



## CITY OF HAVELOCK

Post Office Box 368  
Havelock, NC 28532

### Request for Engineering Service Qualifications

Pursuant to North Carolina General Statutes §143-64.31, the City of Havelock, North Carolina, announces that it is soliciting Request for Qualifications (RFQ's) to negotiate for professional engineering services. Submitted proposals are to be in accordance with the attached specifications, bids can be submitted by mail, email, or hand delivered. Cover sheets, envelopes, etc. should be clearly marked with the words.

### **“City of Havelock Request for Engineering Service Qualifications: Gray Fox Road Infrastructure Improvements”**

#### **Proposal Submission:**

If bid is submitted by mail or hand delivered submit one (1) unbound copy, three (3) bound copies and one (1) electronic copy of the written proposal for a total of five (5) proposals. Fee schedule should be in a sealed envelope. If submitting bid by email include a separate file attachment titled fee schedule. The City of Havelock intends to evaluate the qualifications of all firms submitting proposals before considering the fee schedule. Bids will be accepted until **1:00 p.m. (EST) Thursday, September 8, 2022.** No proposals will be accepted after this date and time. The City of Havelock reserves the right to refuse any or all packages received.

**Submit proposals to:**           **Lee Tillman, Director of Finance**  
  **City of Havelock**  
  **P.O. Box 368**  
  **1 Governmental Ave.**  
  **Havelock, NC 28532**  
  **Fax: 252-447-0126**  
  **Email: [Bids@havelocknc.us](mailto:Bids@havelocknc.us)**

All questions regarding this project should be directed to [bids@havelocknc.us](mailto:bids@havelocknc.us). In order that the selection process is as objective as possible, do not contact any other member of the City of Havelock Staff or officials.

#### General Comments:

- 1: Any cost incurred by respondents in preparing or submitting a proposal for the project shall be the respondents' sole responsibility.
- 2: All responses, inquiries, or correspondence relating to this RFQ will become the property of the City of Havelock when received.
- 3: The City of Havelock reserves the right to refuse any or all packages received.

Questions must be received by **12:00 PM (EST) on Monday, August 22, 2022.** If questions are received, the City will respond no later than **2:00 PM (EST) on Wednesday, August 24, 2022.**

This is the 8th day of August 2022

Published: Vendor Registry August 8, 2022

CITY OF HAVELOCK

Lee W. Tillman  
Director of Finance



**STATE OF NORTH CAROLINA  
AFFIDAVIT  
CITY OF HAVELOCK**

I, \_\_\_\_\_ (the individual attesting below), being duly authorized by and on behalf of \_\_\_\_\_ (the entity hereinafter "Employer") after first being duly sworn hereby swears or affirms as follows:

1. Employer understands that E-Verify is the federal E-Verify program operated by the United States Department of Homeland Security and other federal agencies, or any successor or equivalent program used to verify the work authorization of newly hired employees pursuant to federal law in accordance with NCGS §64-25(5).
2. Employer understands that Employers Must Use E-Verify. Each employer, after hiring an employee to work in the United States, shall verify the work authorization of employee through E-Verify in accordance with NCGS §64-26(a).
3. Employer is a person, business entity, or other organization that transacts business in the State and that employs 25 or more employees in this State. (mark Yes or No)
  - a. YES \_\_\_\_\_, or
  - b. NO \_\_\_\_\_
4. Employer's subcontractors comply with E-Verify, and if Employer is the winning bidder on this project, Employer will ensure compliance with E-Verify by any subcontractors subsequently hired by Employer

This \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

Signature of Affiant: \_\_\_\_\_

Print or Type Name: \_\_\_\_\_

State of North Carolina County of \_\_\_\_\_

Signed and sworn to (or affirmed) before me, this the

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Signature of Notary

\_\_\_\_\_  
Printed Name of Notary

Company Name: \_\_\_\_\_

Company Address: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Telephone Number:  
\_\_\_\_\_

NC Contractor's License Type and Number: \_\_\_\_\_

Number of Addendums Acknowledged (circle one): N/A 1 2 3 4

*As of the date listed below, the vendor or bidder listed above is compliant with N.C.G.S. 147-86.42-84, the Iran Divestment Act and the Companies Boycotting Israel Act.*

Authorized Signature: \_\_\_\_\_

Print Name of Authorized Signature: \_\_\_\_\_

Title:  
\_\_\_\_\_

**Address Bid to:** Lee Tillman, Director of Finance  
City of Havelock  
P.O. Drawer 368  
1 Governmental Avenue  
Havelock, NC 28532  
[Bids@Havelocknc.us](mailto:Bids@Havelocknc.us)

**Please indicate the Project name on the outside of the envelope.**

# Request for Qualifications

## City of Havelock Engineering Services Gray Fox Road Infrastructure Improvements

**Introduction:** The City of Havelock, North Carolina requests proposals from qualified Engineering Firms for the final design, cost estimates construction, preparation of bid package, and CA/CO services for the road repair or replacement project of Gray Fox Road. Upon review of proposals received in response to this Request for Qualifications (RFQ), the City of Havelock anticipates awarding a single contract for the engineering services as required.

**Project Description:** Gray Fox Road is a city street which is located west of Highway 70 and south of MCAS Cherry Point. The road is located along East Prong Slocum Creek. Specifically, the grant-funded project proposes to make drainage improvements along Gray Fox Road in the vicinity of the East Prong Slocum Creek crossing. Gray Fox Road provides the connection for families in the subdivision to gain access to Highway 70, the local high school, and important retail- and service-oriented businesses for the families.

The project that needs to be completed is the removal and replacement of the existing drainpipes (four main pipes and two overflow pipes). This section of water pipes serves as a major drainage outfall for the east portion of the City and is a critical component of providing drainage and reducing the risk of flooding. The 2020 Inspection Report noted that these pipes need improvements.

