TIP PROJECT: R-2577A

CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2577A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
37405.1.2	N/A	PE	
37405.2.4	N/A	R/W	
37405.3.1	N/A	CONST.	

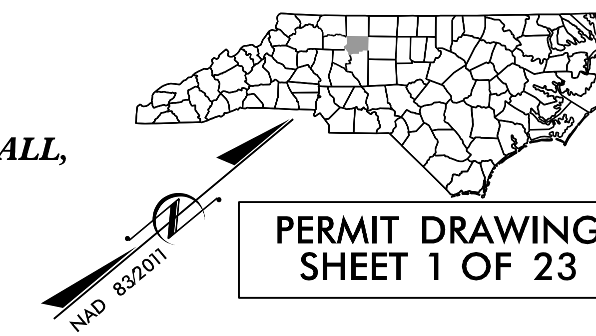
FORSYTH COUNTY

LOCATION: US 158 (REIDSVILLE RD.) FROM NORTH OF US 421/I-40 BUS. TO SR 1965 (BELEWS CREEK RD.)

TYPE OF WORK: GRADING, PAVING, WIDENING, DRAINAGE, CULVERTS, SIGNING, STRUCTURES, RETAINING WALL, SIGNALS, & UTILITIES

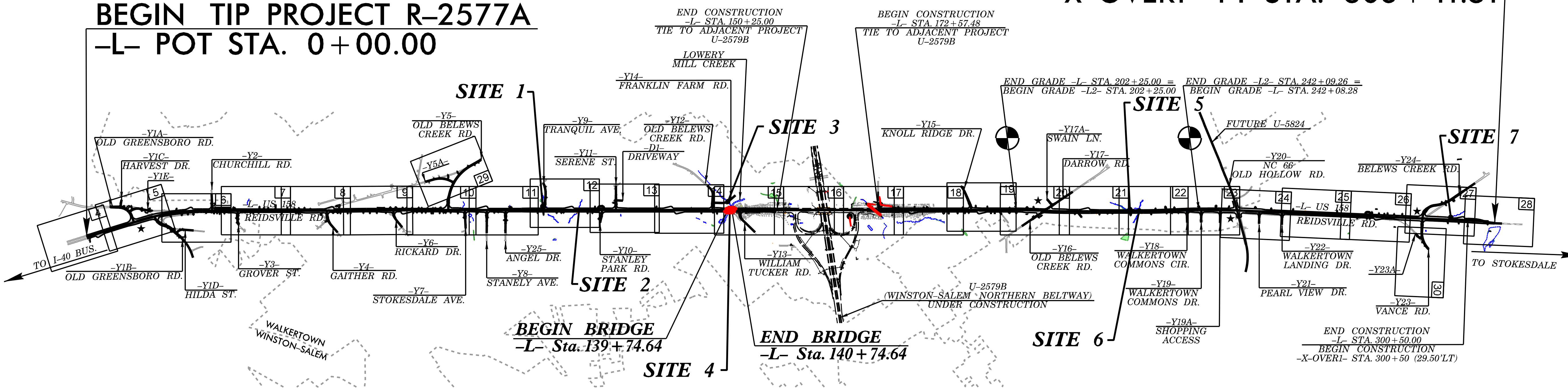
STREAM AND WETLAND IMPACTS

VICINITY MAP (NTS)



PERMIT DRAWING
SHEET 1 OF 23

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



NOTES:
1. A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF WINSTON-SALEM AND WALKERTOWN.
2. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
3. THIS PROJECT HAS PARTIAL CONTROL OF ACCESS WITH FULL CONTROL OF ACCESS AT POINTS AS SHOWN ON PLANS.

★ PROPOSED TRAFFIC SIGNAL

ENGLISH

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100 — PLANS
50 25 0 50 100 — PROFILE (HORIZONTAL)
10 5 0 10 20 — PROFILE (VERTICAL)

DESIGN DATA

ADT 2017 = 23,600
ADT 2040 = 35,000
V = 50 MPH
K = 8%
D = 60%
T = 14% *
* TTST = 8% DUAL = 6%

FUNC CLASS = ARTERIAL
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2577A............ 5.349 miles
LENGTH STRUCTURE TIP PROJECT R-2577A........... 0.031 miles
TOTAL LENGTH OF PROJECT R-2577A.................. 5.380 miles

PLANS PREPARED BY:
RK&K
RUMMEL, KLEPPER & KAHL, LLP
8601 SIX FORKS ROAD, FORUM 1, SUITE 700
RALEIGH, NORTH CAROLINA 27615-3960
NC LICENSE NO. F-0112
1-888-521-4455 OR 919-878-9560

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: February 26, 2021

LETTING DATE: December 19, 2023

Scott D. Blevins, PE — PROJECT ENGINEER

John R.G. Olinger, PE — PROJECT DESIGN ENGINEER

NCDOT CONTACT: Connie James, PE — DIVISION 9

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DEPARTMENT OF TRANSPORTATION — STATE OF NORTH CAROLINA

5/6/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Final\R-2577A_hyd_prm_tsh.dgn
Fkeys
09/08/99

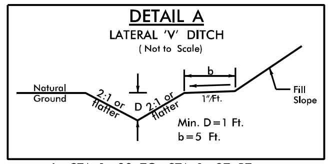
PROJECT REFERENCE NO.	SHEET NO.
R-2577A	2D-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

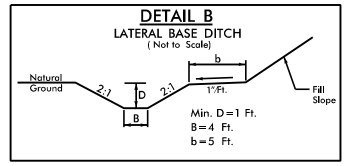
PERMIT DRAWING SHEET 2 OF 23

DETAIL A
LATERAL 'V' DITCH
(Not to Scale)



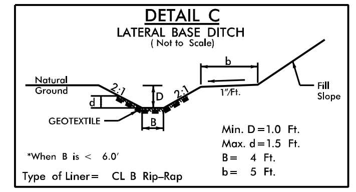
-L- STA. 1+00 TO STA. 1+97 RT
-L- STA. 6+50 TO STA. 8+00 LT
-L- STA. 11+19 TO STA. 11+44 LT
-L- STA. 12+00 TO STA. 16+00 LT
-L- STA. 16+50 TO STA. 20+50 RT
-L- STA. 22+00 TO STA. 23+24 RT
-L- STA. 25+00 TO STA. 27+50 RT
-L- STA. 35+80 TO STA. 38+00 RT
-L- STA. 41+00 TO STA. 45+50 RT
-L- STA. 47+50 TO STA. 51+50 RT
-L- STA. 59+00 TO STA. 60+50 RT
-L- STA. 62+79 TO STA. 66+50 RT
-L- STA. 67+80 TO STA. 69+00 RT
-Y1A- STA. 15+61.54 TO STA. 15+95.66 LT
-Y6- STA. 10+62 TO STA. 11+35 RT
-Y8- STA. 10+67 TO STA. 11+50 LT
-L- STA. 78+00 TO STA. 82+49 RT
-L- STA. 82+00 TO STA. 83+00 LT
-L- STA. 88+50 TO STA. 89+90 RT
-L- STA. 88+00 TO STA. 90+00 LT
-L- STA. 103+00 TO STA. 105+00 RT
-L- STA. 109+50 TO STA. 112+00 RT
-L- STA. 113+50 TO STA. 128+50 RT
-L- STA. 116+22 TO STA. 123+00 LT
-Y13- STA. 10+85 TO STA. 11+50 RT
-L- STA. 175+46 TO STA. 179+00 LT
-L- STA. 182+11 TO STA. 184+00 LT
-L- STA. 185+20 TO STA. 185+50 RT
-L- STA. 186+50 TO STA. 192+52 RT
-L- STA. 195+69 TO STA. 198+50 LT
-L- STA. 199+50 TO STA. 200+07RT
-L- STA. 242+22 TO STA. 245+50 LT
-L- STA. 228+23 TO STA. 228+69 RT
-L- STA. 284+00 TO STA. 285+22 RT
-L- STA. 286+50 TO STA. 290+10 RT
-L- STA. 291+00 TO STA. 296+00 RT, D=1.5
-L- STA. 291+50 TO STA. 294+50 LT, D=1.5
-Y24- STA. 20+00 TO STA. 22+23 RT
-Y24- STA. 23+00 TO STA. 23+63 RT
-L2- STA. 215+50 TO STA. 217+50 LT
-L2- STA. 236+00 TO STA. 238+75 RT
-L- STA. 247+11 TO STA. 250+00 RT
-L2- STA. 228+23 TO STA. 228+69 RT
-L2- STA. 229+50 TO STA. 230+00 LT
-L2- STA. 235+34 TO STA. 238+50 LT
-Y10- STA. 10+72 TO STA. 11+50 LT
-Y17A- STA. 10+50 TO STA. 11+34 LT
-Y17A- STA. 10+50 TO STA. 11+00 RT
-L- STA. 199+43 TO STA. 200+07 RT
-L- STA. 296+28 TO STA. 297+68 RT, D=2′
-L- STA. 297+68 TO STA. 298+00 RT, D=1.5′
-L- STA. 301+05 TO STA. 304+77 RT

DETAIL B
LATERAL BASE DITCH
(Not to Scale)



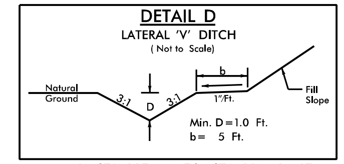
-L- STA. 2+00 TO STA. 3+00 LT
-L- STA. 35+00 TO STA. 35+80 RT, M=4
-L- STA. 129+50 TO STA. 131+75 LT
-Y9- STA. 13+50 TO STA. 14+50 LT
-Y11- STA. 12+17 TO STA. 13+00 LT
-Y11- STA. 14+00 TO STA. 14+40 LT

DETAIL C
LATERAL BASE DITCH
(Not to Scale)



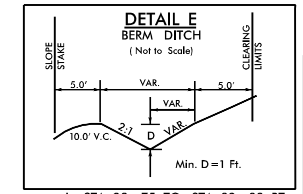
-L- STA. 98+00 TO STA. 99+71 RT
-L- STA. 100+50 TO STA. 100+92 RT
-L- STA. 101+02 TO STA. 102+00 LT
-L- STA. 106+50 TO STA. 108+50 LT
-L- STA. 113+02 TO STA. 113+50 RT
-L- STA. 140+51 TO STA. 142+00 RT
-Y9- STA. 14+50 TO STA. 15+06 LT
-L- STA. 294+50 TO STA. 297+50 LT, D=1.5, B=3, CL I RIP-RAP
-L- STA. 297+50 TO STA. 298+07 LT, M=3, D=1.5, B=3

DETAIL D
LATERAL 'V' DITCH
(Not to Scale)



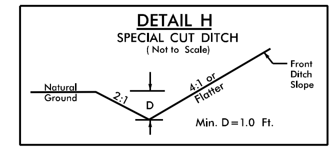
-L- STA. 287+00 TO STA. 290+20 LT

DETAIL E
BERM DITCH
(Not to Scale)



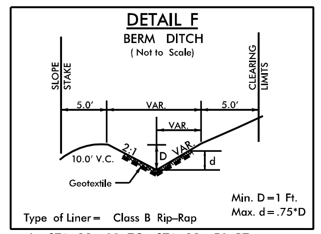
-L- STA. 29+75 TO STA. 32+88 RT
-L- STA. 38+50 TO STA. 41+00 RT
-L- STA. 83+00 TO STA. 87+28 LT
-L- STA. 94+50 TO STA. 96+50 LT
-Y3- STA. 10+91 TO STA. 11+20 RT
-L- STA. 102+50 TO STA. 106+00 LT
-L- STA. 124+50 TO STA. 128+50 LT
-L- STA. 132+50 TO STA. 135+78 LT
-L- STA. 179+50 TO STA. 182+00 LT
-L- STA. 193+19 TO STA. 195+69 LT
-L2- STA. 235+40 TO STA. 236+00 RT
-Y15- STA. 12+50 TO STA. 15+00 LT
-Y5- STA. 18+50 TO STA. 22+50 RT
-X-OERI- STA. 302+46.78 TO STA. 305+62.57 RT

DETAIL H
SPECIAL CUT DITCH
(Not to Scale)



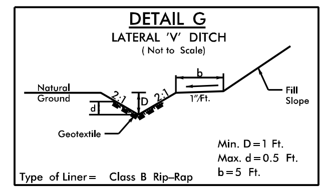
-Y1B- STA. 11+03 TO STA. 15+79 LT
-Y1B- STA. 17+50 TO STA. 18+00 LT
-Y1B- STA. 17+50 TO STA. 18+00 RT
-Y1C- STA. 10+00 TO STA. 11+00 LT
-Y1C- STA. 10+00 TO STA. 11+00 RT
-Y1D- STA. 12+00 TO STA. 12+50 LT
-Y1D- STA. 12+00 TO STA. 13+77 RT
-Y2- STA. 12+00 TO STA. 12+50 RT
-Y3- STA. 11+50 TO STA. 13+00 LT
-Y3- STA. 11+50 TO STA. 13+00 RT
-Y25- STA. 12+50 TO STA. 13+00 LT
-Y25- STA. 12+50 TO STA. 13+00 RT
-Y11- STA. 11+50 TO STA. 12+00 RT
-Y12- STA. 21+25 TO STA. 22+50 RT
-Y13- STA. 11+00 TO STA. 13+00 LT
-Y4- STA. 12+50 TO STA. 14+00 LT
-Y4- STA. 12+50 TO STA. 14+00 RT
-Y5- STA. 21+50 TO STA. 22+50 LT
-Y5- STA. 10+00 TO STA. 11+50 LT
-Y5- STA. 10+00 TO STA. 11+50 RT
-Y5- STA. 21+50 TO STA. 22+50 RT
-Y5A- STA. 10+00 TO STA. 11+00 LT
-Y5A- STA. 10+00 TO STA. 11+00 RT
-Y5A- STA. 15+50 TO STA. 16+14 RT
-Y6- STA. 11+35 TO STA. 11+85 LT
-Y6- STA. 11+35 TO STA. 11+85 RT
-Y7- STA. 10+94 TO STA. 12+00 RT
-Y8- STA. 11+78 TO STA. 12+50 LT
-Y15- STA. 11+25 TO STA. 11+50 LT
-Y15- STA. 11+25 TO STA. 12+50 RT
-Y23- STA. 15+50 TO STA. 17+00 RT
-Y23- STA. 16+00 TO STA. 17+00 LT
-Y24- STA. 13+09 TO STA. 14+00 LT
-Y24- STA. 13+09 TO STA. 15+50 RT
-Y1D- STA. 13+50 TO STA. 13+77 LT
-Y5A- STA. 15+96 TO STA. 16+10 LT
-Y5- STA. 17+50 TO STA. 17+61 RT
-X-OVER- STA. 302+46.78 TO STA. 305+62.57 RT

DETAIL F
BERM DITCH
(Not to Scale)



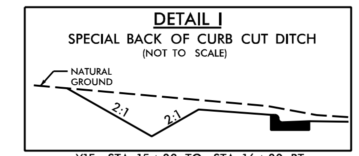
-L- STA. 38+00 TO STA. 38+50 RT
-L- STA. 83+50 TO STA. 84+50 LT
-L- STA. 87+28 TO STA. 88+00 LT
-L- STA. 94+00 TO STA. 94+50 LT
-Y12- STA. 22+00 TO STA. 23+88 RT

DETAIL G
LATERAL 'V' DITCH
(Not to Scale)



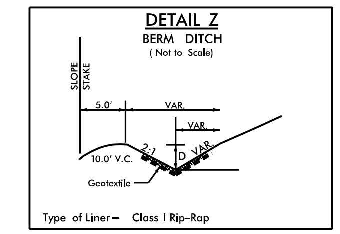
-L- STA. 11+44 TO STA. 12+00 LT, CL I RIP RAP
-L- STA. 60+50 TO STA. 62+79 RT
-L- STA. 81+50 TO STA. 82+00 LT
-L- STA. 185+50 TO STA. 186+50 RT
-Y17- STA. 14+00 TO STA. 14+50 LT, CL I RIP RAP

DETAIL I
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)



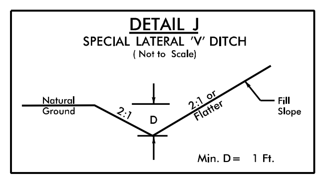
-Y1E- STA. 15+00 TO STA. 16+00 RT
-L- STA. 20+50 TO STA. 22+00 RT
-L- STA. 23+24 TO STA. 25+00 RT
-L- STA. 28+00 TO STA. 29+50 RT
-L- STA. 55+50 TO STA. 59+00 RT
-L- STA. 73+65 TO STA. 78+50 LT
-L- STA. 80+00 TO STA. 81+50 LT
-L- STA. 90+00 TO STA. 92+75 LT
-L- STA. 93+10 TO STA. 94+00 LT
-L- STA. 123+00 TO STA. 124+00 LT
-L- STA. 182+00 TO STA. 192+11 LT
-L- STA. 184+00 TO STA. 192+00 LT
-Y1A- STA. 12+50 TO STA. 14+24 LT
-Y5- STA. 22+50 TO STA. 23+31 RT

DETAIL Z
BERM DITCH
(Not to Scale)



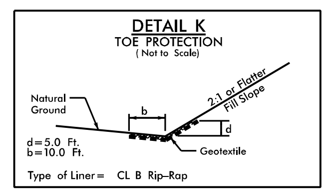
-L- STA. 179+00 TO STA. 179+50 LT

DETAIL J
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



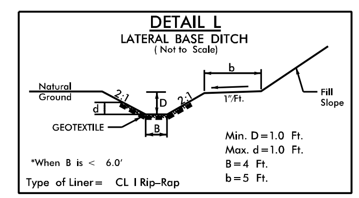
-L- STA. 0+00 TO STA. 02+00 LT
-Y1A- STA. 11+00 TO STA. 12+00 LT
-Y1E- STA. 12+00 TO STA. 15+00 RT

DETAIL K
TOE PROTECTION
(Not to Scale)



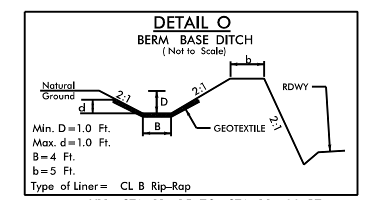
-L- STA. 2+00 TO STA. 2+50 RT
-L- STA. 3+00 TO STA. 3+60 LT
-L- STA. 4+05 TO STA. 6+00 LT
-L- STA. 7+06 TO STA. 9+45 RT
-L- STA. 8+40 TO STA. 9+86 LT
-L- STA. 22+00 TO STA. 23+00 LT
-L- STA. 37+00 TO STA. 38+00 LT
-L- STA. 95+00 TO STA. 97+50 RT
-L- STA. 98+40 TO STA. 99+54 LT
-L- STA. 101+50 TO STA. 102+62 RT
-Y14- STA. 13+22 TO STA. 13+73 RT
-L- STA. 137+50 TO STA. 139+50 LT
-L2- STA. 217+52 TO STA 218+50 LT
-L2- STA. 229+00 TO STA 230+50 RT

DETAIL L
LATERAL BASE DITCH
(Not to Scale)



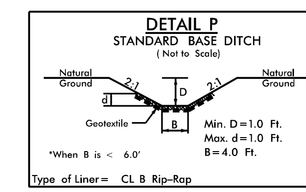
-L- STA. 107+04 TO STA. 109+50 RT

DETAIL O
BERM BASE DITCH
(Not to Scale)



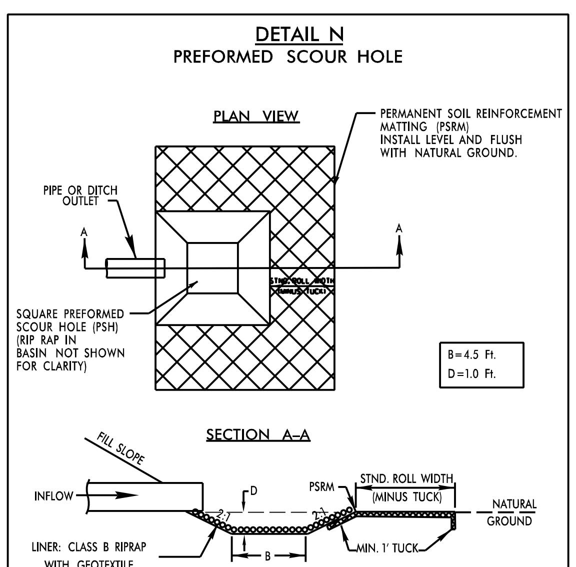
-Y12- STA. 21+25 TO STA. 22+00 RT
-L- STA. 102+00 TO STA. 102+50 LT
-L- STA. 128+50 TO STA. 129+50 LT

DETAIL P
STANDARD BASE DITCH
(Not to Scale)



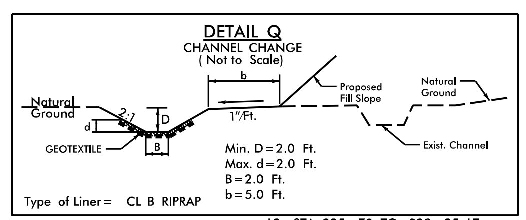
-L- STA. 140+12 RT
L=28′, S=7.071%
BEG. EL=842.00′, END EL=840.02′
-L- STA. 100+92 RT, MIN. D=0.5′
L=36′, S=12.64%, M=3
BEG. EL=861.00′, END EL=856.45′

DETAIL N
PREFORMED SCOUR HOLE



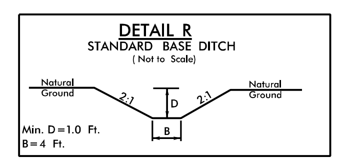
-L- STA. 252+50 LT

DETAIL Q
CHANNEL CHANGE
(Not to Scale)



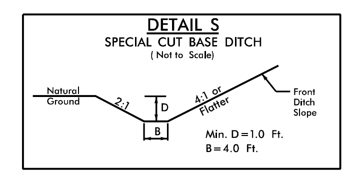
-L2- STA. 225+70 TO 229+25 LT.

DETAIL R
STANDARD BASE DITCH
(Not to Scale)



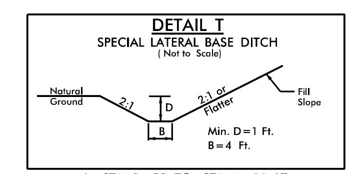
-L- STA. 106+25 RT, MIN. D=1.0′
L=25′, S=7.0%
BEG. EL=863.60′, END EL=861.85′
-Y4- STA. 12+50 LT, MIN D=1.5′
L=163′, S=1.85%
BEG. EL=927.27′, END EL=924.24′

DETAIL S
SPECIAL CUT BASE DITCH
(Not to Scale)



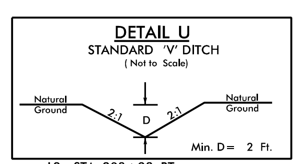
-Y11- STA. 13+00 TO STA. 14+00 LT

DETAIL T
SPECIAL LATERAL BASE DITCH
(Not to Scale)



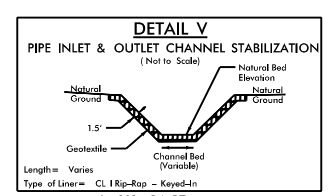
-L- STA. 3+59 TO STA. 4+00 LT

DETAIL U
STANDARD 'V' DITCH
(Not to Scale)



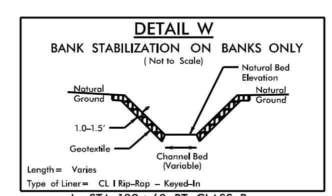
-L2- STA. 208+29 RT
L=143.89′, S=0.73%, M=4
BEG. EL= 966.90′, END EL. 965.85′
-L- STA. 285+22 RT
L=139′, S=1.8%, M=2
BEG. EL= 963.93′, END EL. 961.44′
-L2- STA. 240+47 RT
L=162′, S= 0.99%, M=3.5
BEG. EL= 962.26′, END EL. 963.88′
-L- STA. 242+08 RT
L=162′, S= 1.08%, M=5
BEG. EL= 963.88′, END EL. 963.94′
-L- STA. 243+14 RT
L=136′, S= 5.38%, M=5
BEG. EL= 968.22′, END EL. 975.53′

DETAIL V
PIPE INLET & OUTLET CHANNEL STABILIZATION
(Not to Scale)



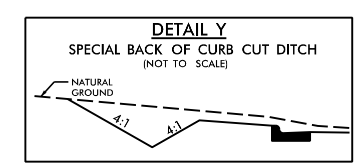
-L- 101+34 RT
-L- STA. 106+50 RT
-L- STA. 107+85 LT
-L2- STA. 228+78 RT
-L2- STA. 229+03 LT
-Y9- STA. 14+65 RT
-Y14- STA. 13+13 LT
-Y14- STA. 13+43 RT

DETAIL W
BANK STABILIZATION ON BANKS ONLY
(Not to Scale)



-L- STA. 139+63 RT; CLASS B
-L- STA. 139+86 RT
-L- STA. 140+50 LT
-L- STA. 140+75 LT; CLASS II
-L- STA. 298+07 LT

DETAIL Y
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)



-L- STA. 90+25 TO STA. 91+20 RT
-Y25- STA. 10+73 TO STA. 11+00 RT

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R:\Hydraulics\PERMITS_Environmental\Drawings\Final\R-2577A_HYD_prm_DitchDetail.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2577A	2D-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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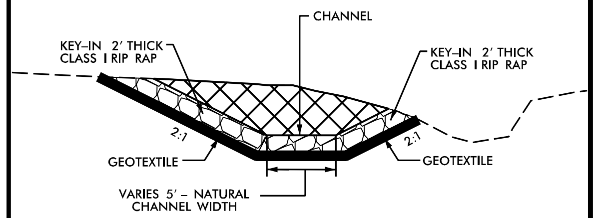
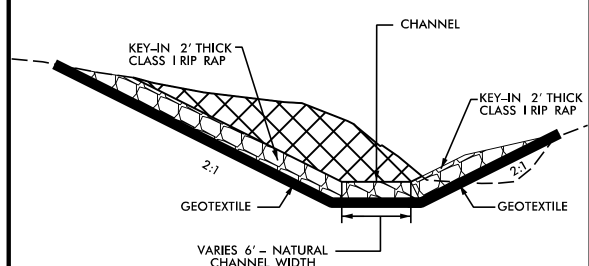
UT LOWERY MILL CREEK DETAILS
–L– 107+57



INLET CHANNEL IMPROVEMENTS

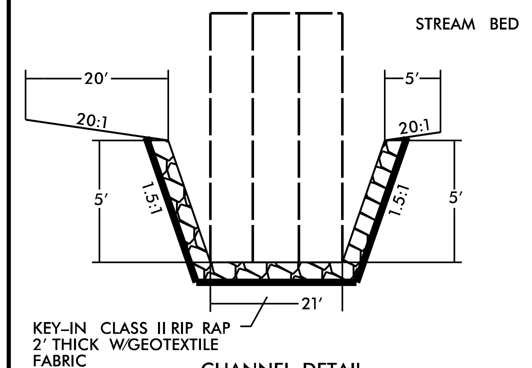
LOOKING DOWNSTREAM (NTS)
LENGTH = 25'



OUTLET CHANNEL IMPROVEMENTS

LOOKING DOWNSTREAM (NTS)
LENGTH = 70'

LOWERY MILL CREEK DETAIL
–L– 140+39.5

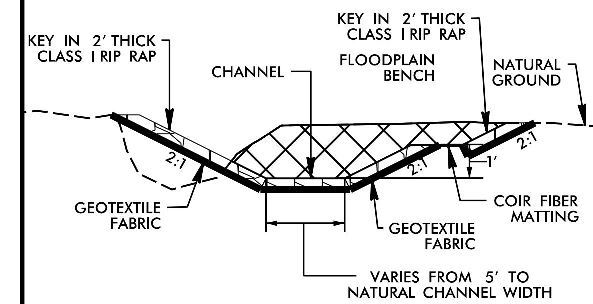


CHANNEL DETAIL

LOOKING DOWNSTREAM
LENGTH=105', SLOPE=1.33%

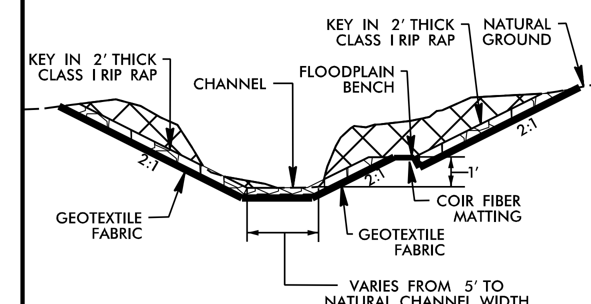
(NTS)

MARTIN MILL CREEK DETAILS
–L2– 229+09



INLET CHANNEL IMPROVEMENTS

LOOKING DOWNSTREAM (NTS)
LENGTH = 30'



