09/08/99

TIP PROJECT: R-2577A

See Sheet 1-B For Conventional Symbols

VICINITY MAP (NTS)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

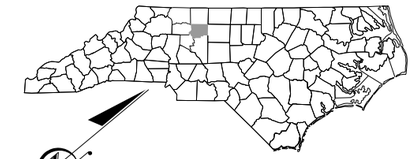
FORSYTH COUNTY

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

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*

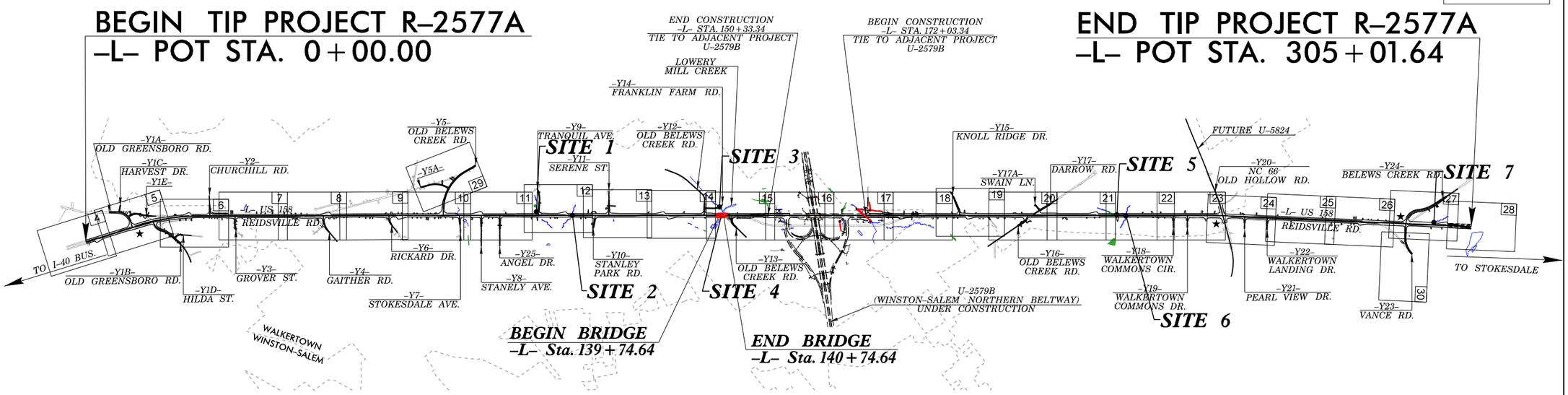


NAD 83

PERMIT DRAWING
SHEET 1 OF 22

ENGLISH

STREAM AND WETLAND IMPACTS



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 ____.
3. THIS PROJECT HAS PARTIAL CONTROL OF ACCESS WITH FULL CONTROL OF ACCESS AT POINTS AS SHOWN ON PLANS.

★ PROPOSED TRAFFIC SIGNAL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT:

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..... 5.758 miles
LENGTH STRUCTURE TIP PROJECT R-2577A..... 0.019 miles
TOTAL LENGTH OF PROJECT R-2577A..... 5.777 miles

PLANS PREPARED BY:
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE, SUITE 350
RALEIGH, NORTH CAROLINA 27609
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:
October 21, 2019

LETTING DATE:
October 19, 2021

NCDOT CONTACT:

Anthony A. Houser, PE
PROJECT ENGINEER

Cathy S. Houser, PE
PROJECT DESIGN ENGINEER

Connie James, PE
DIVISION 9

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

10/17/2019
R:\Hydraulics\PERMITS_Environmental\Drawings\4C\R-2577A_hyd_prm_tsh.dgn
F:Keys

8/17/99

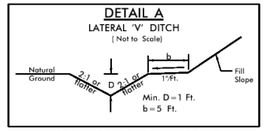
PROJECT REFERENCE NO.	SHEET NO.
R-2577A	DITCH DETAIL
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ENGLISH

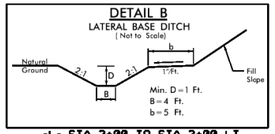
PERMIT DRAWING SHEET 2 OF 22

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



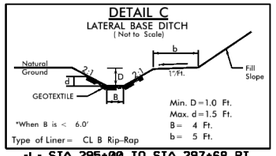
-L- STA. 1+00 TO STA. 1+97 LT
-L- STA. 6+50 TO STA. 8+00 LT
-L- STA. 11+29 TO STA. 11+54 LT
-L- STA. 12+00 TO STA. 14+00 LT
-L- STA. 14+00 TO STA. 16+00 LT
-L- STA. 16+50 TO STA. 21+00 RT
-L- STA. 21+00 TO STA. 22+00 LT
-L- STA. 22+00 TO STA. 23+24 RT
-L- STA. 23+00 TO STA. 23+25 LT
-L- STA. 25+00 TO STA. 27+50 RT
-L- STA. 35+80 TO STA. 38+00 RT
-L- STA. 41+00 TO STA. 45+85 RT
-L- STA. 41+10 TO STA. 46+00 LT
-L- STA. 47+50 TO STA. 51+50 RT
-L- STA. 50+00 TO STA. 53+50 LT
-L- STA. 52+00 TO STA. 53+50 LT
-L- STA. 53+77 TO STA. 55+00 RT
-L- STA. 59+50 TO STA. 62+79 RT
-L- STA. 62+79 TO STA. 66+50 RT
-Y6- STA. 12+50 TO STA. 13+74 RT
-L- STA. 67+80 TO STA. 68+00 RT
-L- STA. 63+50 TO STA. 73+50 LT
-L- STA. 68+31 TO STA. 69+00 RT
-L- STA. 78+00 TO STA. 82+49 RT
-L- STA. 82+43 TO STA. 83+50 LT
-Y8- STA. 10+50 TO STA. 11+00 LT
-L- STA. 88+00 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+17 RT
-L- STA. 113+50 TO STA. 123+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. 178+50 LT
-L- STA. 182+11 TO STA. 184+00 LT
-L- STA. 195+69 TO STA. 198+50 LT
-L- STA. 185+20 TO STA. 185+50 RT
-L- STA. 186+50 TO STA. 192+52 RT
-L- STA. 201+23 TO STA. 203+50 RT
-L- STA. 286+00 TO STA. 287+00 LT
-L- STA. 287+00 TO STA. 290+20 LT
-L- STA. 291+50 TO STA. 295+89 LT
-Y1A- STA. 10+50 TO STA. 12+50 LT
-Y24- STA. 20+00 TO STA. 22+23 RT
-Y24- STA. 23+00 TO STA. 23+63 RT
-L- STA. 215+50 TO STA. 218+00 LT
-L- STA. 230+50 TO STA. 235+00 RT
-L- STA. 235+40 TO STA. 238+75 RT
-L- STA. 242+22 TO STA. 245+50 LT
-L- STA. 247+11 TO STA. 250+00 RT
-L- STA. 229+50 TO STA. 230+00 LT
-L- STA. 235+17 TO STA. 238+50 LT
-Y10- STA. 10+72 TO STA. 11+50 LT
-Y17- STA. 11+50 TO STA. 14+36 LT
-Y17- STA. 13+00 TO STA. 14+35 RT
-Y17A- STA. 10+50 TO STA. 11+28 LT
-L- STA. 199+43 TO STA. 200+07 RT
-L- STA. 301+05 TO STA. 305+00 RT
-L- STA. 220+00 TO STA. 225+00 RT
-Y1B- STA. 11+26 TO STA. 11+50 LT

DETAIL B
LATERAL BASE DITCH
(Not to Scale)



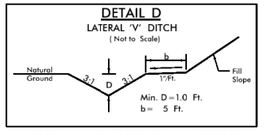
-L- STA. 2+00 TO STA. 3+00 LT
-L- STA. 35+00 TO STA. 35+80 RT
-L- STA. 291+35 TO STA. 295+00 RT
-L- STA. 109+50 TO STA. 112+17 RT
-L- STA. 129+50 TO STA. 131+75 LT
-Y9- STA. 13+50 TO STA. 14+50 LT
-Y11- STA. 12+17 TO STA. 13+00 LT
-Y11- STA. 14+00 TO STA. 14+40 LT

DETAIL C
LATERAL BASE DITCH
(Not to Scale)



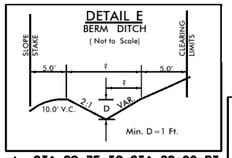
-L- STA. 295+00 TO STA. 297+68 RT
-L- STA. 98+00 TO STA. 99+71 RT
-L- STA. 100+50 TO STA. 100+82 RT
-L- STA. 101+02 TO STA. 102+00 LT
-L- STA. 105+50 TO STA. 108+50 LT
-L- STA. 113+02 TO STA. 113+50 RT
-L- STA. 140+51 TO STA. 142+00 RT
-Y9- STA. 14+50 TO STA. 15+06 LT

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



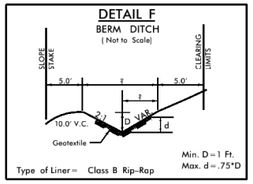
-L- STA. 284+00 TO STA. 290+10 RT
-L- STA. 287+00 TO STA. 290+00 LT

DETAIL E
BERM DITCH
(Not to Scale)



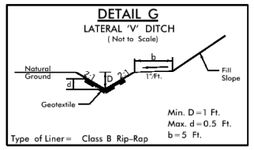
-L- STA. 29+75 TO STA. 32+88 RT
-L- STA. 38+50 TO STA. 41+00 RT
-L- STA. 34+00 TO STA. 35+00 RT
-L- STA. 45+50 TO STA. 48+50 RT
-L- STA. 46+50 TO STA. 48+00 LT
-L- STA. 56+00 TO STA. 58+50 LT
-L- STA. 84+50 TO STA. 87+27 LT
-L- STA. 94+50 TO STA. 96+50 LT
-Y1A- STA. 14+50 TO STA. 15+50 RT
-Y3- STA. 10+91 TO STA. 11+20 RT
-L- STA. 102+50 TO STA. 106+00 RT
-L- STA. 124+50 TO STA. 128+50 LT
-L- STA. 132+50 TO STA. 135+78 LT
-L- STA. 178+50 TO STA. 182+11 LT
-L- STA. 193+19 TO STA. 195+69 LT
-Y15- STA. 12+50 TO STA. 15+00 LT
-Y5- STA. 21+00 TO STA. 22+50 RT

DETAIL F
BERM DITCH
(Not to Scale)



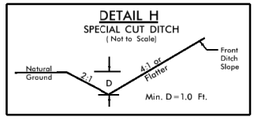
-L- STA. 38+00 TO STA. 38+50 RT
-L- STA. 83+50 TO STA. 84+50 LT
-L- STA. 87+27 TO STA. 88+00 LT
-L- STA. 94+00 TO STA. 94+50 LT
-Y12- STA. 22+00 TO STA. 23+88 RT

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



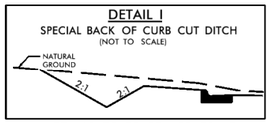
-Y1A- STA. 16+00 TO STA. 16+16 RT
-L- STA. 11+54 TO STA. 12+00 LT
-L- STA. 22+00 TO STA. 23+00 RT
-L- STA. 50+00 TO STA. 52+00 LT
-L- STA. 59+50 TO STA. 62+79 RT
-L- STA. 63+00 TO STA. 63+50 LT
-L- STA. 185+50 TO STA. 186+50 RT

DETAIL H
SPECIAL CUT DITCH
(Not to Scale)