The project proposes to demolish the six existing corrugated metal pipes and install six new RCP pipes (four main and two overflow). In addition, this project will include roadway repairs at the crossovers of East Prong Slocum Creek as impacted by this work and to improve the overall roadway for the families living in this community.

Work for the project shall consist, at a minimum, of:

- Demolition and excavation,
- Multi-pipe replacement,
- Stormwater bypass pumping/dewatering,
- Pavement reconstruction

**Project Schedule:** The following is a preliminary milestone date list for this project:

Task	Date
Accept RFQs	September 8, 2022
Interview Engineering Firms (three (3))	September 19, 2022
Award Engineering Service Project	September 26, 2022

**Proposal Format:** Proposal must be submitted in the format outlined herein. Each proposal will be reviewed to determine if it is complete prior to actual evaluation. A total of five (5) copies of the proposal shall be submitted to the City of Havelock if submitting by mail or hand delivered. Fee schedule is to be in a separate attachment or a sealed envelope.

**Proposal Content:** The proposal should provide background information about the company, its employees, and its experience with related projects, related clients and experience with successfully acquiring and grant funded projects. The City will give preferably consideration to North Carolina local government related project references. It should cover the experience of the firm, as well as any consultants on the proposed team. For the purposes of the RFQ, the term “company” shall refer to the prime respondent of this RFQ, or in other words, the company with whom the City of Havelock will contract.

The term “consultant” shall refer to any and all consultants with whom the prime respondent will be including on the project team. The proposal shall clearly delineate any experience, background, etc. between the prime “company” and “consultants.”

**Specifically, the proposal should address the following information in order:**

- 1: Company profile listing: name, address, year established, type of ownership, size of company and staff, and an organization chart. If company has multiple offices, please list where the work for this project will be performed.
- 2: Information about the overall makeup of the project team, including: the identity of all key personnel, a description of their respective responsibilities and duties, and each team members experience with municipality public services including engineering design projects, preparing cost estimates, bid packages, and administering of CA/CO.
- 3: Information about any consultants to be included on the team. Identify consultant company name, address, telephone number, contact person, and names and job descriptions of key personnel. Identify consultants experience with municipalities public services including engineering design projects, preparing cost estimates, bid packages, and administering of CA/CO.
- 4: Company’s experience as prime engineer on a project team.
- 5: Provided resumes on those consultants and individuals proposed to be assigned to the project team.
- 6: Within the last ten (10) years, summary of at least five (5) similar projects for which the engineer was responsible. Each of the project summaries should include the following:
  - a: Description of the project, including: size, functions, and year completed.
  - b: Degree of involvement (principals or consultant).
  - c: Consulting firms involved and their assigned responsibilities.

- d: Project references including names, addresses, and telephone numbers.
- 7: Current company workload, and ability to perform work for this project given the schedule listed above.
- 8: Proposed design approach by company for this project. including a proposed task timeline indicating number of calendar days to start/complete each proposed task.
- 9: Company proximity to, and familiarity with the area where the project is located.
- 10: Please provide references of clients for whom company and consultants have provided similar services. Include name, title, company or agency, and telephone number for each reference.
- 11: A list identifying project, year and project cost amount in regards to the company's experience in submitting grant/loan applications and/or administrating federal funded program projects.
- 12: A copy of the company's current rate and/or service fee schedule. (This section should be in a separate sealed envelope or attachment marked "Fee Schedule". The City of Havelock intends to evaluate the qualifications of all firms submitting proposals before considering the fee schedule.)
- 13: Additional information the respondent believes to be relevant to the selection efforts of the City of Havelock.

**Selection Criteria:** In determining which three (3) firm(s) the City would select for further interview and/or negotiate consideration, a firm's submitted proposal is to be evaluated by city staff based upon the following weighted criteria:

- a. The firm's overall experience during the past ten (10) years in planning, design and construction administration involvement in related public services. (10 points)
- b. The firm's experience in specific planning, design and construction for a North Carolina municipal and/or county government structure. Besides the firm's experience, this rating factor will favorably consider those assigned individuals project team members who have actually been involved with a municipal and/or county project. (15 points)
- c. Assessment of the firm's workload and ability to timely perform work for the City's project. (10 points)
- d. Assessment of the submitted project design approach and work task timeline proposed by the firm. (25 points)
- e. The firm's experience in submitting grant/loan applications and/or administrating federal funded program projects. (25 points)
- f. A check on the firm's submitted project references. (15 points)



NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 STRUCTURE MANAGEMENT UNIT

ATTENTION:

**(PAR) ISSUED FOR SECTION LOSS AND DRIFT  
 REMOVAL. NEWLY STRUCTURALLY DEFICIENT DUE  
 TO CORROSION.**

# Structure Safety Report

## 2 Year Complete Topside and Underwater Element Inspection

INSPECTION DATE: 04/15/2020

DIVISION: 2 COUNTY: CRAVEN STRUCTURE NUMBER: 240216 FREQUENCY: 24 MONTHS

FACILITY CARRIED: GRAY FOX RD. MILE POST: \_\_\_\_\_

LOCATION: 0.1MI.W.JCT.HOLLYWOOD BLV

FEATURE INTERSECTED: EAST PRONG SLOCUM CRK.