OUTLET CHANNEL IMPROVEMENTS

LOOKING DOWNSTREAM (NTS)
LENGTH = 35'

ENGLISH

PERMIT DRAWING
SHEET 3 OF 23

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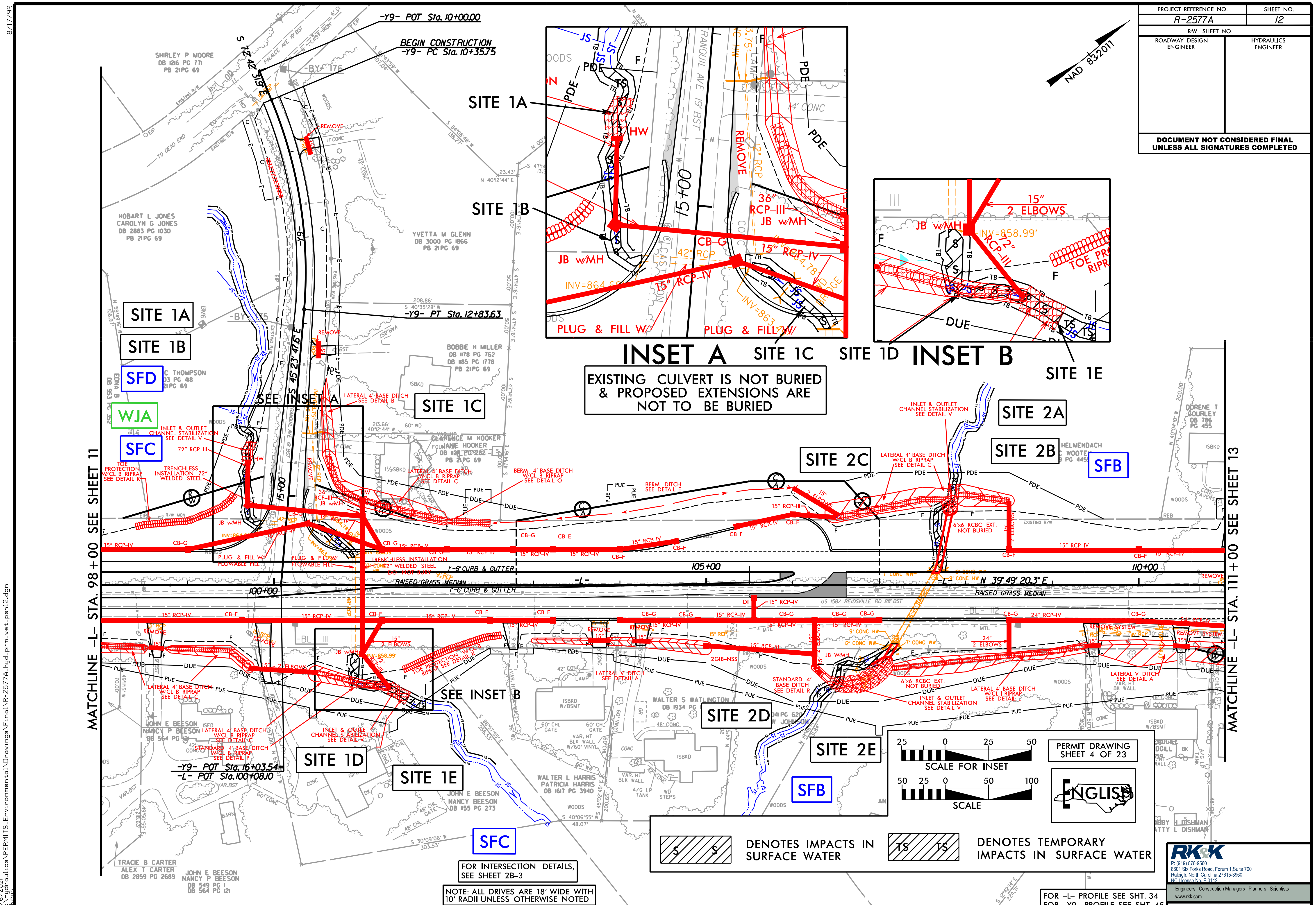
PROJECT REFERENCE NO. R-2577A
SHEET NO. 12
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
NAD 83/2011
-Y9- POT Sta. 10+00.00
BEGIN CONSTRUCTION -Y9- PC Sta. 10+35.75
-Y9- PT Sta. 12+83.63
SHIRLEY P MOORE DB 1216 PG 771 PB 21 PG 69
HOBART L JONES CAROLYN G JONES DB 2883 PG 1030 PB 21 PG 69
YVETTA M GLENN DB 3000 PG 1866 PB 21 PG 69
BOBBIE H MILLER DB 878 PG 762 DB 885 PG 1778 PB 21 PG 69
SITE 1A
SITE 1B
SITE 1C
SITE 1D
SITE 1E
SITE 2A
SITE 2B
SITE 2C
SITE 2D
SITE 2E
SFD
WJA
SFC
SFB
SEE INSET A
SEE INSET B
INSET A
INSET B
EXISTING CULVERT IS NOT BURIED & PROPOSED EXTENSIONS ARE NOT TO BE BURIED
36" RCP-III JB w/MH
15" RCP-IV
42" RCP
JB w/MH
PLUG & FILL W/
15" 2 ELBOWS
INV=858.99'
72" RCP-III
TOE PROTECTION RIPRAP
DUE
INLET & OUTLET CHANNEL STABILIZATION SEE DETAIL V
LATERAL 4' BASE DITCH SEE DETAIL B
TRENCHLESS INSTALLATION 72" WELDED STEEL
PLUG & FILL W/ FLOWABLE FILL
BERM 4' BASE DITCH W/CL B RIPRAP SEE DETAIL O
BERM DITCH SEE DETAIL E
6'x6' RCBC EXT. NOT BURIED
LATERAL 4' BASE DITCH W/CL B RIPRAP SEE DETAIL C
STANDARD 4' BASE DITCH SEE DETAIL R
LATERAL V DITCH SEE DETAIL A
1'-6" CURB & GUTTER
RAISED GRASS MEDIAN
N 39°49'20.3" E
US 158/ REIDSVILLE RD 28' BST
100+00
105+00
110+00
15+00
WALTER S WATLINGTON DB 1934 PG
WALTER L HARRIS PATRICIA HARRIS DB 1617 PG 3940
JOHN E BEESON NANCY P BEESON DB 564 PG
JOHN E BEESON NANCY BEESON DB 855 PG 273
TRACIE B CARTER ALEX T CARTER DB 2859 PG 2689
JOHN E BEESON NANCY P BEESON DB 549 PG 1 DB 564 PG 121
-Y9- POT Sta. 16+03.54= -L- POT Sta. 100+08.10
MATCHLINE -L- STA. 98+00 SEE SHEET 11
MATCHLINE -L- STA. 111+00 SEE SHEET 13
FOR INTERSECTION DETAILS, SEE SHEET 2B-3
NOTE: ALL DRIVES ARE 18' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED
SCALE FOR INSET
SCALE
PERMIT DRAWING SHEET 4 OF 23
ENGLISH
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
FOR -L- PROFILE SEE SHT. 34
FOR -Y9- PROFILE SEE SHT. 45
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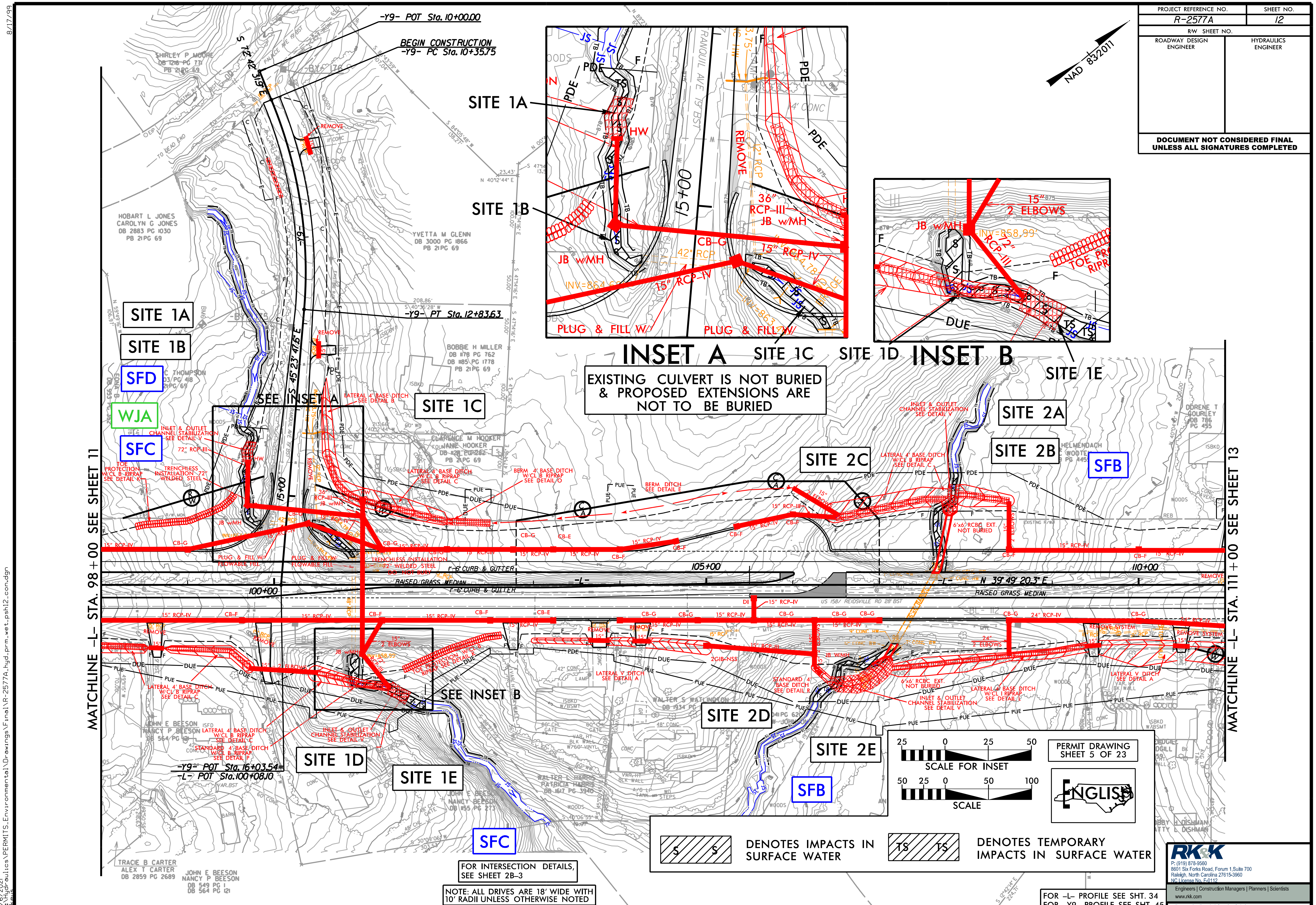
PROJECT REFERENCE NO. R-2577A
SHEET NO. 12
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
NAD 832011
-Y9- POT Sta. 10+00.00
BEGIN CONSTRUCTION -Y9- PC Sta. 10+35.75
-Y9- PT Sta. 12+83.63
-Y9- POT Sta. 16+03.54=
-L- POT Sta. 100+08.10
SITE 1A
SITE 1B
SITE 1C
SITE 1D
SITE 1E
SITE 2A
SITE 2B
SITE 2C
SITE 2D
SITE 2E
SFD
WJA
SFC
SFB
SEE INSET A
SEE INSET B
INSET A
INSET B
EXISTING CULVERT IS NOT BURIED & PROPOSED EXTENSIONS ARE NOT TO BE BURIED
MATCHLINE -L- STA. 98+00 SEE SHEET 11
MATCHLINE -L- STA. 111+00 SEE SHEET 13
SCALE FOR INSET
SCALE
PERMIT DRAWING SHEET 5 OF 23
ENGLISH
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
FOR INTERSECTION DETAILS, SEE SHEET 2B-3
NOTE: ALL DRIVES ARE 18' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED
FOR -L- PROFILE SEE SHT. 34
FOR -Y9- PROFILE SEE SHT. 45
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R-2577A	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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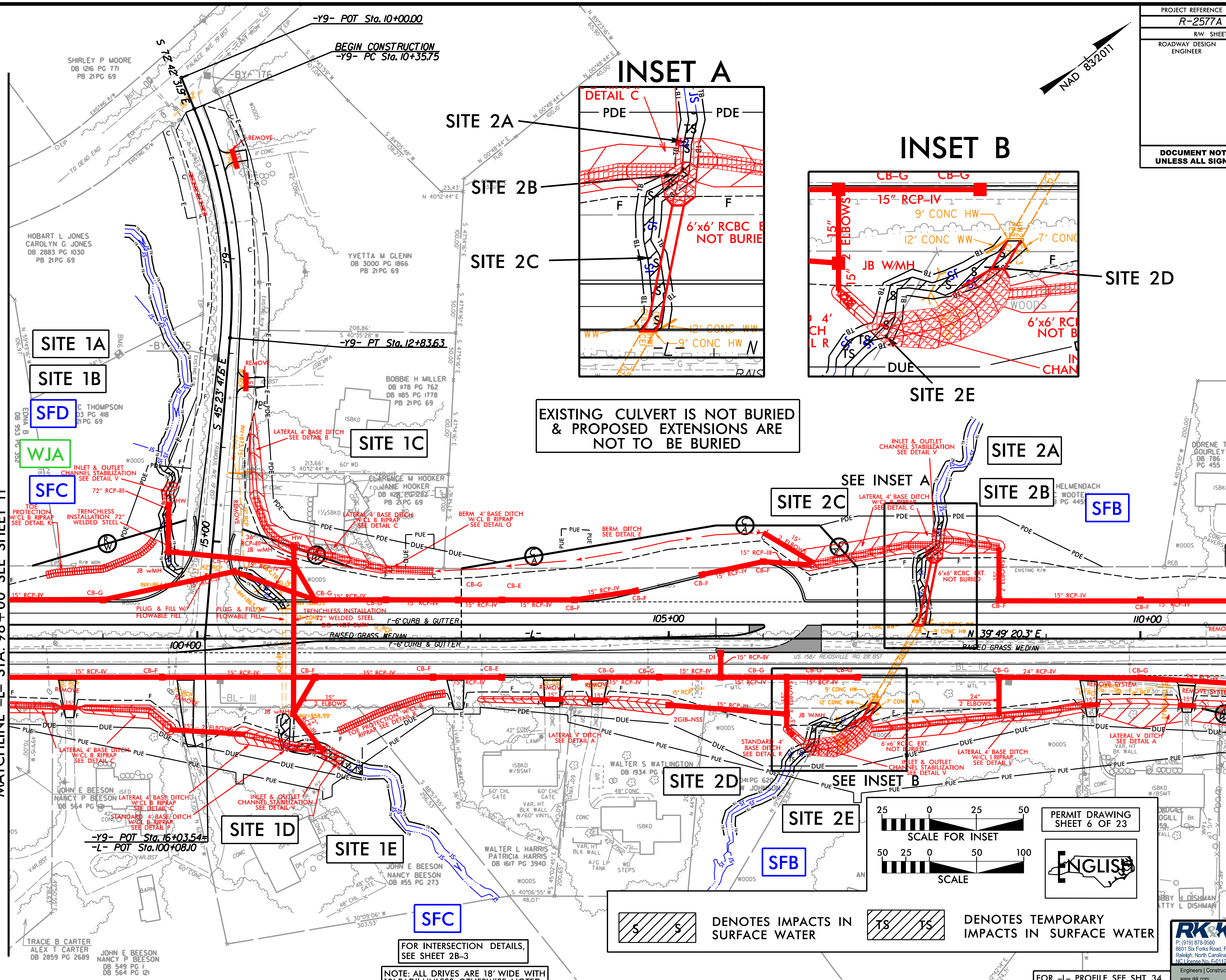

EXISTING CULVERT IS NOT BURIED & PROPOSED EXTENSIONS ARE NOT TO BE BURIED

SCALE FOR INSET: 25 0 25 50

SCALE: 50 25 0 50 100

PERMIT DRAWING SHEET 6 OF 23

ENGLISH

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

FOR INTERSECTION DETAILS, SEE SHEET 2B-3

NOTE: ALL DRIVES ARE 18' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

FOR -L- PROFILE SEE SHT. 34
FOR -Y9- PROFILE SEE SHT. 45

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PROJECT REFERENCE NO.	SHEET NO.
R-2577A	12

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

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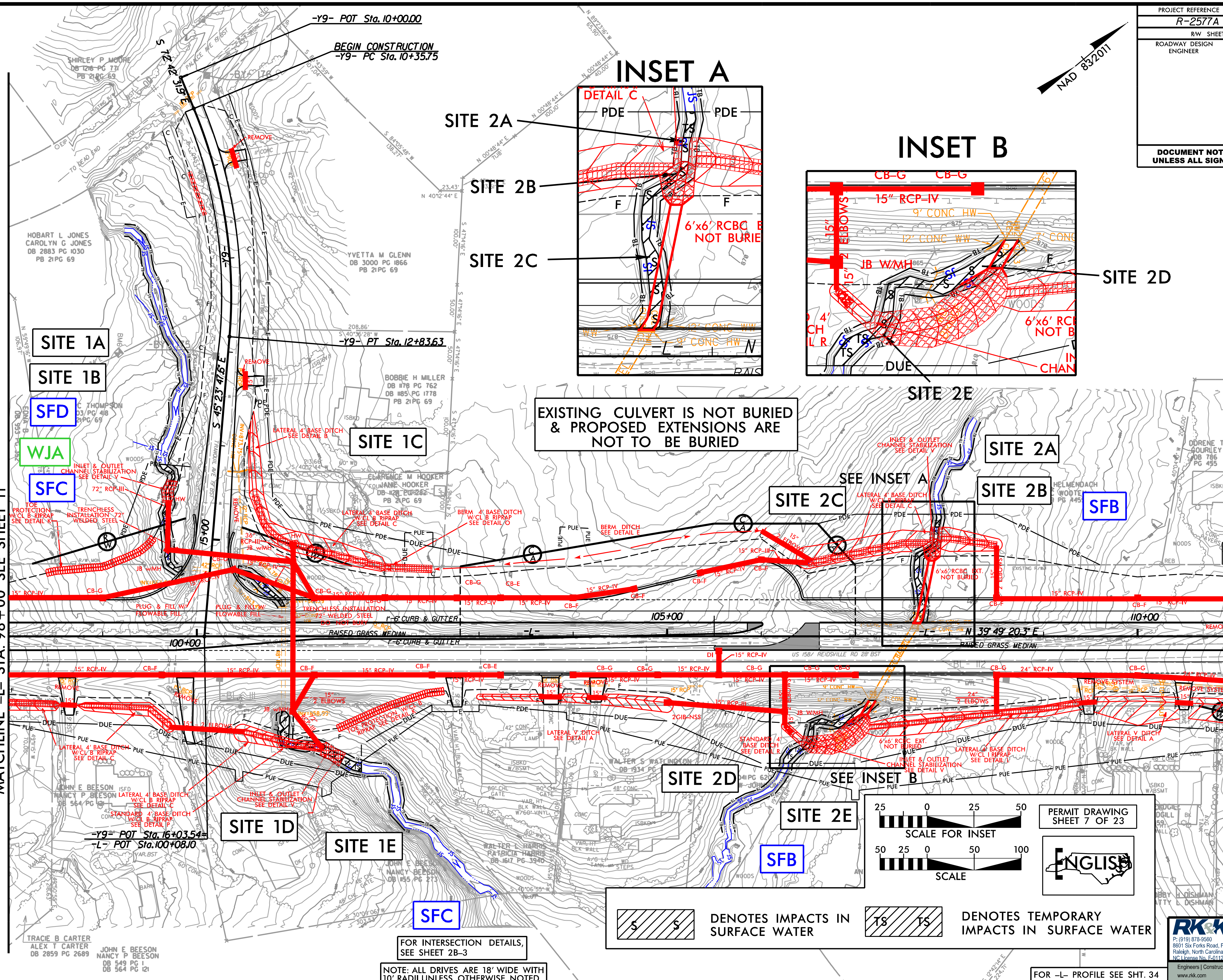

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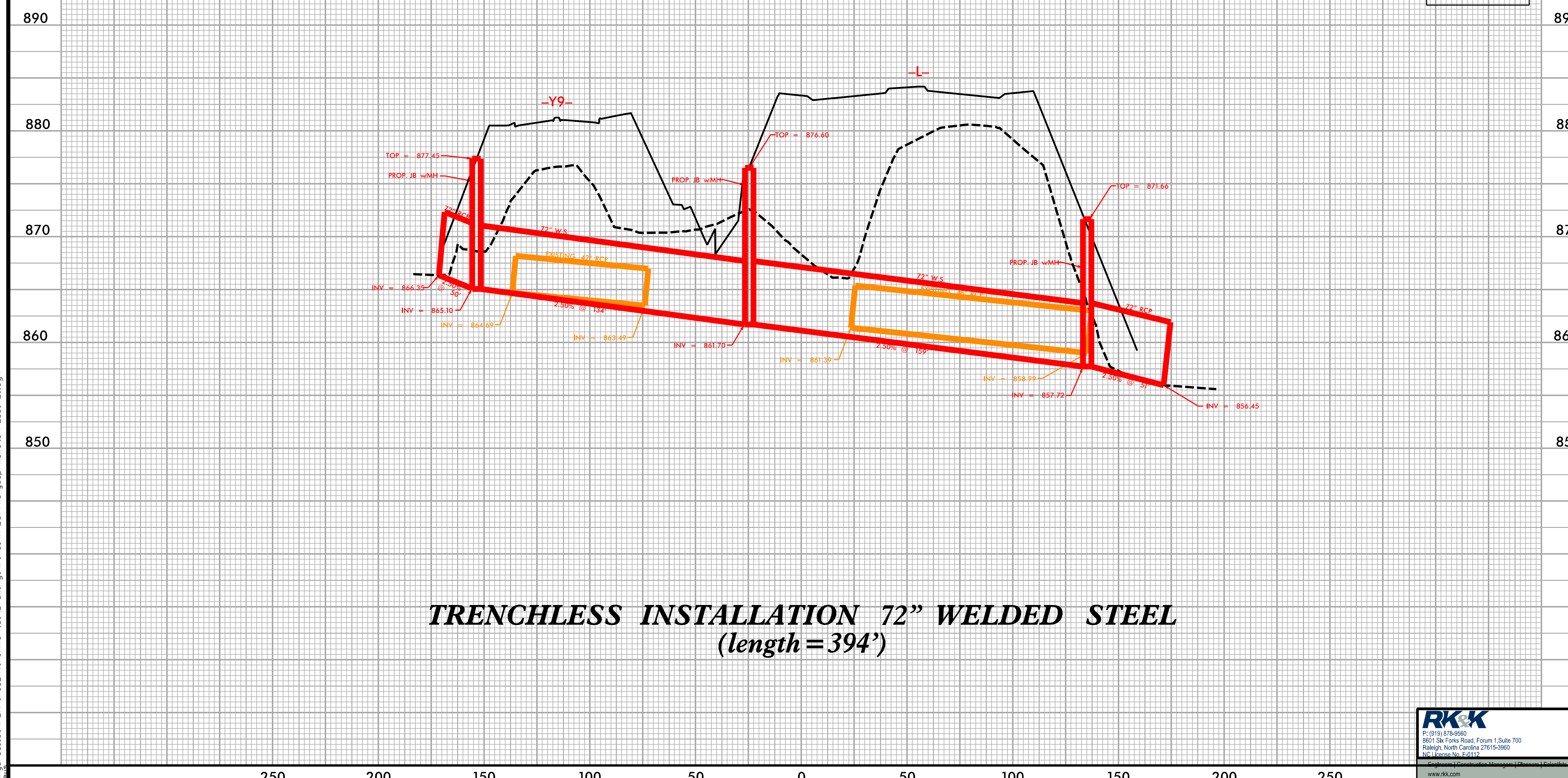
PROJECT REFERENCE NO.	SHEET NO.
R-2577A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 1
-L- STA. 101+02

PERMIT DRAWING
SHEET 8 OF 23

ENGLISH



TRENCHLESS INSTALLATION 72" WELDED STEEL
(length = 394')

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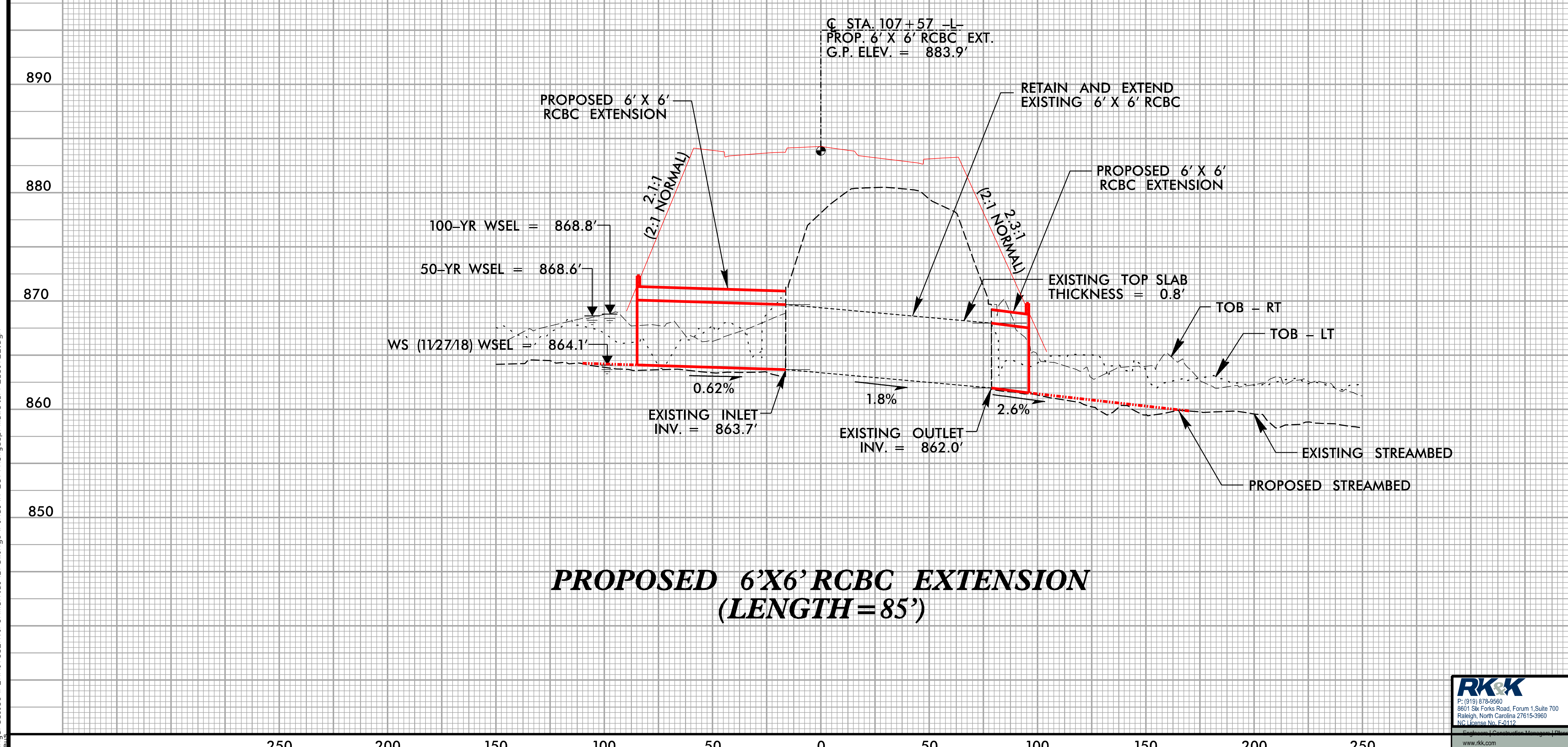
SITE 2
-L- STA. 107+57

PERMIT DRAWING
SHEET 9 OF 23

PROJECT REFERENCE NO.	SHEET NO.
R-2577A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



PROPOSED 6'X6' RCBC EXTENSION
(LENGTH=85')