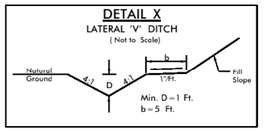
-L- STA. 13+79 TO STA. 14+72 RT
-L- STA. 17+00 TO STA. 17+36 LT
-L- STA. 17+00 TO STA. 17+39 RT
-L- STA. 68+00 TO STA. 68+31 RT
-L- STA. 76+00 TO STA. 78+00 LT
-Y1A- STA. 12+00 TO STA. 12+50 RT
-Y1B- STA. 11+03 TO STA. 11+26 LT
-Y1B- STA. 11+50 TO STA. 15+79 LT
-Y1B- STA. 17+50 TO STA. 18+50 LT
-Y1B- STA. 17+50 TO STA. 18+50 RT
-Y1C- STA. 9+50 TO STA. 11+00 LT
-Y1C- STA. 9+50 TO STA. 11+00 RT
-Y1C- STA. 11+00 TO STA. 11+18 RT
-Y1D- STA. 11+50 TO STA. 12+00 LT
-Y1D- STA. 11+50 TO STA. 12+00 RT
-Y1D- STA. 13+50 TO STA. 13+77 RT
-Y3- STA. 11+50 TO STA. 13+00 LT
-Y3- STA. 11+50 TO STA. 13+00 RT
-Y25- STA. 13+00 TO STA. 13+50 LT
-Y25- STA. 13+00 TO STA. 13+50 RT
-Y11- STA. 11+50 TO STA. 12+00 LT
-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+50 LT
-Y14- STA. 13+31 TO STA. 14+00 LT
-Y4- STA. 12+50 TO STA. 13+50 LT
-Y4- STA. 12+50 TO STA. 13+50 RT
-Y5- STA. 22+00 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. 22+00 TO STA. 22+50 RT
-Y5A- STA. 10+00 TO STA. 11+00 LT
-Y5A- STA. 9+50 TO STA. 11+00 RT
-Y5A- STA. 15+50 TO STA. 16+00 RT
-Y6- STA. 12+00 TO STA. 12+50 LT
-Y7- STA. 10+94 TO STA. 12+00 RT
-Y8- STA. 11+78 TO STA. 12+50 LT
-Y17A- STA. 10+00 TO STA. 11+00 RT
-Y17A- STA. 10+00 TO STA. 10+50 LT
-Y15- STA. 11+00 TO STA. 11+50 LT
-Y23- STA. 17+00 TO STA. 17+36 LT
-Y23- STA. 17+00 TO STA. 17+39 RT
-Y23- STA. 13+79 TO STA. 14+72 RT
-Y24- STA. 12+00 TO STA. 13+00 LT
-Y24- STA. 12+00 TO STA. 13+00 RT

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



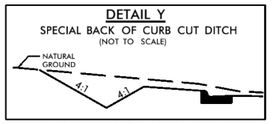
-L- STA. 16+50 TO STA. 20+50 LT
-L- STA. 20+50 TO STA. 21+00 RT
-L- STA. 21+00 TO STA. 22+00 RT
-L- STA. 23+24 TO STA. 25+00 RT
-L- STA. 27+50 TO STA. 29+50 RT
-L- STA. 41+00 TO STA. 41+50 RT
-L- STA. 48+50 TO STA. 50+00 LT
-L- STA. 55+50 TO STA. 59+50 RT
-L- STA. 69+00 TO STA. 69+50 LT
-L- STA. 73+00 TO STA. 74+50 RT
-L- STA. 74+50 TO STA. 78+50 LT
-L- STA. 78+00 TO STA. 78+50 LT
-L- STA. 78+00 TO STA. 82+48 RT
-L- STA. 80+00 TO STA. 81+50 LT
-L- STA. 90+00 TO STA. 91+00 LT
-L- STA. 91+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. 184+00 TO STA. 192+00 LT
-Y1A- STA. 11+00 TO STA. 12+00 RT
-Y1A- STA. 12+50 TO STA. 14+50 RT
-Y1A- STA. 12+50 TO STA. 14+24 LT
-Y5- STA. 22+50 TO STA. 23+31 RT

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



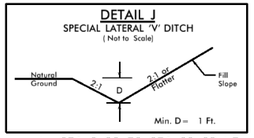
-L- STA. 88+00 TO STA. 89+90 RT
-Y8- STA. 10+50 TO STA. 11+00 LT

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



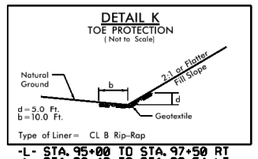
-L- STA. 90+25 TO STA. 91+20 RT
-Y25- STA. 10+73 TO STA. 11+00 RT

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



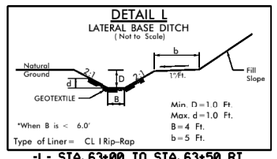
-L- STA. 0+00 TO STA. 02+00 LT
-L- STA. 11+00 TO STA. 11+29 LT
-Y1A- STA. 11+00 TO STA. 12+00 LT
-Y1E- STA. 12+00 TO STA. 15+00 RT

DETAIL K
TOE PROTECTION
(Not to Scale)



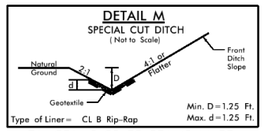
-L- STA. 95+00 TO STA. 97+50 RT
-L- STA. 98+40 TO STA. 99+54 LT
-L- STA. 101+50 TO STA. 102+62 RT
-L- STA. 137+50 TO STA. 139+50 LT
-L- STA. 229+25 TO STA. 230+50 RT
-Y20- STA. 96+59 TO STA. 97+51 LT

DETAIL L
LATERAL BASE DITCH
(Not to Scale)



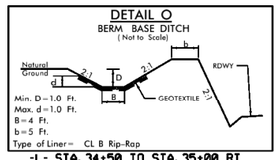
-L- STA. 63+00 TO STA. 63+50 RT
-L- STA. 107+04 TO STA. 109+50 RT

DETAIL M
SPECIAL CUT DITCH
(Not to Scale)



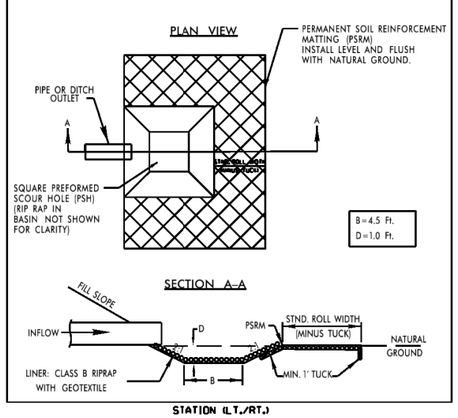
-Y5A- STA. 16+00 TO STA. 16+14 RT

DETAIL O
BERM BASE DITCH
(Not to Scale)



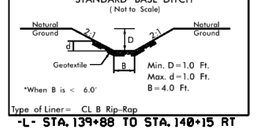
-L- STA. 34+50 TO STA. 35+00 RT
-Y12- STA. 21+25 TO STA. 22+00 RT
-L- STA. 102+00 TO STA. 102+50 LT
-L- STA. 128+50 TO STA. 129+50 LT

DETAIL N
PREFORMED SCOUR HOLE



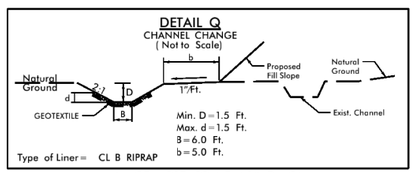
STATION (LT./RT.)

DETAIL P
STANDARD BASE DITCH
(Not to Scale)



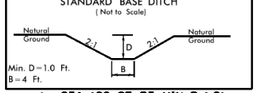
-L- STA. 139+88 TO STA. 140+15 RT

DETAIL Q
CHANNEL CHANGE
(Not to Scale)



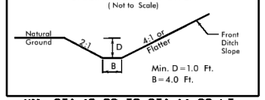
-L- STA. 225+38 LT, MIN D=1.0'
L=386', S=2.3%
BEG. EL=929.00', END EL=920.00'

DETAIL R
STANDARD BASE DITCH
(Not to Scale)



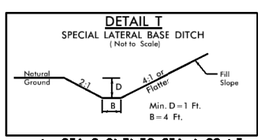
-L- STA. 106+25 RT, MIN. D=1.0'
L=25', S=7.0%
BEG. EL=863.60', END EL=861.85'

DETAIL S
SPECIAL CUT BASE DITCH
(Not to Scale)



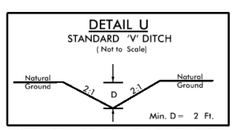
-Y11- STA. 13+00 TO STA. 14+00 LT

DETAIL T
SPECIAL LATERAL BASE DITCH
(Not to Scale)



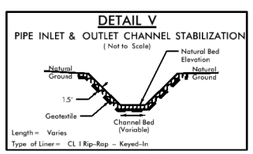
-L- STA. 3+81.71 TO STA. 4+00 LT

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



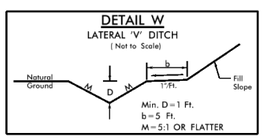
-Y20- STA. 96+28 LT, MIN. D= 2.0'
L=55', S=1.1%
BEG. EL= 976.18', END EL. 976.77'

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



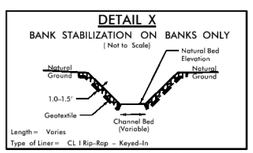
-L- 101+34 RT
-Y9- STA. 14+65 RT
-Y14- STA. 13+13 LT

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



-L- STA. 51+50 TO STA. 52+00 RT

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



-L- STA. 100+94 RT
-L- STA. 106+50 RT
-L- STA. 107+85 LT
-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. 228+96 RT
-L- STA. 298+07 LT

FOR -L- PROFILE SEE SHT. 31

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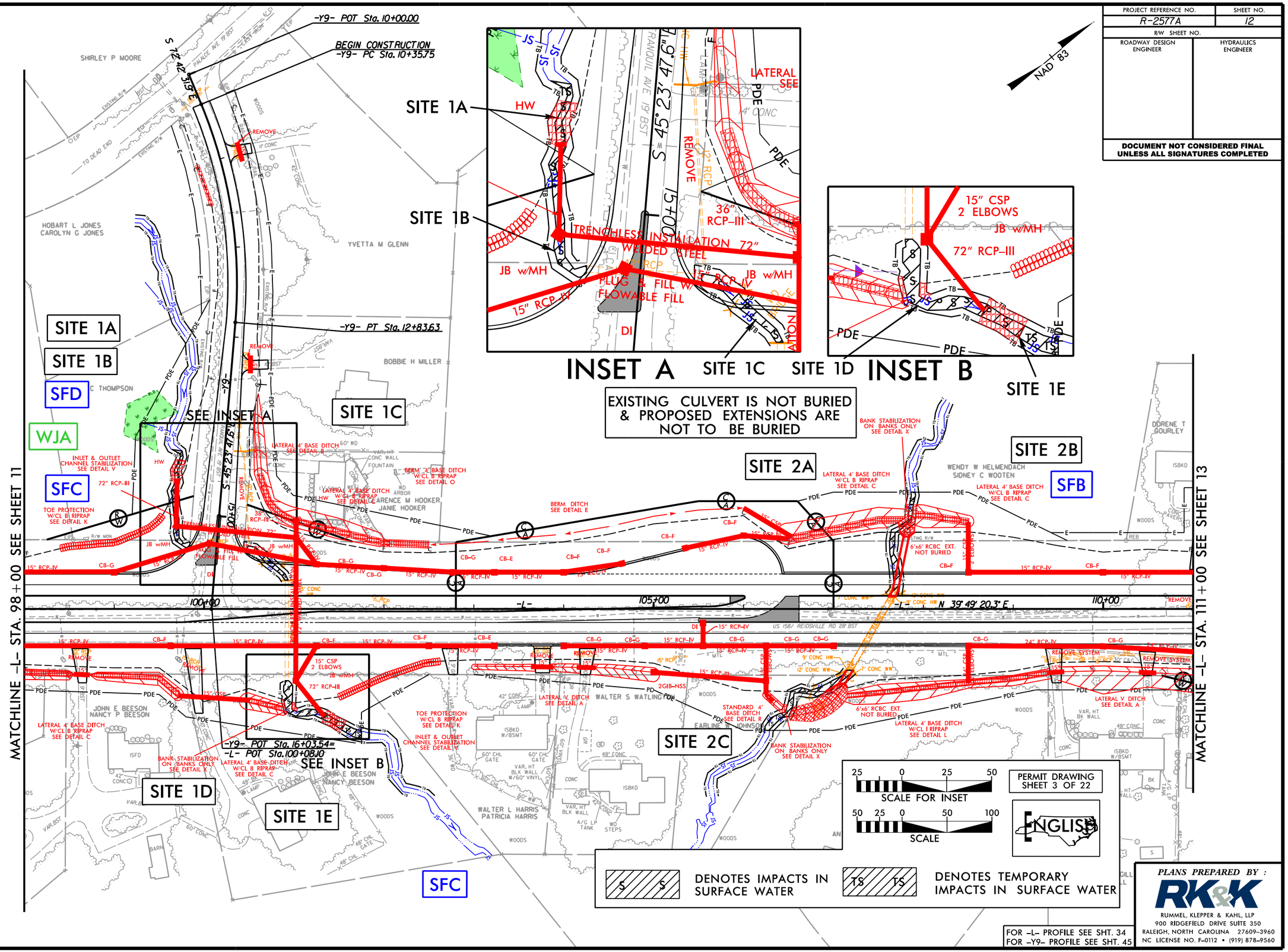
ekeais

