

OFFICE ESTIMATE

1@ 40, 1@ 45, 1@ 35' Bridge

PREDESIGN-PRESURVEY REPORT

Project# _____

TIP# _____

Let Date _____

WBS# 17BP.11.R.78

County SURRY (DIV II)

Bridge# 850143

Road# SR 2048 (STONY RIDGE RD)

Stream GRASSY CREEK

Type Of Request: POC Force Account TIP NCMA

Date 7/02/13 Name MJY

Assigned To RLH

Checked By WSH 7-3-13

Prior Survey Date NO (attach copy of prior survey) BRN BK: 3@ 35' CO. FILE NO

Study By Scour Section NO

Flood Zone AE Detail Study LIMITED Date 8/18/09 Panel# 5962

B.M. Info _____

Quad Map PINNACLE Drainage Area 10.4 SQ. MI. From DASS (STA. 211412.525)

Q25 2200 cfs Q50 2700 cfs Q100 3100 cfs Method REG. EQNS. / REG. 1

EXISTING BRIDGE INFORMATION

Location 0.1 MI. E. JCT. SR 2067

Average Daily Traffic 1200 6% TRK. (2009)

Length 106' Bed- To Crown 15' Water Depth 1'

Type Structure STEEL PLANK FLOOR ON 1-BEAMS, TIM. CAPS/TIM. PILES

Type Spans 1@ 35'-3.5"; 1@ 35'; 1@ 35'-3.5"

Upstream Structure 850141 - DASS = 5.86 SQ. MI., N.A. - TOO MANY TRIB. STREAMS.

Location _____

Bed- To Crown _____ Prior Survey _____

Downstream Structure 850142 - DASS = 12 SQ. MI., N.A. - TOO MANY TRIB. STREAMS.