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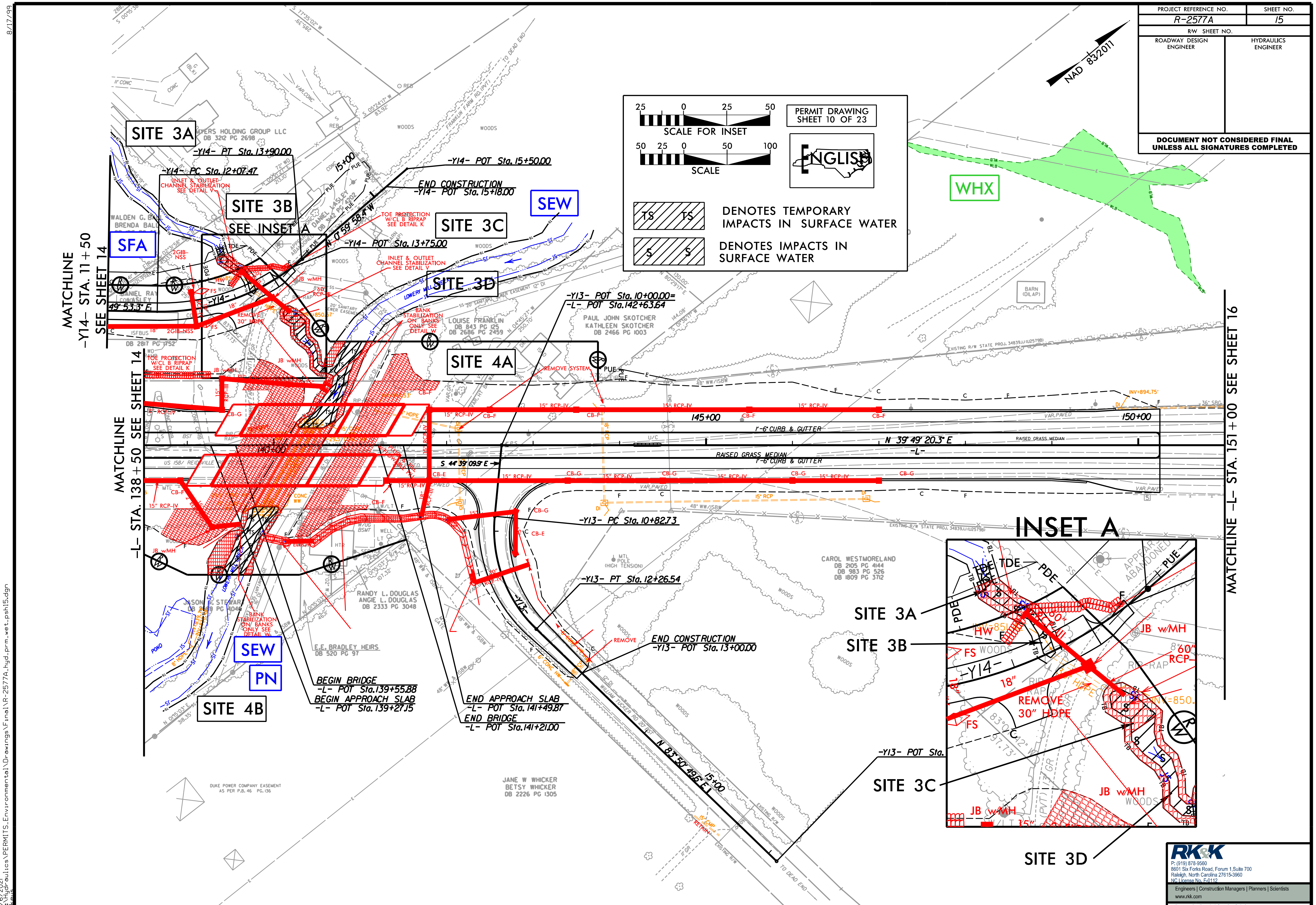
PROJECT REFERENCE NO. R-2577A
SHEET NO. 15
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
NAD 83/2011
PERMIT DRAWING SHEET 10 OF 23
SCALE FOR INSET
SCALE
ENGLISH
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
WHX
SEW
SFA
PN
SITE 3A
SITE 3B
SITE 3C
SITE 3D
SITE 4A
SITE 4B
SEE INSET A
INSET A
MATCHLINE -Y14- STA. 11+50 SEE SHEET 14
MATCHLINE -L- STA. 138+50 SEE SHEET 14
MATCHLINE -L- STA. 151+00 SEE SHEET 16
-Y14- PT Sta. 13+90.00
-Y14- PC Sta. 12+07.47
-Y14- POT Sta. 15+50.00
END CONSTRUCTION -Y14- POT Sta. 15+18.00
-Y14- POT Sta. 13+75.00
-Y13- POT Sta. 10+00.00= -L- POT Sta. 142+63.64
-Y13- PC Sta. 10+82.73
-Y13- PT Sta. 12+26.54
END CONSTRUCTION -Y13- POT Sta. 13+00.00
BEGIN BRIDGE -L- POT Sta. 139+55.88
BEGIN APPROACH SLAB -L- POT Sta. 139+27.15
END APPROACH SLAB -L- POT Sta. 141+49.87
END BRIDGE -L- POT Sta. 141+21.00
N 39° 49' 20.3" E
S 44° 39' 09.9" E
N 83° 50' 49.6" E
RAISED GRASS MEDIAN
PAUL JOHN SKOTCHER KATHLEEN SKOTCHER DB 2466 PG 1003
LOUISE FRANKLIN DB 843 PG 125 DB 2686 PG 2459
CAROL WESTMORELAND DB 2105 PG 4144 DB 983 PG 526 DB 1809 PG 3712
RANDY L. DOUGLAS ANGIE L. DOUGLAS DB 2333 PG 3048
E.E. BRADLEY HEIRS DB 520 PG 97
JANE W WHICKER BETSY WHICKER DB 2226 PG 1305
DUKE POWER COMPANY EASEMENT AS PER P.B. 46 PG. 136
TOE PROTECTION W/CL B RIPRAP SEE DETAIL K
INLET & OUTLET CHANNEL STABILIZATION SEE DETAIL V
BANK STABILIZATION ON BANKS ONLY SEE DETAIL W
REMOVE 30" HDPE
REMOVE SYSTEM
JB w/MH
RK&K
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PROJECT REFERENCE NO.	SHEET NO.
R-2577A	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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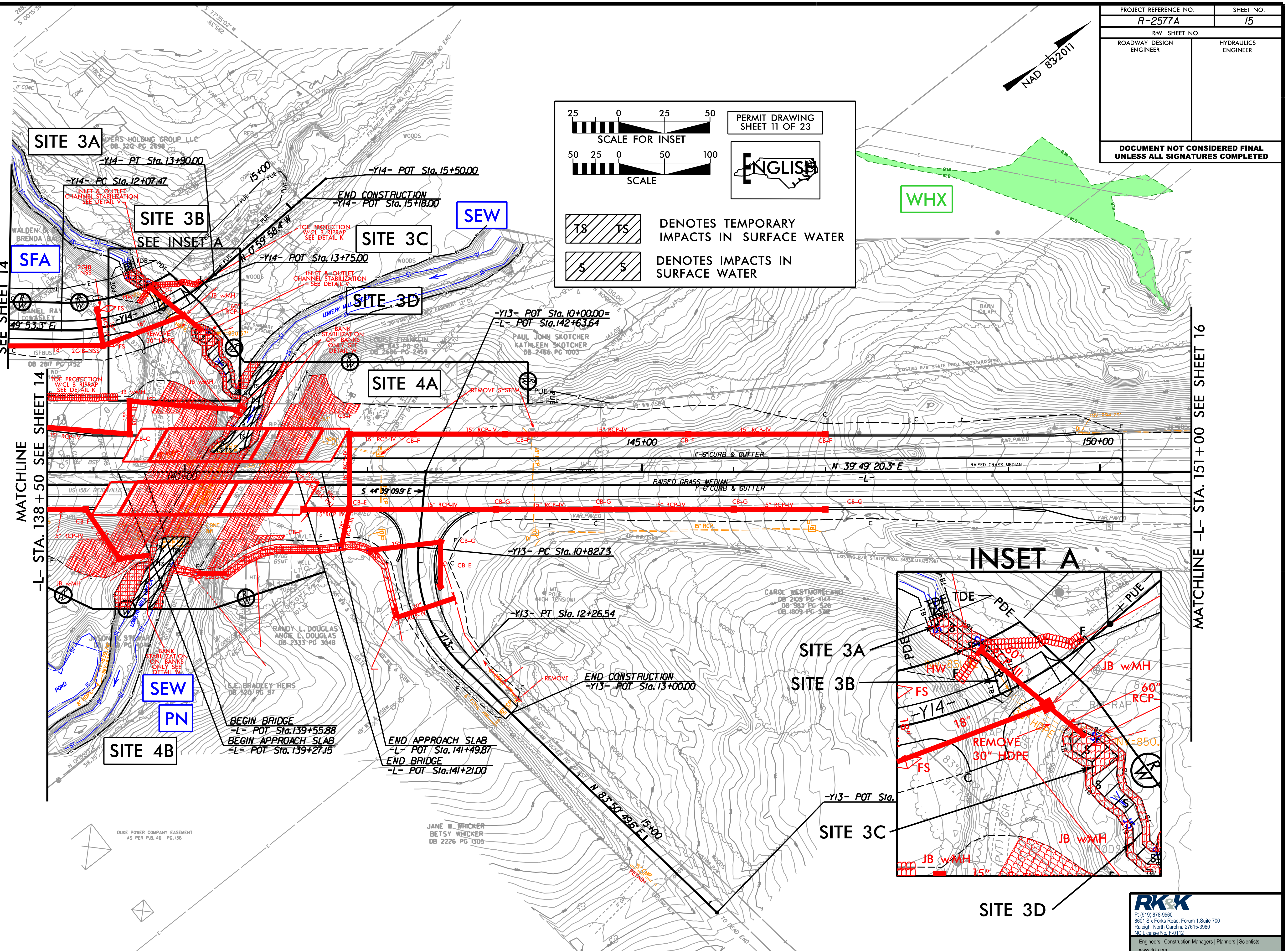

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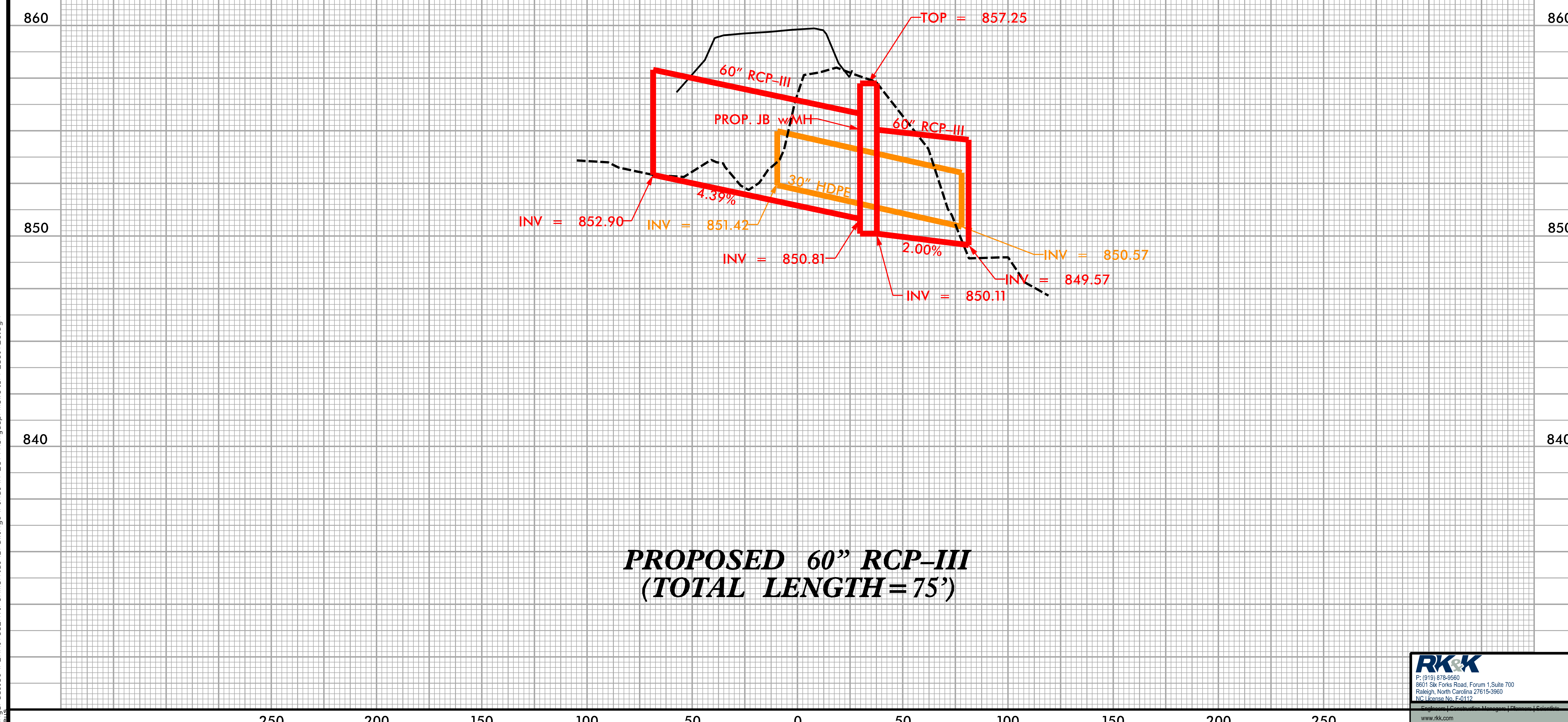
PROJECT REFERENCE NO.	SHEET NO.
R-2577A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 3
-Y14- STA. 13+25

PERMIT DRAWING
SHEET 12 OF 23

ENGLISH



PROPOSED 60" RCP-III
(TOTAL LENGTH=75')

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-L-

PROJECT REFERENCE NO.	SHEET NO.
R-2577A	35
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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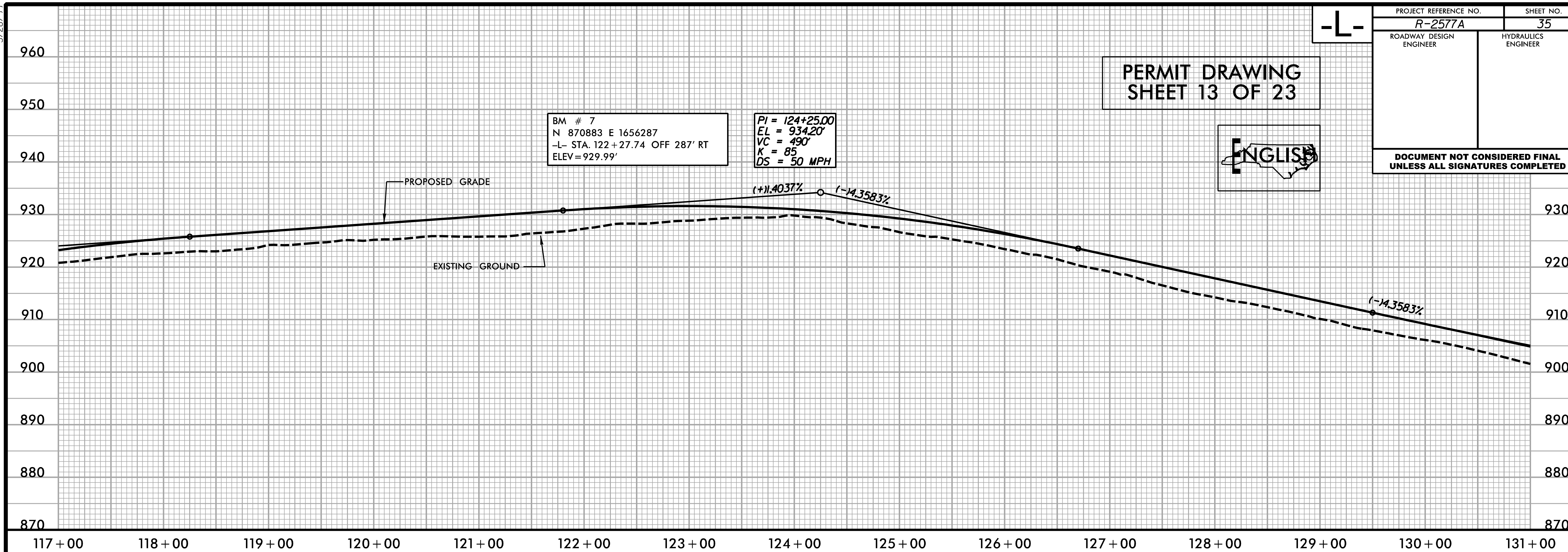
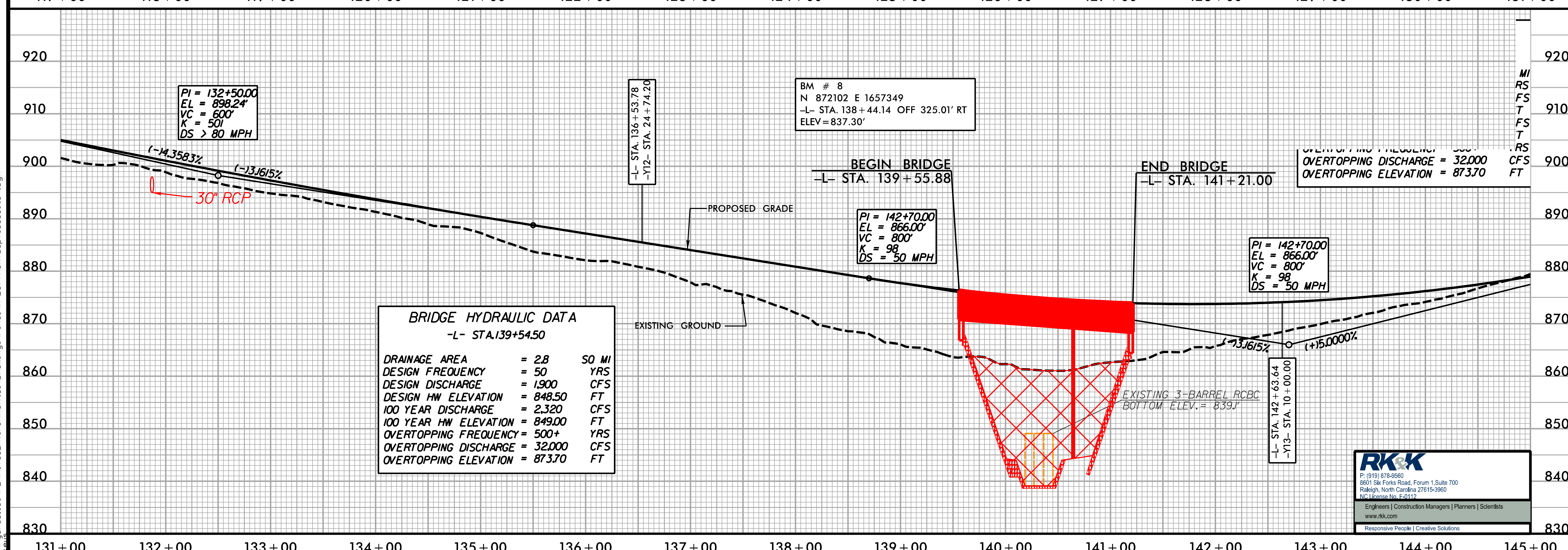
PERMIT DRAWING SHEET 13 OF 23

ENGLISH





BRIDGE HYDRAULIC DATA

-L- STA.139+54.50

DRAINAGE AREA	=	2.8	SQ MI
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	1,900	CFS
DESIGN HW ELEVATION	=	848.50	FT
100 YEAR DISCHARGE	=	2,320	CFS
100 YEAR HW ELEVATION	=	849.00	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	32,000	CFS
OVERTOPPING ELEVATION	=	873.70	FT

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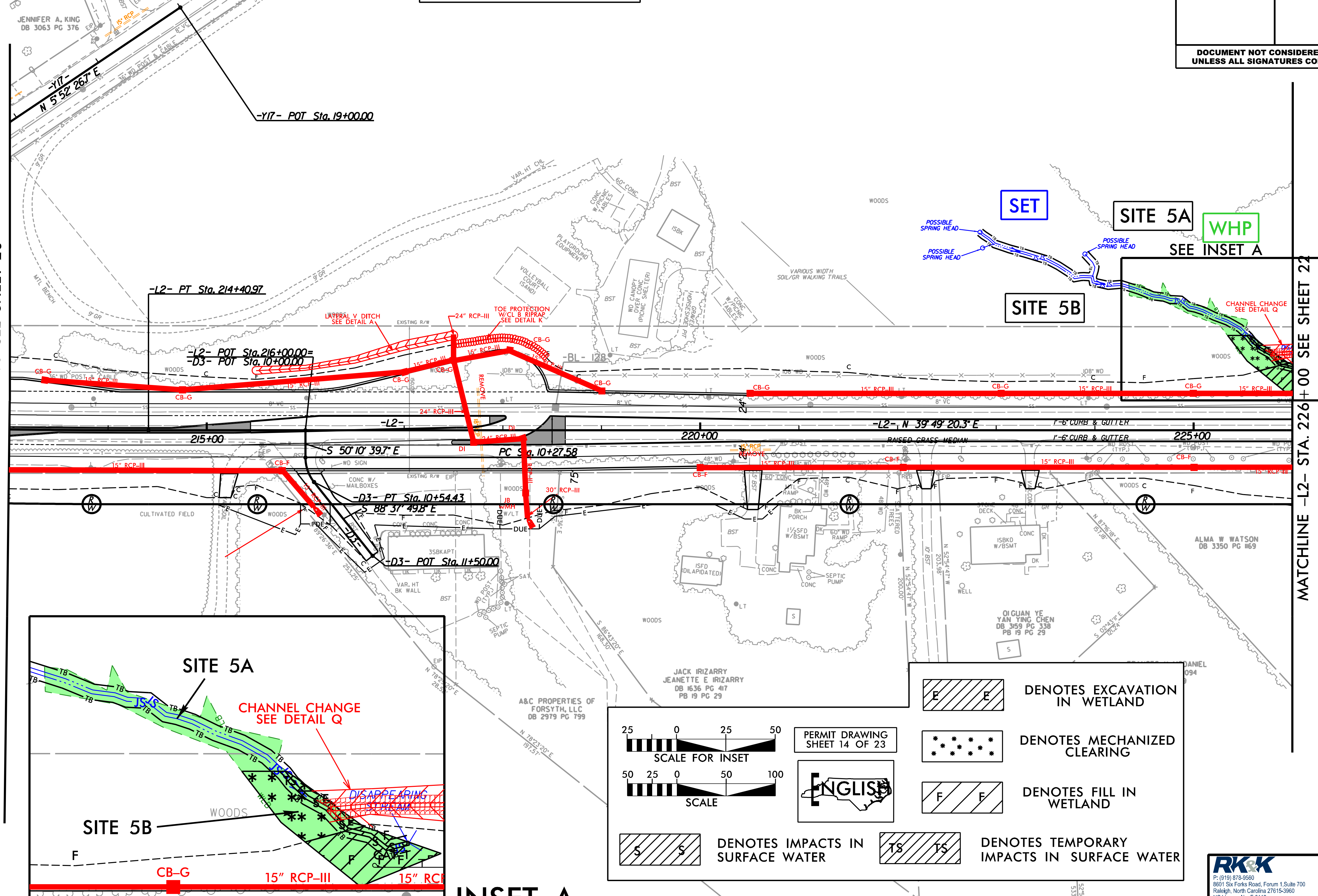
PROJECT REFERENCE NO.	SHEET NO.
R-2577A	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L2-	-D3-
PI Sta 211+91.50	PI Sta 10+41.53
Δ = 2° 29' 10.3" (LT)	Δ = 38° 27' 10.1" (LT)
D = 0° 29' 53.6"	D = 143° 14' 22.0"
L = 499.01'	L = 26.85'
T = 249.55'	T = 13.95'
R = 11,500.00'	R = 40.00'
SE = NC	
DS = 50 MPH	



INSET A

SCALE FOR INSET: 25 0 25 50

SCALE: 50 25 0 50 100

PERMIT DRAWING
SHEET 14 OF 23

ENGLISH

Symbol	Meaning
E / E hatch	DENOTES EXCAVATION IN WETLAND
* * *	DENOTES MECHANIZED CLEARING
F / F hatch	DENOTES FILL IN WETLAND
S / S hatch	DENOTES IMPACTS IN SURFACE WATER
TS / TS hatch	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NOTE: ALL DRIVEWAYS ARE 18' UNLESS OTHERWISE NOTED

FOR -L2- PROFILE SEE SHTS. 38-39
FOR -D3- PROFILE SEE SHT. 50

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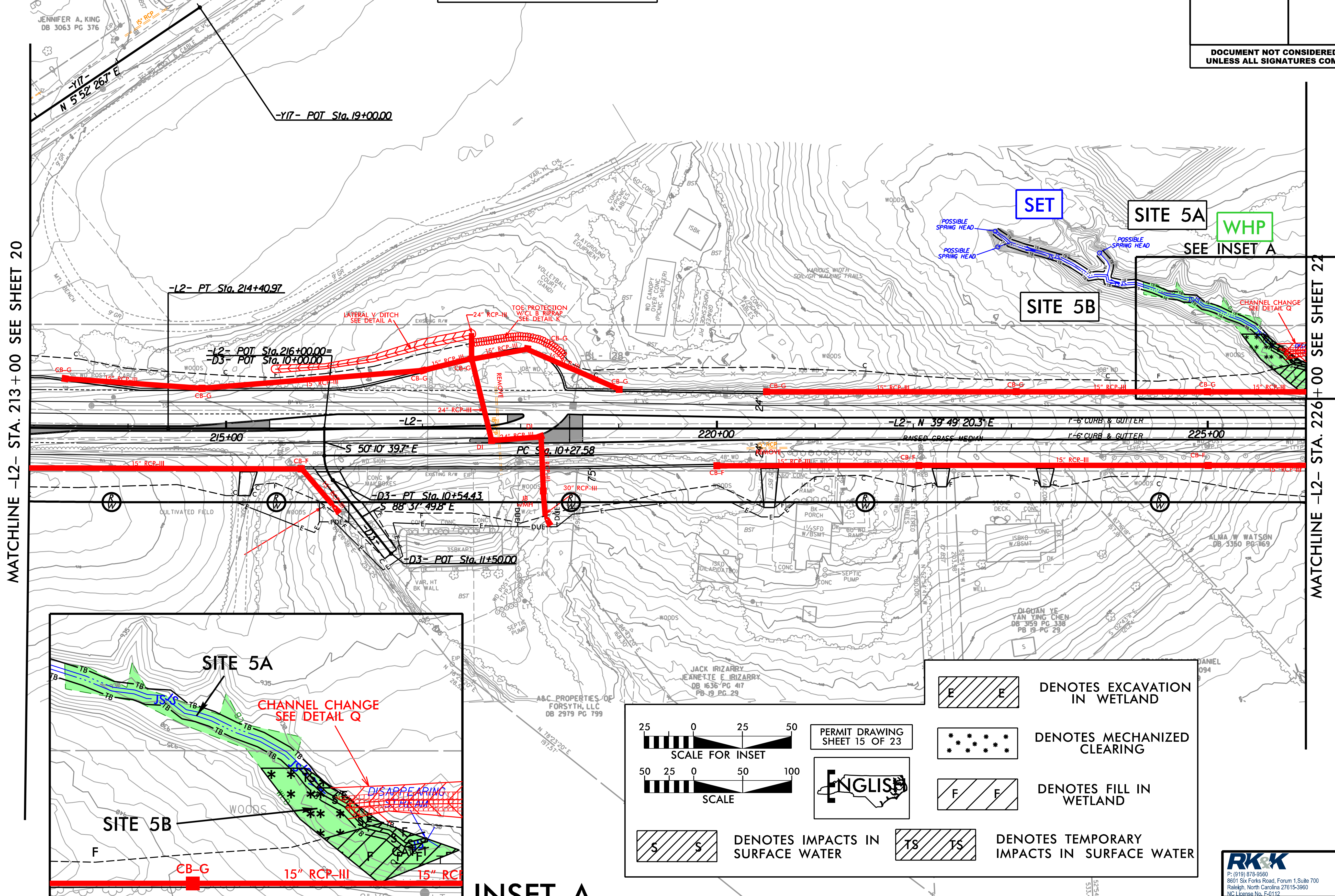

-L2-	-D3-
PI Sta 211+91.50	PI Sta 10+41.53
Δ = 2° 29' 10.3" (LT)	Δ = 38° 27' 10.1" (LT)
D = 0° 29' 53.6"	D = 143° 14' 22.0"
L = 499.01'	L = 26.85'
T = 249.55'	T = 13.95'
R = 11,500.00'	R = 40.00'
SE = NC	
DS = 50 MPH	

PROJECT REFERENCE NO.	SHEET NO.
R-2577A	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 15 OF 23

SCALE FOR INSET (25 0 25 50)

SCALE (50 25 0 50 100)

ENGLISH

- E E — DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING
- F F — DENOTES FILL IN WETLAND
- S S — DENOTES IMPACTS IN SURFACE WATER
- TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NOTE: ALL DRIVEWAYS ARE 18' UNLESS OTHERWISE NOTED