LATITUDE: 34° 52' 4.62" LONGITUDE: 76° 54' 29.32"

SUPERSTRUCTURE: \_\_\_\_\_

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

SPANS: 4 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 4

POSTED SV: Not Posted POSTED TTST: Not Posted

OTHER SIGNS PRESENT: 4 DELINEATORS, 1 DO NOT FEED THE ALLIGATORS



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>

DIRECTION OF INSPECTION W-E

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

EAST

INSPECTED BY PATRICK G. RUTHERFORD	SIGNATURE 	ASSISTED BY STAN MATTHAIE, JOHN RORES
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NATIONAL BRIDGE INVENTORY ---- STRUCTURE INVENTORY AND APPRAISAL

06/16/2020

IDENTIFICATION				CLASSIFICATION			
(1) STATE NAME	NORTH CAROLINA	BRIDGE	240216	SUFFICIENCY RATING			72.95
(8) STRUCTURE NUMBER (FEDERAL)			0490216	STATUS =			Structurally Deficient
(5) INVENTORY ROUTE (ON/UNDER)	ON		150000000				
(2) STATE HIGHWAY DEPARTMENT DISTRICT			2	(112) NBIS BRIDGE SYSTEM			YES
(3) COUNTY CODE (FEDERAL)	49	(4) PLACE CODE	30120	(104) HIGHWAY SYSTEM	Inventory Route not on NHS		0
(6) FEATURE INTERSECTED	EAST PRONG SLOCUM CRK.			(26) FUNCTIONAL CLASS	Urban Local		19
(7) FACILITY CARRIED	GRAY FOX RD.			(100) STRAHNET HIGHWAY	Not a STRAHNET Route		0
(9) LOCATION	0.1MI.WJCT.HOLLYWOOD BLV			(101) PARALLEL STRUCTURE	No parallel structure exists		N
(11) MILEPOINT			0.0	(102) DIRECTION OF TRAFFIC	2-way traffic		2
(12) BASE HIGHWAY NETWORK			0	(103) TEMPORARY STRUCTURE			
(13) LRS INVENTORY ROUTE & SUBROUTE				(110) DESIGNATED NATIONAL NETWORK - on national network for trucks			0
(16) LATITUDE	34° 52' 4.62"	(17) LONGITUDE	76° 54' 29.32"	(20) TOLL	On Free Road		3
(98) BORDER BRIDGE STATE CODE		PERCENT SHARED		(21) MAINT -			04
(99) BORDER BRIDGE STRUCTURE NUMBER				(22) OWNER -			04
STRUCTURE TYPE AND MATERIAL				CONDITION			
(43) STRUCTURE TYPE MAIN			Steel	(37) HISTORICAL SIGNIFICANCE -			5
TYPE		Culvert	CODE 319	(58) DECK			N
(44) STRUCTURE TYPE APPROACH				(59) SUPERSTRUCTURE			N
TYPE			CODE	(60) SUBSTRUCTURE			N
(45) NUMBER OF SPANS IN MAIN UNIT			4	(61) CHANNEL & CHANNEL PROTECTION			5
(46) NUMBER OF SPANS IN APPROACH			0	(62) CULVERTS			4
(107) DECK STRUCTURE TYPE			CODE N	LOAD RATING AND POSTING			
(108) WEARING SURFACE/PROTECTIVE SYSTEM				(31) DESIGN LOAD	HS20		5
(A) TYPE OF WEARING SURFACE			CODE N	(63) OPERATING RATING METHOD - RFR - Load and Resistance Factor			3
(B) TYPE OF MEMBRANE			CODE N	(64) OPERATING RATING -	HS-52		99
(C) TYPE OF DECK PROTECTION			CODE N	(65) INVENTORY RATING METHOD -			3
AGE AND SERVICE				(66) INVENTORY RATING	HS-52		99
(27) YEAR BUILT			1983	(70) BRIDGE POSTING	No Posting Required		5
(106) YEAR RECONSTRUCTED			0	(41) STRUCTURE OPEN, POSTED, OR CLOSED			A
(42) TYPE OF SERVICE ON -			Highway	DESCRIPTION	Open, no restriction		
OFF -		Waterway	CODE 15	APPRAISAL			
(28) LANES ON STRUCTURE	2	LANES UNDER STRUCTURE	0	(67) STRUCTURAL EVALUATION			4
(29) AVERAGE DAILY TRAFFIC			250	(68) DECK GEOMETRY			N
(30) YEAR OF ADT	1991	(109) TRUCK ADT PCT	7	(69) UNDERCLEARANCES, VERT & HORIZ			N
(19) BYPASS OR DETOUR LENGTH			2.0	(71) WATERWAY ADEQUACY			4
GEOMETRIC DATA				(72) APPROACH ROADWAY ALIGNMENT			N
(48) LENGTH OF MAXIMUM SPAN			4.0	(36) TRAFFIC SAFETY FEATURES			NNNN
(49) STRUCTURE LENGTH			22.0	(113) SCOUR CRITICAL BRIDGES			8
(50) CURB OR SIDEWALK: LEFT	0.0	RIGHT	0.0	PROPOSED IMPROVEMENTS			
(51) BRIDGE ROADWAY WIDTH, CURB TO CURB			0.0	(75) TYPE OF WORK			CODE
(52) DECK WIDTH OUT TO OUT			0.0	(76) LENGTH OF STRUCTURE IMPROVEMENT			
(32) APPROACH ROADWAY WITH (W/ SHOULDERS)			24.0	(94) BRIDGE IMPROVEMENT COST			
(33) BRIDGE MEDIAN	No median	CODE	0	(95) ROADWAY IMPROVEMENT COST			
(34) SKEW	0	(35) STRUCTURE FLARED	0	(96) TOTAL PROJECT COST			
(10) INVENTORY ROUTE MIN VERT CLEAR			999.9	(97) YEAR OF IMPROVEMENT COST ESTIMATE			
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR			24.0	(114) FUTURE ADT	500	YEAR OF FUTURE ADT	2025
(53) MIN VERT CLEAR OVER BRIDGE RDWY			999.9	INSPECTION			
(54) MIN VERT UNDERCLEAR: REFERENCE			0.0	(90) INSPECTION DATE	04/20	(91) FREQUENCY	24
(55) MIN LAT UNDERCLEARANCE RT: REFERENCE	N		0.0	(92) CRITICAL FEATURE INSPECTION		(93) CFI DATE	
(56) MIN LAT UNDERCLEARANCE LT:			0.0	A) FRACTURE CRIT DETAIL		A)	
NAVIGATION DATA				B) UNDERWATER INSP	60	B)	04/20
(38) NAVIGATION CONTROL -		CODE	0	C) OTHER SPECIAL INSP		C)	
(111) PIER PROTECTION		CODE		SCOUR			
(39) NAVIGATION VERTICAL CLEARANCE			0.0				
(116) VERT - LIFT BRIDGE NAV MIN VERT CLEAR			0.0				
(40) NAVIGATION HORIZONTAL CLEARANCE			0.0				



