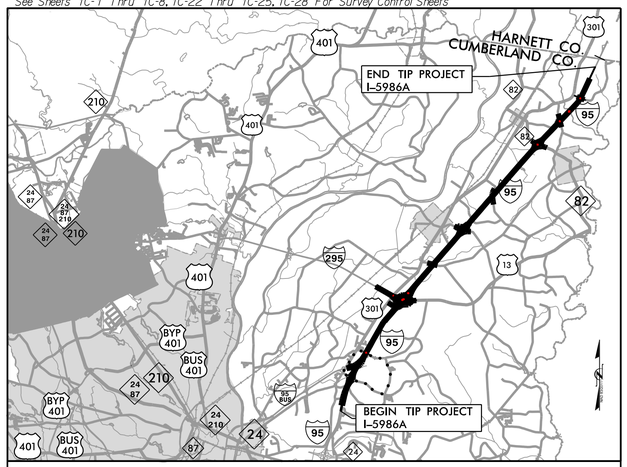
Submitted 9/2/2020

09/08/99

TIP PROJECT: I-5986A

CONTRACT: C204283

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See Sheets 1C-1 Thru 1C-8, 1C-22 Thru 1C-25, 1C-28 For Survey Control Sheets



VICINITY MAP (NTS)

OFFSITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5986A	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
47532.2.2	NHP-0095(057)	R/W
47532.3.2	NHP-0095(057)	PE, UTIL., CONST.

LOCATION: I-95 WIDENING FROM SOUTH OF SR 1832 (MURPHY ROAD- EXIT 55) TO SOUTH OF SR 1811 (BUD HAWKINS ROAD-EXIT 70)

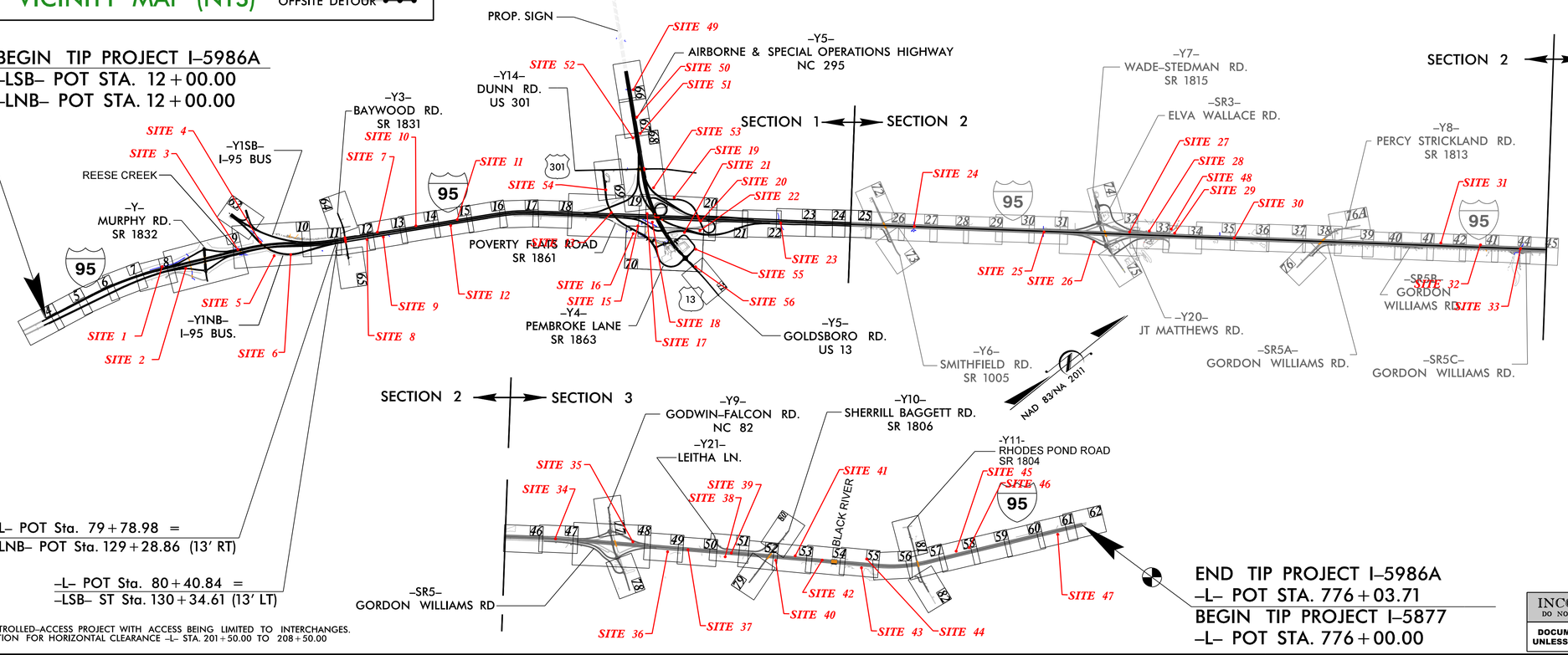
TYPE OF WORK: GRADING, DRAINAGE, PAVING, LIGHTING, SIGNING, ITS, CULVERTS & STRUCTURES

PROP. SIGN 295

WETLAND AND SURFACE WATER IMPACTS

ENGLISH

PERMIT DRAWING
SHEET 1 OF 163



NOTES
1. THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.
2. DESIGN EXCEPTION FOR HORIZONTAL CLEARANCE -L- STA. 201+50.00 TO 208+50.00

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
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 2018 = 56,700
ADT 2040 = 73,800
K = 55%
D = 7%
T = 18% *
V = 75 MPH

FUNC CLASS: INTERSTATE
* (TTST 13% + DUALS 5%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT I-5986A.....15.368 MILES
LENGTH STRUCTURE TIP PROJECT I-5986A.....0.048 MILES
TOTAL LENGTH TIP PROJECT I-5986A.....15.416 MILES

NCDOT CONTACT

Michael Penney, PE
PROJECT ENGINEER - DESIGN-BUILD UNIT

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

S.T. WOOTEN

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

LETTING DATE:
AUGUST 20, 2019

Michael T. Merritt, PE
PROJECT ENGINEER

Anthony A. Houser, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER
SIGNATURE: P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

8/20/2020
R:\Hydraulics\PERMITS_Environmental\Drawings\4B\I-5986A_Hyd_TSH.dgn
Fkeys

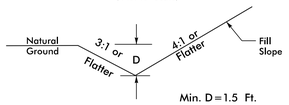
Submitted 9/2/2020

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2D-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

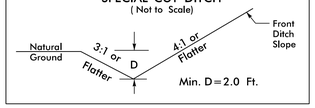
PERMIT DRAWING SHEET 2 OF 163

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



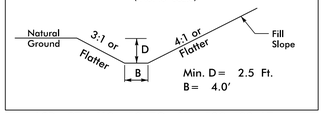
–Y1NB– STA. 44+50 TO STA. 47+00 RT
–L– STA. 210+50 TO STA. 212+25 RT
–Y5RPD– STA. 10+90 TO STA. 12+00 LT
–LSB– STA. 19+50 TO STA. 31+00 LT
–LSB– STA. 61+50 TO STA. 62+75 RT
–Y4– STA. 50+00 TO STA. 55+00 LT
–Y4– STA. 61+00 TO STA. 65+49 LT
–Y4A– STA. 10+54 TO STA. 13+50 RT
–Y5– STA. 65+00 TO STA. 68+00 RT
–Y5– STA. 85+50 TO STA. 86+50 LT
–Y5– STA. 85+00 TO STA. 89+00 RT
–Y5SPUR– STA. 19+49 TO STA. 22+03 LT
–SR5C_DET– STA. 12+70 TO STA. 13+10 RT
–SR5C_DET– STA. 15+00 TO STA. 16+32 RT

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



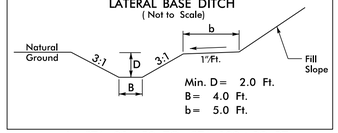
–Y1NB– STA. 47+00 TO STA. 59+00 RT
–L– STA. 103+00 TO STA. 107+72 LT
–L– STA. 138+50 TO STA. 186+00 RT
–L– STA. 232+00 TO STA. 239+00 LT
–L– STA. 256+00 TO STA. 269+00 LT
–L– STA. 232+50 TO STA. 241+50 RT
–L– STA. 245+00 TO STA. 249+00 RT
–Y5FLY– STA. 82+33 TO STA. 85+77 RT
–Y5SPURA– STA. 10+46 TO STA. 16+99 LT
–Y5RPA– STA. 36+85 TO STA. 37+50 LT
–Y5RPA– STA. 34+49 TO STA. 36+85 RT
–L– STA. 227+00 TO STA. 232+50 RT
–Y5LPD– STA. 12+79 TO STA. 14+50 LT
–Y5C– STA. 25+00 TO STA. 26+65 RT
–Y5C– STA. 24+50 TO STA. 25+92 LT
–LSB– STA. 68+50 TO STA. 76+50 LT
–L– STA. 221+58 TO STA. 232+00 LT

DETAIL C
SPECIAL LATERAL BASE DITCH
(Not to Scale)



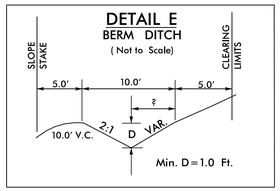
–LSB– STA. 112+50 TO STA. 129+00 LT
–L– STA. 212+25 TO STA. 220+00 RT
–L– STA. 208+50 TO STA. 215+00 LT
–Y5B– STA. 10+44 TO STA. 12+50 RT
–Y5FLY– STA. 66+80 TO STA. 70+00 LT
–Y5FLY– STA. 63+50 TO STA. 66+80 RT

DETAIL D
LATERAL BASE DITCH
(Not to Scale)



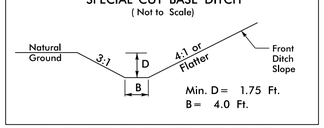
–L– STA. 90+50 TO STA. 100+28 RT
–L– STA. 162+00 TO STA. 165+50 LT
–L– STA. 247+00 TO STA. 251+50 LT
–L– STA. 252+00 TO STA. 256+00 LT
–L– STA. 253+00 TO STA. 255+00 RT
–Y5LPD– STA. 26+50 TO STA. 30+65 RT

DETAIL E
BERM DITCH
(Not to Scale)



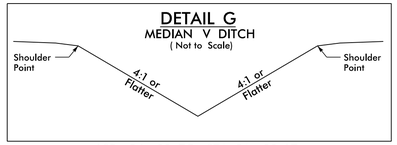
DETAIL NOT USED IN SECTION 1

DETAIL F
SPECIAL CUT BASE DITCH
(Not to Scale)



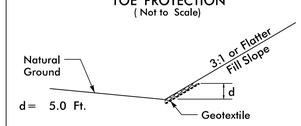
–L– STA. 132+50 TO STA. 137+00 LT
–L– STA. 159+00 TO STA. 162+00 LT
–L– STA. 165+50 TO STA. 167+00 LT
–L– STA. 223+11 TO STA. 226+23 RT
–L– STA. 239+00 TO STA. 247+00 LT
–L– STA. 255+00 TO STA. 269+00 RT
–Y5B– STA. 12+50 TO STA. 17+50 RT

DETAIL G
MEDIAN V DITCH
(Not to Scale)



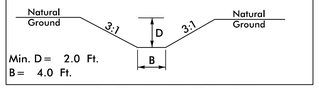
–LSB– 84+00 TO STA. 86+00 LT
–LSB– STA. 105+00 TO STA. 113+50 RT
–L– STA. 215+00 TO STA. 217+50 LT
–Y5– STA. 83+50 TO STA. 85+50 LT
–Y5RPA– STA. 45+00 TO STA. 49+00 LT

DETAIL H
TOE PROTECTION
(Not to Scale)



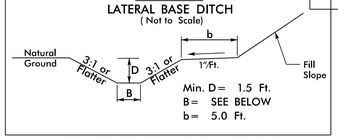
–L– STA. 121+50 TO STA. 127+90 RT
–L– STA. 186+71 TO STA. 187+92 LT
–L– STA. 198+60 TO STA. 203+00 RT
–L– STA. 199+36 TO STA. 202+57 LT
–Y4– STA. 40+82 TO STA. 43+12 LT
–Y4– STA. 40+38 TO STA. 41+90 RT
–Y5LPD– STA. 19+00 TO STA. 21+00 RT
–Y5LPD– STA. 20+21 TO STA. 24+50 LT
–Y5FLY– STA. 57+07 TO STA. 62+59 LT
–Y5RPD– STA. 15+00 TO STA. 24+34 RT
–Y5C– STA. 12+83 TO STA. 17+66 LT
–Y5C– STA. 12+64 TO STA. 17+88 RT
–Y5B– STA. 13+20 TO STA. 17+18 LT
–Y5RPC– STA. 13+37 TO STA. 21+33 RT
–Y5LPD– STA. 38+47 TO STA. 39+75 LT
–Y5LPD– STA. 37+76 TO STA. 39+18 RT
–Y5RPA– STA. 42+36 TO STA. 44+00 RT
–Y5– STA. 47+87 TO STA. 50+88 LT
–Y5– STA. 55+85 TO STA. 65+25 LT
–Y5– STA. 64+30 TO STA. 64+55 RT
–Y5– STA. 107+80 TO STA. 109+51 RT
–Y5LPD– STA. 44+31 TO STA. 48+12 RT
–YRPA– STA. 11+88 TO STA. 13+93 RT
–LSB– STA. 88+50 TO STA. 90+48 RT
–LSB– STA. 90+97 TO STA. 95+38 RT

DETAIL I
STANDARD BASE DITCH
(Not to Scale)



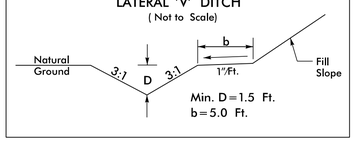
–Y5LPD– STA. 13+78 RT, L=285',
BEG. ELEV=131.67', END ELEV=130.90', S=0.3%
–LNB– STA. 60+18 TO 61+15 RT, D=1.25'
BEG. ELEV=114.10' END ELEV=111.40', S=2.8%
–LNB– STA. 61+15 TO 62+18 RT, D=1.25'
BEG. ELEV=111.40 END ELEV=113.10, S=1.7%

DETAIL J
LATERAL BASE DITCH
(Not to Scale)



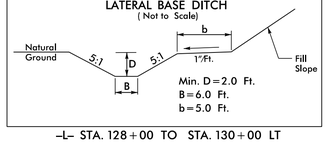
–L– STA. 90+50 TO STA. 94+00 LT, B=4'
–L– STA. 118+50 TO STA. 121+12 LT, B=4'
–L– STA. 130+00 TO STA. 132+50 LT, B=4'
–L– STA. 137+00 TO STA. 138+00 LT, B=4'
–L– STA. 138+50 TO STA. 147+00 LT, B=4'
–L– STA. 147+00 TO STA. 154+50 LT, B=4'

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



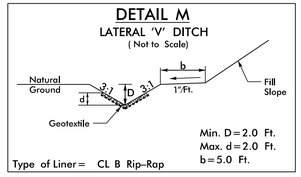
–L– STA. 89+00 TO STA. 90+50 RT
–L– STA. 112+50 TO STA. 113+81 RT
–L– STA. 129+00 TO STA. 131+50 RT
–L– STA. 138+00 TO STA. 138+50 LT
–L– STA. 154+50 TO STA. 158+87 LT
–L– STA. 249+00 TO STA. 253+00 RT
–Y5C– STA. 19+38 TO STA. 24+50 LT
–Y5– STA. 42+00 TO STA. 45+51 LT
–Y5– STA. 64+50 TO STA. 68+50 LT
–Y5– STA. 70+02 TO STA. 76+21 LT
–Y5– STA. 70+00 TO STA. 73+64 RT

DETAIL L
LATERAL BASE DITCH
(Not to Scale)



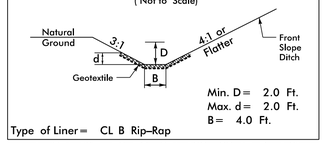
–L– STA. 128+00 TO STA. 130+00 LT

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



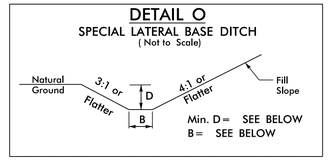
–Y5RPD– STA. 12+93 TO STA. 15+40 RT

DETAIL N
SPECIAL CUT BASE DITCH
(Not to Scale)



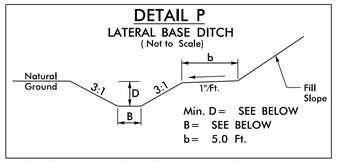
–L– STA. 107+72 TO STA. 109+00 LT, D=1.0'

DETAIL O
SPECIAL LATERAL BASE DITCH
(Not to Scale)



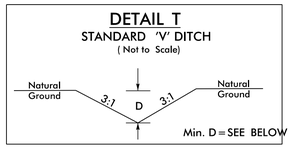
–LSB– STA. 31+00 TO STA. 37+00 LT, B=8', D=2.0'
–LSB– STA. 51+50 TO STA. 53+50 LT, B=11', D=1.5'
–LNB– STA. 115+00 TO STA. 118+50 RT, B=4', D=0.75'
–L– STA. 192+74 TO STA. 195+45 LT, B=7', D=2.0'
–Y4– STA. 42+00 TO STA. 61+50 RT, B=4', D=3.5'
–Y4– STA. 61+50 TO STA. 64+64 RT, B=4', D=2.75'

DETAIL P
LATERAL BASE DITCH
(Not to Scale)



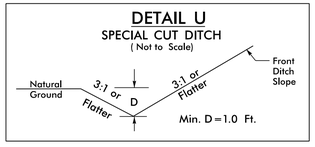
–Y3– STA. 18+50 TO STA. 19+15 LT, B=4', D=1.00'
–Y3– STA. 22+50 TO STA. 24+12 LT, B=4', D=2.00'
–L– STA. 128+00 TO STA. 129+00 RT, B=4', D=1.00'
–Y5– STA. 65+00 TO STA. 68+50 LT, B=4', D=1.00'

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



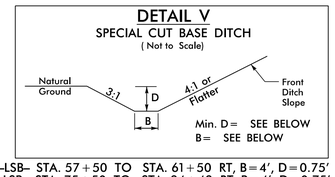
–Y1NB– STA. 44+50, L=53', S=0.8%, D=1.5'
BEG. ELEV=119.98, END ELEV=119.56, M=3.5
–Y5LPA– STA. 18+75, L=50', S=4.8%, D=1.0'
BEG. ELEV=144.45, END ELEV=142.05, M=3
–L– STA. 186+00 RT, L=200', S=0.3%, D=2.5'
BEG. ELEV=125.00, END ELEV=124.40'
–SR5C_DET– STA. 13+10 TO STA. 14+00, L=90', S=0.02%, D=1.0'
BEG. ELEV=140.43, END ELEV=140.41

DETAIL U
SPECIAL CUT DITCH
(Not to Scale)



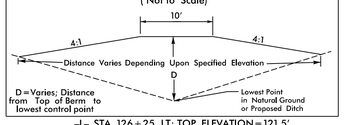
–LSB– STA. 81+00 TO STA. 84+00 LT
–LSB– STA. 128+50 TO STA. 129+00 LT
–LNB– STA. 45+20 TO STA. 48+00 LT
–LNB– STA. 118+50 TO STA. 120+52 RT
–L– STA. 102+12 TO STA. 103+00 LT
–L– STA. 111+00 TO STA. 112+50 RT
–L– STA. 113+81 TO STA. 118+50 LT
–L– STA. 131+50 TO STA. 132+50 RT
–L– STA. 169+00 TO STA. 173+00 LT
–L– STA. 232+50 TO STA. 241+50 RT

DETAIL V
SPECIAL CUT BASE DITCH
(Not to Scale)



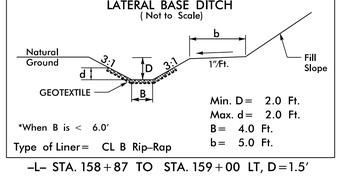
–LSB– STA. 57+50 TO STA. 61+50 RT, B=4', D=0.75'
–LSB– STA. 75+50 TO STA. 84+48 RT, B=4', D=0.75'
–LSB– STA. 94+00 TO STA. 96+00 RT, B=4', D=1.0'
–L– STA. 86+50 TO STA. 90+50 LT, B=4', D=1.5'
–L– STA. 94+00 TO STA. 100+28 LT, B=4', D=2.0'
–L– STA. 100+28 TO STA. 102+12 LT, B=4', D=1.0'
–L– STA. 109+00 TO STA. 113+81 LT, B=4', D=1.5'
–L– STA. 195+45 TO STA. 199+55 LT, B=7', D=1.0'

DETAIL Q
10' WIDE BERM
(Not to Scale)



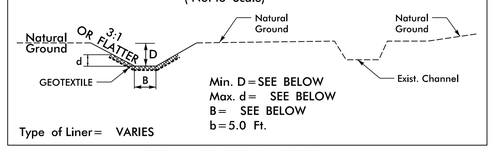
–L– STA. 126+25 LT; TOP ELEVATION=121.5'
–L– STA. 138+00 LT; TOP ELEVATION=128.5'
–L– STA. 154+50 LT; TOP ELEVATION=132.0'

DETAIL R
LATERAL BASE DITCH
(Not to Scale)



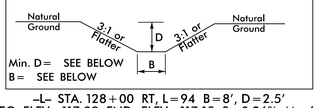
–L– STA. 158+87 TO STA. 159+00 LT, D=1.5'

DETAIL S
CHANNEL CHANGE
(Not to Scale)



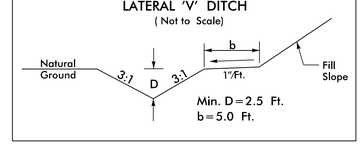
DETAIL NOT USED IN SECTION 1

DETAIL W
STANDARD BASE DITCH
(Not to Scale)



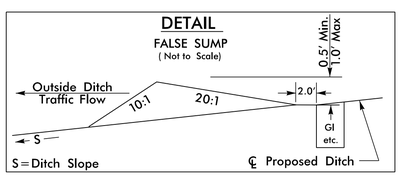
–L– STA. 128+00 RT, L=94 B=8', D=2.5'
BEG. ELEV=117.39 END ELEV=117.15, S=0.26%, M=6.0
–L– STA. 138+50 RT, L=41, B=6', D=2.0'
BEG. ELEV=122.78 END ELEV=122.45, S=0.80%, M=6.0
–L– STA. 113+81 RT, L=35, B=3', D=2.0'
BEG. ELEV=122.50 END ELEV=122.36, S=0.40%, M=3.0
–L– STA. 100+28 RT, L=22, B=6', D=2.5'
BEG. ELEV=121.50 END ELEV=121.43, S=0.33%, M=6.0
–L– STA. 107+72 RT, L= 70, B=3', D=2.0'
BEG. ELEV=120.09 END ELEV=120.30, S=0.30%, M=6.0
–L– STA. 121+12 RT, L=54', B=3', D=3.0'
BEG. ELEV=115.95 END ELEV=115.80, S=0.28%, M=5.5
–L– STA. 160+29 RT, L= 69, B=12', D=3.0',
BEG. ELEV=124.74 END ELEV=124.63, S=0.16%, M=3.0
–Y5– STA. 104+47 TO STA. 106+50 LT, B=10', D=2.25'
BEG. ELEV=126.60, END ELEV=127.08, S=0.24%, M=3.0
–L– STA. 215+50 LT, L=76', B=4', D=1.25'
BEG. ELEV–=127.55, END ELEV=127.30, S=0.33%, M=3.0
–LNB– STA. 106+25 TO STA. 107+70 RT, B=4', D=1.0'
BEG. ELEV=113.08, END ELEV=112.80, S=0.19%, M=3.0
–LNB– STA. 107+70 TO STA. 108+54 RT, B=4', D=1.0'
BEG. ELEV=112.80, END ELEV=115.21, S=2.9%, M=3.0
–LNB– STA. 115+00 RT, L=107', B=4', D=1.0'
BEG. ELEV=120.50, END ELEV=119.6, S=0.8%, M=3.0

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

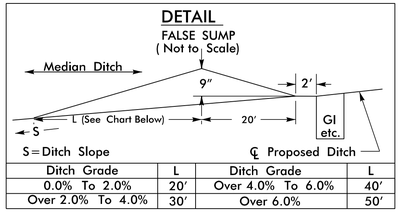


DETAIL NOT USED IN SECTION 1

DETAIL
FALSE SUMP
(Not to Scale)

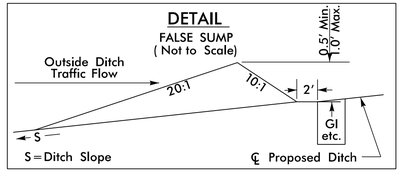


DETAIL
FALSE SUMP
(Not to Scale)



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL
FALSE SUMP
(Not to Scale)



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R:\Hydraulics\PERMITS_Environmental\Drawings\4BI-5986A_HYD_Ditch Detail_Sec1.dgn
FKeys

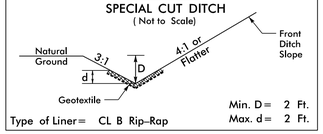
Submitted 9/2/2020

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2D-2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

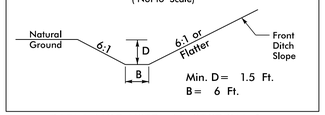
PERMIT DRAWING SHEET 3 OF 163

DETAIL Y
SPECIAL CUT DITCH
(Not to Scale)



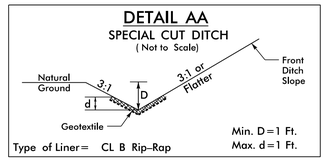
DETAIL NOT USED IN SECTION 1

DETAIL Z
SPECIAL CUT BASE DITCH
(Not to Scale)



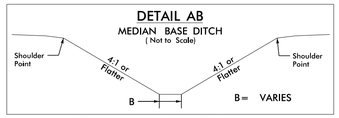
DETAIL NOT USED IN SECTION 1

DETAIL AA
SPECIAL CUT DITCH
(Not to Scale)



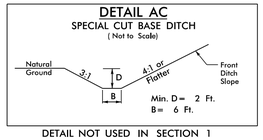
–Y5FLY– STA. 80+14.68 TO STA. 82+33.14

DETAIL AB
MEDIAN BASE DITCH
(Not to Scale)



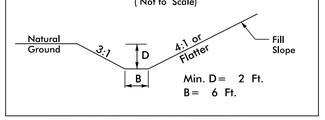
DETAIL NOT USED IN SECTION 1

DETAIL AC
SPECIAL CUT BASE DITCH
(Not to Scale)



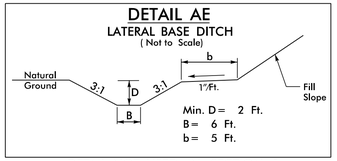
DETAIL NOT USED IN SECTION 1

DETAIL AD
SPECIAL LATERAL BASE DITCH
(Not to Scale)



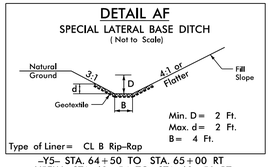
DETAIL NOT USED IN SECTION 1

DETAIL AE
LATERAL BASE DITCH
(Not to Scale)



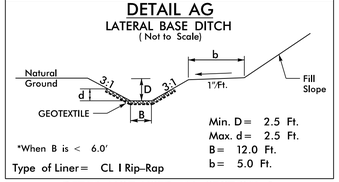
DETAIL NOT USED IN SECTION 1

DETAIL AF
SPECIAL LATERAL BASE DITCH
(Not to Scale)



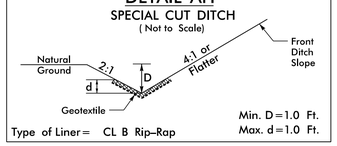
–Y5– STA. 64+50 TO STA. 65+00 RT
–Y5FLY– STA. 62+54 TO STA. 63+50 RT

DETAIL AG
LATERAL BASE DITCH
(Not to Scale)



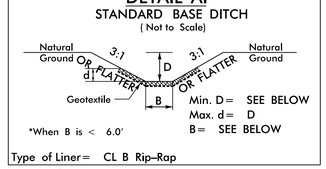
DETAIL NOT USED IN SECTION 1

DETAIL AH
SPECIAL CUT DITCH
(Not to Scale)



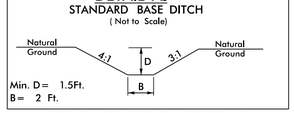
DETAIL NOT USED IN SECTION 1

DETAIL AI
STANDARD BASE DITCH
(Not to Scale)



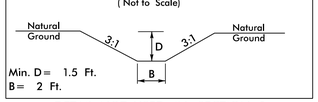
–L– STA. 121+12 RT, L=54', B=3', D=3.0'
BEG. ELEV=115.95 END ELEV=115.80, S=0.28%, M=5.5
–Y1SB– STA. 18+58 TO 21+90 RT, B=4', D=2.5'
BEG. ELEV=119.34 END ELEV=115.4, S=1.7% M=3.0

DETAIL AJ
STANDARD BASE DITCH
(Not to Scale)



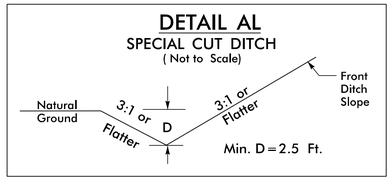
DETAIL NOT USED IN SECTION 1

DETAIL AK
STANDARD BASE DITCH
(Not to Scale)



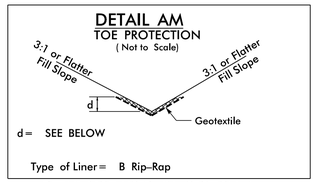
DETAIL NOT USED IN SECTION 1

DETAIL AL
SPECIAL CUT DITCH
(Not to Scale)



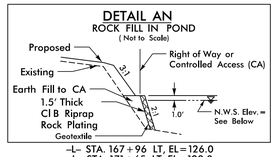
DETAIL NOT USED IN SECTION 1

DETAIL AM
TOE PROTECTION
(Not to Scale)

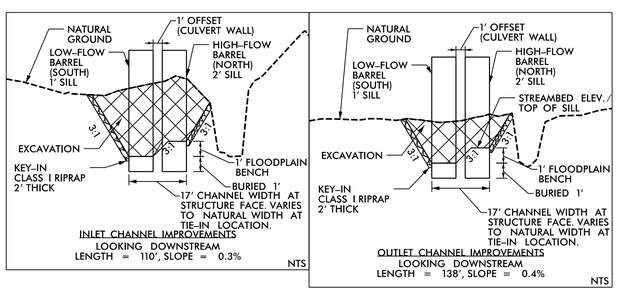


DETAIL NOT USED IN SECTION 1

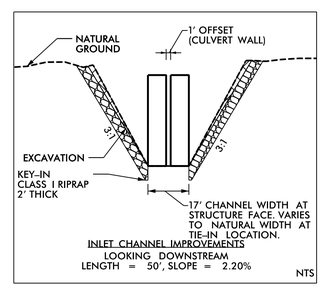
DETAIL AN
ROCK FILL IN POND
(Not to Scale)



–L– STA. 167+96 LT, EL=126.0
–L– STA. 171+65 LT, EL=128.0



CULVERT INLET AND OUTLET DETAILS
–L– STA 252+34.5



CULVERT INLET DETAIL
–Y5– STA 45+24

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F.Keys

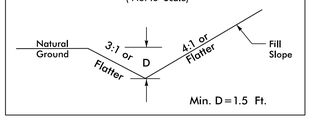
Submitted 9/2/2020

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2D-3
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

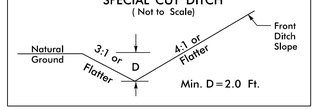
PERMIT DRAWING SHEET 4 OF 163

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



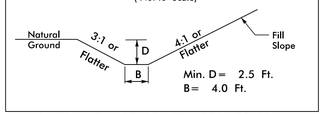
–L– STA. 333+00 TO STA. 340+50 RT
–L– STA. 341+00 TO STA. 345+00 LT
–L– STA. 499+65 TO STA. 500+00 LT
–SR5A– STA. 10+50 TO STA. 11+77 LT
–Y6– STA. 28+00 TO STA. 28+50 LT
–Y7A– STA. 15+00 TO STA. 16+00 LT
–Y8– STA. 16+00 TO STA. 16+50 RT
–Y8– STA. 29+50 TO STA. 34+50 RT

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



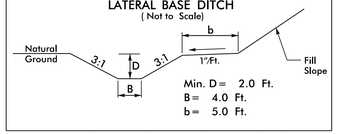
–L– STA. 280+00 TO STA. 280+50 LT
–L– STA. 313+50 TO STA. 320+00 RT
–L– STA. 322+00 TO STA. 324+00 RT
–L– STA. 379+00 TO STA. 381+00 LT
–L– STA. 379+50 TO STA. 385+00 RT
–L– STA. 401+00 TO STA. 403+00 LT
–L– STA. 401+50 TO STA. 402+50 RT
–L– STA. 407+50 TO STA. 409+00 RT
–L– STA. 406+50 TO STA. 421+50 LT
–L– STA. 448+50 TO STA. 453+50 LT
–L– STA. 474+50 TO STA. 485+00 LT
–L– STA. 475+00 TO STA. 489+50 RT
–L– STA. 500+00 TO STA. 518+00 RT
–L– STA. 541+00 TO STA. 550+00 RT
–Y20– STA. 10+35 TO STA. 12+00 LT
–Y20– STA. 10+35 TO STA. 12+00 RT
–Y20– STA. 17+50 TO STA. 19+00 LT
–Y20– STA. 20+87.64 TO STA. 22+44.57 RT
–Y6– STA. 11+00 TO STA. 13+50 LT
–Y6– STA. 11+00 TO STA. 13+00 RT
–Y6– STA. 29+50 TO STA. 32+00 LT
–Y6– STA. 29+00 TO STA. 32+00 RT
–Y7A– STA. 12+00 TO STA. 15+00 LT
–Y7A– STA. 12+00 TO STA. 14+50 RT
–Y7D– STA. 14+50 TO STA. 16+25 RT
–Y7RPA– STA. 11+40.19 TO STA. 15+43.19 RT
–Y7RPC– STA. 19+50 TO STA. 20+50 LT
–Y7RPD– STA. 11+84.98 TO STA. 17+96.54 LT

DETAIL C
SPECIAL LATERAL BASE DITCH
(Not to Scale)



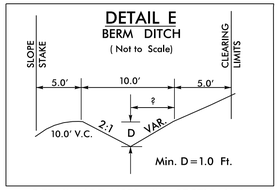
–L– STA. 306+75 TO STA. 307+00 LT
–L– STA. 339+00 TO STA. 341+00 LT
–L– STA. 422+20 TO STA. 427+50 RT
–L– STA. 496+50 TO STA. 499+65 LT
–L– STA. 504+50 TO STA. 508+50 LT
–L– STA. 529+50 TO STA. 538+77 LT
–L– STA. 541+75 TO STA. 550+50 LT
–L– STA. 425+58 TO STA. 435+00 LT
–L– STA. 440+50 TO STA. 448+50 LT
–L– STA. 510+00 TO STA. 513+00 LT
–L– STA. 539+70 TO STA. 540+58 LT
–SR3– STA. 32+78.79 TO STA. 34+17 LT
–Y8– STA. 33+50 TO STA. 36+00 LT

DETAIL D
LATERAL BASE DITCH
(Not to Scale)



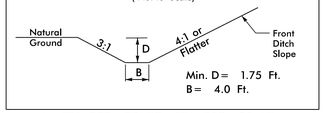
–L– STA. 280+50 TO STA. 282+50 LT
–L– STA. 296+50 TO STA. 301+00 LT
–L– STA. 316+50 TO STA. 327+50 LT
–L– STA. 327+50 TO STA. 336+00 LT
–L– STA. 300+50 TO STA. 302+30 RT
–L– STA. 357+79 TO STA. 364+00 RT
–L– STA. 370+00 TO STA. 370+50 LT
–L– STA. 372+00 TO STA. 375+50 LT
–L– STA. 405+46 TO STA. 407+50 RT
–L– STA. 470+50 TO STA. 474+50 LT
–L– STA. 500+00 TO STA. 504+50 LT
–Y7RPB– STA. 18+29 TO STA. 24+32.14 LT
–Y7B– STA. 14+72 TO STA. 15+71.74 RT
–Y7D– STA. 11+50 TO STA. 14+13 LT

DETAIL E
BERM DITCH
(Not to Scale)



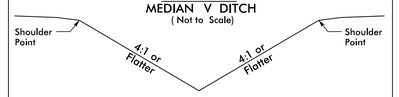
DETAIL NOT USED IN SECTION 2

DETAIL F
SPECIAL CUT BASE DITCH
(Not to Scale)



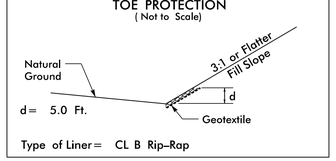
–L– STA. 282+50 TO STA. 288+50 LT
–L– STA. 307+00 TO STA. 316+50 LT
–L– STA. 296+50 TO STA. 300+50 RT
–L– STA. 307+50 TO STA. 308+50 RT
–L– STA. 336+00 TO STA. 339+00 LT
–L– STA. 361+00 TO STA. 362+00 LT
–L– STA. 364+00 TO STA. 364+50 RT
–L– STA. 370+50 TO STA. 372+00 LT
–L– STA. 371+50 TO STA. 372+50 RT
–L– STA. 453+50 TO STA. 461+50 LT
–L– STA. 465+00 TO STA. 470+50 LT
–L– STA. 438+00 TO STA. 460+00 RT
–L– STA. 435+00 TO STA. 440+50 LT
–L– STA. 493+00 TO STA. 496+50 LT
–Y7D– STA. 14+80 TO STA. 16+25 LT
–Y7RPB– STA. 10+18.97 TO STA. 18+29.27 LT
–Y7RPC– STA. 10+05.01 TO STA. 16+73.59 RT

DETAIL G
MEDIAN V DITCH
(Not to Scale)



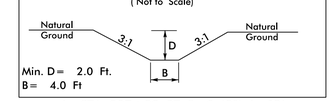
–L– STA. 390+50 TO STA. 392+50 LT
–Y20– STA. 21+93.18 TO STA. 22+44.57 LT
–Y7RPA– STA. 10+40.05 TO STA. 11+40.19 RT
–Y7RPD– STA. 10+84.95 TO STA. 11+84.98 LT

DETAIL H
TOE PROTECTION
(Not to Scale)



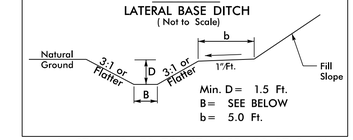
–L– STA. 300+78 TO STA. 303+84 LT
–L– STA. 423+10 TO STA. 425+20 LT
–L– STA. 508+50 TO STA. 509+52 LT
–L– STA. 522+75 TO STA. 525+40 LT
–L– STA. 435+00 TO STA. 437+00 RT
–SR3– STA. 34+16 TO STA. 35+78 LT
–Y7RPC– STA. 17+50 TO STA. 24+10 RT

DETAIL I
STANDARD BASE DITCH
(Not to Scale)



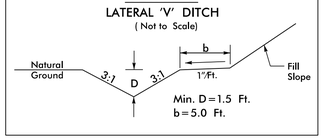
–L– STA. 307+38 RT, S=0.42%, L=12',
BEG EL=126.90', END EL=126.85'
–L– STA. 498+38 LT, S=0.02%, L=65',
BEG EL=169.73', END EL=169.72'
–SR3– STA. 23+79 LT, S=1.29%, L=35',
BEG EL=147.45', END EL=147.00'
–SR5A– STA. 17+00 LT, S=2.14%, L=65',
BEG EL=169.32', END EL=167.93'
–L– STA. 293+37 LT, S=0.30%, L=112',
BEG EL=135.23', END EL=134.89'
–Y7RPB– STA. 15+38 LT, S=0.00%, L=25',
BEG EL=136.50', END EL=136.50'

DETAIL J
LATERAL BASE DITCH
(Not to Scale)



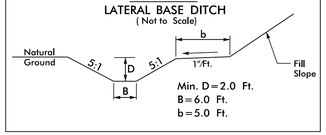
–L– STA. 340+50 TO STA. 355+00 RT, B=2'
–L– STA. 360+50 TO STA. 361+00 LT, B=4'
–L– STA. 372+50 TO STA. 376+50 RT, B=4'
–SR3– STA. 11+00 TO STA. 24+50 RT, B=4'
–Y7B– STA. 11+00 TO STA. 15+50 LT, B=4'
–Y7C– STA. 12+53 TO STA. 13+84 LT, B=4'
–Y7D– STA. 11+03 TO STA. 11+50 LT, B=4'
–Y7RPB– STA. 20+00 TO STA. 21+00 RT, B=4'
–Y7RPD– STA. 24+30 TO STA. 25+06 LT, B=4'

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



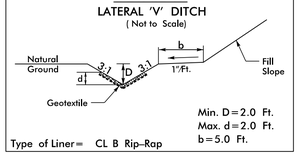
–L– STA. 280+00 TO STA. 289+00 RT
–L– STA. 320+00 TO STA. 322+00 RT
–L– STA. 324+00 TO STA. 333+00 RT
–L– STA. 345+00 TO STA. 351+00 LT
–L– STA. 353+00 TO STA. 355+00 LT
–L– STA. 402+50 TO STA. 403+00 RT
–L– STA. 403+00 TO STA. 406+50 LT
–SR3– STA. 24+50 TO STA. 28+00 LT
–Y20– STA. 19+00 TO STA. 21+93.18 LT
–Y20– STA. 22+44.57 TO STA. 22+95.34 RT
–Y6– STA. 13+50 TO STA. 15+50 LT
–Y6– STA. 23+00 TO STA. 28+50 RT
–Y6– STA. 28+50 TO STA. 29+50 LT
–Y7C– STA. 16+50 TO STA. 19+00 LT
–Y7D– STA. 11+00 TO STA. 14+50 RT
–Y7RPB– STA. 21+00 TO STA. 23+74 RT
–Y7RPC– STA. 17+13.38 TO STA. 19+00 LT
–Y7RPC– STA. 20+50 TO STA. 23+90 LT
–Y7RPD– STA. 22+00 TO STA. 24+00 RT
–Y8– STA. 26+19 TO STA. 29+50 RT

DETAIL L
LATERAL BASE DITCH
(Not to Scale)



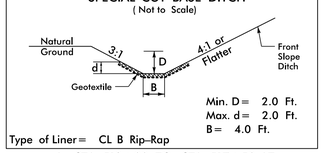
DETAIL NOT USED IN SECTION 2

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



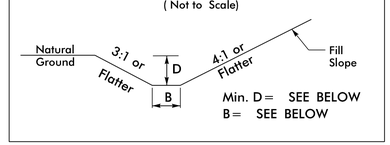
–Y7RPD– STA. 24+00 TO STA. 24+42 RT
–Y7C– STA. 11+00 TO STA. 12+53 LT

DETAIL N
SPECIAL CUT BASE DITCH
(Not to Scale)



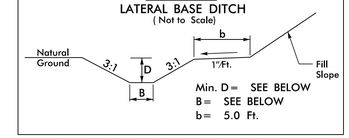
–L– STA. 513+00 TO STA. 517+50 LT
–Y20– STA. 32+51.25 TO STA. 33+42 RT

DETAIL O
SPECIAL LATERAL BASE DITCH
(Not to Scale)



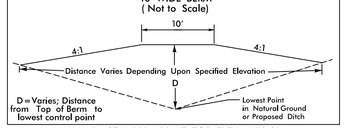
DETAIL NOT USED IN SECTION 2

DETAIL P
LATERAL BASE DITCH
(Not to Scale)



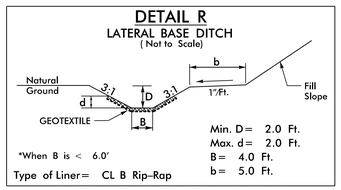
–SR3– STA. 18+50 TO 19+50 LT, B=6', D=1'
–Y8– STA. 33+00 TO 33+50 LT, B=6', D=1'
–L– STA. 355+00 TO STA. 360+50 LT, B=4', D=3'
–L– STA. 403+00 TO STA. 405+46 RT, B=4', D=4.5'
–Y20– STA. 22+95.34 TO STA. 24+46 RT, B=4', D=3'

DETAIL Q
10' WIDE BERM
(Not to Scale)



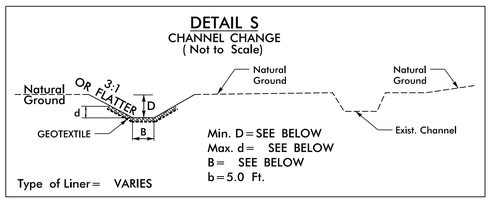
–L– STA. 500+00 LT, TOP ELEV.=173.0'
–L– STA. 500+00 RT, TOP ELEV.=172.3'
–SR3– STA. 20+50 RT, TOP ELEV.=151.0'
–SR3– STA. 24+50 RT, TOP ELEV.=150.0'

DETAIL R
LATERAL BASE DITCH
(Not to Scale)



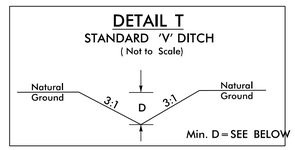
–L– STA. 517+50 TO STA. 521+00 LT

DETAIL S
CHANNEL CHANGE
(Not to Scale)



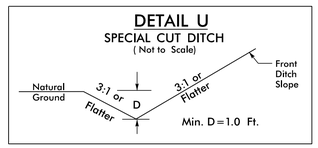
DETAIL NOT USED IN SECTION 2

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



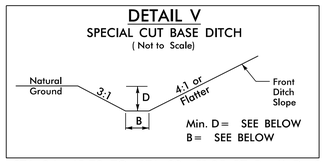
–Y9RPA– STA. 20+00, D=1'
BEG. ELEV=150.00 END ELEV=146.50, S=3.5%

DETAIL U
SPECIAL CUT DITCH
(Not to Scale)



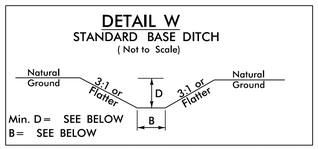
–L– STA. 518+00 TO STA. 522+50 RT
–SR5A– STA. 11+76.57 TO STA. 12+27.18 LT
–SR5A– STA. 11+76.57 TO STA. 12+27.18 RT
–SR5A– STA. 13+79.06 TO STA. 19+00 LT
–SR5A– STA. 13+79.06 TO STA. 19+00 RT
–Y8– STA. 11+00 TO STA. 12+00 LT
–Y8– STA. 11+00 TO STA. 16+00 RT
–Y8– STA. 34+50 TO STA. 36+00 RT

DETAIL V
SPECIAL CUT BASE DITCH
(Not to Scale)



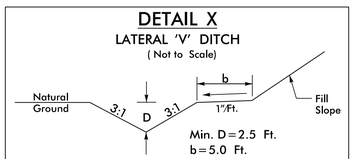
–Y20– STA. 24+45.78 TO STA. 32+51.25 RT, B=4', D=3.5'

DETAIL W
STANDARD BASE DITCH
(Not to Scale)



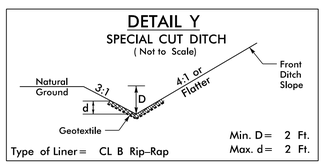
–L– STA. 499+00 TO STA. 499+70 RT, B=4', D=3'
–SR5B– STA. 15+70 RT, B=4', D=3', M=3.0
BEG EL=168.57', END EL=168.33', S=0.30%, L=78'
–Y20– STA. 32+51 LT, B=4', D=4.0'
BEG. ELEV=141.11 END ELEV=141.06, S=0.1%, M=4.0
–L– STA. 405+64 LT, B=4', D=3.0'
BEG. ELEV=140.22 END ELEV=139.80, S=0.3%, M=4.0

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



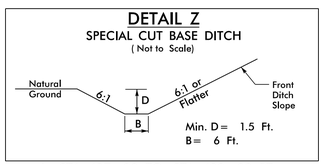
DETAIL NOT USED IN SECTION 2

DETAIL Y
SPECIAL CUT DITCH
(Not to Scale)



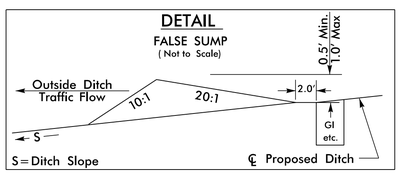
DETAIL NOT USED IN SECTION 2

DETAIL Z
SPECIAL CUT BASE DITCH
(Not to Scale)

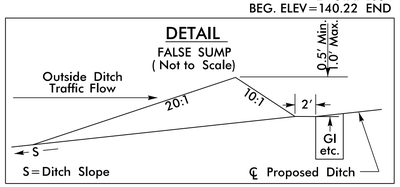


–L– STA. 437+00 TO STA. 438+00 RT

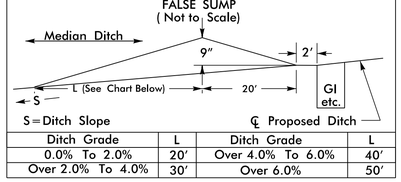
DETAIL
FALSE SUMP
(Not to Scale)



DETAIL
FALSE SUMP
(Not to Scale)



DETAIL
FALSE SUMP
(Not to Scale)



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

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R:\Hydraulics\PERMITS_Environmental\Drawings\4B\I-5986A_HYD_Ditch Detail_Sec2.dgn
FKeys

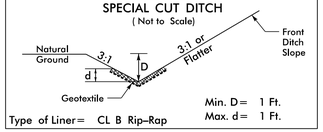
Submitted 9/2/2020

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2D-4
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

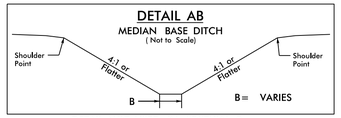
PERMIT DRAWING SHEET 5 OF 163

DETAIL AA
SPECIAL CUT DITCH
(Not to Scale)



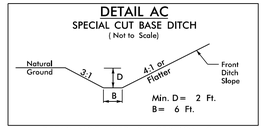
DETAIL NOT USED IN SECTION 2

DETAIL AB
MEDIAN BASE DITCH
(Not to Scale)



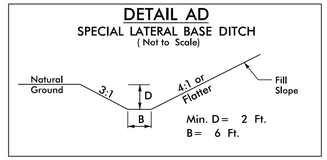
DETAIL NOT USED IN SECTION 2

DETAIL AC
SPECIAL CUT BASE DITCH
(Not to Scale)



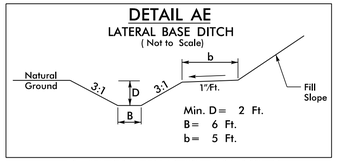
DETAIL NOT USED IN SECTION 2

DETAIL AD
SPECIAL LATERAL BASE DITCH
(Not to Scale)



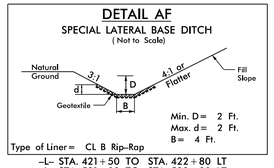
DETAIL NOT USED IN SECTION 2

DETAIL AE
LATERAL BASE DITCH
(Not to Scale)



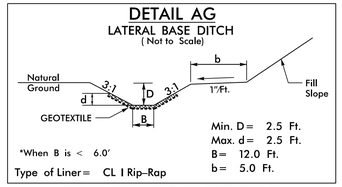
DETAIL NOT USED IN SECTION 2

DETAIL AF
SPECIAL LATERAL BASE DITCH
(Not to Scale)



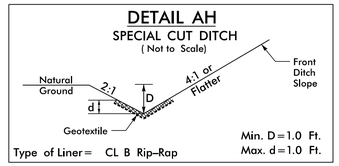
-L- STA. 421+50 TO STA. 422+80 LT
-L- STA. 521+00 TO STA. 522+90 LT

DETAIL AG
LATERAL BASE DITCH
(Not to Scale)



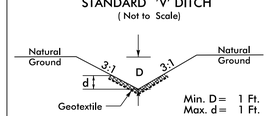
DETAIL NOT USED IN SECTION 2

DETAIL AH
SPECIAL CUT DITCH
(Not to Scale)



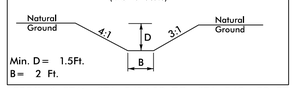
-L- STA. 296+00 TO STA. 296+50 LT

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



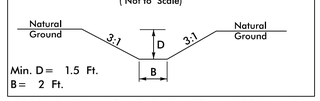
-Y9RPA- STA. 20+00, D=1'
BEG. ELEV=155.88 END ELEV=150.00, S=25.6%

DETAIL AJ
STANDARD BASE DITCH
(Not to Scale)



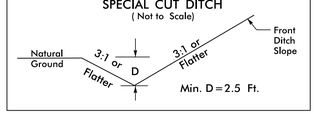
-SR5C (L STA)- STA. 541+19 TO STA. 543+50 RT

DETAIL AK
STANDARD BASE DITCH
(Not to Scale)



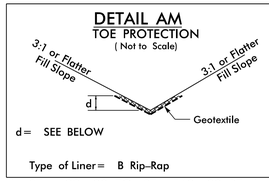
-SR5C (L STA)- STA. 543+26 RT, S=1.00%, L=75',
BEG EL=142.50', END EL=141.75'

DETAIL AL
SPECIAL CUT DITCH
(Not to Scale)



-L- STA. 489+50 TO STA. 499+60 RT

DETAIL AM
TOE PROTECTION
(Not to Scale)

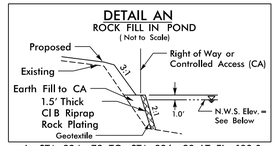


d= SEE BELOW

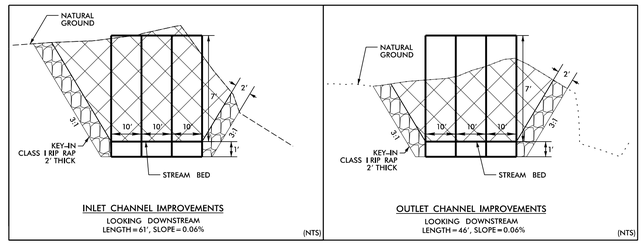
Type of Liner= B Rip-Rap

-L- STA. 522+00 TO STA. 540+00 RT, d=2.5

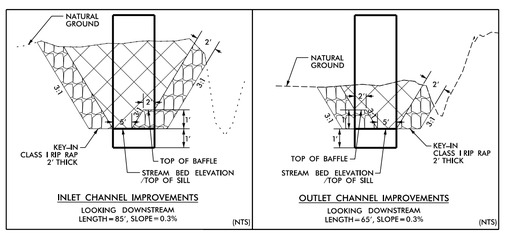
DETAIL AN
ROCK FILL IN POND
(Not to Scale)



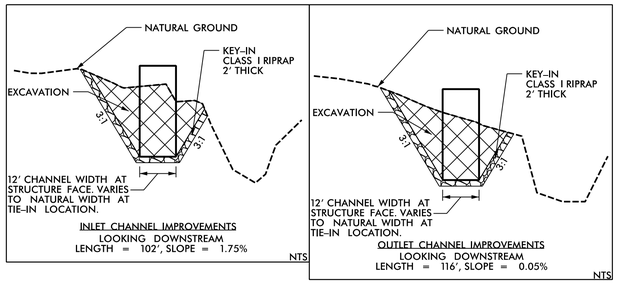
-L- STA 324+79 TO STA 326+93 LT, EL=138.0
-L- STA 452+12 TO STA 454+94 LT, EL=155.0
-L- STA 491+59 TO STA 492+86 LT, EL=170.0



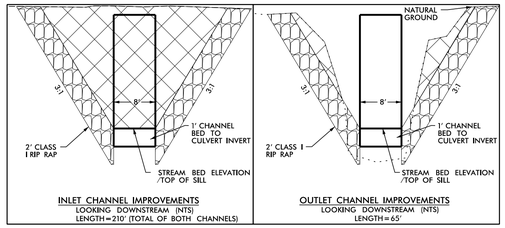
CULVERT INLET AND OUTLET DETAILS
-L- STA. 304+15



CULVERT INLET AND OUTLET DETAILS
-L- STA. 355+00



CULVERT INLET AND OUTLET DETAILS
-L- STA. 422+50.5



CULVERT INLET AND OUTLET DETAILS
-L- STA. 540+46

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R:\Hydraulics\PERMITS_Environmental\Drawings\4B\I-5986A_HYD_Ditch Detail_Sec2.dgn
Fkeys

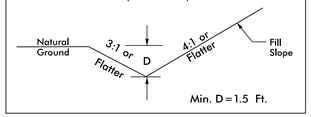
Submitted 9/2/2020

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2D-5
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

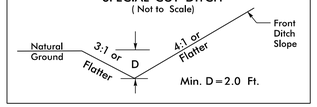
PERMIT DRAWING SHEET 6 OF 163

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



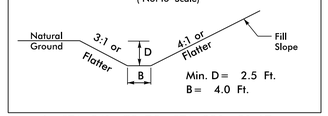
–L– STA. 626+93 TO STA. 629+50 LT
–L– STA. 627+50 TO STA. 629+00 RT
–L– STA. 735+00 TO STA. 735+85 LT
–L– STA. 740+00 TO STA. 742+50 LT
–L– STA. 761+00 TO STA. 761+35 LT

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



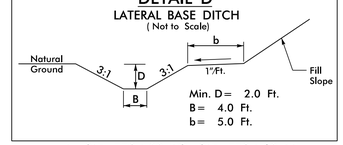
–L– STA. 582+00 TO STA. 585+00 LT
–L– STA. 595+00 TO STA. 599+50 LT
–L– STA. 599+00 TO STA. 600+00 RT
–L– STA. 609+50 TO STA. 610+50 LT
–L– STA. 620+00 TO STA. 620+50 LT
–L– STA. 629+50 TO STA. 635+00 LT
–L– STA. 629+00 TO STA. 637+00 RT
–L– STA. 647+00 TO STA. 649+00 LT
–L– STA. 646+00 TO STA. 650+50 RT
–L– STA. 653+00 TO STA. 659+00 RT
–L– STA. 696+00 TO STA. 709+00 LT
–L– STA. 711+50 TO STA. 715+00 RT
–L– STA. 711+50 TO STA. 735+00 LT
–L– STA. 725+50 TO STA. 726+50 RT
–L– STA. 731+50 TO STA. 732+50 RT
–L– STA. 742+50 TO STA. 753+00 LT
–L– STA. 758+50 TO STA. 759+00 LT
–L– STA. 760+00 TO STA. 761+00 LT
–SR5– STA. 14+00 TO STA. 17+96 RT
–SR5– STA. 20+92 TO STA. 22+92 RT
–SR5– STA. 33+47 TO STA. 37+00 RT
–SR5– STA. 37+50 TO STA. 41+50 LT
–Y9A– STA. 10+00 TO STA. 16+50 RT
–Y9A– STA. 10+00 TO STA. 16+00 LT
–Y9C– STA. 13+50 TO STA. 15+50 LT
–Y9C– STA. 13+00 TO STA. 15+50 RT
–Y9RPA– STA. 15+70 TO STA. 19+00 LT
–Y9RPA– STA. 14+73 TO STA. 18+50 RT
–Y9RPD– STA. 16+86 TO STA. 20+00 LT
–Y10– STA. 12+50 TO STA. 13+00 RT
–Y10– STA. 31+00 TO STA. 34+00 LT
–Y10– STA. 32+00 TO STA. 34+00 RT
–Y11– STA. 12+00 TO STA. 13+30 LT
–Y11– STA. 12+00 TO STA. 13+90 RT
–Y11– STA. 13+60 TO STA. 15+00 LT
–Y11– STA. 32+50 TO STA. 36+00 LT
–Y11DW– STA. 12+50 TO STA. 15+50 LT
–Y11DW– STA. 11+50 TO STA. 15+50 RT
–Y21– STA. 14+00 TO STA. 19+78 LT
Y21– STA. 14+50 TO STA. 16+82 RT

DETAIL C
SPECIAL LATERAL BASE DITCH
(Not to Scale)



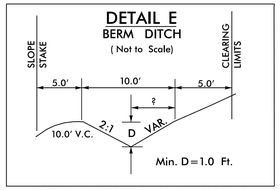
–L– STA. 541+75 TO STA. 550+50 LT
–L– STA. 620+50 TO STA. 622+47 LT
–L– STA. 756+50 TO STA. 758+50 LT
–Y9A– STA. 16+50 TO STA. 18+90 LT (3:1 FILL SLOPE)
–Y9C– STA. 13+50 TO STA. 15+50 LTT
–Y10– STA. 15+00 TO STA. 16+00 RT

DETAIL D
LATERAL BASE DITCH
(Not to Scale)



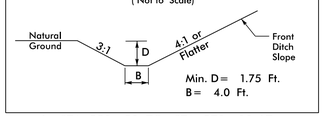
–L– STA. 573+00 TO STA. 573+60 LT
–L– STA. 639+50 TO STA. 640+35 RT
–L– STA. 642+70 TO STA. 646+00 RT
–L– STA. 656+00 TO STA. 660+10 LT
–L– STA. 666+00 TO STA. 667+00 LT
–L– STA. 694+80 TO STA. 696+50 RT
–L– STA. 699+50 TO STA. 704+40 RT
–L– STA. 732+50 TO STA. 742+00 RT
–L– STA. 748+00 TO STA. 756+40 RT
–L– STA. 753+00 TO STA. 756+40 LT
–L– STA. 764+00 TO STA. 776+50 LT
–SR5– STA. 17+96 TO STA. 19+55 RT
–SR5– STA. 19+65 TO STA. 20+92 RT
–Y9A– STA. 16+50 TO STA. 18+90 RT
–Y9C– STA. 11+40 TO STA. 13+00 RT
–Y9RPB– STA. 20+50 TO STA. 23+50 LT
–Y10– STA. 24+00 TO STA. 28+75 RT
–Y11– STA. 14+20 TO STA. 19+00 RT
–Y11– STA. 15+00 TO STA. 21+50 LT
–Y21– STA. 19+78 TO STA. 24+50 LT
–Y21– STA. 25+00 TO STA. 34+00 LT

DETAIL E
BERM DITCH
(Not to Scale)



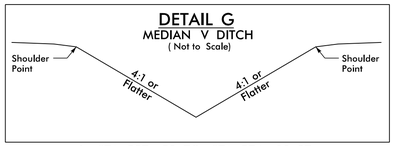
DETAIL NOT USED IN SECTION 3

DETAIL F
SPECIAL CUT BASE DITCH
(Not to Scale)



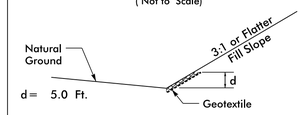
–L– STA. 550+50 TO STA. 573+00 LT
–L– STA. 585+00 TO STA. 590+15 LT
–L– STA. 585+00 TO STA. 590+50 RT
–L– STA. 594+50 TO STA. 599+00 RT
–L– STA. 637+50 TO STA. 639+50 RT
–L– STA. 654+50 TO STA. 656+00 LT
–L– STA. 659+00 TO STA. 660+10 RT
–L– STA. 660+10 TO STA. 666+00 LT
–L– STA. 696+50 TO STA. 699+50 RT
–L– STA. 742+00 TO STA. 748+00 RT
–Y9B– STA. 11+00 TO STA. 13+50 LT
–Y9B– STA. 16+00 TO STA. 19+50 LT
–Y9RPD– STA. 10+23 TO STA. 16+86 LT
–SR5– STA. 36+28 TO STA. 37+50 LT
–Y10– STA. 13+00 TO STA. 15+00 RT

DETAIL G
MEDIAN V DITCH
(Not to Scale)



–L– STA. 557+50 TO STA. 574+00 RT
–L– STA. 599+50 TO STA. 600+50 LT
–L– STA. 643+00 TO STA. 647+00 LT

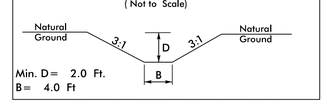
DETAIL H
TOE PROTECTION
(Not to Scale)



Type of Liner= CL B Rip–Rap

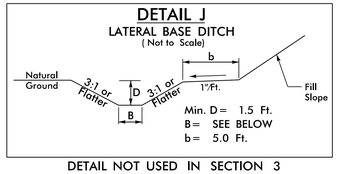
–L– STA. 605+75 TO STA. 606+83 LT
–L– STA. 622+50 TO STA. 627+00 LT
–L– STA. 625+75 TO STA. 627+50 RT
–L– STA. 674+70 TO STA. 677+10 RT
–L– STA. 678+75 TO STA. 684+10 RT
–L– STA. 692+30 TO STA. 694+76 RT
–L– STA. 735+85 TO STA. 736+10 LT
–Y9RPA– STA. 10+00 TO STA. 13+30 RT
–Y10– STA. 16+00 TO STA. 18+00 RT

DETAIL I
STANDARD BASE DITCH
(Not to Scale)



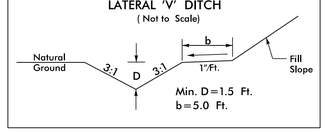
–L– STA. 695+15 TO STA. 696+00 LT,
BEG. EL=128.85', END EL=129.15', L=95', S=0.3%
–L– STA. 761+30 LT,
BEG. EL=145.03', END EL=144.20', L=28', S=3.0%
–L– STA. 593+50 LT,
BEG. EL=152.05', END EL=151.25', L=105', S=0.8%
–L– STA. 594+55 RT,
BEG. EL=152.60', END EL=151.20', L=53', S=2.6%
–Y9C– STA. 11+40 RT,
BEG. EL=153.80', END EL=151.00', L=300', S=0.9%
–Y9RPA– STA. 16+20 RT,
BEG. EL=150.32', END EL=150.15', L=54', S=0.3%

DETAIL J
LATERAL BASE DITCH
(Not to Scale)



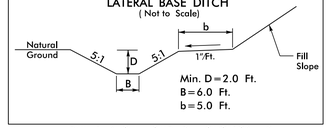
DETAIL NOT USED IN SECTION 3

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



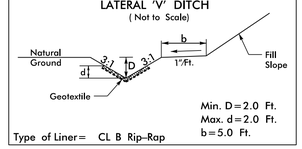
–Y9RPD– STA. 18+29 TO STA. 24+50 RT
–Y10– STA. 20+00 TO STA. 21+30 RT
–Y10– STA. 27+86 TO STA. 31+00 LT
–Y10– STA. 28+75 TO STA. 32+00 RT
–Y11– STA. 26+00 TO STA. 27+00 RT
–Y21– STA. 31+00 TO STA. 36+00 RT

DETAIL L
LATERAL BASE DITCH
(Not to Scale)



DETAIL NOT USED IN SECTION 3

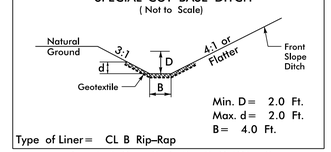
DETAIL M
LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= CL B Rip–Rap

DETAIL NOT USED IN SECTION 3

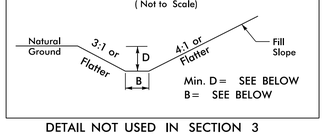
DETAIL N
SPECIAL CUT BASE DITCH
(Not to Scale)



Type of Liner= CL B Rip–Rap

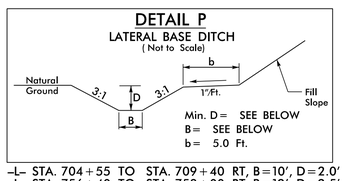
DETAIL NOT USED IN SECTION 3

DETAIL O
SPECIAL LATERAL BASE DITCH
(Not to Scale)



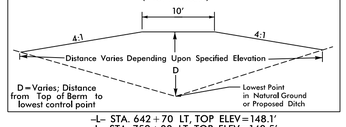
DETAIL NOT USED IN SECTION 3

DETAIL P
LATERAL BASE DITCH
(Not to Scale)



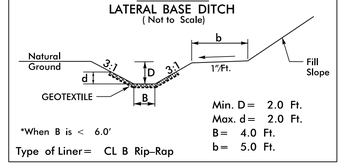
–L– STA. 704+55 TO STA. 709+40 RT, B=10', D=2.0'
–L– STA. 756+40 TO STA. 758+00 RT, B=12', D=2.5'
–Y11DW– STA. 11+00 TO STA. 11+50 LT, B=4', D=1.0'

DETAIL Q
10' WIDE BERM
(Not to Scale)



–L– STA. 642+70 LT, TOP ELEV=148.1'
–L– STA. 759+00 LT, TOP ELEV=148.5'
–L– STA. 762+00 LT, TOP ELEV=146.8'

DETAIL R
LATERAL BASE DITCH
(Not to Scale)

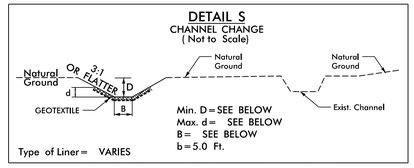


*When B is < 6.0'

Type of Liner= CL B Rip–Rap

DETAIL NOT USED IN SECTION 3

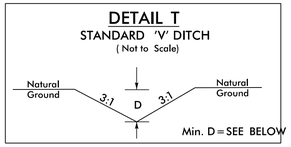
DETAIL S
CHANNEL CHANGE
(Not to Scale)



Type of Liner= VARIES

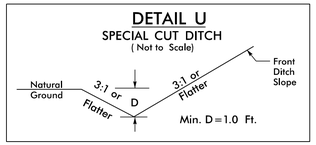
–L– STA. 766+40 LT, B=6', CL I RIPRAP, MIN D=3.0'
BEG. EL=138.55', END EL=137.85', L=55', S=1.3%
–L– STA. 766+40 RT, B=6', CL II RIPRAP, MIN D=3.0'
BEG. EL=134.80', END EL=134.35', L=48', S=0.9%

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



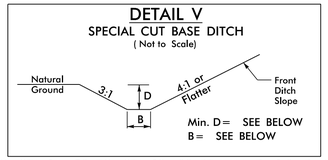
–L– STA. 735+85 LT,
BEG. EL=144.50', END EL=144.53', L=20', S=0.2%

DETAIL U
SPECIAL CUT DITCH
(Not to Scale)



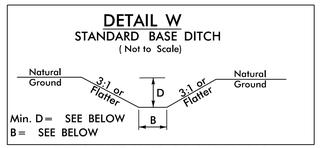
DETAIL NOT USED IN SECTION 3

DETAIL V
SPECIAL CUT BASE DITCH
(Not to Scale)



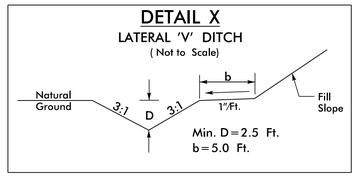
–Y9C– STA. 16+50 TO STA. 19+00 RT, MIN D=1.0', B=2'

DETAIL W
STANDARD BASE DITCH
(Not to Scale)



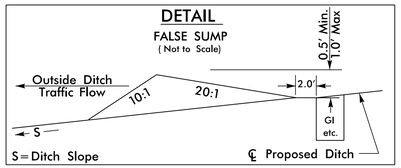
DETAIL NOT USED IN SECTION 3

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

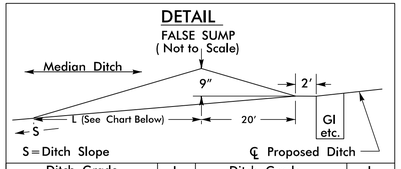


DETAIL NOT USED IN SECTION 3

DETAIL
FALSE SUMP
(Not to Scale)

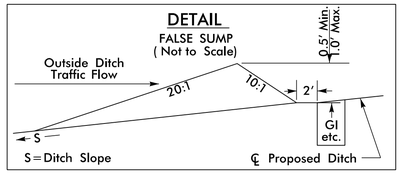


DETAIL
FALSE SUMP
(Not to Scale)

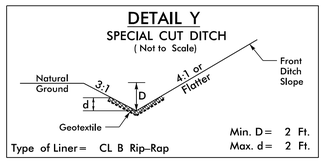


Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL
FALSE SUMP
(Not to Scale)



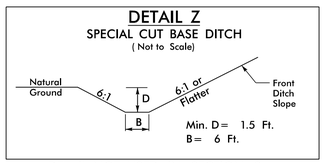
DETAIL Y
SPECIAL CUT DITCH
(Not to Scale)



Type of Liner= CL B Rip–Rap

–L– STA. 654+00 TO STA. 654+50 LT

DETAIL Z
SPECIAL CUT BASE DITCH
(Not to Scale)



DETAIL NOT USED IN SECTION 3

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2D-6
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

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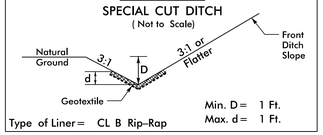
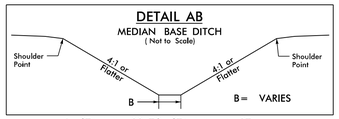
PERMIT DRAWING SHEET 7 OF 163

DETAIL AA
SPECIAL CUT DITCH
(Not to Scale)



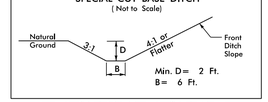
DETAIL NOT USED IN SECTION 3

DETAIL AB
MEDIAN BASE DITCH
(Not to Scale)



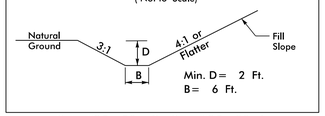
-L- STA. 575+00 TO STA. 577+75 RT
-L- STA. 635+00 TO STA. 642+50 LT
-Y9RPC- STA. 10+00 TO STA. 12+26 RT
-Y9RPC- STA. 17+50 TO STA. 24+00 RT

DETAIL AC
SPECIAL CUT BASE DITCH
(Not to Scale)



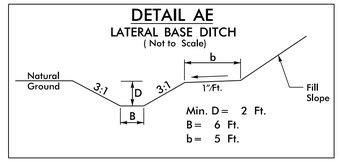
-L- STA. 608+66 TO STA. 625+50 RT
-Y9RPB- STA. 11+19 TO STA. 20+50 LT

DETAIL AD
SPECIAL LATERAL BASE DITCH
(Not to Scale)

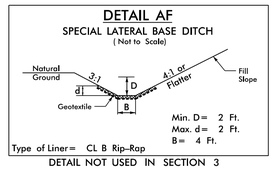


-L- STA. 625+50 TO STA. 625+90 RT

DETAIL AE
LATERAL BASE DITCH
(Not to Scale)

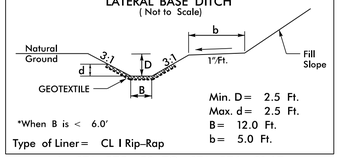


DETAIL AF
SPECIAL LATERAL BASE DITCH
(Not to Scale)



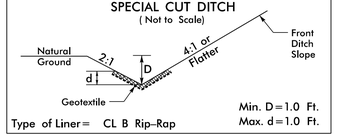
DETAIL NOT USED IN SECTION 3

DETAIL AG
LATERAL BASE DITCH
(Not to Scale)



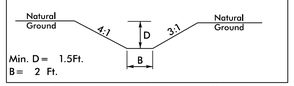
-L- STA. 575+50 TO STA. 576+81 LT
-Y9RPB- STA. 10+00 TO STA. 11+19 LT

DETAIL AH
SPECIAL CUT DITCH
(Not to Scale)



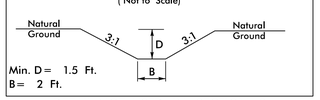
DETAIL NOT USED IN SECTION 3

DETAIL AJ
STANDARD BASE DITCH
(Not to Scale)



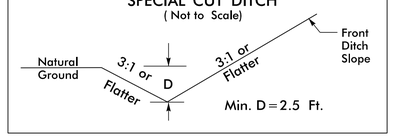
DETAIL NOT USED IN SECTION 3

DETAIL AK
STANDARD BASE DITCH
(Not to Scale)



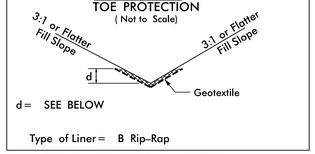
DETAIL NOT USED IN SECTION 3

DETAIL AL
SPECIAL CUT DITCH
(Not to Scale)

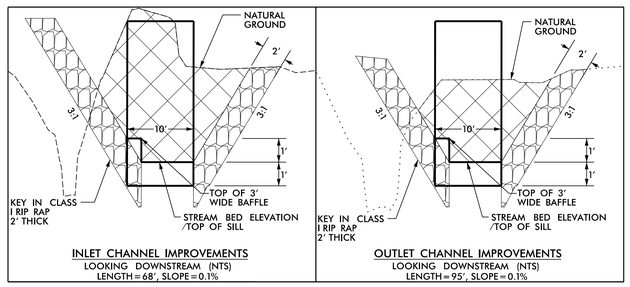


DETAIL NOT USED IN SECTION 3

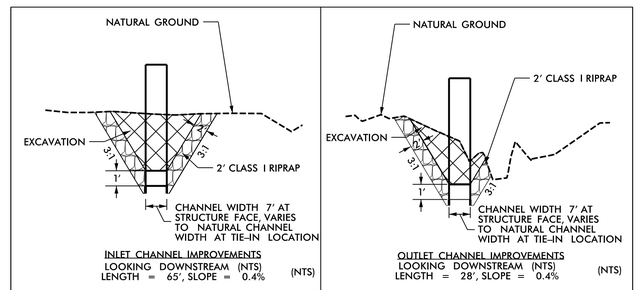
DETAIL AM
TOE PROTECTION
(Not to Scale)



DETAIL NOT USED IN SECTION 3

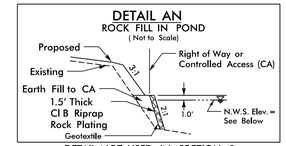


CULVERT INLET AND OUTLET DETAILS
-L- 574+71



CULVERT INLET AND OUTLET DETAILS
-L- 642+72

DETAIL AN
ROCK FILL IN POND
(Not to Scale)



DETAIL NOT USED IN SECTION 3

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Fkeys

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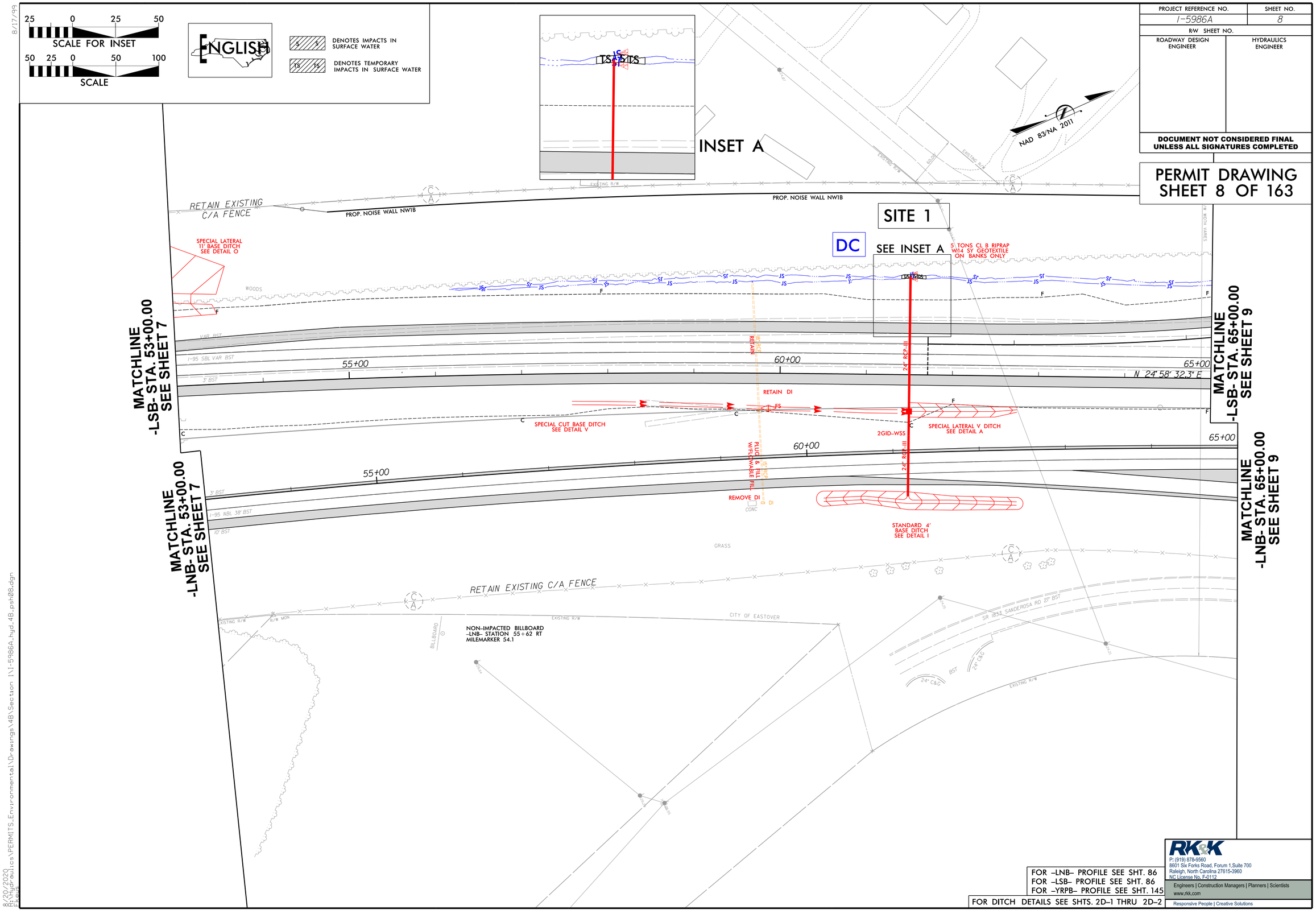

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING
SHEET 8 OF 163

FOR –LNB– PROFILE SEE SHT. 86
FOR –LSB– PROFILE SEE SHT. 86
FOR –YRPB– PROFILE SEE SHT. 145
FOR DITCH DETAILS SEE SHTS. 2D–1 THRU 2D–2

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8/17/99

25 0 25 50
SCALE FOR INSET
50 25 0 50 100
SCALE

ENGLISH

DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

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I-5986A	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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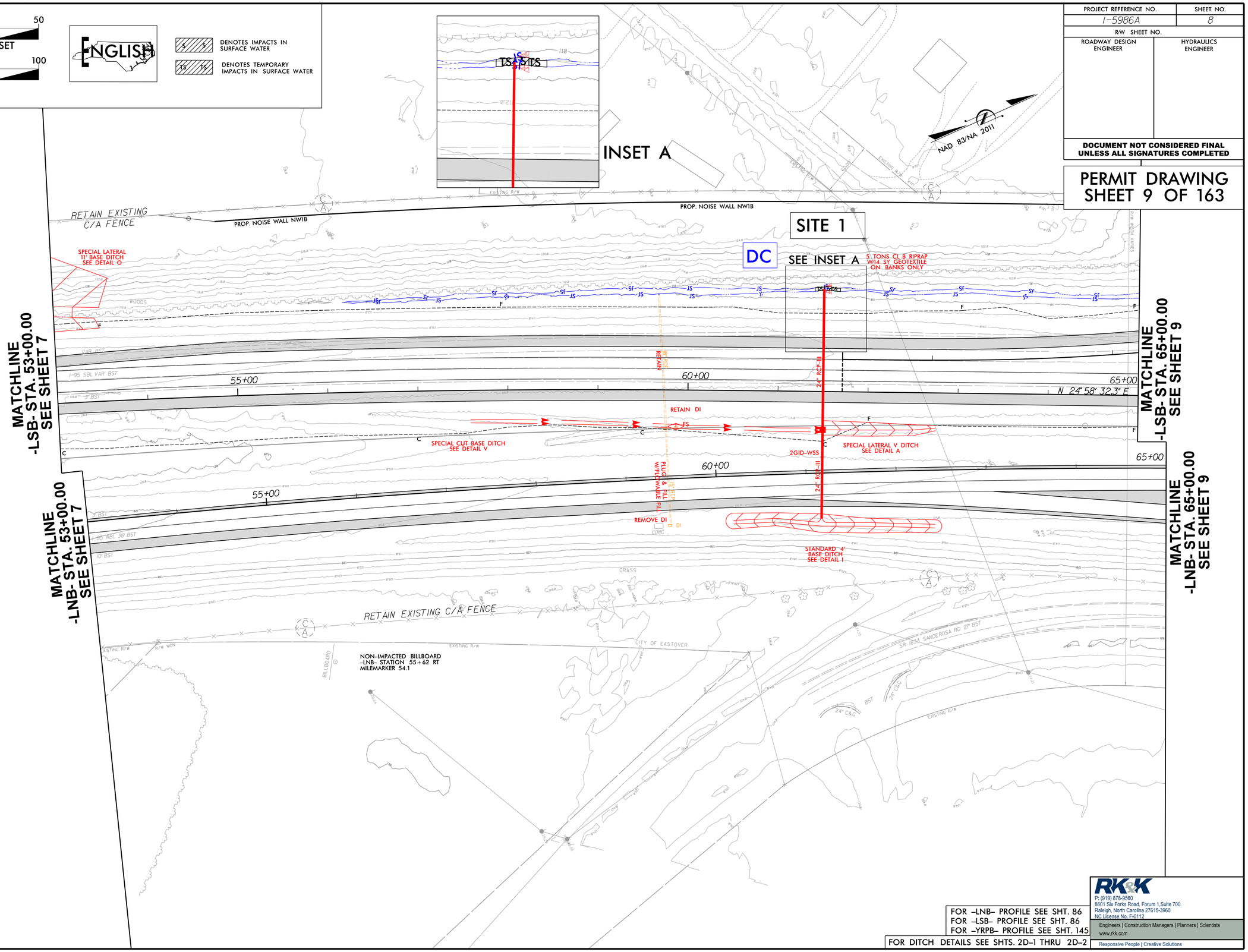
PERMIT DRAWING
SHEET 9 OF 163



FOR –LNB– PROFILE SEE SHT. 86
FOR –LSB– PROFILE SEE SHT. 86
FOR –YRPB– PROFILE SEE SHT. 145
FOR DITCH DETAILS SEE SHTS. 2D–1 THRU 2D–2

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REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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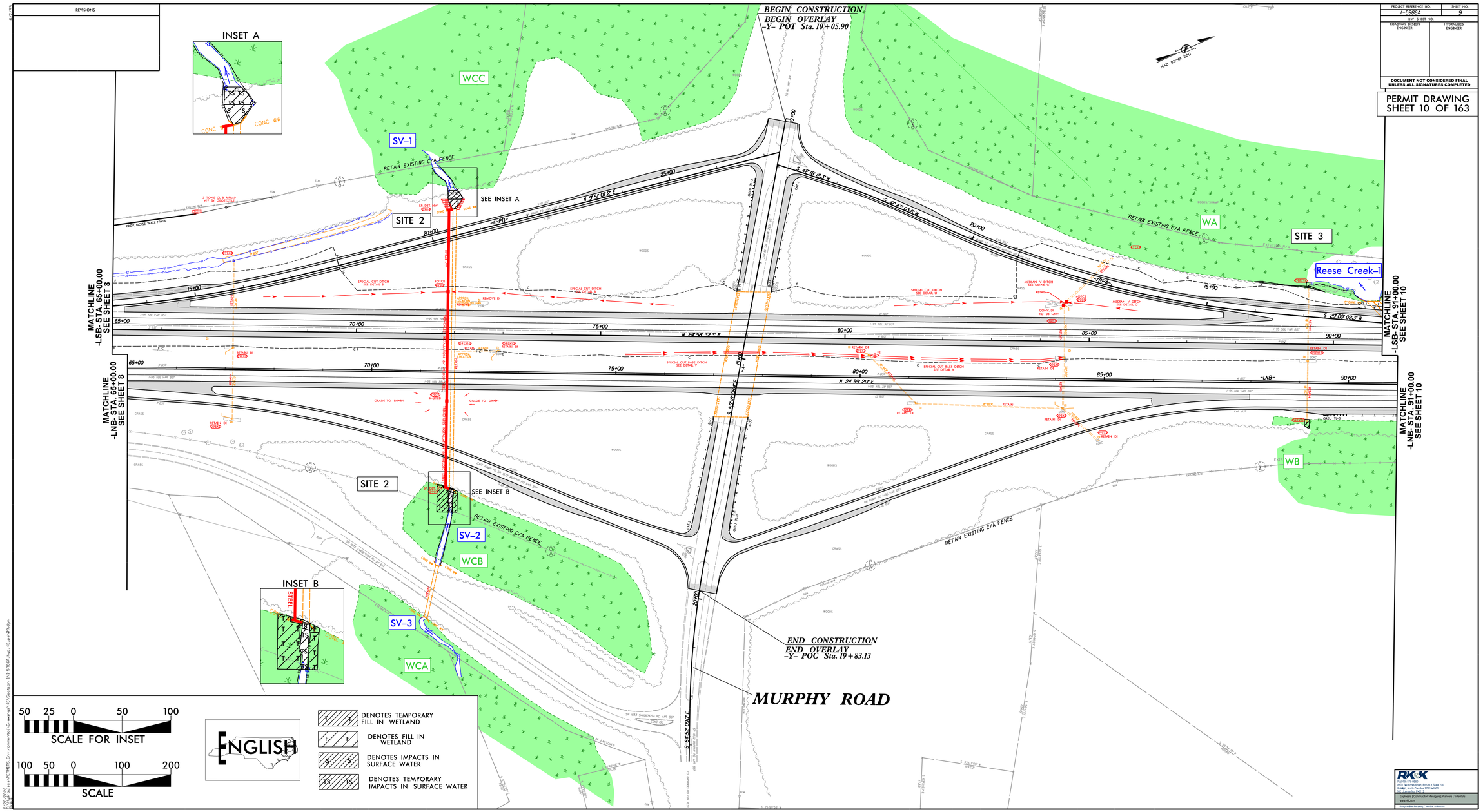
PERMIT DRAWING
SHEET 10 OF 163



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REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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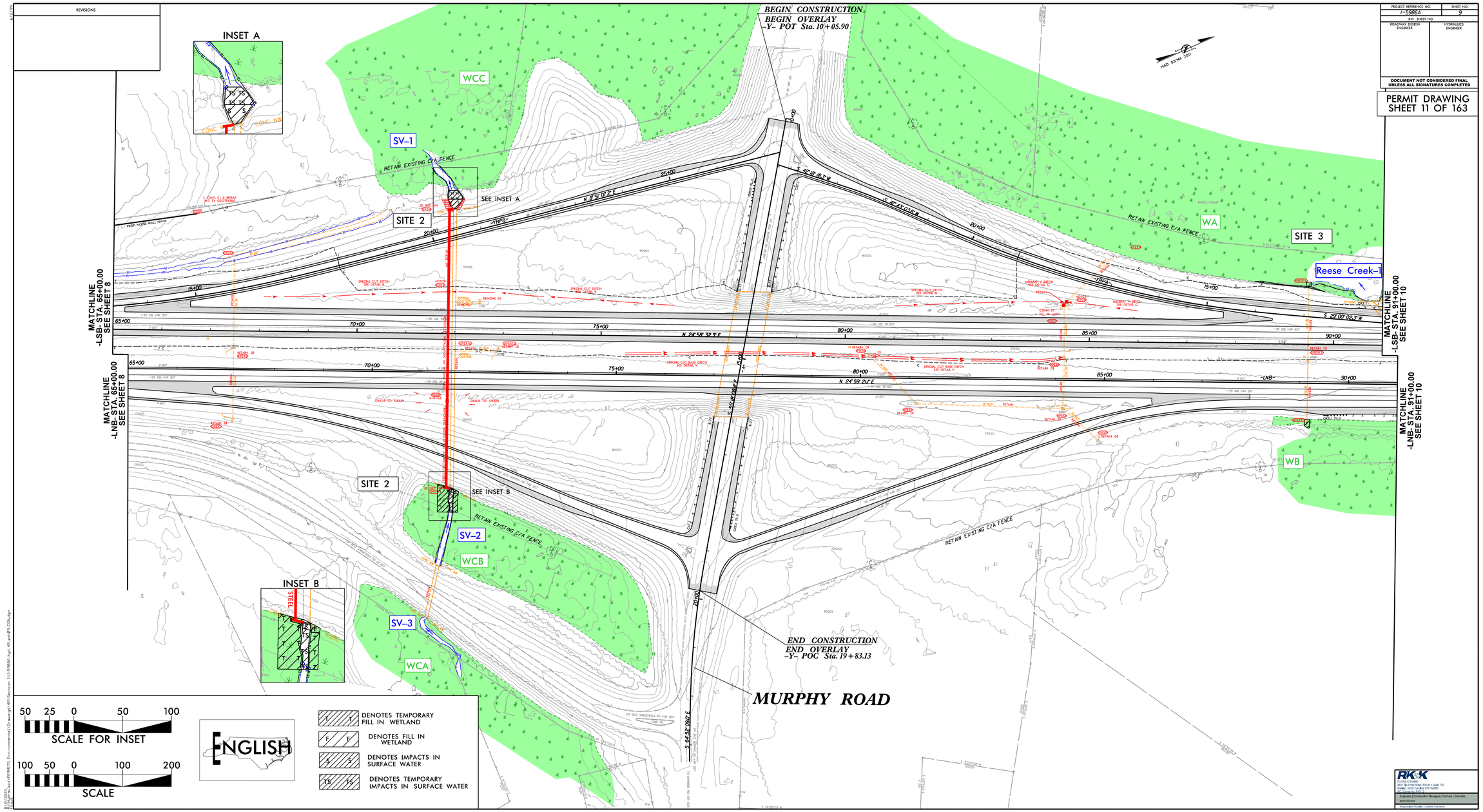
SHEET 11 OF 163



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I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 2
–LSB– STA. 71+86

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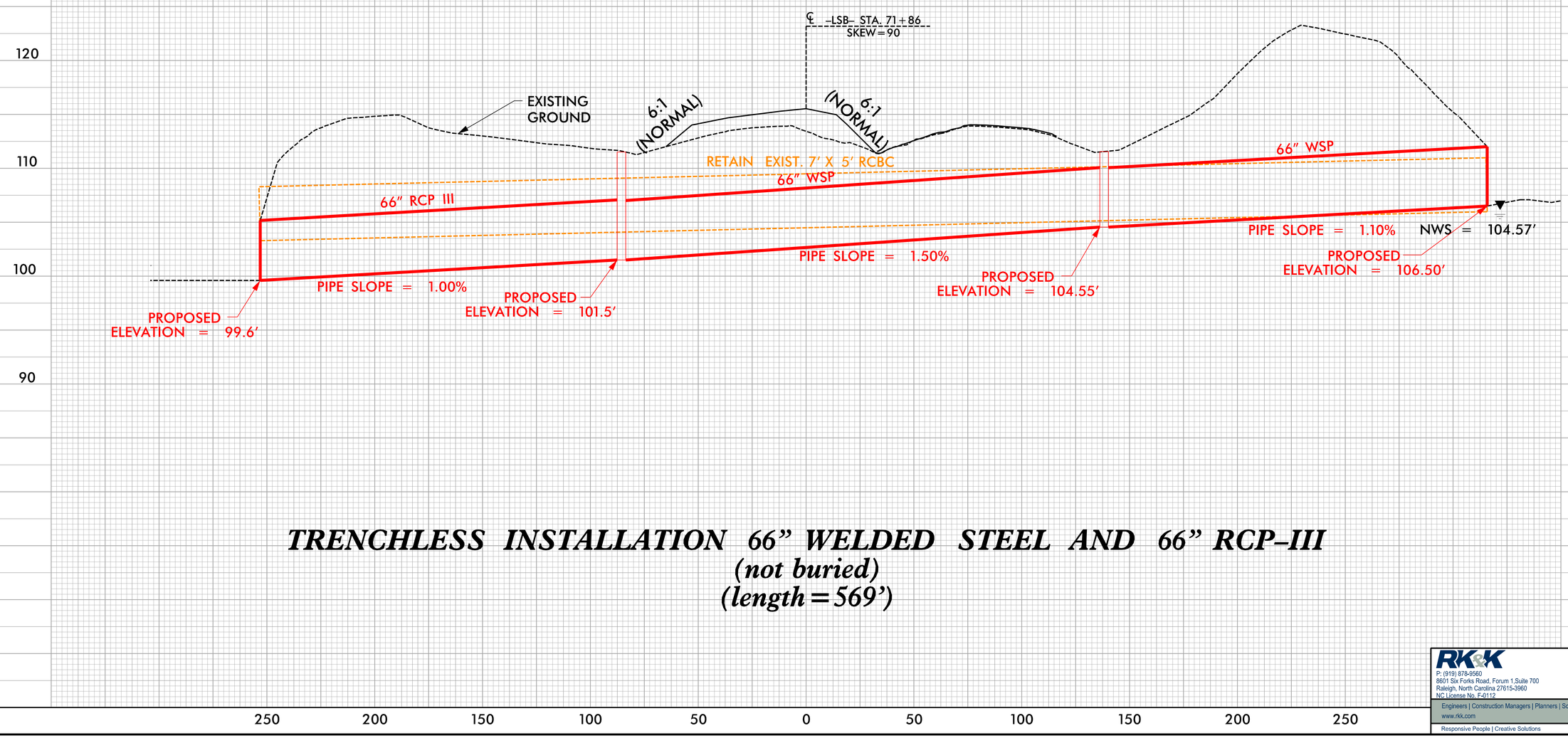
SHEET 12 OF 163

ENGLISH



TRENCHLESS INSTALLATION 66" WELDED STEEL AND 66" RCP–III
(not buried)
(length=569')

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8/20/2020
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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 3
–LSB– STA. 91+70

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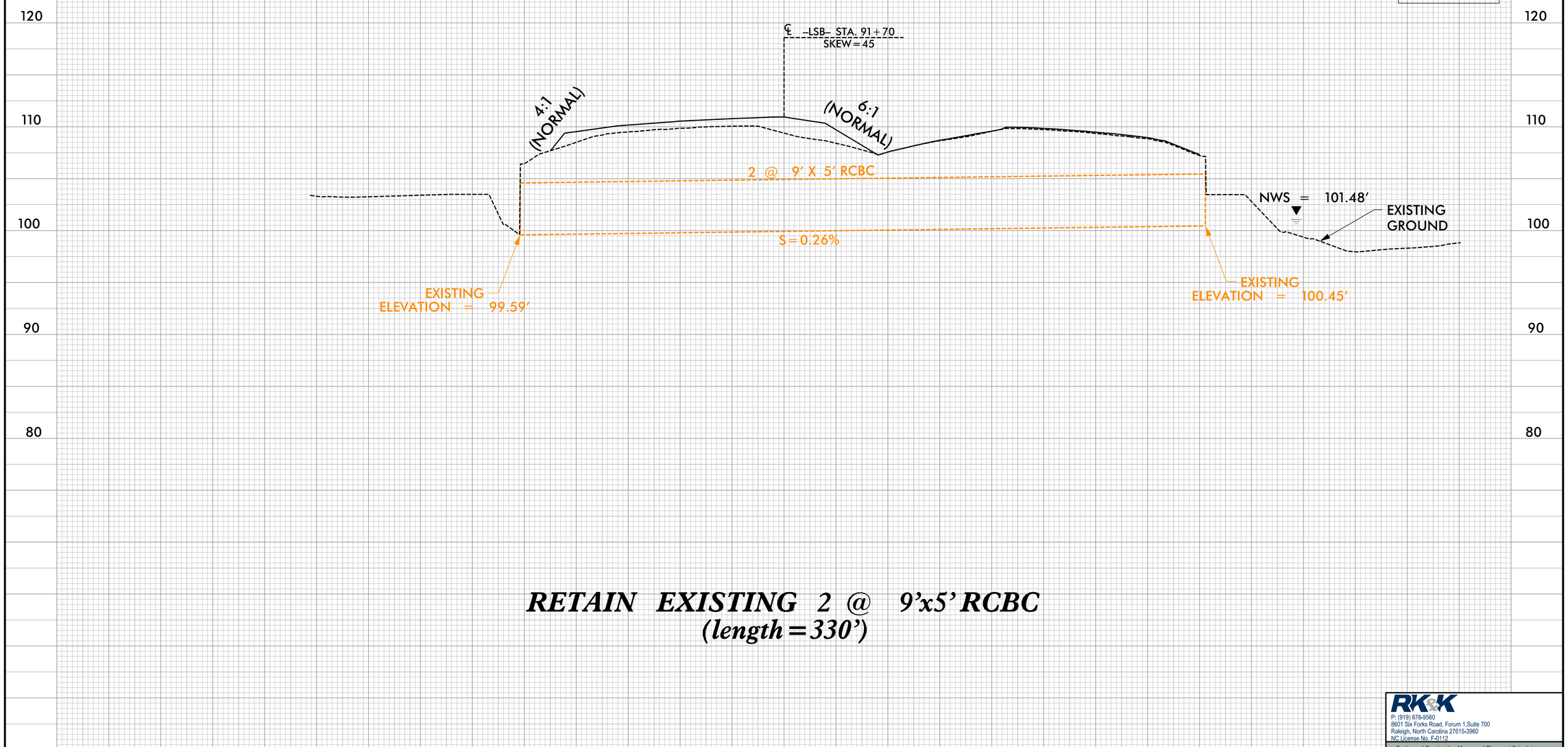
SHEET 13 OF 163

ENGLISH



RETAIN EXISTING 2 @ 9'x5' RCBC
(length = 330')

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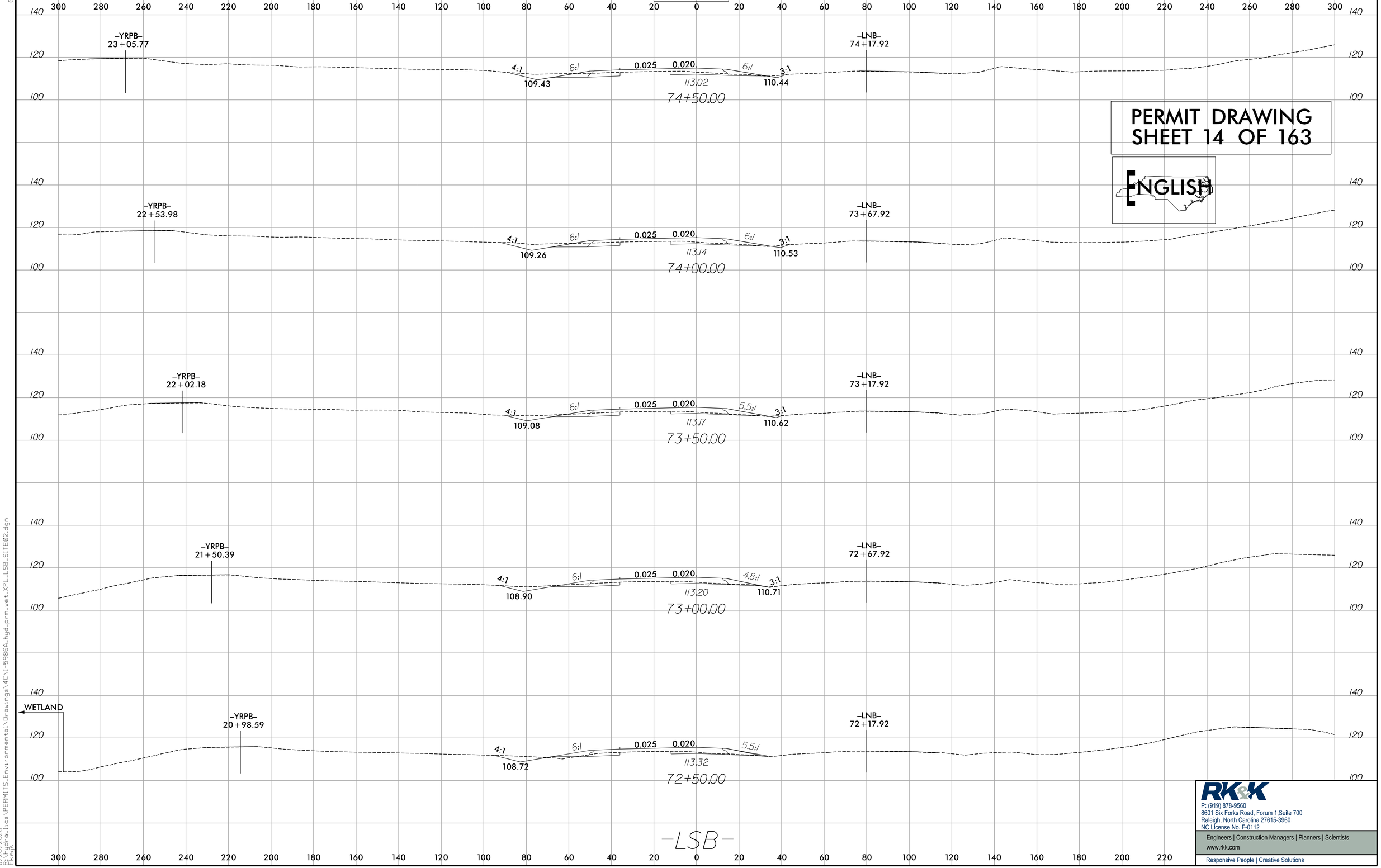
6/23/16

SITE 2

PROJ. REFERENCE NO.	SHEET NO.
I-5986A	S1 X-25

0 10 20



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SHEET 14 OF 163

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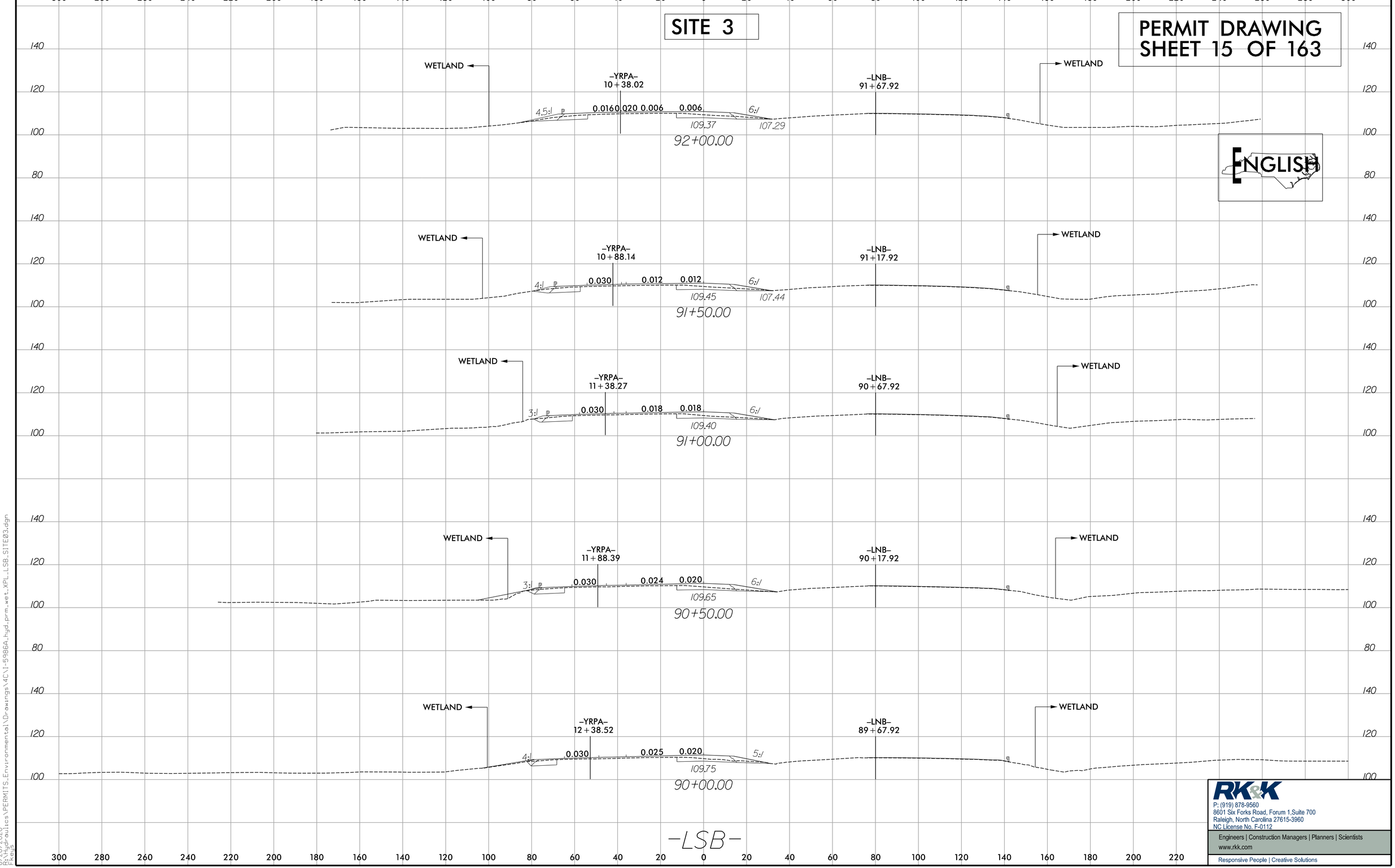
PROJ. REFERENCE NO.	SHEET NO.
I-5986A	S1 X-32

