

Project Number 45616.1.1

TIP Number B-5661

Let Date _____

PREDESIGN-PRESURVEY REPORT

County JOHNSTON

Bridge Number 500243

Road Number SR 2123 - Old Dam Road

Stream Little River

Type Of Request: POC Force Account TIP

Date 2-1-16 Name S J Sykes Assigned To _____

Checked By _____

Prior Survey Date Not wrote in (attach copy of prior survey) survey not found

Study By Scour Section _____

Flood Zone AE Detail Study Detailed Date 12/2/2005 (attach copy of flood map) panel 2639

B.M. Info _____

Quad Map Stancils Chapel Drainage Area 111 sq mi From Stream Stats

Q25 4300 Q50 5200 Q100 6200 Method USGS SI Report 2009-5158

EXISTING BRIDGE INFORMATION

Location 1.5 mi E of JCT NC 39

Average Daily Traffic 500 (yr 1993)

Length 81' Bed-To Crown 16' Water Depth 4'

Type Structure Steel plank floor on I-beams, RCP + Beam w/ steel cap

Type Spans 2 @ 40' 4.5"

Upstream Structure #44 (NC 39)

Location 0.6 mi S of JCT NC 42

Bed-To Crown 21' Prior Survey No

Downstream Structure #242 (SR 2127)

Location 1.3 mi W of JCT SR 2170

Bed-To Crown 17' Prior Survey 7-54 (3 @ 35')

SCS Watershed _____

ENVIRONMENTAL

Trout Stream No Anadromous Fish YES Primary Nursery Area No

High Quality Waters Yes Nutrient Sensitive Waters Yes

Near Water Supply Intake No CAMA County No

Stream Classification WS-V, NSW

DENR River Basin Info. Neuse

off. co estimated min. brg. length = 105'



NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BRIDGE MANAGEMENT UNIT

ATTENTION TEMPORARY PILE REPAIRS

BRIDGE INSPECTION REPORT

INSPECTION TYPE: Routine Inspection

COUNTY JOHNSTON BRIDGE NUMBER 500243 INSPECTION CYCLE 2 YRS
ROUTE SR2123 ACROSS LITTLE RIVER M.P. 0

LOCATION 1.5 MI E JCT NC39

SUPERSTRUCTURE STEEL PLANK FLOOR/I-BEAMS

SUBSTRUCTURE E.BTS:TIM.CAPS ON TIM.PILES;BT:RCP&BEAM W/STL.CAP

SPANS 2 @ 40'4.5

LONGITUDE 78° 13' 31.67"

LATITUDE 35° 38' 50.13"

INSPECTION DATE 07/17/2013

PRESENT CONDITION FAIR

PRESENT POSTING SV 31 TTST 36

SV 31 TTST 36

PROPOSED POSTING

OTHER SIGNS PRESENT 3 DELINEATORS



LOOKING EAST

Fracture Critical	<u>No</u>
Temporary Shoring	<u>No</u>
Scour Critical	<u>No</u>
Scour POA	<u>No</u>

SIGN NOTICE ISSUED FOR		NUMBERED REQUIRED
<u>No</u>	WEIGHT LIMIT	<u></u>
<u>Yes</u>	DELINEATORS	<u>1</u>
<u>No</u>	NARROW BRIDGE	<u></u>
<u>No</u>	ONE LANE BRIDGE	<u></u>
<u>No</u>	LOW CLEARANCE	<u></u>