Location _____

Bed- To Crown _____ Prior Survey _____

SCS Watershed _____

ENVIRONMENTAL

TVA NO ✓

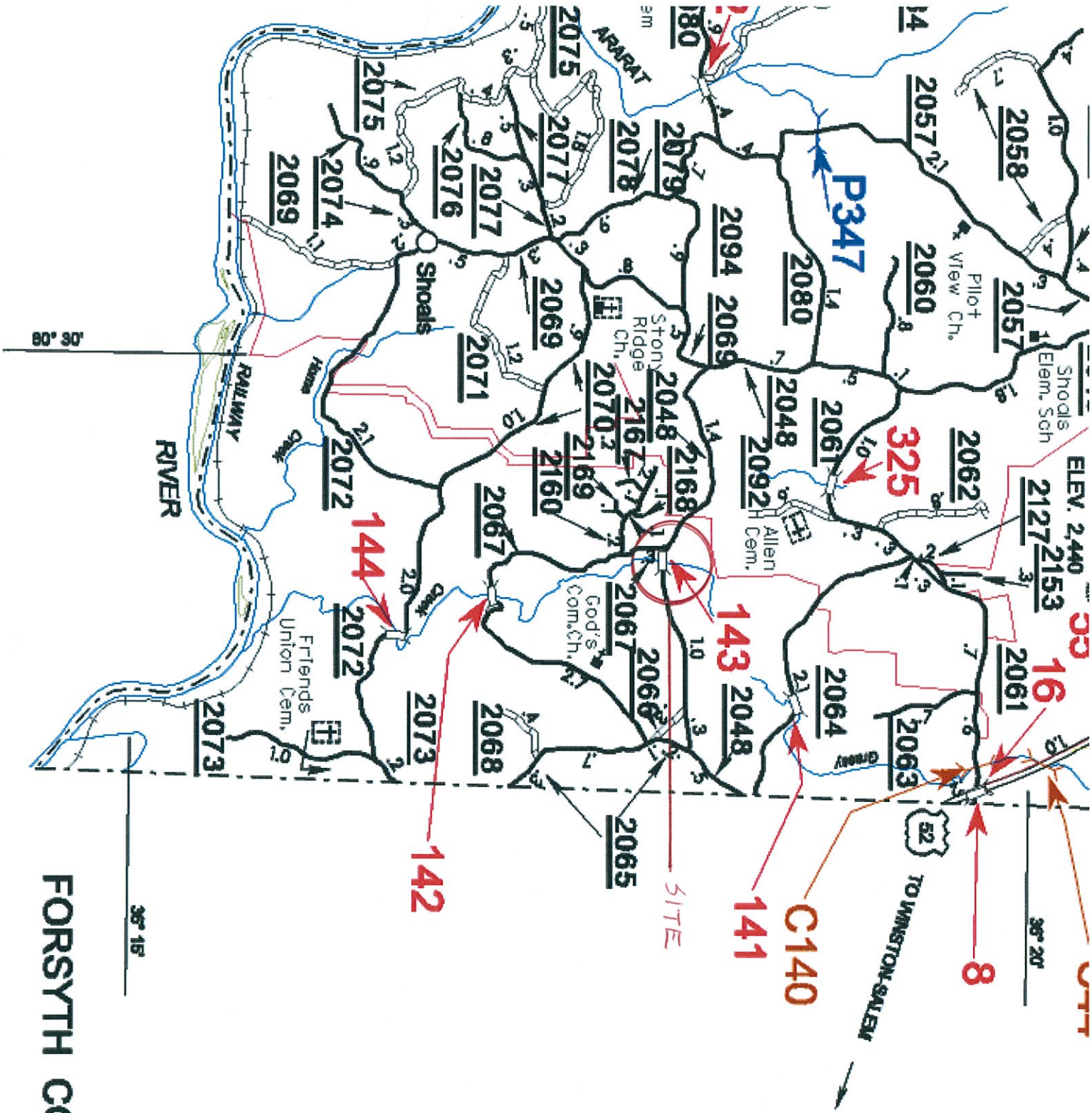
Trout Stream NO Anadromous Fish NO ✓ Primary Nursery Area NO ✓