## Superstructure Build Details

Span Number 1

Span Length 4.0000

Skew 0.0000

Number of Items	Type of Component	Element Name	Quantity	Protective System Applied	Quantity (Sq Ft)
2	Steel Pipe Arch	Steel Culvert	77 Feet	Unknow	750

Span Number 2

Span Length 4.0000

Skew 0.0000

Number of Items	Type of Component	Element Name	Quantity	Protective System Applied	Quantity (Sq Ft)
2	Steel Pipe Arch	Steel Culvert	37 Feet		
1	Steel Pipe Arch	Steel Culvert	57 Feet	Metalized	750

Span Number 3

Span Length 4.0000

Skew 0.0000

Number of Items	Type of Component	Element Name	Quantity	Protective System Applied	Quantity (Sq Ft)
1	Steel Pipe Arch	Steel Culvert	57 Feet	Galvanized Protective System	750
2	Steel Pipe Arch	Steel Culvert	37 Feet		

Span Number 4

Span Length 4.0000

Skew 0.0000

Number of Items	Type of Component	Element Name	Quantity	Protective System Applied	Quantity (Sq Ft)
2	Steel Pipe Arch	Steel Culvert	37 Feet		
1	Steel Pipe Arch	Steel Culvert	57 Feet	Galvanized Protective System	750

# Structure Element Scoring

Structure Number: 240216

Inspection Date 4/15/2020

Element Number	Parent Number	Element Name	Location	Total Quantity	Level 1 Quantity	Level 2 Quantity	Level 3 Quantity	Level 4 Quantity
240	0	Steel Culvert	Culverts and Pipes	359	318	29	12	0
515	240	Steel Protective Coating	Culverts and Pipes	3000	2475	0	120	405

# Summary of Maintenance Needs

## Maintenance By Defect

Structure Number: 240216

Inspection Date: 04/15/2020

MMS Code	Element Name	Defect Name	Recommended Quantity
3370	Steel Culvert	Scour	1 Feet
3370	Steel Culvert	Corrosion	11 Feet
3342	Steel Protective Coating	Effectiveness (Steel Protective Coatings)	525 Square Feet

## Element Structure Maintenance Quantities

Structure Number: 240216

Inspection Date 04/15/2020

Location	MMS Code	Description	Maint Quantity	Total Quantity	Severe Quantity	Poor Quantity	Fair Quantity	Good Quantity
Culverts and Pipes	3342	Clean and Paint Steel	525	3000	405	120	0	2475
Culverts and Pipes	3370	Maintenance of NBI Culverts and Pipes	12	359	0	12	29	318

# Priority Actions Request

Structure Number 240216

## Span1

3370 Culvert Section 1 Steel Pipe Arch

Priority Level	Defect Type	Quantity	Defect Description
②	Corrosion	2	Barrel 1 Section 1: SECTION LOSS SOUTH END, EAST SIDE FROM END BACK 1.0' X 8" VERT. (PAR). SECTION LOSS FROM NORTH END BACK 1.0' AT EAST AND WEST SIDES. (PAR)

## Span2

3370 Culvert Section 1 Steel Pipe Arch

Priority Level	Defect Type	Quantity	Defect Description
②	Corrosion	2	Barrel 2 Section 1: SECTION LOSS, SOUTH END WEST SIDE FROM END BACK 2.0' (PAR)

## Span3

3370 Culvert Section 1 Steel Pipe Arch

Priority Level	Defect Type	Quantity	Defect Description
②	Corrosion	6	Barrel 3 Section 1: CORRODED AND COLLAPSED ALONG TOP OF PIPE FROM SOUTH END BACK 6.0' (PAR)

## Span4

3370 Culvert Section 1 Steel Pipe Arch

Priority Level	Defect Type	Quantity	Defect Description
②	Corrosion	1	Barrel 4 Section 1: SECTION LOSS, FROM SOUTH END BACK 1.0' AT THE EAST AND WEST SIDES AT THE WL. (PAR)

## Drift

3366 Drift Drift

Priority Level	Defect Type	Quantity	Defect Description
②		80	DRIFT AT THE UPSTREAM END FROM MUDLINE TO 1' ABOVE TOP OF PIPES EXTEND +/- 5' INTO PIPES.(PAR)

## Element Condition and Maintenance Data

Structure Number: 240216

Inspection Date: 04/15/2020

<b>Span 1</b>	<b>Culvert Section 1</b>
<b>Steel Pipe Arch</b>	

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
240	Steel Culvert	57	49	6	2	0 Feet
515	Steel Protective Coating	750	625	0	0	125 Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty
240	Corrosion	SECTION LOSS SOUTH END, EAST SIDE FROM END BACK 1.0' X 8" VERT. (PAR). SECTION LOSS FROM NORTH END BACK 1.0' AT EAST AND WEST SIDES. (PAR)	3	2	2 Feet
240	Corrosion	RUST ON EXPOSED PIPE ENDS	2	5	Feet
240	Distortion	3" x 20" area of up to 1" deformation at 12 o'clock at upstream end	2	1	Feet
515	Effectiveness (Steel Protective Coatings)	COATING FAILED IN AREAS OF CORROSION	4	125	125 Square Feet