PROJECT REFERENCE NO.	SHEET NO.
R-2577A	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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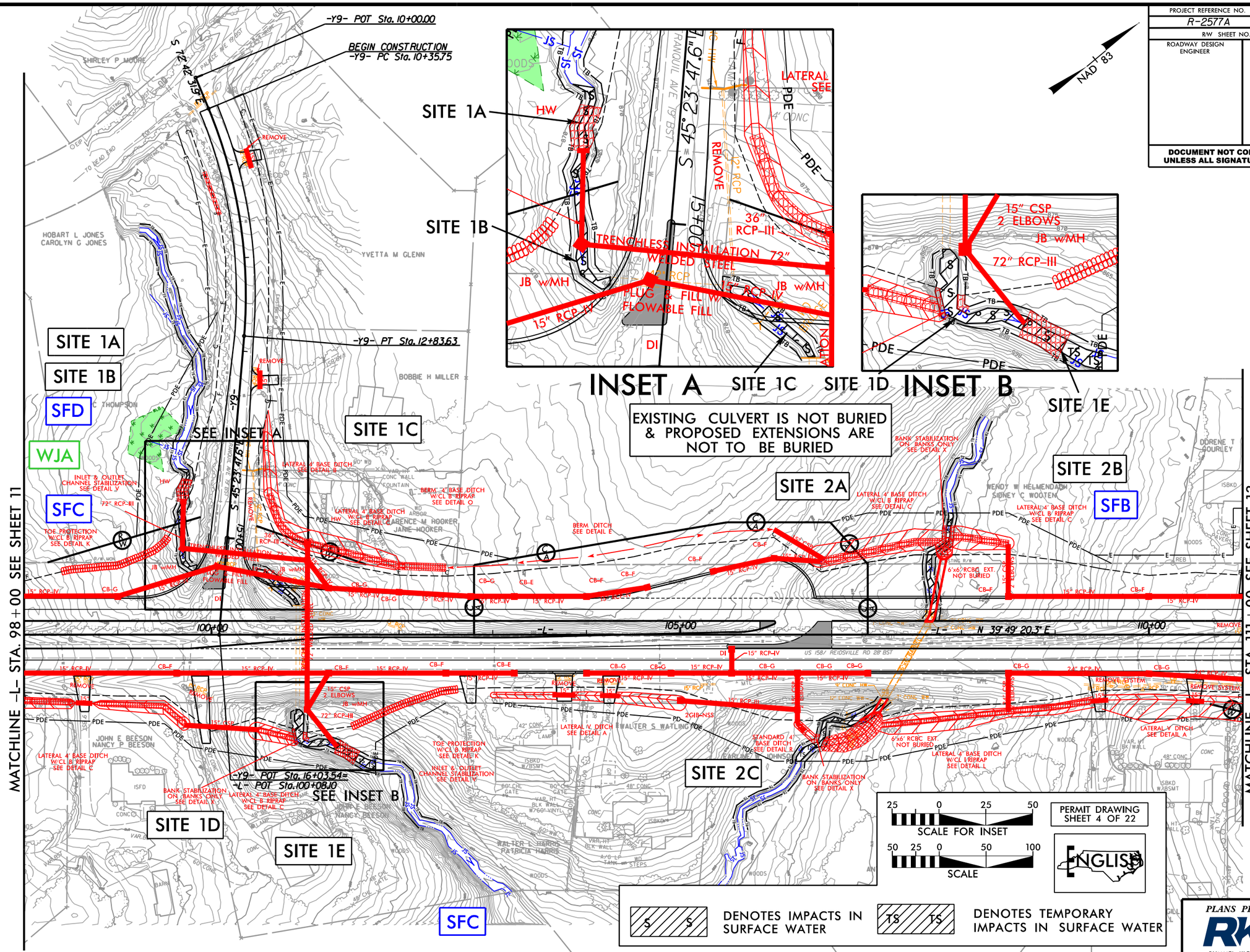
PROJECT REFERENCE NO.	SHEET NO.
R-2577A	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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11/7/2019
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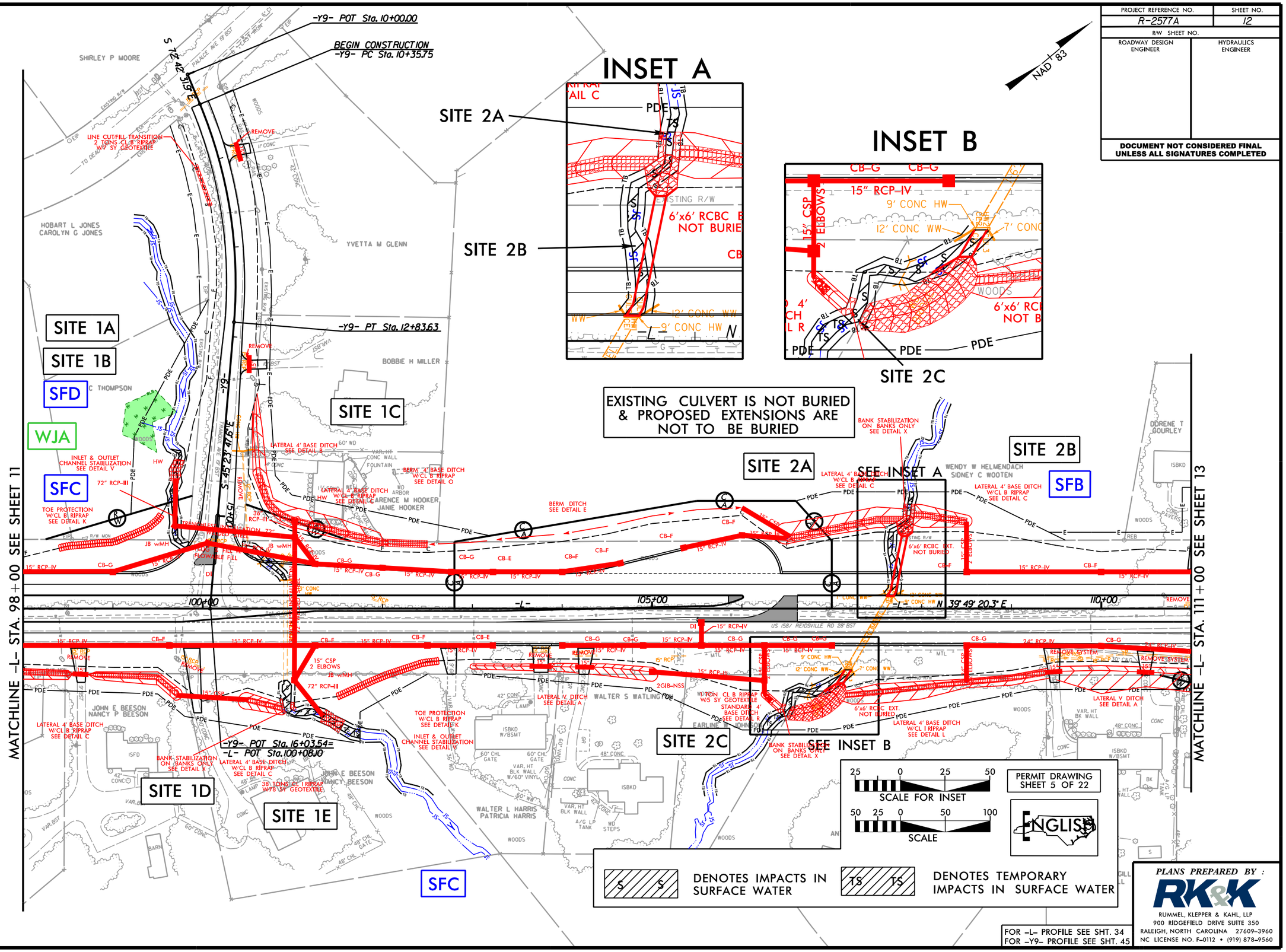
PROJECT REFERENCE NO.	SHEET NO.
R-2577A	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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

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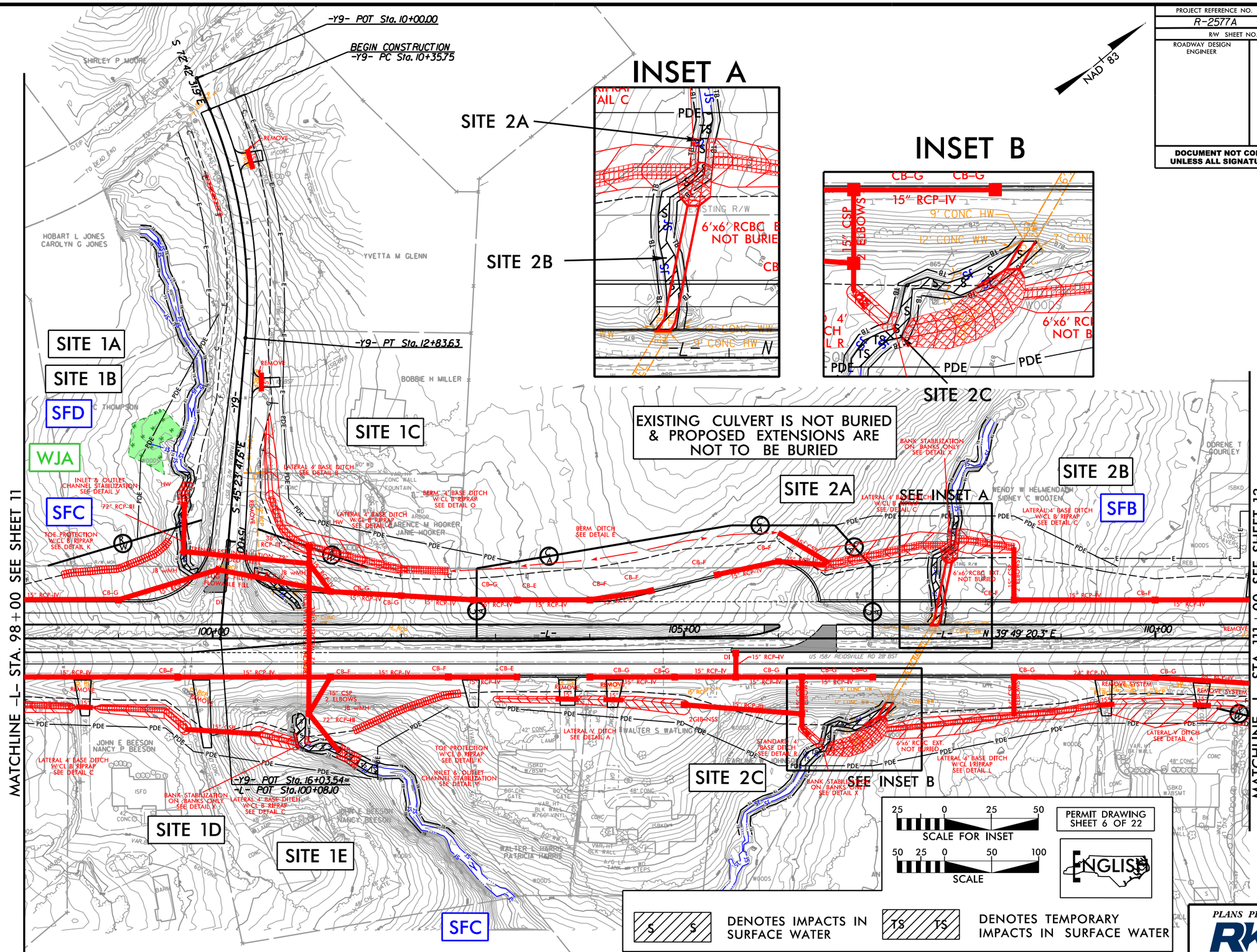
PROJECT REFERENCE NO.	SHEET NO.
R-2577A	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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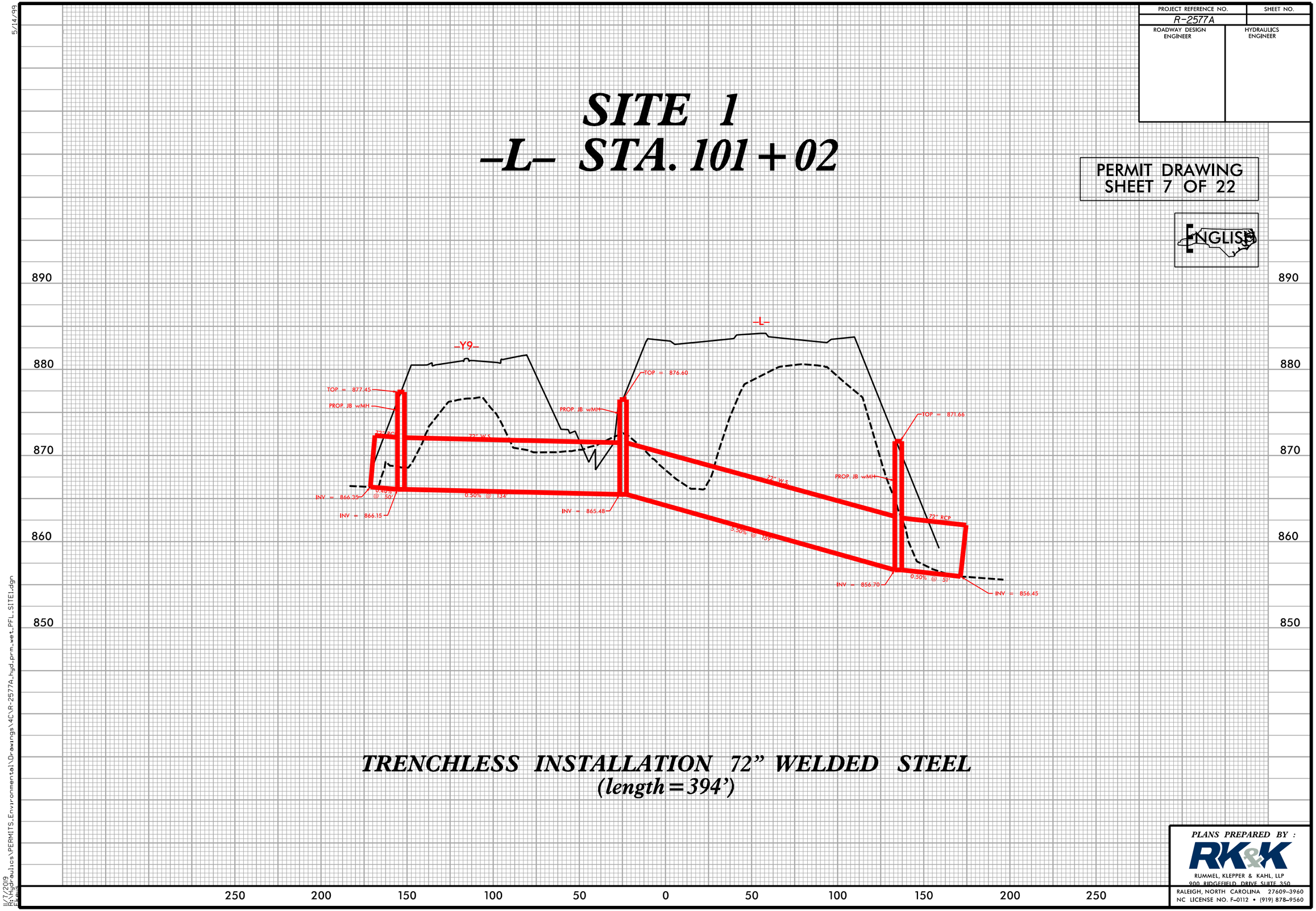
PROJECT REFERENCE NO.	SHEET NO.
R-2577A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 1
-L- STA. 101+02