NATIONAL BRIDGE INVENTORY----- STRUCTURE INVENTORY AND APPRAISAL Run Date: 08/01/2013

IDENTIFICATION				CLASSIFICATION	
(1) STATE NAME -NORTH CAROLINA	BRIDGE	500243	SUFFICIENCY RATING =	27.08	
(8) STRUCTURE NUMBER(FEDERAL)	000000001010243		STATUS =	Structurally Deficient	
(5) INVENTORY ROUTE (ON/UNDER) - ON	31021230				
(2) STATE HIGHWAY DEPARTMENT DISTRICT	3				
(3) COUNTY CODE	101	(4) PLACE CODE	0	(112)NBIS BRIDGE SYSTEM -	YES
(6) FEATURE INTERSECTED -	LITTLE RIVER			(104)HIGHWAY SYSTEM	Is not on NHS
(7) FACILITY CARRIED	SR2123			(26) FUNCTIONAL CLASS -	Local
(9) LOCATION	1.5 MI E JCT NC39			(100)STRAHNET HIGHWAY -	Not a STRAHNET Route
(11)MILEPOINT	0			(101)PARALLEL STRUCTURE -	No Parallel Structure
(16)LAT	35° 38' 50.13"	(17)LONG	78° 13' 31.67"	(102)DIRECTION OF TRAFFIC -	2-way Traffic
(98)BORDER BRIDGE STATE CODE	PCT SHARE			(103)TEMPORARY STRUCTURE -	Temporary Structure/Conditions
(99)BORDER BRIDGE STRUCTURE NO				(110)DESIGNATED NATIONAL NETWORK -	Not on the National Network
			(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				CONDITION	
(43) STRUCTURE TYPE MAIN:	Steel			(58) DECK	6
TYPE -	Stringer Multibeam or Girder	CODE	302	(59) SUPERSTRUCTURE	5
(44) STRUCTURE TYPE APPR :				(60) SUBSTRUCTURE	4
TYPE -		CODE	000	(61) CHANNEL & CHANNEL PROTECTION	7
(45) NUMBER OF SPANS IN MAIN UNIT	2			(62) CULVERTS	N
(46) NUMBER OF APPROACH SPANS					
(107)DECK STRUCTURE TYPE -	6	CODE		LOAD RATING AND POSTING	
(108)WEARING SURFACE / PROTECTIVE SYSTEM :				(31) DESIGN LOAD	H 15
(A) TYPE OF WEARING SURFACE -		CODE		(63) OPERATING RATING METHOD -	Load Factor
(B) TYPE OF MEMBRANE	-	CODE		(64) OPERATING RATING -	HS-1
(C) TYPE OF DECK PROTECTION -		CODE		(65) INVENTORY RATING METHOD -	Load Factor
				(66) INVENTORY RATING -	HS-1
				(70) BRIDGE POSTING -	Posting Required
				(41) STRUCTURE OPEN, POSTED ,OR CLOSED	P
				DESCRIPTION -	Posted for Load
AGE AND SERVICE				APPRAISAL	
(27) YEAR BUILT	1950			(67) STRUCTURAL EVALUATION	3
(106)YEAR RECONSTRUCTED	1972			(68) DECK GEOMETRY	4
(42) TYPE OF SERVICE : ON -	Highway			(69) UNDERCLEARANCES,VERTI & HORIZ	N
UNDER -	Waterway	CODE	15	(71) WATERWAY ADEQUACY	7
(28) LANES: ON STRUCTURE	2 UNDER STRUCTURE		0	(72) APPROACH ROADWAY ALIGNMENT	6
(29) AVERAGE DAILY TRAFFIC	500			(36) TRAFFIC SAFETY FEATURES	0000
(30) YEAR OF ADT	1993	(109) TRUCK ADT PCT	6%	(113)SCOUR CRITICAL BRIDGES	U
(19) BYPASS OR DETOUR LENGTH	6 MI				
GEOMETRIC DATA				PROPOSED IMPROVEMENTS	
(48) LENGTH OF MAXIMUM SPAN	40 FT			(75) TYPE OF WORK -	CODE
(49) STRUCTURE LENGTH	81 FT			(76) LENGTH OF STRUCTURE IMPROVEMENT	
(50)CURB OR SIDEWALK: LEFT	.375 FT RIGHT	.375 FT		(94) BRIDGE IMPROVEMENT COST	
(51) BRIDGE ROADWAY WIDTH CURB TO CURB	24.167 FT			(95) ROADWAY IMPROVEMENT COST	
(52) DECK WIDTH OUT TO OUT	24.167 FT			(96) TOTAL PROJECT COST	
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS)	21 FT			(97) YEAR OF IMPROVEMENT COST ESTIMATE	
(33) BRIDGE MEDIAN -	No Median	CODE	0	(114)FUTURE ADT	1000
(34) SKEW	0°	(35) STRUCTURE FLARED	0	(115) YEAR FUTURE ADT	2025
(10) INVENTORY ROUTE MIN VERT CLEAR	999.9 FT				
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR	24.167 FT			INSPECTIONS	
(53) MIN VERT CLEAR OVER BRIDGE RDWY	999.9 FT			(90) INSPECTION DATE	07/17/2013
(54) MIN VERT UNDERCLEAR REF	Not a Highway or Railroad	0 FT		(92) CRITICAL FEATURE INSPECTION :	(93) CFI DATE
(55) MIN LAT UNDERCLEAR RT REF	Not a Highway or Railroad	000 FT		A) FRACTURE CRIT DETAIL -	NO
(56) MIN LAT UNDERCLEAR LT REF -	000 FT			B) UNDERWATER INSP -	NO
				C) OTHER SPECIAL INSP	NO
				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: 08/01/2013

COUNTY :	DIVISION :	DISTRICT :	STRUCTURE NUMBER :	LENGTH :	
JOHNSTON	4	3	500243	81	FEET

ROUTE CARRIED :	FEATURE INTERSECTED :
SR2123	LITTLE RIVER

LOCATED :	BRIDGE NAME :	CITY :
1.5 MI E JCT NC39		

FUNC. CLASS :	SYST.ON :	SYST.UNDER :	ADT & YR :	RAIL TYPE :
09	NFA	NFA	500 1993	LT 233 RT 233

BUILT :	BY :	PROJ :	FED.AID PROJ :	DESIGN LOAD :
1950	BMU			H 15

REHAB :	BY :	PROJ :	ALIGNMENT :	SKEW :	LANES :
1972	DBM		TAN	90	ON 2 UNDER 0

NAVIGATION :			HT. CRN. TO BED :		WATER DEPTH :
VC 0 FT	HC 0 FT		16 FT		4 FT

SUPERSTRUCTURE : STEEL PLANK FLOOR/I-BEAMS

SUBSTRUCTURE : E.BTS:TIM.CAPS ON TIM.PILES;BT:RCP&BEAM W/STL.CAP

SPANS : 2 @ 40'4.5

BEAMS OR GIRDERS : 8LINES W21X62 I-BEAMS @ 3'2 CTS.

FLOOR :	ENCROACHMENT :	DECK (OUT TO OUT) :
STL.PLK/2. 75AWS		24.167 FT

CLEAR ROADWAY :	BETWEEN RAILS :	SIDEWALK OR CURB :
24.167 FT	24.917 FT	LT .375 FT RT .375 FT

VERT.CL.OVER :
999.9 FT

INV.RTG. :	OPE.RTG. :	CONTR.MEMBER :	POSTED :	TTST	36	DATE	08/02/2011
HS-1	HS-1	I-Bm	SV 31				

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

UNDER ROUTES AND CLEARANCES

REMARKS :

