Cover Page

Hydraulics Unit Pre-Design Report (Pre-Scoping) for Structure #: 730043

Date: 09/26/2016

County: Pitt | **Stream:** Swift Creek

Road #: SR 1923 | **Road Name:** Gardnerville Rd

Division: 2 | **Location:** 0.7 miles Southeast of JCT with SR 1725

Latitude: 35.37933 | **Longitude:** -77.29550 Decimal degrees, a min of 5 decimal points

Assigned to: Firm Name

Prepared By: Firm Employee

Hydro Reviewer: NCDOT Personnel

Project Type:

Existing Structure

Structure Type: RC Deck/I Beams | Yr Built: 1949

Span Arrangement: 5@25', 1@25.4' | OAL (ft): 175.0 | Skew: 75 | Abutment Type: Vertical -Timber

Number of Barrels: | @ Span (ft): | x Rise (ft):

Bed to Crown (ft): 56.0 | Clear Roadway (ft): 57.0 | Water Depth (ft) 5.0 | Superstructure Depth: 1.6 ft

ADT: 480 | Year ADT: 2011 | Scour Code (item113): 5 | Prior Survey Completed: Yes | Survey Date: July 1970

Drainage Area: 90.1 Sq. Mi. | Drainage Area Source: Quad & Sel.-Sites | Roadway Overtops at Q100: No

Discharge Method: USGS Regression Equations | USGS Region: 4- Coastal | Stream Gage Number(if applicable): n/a

Q10 (cfs): 2,800.0 | Q25 (cfs): 3,700.0 | Q50 (cfs): 4,600.0 | Q100 (cfs): 5,500.0 | QBFE (cfs): 5,500.0

Structure in Flood Hazard Zone: Yes | Panel #: 5509 | Panel Date: 07/02/2004 | Type of FIS: LIMITED | Date of FIS: 07/02/2004

Enviromental

Quad Map: | River Basin: Neuse | Buffer Rule: N/A

Primary Stream Classification

☐ Class B ☑ Class C ☐ SA ☐ SB

☐ SC ☐ SWL ☐ WL ☐ WS I

☐ WS II ☐ WS III ☐ WS IV ☐ WS V

Supplemental Stream Classification

☐ FWS ☐ HQW ☑ NSW ☐ ORW

☑ Sw ☐ Tr ☐ UWL ☐ w/in 0.5mi. of CA

Other Stream Classification

☑ Anadromous Fish ☐ Area of Envronmental Concern

☐ CAMA County ☐ Federal Wild & Scenic Rivers

☐ HSB Requried ☐ NC Natural & Scenic Rivers

☐ Impaired [303d] ☐ Primary Nursery Area

☐ TVA ☐ Designated Shellfish Harvesting Area

☐ Designated Public Mountain Trout Waters

Up/Down Stream Features

Upstream Feature: Bridge

Location: 0.7 miles Northeast of JCt with SR 1919

Structure #: 730042 | Route: SR1753

Latitude: 35.40175 | Longitude: -77.33182

Prior Survey Completed: No | Survey Date: n/a

Structure Type: Cored Slab

Span Arrangement: 1@40', 1@45', 1@40'5; | OAL (ft): 120.5

Number of Barrels: | @ Span (ft): | x Rise (ft):

Bed to Crown (ft): 21.0 | Year Built: 1974

Downstream Feature: Bridge

Location: 1.0 mile East of JCT with SR 1458

Structure #: 240041 | Route: SR1464

Latitude: 35.36498 | Longitude: -77.26831

Prior Survey Completed: No | Survey Date: n/a

Structure Type: Timber Deck/ I Beams

Span Arrangement: 2@45'2, 1@45'3; | OAL (ft): 135.50

Number of Barrels: | @ Span (ft): | x Rise (ft):

Bed to Crown (ft) 21.0 | Year Built: 1971

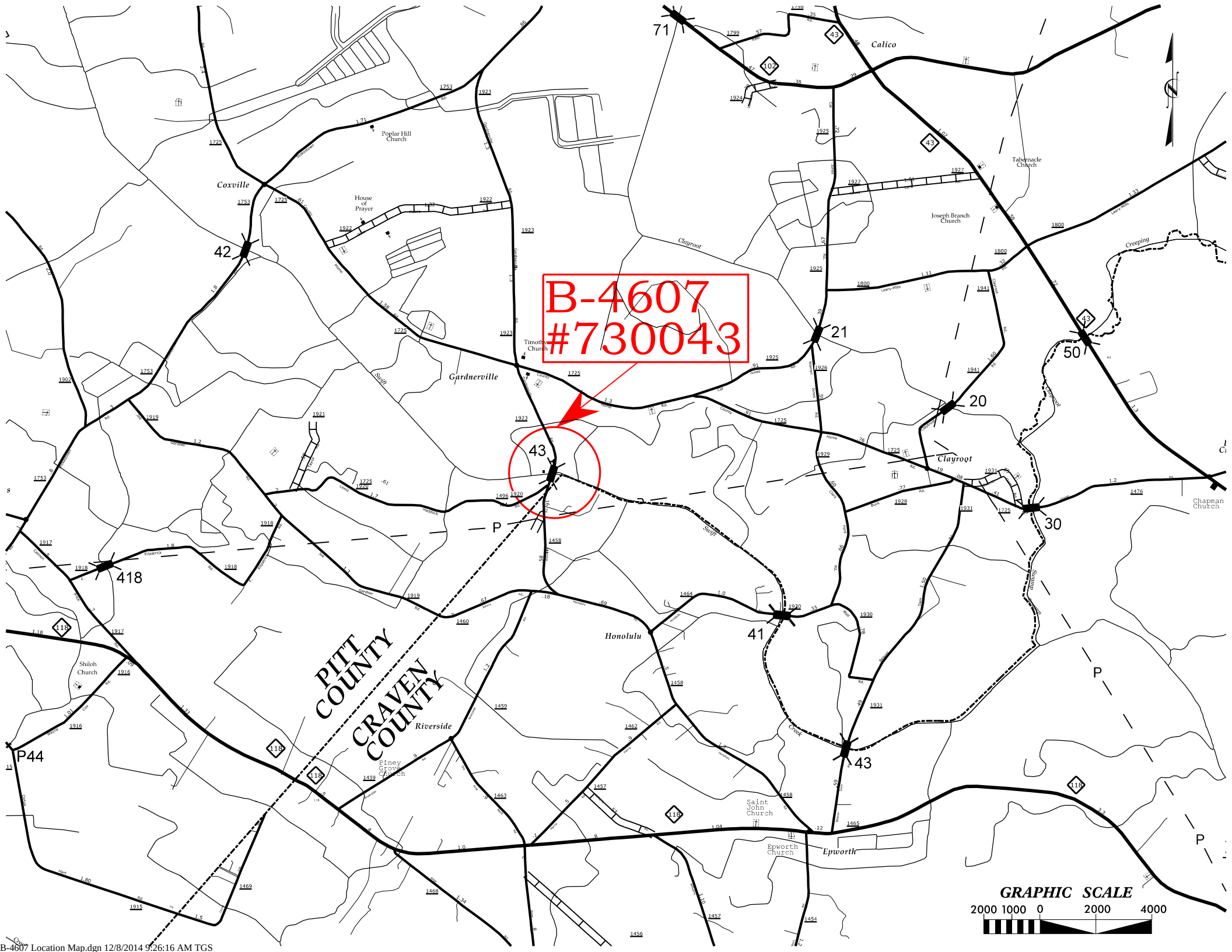
Preliminary Structure Estimate [Office Estimate]

Structure Type: Cored Slab | Skew: 75

Dimensions/Spans: Total Length=190' (1@50', 2@70'), OTO=30', 21" CSU, 21"/24" CSU 75 deg. skew; Max Superstructure depth=24"CSU+7"asphalt at C/L per Std. Dwgs.=31"

Notes

Bridge sized to roughly maintain low chord as a starting point, provide clearance from ex. bents, satisfy 10' setbacks, and span existing center spans. Based on currently available, presurvey data this may result in a 1' grade increase.
Impervious area is 4.1% per 2006 NLCD, therefore Rural Regression Equations were used.



