

35' ~~#~~ Left/DS offset
New Alignment
SAMP 45 35
25/35/25
15' B's
Low Defn

Project Number 45614.1.1
TIP Number B-5659
Let Date _____

2' 6" CAP
10' offset

PREDESIGN-PRESURVEY REPORT
No Bents In Water

County JOHNSTON

Bridge Number 500432
Road Number SR 1738 - EATMAN ROAD
Stream CATTAIL CREEK

Type Of Request: POC Force Account TIP
Date 2-1-16 Name S J SYKES Assigned To _____
Checked By _____
Prior Survey Date No (attach copy of prior survey)
Study By Scour Section _____
Flood Zone AE Detail Study Limited Date 12/2/2005 (attach copy of flood map) Panel 2700
B.M. Info _____
Quad Map FLOWERS Drainage Area 7.01 sq m. From STREAM STATS
Q25 1700 Q50 2100 Q100 2500 Method USGS SI Rept 2009-5158

EXISTING BRIDGE INFORMATION

Location 1.2 mi S JCT SR 1700
Average Daily Traffic 130 (yr. 2000)
Length 33' Bed-To Crown 13' Water Depth 6'
Type Structure Timber floor / Timber joists, Timber caps + piles, steel cap pile crutches
Type Spans With crutches - 1 @ 8', 2 @ 8.66', 1 @ 8.083'
Upstream Structure C166 SR 1700
Location 1.1 mi W of JCT NC 96
Bed-To Crown 10' Prior Survey 8-91 (3 @ 12' x 8')
Downstream Structure #171 SR 1733
Location 0.5 mi W of JCT NC 96
Bed-To Crown 15' Prior Survey No
SCS Watershed _____

ENVIRONMENTAL

Trout Stream No Anadromous Fish No Primary Nursery Area No
High Quality Waters No Nutrient Sensitive Waters Yes
Near Water Supply Intake No CAMA County No
Stream Classification C, NSW
DENR River Basin Info. Neuse

office estimated min. bry length = 85'



NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STRUCTURE MANAGEMENT UNIT

ATTENTION: Shored structure

Structure Safety Report

Routine Element Inspection

COUNTY: JOHNSTON STRUCTURE NUMBER: 500432 FREQUENCY: 24 MONTHS

FACILITY CARRIED: SR1738 MILE POST:

LOCATION: 1.2 MI S JCT SR1700

FEATURE INTERSECTED: CATTAIL CREEK

LATITUDE: 35° 42' 5.01" LONGITUDE: 78° 18' 1.59"

SUPERSTRUCTURE: NEW TIMBER FLOOR/TIMBER JOIST

EBTS,IBT: TIMCAP/TIMPILES;STLCAP/PILE CRUTCHES ADDED

SUBSTRUCTURE: EBT1,BT1,BT3:STLCAP/STLPLS;EBT2&BT2:TIMCAP/TIMPILES

2@17.667'

SPANS: 1@8', 2@8.667', 1@8.083'

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

PRESENT CONDITION: Fair INSPECTION DATE: 06/23/2015

POSTED SV: Not Posted POSTED TTST: Not Posted

OTHER SIGNS PRESENT: 4 Delineators,2 Narrow Bridge



Looking north

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>

INSPECTED BY Willis C May	SIGNATURE <i>Willis C May</i>	ASSISTED BY Wayne T Wilkinson
------------------------------	----------------------------------	----------------------------------