FOR -L2- PROFILE SEE SHTS. 38-39
FOR -D3- PROFILE SEE SHT. 50

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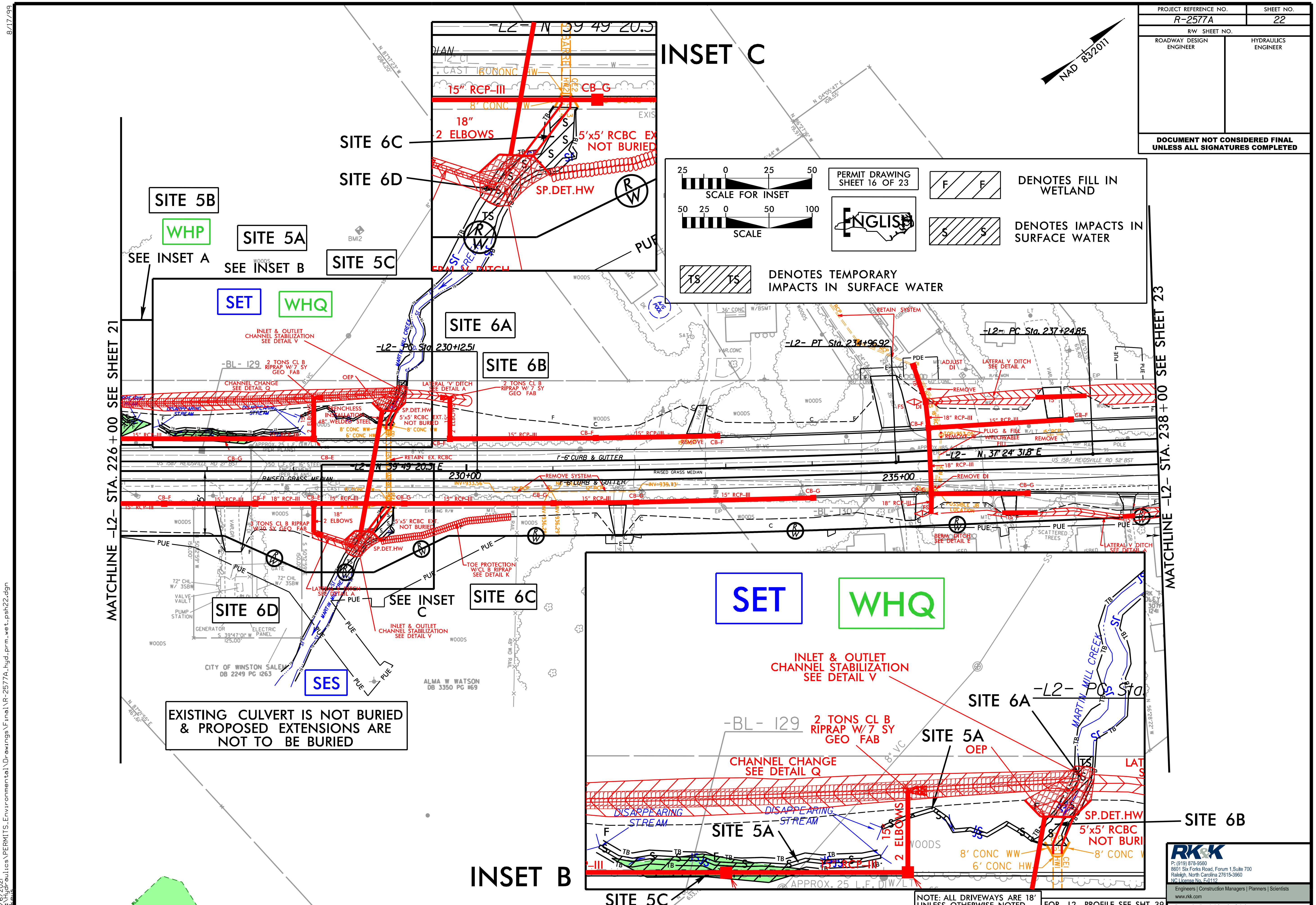
PROJECT REFERENCE NO. R-2577A
SHEET NO. 22
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
NAD 83/2011
INSET C
SITE 6C
SITE 6D
SITE 5B
WHP
SEE INSET A
SITE 5A
SEE INSET B
SITE 5C
SET
WHQ
SITE 6A
SITE 6B
SCALE FOR INSET
SCALE
PERMIT DRAWING SHEET 16 OF 23
ENGLISH
DENOTES FILL IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
MATCHLINE -L2- STA. 226+00 SEE SHEET 21
MATCHLINE -L2- STA. 238+00 SEE SHEET 23
-L2- PC Sta. 230+12.51
-L2- PT Sta. 234+96.92
-L2- PC Sta. 237+24.85
-L2- N 59°49' 20.5" E
-L2- N 37°24' 31.8" E
230+00
235+00
15" RCP-III
18" 2 ELBOWS
5'x5' RCBC EXT. NOT BURIED
SP.DET.HW
INLET & OUTLET CHANNEL STABILIZATION SEE DETAIL V
2 TONS CL B RIPRAP W/ 7 SY GEO FAB
CHANNEL CHANGE SEE DETAIL Q
DISAPPEARING STREAM
LATERAL 'V' DITCH SEE DETAIL A
TOE PROTECTION W/CL B RIPRAP SEE DETAIL K
SEE INSET C
SES
CITY OF WINSTON SALEM DB 2249 PG 1263
ALMA W WATSON DB 3350 PG 869
EXISTING CULVERT IS NOT BURIED & PROPOSED EXTENSIONS ARE NOT TO BE BURIED
INSET B
OEP
8' CONC WW
6' CONC HW
NOTE: ALL DRIVEWAYS ARE 18' UNLESS OTHERWISE NOTED
FOR -L2- PROFILE SEE SHT. 39
RK&K
8601 Six Forks Road, Forum 1, Suite 700 Raleigh, North Carolina 27615-3960
Engineers | Construction Managers | Planners | Scientists
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8/17/99
5/6/2021
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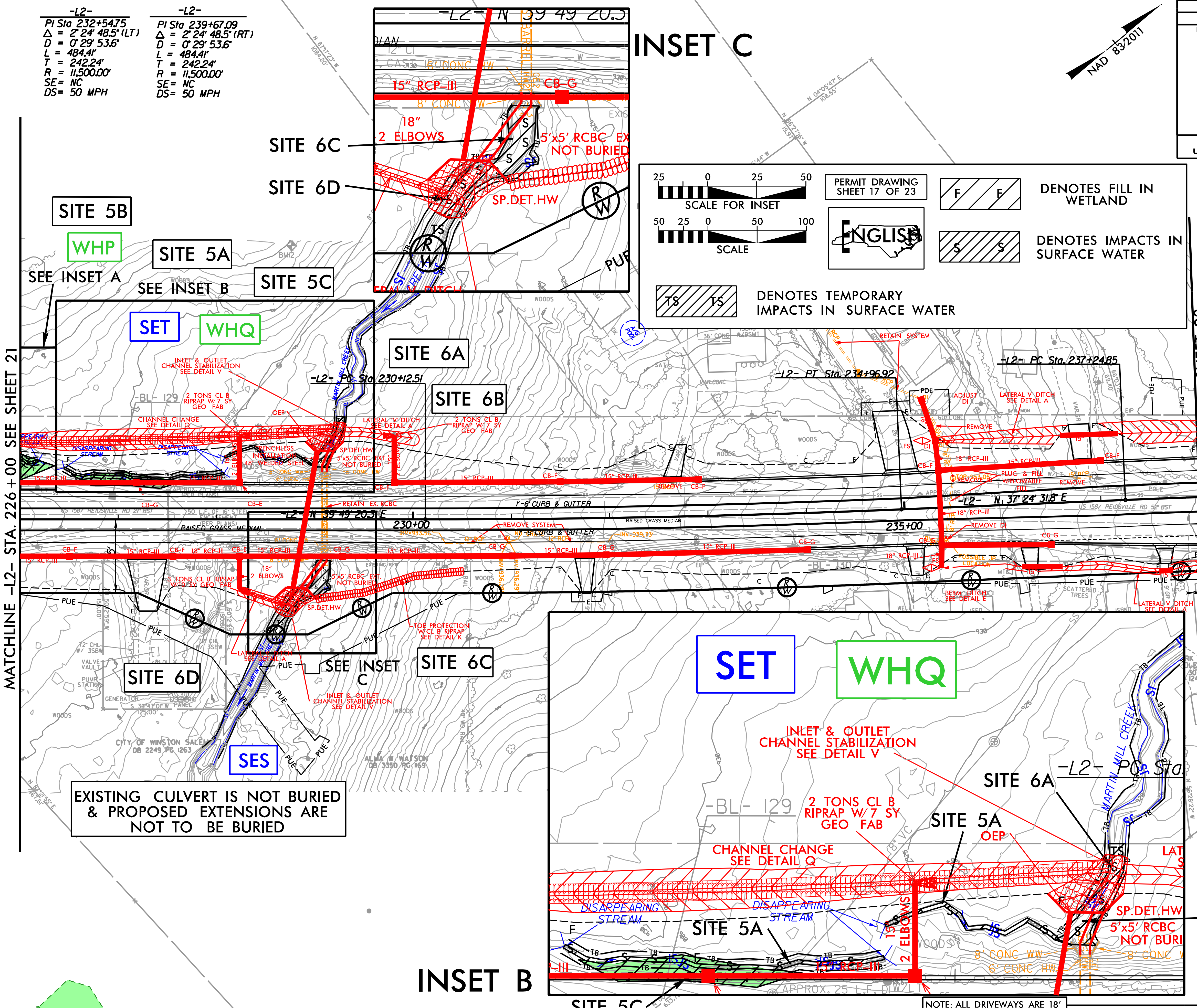
PROJECT REFERENCE NO.	SHEET NO.
R-2577A	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011



25 0 25 50 SCALE FOR INSET	PERMIT DRAWING SHEET 17 OF 23
50 25 0 50 100 SCALE	ENGLISH
F F	DENOTES FILL IN WETLAND
S S	DENOTES IMPACTS IN SURFACE WATER
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NOTE: ALL DRIVEWAYS ARE 18' UNLESS OTHERWISE NOTED

FOR -L2- PROFILE SEE SHT. 39

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
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5/6/2021
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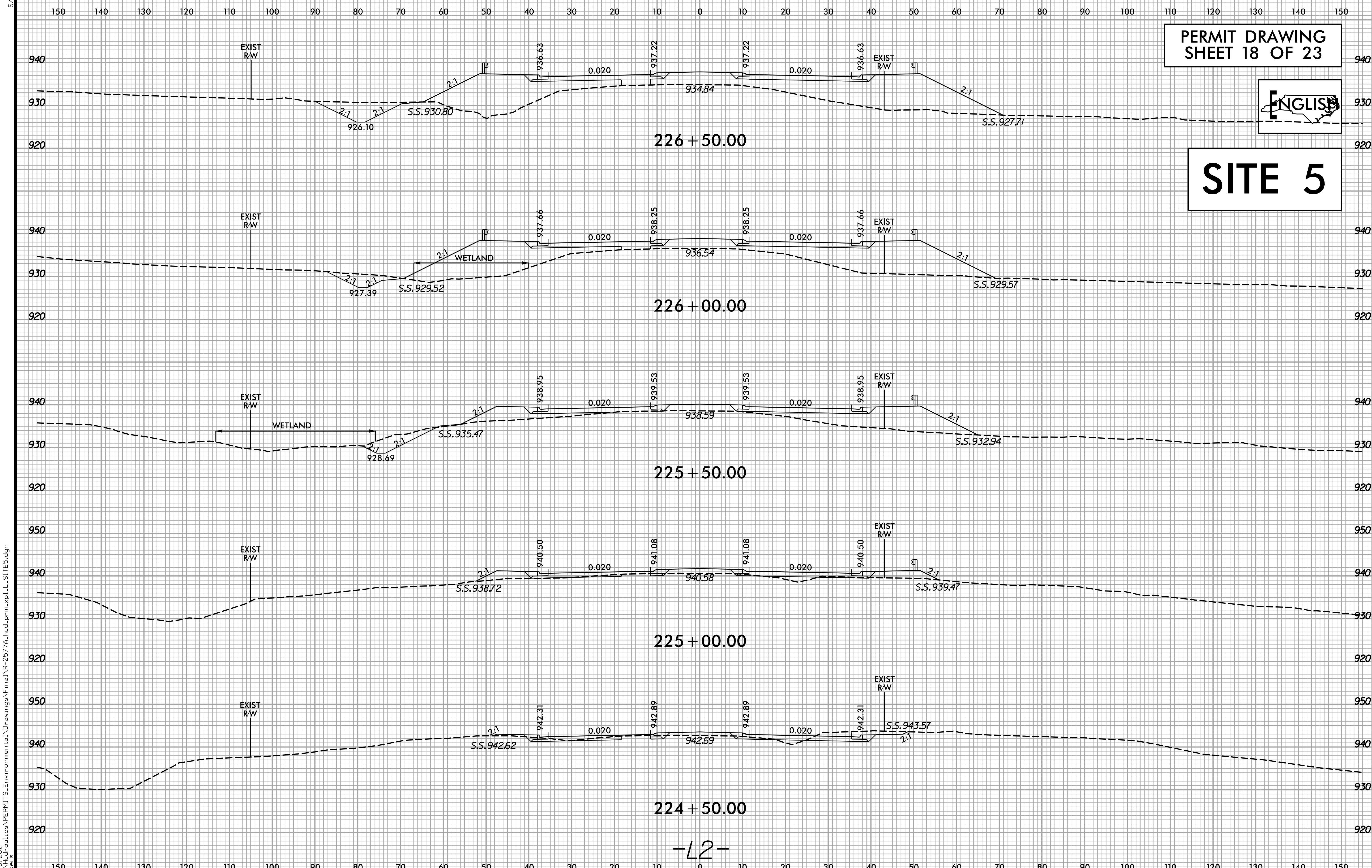
PROJ. REFERENCE NO.	SHEET NO.
R-2577A	X-195

PERMIT DRAWING
SHEET 18 OF 23

SITE 5



6/23/16

5/6/2021
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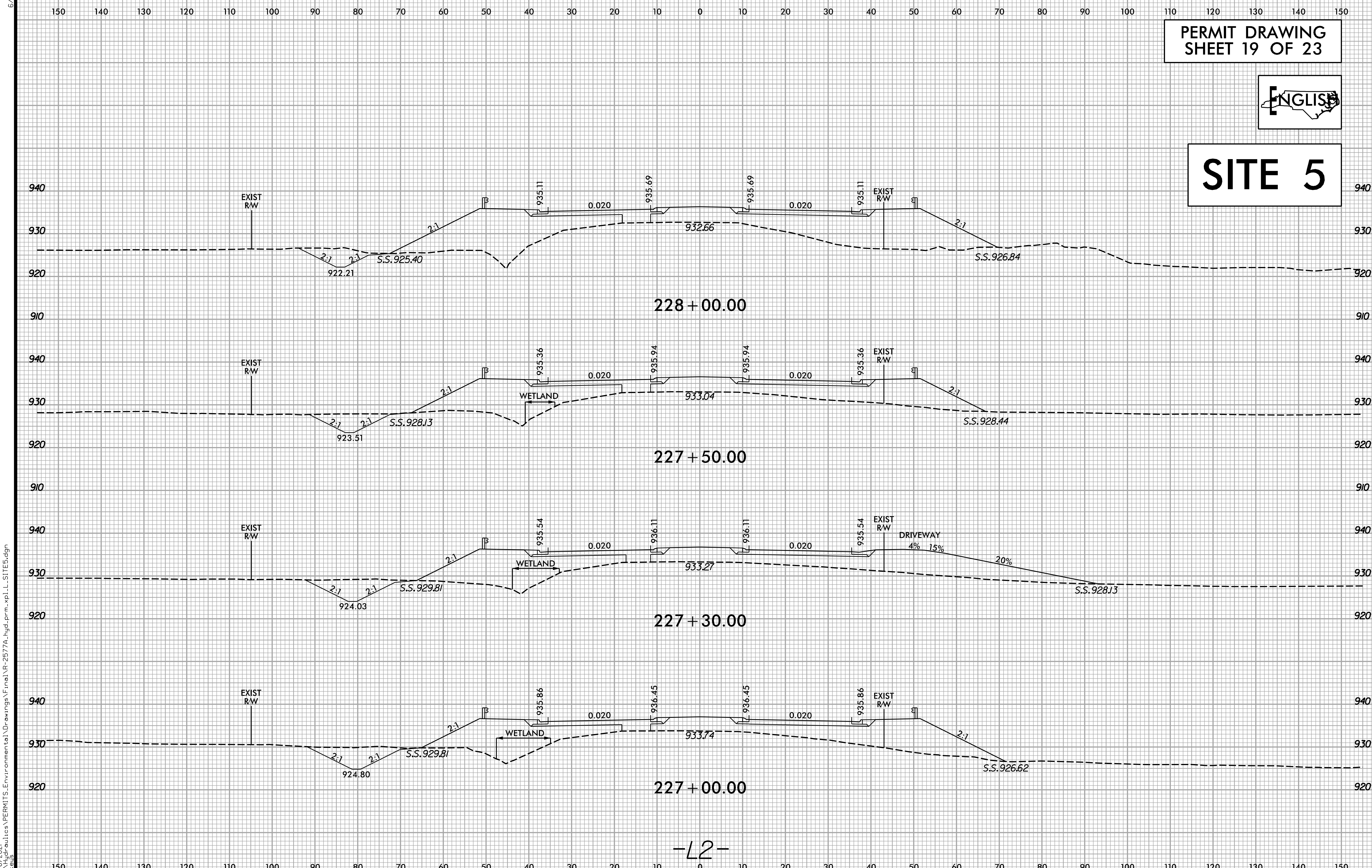
rkeys

PROJ. REFERENCE NO.	SHEET NO.
R-2577A	X-196

PERMIT DRAWING
SHEET 19 OF 23

SITE 5



6/23/16
5/6/2021
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rkeys

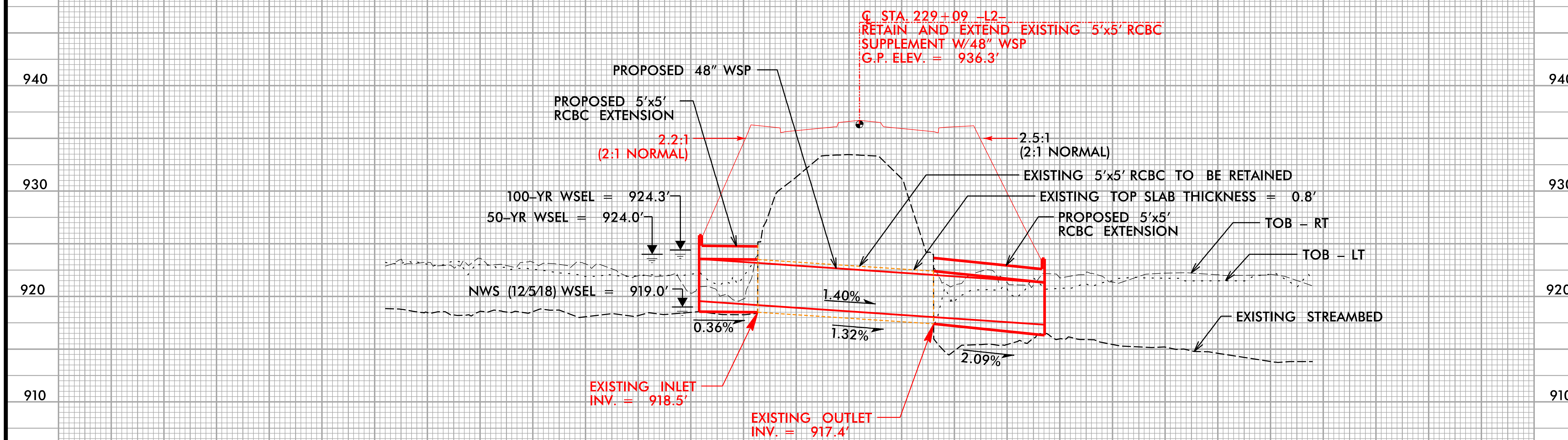
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2577A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 6
-L- STA. 229+09

PERMIT DRAWING
SHEET 20 OF 23

ENGLISH



PROPOSED 5'X 5' RCBC EXTENSION
(LENGTH=65')
PROPOSED 48" WS
(LENGTH=142')

250 200 150 100 50 0 50 100 150 200 250

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

5/6/2021
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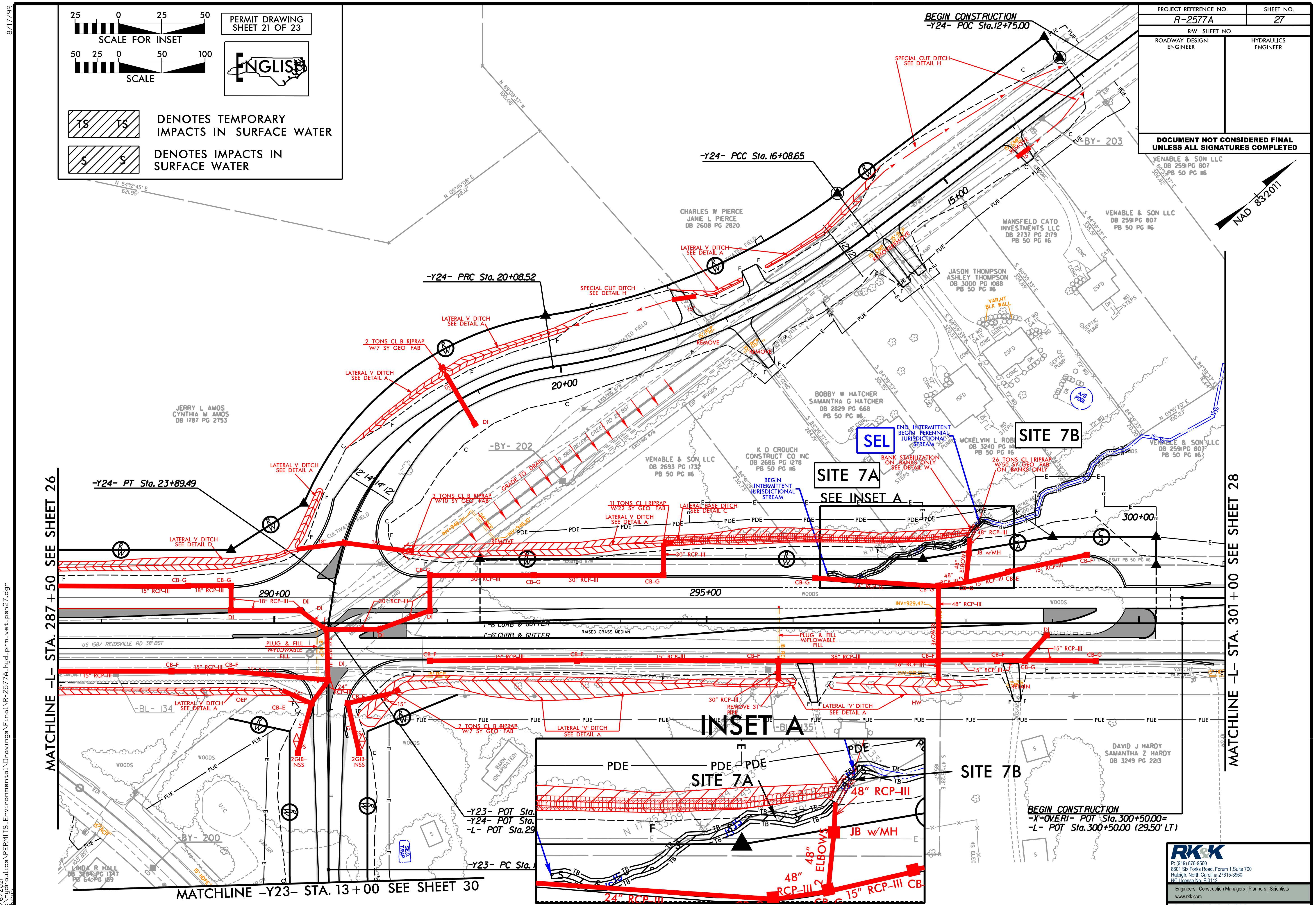

PERMIT DRAWING SHEET 21 OF 23
SCALE FOR INSET
SCALE
ENGLISH
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
PROJECT REFERENCE NO. R-2577A
SHEET NO. 27
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
NAD 83/2011
BEGIN CONSTRUCTION -Y24- POC Sta.12+75.00
-Y24- PCC Sta. 16+08.65
-Y24- PRC Sta. 20+08.52
-Y24- PT Sta. 23+89.49
CHARLES W PIERCE JANIE L PIERCE DB 2608 PG 2820
VENABLE & SON LLC DB 2591 PG 807 PB 50 PG 116
MANSFIELD CATO INVESTMENTS LLC DB 2737 PG 2179 PB 50 PG 116
JASON THOMPSON ASHLEY THOMPSON DB 3000 PG 1088 PB 50 PG 116
BOBBY W HATCHER SAMANTHA G HATCHER DB 2829 PG 668 PB 50 PG 116
JERRY L AMOS CYNTHIA M AMOS DB 1787 PG 2753
K D CROUCH CONSTRUCT CO INC DB 2686 PG 1278 PB 50 PG 116
VENABLE & SON LLC DB 2693 PG 1732 PB 50 PG 116
DAVID J HARDY SAMANTHA Z HARDY DB 3249 PG 2213
LINDA R HALL DB 3264 PG 1747 PB 64 PG 159
SPECIAL CUT DITCH SEE DETAIL H
LATERAL V DITCH SEE DETAIL A
2 TONS CL B RIPRAP W/7 SY GEO FAB
3 TONS CL B RIPRAP W/10 SY GEO FAB
11 TONS CL I RIPRAP W/22 SY GEO FAB
26 TONS CL I RIPRAP W/50 SY GEO FAB ON BANKS ONLY
LATERAL BASE DITCH SEE DETAIL C
LATERAL V DITCH SEE DETAIL D
END INTERMITTENT BEGIN PERENNIAL JURISDICTIONAL STREAM
BEGIN INTERMITTENT JURISDICTIONAL STREAM
BANK STABILIZATION ON BANKS ONLY SEE DETAIL W
SEL
SITE 7A
SITE 7B
SEE INSET A
GRADE TO DRAIN
20+00
15+00
290+00
295+00
300+00
-BY- 202
-BY- 203
-BY- 200
-BL- 134
US 158/ REIDSVILLE RD 38' BST
RAISED GRASS MEDIAN
PLUG & FILL W/FLOWABLE FILL
REMOVE 31" PIPE
48" RCP-III
JB w/MH
48" ELBOWS
24" RCP-III
15" RCP-III
30" RCP-III
36" RCP-III
INSET A
BEGIN CONSTRUCTION -X-OVERI- POT Sta.300+50.00= -L- POT Sta.300+50.00 (29.50' LT)
-Y23- POT Sta.
-Y24- POT Sta.
-L- POT Sta.29
-Y23- PC Sta.
MATCHLINE -L- STA. 287+50 SEE SHEET 26
MATCHLINE -L- STA. 301+00 SEE SHEET 28
MATCHLINE -Y23- STA. 13+00 SEE SHEET 30
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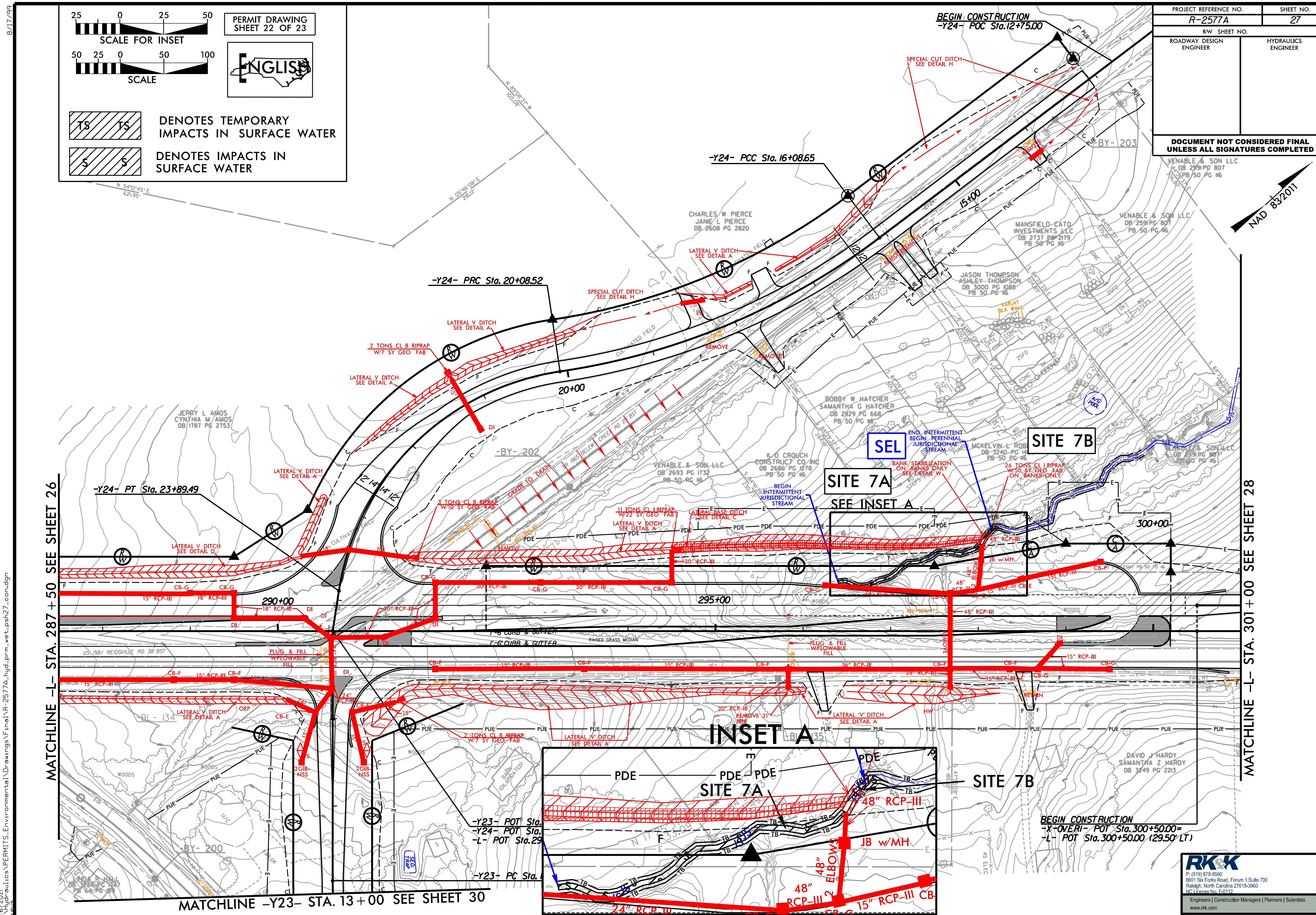