B-4607 Location Map.dgn 12/8/2014 9:26:16 AM TGS

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BRIDGE MANAGEMENT UNIT

ATTENTION PMS ISSUED FOR SEVERAL INTERIOR BENT PILES

BRIDGE INSPECTION REPORT

INSPECTION TYPE: Routine Inspection

COUNTY PITT BRIDGE NUMBER 730043 INSPECTION CYCLE 2 YRS

ROUTE SR1923 ACROSS SWIFT CREEK M.P. 0

LOCATION 0.7 MI.SE.JCT.SR1725

SUPERSTRUCTURE REINFORCED CONCRETE FLOOR ON I-BEAMS&CONT.I-BEAMS

SUBSTRUCTURE E.BTS&INT.BTS:RC CAP/TIMBER PILES;BT4:TIM CRUTCH

SPANS 6@25',2 SPAN CONTINOUS;1@25'

LONGITUDE 77° 17' 43.80" LATITUDE 35° 22' 45.59"

INSPECTION DATE 11/12/2013 PRESENT CONDITION ~~POOR~~ Fair TSE 5/22/14

PRESENT POSTING Y SV-22 TTST-30 PROPOSED POSTING

OTHER SIGNS PRESENT (4) DELINEATORS

LOOKING NORTH

Fracture Critical	No
Temporary Shoring	Yes
Scour Critical	No
Scour POA	Yes

SIGN NOTICE ISSUED FOR		NUMBERED REQUIRED
No	WEIGHT LIMIT	
No	DELINEATORS	
No	NARROW BRIDGE	
No	ONE LANE BRIDGE	
No	LOW CLEARANCE	

IDENTIFICATION

(1) STATE NAME -NORTH CAROLINA BRIDGE 730043
(8) STRUCTURE NUMBER(FEDERAL) 000000001470043
(5) INVENTORY ROUTE (ON/UNDER) - ON 31019230
(2) STATE HIGHWAY DEPARTMENT DISTRICT 1
(3) COUNTY CODE 147 (4) PLACE CODE 0
(6) FEATURE INTERSECTED - SWIFT CREEK
(7) FACILITY CARRIED SR1923
(9) LOCATION 0.7 MI.SE.JCT.SR1725
(11)MILEPOINT 0
(16)LAT 35° 22' 45.59" (17)LONG 77° 17' 43.80"
(98)BORDER BRIDGE STATE CODE PCT SHARE
(99)BORDER BRIDGE STRUCTURE NO

STRUCTURE TYPE AND MATERIAL

(43) STRUCTURE TYPE MAIN: Steel Continuous
TYPE - Stringer Mutlibeam or Girder CODE 402
(44) STRUCTURE TYPE APPR : Steel
TYPE - Stringer Mutlibeam or Girder CODE 302
(45) NUMBER OF SPANS IN MAIN UNIT 6
(46) NUMBER OF APPROACH SPANS 1
(107)DECK STRUCTURE TYPE - 1 CODE
(108)WEARING SURFACE / PROTECTIVE SYSTEM :
(A) TYPE OF WEARING SURFACE - CODE
(B) TYPE OF MEMBRANE - CODE
(C) TYPE OF DECK PROTECTION - CODE

AGE AND SERVICE

(27) YEAR BUILT 1949
(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 480
(30) YEAR OF ADT 2011 (109) TRUCK ADT PCT 6%
(19) BYPASS OR DETOUR LENGTH 8 MI

GEOMETRIC DATA

(48) LENGTH OF MAXIMUM SPAN 25 FT
(49) STRUCTURE LENGTH 175 FT
(50)CURB OR SIDEWALK: LEFT 1 FT RIGHT 1 FT
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 24 FT
(52) DECK WIDTH OUT TO OUT 25.5 FT
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 21 FT
(33) BRIDGE MEDIAN - No Median CODE 0
(34) SKEW 15° (35) STRUCTURE FLARED 0
(10) INVENTORY ROUTE MIN VERT CLEAR 999.9 FT
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 24 FT
(53) MIN VERT CLEAR OVER BRIDGE RDWY 999.9 FT
(54) MIN VERT UNDERCLEAR REF Not a Highway or Railroad 0 FT
(55) MIN LAT UNDERCLEAR RT REF Not a Highway or Railroad 000 FT
(56) MIN LAT UNDERCLEAR LT REF - 000 FT

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

SUFFICIENCY RATING = 27.25
STATUS = Structurally Deficient

CLASSIFICATION CODE

(112)NBIS BRIDGE SYSTEM - YES
(104)HIGHWAY SYSTEM Is not on NHS 0
(26) FUNCTIONAL CLASS - Local 09
(100)STRAHNET HIGHWAY - Not a STRAHNET Route 0
(101)PARALLEL STRUCTURE - No Parallel Structure N
(102)DIRECTION OF TRAFFIC - 2-way Traffic 2
(103)TEMPORARY STRUCTURE - Temporary Structure/Conditions T
(110)DESIGNATED NATIONAL NETWORK - Not on the National Network 0
(20) TOLL On Free Road 3
(31) MAINTAIN - State Highway Agency 01
(22) OWNER - State Highway Agency 01
(37) HISTORICAL SIGNIFICANCE - Not Eligible 5

CONDITION CODE

(58) DECK 6
(59) SUPERSTRUCTURE 6
(60) SUBSTRUCTURE 4
(61) CHANNEL & CHANNEL PROTECTION 5
(62) CULVERTS N

LOAD RATING AND POSTING CODE

(31) DESIGN LOAD H 15 2
(63) OPERATING RATING METHOD - Allowable Stress 2
(64) OPERATING RATING - HS-1 1
(65) INVENTORY RATING METHOD - Allowable Stress 2
(66) INVENTORY RATING - HS-1 1
(70) BRIDGE POSTING - Posting Required 0
(41) STRUCTURE OPEN, POSTED ,OR CLOSED P
DESCRIPTION - Posted for Load

APPRAISAL CODE

(67) STRUCTURAL EVALUATION 3
(68) DECK GEOMETRY 4
(69) UNDERCLEARANCES,VERTI & HORIZ N
(71) WATERWAY ADEQUACY 7
(72) APPROACH ROADWAY ALIGNMENT 6
(36) TRAFFIC SAFETY FEATURES 0000
(113)SCOUR CRITICAL BRIDGES 5

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 960 (115) YEAR FUTURE ADT 2025

INSPECTIONS

(90) INSPECTION DATE 11/12/2013
(92) CRITICAL FEATURE INSPECTION : (93) CFI DATE
A) FRACTURE CRIT DETAIL - NO A)
B) UNDERWATER INSP - YES 48Mo B) 12/02/2010
C) OTHER SPECIAL INSP NO C)
SCOUR

BRIDGE MANAGEMENT UNIT

DATA ON EXISTING STRUCTURE Run Date: 11/21/2013

COUNTY :	DIVISION :	DISTRICT:	STRUCTURE NUMBER :	LENGTH :
PITT	2	1	730043	175 FEET

ROUTE CARRIED : SR1923

FEATURE INTERSECTED : SWIFT CREEK

LOCATED : 0.7 MI.SE.JCT.SR1725

BRIDGE NAME :

CITY :

FUNC. CLASS :	SYST.ON :	SYST.UNDER :	ADT & YR :	RAIL TYPE :
09	NFA	NFA	480 2011	LT 111 RT 111

BUILT :	BY :	PROJ :	FED.AID PROJ :	DESIGN LOAD :
1949	SHPWC			H 15

REHAB :	BY :	PROJ :	ALIGNMENT :	SKEW :	LANES :
	DBM		TAN.	75	ON 2 UNDER 0

NAVIGATION :				HT. CRN. TO BED :		WATER DEPTH :	
VC	0	FT	HC 0	FT	20 FT	2	FT

SUPERSTRUCTURE : REINFORCED CONCRETE FLOOR ON I-BEAMS&CONT.I-BEAMS

SUBSTRUCTURE : E.BTS&INT.BTS:RC CAP/TIMBER PILES;BT4:TIM CRUTCH

SPANS : 6@25',2 SPAN CONTINOUS;1@25'

BEAMS OR GIRDERS : SPN.1-4&6,7:6 LNS.16CONT.I-BMS:SPN5:6LNS.16 I-BMS

FLOOR :	ENCROACHMENT :	DECK (OUT TO OUT) :
5.5 RC/NO AWS		25.5 FT

CLEAR ROADWAY :	BETWEEN RAILS :	SIDEWALK OR CURB :
24 FT	26 FT	LT 1 FT RT 1 FT

VERT.CL.OVER : 999.9 FT

INV.RTG. :	OPE.RTG. :	CONTR.MEMBER :	POSTED :			
HS-1	HS-1	Int Bm Sp 5	SV 9	TTST 9	DATE	11/21/2013

SYSTEM : Secondary S.R. Route

GREEN LINE ROUTE : N

UNDER ROUTES AND CLEARANCES

REMARKS :

Stream Bed Soundings

(See next sheet for profile sketch)