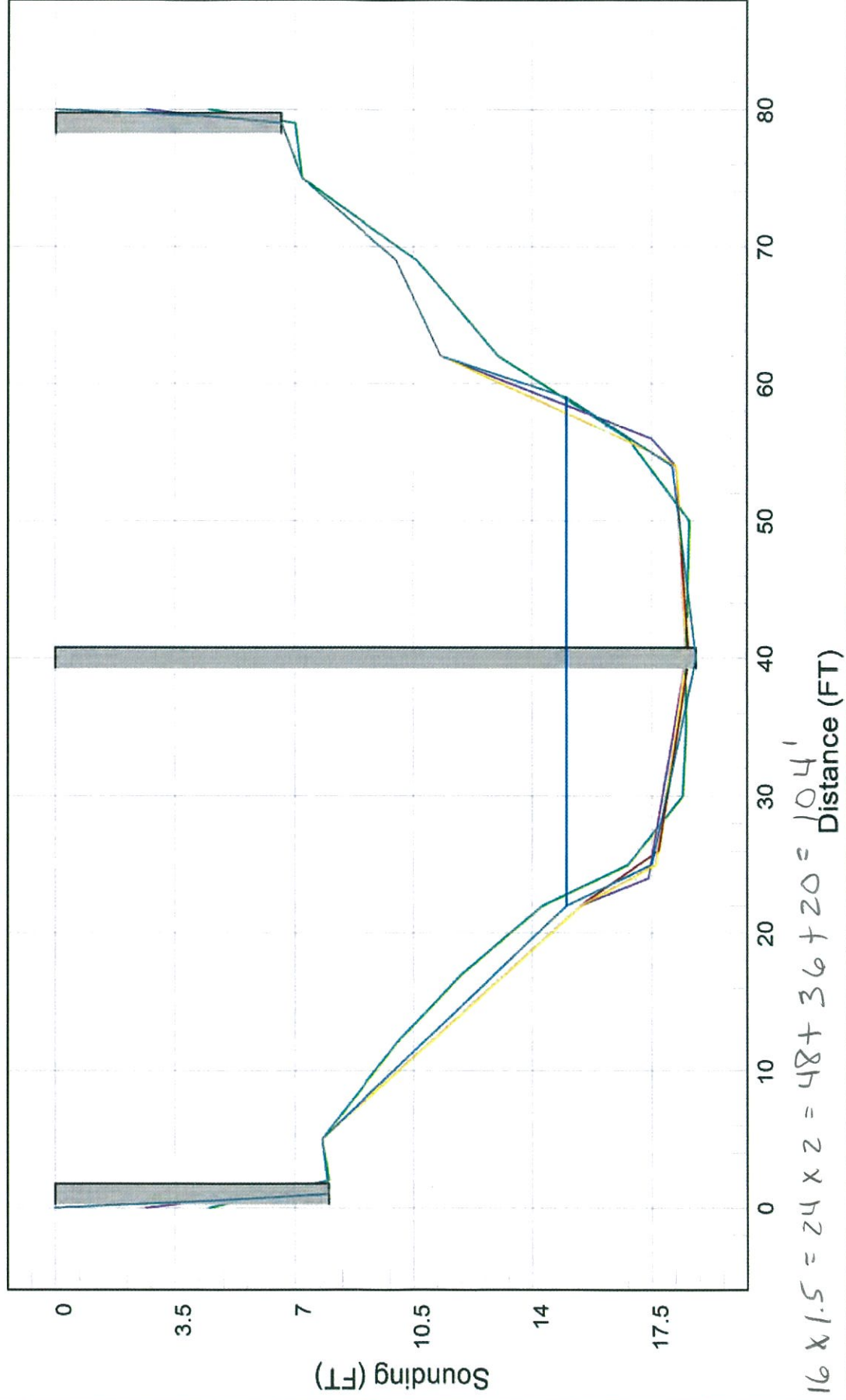
Bridge: 500243

County JOHNSTON

Date: 07/17/2013

STREAMBED PROFILE (Downstream)

Top of Rail = 0 FT (Sounding)



D.A. = 130 sq. mi.