PERMIT DRAWING
SHEET 7 OF 22

ENGLISH



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

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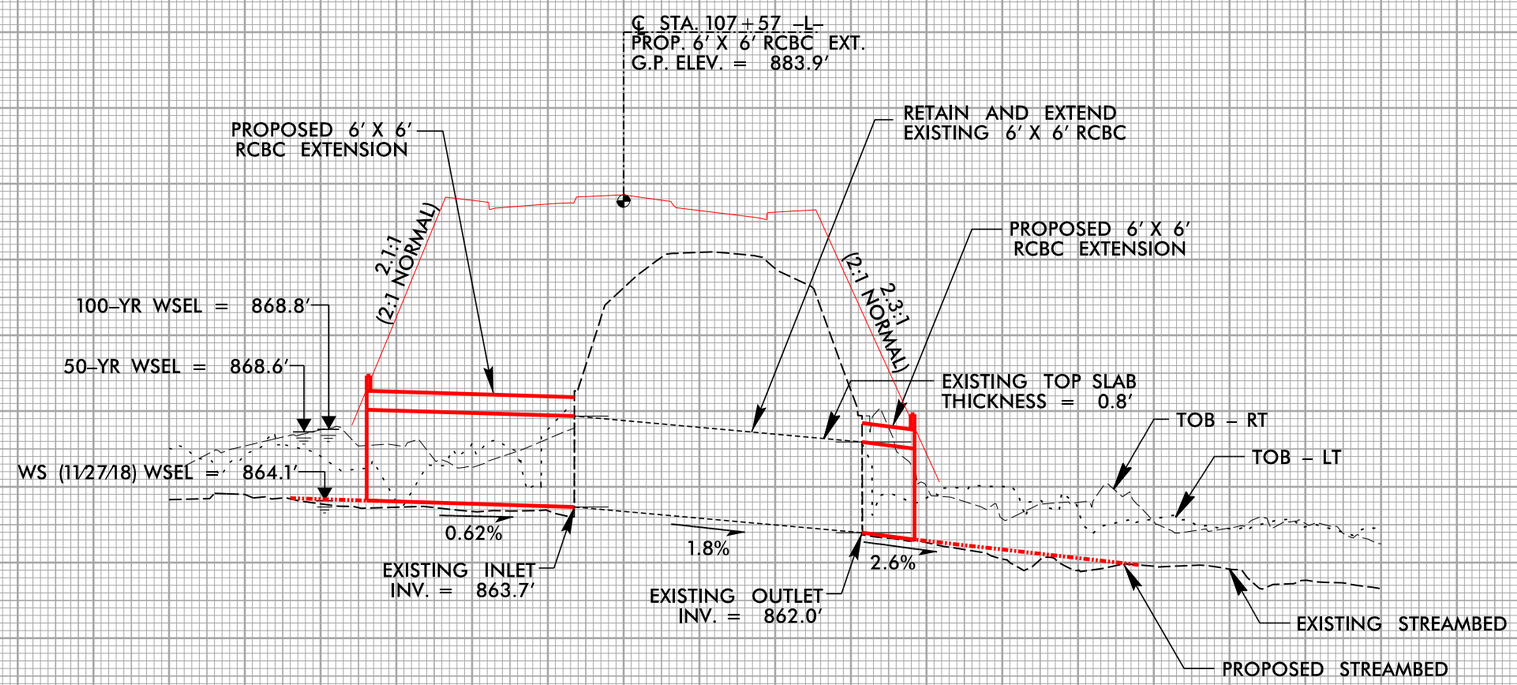
PROJECT REFERENCE NO.	SHEET NO.
R-2577A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 2
-L- STA. 107+57

PERMIT DRAWING
SHEET 8 OF 22

ENGLISH



PROPOSED 6'X6' RCBC EXTENSION

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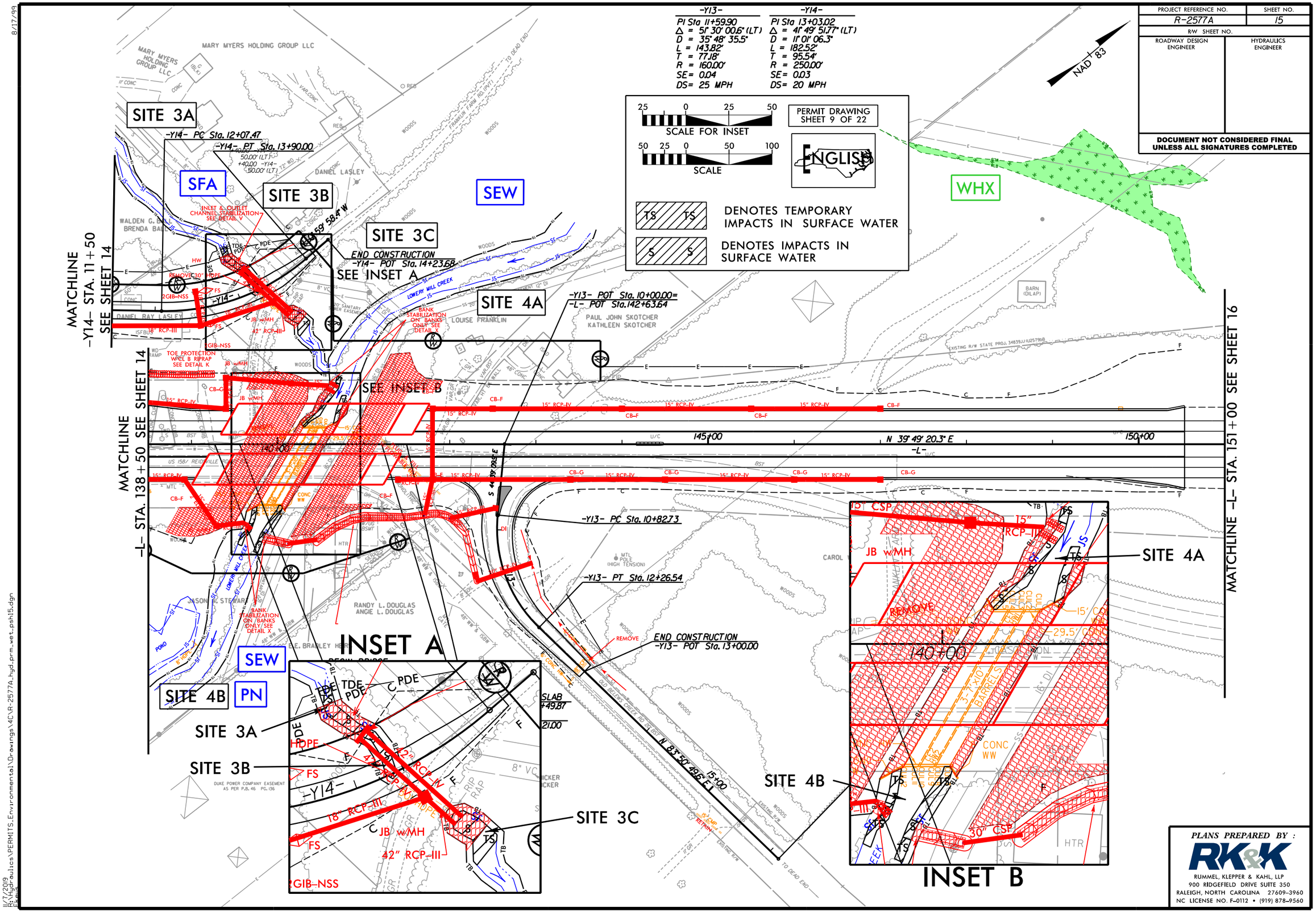

PROJECT REFERENCE NO.	SHEET NO.
R-2577A	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PROJECT REFERENCE NO.	SHEET NO.
R-2577A	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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-Y13-	-Y14-
PI Sta 11+59.90	PI Sta 13+03.02
Δ = 51° 30' 00.6" (LT)	Δ = 41° 49' 51.77" (LT)
D = 35° 48' 35.5"	D = 11° 01' 06.3"
L = 143.82'	L = 182.52'
T = 77.18'	T = 95.54'
R = 160.00'	R = 250.00'
SE = 0.04	SE = 0.03
DS = 25 MPH	DS = 20 MPH