Bridge No: 730043 County: PITT Date: 11/12/2013 By: BGL

Record sounding from top of rail. Other location if needed: RAILS

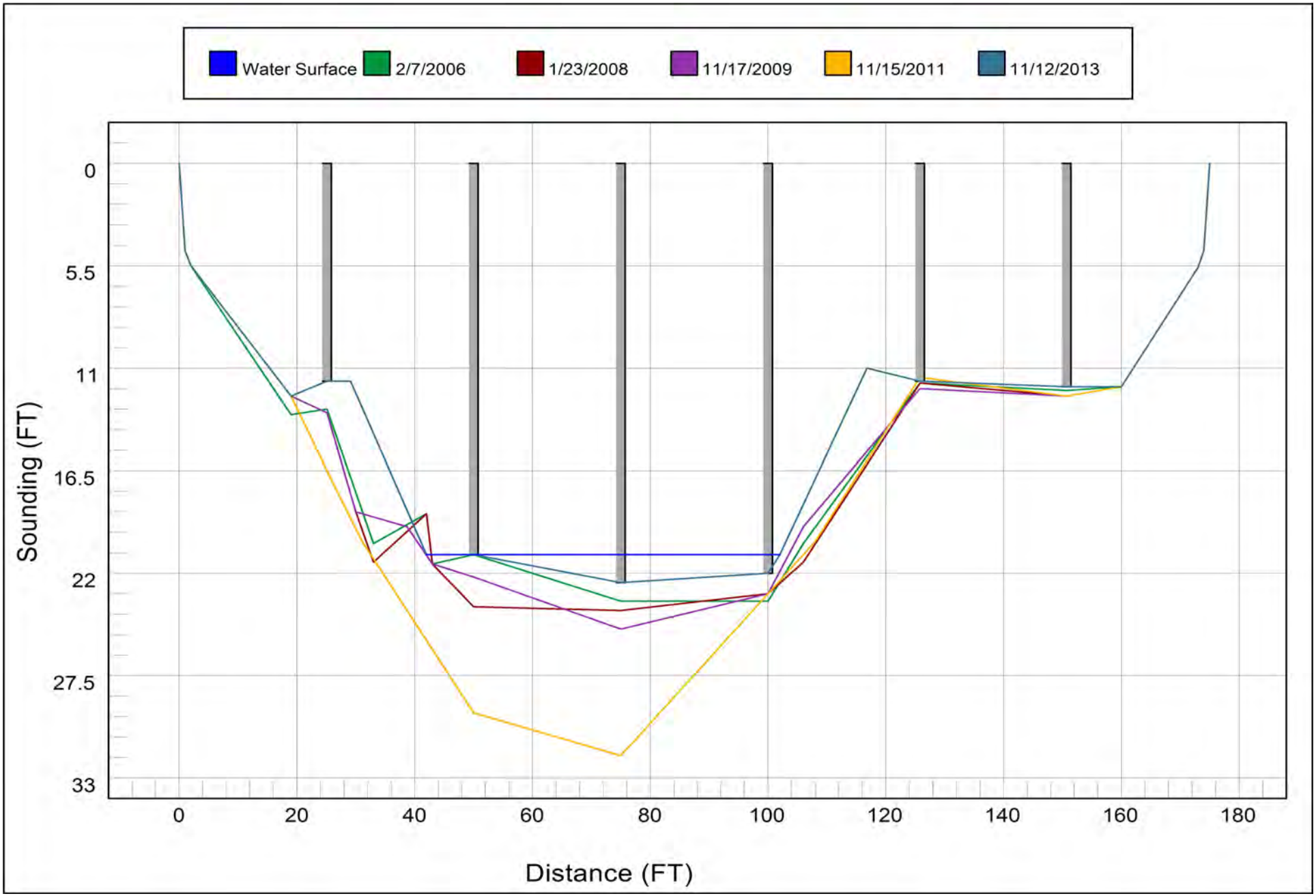
Distance from Highwater Mark to top of rail: 6.5 Location of Highwater Mark: SLOPES

DOWNSTREAM			UPSTREAM		
Distance (Station) (ft)	Sounding (ft)	Description	Distance (Station) (ft)	Sounding (ft)	Description
0	0		0	0	
1	4.7	TOP OF CAP			
2	5.5	TOP OF SLOPE			
19	12.5	TOE OF SLOPE	19	13.2	TOE OF SLOPE
25.1	11.7	BENT 1	25.1	12.7	BENT 1
29.1	11.7	G/L			
42	21	WSWE/ EAST			
50	21	BENT 2	50	22.9	BENT 2
75	22.5	BENT 3	75	21.6	BENT 3
100	22	BENT 4	100	21.6	BENT 4
102	21	WSWE			
116.8	11	G/L			
125.8	11.7	BENT 5	125.8	11.9	BENT 5
150.7	12	BENT 6	150.7	12	BENT 6
160	12	TOE OF SLOPE	160	12.2	TOE OF SLOPE
173	5.6	TOP OF SLOPE			
174	4.7	TOP OF CAP			
175	0		175	0	

Bridge: 730043 County PITT Date: 11/12/2013

STREAMBED PROFILE (Downstream)

Top of Rail = 0 FT (Sounding)



Bridge Inspection Field Sketch

Roadway	19ft Wide	2 Paved Lanes	Looking North
Left Shoulder	8ft Wide		8ft Unpaved
Right Shoulder	9.917ft Wide	1.917ft Paved	8ft Unpaved
Left Guardrail			
Right Guardrail			

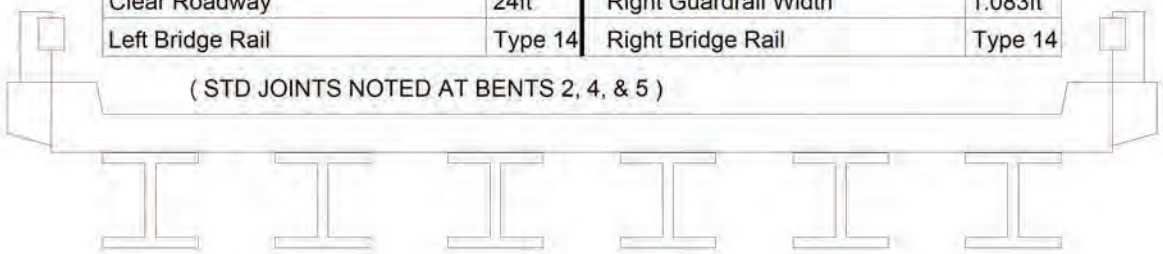
VERIFIED BY; PD IPOCK, 11-12-2013.

Title	Description
730043 SOUTH APPROACH ROADWAY	LOOKING NORTH.

Bridge No:	Drawn By:	Date:	File Name:
730043	P.D.IPOCK	11-15-2011	S0050001472

Bridge Inspection Field Sketch

Deck Width/Out to Out	25.5ft	Wearing Surface	0ft
Between Rails	26ft	Median Width	
Curb Height	0.771ft	Median Height	
Top Rail to Deck/Wearing Surface	2.75ft	Left Guardrail Width	1.083ft
Clear Roadway	24ft	Right Guardrail Width	1.083ft
Left Bridge Rail	Type 14	Right Bridge Rail	Type 14



Measurements for Span #	1	Measurements Similar for All Spans	
Deck Thickness	0.458	Left Overhang	1.083
Top of Rail to Bottom of Beam	4.333	Right Overhang	1.083

Beam No	Beam Type	Spacing	Comments
1	Steel I Beam	4.667ft	Similar Steel I Beam Size (7" X 15- 7/8" X 3/8" FLG.)
2	Steel I Beam	4.667ft	
3	Steel I Beam	4.667ft	
4	Steel I Beam	4.667ft	
5	Steel I Beam	4.667ft	
6	Steel I Beam		

VERIFIED BY; PD IPOCK, 11-12-2013.

Title

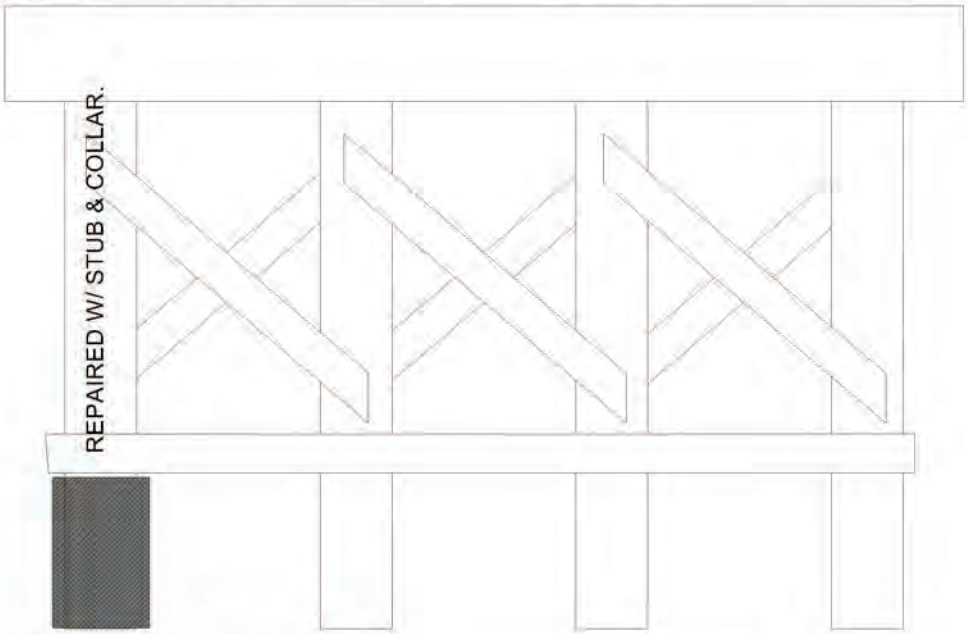
730043 SUPERSTRUCTURE/ SPAN 1

Description

SIMILAR SECTION.