High Quality Waters NO ✓ Nutrient Sensitive Waters NO ✓

Near Water Supply Intake NO ✓ CAMA County NO ✓

Stream Classification WS-IV ✓ # 12-76

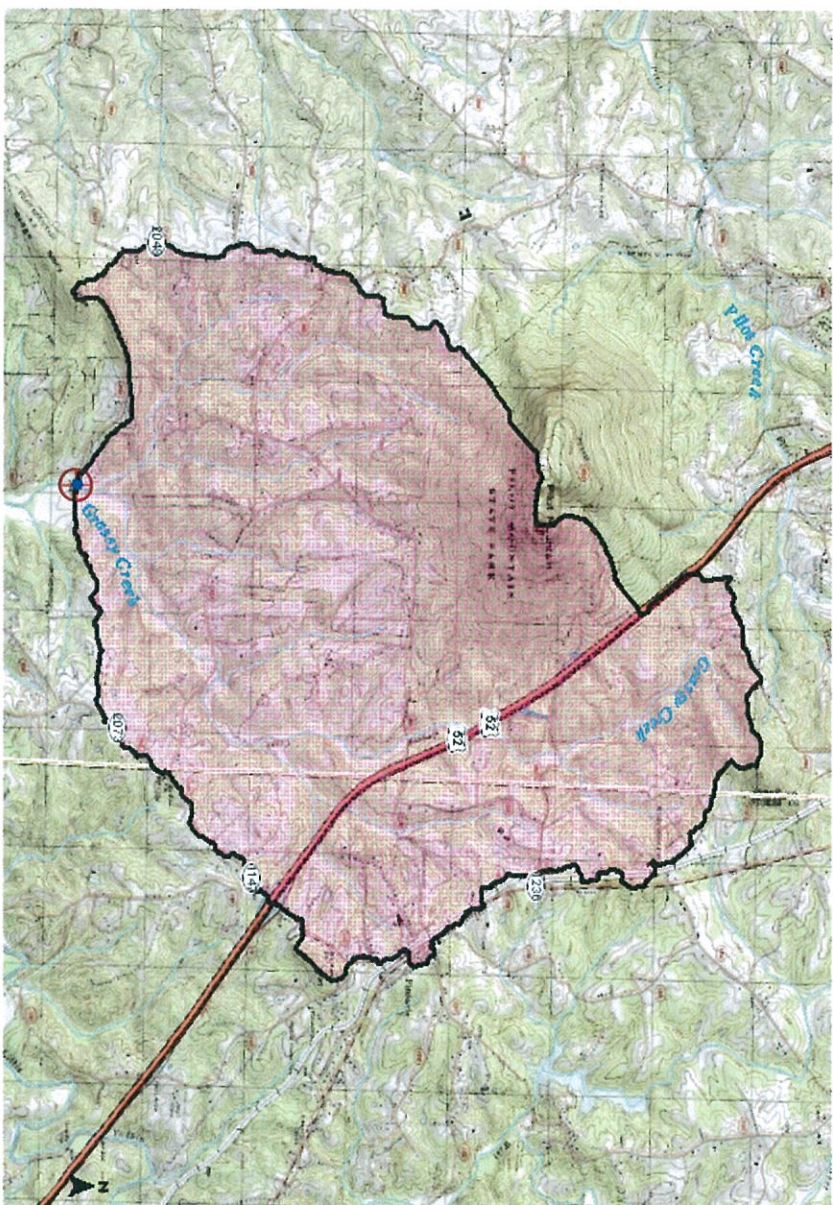
DENR River Basin Info. YADKIN ✓ (FROM SOURCE TO YADKIN RIVER)



850143



StreamStats Print Page



7/2/2013 9:00:32 AM

- Explanation**
- ★ Global Watershed Point
 - SPTOS Point
 - NCDOT Point
 - Localities
 - ▲ Gauging Station, Continuous Record
 - ▲ Low Flow, Partial Record
 - ▲ Peak Flow, Partial Record
 - ▲ Peak and Low Flow, Partial Record
 - ▲ Stage Only
 - ▲ Low Flow, Partial Record, Stage
 - ▲ Miscellaneous Record
 - ▲ Unknown
 - ▲ Localized
 - ▲ Longest Flood at 30
 - ▲ Stream Grid
 - ▲ Global Watershed
 - ▲ Pilot Study Area
 - ▲ Inundation

850143



North Carolina StreamStats

Streamstats Ungaged Site Report

Date: Tue Jul 2 2013 09:00:22 Mountain Daylight Time

Site Location: North_Carolina

NAD27 Latitude: 36.2991 (36 17 57)

NAD27 Longitude: -80.4772 (-80 28 38)

NAD83 Latitude: 36.2993 (36 17 57)

NAD83 Longitude: -80.4770 (-80 28 37)