25 0 25 50 SCALE FOR INSET

50 25 0 50 100 SCALE

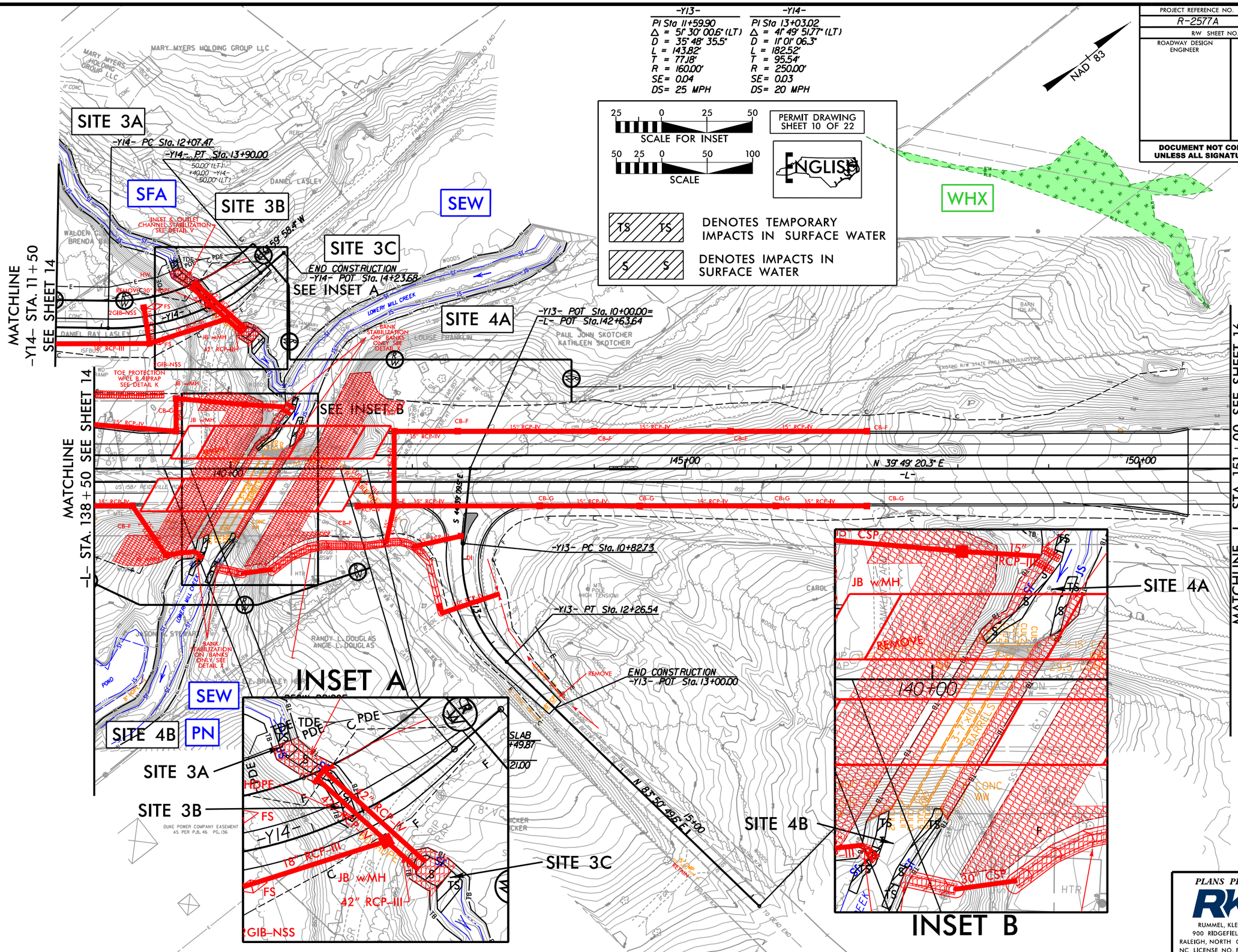
PERMIT DRAWING SHEET 10 OF 22

ENGLISH

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

NAD 83



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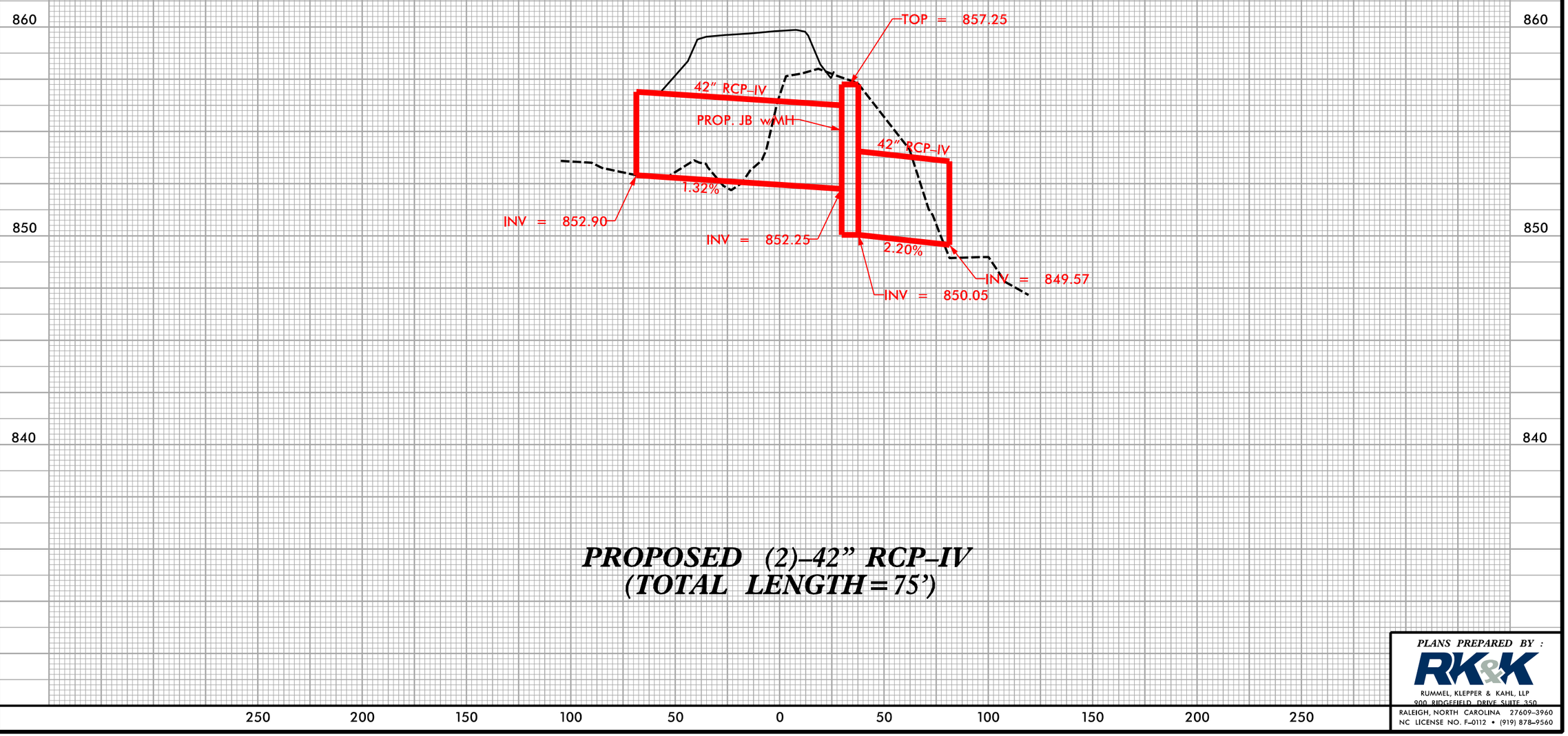
PROJECT REFERENCE NO.	SHEET NO.
R-2577A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 3
–Y14– STA. 13+25

PERMIT DRAWING
SHEET 11 OF 22

ENGLISH



PROPOSED (2)–42" RCP–IV
(TOTAL LENGTH=75')

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5/28/99

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

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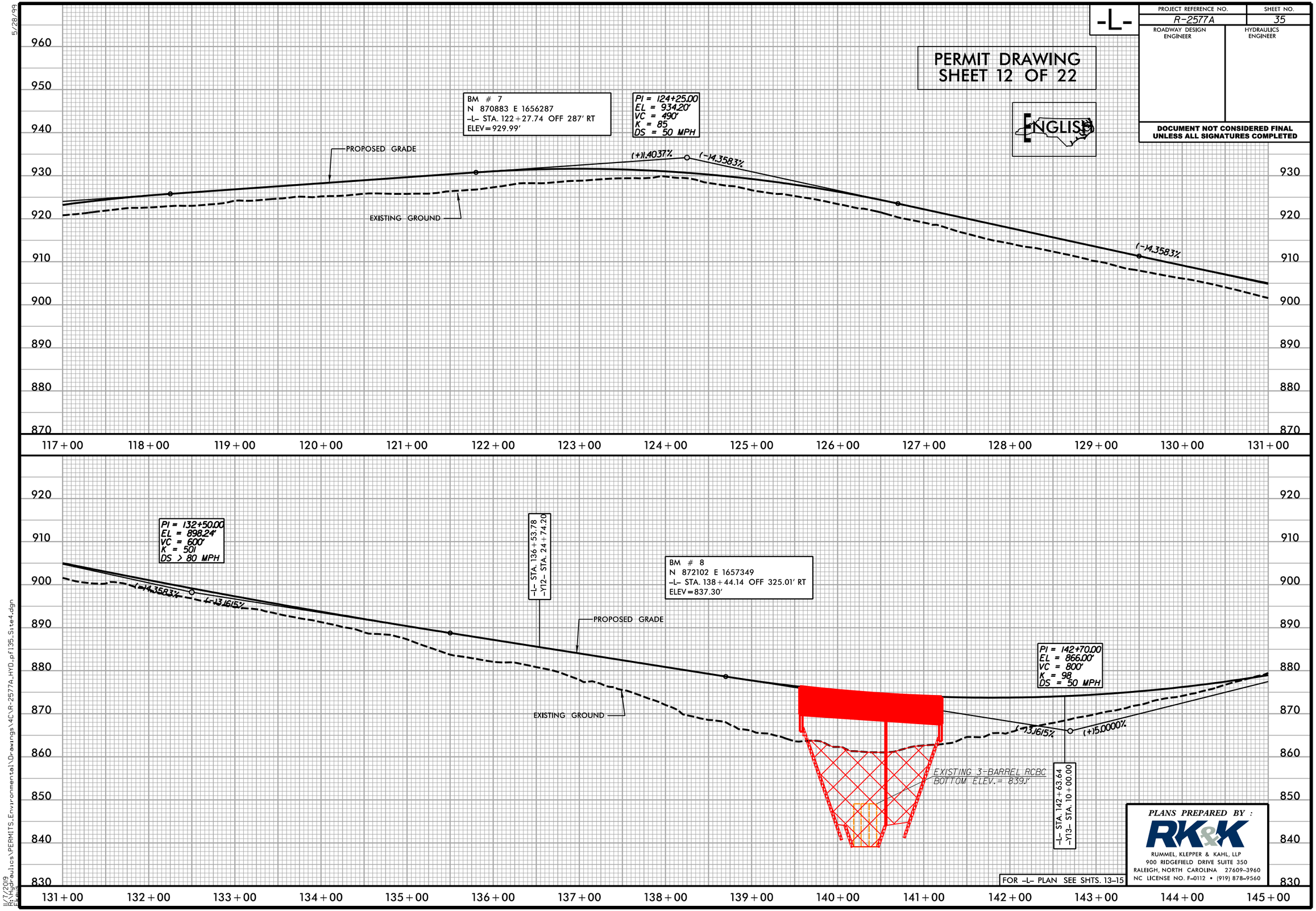
-L-

PERMIT DRAWING
SHEET 12 OF 22

ENGLISH



FOR -L- PLAN SEE SHTS. 13-15

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8/17/99

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

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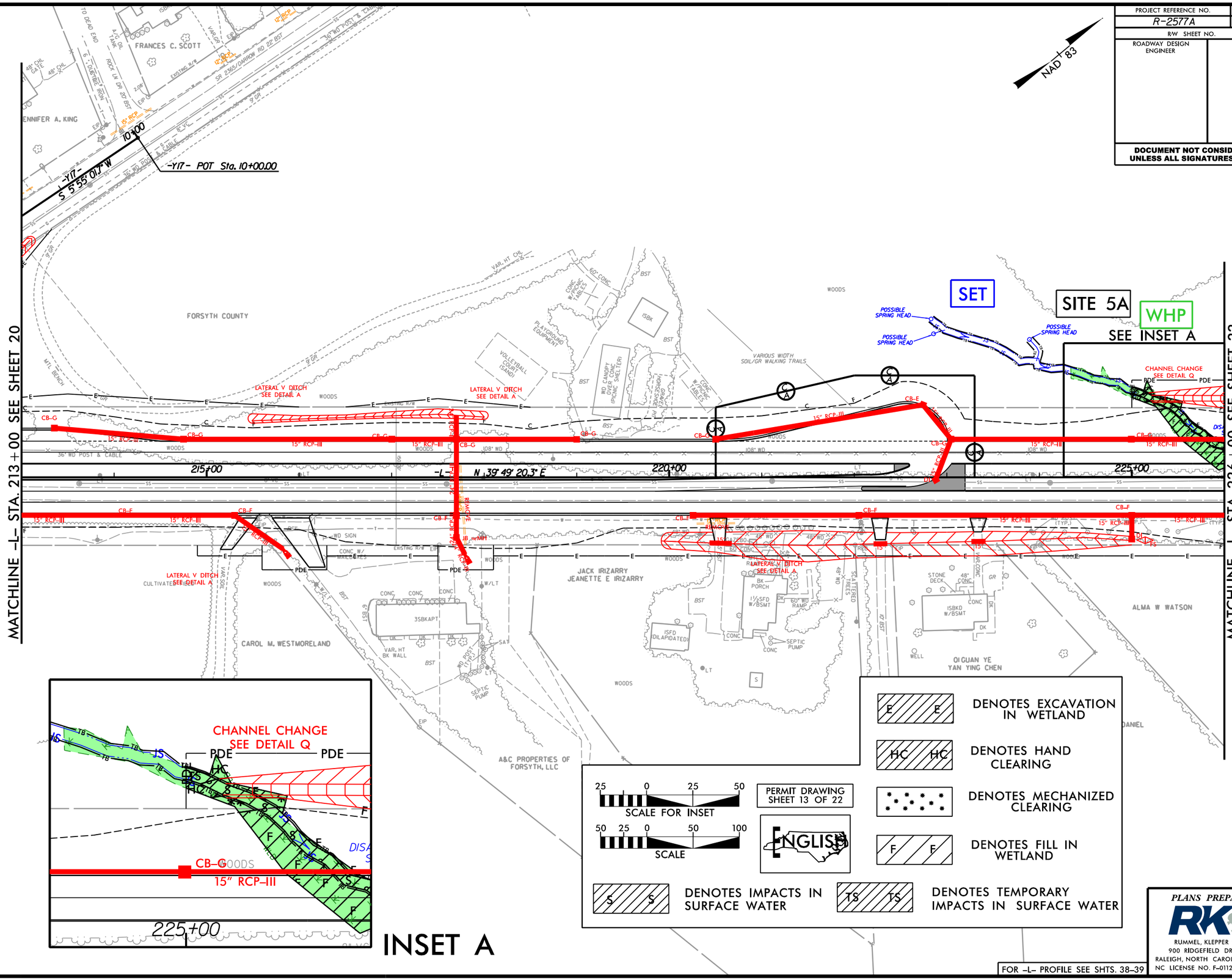