Bridge No: 730043 **Drawn By:** P.D.IPOCK **Date:** 11-15-2011 **File Name:** S0050001473

Bridge Inspection Field Sketch



NOTE; ENCASEMENT NOT VISIBLE 2013.

Bent #	1	Bents 2,5,6 Similar Except For Pile 1.	Note : End Bent Piles Not Visible
Cap - Beam Type (Wood or Steel)			
Cap Size	27.333ft Long	2.333ft Wide	2ft High
Left Overhang	2ft	Lt Cap/Beam Overhang	0.833'ft
Right Overhang	2.167ft	Rt Cap/Beam Overhang	1.667'ft

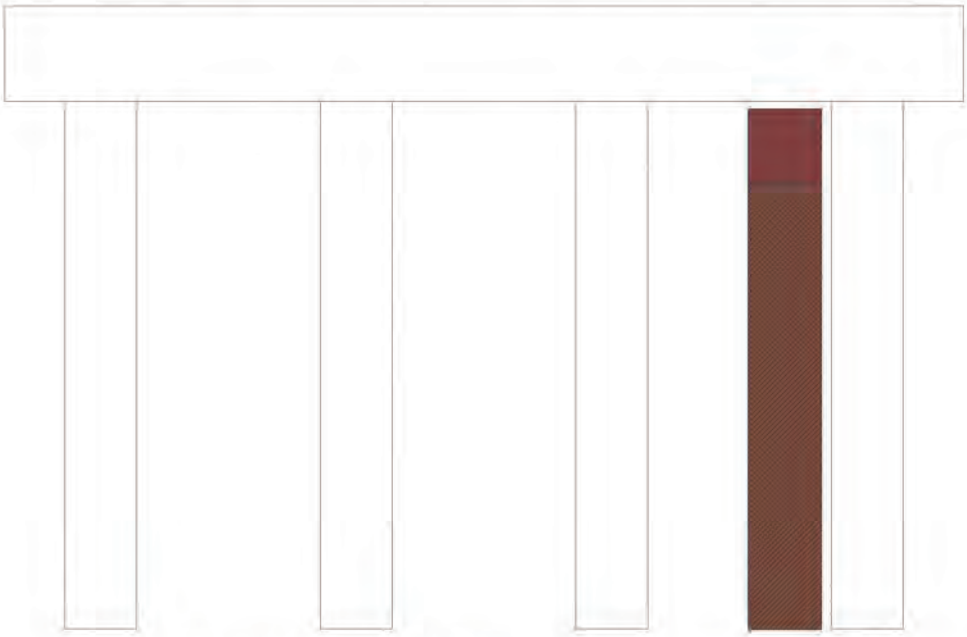
Pile #	Material	Pile Type	Spacing	Length	Width/Diam.	Height	Orientation
1	Wood or Timber	Pile Bent	7.833'		12" Avg. Dia.		Vertical
2	Wood or Timber	Pile Bent	7.833'		12" Avg. Dia.		Vertical
3	Wood or Timber	Pile Bent	7.5'		12" Avg. Dia.		Vertical
4	Wood or Timber	Pile Bent			12" Avg. Dia.		Vertical

VERIFIED BY; PD IPOCK, 11-12-2013.

Title	Description
730043 SUBSTRUCTURE	BT.1 WITH P-1 ENCASED

Bridge No:	Drawn By:	Date:	File Name:
730043	P.D.IPOCK	11-15-2011	S0050001474

Bridge Inspection Field Sketch



THIS BENT DOES HAVE CROSSBRACING.

Bent #	4		
Cap - Beam Type (Wood or Steel)			
Cap Size	27.333ft Long	2.333ft Wide	2ft High
Left Overhang	2ft	Lt Cap/Beam Overhang	0.833ft
Right Overhang	2.167ft	Rt Cap/Beam Overhang	1.667ft

Pile #	Material	Pile Type	Spacing	Length	Width/Diam.	Height	Orientation
1	Wood or Timber	Pile Bent	7.833'		12" Avg. Dia.		Vertical
2	Wood or Timber	Pile Bent	7.833'		12" Avg. Dia.		Vertical
3	Wood or Timber	Pile Bent	7.5'		12" Avg. Dia.		Vertical
4	Wood or Timber	Pile Bent			12" Avg. Dia.		Vertical

VERIFIED BY; PD IPOCK, 11-12-2013.

Title

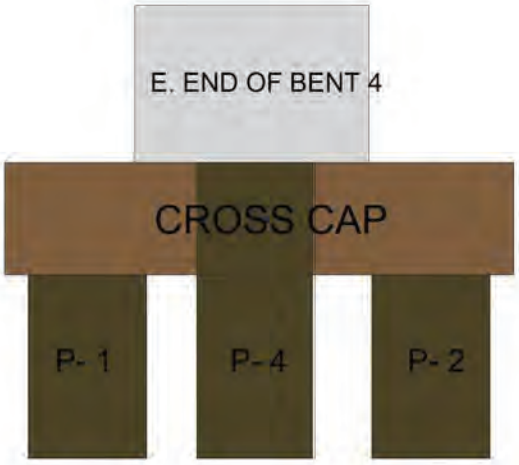
730043 SUBSTRUCTURE/ BT.4

Description

BENT 4 WITH CROSS CAP
ADJACENT TO PILE 4.

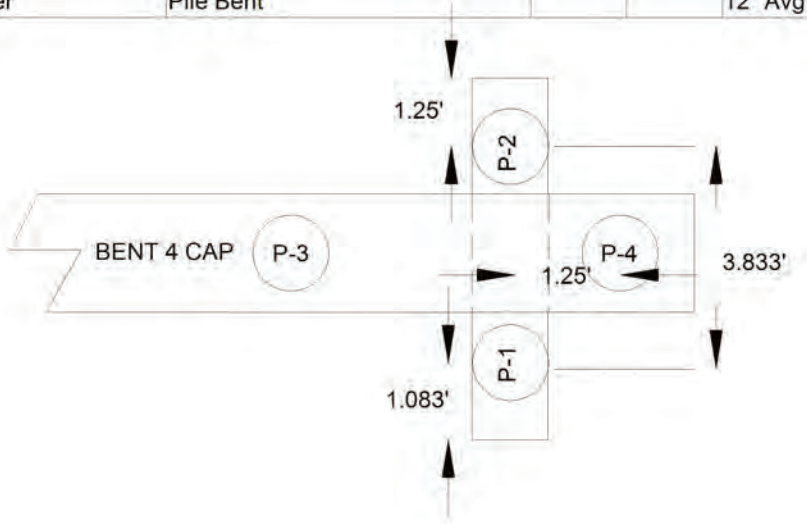
Bridge No: 730043 **Drawn By:** P.D.IPOCK **Date:** 11-15-2011 **File Name:** S0050001476

Bridge Inspection Field Sketch



Cross Cap @Bent 4 LT OF Pile 4			
Cap - Beam Type (Wood or Steel)			
Cap Size	6.166ft Long	1ft Wide	1ft High
Left Overhang	1.083ft	Lt Cap/Beam Overhang	
Right Overhang	1.25ft	Rt Cap/Beam Overhang	

Pile #	Material	Pile Type	Spacing	Length	Width/Diam.	Height	Orientation
1	Wood or Timber	Pile Bent	3.833'		12" Avg.Dia.		Vertical
2	Wood or Timber	Pile Bent			12" Avg.Dia.		Vertical