SITE 3

PERMIT DRAWING SHEET 15 OF 163



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6/23/16

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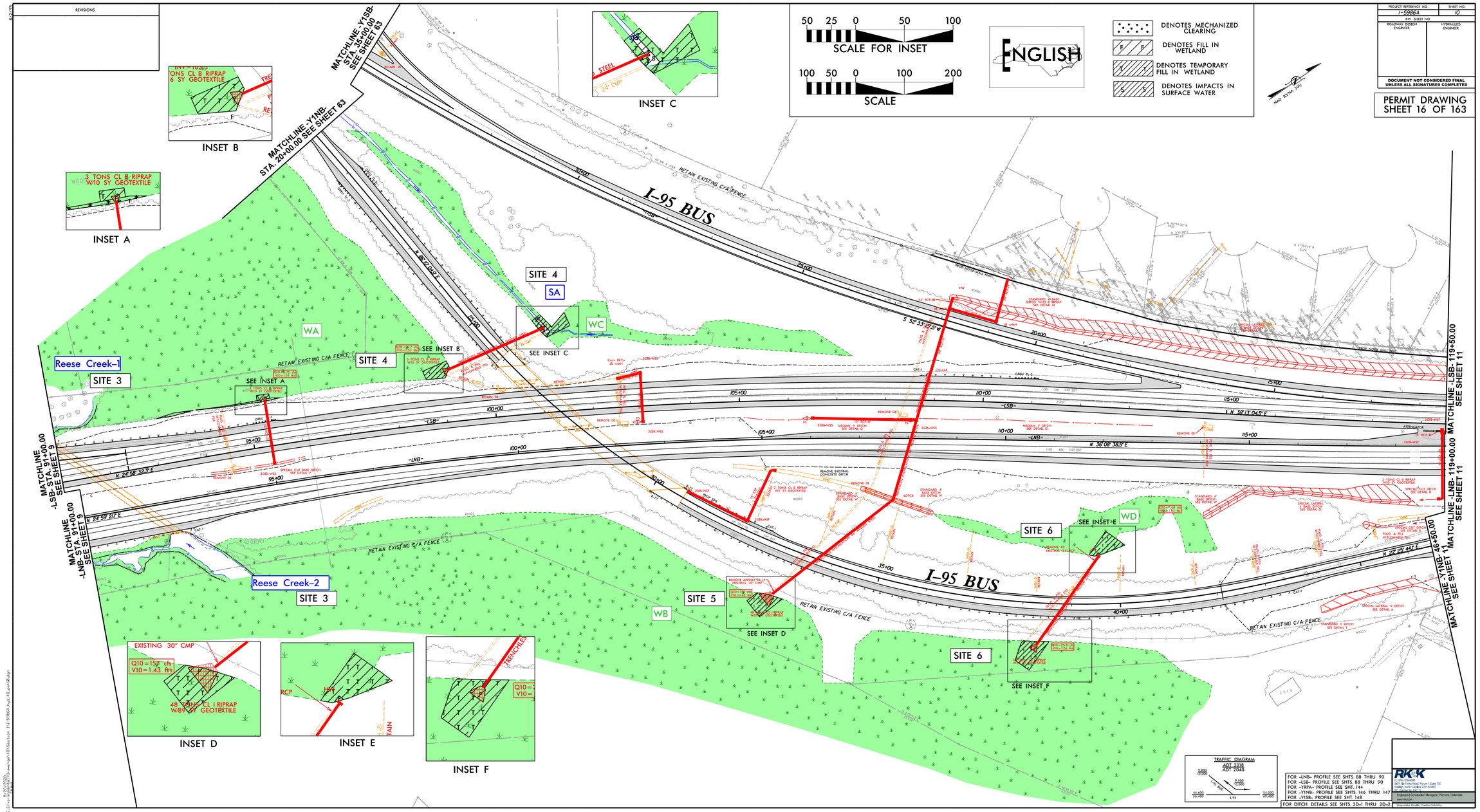

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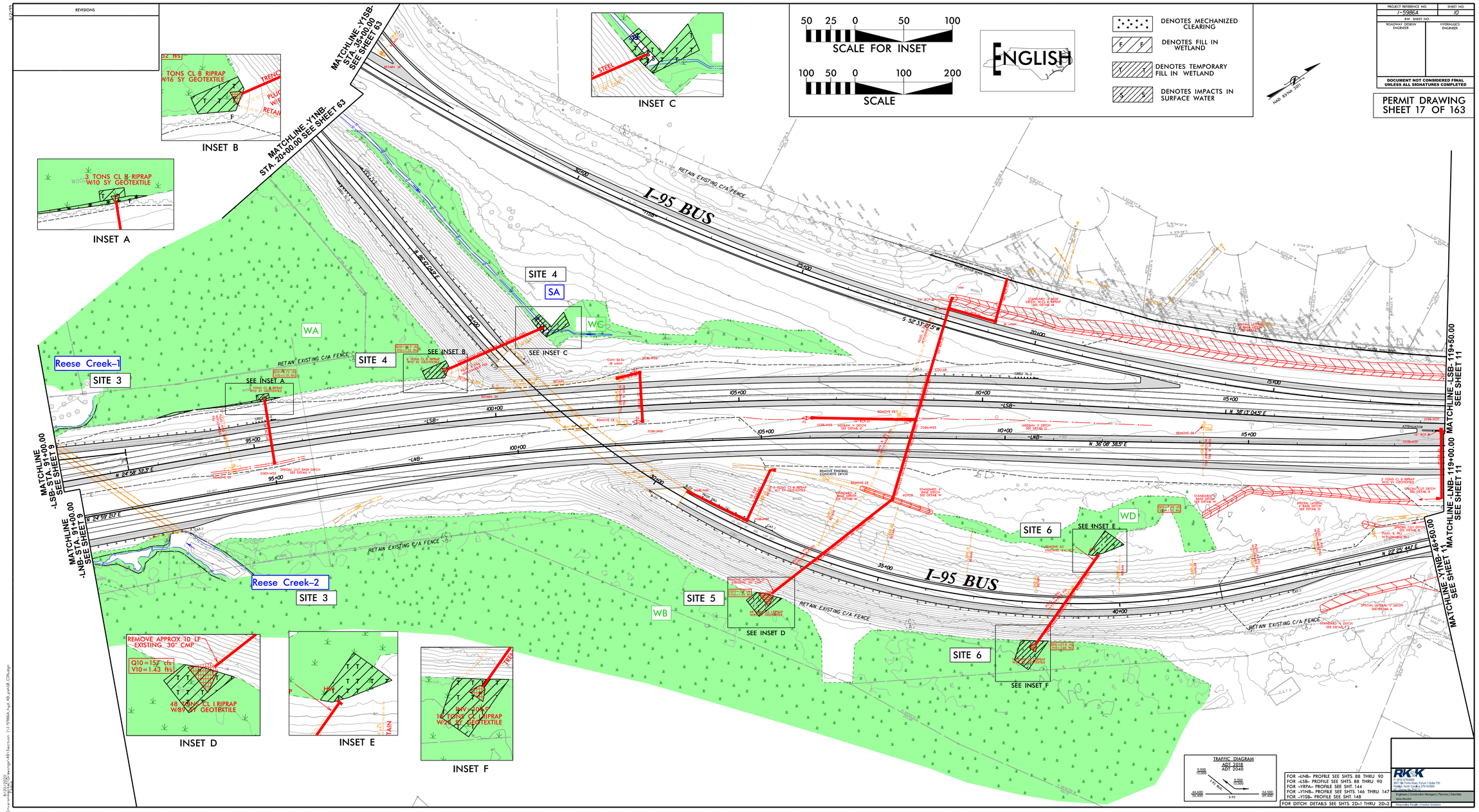

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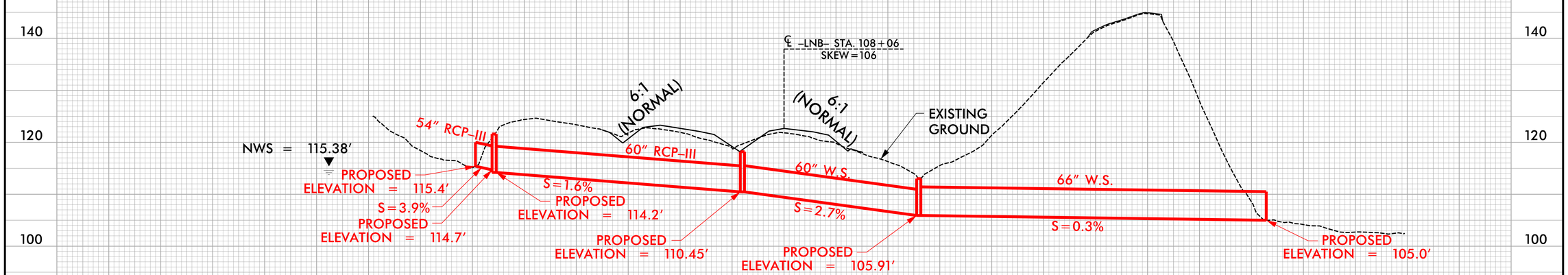
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 5
–LNB– STA. 108 + 06

PERMIT DRAWING
SHEET 18 OF 163

ENGLISH



54" RCP–III, 60" RCP–III, TRENCHLESS INSTALLATION 60" WELDED STEEL, & TRENCHLESS INSTALLATION 66" WELDED STEEL
(not buried)
(length = 744')

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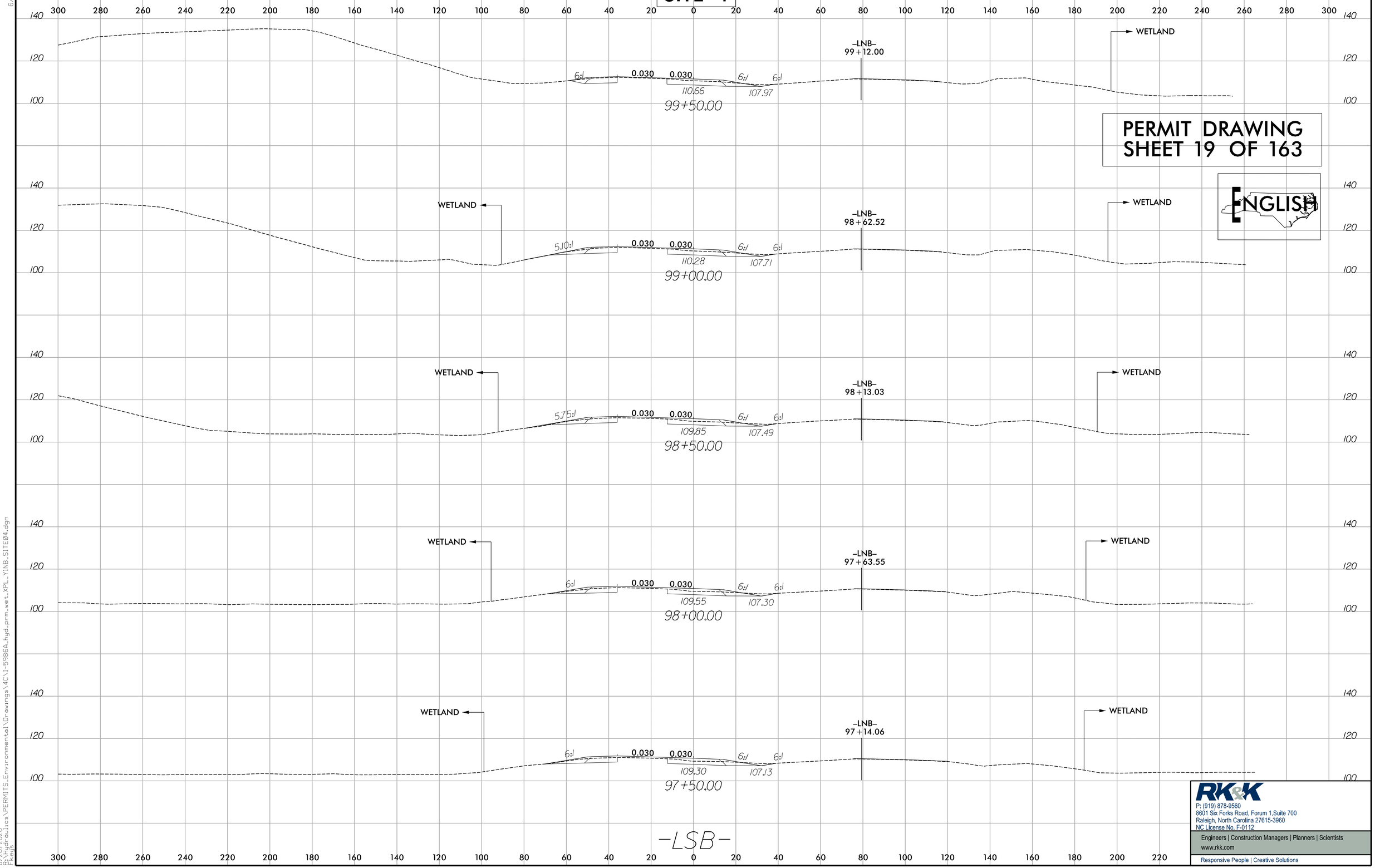
PROJ. REFERENCE NO.	SHEET NO.
I-5986A	S1 X-35

SITE 4



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SHEET 19 OF 163

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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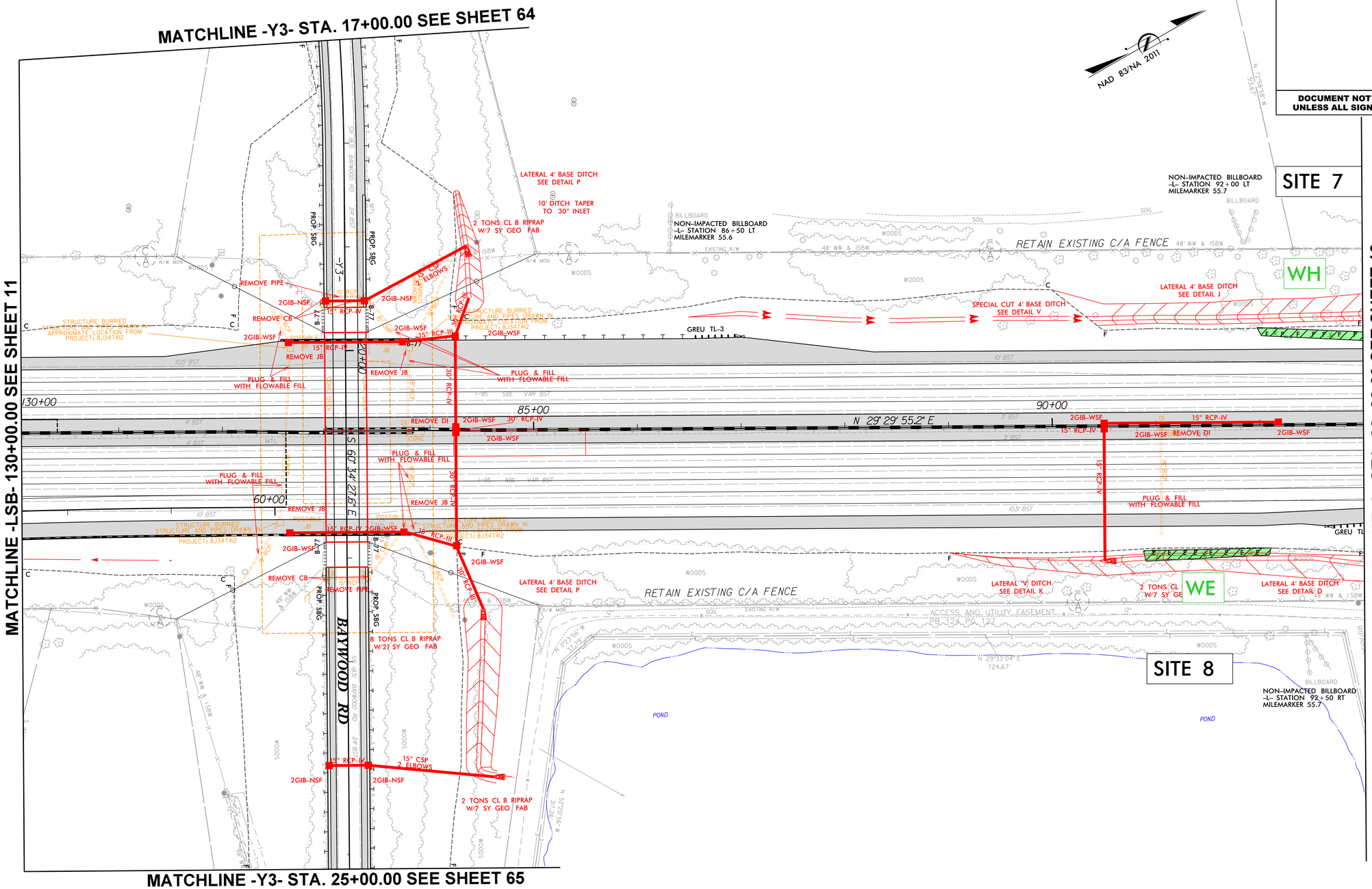
PERMIT DRAWING SHEET 20 OF 163



50 25 0 50 100
SCALE

ENGLISH

DENOTES FILL IN WETLAND

DENOTES EXCAVATION IN WETLAND

FOR –LSB– PROFILE SEE SHT. 91
FOR –LLT SEC1– PROFILE SEE SHT. 92
FOR –LRT SEC1– PROFILE SEE SHT. 92
FOR –Y1NB– PROFILE SEE SHT. 147
FOR –Y3– PROFILE SEE SHT. 149

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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I-5986A	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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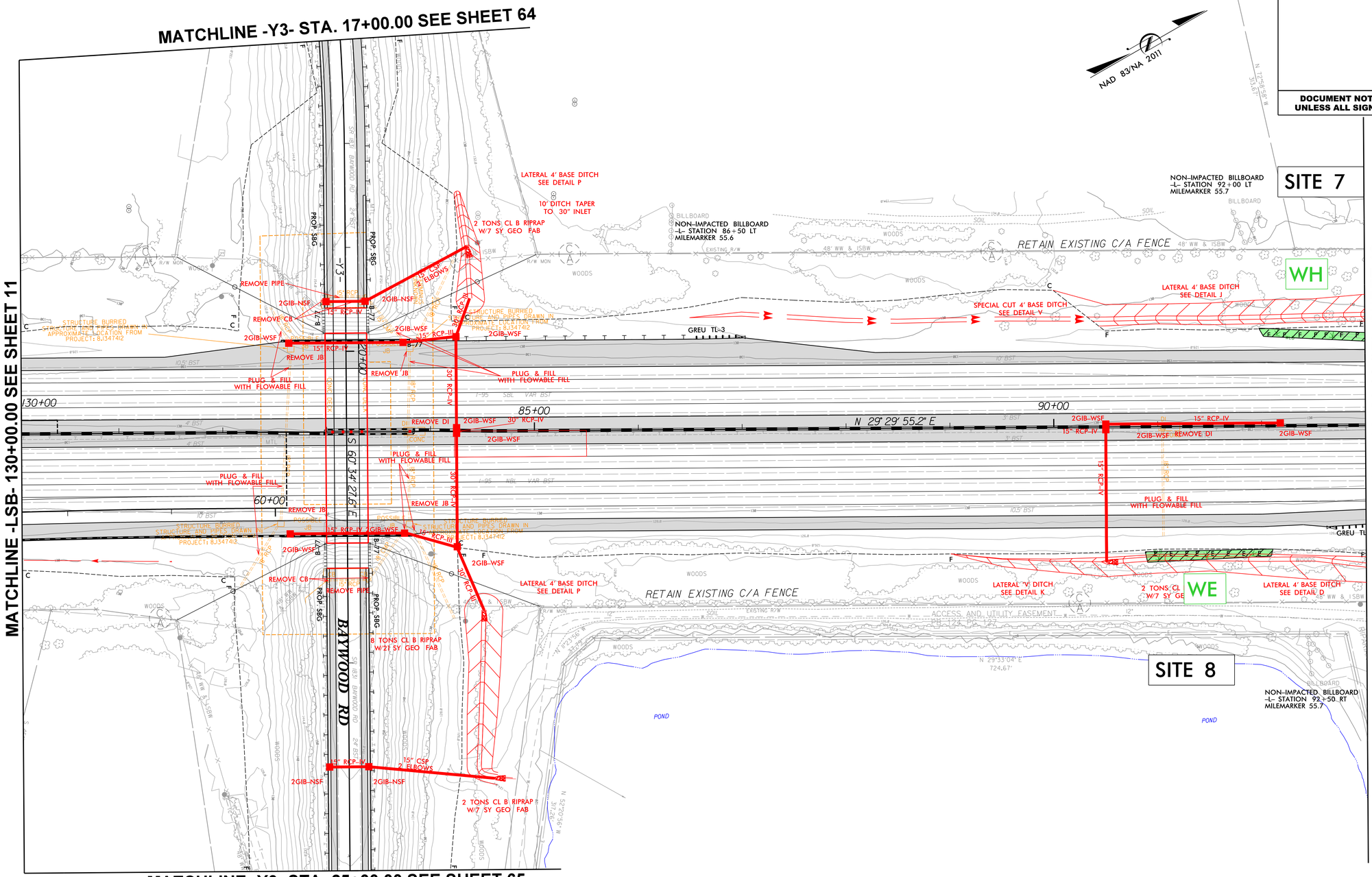

50 25 0 50 100
SCALE

ENGLISH

DENOTES FILL IN WETLAND

DENOTES EXCAVATION IN WETLAND

FOR –LSB– PROFILE SEE SHT. 91
FOR –LLT SEC1– PROFILE SEE SHT. 92
FOR –LRT SEC1– PROFILE SEE SHT. 92
FOR –Y1NB– PROFILE SEE SHT. 147
FOR –Y3– PROFILE SEE SHT. 149

FOR DITCH DETAILS SEE SHTS. 2D–1 THRU 2D–2

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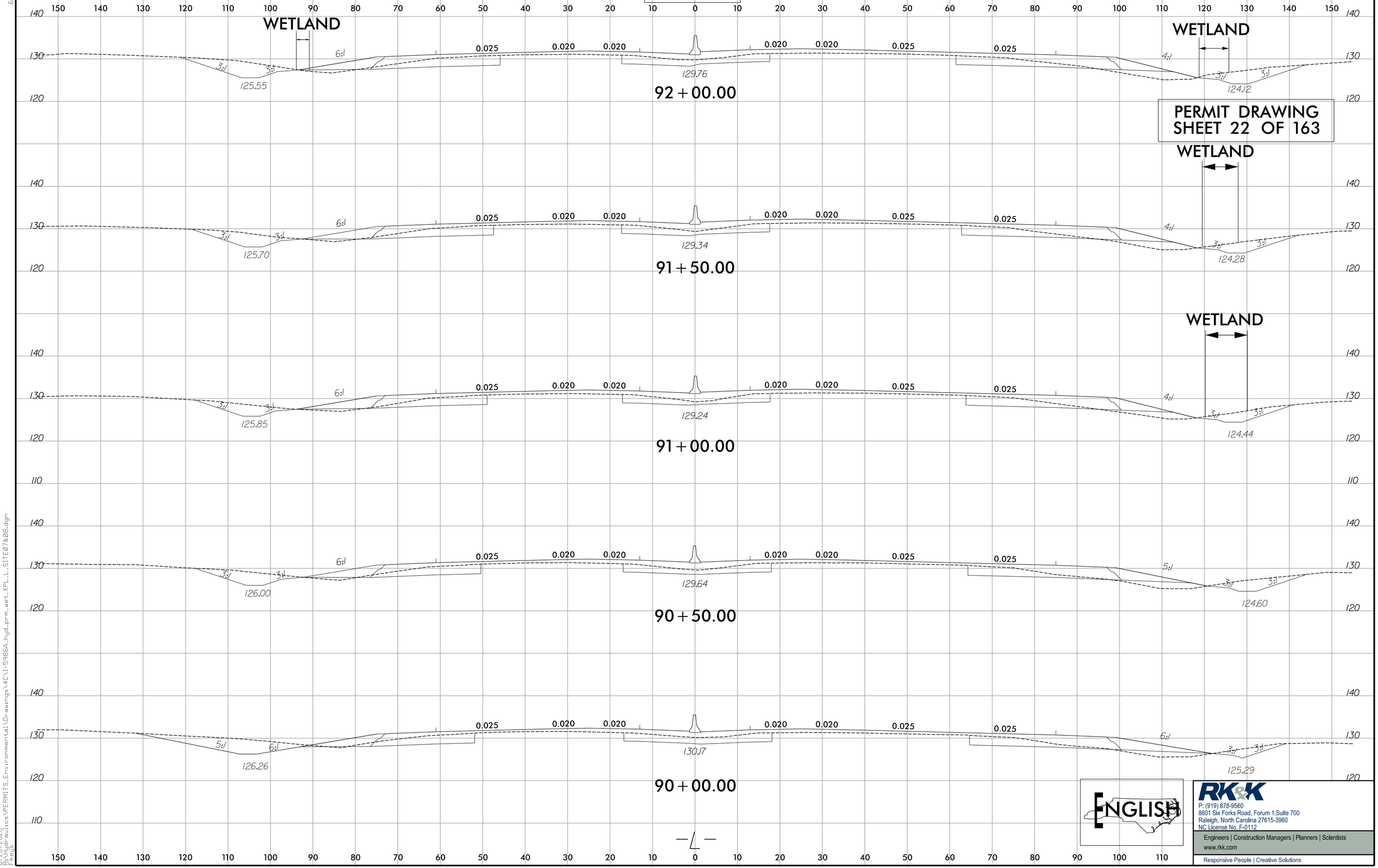
PROJ. REFERENCE NO.	SHEET NO.
I-5986A	S1 X-54



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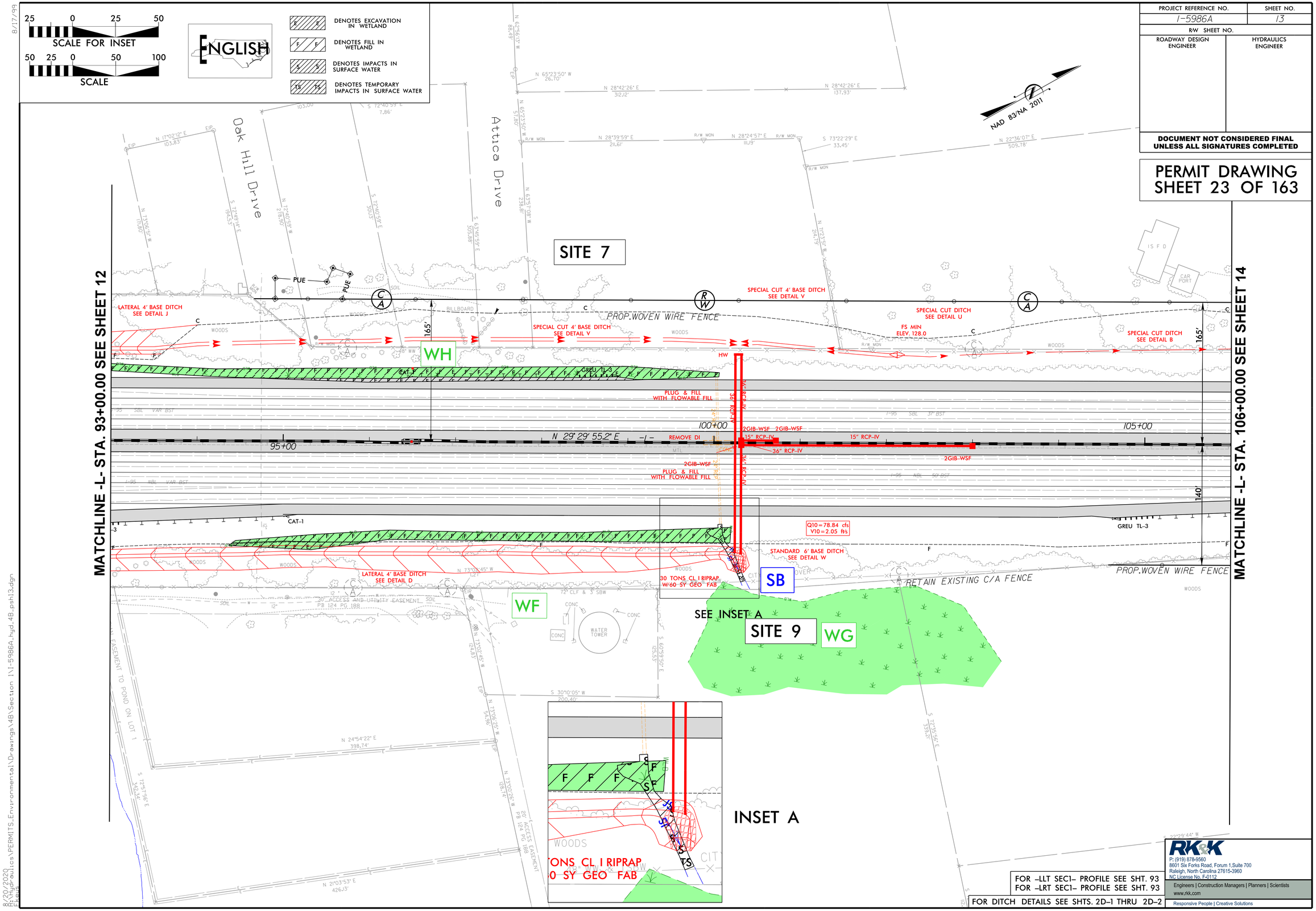

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 23 OF 163

FOR -LLT SEC1- PROFILE SEE SHT. 93
FOR -LRT SEC1- PROFILE SEE SHT. 93
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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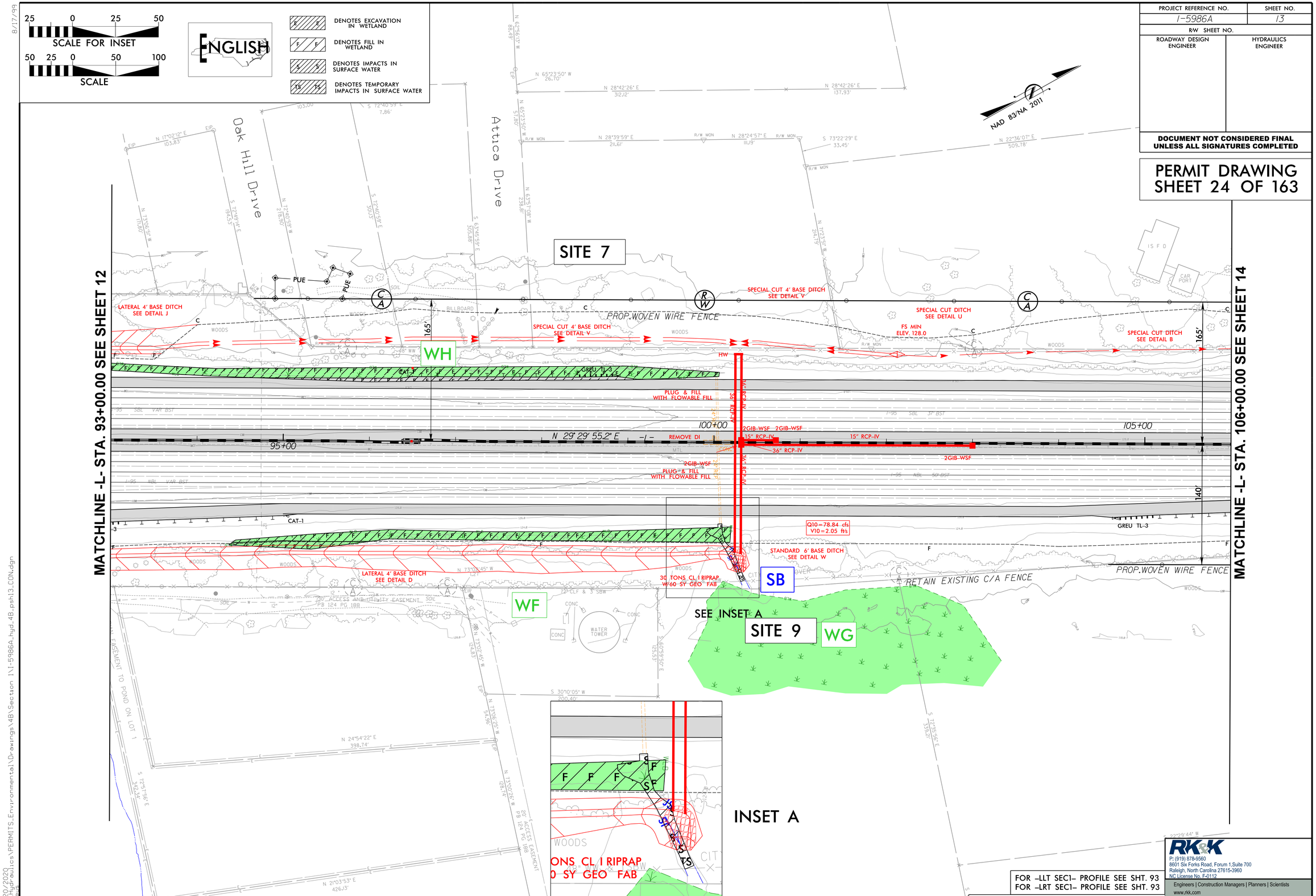

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 24 OF 163

FOR -LLT SEC1- PROFILE SEE SHT. 93
FOR -LRT SEC1- PROFILE SEE SHT. 93
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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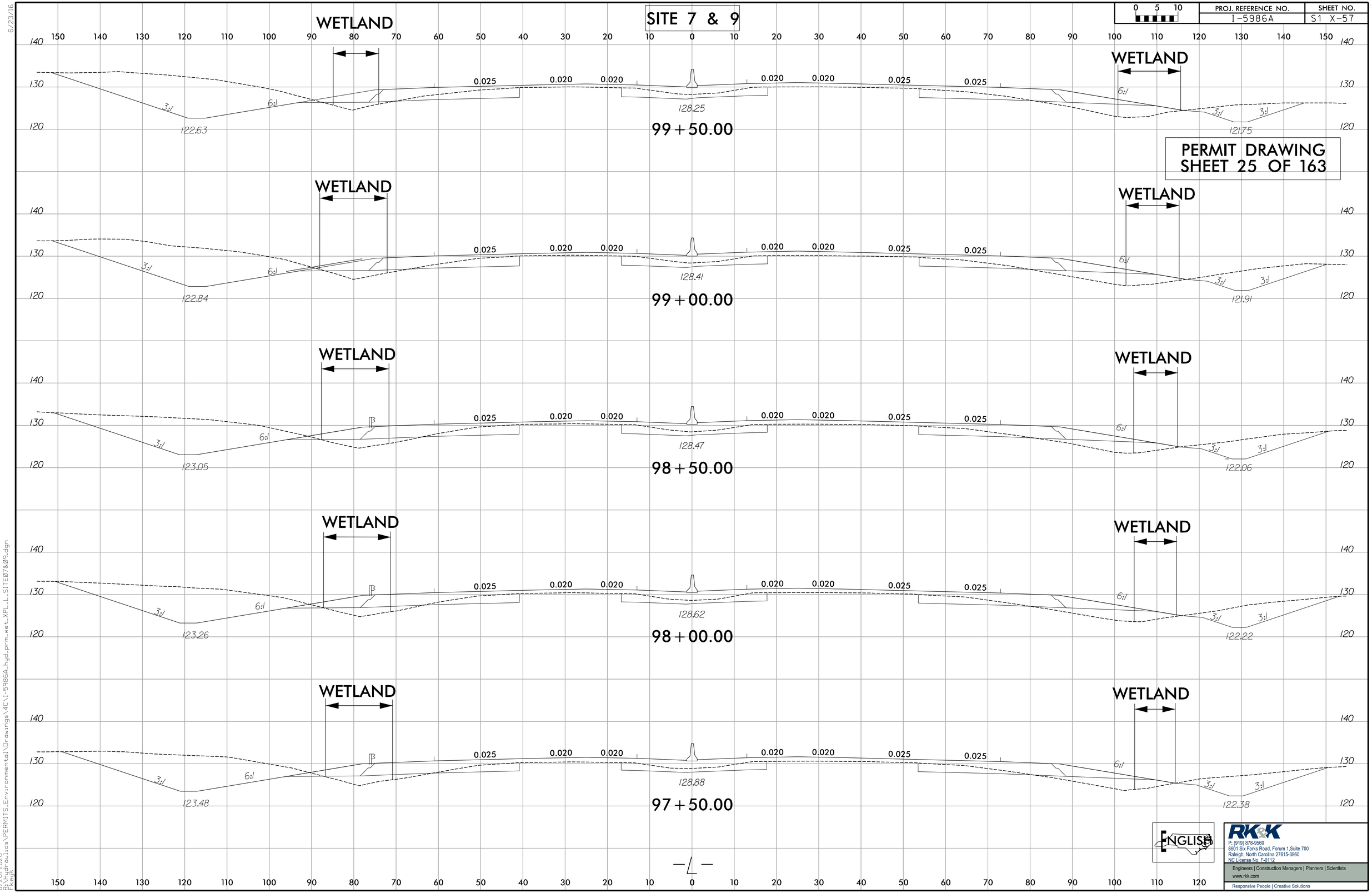
PROJ. REFERENCE NO.	SHEET NO.
I-5986A	S1 X-57

0 5 10

SITE 7 & 9



PERMIT DRAWING
SHEET 25 OF 163

ENGLISH

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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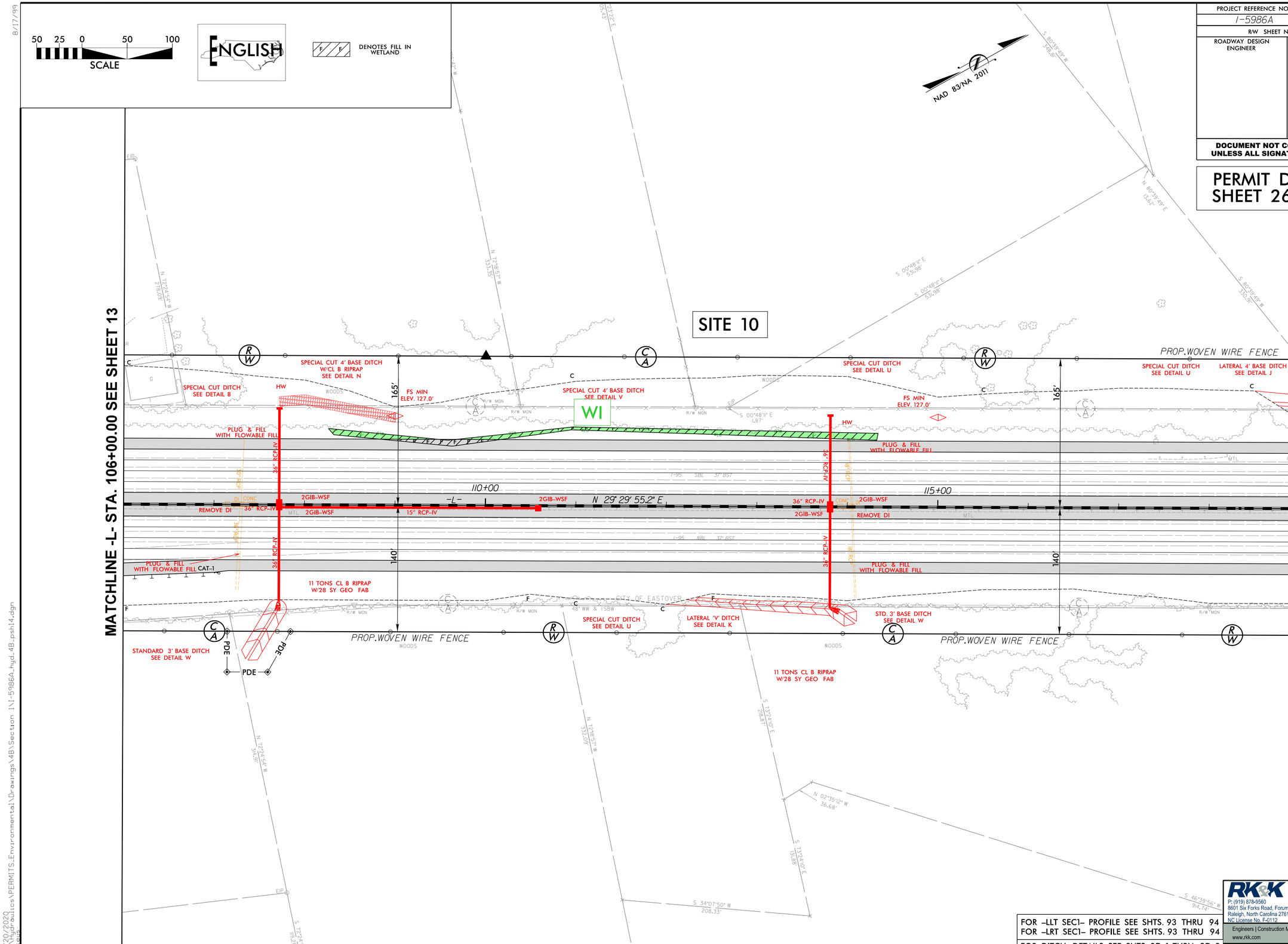
PERMIT DRAWING SHEET 26 OF 163



FOR -LLT SEC1- PROFILE SEE SHTS. 93 THRU 94
FOR -LRT SEC1- PROFILE SEE SHTS. 93 THRU 94
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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I-5986A	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 27 OF 163

50 25 0 50 100
SCALE

ENGLISH

DENOTES FILL IN WETLAND

NAD 83/NA 2011

SITE 10

MATCHLINE -L- STA. 106+00.00 SEE SHEET 13

MATCHLINE -L- STA. 119+00.00 SEE SHEET 15

SPECIAL CUT 4' BASE DITCH W/CL B RIPRAP SEE DETAIL N

SPECIAL CUT DITCH SEE DETAIL B

HW

FS MIN ELEV. 127.0'

165'

SPECIAL CUT 4' BASE DITCH SEE DETAIL V

WI

SPECIAL CUT DITCH SEE DETAIL U

FS MIN ELEV. 127.0'

165'

PROP. WOVEN WIRE FENCE

SPECIAL CUT DITCH SEE DETAIL U

LATERAL 4' BASE DITCH SEE DETAIL J

PLUG & FILL WITH FLOWABLE FILL

36" RCP-IV

36" RCP-IV

PLUG & FILL WITH FLOWABLE FILL

110+00

115+00

2GIB-WSF

-L- N 29° 29' 55.2" E

2GIB-WSF

36" RCP-IV

2GIB-WSF

15" RCP-IV

36" RCP-IV

2GIB-WSF

2GIB-WSF

REMOVE DI

REMOVE DI

36" RCP-IV

36" RCP-IV

PLUG & FILL WITH FLOWABLE FILL

CAT-1

140'

140'

11 TONS CL B RIPRAP W/28 SY GEO FAB

CITY OF EASTOVER

SPECIAL CUT DITCH SEE DETAIL U

LATERAL 'V' DITCH SEE DETAIL K

STD. 3' BASE DITCH SEE DETAIL W

PROP. WOVEN WIRE FENCE

PROP. WOVEN WIRE FENCE

STANDARD 3' BASE DITCH SEE DETAIL W

PDE

PDE

PDE

11 TONS CL B RIPRAP W/28 SY GEO FAB

WOODS

FOR –LLT SEC1– PROFILE SEE SHTS. 93 THRU 94
FOR –LRT SEC1– PROFILE SEE SHTS. 93 THRU 94
FOR DITCH DETAILS SEE SHTS. 2D–1 THRU 2D–2

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PROJ. REFERENCE NO.	SHEET NO.
I-5986A	S1 X-62

SITE 10

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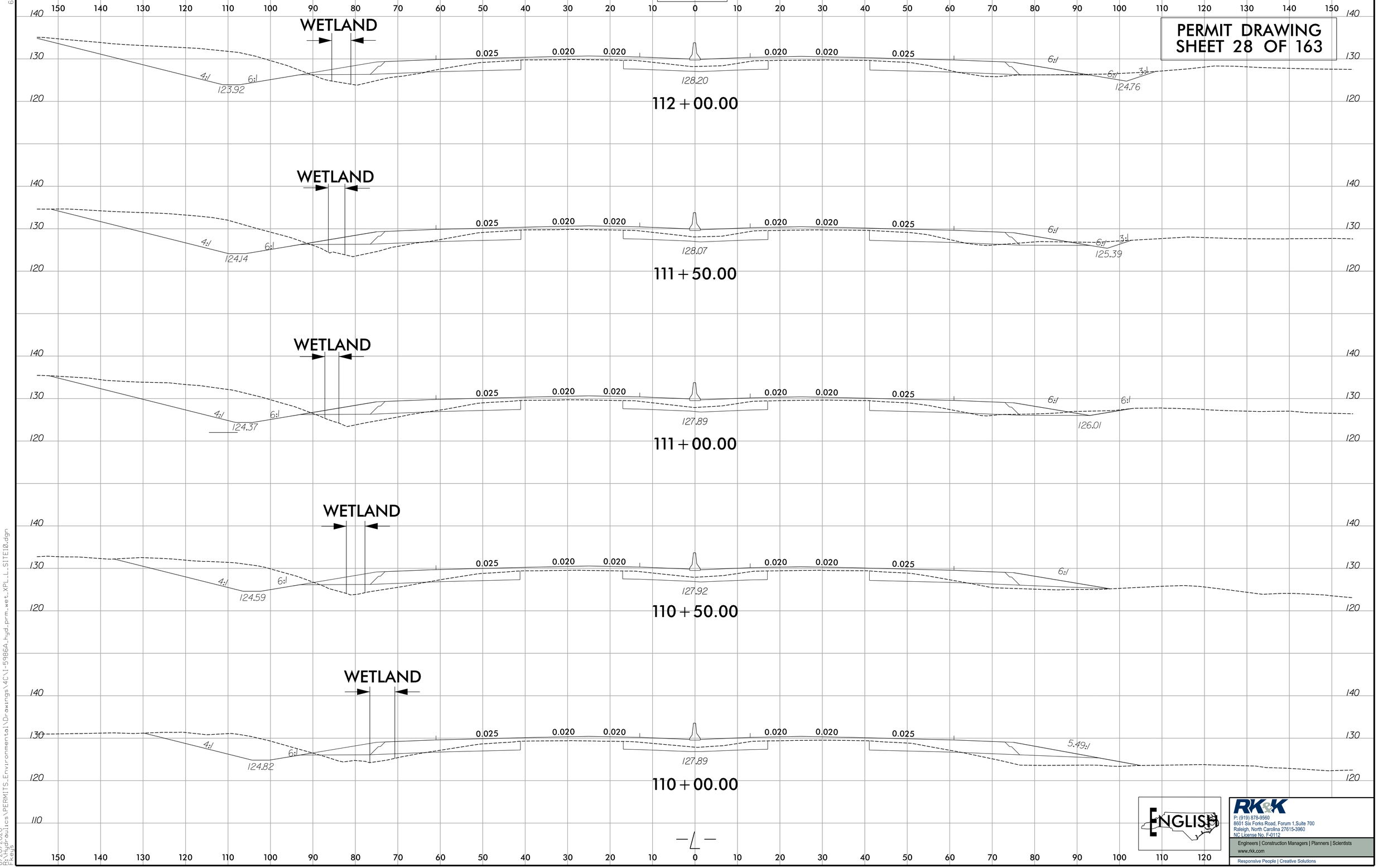
SHEET 28 OF 163



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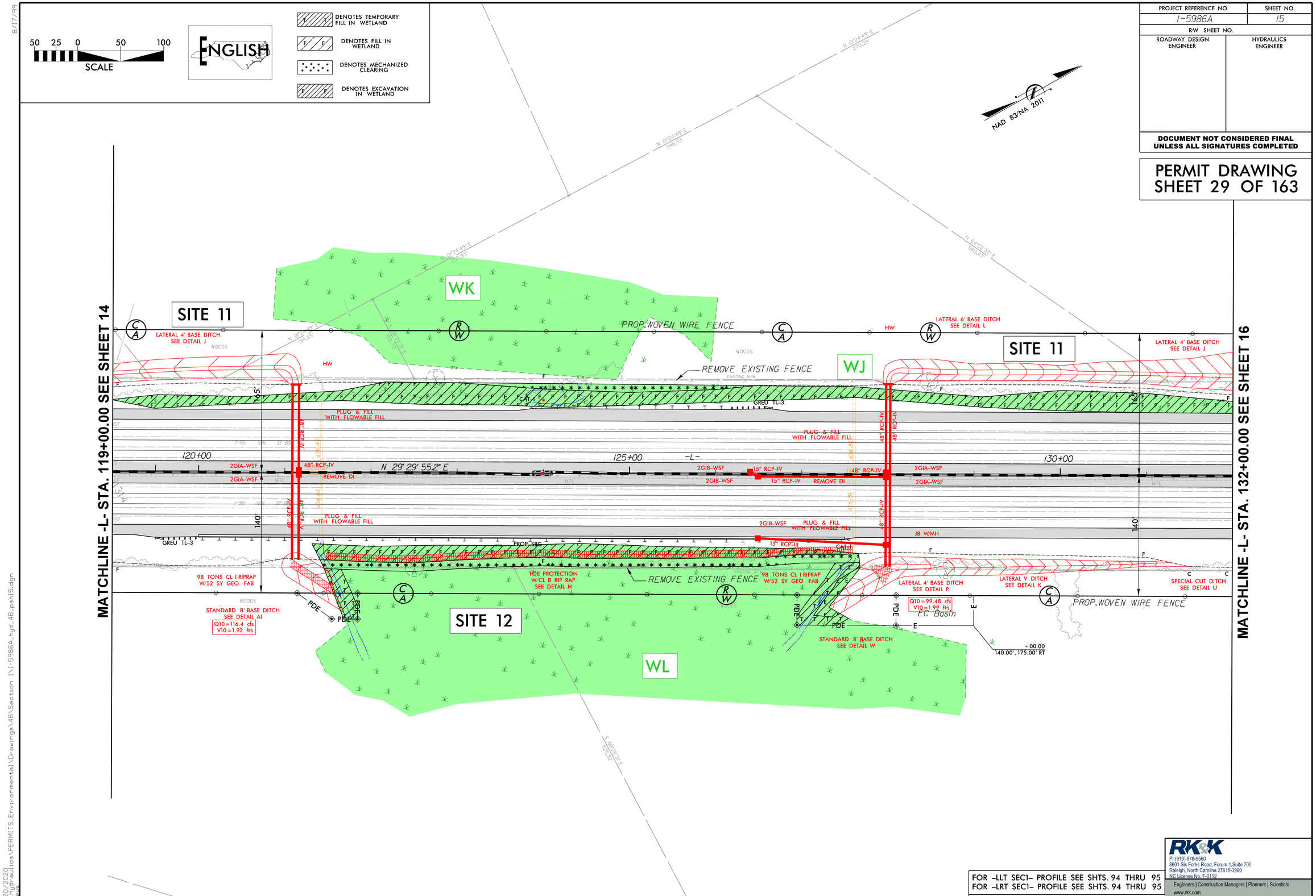

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 29 OF 163

FOR -LLT SEC1- PROFILE SEE SHTS. 94 THRU 95
FOR -LRT SEC1- PROFILE SEE SHTS. 94 THRU 95
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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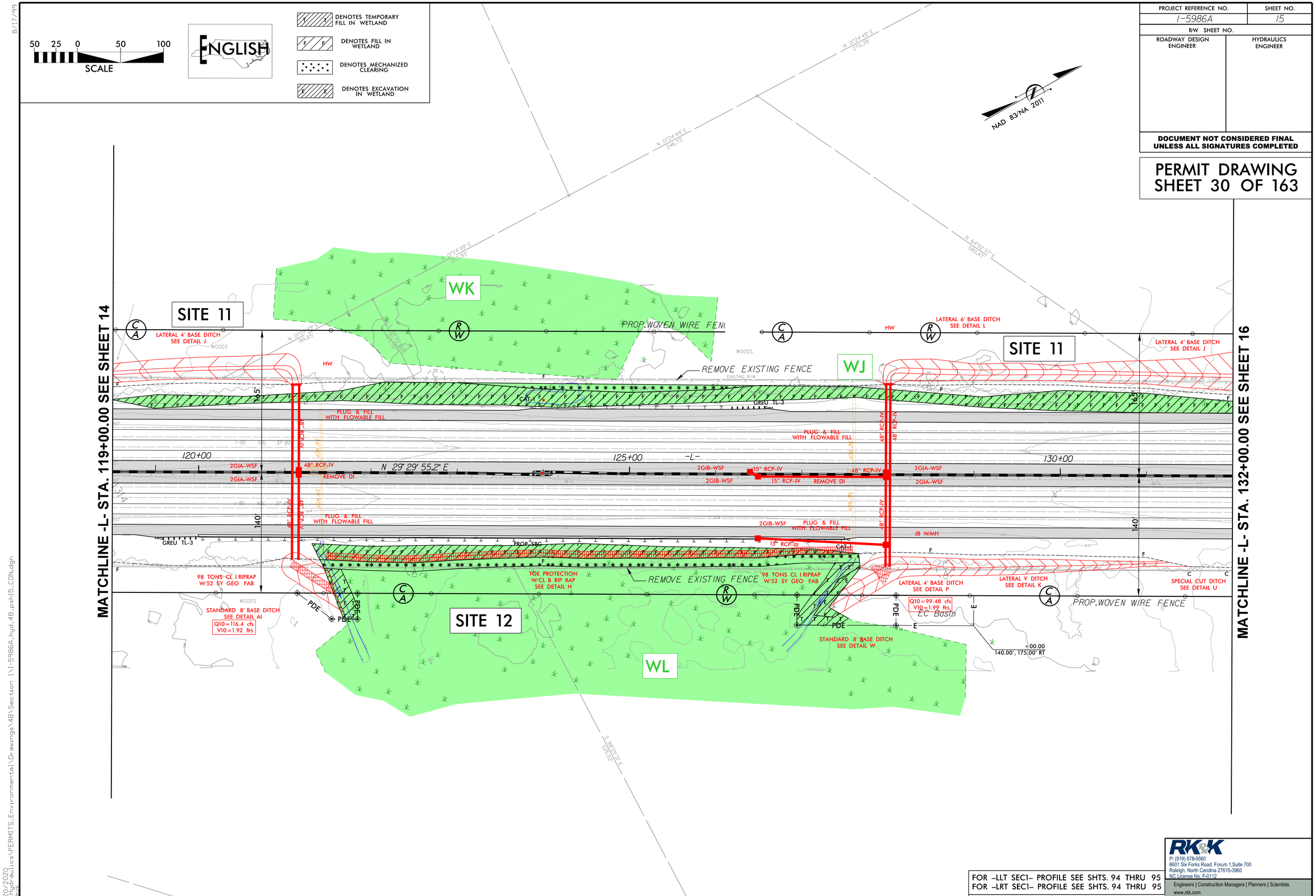

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 30 OF 163

FOR -LLT SEC1- PROFILE SEE SHTS. 94 THRU 95
FOR -LRT SEC1- PROFILE SEE SHTS. 94 THRU 95
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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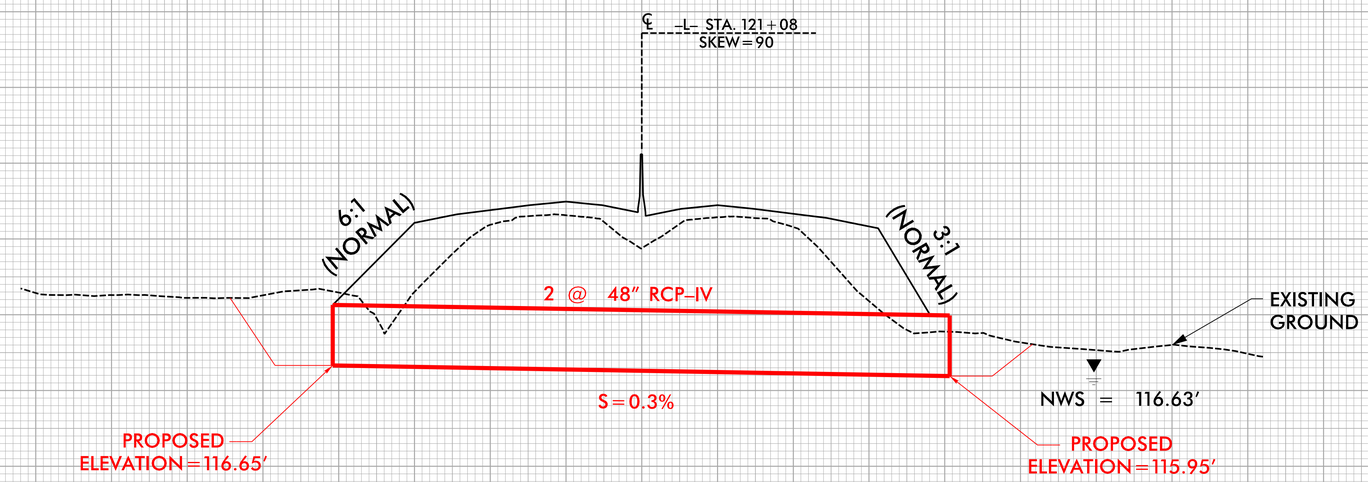
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 11 & 12
-L- STA. 121+08

PERMIT DRAWING
SHEET 31 OF 163

ENGLISH



2 @ 48" RCP-IV
(not buried)
(length=204')

250 200 150 100 50 0 50 100 150 200 250

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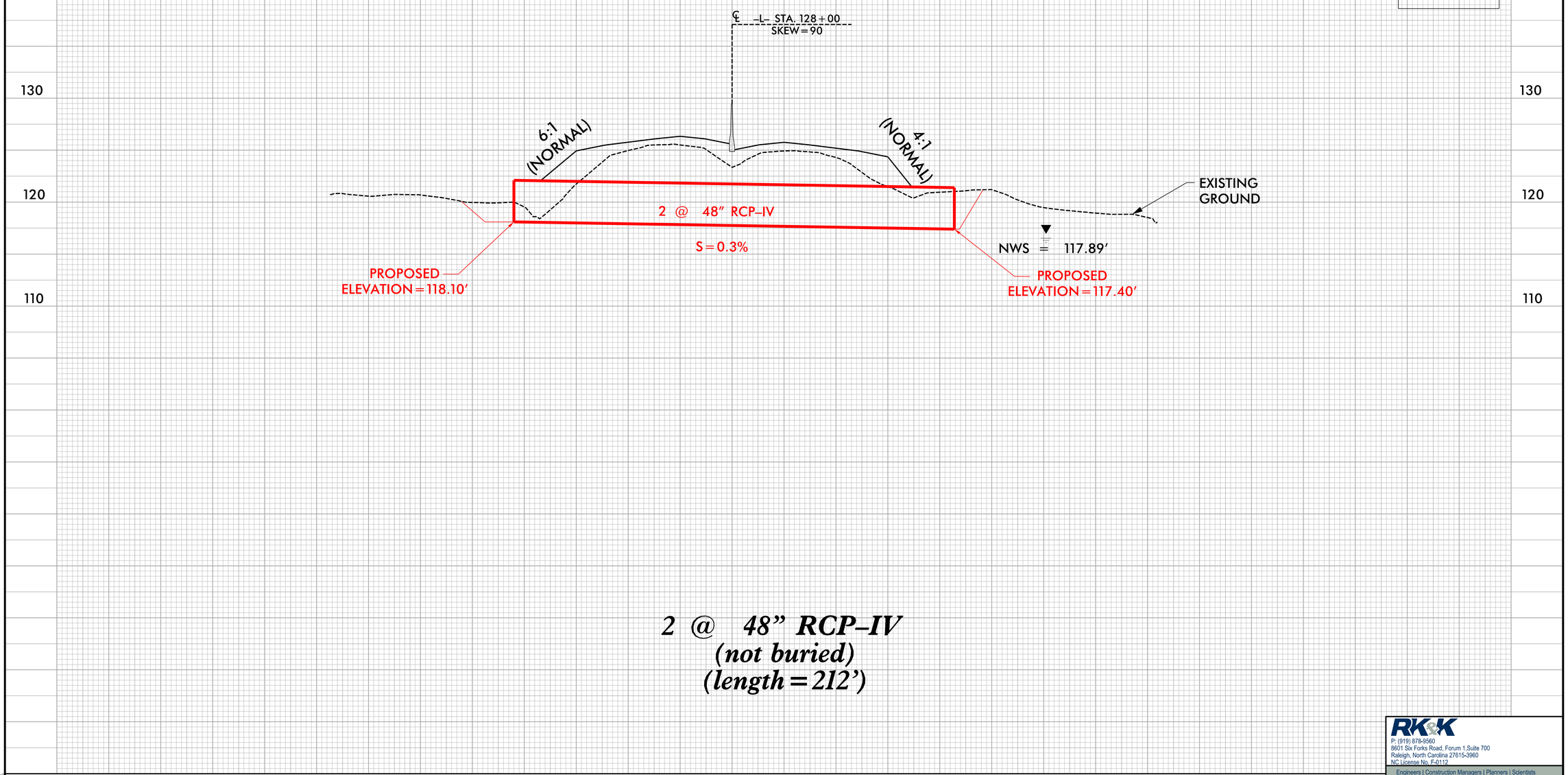
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 11 & 12
-L- STA. 128+00

PERMIT DRAWING
SHEET 32 OF 163

ENGLISH



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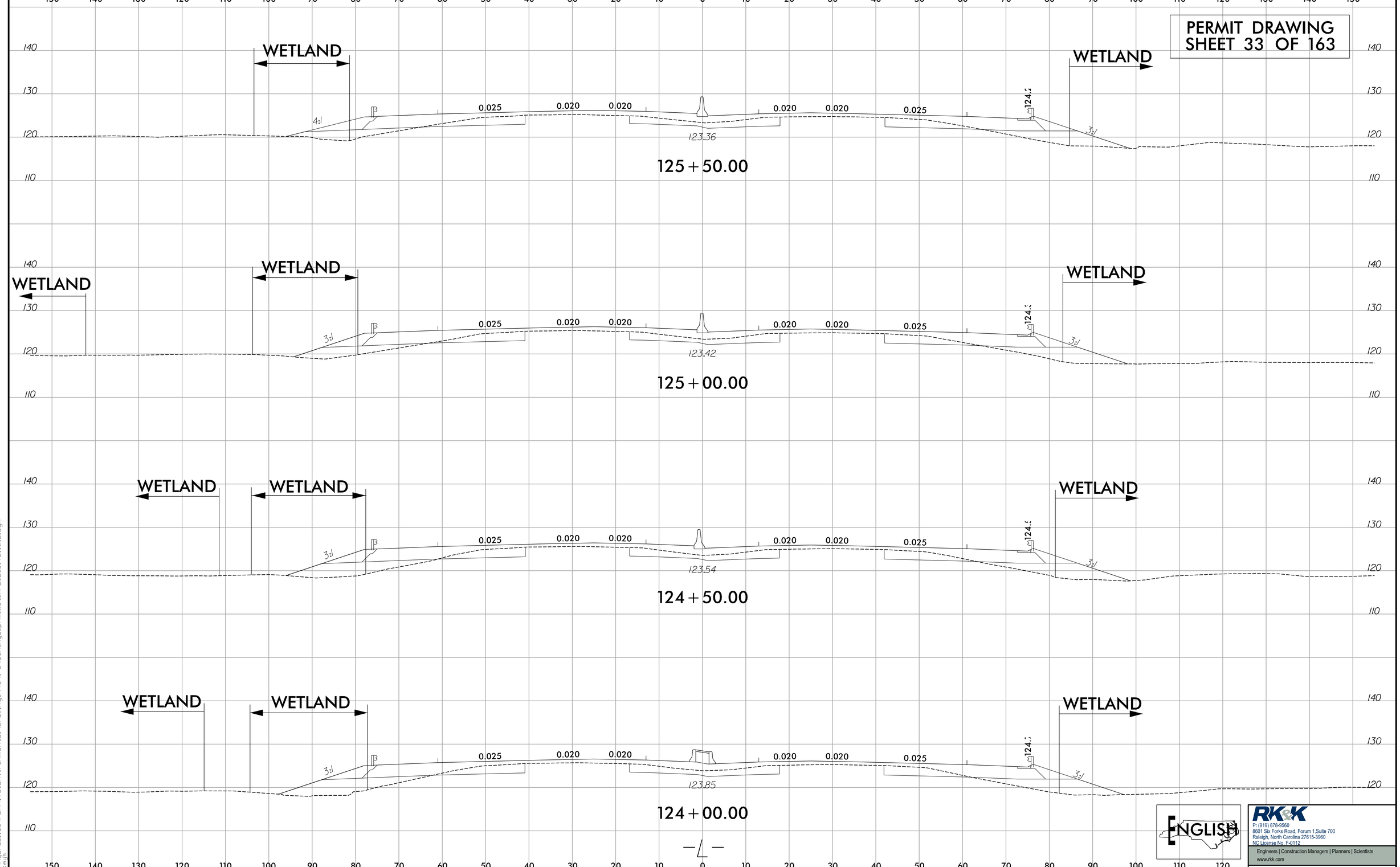
6/23/16

PROJ. REFERENCE NO.	SHEET NO.
I-5986A	S1 X-68

0 5 10

SITE 11 & 12

PERMIT DRAWING
SHEET 33 OF 163



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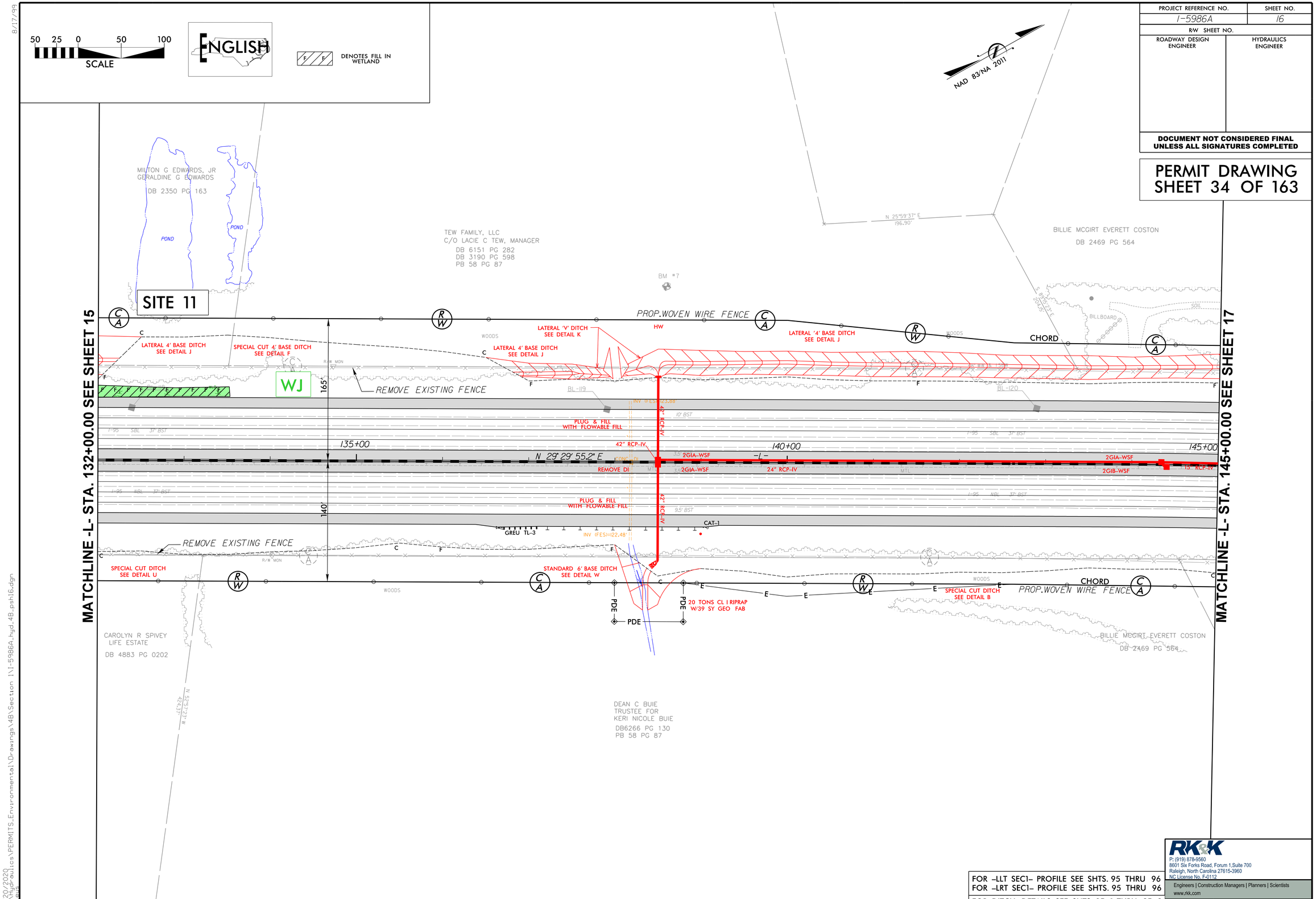

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 34 OF 163

FOR -LLT SEC1- PROFILE SEE SHTS. 95 THRU 96
FOR -LRT SEC1- PROFILE SEE SHTS. 95 THRU 96
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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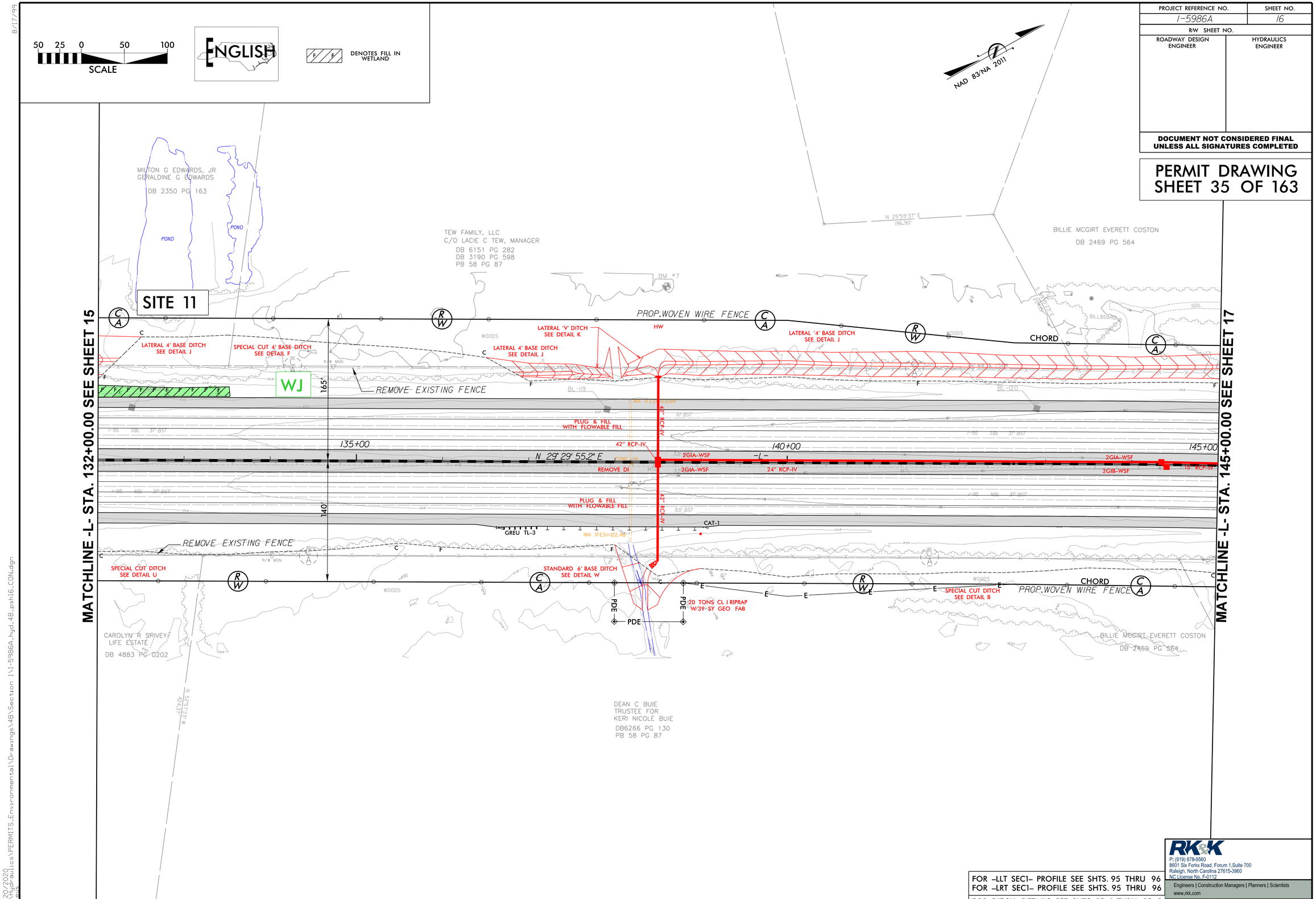
PERMIT DRAWING SHEET 35 OF 163



FOR -LLT SEC1- PROFILE SEE SHTS. 95 THRU 96
FOR -LRT SEC1- PROFILE SEE SHTS. 95 THRU 96
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
I-5986	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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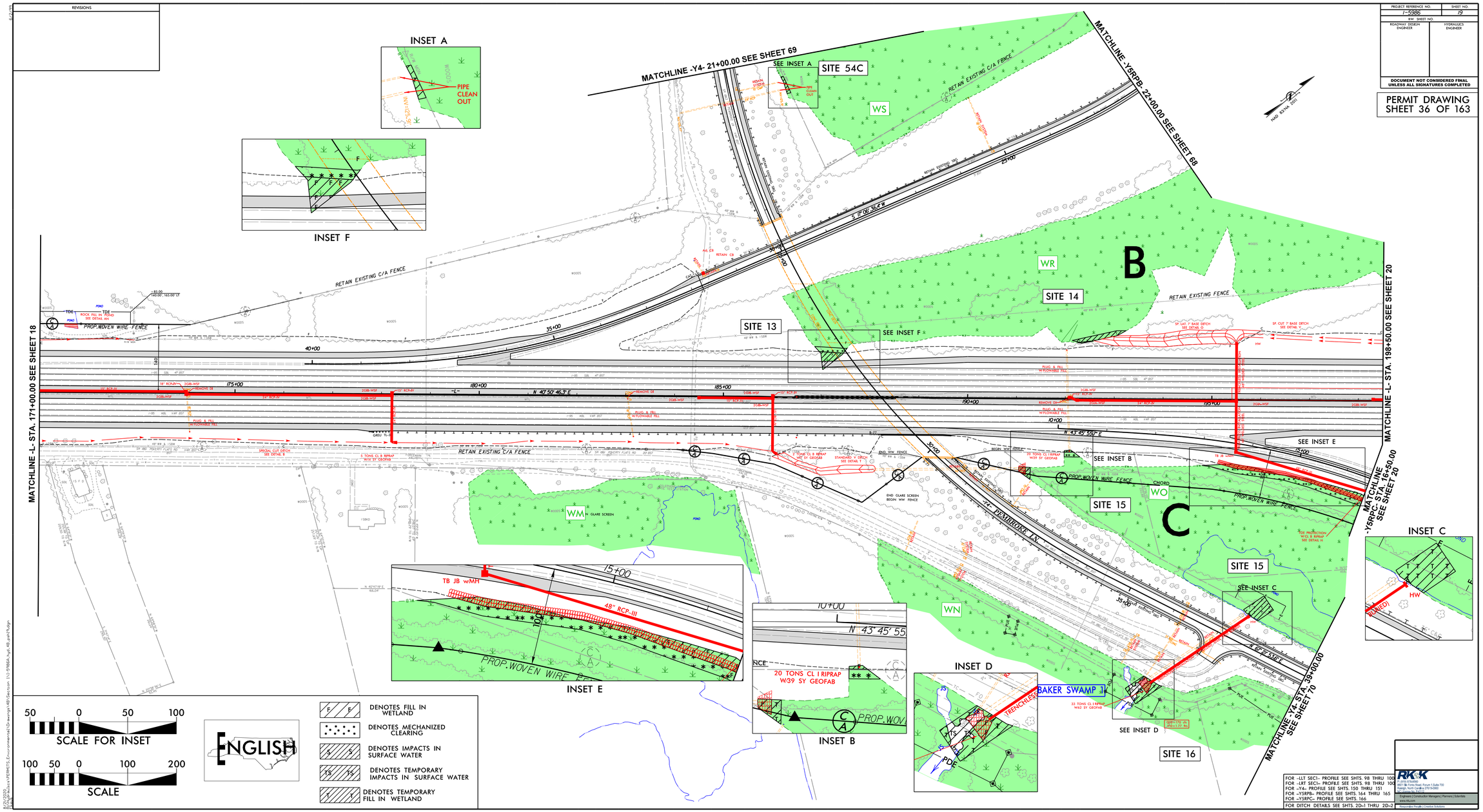
PERMIT DRAWING
SHEET 36 OF 163



FOR -LLT SEC1- PROFILE SEE SHTS. 98 THRU 100
FOR -LRT SEC1- PROFILE SEE SHTS. 98 THRU 100
FOR -Y4- PROFILE SEE SHTS. 150 THRU 151
FOR -Y5RPB- PROFILE SEE SHTS. 164 THRU 165
FOR -Y5RPC- PROFILE SEE SHTS. 166
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
I-5986	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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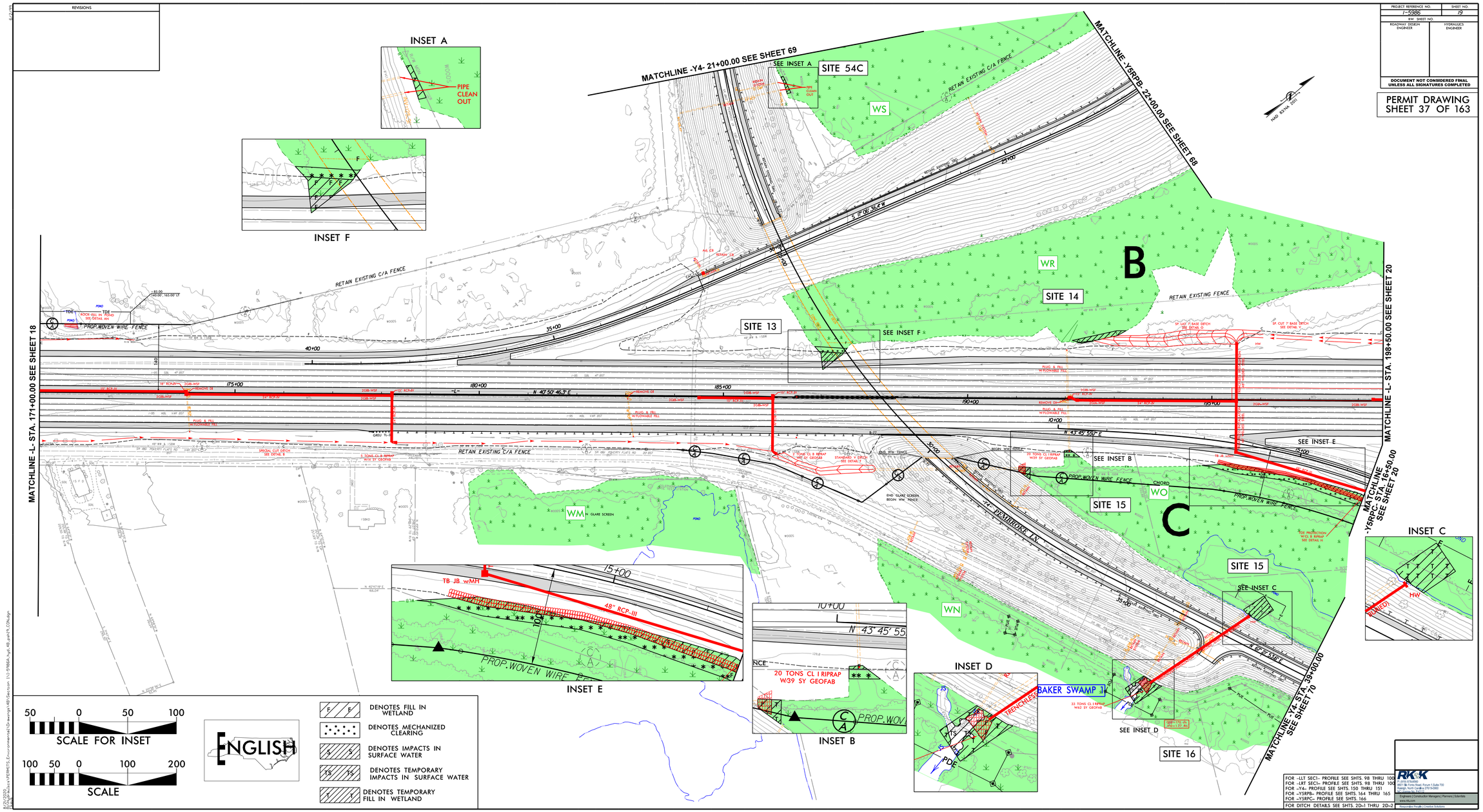
SHEET 37 OF 163



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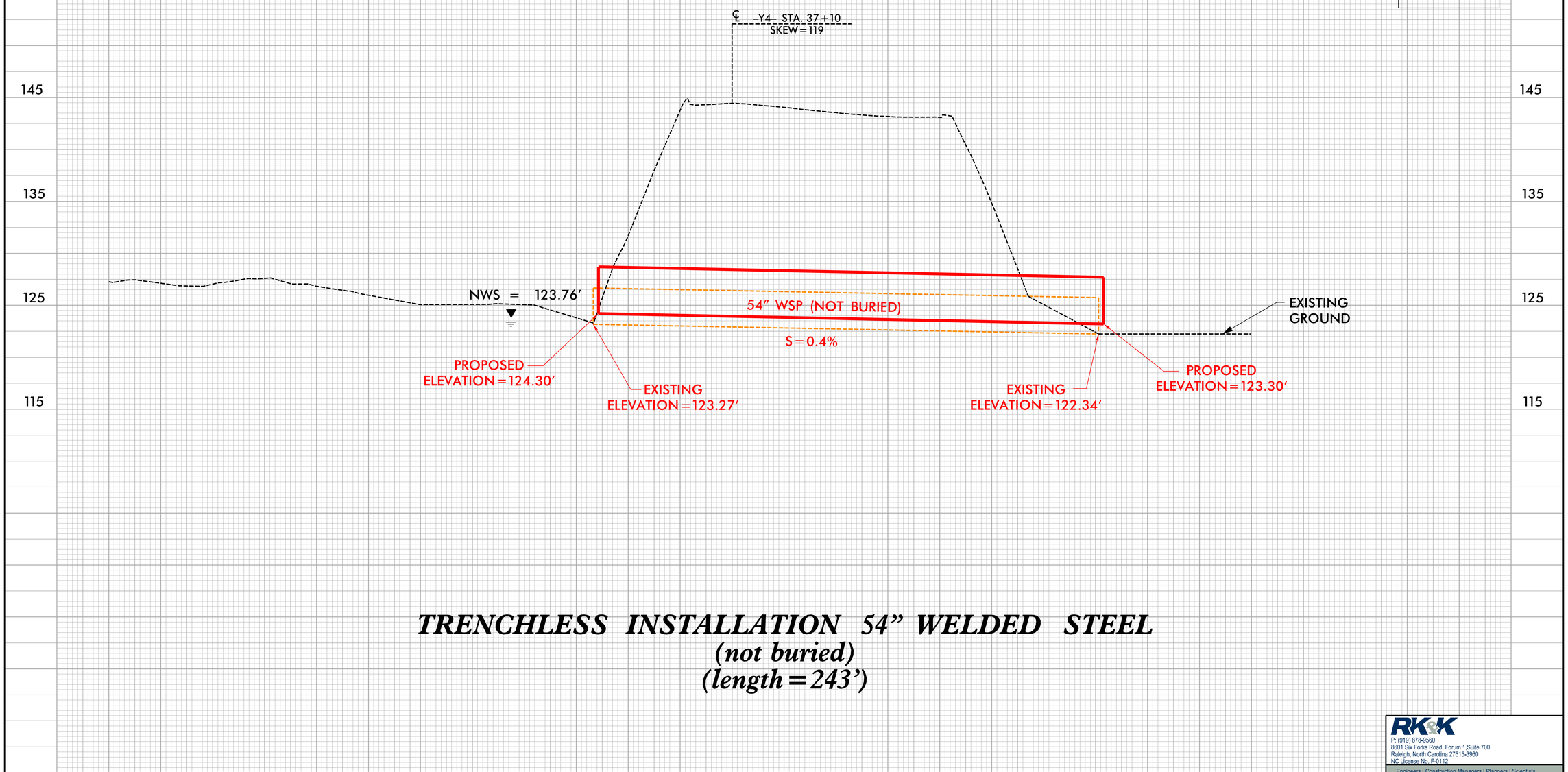
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 15 & 16
–Y4– STA. 37+10

PERMIT DRAWING
SHEET 38 OF 163

ENGLISH



TRENCHLESS INSTALLATION 54" WELDED STEEL
(not buried)
(length=243')

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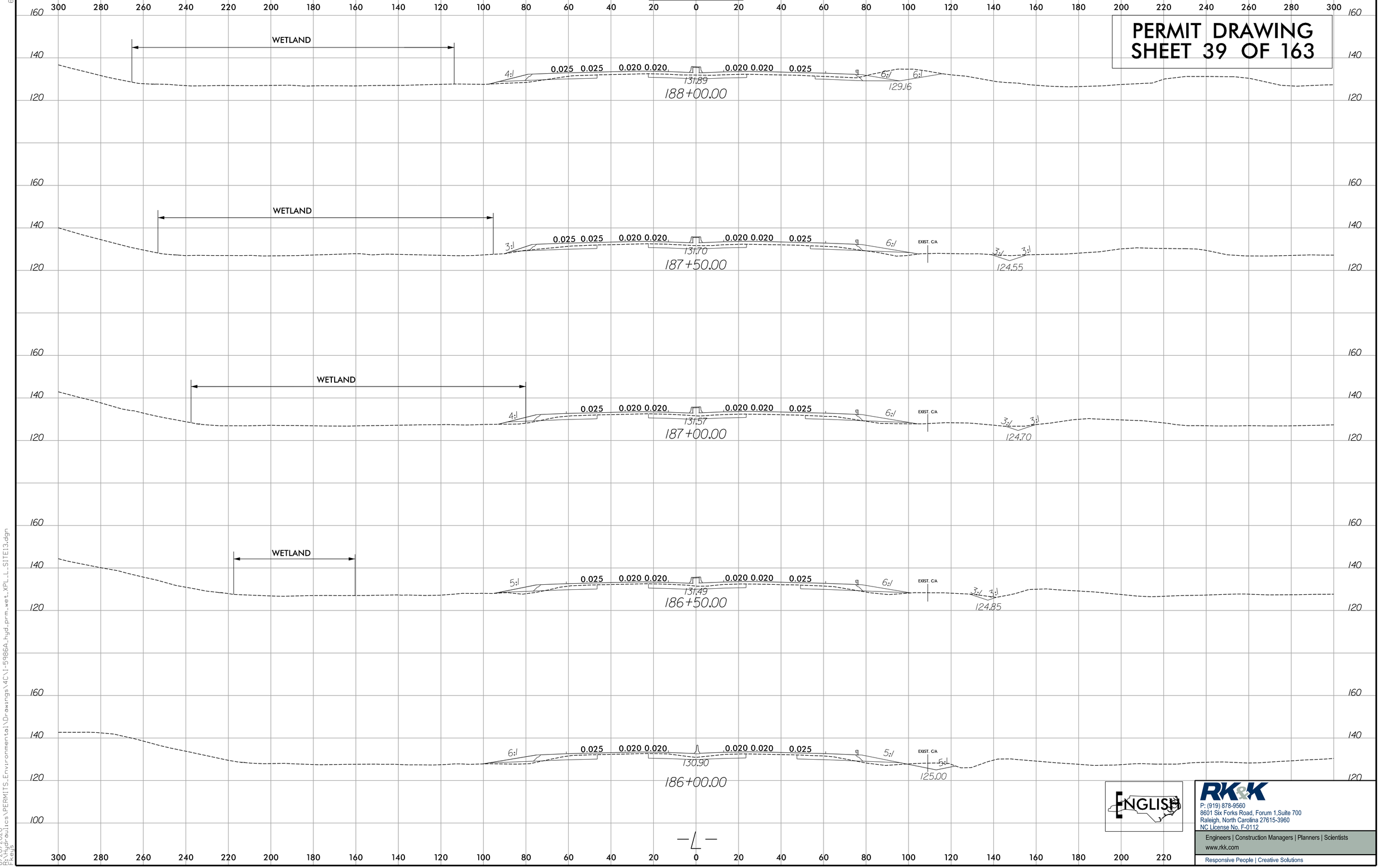
SITE 13

PROJ. REFERENCE NO.	SHEET NO.
I-5986A	S1 X-101

0 10 20

PERMIT DRAWING
SHEET 39 OF 163



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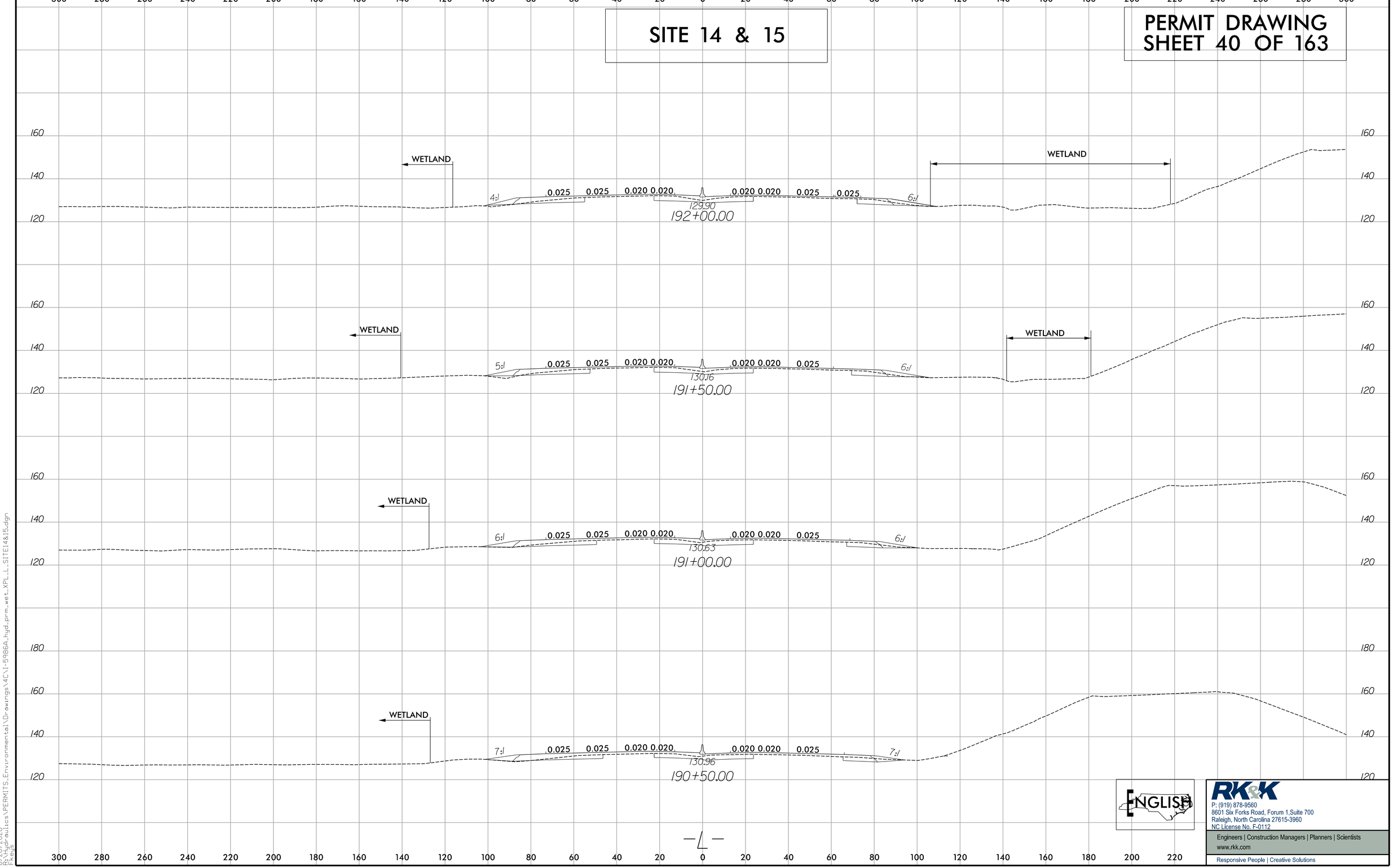
PROJ. REFERENCE NO.	SHEET NO.
I-5986A	S1 X-103

SITE 14 & 15

PERMIT DRAWING
SHEET 40 OF 163



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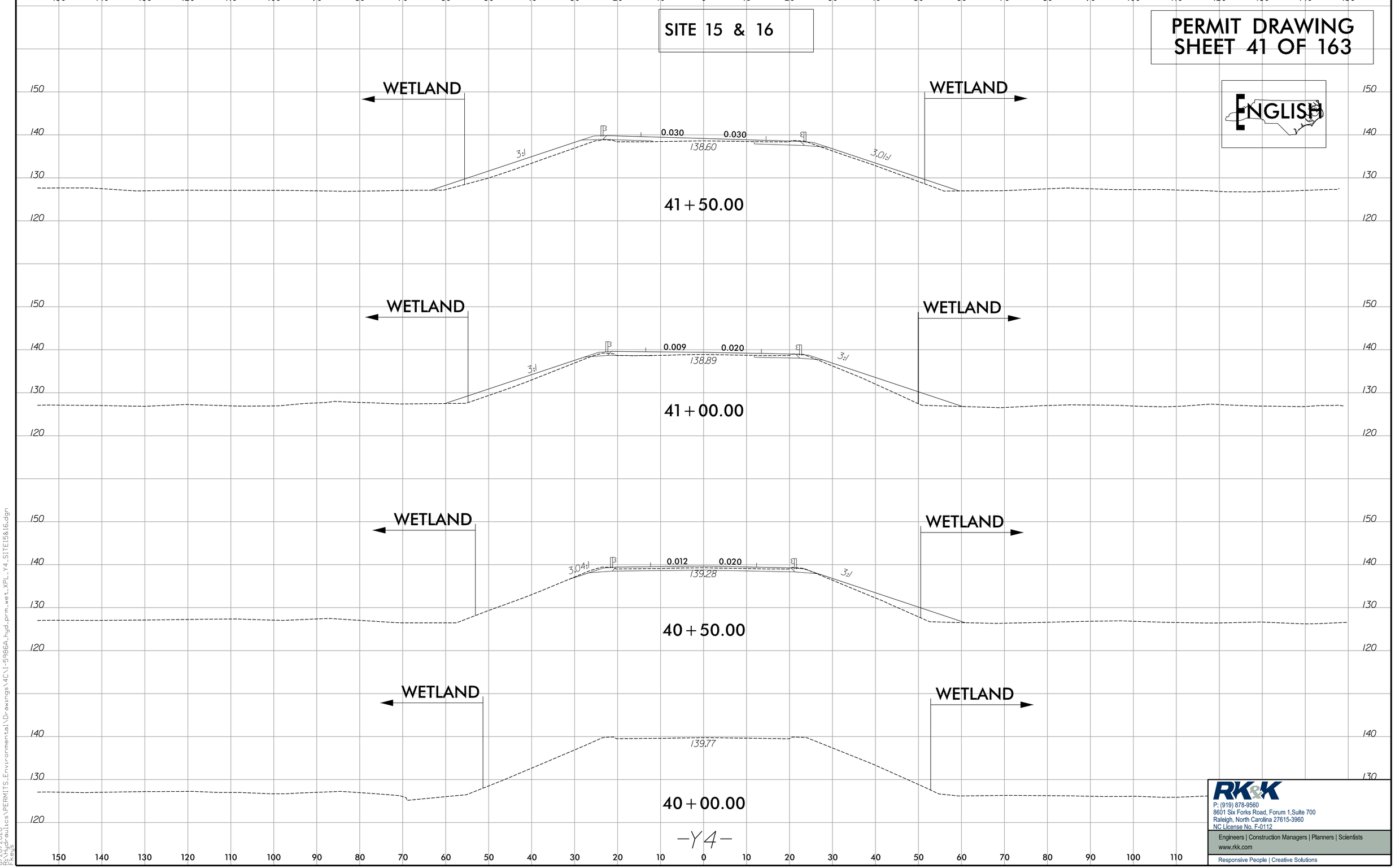
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5986A	S1 X-155

SITE 15 & 16

PERMIT DRAWING
SHEET 41 OF 163

ENGLISH



-Y4-

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6/23/16

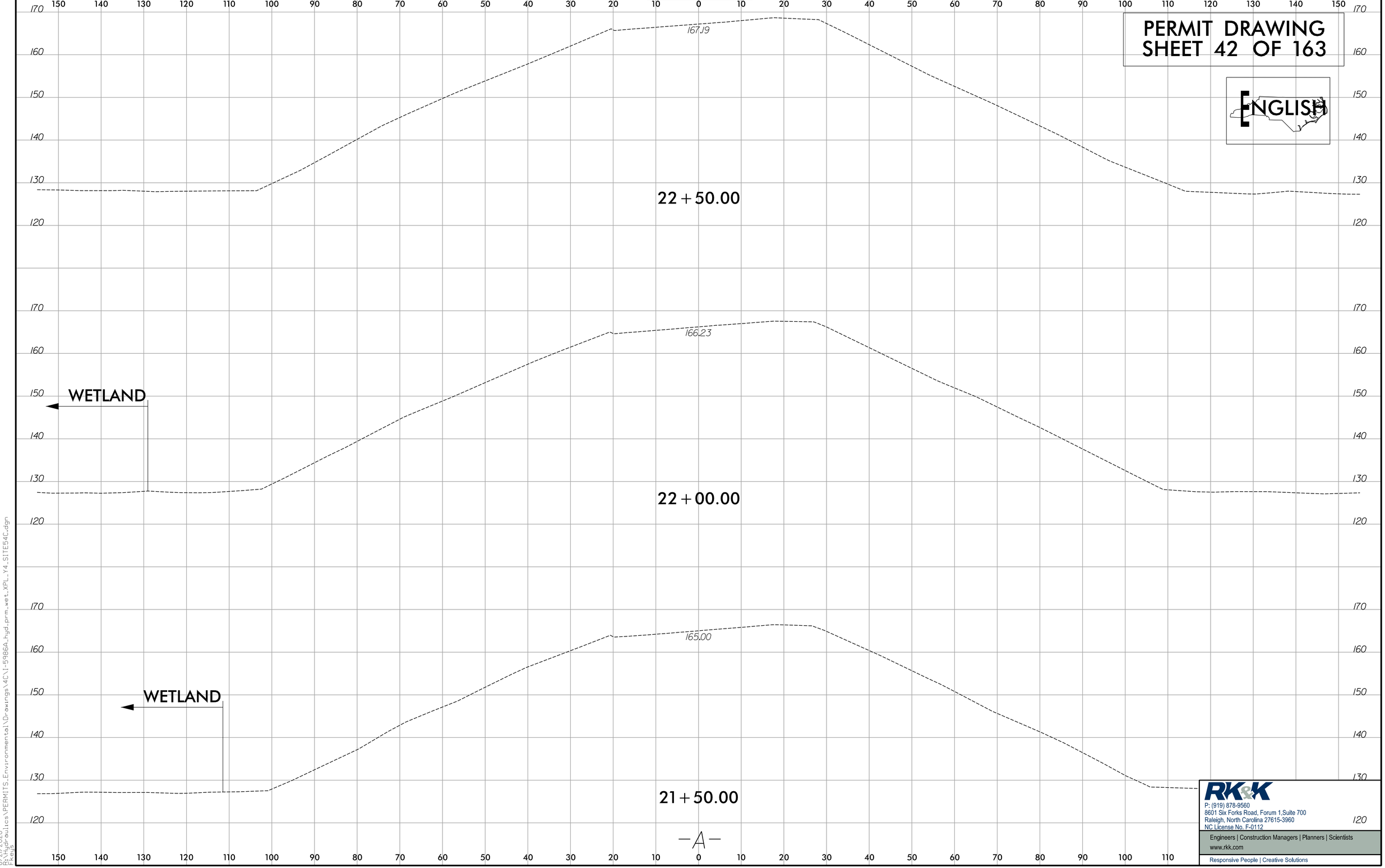
SITE 54C

PROJ. REFERENCE NO.	SHEET NO.
I-5986A	X-2

0 5 10

PERMIT DRAWING
SHEET 42 OF 163

ENGLISH



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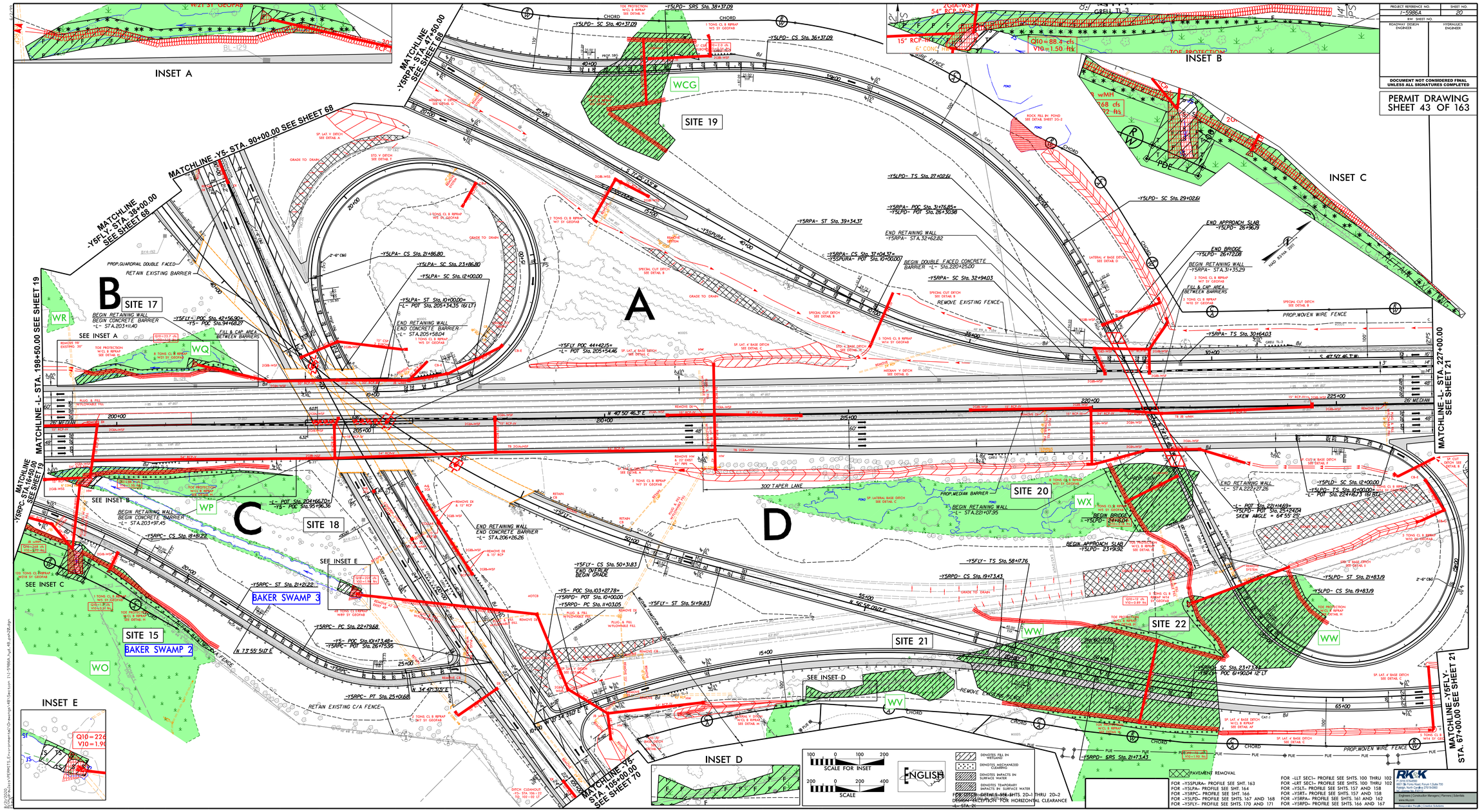

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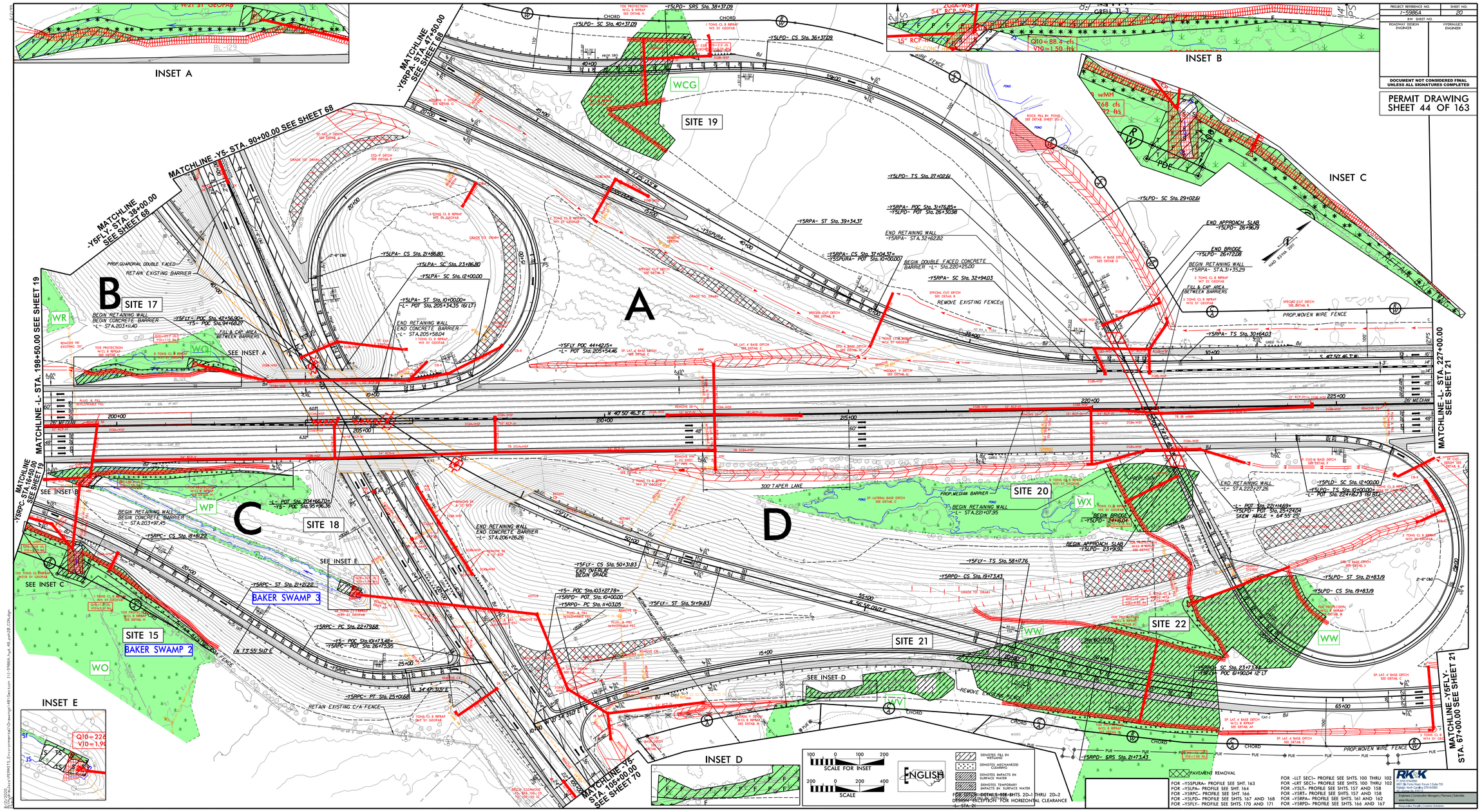