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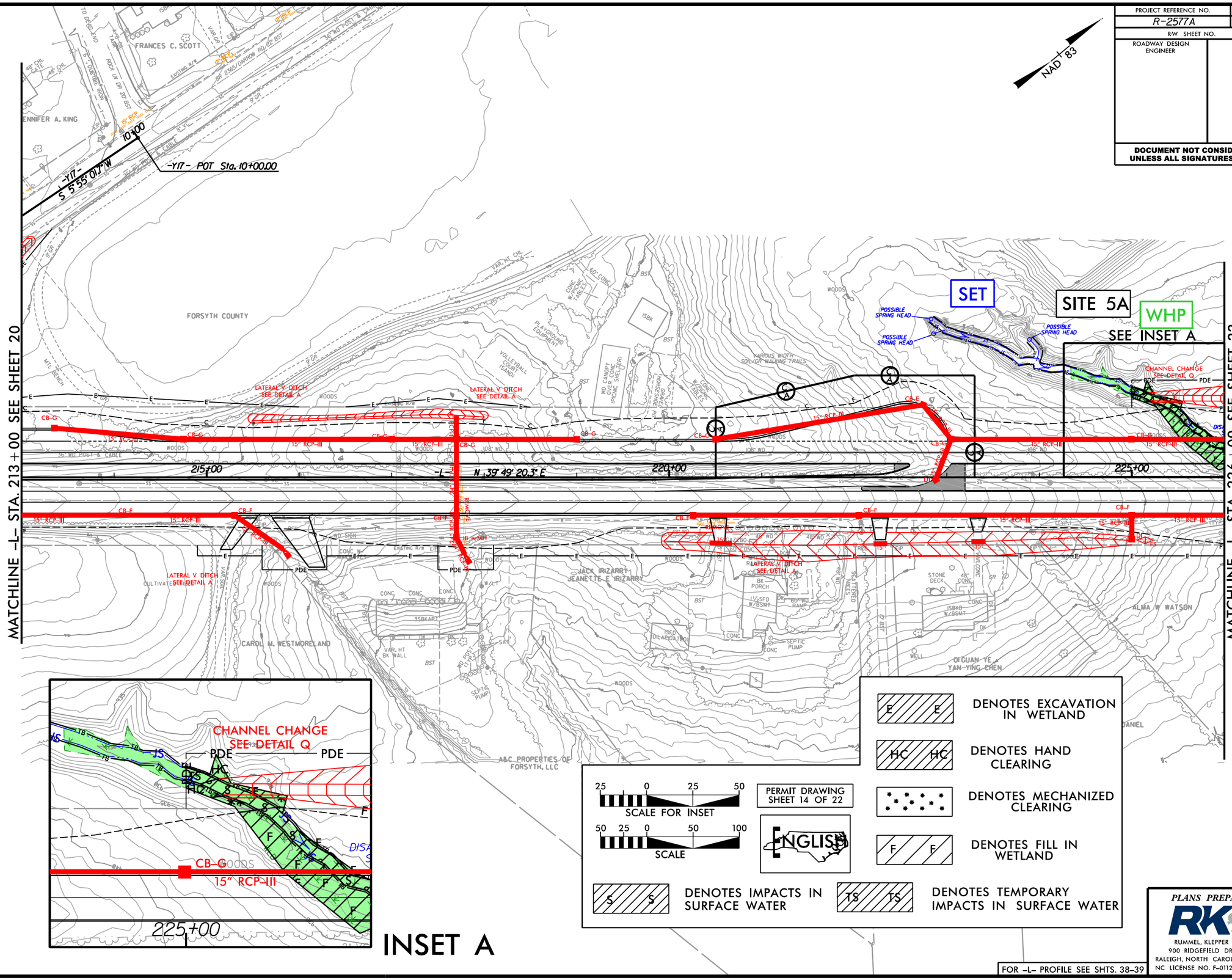
PROJECT REFERENCE NO.	SHEET NO.
R-2577A	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



FOR -L- PROFILE SEE SHTS. 38–39

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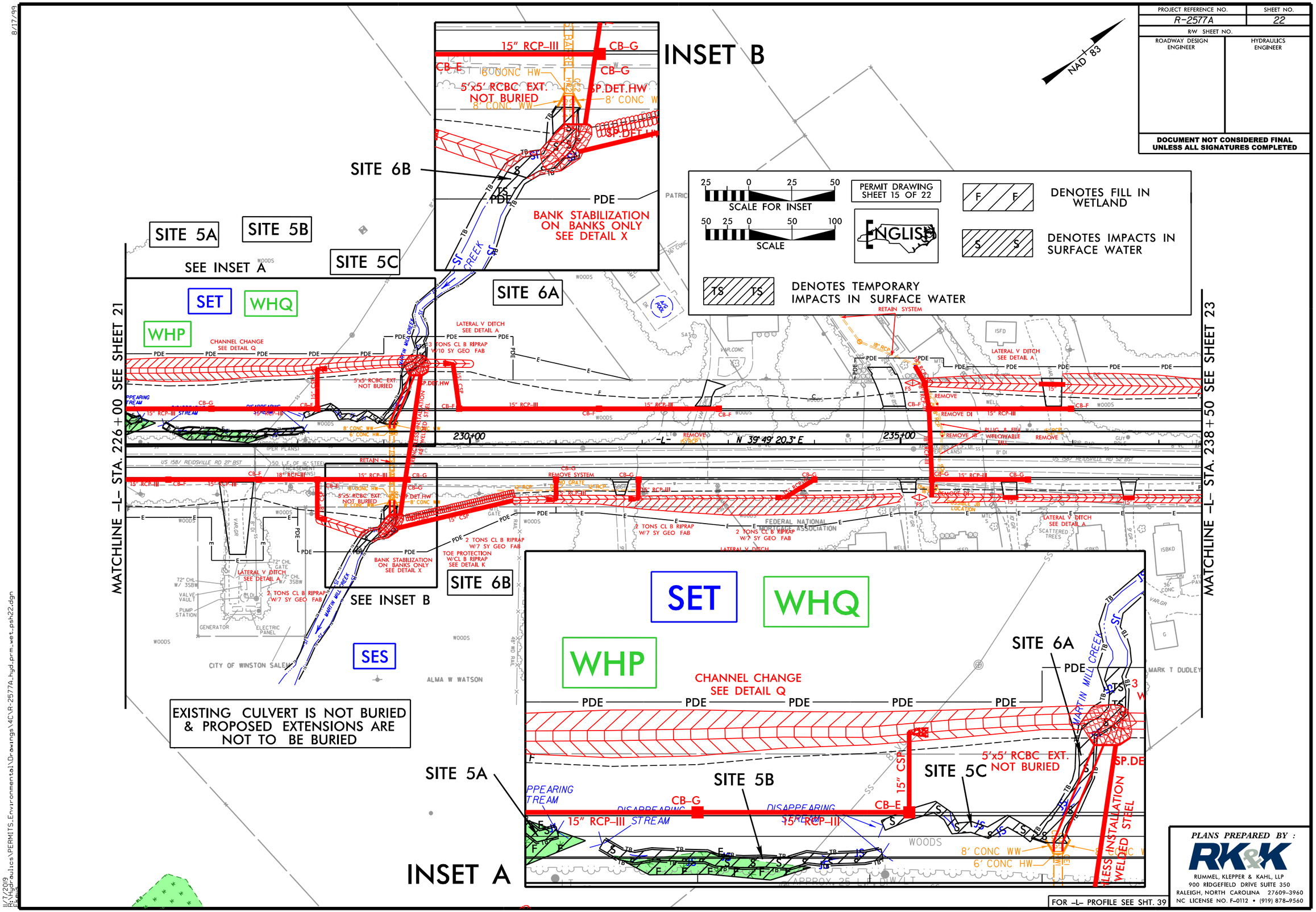
PROJECT REFERENCE NO.	SHEET NO.
R-2577A	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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11/7/2019
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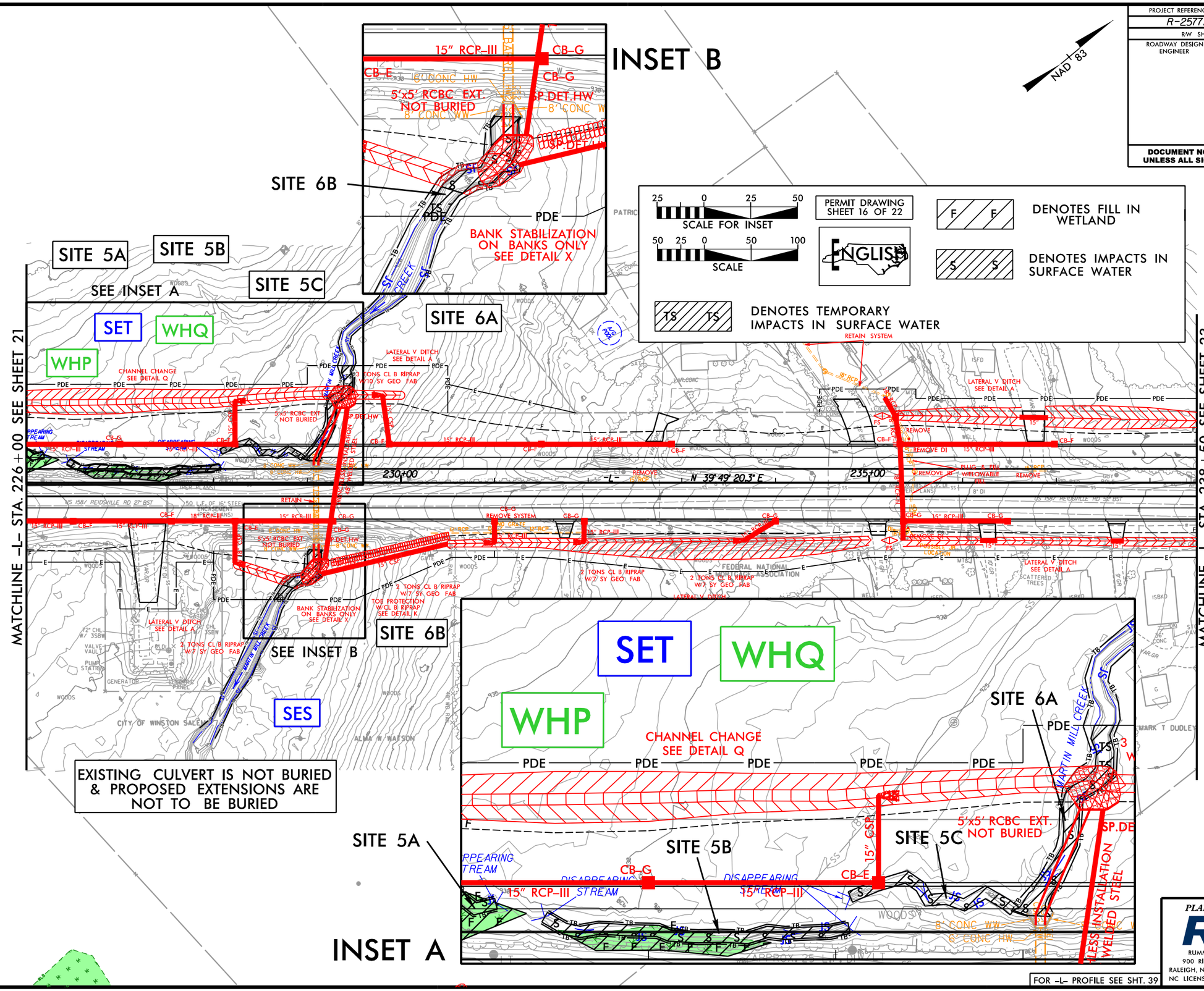
PROJECT REFERENCE NO.	SHEET NO.
R-2577A	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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PROJ. REFERENCE NO.	SHEET NO.
R-2577A	X-111