Drainage Area: 10.2 mi²

Percent Urban: 8.1 %

Percent Impervious: 0.9 %

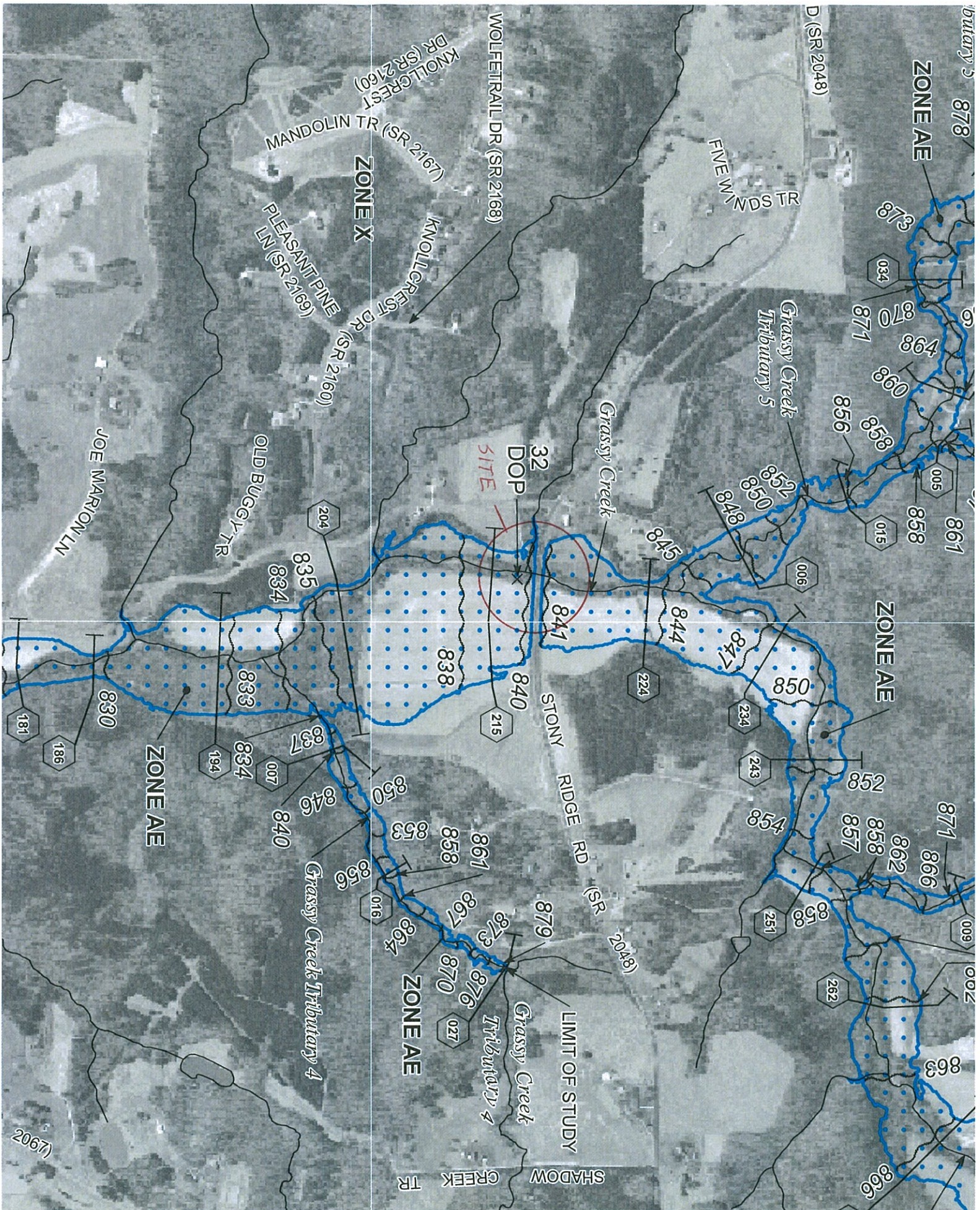
Peak Flows Region Grid Basin Characteristics			
100% Peak Southeast US 2009 5158 (10.2 mi ²)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	10.2	1	9000
Percent Area in Region 1 (percent)	100.000	0	100
Percent Area in Region 2 (percent)	0.000	0	100
Percent Area in Region 3 (percent)	0.000	0	100
Percent Area in Region 4 (percent)	0.000	0	100
Percent Area in Region 5 (percent)	0.000	0	100

Urban Flows Region Grid Basin Characteristics			
100% Peak urban Blue Ridge-Piedmont FS007-00 (10.2 mi ²)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	10.2	0.04	41
Area of Impervious Surfaces (percent)	0.95 (below min value 2)	2	54.6

Warning: Some parameters are outside the suggested range. Estimates will be extrapolations with unknown errors.