NATIONAL BRIDGE INVENTORY----- STRUCTURE INVENTORY AND APPRAISAL Run Date: 11/25/2015

IDENTIFICATION				CLASSIFICATION	
(1) STATE NAME -NORTH CAROLINA	BRIDGE	500432		SUFFICIENCY RATING =	6
(8) STRUCTURE NUMBER(FEDERAL)		000000001010432		STATUS =	Structurally Deficient
(5) INVENTORY ROUTE (ON/UNDER) - ON		31017380			
(2) STATE HIGHWAY DEPARTMENT DISTRICT		3			
(3) COUNTY CODE	101	(4) PLACE CODE	0		
(6) FEATURE INTERSECTED -	CATTAIL CREEK			(112)NBIS BRIDGE SYSTEM -	YES
(7) FACILITY CARRIED	SR1738			(104)HIGHWAY SYSTEM	Is not on NHS
(9) LOCATION	1.2 MI S JCT SR1700			(26) FUNCTIONAL CLASS -	Local
(11)MILEPOINT		0		(100)STRAHNET HIGHWAY -	Not a STRAHNET Route
(16)LAT	35° 42' 5.01"	(17)LONG	78° 18' 1.59"	(101)PARALLEL STRUCTURE -	No Parallel Structure
(98)BORDER BRIDGE STATE CODE		PCT SHARE		(102)DIRECTION OF TRAFFIC -	2-way Traffic
(99)BORDER BRIDGE STRUCTURE NO				(103)TEMPORARY STRUCTURE -	Temporary Structure/Conditions
				(110)DESIGNATED NATIONAL NETWORK -	Not on the National Network
				(20) TOLL	On Free Road
				(31) MAINTAIN -	State Highway Agency
				(22) OWNER -	State Highway Agency
				(37) HISTORICAL SIGNIFICANCE -	Not Eligible
STRUCTURE TYPE AND MATERIAL				CONDITION	
(43) STRUCTURE TYPE MAIN:	Wood or Timber				
TYPE -	Stringer Multibeam or Girder	CODE	702		
(44) STRUCTURE TYPE APPR :					
TYPE -		CODE	000		
(45) NUMBER OF SPANS IN MAIN UNIT			4	(58) DECK	7
(46) NUMBER OF APPROACH SPANS				(59) SUPERSTRUCTURE	7
(107)DECK STRUCTURE TYPE -	8	CODE		(60) SUBSTRUCTURE	3
(108)WEARING SURFACE / PROTECTIVE SYSTEM :				(61) CHANNEL & CHANNEL PROTECTION	7
(A) TYPE OF WEARING SURFACE -		CODE		(62) CULVERTS	N
(B) TYPE OF MEMBRANE -		CODE			
(C) TYPE OF DECK PROTECTION -		CODE		LOAD RATING AND POSTING	
				(31) DESIGN LOAD	Unknown
				(63) OPERATING RATING METHOD -	Allowable Stress
				(64) OPERATING RATING -	HS-1
				(65) INVENTORY RATING METHOD -	Allowable Stress
				(66) INVENTORY RATING -	HS-1
				(70) BRIDGE POSTING -	No Posting Required
				(41) STRUCTURE OPEN, POSTED ,OR CLOSED	D
				DESCRIPTION -	Open Temporary Shoring
AGE AND SERVICE				APPRAISAL	
(27) YEAR BUILT			1955		
(106)YEAR RECONSTRUCTED					
(42) TYPE OF SERVICE : ON -	Highway				
UNDER -	Waterway	CODE	15		
(28) LANES: ON STRUCTURE	2	UNDER STRUCTURE	0		
(29) AVERAGE DAILY TRAFFIC			130		
(30) YEAR OF ADT	2000	(109) TRUCK ADT PCT	6%		
(19) BYPASS OR DETOUR LENGTH			199 MI		
GEOMETRIC DATA					
(48) LENGTH OF MAXIMUM SPAN			9 FT	(67) STRUCTURAL EVALUATION	3
(49) STRUCTURE LENGTH			33 FT	(68) DECK GEOMETRY	3
(50)CURB OR SIDEWALK: LEFT	.2915 FT	RIGHT	.2915 FT	(69) UNDERCLEARANCES,VERTI & HORIZ	N
(51) BRIDGE ROADWAY WIDTH CURB TO CURB			19 FT	(71) WATERWAY ADEQUACY	5
(52) DECK WIDTH OUT TO OUT			20 FT	(72) APPROACH ROADWAY ALIGNMENT	8
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS)			18 FT	(36) TRAFFIC SAFETY FEATURES	0000
(33) BRIDGE MEDIAN -	No Median	CODE	0	(113)SCOUR CRITICAL BRIDGES	U
(34) SKEW	0°	(35) STRUCTURE FLARED	0	PROPOSED IMPROVEMENTS	
(10) INVENTORY ROUTE MIN VERT CLEAR			999.9 FT	(75) TYPE OF WORK -	CODE
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR			19 FT	(76) LENGTH OF STRUCTURE IMPROVEMENT	
(53) MIN VERT CLEAR OVER BRIDGE RDWY			999.9 FT	(94) BRIDGE IMPROVEMENT COST	
(54) MIN VERT UNDERCLEAR REF	Not a Highway or Railroad		0 FT	(95) ROADWAY IMPROVEMENT COST	
(55) MIN LAT UNDERCLEAR RT REF	Not a Highway or Railroad		000 FT	(96) TOTAL PROJECT COST	
(56) MIN LAT UNDERCLEAR LT REF -			000 FT	(97) YEAR OF IMPROVEMENT COST ESTIMATE	
				(114)FUTURE ADT	260
				(115) YEAR FUTURE ADT	2025
NAVIGATION DATA				INSPECTIONS	
(38) NAVIGATION CONTROL -	No Navigational Control	CODE	0	(90) INSPECTION DATE	06/23/2015
(111)PIER PROTECTION -		CODE		(92) CRITICAL FEATURE INSPECTION :	(93) CFI DATE
(39) NAVIGATION VERTICAL CLEARANCE			0	A) FRACTURE CRIT DETAIL -	NO
(116)VERT - LIFT BRIDGE NAV MIN VERT CLEAR			FT	B) UNDERWATER INSP -	YES 48Mo
(40) NAVIGATION HORIZONTAL CLEARANCE			0 FT	C) OTHER SPECIAL INSP	NO
				SCOUR	

BRIDGE MANAGEMENT UNIT

DATA ON EXISTING STRUCTURE

Run Date: 11/25/2015

COUNTY :	DIVISION :	DISTRICT :	STRUCTURE NUMBER :	LENGTH :	
JOHNSTON	4	3	500432	33	FEET

ROUTE CARRIED :	FEATURE INTERSECTED :
SR1738	CATTAIL CREEK

LOCATED :	BRIDGE NAME :	CITY :
1.2 MI S JCT SR1700		

FUNC. CLASS :	SYST.ON :	SYST.UNDER :	ADT & YR :	RAIL TYPE :
09	NFA	NFA	130 2000	LT 227 RT 227

BUILT :	BY :	PROJ :	FED.AID PROJ :	DESIGN LOAD :
1955	BMU			Unknown

REHAB :	BY :	PROJ :	ALIGNMENT :	SKEW :	LANES :
	BMU		TAN.	90	ON 2 UNDER 0

NAVIGATION :	HT. CRN. TO BED :	WATER DEPTH :
VC 0 FT HC 0 FT	13 FT	6 FT

SUPERSTRUCTURE : NEW TIMBER FLOOR/TIMBER JOIST

SUBSTRUCTURE : EBT1,BT1,BT3:STLCAP/STLPLS;EBT2&BT2:TIMCAP/TIMPILES

SPANS : 1@6'9"; 2@8'8"; 1@8'1"

BEAMS OR GIRDERS : 10 LINES 6X12 TIMBER JOIST @ VAR. CTS.