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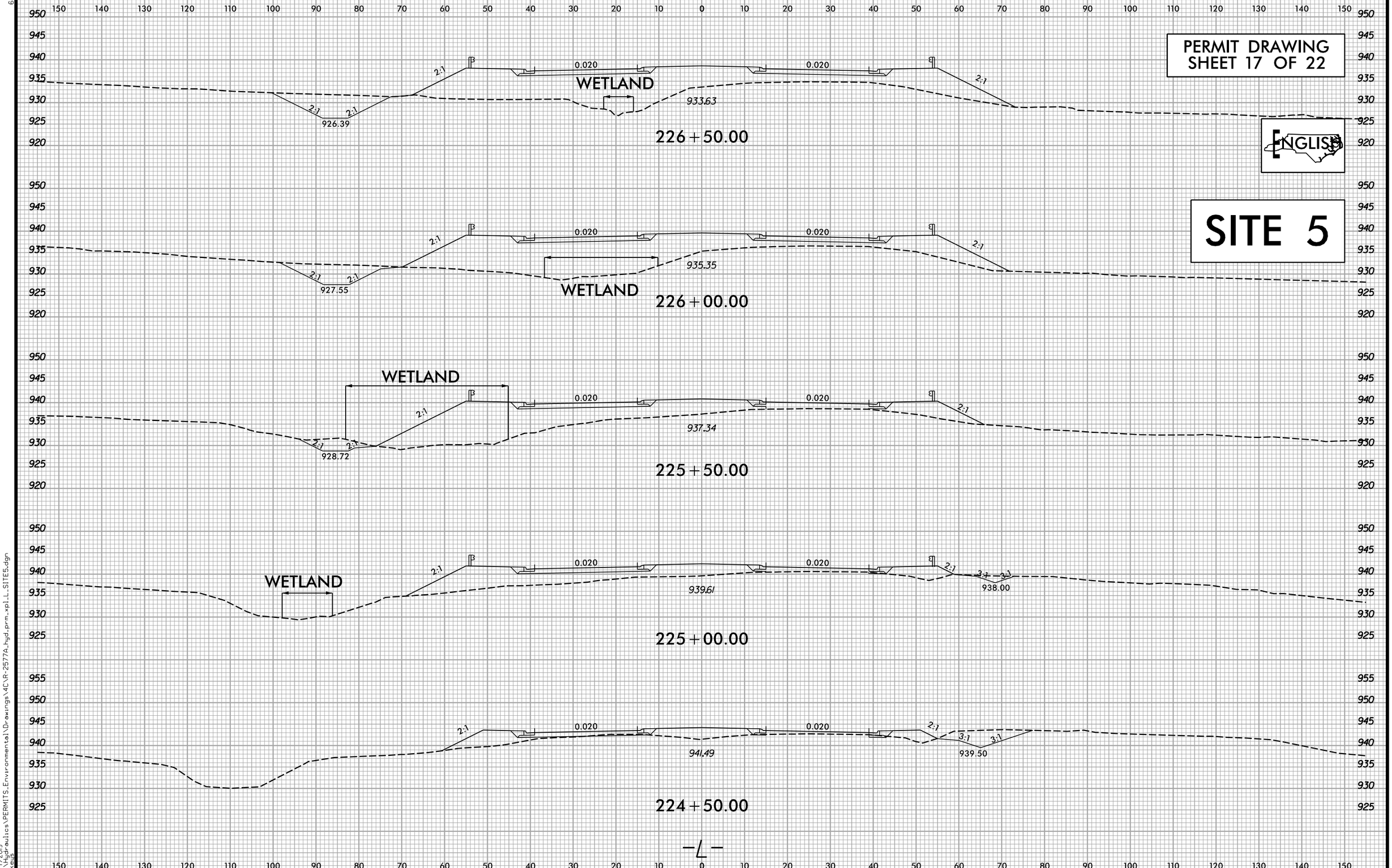
PERMIT DRAWING
SHEET 17 OF 22

ENGLISH

SITE 5



6/23/16

11/7/2019
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Fkeng

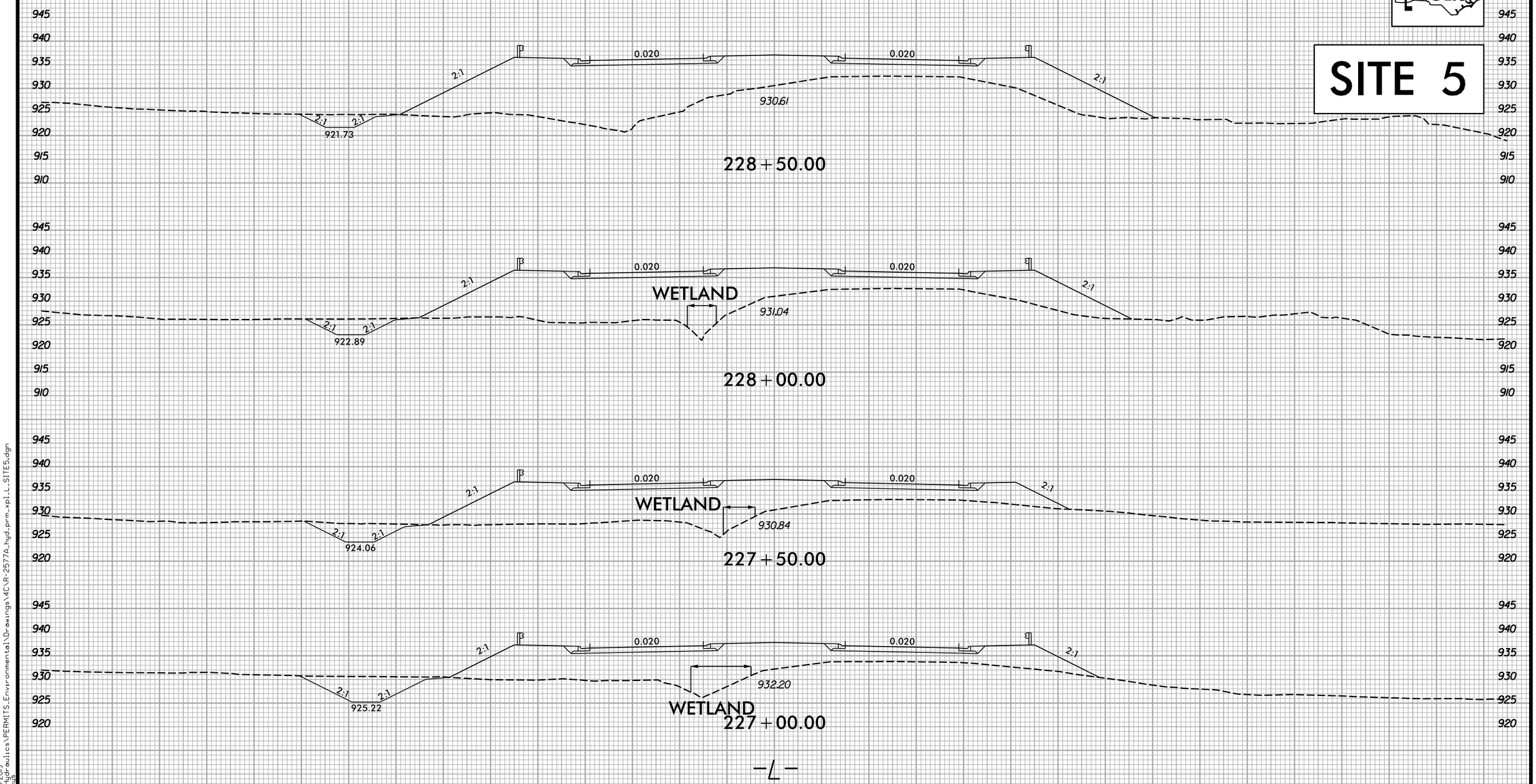
PROJ. REFERENCE NO.	SHEET NO.
R-2577A	X-112

0 5 10

PERMIT DRAWING
SHEET 18 OF 22

ENGLISH

SITE 5



6/23/16

11/7/2019
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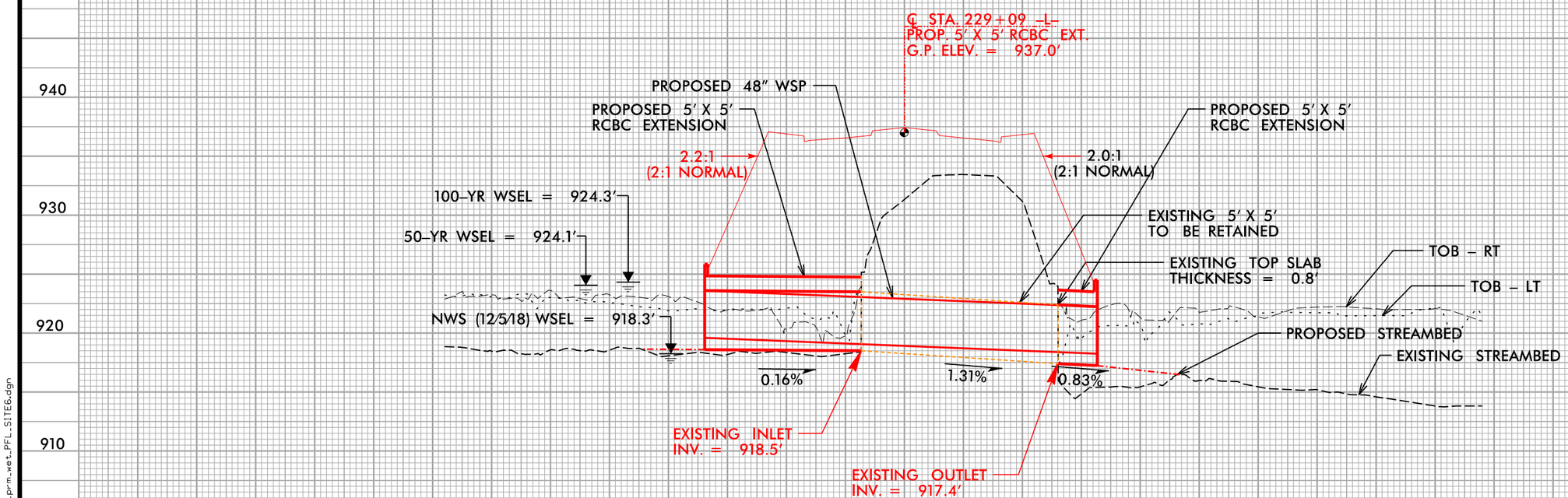
Fkeus

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

SITE 6
-L- STA. 229+09

PERMIT DRAWING
SHEET 19 OF 22



PROPOSED 5'X 5' RCBC EXTENSION
(LENGTH=83')
PROPOSED 48" WS
(LENGTH=164')

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5/14/99
11/7/2019
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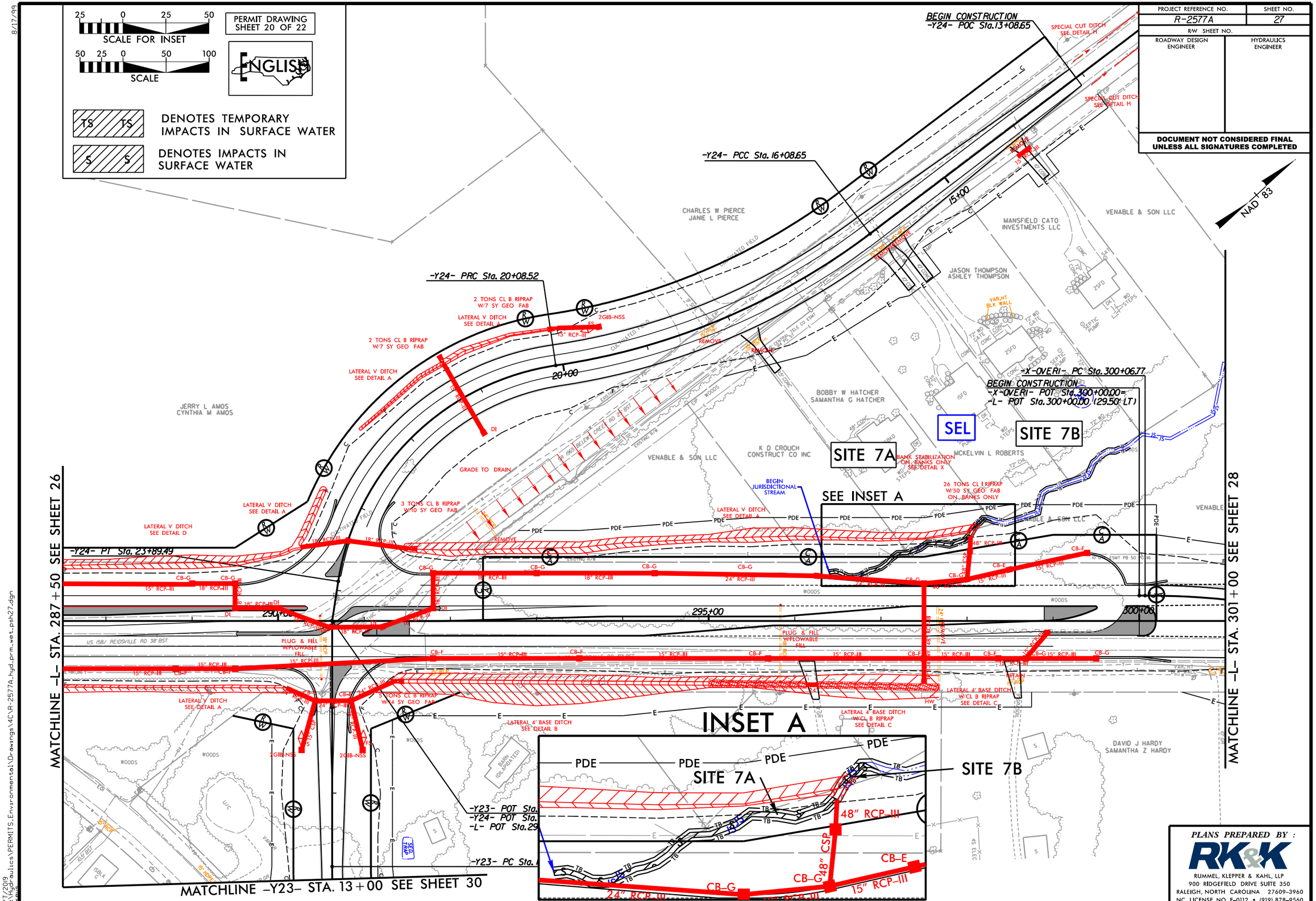