Peak Flows Region Grid Streamflow Statistics					
Statistic	Flow (ft ³ /s)	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
PK2	715	35		412	1240
PK5	1270	34		735	2180
PK10	1670	35		952	2920
PK25	2190	38		1210	3980
PK50	2660	40		1420	4980
PK100	3080	42		1590	5970
PK200	3500	44		1740	7020
PK500	4150	48		1970	8740

Urban Flows Region Grid Streamflow Statistics					
Statistic	Flow (ft ³ /s)	Standard Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
PK2U	179				
PK5U	373				
PK10U	544				
PK25U	921				
PK50U	1170				
PK100U	1460				



Section 5.0 – Engineering Methods

Table 11—Limited Detailed Flood Hazard Data

Cross Section ¹	Stream Station ²	Flood Discharge (cfs)	1% Annual Chance Water-Surface Elevation (feet NAVD 88)	Non-Encroachment Width ³ (feet)
GRASSY CREEK				
144	14,444	3,553	813.5	30 / 21
149	14,881	3,553	815.4	50 / 30
154	15,371	3,553	817.5	43 / 110
159	15,861	3,553	818.6	62 / 29
163	16,251	3,553	820.1	70 / 47
166	16,647	3,553	821.8	55 / 73
172	17,185	3,553	824.0	37 / 94
175	17,479	3,553	825.2	18 / 210
181	18,084	3,461	827.3	18 / 102
186	18,589	3,461	829.7	85 / 35
194	19,418	3,374	833.0	180 / 75
204	20,390	3,310	835.4	281 / 18
209	20,911	3,310	837.4	310 / 17
215	21,452	3,310	838.4	140 / 25
224	22,445	3,310	843.5	151 / 18
234	23,362	2,648	847.4	100 / 15
243	24,323	2,648	851.6	18 / 120
248	24,811	2,648	854.1	16 / 70
251	25,145	2,648	856.7	68 / 15
256	25,558	2,434	858.7	37 / 40
262	26,211	2,434	862.0	15 / 180
267	26,719	2,434	863.0	50 / 95
273	27,303	2,434	866.4	181 / 93
281	28,129	2,384	868.1	15 / 132
283	28,274	2,384	870.3	90 / 40
286	28,630	2,384	873.3	155 / 15
291	29,078	2,384	875.5	45 / 120
295	29,515	2,384	877.5	50 / 145
307	30,704	2,267	883.7	76 / 26
312	31,235	2,154	887.5	45 / 39
316	31,649	2,154	890.3	22 / 43
320	32,023	2,154	893.9	33 / 40
325	32,453	2,154	895.9	32 / 45
329	32,934	2,154	898.2	14 / 140
333	33,271	2,154	899.1	14 / 147
335	33,521	2,154	900.2	66 / 75
341	34,104	2,154	902.6	53 / 20
343	34,308	2,154	903.4	38 / 104
346	34,581	2,154	905.1	120 / 60
349	34,887	1,707	907.0	12 / 110
357	35,709	1,707	910.6	42 / 21
363	36,293	1,707	915.5	12 / 130
368	36,832	1,653	917.0	17 / 70
375	37,517	1,653	920.7	141 / 12
378	37,754	1,653	921.6	50 / 64
380	38,006	1,653	923.0	42 / 23
387	38,661	1,653	927.7	44 / 12
394	39,351	1,653	931.0	100 / 12

TR. STA.
1,745 BRU

RIVER STA. = 21745 BRU

Grassy Creek Limited Detail Study Plan: Floodway Run 8/20/2009
Stony Ridge Rd (GC) TORStructure ID: LDS_GC_04Approximate Surv

Elevation (ft)

Station (ft)

Legend

- EG 100-FW
- EG 100-year
- WS 100-FW
- WS 100-year
- Ground
- Ineff
- Bank Sta
- Encroachment