General Comments

<b>Span 2</b>	<b>Culvert Section 1</b>
<b>Steel Pipe Arch</b>	

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
240	Steel Culvert	57	45	9	3	0 Feet
515	Steel Protective Coating	750	610	0	0	140 Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty
240	Corrosion	SECTION LOSS, SOUTH END WEST SIDE FROM END BACK 2.0' (PAR)	3	2	2 Feet
240	Scour	PREVIOUS 9" OF SCOUR AT THE UPSTREAM END REMAINS BLOCKED BY DRIFT AT THIS INSPECTION .	3	1	1 Feet
240	Corrosion	RUST ON EXPOSED PIPE ENDS	2	8	Feet
240	Distortion	2" x 40" area of up to 1" deformation at 12 o'clock at upstream end	2	1	Feet
515	Effectiveness (Steel Protective Coatings)	COATING FAILED IN AREAS OF CORROSION	4	140	140 Square Feet

General Comments

<b>Span 2</b>	<b>Culvert Section 3</b>
<b>Steel Pipe Arch</b>	

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
240	Steel Culvert	17	14	3	0	0 Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty
240	Corrosion	20" x 3" area of 2 1/2" deep deformation at 12 o'clock at downstream end	2	2	Feet
240	Corrosion	9" x 50" area of rust on top of barrel at downstream end	2	1	Feet

General Comments

## Span 3 Culvert Section 1

## Steel Pipe Arch

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
240	Steel Culvert	57	48	3	6	0 Feet
515	Steel Protective Coating	750	610	0	0	140 Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty
240	Corrosion	CORRODED AND COLLAPSED ALONG TOP OF PIPE FROM SOUTH END BACK 6.0' (PAR)	3	6	6 Feet
240	Corrosion	20" x 40" area of rust on top of barrel at upstream end	2	2	Feet
240	Corrosion	PREVIOUS 9" OF SCOUR UPSTREAM IS DRIFT COVERED AT THIS INSPECTION.	2	1	Feet
515	Effectiveness (Steel Protective Coatings)	COATING FAILED IN AREAS OF CORROSION.	4	140	140 Square Feet

General Comments

## Span 3 Culvert Section 3

## Steel Pipe Arch

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
240	Steel Culvert	17	15	2	0	0 Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty
240	Corrosion	20" x 50" area of rust on top of barrel at upstream end	2	2	Feet

General Comments

## Span 4 Culvert Section 1

## Steel Pipe Arch

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
240	Steel Culvert	57	50	6	1	0 Feet
515	Steel Protective Coating	750	630	0	120	0 Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty
240	Corrosion	SECTION LOSS, FROM SOUTH END BACK 1.0' AT THE EAST AND WEST SIDES AT THE W/L. (PAR)	3	1	1 Feet
240	Corrosion	SURFACE RUST AT EXPOSED PIPE ENDS	2	4	Feet
240	Distortion	1" x 7" area of up to 1/2" deformation at 12 o'clock at upstream end	2	1	Feet
240	Scour	PREVIOUS 6" OF SCOUR DRIFT COVERED AT THIS INSPECTION.	2	1	Feet
515	Effectiveness (Steel Protective Coatings)	COATING FAILED IN AREAS OF COROSION.	3	120	120 Square Feet

General Comments

## Elements Verified

Location	Name	Component	Element Name	Amount
Span 1	Culvert Section 1	Steel Pipe Arch	Steel Culvert	57
Span 2	Culvert Section 1	Steel Pipe Arch	Steel Culvert	57
Span 3	Culvert Section 1	Steel Pipe Arch	Steel Culvert	57
Span 4	Culvert Section 1	Steel Pipe Arch	Steel Culvert	57

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## General Inspection Notes

# National Bridge and NC Inspection Items

Structure Number: 240216

Inspection Date: 04/15/2020

## 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	5
Item 62: Culvert	0 - 9, N	4
Item 71: Waterway Adequacy	0 - 9, N	6
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	N	0	4675
Wingwall	G, F, P, or C			
Scour	G, F, P, or C	F		
Drift	G, F, P, or C	P	80	3366
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	N
Priority Maintenance Request Submitted	YES/NO	Y
Inspection Time	Hours	12
Traffic Control Time	Hours	
Snooper Time	Hours	
Ladder Used	YES/NO	N
Bucket Truck Used	YES/NO	N
Boat Used	YES/NO	Y
Other Equipment Used	YES/NO	Y

# National Bridge and NC SMU Inspection Item Details

Structure Number: 240216

Inspection Date: 04/15/2020

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Item	Culvert - Item 62	Grade 4	Maint Code	Qty. 0
Details	NEWLY STRUCTURALLY DEFICIENT MAINLY DUE TO THE UPSTREAM END OF LINE 3 COLLAPSING FROM THE END BACK 6.0'.			

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Item	Priority Maintenance Issued	Grade Y	Maint Code	Qty. 0
Details	(PAR) ISSUED FOR SECTION LOSS AND DRIFT REMOVAL.			

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Item	Boat Used	Grade Y	Maint Code	Qty. 0
Details	BOAT WAS IN TOW FOR USE OF COMPRESSOR FOR SURFACE SUPPLIED AIR.			

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Item	Other Equipment Used	Grade Y	Maint Code	Qty. 0
Details	SURFACE SUPPLIED AIR, AGA, WETSUIT 2.7' W/D 1.0' VIS. MILD CURRENT 40D/RAIN			

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Item	Drift	Grade P	Maint Code 3366	Qty. 80
Details	DRIFT AT THE UPSTREAM END FROM MUDLINE TO 1' ABOVE TOP OF PIPES EXTEND +/- 5' INTO PIPES.(PAR)			

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Item	Scour	Grade F	Maint Code	Qty. 0
Details	PREVIOUS SCOUR AT THE UPSTREAM END IS DRIFT COVERED AT THIS INSPECTION.			