FAL. "C" = 0.3

REQ 1350 ^{sq'}

C = 0.35 Req. 1540 ^{sq'}

This is very Unimportant Co. Pa. &
does not justify H.W. grade line

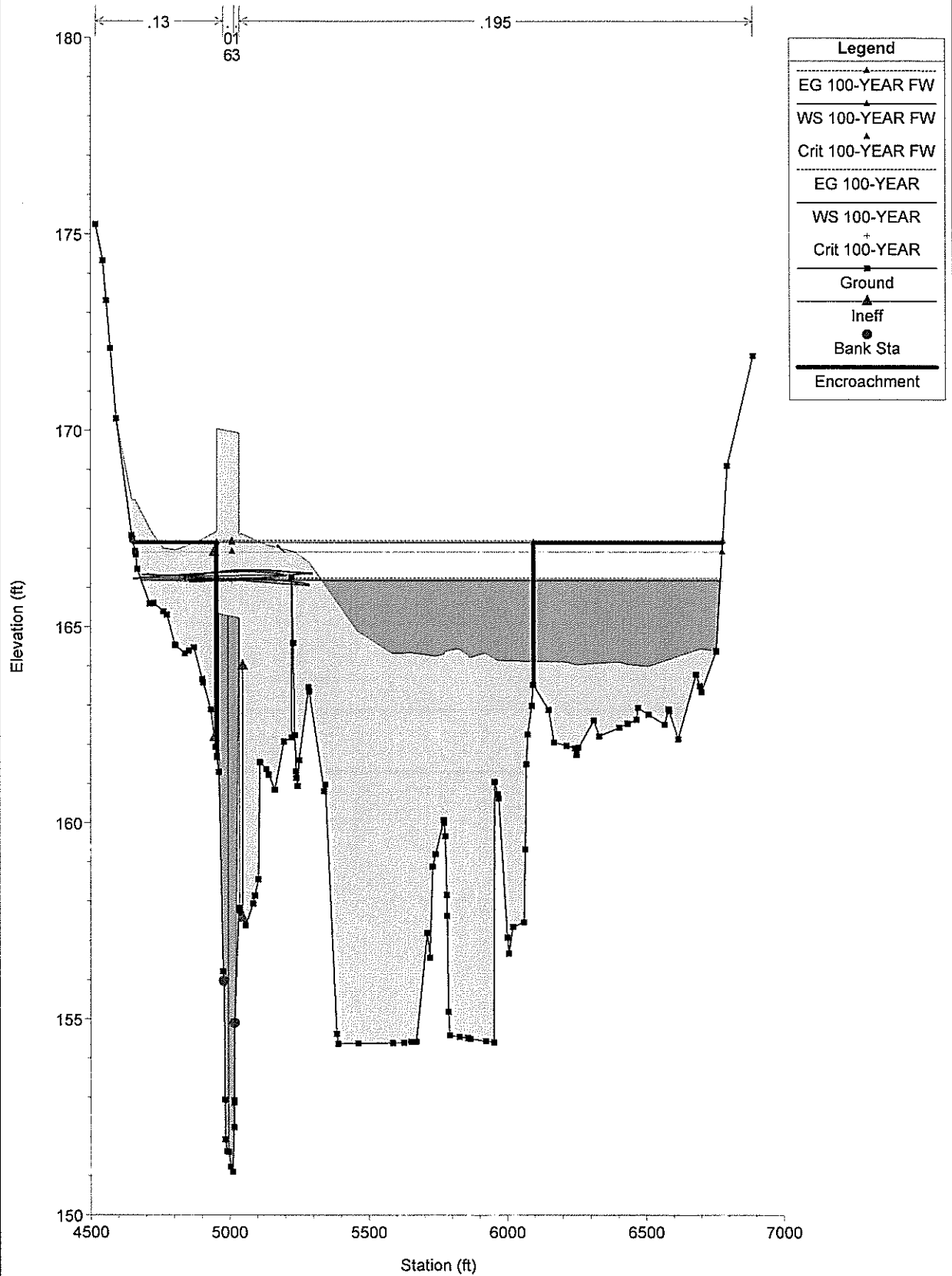
Tr. Line 2

JOHNSTON COUNTY
BRIDGE NO. 242
LITTLE RIVER
SCALE HORZ. 1" = 50'
 VERT. 1" = 10'
JAP JULY 1954

HEC-RAS Plan: LittleRivFW River: Main Stem 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	259669.7	100-YEAR	10500.00	150.99	169.47		169.72	0.001229	5.54	6782.54	1168.38	0.23
Reach - 1	259669.7	100-YEAR FW	10500.00	150.99	170.43		170.71	0.001176	5.61	5177.86	515.00	0.23
Reach - 1	258190.7	100-YEAR	10500.00	150.58	168.10		168.19	0.000832	4.36	10979.61	2009.86	0.19
Reach - 1	258190.7	100-YEAR FW	10500.00	150.58	169.04		169.16	0.000882	4.65	8976.27	1310.00	0.19
Reach - 1	256910.7	100-YEAR	10500.00	150.83	167.12		167.19	0.000740	3.91	12462.54	2194.71	0.17
Reach - 1	256910.7	100-YEAR FW	10500.00	150.83	167.99		168.08	0.000800	4.21	10279.87	1450.00	0.18
Reach - 1	255565.4	100-YEAR	10500.00	151.10	166.19	164.00	166.24	0.000667	3.59	12536.39	2092.86	0.17
Reach - 1	255565.4	100-YEAR FW	10500.00	151.10	167.15	164.00	167.18	0.000524	3.32	11306.82	1152.00	0.15
Reach - 1	255542.7	Bridge										
Reach - 1	255520.0	100-YEAR	10500.00	150.99	166.07	163.65	166.11	0.000670	3.60	12515.89	2092.15	0.17
Reach - 1	255520.0	100-YEAR FW	10500.00	150.99	166.91	163.65	166.96	0.000546	3.37	11161.31	1152.00	0.15
Reach - 1	253659.7	100-YEAR	10500.00	148.33	164.72		164.80	0.000733	3.81	11006.89	2049.94	0.18
Reach - 1	253659.7	100-YEAR FW	10500.00	148.33	165.66		165.76	0.000739	4.00	9196.26	1290.00	0.18
Reach - 1	251988.7	100-YEAR	10500.00	146.66	163.74		163.80	0.000499	3.25	11169.99	1736.99	0.15
Reach - 1	251988.7	100-YEAR FW	10500.00	146.66	164.74		164.79	0.000450	3.22	9985.51	1220.00	0.14
Reach - 1	248487.7	100-YEAR	10500.00	143.63	162.80		162.82	0.000176	2.08	19757.77	2435.54	0.09
Reach - 1	248487.7	100-YEAR FW	10500.00	143.63	163.78		163.80	0.000191	2.25	16898.72	1750.00	0.09

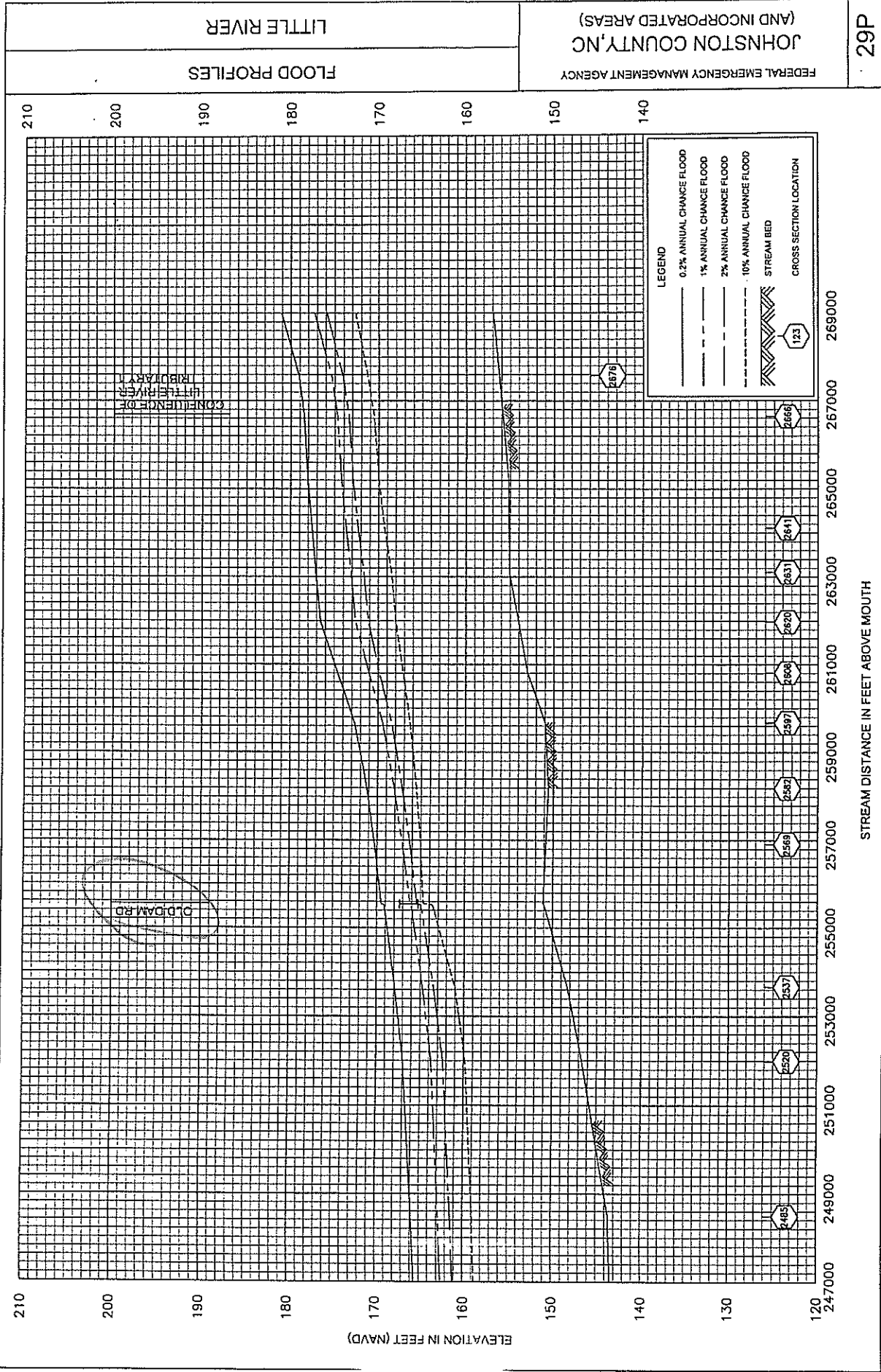
Little_River Plan: Little River FW 8/15/2003
OLD DAM RD