Dimensions: .07, .13, .05, .13, .07

850143



NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BRIDGE MANAGEMENT UNIT

ATTENTION

BRIDGE INSPECTION REPORT

INSPECTION TYPE: Routine Inspection

COUNTY SURRYBRIDGE NUMBER 850143INSPECTION CYCLE 2 YRSROUTE SR2048ACROSS GRASSY CREEKM.P. 0LOCATION .1 MI.E.JCT.SR2067SUPERSTRUCTURE STEEL PLANK FLOOR ON I-BEAMSSUBSTRUCTURE E.BTS&INT.BTS:TIMBER CAPS/TIMBER PILES @ 5'-10 CTS.SPANS 1 @ 35'-3.5; 1 @ 35'; 1 @ 35'-3.5LONGITUDE 80° 28' 38.2"LATITUDE 36° 17' 56.7"PRESENT CONDITION FAIRINVENTORY RATING INSPECTION DATE 11/09/2011OPERATING RATING PRESENT POSTING SV 33 TTST 39 SV 33 TTST 39PROPOSED POSTING COMPUTER UPDATE ANALYSIS DATE POSTING LETTER DATE SUFFICIENCY RATING OTHER SIGNS PRESENT NONE

LOOKING SOUTH

SIGN NOTICE
ISSUED FORNUMBERED
REQUIREDNoWEIGHT LIMIT NoDELINEATORS NoNARROW BRIDGE NoONE LANE BRIDGE NoLOW CLEARANCE

BRIDGE MANAGEMENT UNIT

DATA ON EXISTING STRUCTURE

Run Date: 01/09/2012

COUNTY : SURRY	DIVISION : 11	DISTRICT : 1	STRUCTURE NUMBER : 850143	LENGTH : 106 FEET
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ROUTE CARRIED : SR2048	FEATURE INTERSECTED : GRASSY CREEK
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LOCATED : .1 MI.E.JCT.SR2067	BRIDGE NAME :	CITY :
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FUNC. CLASS : 08	SYST.ON : NFA	SYST.UNDER : NFA	ADT & YR : 1200 2009	RAIL TYPE : LT 233 RT 233
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BUILT : 1972	BY : BMU	PROJ :	FED.AID PROJ :	DESIGN LOAD : Other or Unknown
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REHAB :	BY :	PROJ :	ALIGNMENT : TAN	SKEW : 90	LANES : ON 2 UNDER
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NAVIGATION : VC 0 FT	HC 0 FT	HT. CRN. TO BED : 15 FT	WATER DEPTH : 1 FT
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SUPERSTRUCTURE :	STEEL PLANK FLOOR ON I-BEAMS
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SUBSTRUCTURE :	E.BTS&INT.BTS:TIMBER CAPS/TIMBER PILES @ 5'-10 CTS.
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SPANS :	1 @ 35'-3.5; 1 @ 35'; 1 @ 35'-3.5
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BEAMS OR GIRDERS :	10 LINES 18 I-BEAMS @ 2'6.75 CENTERS
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FLOOR :	ENCROACHMENT :	DECK (OUT TO OUT) : 24.2 FT
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CLEAR ROADWAY : 24 FT	BETWEEN RAILS : 24.2 FT	SIDEWALK OR CURB : LT .1 FT RT .1 FT
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VERT.CL.OVER : 999.9 FT