LINE 3, SOUTH END COLLAPSED FROM THE END BACK 6.0' (PAR)



SECTION LOSS LINE 2, FROM SOUTH END BACK 2.0' (PAR)



SECTION LOSS LINE 1, FROM SOUTH END BACK 1.0' (PAR)



DRIFT FROM MUDLINE TO 1' ABOVE TOP OF ALL LINES AT THE SOUTH END EXTENDING INTO PIPES +/- 5.0' (PAR)



SECTION LOSS LINE 4 FROM SOUTH END BACK 1.0'(PAR)



SECTION LOSS LINE 1, FROM NORTH END BACK 1.0' (PAR)



RUST AT EXPOSED PIPE ENDS

Structure Number: 240216

Inspection Date 04/15/2020

**Barrel Number 1**

Skew 0 ° Length along centerline (ft) 56.33 Height Crown to Bed (ft) 4.2 Fill Depth (ft) 0.0

Section 1 Details	Barrel Height (ft)	<u>3.0</u>	Barrel Width (ft)	<u>4.0</u>
Material	<u>Steel</u>	Corrugation Pattern	<u>3" X 1"</u>	Top Radius (ft) <u>2.083</u>
Section 2 Details	Barrel Height (ft)	<u>0.0</u>	Barrel Width (ft)	<u>0.0</u>
Material	<u>Steel</u>	Corrugation Pattern		Top Radius (ft) <u>0.0</u>

**Barrel Number 2**

Skew 0 ° Length along centerline (ft) 56.33 Height Crown to Bed (ft) 4.2 Fill Depth (ft) 0.0

Section 1 Details	Barrel Height (ft)	<u>3.0</u>	Barrel Width (ft)	<u>4.0</u>
Material	<u>Steel</u>	Corrugation Pattern	<u>3" X 1"</u>	Top Radius (ft) <u>2.083</u>
Section 2 Details	Barrel Height (ft)	<u>0.0</u>	Barrel Width (ft)	<u>0.0</u>
Material	<u>Steel</u>	Corrugation Pattern		Top Radius (ft) <u>0.0</u>
Section 3 Details	Barrel Height (ft)	<u>0.0</u>	Barrel Width (ft)	<u>0.0</u>
Material	<u>Steel</u>	Corrugation Pattern		Top Radius (ft) <u>0.0</u>

**Barrel Number 3**

Skew 0 ° Length along centerline (ft) 56.33 Height Crown to Bed (ft) 4.2 Fill Depth (ft) 0.0

Section 1 Details	Barrel Height (ft)	<u>3.0</u>	Barrel Width (ft)	<u>4.0</u>
Material	<u>Steel</u>	Corrugation Pattern	<u>3" X 1"</u>	Top Radius (ft) <u>2.083</u>
Section 2 Details	Barrel Height (ft)	<u>0.0</u>	Barrel Width (ft)	<u>0.0</u>
Material	<u>Steel</u>	Corrugation Pattern		Top Radius (ft) <u>0.0</u>
Section 3 Details	Barrel Height (ft)	<u>0.0</u>	Barrel Width (ft)	<u>0.0</u>
Material	<u>Steel</u>	Corrugation Pattern		Top Radius (ft) <u>0.0</u>

**Barrel Number 4**

Skew 0 ° Length along centerline (ft) 56.33 Height Crown to Bed (ft) 4.2 Fill Depth (ft) 0.0

Section 1 Details	Barrel Height (ft)	<u>3.0</u>	Barrel Width (ft)	<u>4.0</u>
Material	<u>Steel</u>	Corrugation Pattern	<u>3" X 1"</u>	Top Radius (ft) <u>0.0</u>
Section 2 Details	Barrel Height (ft)	<u>0.0</u>	Barrel Width (ft)	<u>0.0</u>
Material	<u>Steel</u>	Corrugation Pattern		Top Radius (ft) <u>0.0</u>
Section 3 Details	Barrel Height (ft)	<u>0.0</u>	Barrel Width (ft)	<u>0.0</u>
Material	<u>Steel</u>	Corrugation Pattern		Top Radius (ft) <u>0.0</u>





EAST



SOUTH



SOUTH PROFILE



NORTH



NORTH PROFILE



WEST



ROADWAY OVERVIEW



LOOKING UPSTREAM



LOOKING DOWNSTREAM






# BRIDGE INSPECTOR'S RECOMMENDATION FOR MAINTENANCE REPAIRS

Bridge: 240216

County CRAVEN

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	80	DRIFT AT THE UPSTREAM END FROM MUDLINE TO 1' ABOVE TOP OF PIPES EXTEND +/- 5' INTO PIPES.(PAR)	
 3370	Maintenance and Repair of NBIS Pipes and Culverts	LF	2	Barrel 1 Section 1: SECTION LOSS SOUTH END, EAST SIDE FROM END BACK 1.0' X 8" VERT. (PAR). SECTION LOSS FROM NORTH END BACK 1.0' AT EAST AND WEST SIDES. (PAR)	
 3370	Maintenance and Repair of NBIS Pipes and Culverts	LF	2	Barrel 2 Section 1: SECTION LOSS, SOUTH END WEST SIDE FROM END BACK 2.0' (PAR)	
 3370	Maintenance and Repair of NBIS Pipes and Culverts	LF	6	Barrel 3 Section 1: CORRODED AND COLLAPSED ALONG TOP OF PIPE FROM SOUTH END BACK 6.0' (PAR)	
 3370	Maintenance and Repair of NBIS Pipes and Culverts	LF	1	Barrel 4 Section 1: SECTION LOSS, FROM SOUTH END BACK 1.0' AT THE EAST AND WEST SIDES AT THE W/L . (PAR)	