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING
SHEET 44 OF 163

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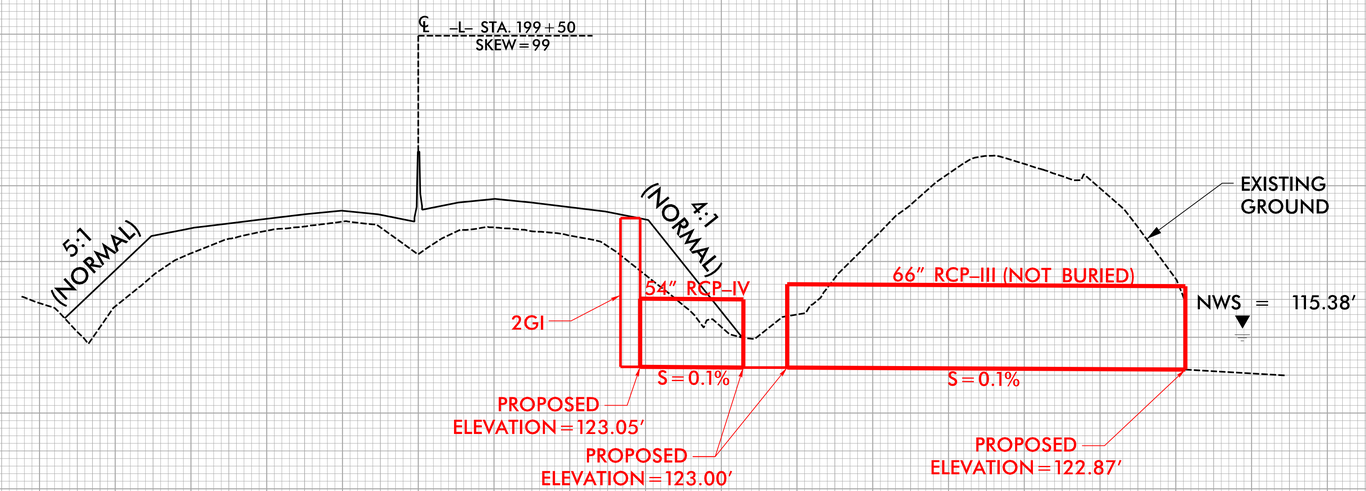
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 15/18
–L– STA. 199+50

PERMIT DRAWING
SHEET 45 OF 163

ENGLISH



54" RCP-IV
(not buried)
(length=110')

66" RCP-III
(not buried)
(length=131')

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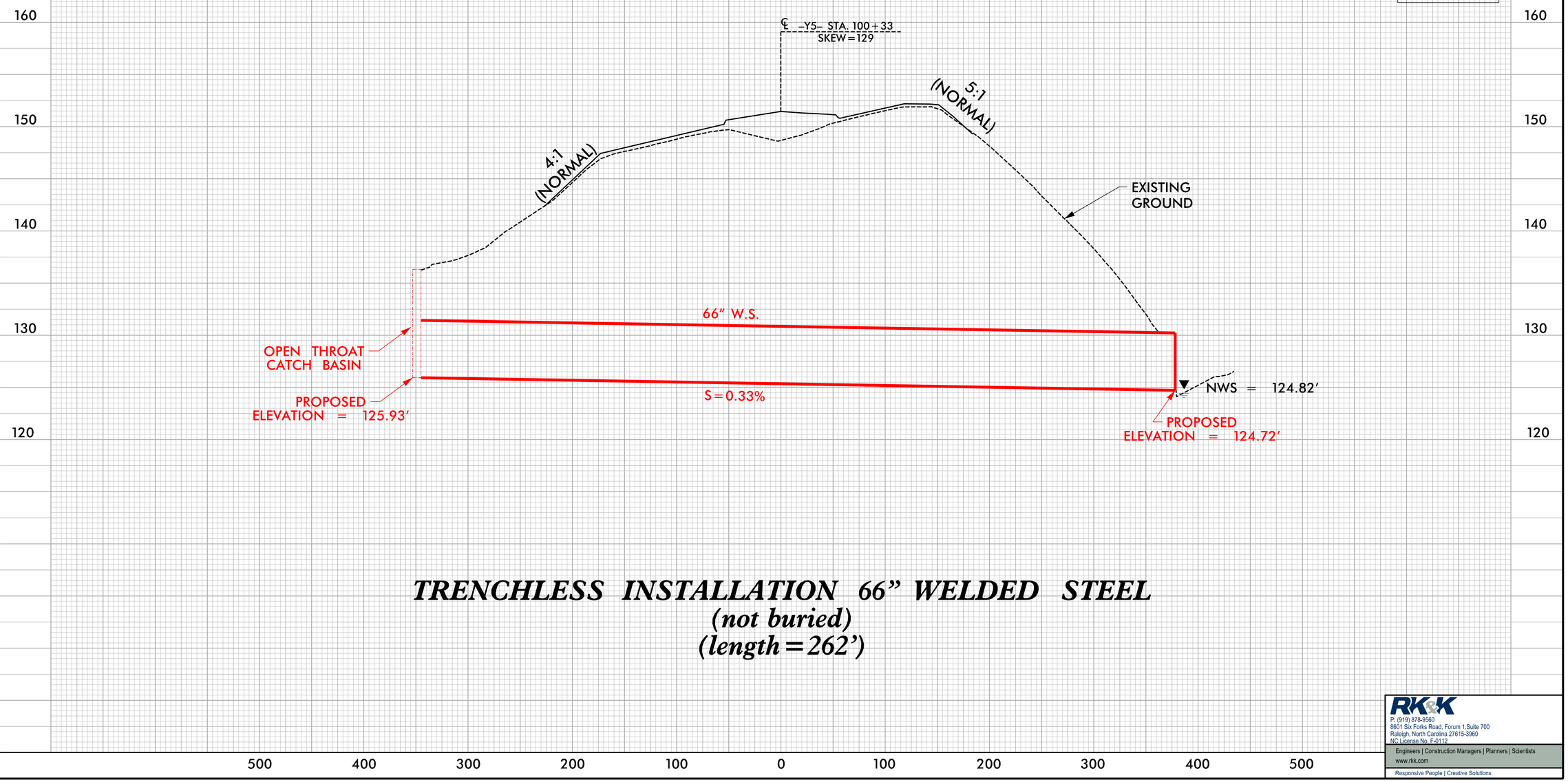
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 18
–Y5– STA. 100+33

PERMIT DRAWING
SHEET 46 OF 163

ENGLISH



TRENCHLESS INSTALLATION 66" WELDED STEEL
(not buried)
(length=262')

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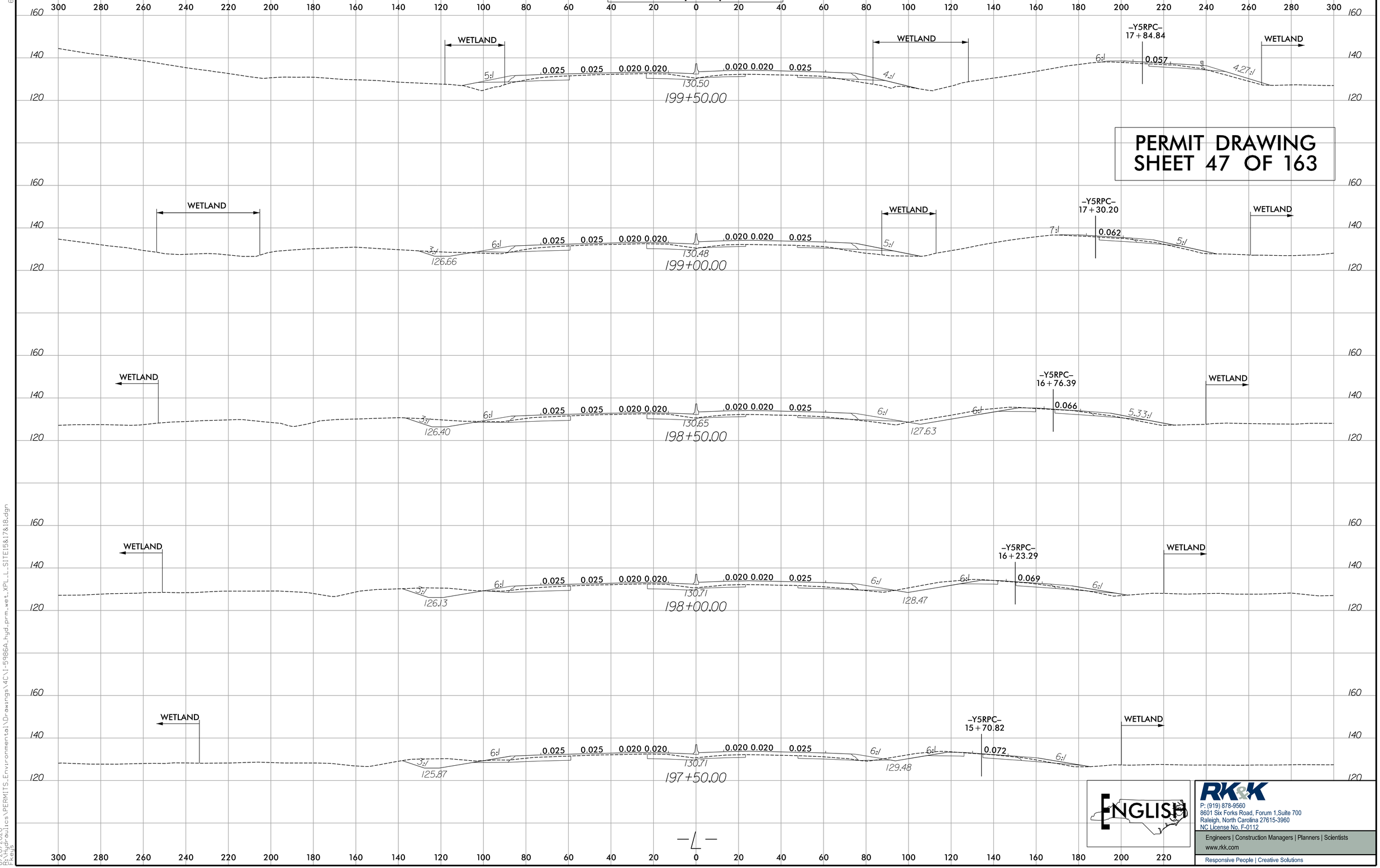
6/23/16

SITE 15, 17, & 18

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	I-5986A	S1 X-106



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SHEET 47 OF 163

ENGLISH

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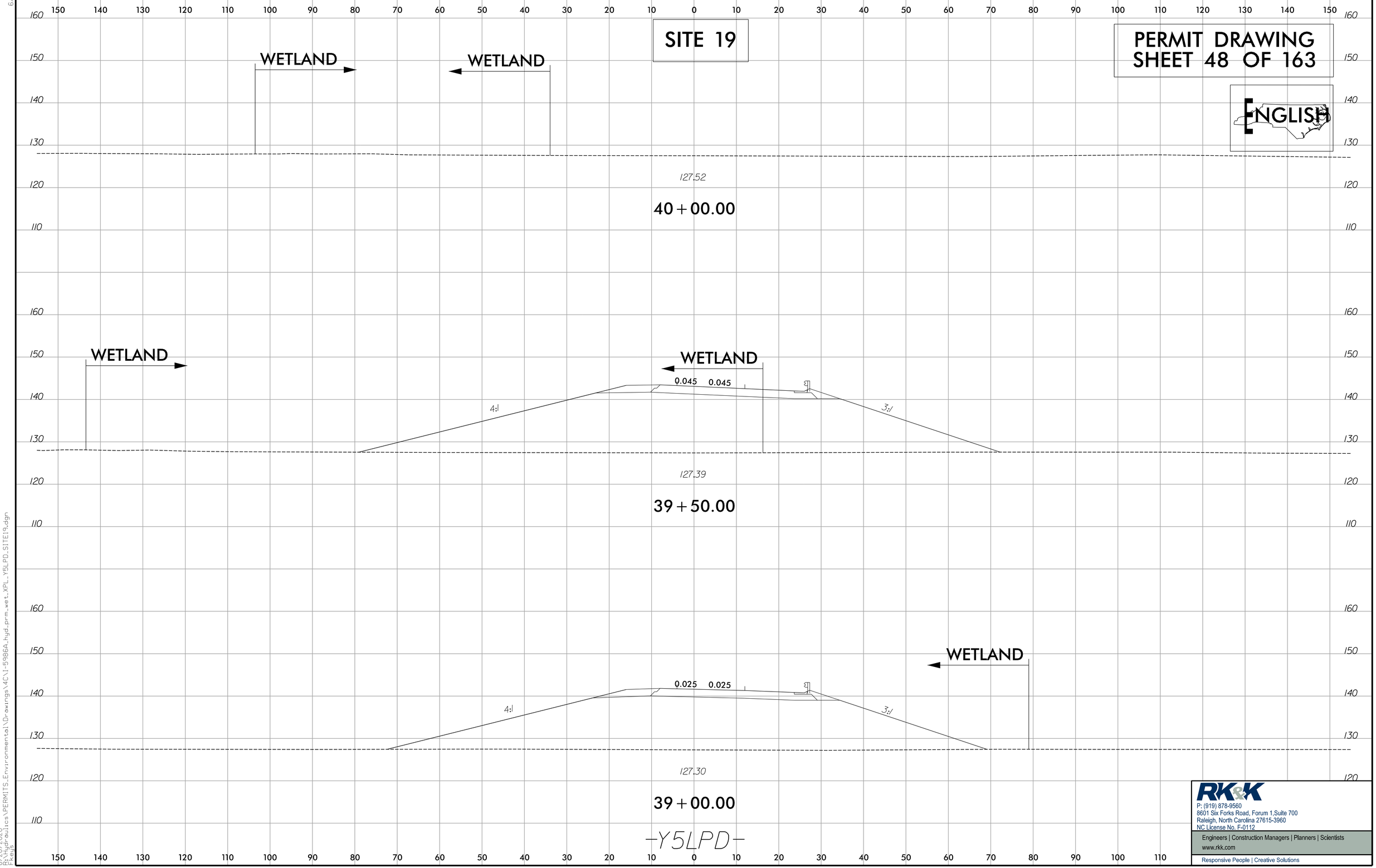
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5986A	S1 X-263

SITE 19

PERMIT DRAWING SHEET 48 OF 163

ENGLISH



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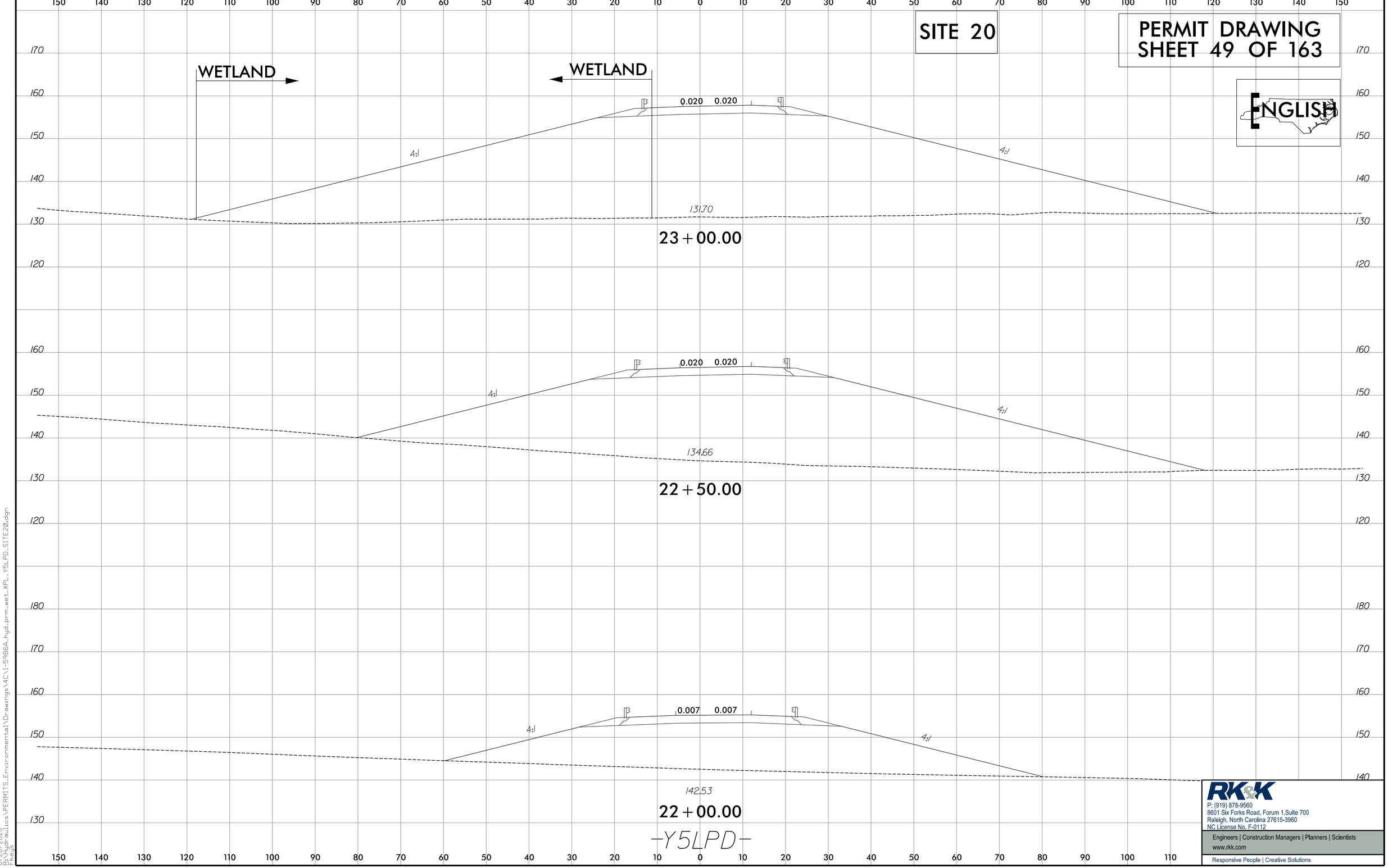
PROJ. REFERENCE NO.	SHEET NO.
I-5986A	S1 X-253

SITE 20

PERMIT DRAWING
SHEET 49 OF 163

ENGLISH



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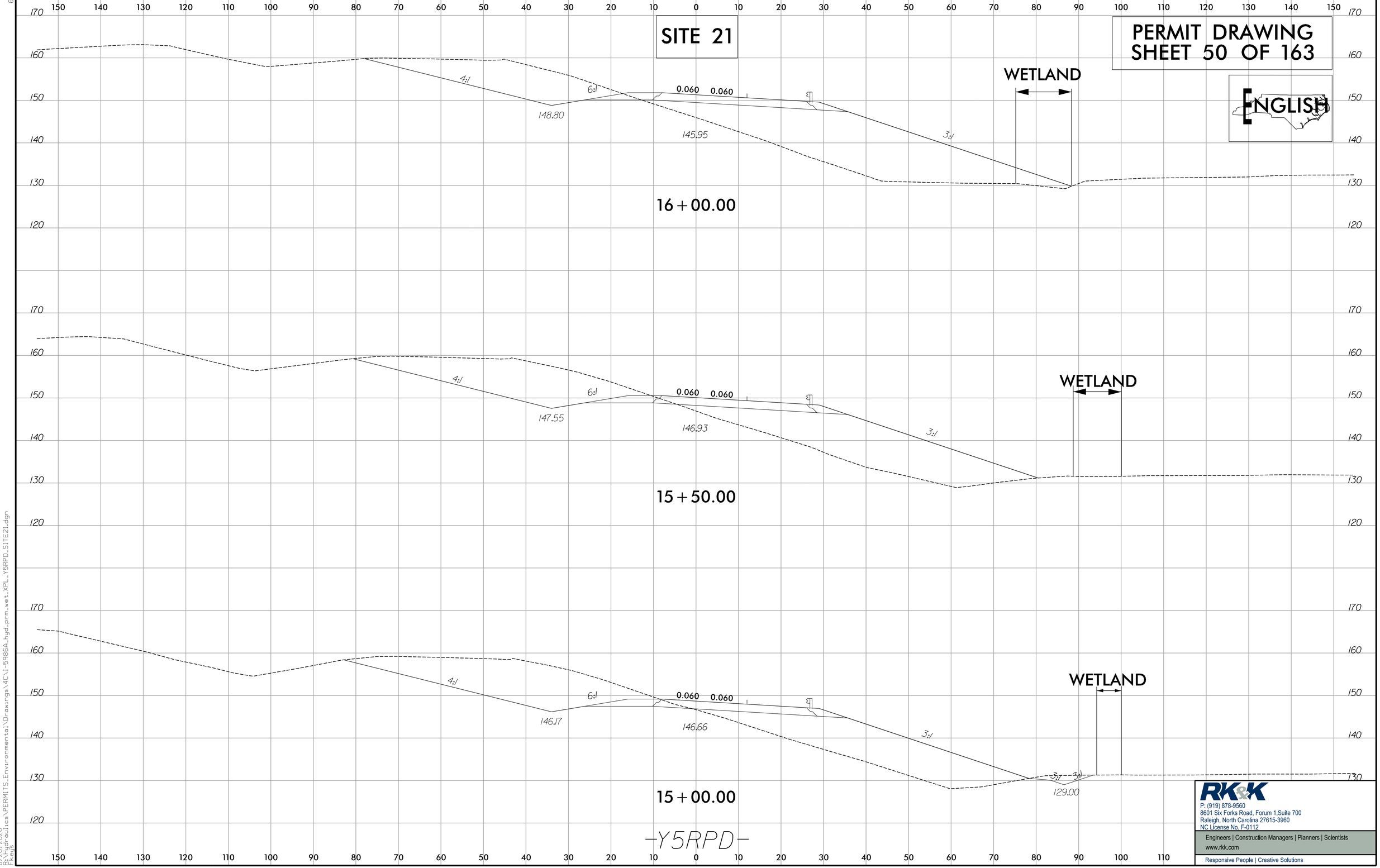
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5986A	S1 X-248

PERMIT DRAWING SHEET 50 OF 163

ENGLISH

SITE 21



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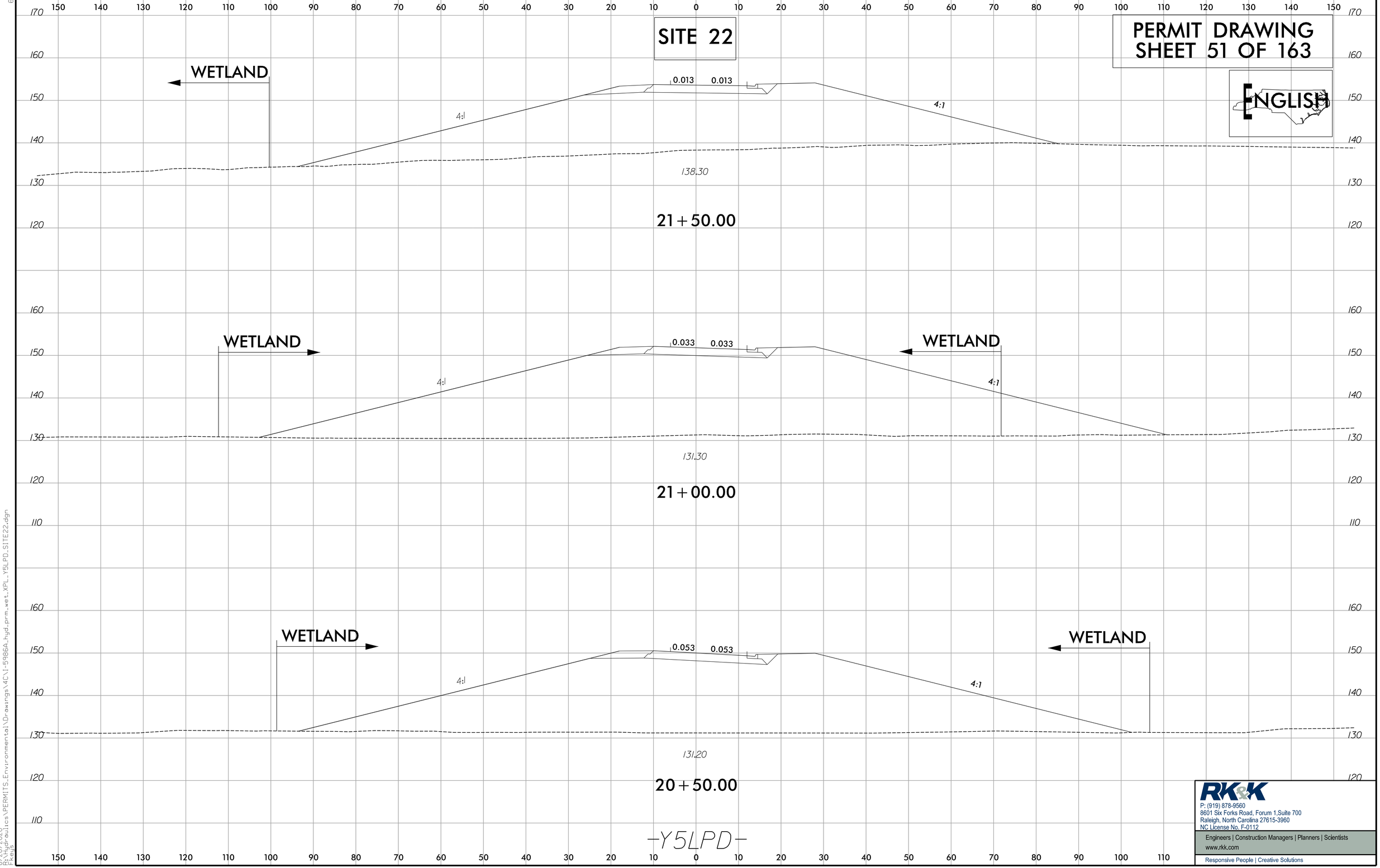
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5986A	S1 X-252

PERMIT DRAWING
SHEET 51 OF 163

ENGLISH

SITE 22



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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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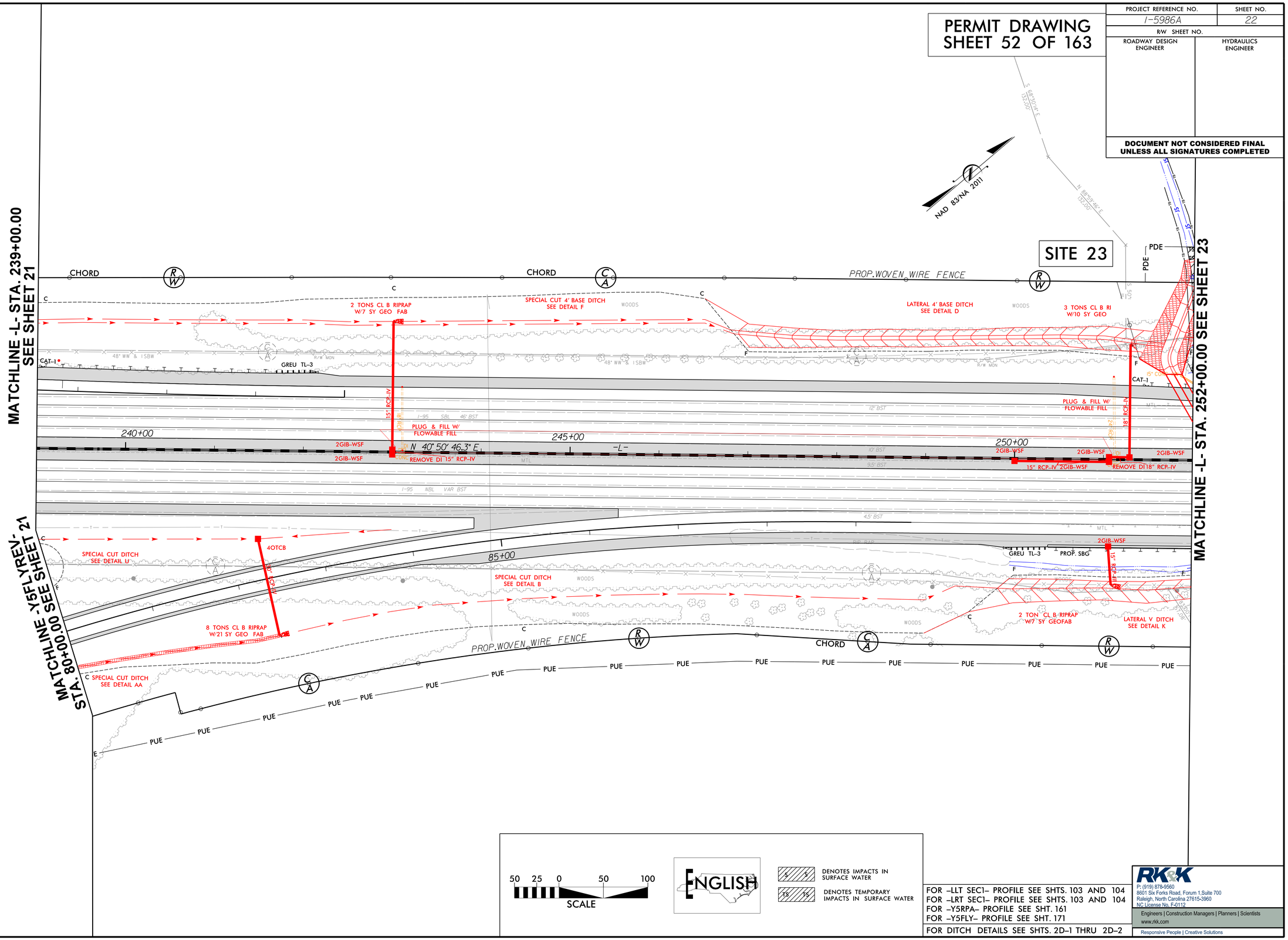

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SCALE

ENGLISH

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

FOR –LLT SEC1– PROFILE SEE SHTS. 103 AND 104
FOR –LRT SEC1– PROFILE SEE SHTS. 103 AND 104
FOR –Y5RPA– PROFILE SEE SHT. 161
FOR –Y5FLY– PROFILE SEE SHT. 171

FOR DITCH DETAILS SEE SHTS. 2D–1 THRU 2D–2

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I-5986A	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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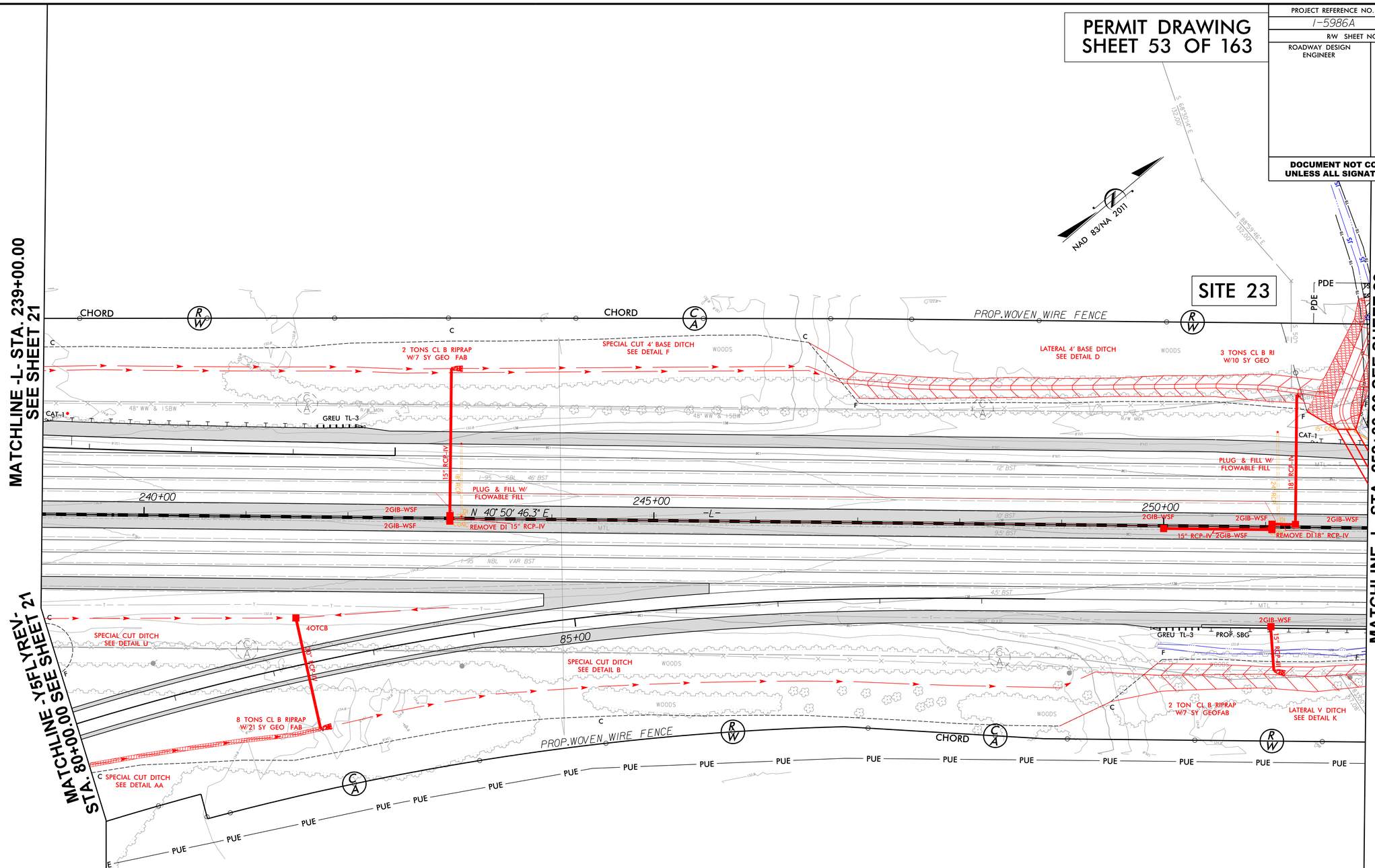
PERMIT DRAWING SHEET 53 OF 163



50 25 0 50 100
SCALE

ENGLISH

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

FOR –LLT SEC1– PROFILE SEE SHTS. 103 AND 104
FOR –LRT SEC1– PROFILE SEE SHTS. 103 AND 104
FOR –Y5RPA– PROFILE SEE SHT. 161
FOR –Y5FLY– PROFILE SEE SHT. 171

FOR DITCH DETAILS SEE SHTS. 2D–1 THRU 2D–2

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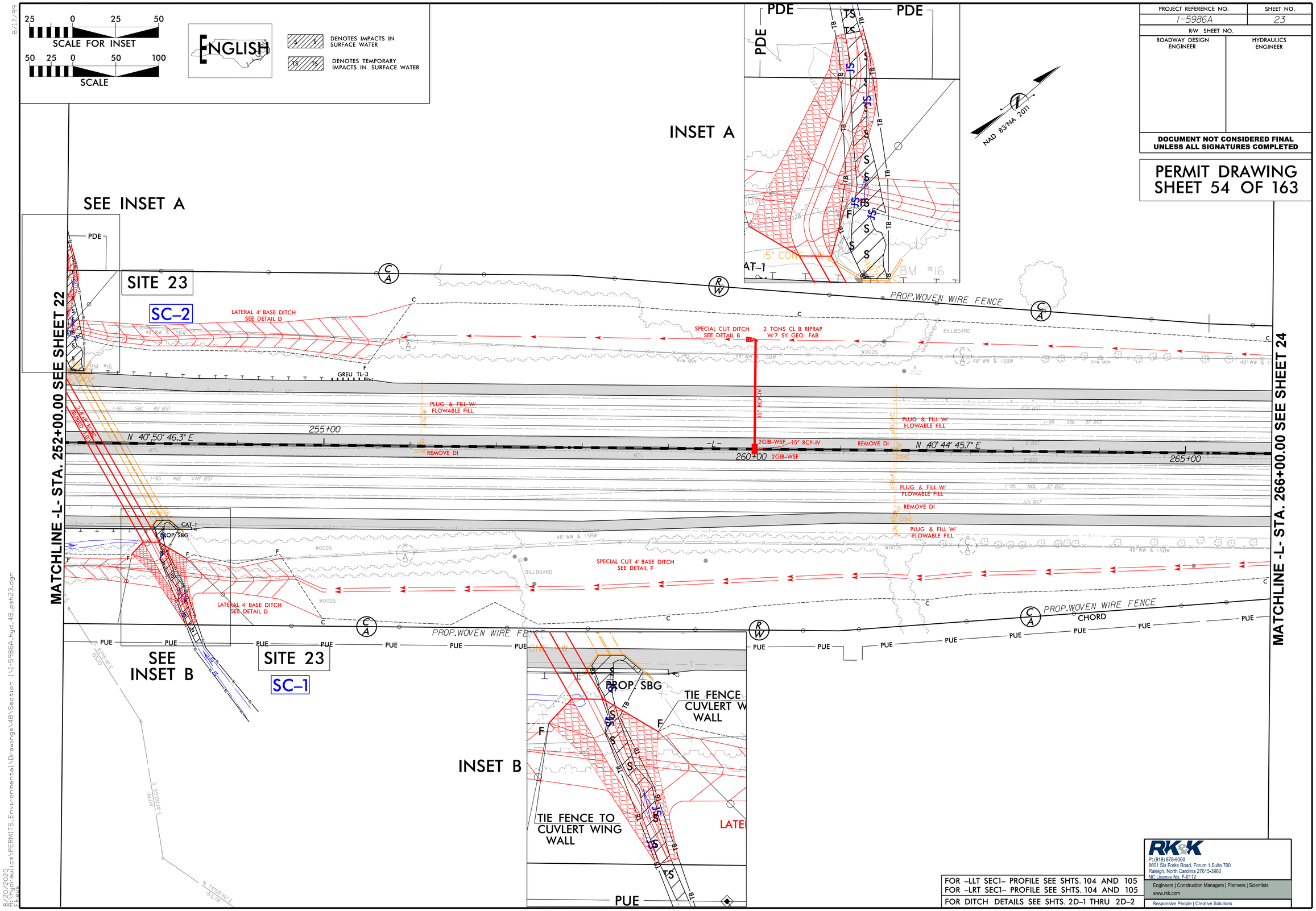

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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SHEET 54 OF 163

FOR -LLT SEC1- PROFILE SEE SHTS. 104 AND 105
FOR -LRT SEC1- PROFILE SEE SHTS. 104 AND 105
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

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I-5986A	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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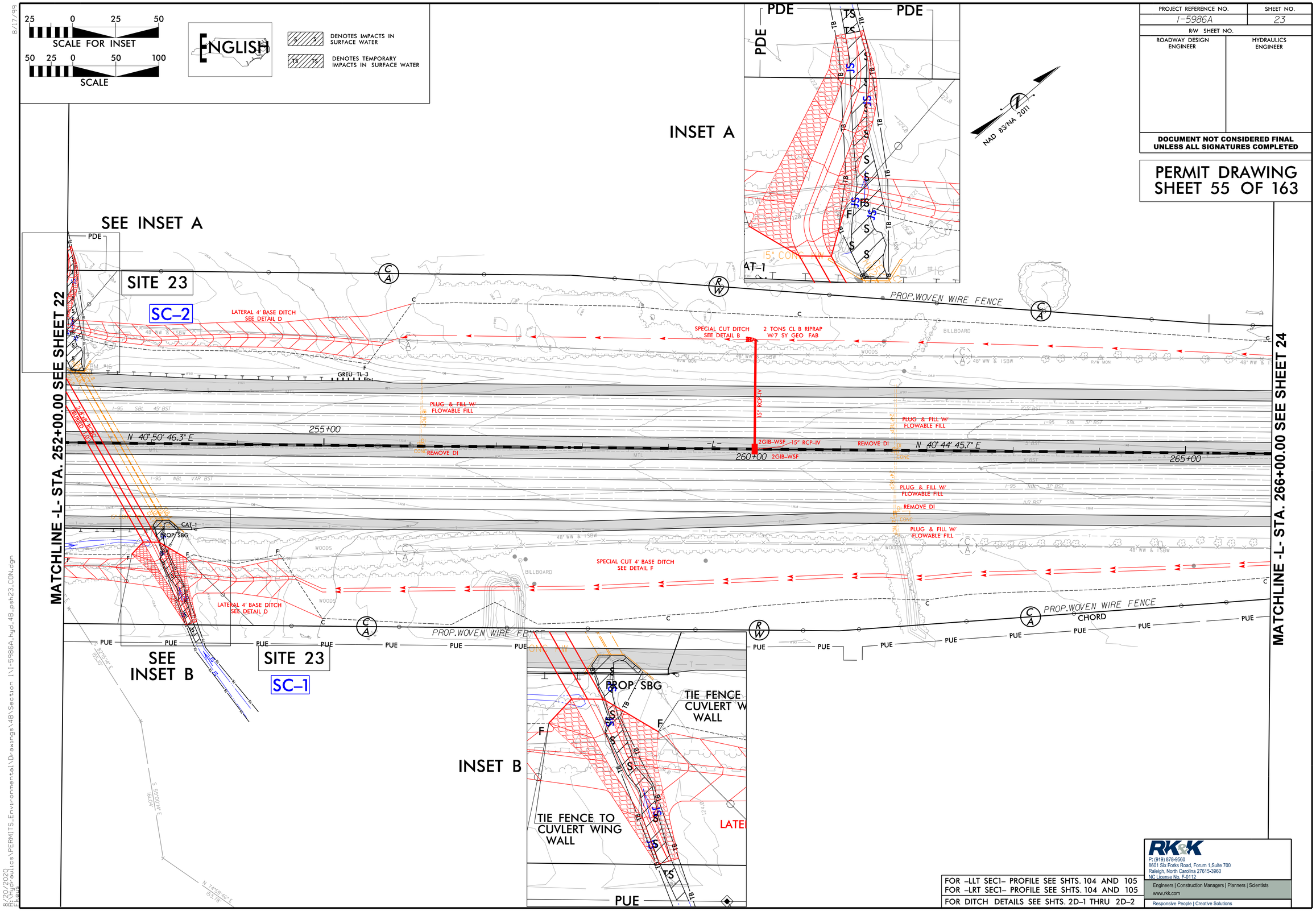
PERMIT DRAWING SHEET 55 OF 163



FOR -LLT SEC1- PROFILE SEE SHTS. 104 AND 105
FOR -LRT SEC1- PROFILE SEE SHTS. 104 AND 105
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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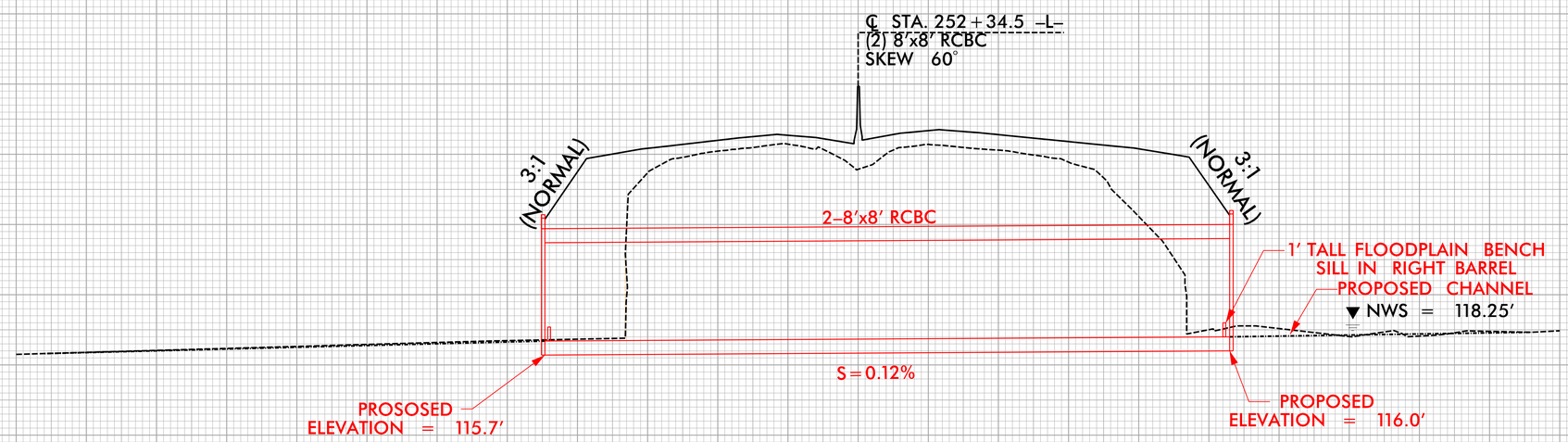
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 23
–L– STA. 252+34

PERMIT DRAWING
SHEET 56 OF 163

ENGLISH



2 – 8'X 8' RCBC
(buried 1.0')
(length=244')

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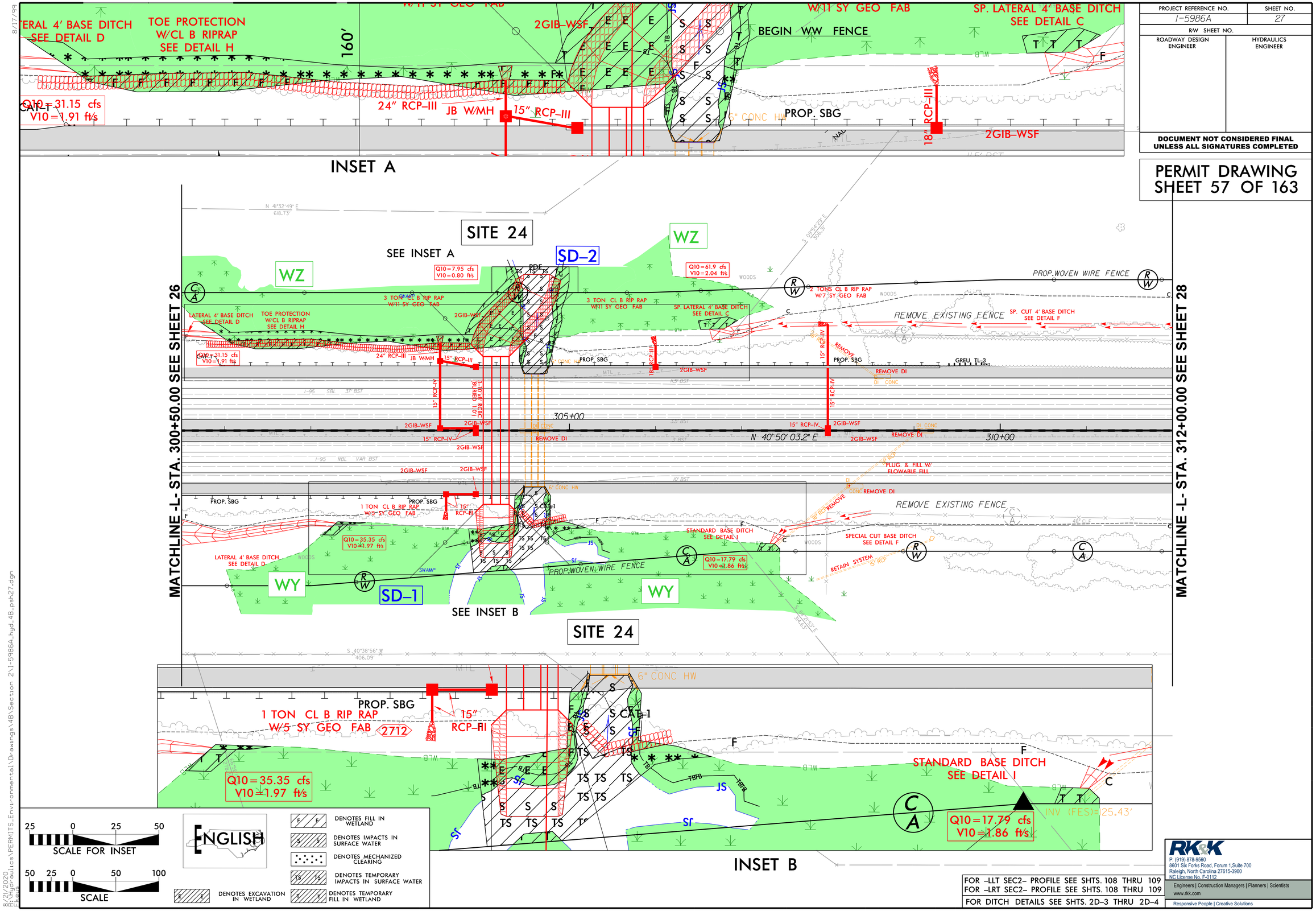
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	27
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 57 OF 163



FOR -LLT SEC2- PROFILE SEE SHTS. 108 THRU 109
FOR -LRT SEC2- PROFILE SEE SHTS. 108 THRU 109
FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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I-5986A	27
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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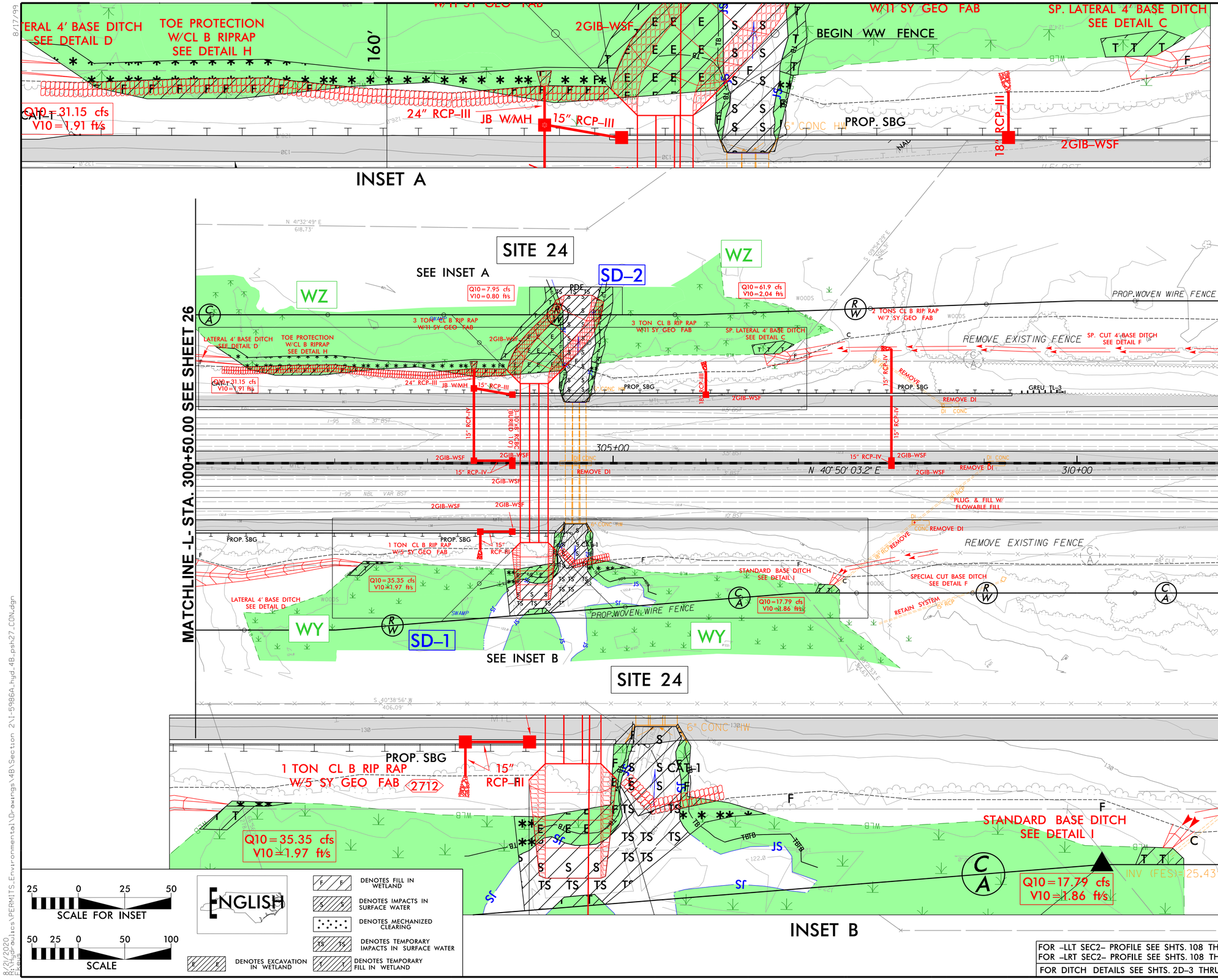
PERMIT DRAWING
SHEET 58 OF 163



25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

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

FOR -LLT SEC2- PROFILE SEE SHTS. 108 THRU 109
FOR -LRT SEC2- PROFILE SEE SHTS. 108 THRU 109
FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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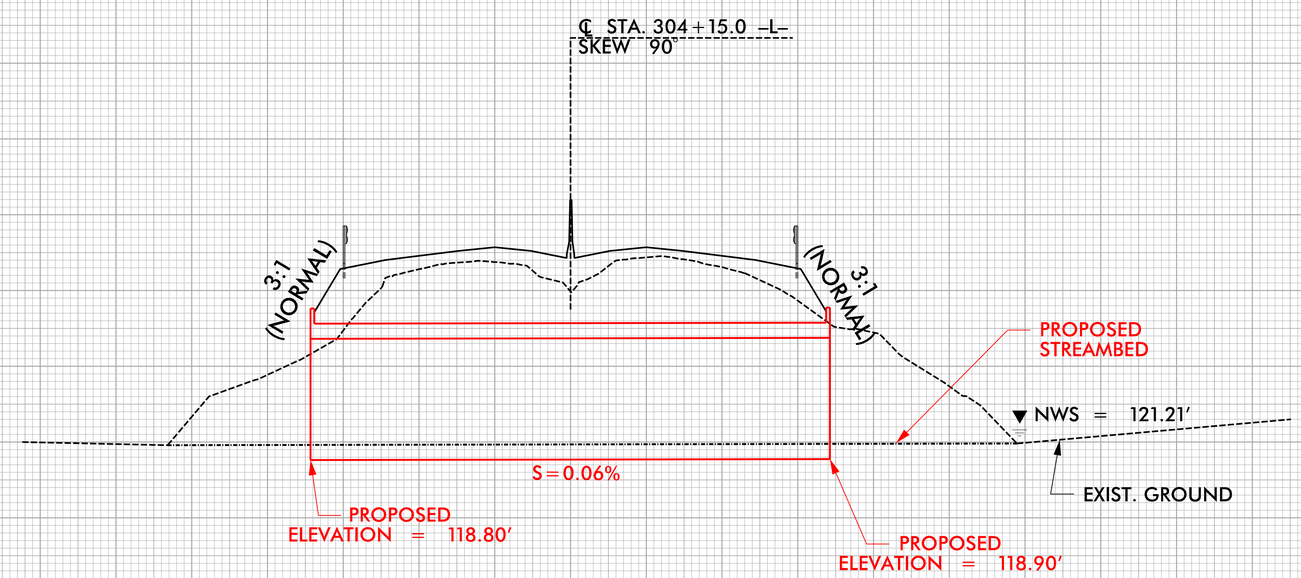
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 24
–L– STA. 304+15

PERMIT DRAWING
SHEET 59 OF 163

ENGLISH



3 @ 10' X 8' RCBC
(buried 1.0')
(length=171')

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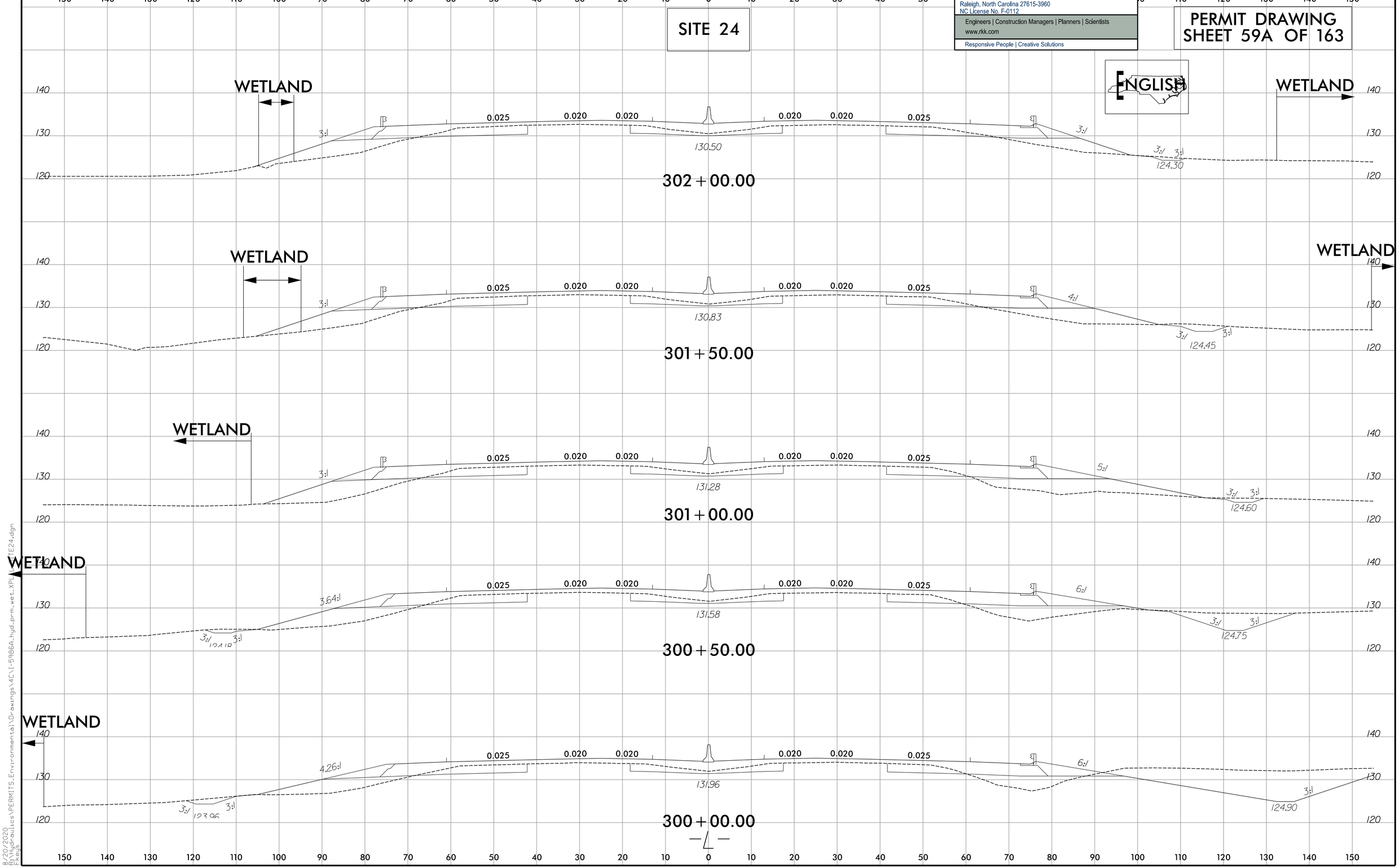
I-5986A	S2 X-8

PERMIT DRAWING
SHEET 59A OF 163

SITE 24



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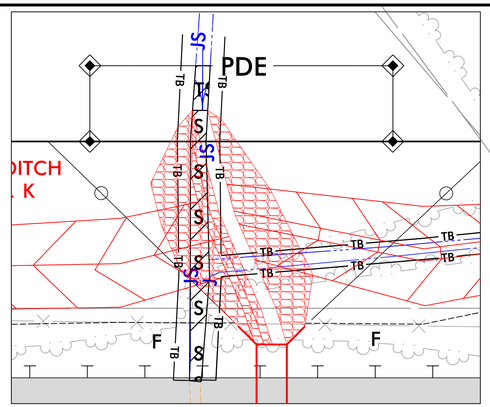

INSET A

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

E	DENOTES EXCAVATION IN WETLAND
S	DENOTES IMPACTS IN SURFACE WATER
TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
T	DENOTES TEMPORARY FILL IN WETLAND

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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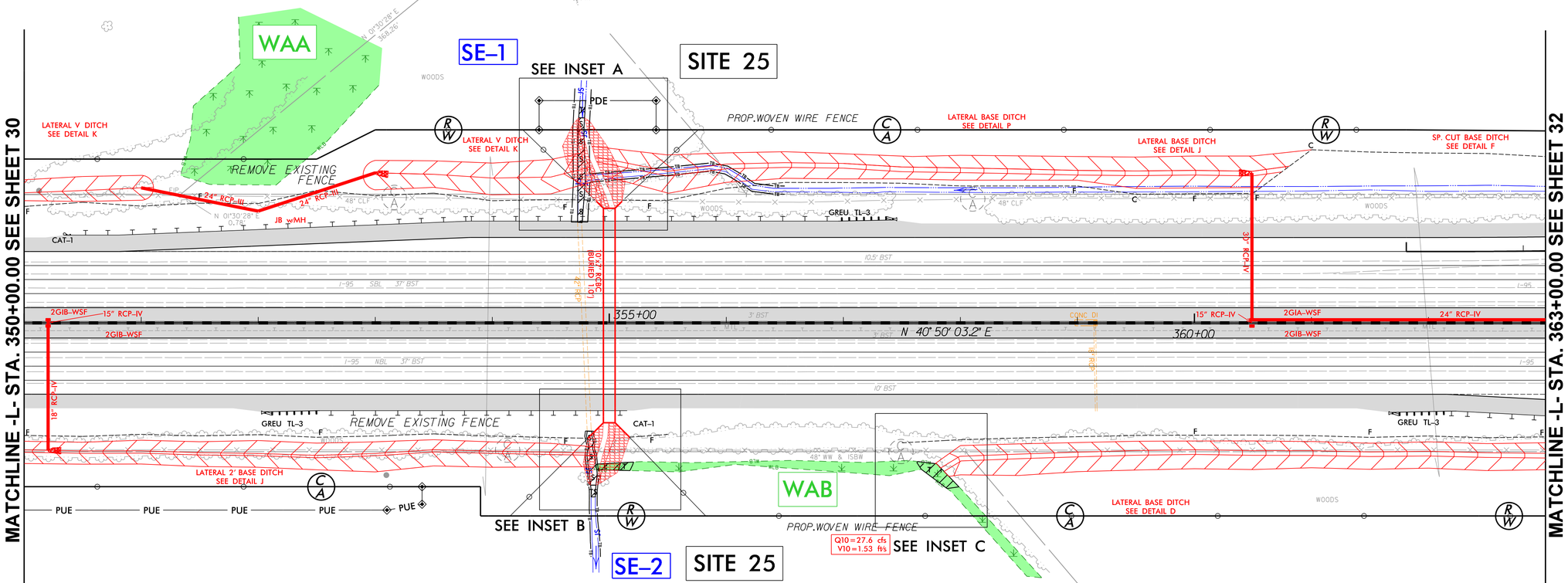
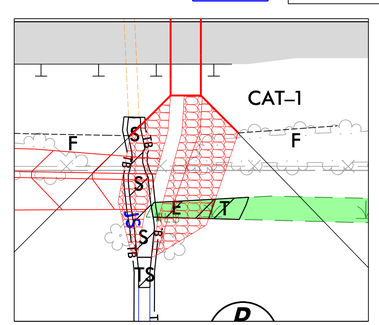
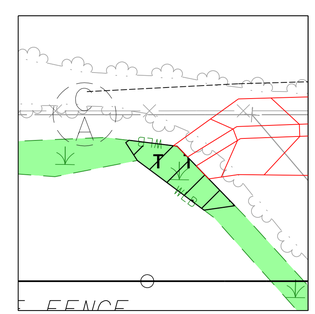
PERMIT DRAWING SHEET 60 OF 163

NAD 83/NA 2011





INSET B



INSET C

FOR –LLT SEC2– PROFILE SEE SHTS. 112 THRU 113
FOR –LRT SEC2– PROFILE SEE SHTS. 112 THRU 113
FOR –Y7RPB– PROFILE SEE SHT. 178
FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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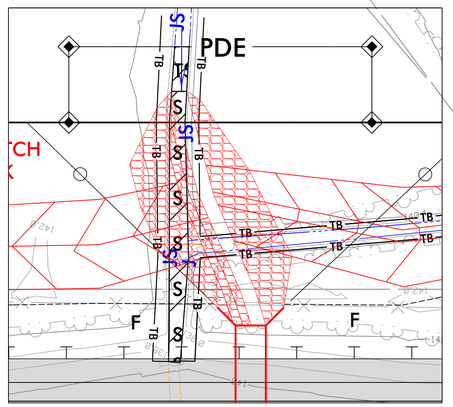

INSET A

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

E DENOTES EXCAVATION IN WETLAND
S DENOTES IMPACTS IN SURFACE WATER
TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER
T DENOTES TEMPORARY FILL IN WETLAND

NAD 83/NA 2011

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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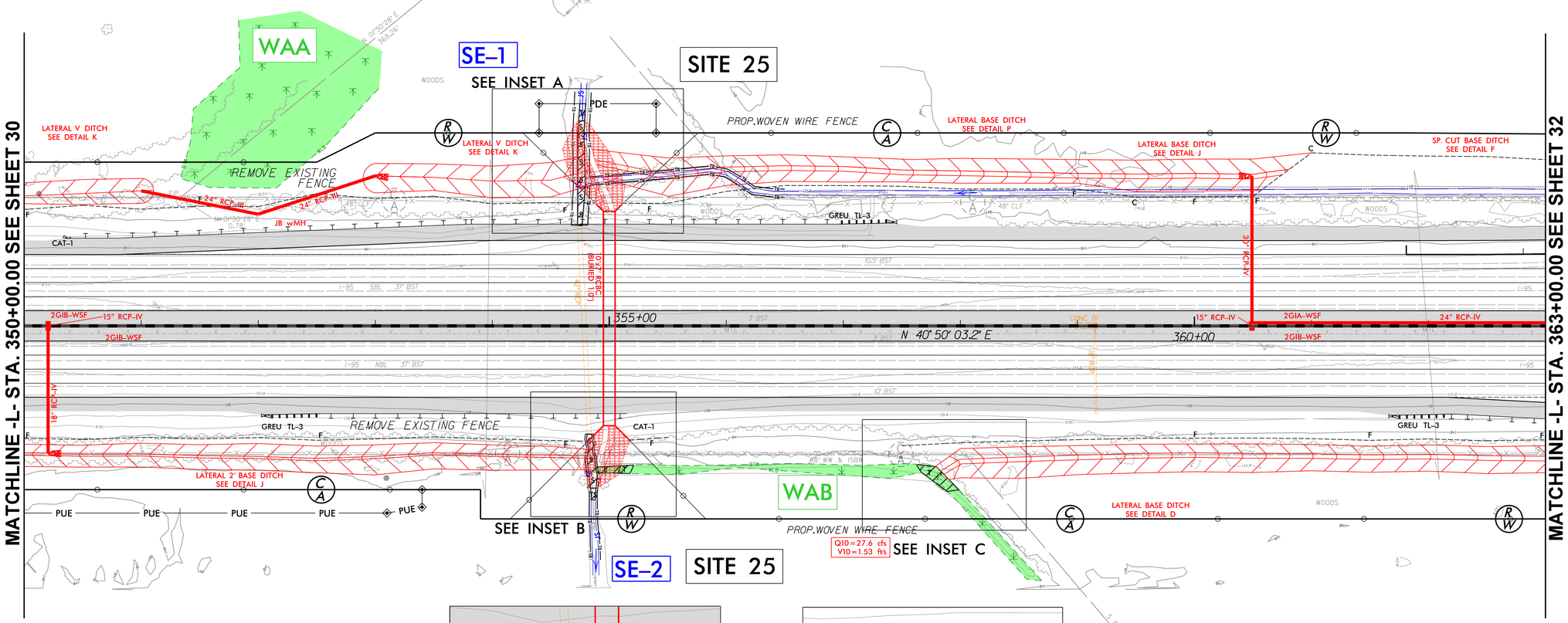
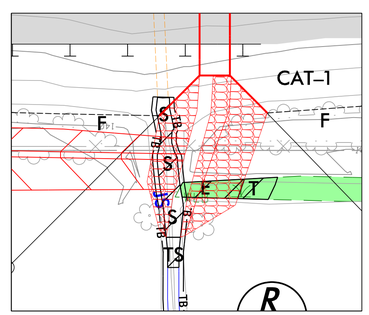
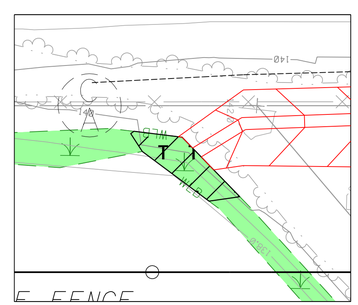




INSET B



INSET C

FOR –LLT SEC2– PROFILE SEE SHTS. 112 THRU 113
FOR –LRT SEC2– PROFILE SEE SHTS. 112 THRU 113
FOR –Y7RPB– PROFILE SEE SHT. 178
FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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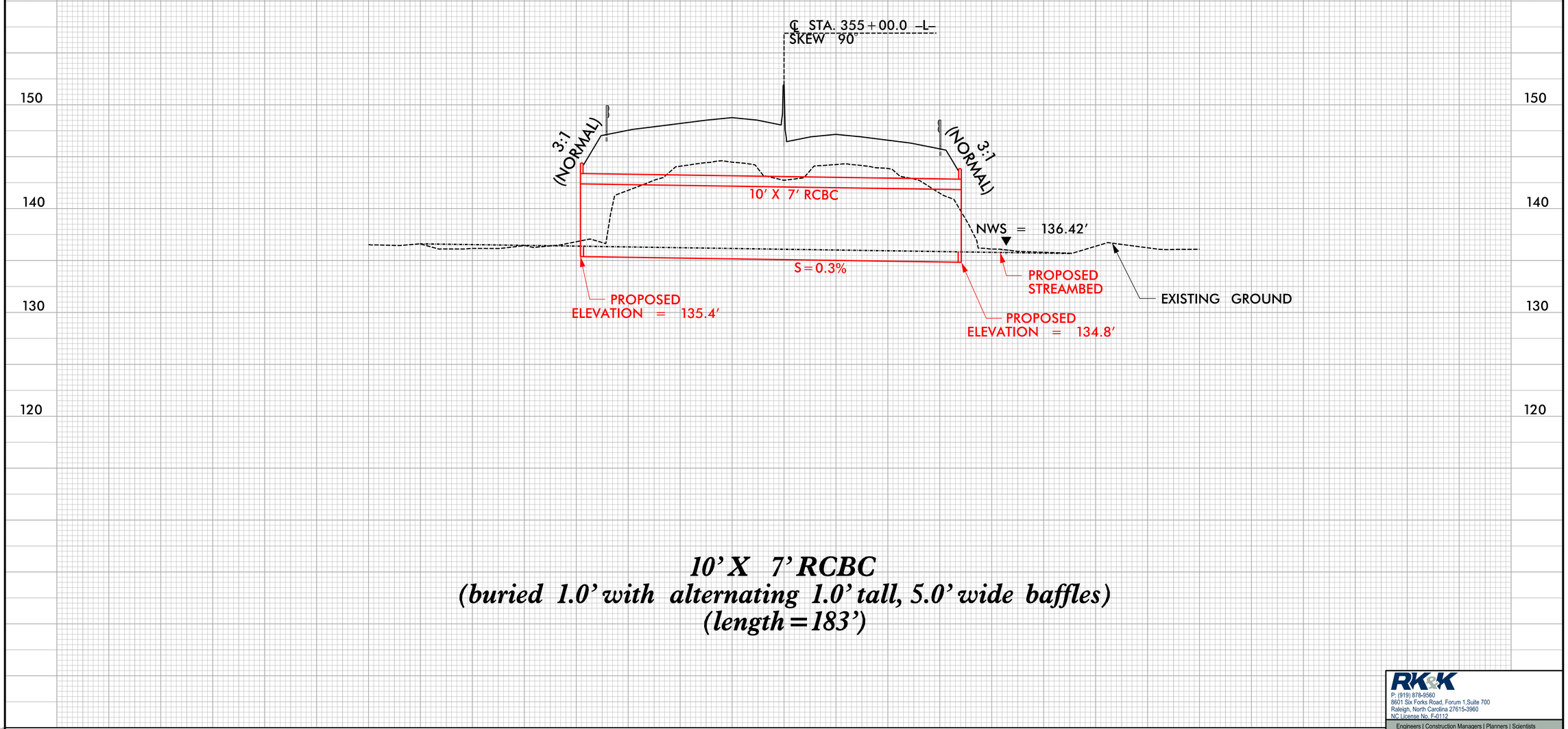
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 25
–L– STA. 355+00

PERMIT DRAWING
SHEET 62 OF 163

ENGLISH



10' X 7' RCBC
(buried 1.0' with alternating 1.0' tall, 5.0' wide baffles)
(length=183')

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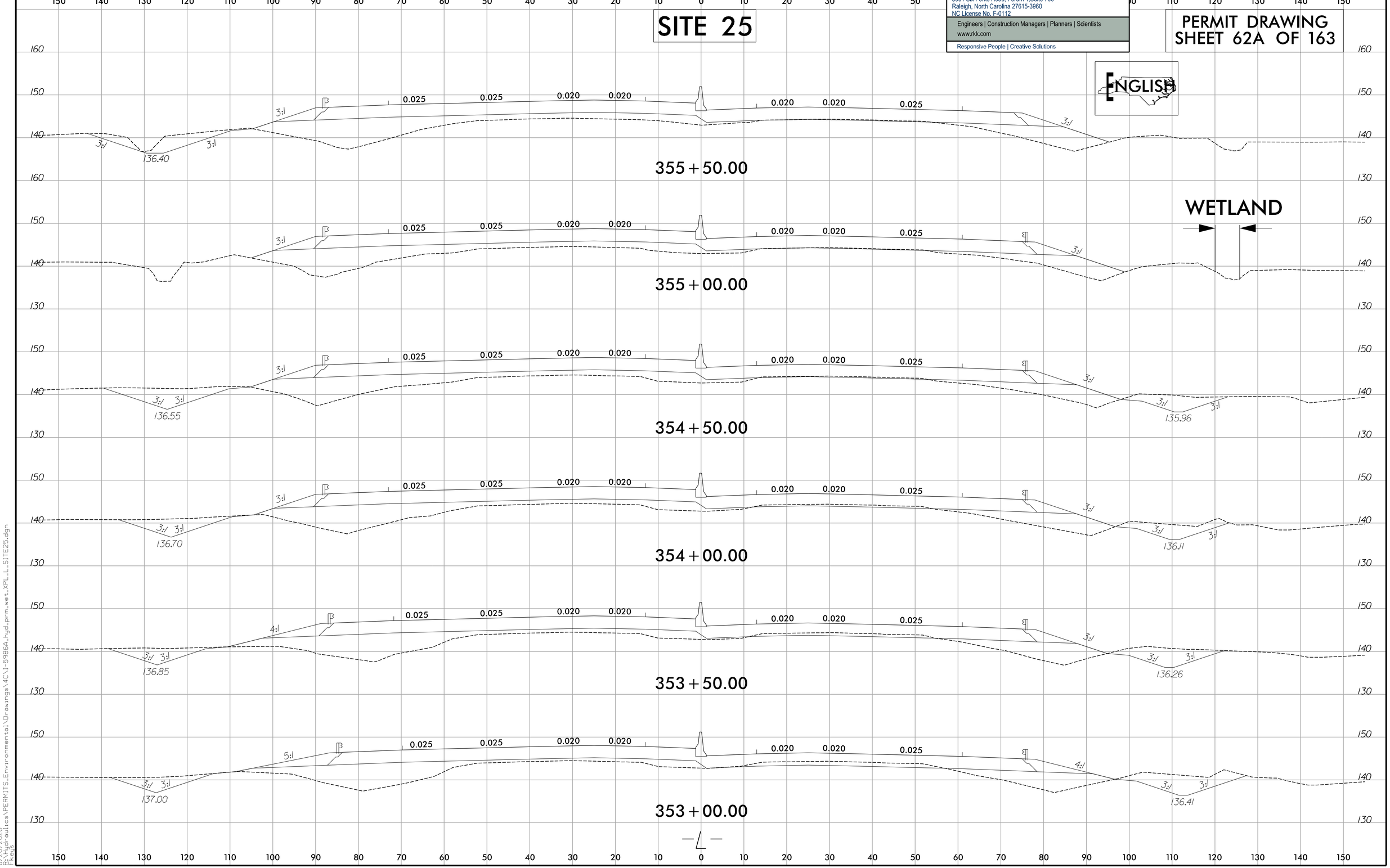
PROJ. REFERENCE NO.	SHEET NO.
I-5986A	S2 X-26

SITE 25

PERMIT DRAWING
SHEET 62A OF 163



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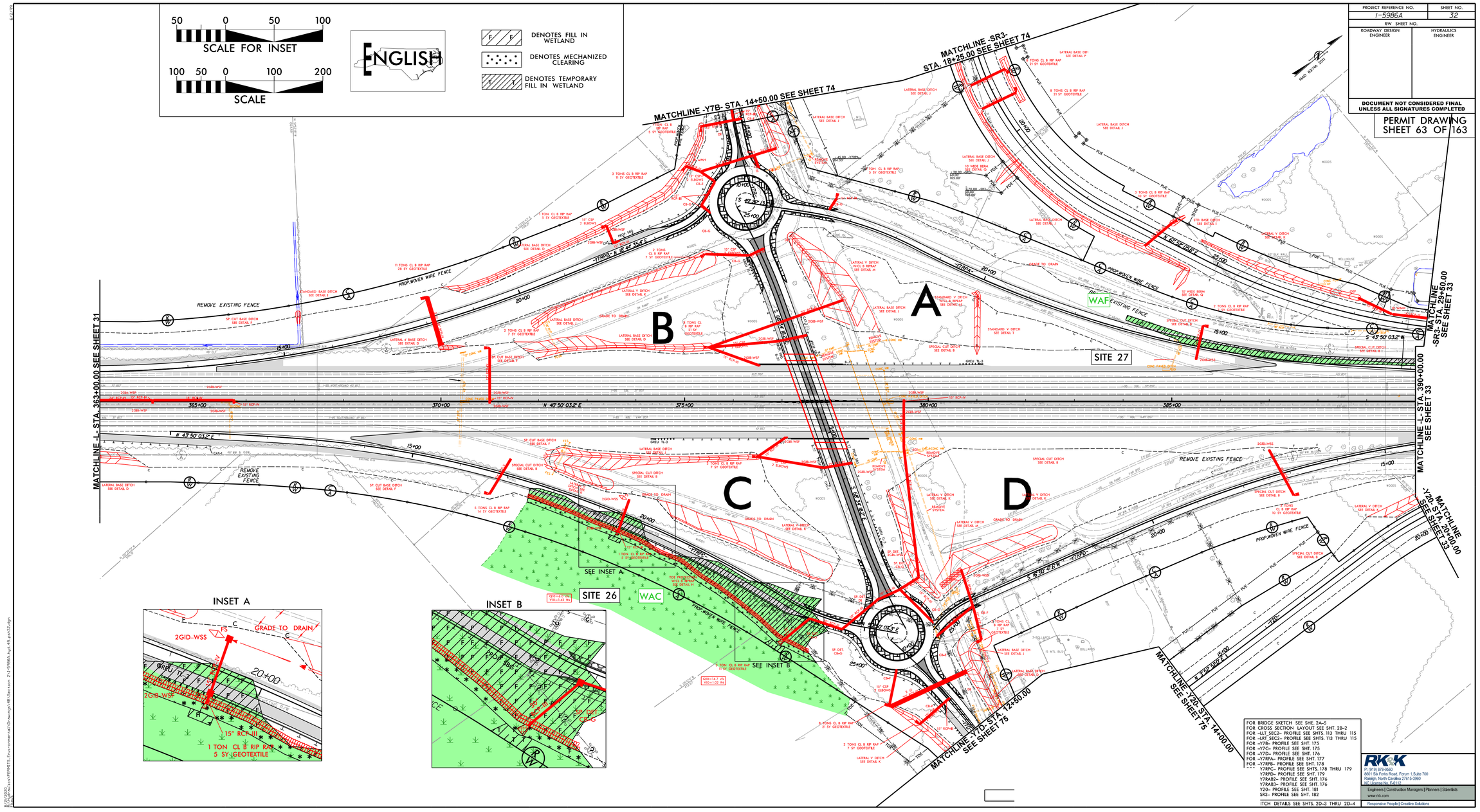

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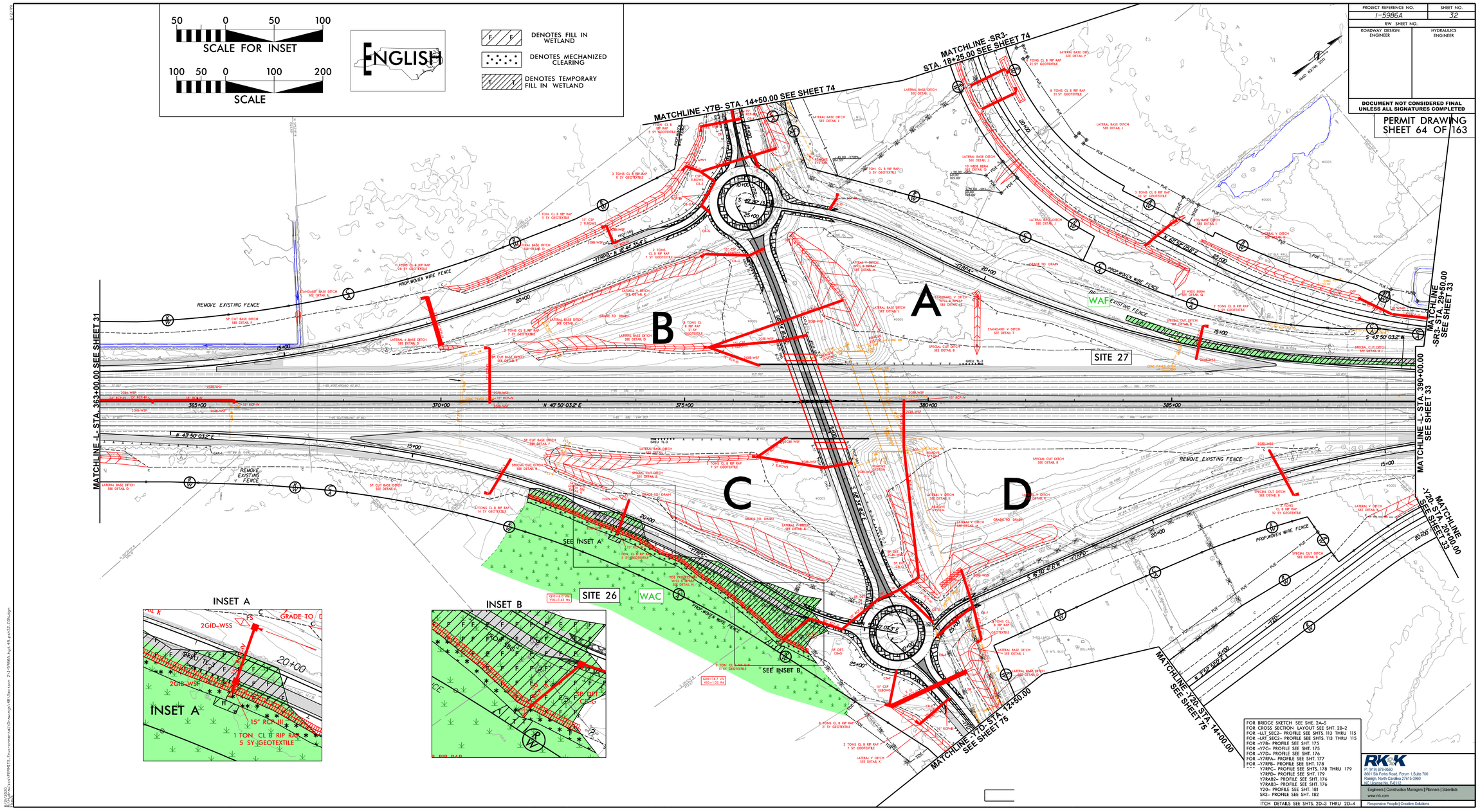

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING
SHEET 64 OF 163

FOR BRIDGE SKETCH SEE SHT. 2A-5
FOR CROSS SECTION LAYOUT SEE SHT. 2B-2
FOR -LLT_SEC2- PROFILE SEE SHTS. 113 THRU 115
FOR -LRT_SEC2- PROFILE SEE SHTS. 113 THRU 115
FOR -Y7B- PROFILE SEE SHT. 175
FOR -Y7C- PROFILE SEE SHT. 175
FOR -Y7D- PROFILE SEE SHT. 176
FOR -Y7RPA- PROFILE SEE SHT. 177
FOR -Y7RPB- PROFILE SEE SHT. 178
Y7RPC- PROFILE SEE SHTS. 178 THRU 179
Y7RPD- PROFILE SEE SHT. 179
Y7RAB2- PROFILE SEE SHT. 176
Y7RAB3- PROFILE SEE SHT. 176
Y2D- PROFILE SEE SHT. 181
SR3- PROFILE SEE SHT. 182

ITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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I-5986A	S2 X-135

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SHEET 65 OF 163

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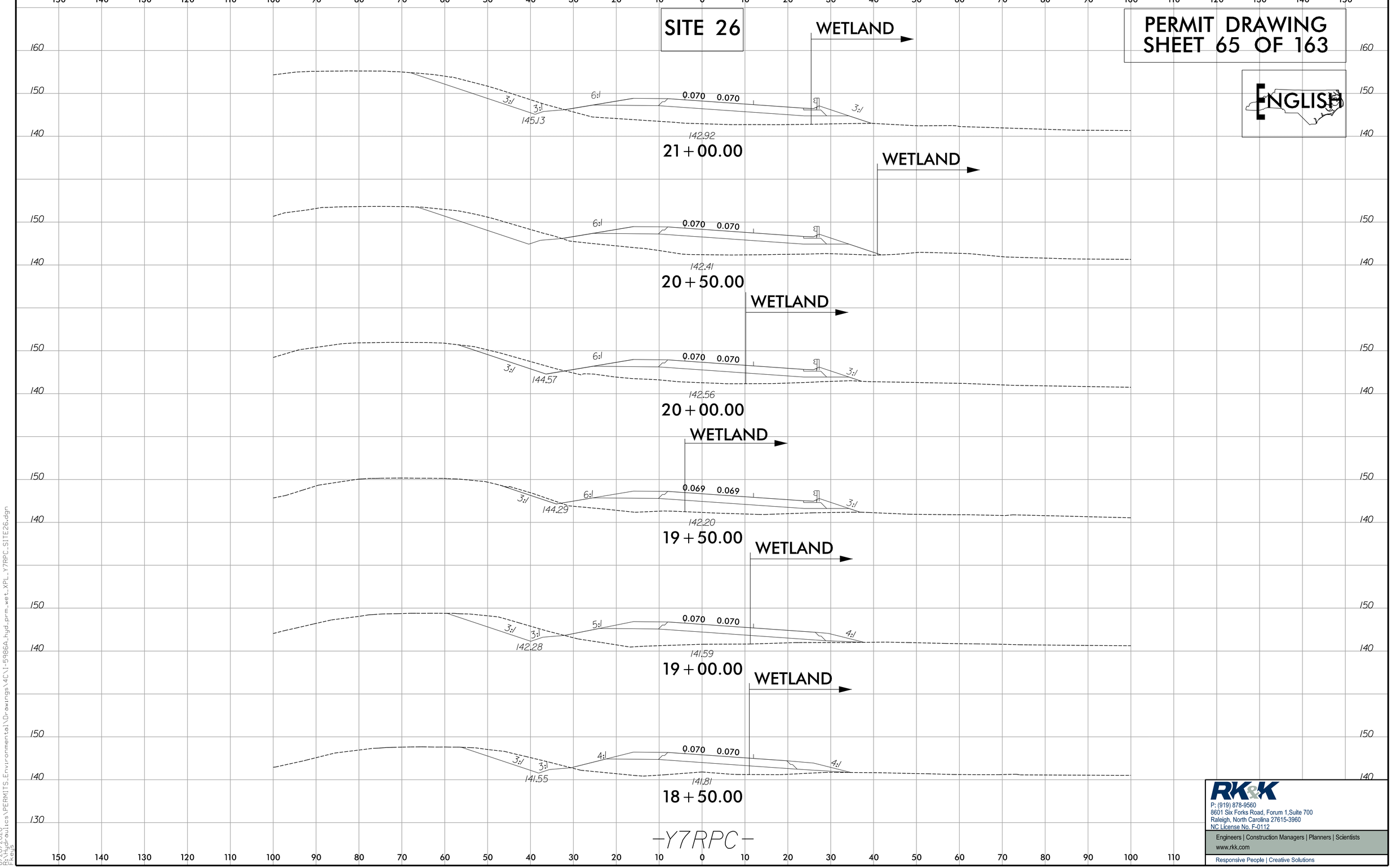

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I-5986A	S2 X-37

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SITE 27

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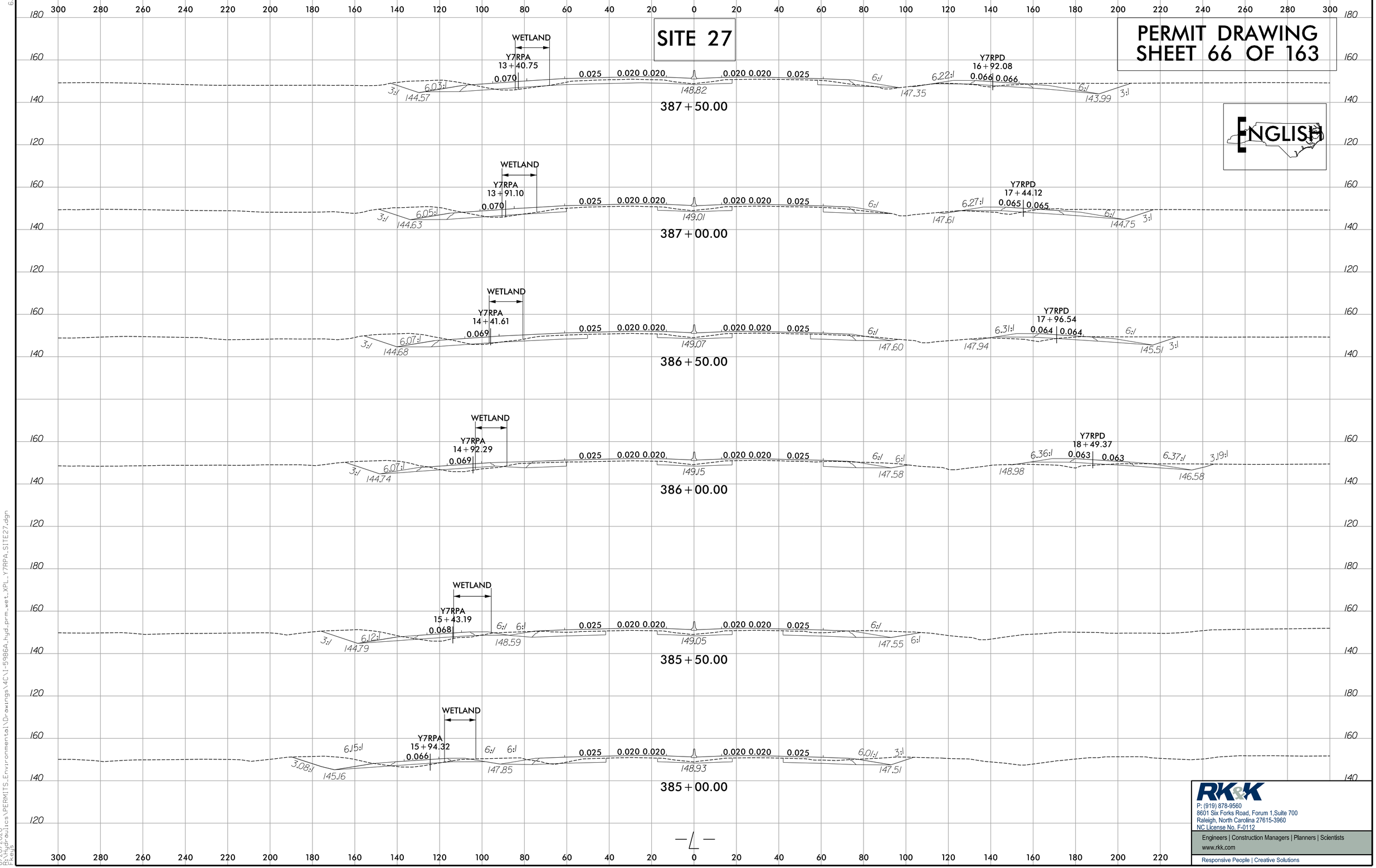

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I-5986A	33
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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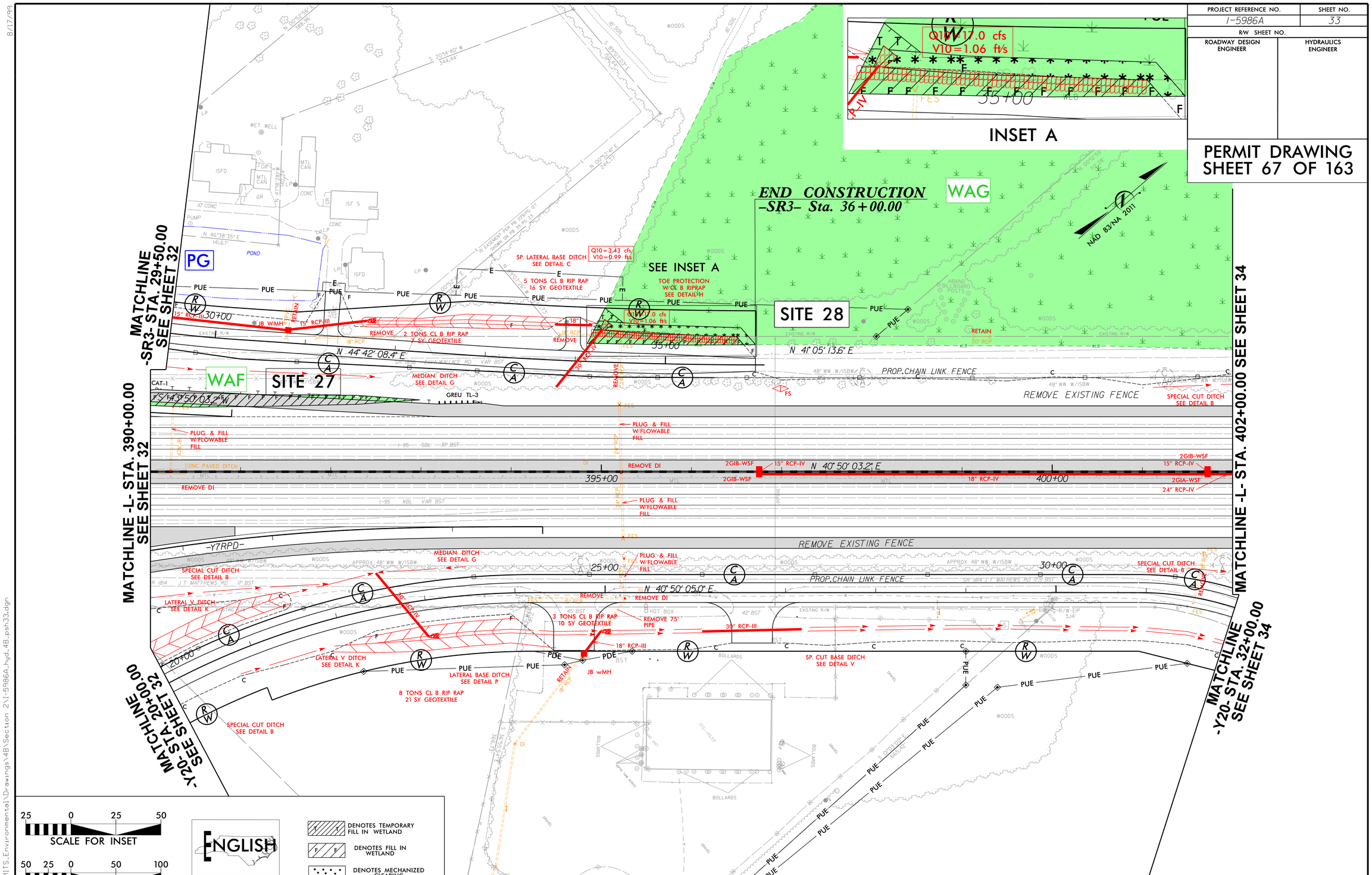
SHEET 67 OF 163



FOR –LLT_SEC2– PROFILE SEE SHTS. 115 THRU 116
FOR –LRT_SEC2– PROFILE SEE SHTS. 115 THRU 116
FOR –Y7RPA– PROFILE SEE SHT. 177
FOR –Y7RPD– PROFILE SEE SHT. 179
FOR –Y20– PROFILE SEE SHT. 181

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I-5986A	33
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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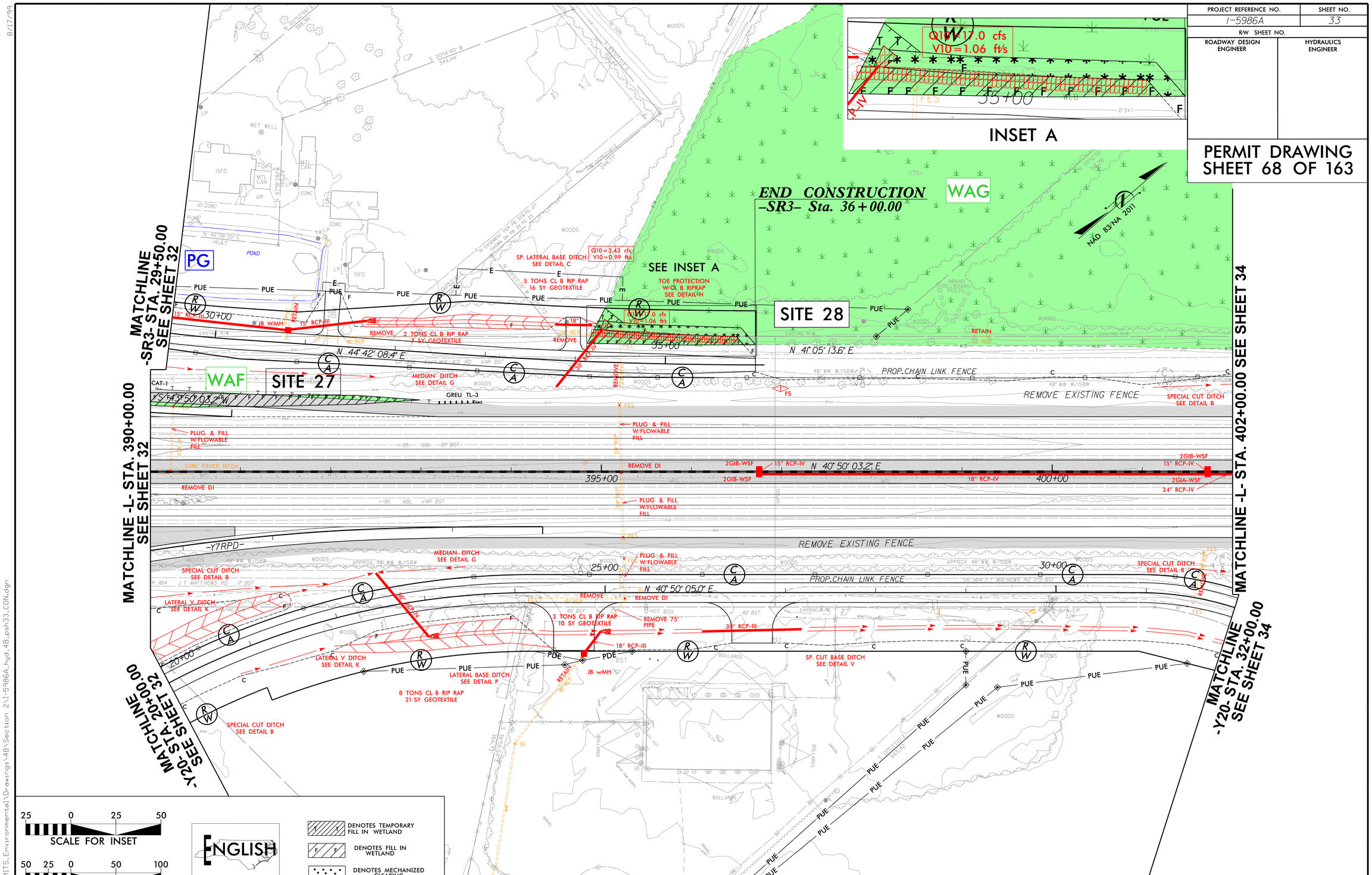
SHEET 68 OF 163



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FOR –LRT_SEC2– PROFILE SEE SHTS. 115 THRU 116
FOR –Y7RPA– PROFILE SEE SHT. 177
FOR –Y7RPD– PROFILE SEE SHT. 179
FOR –Y20– PROFILE SEE SHTS.