INV.RTG. : HS-11	OPE.RTG. : HS-18	CONTR.MEMBER : Int.bmsSpB	POSTED : SV 21	TTST 27	DATE 01/06/2012
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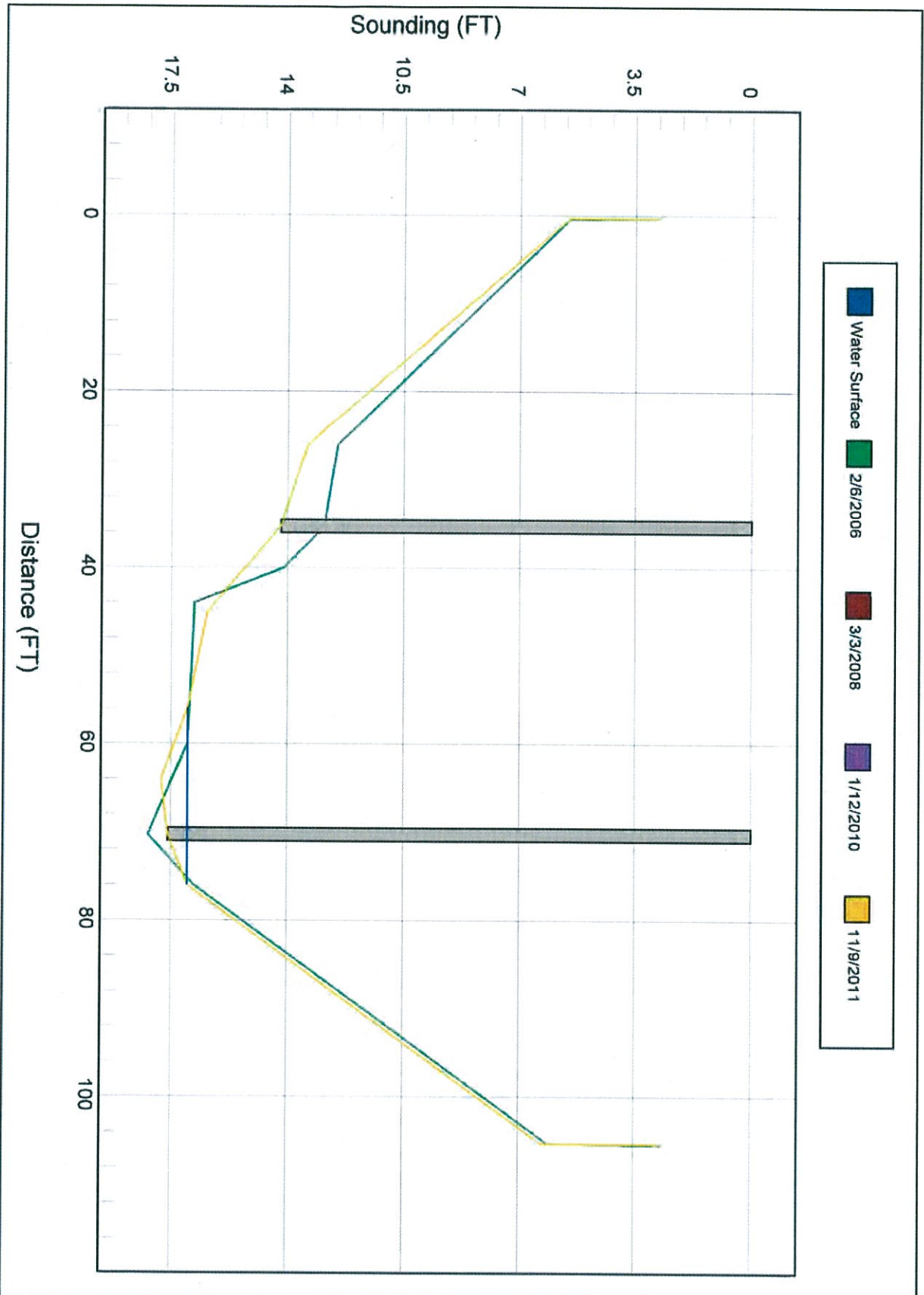
SYSTEM : Secondary S.R. Route	GREEN LINE ROUTE : N
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UNDER ROUTES AND CLEARANCES

REMARKS :

Top of Rail = 0 FT (Sounding)

STREAMBED PROFILE (Downstream)



Structure 850143

County SURRY

Date: 11/09/2011

Structure Photos



SOUTH FACE PIER (2)



EAST PROFILE