FLOOR :	ENCROACHMENT :	DECK (OUT TO OUT) :
4X8TIM./3" AWS		20 FT

CLEAR ROADWAY :	BETWEEN RAILS :	SIDEWALK OR CURB :
19 FT	19.583 FT	LT .2915 FT RT .2915 FT

VERT.CL.OVER :
999.9 FT

INV.RTG. :	OPE.RTG. :	CONTR.MEMBER :	POSTED :	DATE
HS-1	HS-1	Joist	SV TTST	10/15/1996

SYSTEM :	GREEN LINE ROUTE :
Secondary S.R. Route	N

UNDER ROUTES AND CLEARANCES

REMARKS :

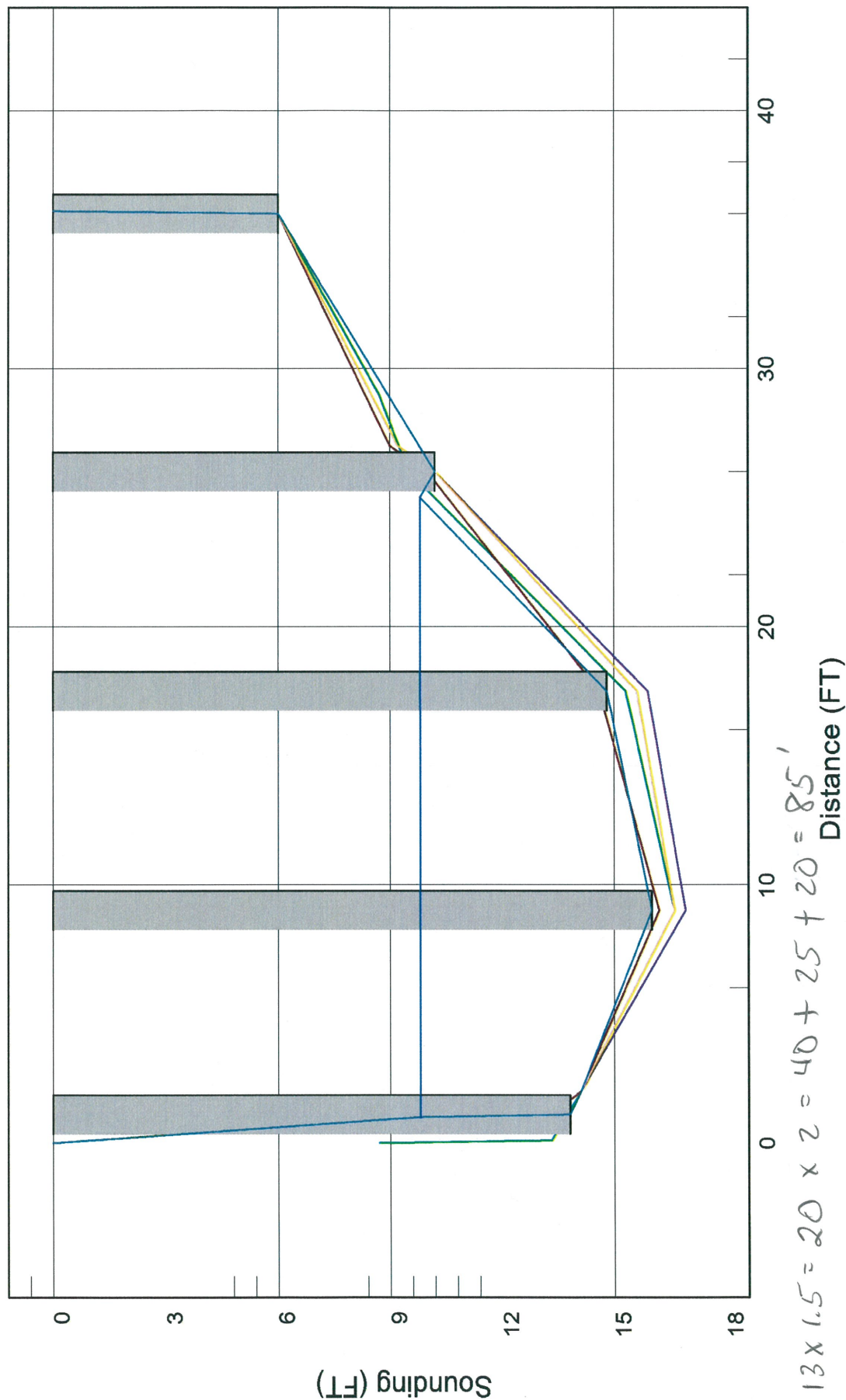
Bridge: 500432

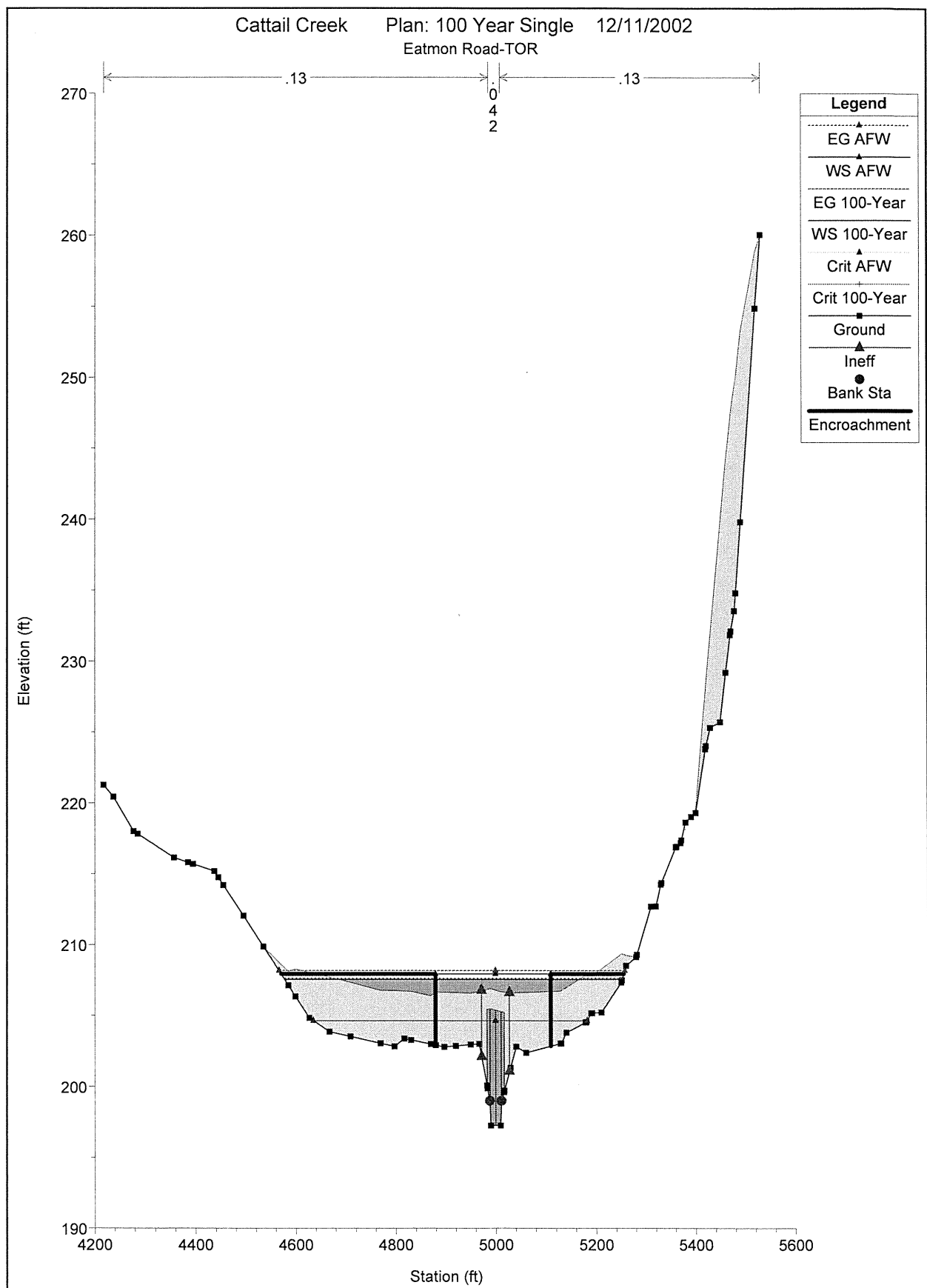
County JOHNSTON

Date:

STREAMBED PROFILE (Downstream)

Top of Rail = 0 FT (Sounding)





Section 5.0 – Engineering Methods

Table 8—Summary of Discharges

Flooding Source	Location	Drainage Area (square miles)	Discharges (cfs)			
			10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Bull Branch (continued)	Approximately 0.1 mile upstream of Woodard's Dairy Road	1.3	*	*	878	*
Burnt Stocking Branch	At the confluence with Little Creek	3.6	*	*	1,670	*
	Approximately 1.0 mile downstream of Pine Level Micro Road	2.9	*	*	1,440	*