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
Little River (continued)	Approximately 0.2 mile downstream of NC Highway 39	104.2	*	*	10,400	*
	Just upstream of the confluence of Cattail Creek	92.8	*	*	10,300	*
	Approximately 0.8 mile upstream of the confluence of Cattail Creek	92.4	*	*	10,300	*
	Approximately 0.3 mile upstream of Antioch Church Road	91.6	*	*	10,300	*
	Approximately 1.6 miles upstream of Antioch Church Road	90.8	*	*	10,300	*
	Approximately 2.5 miles upstream of Antioch Church Road	89.9	*	*	10,300	*
	Approximately 2.9 miles upstream of Antioch Church Road	89.0	*	*	10,200	*
	Approximately 2.3 miles downstream of State Highway 231	86.8	*	*	10,200	*
	Approximately 1.6 miles downstream of State Highway 231	86.3	*	*	10,200	*
	Approximately 1.4 miles downstream of State Highway 231	85.6	*	*	10,200	*
	Approximately 0.4 miles downstream of State Highway 231	83.0	*	*	10,100	*
	Approximately 0.2 mile downstream of State Highway 231	82.6	*	*	10,100	*
	Just upstream of the confluence of Snipes Creek	75.7	*	*	9,950	*
	Approximately 265 feet upstream of NC Highway 96 S	74.9	*	*	9,930	*
	Approximately 0.9 mile upstream of NC Highway 96 S	73.9	*	*	9,910	*
	Approximately 0.6 mile downstream of Mudham Road	72.9	*	*	9,890	*



BRIDGE MANAGEMENT UNIT

DATA ON EXISTING STRUCTURE

Run Date: 01/17/2014

COUNTY : JOHNSTON DIVISION : 4 DISTRICT : 3 STRUCTURE NUMBER : 500044 LENGTH : 198 FEET

ROUTE CARRIED : NC39 FEATURE INTERSECTED : LITTLE RIVER

LOCATED : 0.6MI S JCT NC42 BRIDGE NAME : CITY :

FUNC. CLASS : 07 SYST.ON : FA SYST.UNDER : NFA ADT & YR : 2200 2012 RAIL TYPE : LT 41 RT 41

BUILT : 2007 BY : DOH PROJ : MA4071B FED.AID PROJ : DESIGN LOAD : HS 20 + MOD

REHAB : BY : PROJ : ALIGNMENT : TAN SKEW : 60 LANES : ON 2 UNDER 0

NAVIGATION : VC 0 FT HC 0 FT HT. CRN. TO BED : 21 FT WATER DEPTH : 3 FT

SUPERSTRUCTURE : PPC CORED SLAB

SUBSTRUCTURE : EBNTS: RC CAP/H-PILE; IBTS: RC CAP & COLUMN/DRILLED PIERS

SPANS : 1@46.25', 1@60', 1@45.0156', 1@46.25'

BEAMS OR GIRDERS : 13 LNS 36" PPC CORED SLAB SECTIONS

FLOOR : PPCCS/3. 156AW ENCROACHMENT : DECK (OUT TO OUT) : 39 FT

CLEAR ROADWAY : 36.167 FT BETWEEN RAILS : 39 FT SIDEWALK OR CURB : LT 1.4165 FT RT 1.4165 FT

VERT.CL.OVER : 999.9 FT

INV.RTG. : HS-28 OPE.RTG. : HS-47 CONTR.MEMBER : 60 ft C. Slab POSTED : SV TTST DATE 05/07/2007

SYSTEM : Primary N.C. Route GREEN LINE ROUTE : N

UNDER ROUTES AND CLEARANCES

Upstream Structure

REMARKS :

BRIDGE MANAGEMENT UNIT

DATA ON EXISTING STRUCTURE

Run Date: 12/17/2015

COUNTY : JOHNSTON DIVISION : 4 DISTRICT : 3 STRUCTURE NUMBER : 500242 LENGTH : 107 FEET

ROUTE CARRIED : SR2127 FEATURE INTERSECTED : LITTLE RIVER

LOCATED : 1.3 MI. W. JCT. SR2170 BRIDGE NAME : CITY :