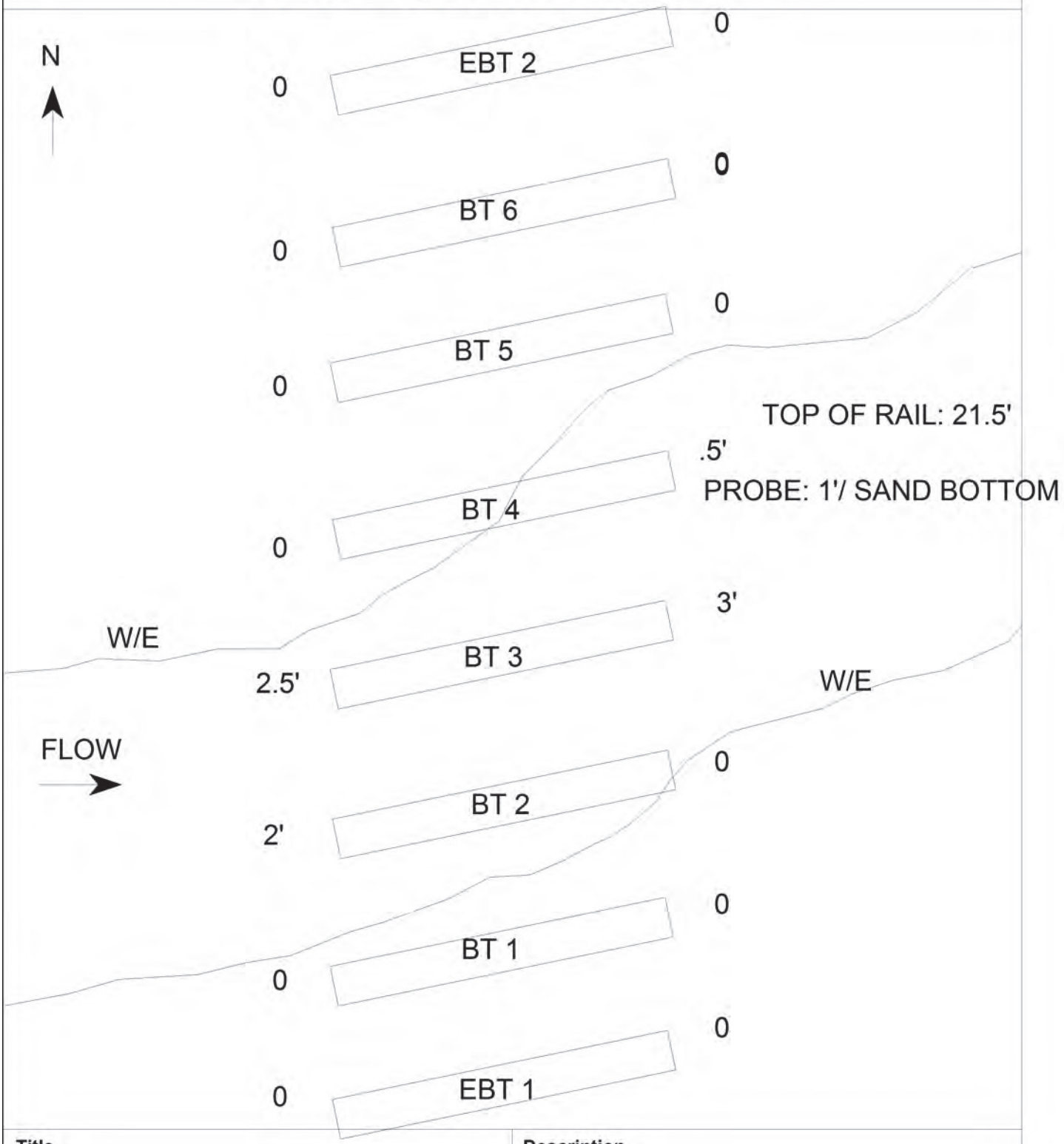
VERIFIED BY; PD IPOCK, 11-12-2013.

Title
730043 SUBSTRUCTURE

Description
CROSS CAP AT BENT 4 PILE 4.

Bridge No: 730043 | **Drawn By:** P.D.IPOCK | **Date:** 11-15-2011 | **File Name:** S0050001477

Bridge Inspection Field Sketch



Title	Description
CHANNEL PLAN VIEW	CHANNEL PLAN VIEW

Bridge No:	Drawn By:	Date:	File Name:
730043	BC	12/2/2010	S0166000348

Bridge Inspection Field Sketch

Cap Information			Material Cast-in-Place Concrete			
Length	Width	Height	Left Overhang	Right Overhang	Left Beam to End of Cap.	Right Beam to End of Cap.
27.333 ft.	2.333 ft.	2.000 ft.	2.000 ft.	2.167 ft.	.833 ft.	1.667 ft.

Subcap Information			Material		
Length	Width	Height	Left Overhang	Right Overhang	Left Pile to Splice.

Sill Information			Material
Length	Width	Height	

Pile #	Material	Spacing	Width/Dia.	Height	Length	Orientation	Driven?	Replacement?	Removed?	Collar?
1	Timber	7.833 ft.	1 ft.			Vertical	Yes	No	No	No
2	Timber	7.833 ft.	1 ft.			Vertical	Yes	No	No	No
3	Timber	7.5 ft.	1 ft.			Vertical	Yes	No	No	No
4	Timber		1 ft.			Vertical	Yes	Yes	No	Yes

CROSS BRACING IN PLACE

Bent/Abutment #: 3 Similar Bents:

Title

730043 SUBSTRUCTURE, BT.3

Description

BT.3 WITH PILE 4 ENCASED/ STUB & COLLAR.

Bridge No:	Drawn By:	Date:	File Name:
730043	PD IPOCK	11/12/2013	S0050003304

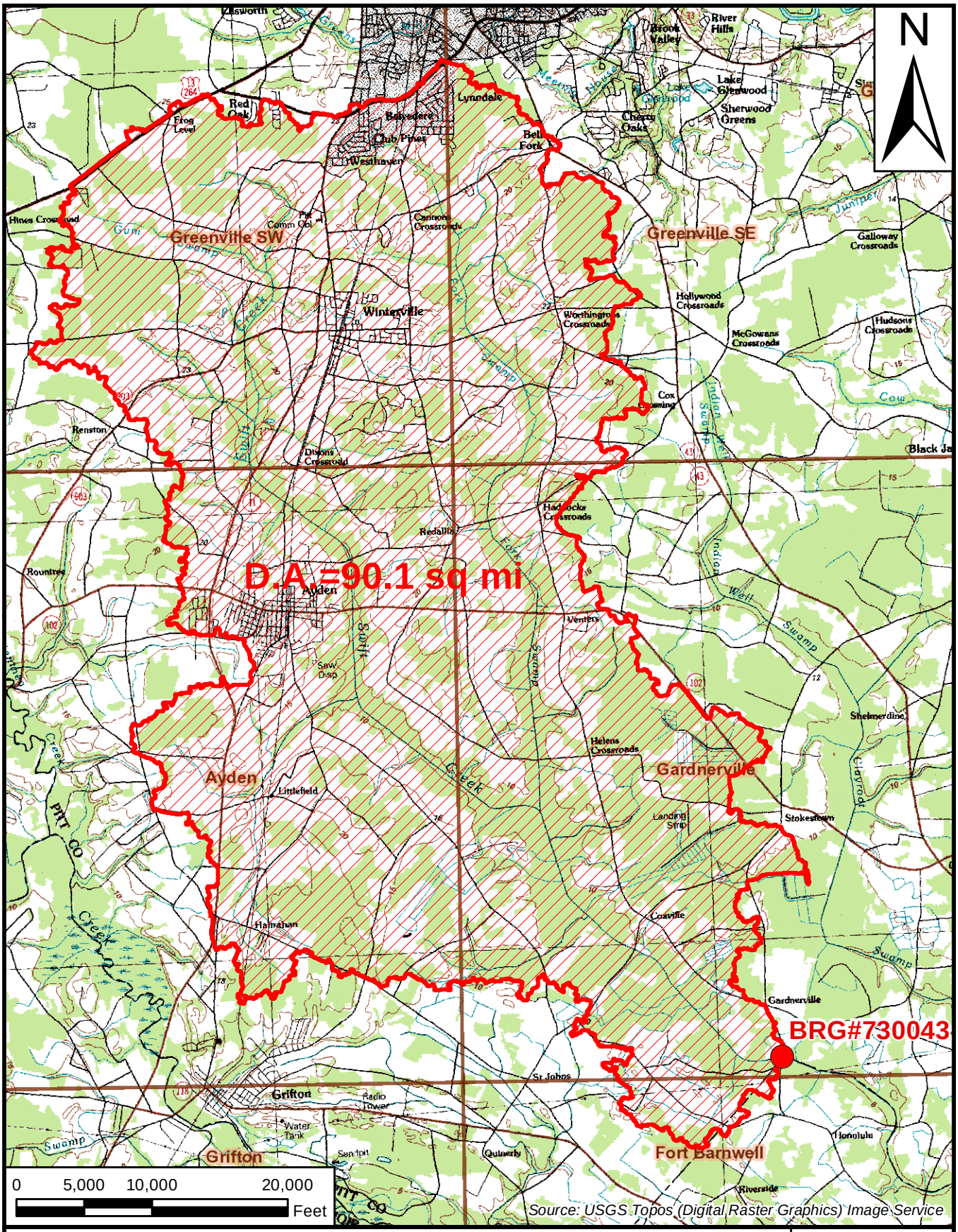
Structure 730043 County PITT Date: 11/12/2013 Structure Photos