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SITE 27

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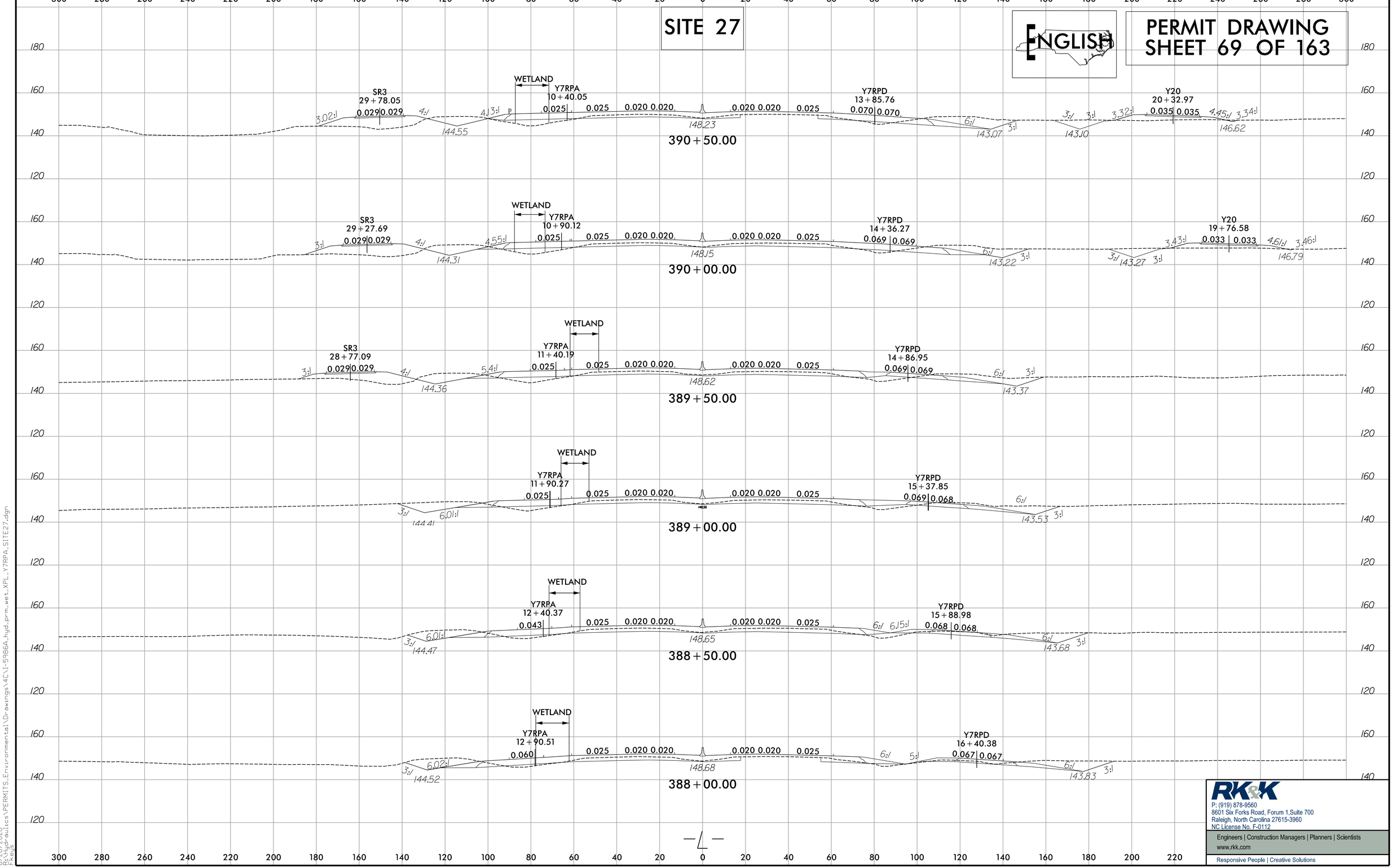
SHEET 69 OF 163



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SITE 28

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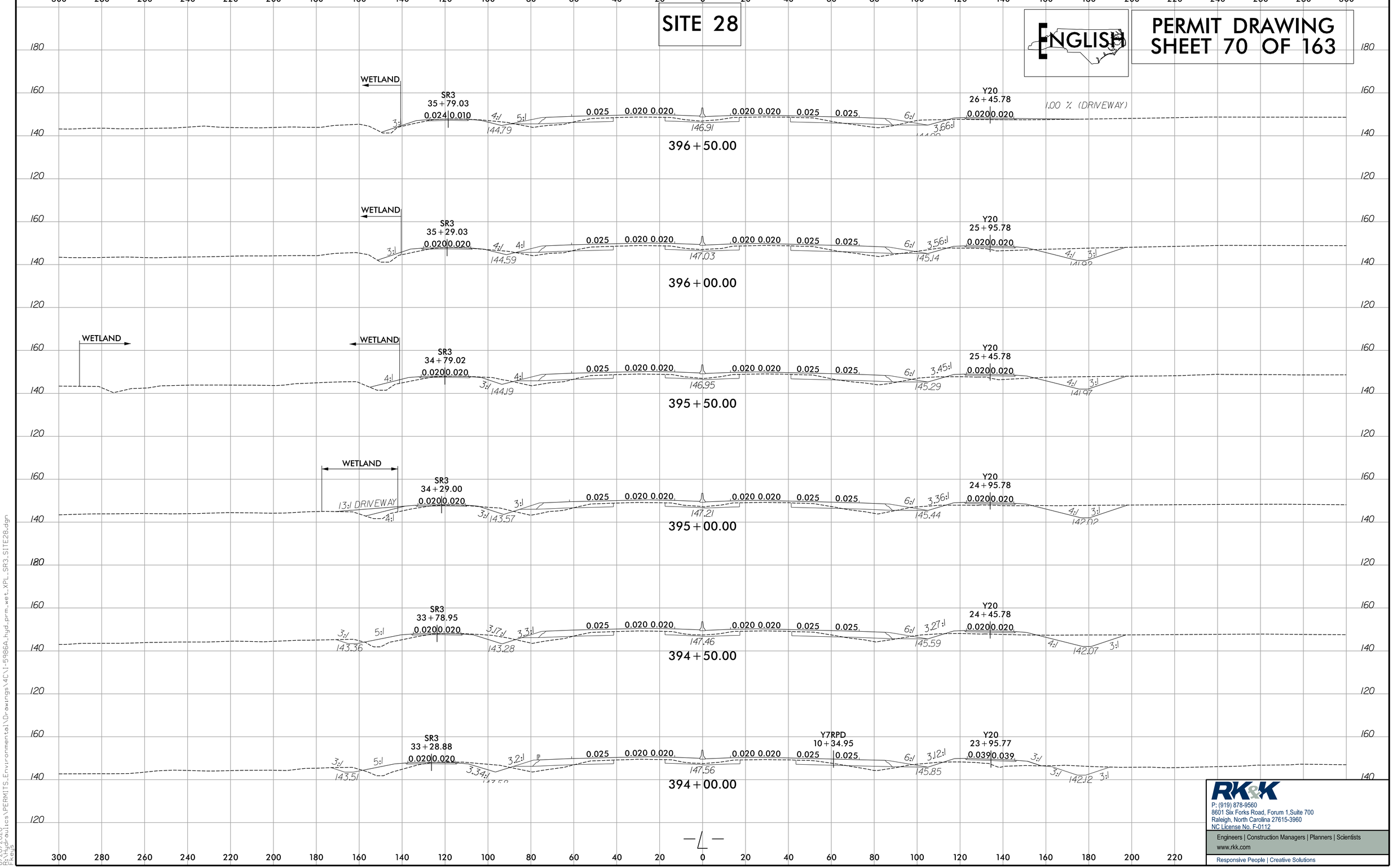
SHEET 70 OF 163



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R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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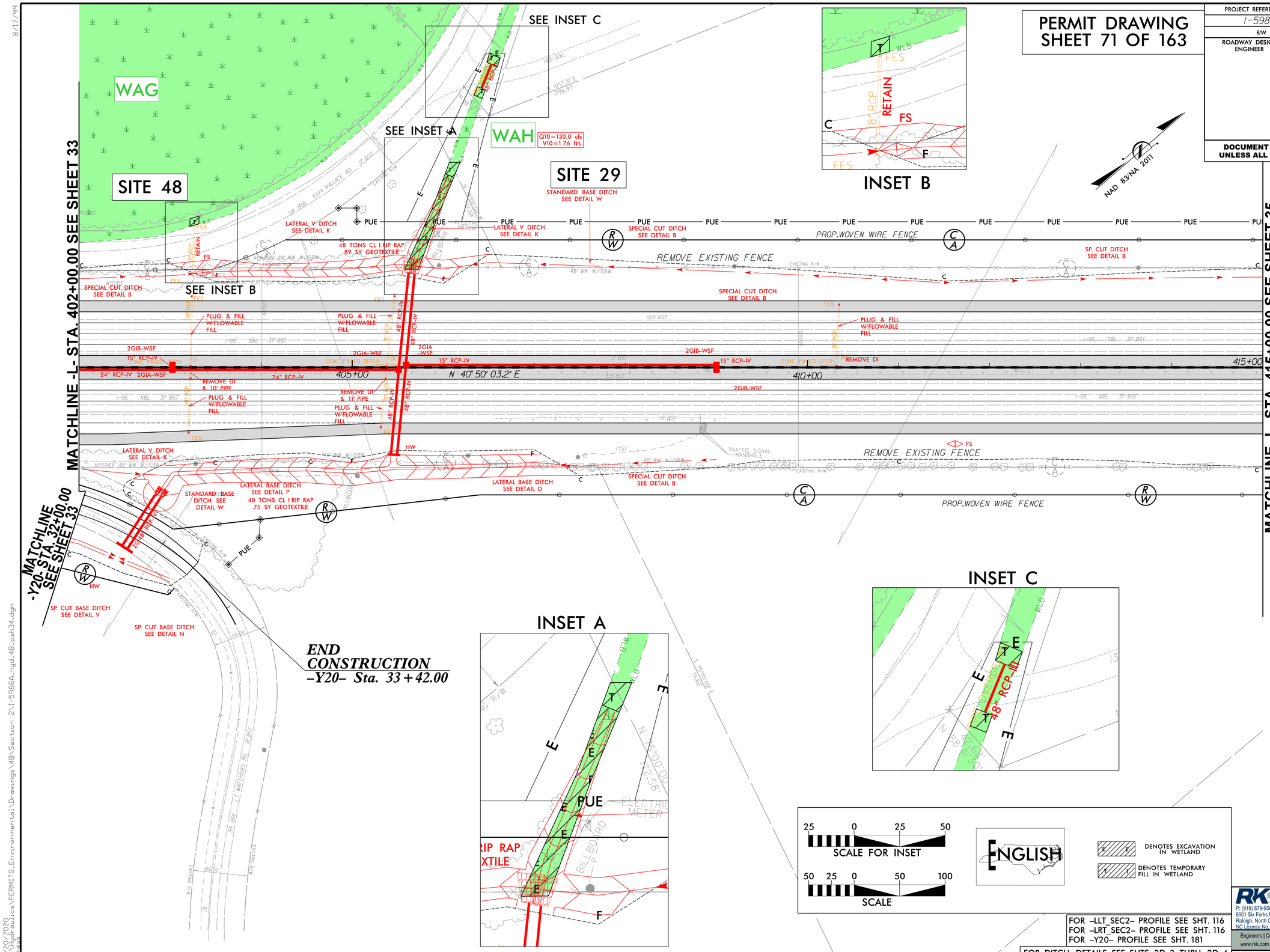

FOR -LLT_SEC2- PROFILE SEE SHT. 116
FOR -LRT_SEC2- PROFILE SEE SHT. 116
FOR -Y20- PROFILE SEE SHT. 181

FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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I-5986A	34
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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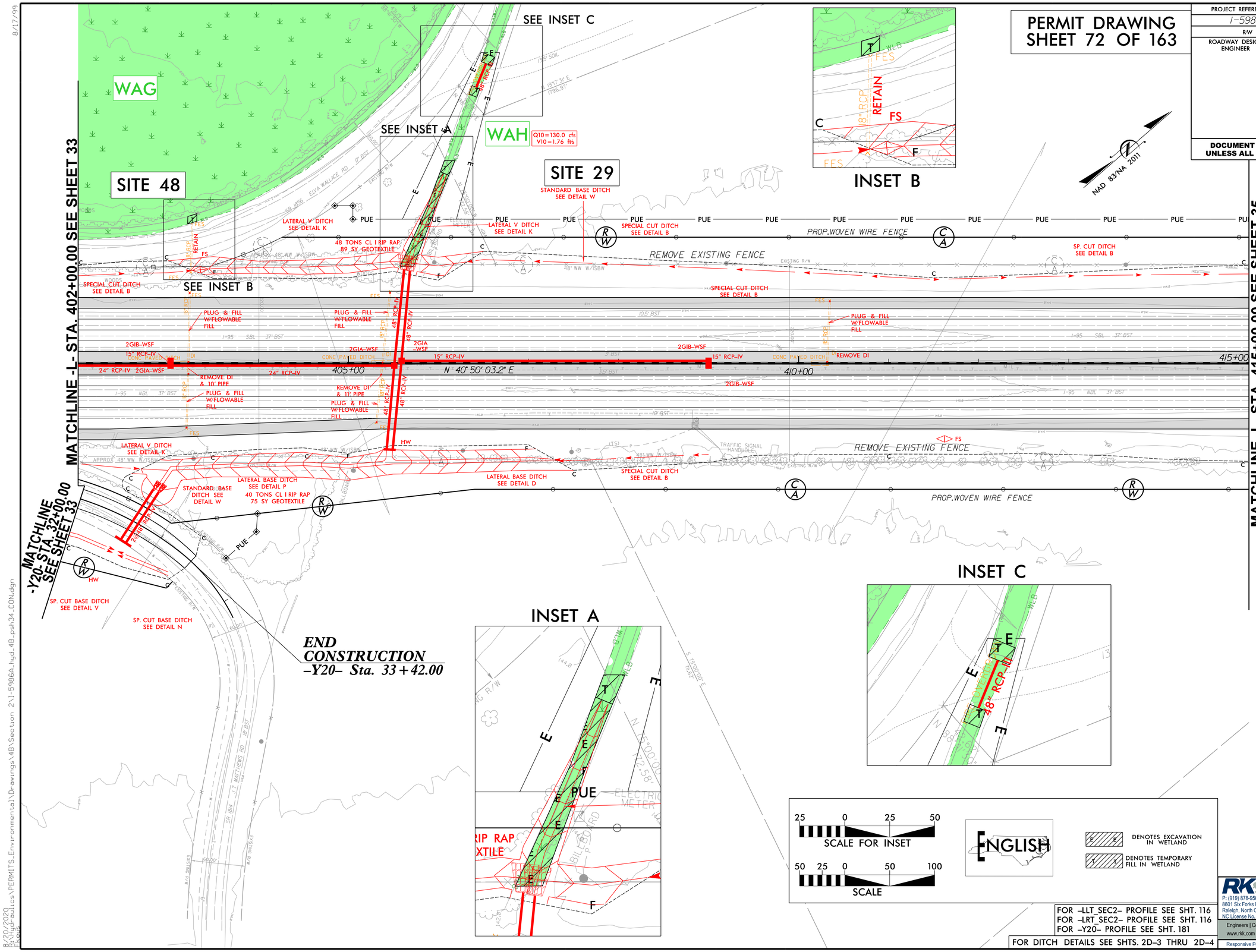

FOR -LLT_SEC2- PROFILE SEE SHT. 116
FOR -LRT_SEC2- PROFILE SEE SHT. 116
FOR -Y20- PROFILE SEE SHT. 181

FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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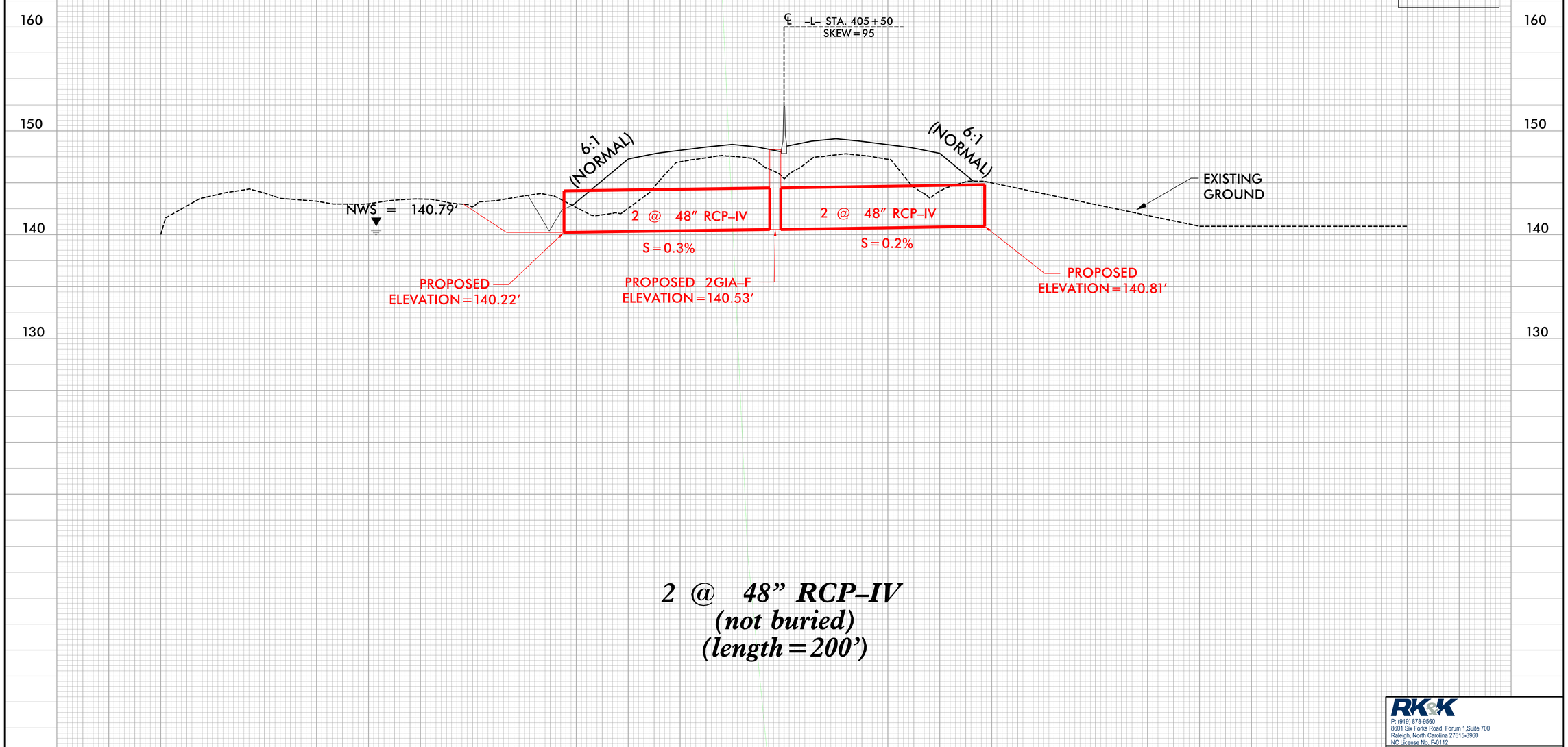
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 29
–L– STA. 405+50

PERMIT DRAWING
SHEET 73 OF 163

ENGLISH



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(not buried)
(length=200')

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SITE 29

PROJ. REFERENCE NO.	SHEET NO.
I-5986A	S2 X-44

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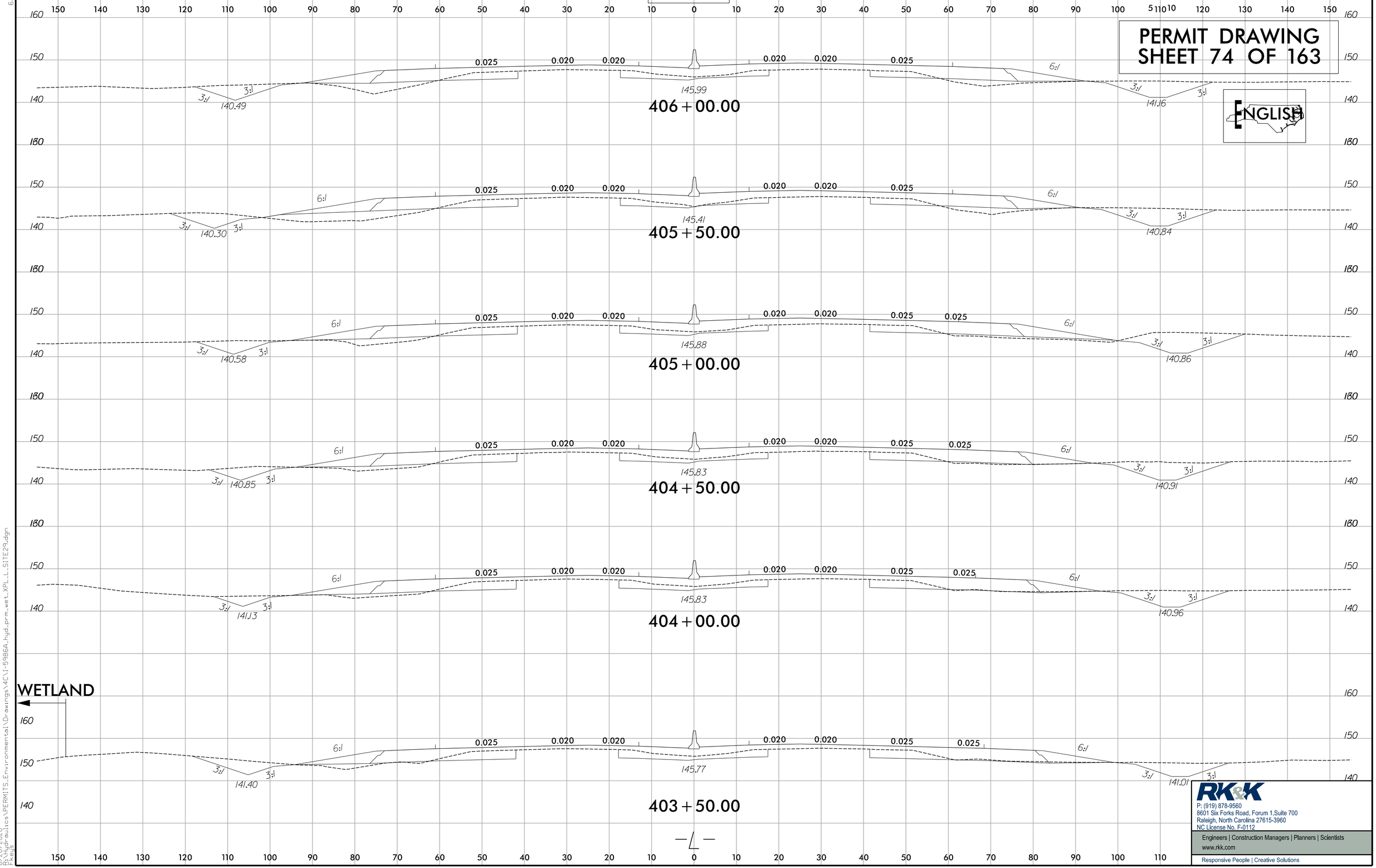
PERMIT DRAWING
SHEET 74 OF 163

ENGLISH



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PROJ. REFERENCE NO.	SHEET NO.
I-5986A	S2 X-44

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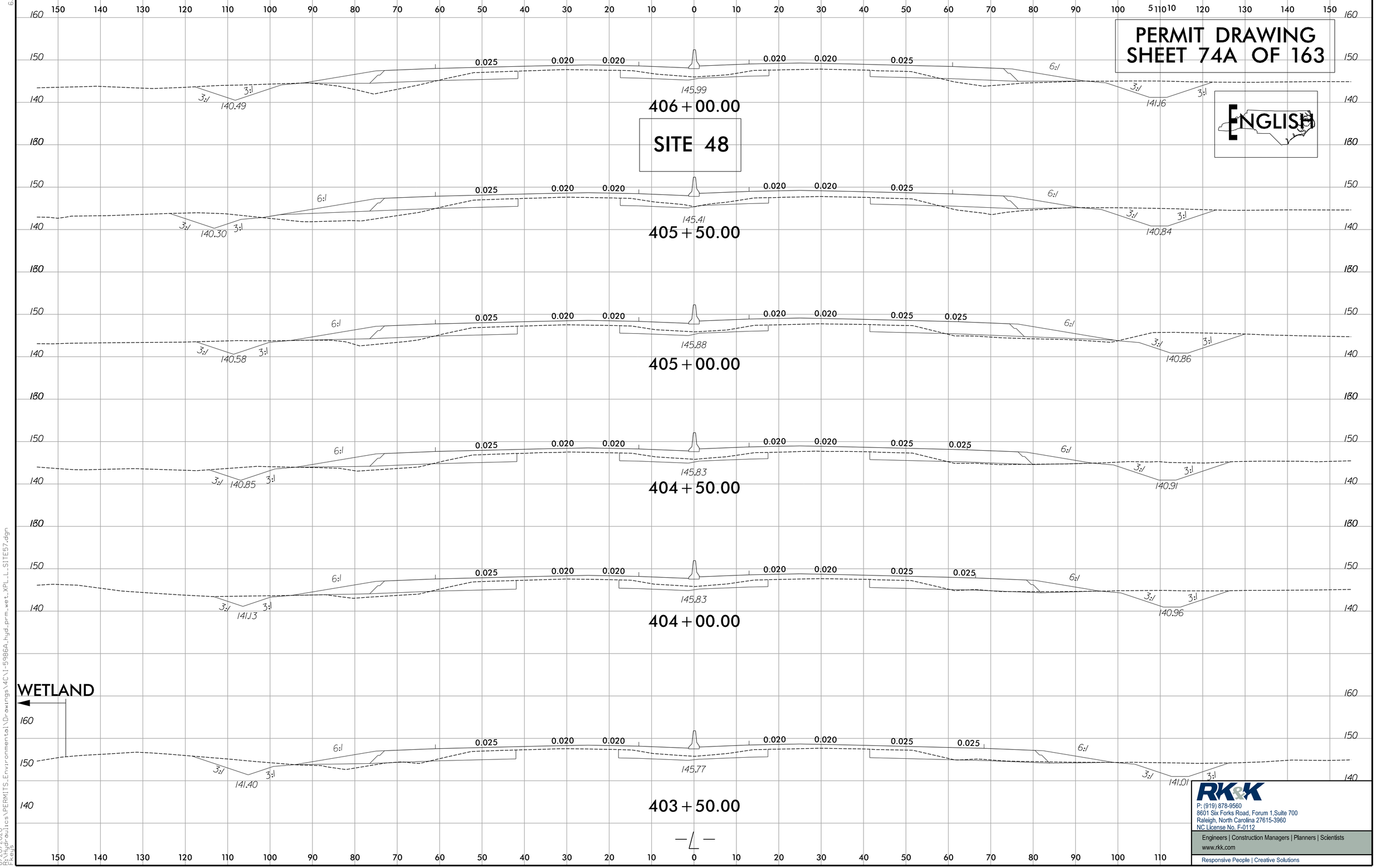
ENGLISH



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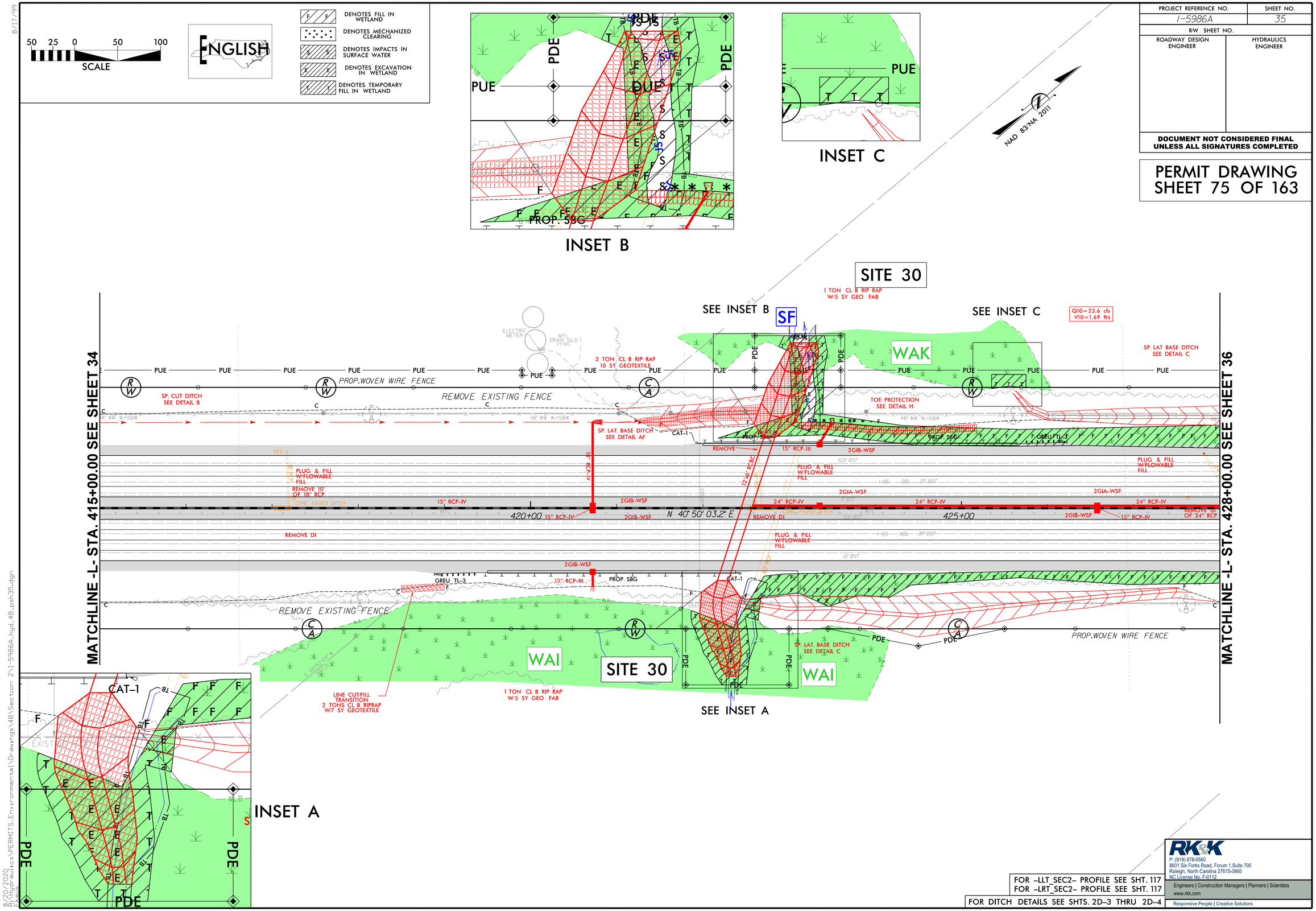

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	35
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING
SHEET 75 OF 163

FOR -LLT_SEC2- PROFILE SEE SHT. 117
FOR -LRT_SEC2- PROFILE SEE SHT. 117
FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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50 25 0 50 100
SCALE

ENGLISH

- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES EXCAVATION IN WETLAND
- DENOTES TEMPORARY FILL IN WETLAND

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I-5986A	35
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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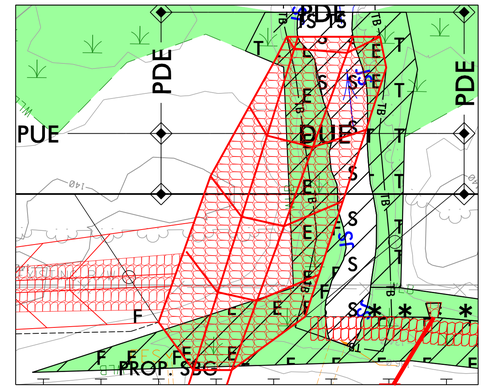
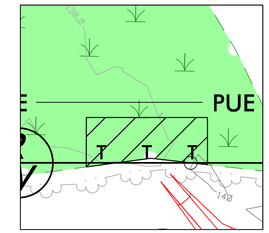
PERMIT DRAWING SHEET 76 OF 163



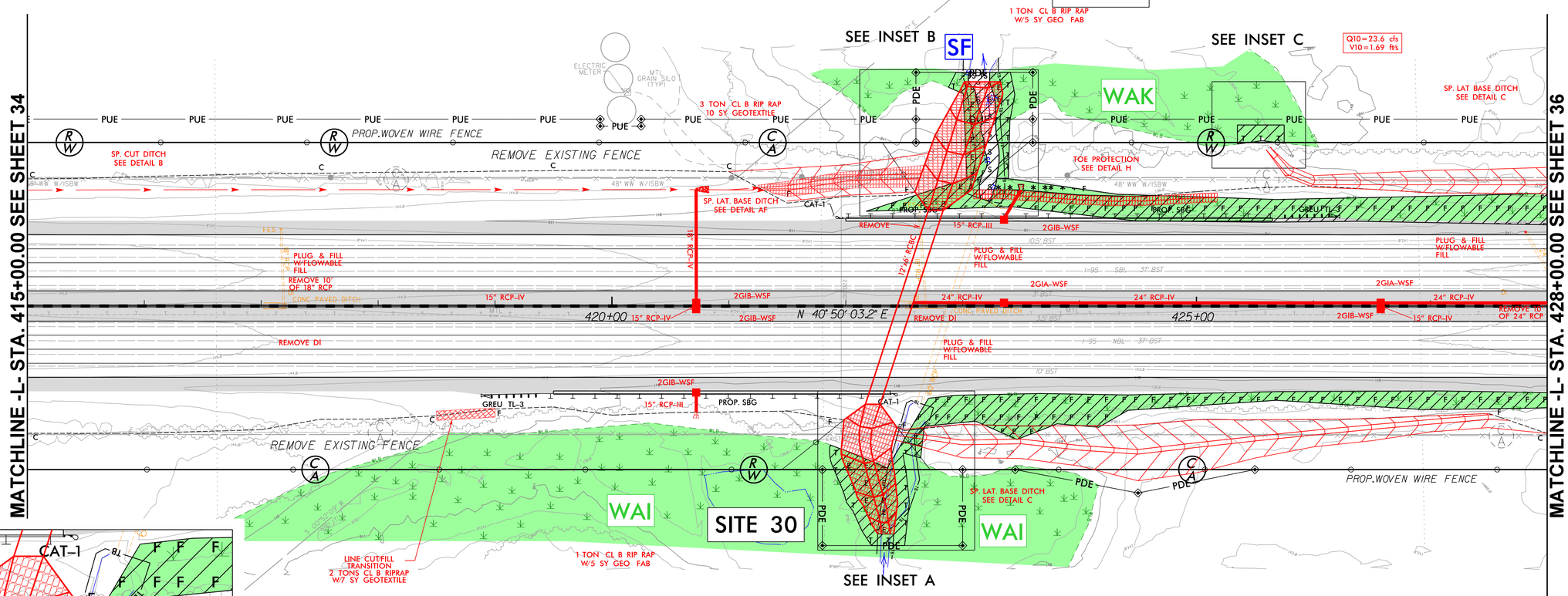
INSET B

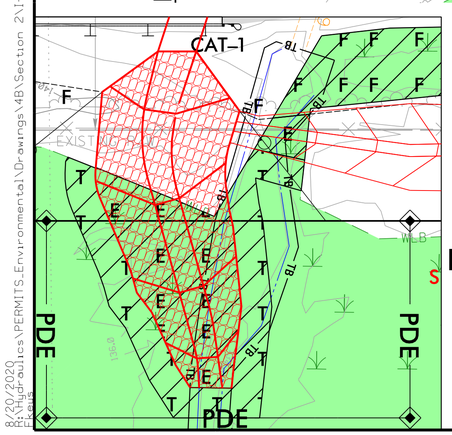


INSET C

NAD 83/NA 2011

SITE 30





INSET A

FOR –LLT_SEC2– PROFILE SEE SHT. 117
FOR –LRT_SEC2– PROFILE SEE SHT. 117
FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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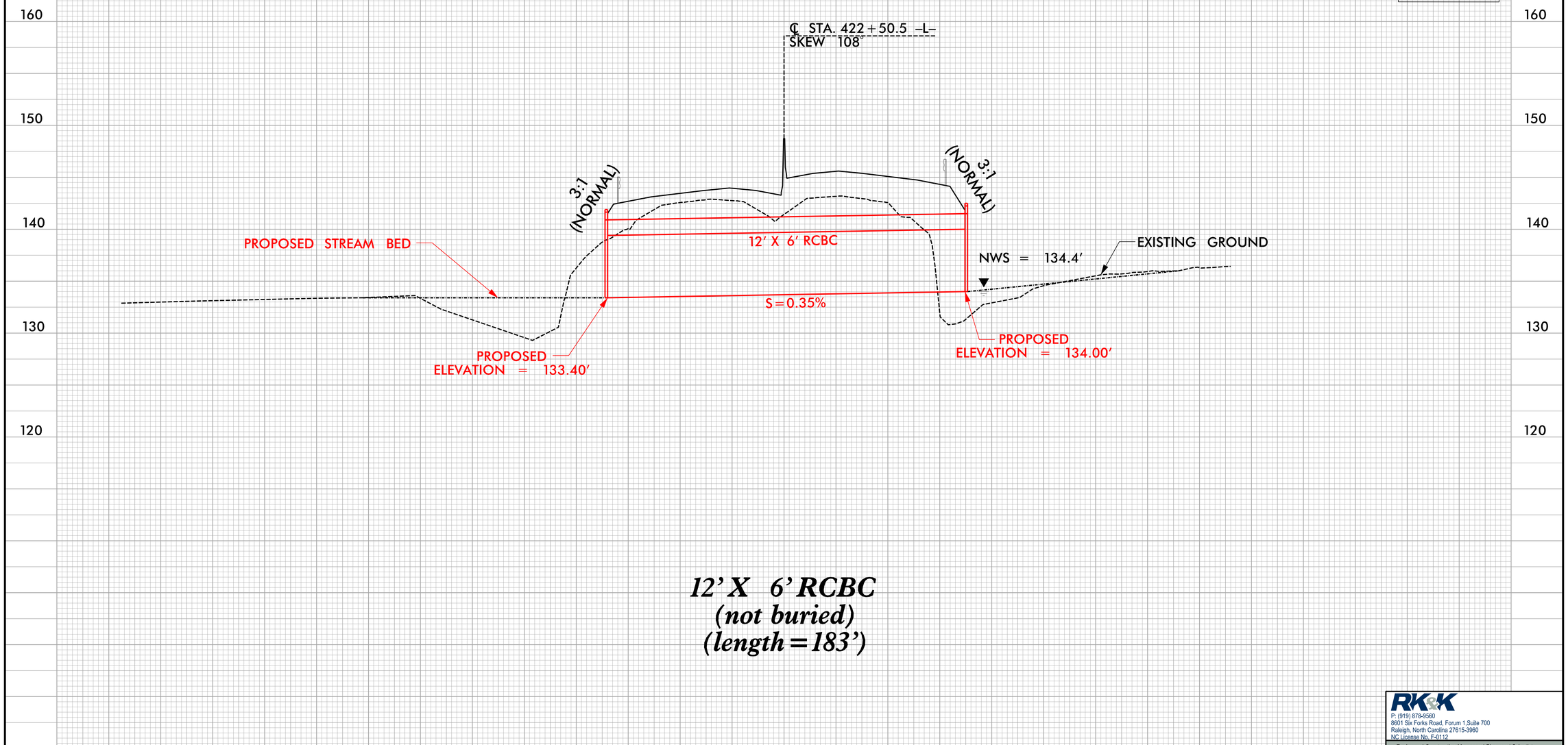
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 30
–L– STA. 422+50

PERMIT DRAWING
SHEET 77 OF 163

ENGLISH



12' X 6' RCBC
(not buried)
(length=183')

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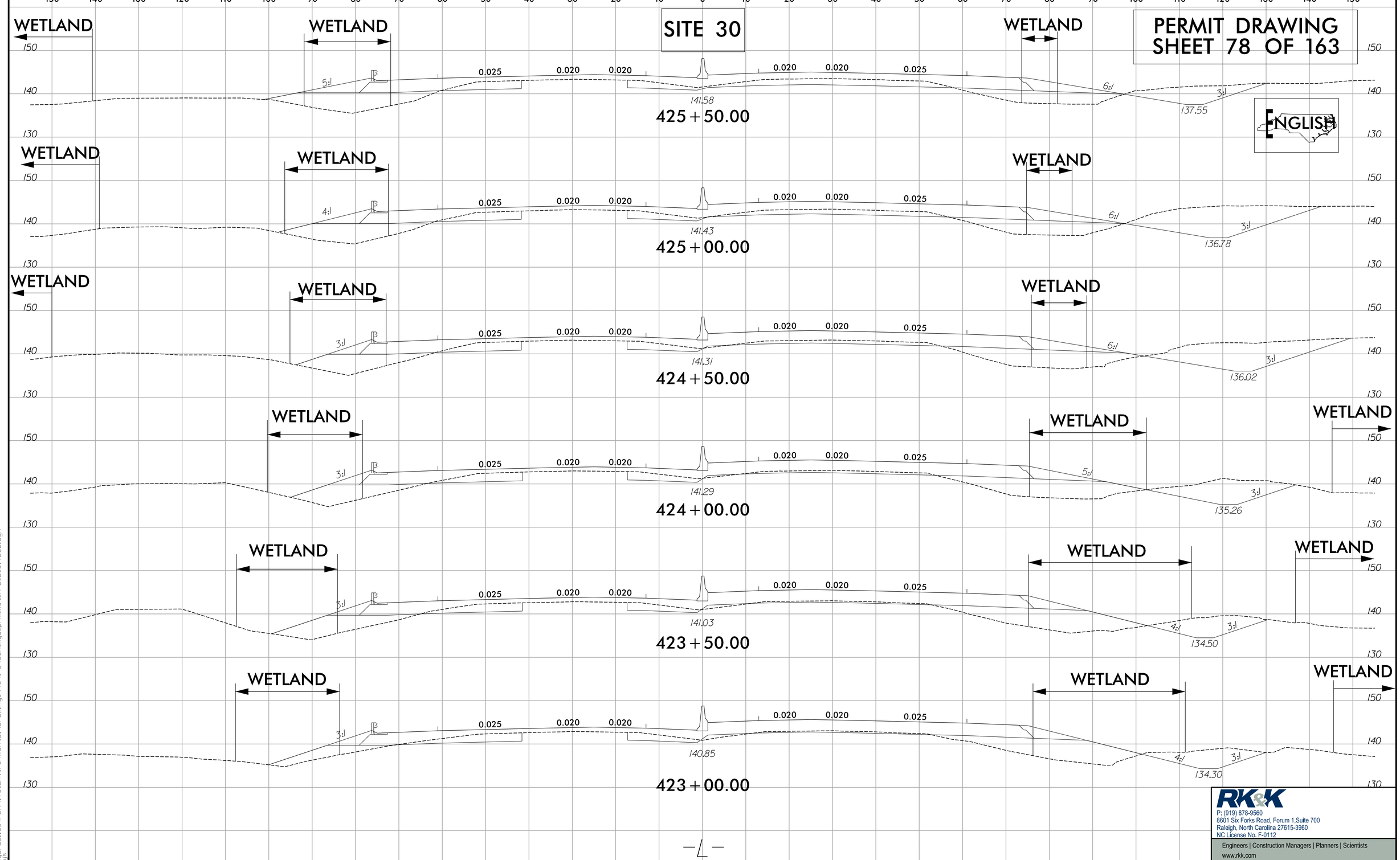
PROJ. REFERENCE NO.	SHEET NO.
I-5986A	S2 X-51

SITE 30

PERMIT DRAWING
SHEET 78 OF 163



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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	36
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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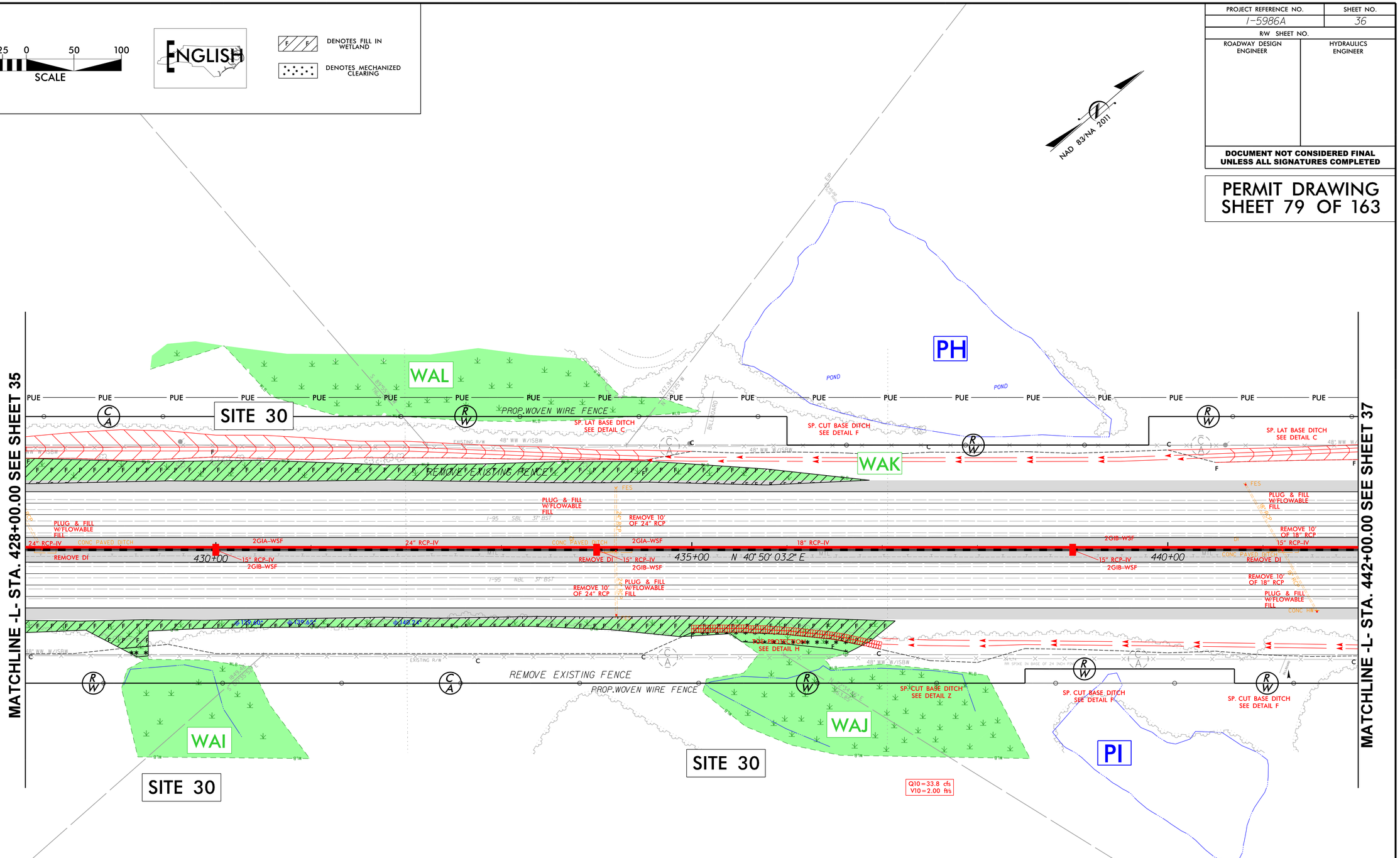
PERMIT DRAWING SHEET 79 OF 163



FOR -LLT_SEC2- PROFILE SEE SHTS. 117 THRU 118
FOR -LRT_SEC2- PROFILE SEE SHTS. 117 THRU 118
FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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I-5986A	36
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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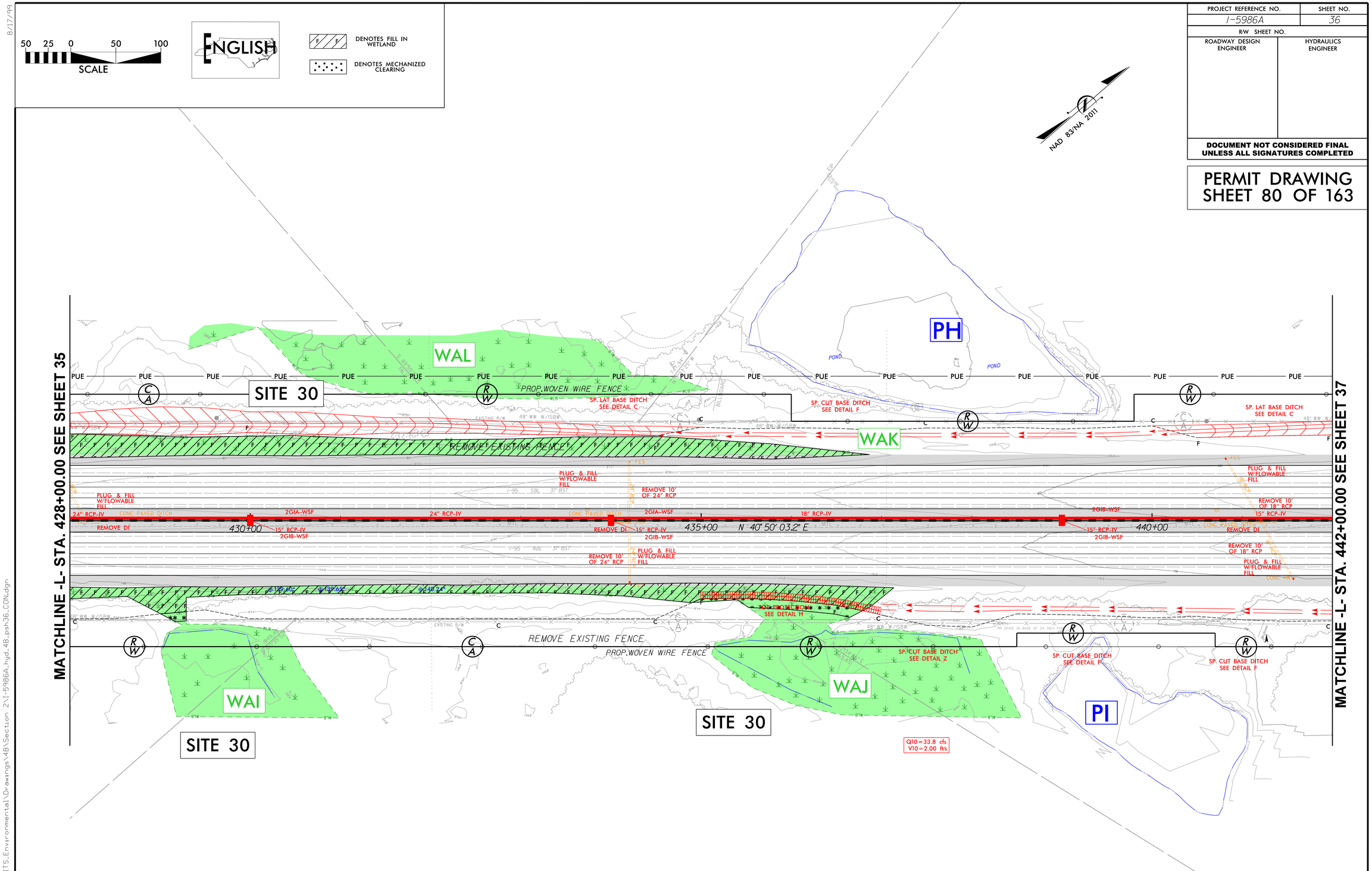
PERMIT DRAWING SHEET 80 OF 163



FOR -LLT_SEC2- PROFILE SEE SHTS. 117 THRU 118
FOR -LRT_SEC2- PROFILE SEE SHTS. 117 THRU 118
FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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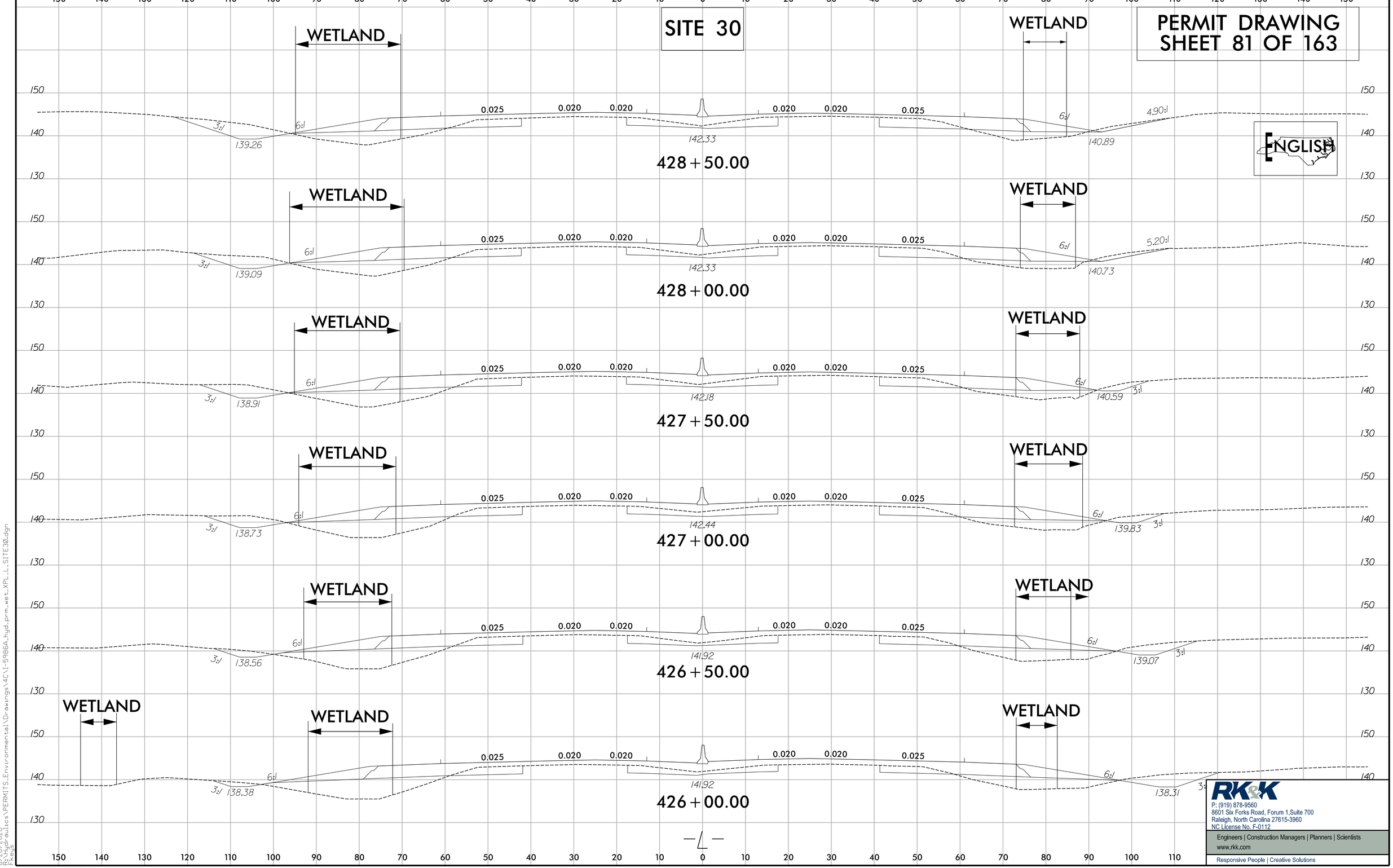
PROJ. REFERENCE NO.	SHEET NO.
I-5986A	S2 X-52

0 5 10

SITE 30

PERMIT DRAWING SHEET 81 OF 163



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50 25 0 50 100
SCALE

ENGLISH

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	42
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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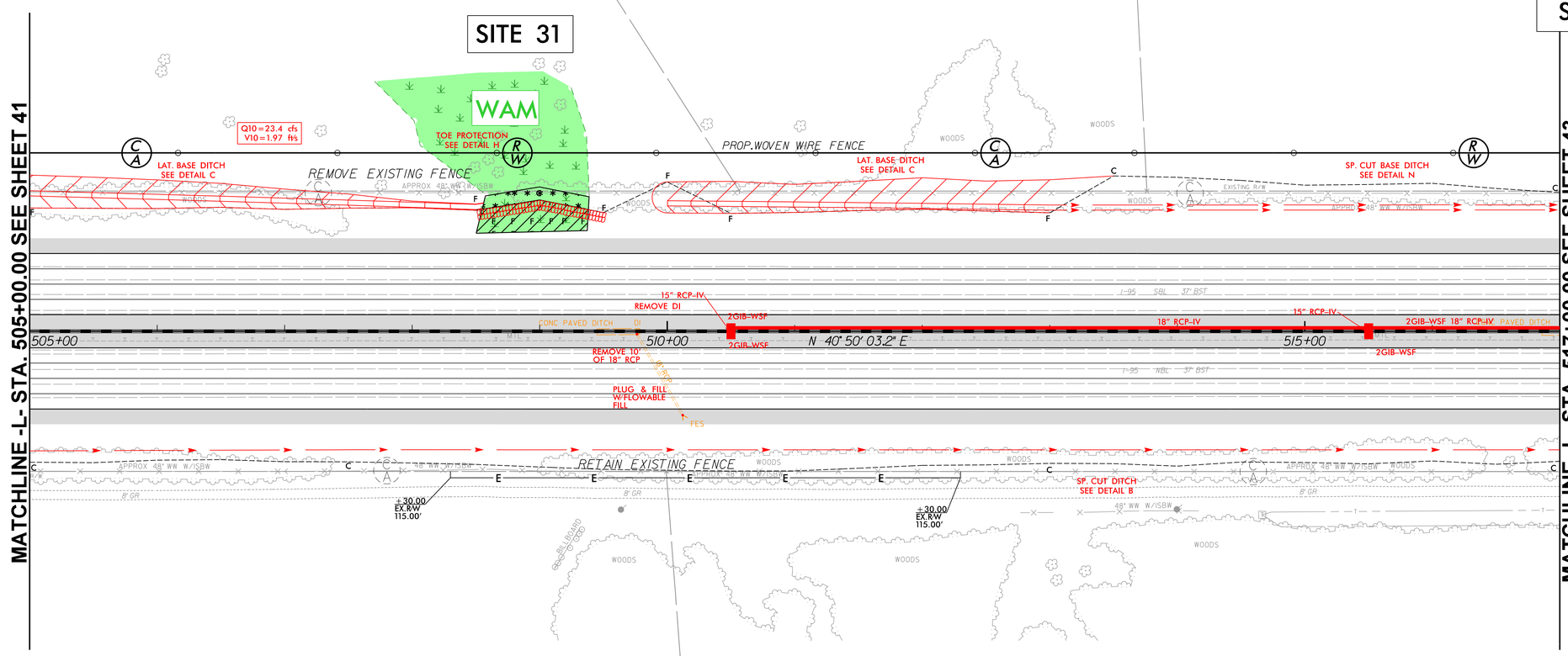

FOR –LLT_SEC2– PROFILE SEE SHTS. 123 THRU 124
FOR –LRT_SEC2– PROFILE SEE SHTS. 123 THRU 124
FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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50 25 0 50 100
SCALE

ENGLISH

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	42
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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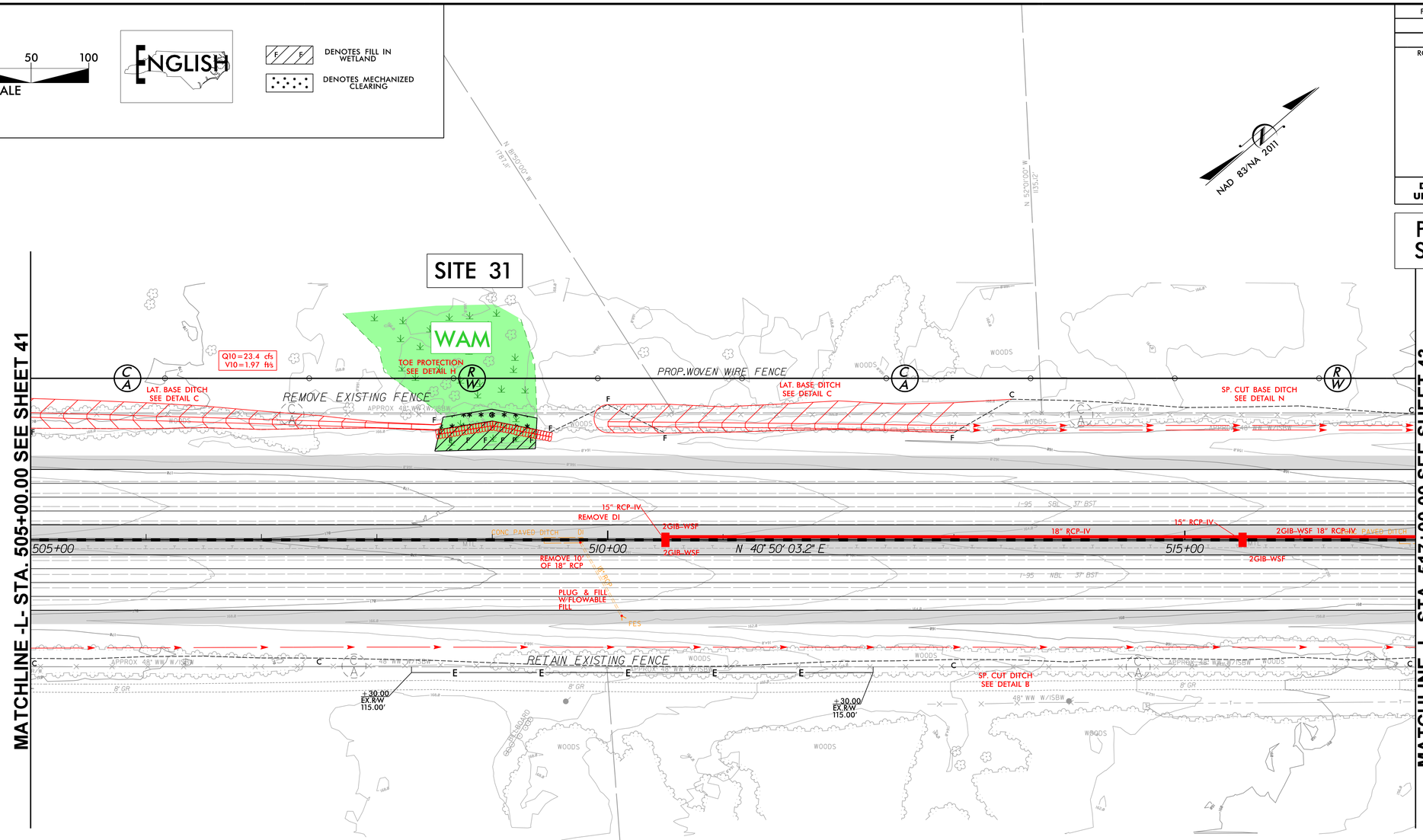

FOR –LLT_SEC2– PROFILE SEE SHTS. 123 THRU 124
FOR –LRT_SEC2– PROFILE SEE SHTS. 123 THRU 124
FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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I-5986A	S2 X-81

SITE 31

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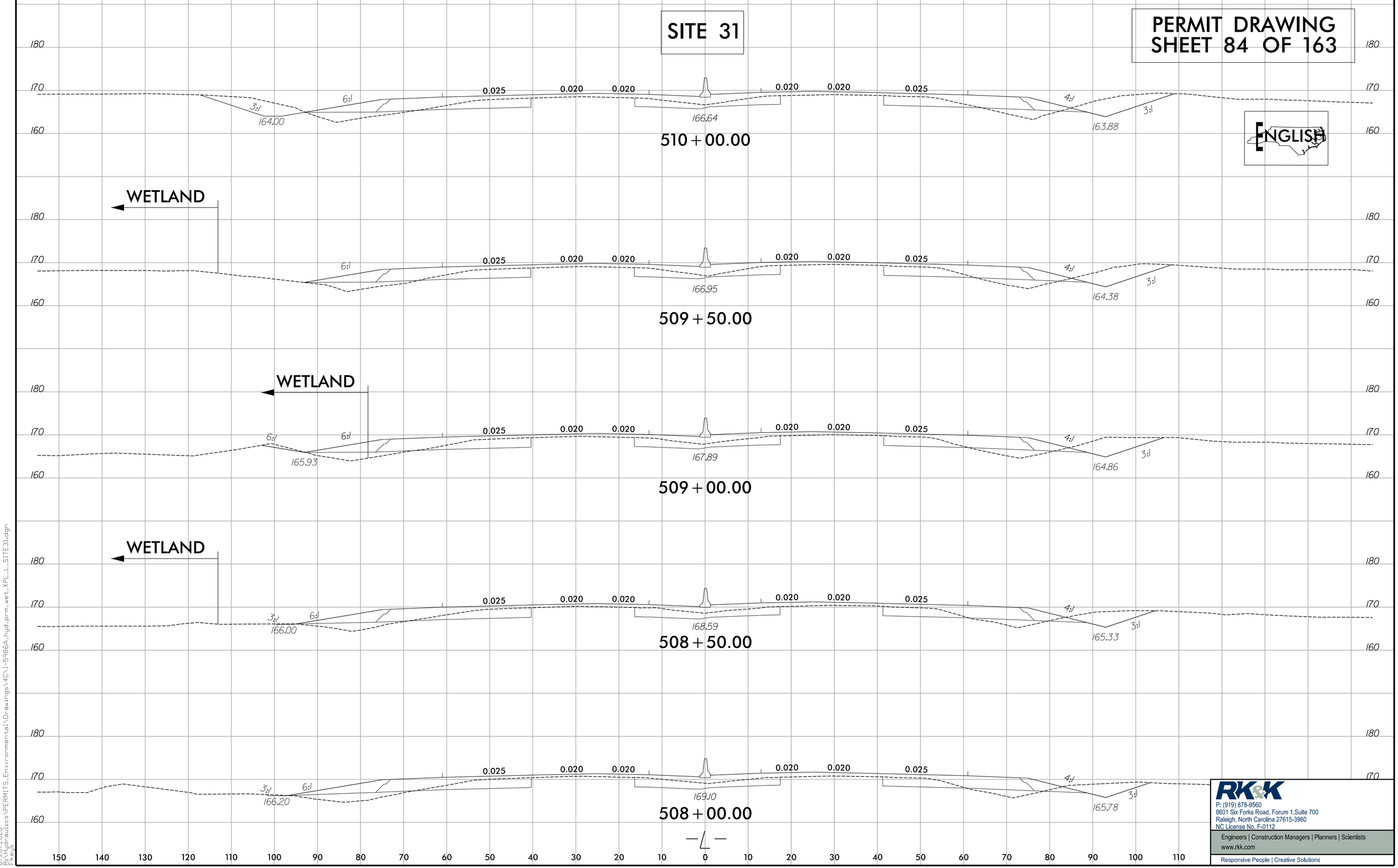

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SCALE

ENGLISH

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

NAD 83/NA 2011

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	43
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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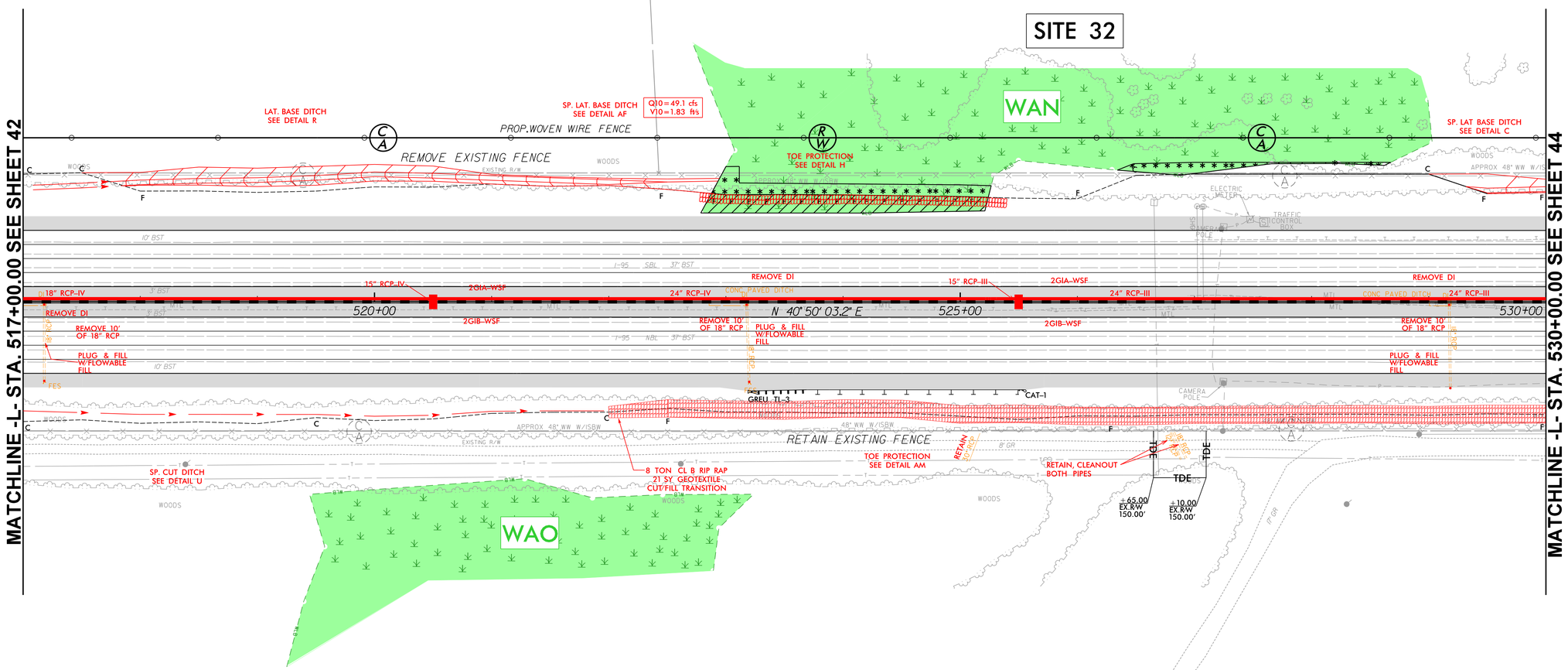

FOR –LLT_SEC2– PROFILE SEE SHTS. 124 THRU 125
FOR –LRT_SEC2– PROFILE SEE SHTS. 124 THRU 125

FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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SCALE

ENGLISH

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

NAD 83/NA 2011

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	43
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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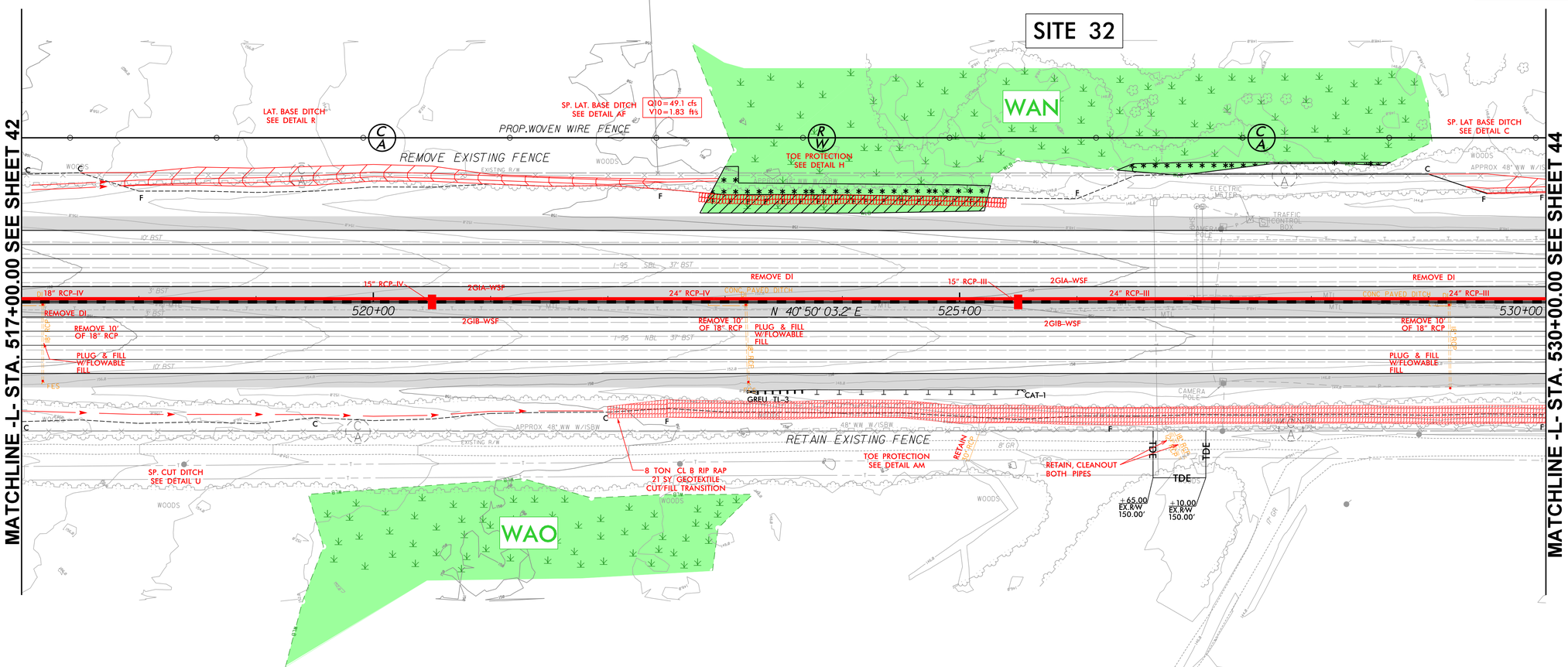
PERMIT DRAWING SHEET 86 OF 163



FOR –LLT_SEC2– PROFILE SEE SHTS. 124 THRU 125
FOR –LRT_SEC2– PROFILE SEE SHTS. 124 THRU 125

FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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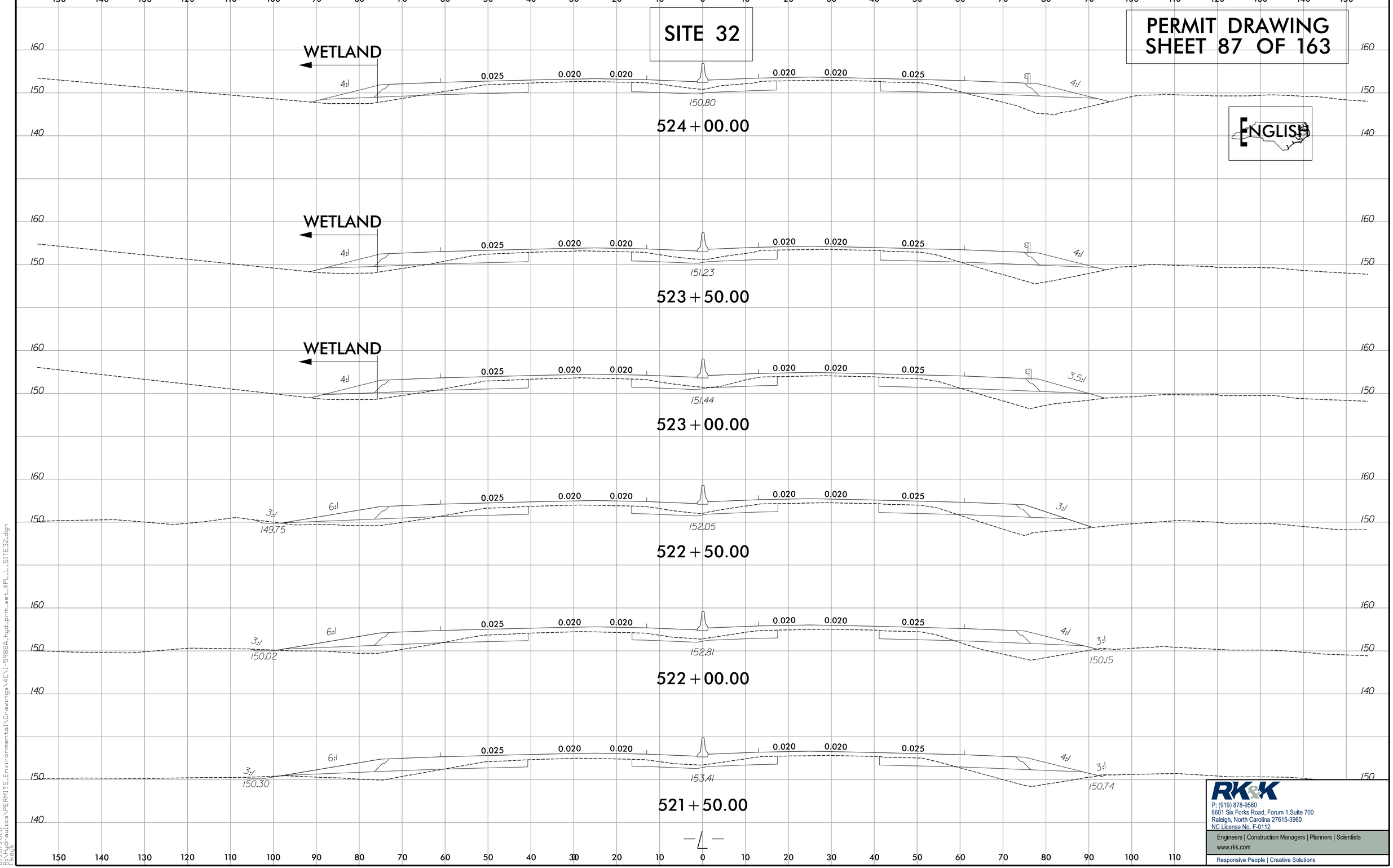
I-5986A	S2 X-86

SITE 32

PERMIT DRAWING SHEET 87 OF 163



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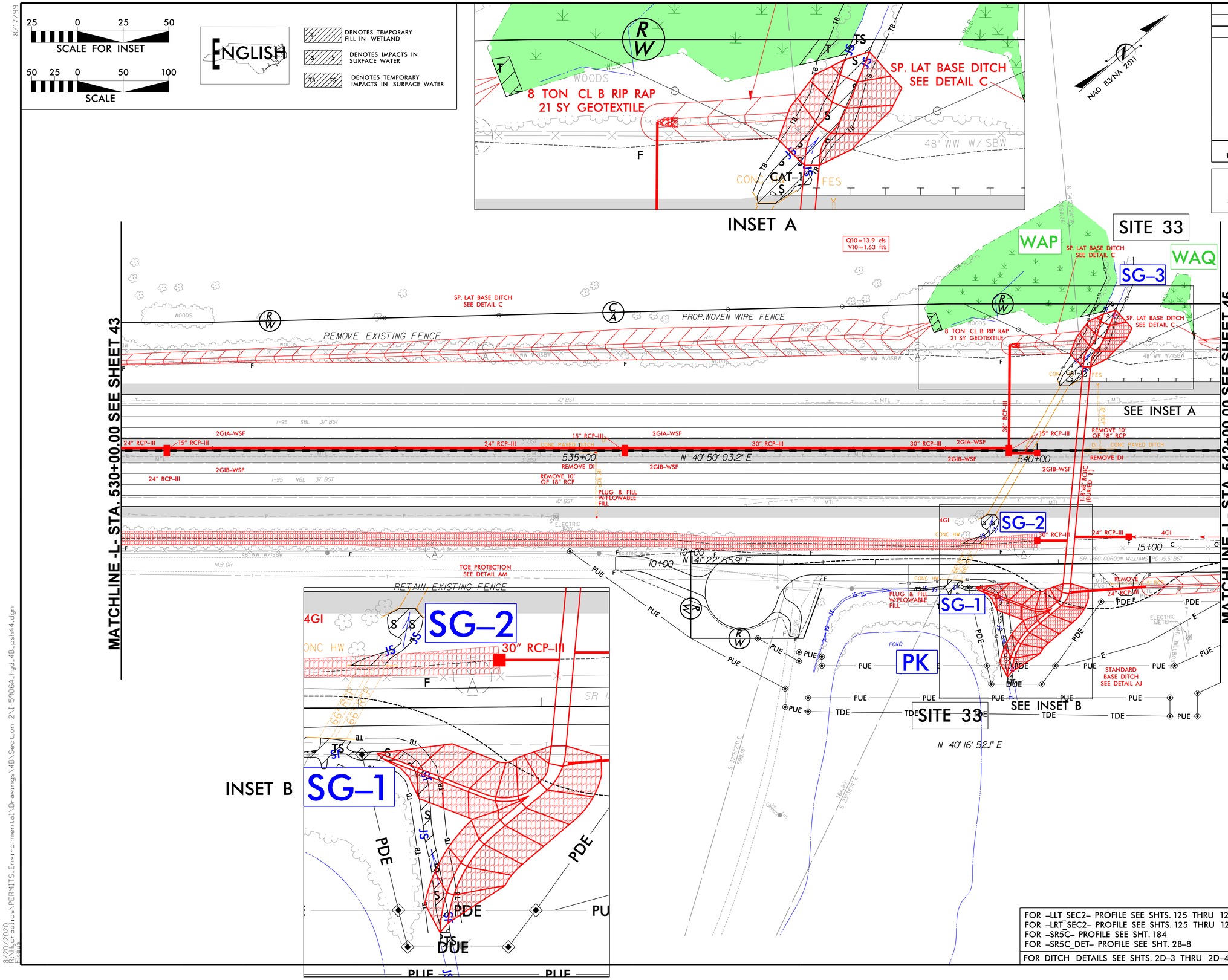

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	44
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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SHEET 88 OF 163

FOR -LLT_SEC2- PROFILE SEE SHTS. 125 THRU 126
FOR -LRT_SEC2- PROFILE SEE SHTS. 125 THRU 126
FOR -SR5C- PROFILE SEE SHT. 184
FOR -SR5C_DET- PROFILE SEE SHT. 2B-8

FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

T T DENOTES TEMPORARY FILL IN WETLAND
S S DENOTES IMPACTS IN SURFACE WATER
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	44
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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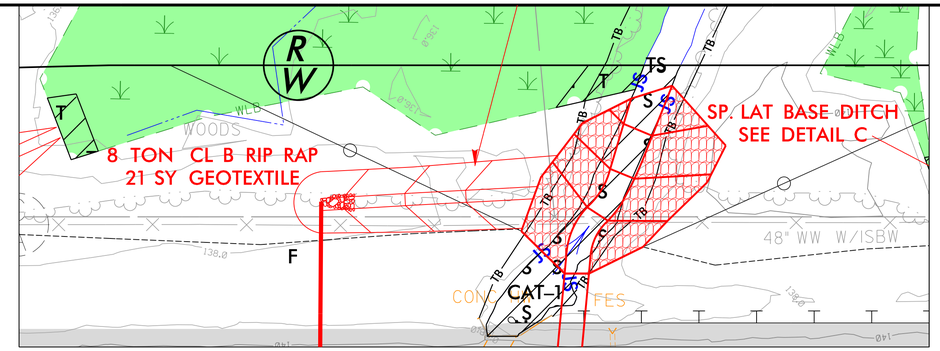
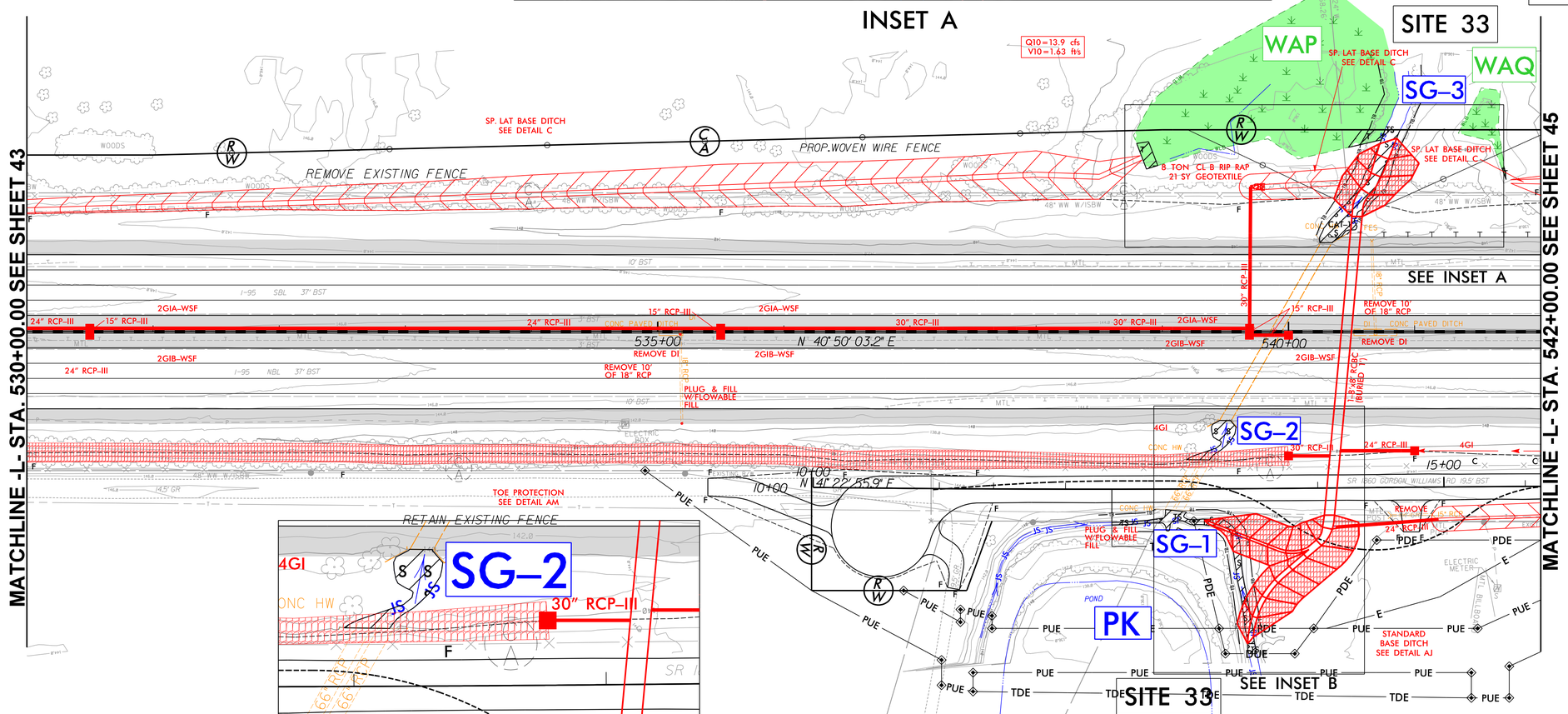
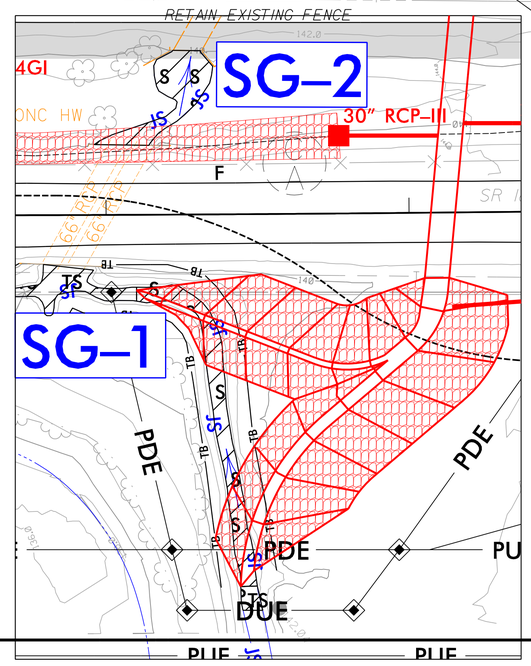


INSET A



INSET B



FOR -LLT_SEC2- PROFILE SEE SHTS. 125 THRU 126
FOR -LRT_SEC2- PROFILE SEE SHTS. 125 THRU 126
FOR -SR5C- PROFILE SEE SHT. 184
FOR -SR5C_DET- PROFILE SEE SHT. 2B-8

FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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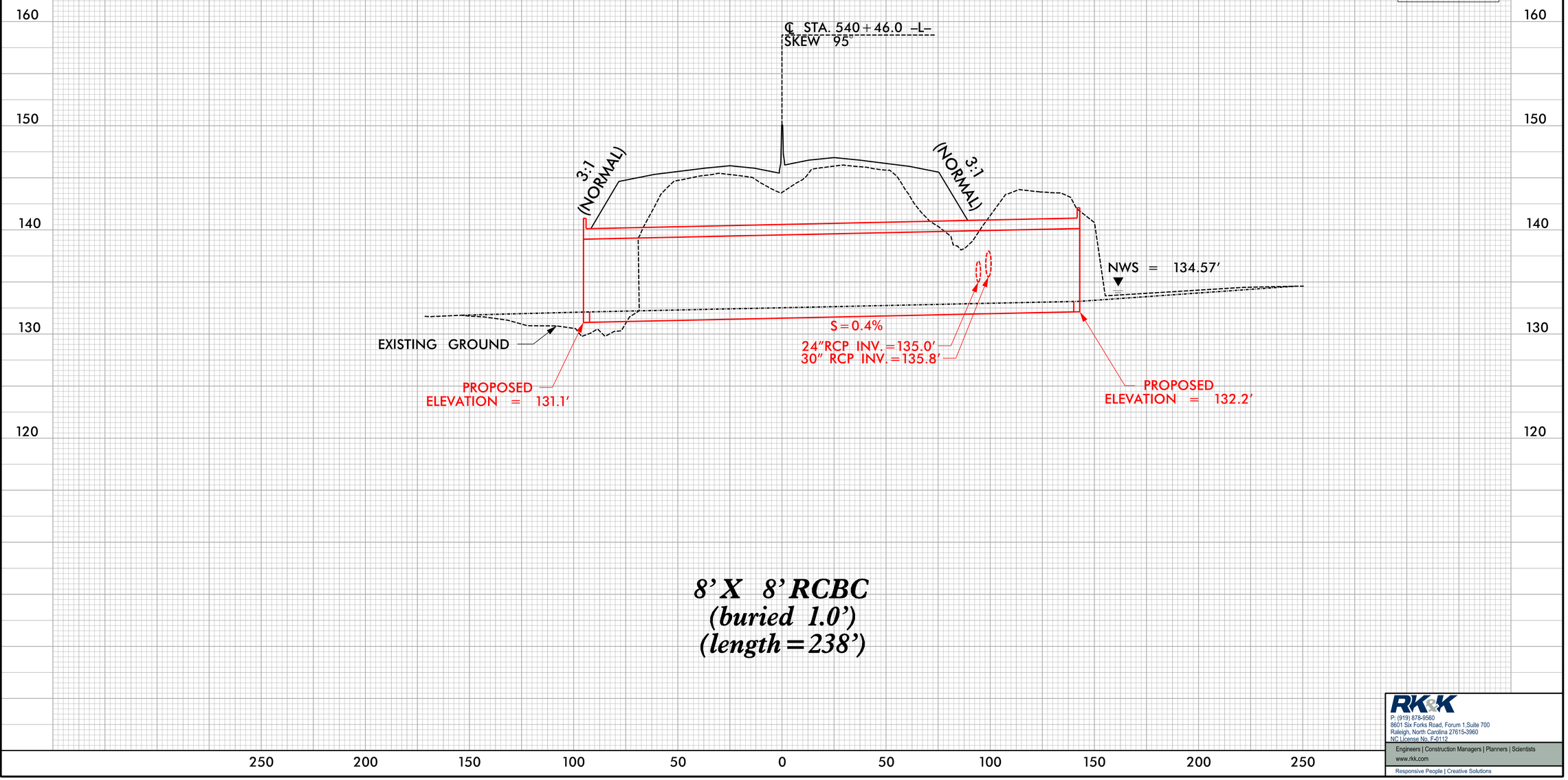
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 33
–L– STA. 540+46

PERMIT DRAWING
SHEET 90 OF 163

ENGLISH



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	I-5986A	S2 X-93

SITE 33

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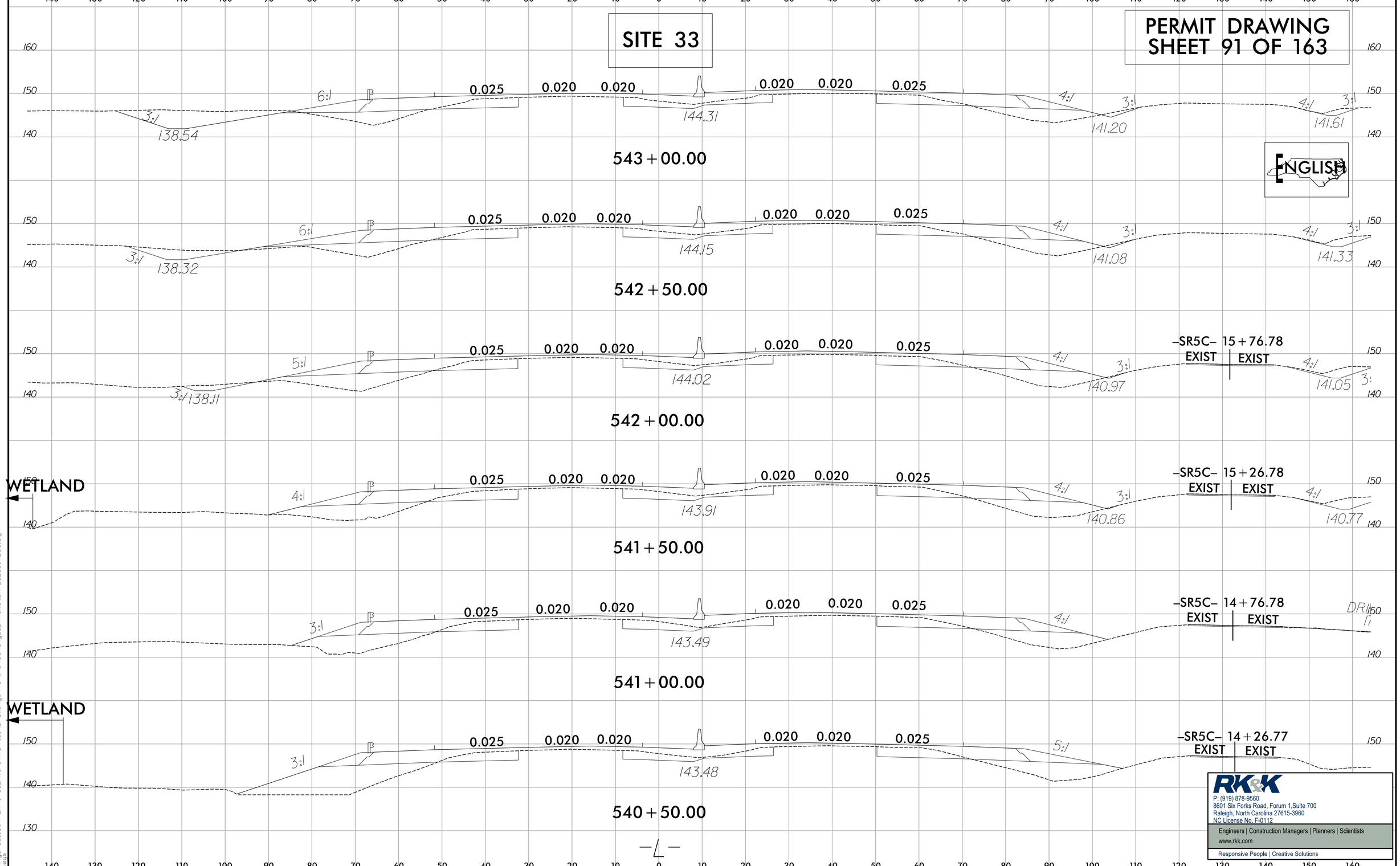

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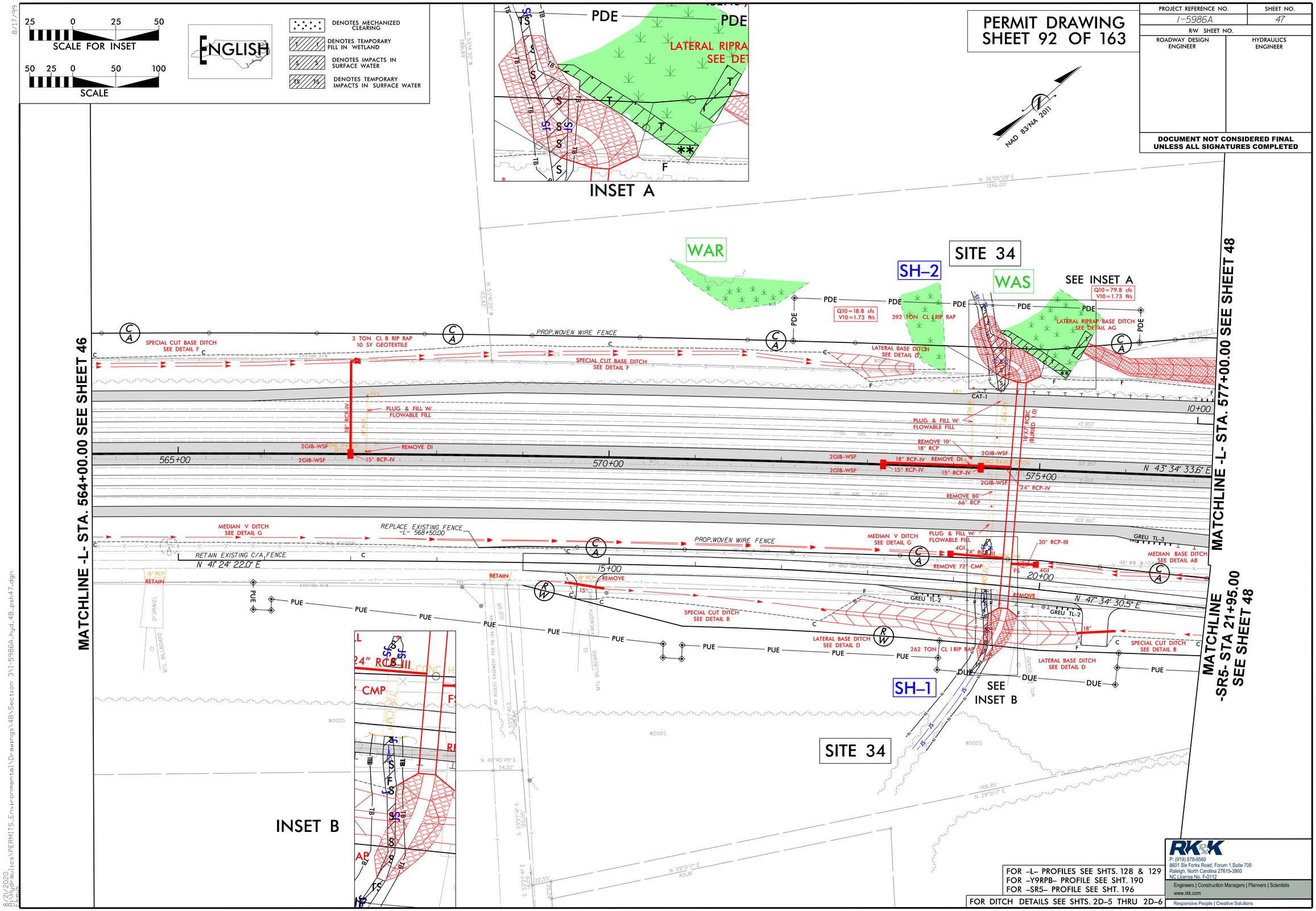

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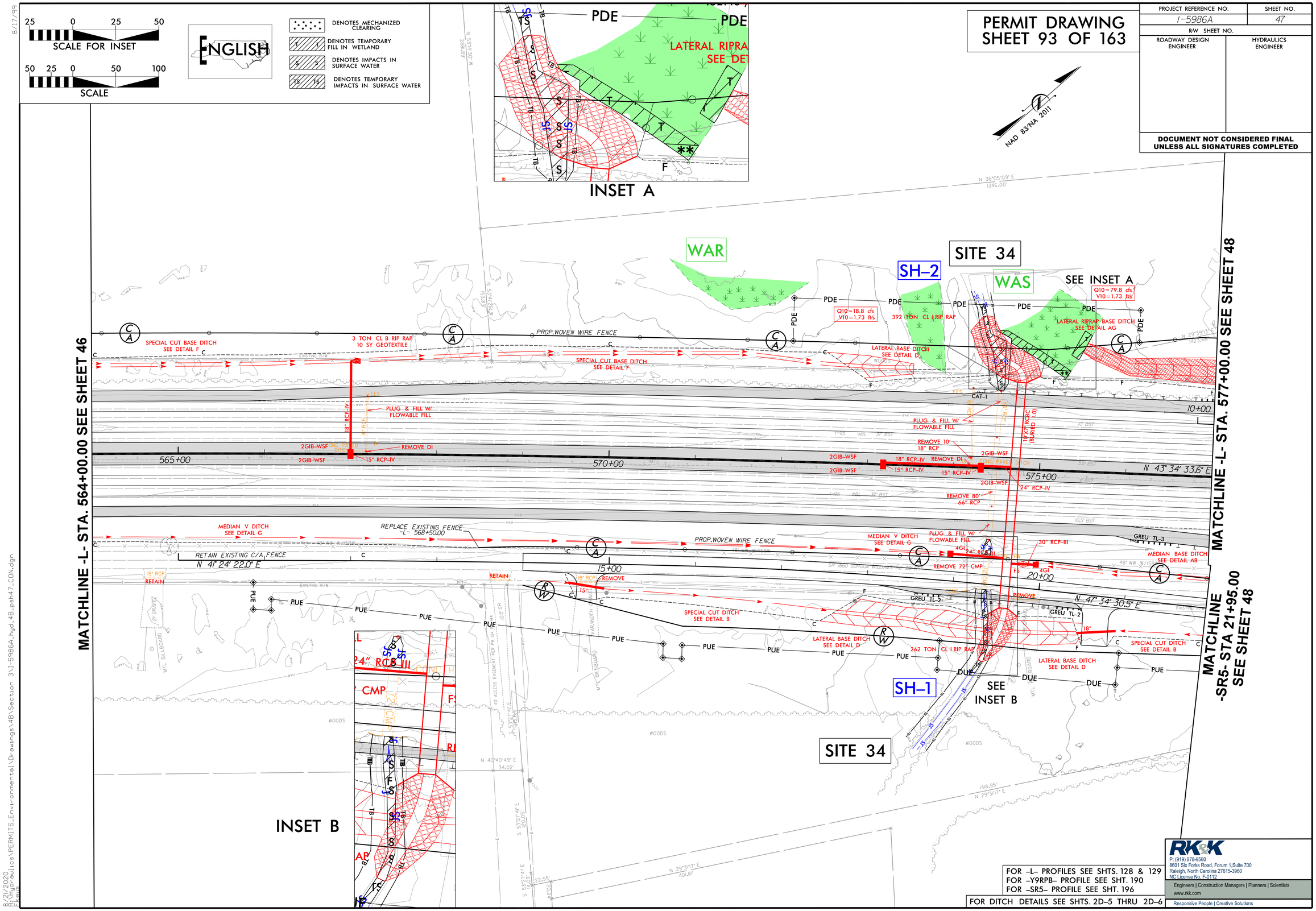

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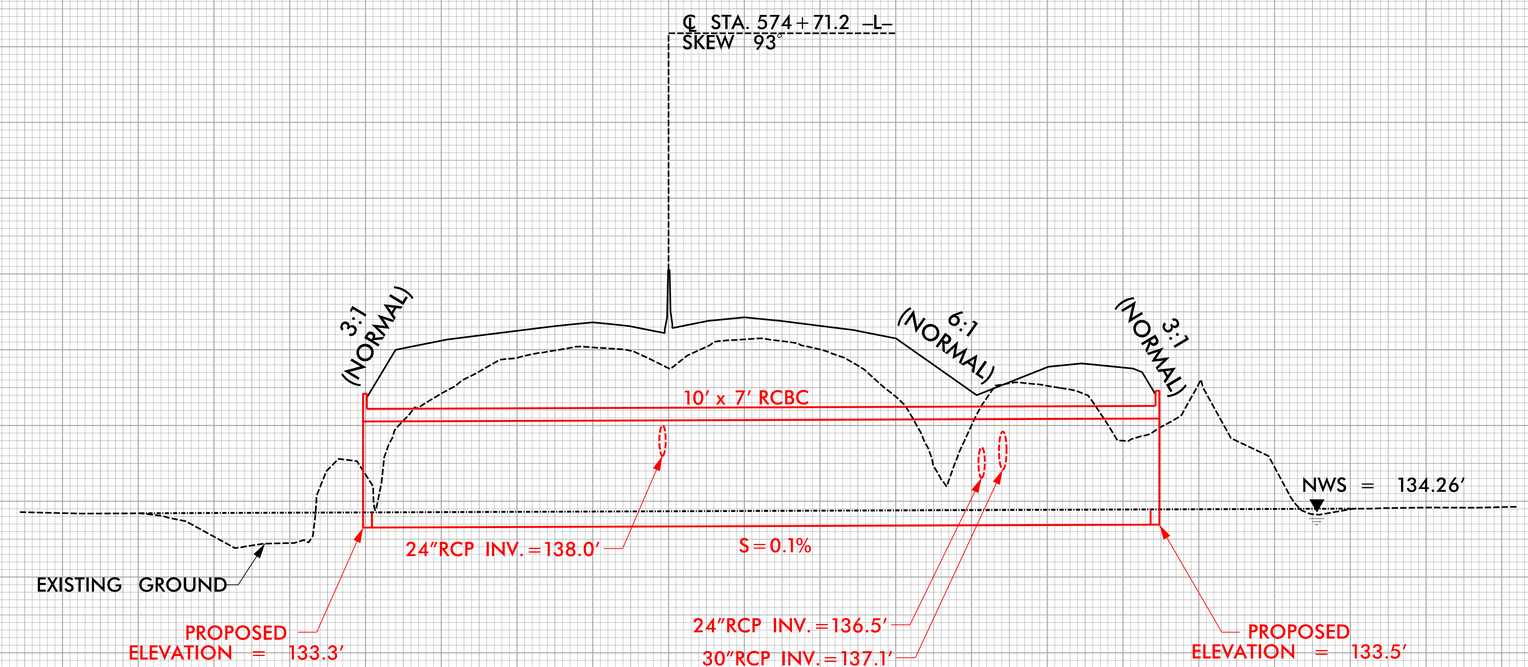
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 34
–L– STA. 574+71

PERMIT DRAWING
SHEET 94 OF 163

ENGLISH



10' X 7' RCBC
(buried 1.0' alternating 1.0' tall, 3.0' wide baffles)
(length=263')

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8/20/2020
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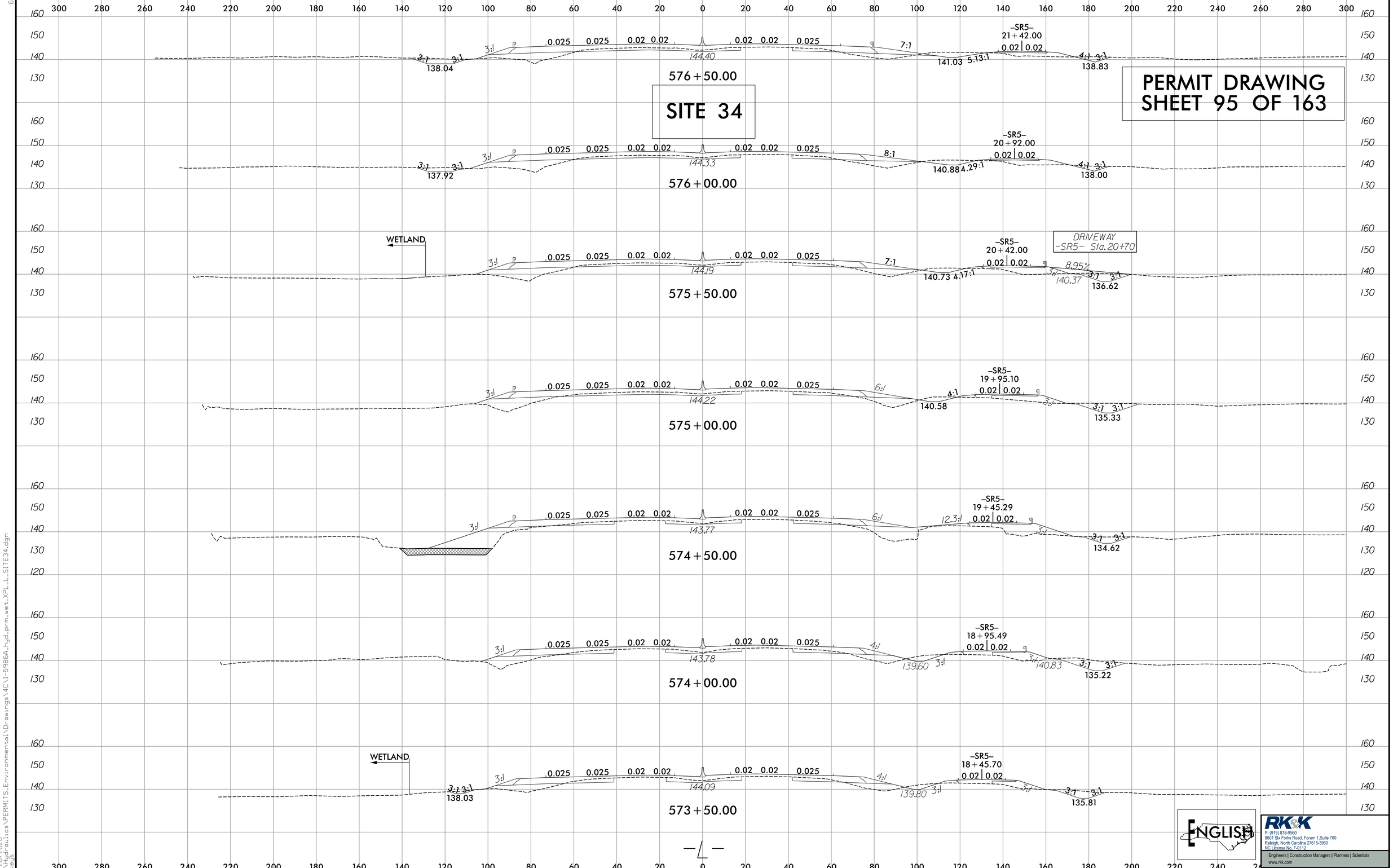
0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	I-5986A SECTION 3	X-10

SITE 34

PERMIT DRAWING
SHEET 95 OF 163



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REVISIONS

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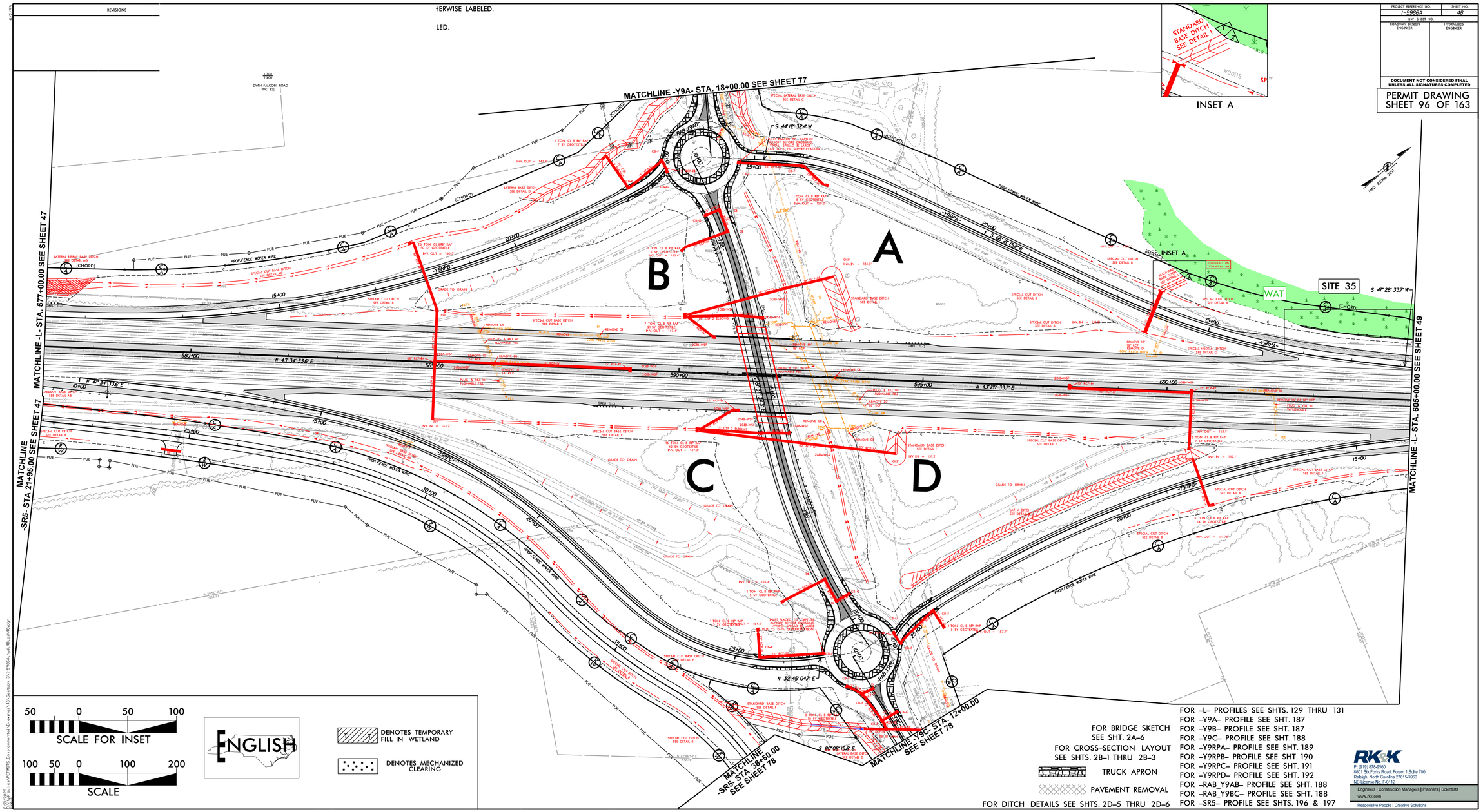