	Approximately 0.1 mile upstream of Pine Level Micro Road	1.9	*	*	1,110	*
Camp Branch	Approximately 0.5 mile upstream of Stephenson Road	4.2	*	*	1,057	*
	Approximately 0.2 mile upstream of Stephenson Road	4.0	*	*	1,030	*
	Approximately 0.4 mile upstream of the confluence with Black Creek	3.5	*	*	957	*
Cattail Creek	At the confluence with the Little River	9.8	*	*	3,100	*
	Approximately 0.8 mile upstream of North Carolina Highway 96	9.0	*	*	2,930	*
	Approximately 0.5 mile upstream of Antioch Church Road	8.4	*	*	2,820	*
	Approximately 0.4 mile downstream of Eatmon Road	7.4	*	*	2,610	*
	Approximately 0.7 mile downstream of Covered Bridge Road	5.3	*	*	2,110	*
	Approximately 0.1 mile upstream of Covered Bridge Road	4.7	*	*	1,970	*
	Approximately 0.2 mile upstream of Covered Bridge Road	3.7	*	*	1,680	*
	Approximately 0.3 mile upstream of Covered Bridge Road	3.5	*	*	1,630	*
	Approximately 0.6 mile upstream of Covered Bridge Road	2.6	*	*	1,340	*