FUNC. CLASS : 09 SYST.ON : NFA SYST.UNDER : NFA ADT & YR : 460 2001 RAIL TYPE : LT 241 RT 241

BUILT : 1956 BY : BMU PROJ : FED.AID PROJ : DESIGN LOAD : Unknown

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

NAVIGATION : VC 0 FT HC 0 FT HT. CRN. TO BED : 17 FT WATER DEPTH : 1 FT

SUPERSTRUCTURE : REINFORCED CONCRETE DECK ON I-BEAMS

SUBSTRUCTURE : ABUTMENTS:RC SPILL THROUGH, INTERIOR BENTS:RC POST & BEAM

SPANS : 1@35'11", 1@35'0", 1@35'11" SIMPLE

BEAMS OR GIRDERS : 4 LINES OF W27X94 I-BEAMS @ 6'9" CENTERS

FLOOR : 6" RC, 3.5" AWS ENCROACHMENT : DECK (OUT TO OUT) : 28.167 FT

CLEAR ROADWAY : 24 FT BETWEEN RAILS : 26.417 FT SIDEWALK OR CURB : LT 1.2085 FT RT 1.2085 FT

VERT.CL.OVER : 999.9 FT

INV.RTG. : HS-9 OPE.RTG. : HS-16 CONTR.MEMBER : Ext. Bm1 Sp2(loss) POSTED : SV 19 TTST 25 DATE : 12/10/2015

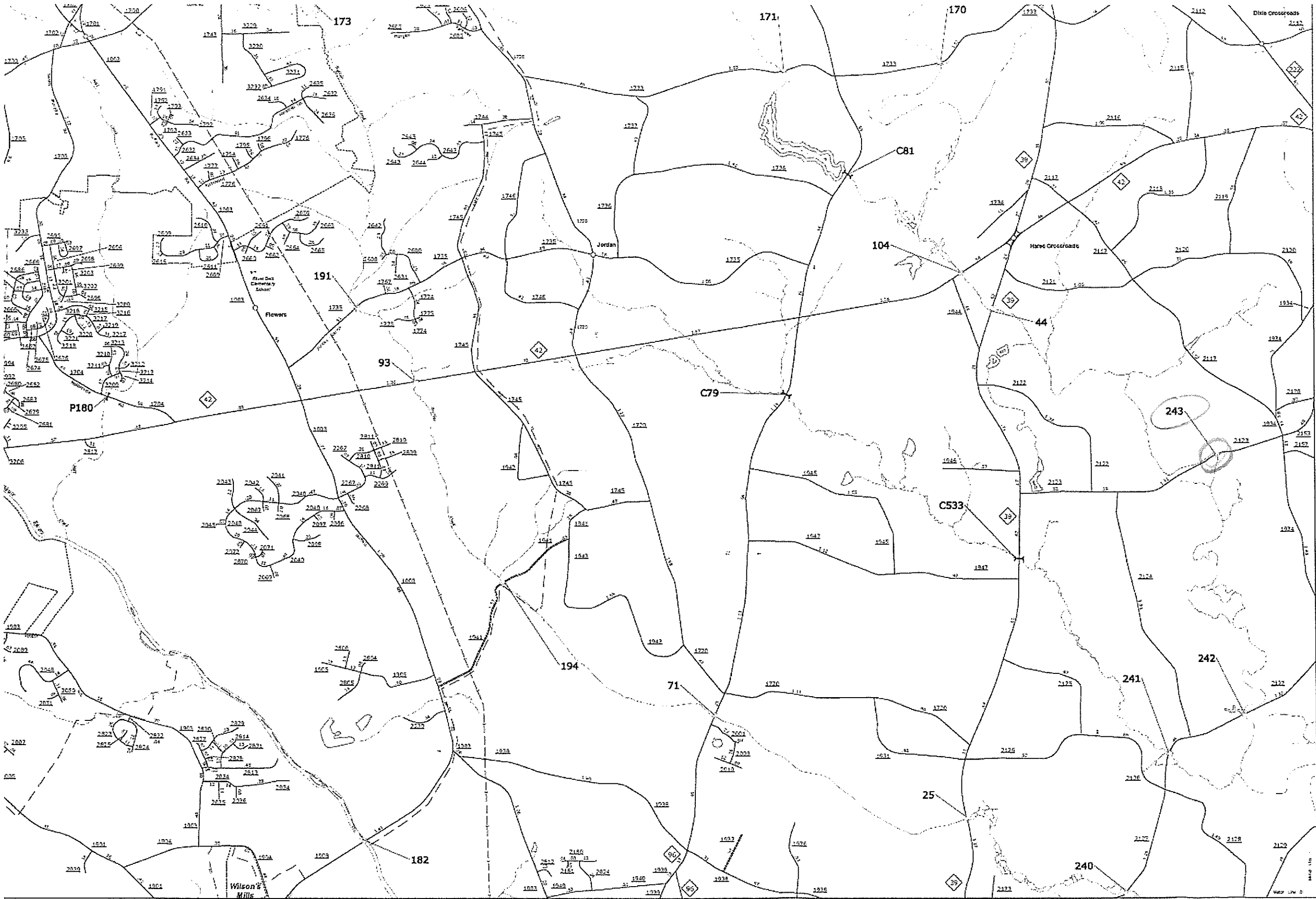
SYSTEM : Secondary S.R. Route GREEN LINE ROUTE : N

UNDER ROUTES AND CLEARANCES

DOWNSTREAM Structure

REMARKS :

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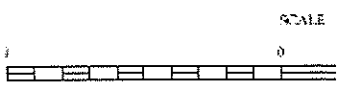