PERMIT DRAWING
SHEET 22 OF 23
SCALE FOR INSET
SCALE
ENGLISH
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
PROJECT REFERENCE NO.
R-2577A
SHEET NO.
27
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
BEGIN CONSTRUCTION
-Y24- POC Sta.12+75.00
-Y24- PCC Sta. 16+08.65
-Y24- PRC Sta. 20+08.52
-Y24- PT Sta. 23+89.49
NAD 83/2011
SITE 7A
SITE 7B
SEL
SEE INSET A
INSET A
END INTERMITTENT BEGIN PERENNIAL JURISDICTIONAL STREAM
BEGIN INTERMITTENT JURISDICTIONAL STREAM
BANK STABILIZATION ON BANKS ONLY SEE DETAIL W
26 TONS CL I RIPRAP W/50 SY GEO FAB ON BANKS ONLY
11 TONS CL I RIPRAP W/22 SY GEO FAB
3 TONS CL B RIPRAP W/10 SY GEO FAB
2 TONS CL B RIPRAP W/7 SY GEO FAB
LATERAL V DITCH SEE DETAIL A
SPECIAL CUT DITCH SEE DETAIL H
LATERAL BASE DITCH SEE DETAIL C
LATERAL V DITCH SEE DETAIL D
PLUG & FILL W/FLOWABLE FILL
REMOVE 31' PIPE
JB w/MH
48" RCP-III
48" ELBOWS
36" RCP-III
30" RCP-III
24" RCP-III
18" RCP-III
15" RCP-III
290+00
295+00
300+00
20+00
15+00
BEGIN CONSTRUCTION
-X-OVERI- POT Sta.300+50.00=
-L- POT Sta.300+50.00 (29.50' LT)
-Y23- POT Sta.
-Y24- POT Sta.
-L- POT Sta.29
-Y23- PC Sta.
MATCHLINE -L- STA. 287+50 SEE SHEET 26
MATCHLINE -L- STA. 301+00 SEE SHEET 28
MATCHLINE -Y23- STA. 13+00 SEE SHEET 30
US 158/ REIDSVILLE RD
RAISED GRASS MEDIAN
1'-6" CURB & GUTTER
CHARLES W PIERCE
JANIE L PIERCE
DB 2608 PG 2820
JERRY L AMOS
CYNTHIA M AMOS
DB 1787 PG 2753
VENABLE & SON LLC
DB 2591 PG 807
PB 50 PG 116
MANSFIELD-CATO INVESTMENTS LLC
DB 2737 PG 2179
PB 50 PG 116
JASON THOMPSON
ASHLEY THOMPSON
DB 3000 PG 1088
PB 50 PG 116
BOBBY W HATCHER
SAMANTHA G HATCHER
DB 2829 PG 668
PB 50 PG 116
K D CROUCH CONSTRUCT CO INC
DB 2686 PG 1278
PB 50 PG 116
VENABLE & SON LLC
DB 2693 PG 1732
PB 50 PG 116
MCKELVIN L ROB
DB 3240 PG
PB 50 PG 116
DAVID J HARDY
SAMANTHA Z HARDY
DB 3249 PG 2213
-BY-202
-BY-203
-BL-134
-BY-200
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WETLAND AND SURACE WATER IMPACTS SUMMARY

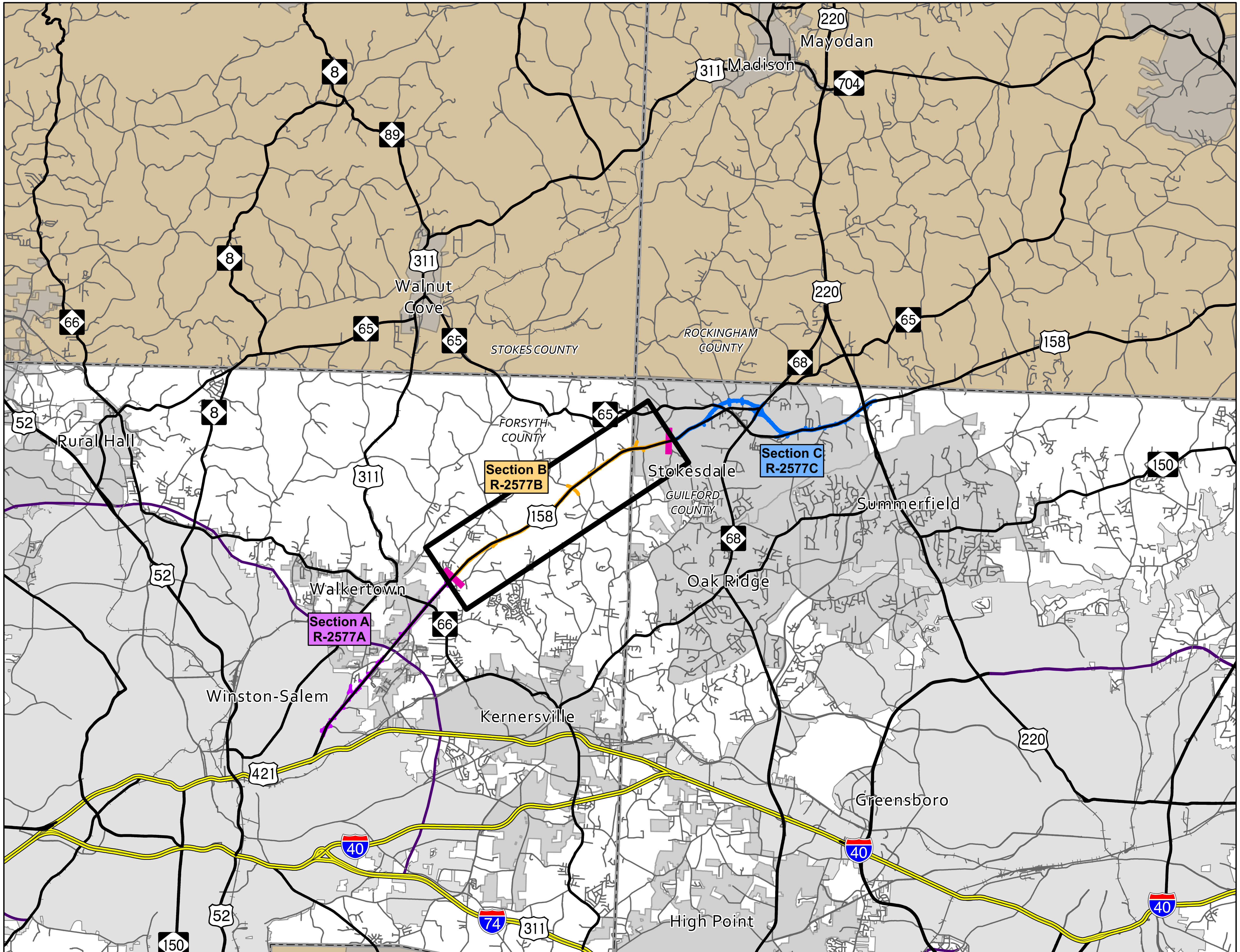
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1A	-Y9- 14+25-14+65 RT	ARMORING CHANNEL, SFC						< 0.01	< 0.01	25	22	
1B	-Y9- 14+65-15+33 RT	72" RCP,ROADWAY FILL, SFC						< 0.01		84		
1C	-L- 100+48-100+93 LT	ROADWAY FILL, SFC						< 0.01		58		
1D	-L- 100+92-101+34 RT	72" RCP,ROADWAY FILL, SFC						0.01		77		
1E	-L- 101+34-101+75 RT	ARMORING CHANNEL, SFC						< 0.01	< 0.01	24	22	
2A	-L- 107+87 LT	BANK STABILIZATION, SFB						< 0.01	< 0.01	13	14	
2B	-L- 107+87 LT	ARMORING CHANNEL BED AND BANK, SFB						< 0.01		20		
2C	-L- 107+66 LT	UPSTREAM - 1 6x6 RCBC EXTENSION NOT BURIED, CHANNEL TIE IN, SFB						0.01		81		
2D	-L- 106+50-107+20 RT	DOWNSTREAM - 1 6x6 RCBC EXTENSION NOT BURIED, CHANNEL TIE IN, SFB						0.01		86		
2E	-L- 106+25-106+50 RT	ARMORING CHANNEL BED AND BANK, SFB						< 0.01	< 0.01	15	26	
3A	-Y14- 13+03 LT	ARMORING CHANNEL, SFA						< 0.01	< 0.01	29	9	
3B	-Y14- 13+22 LT	60" RCP, SFA						< 0.01		30		
3C	-Y14- 13+41 RT	60" RCP OUTLET PAD, SFA						< 0.01		27		
3D	-Y14- 13+48 RT	BANK STABILIZATION, SFA						0.01		63		
4A	-L- 140+38 LT	UPSTREAM - BANK STABILIZATION, DUAL BRIDGES REPLACING (3)-7x10 RCBC, SEW						0.03	0.03	114		
4B	-L- 139+91 RT	DUAL BRIDGES REPLACING (3)-7x10 RCBC, SEW						0.02	0.03	88		
5A	-L2- 225+52-228+95 LT	ROADWAY FILL & CHANNEL CHANGE, SET						0.02	< 0.01	331	14	
5B	-L2- 225+33-226+35 LT	ROADWAY FILL & CHANNEL CHANGE, WHP	0.02		< 0.01	0.02						
5C	-L2- 228+07-228+98 LT	ROADWAY FILL & CHANNEL CHANGE, WHQ	0.02									
6A	-L2- 229+25 LT	ARMORING CHANNEL, SES						< 0.01	< 0.01	32	6	
6B	-L2- 229+10 LT	UPSTREAM - 1 5x5 RCBC EXTENSION W/ 48" WELDED STEEL PIPE, SES						< 0.01		18		
6C	-L2- 229+10 RT	DOWNSTREAM - 1 5x5 RCBC EXTENSION W/ 48" WELDED STEEL PIPE, SES						0.01		38		
6D	-L2- 228+70 RT	ARMORING CHANNEL, SES						< 0.01	< 0.01	39	21	
7A	-L- 296+40-298+03 LT	ROADWAY FILL, 48" RCP, SEL						0.01		178		
7B	-L- 298+03-298+28 LT	BANK STABILIZATION, SEL						< 0.01	< 0.01	16	13	
TOTALS*:			0.04		< 0.01	0.02		0.19	0.08	1486	147	

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
May 2021
FORSYTH
R-2577A

Revised 2016 09 09



N

0 2 4 Miles

Legend

Preferred Alternatives

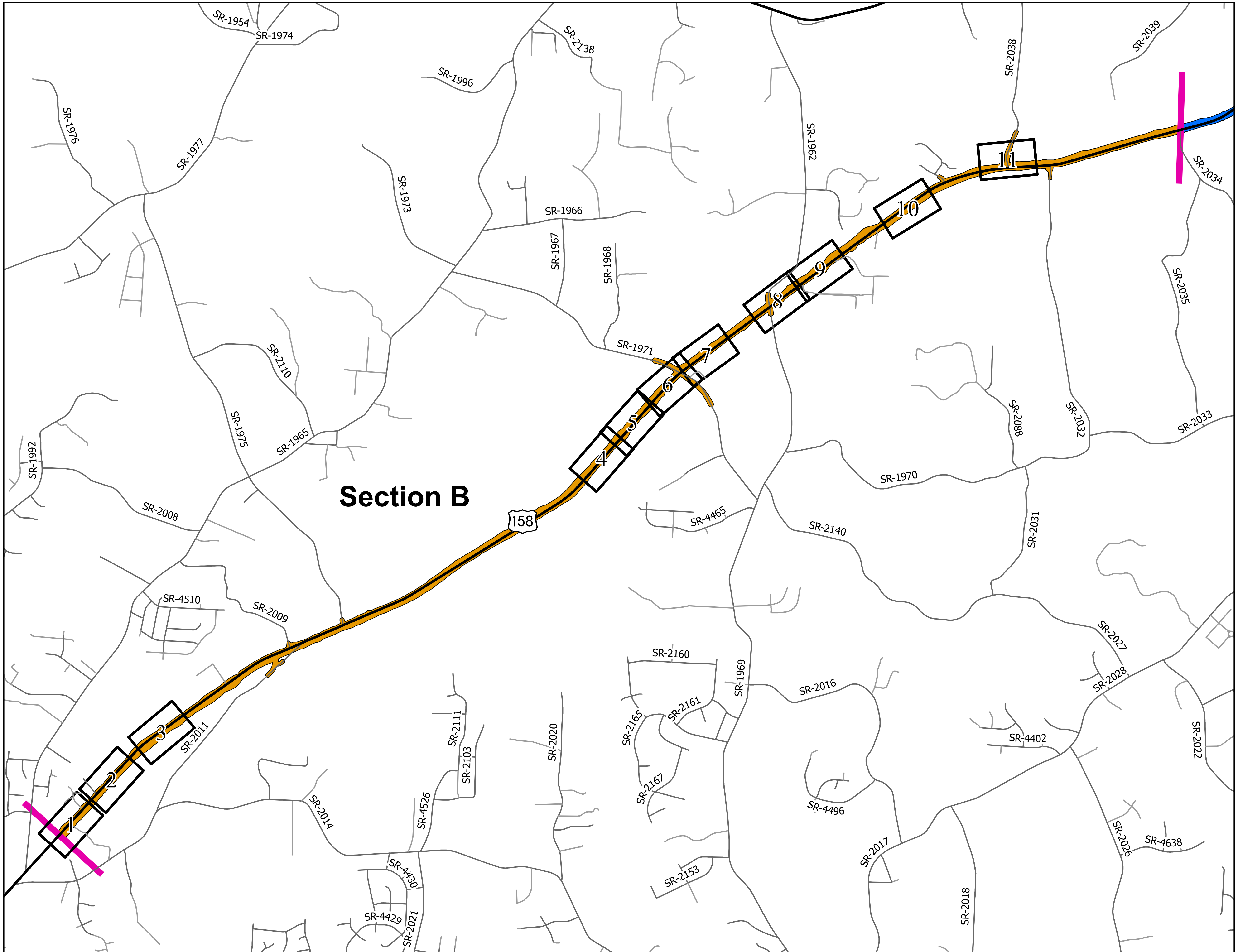
- Project R-2577A
- Project R-2577B
- Project R-2577C
- R-2577 Section Break
- Interstate
- US Routes
- NC Route
- Secondary Road
- Proposed/Under Construction
- RailroadTrack
- County Line

STIP PROJECT: R-2577

WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS SECTION B: CORRIDOR CONTEXT

FORSYTH AND GUILFORD COUNTIES



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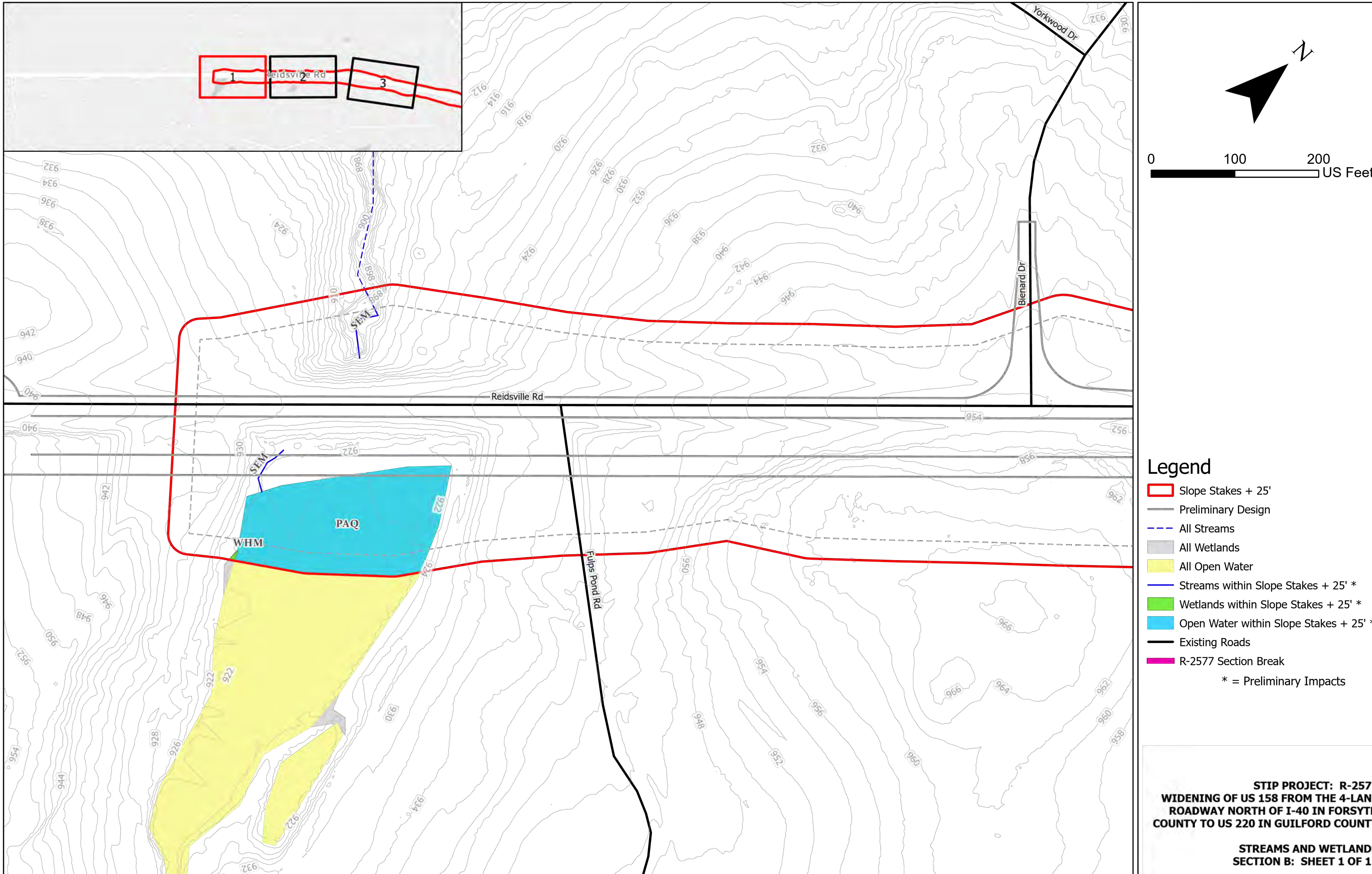
0 0.5 1 Miles

Legend

- R-2577B
- R-2577C
- R-2577 Section Break
- Section Map Sheets
- Interstate
- US Routes
- NC Route
- Secondary Road
- Other Existing Road

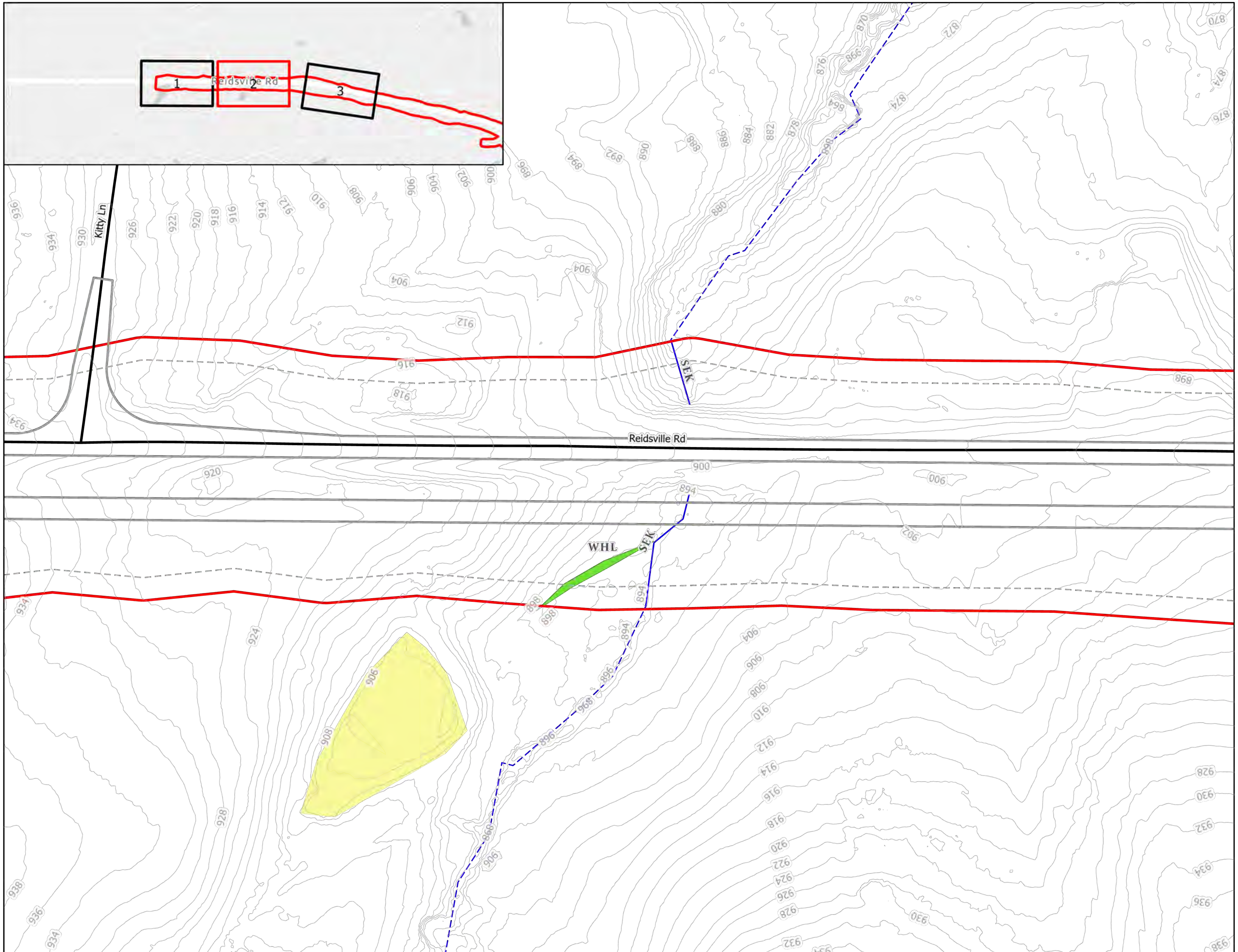
STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

MASTER SHEET
SECTION B



STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION B: SHEET 1 OF 11



N

0 100 200 US Feet

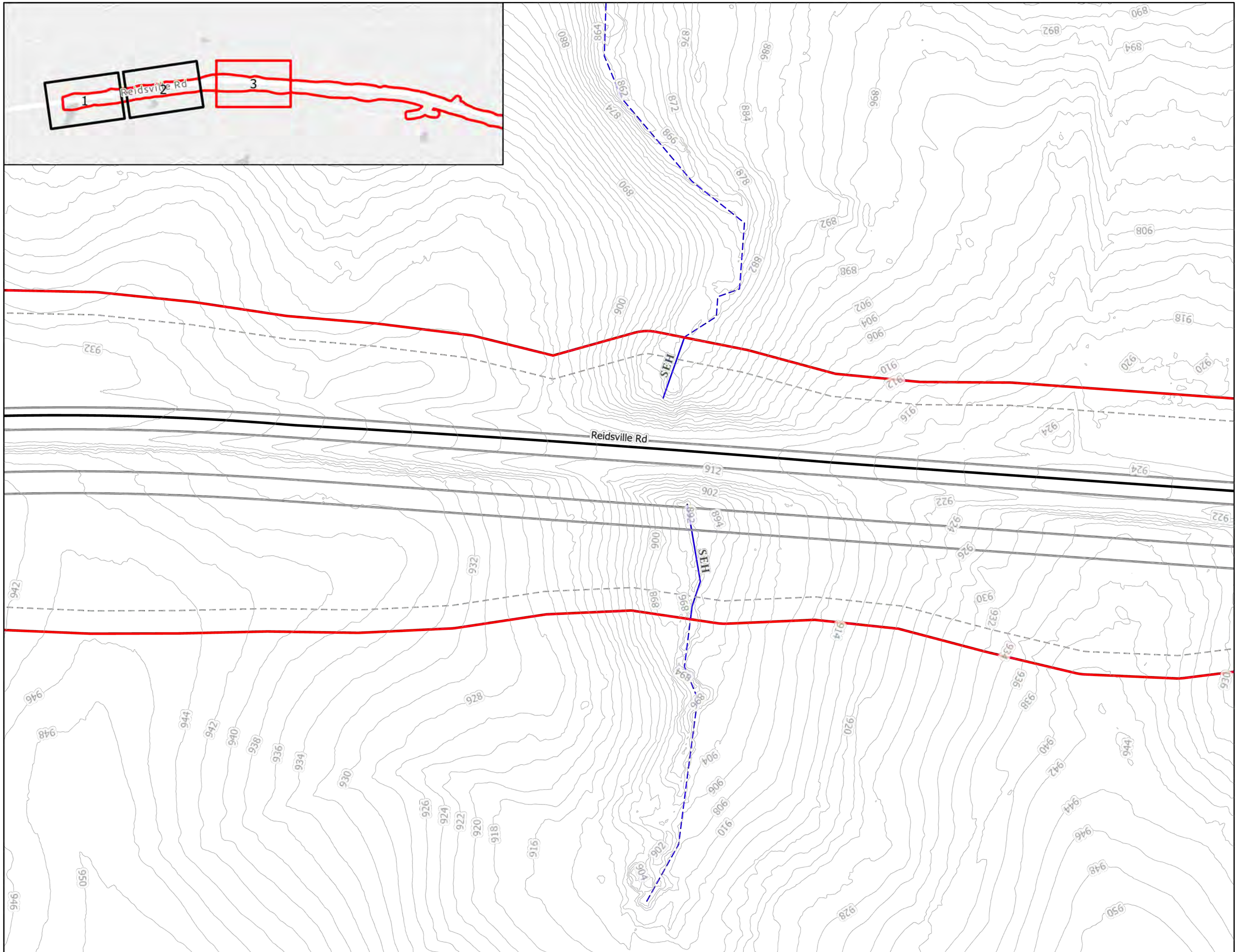
Legend

- Slope Stakes + 25'
- Preliminary Design
- All Streams
- All Wetlands
- All Open Water
- Streams within Slope Stakes + 25' *
- Wetlands within Slope Stakes + 25' *
- Open Water within Slope Stakes + 25' *
- Existing Roads
- R-2577 Section Break