LOOKING UPSTREAM-WEST

LOOKING DOWNSTREAM-EAST

LOOKING SOUTH, SR 1923

EAST SIDE, LOOKING SOUTH



DRAINAGE AREA MAP

Pitt County, NC
Replace Bridge No. 43 on SR 1923 over Swift Creek
B-4607

Date: 1-21-2015

Sheet 1 of 1

Table 13 - Summary of Discharges

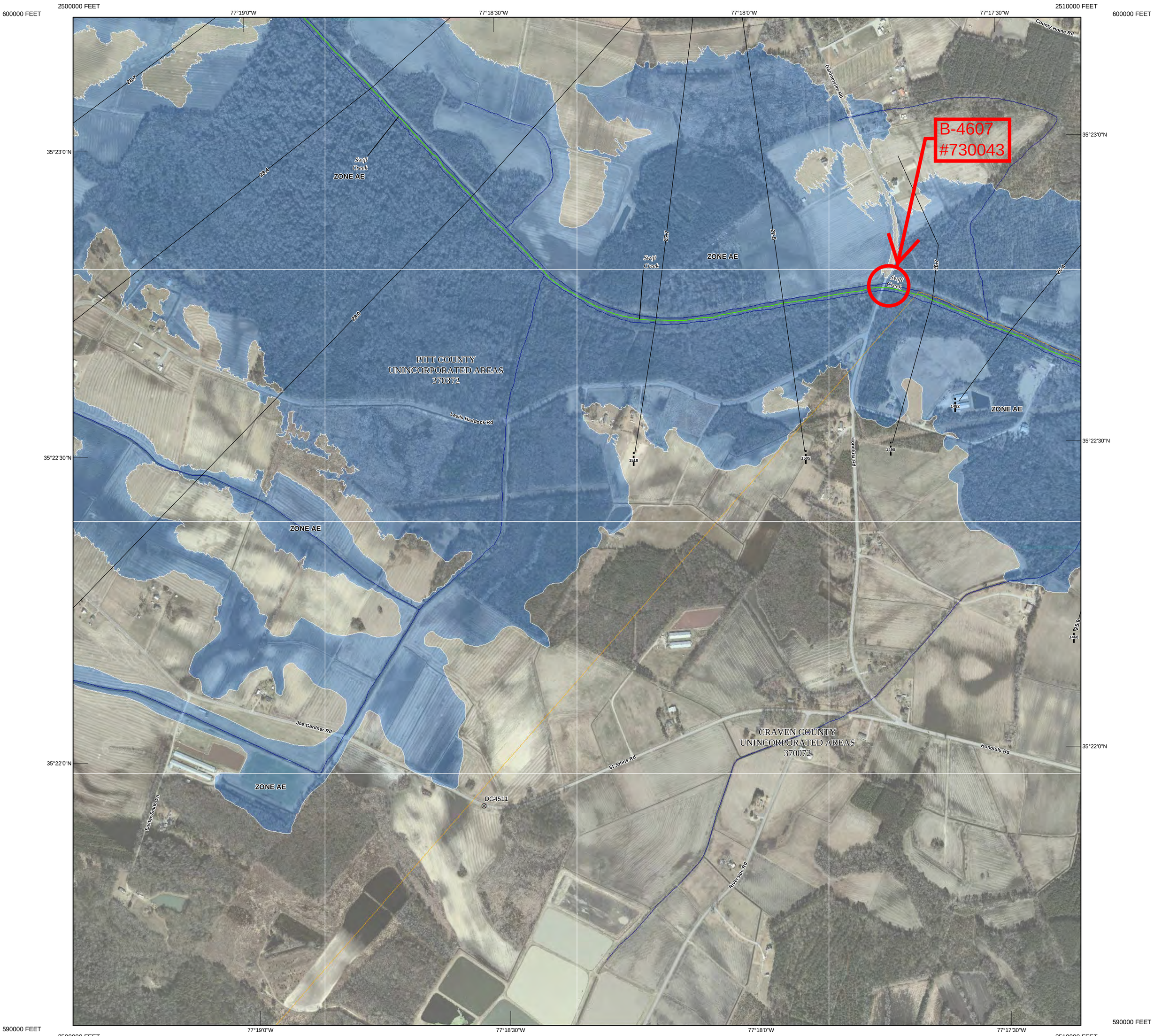
Flooding Source		Discharges (cfs)			
Location	Drainage Area (square miles)	10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Approximately 1,250 feet downstream of 14th Street	0.27	147	306	365	544
Swift Creek					
Approximately 0.4 mile downstream of confluence of Clayroot Swamp	178.32	*	*	7690	*
Just upstream of confluence of Clayroot Swamp	97.83	*	*	6210	*
Approximately 0.7 mile downstream of Beaver Dam Road	94.51	*	*	6120	*
Just downstream of Clark Ford Road	91.41	*	*	6030	*
Approximately 0.7 mile upstream of Gardnerville Road	86.34	*	*	5840	*
Approximately 0.5 mile downstream of Stokestown-St Johns Road	82.48	*	*	5690	*
Approximately 0.2 mile upstream of Stokestown-St. Johns Road	81.26	*	*	5639	*
Approximately 0.9 mile upstream of Stokestown-St. Johns Road	75.26	*	*	5400	*
Approximately 1.2 miles downstream of confluence of Fork Swamp	70.18	*	*	5190	*
At the confluence of Fork Swamp	43.02	*	*	4230	*
Approximately 1.0 mile downstream of confluence of Back Swamp	38.31	*	*	4000	*
Just upstream of confluence of Back Swamp	28.65	*	*	3460	*
Just downstream of Highway 102	25.70	*	*	3280	*
Just upstream of old Highway 11	19.59	*	*	2860	*
Just upstream of Highway 11	18.95	*	*	2820	*
Just upstream of confluence of Horse Swamp	12.53	*	*	2290	*
Just upstream of confluence of Swift Creek Tributary 2	9.04	*	*	1950	*
Approximately 1,800 feet downstream of Forlines Road (SR 1126)	8.56	704	1272	1577	2459
Approximately 800 feet downstream of Forlines Road (SR 1126)	6.97	620	1129	1404	2201
Approximately 1,300 feet downstream of Davenport Farm Road (SR 1128)	4.24	457	847	1060	1684
Approximately 430 feet upstream of Davenport Farm Road (SR 1128)	3.89	433	806	1010	1607
Approximately 0.5 mile downstream of Sterling Trace Drive (SR 2115)	2.30	314	594	750	1211
Approximately 200 feet upstream of Thomas Langston Road (SR 1134)	1.68	259	496	628	1023
Swift Creek Tributary 1					
Just upstream of confluence with Swift Creek	2.66	*	*	814	*
Approximately 0.8 mile upstream of confluence with Swift Creek	1.82	*	*	657	*
Approximately 0.2 mile downstream of Highway 11	1.32	*	*	546	*
Swift Creek Tributary 2					
The confluence with Swift Creek	1.11	200	389	496	817
Approximately 0.5 mile upstream of Red Forbes Road (SR 2106)	0.73	155	306	391	652
Tar River					
At the confluence of Grindle Creek	2756.83	29500	45200	53100	74900
At State Highway 222	2521.00	28200	43000	50400	70500
At the Edgecombe/Pitt County boundary	2459.00	27800	42400	49600	69200
Thomas Canal					
At the confluence with Conetoe Creek	1.37	*	*	559	*
Thorofare Swamp					
Just upstream of confluence with Clayroot Swamp	2.21	*	*	733	*
Just upstream of Hubert Boyd road	0.81	*	*	415	*
Approximately 0.6 mile upstream of Hubert Boyd road	0.66	*	*	369	*
Tranters Creek					
Approximately 1.1 miles upstream of Clarks Neck Road (SR 1567)	237.00	5380	8631	10253	14616

Table 17 - Limited Detailed Flood Hazard Data

Cross Section	Stream Station	Flood Discharge (cfs)	1% Annual Chance Water-Surface Elevation (feet NAVD 88)	Non-Encroachment Width (feet) Left/Right from Stream Centerline
012	1,247	993	13.9[1]	69 / 11
021	2,104	993	14.7	131 / 17
025	2,507	993	15.0	142 / 49
032	3,157	993	15.5	175 / 5
036	3,632	993	15.9	101 / 82
041	4,150	993	16.2	5 / 207
048	4,778	993	16.6	122 / 52
051	5,082	993	17.3	107 / 181
060	6,000	587	17.7	62 / 29
067	6,674	587	18.5	68 / 91
073	7,327	587	19.3	55 / 130
084	8,440	546	22.1	24 / 13
091	9,123	546	24.8	120 / 4
095	9,518	546	24.9	67 / 40
Poley Branch				
008	827	643	14.7[1]	854 / 191
015	1,466	643	14.7[1]	32 / 73
020	1,980	643	14.7[1]	24 / 81
025	2,474	643	14.7[1]	60 / 48
031	3,067	561	15.2	2 / 169
034	3,436	561	17.0	20 / 23
039	3,888	561	19.7	52 / 34
042	4,201	561	20.6	17 / 54
052	5,165	493	23.3	76 / 42
058	5,769	493	24.1	19 / 60
064	6,379	427	24.7	53 / 66
069	6,861	427	24.9	150 / 307
Swift Creek				
1256	125,585	6,210	19.8	1,000 / 250
1266	126,560	6,210	20.0	833 / 404
1270	126,979	6,210	20.0	432 / 666
1282	128,194	6,210	20.3	412 / 249
1294	129,375	6,120	20.6	300 / 550
1303	130,298	6,120	20.9	375 / 590
1309	130,915	6,120	21.0	300 / 500
1320	131,990	6,120	21.3	250 / 450
1336	133,608	6,120	22.2	770 / 455
1341	134,059	6,120	22.3	800 / 320
1351	135,109	6,120	22.5	365 / 381
1361	136,082	6,120	22.9	304 / 612
1366	136,643	6,120	23.0	556 / 290
1381	138,058	6,120	23.4	135 / 505
1403	140,252	6,030	24.1	525 / 320
1417	141,737	6,030	24.4	500 / 500
1427	142,709	6,030	24.6	47 / 588