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	48
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 96 OF 163

FOR BRIDGE SKETCH SEE SHT. 2A–6

FOR CROSS–SECTION LAYOUT SEE SHTS. 2B–1 THRU 2B–3

TRUCK APRON

PAVEMENT REMOVAL

FOR DITCH DETAILS SEE SHTS. 2D–5 THRU 2D–6

FOR –L– PROFILES SEE SHTS. 129 THRU 131
FOR –Y9A– PROFILE SEE SHT. 187
FOR –Y9B– PROFILE SEE SHT. 187
FOR –Y9C– PROFILE SEE SHT. 188
FOR –Y9RPA– PROFILE SEE SHT. 189
FOR –Y9RPB– PROFILE SEE SHT. 190
FOR –Y9RPC– PROFILE SEE SHT. 191
FOR –Y9RPD– PROFILE SEE SHT. 192
FOR –RAB_Y9AB– PROFILE SEE SHT. 188
FOR –RAB_Y9BC– PROFILE SEE SHT. 188
FOR –SR5– PROFILE SEE SHTS. 196 & 197

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	48
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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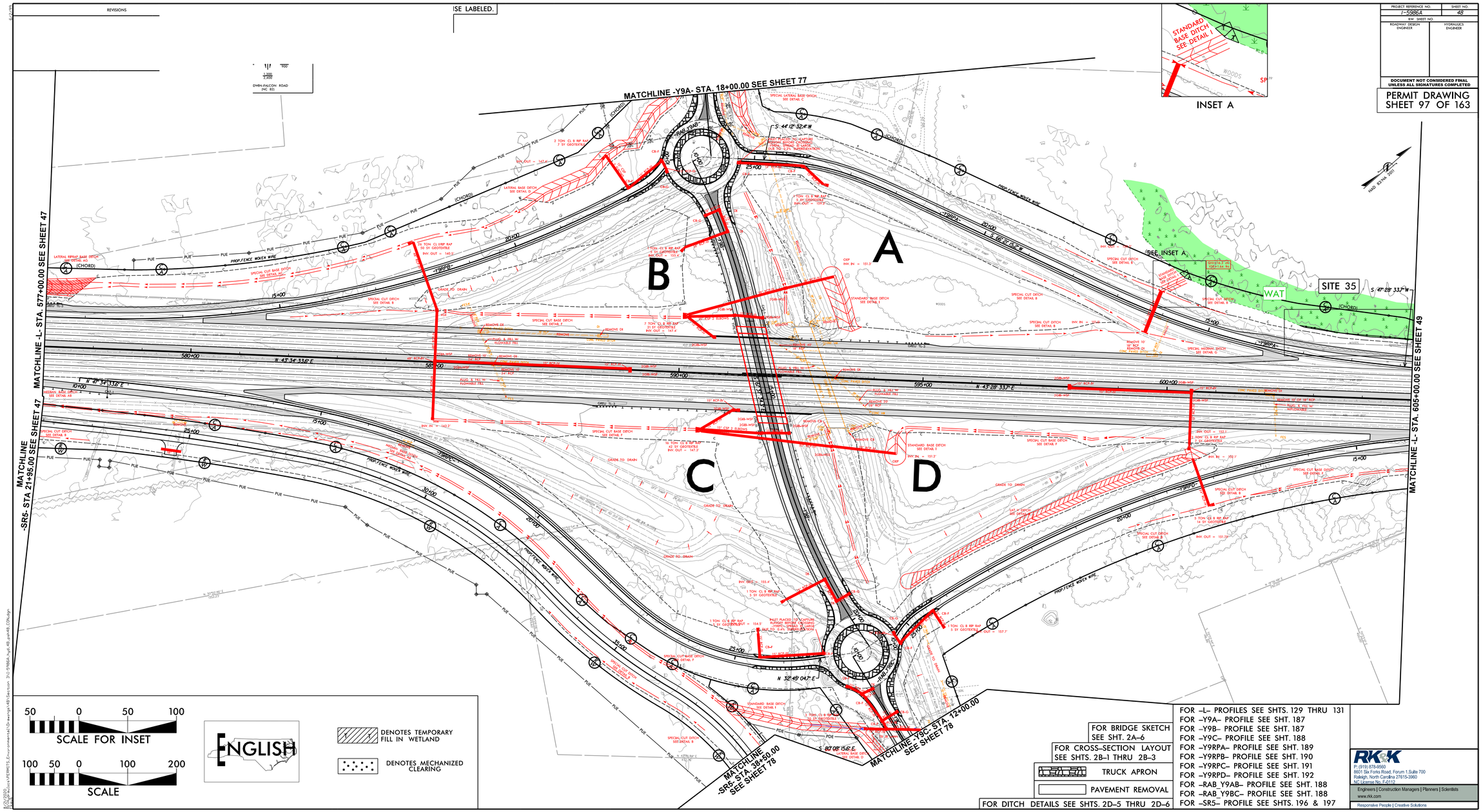
PERMIT DRAWING
SHEET 97 OF 163



SCALE FOR INSET: 50 0 50 100

SCALE: 100 50 0 100 200

ENGLISH

DENOTES TEMPORARY FILL IN WETLAND

DENOTES MECHANIZED CLEARING

FOR BRIDGE SKETCH SEE SHT. 2A–6

FOR CROSS–SECTION LAYOUT SEE SHTS. 2B–1 THRU 2B–3

TRUCK APRON

PAVEMENT REMOVAL

FOR DITCH DETAILS SEE SHTS. 2D–5 THRU 2D–6

FOR –L– PROFILES SEE SHTS. 129 THRU 131
FOR –Y9A– PROFILE SEE SHT. 187
FOR –Y9B– PROFILE SEE SHT. 187
FOR –Y9C– PROFILE SEE SHT. 188
FOR –Y9RPA– PROFILE SEE SHT. 189
FOR –Y9RPB– PROFILE SEE SHT. 190
FOR –Y9RPC– PROFILE SEE SHT. 191
FOR –Y9RPD– PROFILE SEE SHT. 192
FOR –RAB_Y9AB– PROFILE SEE SHT. 188
FOR –RAB_Y9BC– PROFILE SEE SHT. 188
FOR –SR5– PROFILE SEE SHTS. 196 & 197

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I-5986A SECTION 3	X-23

SITE 35

ENGLISH

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SHEET 98 OF 163

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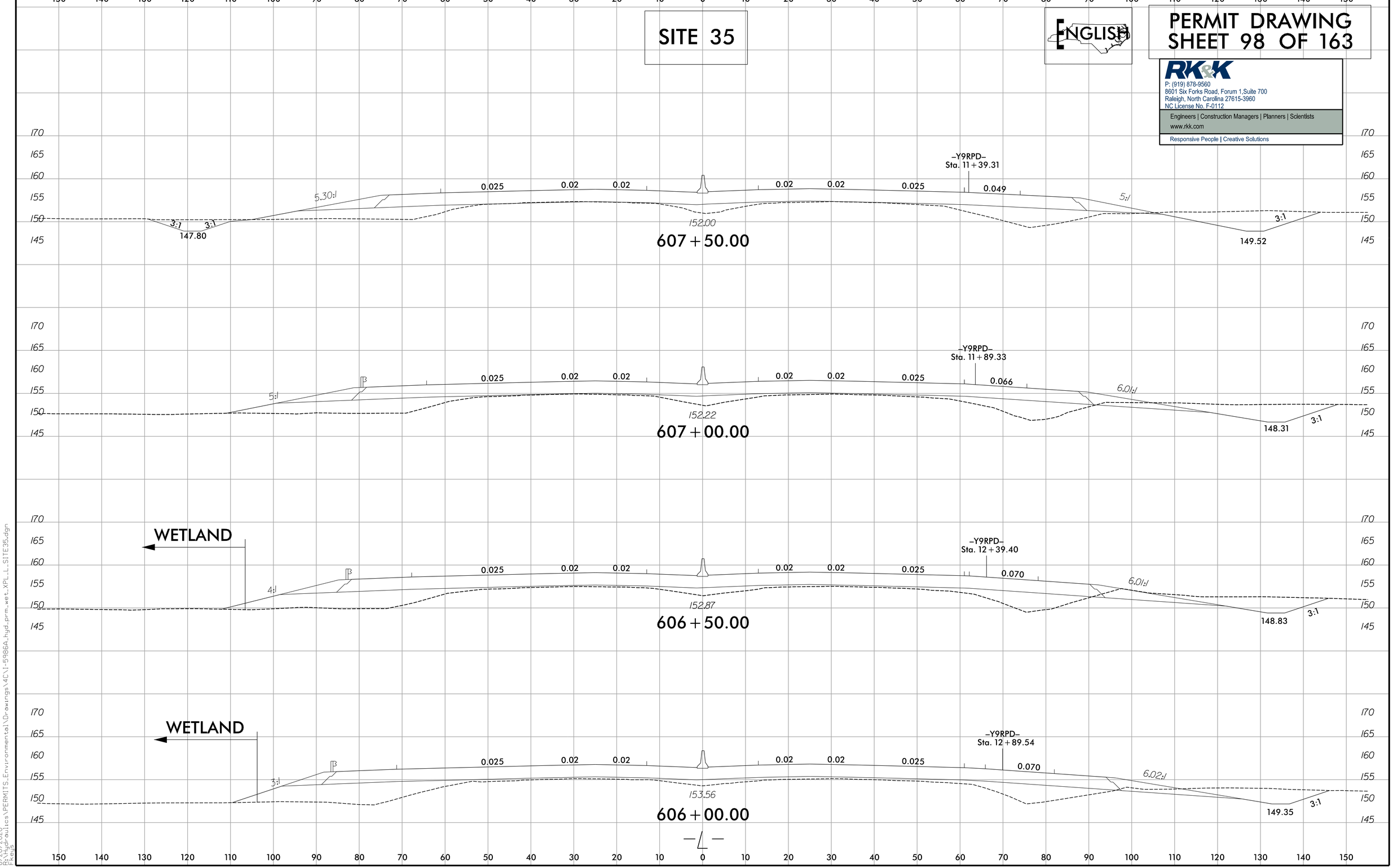

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50 25 0 50 100
SCALE

ENGLISH

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

PERMIT DRAWING SHEET 99 OF 163

PROJECT REFERENCE NO.	SHEET NO.
I-5986	49
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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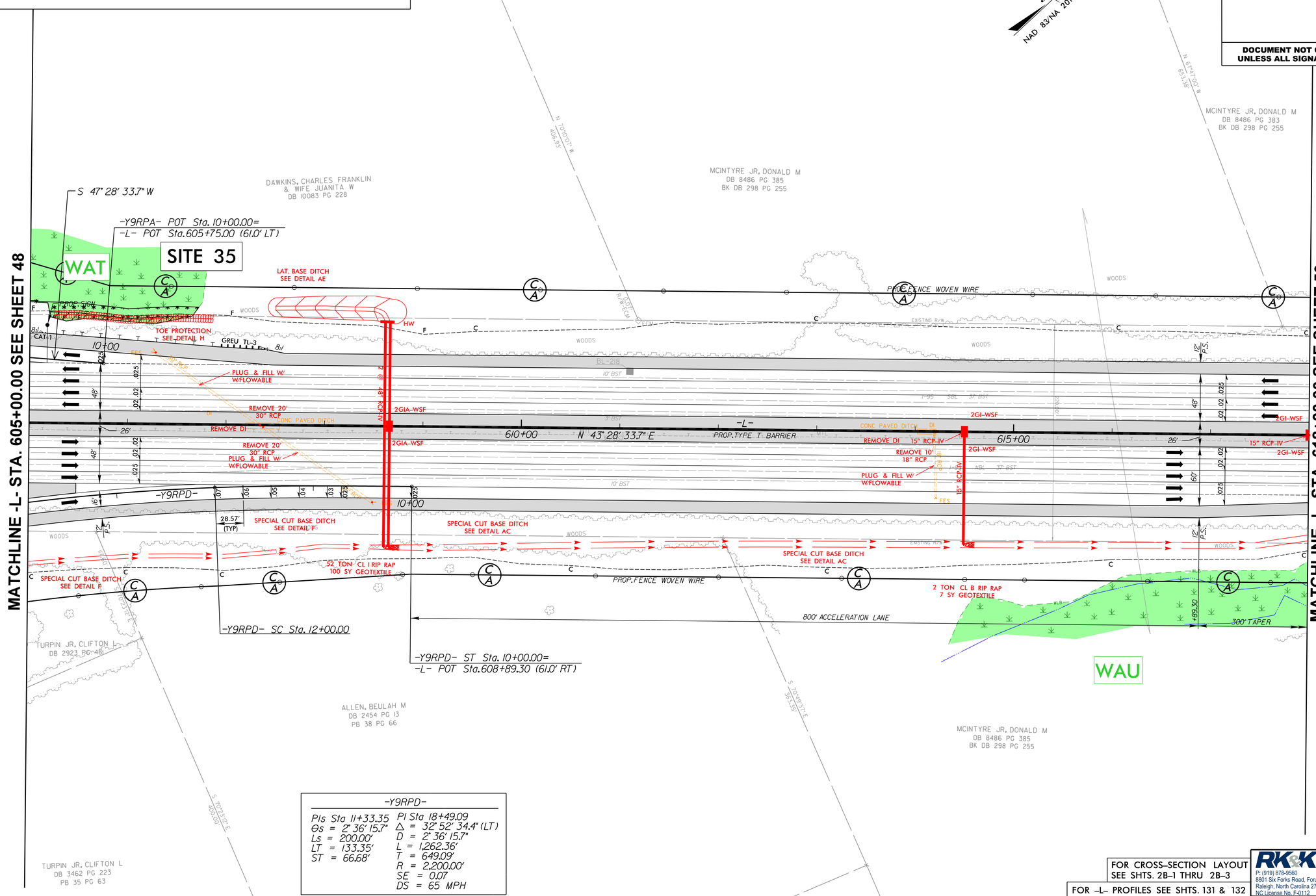

-Y9RPD-	
PIs Sta 11+33.35	PI Sta 18+49.09
Θs = 2° 36' 15.7"	Δ = 32° 52' 34.4" (LT)
Ls = 200.00'	D = 2° 36' 15.7"
LT = 133.35'	L = 1,262.36'
ST = 66.68'	T = 649.09'
	R = 2,200.00'
	SE = 0.07
	DS = 65 MPH

FOR CROSS-SECTION LAYOUT SEE SHTS. 2B-1 THRU 2B-3

FOR -L- PROFILES SEE SHTS. 131 & 132
FOR -Y9RPA- PROFILE SEE SHT. 189
FOR -Y9RPD- PROFILE SEE SHT. 192

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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50 25 0 50 100
SCALE

ENGLISH

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

PERMIT DRAWING SHEET 100 OF 163

PROJECT REFERENCE NO.	SHEET NO.
I-5986	49
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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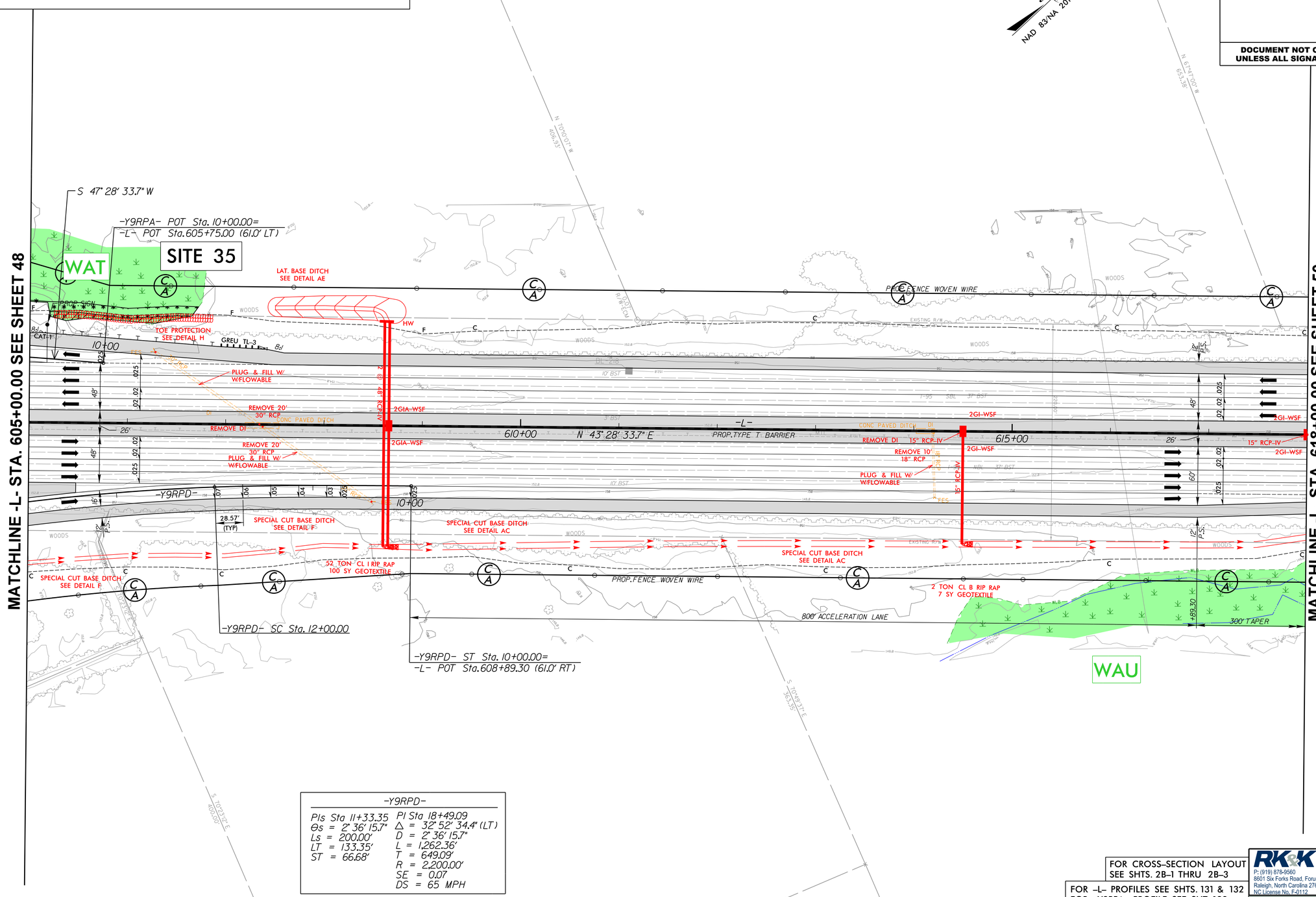

-Y9RPD-	
PIs Sta 11+33.35	PI Sta 18+49.09
Θs = 2° 36' 15.7"	Δ = 32° 52' 34.4" (LT)
Ls = 200.00'	D = 2° 36' 15.7"
LT = 133.35'	L = 1,262.36'
ST = 66.68'	T = 649.09'
	R = 2,200.00'
	SE = 0.07
	DS = 65 MPH

FOR CROSS-SECTION LAYOUT SEE SHTS. 2B-1 THRU 2B-3

FOR -L- PROFILES SEE SHTS. 131 & 132
FOR -Y9RPA- PROFILE SEE SHT. 189
FOR -Y9RPD- PROFILE SEE SHT. 192

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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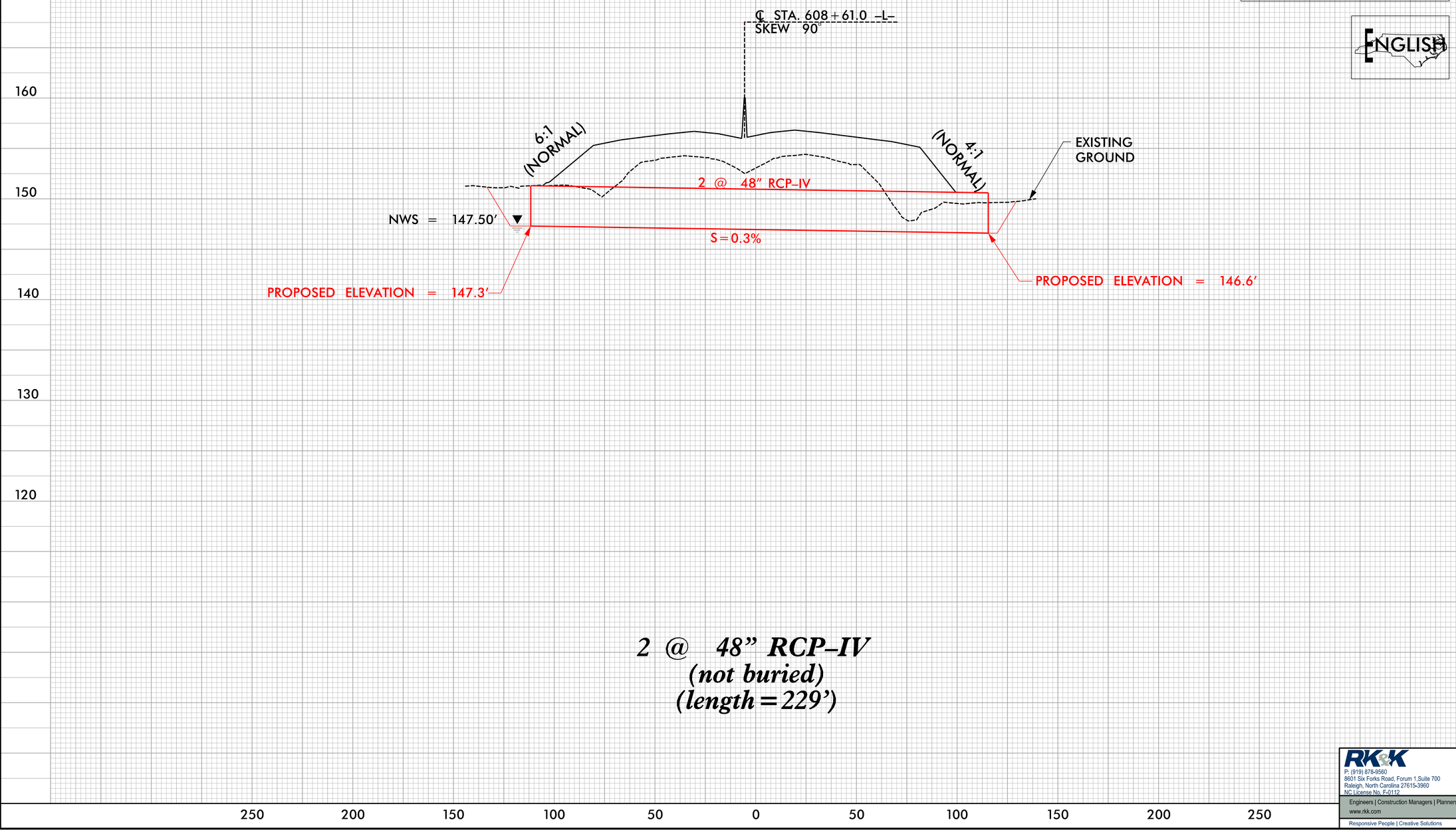
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 35
-L- STA. 608+65

PERMIT DRAWING
SHEET 100A OF 163

ENGLISH



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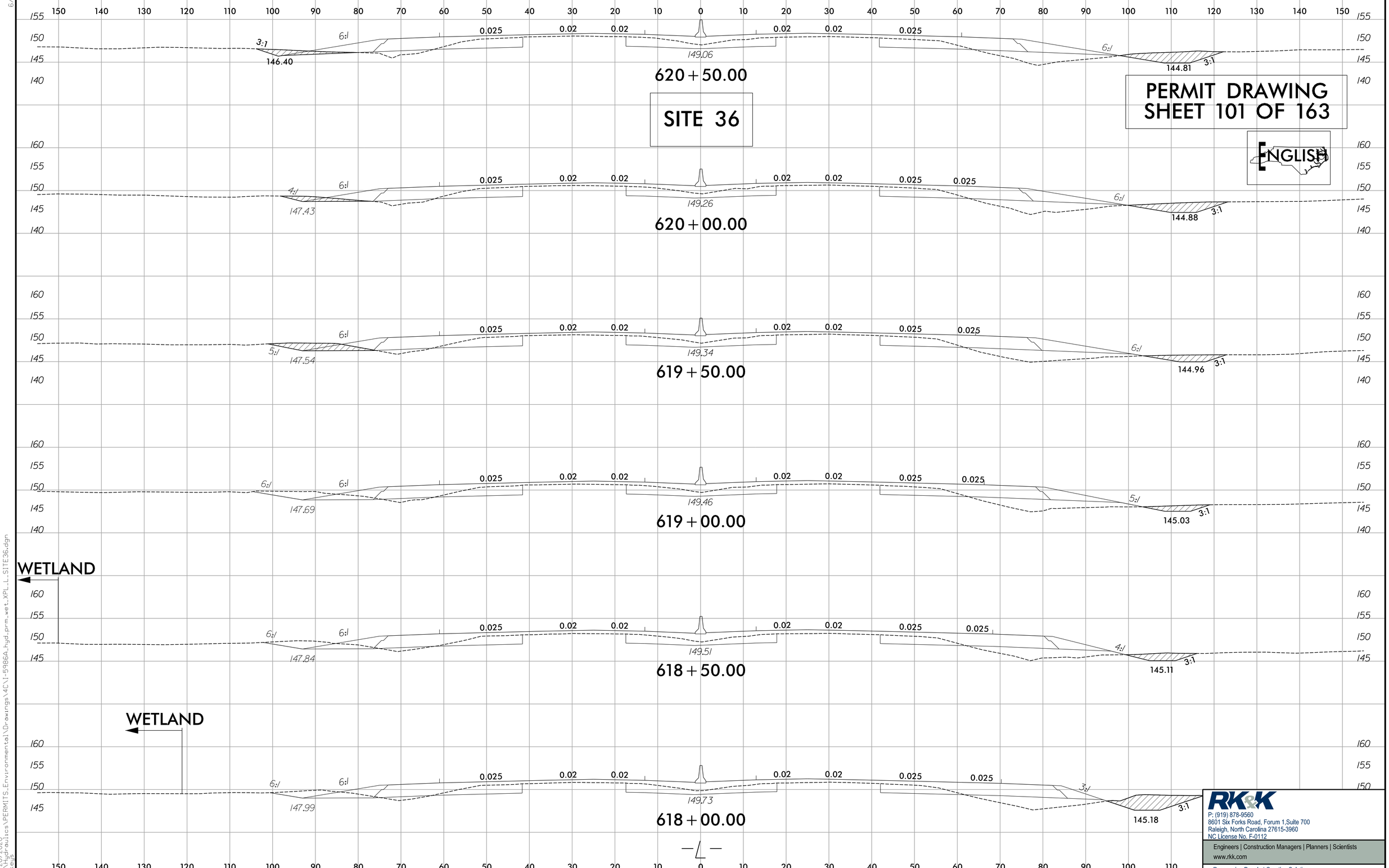
PROJ. REFERENCE NO.	SHEET NO.
I-5986A SECTION 3	X-28

0 5 10

PERMIT DRAWING
SHEET 101 OF 163

ENGLISH

SITE 36



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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	50
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 102 OF 163

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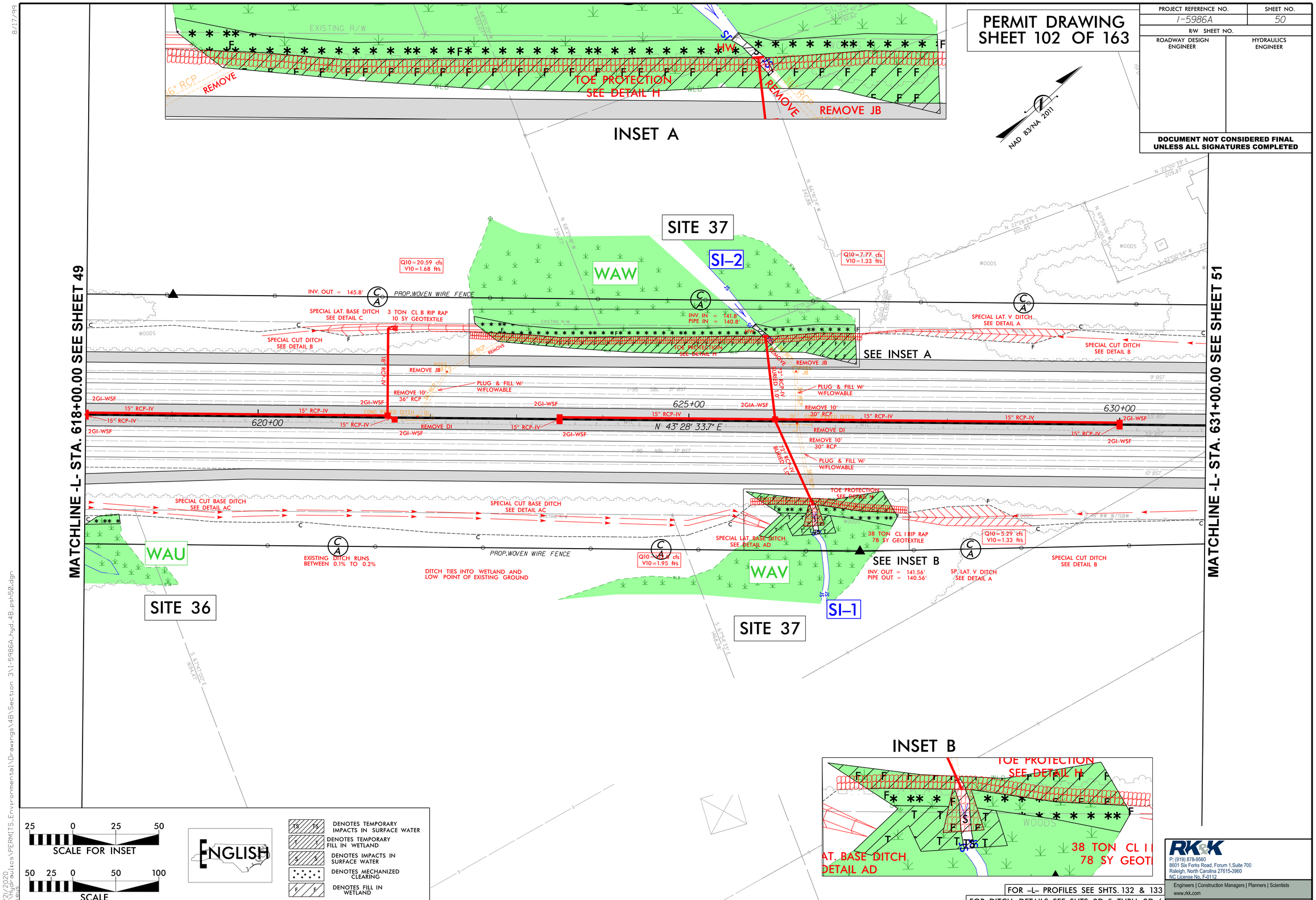

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
T	DENOTES TEMPORARY FILL IN WETLAND
S	DENOTES IMPACTS IN SURFACE WATER
	DENOTES MECHANIZED CLEARING
F	DENOTES FILL IN WETLAND

FOR -L- PROFILES SEE SHTS. 132 & 133

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	50
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 103 OF 163

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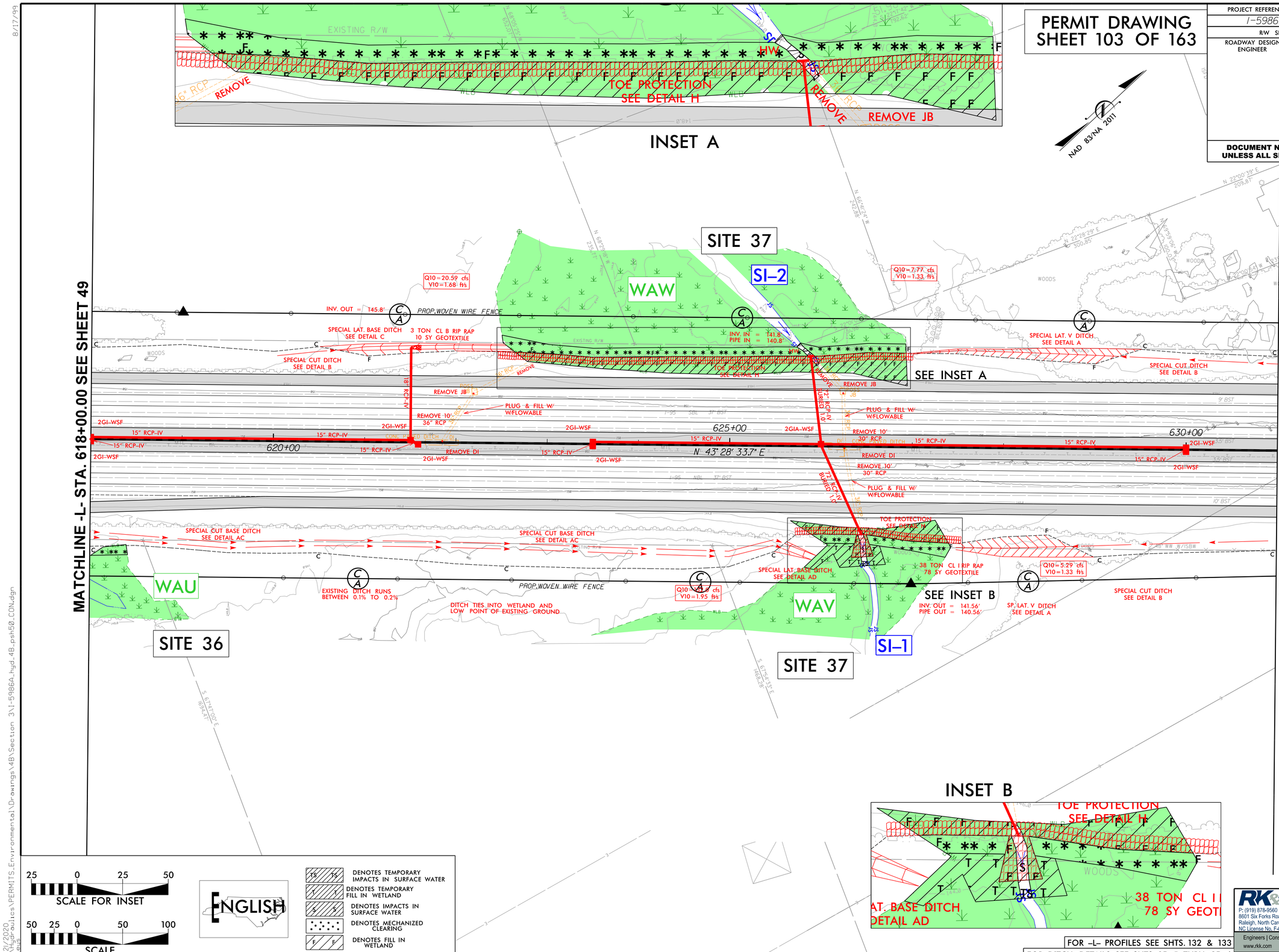

FOR -L- PROFILES SEE SHTS. 132 & 133

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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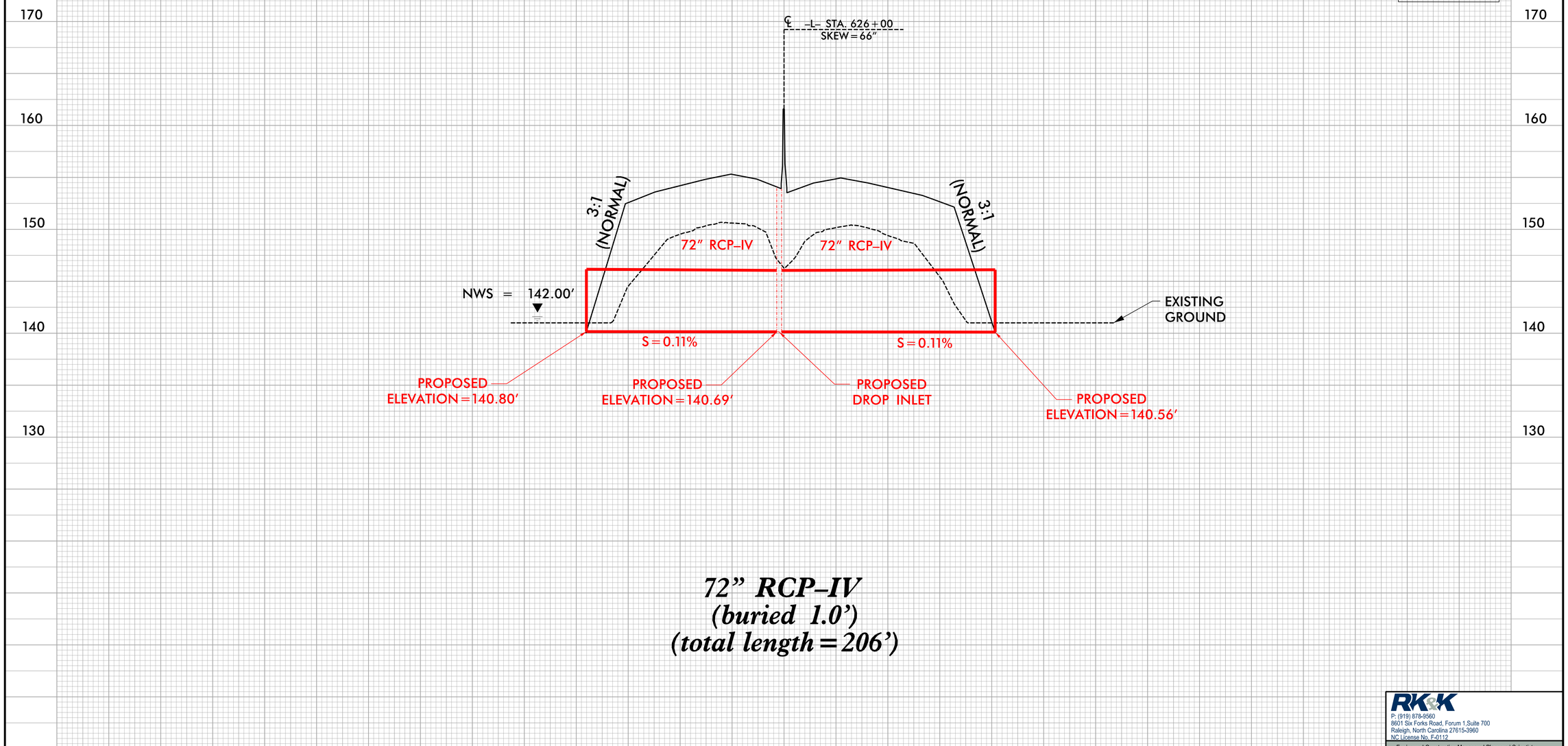
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 37
–L– STA. 626+00

PERMIT DRAWING
SHEET 104 OF 163

ENGLISH



72" RCP–IV
(buried 1.0')
(total length=206')

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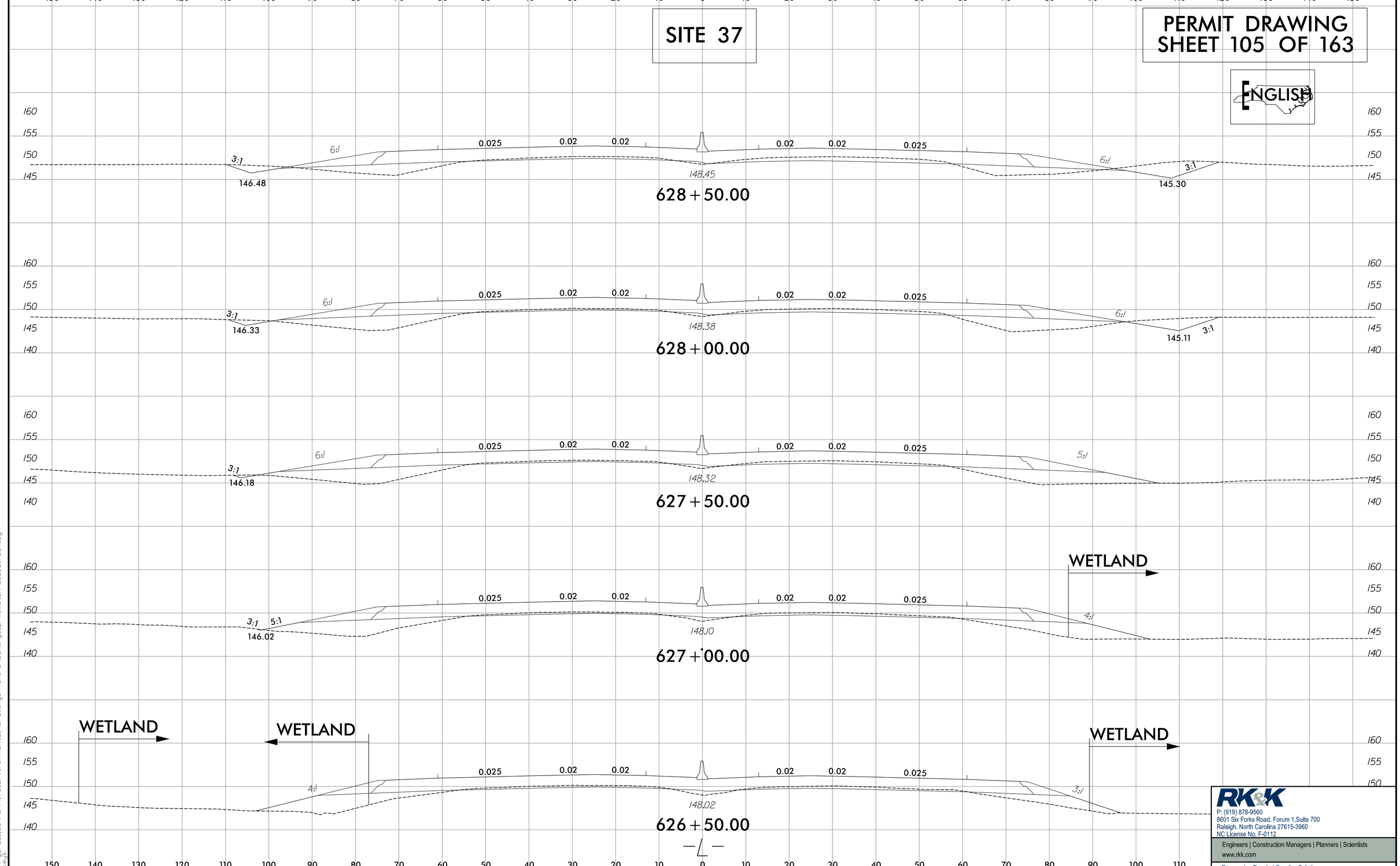
	I-5986A SECTION 3	X-31

SITE 37

PERMIT DRAWING
SHEET 105 OF 163

ENGLISH



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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	51
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 106 OF 163

50 25 0 50 100
SCALE

ENGLISH

DENOTES TEMPORARY FILL IN WETLAND

NAD 83/NA 2011

MATCHLINE -L- STA. 631+00.00 SEE SHEET 50

MATCHLINE -L- STA. 642+00.00 SEE SHEET 52

BEGIN CONSTRUCTION
-Y21- Sta.13+55.00

BEGIN GRADE
-Y21- POC Sta.14+05.00

S 66° 59' 47.1" E

N 43° 28' 33.7" E

SPECIAL CUT DITCH SEE DETAIL B

LATERAL BASE DITCH SEE DETAIL D

MEDIAN BASE DITCH SEE DETAIL AB

PROP.CHAIN LINK FENCE

PROP.WOVEN WIRE FENCE

ES =148.8"

CAT-1

GREU TL-3

15" RCP-IV

18" RCP-IV

24" RCP-IV

2GI-WSF

2GIA-WSF

635+00

640+00

REMOVE 10' OF 18" RCP

REMOVE DI

CONC PAVED DITCH

PLUG & FILL W/ W/FLOWABLE

5 TON CL B RIP RAP
14 SY GEOTEXTILE

SPECIAL CUT BASE DITCH SEE DETAIL F

Q10 = 13.1 cfs
V10 = 1.40 ft/s

SEE INSET A

SITE 38

WAX

INSET A

LATERAL BASE DITCH SEE DETAIL D

FOR CROSS-SECTION LAYOUT SEE SHT. 2B-4

FOR -L- PROFILES SEE SHTS. 133 & 134
FOR -Y21- PROFILE SEE SHT. 195

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	51
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 107 OF 163

50 25 0 50 100
SCALE

ENGLISH

DENOTES TEMPORARY FILL IN WETLAND

NAD 83/NA 2011

MATCHLINE -L- STA. 631+00.00 SEE SHEET 50

MATCHLINE -L- STA. 642+00.00 SEE SHEET 52

10+00

S 66°59' 47.1" E

BEGIN CONSTRUCTION
-Y21- Sta.13+55.00

BEGIN GRADE
-Y21- POC Sta.14+05.00

15+00

20+00

N 43° 28' 33.7" E

635+00

640+00

SPECIAL CUT DITCH SEE DETAIL B

LATERAL BASE DITCH SEE DETAIL D

MEDIAN BASE DITCH SEE DETAIL AB

PROP.CHAIN LINK FENCE

PROP.WOVEN WIRE FENCE

ES =148.8"

CAT-1

GREU TL-3

15" RCP-IV

18" RCP-IV

24" RCP-IV

2GI-WSF

2GIA-WSF

4GI

CONC PAVED DITCH

REMOVE 10' OF 18" RCP

REMOVE DI

PLUG & FILL W/ W/FLOWABLE

BROKEN

SPECIAL CUT BASE DITCH SEE DETAIL F

5 TON CL B RIP RAP
14 SY GEOTEXTILE

PROP.FENCE WOVEN WIRE

Q10 = 13.1 cfs
V10 = 1.40 ft/s

SEE INSET A

SITE 38

WAX

INSET A

LATERAL BASE DITCH SEE DETAIL D

FOR CROSS-SECTION LAYOUT SEE SHT. 2B-4

FOR -L- PROFILES SEE SHTS. 133 & 134
FOR -Y21- PROFILE SEE SHT. 195

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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Ekeen

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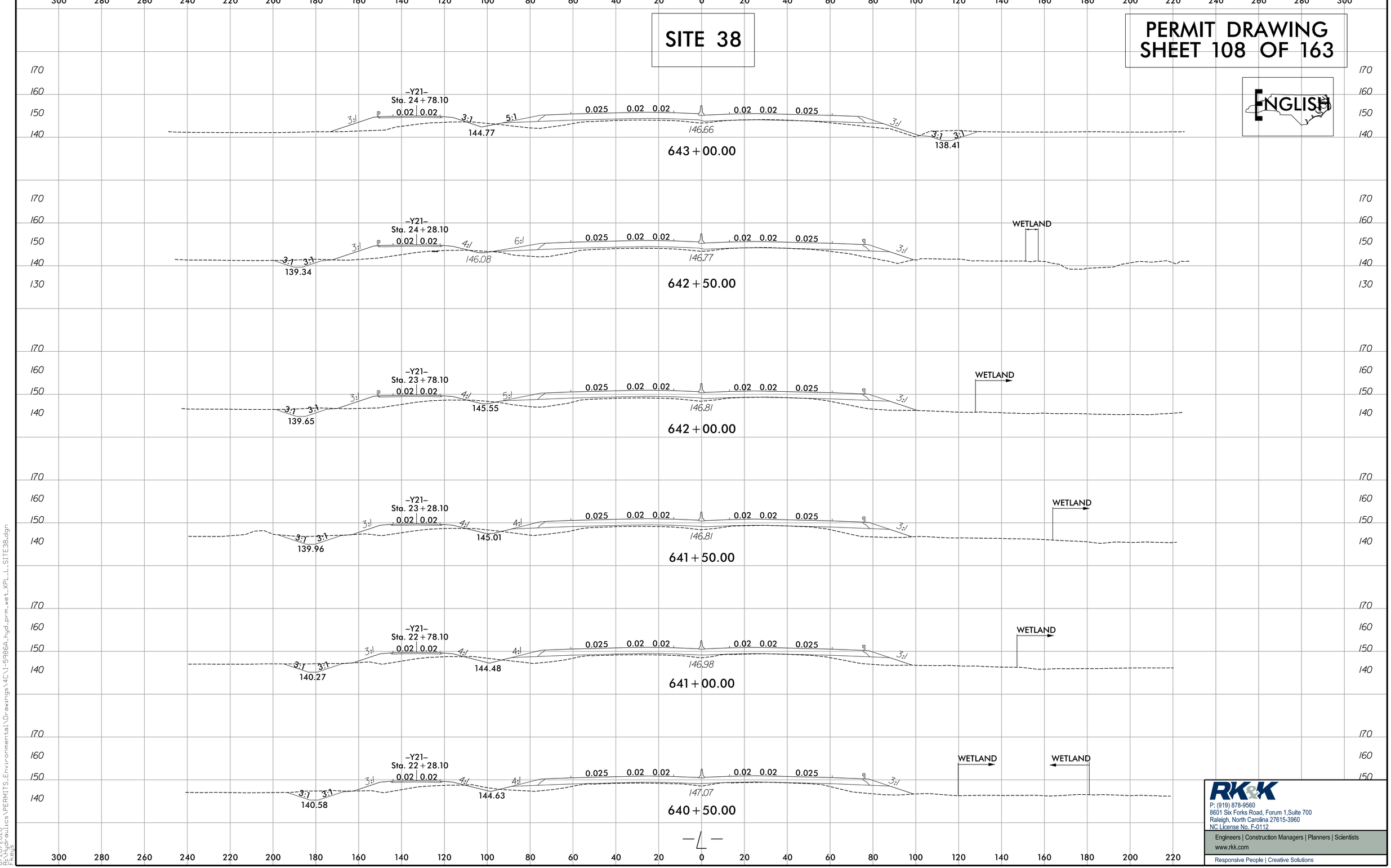
PROJ. REFERENCE NO.	SHEET NO.
I-5986A SECTION 3	X-36

SITE 38

PERMIT DRAWING
SHEET 108 OF 163

ENGLISH



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8/20/2020
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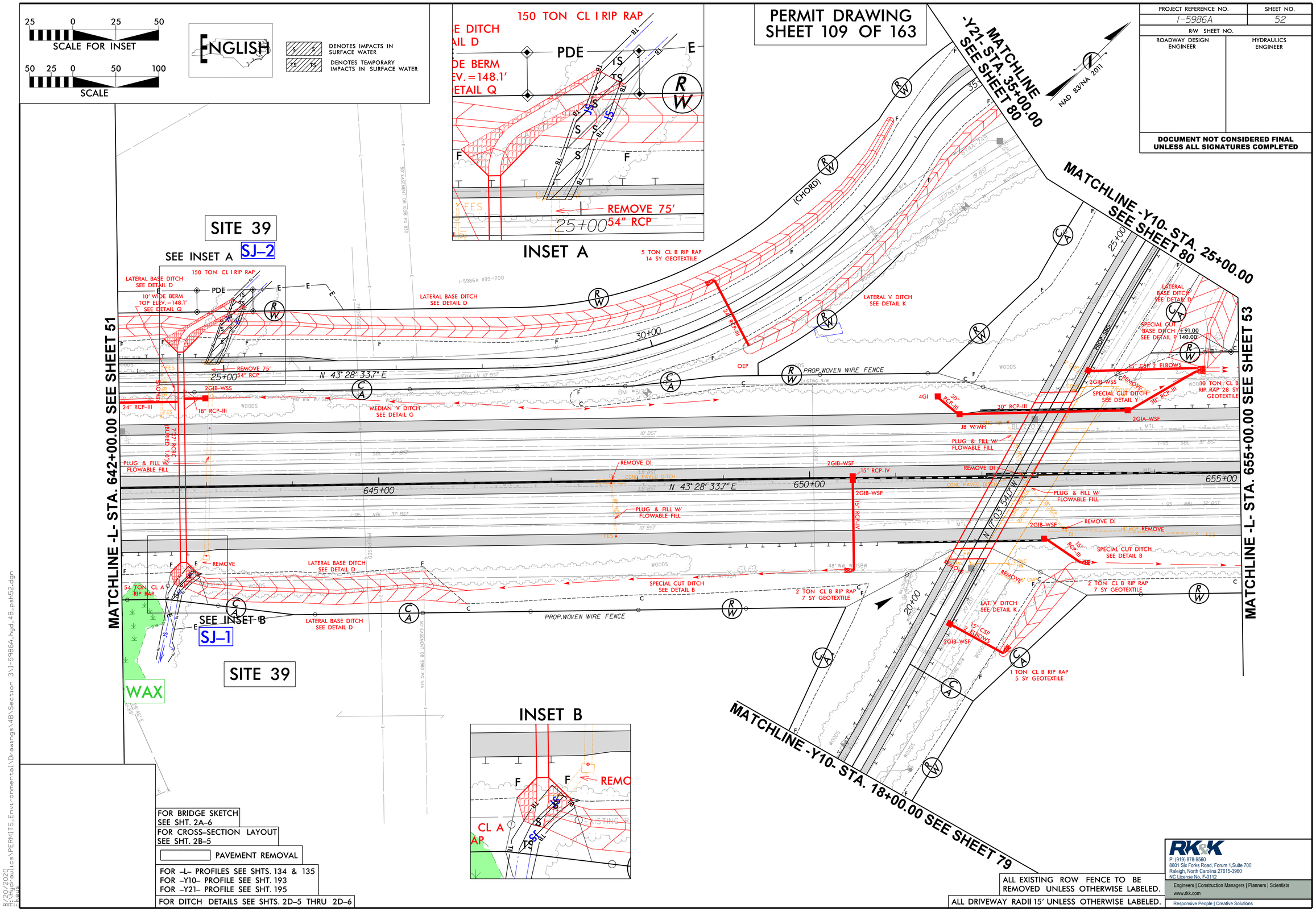

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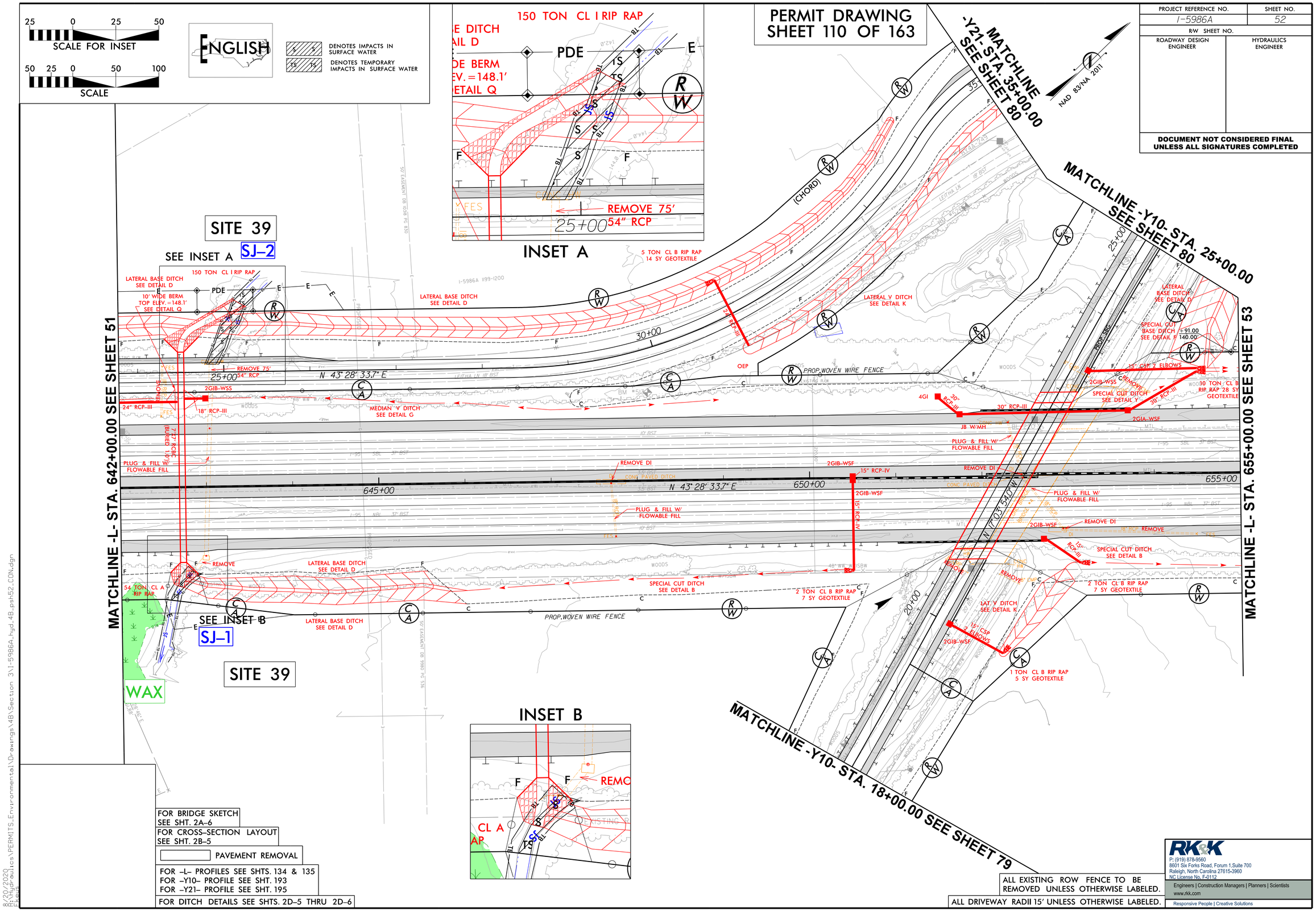

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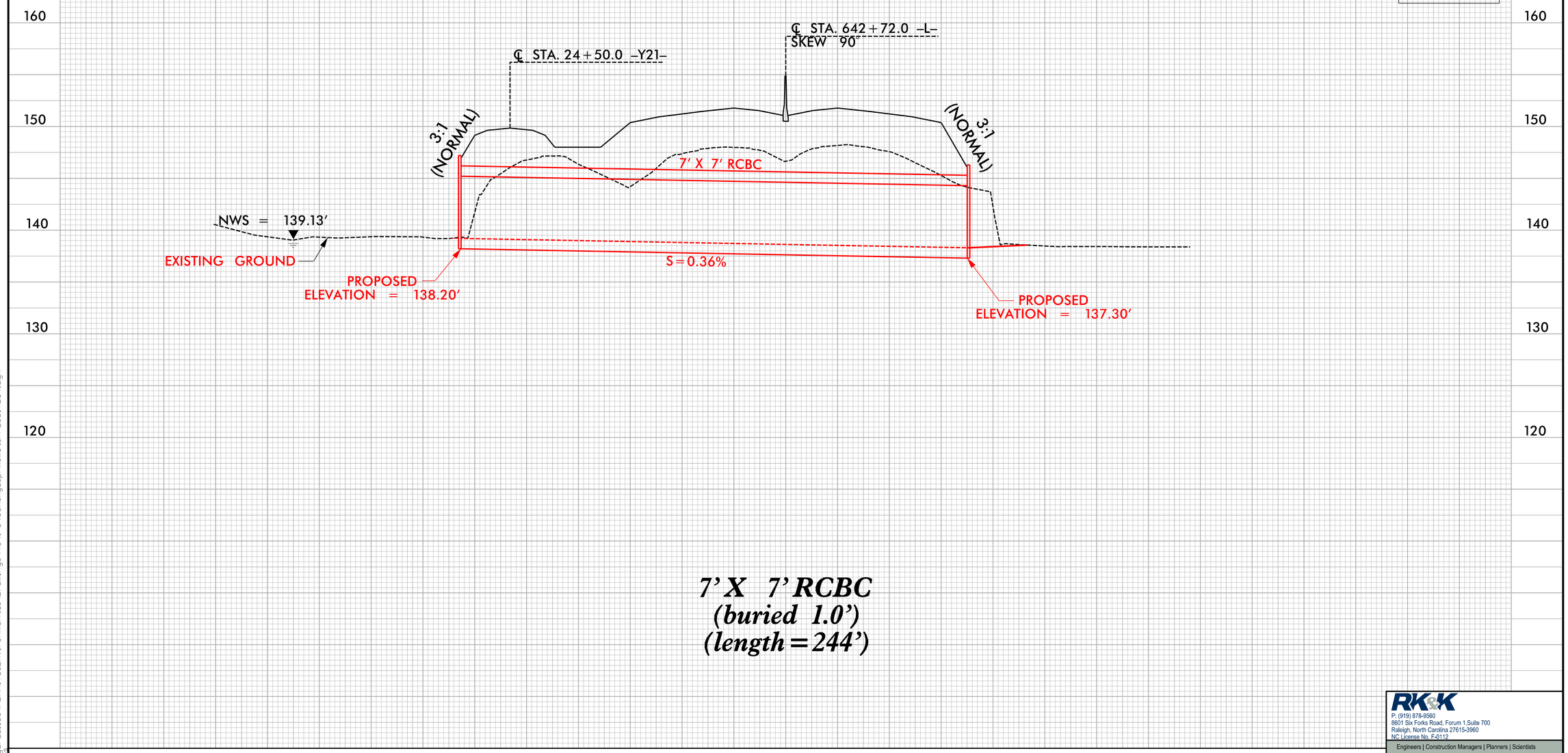
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 39
–L– STA. 642 + 72

PERMIT DRAWING
SHEET 111 OF 163

ENGLISH



7' X 7' RCBC
(buried 1.0')
(length = 244')

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25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

DENOTES TEMPORARY FILL IN WETLAND

DENOTES FILL IN WETLAND

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	53
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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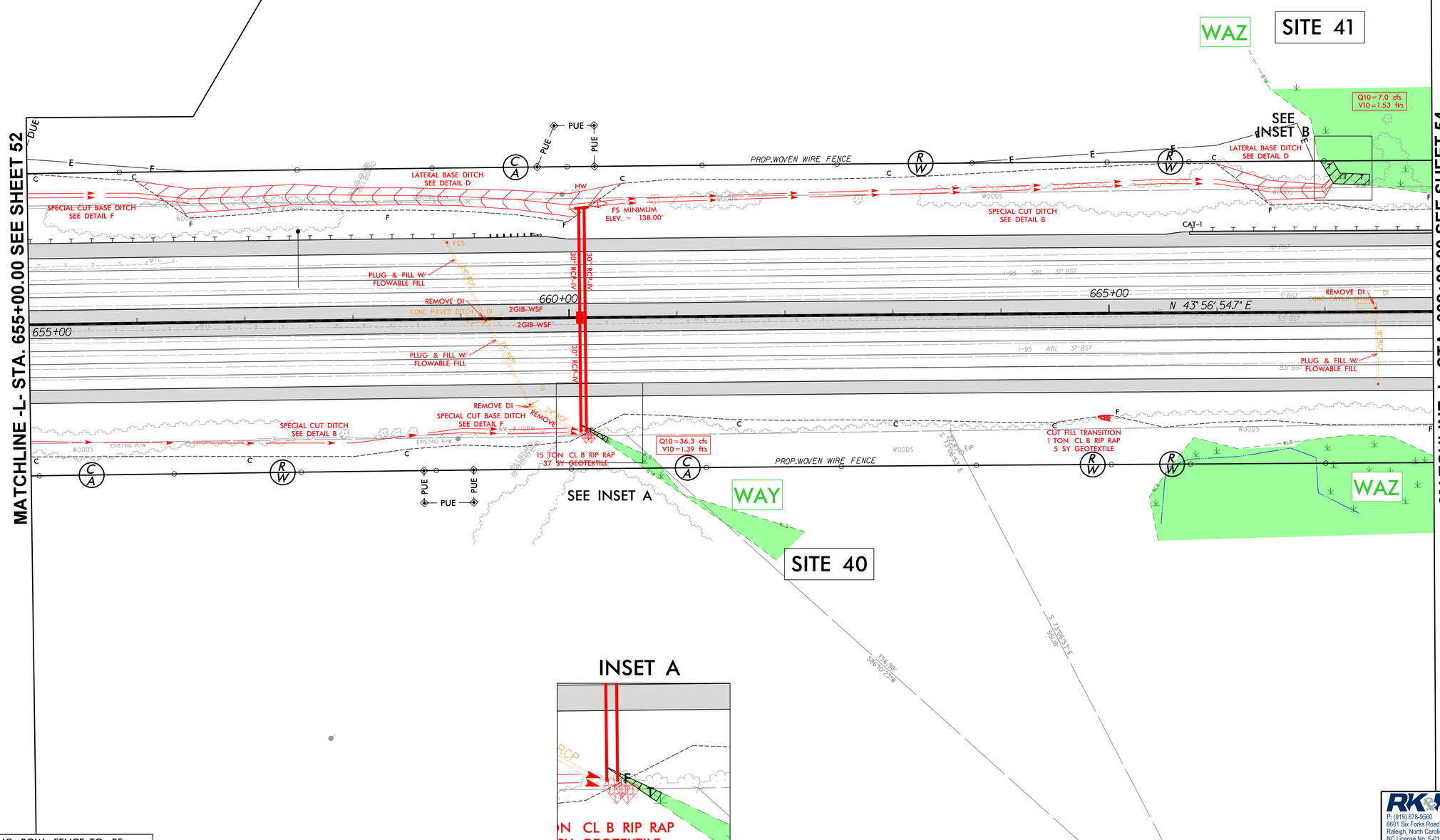
PERMIT DRAWING SHEET 112 OF 163



ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

FOR –L– PROFILES SEE SHTS. 135 & 136

FOR DITCH DETAILS SEE SHTS. 2D–5 THRU 2D–6

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25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

DENOTES TEMPORARY FILL IN WETLAND

DENOTES FILL IN WETLAND

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	53
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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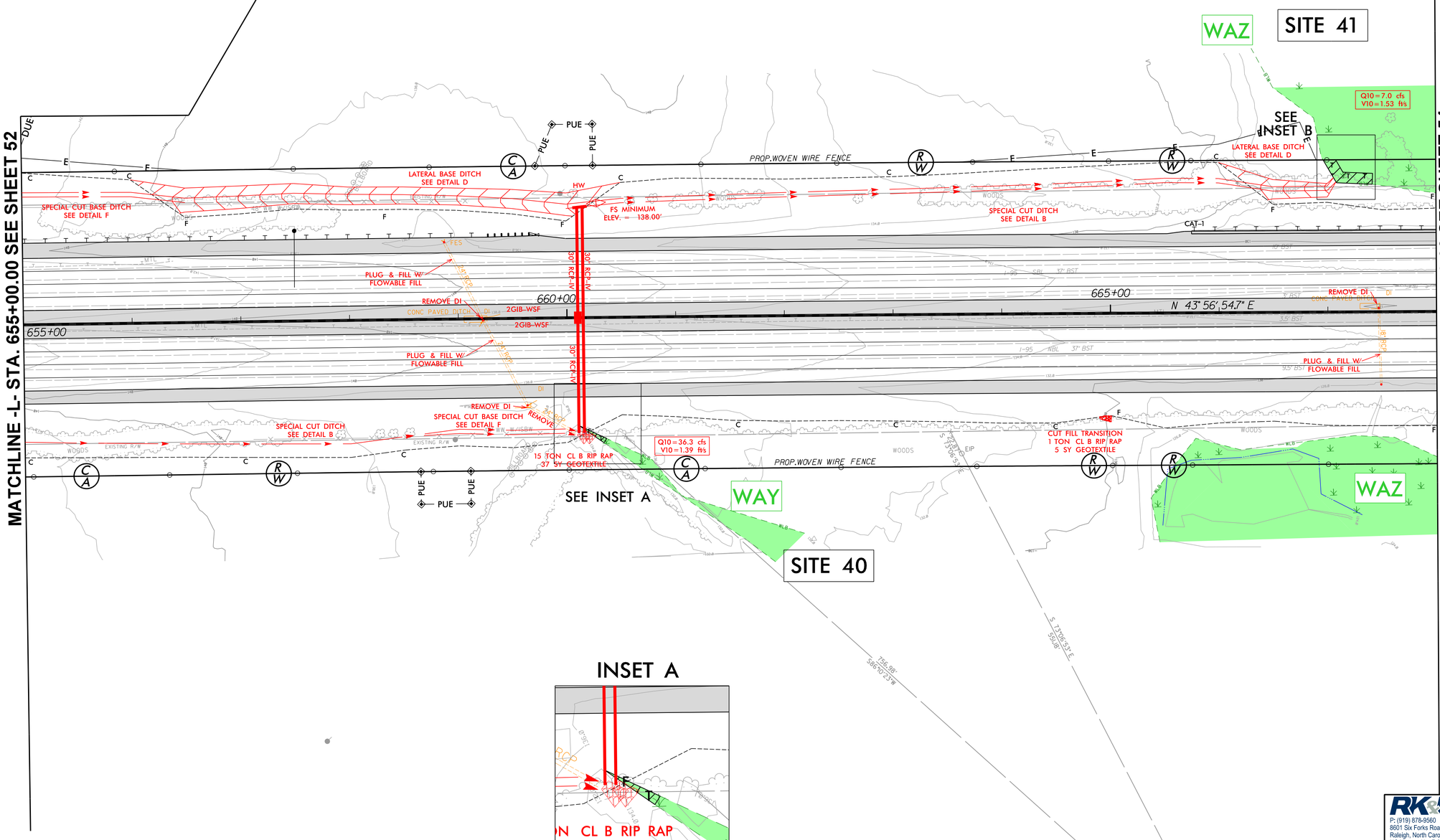
PERMIT DRAWING SHEET 113 OF 163

NAD 83/NA 2011

INSET B



INSET A

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FOR –L– PROFILES SEE SHTS. 135 & 136

FOR DITCH DETAILS SEE SHTS. 2D–5 THRU 2D–6

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5986A SECTION 3	X-43

SITE 40

ENGLISH

PERMIT DRAWING
SHEET 114 OF 163

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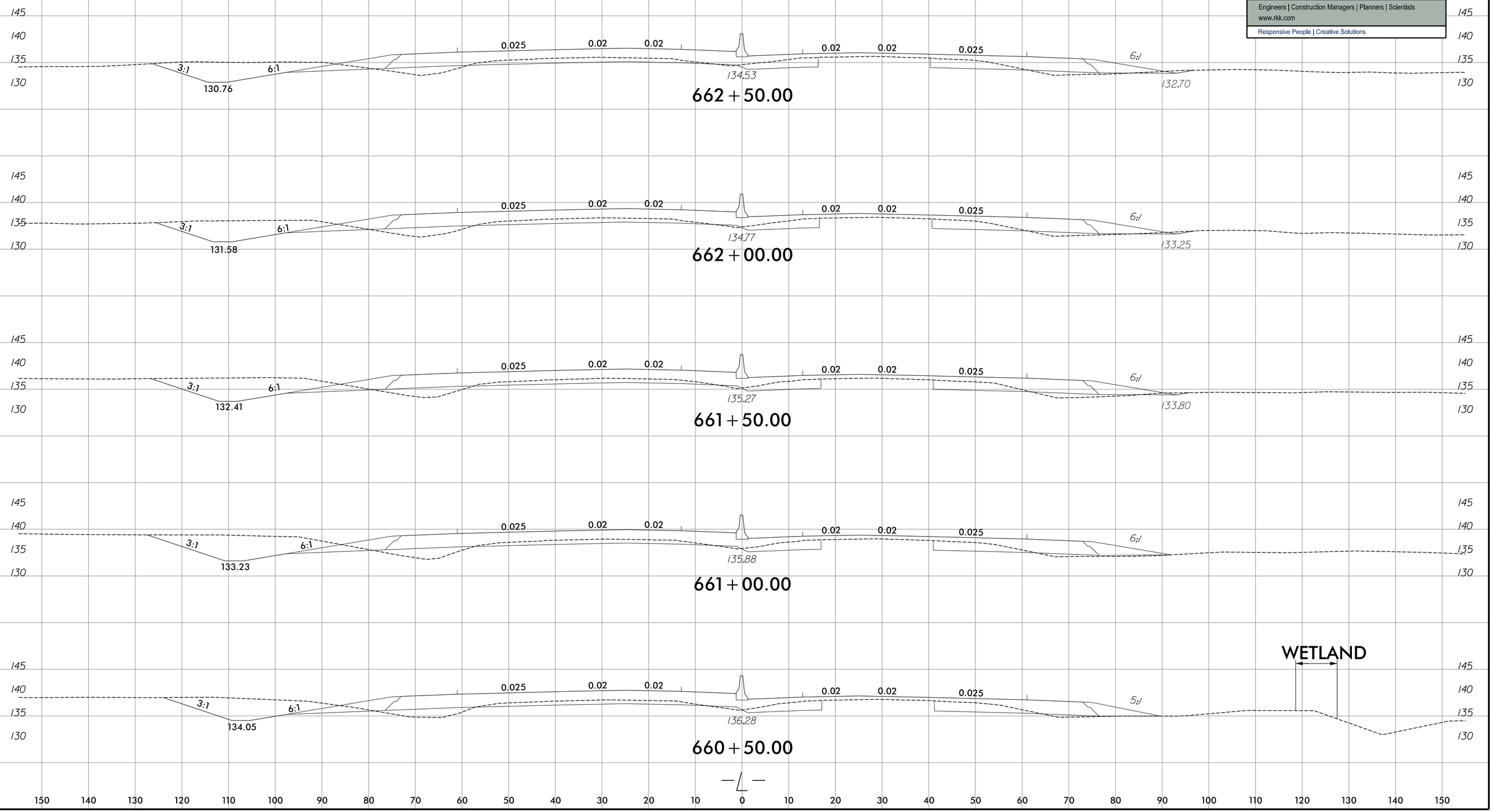

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8/20/2020
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PROJ. REFERENCE NO.	SHEET NO.
I-5986A SECTION 3	X-45

PERMIT DRAWING
SHEET 115 OF 163

SITE 41

ENGLISH

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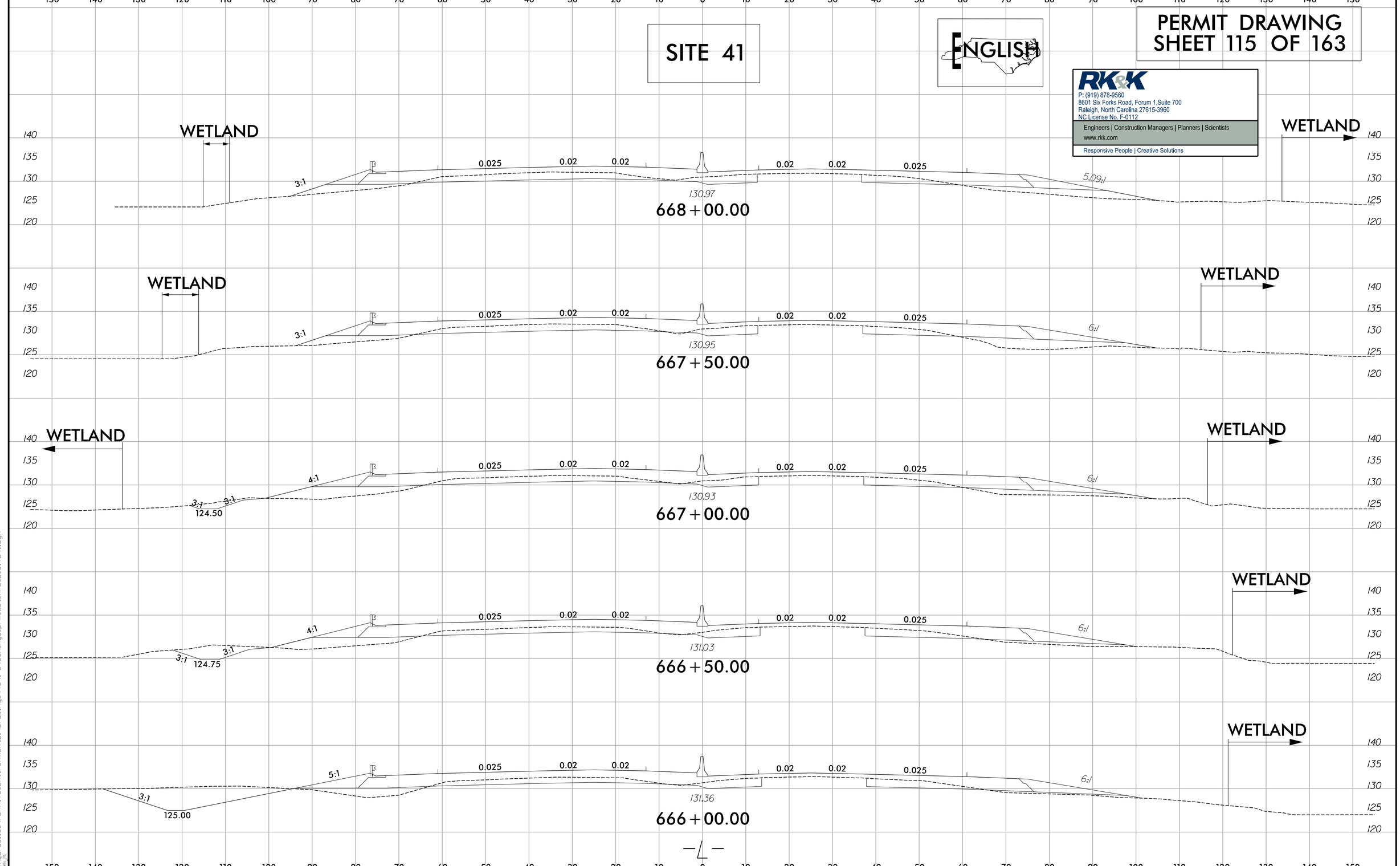

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8/20/2020
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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	54
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 116 OF 163

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

DENOTES HAND CLEARING

DENOTES TEMPORARY FILL IN WETLAND

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

DENOTES EXCAVATION IN WETLAND

NAD 83/NA 2011

BLACK RIVER

SITE 41

SITE 42

WAZ

MATCHLINE -L- STA. 668+00.00 SEE SHEET 53

MATCHLINE -L- STA. 681+00.00 SEE SHEET 55

1 TON CL B RIP RAP
5 SY GEOTEXTILE

PROP.WOVEN WIRE FENCE

Q10=1.7 cfs
V10=0.76 ft/s

2 TON CL B RIP RAP
7 SY GEOTEXTILE

15" RCP-III

2GIB-WSF

GREU TL-3

CAT-1

B-77

PROP. SBG

EXISTING R/W

BLACK RIVER

Q10=0.6 cfs
V10=0.64 ft/s

+00.00
140.00' LT

1 TON CL B RIP RAP
5 SY GEOTEXTILE

WOODS

15" RCP-IV

2GIA-WSF

24" RCP-IV

REMOVE DI

CONC PAVED DITCH

PLUG & FILL W/
FLOWABLE FILL

-L-
N 43° 56' 54.7" E

670+00

675+00

680+00

CONC BRIDGE

TOE PROTECTION
SEE DETAIL H

3 TON CL B RIP RAP
7 SY GEOTEXTILE

Q10=15.2 cfs
V10=1.99 ft/s

Q10=2.7 cfs
V10=0.68 ft/s

Q10=0.6 cfs
V10=0.76 ft/s

+00.00
140.00' RT

SEE INSET A

SEE INSET B

SITE 42

INSET A

2GIB-WSF

2GIB-WSF

15" RCP-III

TOE PRO
SEE DI

1 TON CL B RIP RAP
5 SY GEOTEXTILE

PROP.WOVEN WIRE FENC

WAZ

INSET B

PROP. SBG

B-77

2GIB-WSF

15" RCP-III

TOE P
SEE

TON CL B RIP RAP
5 SY GEOTEXTILE

Q10=0.6 cfs
V10=0.76 ft/s

FOR BRIDGE SKETCH SEE SHT. 2A-7

FOR -L- PROFILES SEE SHT. 136

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	54
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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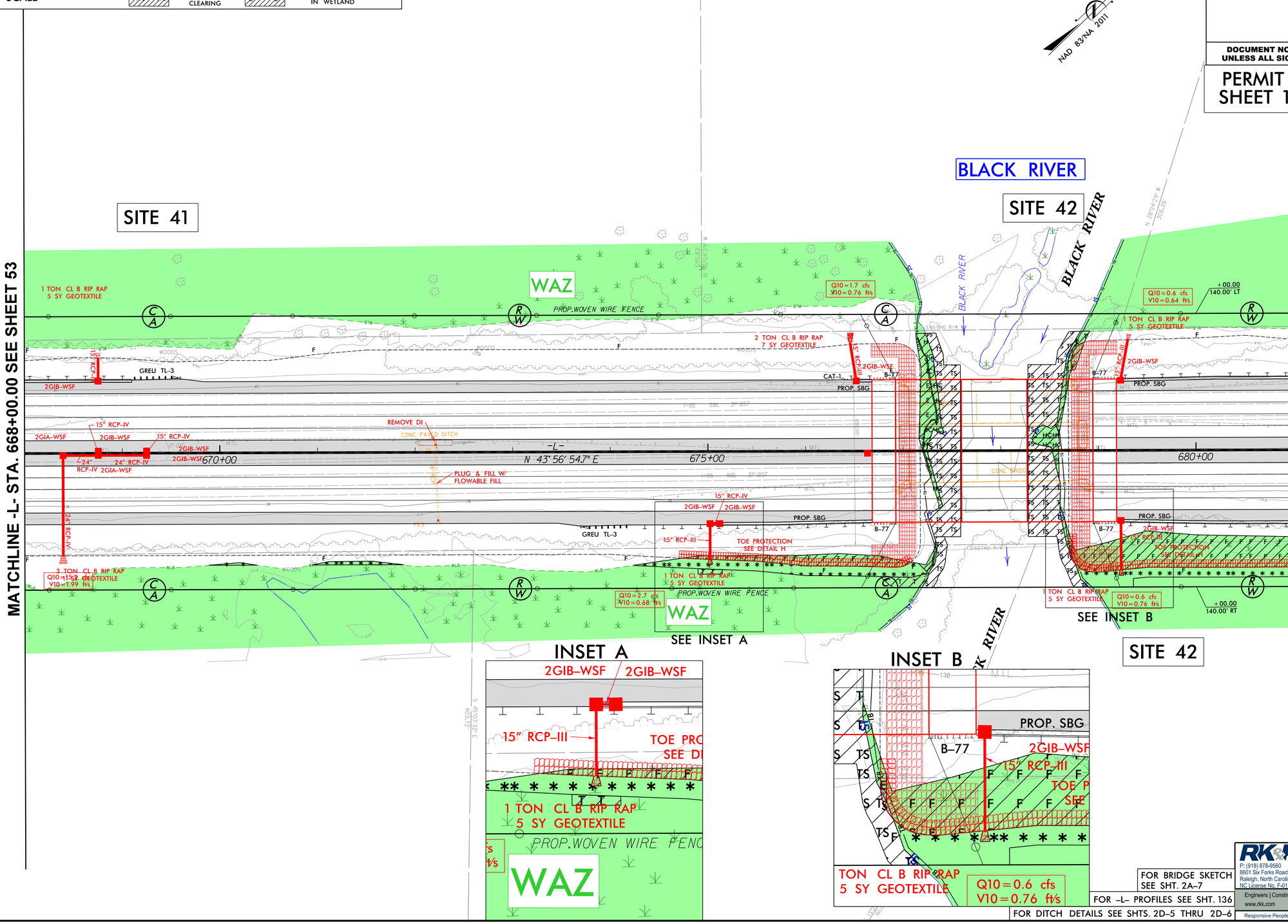
PERMIT DRAWING SHEET 117 OF 163

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

- DENOTES HAND CLEARING
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN WETLAND
- DENOTES EXCAVATION IN WETLAND



FOR BRIDGE SKETCH SEE SHT. 2A-7

FOR -L- PROFILES SEE SHT. 136

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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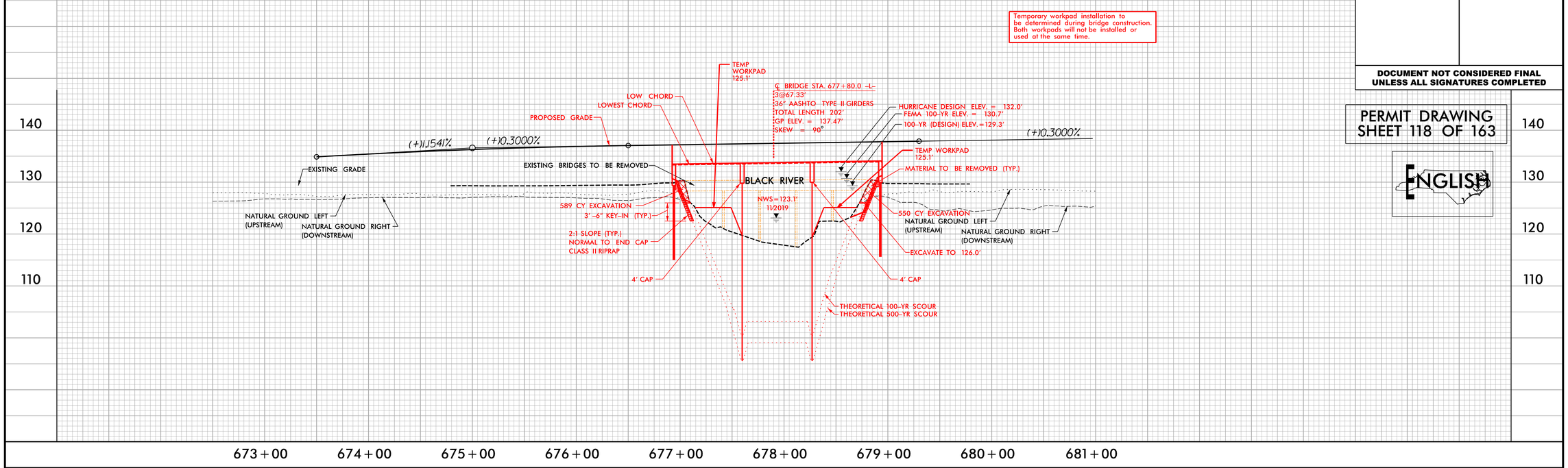
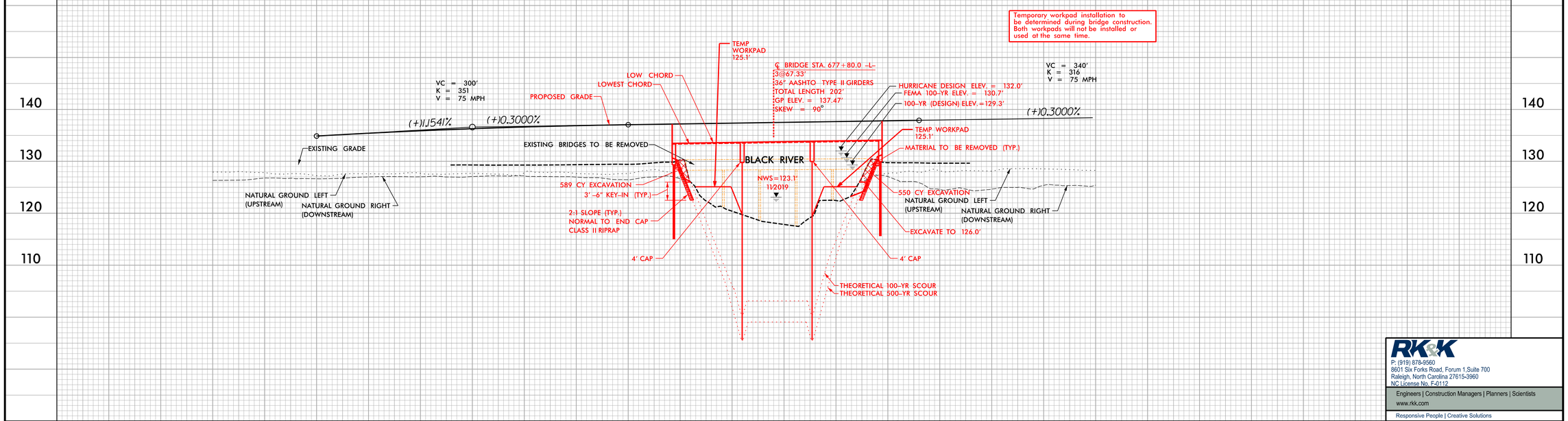
SHEET 118 OF 163

ENGLISH

SITE 42
–L– STA. 677+80 LT



SITE 42
–L– STA. 677+80 RT



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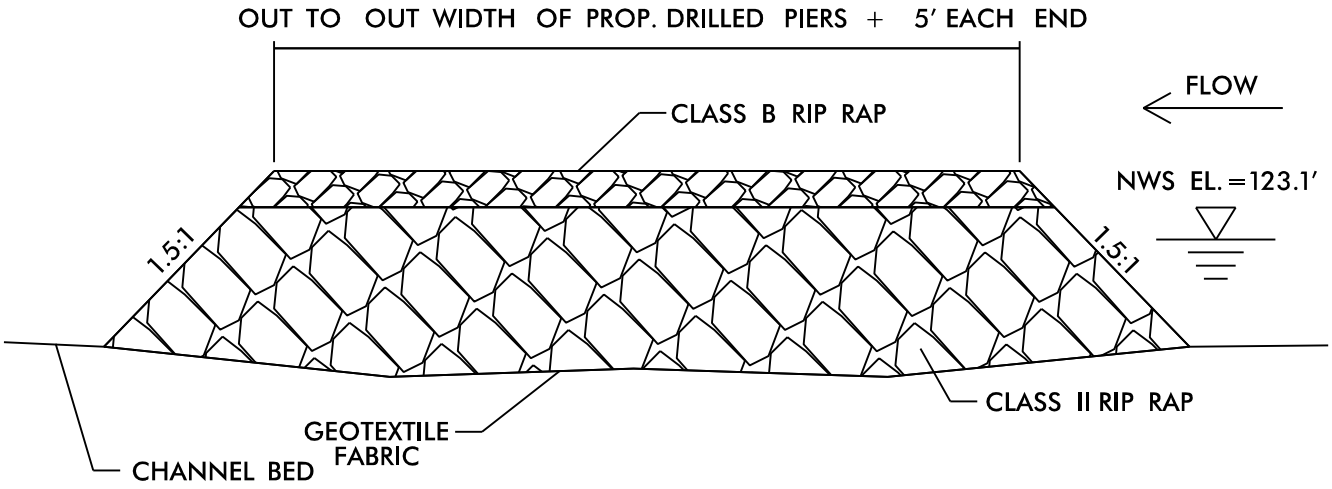
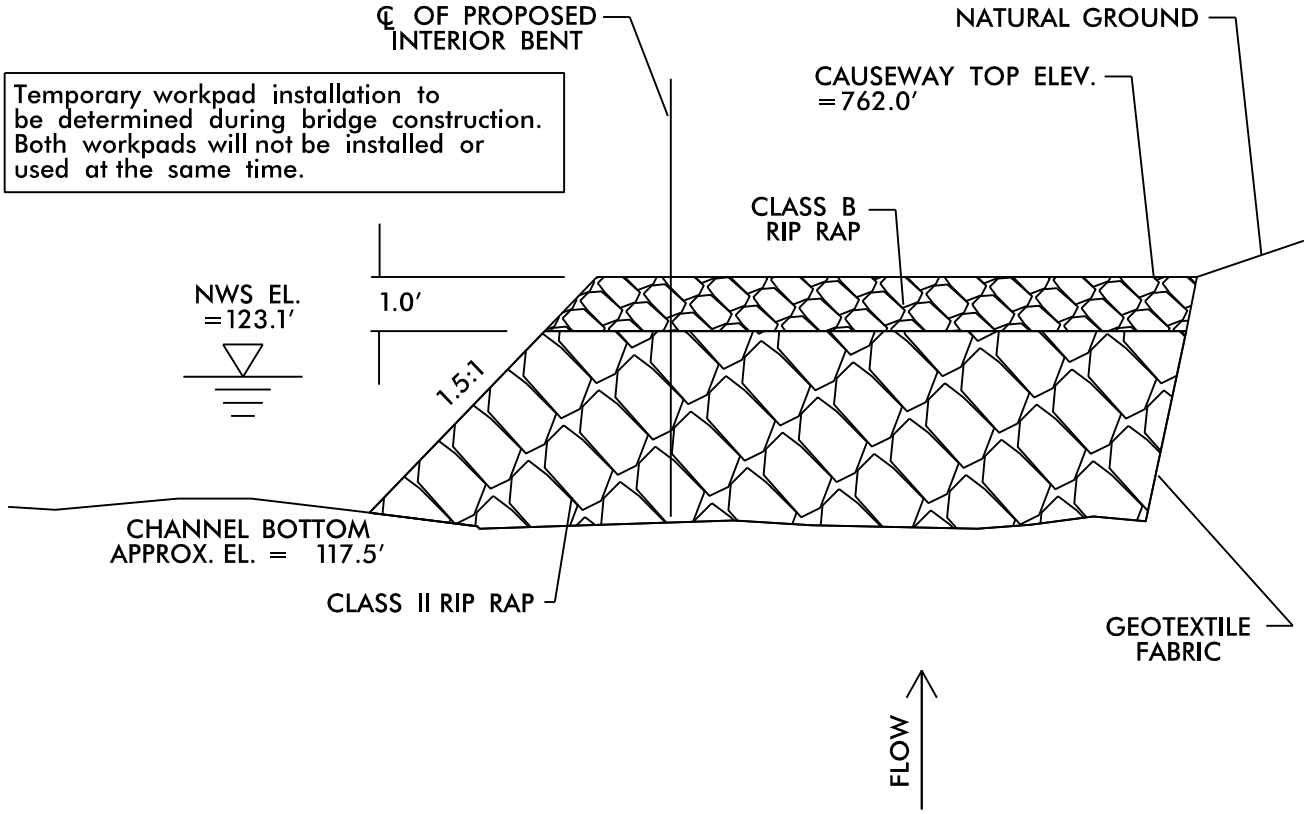
TEMPORARY WORK PAD DETAIL

NOT TO SCALE





STREAM CROSS SECTION TAKEN ALONG UPSTREAM TOE OF CAUSEWAY (MOST RESTRICTIVE LOCATION)

1. CHANNEL FLOW AREA BELOW NWS = 111.5 SF
2. PERCENT OF NWS FLOW AREA REMAINING WHILE CAUSEWAY IS IN PLACE = 54%

NCDOT

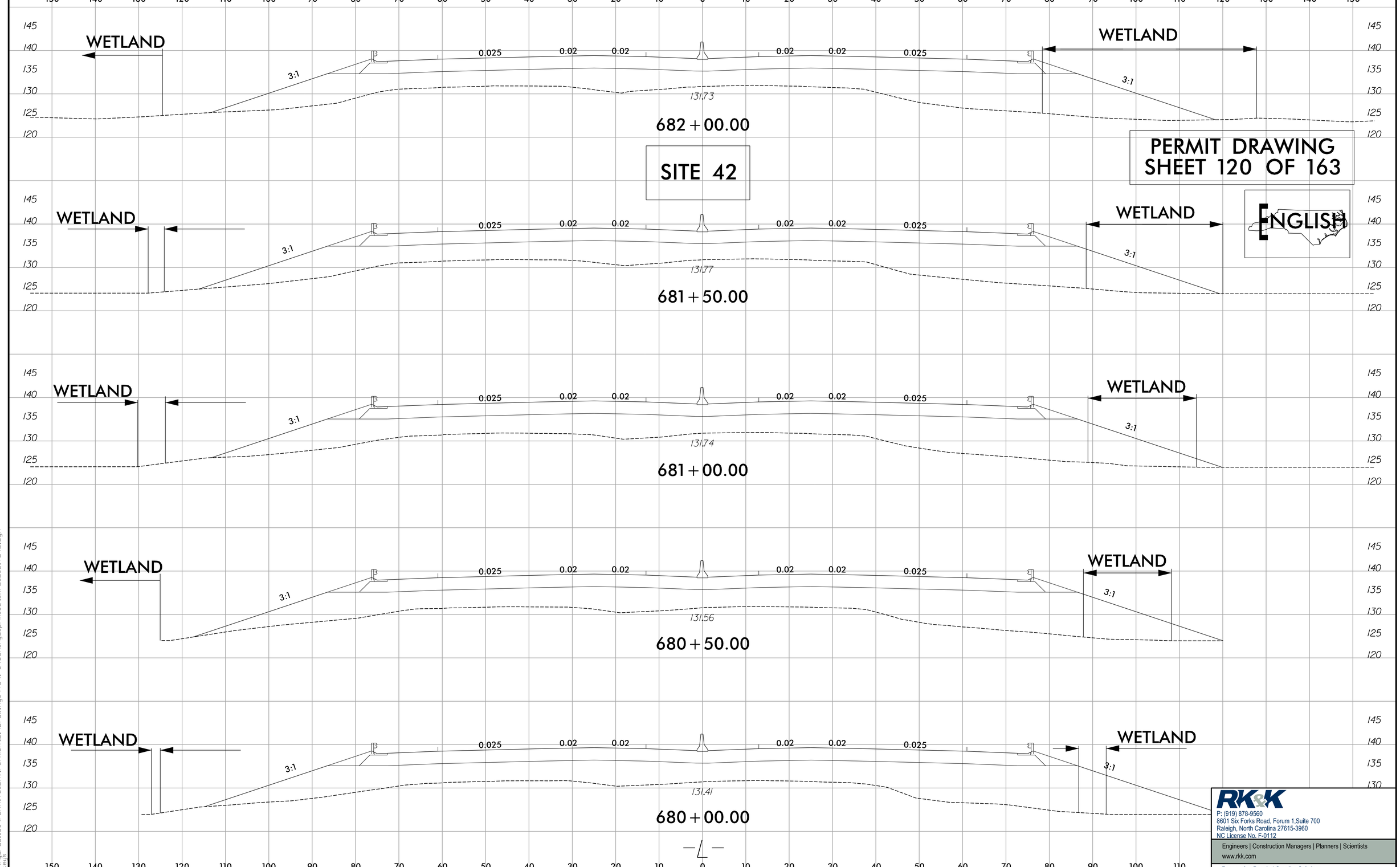
DIVISION OF HIGHWAYS
CUMBERLAND COUNTY
PROJECT: I-5986A / I-5877
BRIDGE OVER
BLACK RIVER
ON I-95

Submitted 9/2/2020

6/23/16

PROJ. REFERENCE NO.	SHEET NO.
I-5986A SECTION 3	X-51

0 5 10



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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	55
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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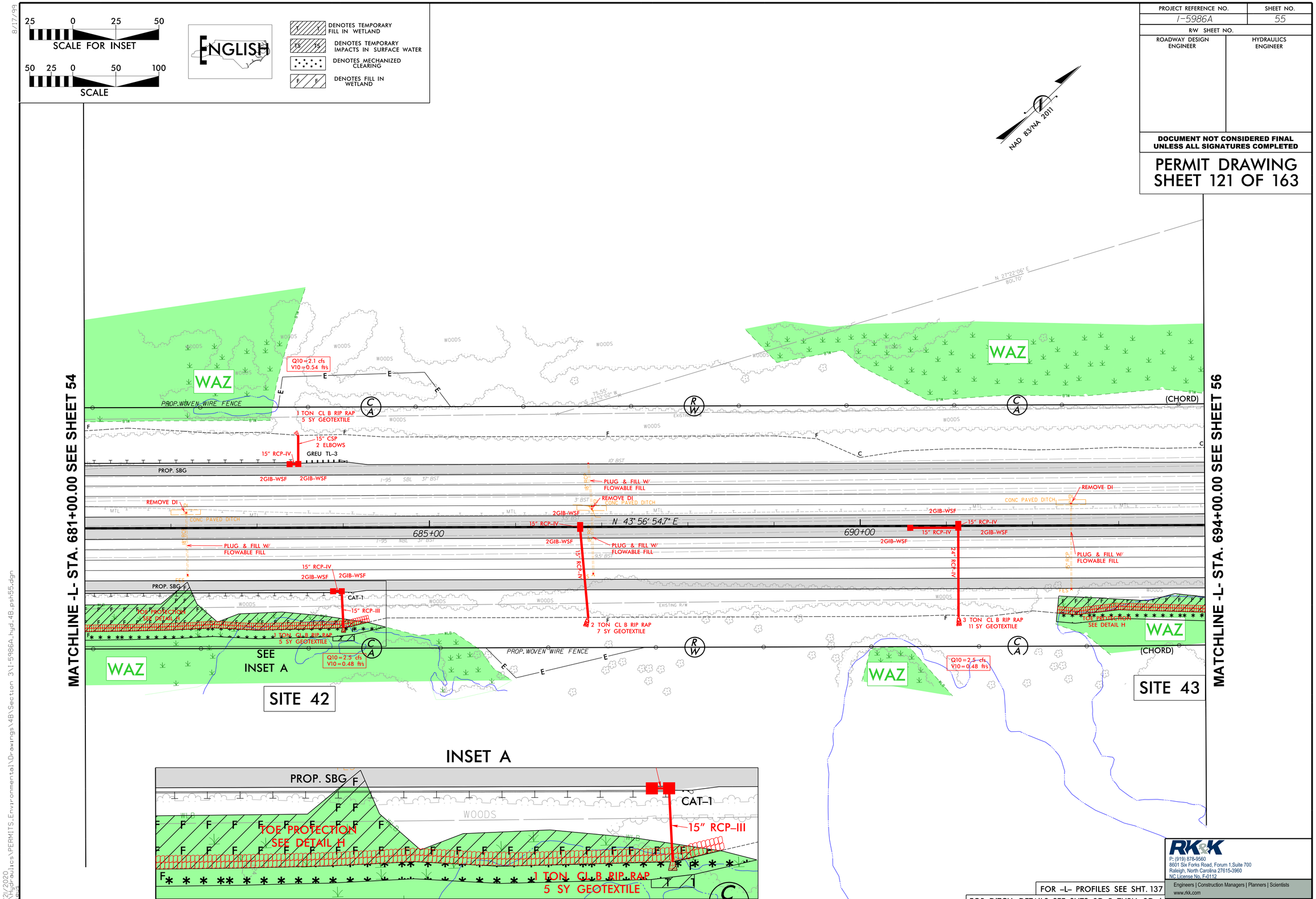

FOR -L- PROFILES SEE SHT. 137

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

DENOTES TEMPORARY FILL IN WETLAND
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	55
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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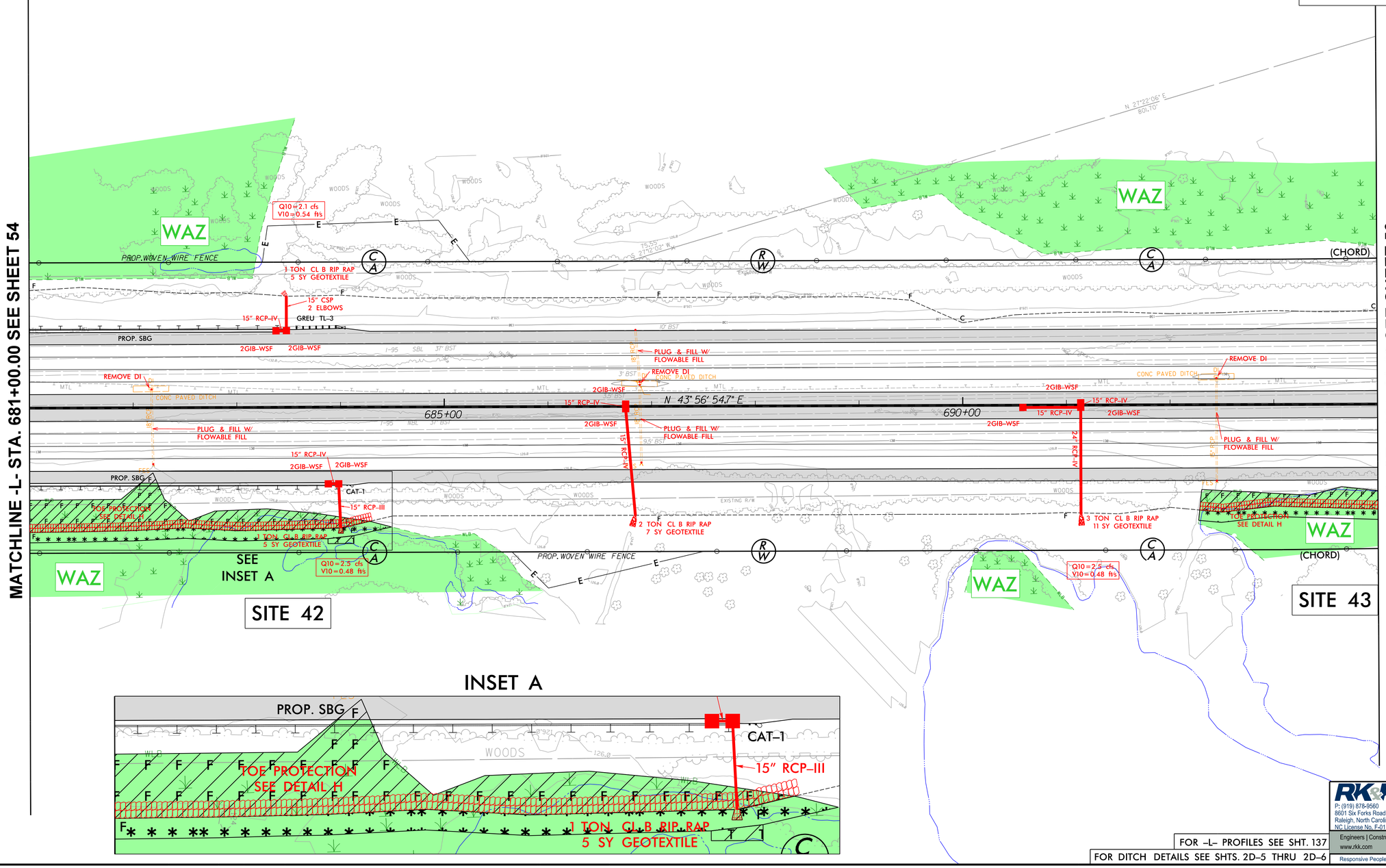
NAD 83/NA 2011



INSET A

FOR -L- PROFILES SEE SHT. 137

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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50 25 0 50 100
SCALE