* = Preliminary Impacts

STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION B: SHEET 2 OF 11



0 100 200
US Feet

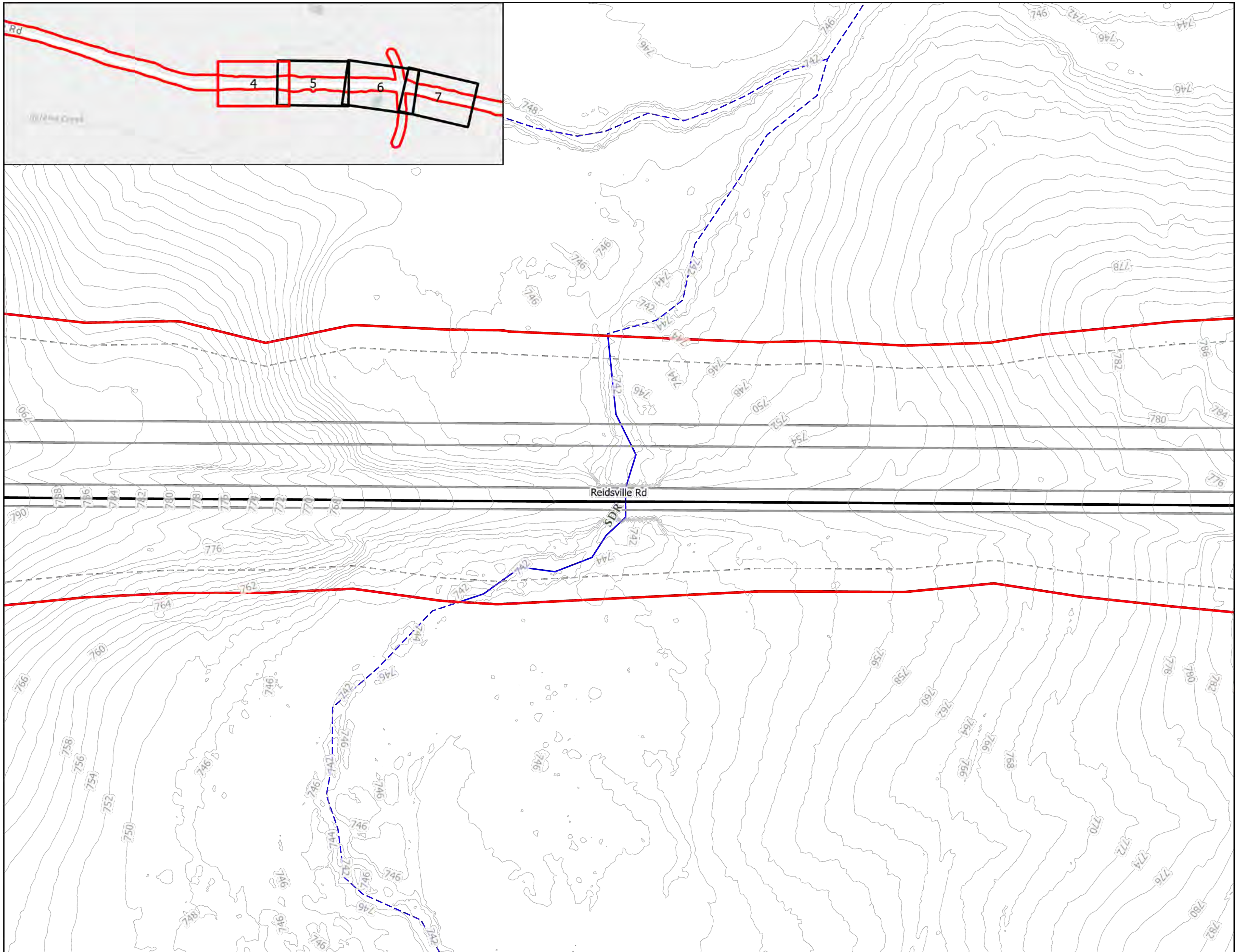
Legend

- Slope Stakes + 25'
- Preliminary Design
- All Streams
- All Wetlands
- All Open Water
- Streams within Slope Stakes + 25' *
- Wetlands within Slope Stakes + 25' *
- Open Water within Slope Stakes + 25' *
- Existing Roads
- R-2577 Section Break

* = Preliminary Impacts

STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION B: SHEET 3 OF 11



N

0 100 200 US Feet

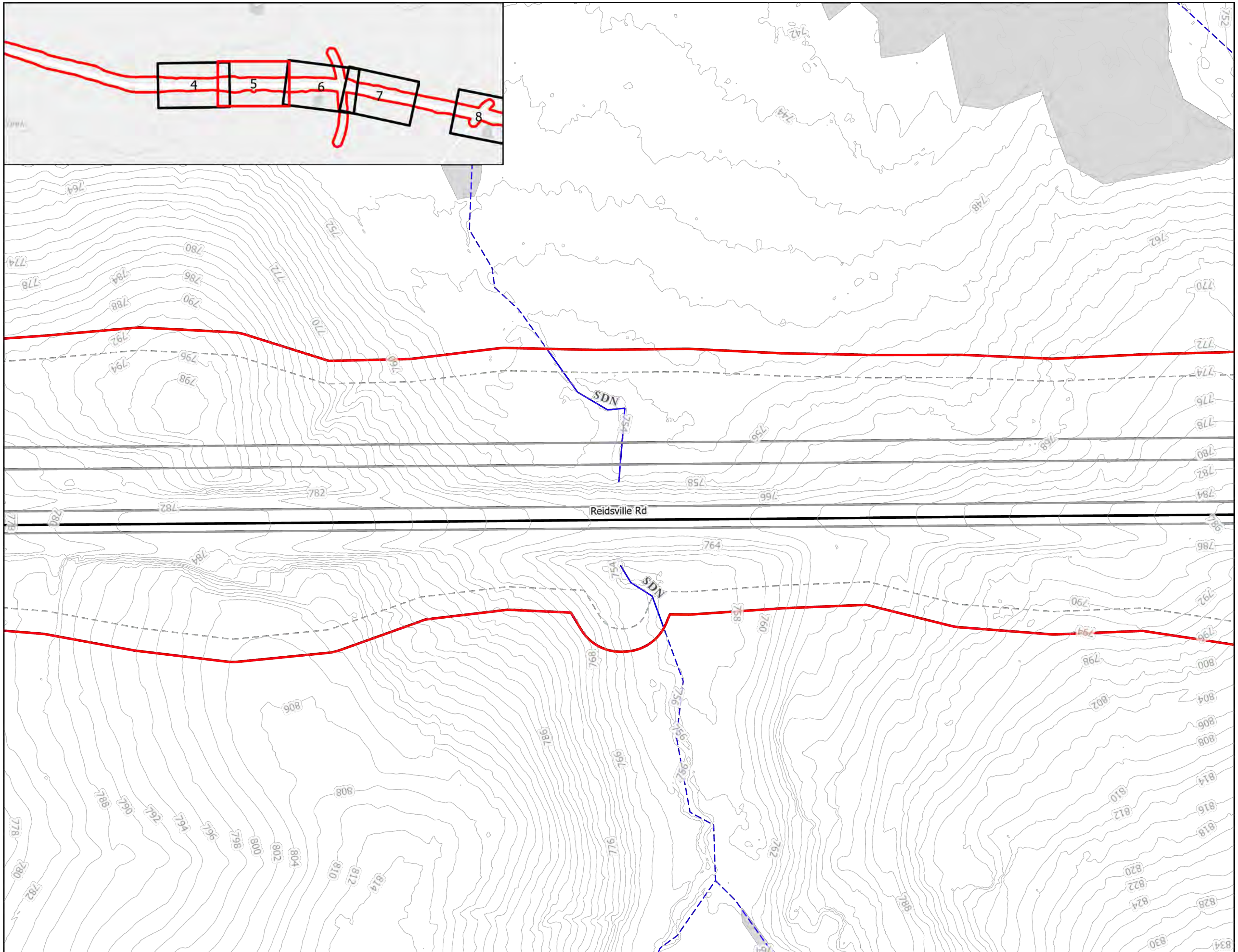
Legend

- Slope Stakes + 25'
- Preliminary Design
- All Streams
- All Wetlands
- All Open Water
- Streams within Slope Stakes + 25' *
- Wetlands within Slope Stakes + 25' *
- Open Water within Slope Stakes + 25' *
- Existing Roads
- R-2577 Section Break

* = Preliminary Impacts

STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION B: SHEET 4 OF 11



N

0 100 200 US Feet

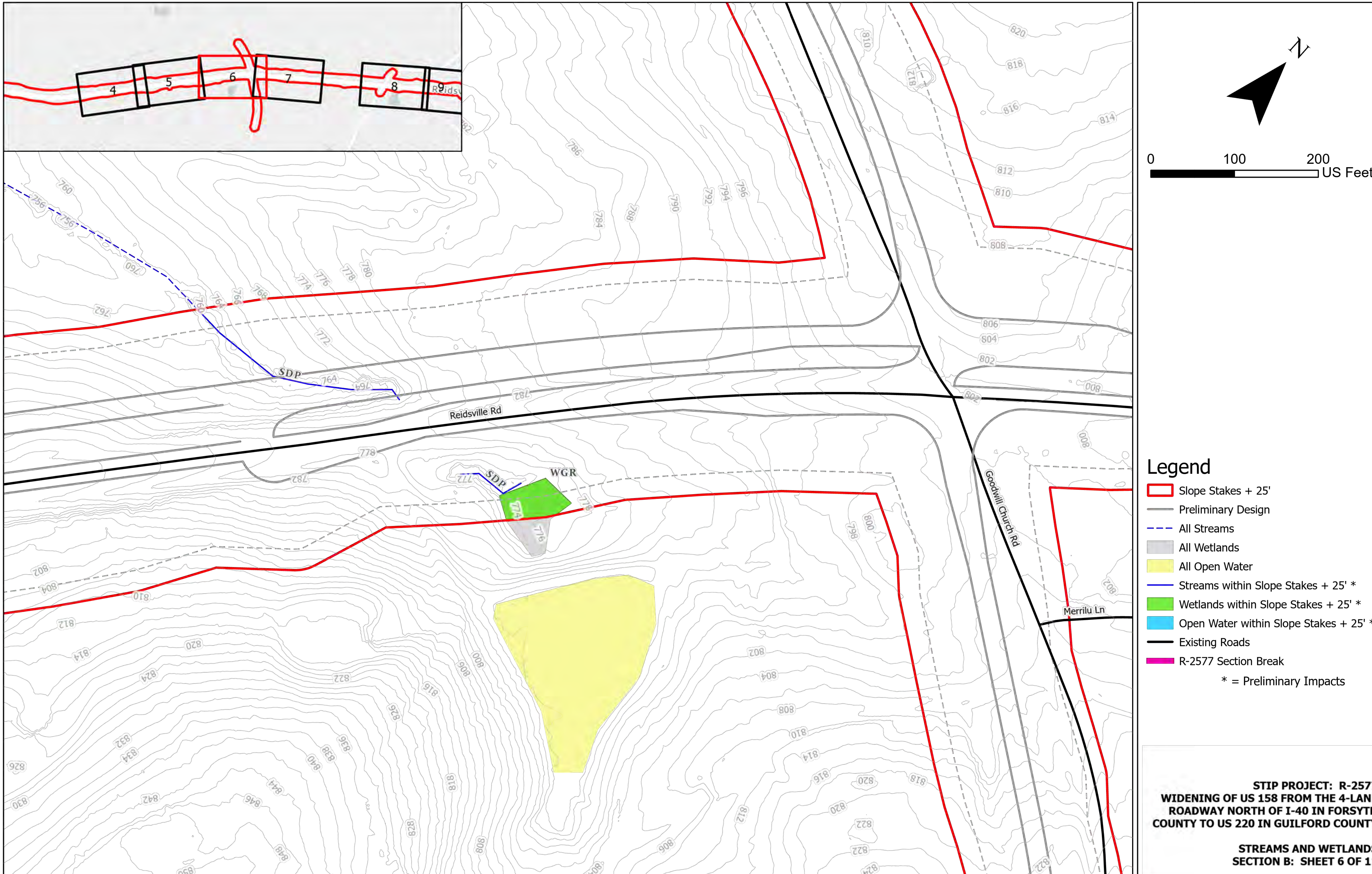
Legend

- Slope Stakes + 25'
- Preliminary Design
- All Streams
- All Wetlands
- All Open Water
- Streams within Slope Stakes + 25' *
- Wetlands within Slope Stakes + 25' *
- Open Water within Slope Stakes + 25' *
- Existing Roads
- R-2577 Section Break

* = Preliminary Impacts

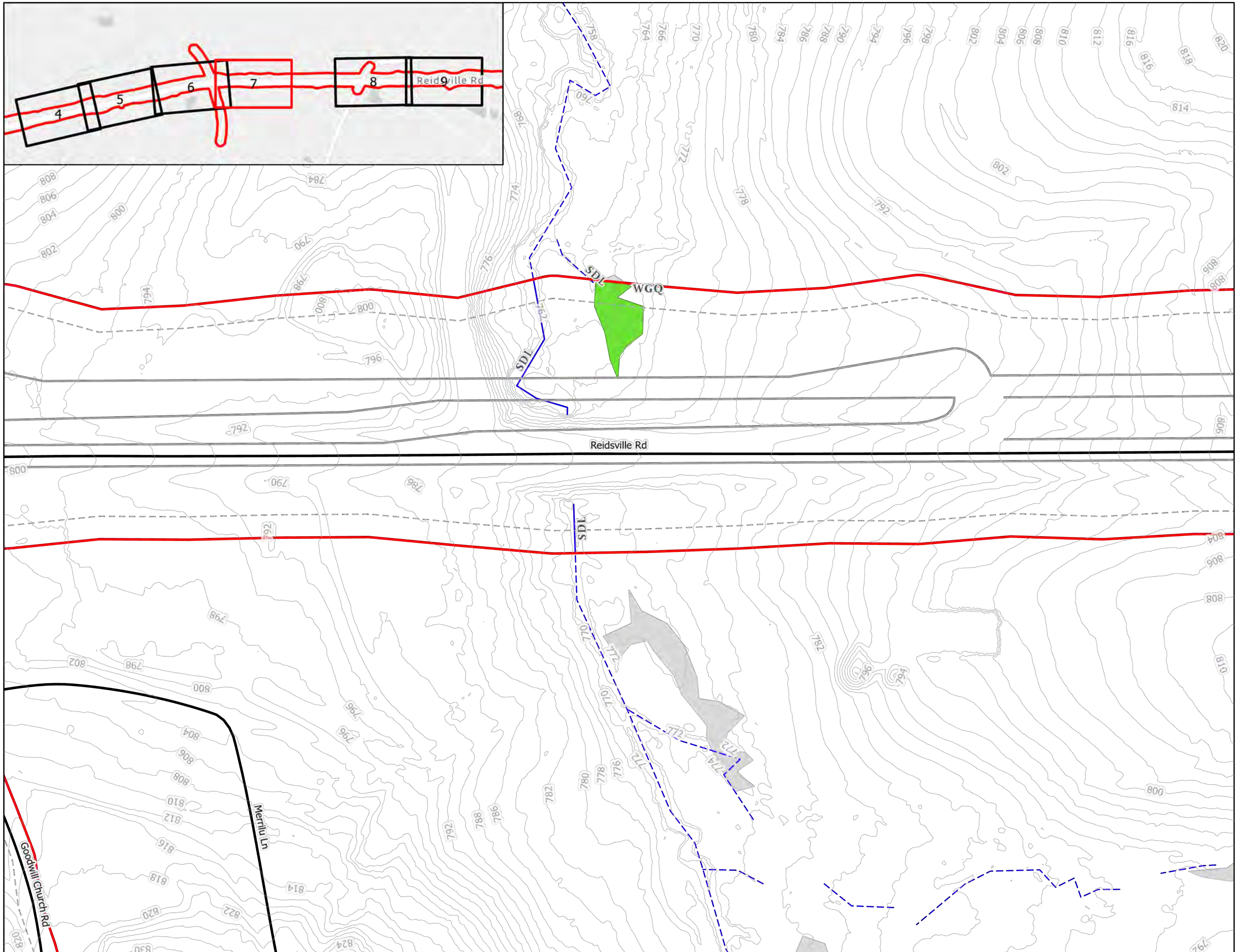
STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION B: SHEET 5 OF 11



STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION B: SHEET 6 OF 11



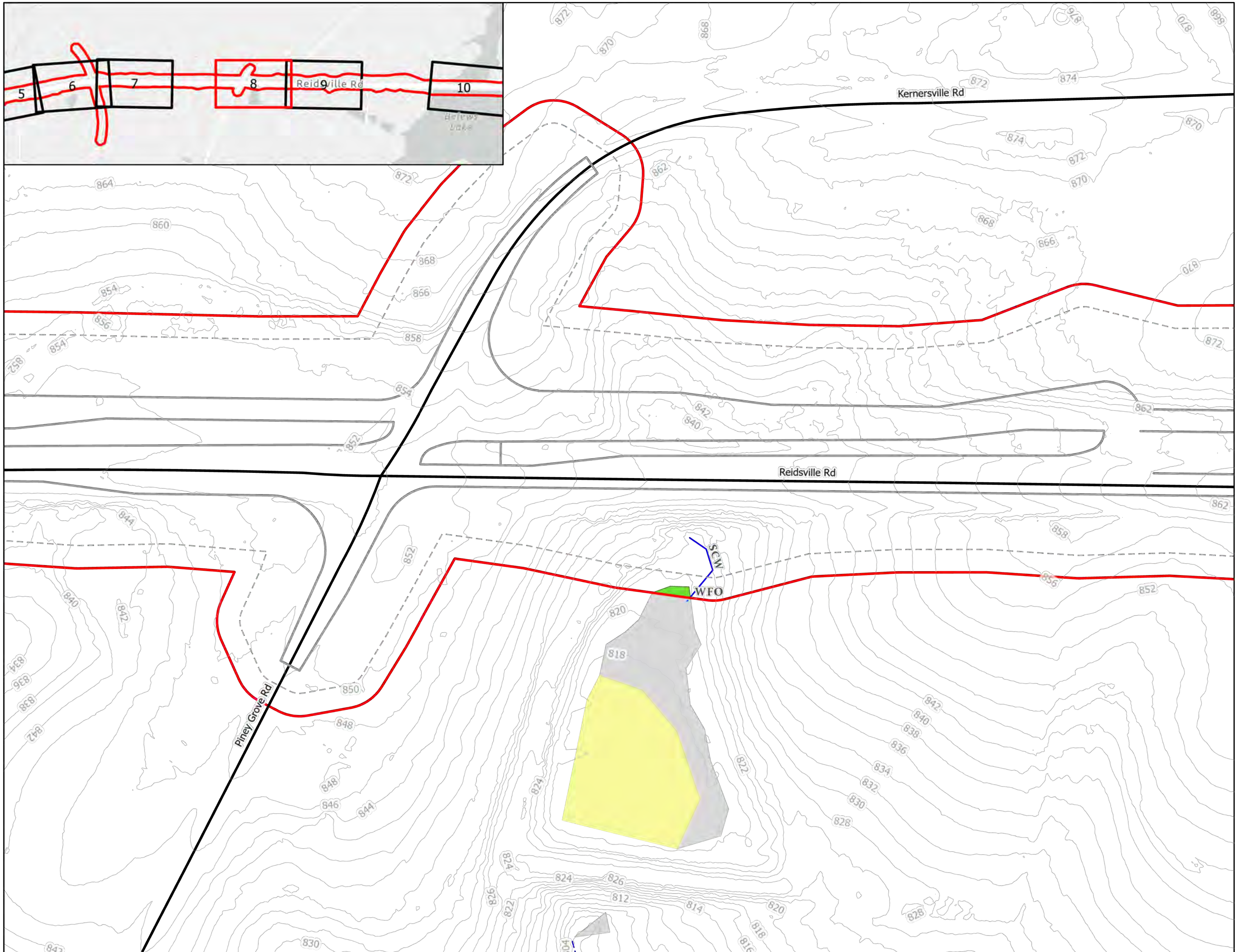
Legend

- Slope Stakes + 25'
- Preliminary Design
- All Streams
- All Wetlands
- All Open Water
- Streams within Slope Stakes + 25' *
- Wetlands within Slope Stakes + 25' *
- Open Water within Slope Stakes + 25' *
- Existing Roads
- R-2577 Section Break

* = Preliminary Impacts

STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION B: SHEET 7 OF 11



N

0 100 200 US Feet

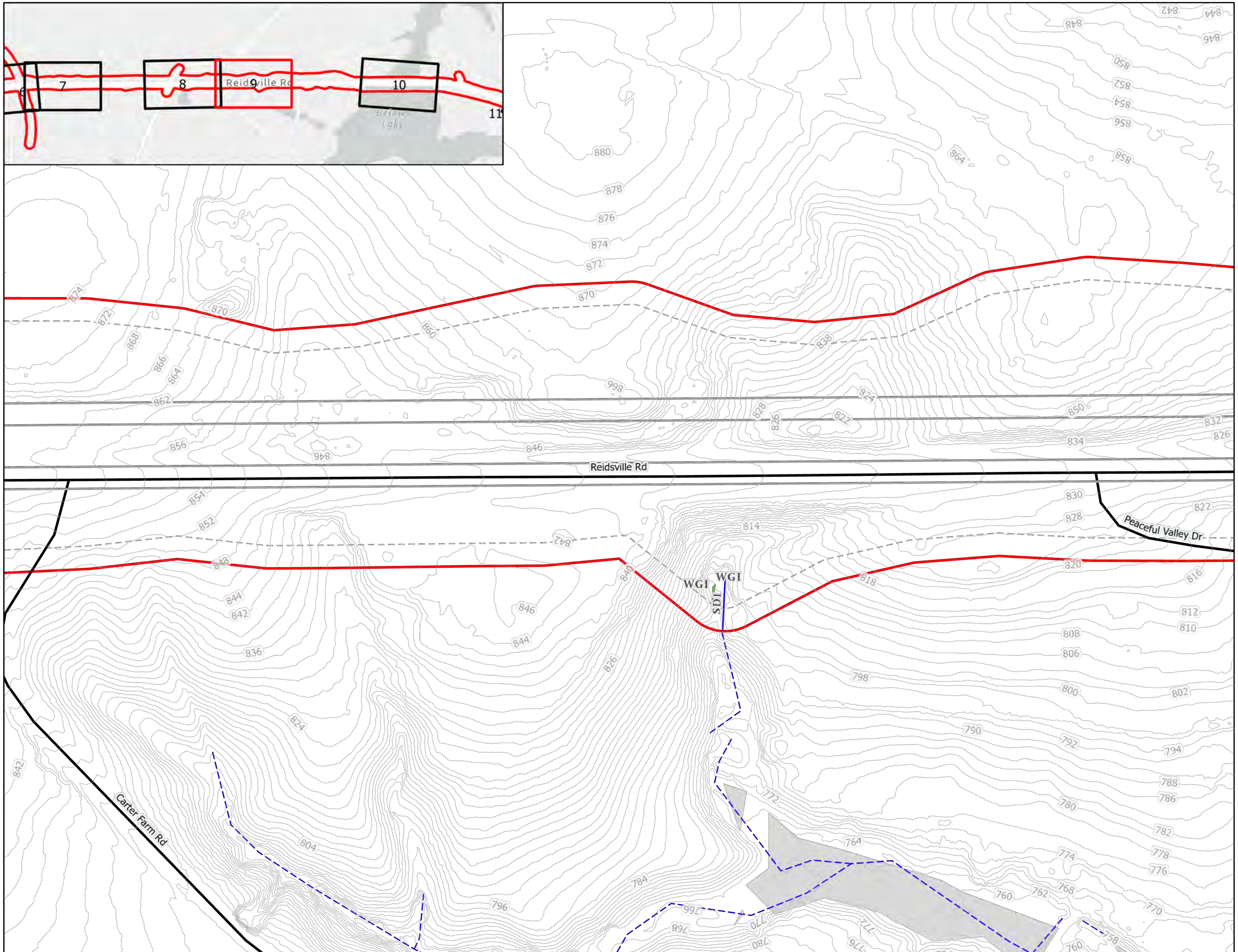
Legend

- Slope Stakes + 25'
- Preliminary Design
- All Streams
- All Wetlands
- All Open Water
- Streams within Slope Stakes + 25' *
- Wetlands within Slope Stakes + 25' *
- Open Water within Slope Stakes + 25' *
- Existing Roads
- R-2577 Section Break

* = Preliminary Impacts

STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION B: SHEET 8 OF 11



N

0 100 200 US Feet

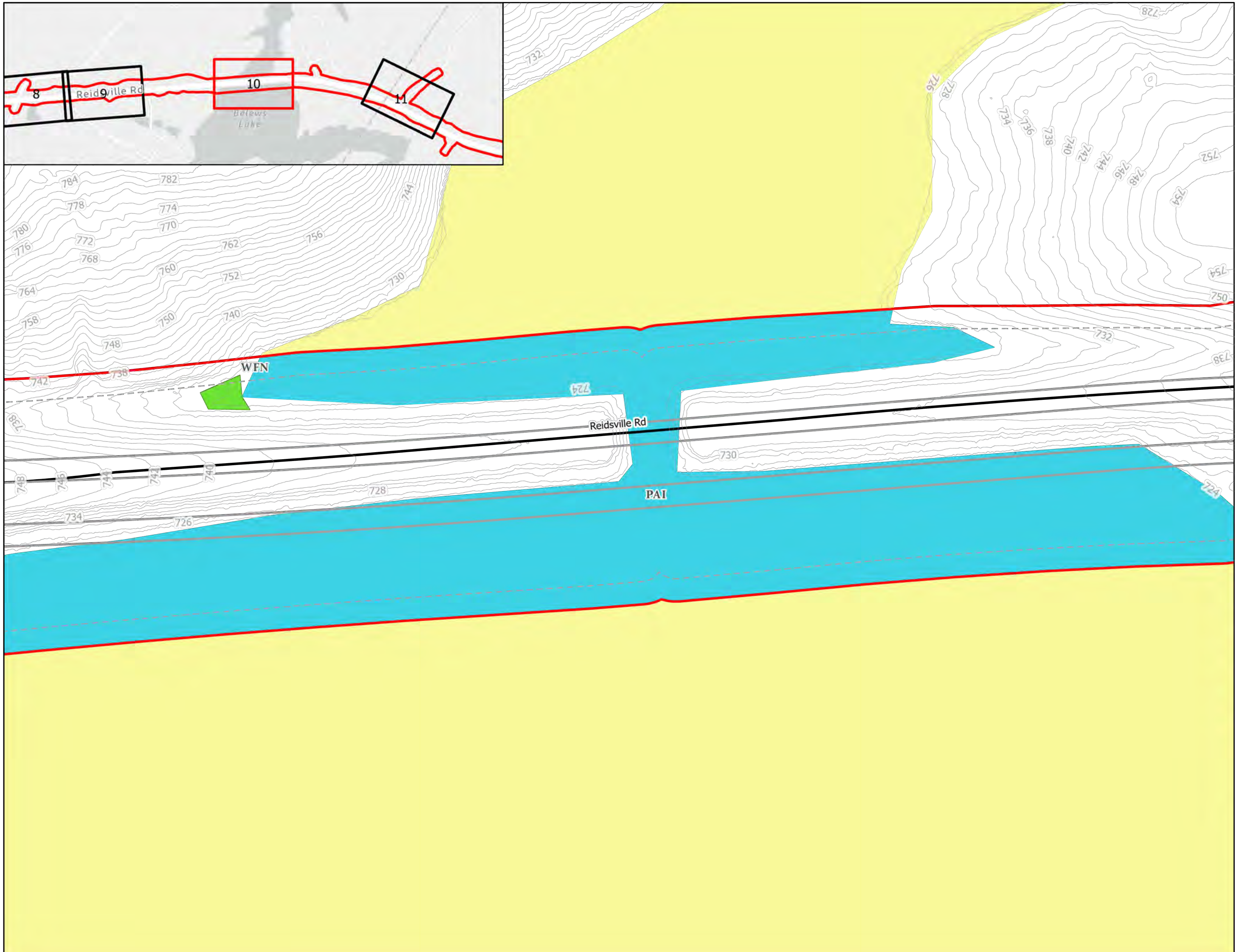
Legend

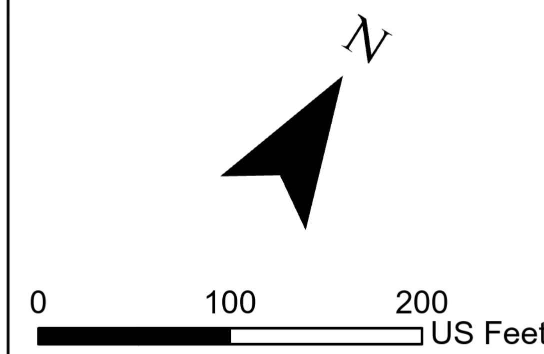
- Slope Stakes + 25'
- Preliminary Design
- All Streams
- All Wetlands
- All Open Water
- Streams within Slope Stakes + 25' *
- Wetlands within Slope Stakes + 25' *
- Open Water within Slope Stakes + 25' *
- Existing Roads
- R-2577 Section Break