BRIDGE MANAGEMENT UNIT

DATA ON EXISTING STRUCTURE

Run Date: 11/25/2015

COUNTY :	DIVISION :	DISTRICT :	STRUCTURE NUMBER :	LENGTH :	
JOHNSTON	4	3	500166	41	FEET

ROUTE CARRIED :	FEATURE INTERSECTED :
SR1700	CATTAIL CREEK

LOCATED :	BRIDGE NAME :	CITY :
1.1 MI W JCT NC96		

FUNC. CLASS :	SYST.ON :	SYST.UNDER :	ADT & YR :	RAIL TYPE :
07	FA	NFA	860 2012	LT 0 RT 0

BUILT :	BY :	PROJ :	FED.AID PROJ :	DESIGN LOAD :
1992	BMU	5.3151		HS 20 + MOD

REHAB :	BY :	PROJ :	ALIGNMENT :	SKEW :	LANES :	UNDER :
			TAN	105	ON 2	0

NAVIGATION :	HT. CRN. TO BED :	WATER DEPTH :
VC 0 FT HC 0 FT	10 FT	1 FT

SUPERSTRUCTURE : TRIPLE 12'X8' PRECAST RCBC; 48'1" ALONG CENTERLINE OF CULVERT

SUBSTRUCTURE :

SPANS :

BEAMS OR GIRDERS :

FLOOR :	ENCROACHMENT :	DECK (OUT TO OUT) :
		0 FT

CLEAR ROADWAY :	BETWEEN RAILS :	SIDEWALK OR CURB :
0 FT	0 FT	LT 0 FT RT 0 FT

VERT.CL.OVER :
999.9 FT

INV.RTG. :	OPE.RTG. :	CONTR.MEMBER :	POSTED :	DATE
HS-20	HS-26	RCBC	SV TTST	02/01/1993

SYSTEM :	GREEN LINE ROUTE :
Secondary S.R. Route	N

UNDER ROUTES AND CLEARANCES

UPSTREAM STRUCTURE

REMARKS :

BRIDGE MANAGEMENT UNIT

DATA ON EXISTING STRUCTURE

Run Date: 12/16/2015

COUNTY : JOHNSTON DIVISION : 4 DISTRICT : 3 STRUCTURE NUMBER : 500171 LENGTH : 53 FEET

ROUTE CARRIED : SR1733 FEATURE INTERSECTED : CAT TAIL CREEK

LOCATED : 0.5MI W.JCT NC96 BRIDGE NAME : CITY :

FUNC. CLASS : 09 SYST.ON : NFA SYST.UNDER : NFA ADT & YR : 230 2011 RAIL TYPE : LT 241 RT 241

BUILT : 1952 BY : BMU PROJ : FED.AID PROJ : DESIGN LOAD : Unknown

REHAB : BY : DBM PROJ : ALIGNMENT : TAN. SKEW : 90 LANES : ON 2 UNDER 0

NAVIGATION : VC 0 FT HC 0 FT HT. CRN. TO BED : 15 FT WATER DEPTH : 4 FT

SUPERSTRUCTURE : RC FLOOR/TIMBER JOIST (STD.BMD-10.)

SUBSTRUCTURE : EBTS&IBTS:TIM.CAPS/TIM.PILES;H-PILE CRUTCH@BTS1&2

SPANS : 1@18';1@17';1@18'