Archer Lod

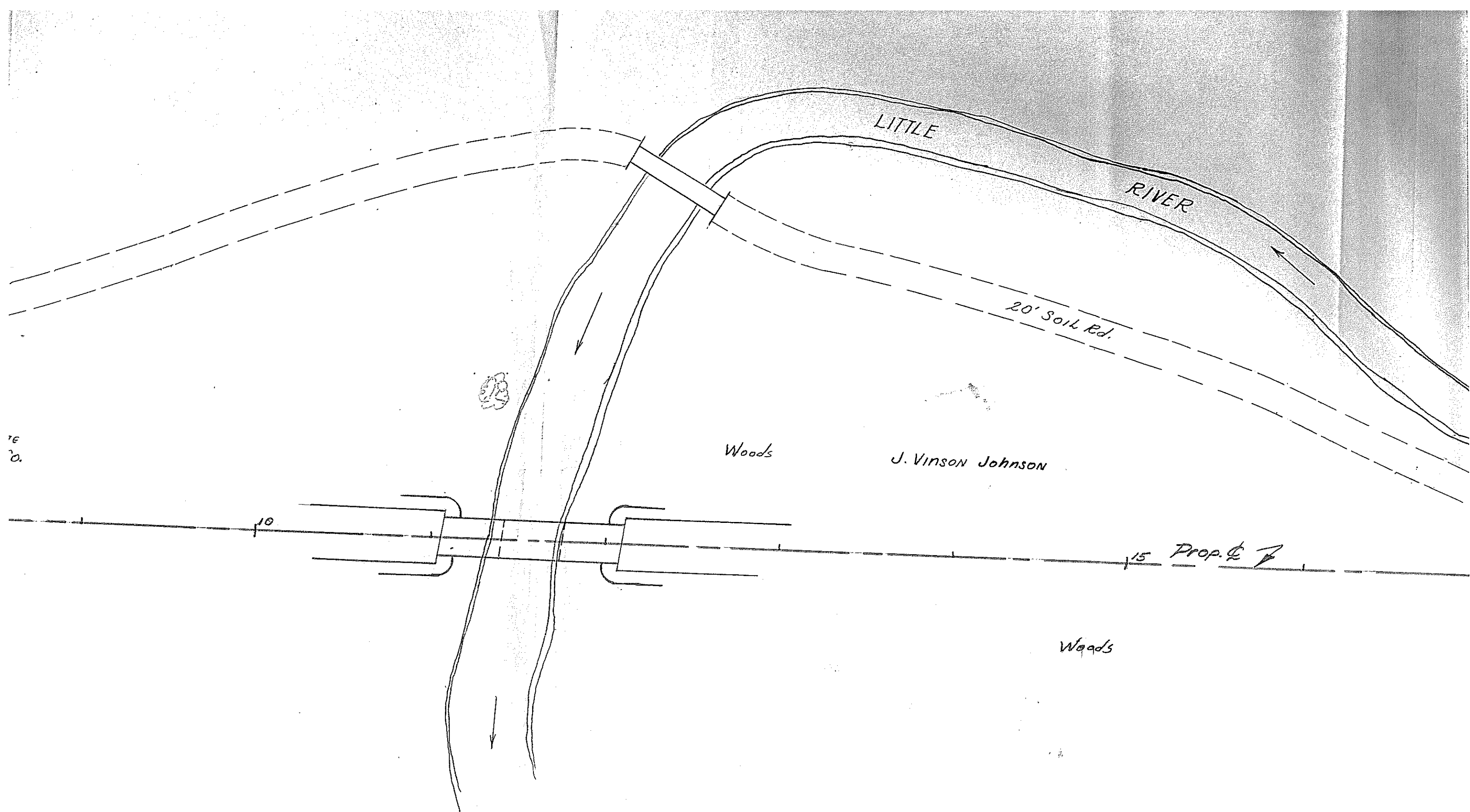


ENLARGED MUNICIPAL AND
JOHNSTON
NORTH CAROLINA
BRIDGE LOCAL

PREPARED BY
NORTH CAROLINA DEPARTMENT OF
TRANSPORTATION
IN COOPERATION WITH
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