* = Preliminary Impacts

STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION B: SHEET 9 OF 11





Legend

- Slope Stakes + 25'
- Preliminary Design
- All Streams
- All Wetlands
- All Open Water
- Streams within Slope Stakes + 25' *
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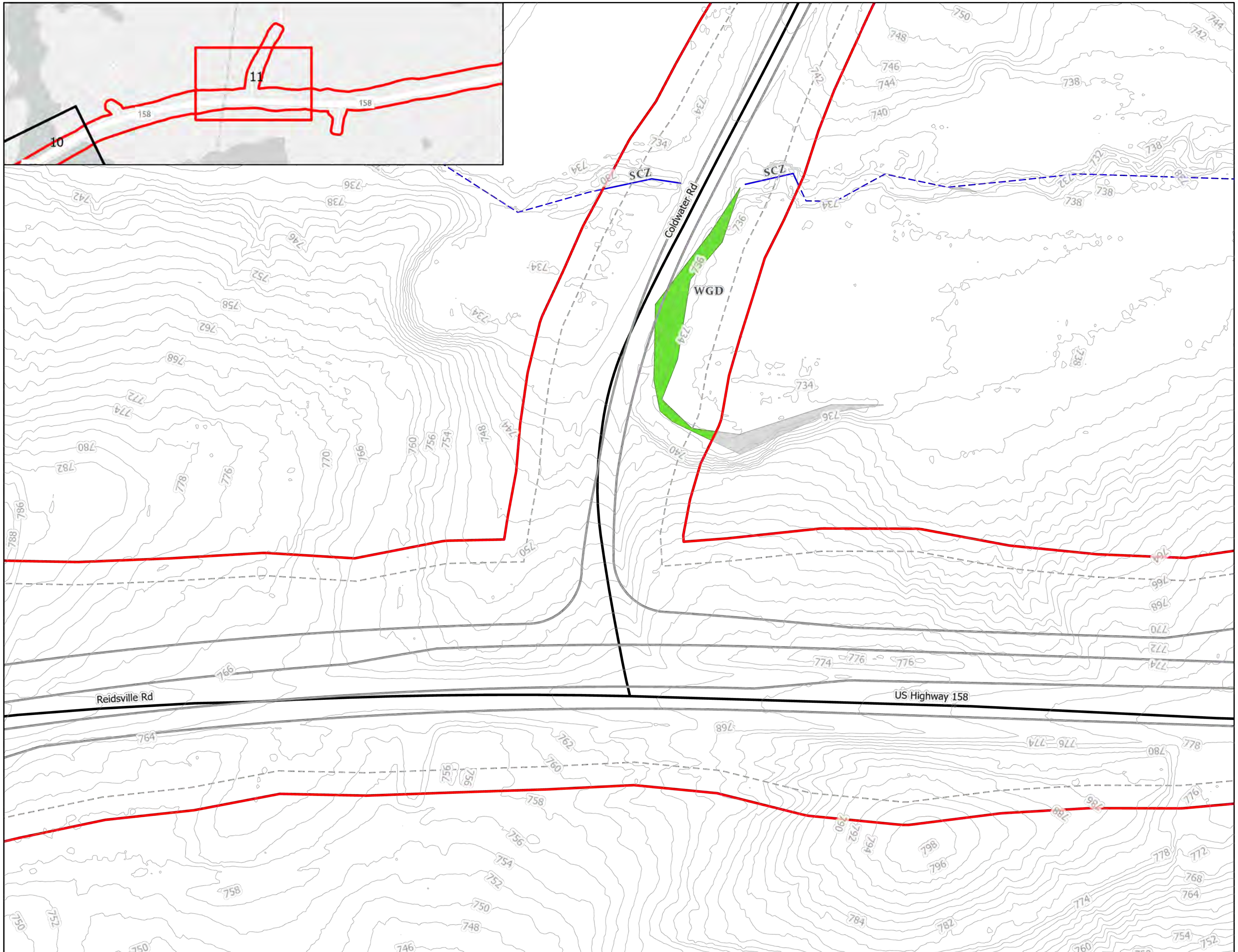
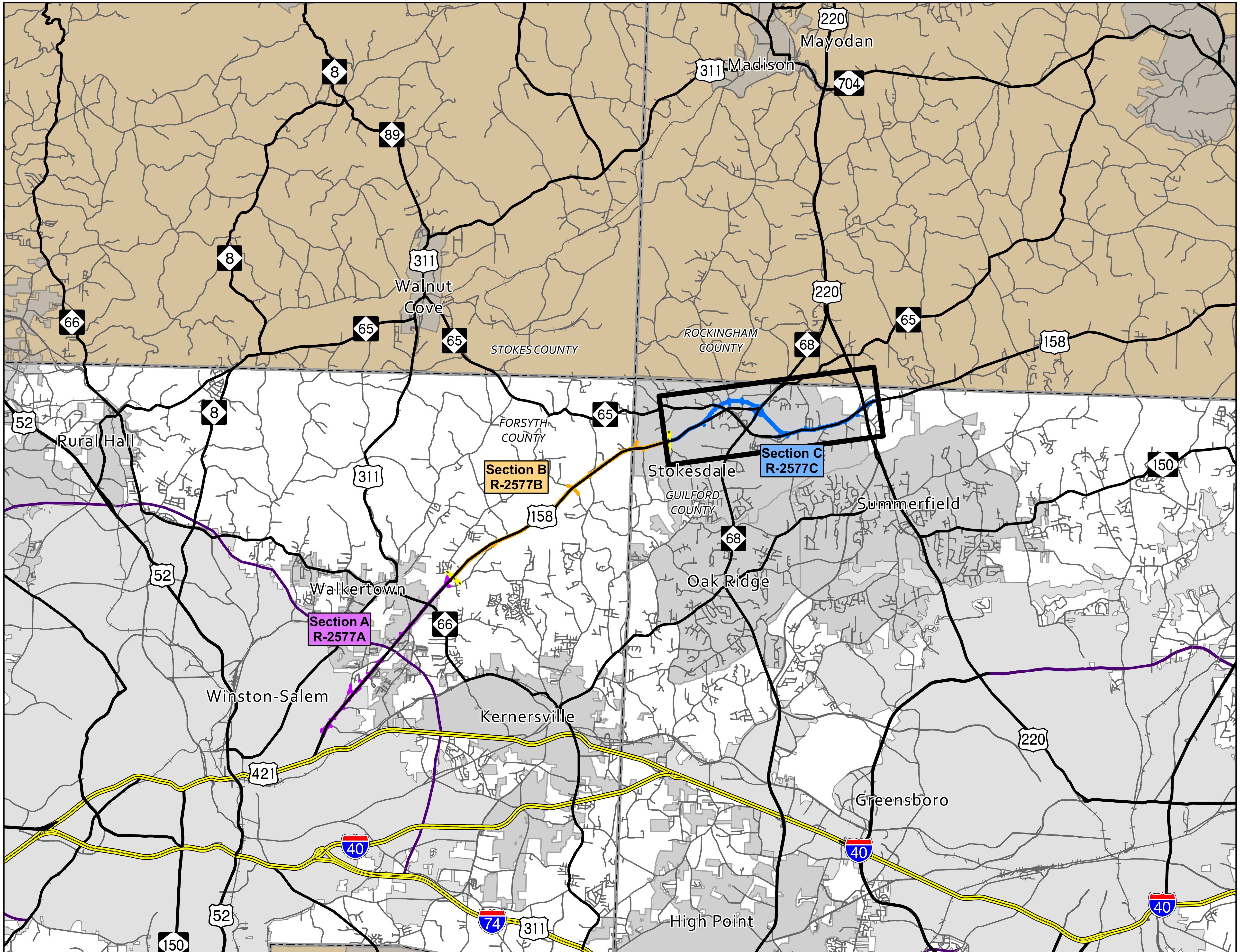
STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION B: SHEET 10 OF 11



STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION B: SHEET 11 OF 11



N

0 2 4 Miles

Legend

Preferred Alternatives

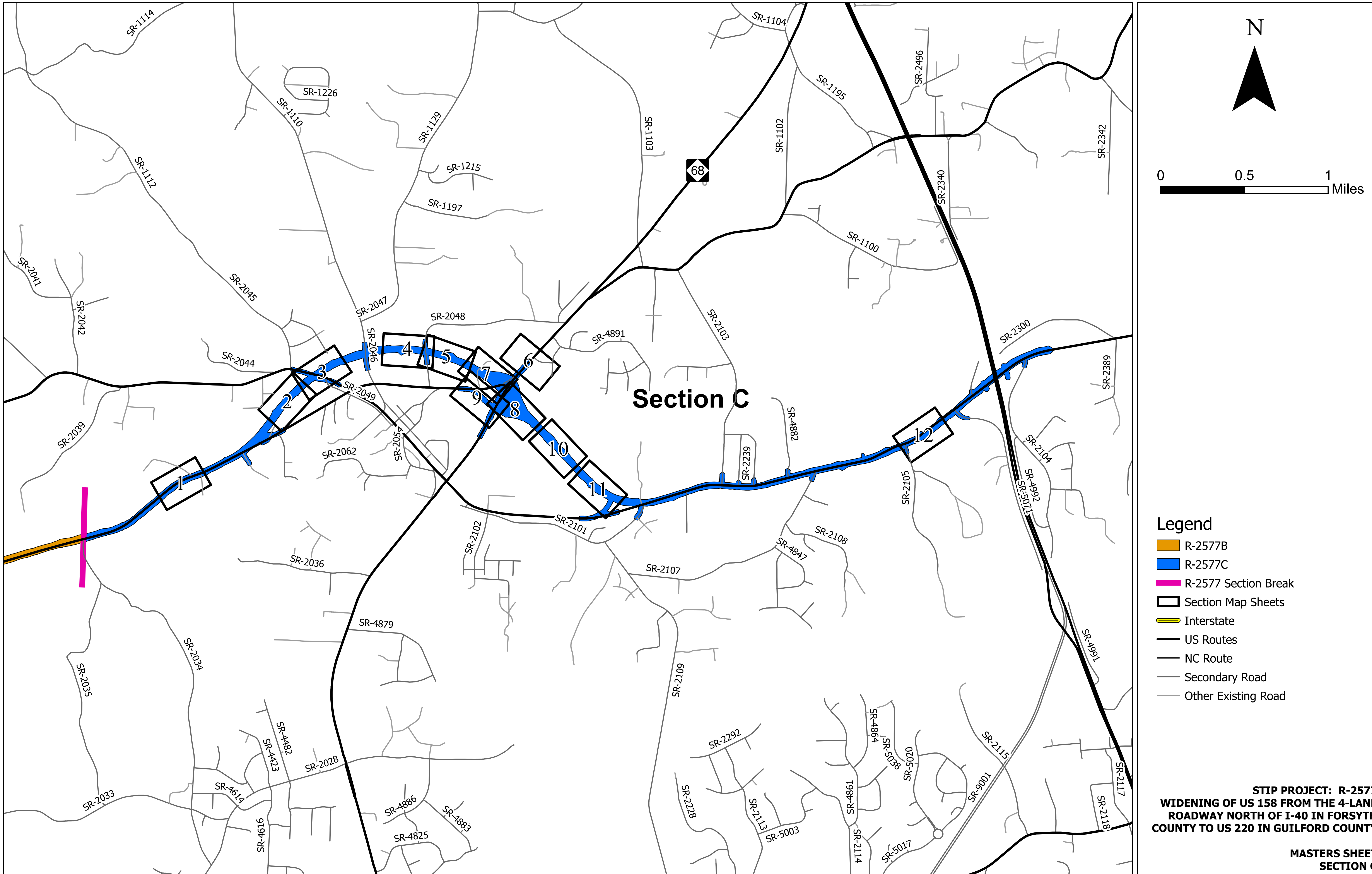
- Project R-2577A
- Project R-2577B
- Project R-2577C
- Interstate
- US Routes
- NC Route
- Secondary Road
- Proposed/Under Construction
- RailroadTrack
- County Line

STIP PROJECT: R-2577

WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

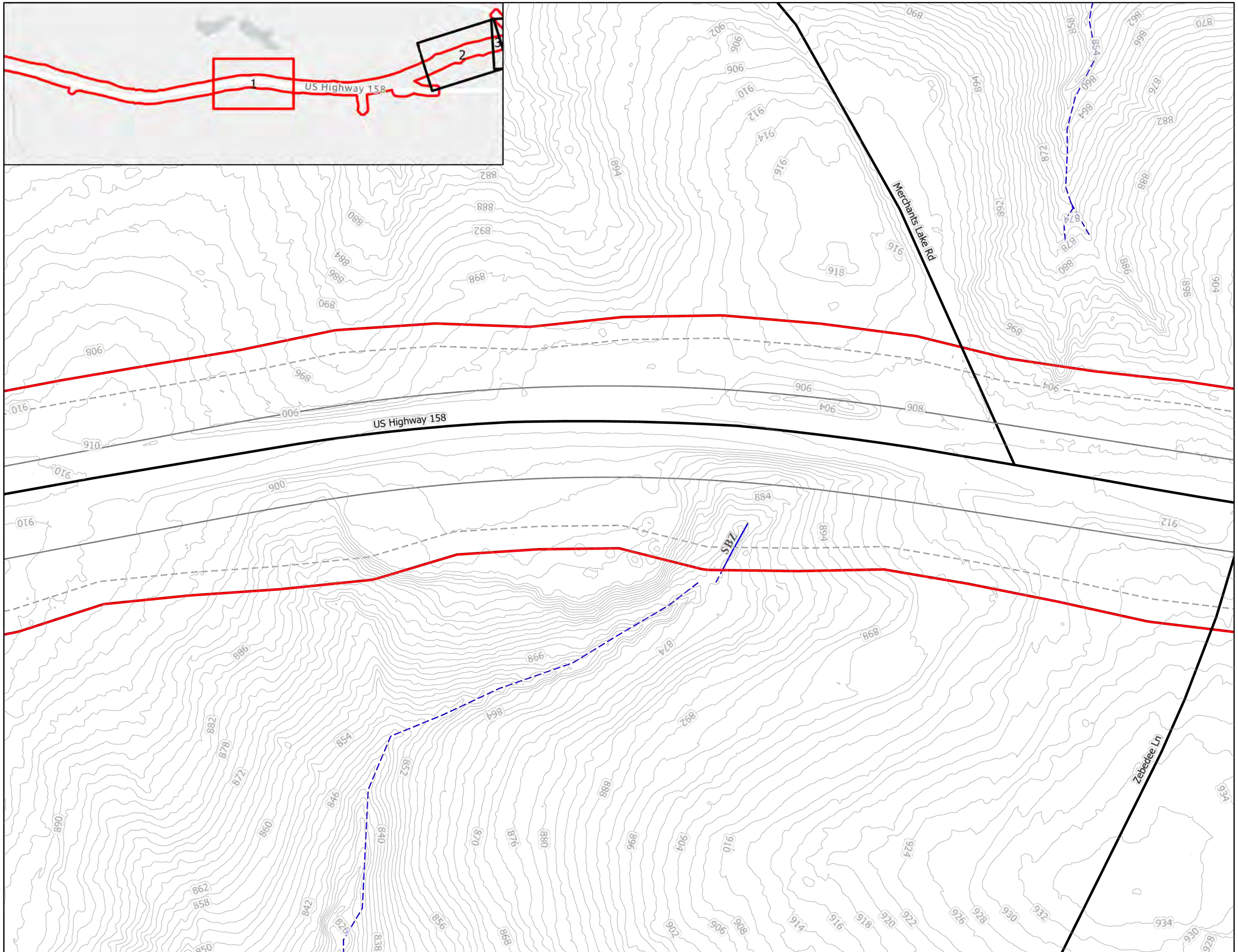
STREAMS AND WETLANDS SECTION C: CORRIDOR CONTEXT

FORSYTH AND GUILFORD COUNTIES



STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

MASTERS SHEET
SECTION C



N

0 100 200 US Feet

Legend

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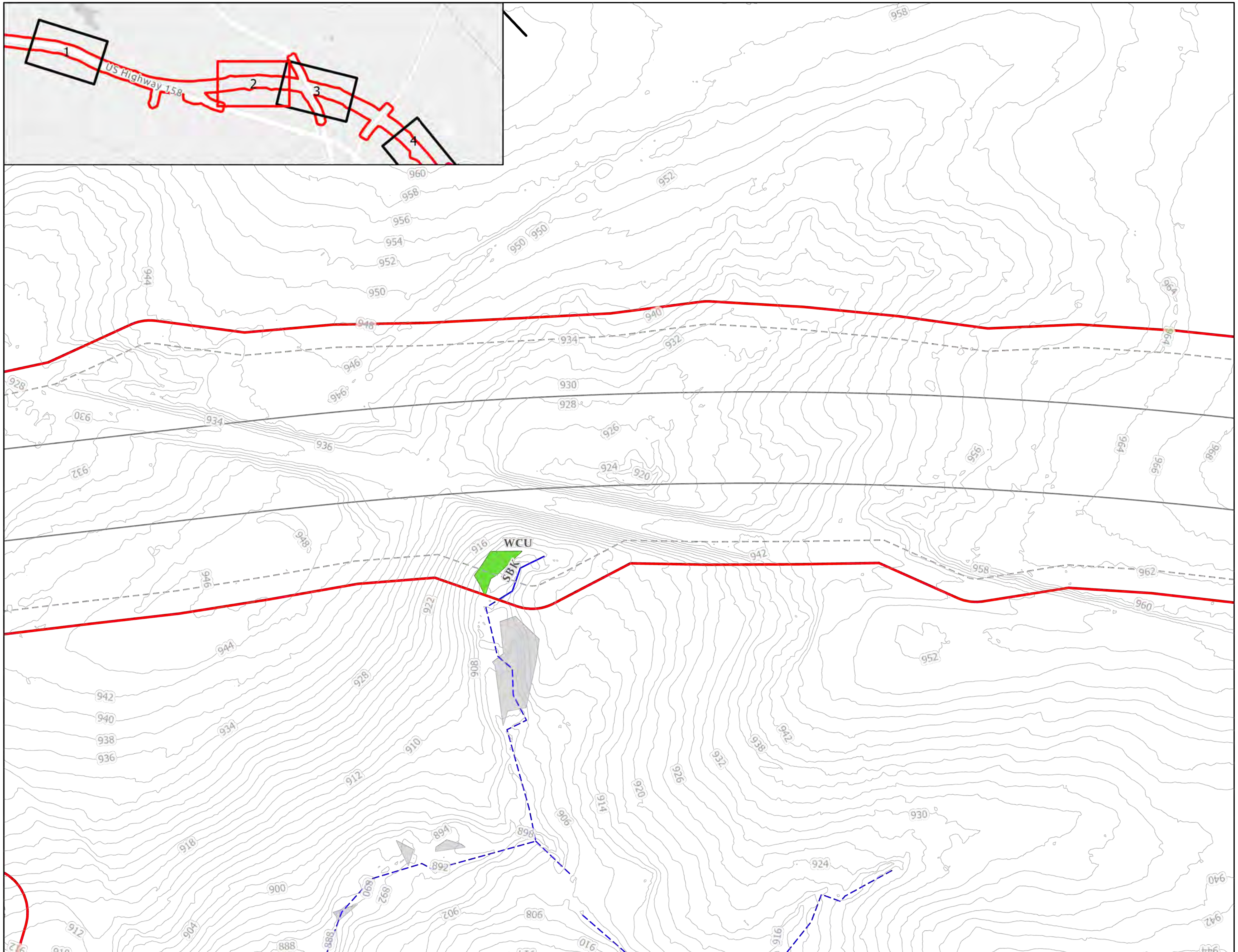
STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION C: SHEET 1 OF 12



N

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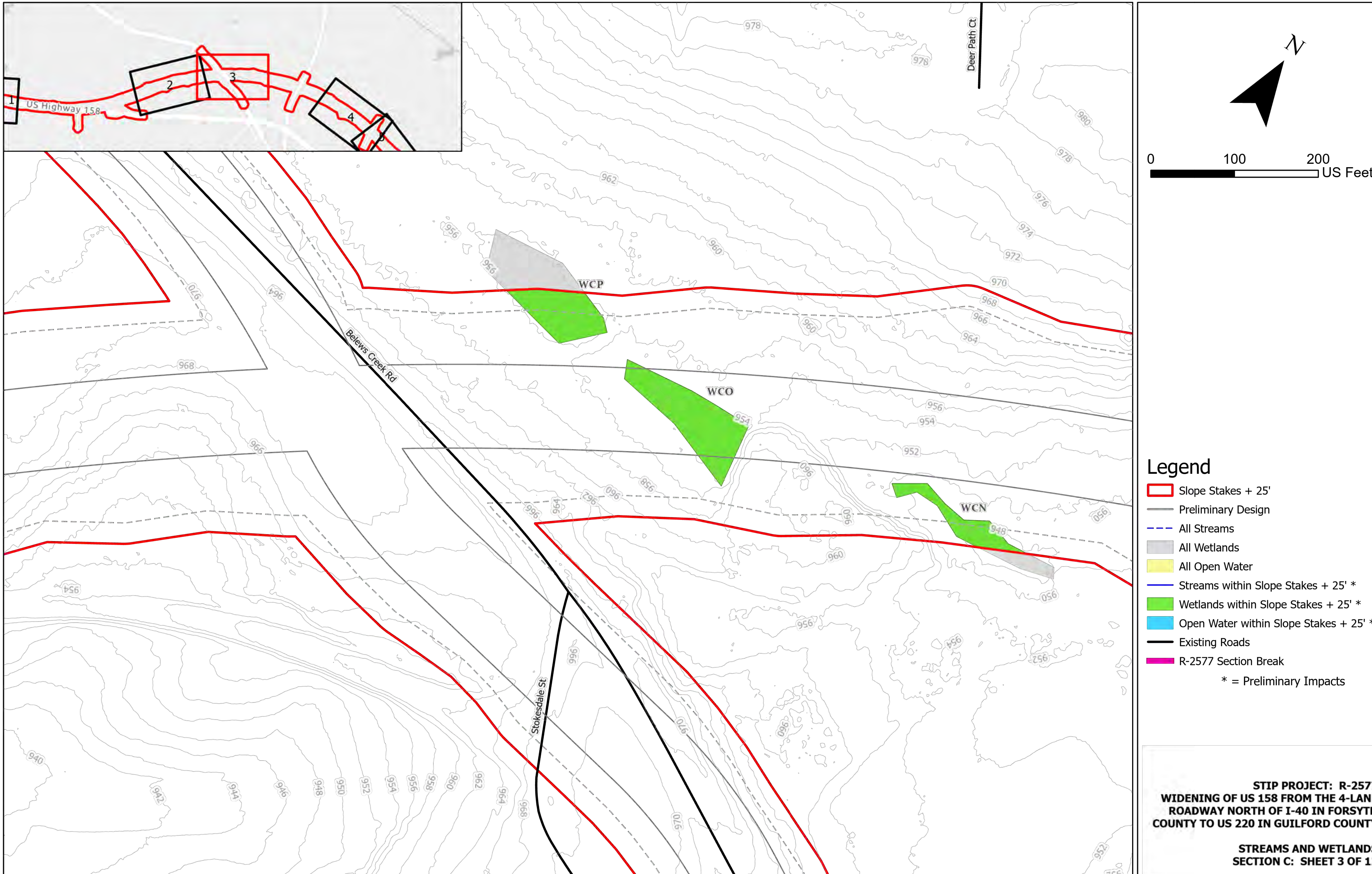
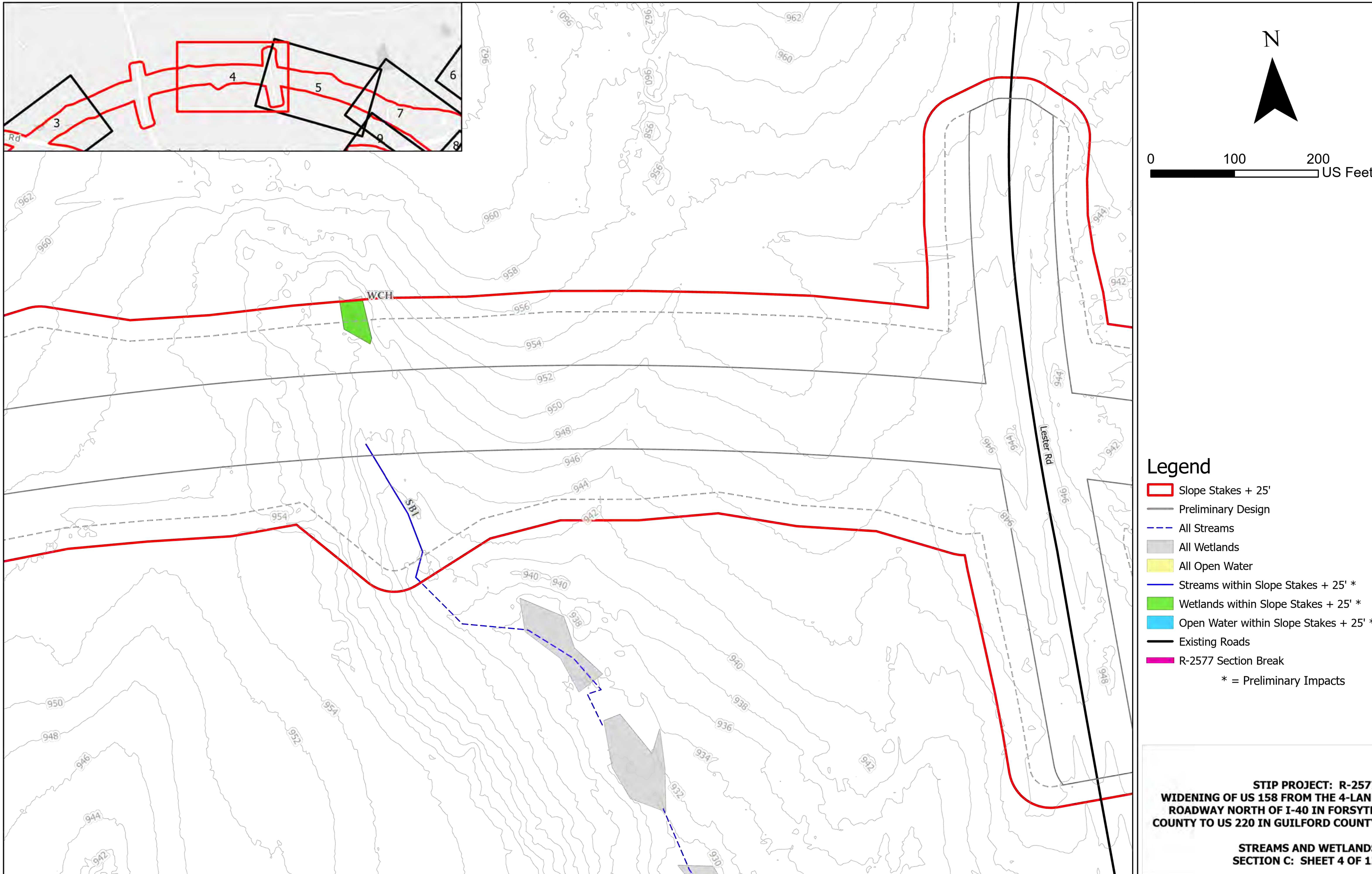
STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION C: SHEET 2 OF 12