ENGLISH

DENOTES TEMPORARY FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	56
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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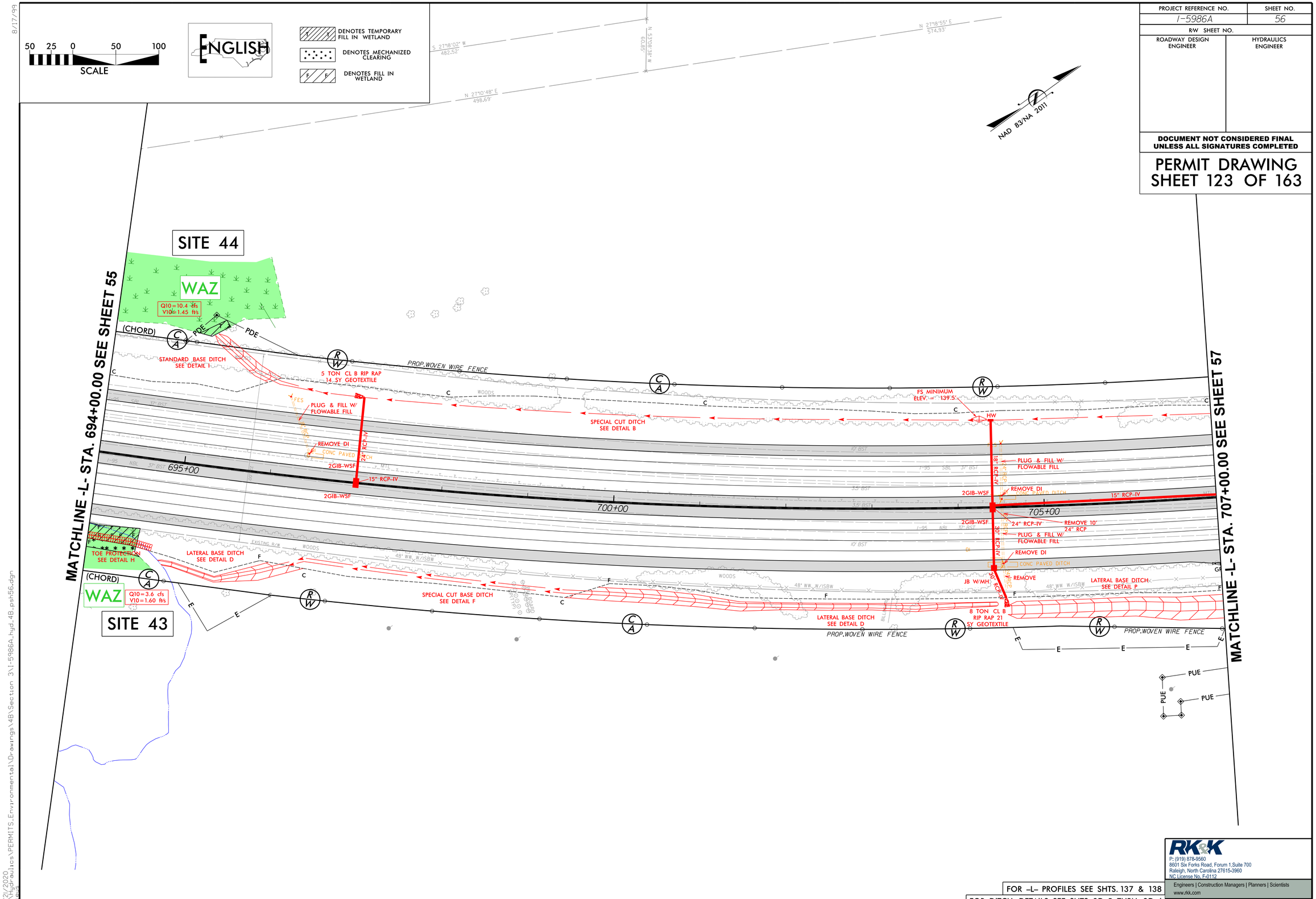

FOR –L– PROFILES SEE SHTS. 137 & 138

FOR DITCH DETAILS SEE SHTS. 2D–5 THRU 2D–6

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I-5986A	56
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 124 OF 163

50 25 0 50 100
SCALE

ENGLISH

DENOTES TEMPORARY FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

NAD 83/NA 2011

S 27°18'02" W 482.52'

N 27°10'48" E 498.69'

N 27°18'55" E 574.93'

N 5°38'09" W 63.89'

SITE 44

WAZ

Q10=10.4 cfs
V10=1.45 ft/s

(CHORD)

PDE

STANDARD BASE DITCH SEE DETAIL I

5 TON CL B RIP RAP 14 SY GEOTEXTILE

PROP.WOVEN WIRE FENCE

WOODS

PLUG & FILL W/ FLOWABLE FILL

SPECIAL CUT DITCH SEE DETAIL B

FS MINIMUM ELEV. = 139.5'

HW

REMOVE DI

CONC PAVED DITCH

2GIB-WSF

15" RCP-IV

24" RCP-IV

18" RCP-IV

30" RCP-IV

REMOVE 10' 24" RCP

REMOVE

JB W/MH

8 TON CL B RIP RAP 21 SY GEOTEXTILE

LATERAL BASE DITCH SEE DETAIL D

LATERAL BASE DITCH SEE DETAIL P

SPECIAL CUT BASE DITCH SEE DETAIL F

TOE PROTECTION SEE DETAIL H

SITE 43

PUE

MATCHLINE -L- STA. 694+00.00 SEE SHEET 55

MATCHLINE -L- STA. 707+00.00 SEE SHEET 57

695+00

700+00

705+00

FOR -L- PROFILES SEE SHTS. 137 & 138

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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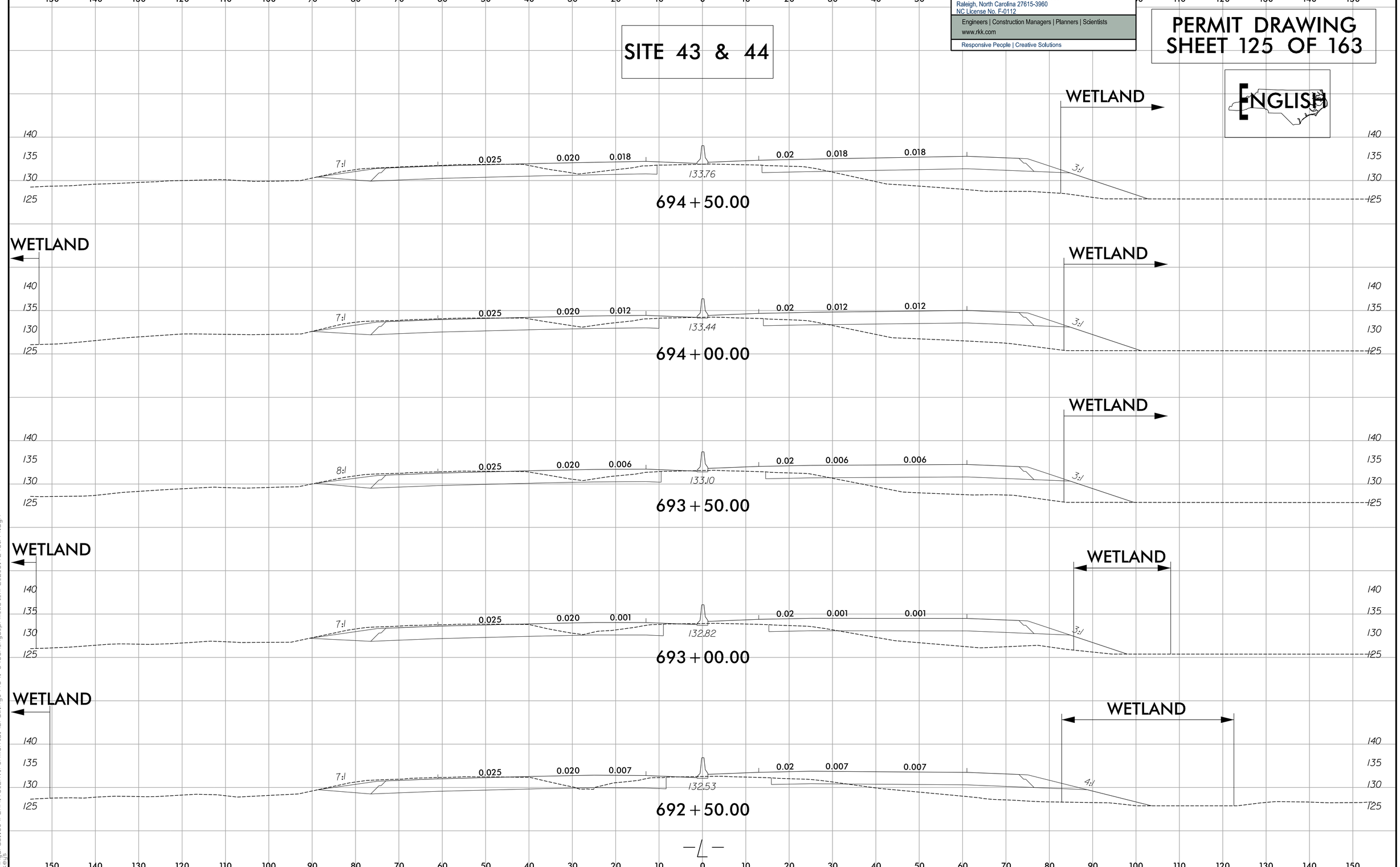
PROJ. REFERENCE NO.	SHEET NO.
I-5986A SECTION 3	X-56

PERMIT DRAWING
SHEET 125 OF 163

SITE 43 & 44



6/23/16

8/20/2020
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Fleig

Submitted 9/2/2020

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	58
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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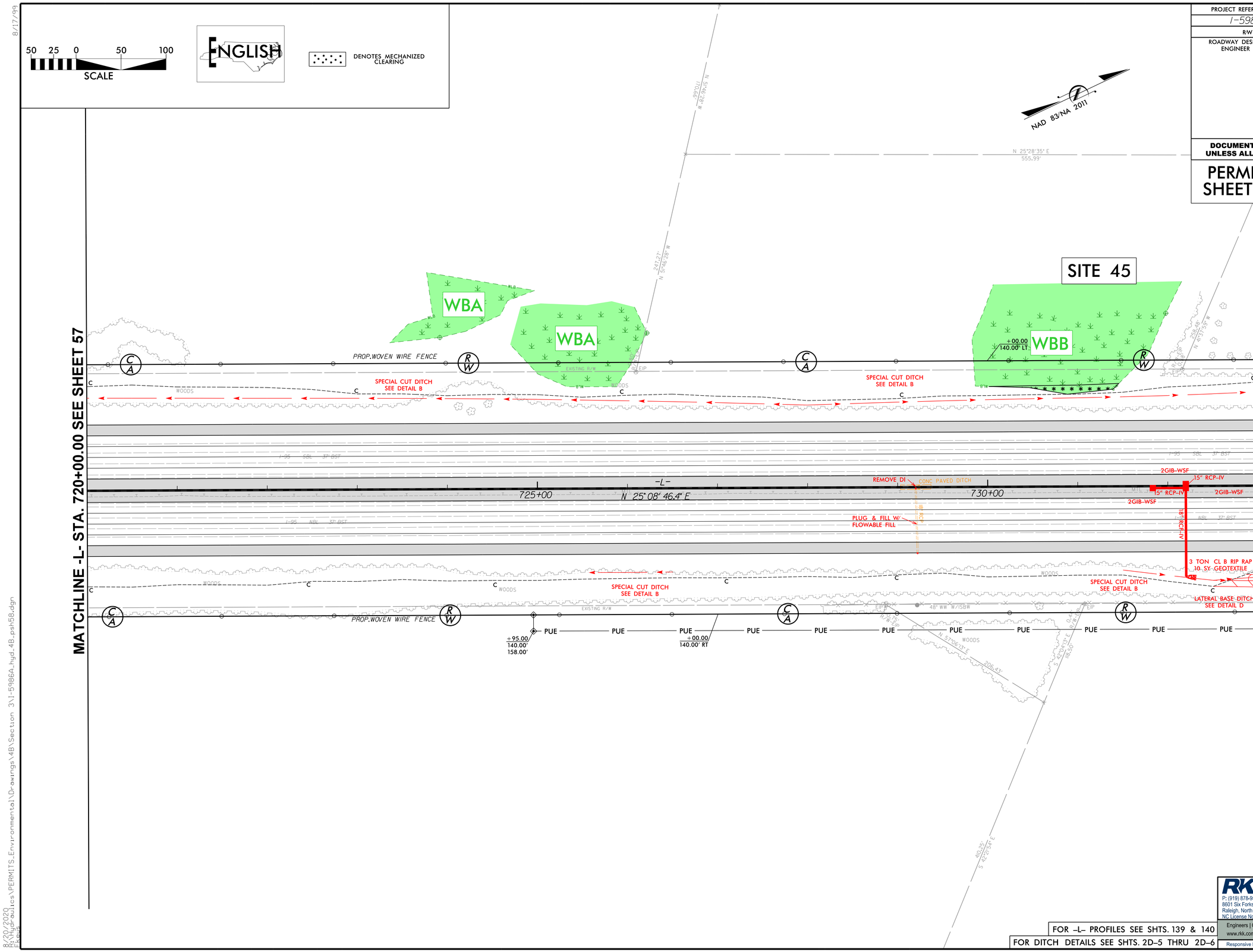
PERMIT DRAWING SHEET 126 OF 163



FOR -L- PROFILES SEE SHTS. 139 & 140

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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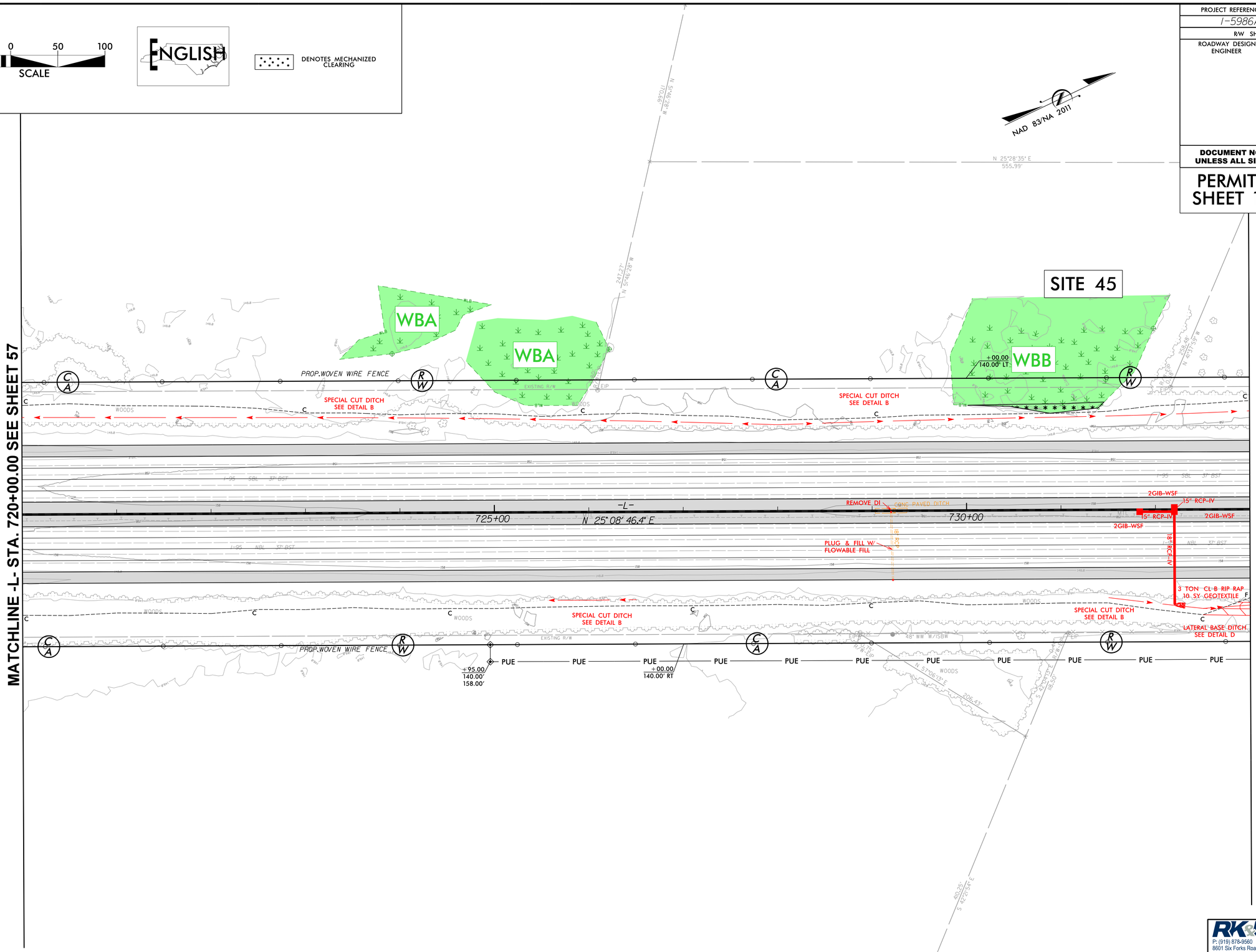
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	58
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 127 OF 163



FOR -L- PROFILES SEE SHTS. 139 & 140

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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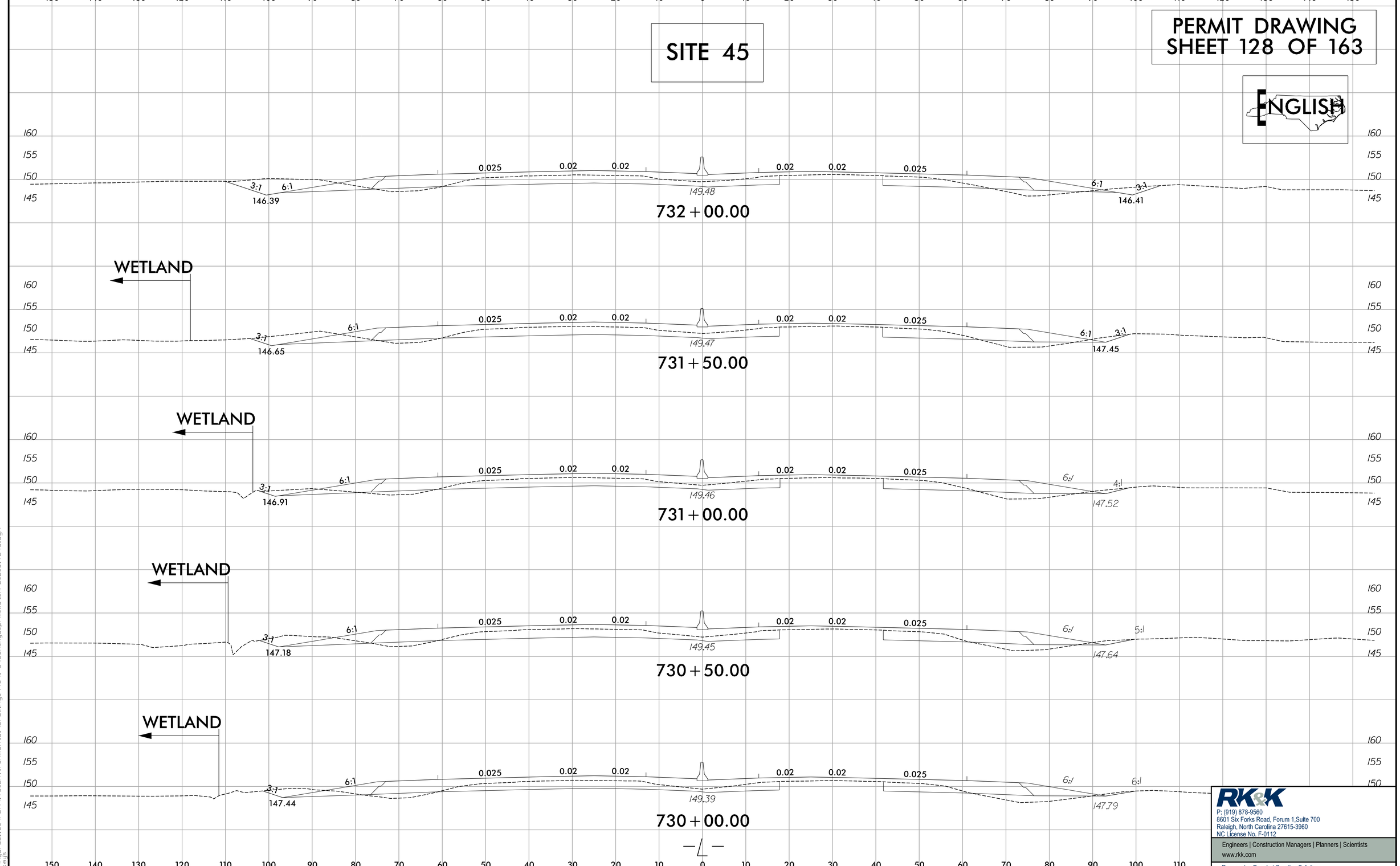
PROJ. REFERENCE NO.	SHEET NO.
I-5986A SECTION 3	X-69

PERMIT DRAWING
SHEET 128 OF 163

ENGLISH

SITE 45



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Fleig

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50 25 0 50 100
SCALE

ENGLISH

DENOTES EXCAVATION IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	59
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 129 OF 163

NAD 83/NA 2011

MATCHLINE -L- STA. 733+00.00 SEE SHEET 58

MATCHLINE -L- STA. 746+50.00 SEE SHEET 60

SITE 46

WBC

Q10=26.9 cfs
V10=1.70 fps

Q10=2.2 cfs
V10=0.92 fps

SPECIAL LATERAL V DITCH SEE DETAIL A

STANDARD V DITCH SEE DETAIL T
TOE PROTECTION SEE DETAIL A

SPECIAL CUT DITCH SEE DETAIL B

PROP. WOVEN WIRE FENCE

+00.00
140.00' LT

+00.00
140.00' RT

42" RCP-IV

PLUG & FILL W/ FLOWABLE FILL

2GIA-WSF

REMOVE DI

CONC PAVED DITCH

N 25° 08' 46.4" E

-L-

735+00

740+00

745+00

PROP. TYPE T BARRIER

24" RCP-IV

LATERAL BASE DITCH SEE DETAIL D

20 TON CL B RIP RAP
56 SY GEOTEXTILE

SPECIAL CUT BASE DITCH SEE DETAIL F

5 TON CL B RIP RAP
14 SY GEOTEXTILE

PUE

FOR -L- PROFILES SEE SHTS. 140 & 141

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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Ekeys

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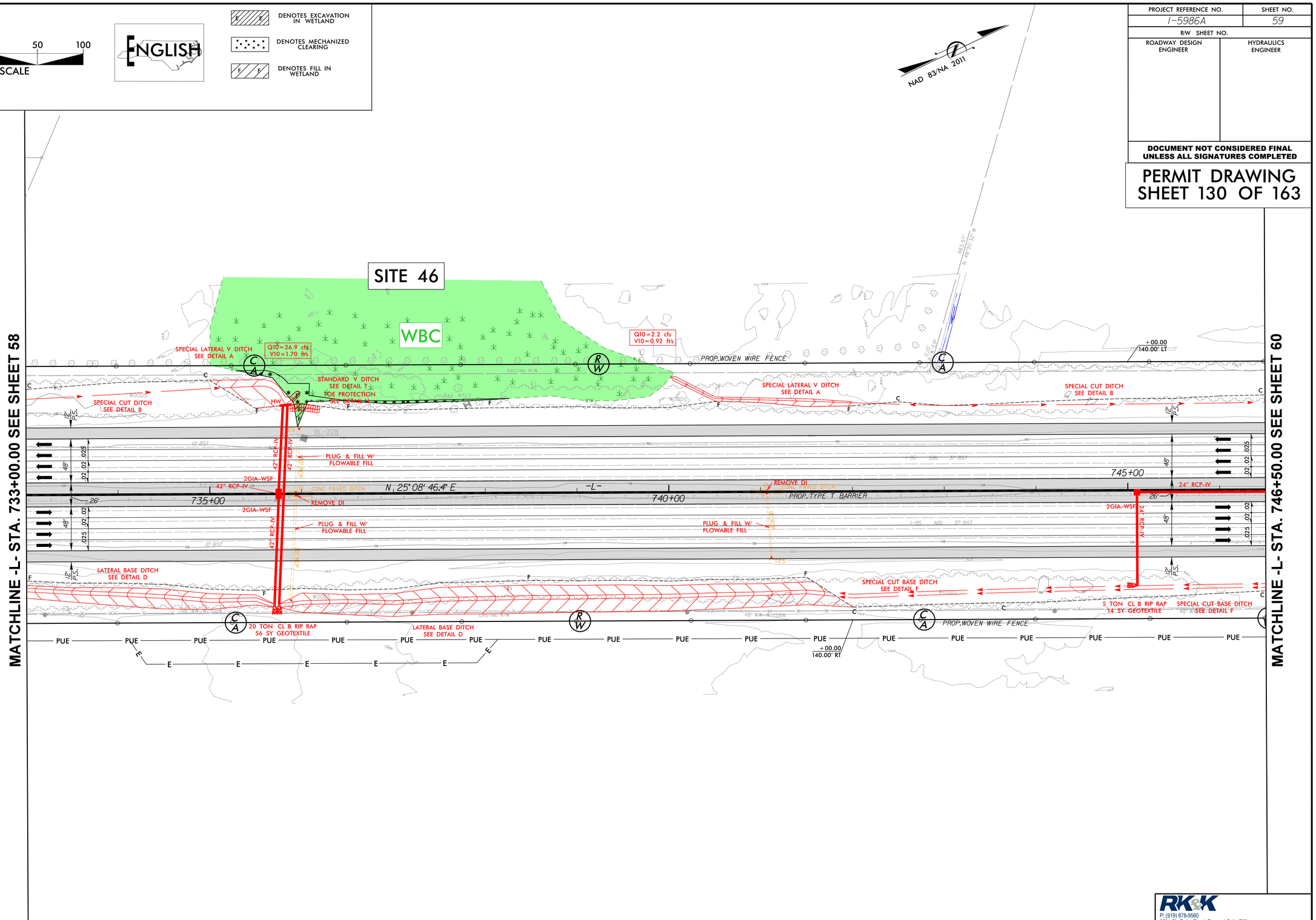
I-5986A	59
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 130 OF 163



FOR -L- PROFILES SEE SHTS. 140 & 141

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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Fkeys

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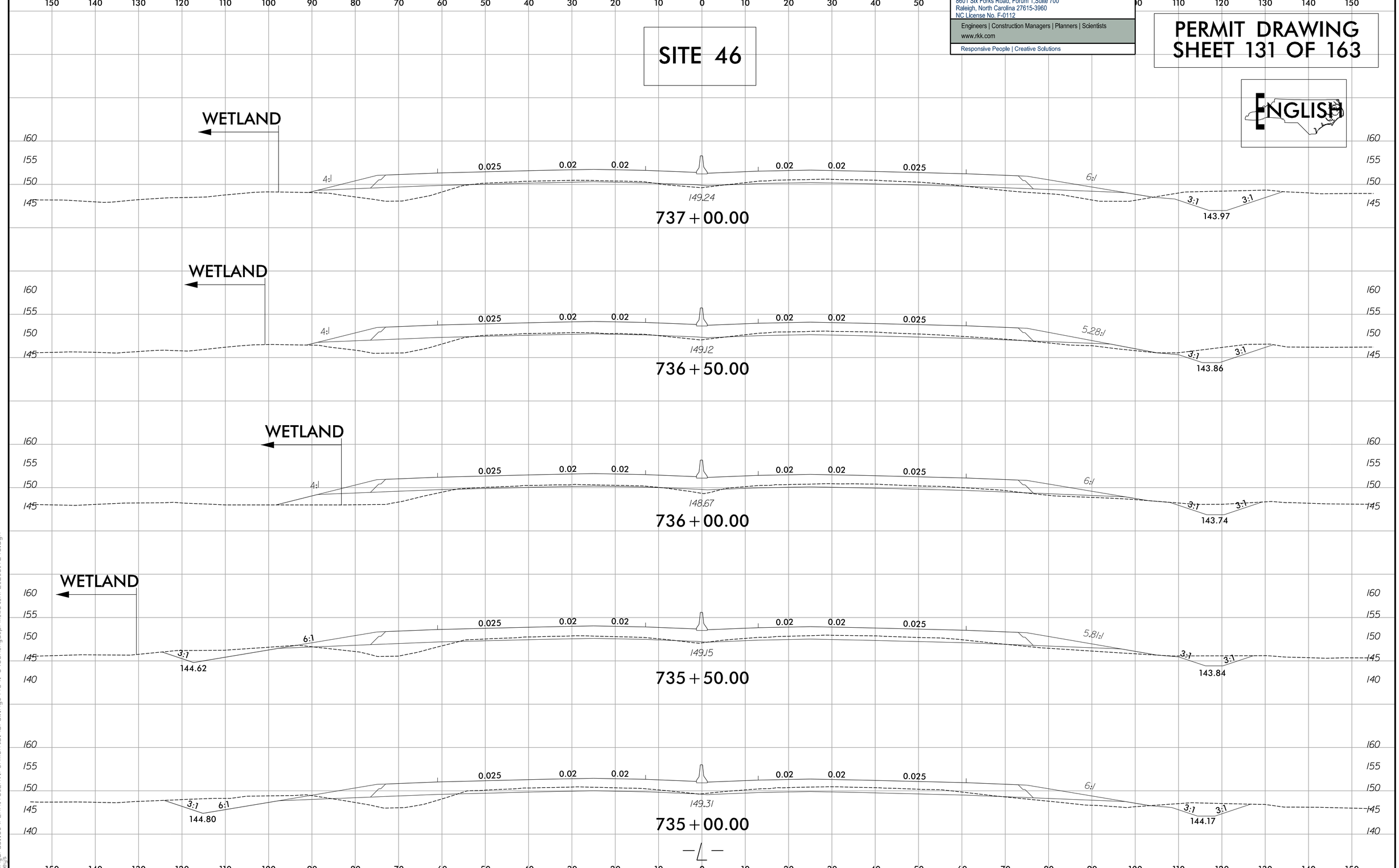
PROJ. REFERENCE NO.	SHEET NO.
I-5986A SECTION 3	X-71

PERMIT DRAWING
SHEET 131 OF 163

ENGLISH

SITE 46



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R:\Hydraulics\PERMITS_Environmental\Drawings\4C\I-5986A_hyd_prm_wet_XPL_L_SITE46.dgn
FKeys

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25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

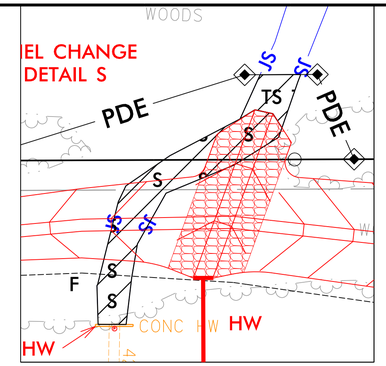
ENGLISH

S S DENOTES IMPACTS IN SURFACE WATER

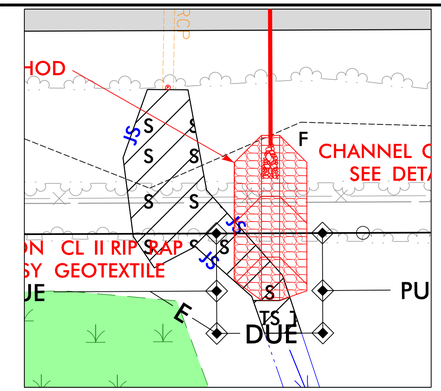
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	61
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



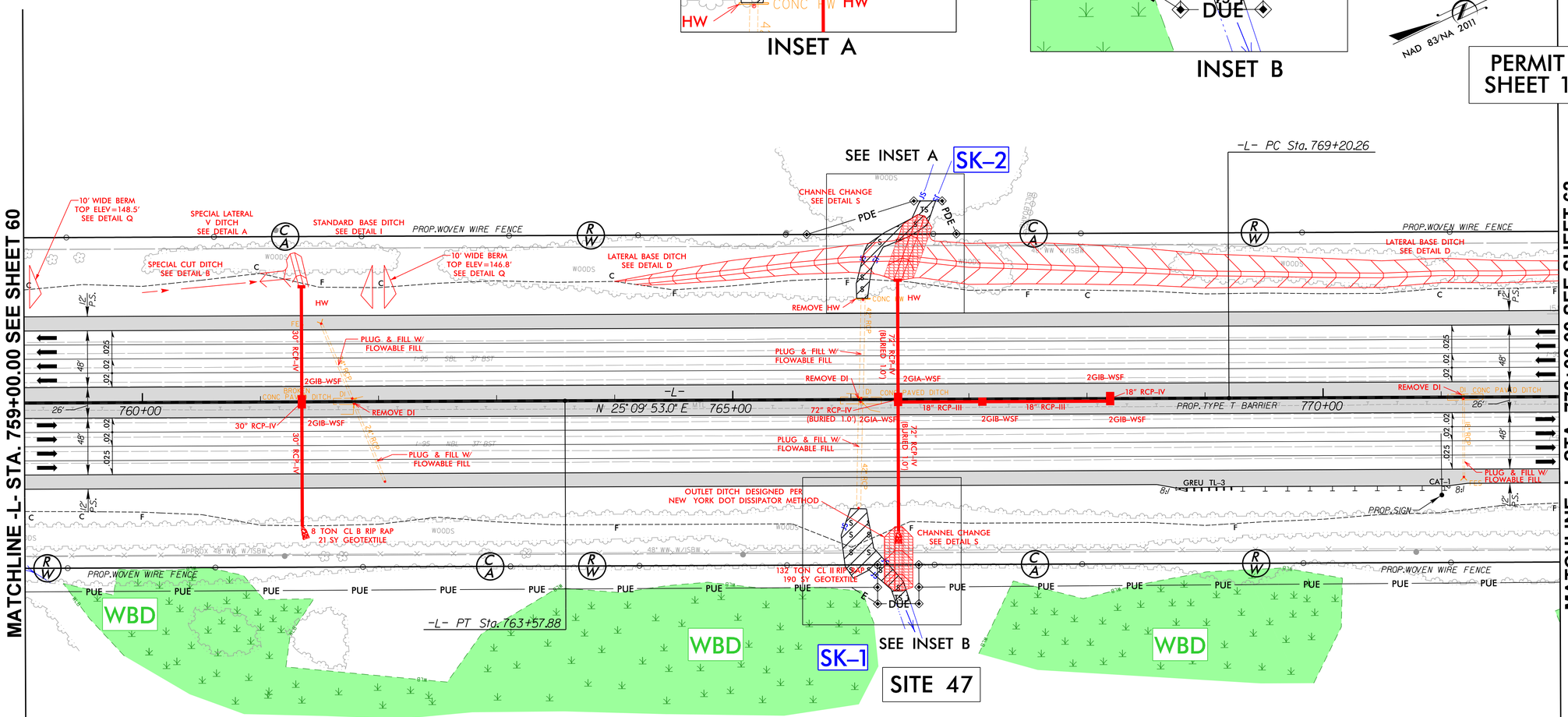
INSET A



INSET B

NAD 83/NA 2011

PERMIT DRAWING
SHEET 132 OF 163



FOR -L- PROFILES SEE SHTS. 142 & 143

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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8/17/99

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

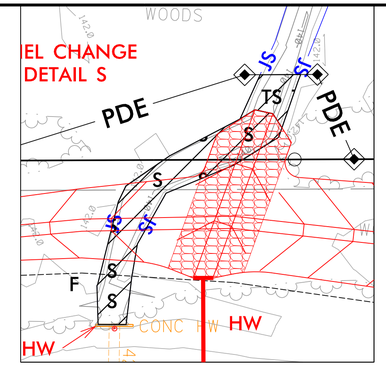
ENGLISH

S S DENOTES IMPACTS IN SURFACE WATER

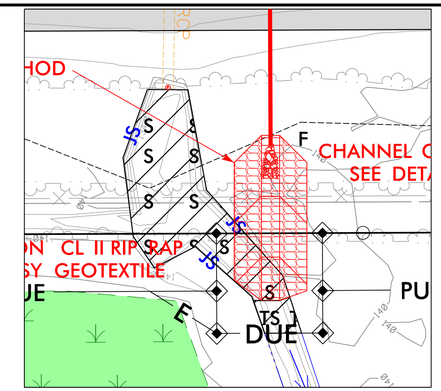
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	61
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



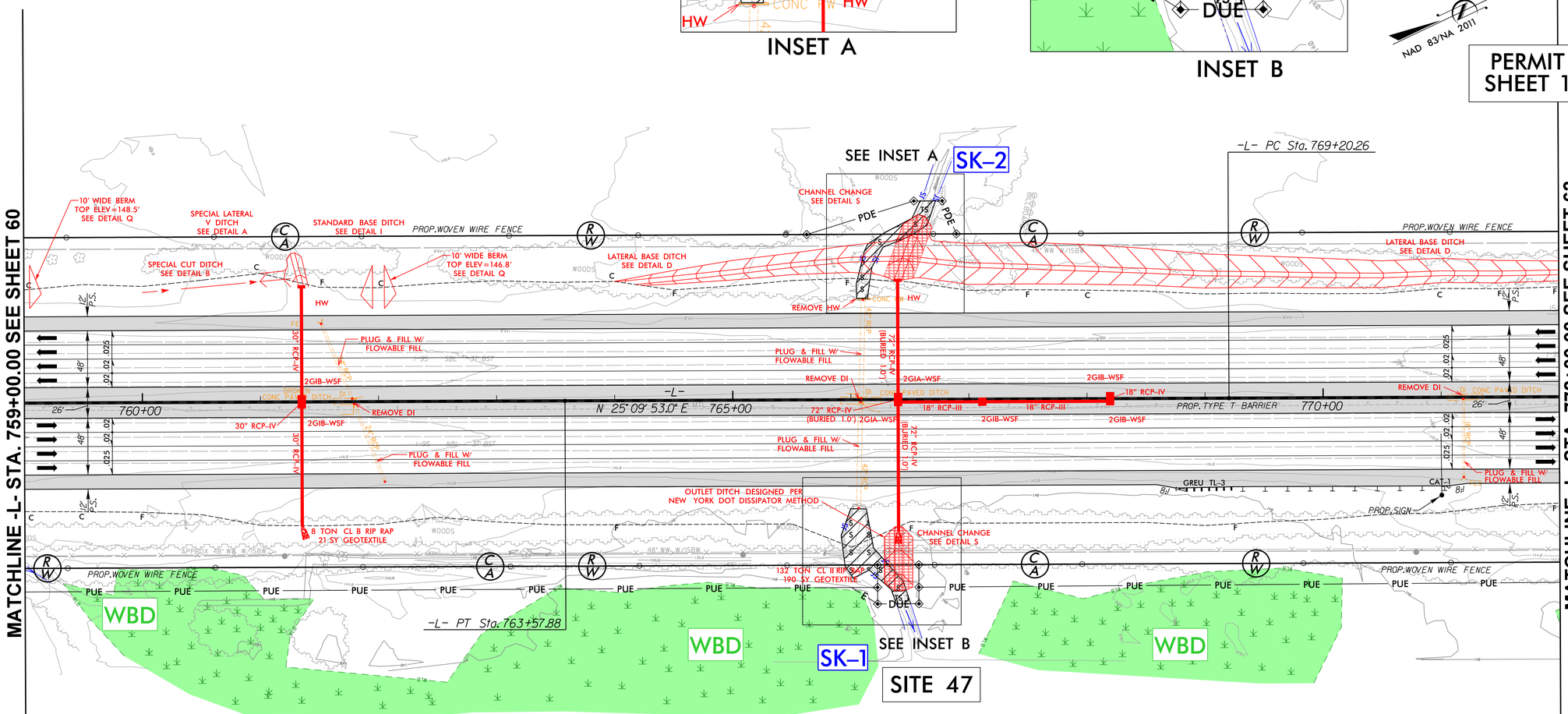
INSET A



INSET B

NAD 83/NA 2011

PERMIT DRAWING
SHEET 133 OF 163



FOR -L- PROFILES SEE SHTS. 142 & 143

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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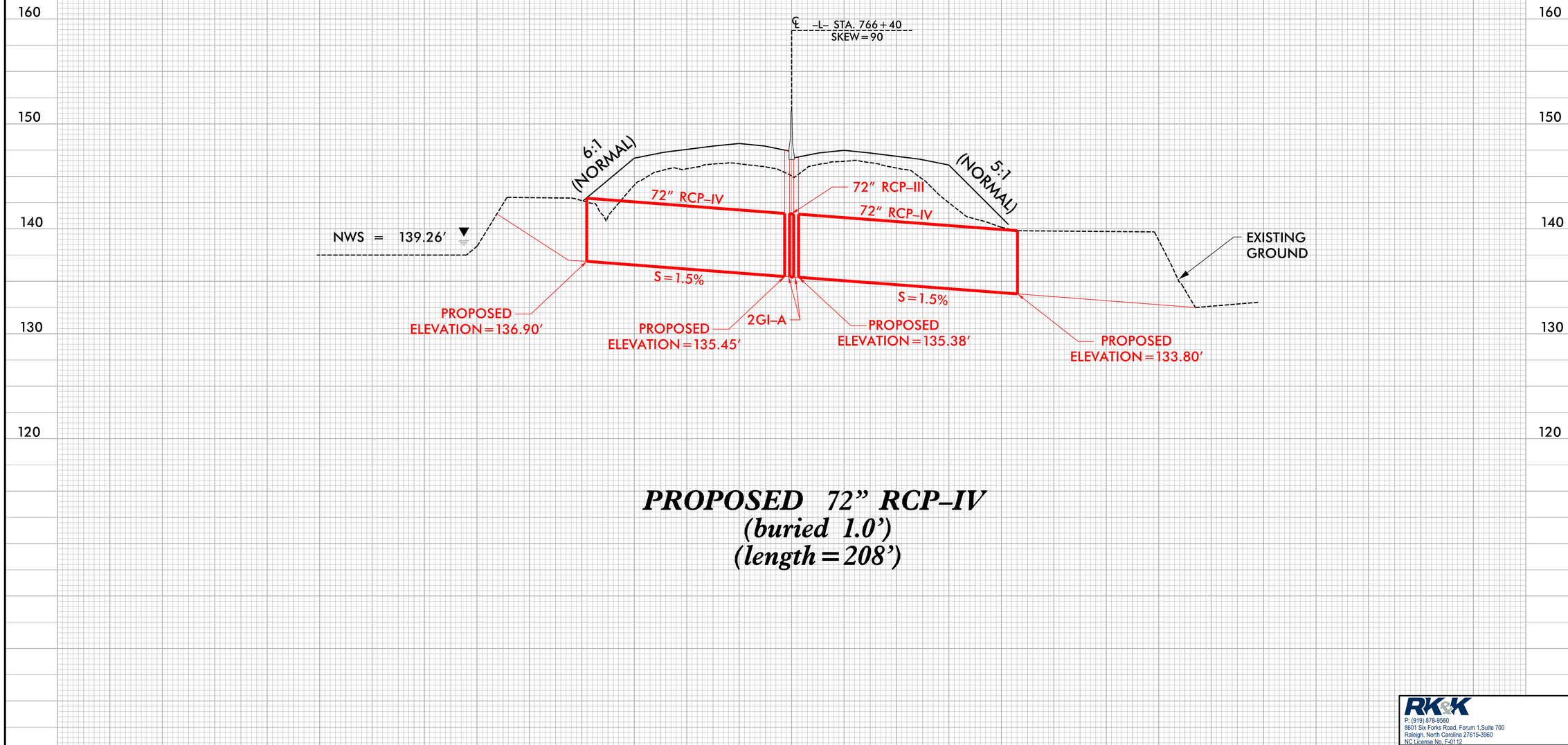
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 47
–L– STA. 766+40

PERMIT DRAWING
SHEET 134 OF 163

ENGLISH



PROPOSED 72" RCP–IV
(buried 1.0')
(length=208')

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	66
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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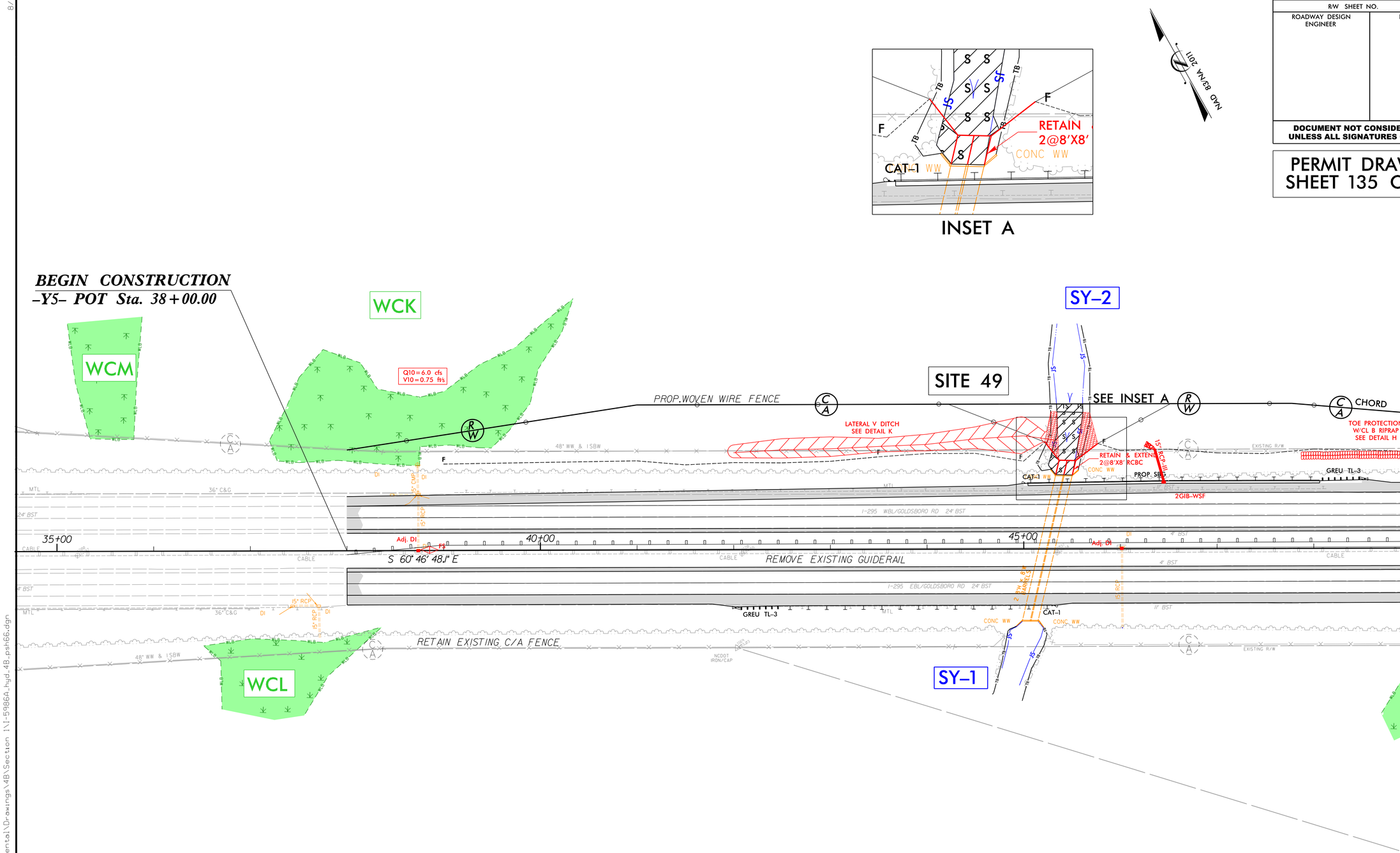
PERMIT DRAWING SHEET 135 OF 163



MATCHLINE -Y5- STA. 49+00.00 SEE SHEET 67

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
S S	DENOTES IMPACTS IN SURFACE WATER
	DENOTES MECHANIZED CLEARING
F F	DENOTES FILL IN WETLAND

FOR -Y5LT- PROFILE SEE SHTS. 153 AND 154
FOR -Y5RT- PROFILE SEE SHTS. 153 AND 154
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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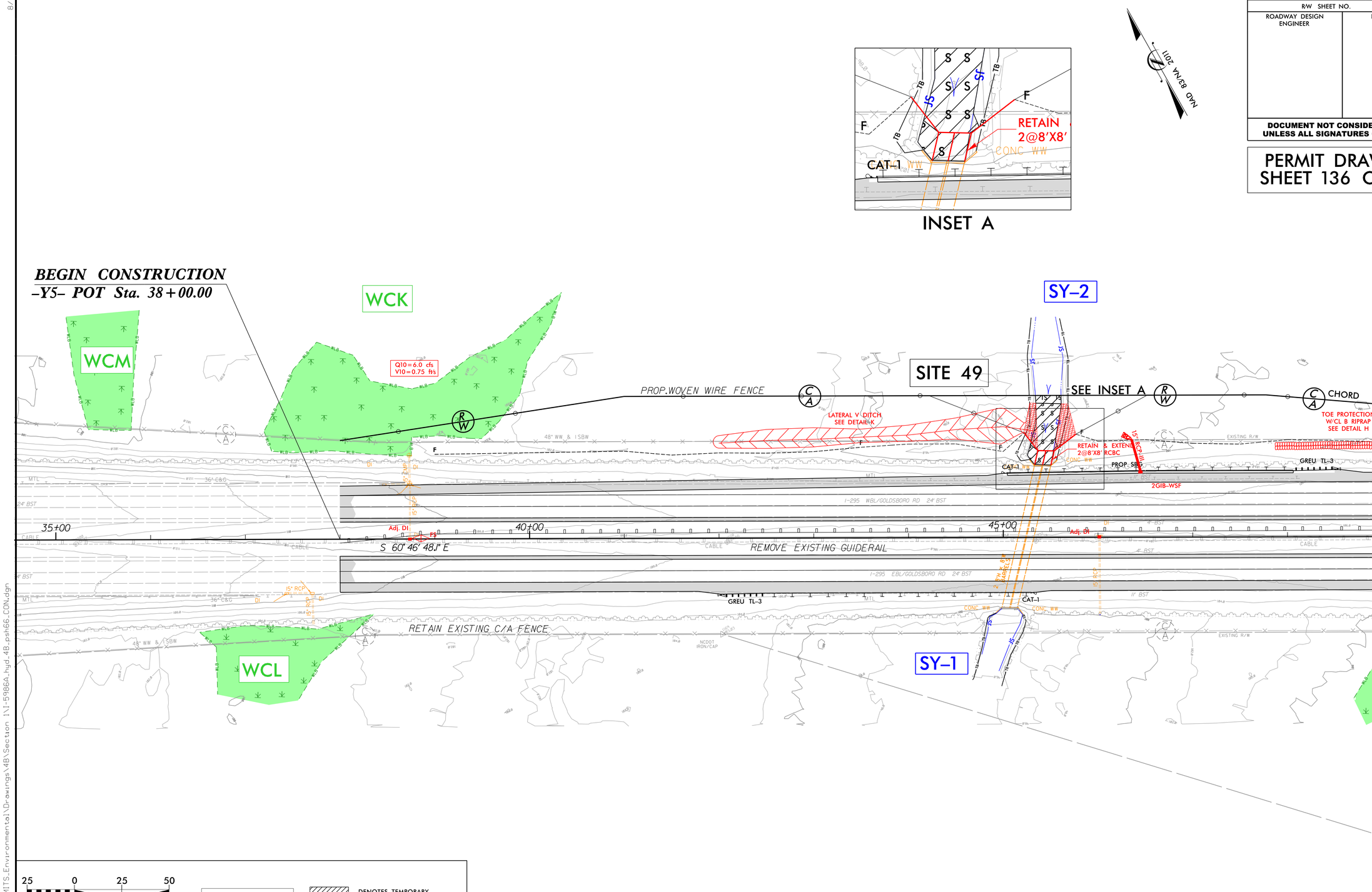
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	66
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 136 OF 163



25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
S S	DENOTES IMPACTS IN SURFACE WATER
	DENOTES MECHANIZED CLEARING
F F	DENOTES FILL IN WETLAND

FOR -Y5LT- PROFILE SEE SHTS. 153 AND 154
FOR -Y5RT- PROFILE SEE SHTS. 153 AND 154
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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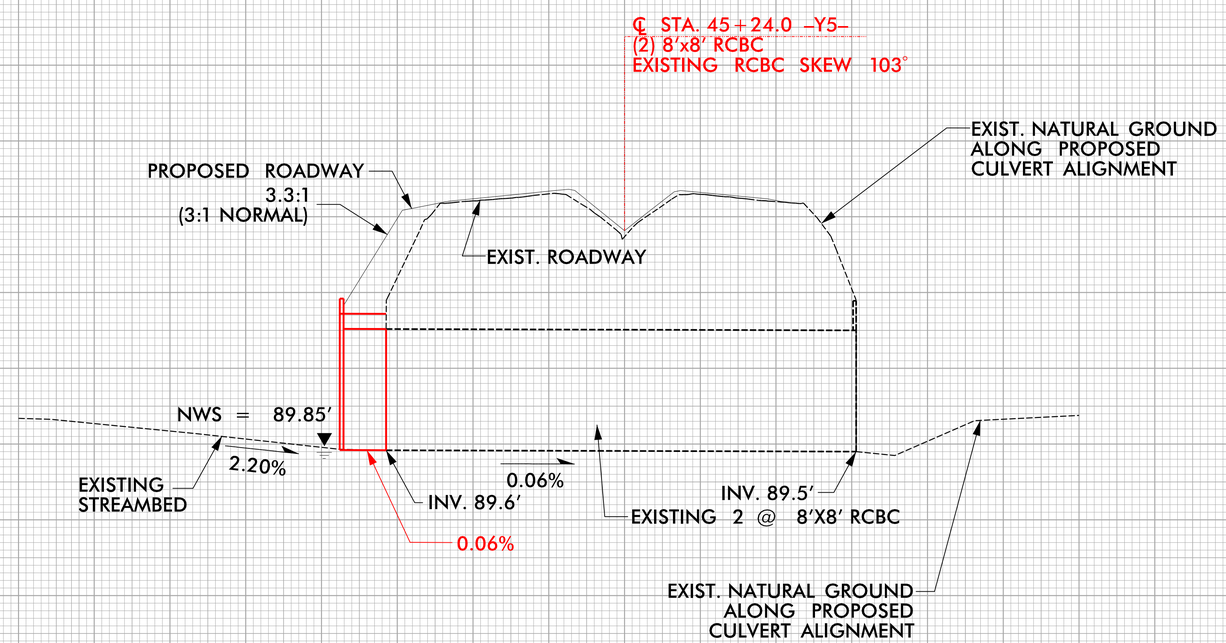
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 49
–Y5– STA. 45+24

PERMIT DRAWING
SHEET 136A OF 163

ENGLISH



2 @ 8'X 8' RCBC EXTENSION
(not buried)
(length=170')

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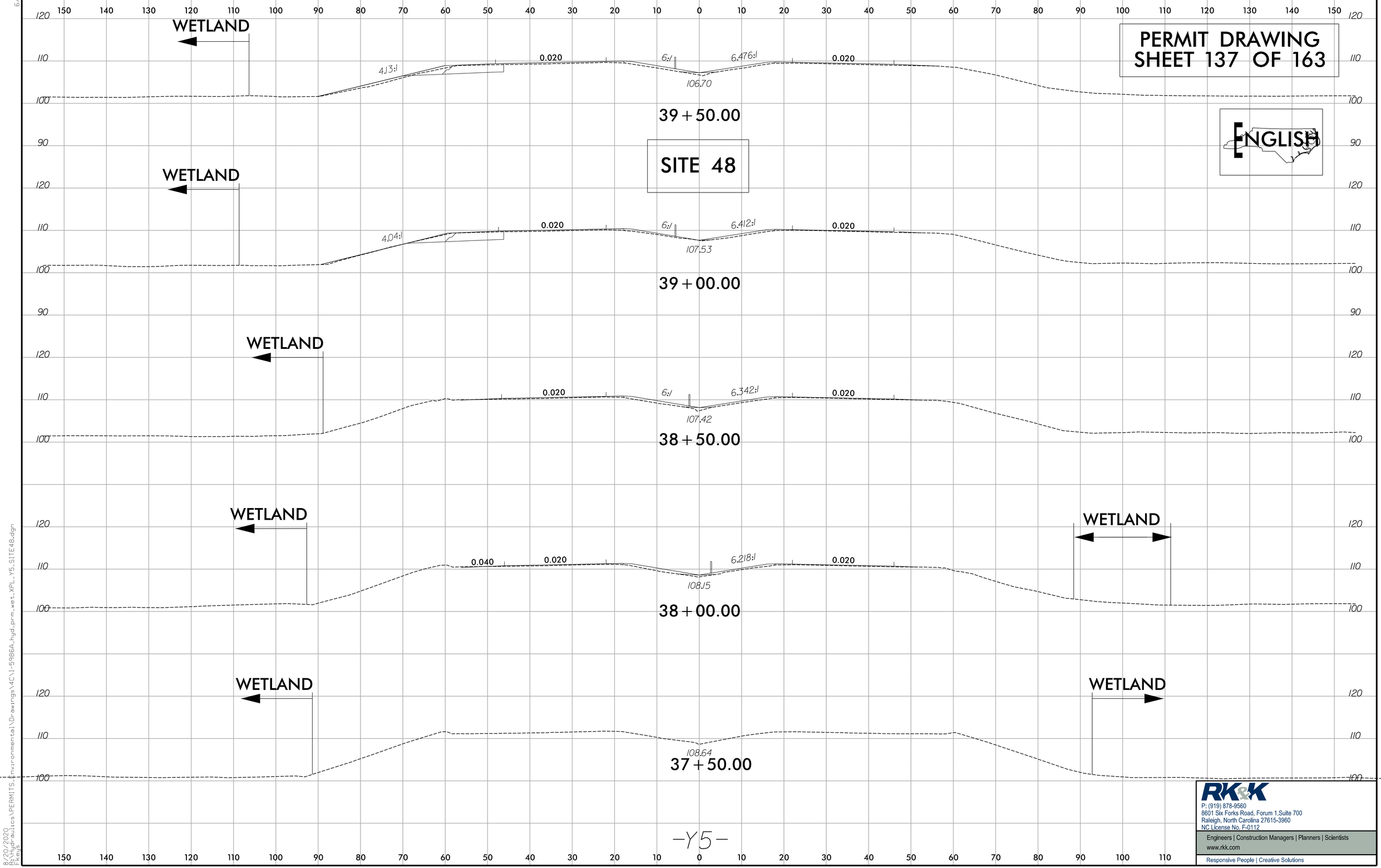
PROJ. REFERENCE NO.	SHEET NO.
I-5986A	S1 X-169

PERMIT DRAWING
SHEET 137 OF 163

ENGLISH

SITE 48



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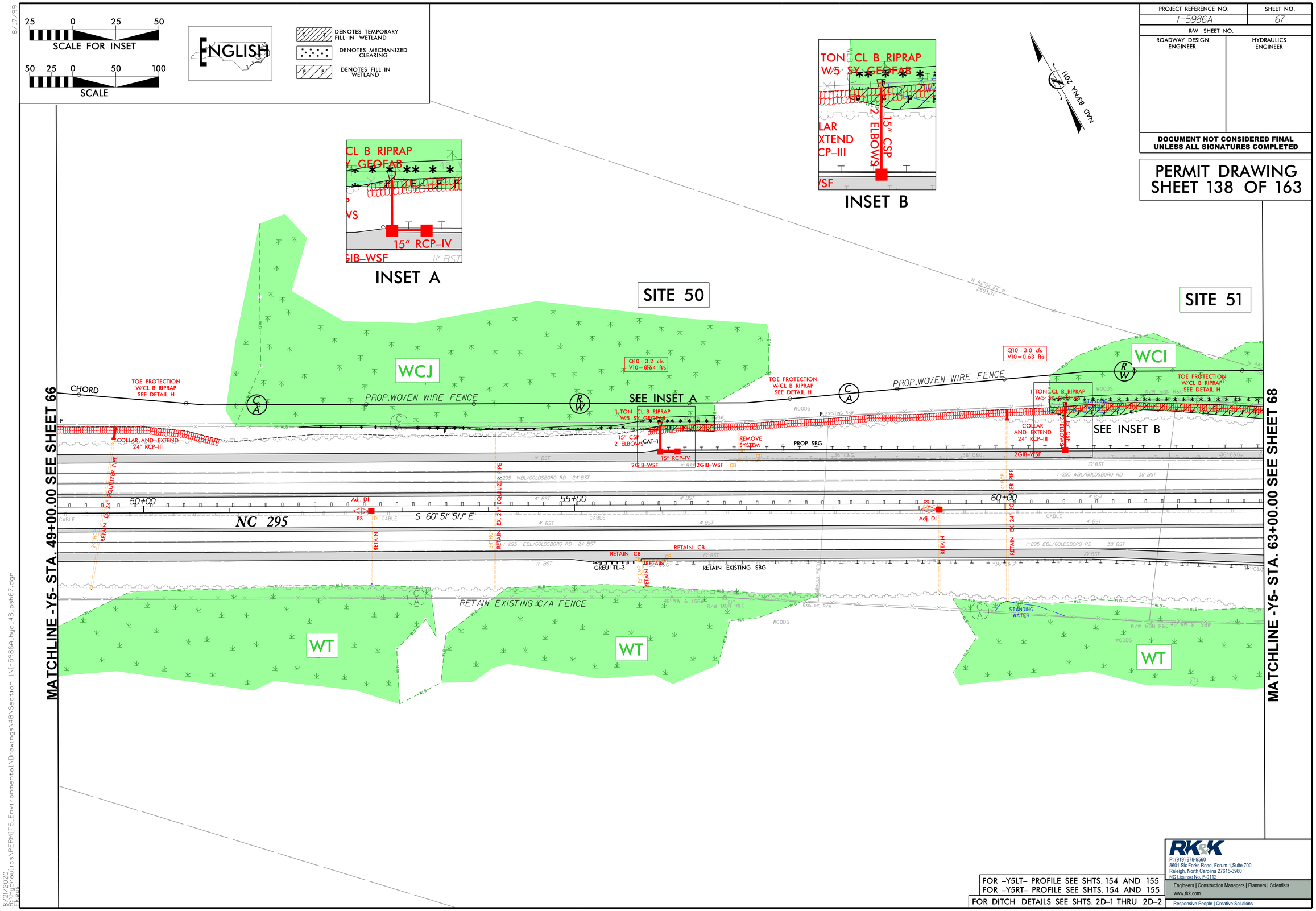

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	67
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 138 OF 163

FOR –Y5LT– PROFILE SEE SHTS. 154 AND 155
FOR –Y5RT– PROFILE SEE SHTS. 154 AND 155
FOR DITCH DETAILS SEE SHTS. 2D–1 THRU 2D–2

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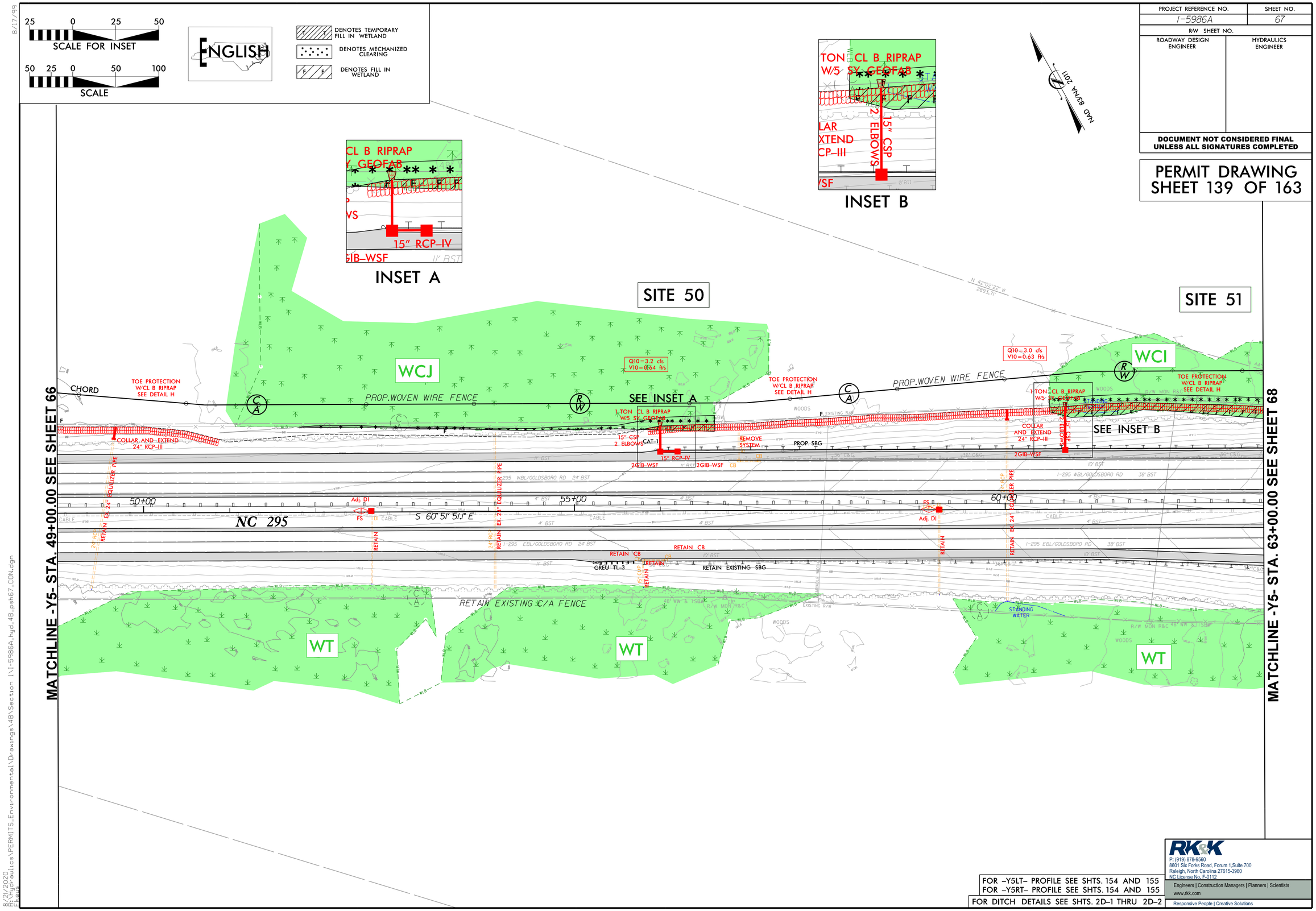

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	67
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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FOR –Y5LT– PROFILE SEE SHTS. 154 AND 155
FOR –Y5RT– PROFILE SEE SHTS. 154 AND 155
FOR DITCH DETAILS SEE SHTS. 2D–1 THRU 2D–2

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PROJ. REFERENCE NO.	SHEET NO.
I-5986A	S1 X-176

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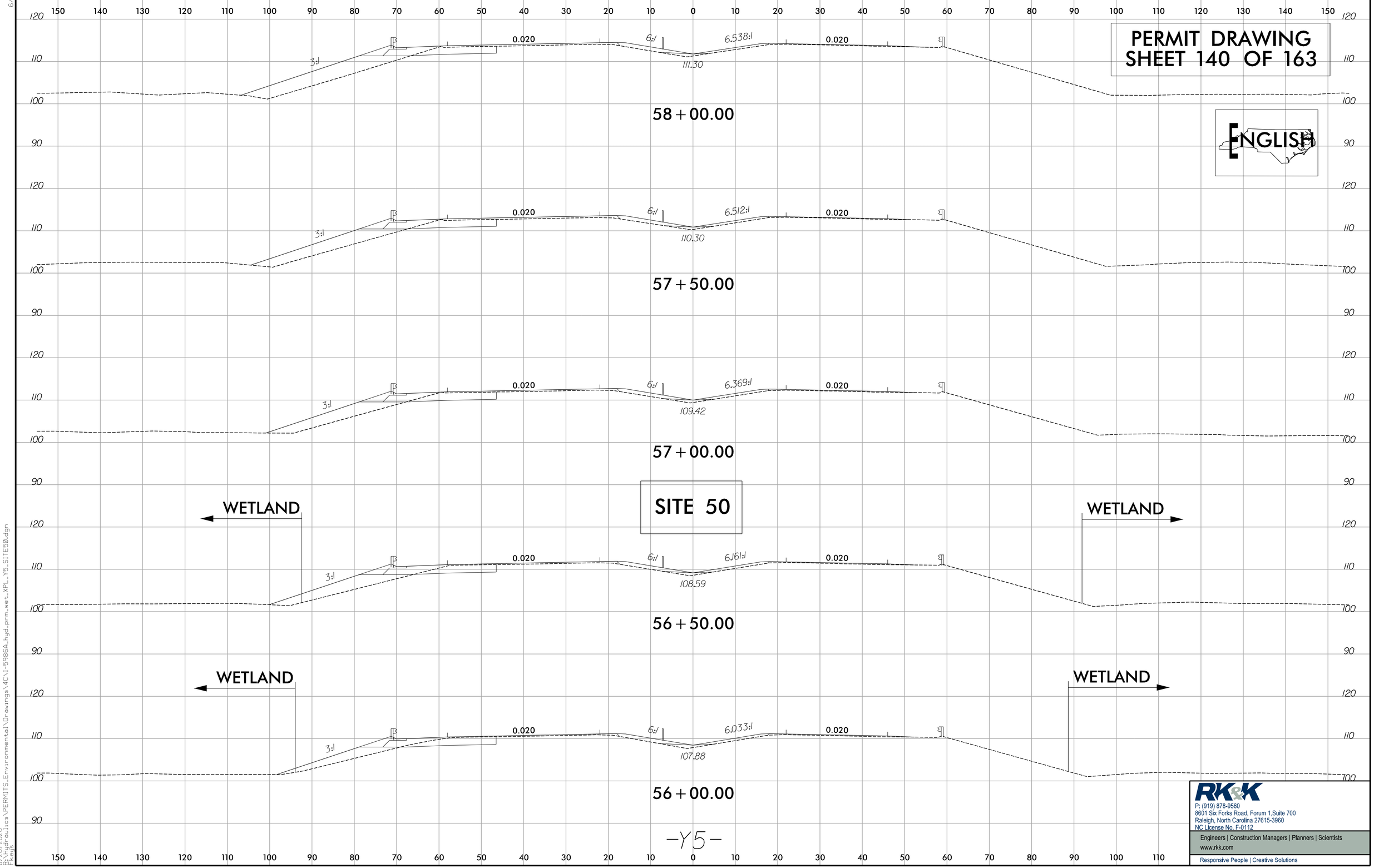
SHEET 140 OF 163

ENGLISH



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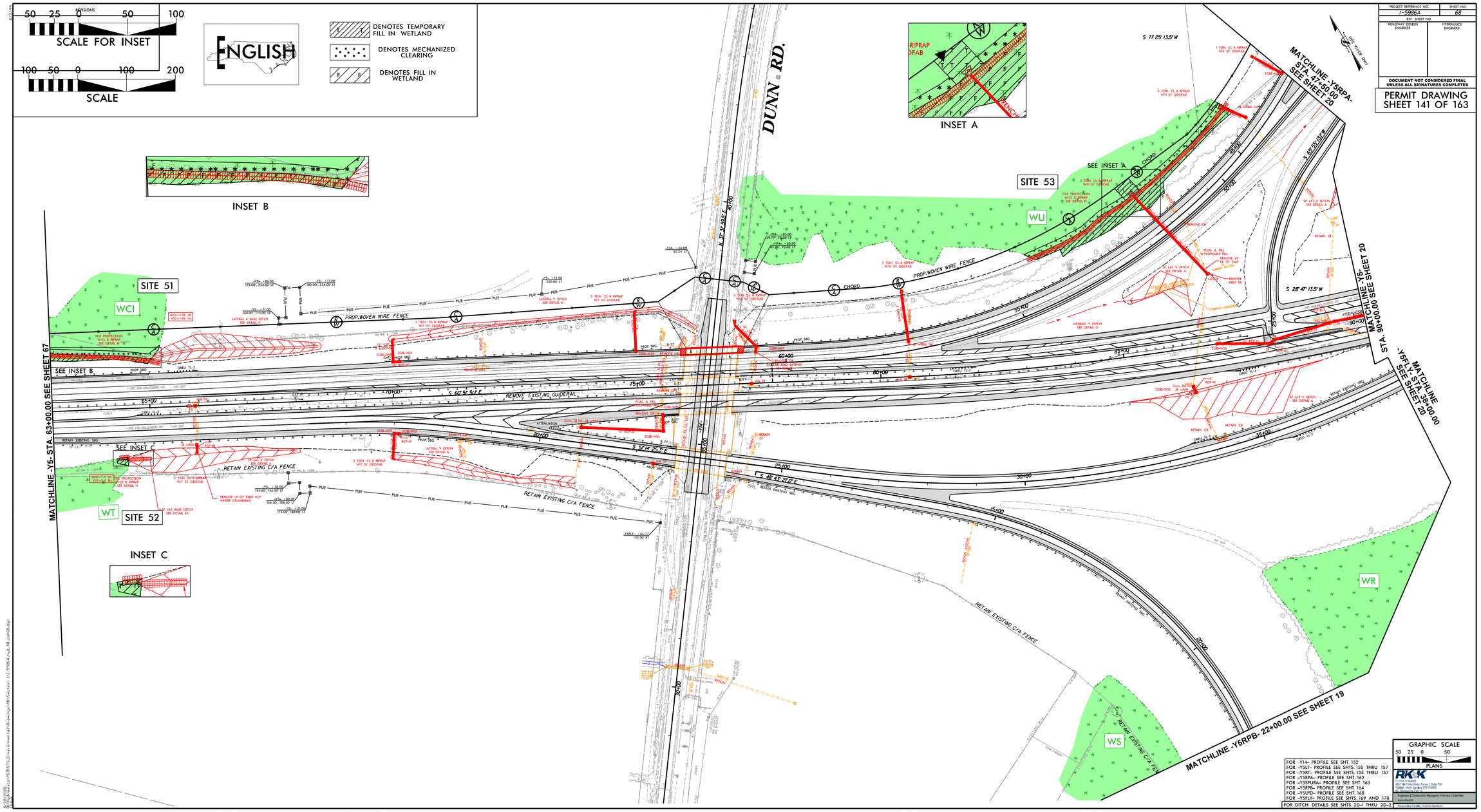

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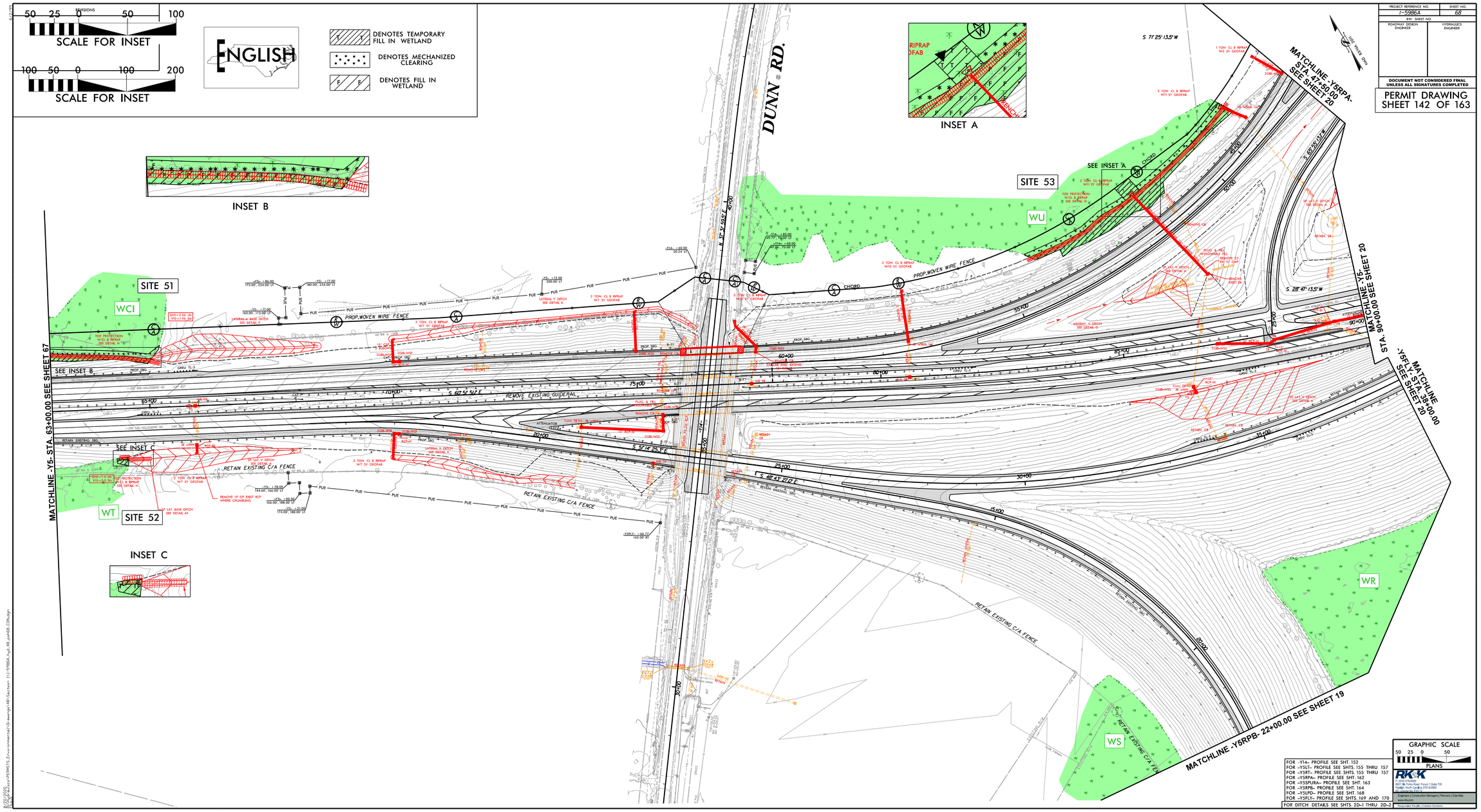

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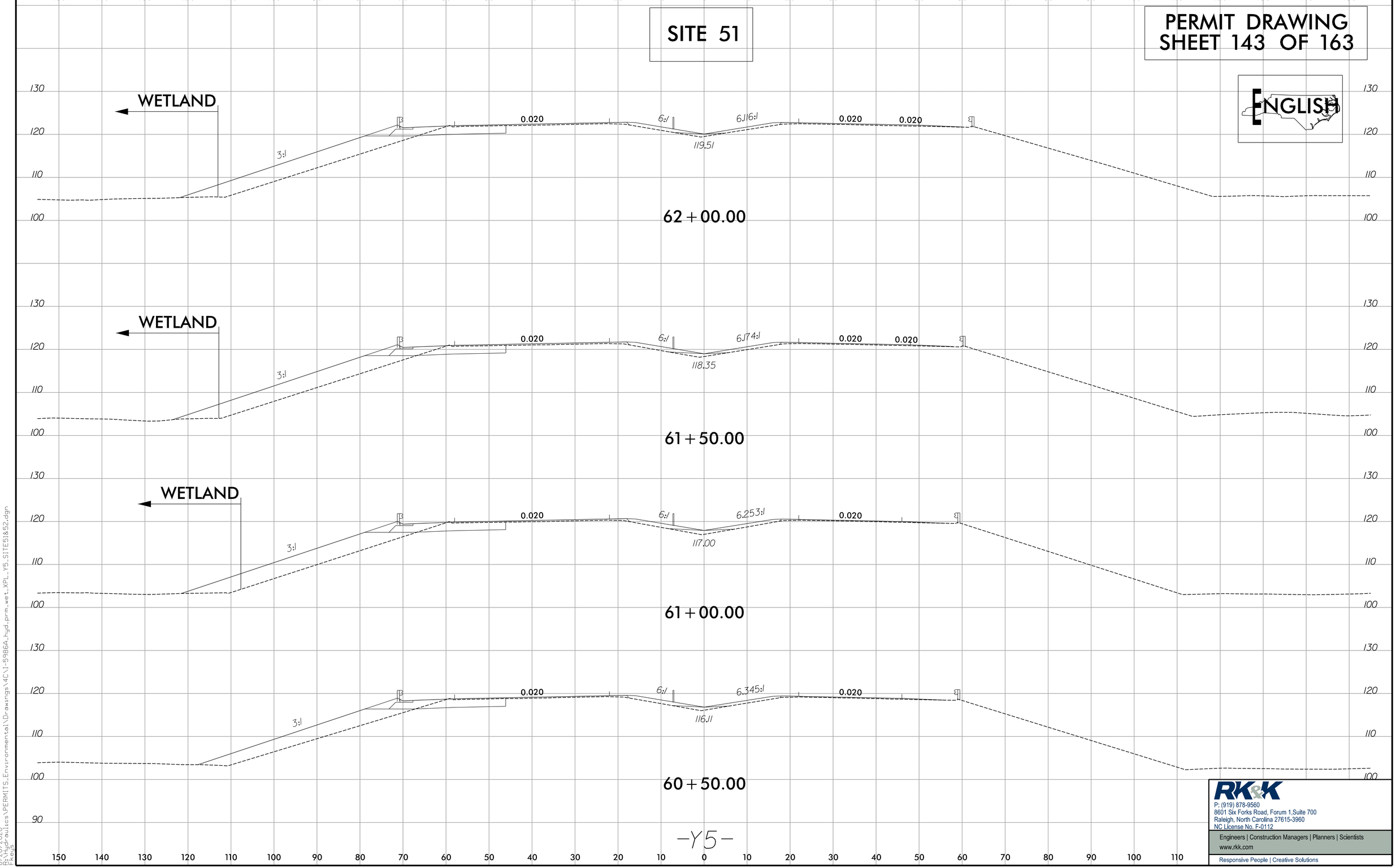
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5986A	S1 X-178

SITE 51

PERMIT DRAWING SHEET 143 OF 163

ENGLISH



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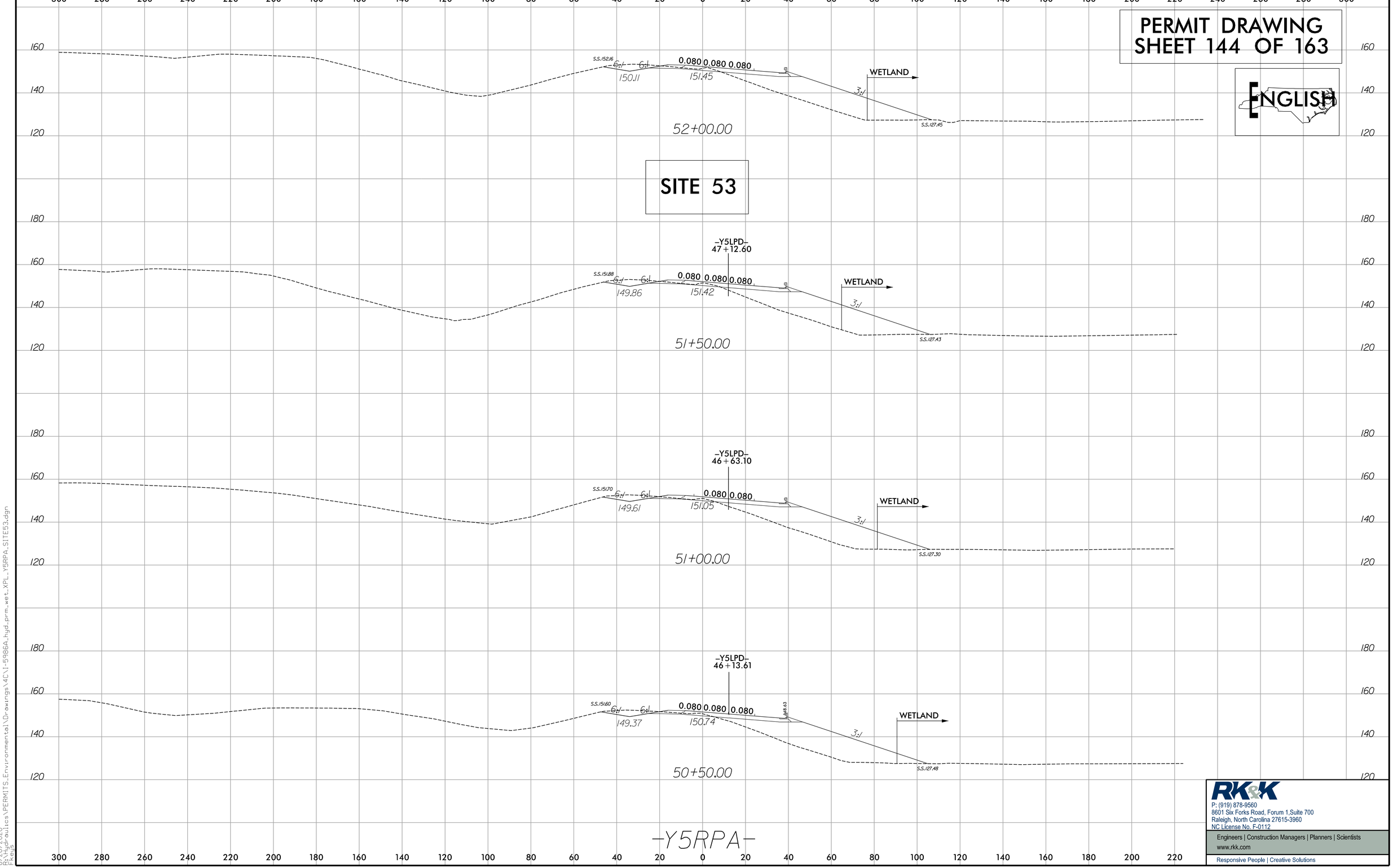
	I-5986A	S1 X-230

PERMIT DRAWING SHEET 144 OF 163

ENGLISH

SITE 53



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ENGLISH

DENOTES TEMPORARY FILL IN WETLAND

PERMIT DRAWING
SHEET 145 OF 163

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	69
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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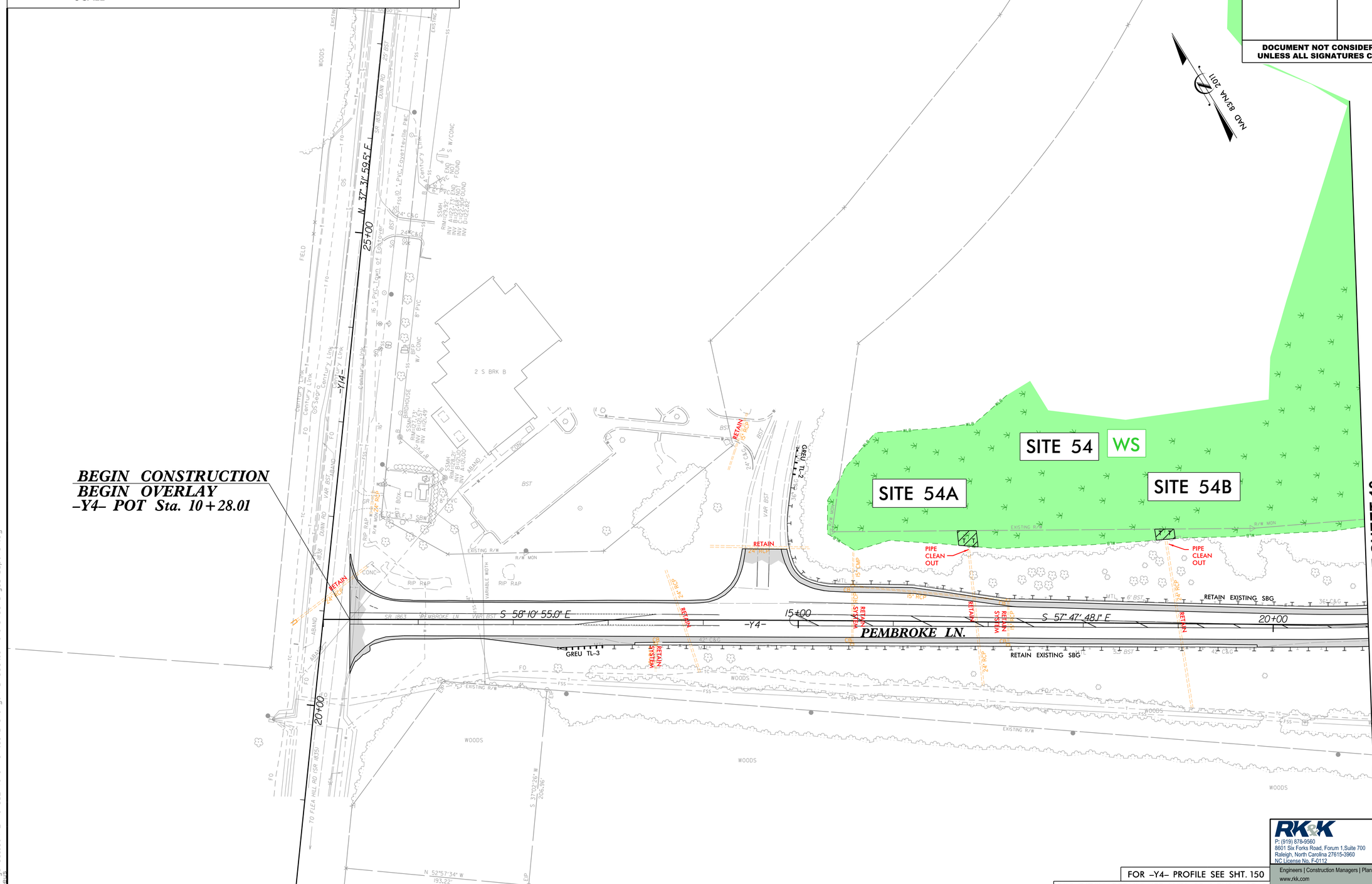

FOR -Y4- PROFILE SEE SHT. 150

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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ENGLISH

DENOTES TEMPORARY FILL IN WETLAND

PERMIT DRAWING
SHEET 146 OF 163

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	69
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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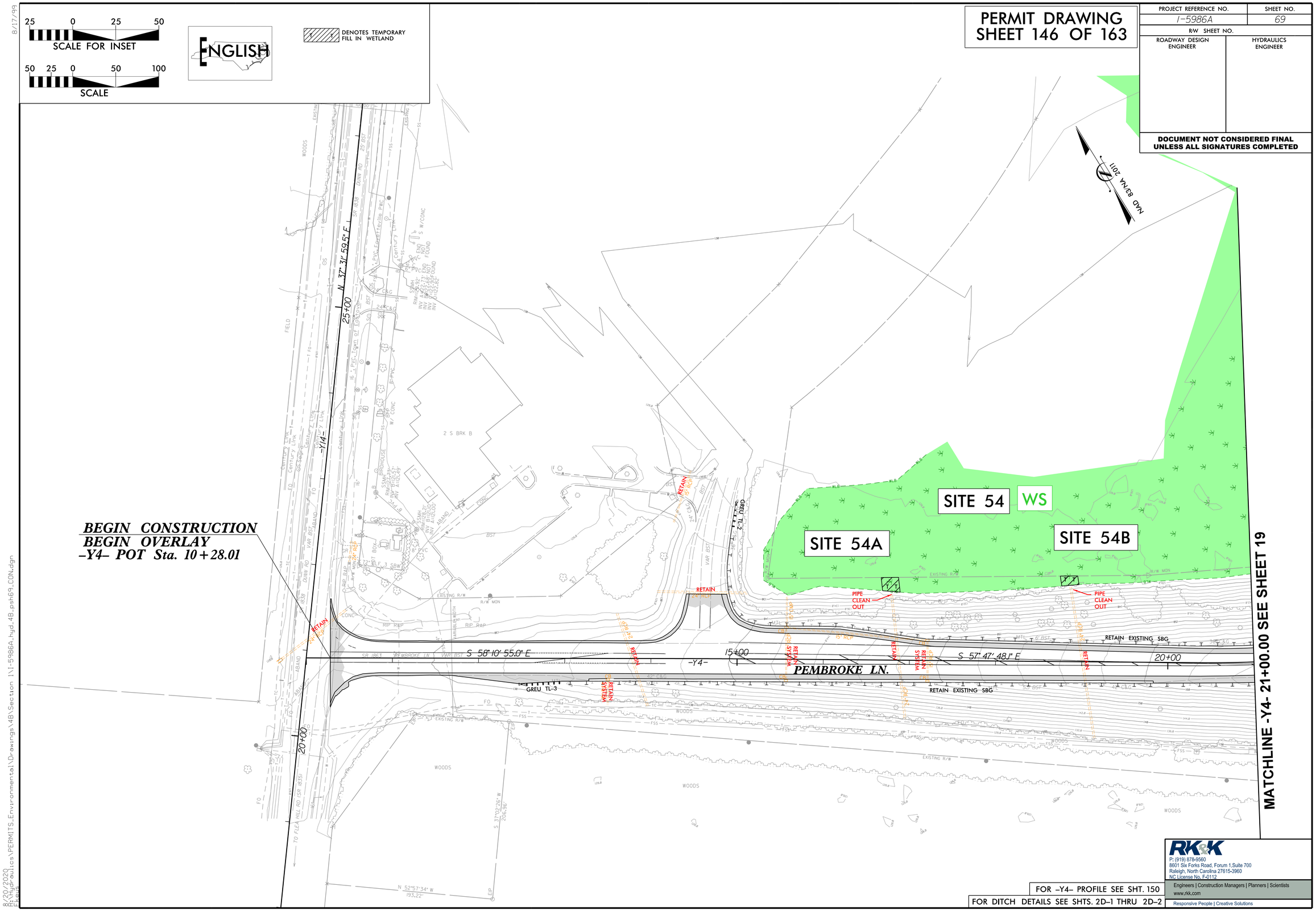

BEGIN CONSTRUCTION
BEGIN OVERLAY
-Y4- POT Sta. 10+28.01

FOR -Y4- PROFILE SEE SHT. 150

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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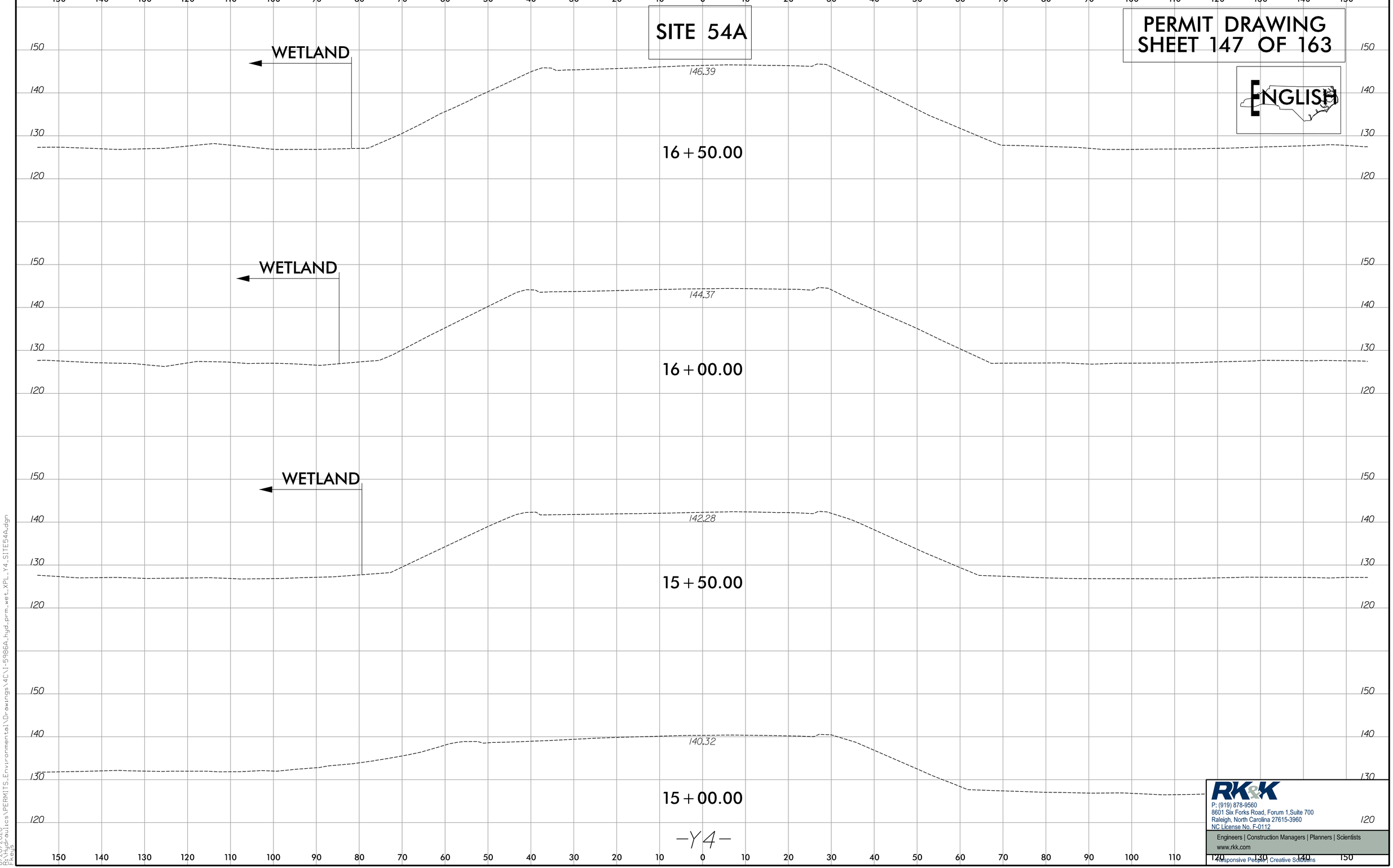
SITE 54A

PERMIT DRAWING
SHEET 147 OF 163

ENGLISH



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PROJ. REFERENCE NO.	SHEET NO.
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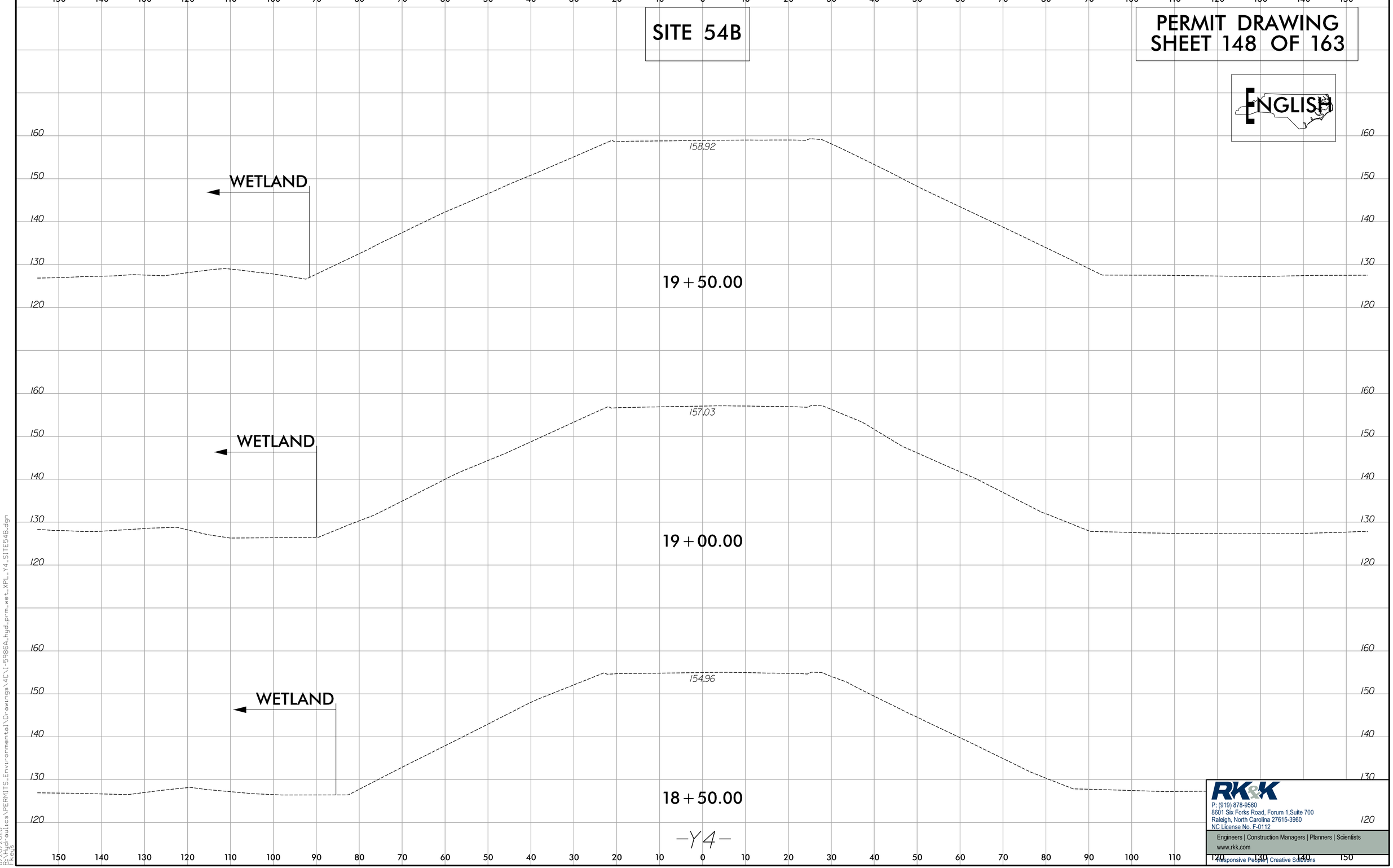
SITE 54B

PERMIT DRAWING
SHEET 148 OF 163



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REVISIONS

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SCALE FOR INSET

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SCALE

ENGLISH

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	70
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 149 OF 163

NAD 83/NSA 2011

MATCHLINE -Y4- STA. 39+00.00 SEE SHEET 19

WO SITE 15

WN SITE 16

INSET A

PEMBROKE LN.

DESIGN SUBJECT TO CHANGE PENDING COORDINATION WITH THE DEVELOPER

MATCHLINE -Y5- STA. 105+00.00 SEE SHEET 20

WV

END CONSTRUCTION
-Y5B- POT Sta. 26+66.96

WCE SITE 55

WCE SITE 56

EC Basin

MATCHLINE -Y5B- STA. 15+00.00 SEE SHEET 71

INSET A

TOE PROTECTION W/CL B RIPRAP SEE DETAIL H

PLUG & FILL W/FLOWABLE FILL

REMOVE SYSTEM

PEMBROKE LN.

NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

PAVEMENT REMOVAL

CONCRETE TRUCK APRON

FOR -DR3- PROFILE SEE SHT. 152
FOR -Y4- PROFILE SEE SHT. 151
FOR -Y4A- PROFILE SEE SHT. 152
FOR -Y5LT- PROFILE SEE SHT. 158
FOR -Y5RT- PROFILE SEE SHT. 158
FOR -Y5A- PROFILE SEE SHT. 159
FOR -Y5B- PROFILE SEE SHT. 159
FOR -Y5C- PROFILE SEE SHT. 160
FOR -Y5RAB- PROFILE SEE SHT. 160

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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REVISIONS

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ENGLISH

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	70
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 150 OF 163

NAD 83/NSA 2011

MATCHLINE -Y4- STA. 39+00.00 SEE SHEET 19

WO SITE 15

WN SITE 16

INSET A

PEMBROKE LN

DESIGN SUBJECT TO CHANGE PENDING COORDINATION WITH THE DEVELOPER

MATCHLINE -Y5- STA. 105+00.00 SEE SHEET 20

WV

END CONSTRUCTION
-Y5B- POT Sta. 26+66.96

WCE SITE 55

WCE SITE 56

MATCHLINE -Y5B- STA. 15+00.00 SEE SHEET 71

INSET A

TOE PROTECTION W/CL B RIPRAP SEE DETAIL H

PLUG & FILL W/FLOWABLE FILL

REMOVE SYSTEM

PEMBROKE LN

NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

PAVEMENT REMOVAL

CONCRETE TRUCK APRON

FOR -DR3- PROFILE SEE SHT. 152
FOR -Y4- PROFILE SEE SHT. 151
FOR -Y4A- PROFILE SEE SHT. 152
FOR -Y5LT- PROFILE SEE SHT. 158
FOR -Y5RT- PROFILE SEE SHT. 158
FOR -Y5A- PROFILE SEE SHT. 159
FOR -Y5B- PROFILE SEE SHT. 159
FOR -Y5C- PROFILE SEE SHT. 160
FOR -Y5RAB- PROFILE SEE SHT. 160

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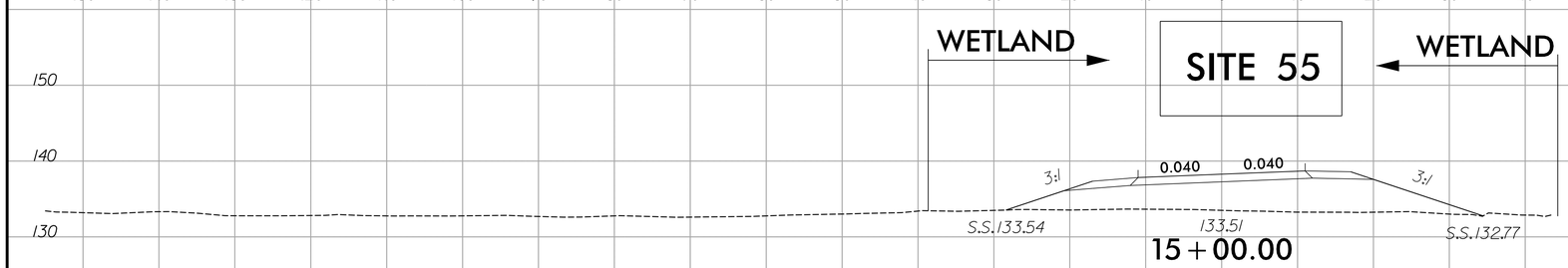
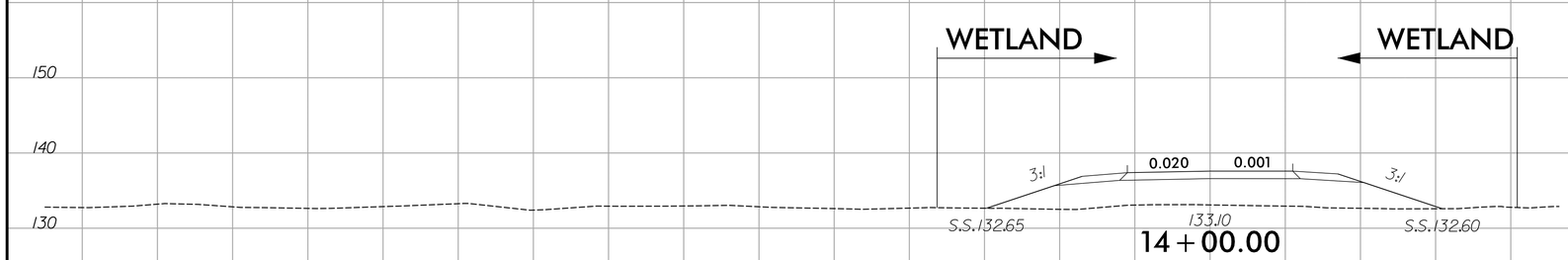
PROJ. REFERENCE NO.	SHEET NO.
I-5986A	S1 X-214

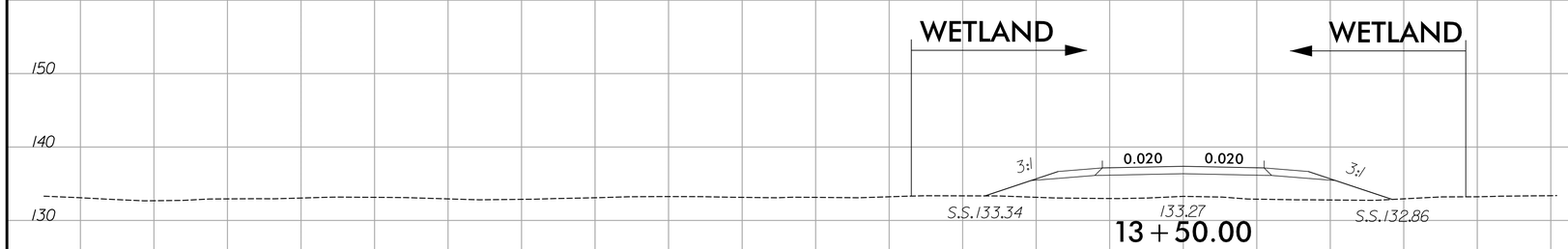
PERMIT DRAWING SHEET 151 OF 163

ENGLISH

SITE 55







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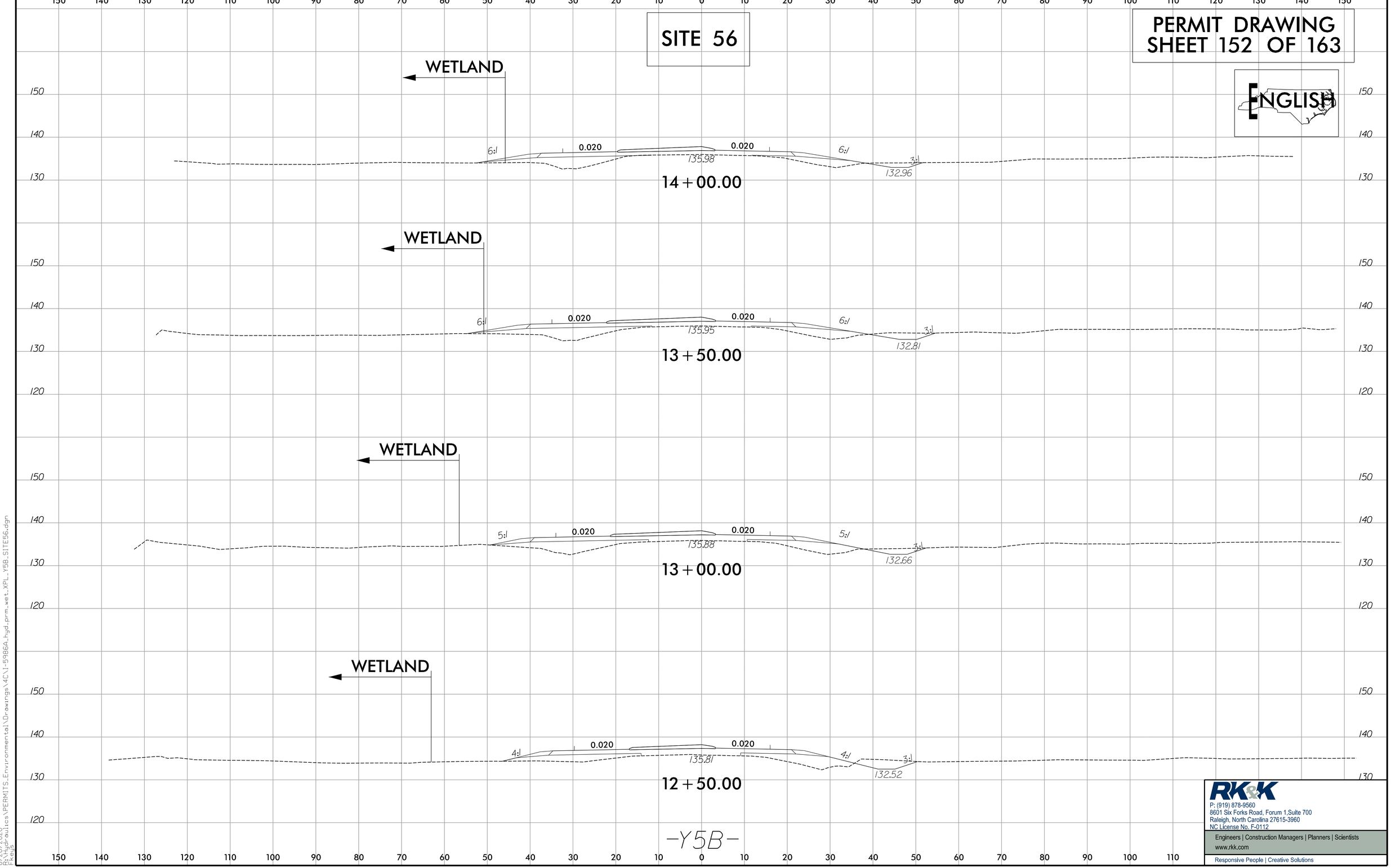
	I-5986A	S1 X-210

SITE 56

PERMIT DRAWING
SHEET 152 OF 163

ENGLISH



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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	

PERMIT DRAWING
SHEET 153 OF 163

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	71
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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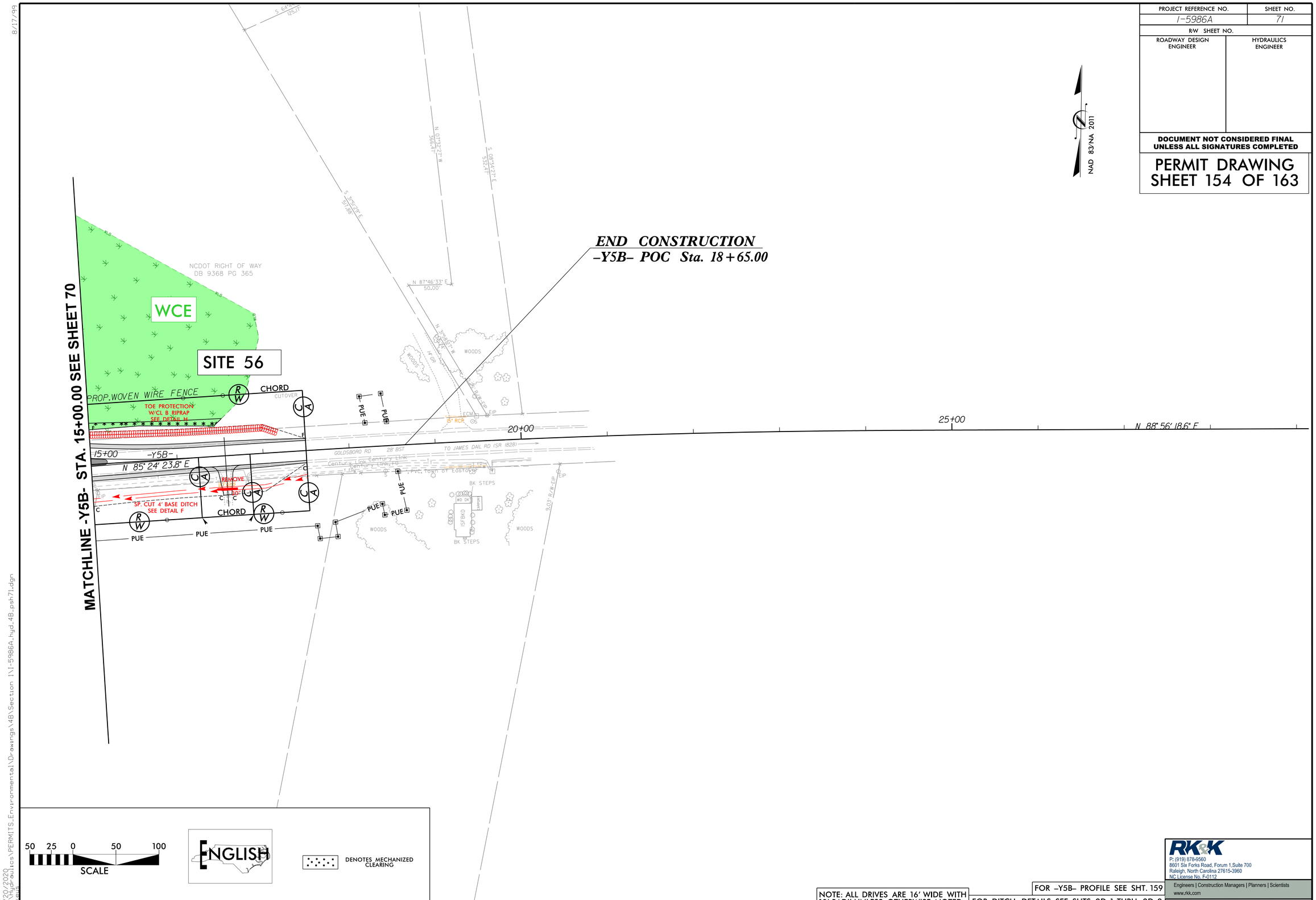

NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

FOR -Y5B- PROFILE SEE SHT. 159

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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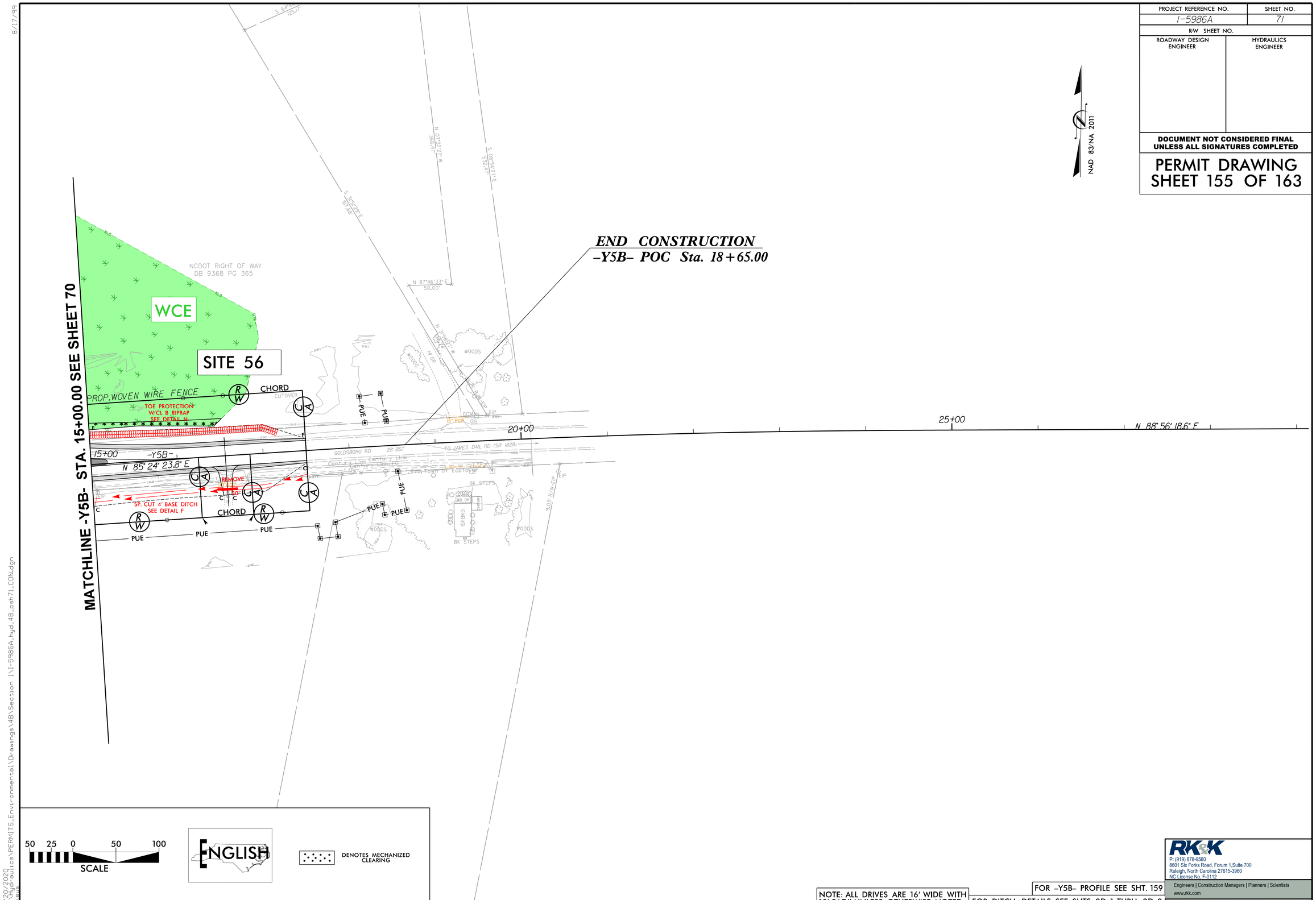
PERMIT DRAWING SHEET 155 OF 163



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FOR -Y5B- PROFILE SEE SHT. 159

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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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)
1	-LSB- 61+50 LT	Bank Stabilization: DC						0.001	0.002	8	20	
2	-LSB- 72+00 RT	Headwall, 66" WSP: SV-2, WCB	0.003	0.038				0.001	0.007	6	41	
	-LNB- 71+75 LT	Bank Stabilization: SV-1						0.008	0.010	19	19	
3	-LNB- 89+16 LT & RT	Pipe clean out: WA, WB		0.006								
	-LSB- 88+37 - 95+69 LT	Roadway Fill, 18" RCP: WA	0.001	0.006		0.018						
4	-LSB- 101+16 LT	30" WSP: SA, WC	0.001	0.033				0.004	0.003	18	23	
	-LSB- 99+00 LT	30" WSP: WA	0.002	0.027								
5	-YINB- 32+80 RT	66" WSP: WB	0.009	0.034								
6	-YINB- 39+39 LT	36" WSP: WD	0.001	0.039								
	-YINB- 38+02 RT	36" WSP: WB	0.004	0.050								
7	-L- 92+02 - 100+05 LT	Roadway Fill: WH	0.231									
8	-L- 90+87 - 91+10 RT	Ditch: WE			0.024							
TOTALS*:			**0.252**	**0.232**	**0.024**	**0.018**	**0.000**	**0.01**	**0.02**	**51**	**103**	**0**

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
8/21/2020
Cumberland / Harnett Counties
I-5986A / I-5877

Submitted 9/2/2020

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)
9	-L- 94+37 - 100+20 RT	Roadway Fill, Ditch: WF	0.135		0.021							
	-L- 100+28 RT	2 @ 36" RCP: SB						0.011	0.001	63	10	
10	-L- 108+26 - 114+34 LT	Roadway Fill: WI	0.076									
11	-L- 118+98 - 133+53 LT	Roadway Fill: WJ	0.531			0.045						
12	-L- 121+32 - 127+67 RT	Roadway Fill, Ditches: WL	0.204	0.066	0.020	0.143						
13	-L- 186+79 - 187+53 LT	Roadway Fill: WR	0.020			0.013						
14	-L- 192+15 - 193+26 LT	Ditch: WR		0.021		0.001						
15	-L- 190+05 RT	42" RCP: WO	0.004			0.006						
	-L- 192+05 RT	Roadway Fill: WO	0.001			0.006						
	-Y5RPC- 13+02 - 21+32 RT	Roadway Fill, 66" RCP: Baker Swamp 2, WO	0.136	0.034		0.165		0.018		60		
	-Y4- 37+50 LT	54" WSP: WO	0.001	0.037								
	-Y4- 40+69 to 43+01 LT	Prop Roadway Fill: WO	0.019			0.053						
TOTALS*:			**1.127**	**0.157**	**0.041**	**0.432**	**0.000**	**0.03**	**0.00**	**123**	**10**	**0**

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
8/21/2020
Cumberland / Harnett Counties
I-5986A / I-5877

Revised 2018 Feb

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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)
16	-Y4- 36+25 RT	54" WSP: Baker Swamp 1, WN Structure Stabilization	0.006	0.025				0.004	0.013	15	34	
	-Y4- 40+32 to 42+06 RT	Roadway Fill: WN	0.035			0.042						
17	-L- 199+16 - 200+49 LT	Prop Roadway Fill - WQ	0.057			0.072						
	-L- 201+67 LT	Rip Rap Outlet Pad - WQ	0.002	0.009								
18	-L- 198+56 - 203+59 RT	Roadway Fill, 60" RCP, 66" RCP: Baker Swamp 3, WP	0.106	0.002		0.066		0.010	0.006	23	13	
	-Y5- 99+16 LT	66" WSP: Baker Swamp 3, WP Structure Stabilization	0.001	0.004				0.007	0.012	22	28	
19	-Y5LPD- 37+73 - 40+14 LT & RT	Roadway Fill: WCG*	0.857									
20	-Y5LPD- 22+86 - 24+53 LT & RT	Roadway Fill: WX	0.402			0.034						
21	-Y5RPD- 14+97 - 18+86 RT	Roadway Fill: WV	0.225			0.020						
22	-Y5FLY- 57+08 - 62+55 LT & RT & -Y5LPD- 18+96 - 21+42 LT & RT	Roadway Fill: WW**	2.663			0.176						
23	-L- 252+34	2 @ 8'x8' RCBC: SC-1, SC-2						0.063	0.006	270	38	
TOTALS*:			**4.353**	**0.040**	**0.000**	**0.411**	**0.000**	**0.08**	**0.04**	**330**	**113**	**0**

*Rounded totals are sum of actual impacts

NOTES:

* Site 19: Area shown in impact table is a total take. Actual impact area is 0.772 acres.

** Site 22: Area shown in impact table is a total take inside -Y5LPD-. Actual impact area is 2.610 acres.

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DIVISION OF HIGHWAYS
8/21/2020
Cumberland / Harnett Counties
I-5986A / I-5877

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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)
24	-L- 304+15	3 @ 10'x8' RCBC, Roadway Fill, Ditch: SD-1, SD-2, WZ, WY	0.056	0.047	0.089	0.080		0.128	0.058	197	26	
	-L- 302+20 RT	Roadway Fill, Ditch: WY		0.004		0.002						
	-L- 306+80 LT	Ditch: WZ		0.010								
	-L- 307+30 RT	Ditch: WY		0.005								
25	-L- 355+00	10'x7' RCBC: SE-1, SE-2, WAB		0.002	0.003			0.017	0.003	135	25	
	-L- 357+75 RT	Ditch: WAB		0.008								
26	-Y7RPC- 17+51 - 24+28 Lt & RT	Roadway Fill: WAC	0.654	0.017		0.151						
27	-Y7RPA 16+97 RT - -L- 392+99 LT	Roadway Fill: WAF	0.284									
28	-SR3 - 34+13 - 35+87 LT	Roadway Fill: WAG	0.047	0.005		0.039						
29	-L- 405+65 LT	2 @ 48" RCP, Ditch: WAH		0.009	0.027							
30	-L- 422+50	12'x6' RCBC: SF, WAK, WAI	0.008	0.074	0.090			0.030	0.003	103	8	
	'-L- 422+46 - 437+14 RT	Roadway Fill, Ditch: WAI	0.488		0.012	0.037						
	-L- 422+85 - 436+87 LT	Roadway Fill: WAK	0.624			0.015						
	-L- 425+50 LT	Ditch: WAK		0.014								
TOTALS*:			**2.161**	**0.192**	**0.221**	**0.322**	**0.000**	**0.17**	**0.06**	**435**	**59**	**0**

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
8/21/2020
Cumberland / Harnett Counties
I-5986A / I-5877

Submitted 9/2/2020

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)
31	-L- 508+50 - 509+37 LT	Roadway Fill: WAM	0.042			0.019						
32	-L- 522+79 - 528+68 LT	Roadway Fill: WAN	0.081			0.080						
33	-L- 540+45	8'x8' Culvert: SG-1, SG-2, SG-3, WAP, WAQ		0.010				0.051	0.011	211	99	
34	-L- 574+64	10'x7' RCBC: SH-1, SH-2		0.025		0.002		0.031	0.004	174	30	
35	-L- 602+70 - 606+71 LT	Prop Roadway Fill: WAT	0.016			0.044						
	-Y9RPA- 15+85 RT	Ditch: WAT		0.005								
36	-L- 618+01 - 618+41 RT	Ditch: WAU				0.007						
37	-L- 622+64 to 626+94 LT	72" RCP, Roadway Fill: SI-1, SI-2, WAW, WAV	0.225	0.029		0.137		0.003	0.003	26	20	
		Structure Stabilization: SI-1						0.003		25		
38	-L- 640+26 to 640+69 RT	Ditch: WAX		0.006								
TOTALS*:			**0.363**	**0.076**	**0.000**	**0.290**	**0.000**	**0.09**	**0.02**	**436**	**149**	**0**

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
8/21/2020
Cumberland / Harnett Counties
I-5986A / I-5877

Revised 2018 Feb

Submitted 9/2/2020

WETLAND AND SURACE WATER IMPACTS SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	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)
39	-L- 642+88	7'x7' RCBC: SJ-1, SJ-2						0.025	0.008	101	40	
40	-L- 660+20 RT	2 @ 30" RCP: WAY	0.001	0.001								
41	-L- 667+00 LT	Ditch: WAZ		0.011								
42	-L- 669+88 - 684+49 LT & RT	Bridge: Black River, WAZ *	0.385	0.020	0.043	0.207	0.038	0.0027	0.266	16	246	
43	-L- 692+28 - 694+59 RT	Roadway Fill: WAZ	0.090			0.053						
44	-L- 695+05 LT	Ditch: WAZ		0.006								
45	-L- 731+00 LT	Roadway Cut: WBB				0.017						
46	-L- 735+80 LT	2 @ 42" RCP: WBC	0.004		0.002	0.028						
47	-L- 766+40	72" RCP: SK-1, SK-2						0.063	0.007	180	24	
48	-L- 403+25 LT	Plug & Fill Exist. 18" RCP: WAG		0.002								
TOTALS*:			**0.480**	**0.040**	**0.044**	**0.304**	**0.038**	**0.09**	**0.28**	**297**	**310**	**0**

*Rounded totals are sum of actual impacts

NOTES:

* Black River bridge bents
  - 2 sets of interior bents in the water
  - 23 piles per bent
  - 20" diameter piles= 2.2sqft permanent surface water impact per pile
  - **Total: 101.2sqft permanent surface water impact (included in the Site 42 number above)**

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Submitted 9/2/2020

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)
49	-Y5- 45+24 LT	2 @ 8'x8' RCBC Ext: SY-2						0.009		15		
		Bank Stabilization						0.029	0.005	50	8	
50	-Y5- 51+81 - 56+63 LT	Roadway Fill: WCJ	0.011			0.043						
51	-Y5- 60+52 - 65+24 LT	Roadway Fill: WCI	0.114			0.109						
52	-Y5- 64+45 RT	Ditch: WT	0.002	0.006								
53	-Y5RPA- 44+43 - 54+38 LT	Roadway Fill: WU	0.267			0.108						
54A	-Y4- 16+88 LT	Pipe clean out: WS		0.008								
54B	-Y4- 19+00 LT	Pipe clean out: WS		0.005								
54C	-Y4- 21+67 LT	Pipe clean out: WS		0.005								
55	-Y5C- 12+74 - 17+83 LT & RT	Roadway Fill: WCE	0.635			0.220						
56	-Y5B- 12+86 - 16+54 LT	Roadway Fill: WCE	0.013			0.065						
TOTALS*:			**1.042**	**0.023**	**0.000**	**0.545**	**0.000**	**0.04**	**0.01**	**65**	**8**	**0**

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
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I-5986A / I-5877

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Submitted 9/2/2020

WETLAND AND SURACE WATER IMPACTS SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	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)
TOTALS for 156:			**0.252**	**0.232**	**0.024**	**0.018**	**0.000**	**0.015**	**0.021**	**51**	**103**	**0**
TOTALS for 157:			**1.127**	**0.157**	**0.041**	**0.432**	**0.000**	**0.029**	**0.001**	**123**	**10**	**0**
TOTALS for 158:			**4.353**	**0.040**	**0.000**	**0.411**	**0.000**	**0.084**	**0.037**	**330**	**113**	**0**
TOTALS for 159:			**2.161**	**0.192**	**0.221**	**0.322**	**0.000**	**0.174**	**0.064**	**435**	**59**	**0**
TOTALS for 160:			**0.363**	**0.076**	**0.000**	**0.290**	**0.000**	**0.088**	**0.017**	**436**	**149**	**0**
TOTALS for 161:			**0.480**	**0.040**	**0.044**	**0.304**	**0.038**	**0.091**	**0.281**	**297**	**310**	**0**
TOTALS for 162:			**1.042**	**0.023**	**0.000**	**0.545**	**0.000**	**0.037**	**0.005**	**65**	**8**	**0**
GRAND TOTAL FOR PROJECT:			**9.783**	**0.759**	**0.330**	**2.321**	**0.038**	**0.517**	**0.427**	**1737**	**752**	**0**

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
8/21/2020
Cumberland / Harnett Counties
I-5986A / I-5877

Revised 2018 Feb

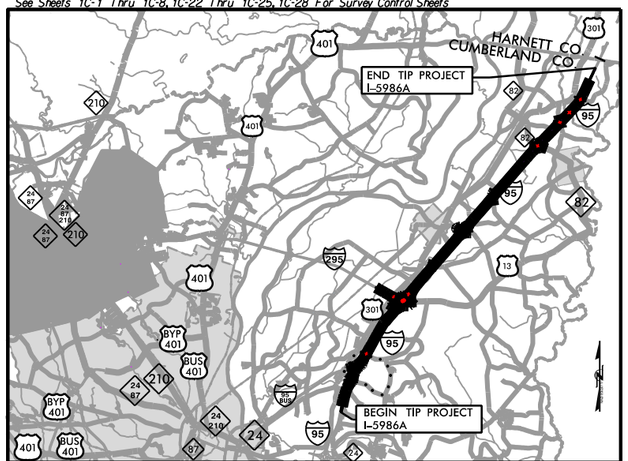
Submitted 9/2/2020

09/08/99

TIP PROJECT: I-5986A

CONTRACT: C204283

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See Sheets 1C-1 Thru 1C-8, 1C-22 Thru 1C-25, 1C-28 For Survey Control Sheets



VICINITY MAP (NTS) OFFSITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5986A	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
47532.2.2	NHP-0095(057)	R/W
47532.3.2	NHP-0095(057)	PE, UTIL., CONST.

CUMBERLAND COUNTY

LOCATION: I-95 WIDENING FROM SOUTH OF SR 1832 (MURPHY ROAD- EXIT 55) TO SOUTH OF SR 1811 (BUD HAWKINS ROAD-EXIT 70)

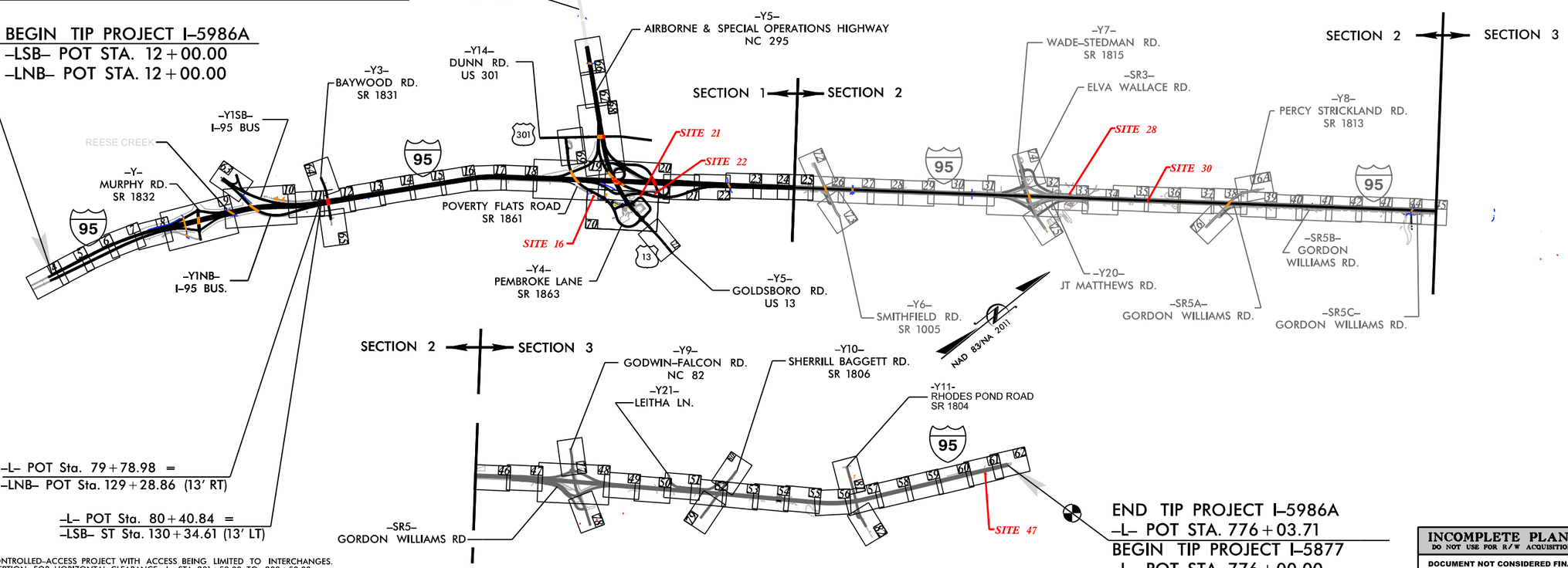
TYPE OF WORK: GRADING, DRAINAGE, PAVING, LIGHTING, SIGNING, ITS, CULVERTS & STRUCTURES

WETLAND AND SURFACE WATER IMPACTS

ENGLISH

UTILITY PERMIT DRAWING
SHEET 1 OF 18

BEGIN TIP PROJECT I-5986A
-LSB- POT STA. 12+00.00
-LNB- POT STA. 12+00.00



-L- POT Sta. 79+78.98 =
-LNB- POT Sta. 129+28.86 (13' RT)

-L- POT Sta. 80+40.84 =
-LSB- ST Sta. 130+34.61 (13' LT)

END TIP PROJECT I-5986A
-L- POT STA. 776+03.71
BEGIN TIP PROJECT I-5877
-L- POT STA. 776+00.00

NOTES
1. THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.
2. DESIGN EXCEPTION FOR HORIZONTAL CLEARANCE -L- STA. 201+50.00 TO 208+50.00

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
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 2018 = 56,700
ADT 2040 = 73,800
K = 55%
D = 7%
T = 18% *
V = 75 MPH

FUNC CLASS: INTERSTATE
* (TTST 13% + DUALS 5%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT I-5986A.....15.368 MILES
LENGTH STRUCTURE TIP PROJECT I-5986A.....0.048 MILES
TOTAL LENGTH TIP PROJECT I-5986A.....15.416 MILES

NCDOT CONTACT

Michael Penney, PE
PROJECT ENGINEER - DESIGN-BUILD UNIT

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

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

S.T. WOOTEN

2018 STANDARD SPECIFICATIONS

LETTING DATE:
AUGUST 20, 2019

Michael T. Merritt, PE
PROJECT ENGINEER

Anthony A. Houser, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER
SIGNATURE: P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

8/21/2020
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REVISIONS

PROJECT REFERENCE NO. 15986 | SHEET NO. 19

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

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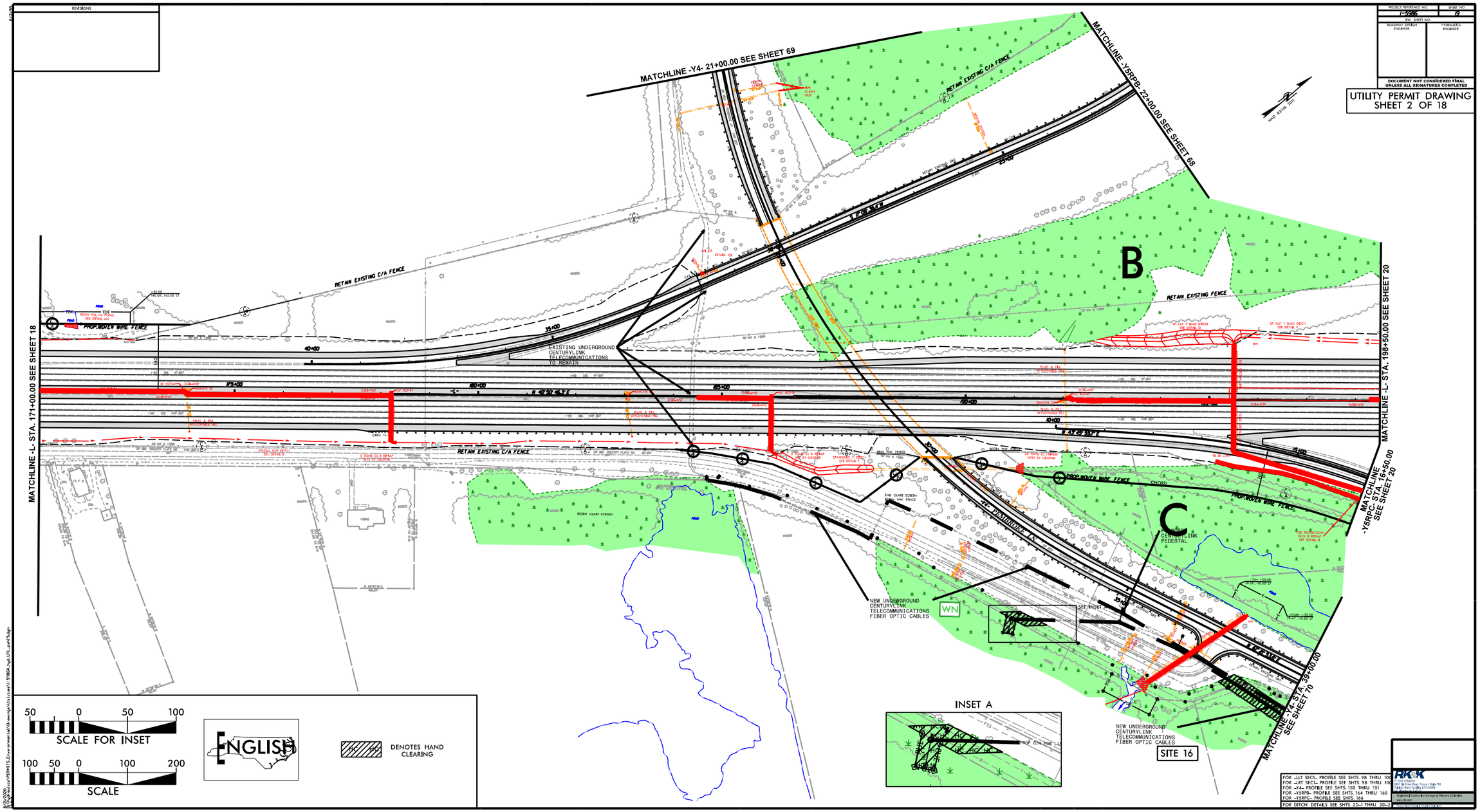
UTILITY PERMIT DRAWING
SHEET 2 OF 18



FOR -LLT SECT.- PROFILE SEE SHTS. 98 THRU 100
FOR -LRT SECT.- PROFILE SEE SHTS. 98 THRU 100
FOR -Y4- PROFILE SEE SHTS. 150 THRU 151
FOR -Y5RPB- PROFILE SEE SHTS. 164 THRU 165
FOR -Y5RPC- PROFILE SEE SHTS. 166
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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8/26/2020

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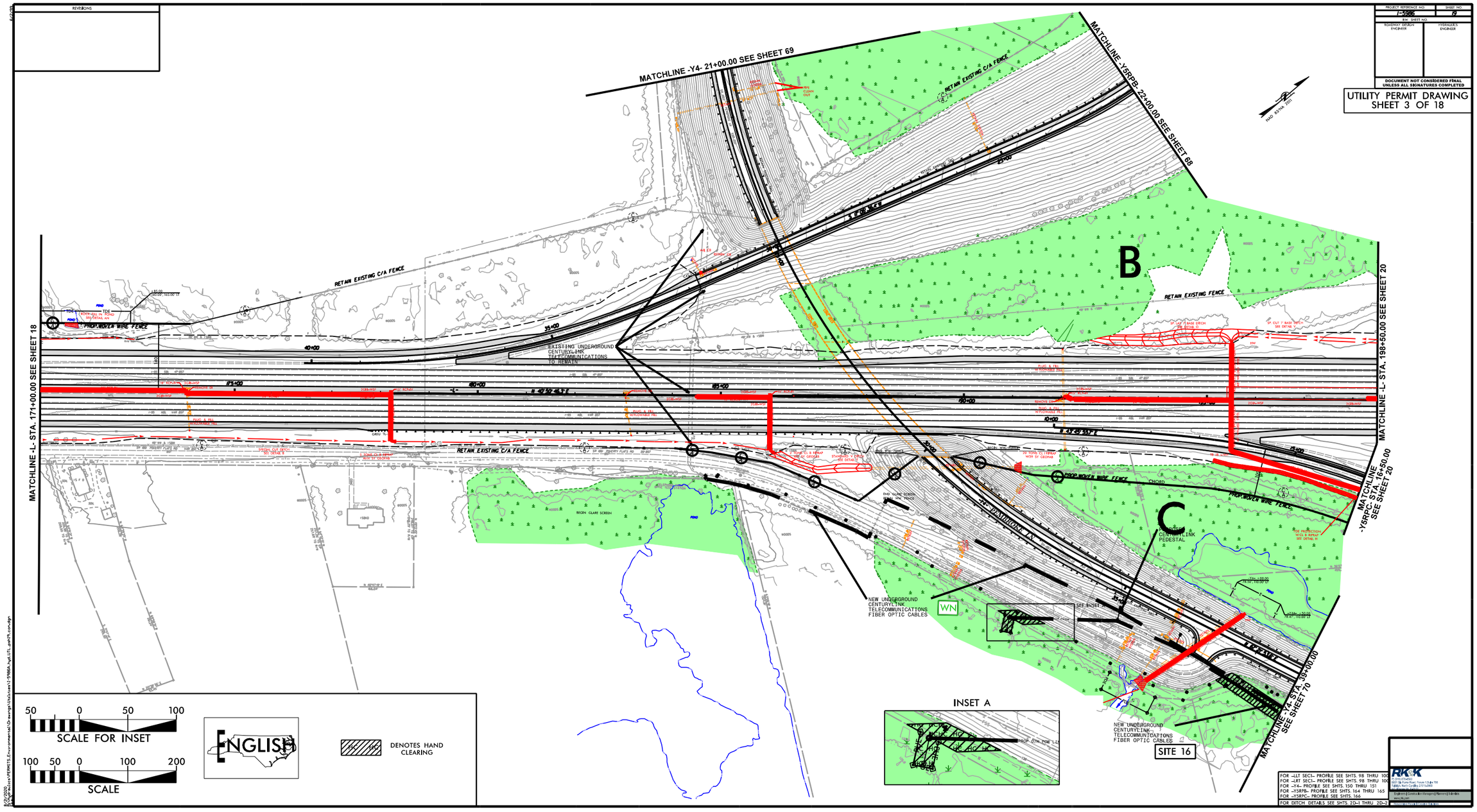

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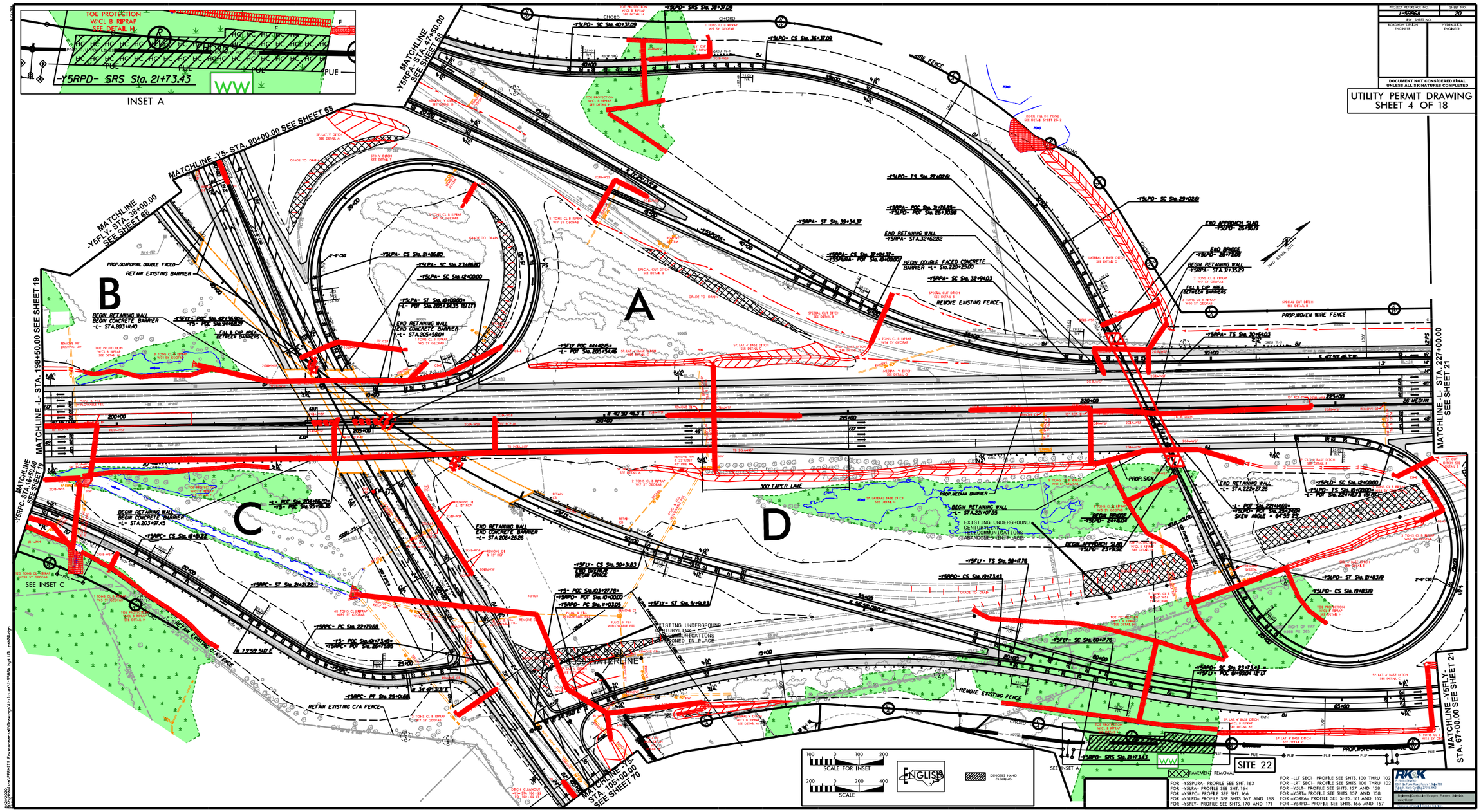

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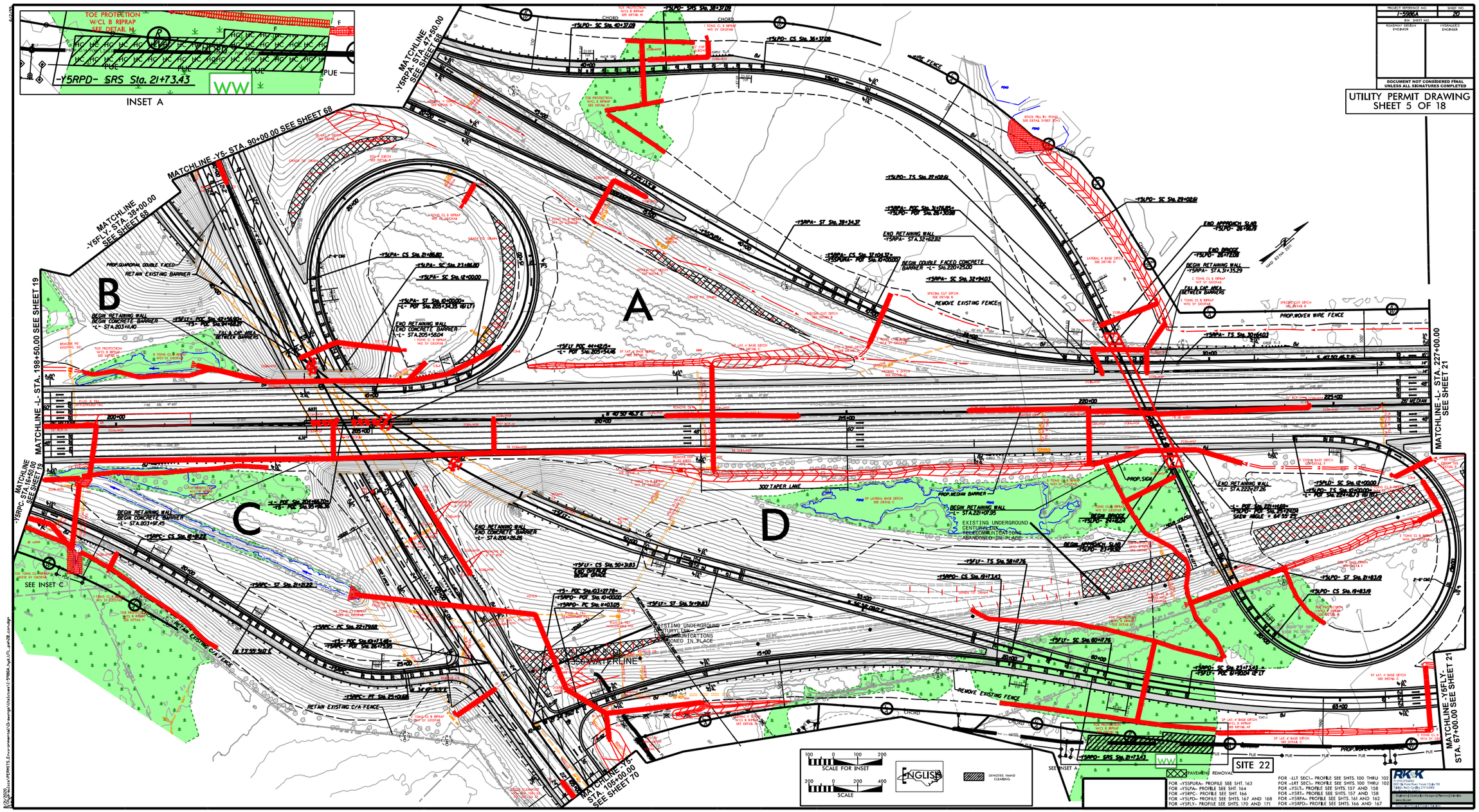

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UTILITY PERMIT DRAWING
SHEET 6 OF 18

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	33
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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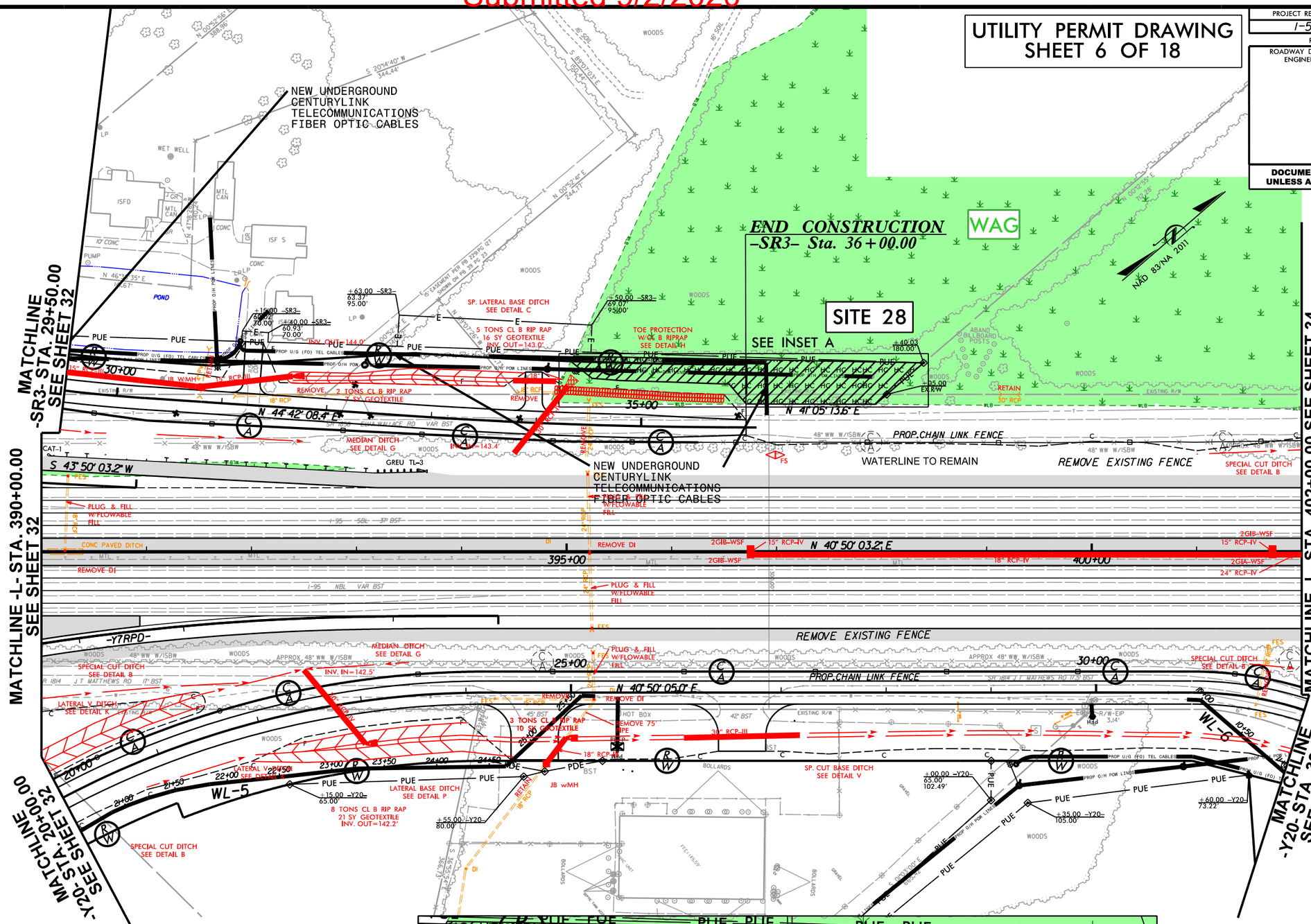

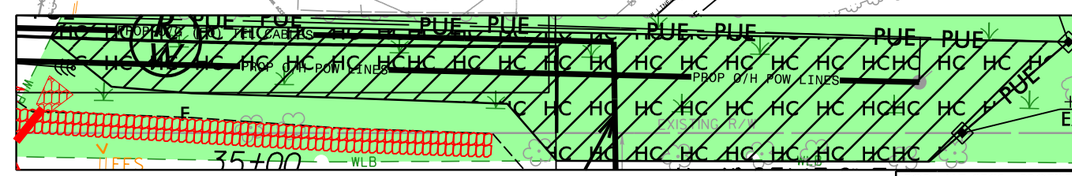

INSET A

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SCALE FOR INSET

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SCALE

ENGLISH

DENOTES HAND CLEARING

FOR -LLT_SEC2- PROFILE SEE SHTS. 115 THRU 116
FOR -LRT_SEC2- PROFILE SEE SHTS. 115 THRU 116
FOR -Y7RPA- PROFILE SEE SHT. 177
FOR -Y7RPD- PROFILE SEE SHT. 179
FOR -Y20- PROFILE SEE SHT. 181
FOR -SR3- PROFILE SEE SHT. 182

FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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UTILITY PERMIT DRAWING
SHEET 7 OF 18

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	33
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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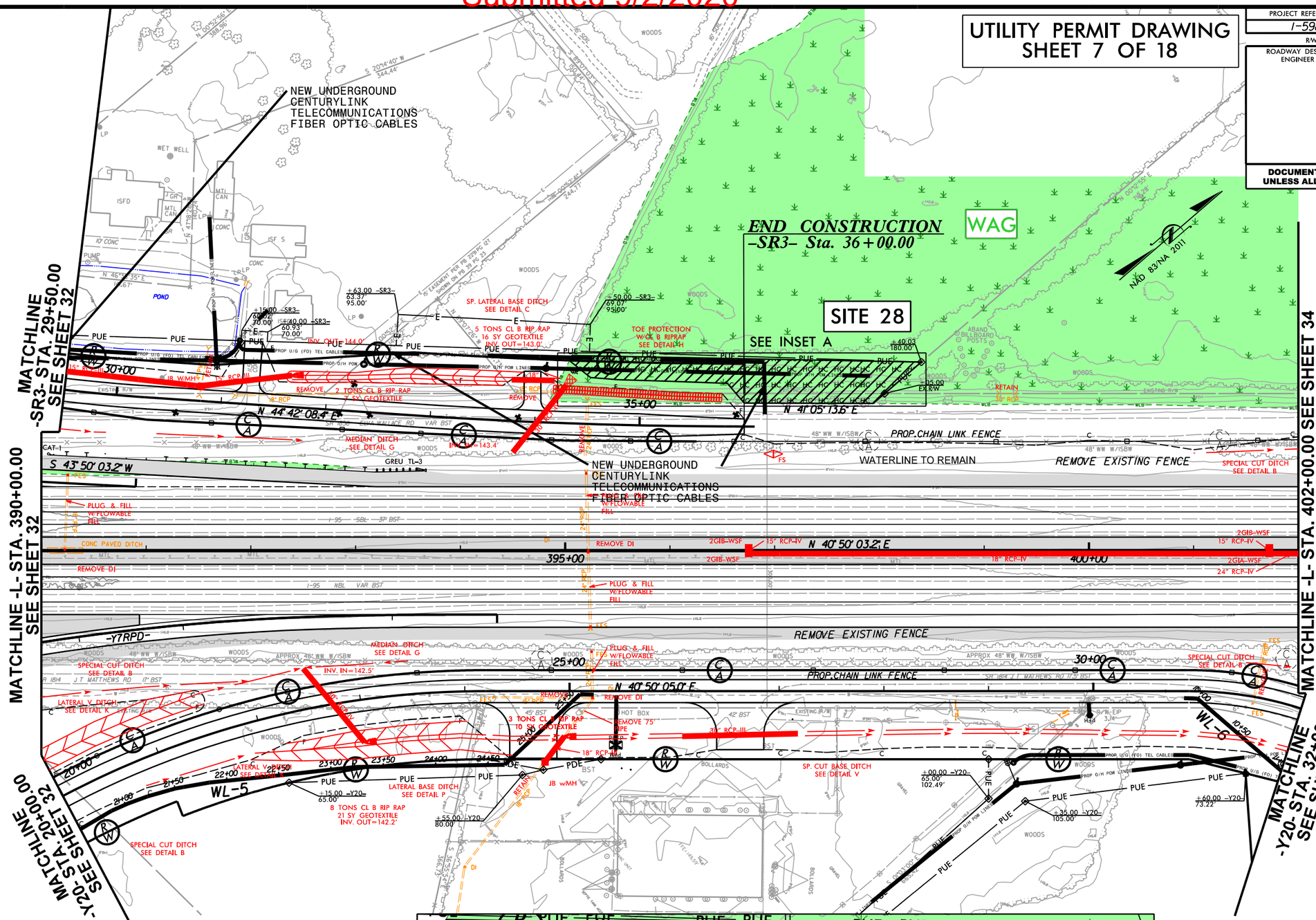

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FOR –LRT_SEC2– PROFILE SEE SHTS. 115 THRU 116
FOR –Y7RPA– PROFILE SEE SHT. 177
FOR –Y7RPD– PROFILE SEE SHT. 179
FOR –Y20– PROFILE SEE SHT. 181
FOR –SR3– PROFILE SEE SHT. 182

FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	35
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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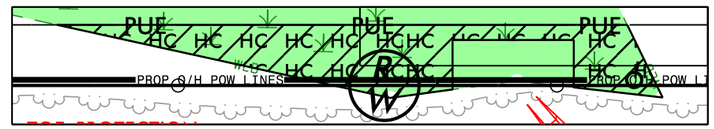
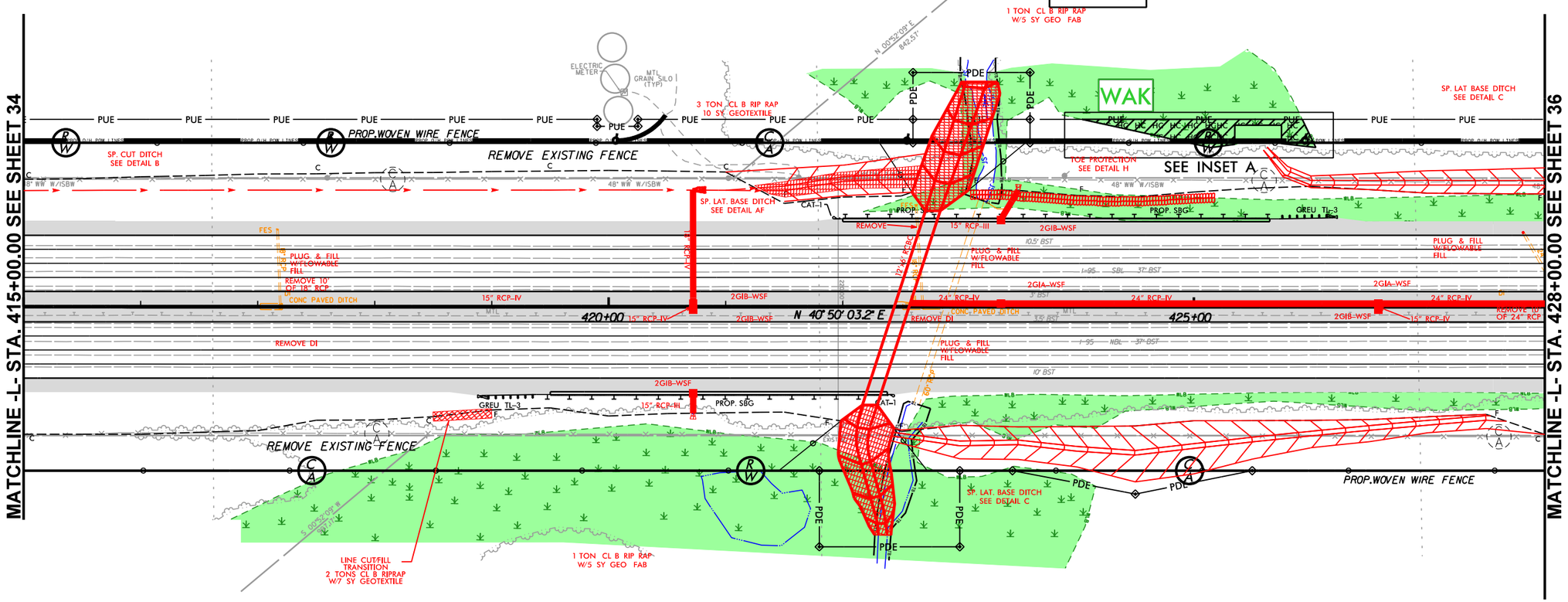
UTILITY PERMIT DRAWING
SHEET 8 OF 18

NAD 83/NA 2011



INSET A

SITE 30



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FOR –LRT_SEC2– PROFILE SEE SHT. 117
FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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DENOTES HAND CLEARING

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	35
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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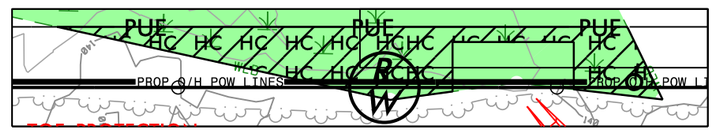
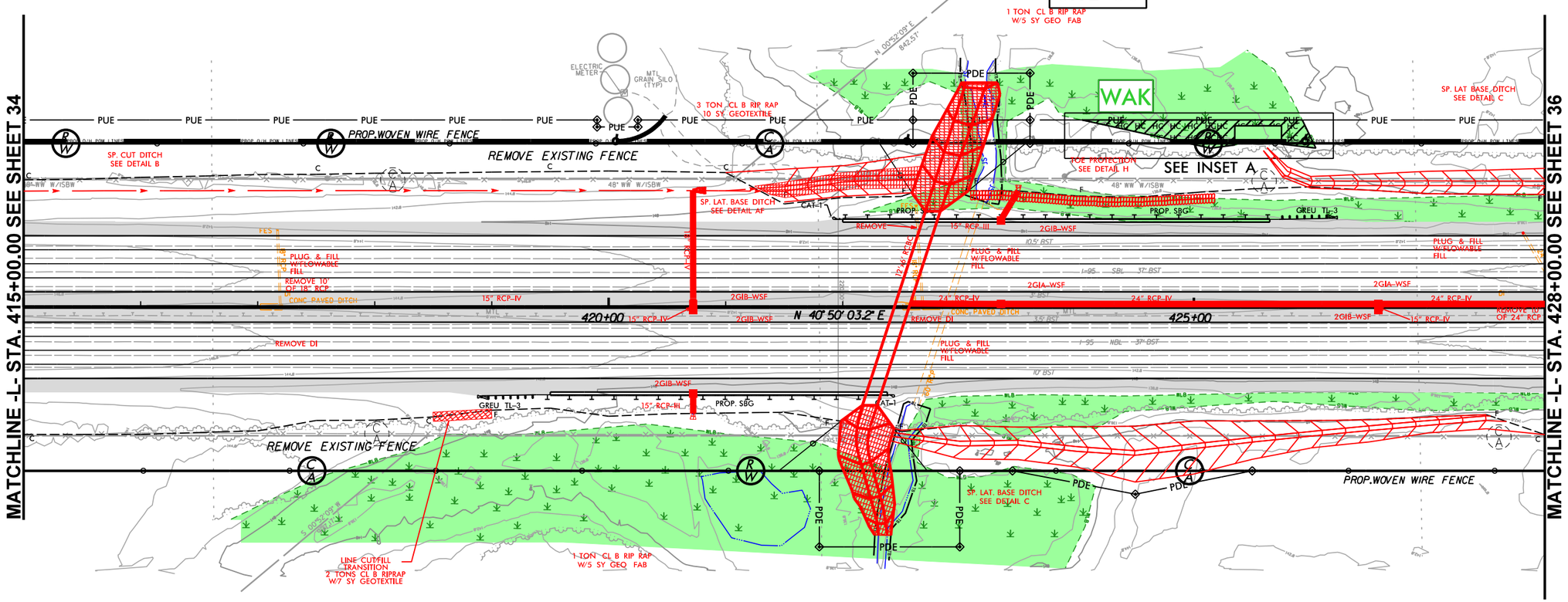
UTILITY PERMIT DRAWING
SHEET 9 OF 18

NAD 83/NA 2011



INSET A

SITE 30



FOR –LLT_SEC2– PROFILE SEE SHT. 117
FOR –LRT_SEC2– PROFILE SEE SHT. 117
FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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SCALE FOR INSET

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SCALE

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DENOTES HAND CLEARING

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	36
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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UTILITY PERMIT DRAWING SHEET 10 OF 18

NAD 83/NA 2011

SITE 30 WAL

MATCHLINE -L- STA. 428+00.00 SEE SHEET 35

MATCHLINE -L- STA. 442+00.00 SEE SHEET 37

SEE INSET A

PUE — PROP O/H POW LINES

PROP.WOVEN WIRE FENCE

POND

SP. LAT BASE DITCH SEE DETAIL C

SP. CUT BASE DITCH SEE DETAIL F

REMOVE EXISTING FENCE

48" WW W/ISBW

EXISTING R/W

FES

PLUG & FILL W/FLOWABLE FILL

REMOVE 10' OF 24" RCP

REMOVE 10' OF 18" RCP

I-95 SBL 37' BST

I-95 NBL 37' BST

24" RCP-IV

18" RCP-IV

15" RCP-IV

2GIA-WSF

2GIB-WSF

CONC PAVED DITCH

REMOVE DI

CONC HW

430+00

435+00

440+00

N 40° 50' 03.2" E

139.60'

139.65'

140.24'

TOE PROTECTION SEE DETAIL H

SP. CUT BASE DITCH SEE DETAIL Z

RR SPIKE IN BASE OF 24 INCH PINE

INSET A

PUE — HC — PROP.WOVEN WIRE FENCE — PROP O/H POW LINES — SP. LAT BASE DITCH SEE DETAIL C

FOR –LLT_SEC2– PROFILE SEE SHTS. 117 THRU 118
FOR –LRT_SEC2– PROFILE SEE SHTS. 117 THRU 118

FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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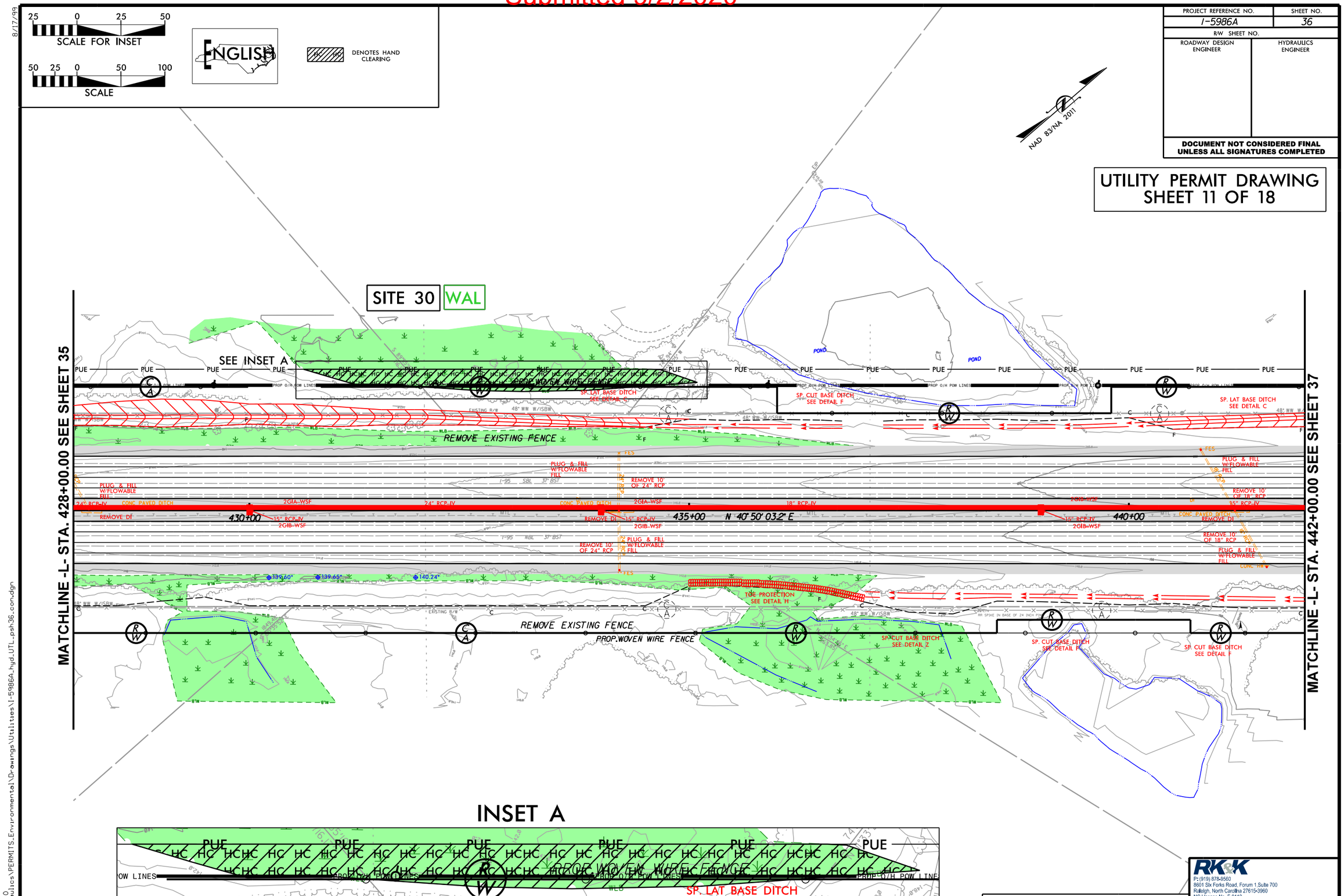
R:\HydraulicsPermits\PERMITS_Environmental\Drawings\Utilities\I-5986A_hyd_UTL_psh36.dgn

Submitted 9/2/2020

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	36
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

UTILITY PERMIT DRAWING
SHEET 11 OF 18



FOR -LLT_SEC2- PROFILE SEE SHTS. 117 THRU 118
FOR -LRT_SEC2- PROFILE SEE SHTS. 117 THRU 118
FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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8/17/99

8/21/2020
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Submitted 9/2/2020

8/17/99

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

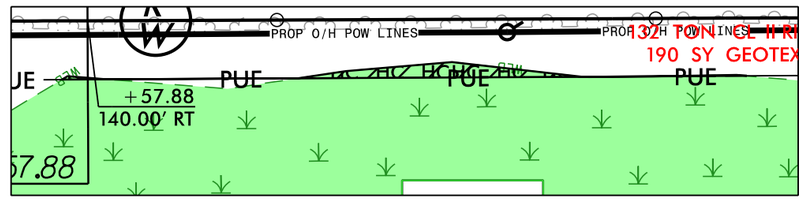
ENGLISH

DENOTES HAND CLEARING

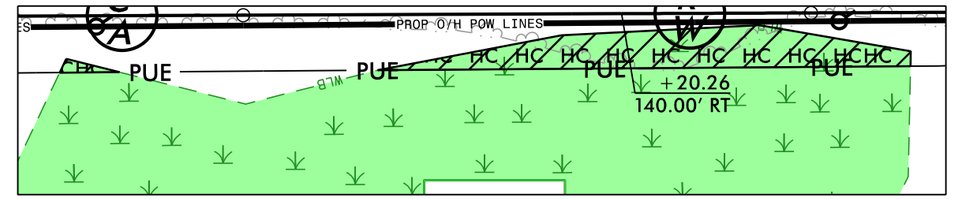
UTILITY PERMIT DRAWING
SHEET 12 OF 18

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	61
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

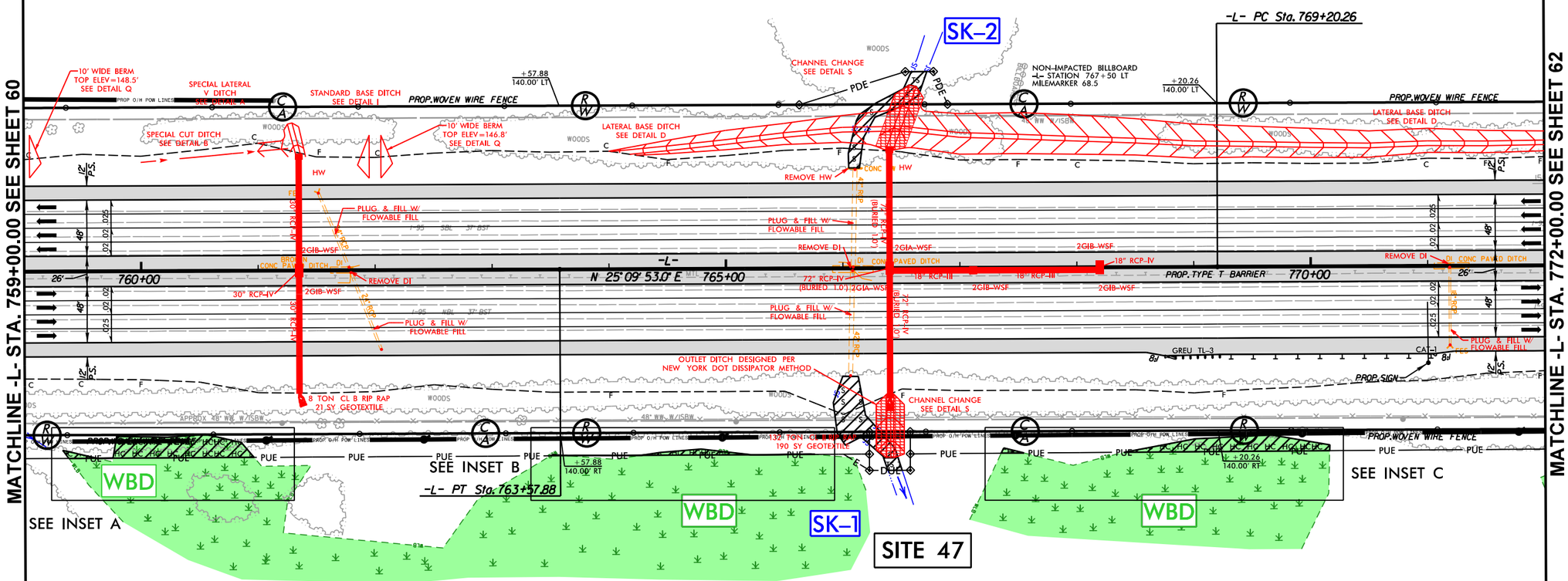


INSET B

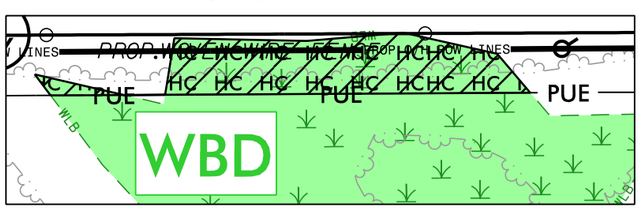


INSET C

NAD 83/NA 2011



INSET A



-L-	
PI Sta 761+15.78	PI Sta 770+75.39
Δ = 0° 01' 06.6" (RT)	Δ = 0° 01' 31.4" (LT)
D = 0° 00' 13.8"	D = 0° 00' 29.5"
L = 484.20'	L = 310.28'
T = 242.10'	T = 155.14'
R = 1,500,000.00'	R = 700,000.00'
SE = NC	SE = NC
DS = 75 MPH	DS = 75 MPH

FOR -L- PROFILES SEE SHTS. 142 & 143

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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Submitted 9/2/2020

8/17/99

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

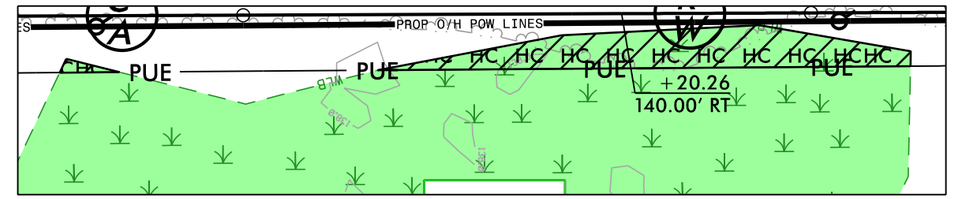
DENOTES HAND CLEARING

UTILITY PERMIT DRAWING
SHEET 13 OF 18

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	61
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

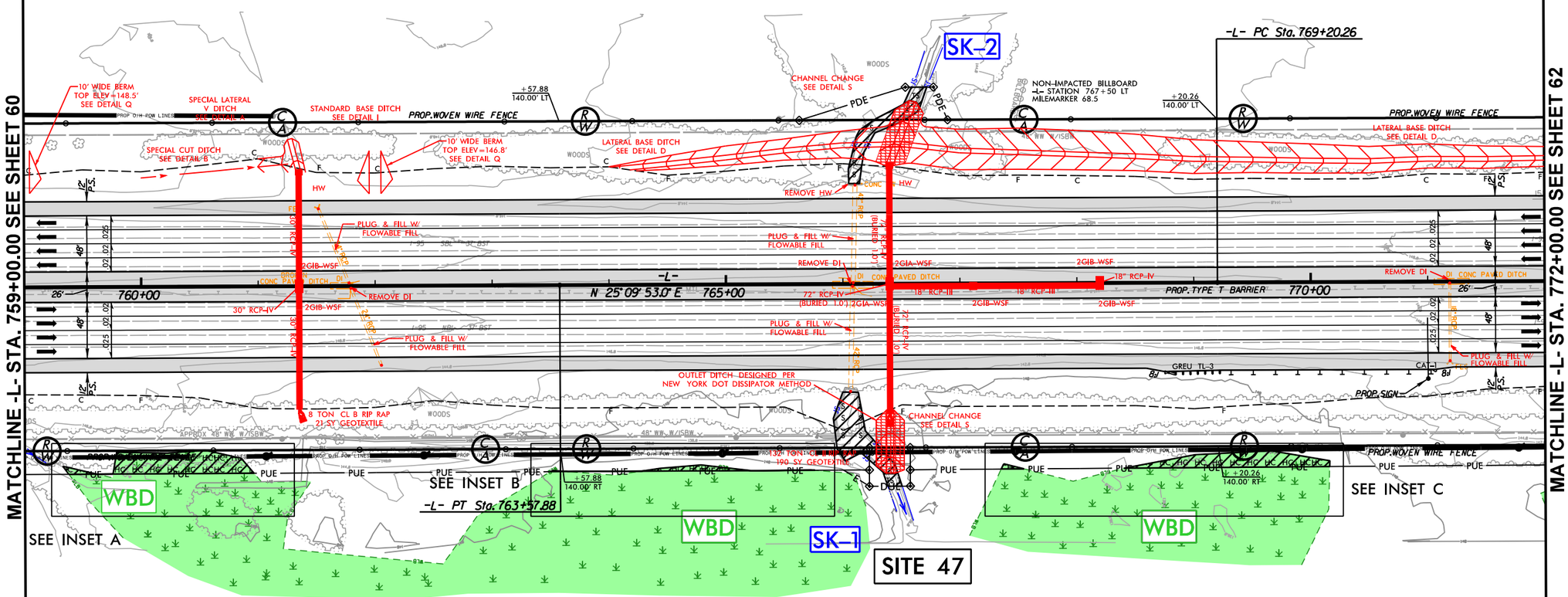
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INSET B

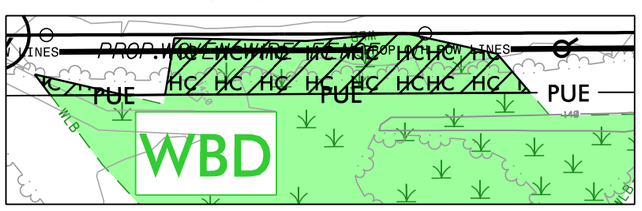


INSET C

NAD 83/NA 2011



INSET A



-L-	
PI Sta 761+15.78	PI Sta 770+75.39
Δ = 0°01' 06.6" (RT)	Δ = 0°01' 31.4" (LT)
D = 0°00' 13.8"	D = 0°00' 29.5"
L = 484.20'	L = 310.28'
T = 242.10'	T = 155.14'
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SE = NC	SE = NC
DS = 75 MPH	DS = 75 MPH

FOR -L- PROFILES SEE SHTS. 142 & 143

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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Submitted 9/2/2020

8/17/99

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

DENOTES HAND CLEARING

NAD 83/NA 2011

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	62
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

UTILITY PERMIT DRAWING
SHEET 14 OF 18

MATCHLINE -L- STA. 772+00.00 SEE SHEET 61

PROP.WOVEN WIRE FENCE

LATERAL BASE DITCH SEE DETAIL D

WOODS

EXISTING R/W

FES

9.5' BST

SBL 37' BST

I-95 SBL 37' BST

35' BST

N 25° 08' 21.5" E

775+00

DI CONC PAVED DITCH

NBL 37' BST

I-95 NBL 37' BST

10' BST

SEE INSET A

48" WW W/ISBW

PUE

+42.00
156.00

+03.71
EX R/W RT
146.00'

WBE

SEE I-5877 PLANS

SITE 47

INSET A

PROP O/H POW LINES

PUE

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

FOR -L- PROFILES SEE SHT. 143

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

DENOTES HAND CLEARING

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	62
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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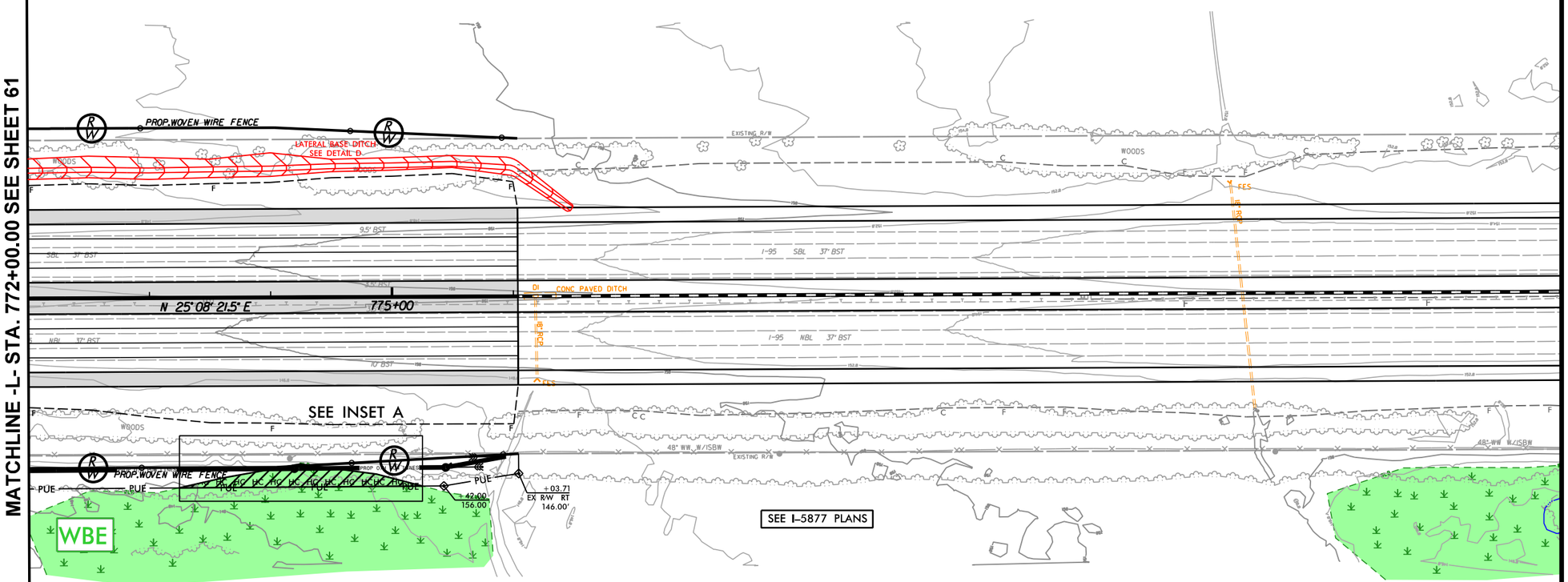
UTILITY PERMIT DRAWING
SHEET 15 OF 18

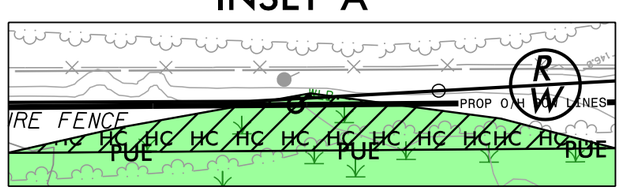
NAD 83/NA 2011

MATCHLINE -L- STA. 772+00.00 SEE SHEET 61



SITE 47

INSET A



ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

FOR -L- PROFILES SEE SHT. 143

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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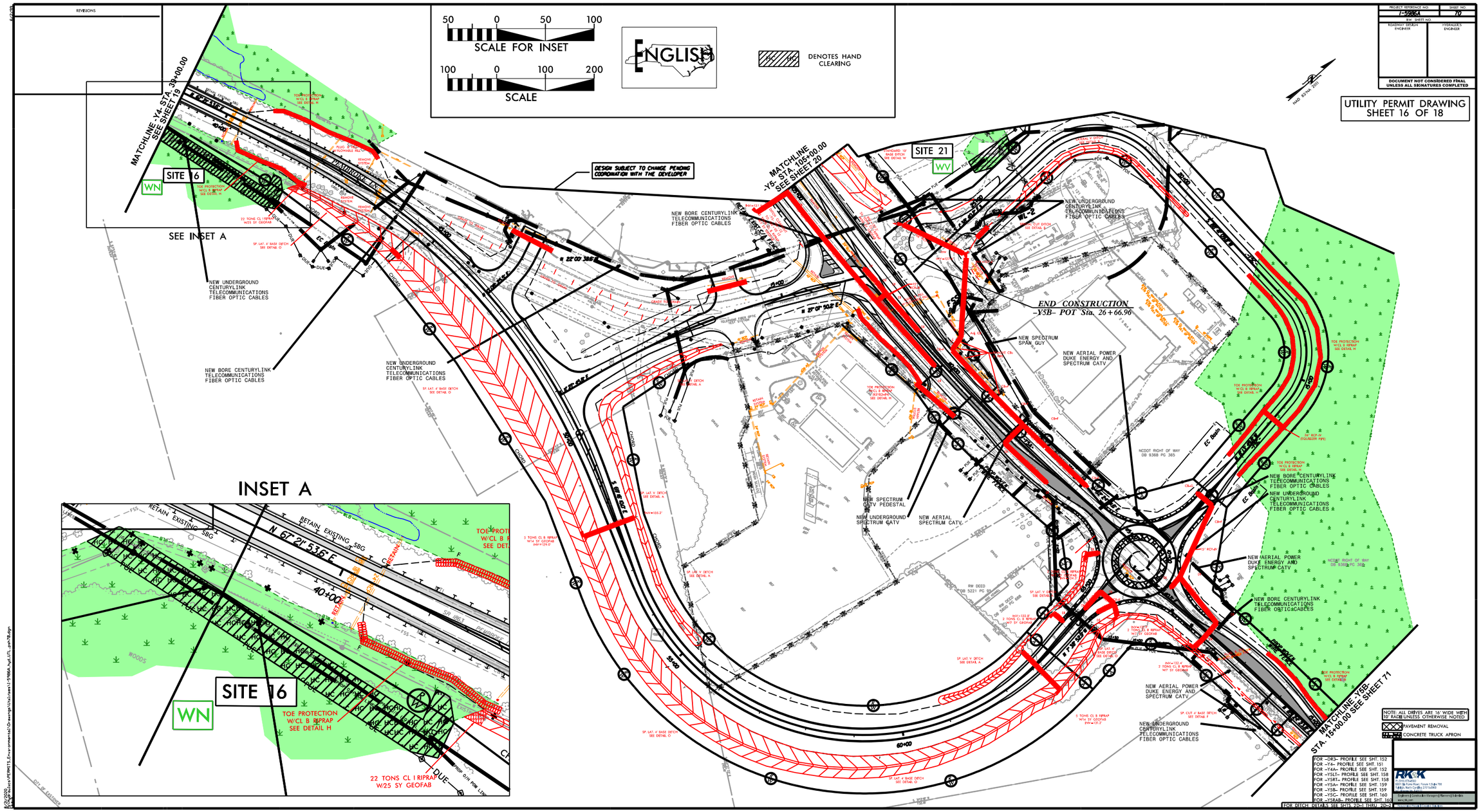

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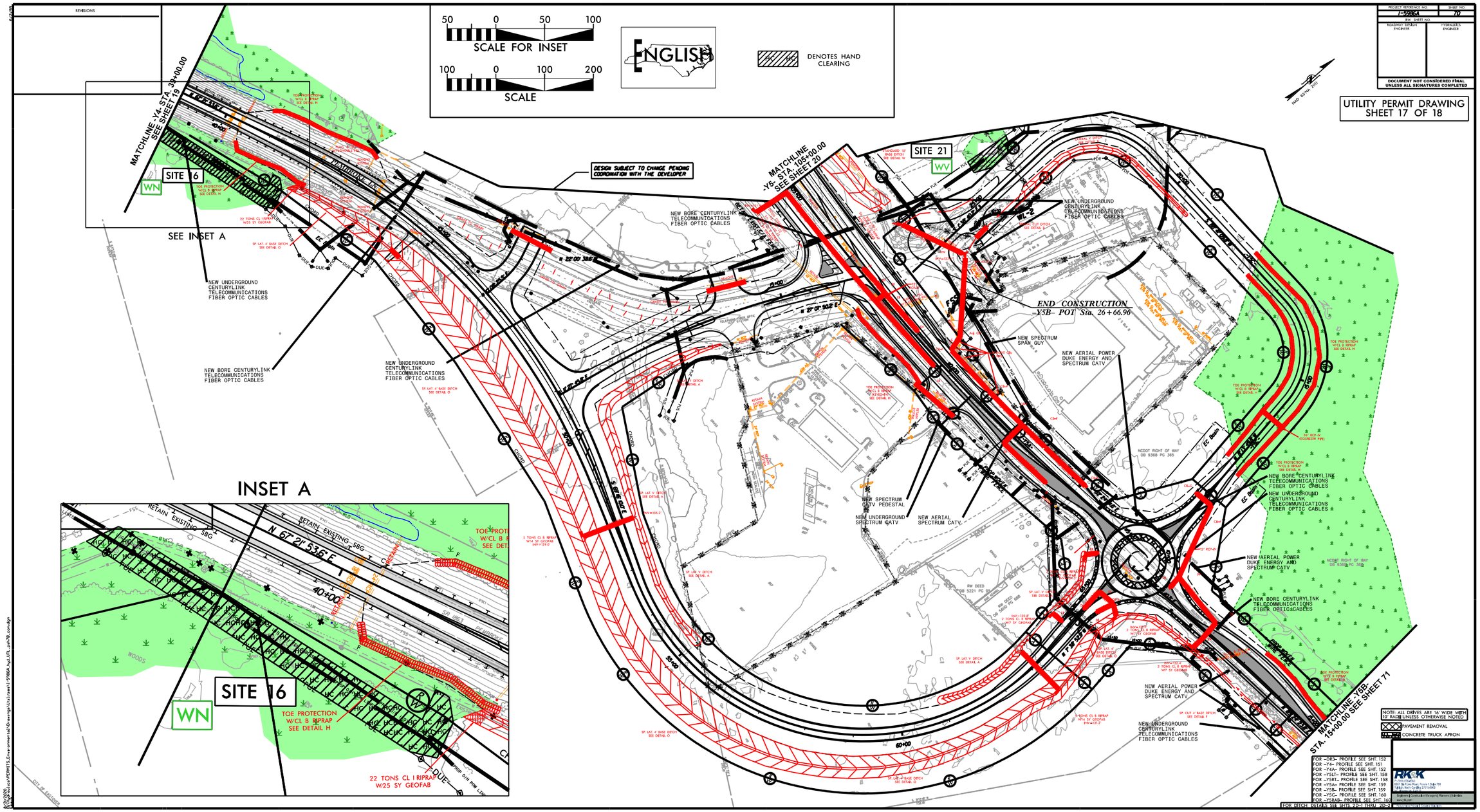


Submitted 9/2/2020

WETLAND AND SURACE WATER IMPACTS SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	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)
16	-Y4- 32+97 - 33+91 RT & - Y4- 37+51 - 41+72 RT	Overhead power: WN*					0.373					
21	-Y5C- 23+55 - 24+62 RT	Overhead power: WV					0.072					
22	-Y5FLY- 60+09 - 62+54 RT	Overhead power: WW					0.204					
28	-L- 395+04 - 398+40 LT	Overhead power: WAG*					0.224					
30	-L- 424+05 - 426+04 LT	Overhead power: WAK*					0.058					
	-L- 430+62 - 435+09 LT	Overhead power: WAL*					0.196					
47	-L- 759+32 - 776+24 RT	Overhead power: WBD					0.092					
		Overhead power: WBE*					0.048					
TOTALS*:			**0.000**	**0.000**	**0.000**	**0.000**	**1.267**	**0.00**	**0.00**	**0**	**0**	**0**

*Rounded totals are sum of actual impacts

NOTES:

* Denotes proposed 2' diameter power pole will be used at 3.1sqft per pole, permanent fill in wetlands

Site 16: 4 poles= 12.4sqft

Site 28: 1 pole= 3.1sqft

Site 30: 2 poles= 6.2sqft

Site 47: 1 pole= 3.1sqft

Total= 25sqft permanent fill in wetlands

Revised 2018 Feb

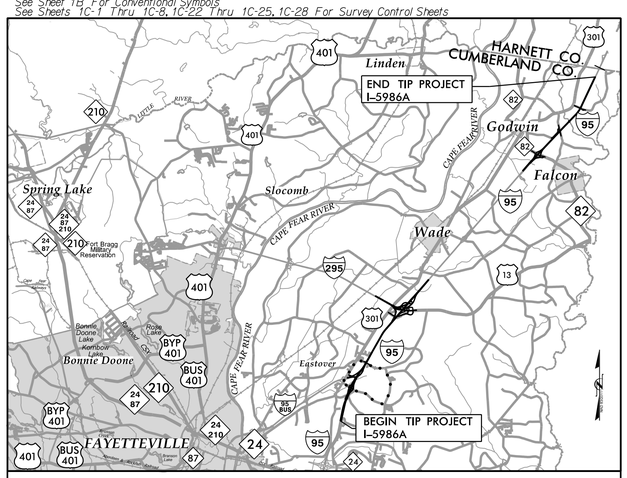
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
8/21/2020
Cumberland / Harnett Counties
I-5986A / I-5877

09/08/99

TIP PROJECT: I-5986A

CONTRACT: C204283

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See Sheets 1C-1 Thru 1C-8, 1C-22 Thru 1C-25, 1C-28 For Survey Control Sheets



VICINITY MAP (NTS) OFFSITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

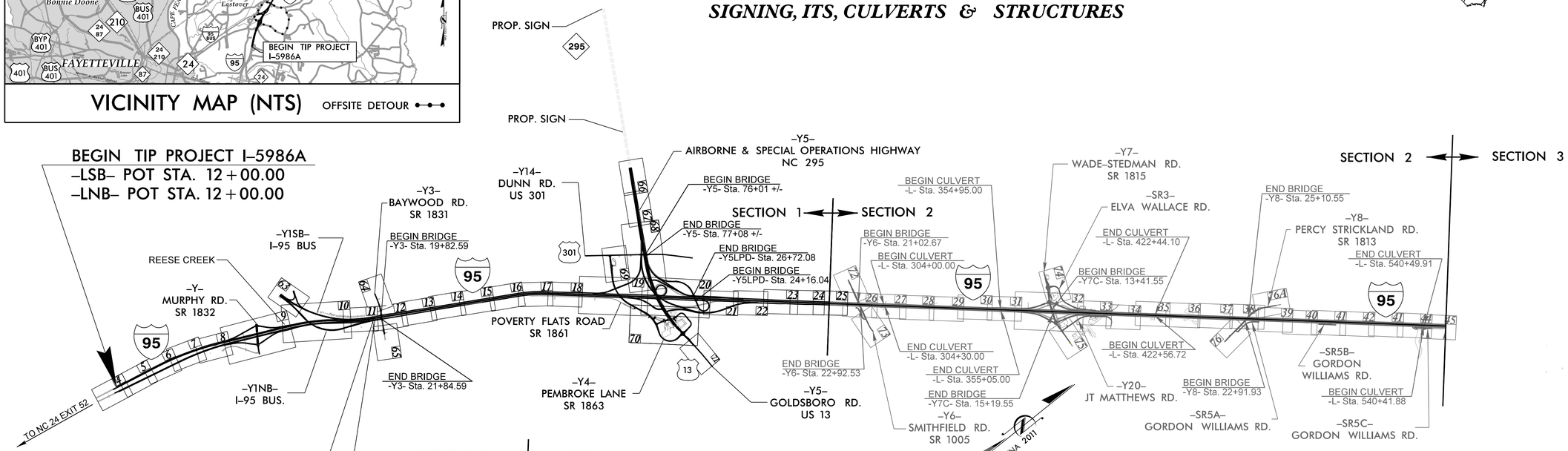
CUMBERLAND COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5986A	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
47532.2.2	NHP-0095(057)	R/W
47532.3.2	NHP-0095(057)	PE, UTIL., CONST.

LOCATION: I-95 WIDENING FROM SOUTH OF SR 1832 (MURPHY ROAD- EXIT 55) TO SOUTH OF SR 1811 (BUD HAWKINS ROAD-EXIT 70)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, LIGHTING, SIGNING, ITS, CULVERTS & STRUCTURES



NOTES
1. THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.
2. DESIGN EXCEPTION FOR HORIZONTAL CLEARANCE -L- STA. 201+50.00 TO 208+50.00

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 2018 = 56,700
ADT 2040 = 73,800
K = 55%
D = 7%
T = 18% *
V = 75 MPH

FUNC CLASS: INTERSTATE
* (TTST 13% + DUALS 5%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT I-5986A.....15.368 MILES
LENGTH STRUCTURE TIP PROJECT I-5986A.....0.048 MILES
TOTAL LENGTH TIP PROJECT I-5986A.....15.416 MILES

NCDOT CONTACT

Michael Penney, PE
PROJECT ENGINEER - DESIGN-BUILD UNIT

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

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

S.T. WOOTEN

2018 STANDARD SPECIFICATIONS

LETTING DATE:
AUGUST 20, 2019

Michael T. Merritt, PE
PROJECT ENGINEER

Anthony A. Houser, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER
SIGNATURE: P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

8/24/2020
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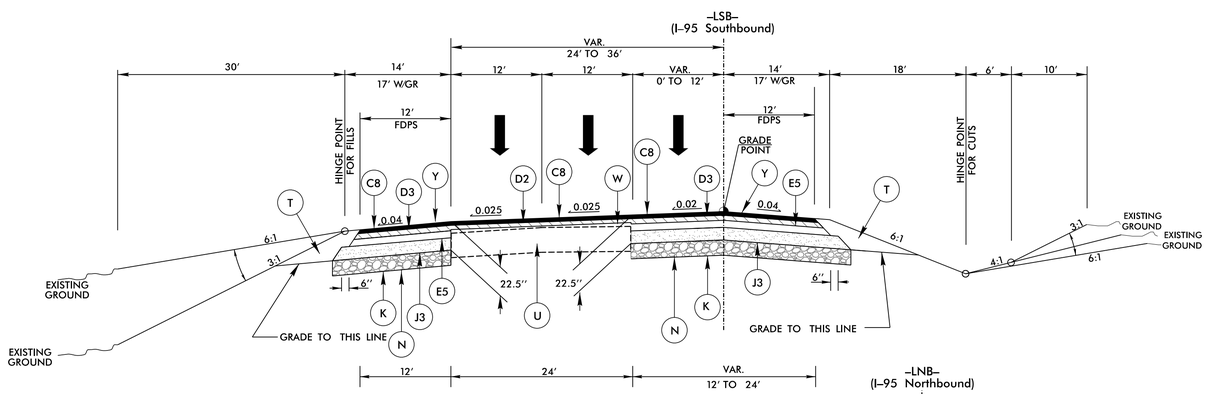
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER

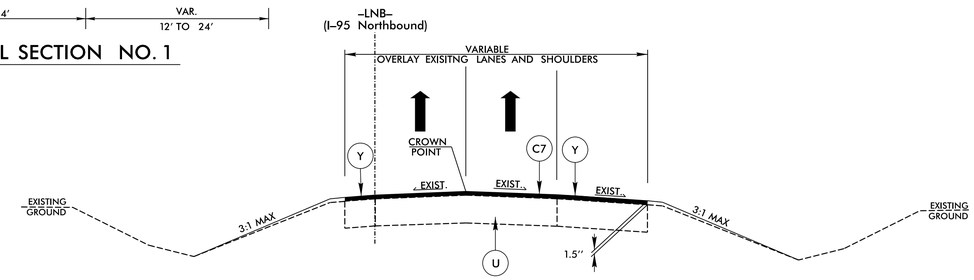
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

C7	1.5" TYPE S9.5D
C8	3" TYPE S9.5D
D2	3" TYPE I19.0C
D3	4" TYPE I19.0C
E5	5.5" TYPE B25.0C
J3	10" ABC
K	12" TYPE 1 AGGREGATE SUBGRADE
N	GEOTEXTILE FOR PAVEMENT STABILIZATION
R4	TYPE T BARRIER
T	EARTH
U	EXISTING PAVEMENT
W	WEDGING
Y	MILLED RUMBLE STRIPS



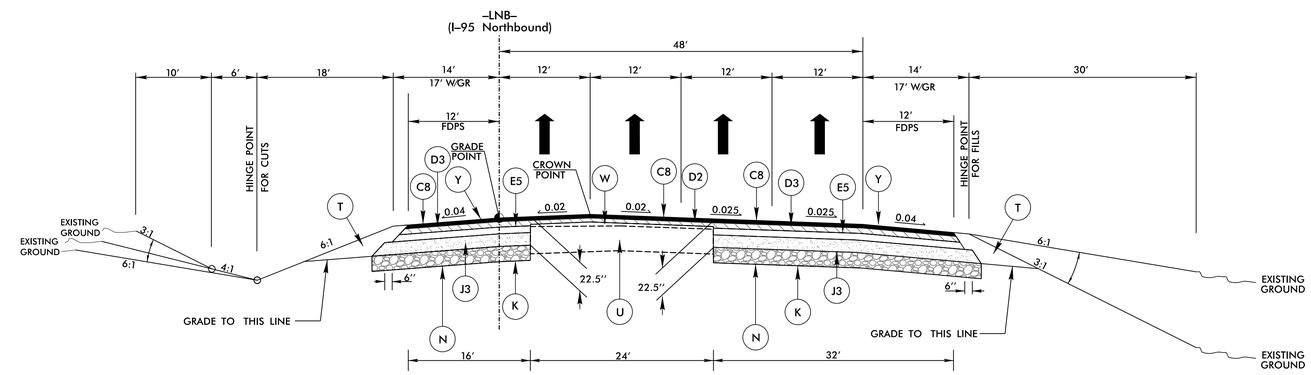
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
-LSB- STA. 12+00.00 TO 119+50.00



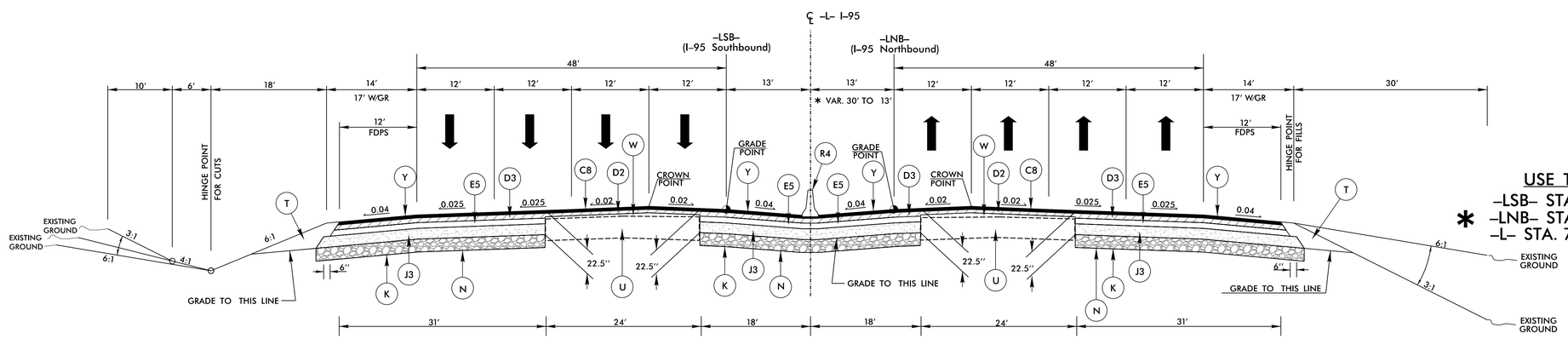
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
-LNB- STA. 12+00.00 TO 105+00.00



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
-LNB- STA. 105+00.00 TO 119+10.00



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4
-LSB- STA. 119+50.00 TO 130+34.61
* -LNB- STA. 119+10.00 TO 129+28.86
-L- STA. 79+78.98 TO 80+40.84

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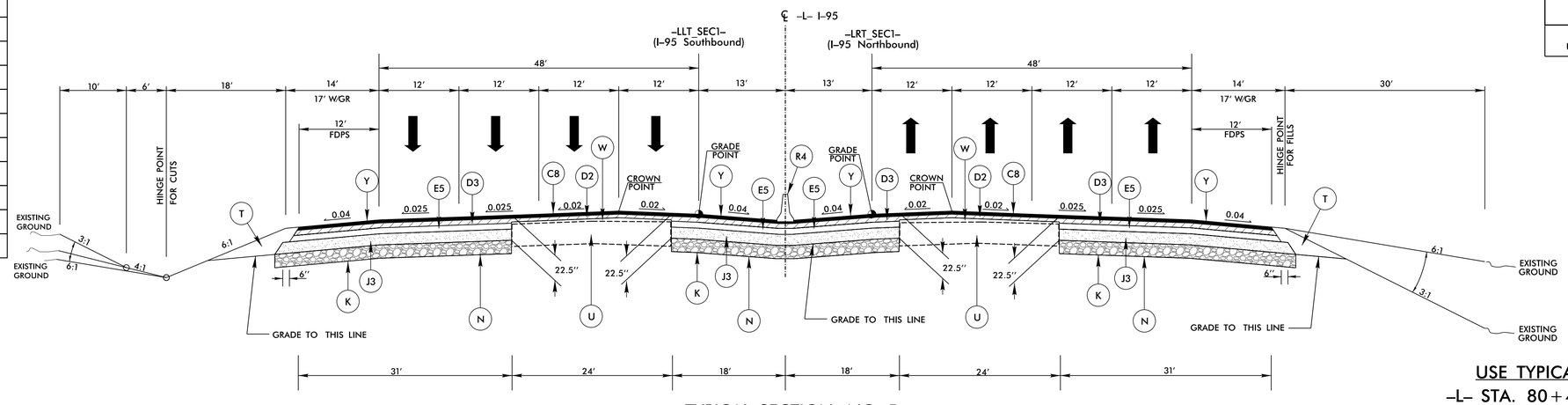
8/24/2020
R:\Roadway\Proj\I5986A_Rdy_typ_sec1.dgn

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER

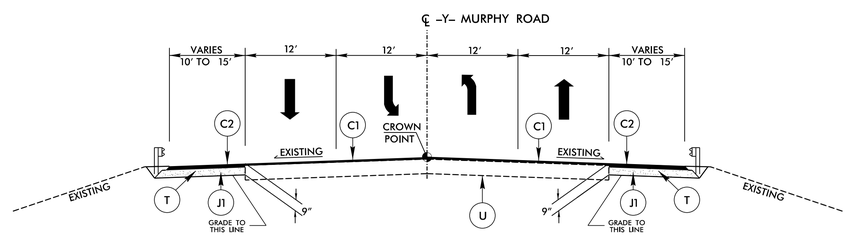
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

C1	1.5" TYPE S9.5B
C2	3" TYPE S9.5B
C7	1.5" TYPE S9.5D
C8	3" TYPE S9.5D
D2	3" TYPE I19.0C
D3	4" TYPE I19.0C
E5	5.5" TYPE B25.0C
J1	6" ABC
J3	10" ABC
K	12" TYPE 1 AGGREGATE SUBGRADE
N	GEOTEXTILE FOR PAVEMENT STABILIZATION
R4	TYPE T BARRIER
T	EARTH
U	EXISTING PAVEMENT
W	WEDGING
Y	MILLED RUMBLE STRIPS



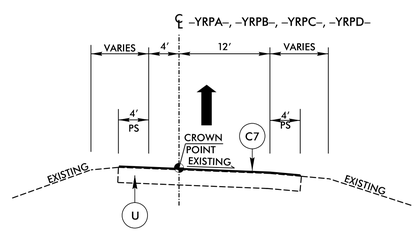
TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5
-L- STA. 80+40.84 TO 280+00.00



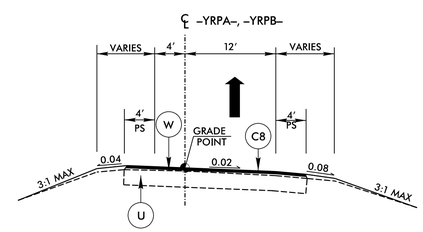
TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6
-Y- STA. 10+05.90 TO 13+61 +/- (EXISTING BRIDGE)
-Y- STA. 16+21 +/- (EXISTING BRIDGE) TO 19+83.13
SEE PLANS FOR PAVED SHOULDER WIDENING LOCATIONS



TYPICAL SECTION NO. 7A

USE TYPICAL SECTION NO. 7A
-YRPA- STA. 19+00.00 TO 24+03.77
-YRPB- STA. 18+00.00 TO 27+01.46
OVERLAY -YRPC- AND -YRPD- WITH 1.5" OF S9.5D (C7)



TYPICAL SECTION NO. 7B

USE TYPICAL SECTION NO. 7B
-YRPA- STA. 14+65.00 TO 19+00.00
-YRPB- STA. 14+88.00 TO 18+00.00

NOTES:
1. SEE PLANS FOR LOCATION OF AUXILIARY LANES, AND TAPERS
2. USE 4:1 SLOPES INSIDE INTERCHANGE
3. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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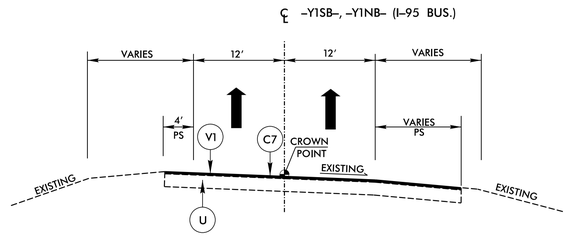
C2	3" TYPE S9.5B
C7	1.5" TYPE S9.5D
C8	3" TYPE S9.5D
D3	4" TYPE I19.0C
E1	3" B25.0C
E3	4.5" B25.0C
K	12" TYPE 1 AGGREGATE SUBGRADE
N	GEOTEXTILE FOR PAVEMENT STABILIZATION
R3	SINGLE FACED CONCRETE BARRIER
T	EARTH
U	EXISTING PAVEMENT
V1	1.5" MILLING
W	WEDGING

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER

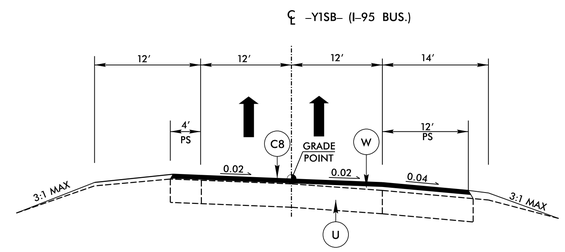
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TYPICAL SECTION NO. 8A

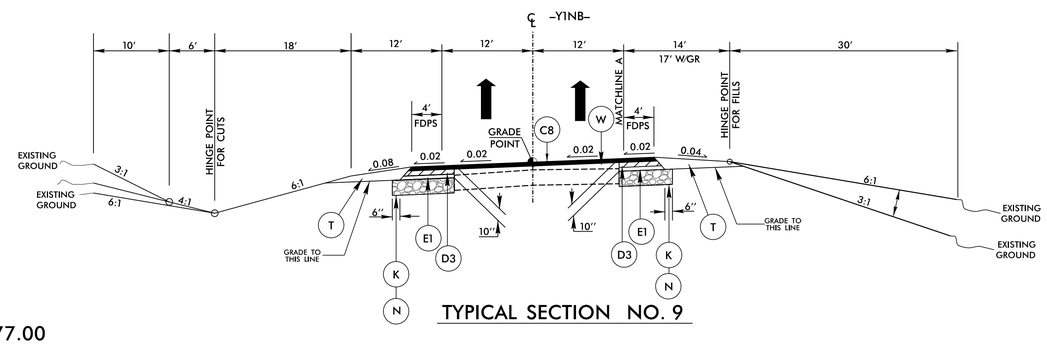
USE TYPICAL SECTION NO. 8A
–Y1SB– STA. 18+50.00 TO 44+74.96
(MILL & FILL I–95 BUS. EXIT RAMP /ENTRANCE LOOP AT DUNN ROAD)

–Y1NB– STA. 10+00.00 TO 26+20+/– (BEGIN EXISTING BRIDGE)
–Y1NB– STA. 30+30+/– (END EXISTING BRIDGE) TO 42+09.48



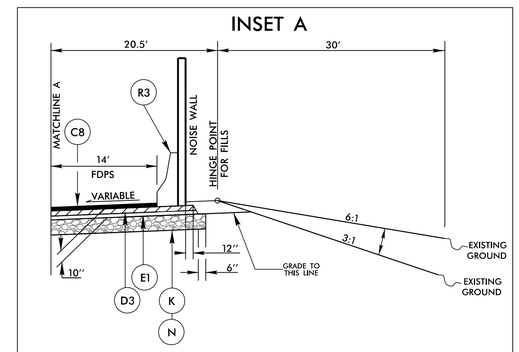
TYPICAL SECTION NO. 8B

USE TYPICAL SECTION NO. 8B
–Y1SB– STA. 17+77.00 TO 18+50.00



TYPICAL SECTION NO. 9

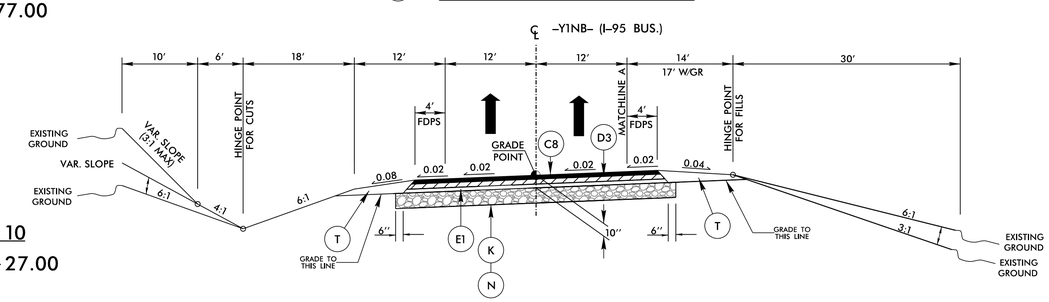
USE TYPICAL SECTION NO. 9
–Y1NB– STA 42+09.48 TO STA 48+77.00



USE INSET A

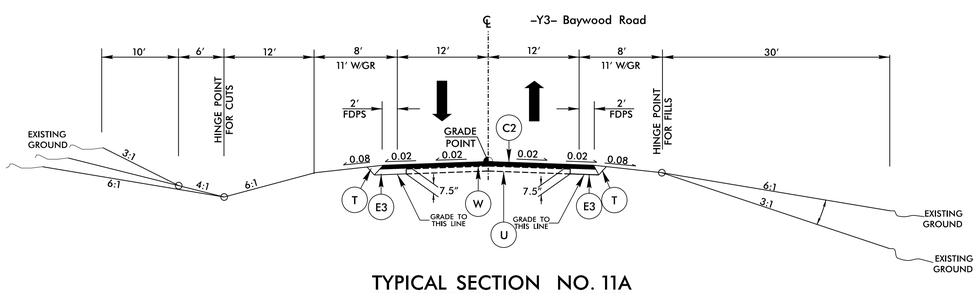
–Y1NB– STA. 49+26.75 TO 59+50.09

USE –L– PAVEMENT DESIGN
–Y1NB– STA. 53+27.00 TO 59+50.09



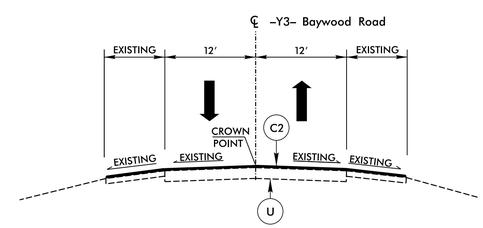
TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10
–Y1NB– STA. 48+77.00 TO 53+27.00



TYPICAL SECTION NO. 11A

USE TYPICAL SECTION NO. 11A
–Y3– STA. 16+00.00 TO 18+00.00
–Y3– STA. 24+00.00 TO 25+00.00



TYPICAL SECTION NO. 11B

USE TYPICAL SECTION NO. 11B
–Y3– STA. 15+00.00 TO 16+00.00
–Y3– STA. 25+00.00 TO 28+39.12

NOTES:
1.SEE PLANS FOR LOCATION OF AUXILIARY LANES, AND TAPERS
2. USE 4:1 SLOPES INSIDE INTERCHANGE
3. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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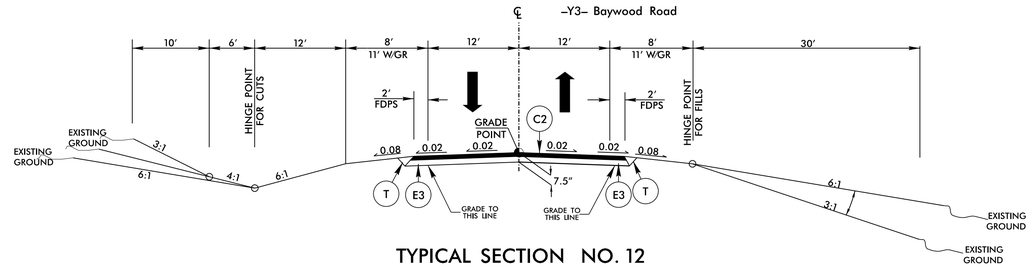
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

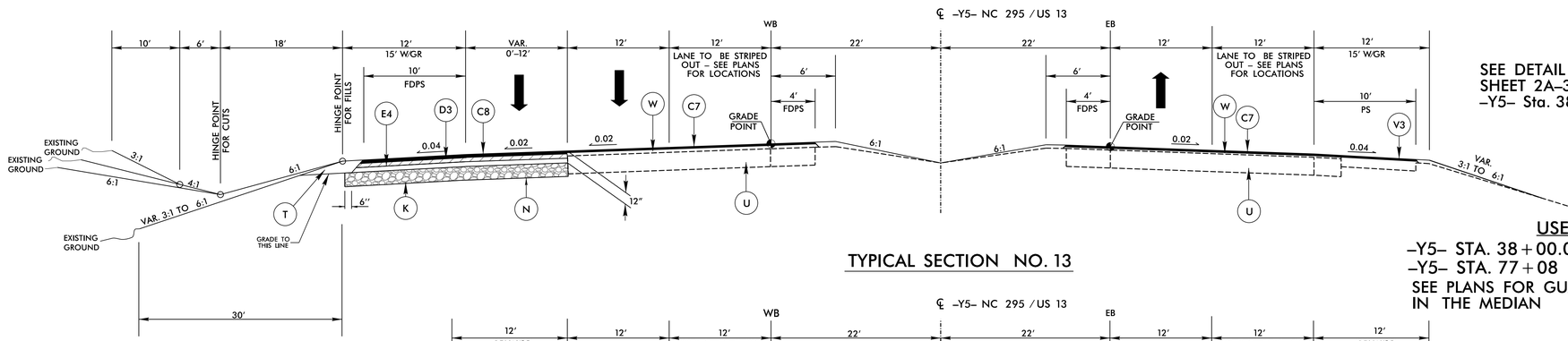
C2	3" TYPE S9.5B
C4	1.5" TYPE S9.5C
C5	3" TYPE S9.5C
C7	1.5" TYPE S9.5D
C8	3" TYPE S9.5D
D3	4" TYPE I19.0C
E3	4.5" B25.0C
E4	5" B25.0C
K	12" TYPE 1 AGGREGATE SUBGRADE
N	GEOTEXTILE FOR PAVEMENT STABILIZATION
R1	1'6" CONCRETE CURB AND GUTTER
T	EARTH
U	EXISTING PAVEMENT
V3	INCIDENTAL MILLING
W	WEDGING



TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12

–Y3– STA. 18+00.00 TO 19+82.59 (BEGIN BRIDGE)
–Y3– STA. 21+84.59 (END BRIDGE) TO 24+00.00

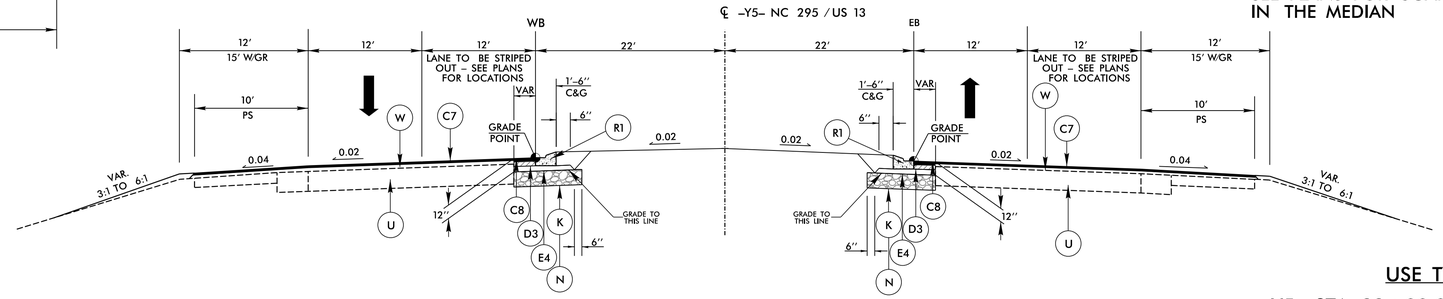


TYPICAL SECTION NO. 13

SEE DETAIL OF INCIDENTAL MILLING ON SHEET 2A–3 FOR PAVED SHOULDER MILLING
–Y5– Sta. 38+00.00 to 64+00.00 RT.