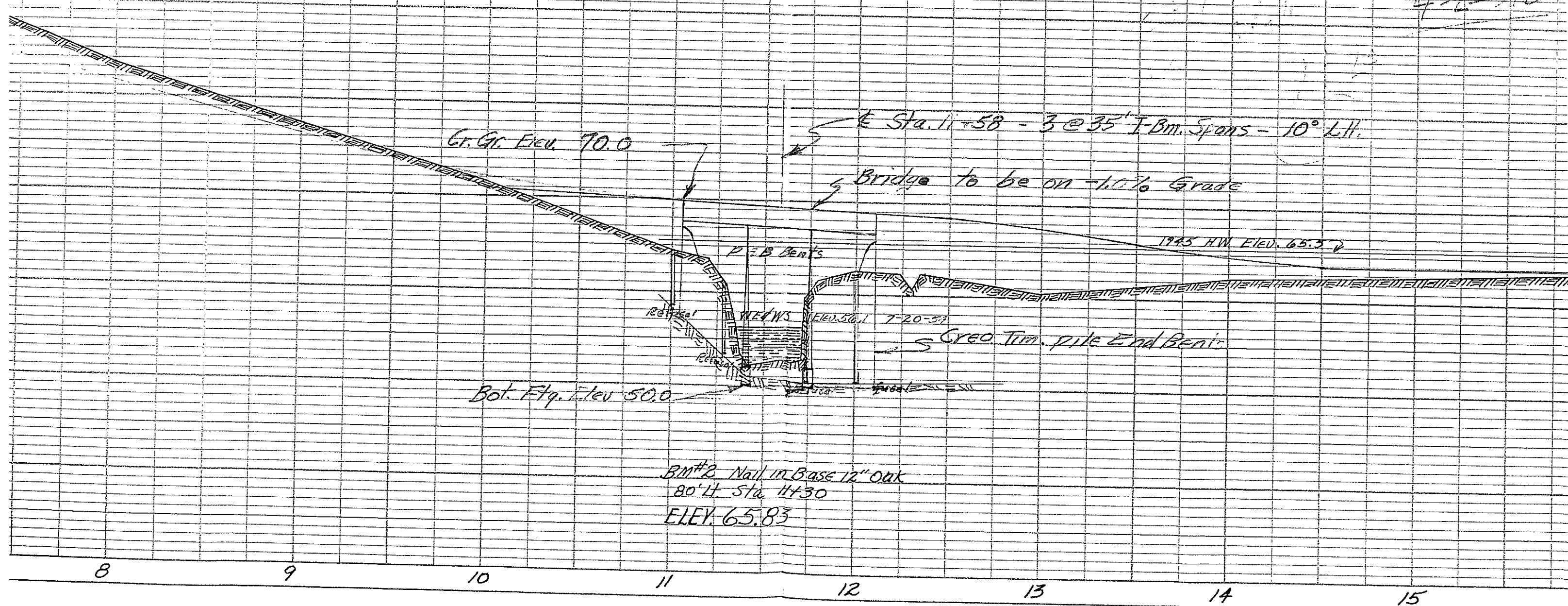


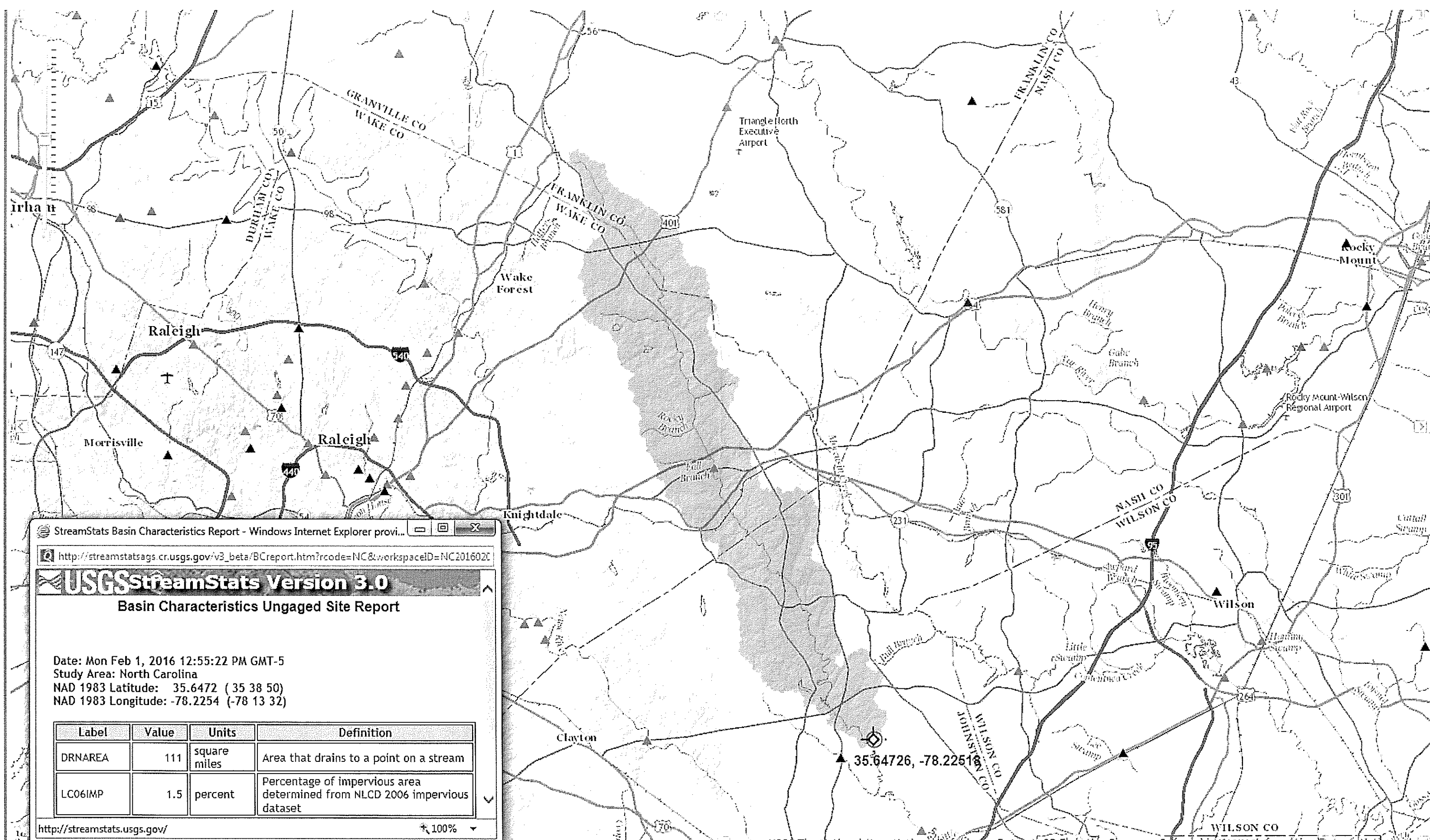
10,000 FOOT GRID BASED ON NORTH CAROLINA
LAMBERT CONFORMAL COORDINATE SYSTEM



DA. = 13
TAL. "C" =

4-2-31E





StreamStats Basin Characteristics Report - Windows Internet Explorer provi...

http://streamstats.scr.usgs.gov/v3_beta/BCreport.htm?rcode=NC&workspaceID=NC2016020

USGS StreamStats Version 3.0

Basin Characteristics Ungaged Site Report

Date: Mon Feb 1, 2016 12:55:22 PM GMT-5
Study Area: North Carolina
NAD 1983 Latitude: 35.6472 (35 38 50)
NAD 1983 Longitude: -78.2254 (-78 13 32)

Label	Value	Units	Definition
DRNAREA	111	square miles	Area that drains to a point on a stream
LC06IMP	1.5	percent	Percentage of impervious area determined from NLCD 2006 impervious dataset

http://streamstats.usgs.gov/ 100%



Who Am I: General Public ▼ Effective ▼

Flood Information

Click the map to view information.

Map Location

Flood Zone: AE (Floodway)

Flood Source:

Base Flood Elevation: 166.1 ft

County: Johnston

Political Area: Johnston County

CID: 370138

Panel: 2639 Download

Map Number: 3720263900J

Panel Effective Date: 12/2/2005

Latitude: 35.64726

Longitude: -78.22519

Risk Information

Financial Vulnerability

FIS Reports

Map Export

Data Export