BEAMS OR GIRDERS : 19 LINES 6X12 TIMBER JOIST @ VAR.CENTERS

FLOOR : 5RC/2" AWS ENCROACHMENT : DECK (OUT TO OUT) : 25.5 FT

CLEAR ROADWAY : 24.083 FT BETWEEN RAILS : 25.583 FT SIDEWALK OR CURB : LT .75 FT RT .75 FT

VERT.CL.OVER : 999.9 FT

INV.RTG. : HS-1 OPE.RTG. : HS-1 CONTR.MEMBER : W24x76Ca p POSTED : SV TTST DATE 12/14/2015

SYSTEM : Secondary S.R. Route GREEN LINE ROUTE : N

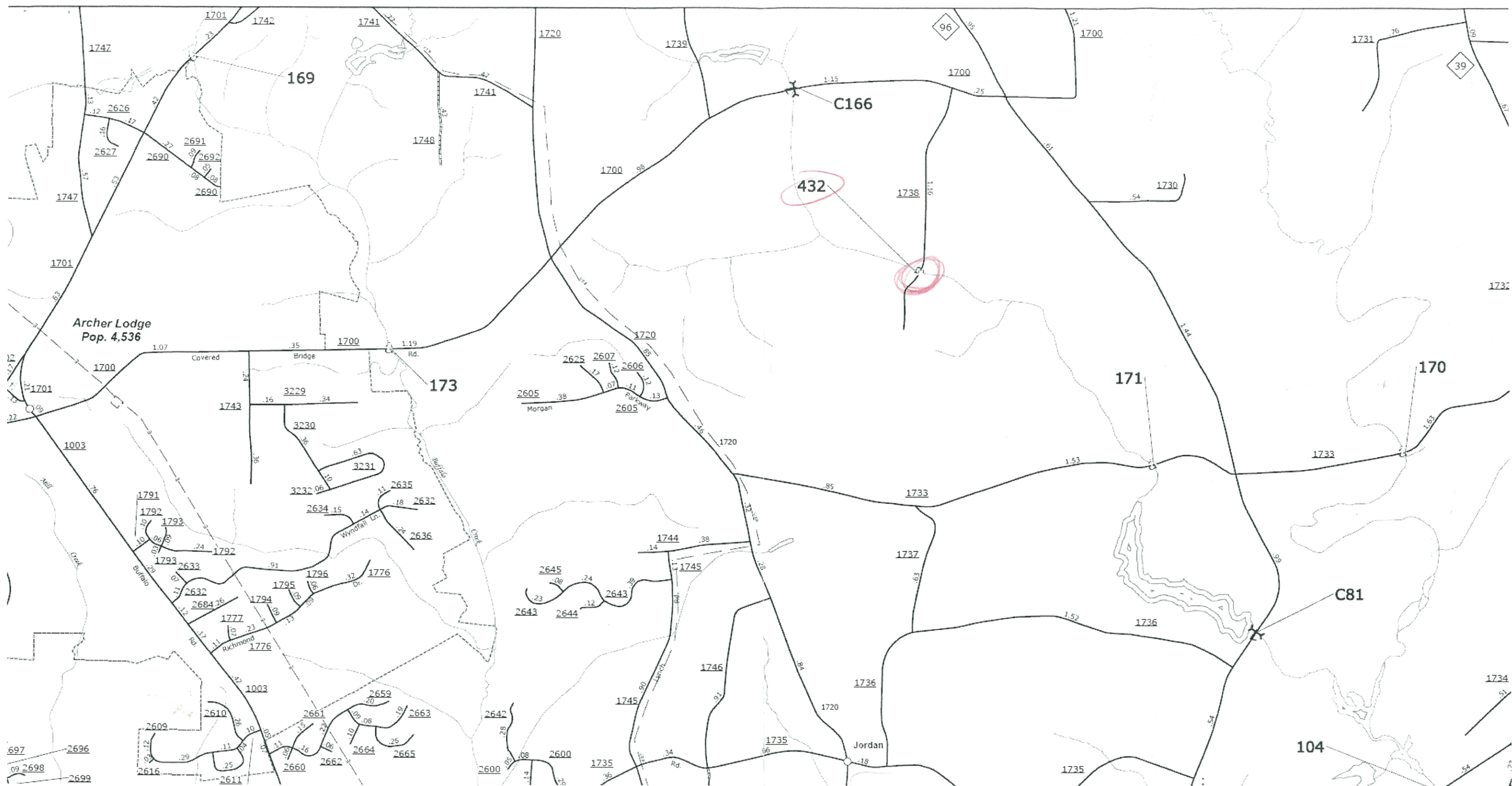
UNDER ROUTES AND CLEARANCES

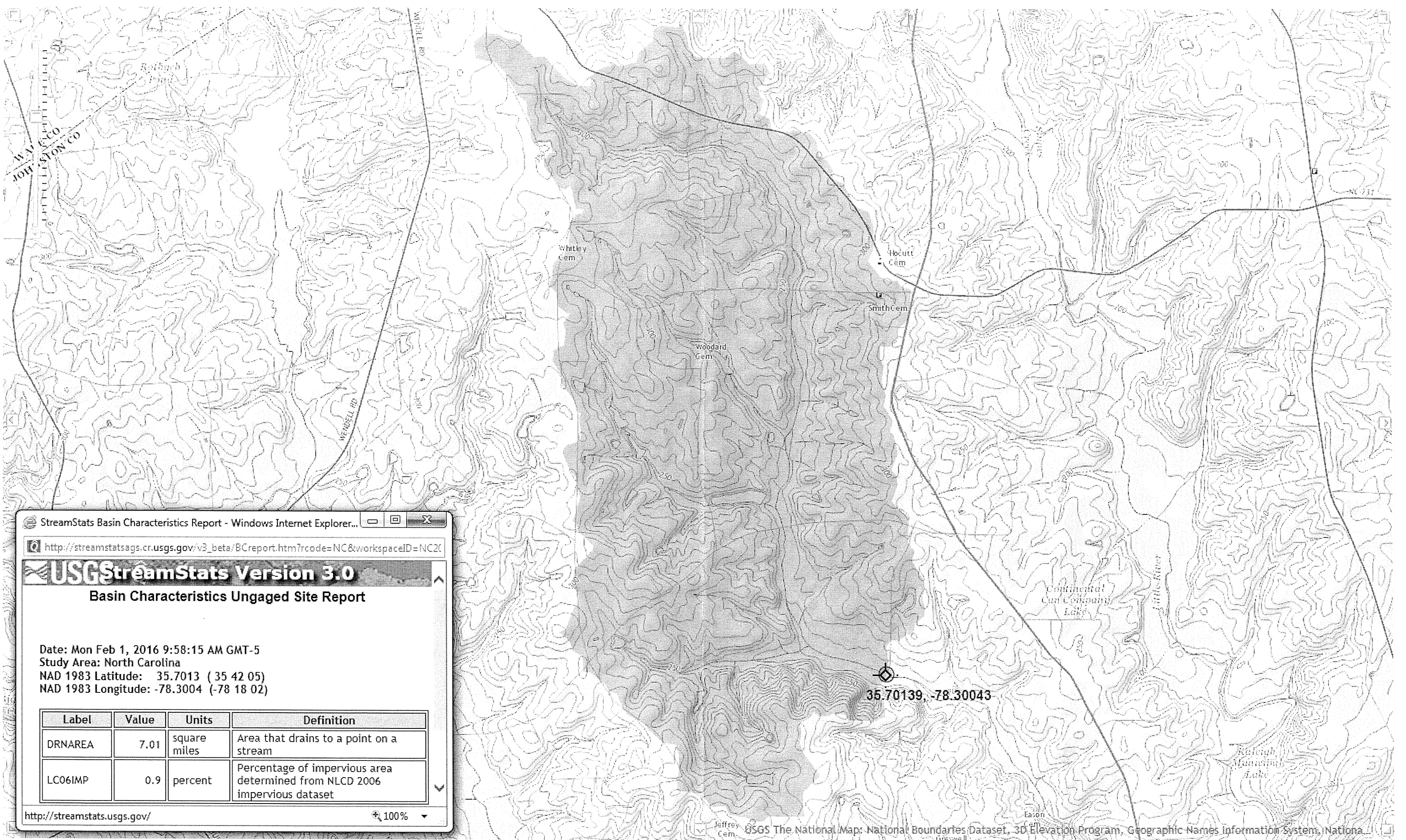
DOWNSTREAM STRUCTURE

REMARKS :

HEC-RAS Plan: Plan01 River: Cattail Creek Reach: Reach - 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach - 1	20500.0	100-Year	2610.00	201.38	209.60		209.66	0.001053	4.01	2569.02	736.94	0.25
Reach - 1	20500.0	AFW	2610.00	201.38	210.34		210.41	0.001025	4.20	2131.68	446.55	0.25
Reach - 1	20079.7	100-Year	2610.00	200.53	208.95		209.08	0.001796	5.32	1978.21	625.26	0.33
Reach - 1	20079.7	AFW	2610.00	200.53	209.68		209.85	0.001764	5.59	1504.80	311.04	0.33
Reach - 1	19603.0	100-Year	2610.00	200.42	208.06		208.18	0.001975	5.22	2029.00	679.41	0.34
Reach - 1	19603.0	AFW	2610.00	200.42	208.81		208.97	0.001908	5.48	1561.31	346.83	0.34
Reach - 1	19040.0	100-Year	2610.00	197.29	207.55	204.09	207.62	0.000550	3.74	2795.20	674.14	0.21
Reach - 1	19040.0	AFW	2610.00	197.29	207.94	204.08	208.17	0.001032	5.26	1400.62	230.00	0.29
Reach - 1	19020.5		Bridge									
Reach - 1	19001.0	100-Year	2610.00	196.89	206.39	203.68	207.51	0.003846	9.40	430.45	647.47	0.54
Reach - 1	19001.0	AFW	2610.00	196.89	207.13	203.69	207.40	0.001247	5.63	1306.18	230.00	0.31