PROJECT REFERENCE NO.
R-2577A
SHEET NO.
27
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
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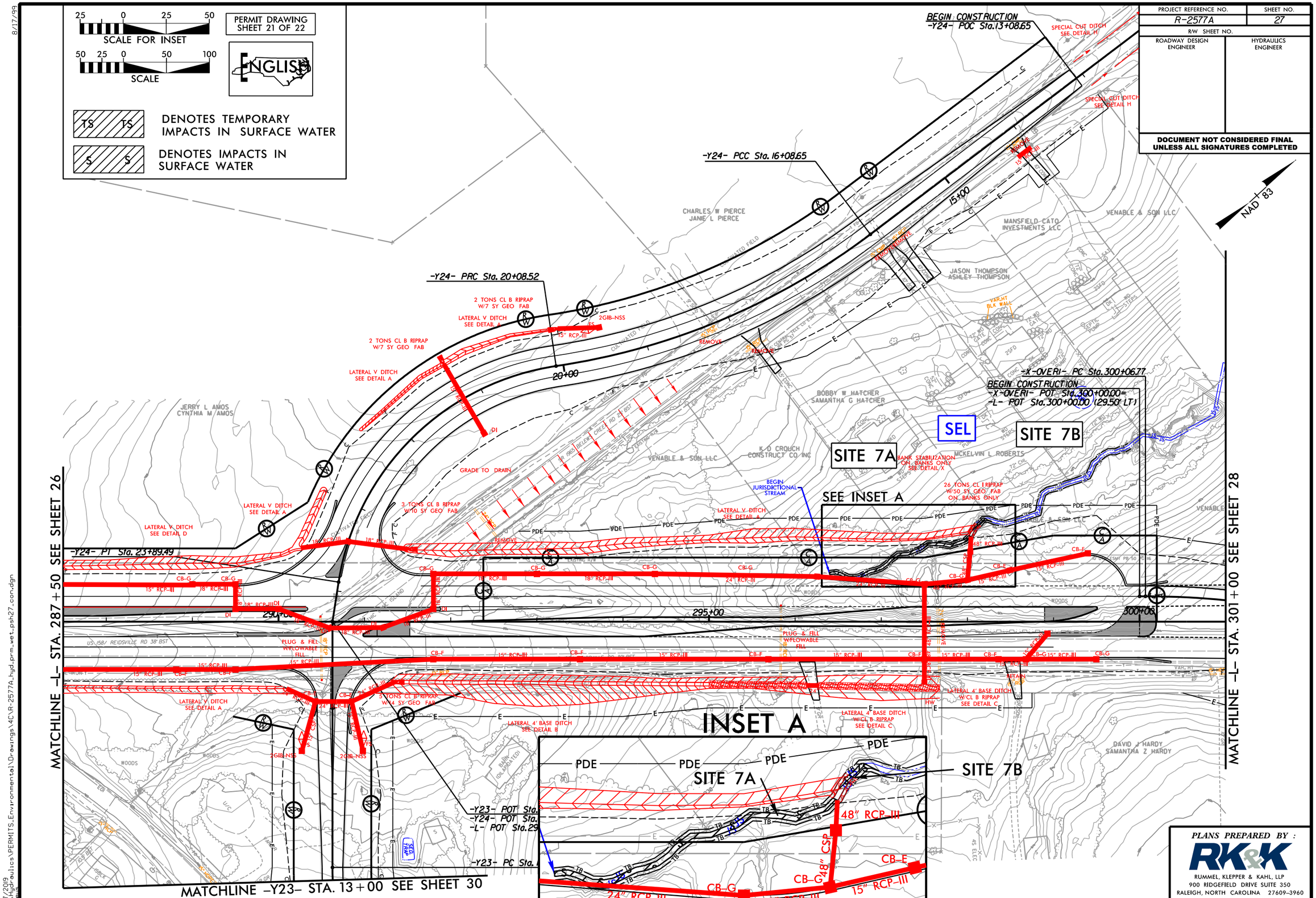
PERMIT DRAWING SHEET 20 OF 22
SCALE FOR INSET
SCALE
ENGLISH
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
BEGIN CONSTRUCTION -Y24- POC Sta.13+08.65
-Y24- PCC Sta. 16+08.65
-Y24- PRC Sta. 20+08.52
-Y24- PT Sta. 23+89.49
-X-OVERI- PC Sta.300+06.77
BEGIN CONSTRUCTION -X-OVERI- POT Sta.300+00.00= -L- POT Sta.300+00.00 (29.50' LT)
SEL
SITE 7A
SITE 7B
SEE INSET A
INSET A
MATCHLINE -L- STA. 287+50 SEE SHEET 26
MATCHLINE -L- STA. 301+00 SEE SHEET 28
MATCHLINE -Y23- STA. 13+00 SEE SHEET 30
NAD 83
CHARLES W PIERCE JANIE L PIERCE
MANSFIELD CATO INVESTMENTS LLC
VENABLE & SON LLC
JASON THOMPSON ASHLEY THOMPSON
BOBBY W HATCHER SAMANTHA G HATCHER
K D CROUCH CONSTRUCT CO INC
MCKELVIN L ROBERTS
JERRY L AMOS CYNTHIA M AMOS
DAVID J HARDY SAMANTHA Z HARDY
2 TONS CL B RIPRAP W/7 SY GEO FAB
LATERAL V DITCH SEE DETAIL A
LATERAL V DITCH SEE DETAIL D
3 TONS CL B RIPRAP W/10 SY GEO FAB
5 TONS CL B RIPRAP W/14 SY GEO FAB
26 TONS CL I RIPRAP W/50 SY GEO FAB ON BANKS ONLY
BANK STABILIZATION ON BANKS ONLY SEE DETAIL X
BEGIN JURISDICTIONAL STREAM
GRADE TO DRAIN
PLUG & FILL W/FLOWABLE FILL
LATERAL 4' BASE DITCH SEE DETAIL B
LATERAL 4' BASE DITCH W/CL B RIPRAP SEE DETAIL C
SPECIAL CUT DITCH SEE DETAIL H
US 158/ REIDSVILLE RD 38' BST
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



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
SCALE FOR INSET
SCALE
PERMIT DRAWING SHEET 21 OF 22
ENGLISH
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
BEGIN CONSTRUCTION -Y24- POC Sta.13+08.65
-Y24- PCC Sta. 16+08.65
-Y24- PRC Sta. 20+08.52
-Y24- PI Sta. 23+89.49
-X-OVERI- PC Sta.300+06.77
BEGIN CONSTRUCTION -X-OVERI- POT Sta.300+00.00= -L- POT Sta.300+00.00 (29.50' LT)
SEL
SITE 7A
SITE 7B
SEE INSET A
INSET A
MATCHLINE -L- STA. 287+50 SEE SHEET 26
MATCHLINE -L- STA. 301+00 SEE SHEET 28
MATCHLINE -Y23- STA. 13+00 SEE SHEET 30
NAD 83
CHARLES W PIERCE JANIE L PIERCE
MANSFIELD CATO INVESTMENTS LLC
VENABLE & SON LLC
JASON THOMPSON ASHLEY THOMPSON
BOBBY W HATCHER SAMANTHA G HATCHER
K D CROUCH CONSTRUCT CO INC
MCKELVIN L ROBERTS
JERRY L AMOS CYNTHIA M AMOS
DAVID J HARDY SAMANTHA Z HARDY
2 TONS CL B RIPRAP W/7 SY GEO FAB
LATERAL V DITCH SEE DETAIL A
LATERAL V DITCH SEE DETAIL D
3 TONS CL B RIPRAP W/10 SY GEO FAB
5 TONS CL B RIPRAP W/14 SY GEO FAB
26 TONS CL I RIPRAP W/50 SY GEO FAB ON BANKS ONLY
BANK STABILIZATION ON BANKS ONLY SEE DETAIL X
BEGIN JURISDICTIONAL STREAM
PLUG & FILL W/FLOWABLE FILL
LATERAL 4' BASE DITCH W/CL B RIPRAP SEE DETAIL C
LATERAL 4' BASE DITCH SEE DETAIL B
GRADE TO DRAIN
SPECIAL CUT DITCH SEE DETAIL H
2GIB-NSS
15" RCP-III
18" RCP-III
24" RCP-III
48" RCP-III
48" CSP
CB-E
CB-G
PDE
TB
PLANS PREPARED BY :
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900 RIDGEFIELD DRIVE SUITE 350
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WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER 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)	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+30-14+65 RT	BANK STABILIZATION, SFC						< 0.01	< 0.01	25	12	
1B	-Y9- 14+65-15+33 RT	72" RCP,ROADWAY FILL, SFC						< 0.01		84		
1C	-L- 100+48-100+92 LT	ROADWAY FILL, SFC						< 0.01		58		
1D	-L- 100+92-101+34 RT	72" RCP,ROADWAY FILL, BANK STABILIZATION, SFC						0.01		77		
1E	-L- 101+34-101+75 RT	BANK STABILIZATION, SFC						< 0.01	< 0.01	24	22	
2A	-L- 107+87 LT	BANK STABILIZATION, SFB						< 0.01	< 0.01	13	14	
2B	-L- 107+66 LT	UPSTREAM - 1 6x6 RCBC EXTENSION NOT BURIED, CHANNEL TIE IN, SFB						0.01		101		
2C	-L- 106+25-107+18 RT	DOWNSTREAM - 1 6x6 RCBC EXTENSION NOT BURIED, CHANNEL TIE IN, SFB						0.01	< 0.01	101	26	
3A	-Y14- 13+03 LT	BANK STABILIZATION, SFA						< 0.01	< 0.01	27	9	
3B	-Y14- 13+22 LT	2 @ 42" RCP, SFA						< 0.01		33		
3C	-Y14- 13+41 RT	2 @ 42" RCP OUTLET PAD, SFA						< 0.01	< 0.01	19	13	
4A	-L- 140+38 LT	UPSTREAM - DUAL BRIDGES REPLACING (3)-7x10 RCBC, BANK STABILIZATION, SEW						0.01	< 0.01	65	10	
4B	-L- 139+91 RT	DOWNSTREAM - DUAL BRIDGES REPLACING (3)-7x10 RCBC, BANK STABILIZATION, SEW						< 0.01	0.01	11	51	
5A	-L- 225+50-226+35 LT	ROADWAY FILL & CHANNEL CHANGE, SET, WHP	0.04		< 0.01	< 0.01	< 0.01	0.02	< 0.01	128	13	
5B	-L- 226+43-228+06	ROADWAY FILL & CHANNEL CHANGE, SET, WHQ	0.01					0.02		166		
5C	-L- 228+07-229+49 LT	ROADWAY FILL & CHANNEL CHANGE, SET						0.01		100		
6A	-L- 229+09 LT	UPSTREAM - 1 5x5 RCBC EXTENSION W/ 48" WELDED STEEL PIPE, SES						0.02	< 0.01	92	22	
6B	-L- 229+08 RT	DOWNSTREAM - 1 5x5 RCBC EXTENSION W/ 48" WELDED STEEL PIPE, SES						0.02	< 0.01	55	18	
7A	-L- 296+40-298+03 LT	ROADWAY FILL, 48" RCP, SEL						0.01		178		
7B	-L- 298+03-298+23 LT	BANK STABILIZATION, SEL						< 0.01	< 0.01	16	13	
TOTALS*:			0.05		< 0.01	< 0.01	< 0.01	0.19	0.04	1373	223	0

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
NOVEMBER 2019
FORSYTH
R-2577A

Revised 2016 09 09