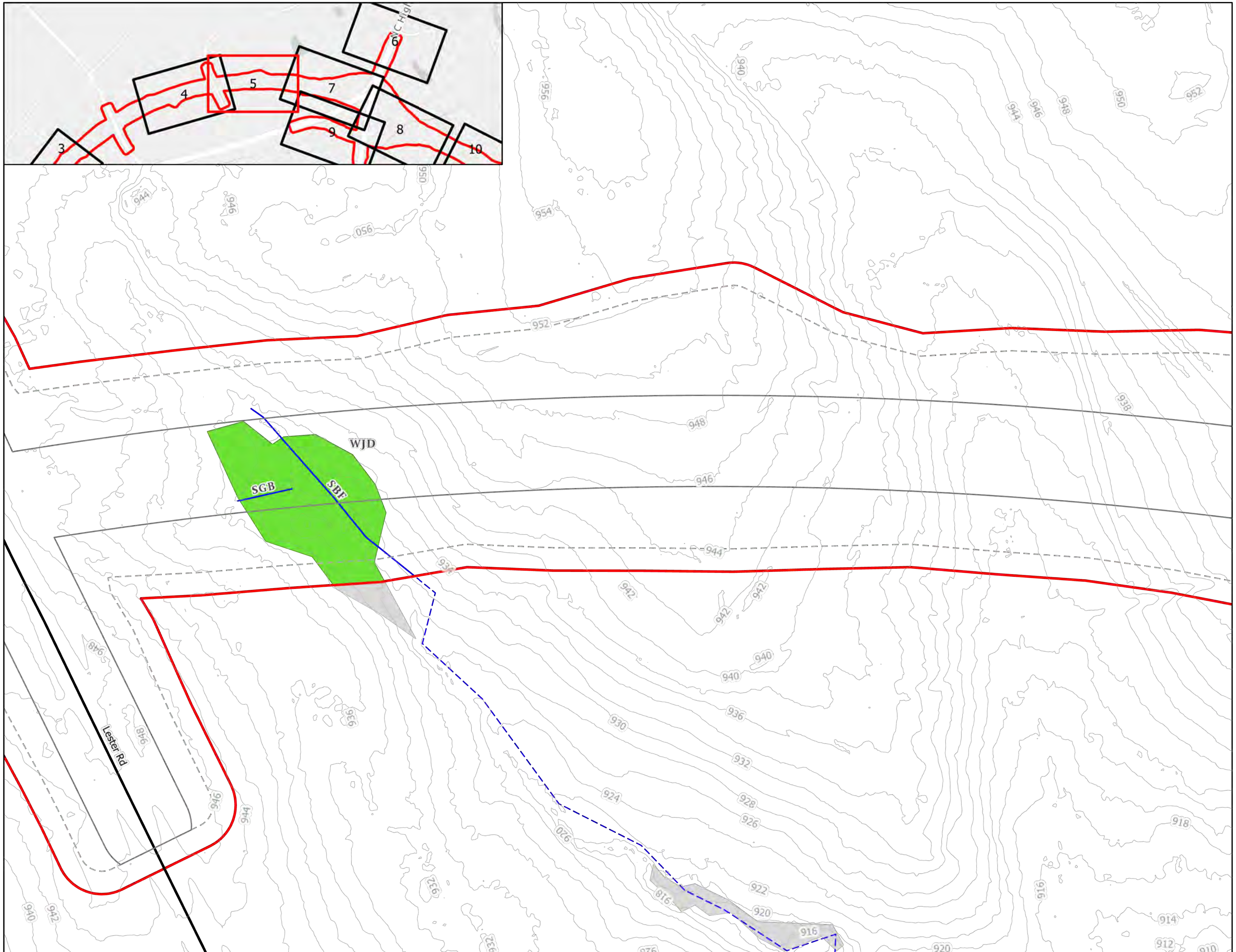
STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION C: SHEET 3 OF 12



STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION C: SHEET 4 OF 12



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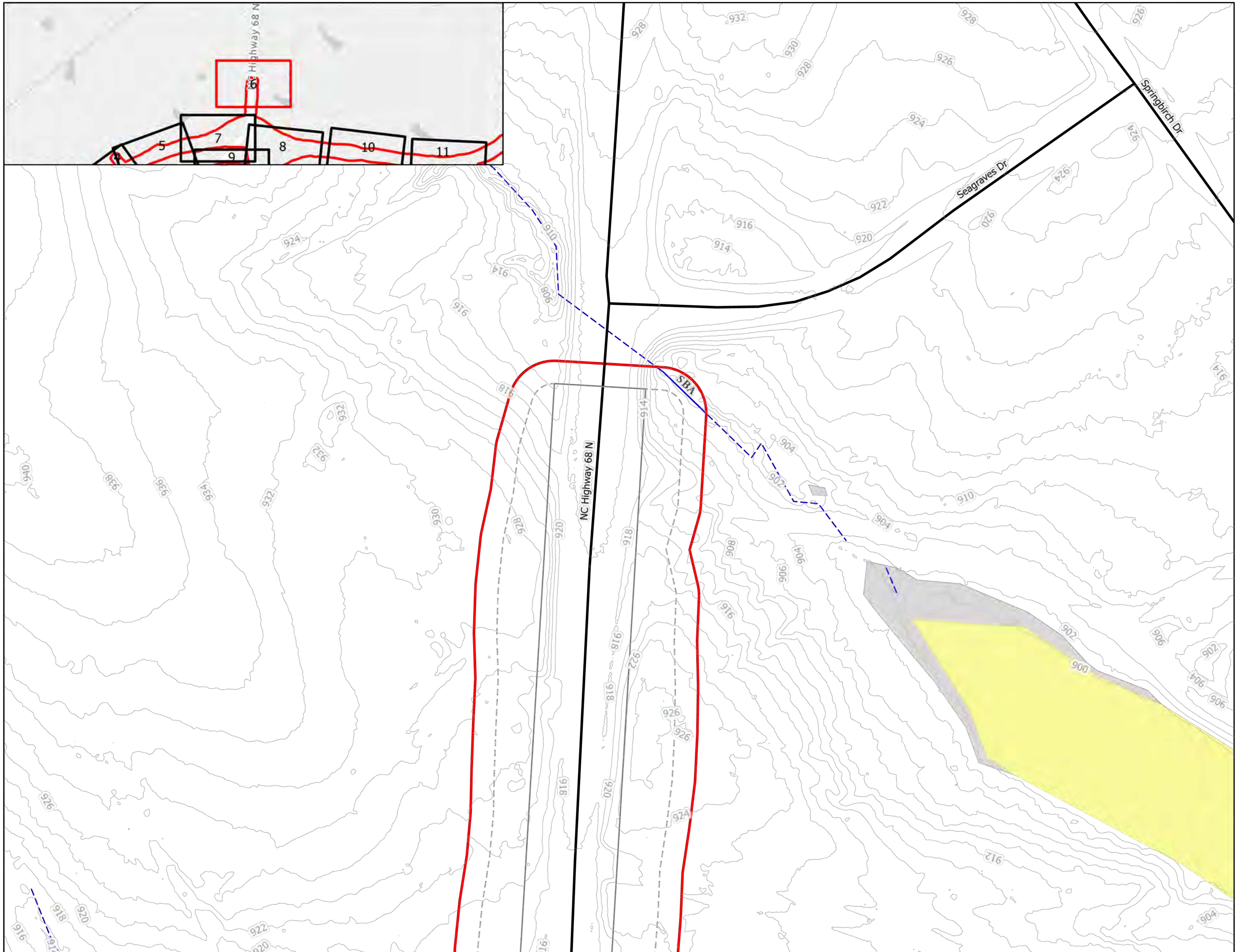
STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION C: SHEET 5 OF 12



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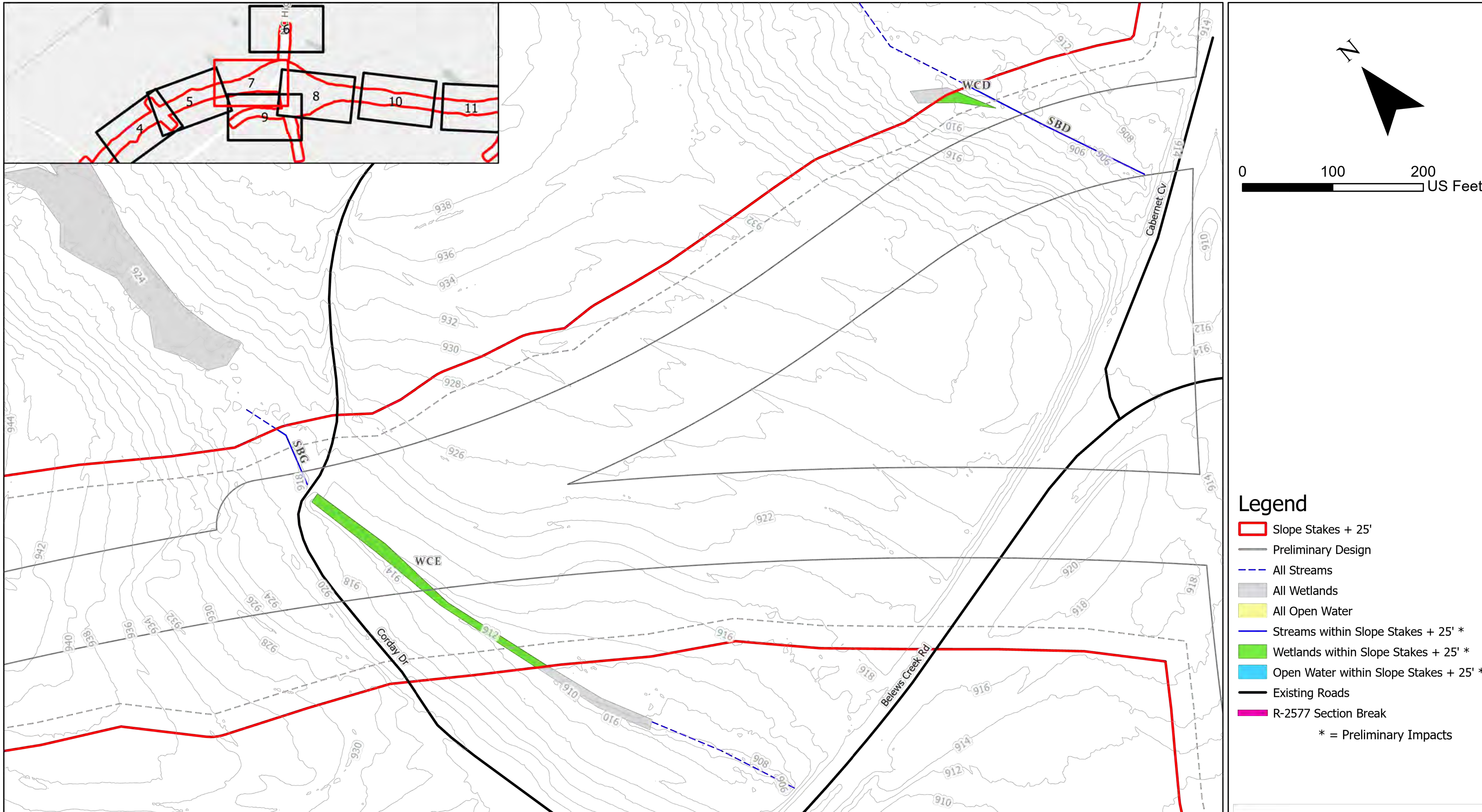
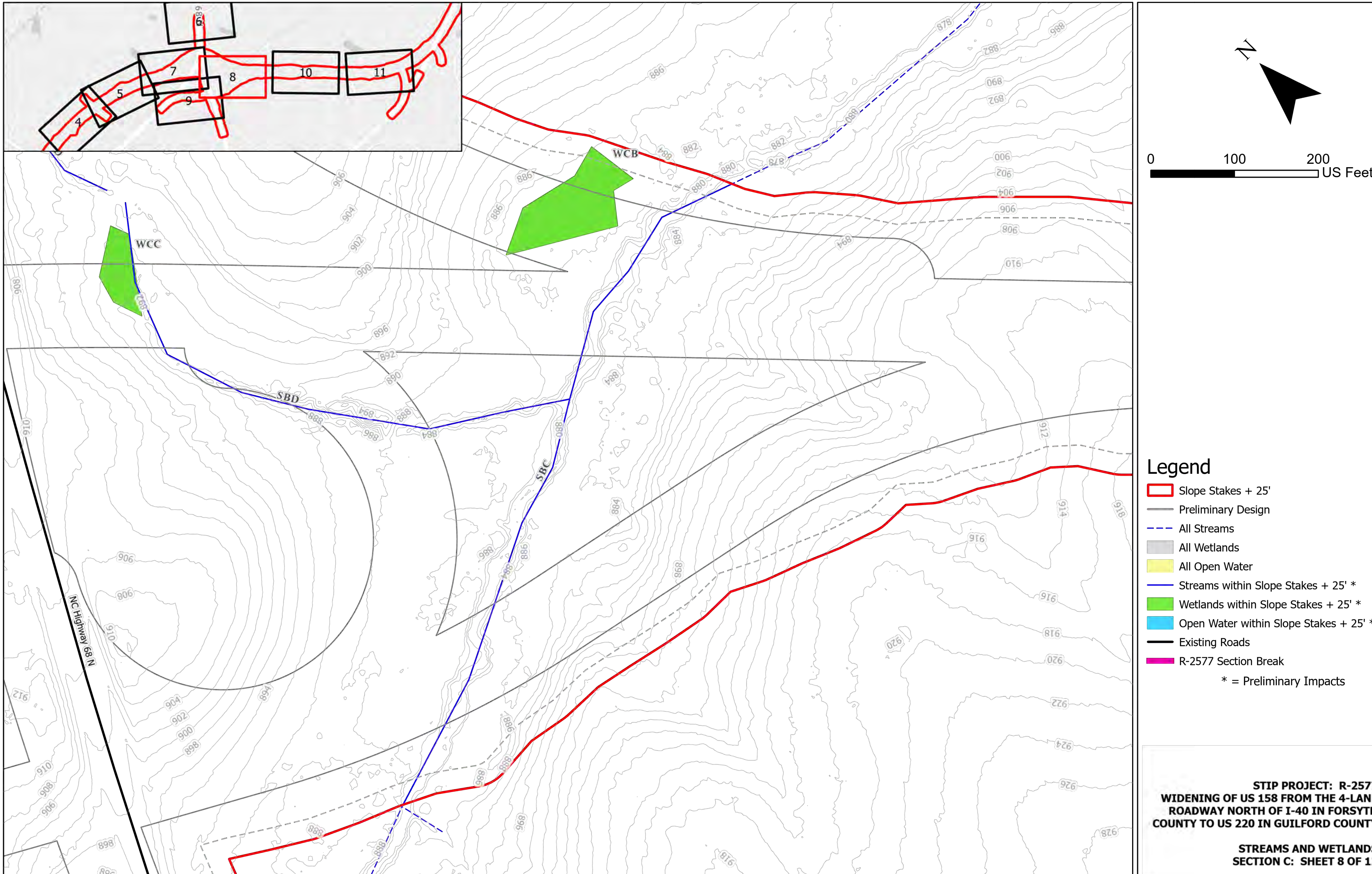
STREAMS AND WETLANDS
SECTION C: SHEET 6 OF 12



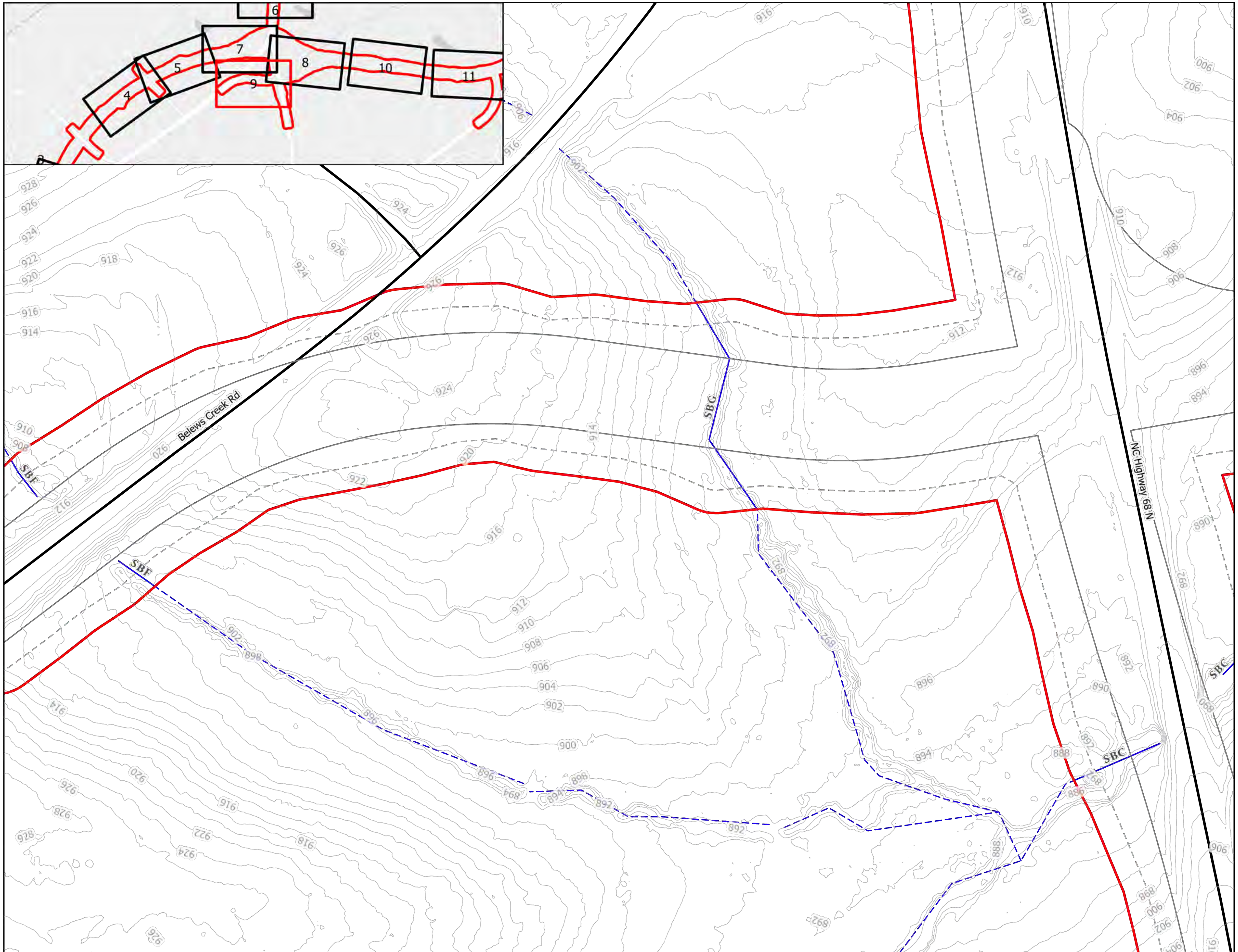
STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION C: SHEET 7 OF 12



STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION C: SHEET 8 OF 12



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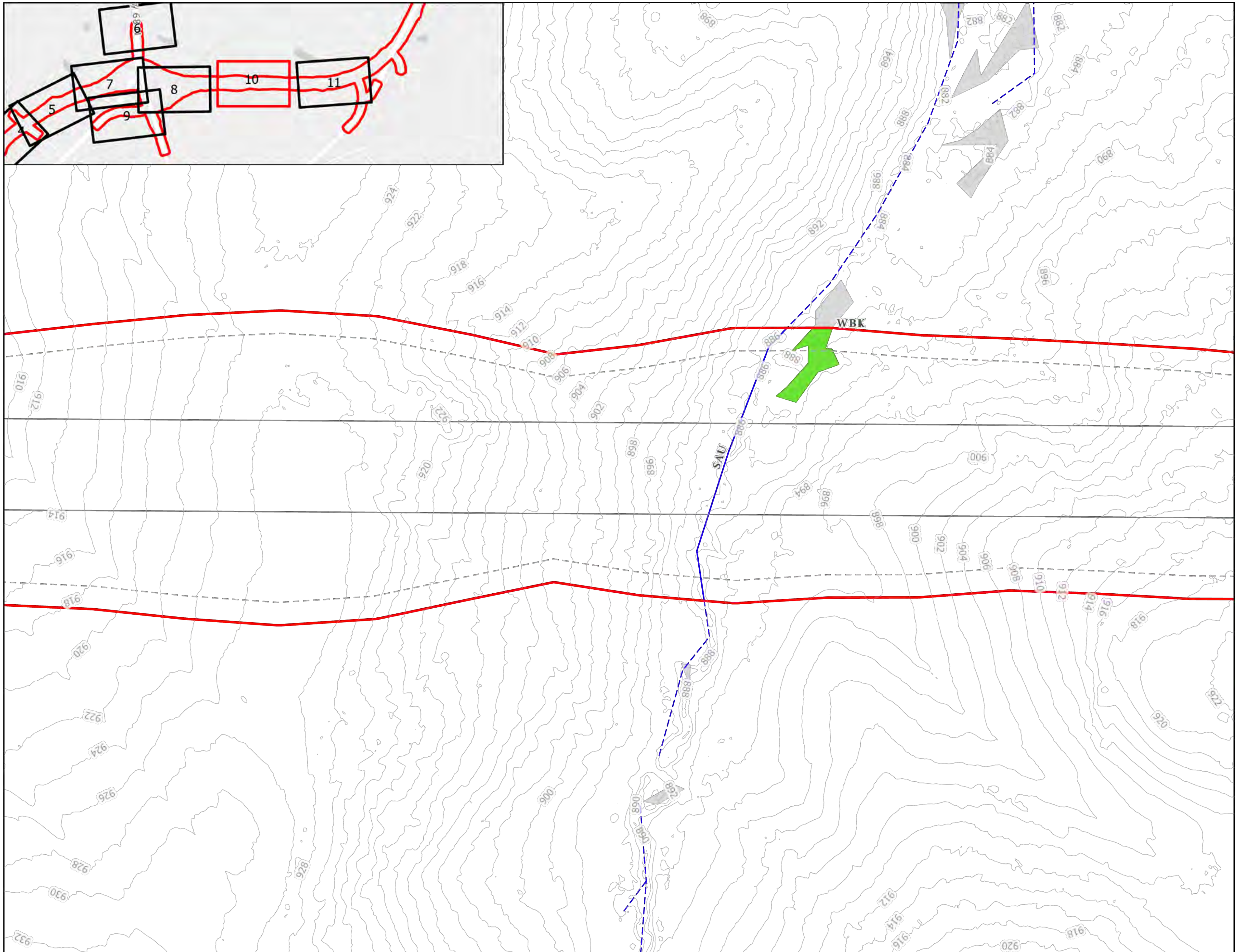
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION C: SHEET 9 OF 12



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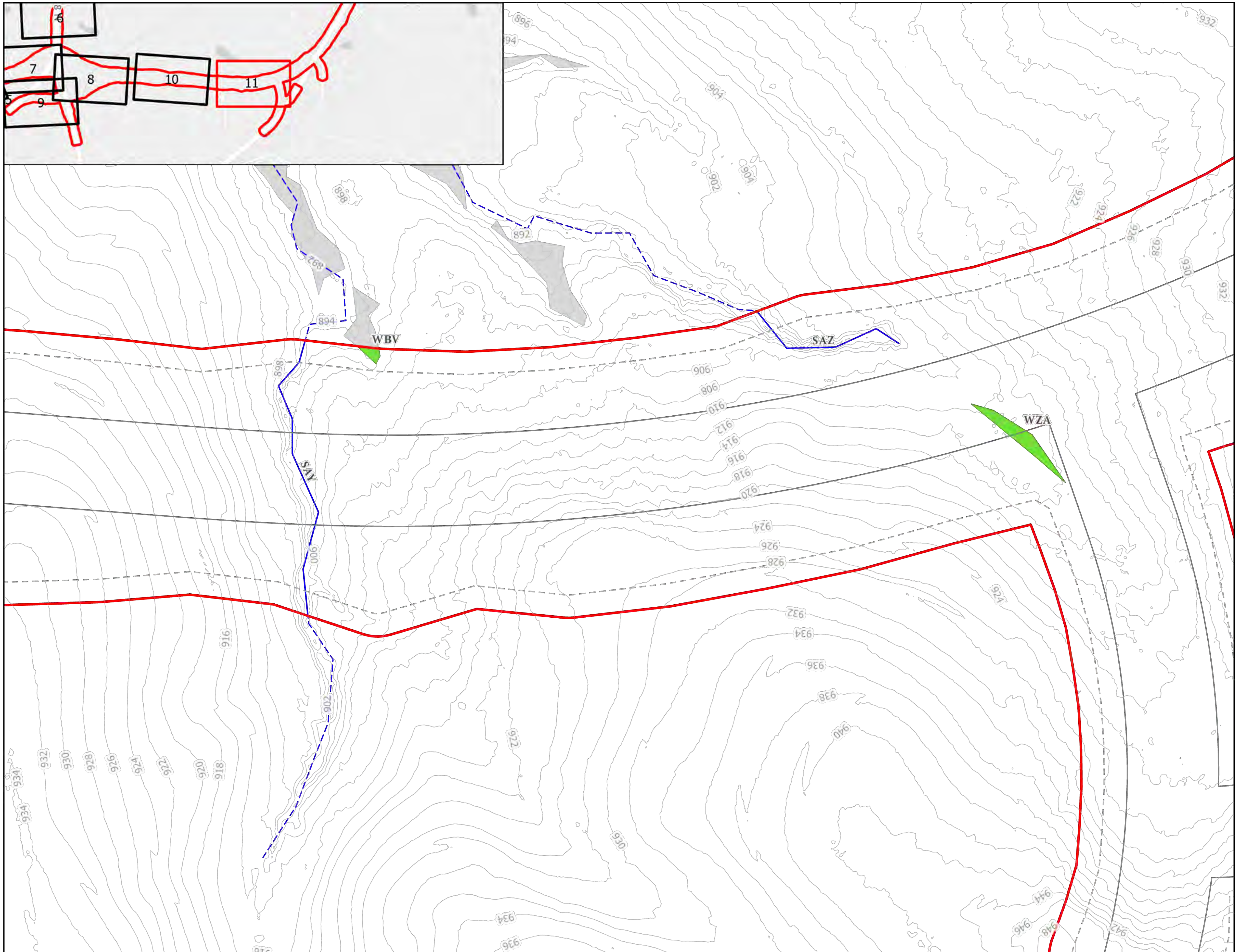
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION C: SHEET 10 OF 12



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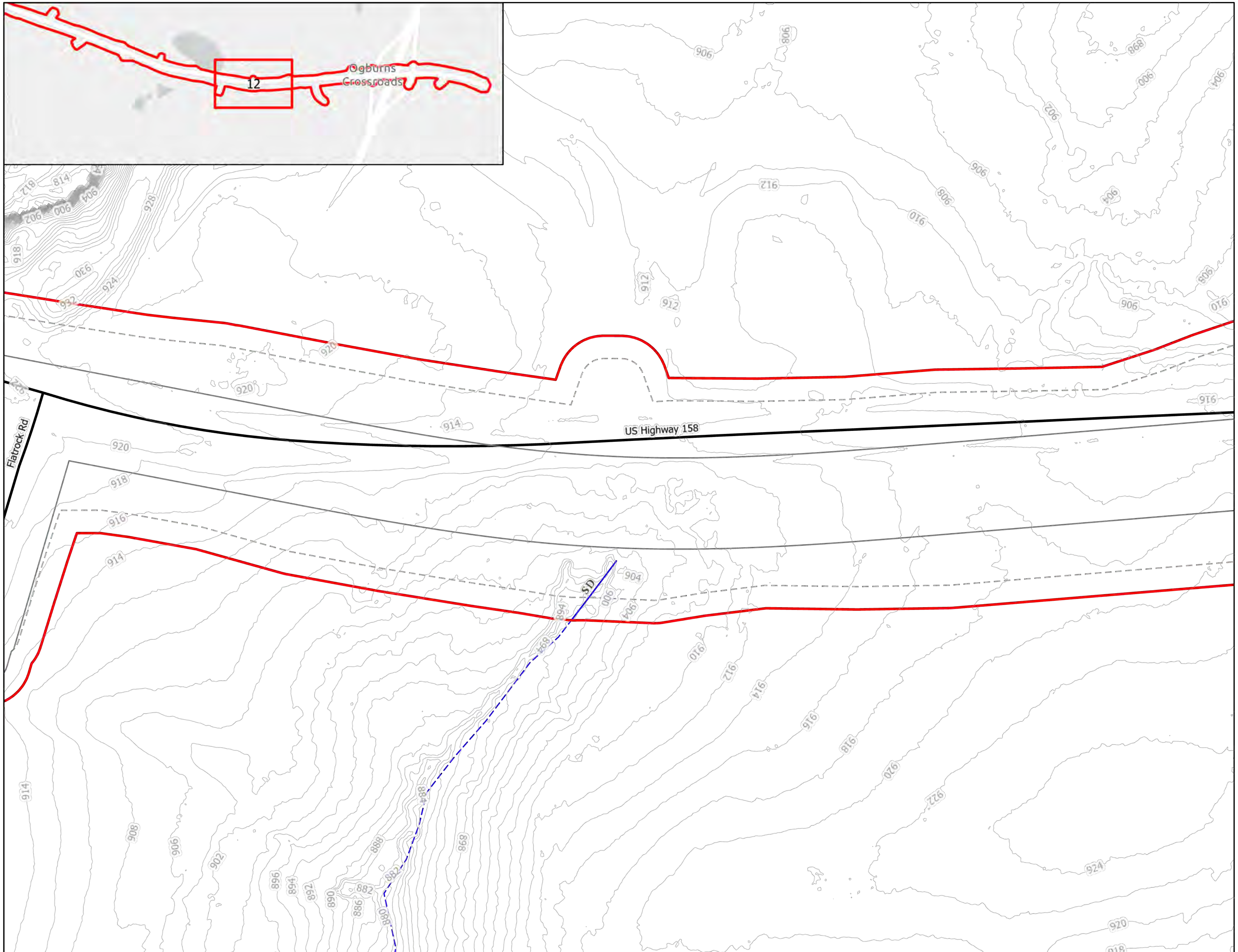
STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION C: SHEET 11 OF 12



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STIP PROJECT: R-2577
WIDENING OF US 158 FROM THE 4-LANE ROADWAY NORTH OF I-40 IN FORSYTH COUNTY TO US 220 IN GUILFORD COUNTY

STREAMS AND WETLANDS
SECTION C: SHEET 12 OF 12