Reach - 1	18608.2	100-Year	2610.00	195.84	205.75		206.01	0.002023	6.32	1506.03	419.71	0.36
Reach - 1	18608.2	AFW	2610.00	195.84	206.45		206.77	0.002026	6.63	1160.50	210.18	0.36
Reach - 1	18000.0	100-Year	2610.00	194.83	204.62		204.84	0.001797	5.91	1554.86	379.27	0.34
Reach - 1	18000.0	AFW	2610.00	194.83	205.33		205.59	0.001791	6.19	1278.96	232.95	0.34
Reach - 1	17612.3	100-Year	2610.00	194.83	204.18		204.27	0.001079	4.43	2146.62	502.34	0.26
Reach - 1	17612.3	AFW	2610.00	194.83	204.91		205.02	0.001059	4.63	1818.63	330.61	0.26







FRIS

Map Theme ▼



Who Am I : General Public ▼

Effective ▼

▼ Flood Information

Click the map to view information.

Map Location

Flood Zone: A1

Flood Source:

Base Flood Elevation: 207.2 ft

County: Johnston

Political Area: Johnston County

CID: 370138

Panel: 2700 Download

Map Number: 3720270000J

Panel Effective Date: 12/2/2005

Latitude: 35.70139

Longitude: -78.30044

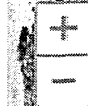
► Risk Information

► Financial Vulnerability

► FIS Reports

► Map Export

► Data Export



- Flood Information
- Risk Information
- Financial Vulnerability
- FIS Reports
- Flood Risk Management Plan

▼ Engineering Models

? Click a stream to view models.

Model Information

Stream: Cattail Creek

Model: Cattail Creek Model

Study: Limited Detailed Study

Start: The confluence with the Little River

End: Approximately 0.2 mile upstream of Harris Wilson Road

[Download Model](#)

- Map Export
- Data Export

STA. 0+00
P.O.T.

TO SR 1739

WOODS

EDGE PL. RAIN

FALLEN
TREES

STA. 3+62.45
P.O.T.

WOODS

SR 1700

20' BST.