**Key**



Priority Maintenance Item



Critical Finding Item



Priority Maintenance Level Not Determined

**BRIDGE INSPECTOR'S RECOMMENDATION FOR PRIORITY MAINTENANCE REPAIRS**

Bridge: 240216                      County CRAVEN

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

MMS Code	MMS Description	Quantity
3366	Drift and Debris Removal	80      HR
Location:		
Bent/Span No.		
Priority Level	Status	
	Request Awaiting Assignment	
Submitted Date:	Submitted By:	Assisted By:
04/15/2020	PATRICK G. RUTHERFORD	
Details		
DRIFT AT THE UPSTREAM END FROM MUDLINE TO 1' ABOVE TOP OF PIPES EXTEND +/- 5' INTO PIPES.(PAR)		

MMS Code	MMS Description	Quantity
3370	Maintenance and Repair of NBIS Pipes and Culverts	2      LF
Location:		
Bent/Span No.		
Priority Level	Status	
	Request Awaiting Assignment	
Submitted Date:	Submitted By:	Assisted By:
04/15/2020	PATRICK G. RUTHERFORD	
Details		
Barrel 1 Section 1: SECTION LOSS SOUTH END, EAST SIDE FROM END BACK 1.0' X 8" VERT. (PAR). SECTION LOSS FROM NORTH END BACK 1.0' AT EAST AND WEST SIDES. (PAR)		

**BRIDGE INSPECTOR'S RECOMMENDATION FOR PRIORITY MAINTENANCE REPAIRS**

Bridge: 240216                      County CRAVEN

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

MMS Code	MMS Description	Quantity
3370	Maintenance and Repair of NBIS Pipes and Culverts	2            LF
Location:		
Bent/Span No.		
Priority Level	Status	
	Request Awaiting Assignment	
Submitted Date:	Submitted By:	Assisted By:
04/15/2020	PATRICK G. RUTHERFORD	
Details		
Barrel 2 Section 1: SECTION LOSS, SOUTH END WEST SIDE FROM END BACK 2.0' (PAR)		

MMS Code	MMS Description	Quantity
3370	Maintenance and Repair of NBIS Pipes and Culverts	6            LF
Location:		
Bent/Span No.		
Priority Level	Status	
	Request Awaiting Assignment	
Submitted Date:	Submitted By:	Assisted By:
04/15/2020	PATRICK G. RUTHERFORD	
Details		
Barrel 3 Section 1: CORRODED AND COLLAPSED ALONG TOP OF PIPE FROM SOUTH END BACK 6.0' (PAR)		



BRIDGE INSPECTOR'S RECOMMENDATION FOR PRIORITY MAINTENANCE REPAIRS

Bridge: 240216                      County CRAVEN

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

MMS Code	MMS Description	Quantity
3370	Maintenance and Repair of NBIS Pipes and Culverts	1              LF
Location:		
Bent/Span No.		
Priority Level	Status	
	Request Awaiting Assignment	
Submitted Date:	Submitted By:	Assisted By:
04/15/2020	PATRICK G. RUTHERFORD	
Details		
Barrel 4 Section 1: SECTION LOSS, FROM SOUTH END BACK 1.0' AT THE EAST AND WEST SIDES AT THE W/L . (PAR)		

# Culvert Segment Details

Barrel 1      Has Bands?: No      Distance From Upstream End to Edge of Pavement: 16ft

	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	4	3	.104	3 x 1		2.083									Pipe Arch	Steel
End of Segment 1	19	4	3	.104	3 x 1		2.083									Pipe Arch	Steel
Beginning of Segment 2	21	4	3	.104	3 x 1		2.083									Pipe Arch	Steel
End of Segment 2	39	4	3	.104	3 x 1		2.083									Pipe Arch	Steel
Beginning of Segment 3	41	4	3	.104	3 x 1		2.083									Pipe Arch	Steel
Downstream End	55	4	3	.104	3 x 1		2.083									Pipe Arch	Steel

# Culvert Segment Details

Barrel 2      Has Bands?: No      Distance From Upstream End to Edge of Pavement: 16ft

	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	4	3	.104	3 x 1		2.083									Pipe Arch	Steel
End of Segment 1	19	4	3	.104	3 x 1		2.083									Pipe Arch	Steel
Beginning of Segment 2	21	4	3	.104	3 x 1		2.083									Pipe Arch	Steel
End of Segment 2	39	4	3	.104	3 x 1		2.083									Pipe Arch	Steel
Beginning of Segment 3	41	4	3	.104	3 x 1		2.083									Pipe Arch	Steel
Downstream End	55	4	3	.104	3 x 1		2.083									Pipe Arch	Steel

# Culvert Segment Details

Barrel 3      Has Bands?: No      Distance From Upstream End to Edge of Pavement: 16ft

	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	4	3	.104	3 x 1		2.083									Pipe Arch	Steel
End of Segment 1	19	4	3	.104	3 x 1		2.083									Pipe Arch	Steel
Beginning of Segment 2	21	4	3	.104	3 x 1		2.083									Pipe Arch	Steel
End of Segment 2	39	4	3	.104	3 x 1		2.083									Pipe Arch	Steel
Beginning of Segment 3	41	4	3	.104	3 x 1		2.083									Pipe Arch	Steel
Downstream End	55	4	3	.104	3 x 1		2.083									Pipe Arch	Steel

# Culvert Segment Details

Barrel 4      Has Bands?: No      Distance From Upstream End to Edge of Pavement: 16ft

	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	4	3	.104	3 x 1		2.083									Pipe Arch	Steel
End of Segment 1	19	4	3	.104	3 x 1		2.083									Pipe Arch	Steel
Beginning of Segment 2	21	4	3	.104	3 x 1		2.083									Pipe Arch	Steel
End of Segment 2	39	4	3	.104	3 x 1		2.083									Pipe Arch	Steel
Beginning of Segment 3	41	4	3	.104	3 x 1		2.083									Pipe Arch	Steel
Downstream End	55	4	3	.104	3 x 1		2.083									Pipe Arch	Steel