Table 17 - Limited Detailed Flood Hazard Data

Cross Section	Stream Station	Flood Discharge (cfs)	1% Annual Chance Water-Surface Elevation (feet NAVD 88)	Non-Encroachment Width (feet) Left/Right from Stream Centerline
1434	143,370	6,030	24.8	100 / 500
1442	144,207	6,030	25.1	300 / 475
1454	145,398	6,030	25.4	450 / 500
1468	146,770	6,030	25.9	100 / 500
1482	148,181	6,030	26.4	90 / 320
1490	149,009	6,030	26.7	250 / 125
1505	150,519	6,030	27.5	700 / 300
1518	151,803	6,030	27.7	1,200 / 125
1541	154,076	5,840	28.0	200 / 1,200
1555	155,550	5,840	28.4	140 / 1,000
1570	157,047	5,840	28.7	1,400 / 80
1588	158,786	5,840	29.1	500 / 1,000
1604	160,412	5,840	29.4	380 / 1,000
1634	163,441	5,690	30.3	100 / 1,420
1653	165,331	5,690	31.0	700 / 1,200
1666	166,570	5,640	31.2	940 / 1,400
1680	168,000	5,640	31.4	780 / 1,600
1699	169,857	5,400	31.8	800 / 1,000
1714	171,366	5,190	32.2	250 / 1,000
1724	172,416	5,190	32.8	100 / 1,000
1739	173,869	5,190	33.3	804 / 716
1757	175,682	5,190	33.8	650 / 1,100
Swift Creek Tributary 1				
005	543	814	47.1[1]	150 / 250
012	1,218	814	47.1[1]	100 / 100
020	1,972	814	47.1[1]	100 / 50
028	2,787	814	47.5	100 / 75
039	3,855	814	49.4	20 / 150
050	5,009	657	51.1	20 / 100
062	6,213	546	52.8	40 / 20
076	7,624	422	55.9	15 / 15
Thomas Canal				
013	1,341	559	46.3[1]	2 / 291
016	1,569	559	46.3[1]	12 / 14
020	1,998	559	46.3[1]	9 / 80
021	2,113	559	46.6	128 / 4
023	2,307	559	46.8	10 / 18
026	2,599	559	47.1	45 / 19
030	3,000	559	47.4	47 / 207
034	3,412	559	48.0	119 / 9
038	3,842	559	48.2	75 / 31
044	4,409	559	48.5	590 / 2
048	4,752	559	48.5	539 / 30
051	5,141	559	48.6	108 / 215
055	5,498	559	48.6	21 / 356



SEE FIS REPORT FOR ZONE DESCRIPTIONS AND INDEX MAP

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTP://FRIS.NC.GOV/FRIS

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A,V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% Annual Chance Flood with Average Depth Less Than One Foot or With Drainage Areas of Less Than One Square Mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*

OTHER AREAS

- Areas Determined to be Outside the 0.2% Annual Chance Floodplain *Zone X*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Accredited or Provisionally Accredited Levee, Dike, or Floodwall
- Non-accredited Levee, Dike, or Floodwall

OTHER FEATURES

- BM5510 D — North Carolina Geodetic Survey bench mark
- BM5510 ? — National Geodetic Survey bench mark
- BM5510 Z — Contractor Est. NCFMP Survey bench mark
- 012 — 18.2 — Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. An accompanying Flood Insurance Study report, Letter of Map Revision (LOMR) or Letter of Map Amendment (LOMA) revising portions of this panel, and digital versions of this FIRM may be available. Visit the North Carolina Floodplain Mapping Program website at http://www.ncfloodmaps.com, or contact the FEMA Map Service Center.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in the community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on this FIRM was provided in digital format by the North Carolina Floodplain Mapping Program (NCFMP). The source of this information can be determined from the metadata available in the digital FLOOD database and in the Technical Support Data Notebook (TSDN).

ACCREDITED LEVEE NOTES TO USERS: If an accredited levee note appears on this panel check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent-annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA Website at http://www.fema.gov/business/nfip/index.shtm.

PROVISIONALLY ACCREDITED LEVEE NOTES TO USERS: If a Provisionally Accredited Levee (PAL) note appears on this panel, check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent-annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection. To maintain accreditation, the levee owner or community is required to submit the data and documentation necessary to comply with Section 65.10 of the NFIP regulations. If the community or owner does not provide the necessary data and documentation or if the data and documentation provided indicates the levee system does not comply with Section 65.10 requirements, FEMA will revise the flood hazard and risk information for this area to reflect de-accreditation of the levee system. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA Website at http://www.fema.gov/business/nfip/index.shtm.

LIMIT OF MODERATE WAVE ACTION NOTES TO USERS: For some coastal flooding zones the AE Zone category has been divided by a Limit of Moderate Wave Action (LiMWA). The LiMWA represents the approximate landward limit of the 1.5-foot breaking wave. The effects of wave hazards between the VE Zone and the LiMWA (or between the shoreline and the LiMWA for areas where VE Zones are not identified) will be similar to, but less severe than those in the VE Zone.

Limit of Moderate Wave Action (LiMWA)

COASTAL BARRIER RESOURCES SYSTEM (CBRS) NOTE

This map may include approximate boundaries of the CBRS for informational purposes only. Flood insurance is not available within CBRS areas for structures that are newly built or substantially improved on or after the date(s) indicated on the map. For more information see http://www.fws.gov/habitatconservation/coastal_barrier.html, the FIS Report, or call the U.S. Fish and Wildlife Service Customer Service Center at 1-800-344-WILD.

CBRS Area

Otherwise Protected Area

SCALE

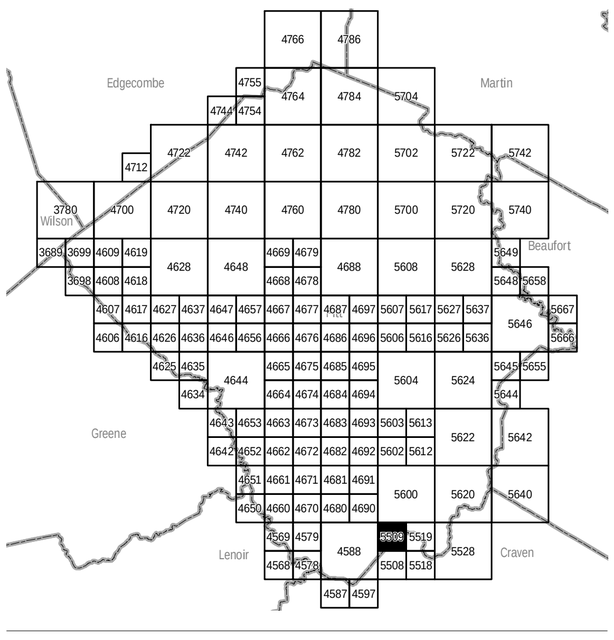
Map Projection:
North Carolina State Plane Projection Feet (Zone 3200)
Datum: NAD 1983 (Horizontal), NAVD 1988 (Vertical)

1 inch = 500 feet 1:6,000

0 250 500 1,000 Feet

0 75 150 300 Meters

PANEL LOCATOR



FEMA

National Flood Insurance Program

NORTH CAROLINA FLOODPLAIN MAPPING PROGRAM
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

NORTH CAROLINA

PANEL 5509

FEMA

Panel Contains:

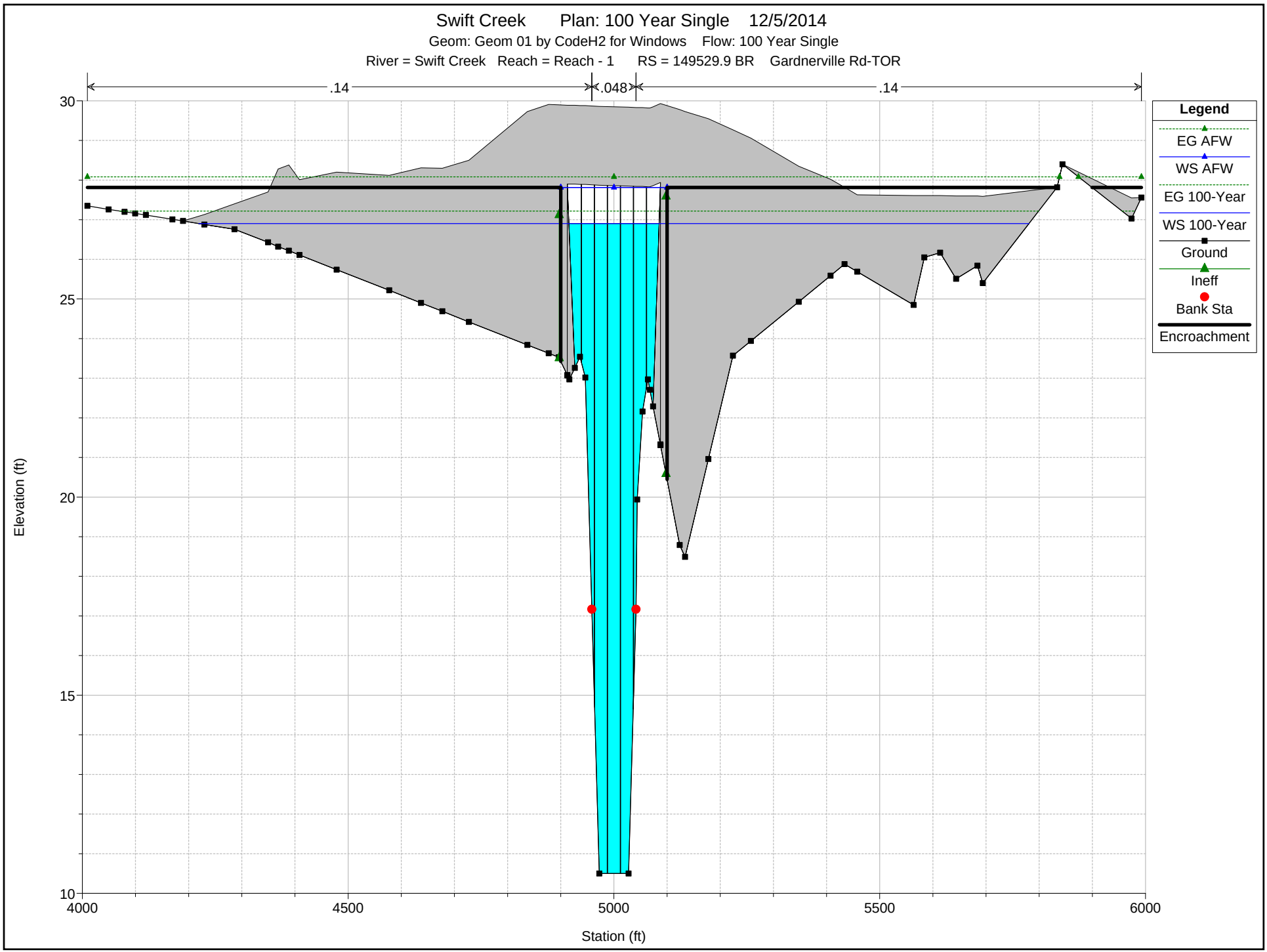
COMMUNITY	CID	PANEL	SUFFIX
CRAVEN COUNTY	370072	5509	K
PITT COUNTY	370372	5509	K

MAP NUMBER
3720550900K

EFFECTIVE DATE
7/2/2004

NORTH CAROLINA Cooperating Technical State
FEMA'S COOPERATING TECHNICAL PARTNER

This digital Flood Insurance Rate Map (FIRM) was produced through a unique cooperative partnership between the State of North Carolina and the Federal Emergency Management Agency (FEMA). The State of North Carolina has implemented a long term approach to floodplain management to decrease the costs associated with flooding. This is demonstrated by the State's commitment to map flood hazard areas at the local level. As a part of this effort, the State of North Carolina has joined in a Cooperating Technical State agreement with FEMA to produce and maintain this digital FIRM.


Swift Creek Plan: 100 Year Single 12/5/2014
Geom: Geom 01 by CodeH2 for Windows Flow: 100 Year Single
River = Swift Creek Reach = Reach - 1 RS = 149529.9 BR Gardnerville Rd-TOR
.14
.048
.14
Legend
EG AFW
WS AFW
EG 100-Year
WS 100-Year
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
30
25
20
15
10
4000
4500
5000
5500
6000
Station (ft)

PLAN
SURVEYED
PLOTTED
GRADES CHECKED
R/W PLOTTED
NOTE BOOK
NO.
BY
DATE
RT. OF WAY CHECKED
ALIGNMENT CHECKED
STRUCTURE NOTATNS CHKD.

CULT.

PASTURE

TO N.C. 118

SR-1465

20' B.S.T.

P.I. = 7+53.2
Δ = 7°06' Rt
D = 1°00'
T = 358.5
L = 710.0

P.T. = 14+63.1

CRAVEN COUNTY

SWIFT CREEK

PITT COUNTY

P.C. = 15+22.1

SR-1931

TO SR. 1725

P.I. = 18+86.6
Δ = 7° 53' Rt
D = 1°05'
T = 364.5
L = 727.7

P.T. = 22+88.8

B.M.#1 80 Penny Nail in Base of 12" Gum
31' Rt of Sta 4+12 Elev. 104.78

B.M.#2 80 Penny Nail in Base of 12" Persimmon
32' Rt of Sta 11+00 Elev. 100.00 (assumed)

℄ Sta 13+80
A @ 35.0
90°
Cr. Gr. El. 103.0'

B.M.#3 80 Penny Nail in Base of 12" Water Oak
61' Rt of Sta 16+27 Elev. 103.58

B.M.#4 80 Penny Nail in Base of 12" Pine
35' Lt of Sta 23+28 Elev. 101.90

N.G.

H.W. El. 97.0

Piles

Present Structure
Spans 1 @ 17.5' - 1 @ 17.0'
1 @ 39.7' - 3 @ 17.5' - 1 @ 16.5'
1 @ 17.5' - 3 @ 17.0' - 1 @ 16.5'
1 @ 17.0' O.C. 243.2' 19.2 Cl. Rdwy
Creo. Tim. piles, deck & wings

D.A. ± 90 Sq. Mi.
0.50 = 0.5 S.

NORTH CAROLINA STATE HIGHWAY COMMISSION
CRAVEN COUNTY

BRIDGE No. 43 TO BE REPLACED ON SR 1465 OVER SWIFT CREEK AT COUNTY LINE BETWEEN N.C. 118 AND SR-1725

SCALE : 1" = 50' HORZ.
1" = 10' VERT.

C.A. RUTH JULY, 1970

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
R/W PLOTTED
NOTE BOOK
NO.
BY
DATE
STRUCTURE NOTATNS CHKD.

B-4607 UPSTREAM STRUCTURE

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BRIDGE MANAGEMENT UNIT

ATTENTION

BRIDGE INSPECTION REPORT

INSPECTION TYPE: Routine Inspection

COUNTY PITT | BRIDGE NUMBER 730042 | INSPECTION CYCLE 2 YRS

ROUTE SR1753 | ACROSS SWIFT CREEK | M.P. 0

LOCATION 0.7 MI NE JCT SR 1919

SUPERSTRUCTURE PRESTRESSED CONCRETE CORED SLAB (BMD-19)

SUBSTRUCTURE E.BTS&BTS:PPC CAP/H-PILES @ 5'6 CTS.

SPANS 1@40';1@45';1@40'-5

LONGITUDE 77° 19' 54.54" | LATITUDE 35° 24' 6.29"

INSPECTION DATE 10/16/2013 | PRESENT CONDITION FAIR

PRESENT POSTING Not Posted NOT POSTED | PROPOSED POSTING

OTHER SIGNS PRESENT (4) DELINEATORS

LOOKING NORTH

Fracture Critical	No
Temporary Shoring	No
Scour Critical	No
Scour POA	Yes

SIGN NOTICE ISSUED FOR		NUMBERED REQUIRED
No	WEIGHT LIMIT	
No	DELINEATORS	
No	NARROW BRIDGE	
No	ONE LANE BRIDGE	
No	LOW CLEARANCE	

B-4607 DOWNSTREAM STRUCTURE

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BRIDGE MANAGEMENT UNIT

ATTENTION

PM ISSUED FOR DRIFT AT BENT 2/HYDRAULICS UNIT CONTACTED PER POA IN SCOUR REPORT DATED 5-13-10 DUE TO SCOUR AT BENT 1. SHORED STRUCTURE.
SIGN NOTICE ISSUED FOR DELINEATORS

BRIDGE INSPECTION REPORT

INSPECTION TYPE: Routine Inspection

COUNTY CRAVEN | BRIDGE NUMBER 240041 | INSPECTION CYCLE 2 YRS

ROUTE SR1464 | ACROSS SWIFT CREEK | M.P. 0

LOCATION 1.0 MI.E.JCT.SR1458

SUPERSTRUCTURE TIMBER FLOOR ON I-BEAMS

SUBSTRUCTURE EBTS&IBTS:TIM.CAPS/TIM.PILES;STL.CRUTCH@E.BTS&BT

SPANS 2@45'2;1@45'3

LONGITUDE 77° 16' 56.91" | LATITUDE 35° 21' 53.91"

INSPECTION DATE 12/03/2012 | PRESENT CONDITION FAIR

PRESENT POSTING Y SV-33 TTST-36 | PROPOSED POSTING

OTHER SIGNS PRESENT (2) DELINEATORS

LOOKING EAST

SIGN NOTICE ISSUED FOR		NUMBERED REQUIRED
No	WEIGHT LIMIT	
Yes	DELINEATORS	2
No	NARROW BRIDGE	
No	ONE LANE BRIDGE	
No	LOW CLEARANCE	