TO NC

WOODS

WOODS

CATTAIL
CREEK

EDGE PL. RAIN

UPSTREAM STRUCTURE

COMPUTATIONS

Size & Type	ke	INLET CONTROL		OUTLET CG			
		HW/D	H. W.	dc	$\frac{dc + D}{2}$	$\frac{W}{h_o}$	H
2 @ 12'x8' RCB	.2	1.1	9.0			9.0	.3
3 @ 12'x8'	.2	1.4	10.8			9.9	1.

Q25 DESIGN

Q100

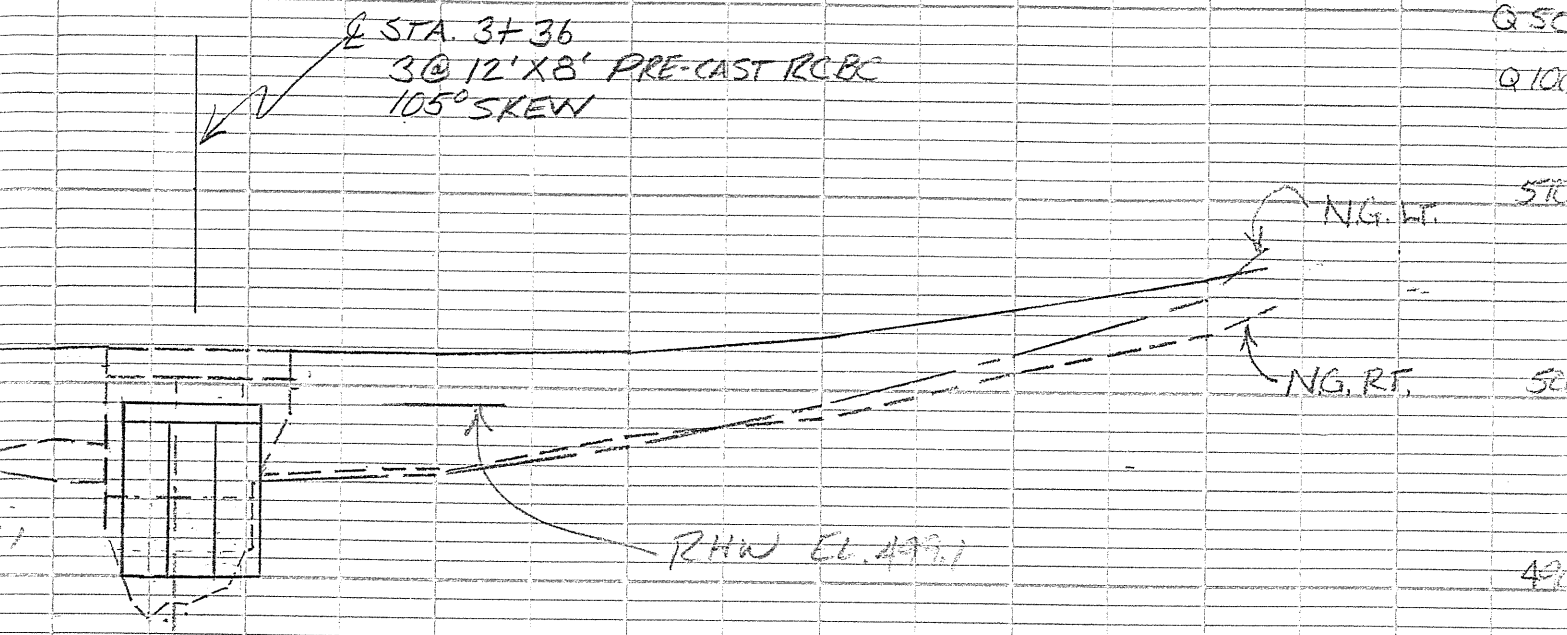
5700 4700 3700 6700

DA = 4.5 MI²
Q 25 = 1250 CFS
Q 50 = 1550 CFS
Q 100 = 1900 CFS

NOTE: SITE IN 100YR FLOOD ZONE
NO PERMITS REQ'D

EXIST. BRG. INFO.
TIMBER DECK, JOISTS, PIERS & ABUTS
1@ 17'9" 1@ 17'0" 1@ 17'9"

H.H.W. BRG. SEAT AUG 90
LOCAL RES. NAME & ADDRESS
WITHHELD
CONFIRMED: JIMMY MARLER
N.C.DOT BRG. MAINT. SUP.

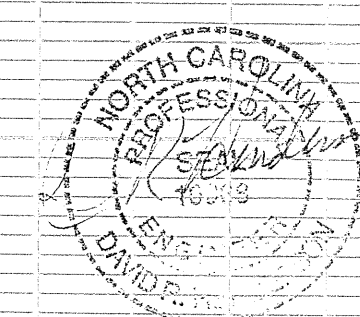


EXISTING WATERWAY = 440 FT.²
PROPOSED WATERWAY = 288 FT.²

OVER TOPPING FLOOD INFO:
FREQ: 200YR
Q: 2200 CFS
EL: 501.72

2165.5 FT
508.2 FT

UPSTREAM STRUCTURE



8-15-91

N.C.DOT
DIVISION OF HIGHWAYS
JOHNSTON CO.
BRG # 166 ON SR 1700
CATTLE CR
SCALE: 1" = 20' HORZ.
1" = 10' VERT.
SURVEYED BY KIK B. BASS
DRAWN & DESIGNED BY KIK
S. 71