# Bridge Inspection Field Sketch

MEASURED +/- 50' WEST



Roadway	21.5ft Wide	2 Paved Lanes	Looking East
Left Shoulder	8ft Wide	1ft Paved	7ft Unpaved
Right Shoulder	8ft Wide	1ft Paved	7ft Unpaved
Left Guardrail			
Right Guardrail			

**Title**  
APPROACH ROADWAY

**Description**  
GRAY FOX ROAD

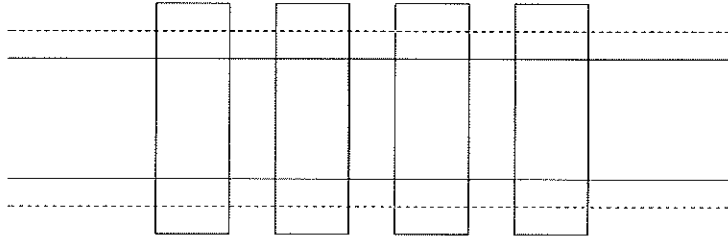
Bridge No: 240216

Drawn By: PGR

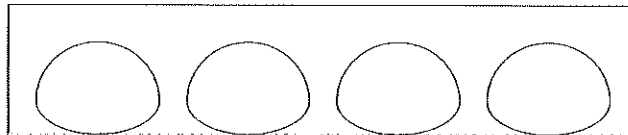
Date: 4/15/20

File Name: S0254000270

# Bridge Inspection Field Sketch



Crown of Roadway



Bed

Looking Upstream

Number of Barrels	Skew	Distance From Crown to Bed	Fill Depth
4	90°	8.2ft	4.2ft
Length Along Center Line of Pipe		Length Along Center Line of Roadway	
56.3333ft		22ft	

Barrel #	Width	Height	Distance From Previous Pipe	Scour at Inlet	Scour at Outlet	Type
1	4ft	3ft		DRIFT COVERED	0	Pipe Arch
2	4ft	3ft	2ft	DRIFT COVERED	0	Pipe Arch
3	4ft	3ft	2ft	DRIFT COVERED	0	Pipe Arch
4	4ft	3ft	2ft	DRIFT COVERED	0	Pipe Arch

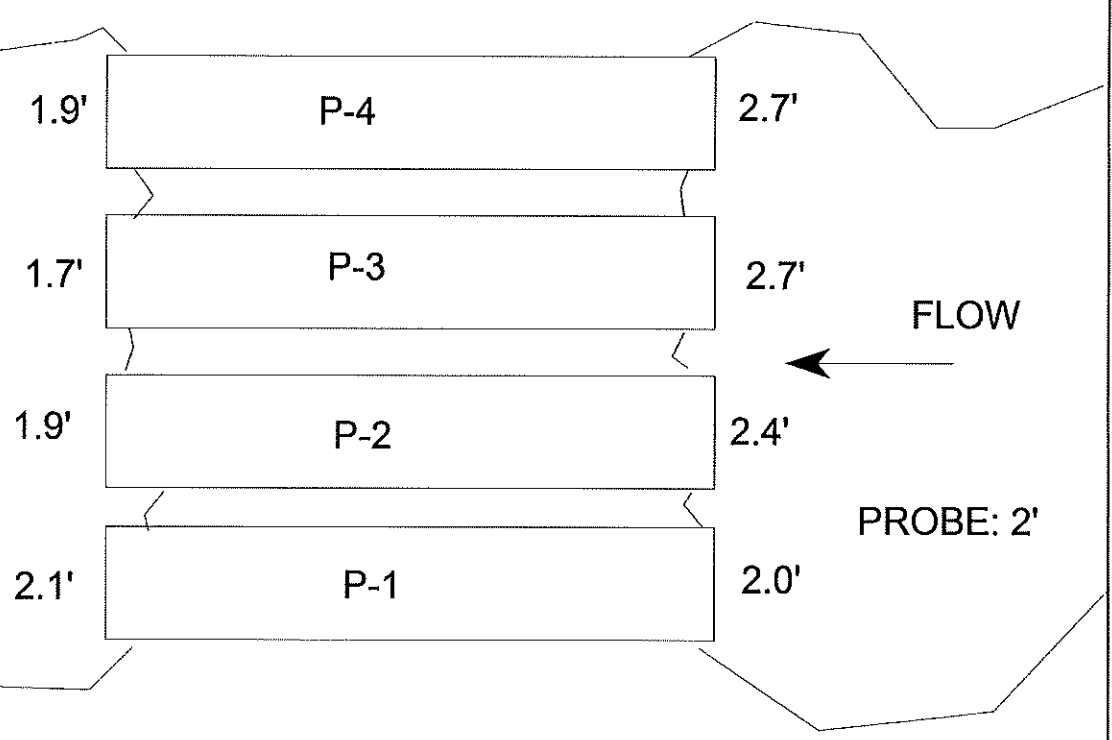
RIGHT EOP TO BREAK: 5'  
 NO GUARDRAILS  
 MAX. DEPTH 2.7'  
 LEFT EOP TO BREAK: 6' \*

RIGHT BREAK TO UPSTREAM: 10' \*  
 SPEED LIMIT: 35  
 LEFT BREAK TO DOWNSTREAM: 11' \*  
 LEFT BREAK TO DOWNSTREAM: 11' \*

VERIFIED BY PGR 4/15/20

<b>Title</b> PIPE DETAILS	<b>Description</b> GRAY FOX ROAD		
Bridge No: 240216	Drawn By: MWC	Date: 2/22/2012	File Name: S0254000271

# Bridge Inspection Field Sketch



W/S TOP OF LINE 3, NORTH END 1.0"

<b>Title</b> CHANNEL PLAN		<b>Description</b> CHAN PLAN	
Bridge No: 240216	Drawn By: PGR	Date: 4/15/20	File Name: S0166001211