USE TYPICAL SECTION NO. 13

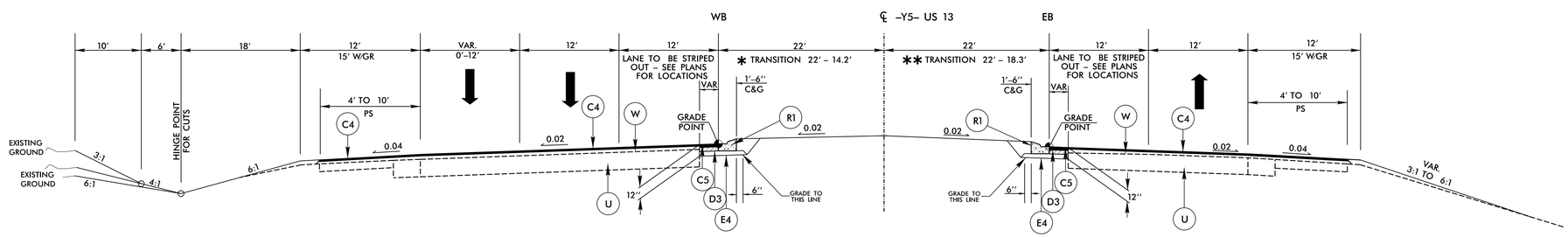
–Y5– STA. 38+00.00 TO 76+01 +/– (BEGIN BRIDGE)
–Y5– STA. 77+08 +/– (END BRIDGE) TO 88+00.00
SEE PLANS FOR GUARDRAIL\GUIDERAIL LOCATIONS IN THE MEDIAN



TYPICAL SECTION NO. 14

USE TYPICAL SECTION NO. 14

–Y5– STA. 88+00.00 TO 94+74.74 (BEGIN BRIDGE)
SEE PLANS FOR GUARDRAIL\GUIDERAIL LOCATIONS IN THE MEDIAN



TYPICAL SECTION NO. 15

USE TYPICAL SECTION NO. 15

✱ –Y5– STA. 97+12.74 (END BRIDGE) TO 102+20.00 (WB)
✱✱ –Y5– STA. 97+12.74 (END BRIDGE) TO 104+60.00 (EB)
–Y5– STA. 102+20.00 TO 106+89.00 (WB)
–Y5– STA. 104+60.00 TO 106+89.00 (EB)

NOTES:
1. SEE PLANS FOR LOCATION OF AUXILIARY LANES, AND TAPERS
2. USE 4:1 SLOPES INSIDE INTERCHANGE
3. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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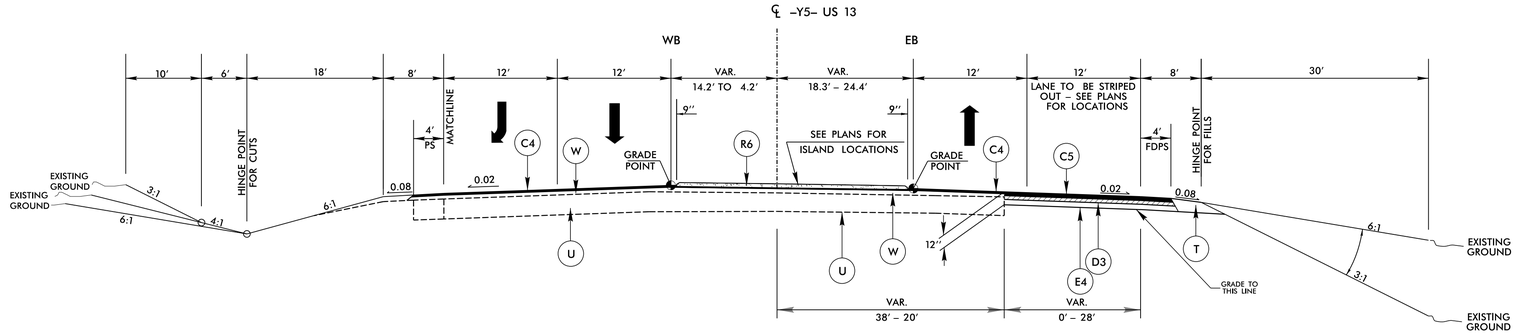
C4	1.5" TYPE S9.5C
C5	3" TYPE S9.5C
C8	3" TYPE S9.5C
D2	3" TYPE I19.0C
D3	4" TYPE I19.0C
E1	3" B25.0C
E4	5" B25.0C
E5	5.5" B25.0C
J1	6" ABC
J3	10" ABC
K	12" TYPE 1 AGGREGATE SUBGRADE
N	GEOTEXTILE FOR PAVEMENT STABILIZATION
R	9" x 18" CONCRETE CURB
R1	1'-6" C&G
R2	2'-6" C&G
R4	TYPE T BARRIER
R6	5" MONOLITHIC ISLAND KEYED-IN
R7	12" TRUCK APRON W/ MESH
R8	12" TRUCK APRON
R9	4" CONCRETE COVER
T	EARTH
U	EXISTING PAVEMENT
W	WEDGING
Y	MILLED RUMBLE STRIPS

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER

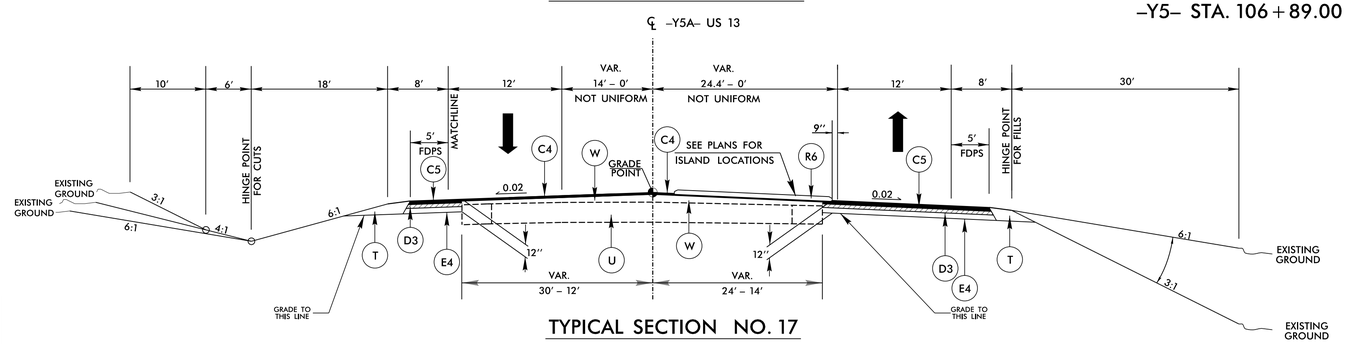
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TYPICAL SECTION NO. 16

USE TYPICAL SECTION NO. 16

-Y5- STA. 106+89.00 TO 109+51.53 (WB & EB)

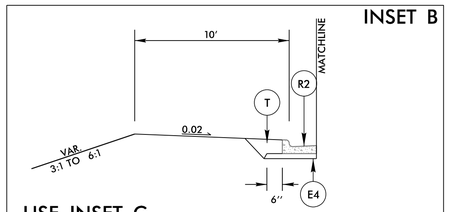


TYPICAL SECTION NO. 17

USE TYPICAL SECTION NO. 17

-Y5A- STA. 109+51.53 TO 114+74.89

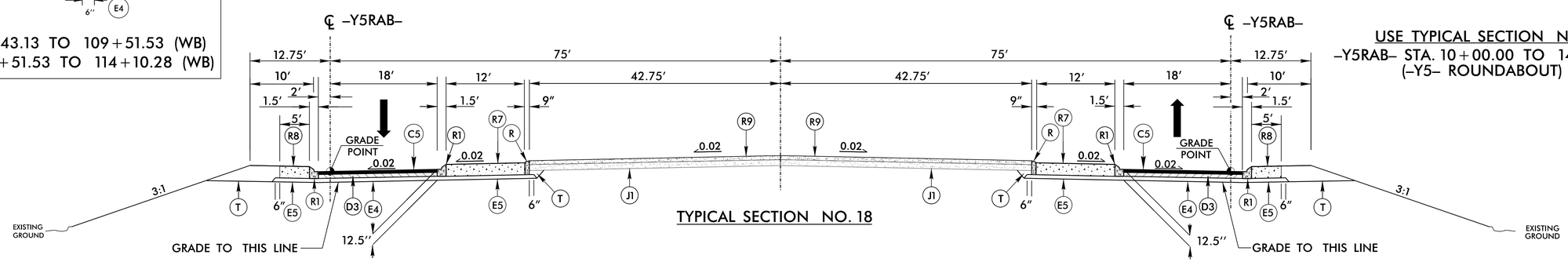
-Y5B- STA. 10+74.36 TO 17+50.00



USE INSET G

-Y5- STA. 109+43.13 TO 109+51.53 (WB)

-Y5A- STA. 109+51.53 TO 114+10.28 (WB)

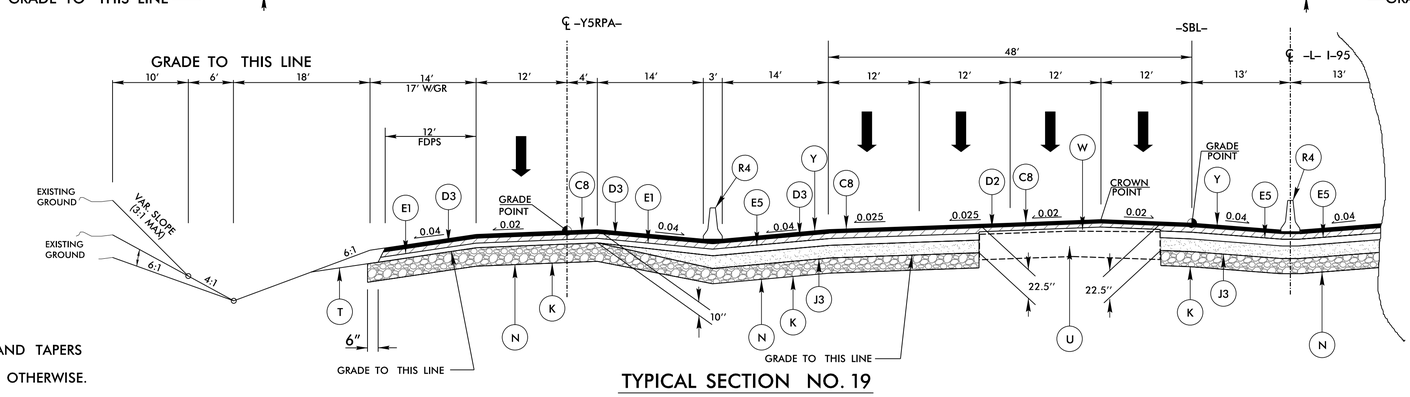


TYPICAL SECTION NO. 18

USE TYPICAL SECTION NO. 18

-Y5RAB- STA. 10+00.00 TO 14+71.24

(-Y5- ROUNDABOUT)



TYPICAL SECTION NO. 19

USE TYPICAL SECTION NO. 19

-Y5RPA- STA. 23+84.23 TO 32+50.00

USE MAINLINE PAVEMENT TO BACK OF GORE

NOTES:
1. SEE PLANS FOR LOCATION OF AUXILIARY LANES, AND TAPERS
2. USE 4:1 SLOPES INSIDE INTERCHANGE
3. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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8/24/2020
DGN: TF

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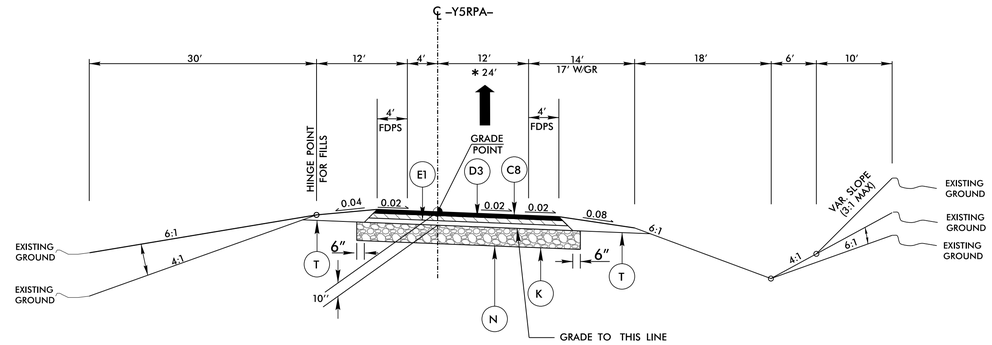
C7	1.5" TYPE S9.5D
C8	3" TYPE S9.5D
D3	4" TYPE I19.0C
E1	3" TYPE B25.0C
K	12" TYPE 1 AGGREGATE SUBGRADE
N	GEOTEXTILE FOR PAVEMENT STABILIZATION
T	EARTH
U	EXISTING PAVEMENT
W	WEDGING

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER

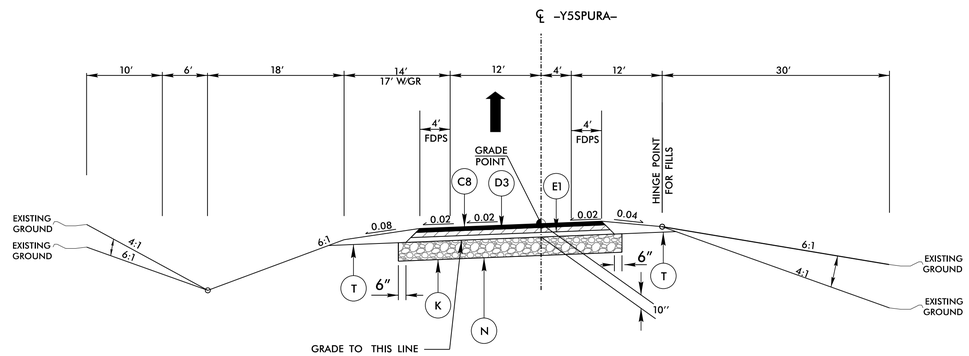
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TYPICAL SECTION NO. 20

USE TYPICAL SECTION NO. 20

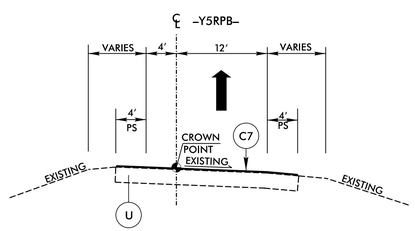
* -Y5RPA- STA. 32+50.00 TO 51+79.86
-Y5RPA- STA. 51+79.86 TO 56+04.41



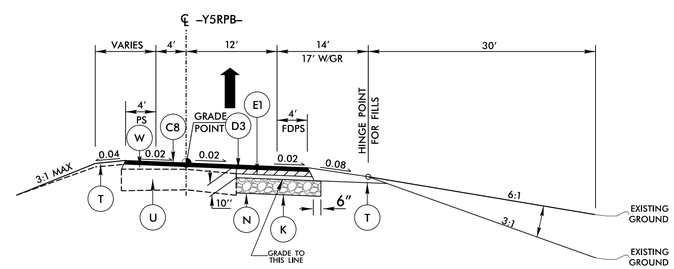
TYPICAL SECTION NO. 21A

USE TYPICAL SECTION NO. 21A
-Y5SPURA- STA. 14+80.94 TO 24+82.00

USE TYPICAL SECTION NO. 21B
-Y5RPB- STA. 10+00.00 TO 31+54.22

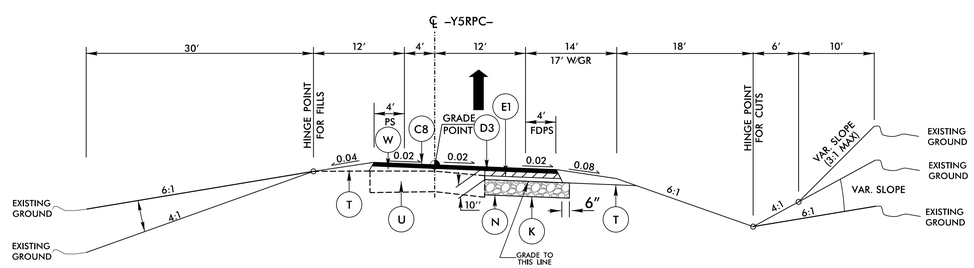


TYPICAL SECTION NO. 21B



TYPICAL SECTION NO. 21C

USE TYPICAL SECTION NO. 21C
-Y5RPB- STA. 31+54.22 TO 35+93.00



TYPICAL SECTION NO. 22

USE TYPICAL SECTION NO. 22
-Y5RPC- STA. 14+27.00 TO 26+24.00

NOTES:
1.SEE PLANS FOR LOCATION OF AUXILIARY LANES, AND TAPERS
2. USE 4:1 SLOPES INSIDE INTERCHANGE
3. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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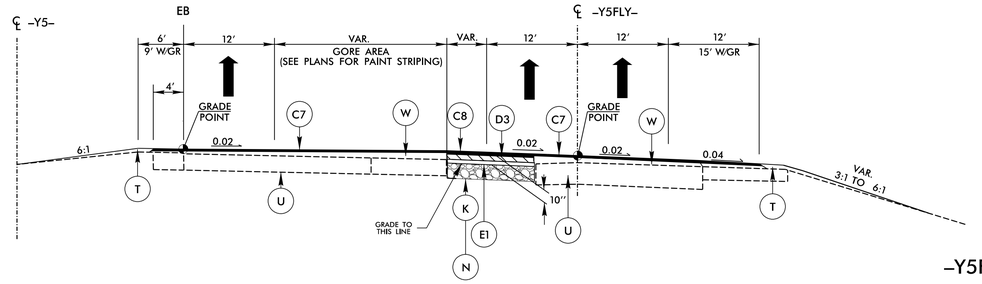
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

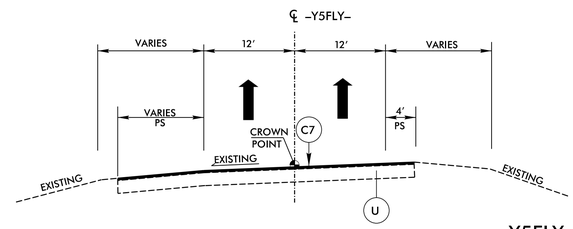
C7	1.5" TYPE S9.5D
C8	3" TYPE S9.5D
D3	4" TYPE I19.0C
E1	3" TYPE B25.0C
K	12" TYPE 1 AGGREGATE SUBGRADE
N	GEOTEXTILE FOR PAVEMENT STABILIZATION
R2	2'-6" C&G
T	EARTH
U	EXISTING PAVEMENT
W	WEDGING



TYPICAL SECTION NO. 23

USE TYPICAL SECTION NO. 23

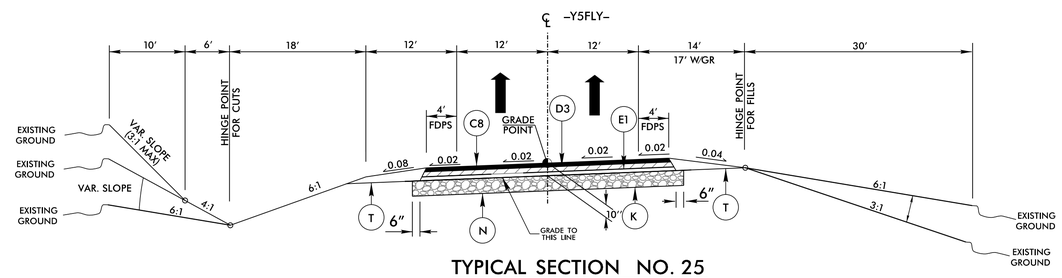
-Y5FLY- STA. 15+25.52 TO 22+80 +/- (BEGIN EXISTING BRIDGE)



TYPICAL SECTION NO. 24

USE TYPICAL SECTION NO. 24

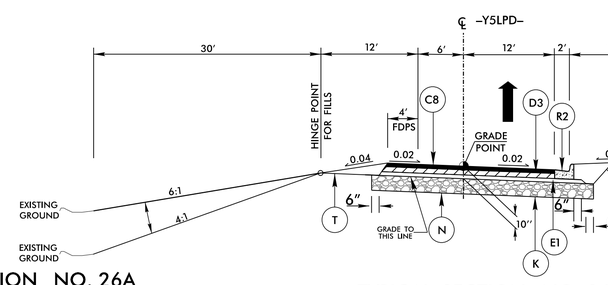
-Y5FLY- STA. 23+85 +/- (END EXISTING BRIDGE) TO 39+22 +/- (BEGIN EXISTING BRIDGE)
-Y5FLY- STA. 47+58 +/- (END EXISTING BRIDGE) TO 50+31.83



TYPICAL SECTION NO. 25

USE TYPICAL SECTION NO. 25

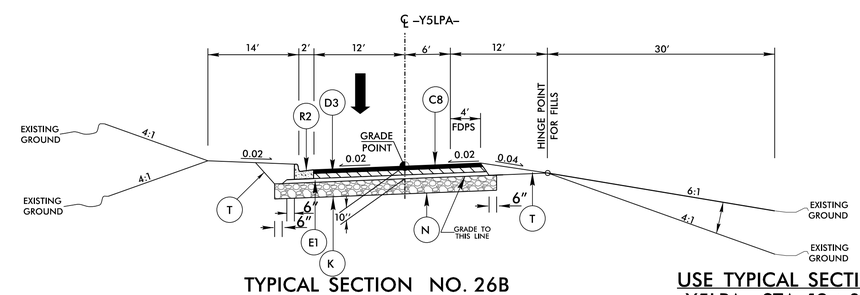
-Y5FLY- STA. 50+31.83 TO 84+70.00



USE TYPICAL SECTION NO. 26A

-Y5LPD- STA 12+27.66 TO STA 21+83.19

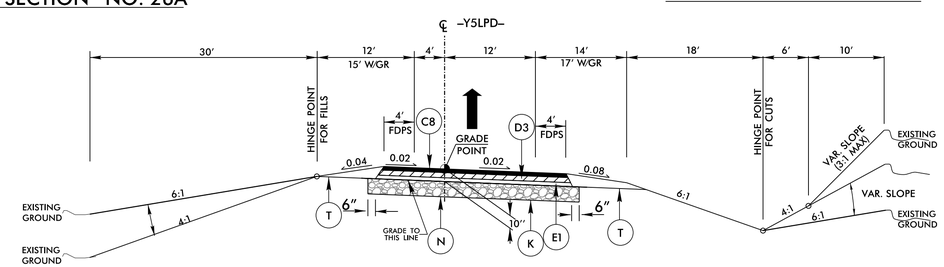
TYPICAL SECTION NO. 26A



TYPICAL SECTION NO. 26B

USE TYPICAL SECTION NO. 26B

-Y5LPA- STA. 12+09.74 TO STA. 21+52.97



TYPICAL SECTION NO. 27

USE TYPICAL SECTION NO. 27

-Y5LPD- STA. 21+83.19 TO STA 24+16.04 (BEGIN BRIDGE)
-Y5LPD- STA. 26+72.08 (END BRIDGE) TO STA. 43+05.36

NOTES:
1. SEE PLANS FOR LOCATION OF AUXILIARY LANES, AND TAPERS
2. USE 4:1 SLOPES INSIDE INTERCHANGE
3. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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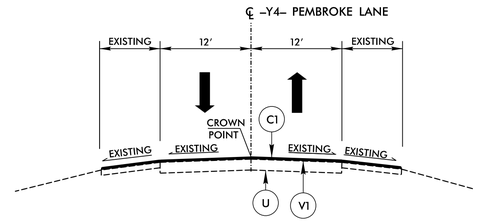
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER

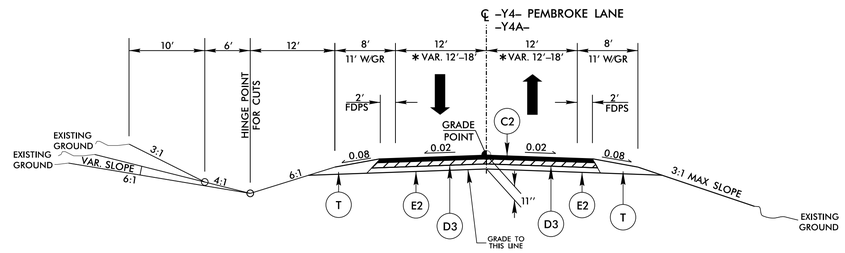
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

C1	1.5" TYPE S9.5B
C2	3" TYPE S9.5B
C5	3" TYPE S9.5C
D3	4" TYPE I19.0C
E2	4" TYPE B25.0C
E4	5" TYPE B25.0C
T	EARTH
U	EXISTING PAVEMENT
V1	1.5" MILLING



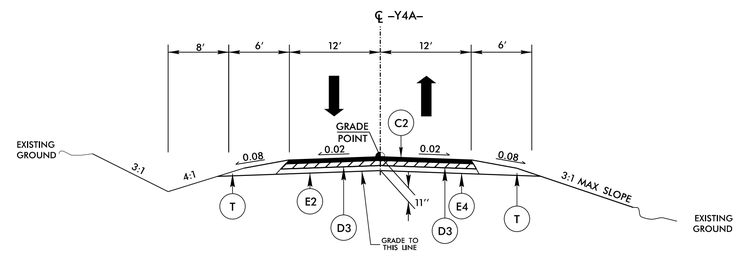
TYPICAL SECTION NO. 28

USE TYPICAL SECTION NO. 28
-Y4- STA. 10+28.01 TO 24+28 +/- (BEGIN EXISTING BRIDGE)
-Y4- STA. 30+25 +/- (END EXISTING BRIDGE) TO 40+20.00



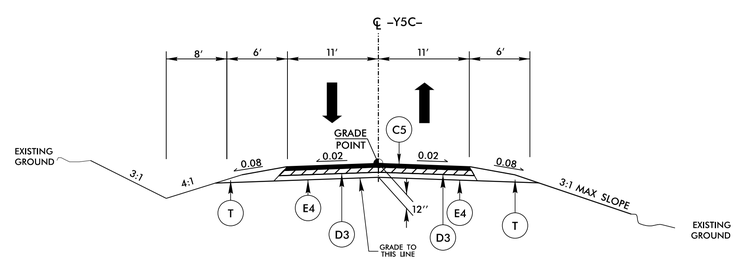
TYPICAL SECTION NO. 29

USE TYPICAL SECTION NO. 29
* -Y4- STA. 40+20.00 TO 53+40.00
-Y4- STA. 53+40.00 TO 65+18.18
-Y4A- STA. 10+20.00 TO 10+81.50



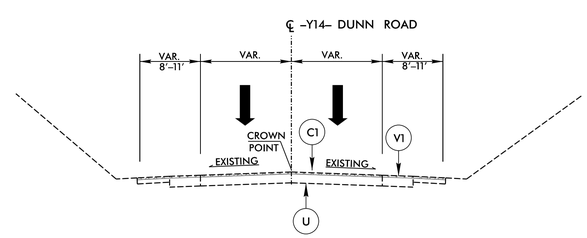
TYPICAL SECTION NO. 30

USE TYPICAL SECTION NO. 30
-Y4A- STA. 10+81.50 TO 16+43.03



TYPICAL SECTION NO. 31

USE TYPICAL SECTION NO. 31
-Y5C- STA. 10+90.82 TO 26+66.96



TYPICAL SECTION NO. 32

USE TYPICAL SECTION NO. 32
-Y14- STA. 34+00.00 TO 38+00.00

NOTES:
1.SEE PLANS FOR LOCATION OF AUXILIARY LANES, AND TAPERS
2. USE 4:1 SLOPES INSIDE INTERCHANGE
3. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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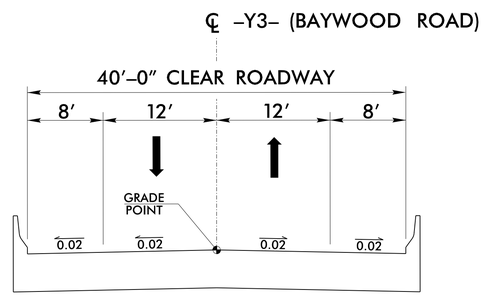
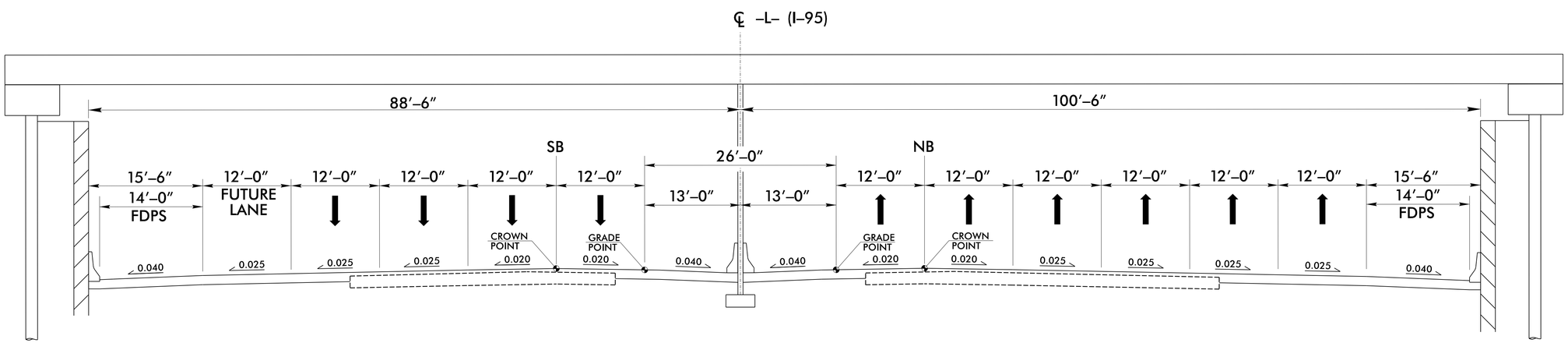
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BRIDGE AT –Y3– STATION 20+77.59 OVER –L– STATION 83+19.18



STRUCTURE TYPICAL SECTION



TYPICAL SECTION UNDER STRUCTURE

NOTES:
1. SEE SHEET 12 FOR PLAN VIEW.
2. SEE SHEET 149 FOR PROFILE VIEW.

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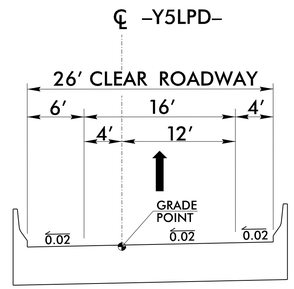
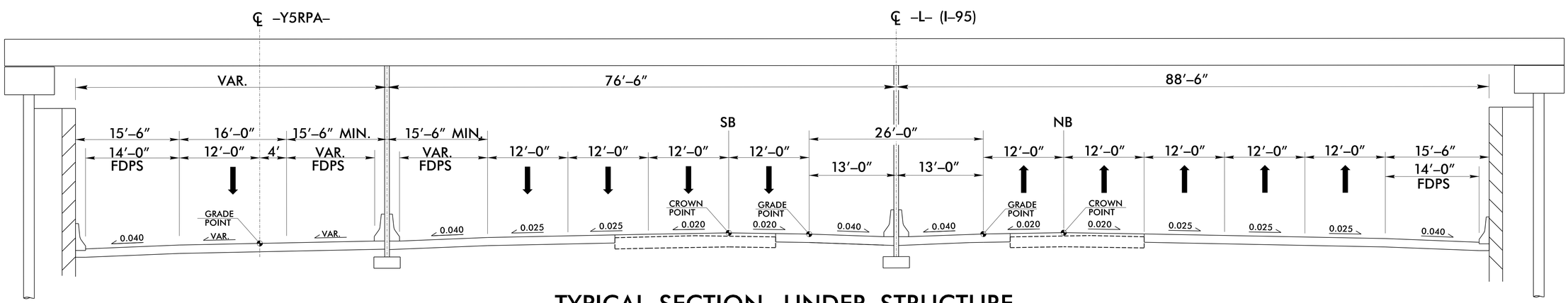
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BRIDGE AT –Y5LPD– STATION 25+24.04 OVER –L– STATION 221+14.69



STRUCTURE TYPICAL SECTION



TYPICAL SECTION UNDER STRUCTURE

NOTES:
1. SEE SHEET 20 FOR PLAN VIEW.
2. SEE SHEET 167 & 168 FOR PROFILE VIEW.

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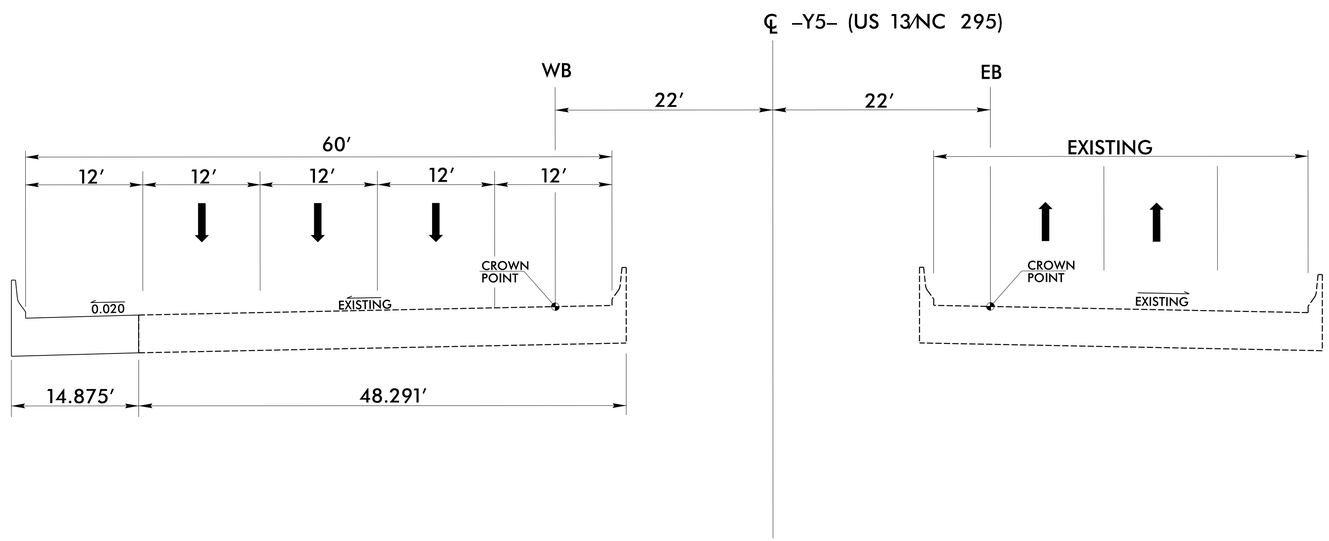
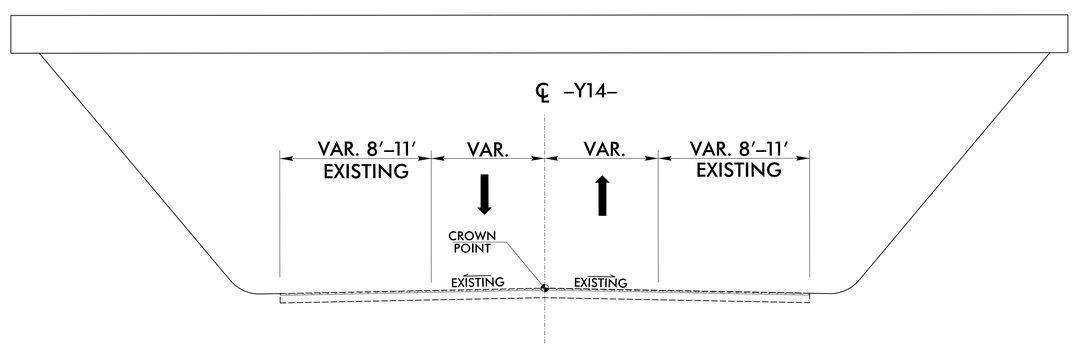
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BRIDGE AT –Y5– STATION 76+45.02 OVER –Y14– STATION 36+22.62



STRUCTURE TYPICAL SECTION



TYPICAL SECTION UNDER STRUCTURE

NOTES:
1. SEE SHEET 68 FOR PLAN VIEW.
2. SEE SHEET 156 FOR PROFILE VIEW.

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ROUNDABOUT LAYOUT

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2B-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

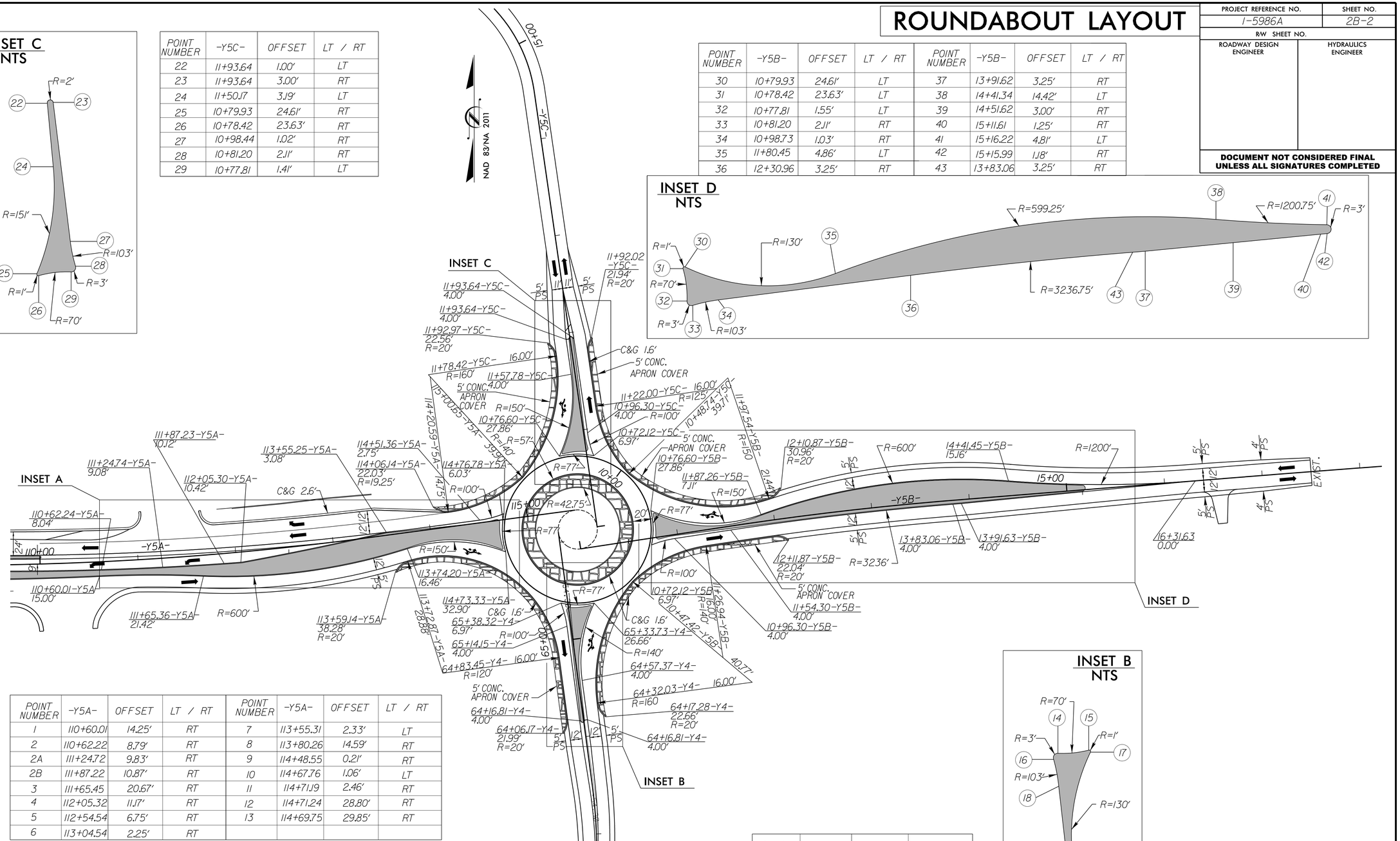
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INSET C
NTS

POINT NUMBER	-Y5C-	OFFSET	LT / RT
22	11+93.64	1.00'	LT
23	11+93.64	3.00'	RT
24	11+50.17	3.19'	LT
25	10+79.93	24.61'	RT
26	10+78.42	23.63'	RT
27	10+98.44	1.02'	RT
28	10+81.20	2.11'	RT
29	10+77.81	1.41'	LT

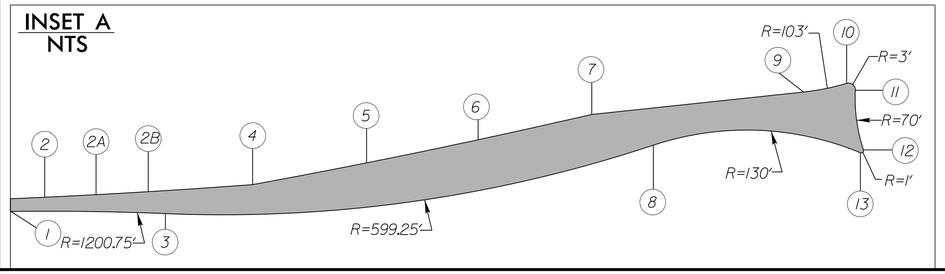
POINT NUMBER	-Y5B-	OFFSET	LT / RT	POINT NUMBER	-Y5B-	OFFSET	LT / RT
30	10+79.93	24.61'	LT	37	13+91.62	3.25'	RT
31	10+78.42	23.63'	LT	38	14+41.34	14.42'	LT
32	10+77.81	1.55'	LT	39	14+51.62	3.00'	RT
33	10+81.20	2.11'	RT	40	15+11.61	1.25'	RT
34	10+98.73	1.03'	RT	41	15+16.22	4.81'	LT
35	11+80.45	4.86'	LT	42	15+15.99	1.18'	RT
36	12+30.96	3.25'	RT	43	13+83.06	3.25'	RT

INSET D
NTS

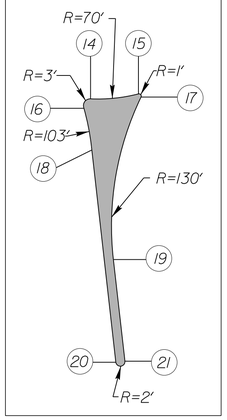


POINT NUMBER	-Y5A-	OFFSET	LT / RT	POINT NUMBER	-Y5A-	OFFSET	LT / RT
1	110+60.01	14.25'	RT	7	113+55.31	2.33'	LT
2	110+62.22	8.79'	RT	8	113+80.26	14.59'	RT
2A	111+24.72	9.83'	RT	9	114+48.55	0.21'	RT
2B	111+87.22	10.87'	RT	10	114+67.76	1.06'	LT
3	111+65.45	20.67'	RT	11	114+71.19	2.46'	RT
4	112+05.32	11.17'	RT	12	114+71.24	28.80'	RT
5	112+54.54	6.75'	RT	13	114+69.75	29.85'	RT
6	113+04.54	2.25'	RT				

INSET A
NTS



INSET B
NTS



POINT NUMBER	-Y4-	OFFSET	LT / RT
14	65+32.63	1.40'	RT
15	65+31.98	22.46'	RT
16	65+29.24	2.11	LT
17	65+30.44	23.41'	RT
18	65+12.01	1.02'	LT
19	64+61.52	1.93'	RT
20	64+16.81	3.00'	LT
21	64+16.81	1.00'	RT

MONOLITHIC ISLAND

CONCRETE APRON COVER

FOR –Y5A– PLAN SEE SHT. 70
FOR –Y5B– PLAN SEE SHT. 70
FOR –Y5C– PLAN SEE SHT. 70
FOR –Y4A– PLAN SEE SHT. 70
FOR –Y5A– PROFILE SEE SHT. 159
FOR –Y5B– PROFILE SEE SHT. 159
FOR –Y5C– PROFILE SEE SHT. 159
FOR –Y4A– PROFILE SEE SHT. 160

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Steve

–Y4A– /–Y5– INTERSECTION DETAIL

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2B-3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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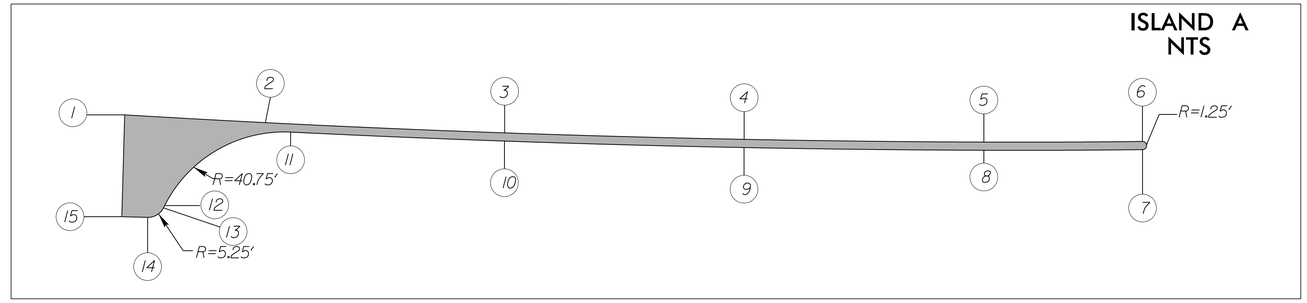
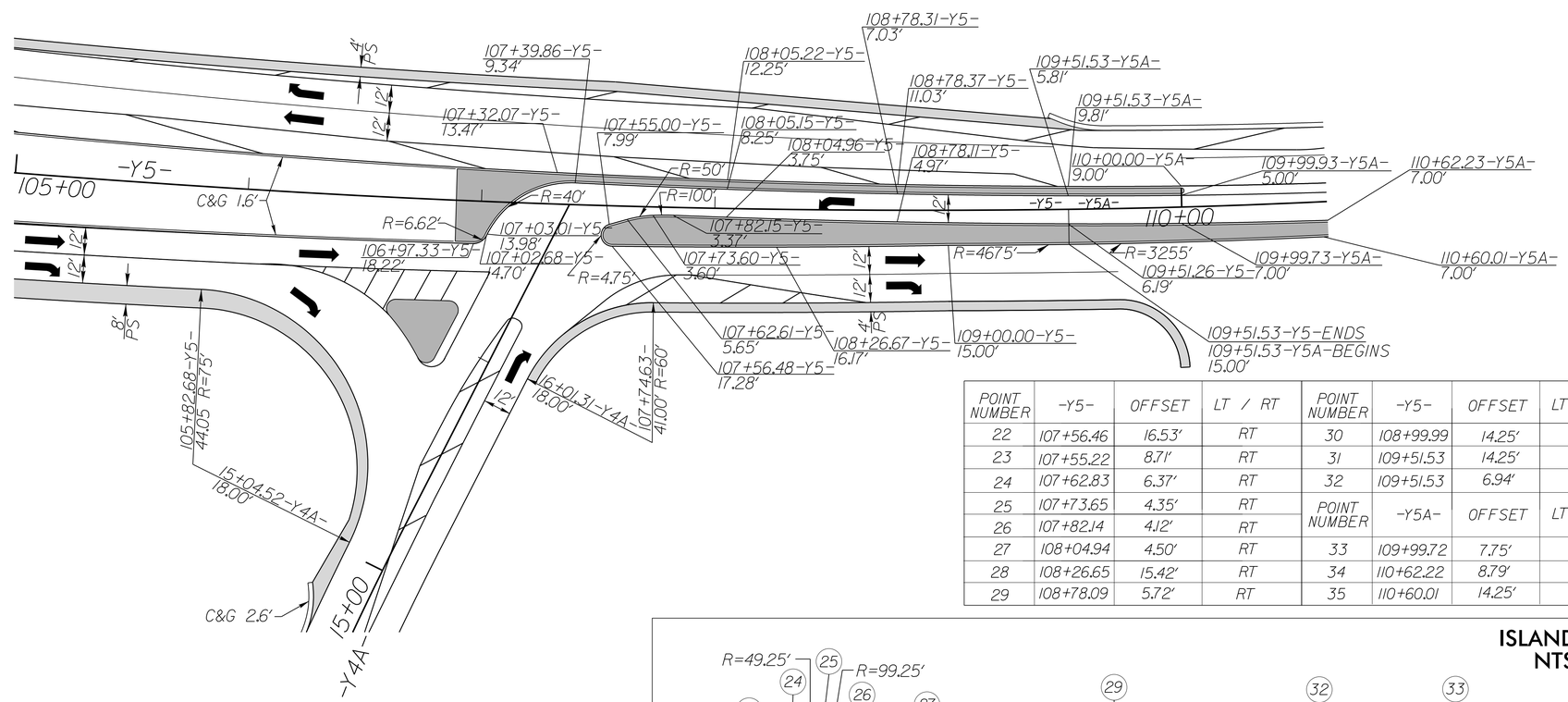
POINT NUMBER	–Y5–	–Y5A–	OFFSET	LT / RT
1	106+89.01		13.43′	LT
2	107+32.06		12.72′	LT
3	108+05.21		11.50′	LT
4	108+78.36		10.28′	LT
5		109+51.53	9.06′	LT
6		109+99.96	8.25′	LT
7		109+99.92	5.75′	LT
8		109+51.53	6.56′	LT
9	108+78.32		7.78′	LT
10	108+05.17		9.00′	LT
11	107+39.87		10.09′	LT
12	107+02.33		13.67′	RT
13	107+02.00		14.39′	RT
14	106+97.32		17.47′	RT
15	106+89.49		17.60′	RT

ISLAND A
NTS

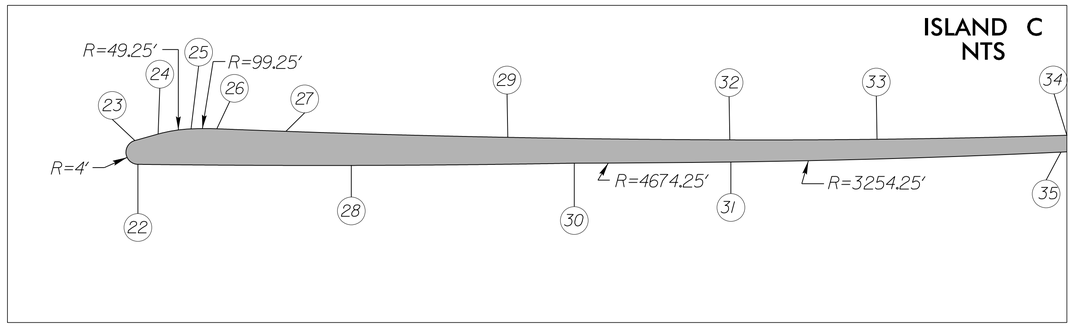




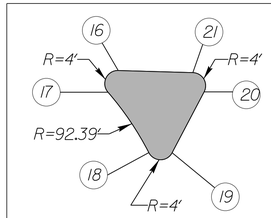
POINT NUMBER	–Y4A–	OFFSET	LT / RT
16	16+06.01	47.58′	LT
17	15+98.68	47.35′	LT
18	15+87.99	27.88′	LT
19	15+91.20	21.55′	LT
20	16+12.14	21.33′	LT
21	16+15.79	27.06	LT

POINT NUMBER	–Y5–	OFFSET	LT / RT	POINT NUMBER	–Y5–	OFFSET	LT / RT
22	107+56.46	16.53′	RT	30	108+99.99	14.25′	RT
23	107+55.22	8.71′	RT	31	109+51.53	14.25′	RT
24	107+62.83	6.37′	RT	32	109+51.53	6.94′	RT
25	107+73.65	4.35′	RT	POINT NUMBER	–Y5A–	OFFSET	LT / RT
26	107+82.14	4.12′	RT				
27	108+04.94	4.50′	RT	33	109+99.72	7.75′	RT
28	108+26.65	15.42′	RT	34	110+62.22	8.79′	RT
29	108+78.09	5.72′	RT	35	110+60.01	14.25′	RT

ISLAND C
NTS



ISLAND B
NTS



MONOLITHIC ISLAND

TYPICAL OFFSET TO ISLAND 0.75′

30 15 0 15 30
1′–30′ SCALE

FOR –Y5– PLAN SEE SHT. 70
FOR –Y5A– PLAN SEE SHT. 70
FOR –Y4A– PLAN SEE SHT. 70
FOR –Y5– PROFILE SEE SHT. 158
FOR –Y5A– PROFILE SEE SHT. 159
FOR –Y4A– PROFILE SEE SHT. 152

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–Y5SPURA– /–Y5– INTERSECTION DETAIL

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2B-4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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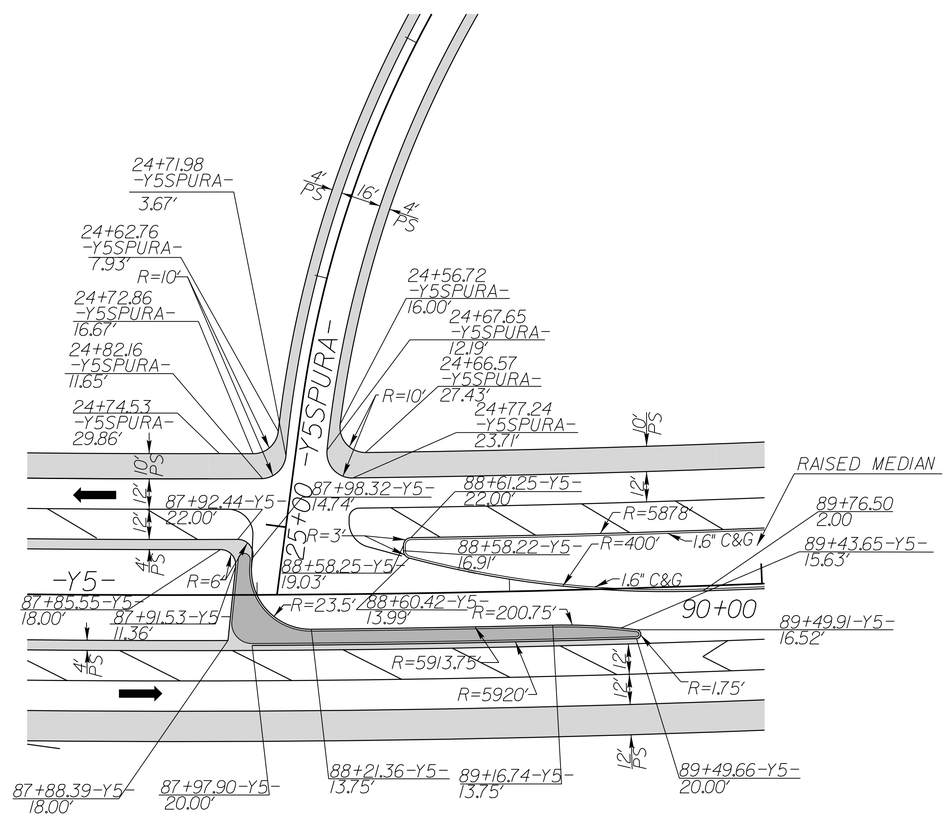

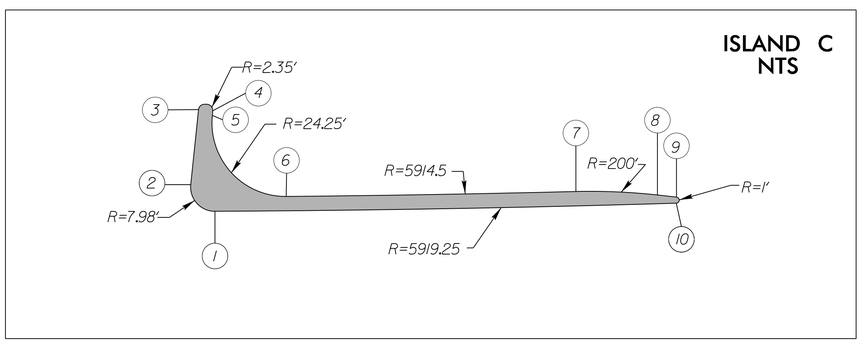

POINT NUMBER	–Y5–	OFFSET	LT / RT
1	87+97.89	19.25'	RT
2	87+89.95	10.43'	RT
3	87+92.60	14.32'	LT
4	87+97.30	13.93'	LT
5	87+97.18	12.41'	LT
6	88+21.36	14.50'	RT
7	89+16.74	14.50'	RT
8	89+43.55	16.38'	RT
9	89+49.81	17.26'	RT
10	89+49.67	19.25'	RT

MONOLITHIC ISLAND

30 15 0 15 30
1'–30' SCALE

FOR –Y5– PLAN SEE SHT. 68
FOR –Y5SPURA– PLAN SEE SHT. 68
FOR –Y5– PROFILE SEE SHT. 157
FOR –Y5SPURA– PROFILE SEE SHT. 163

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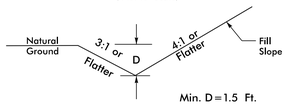
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2D-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

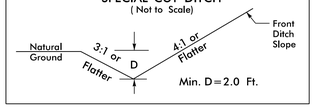
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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



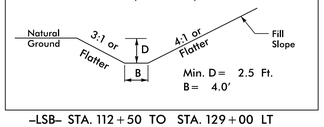
–Y1NB– STA. 44+50 TO STA. 47+00 RT
–L– STA. 210+50 TO STA. 212+25 RT
–Y5RPD– STA. 10+90 TO STA. 12+00 LT
–LSB– STA. 19+50 TO STA. 31+00 LT
–LSB– STA. 61+50 TO STA. 62+75 RT
–Y4– STA. 50+00 TO STA. 55+00 LT
–Y4– STA. 61+00 TO STA. 65+49 LT
–Y4A– STA. 10+54 TO STA. 13+50 RT
–Y5– STA. 65+00 TO STA. 68+00 RT
–Y5– STA. 85+50 TO STA. 86+50 LT
–Y5– STA. 85+00 TO STA. 89+00 RT
–Y5SPUR– STA. 19+49 TO STA. 22+03 LT
–SR5C_DET– STA. 12+70 TO STA. 13+10 RT
–SR5C_DET– STA. 15+00 TO STA. 16+32 RT

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



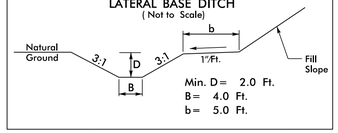
–Y1NB– STA. 47+00 TO STA. 59+00 RT
–L– STA. 103+00 TO STA. 107+72 LT
–L– STA. 138+50 TO STA. 186+00 RT
–L– STA. 232+00 TO STA. 239+00 LT
–L– STA. 256+00 TO STA. 269+00 LT
–L– STA. 232+50 TO STA. 241+50 RT
–L– STA. 245+00 TO STA. 249+00 RT
–Y5FLY– STA. 82+33 TO STA. 85+77 RT
–Y5SPURA– STA. 10+46 TO STA. 16+99 LT
–Y5RPA– STA. 36+85 TO STA. 37+50 LT
–Y5RPA– STA. 34+49 TO STA. 36+85 RT
–L– STA. 227+00 TO STA. 232+50 RT
–Y5LPD– STA. 12+79 TO STA. 14+50 LT
–Y5C– STA. 25+00 TO STA. 26+65 RT
–Y5C– STA. 24+50 TO STA. 25+92 LT
–LSB– STA. 68+50 TO STA. 76+50 LT
–L– STA. 221+58 TO STA. 232+00 LT

DETAIL C
SPECIAL LATERAL BASE DITCH
(Not to Scale)



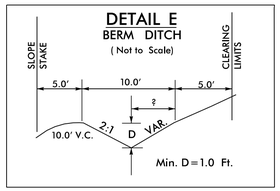
–LSB– STA. 112+50 TO STA. 129+00 LT
–L– STA. 212+25 TO STA. 220+00 RT
–L– STA. 208+50 TO STA. 215+00 LT
–Y5B– STA. 10+44 TO STA. 12+50 RT
–Y5FLY– STA. 66+80 TO STA. 70+00 LT
–Y5FLY– STA. 63+50 TO STA. 66+80 RT

DETAIL D
LATERAL BASE DITCH
(Not to Scale)



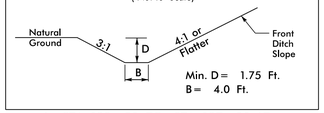
–L– STA. 90+50 TO STA. 100+28 RT
–L– STA. 162+00 TO STA. 165+50 LT
–L– STA. 247+00 TO STA. 251+50 LT
–L– STA. 252+00 TO STA. 256+00 LT
–L– STA. 253+00 TO STA. 255+00 RT
–Y5LPD– STA. 26+50 TO STA. 30+65 RT

DETAIL E
BERM DITCH
(Not to Scale)



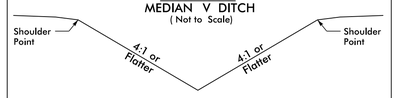
DETAIL NOT USED IN SECTION 1

DETAIL F
SPECIAL CUT BASE DITCH
(Not to Scale)



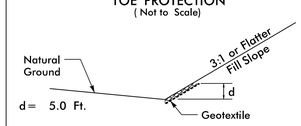
–L– STA. 132+50 TO STA. 137+00 LT
–L– STA. 159+00 TO STA. 162+00 LT
–L– STA. 165+50 TO STA. 167+00 LT
–L– STA. 223+11 TO STA. 226+23 RT
–L– STA. 239+00 TO STA. 247+00 LT
–L– STA. 255+00 TO STA. 269+00 RT
–Y5B– STA. 12+50 TO STA. 17+50 RT

DETAIL G
MEDIAN V DITCH
(Not to Scale)



–LSB– 84+00 TO STA. 86+00 LT
–LSB– STA. 105+00 TO STA. 113+50 RT
–L– STA. 215+00 TO STA. 217+50 LT
–Y5– STA. 83+50 TO STA. 85+50 LT
–Y5RPA– STA. 45+00 TO STA. 49+00 LT

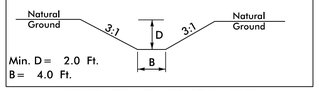
DETAIL H
TOE PROTECTION
(Not to Scale)



d= 5.0 Ft.
Type of Liner= CL B Rip-Rap

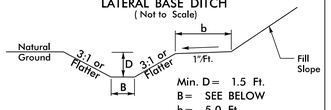
–L– STA. 121+50 TO STA. 127+90 RT
–L– STA. 186+71 TO STA. 187+92 LT
–L– STA. 198+60 TO STA. 203+00 RT
–L– STA. 199+36 TO STA. 202+57 LT
–Y4– STA. 40+82 TO STA. 43+12 LT
–Y4– STA. 40+38 TO STA. 41+90 RT
–Y5LPD– STA. 19+00 TO STA. 21+00 RT
–Y5LPD– STA. 20+21 TO STA. 24+50 LT
–Y5FLY– STA. 57+07 TO STA. 62+59 LT
–Y5RPD– STA. 15+00 TO STA. 24+34 RT
–Y5C– STA. 12+83 TO STA. 17+66 LT
–Y5C– STA. 12+64 TO STA. 17+88 RT
–Y5B– STA. 13+20 TO STA. 17+18 LT
–Y5RPC– STA. 13+37 TO STA. 21+33 RT
–Y5LPD– STA. 38+47 TO STA. 39+75 LT
–Y5LPD– STA. 37+76 TO STA. 39+18 RT
–Y5RPA– STA. 42+36 TO STA. 44+00 RT
–Y5– STA. 47+87 TO STA. 50+88 LT
–Y5– STA. 55+85 TO STA. 65+25 LT
–Y5– STA. 64+30 TO STA. 64+55 RT
–Y5– STA. 107+80 TO STA. 109+51 RT
–Y5LPD– STA. 44+31 TO STA. 48+12 RT
–YRPA– STA. 11+88 TO STA. 13+93 RT
–LSB– STA. 88+50 TO STA. 90+48 RT
–LSB– STA. 90+97 TO STA. 95+38 RT

DETAIL I
STANDARD BASE DITCH
(Not to Scale)



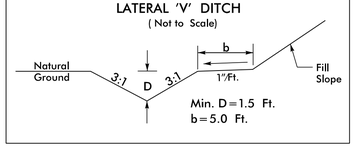
–Y5LPD– STA. 13+78 RT, L=285',
BEG. ELEV=131.67', END ELEV=130.90', S=0.3%
–LNB– STA. 60+18 TO 61+15 RT, D=1.25'
BEG. ELEV=114.10' END ELEV=111.40', S=2.8%
–LNB– STA. 61+15 TO 62+18 RT, D=1.25'
BEG. ELEV=111.40 END ELEV=113.10, S=1.7%

DETAIL J
LATERAL BASE DITCH
(Not to Scale)



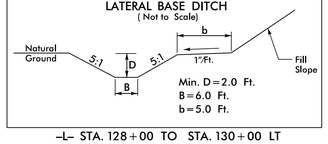
–L– STA. 90+50 TO STA. 94+00 LT, B=4'
–L– STA. 118+50 TO STA. 121+12 LT, B=4'
–L– STA. 130+00 TO STA. 132+50 LT, B=4'
–L– STA. 137+00 TO STA. 138+00 LT, B=4'
–L– STA. 138+50 TO STA. 147+00 LT, B=4'
–L– STA. 147+00 TO STA. 154+50 LT, B=4'

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



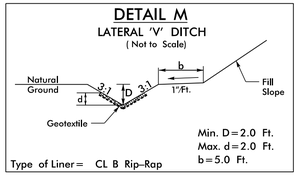
–L– STA. 89+00 TO STA. 90+50 RT
–L– STA. 112+50 TO STA. 113+81 RT
–L– STA. 129+00 TO STA. 131+50 RT
–L– STA. 138+00 TO STA. 138+50 LT
–L– STA. 154+50 TO STA. 158+87 LT
–L– STA. 249+00 TO STA. 253+00 RT
–Y5C– STA. 19+38 TO STA. 24+50 LT
–Y5– STA. 42+00 TO STA. 45+51 LT
–Y5– STA. 64+50 TO STA. 68+50 LT
–Y5– STA. 70+02 TO STA. 76+21 LT
–Y5– STA. 70+00 TO STA. 73+64 RT

DETAIL L
LATERAL BASE DITCH
(Not to Scale)



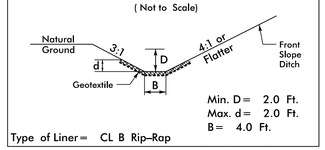
–L– STA. 128+00 TO STA. 130+00 LT

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



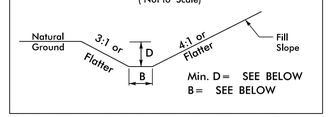
–Y5RPD– STA. 12+93 TO STA. 15+40 RT

DETAIL N
SPECIAL CUT BASE DITCH
(Not to Scale)



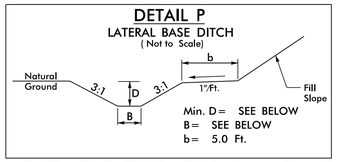
–L– STA. 107+72 TO STA. 109+00 LT, D=1.0'

DETAIL O
SPECIAL LATERAL BASE DITCH
(Not to Scale)



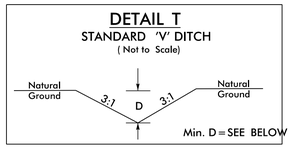
–LSB– STA. 31+00 TO STA. 37+00 LT, B=8', D=2.0'
–LSB– STA. 51+50 TO STA. 53+50 LT, B=11', D=1.5'
–LNB– STA. 115+00 TO STA. 118+50 RT, B=4', D=0.75'
–L– STA. 192+74 TO STA. 195+45 LT, B=7', D=2.0'
–Y4– STA. 42+00 TO STA. 61+50 RT, B=4', D=3.5'
–Y4– STA. 61+50 TO STA. 64+64 RT, B=4', D=2.75'

DETAIL P
LATERAL BASE DITCH
(Not to Scale)



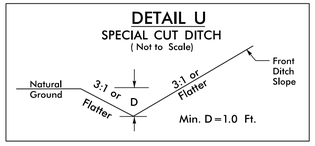
–Y3– STA. 18+50 TO STA. 19+15 LT, B=4', D=1.00'
–Y3– STA. 22+50 TO STA. 24+12 LT, B=4', D=2.00'
–L– STA. 128+00 TO STA. 129+00 RT, B=4', D=1.00'
–Y5– STA. 65+00 TO STA. 68+50 LT, B=4', D=1.00'

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



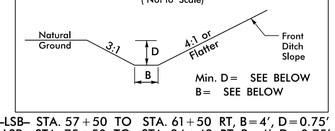
–Y1NB– STA. 44+50, L=53', S=0.8%, D=1.5'
BEG. ELEV=119.98, END ELEV=119.56, M=3.5
–Y5LPA– STA. 18+75, L=50', S=4.8%, D=1.0'
BEG. ELEV=144.45, END ELEV=142.05, M=3
–L– STA. 186+00 RT, L=200', S=0.3%, D=2.5'
BEG. ELEV=125.00, END ELEV=124.40'
–SR5C_DET– STA. 13+10 TO STA. 14+00, L=90', S=0.02%, D=1.0'
BEG. ELEV=140.43, END ELEV=140.41

DETAIL U
SPECIAL CUT DITCH
(Not to Scale)



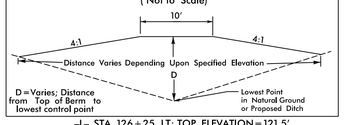
–LSB– STA. 81+00 TO STA. 84+00 LT
–LSB– STA. 128+50 TO STA. 129+00 LT
–LNB– STA. 45+20 TO STA. 48+00 LT
–LNB– STA. 118+50 TO STA. 120+52 RT
–L– STA. 102+12 TO STA. 103+00 LT
–L– STA. 111+00 TO STA. 112+50 RT
–L– STA. 113+81 TO STA. 118+50 LT
–L– STA. 131+50 TO STA. 132+50 RT
–L– STA. 169+00 TO STA. 173+00 LT
–L– STA. 232+50 TO STA. 241+50 RT

DETAIL V
SPECIAL CUT BASE DITCH
(Not to Scale)



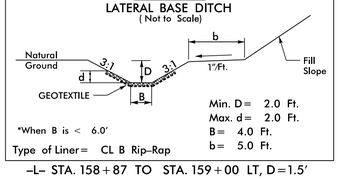
–LSB– STA. 57+50 TO STA. 61+50 RT, B=4', D=0.75'
–LSB– STA. 75+50 TO STA. 84+48 RT, B=4', D=0.75'
–LSB– STA. 94+00 TO STA. 96+00 RT, B=4', D=1.0'
–L– STA. 86+50 TO STA. 90+50 LT, B=4', D=1.5'
–L– STA. 94+00 TO STA. 100+28 LT, B=4', D=2.0'
–L– STA. 100+28 TO STA. 102+12 LT, B=4', D=1.0'
–L– STA. 109+00 TO STA. 113+81 LT, B=4', D=1.5'
–L– STA. 195+45 TO STA. 199+55 LT, B=7', D=1.0'

DETAIL Q
10' WIDE BERM
(Not to Scale)



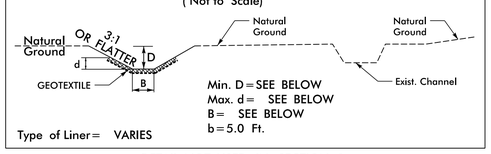
–L– STA. 126+25 LT; TOP ELEVATION=121.5'
–L– STA. 138+00 LT; TOP ELEVATION=128.5'
–L– STA. 154+50 LT; TOP ELEVATION=132.0'

DETAIL R
LATERAL BASE DITCH
(Not to Scale)



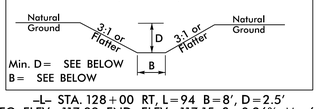
–L– STA. 158+87 TO STA. 159+00 LT, D=1.5'

DETAIL S
CHANNEL CHANGE
(Not to Scale)



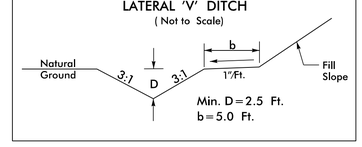
DETAIL NOT USED IN SECTION 1

DETAIL W
STANDARD BASE DITCH
(Not to Scale)



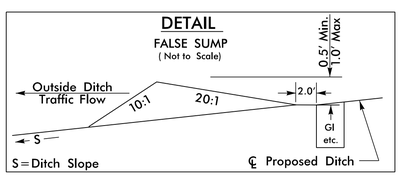
–L– STA. 128+00 RT, L=94 B=8', D=2.5'
BEG. ELEV=117.39 END ELEV=117.15, S=0.26%, M=6.0
–L– STA. 138+50 RT, L=41, B=6', D=2.0'
BEG. ELEV=122.78 END ELEV=122.45, S=0.80%, M=6.0
–L– STA. 113+81 RT, L=35, B=3', D=2.0'
BEG. ELEV=122.50 END ELEV=122.36, S=0.40%, M=3.0
–L– STA. 100+28 RT, L=22, B=6', D=2.5'
BEG. ELEV=121.50 END ELEV=121.43, S=0.33%, M=6.0
–L– STA. 107+72 RT, L= 70, B=3', D=2.0'
BEG. ELEV=120.09 END ELEV=120.30, S=0.30%, M=6.0
–L– STA. 121+12 RT, L=54', B=3', D=3.0'
BEG. ELEV=115.95 END ELEV=115.80, S=0.28%, M=5.5
–L– STA. 160+29 RT, L= 69, B=12', D=3.0',
BEG. ELEV=124.74 END ELEV=124.63, S=0.16%, M=3.0
–Y5– STA. 104+47 TO STA. 106+50 LT, B=10', D=2.25'
BEG. ELEV=126.60, END ELEV=127.08, S=0.24%, M=3.0
–L– STA. 215+50 LT, L=76', B=4', D=1.25'
BEG. ELEV–=127.55, END ELEV=127.30, S=0.33%, M=3.0
–LNB– STA. 106+25 TO STA. 107+70 RT, B=4', D=1.0'
BEG. ELEV=113.08, END ELEV=112.80, S=0.19%, M=3.0
–LNB– STA. 107+70 TO STA. 108+54 RT, B=4', D=1.0'
BEG. ELEV=112.80, END ELEV=115.21, S=2.9%, M=3.0
–LNB– STA. 115+00 RT, L=107', B=4', D=1.0'
BEG. ELEV=120.50, END ELEV=119.6, S=0.8%, M=3.0

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

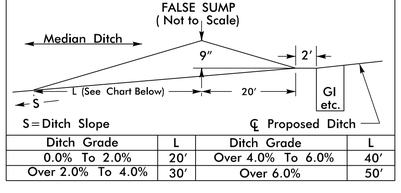


DETAIL NOT USED IN SECTION 1

DETAIL
FALSE SUMP
(Not to Scale)

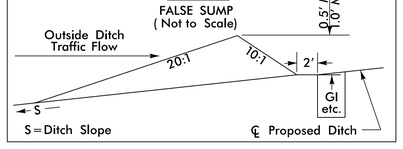


DETAIL
FALSE SUMP
(Not to Scale)



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL
FALSE SUMP
(Not to Scale)



RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
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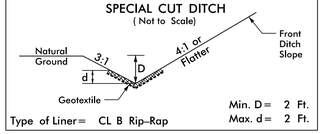
ahefler

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2D-2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

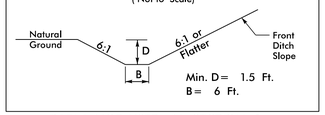
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL Y
SPECIAL CUT DITCH
(Not to Scale)



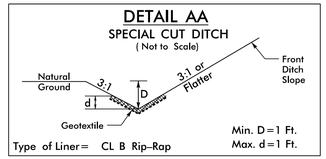
DETAIL NOT USED IN SECTION 1

DETAIL Z
SPECIAL CUT BASE DITCH
(Not to Scale)



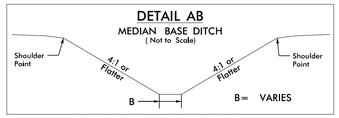
DETAIL NOT USED IN SECTION 1

DETAIL AA
SPECIAL CUT DITCH
(Not to Scale)



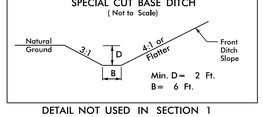
–Y5FLY– STA. 80+14.68 TO STA. 82+33.14

DETAIL AB
MEDIAN BASE DITCH
(Not to Scale)



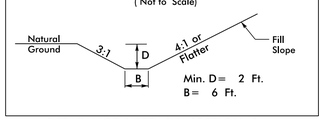
DETAIL NOT USED IN SECTION 1

DETAIL AC
SPECIAL CUT BASE DITCH
(Not to Scale)



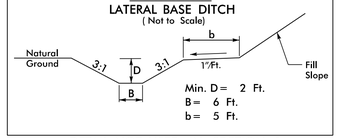
DETAIL NOT USED IN SECTION 1

DETAIL AD
SPECIAL LATERAL BASE DITCH
(Not to Scale)



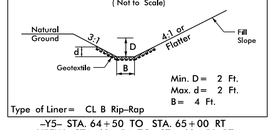
DETAIL NOT USED IN SECTION 1

DETAIL AE
LATERAL BASE DITCH
(Not to Scale)



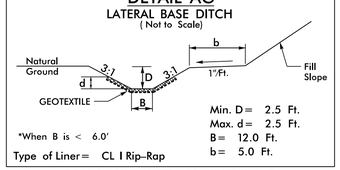
DETAIL NOT USED IN SECTION 1

DETAIL AF
SPECIAL LATERAL BASE DITCH
(Not to Scale)



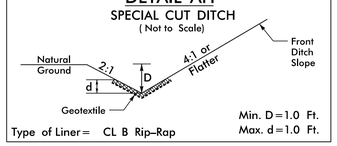
–Y5– STA. 64+50 TO STA. 65+00 RT
–Y5FLY– STA. 62+54 TO STA. 63+50 RT

DETAIL AG
LATERAL BASE DITCH
(Not to Scale)



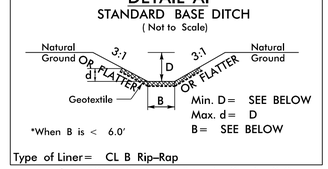
DETAIL NOT USED IN SECTION 1

DETAIL AH
SPECIAL CUT DITCH
(Not to Scale)



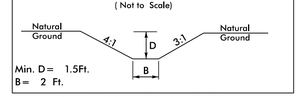
DETAIL NOT USED IN SECTION 1

DETAIL AI
STANDARD BASE DITCH
(Not to Scale)



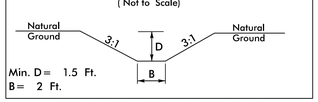
–L– STA. 121+12 RT, L=54', B=3', D=3.0'
BEG. ELEV=115.95 END ELEV=115.80, S=0.28%, M=5.5
–Y1SB– STA. 18+58 TO 21+90 RT, B=4', D=2.5'
BEG. ELEV=119.34 END ELEV=115.4, S=1.7% M=3.0

DETAIL AJ
STANDARD BASE DITCH
(Not to Scale)



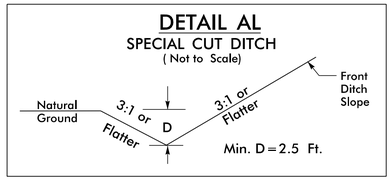
DETAIL NOT USED IN SECTION 1

DETAIL AK
STANDARD BASE DITCH
(Not to Scale)



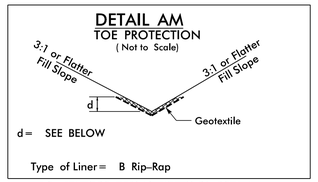
DETAIL NOT USED IN SECTION 1

DETAIL AL
SPECIAL CUT DITCH
(Not to Scale)



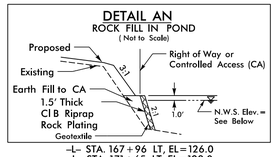
DETAIL NOT USED IN SECTION 1

DETAIL AM
TOE PROTECTION
(Not to Scale)

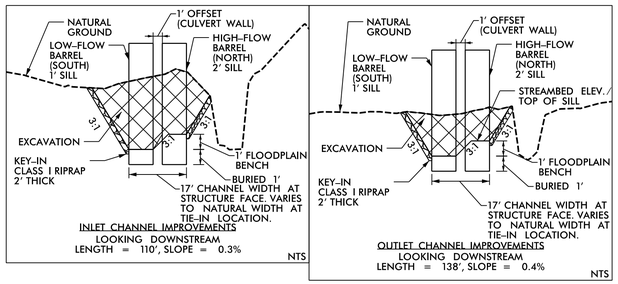


DETAIL NOT USED IN SECTION 1

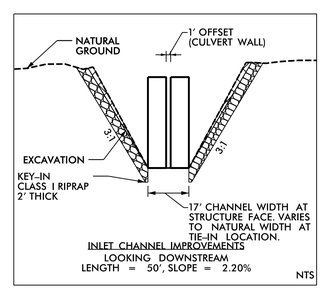
DETAIL AN
ROCK FILL IN POND
(Not to Scale)



–L– STA. 167+96 LT, EL=126.0
–L– STA. 171+65 LT, EL=128.0



CULVERT INLET AND OUTLET DETAILS
–L– STA 252+34.5



CULVERT INLET DETAIL
–Y5– STA 45+24

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ahefner

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2G-2

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 041709 ENGINEER GREGORY K. GOINS

SIGNATURE DATE

ENGINEER

SIGNATURE DATE

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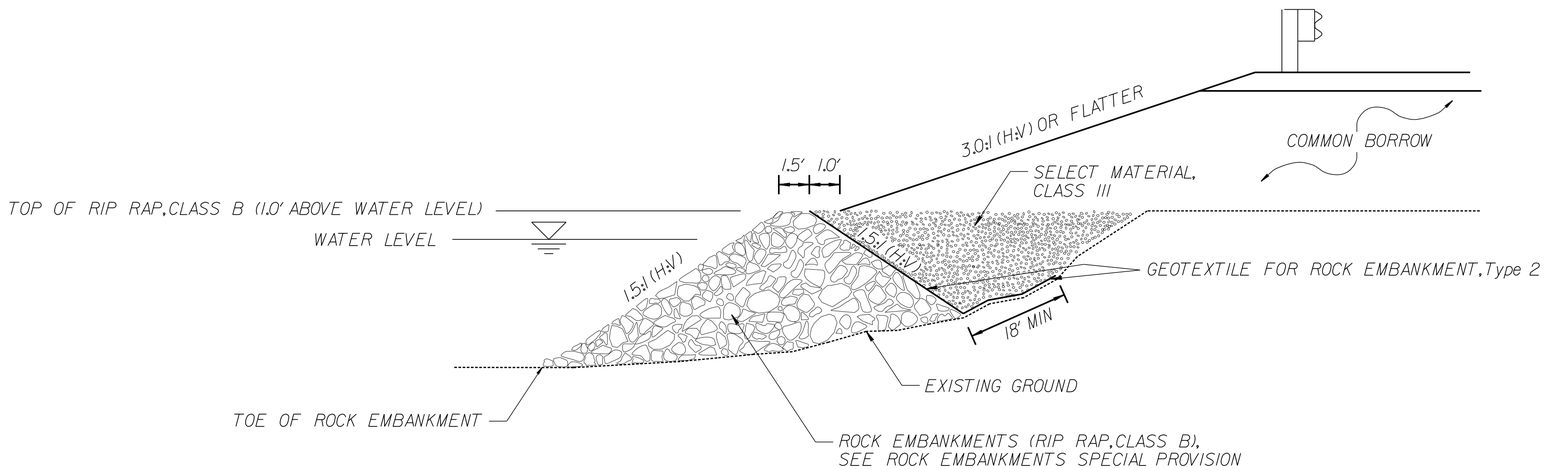
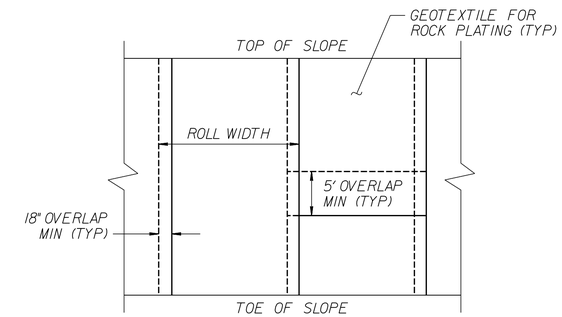


ROCK EMBANKMENT TYPICAL SECTION

(NOT TO SCALE)



GEOTEXTILE OVERLAP DETAIL

(PLAN VIEW)

ROCK EMBANKMENT LOCATIONS			
LINE	BEGIN	END	LOCATION
-Y5LPD-	30+80 +/-	31+38 +/-	RIGHT

NOTES

1. FOR ROCK EMBANKMENTS, SEE ROCK EMBANKMENTS SPECIAL PROVISION.
2. INSTALL ROCK EMBANKMENTS USING RIP RAP, CLASS B, AS SHOWN IN THE PLANS.
3. INSTALL GEOTEXTILE FOR ROCK EMBANKMENT AS SHOWN IN THE DETAIL.
4. FILL THE WEDGE BETWEEN THE RIP RAP AND THE EXISTING GROUND WITH SELECT MATERIAL, CLASS III.

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ROCK EMBANKMENTS DETAIL & NOTES

DATE: 04-30-20

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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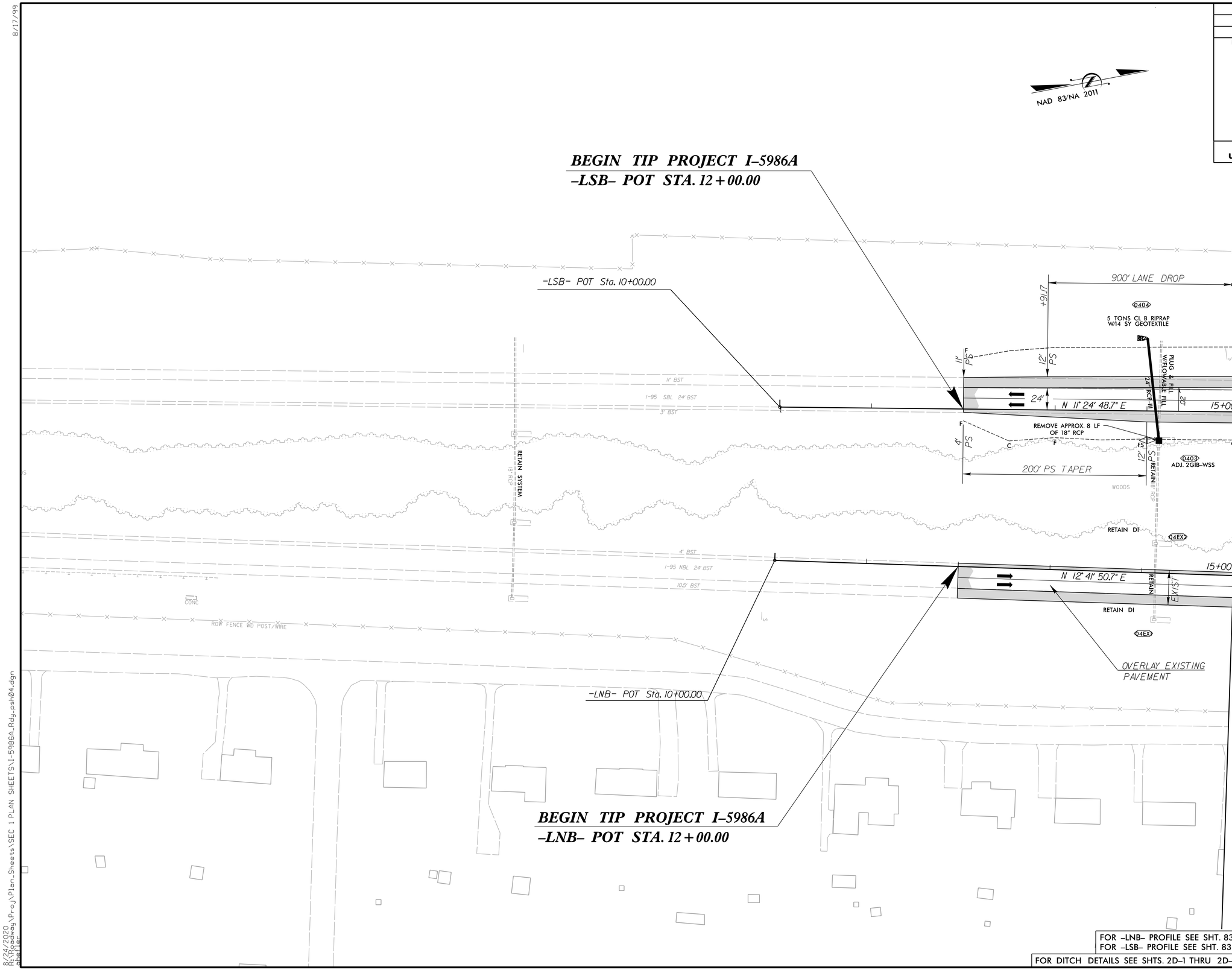

FOR –LNB– PROFILE SEE SHT. 83
FOR –LSB– PROFILE SEE SHT. 83

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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abeller

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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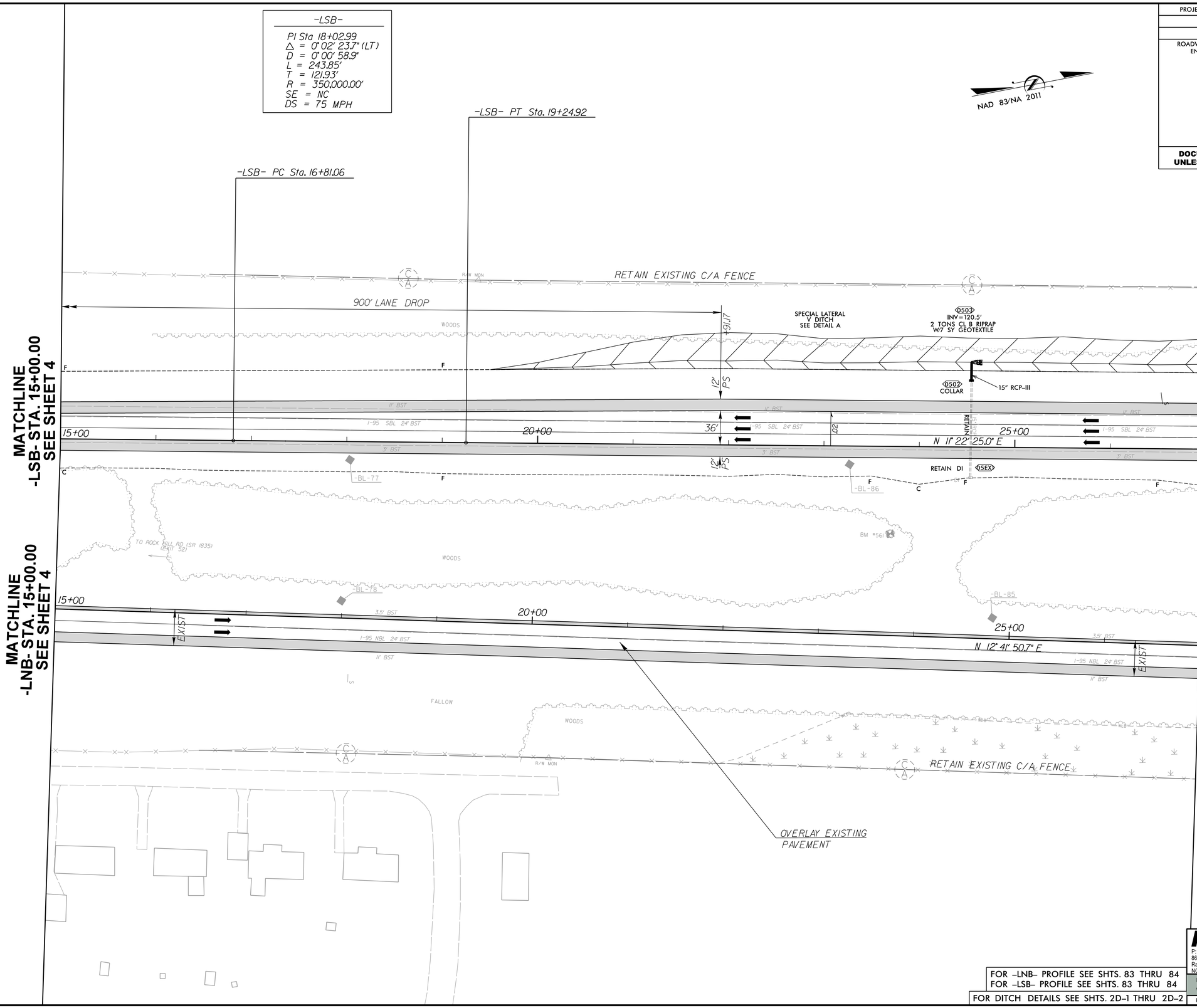

FOR –LNB– PROFILE SEE SHTS. 83 THRU 84
FOR –LSB– PROFILE SEE SHTS. 83 THRU 84
FOR DITCH DETAILS SEE SHTS. 2D–1 THRU 2D–2

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shestler

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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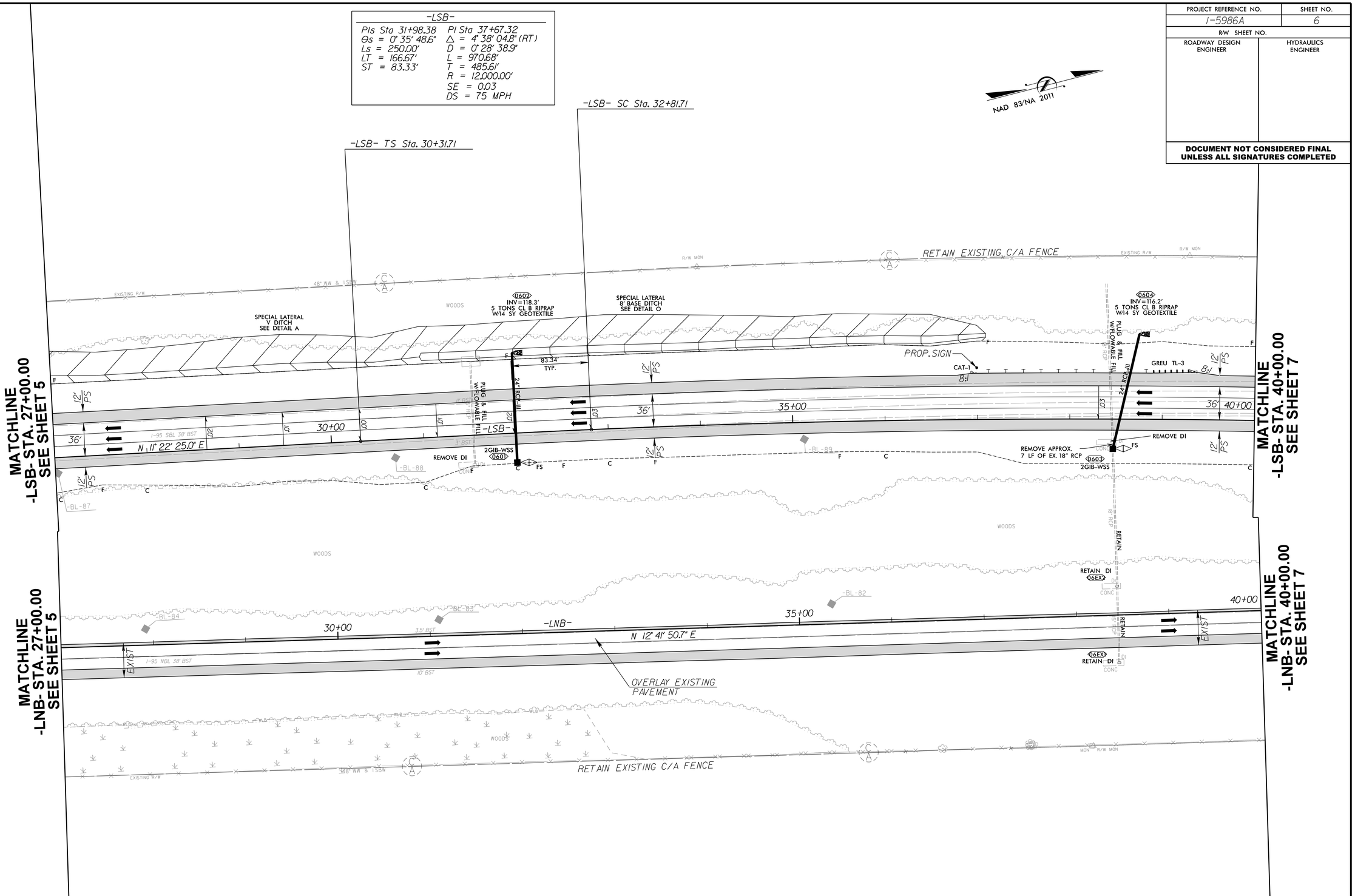
-LSB-

PIs Sta 31+98.38	PI Sta 37+67.32
Θs = 0° 35' 48.6"	Δ = 4° 38' 04.8" (RT)
Ls = 250.00'	D = 0° 28' 38.9"
LT = 166.67'	L = 970.68'
ST = 83.33'	T = 485.61'
	R = 12,000.00'
	SE = 0.03
	DS = 75 MPH



FOR –LNB– PROFILE SEE SHTS. 84 THRU 85
FOR –LSB– PROFILE SEE SHTS. 84 THRU 85
FOR DITCH DETAILS SEE SHTS. 2D–1 THRU 2D–2

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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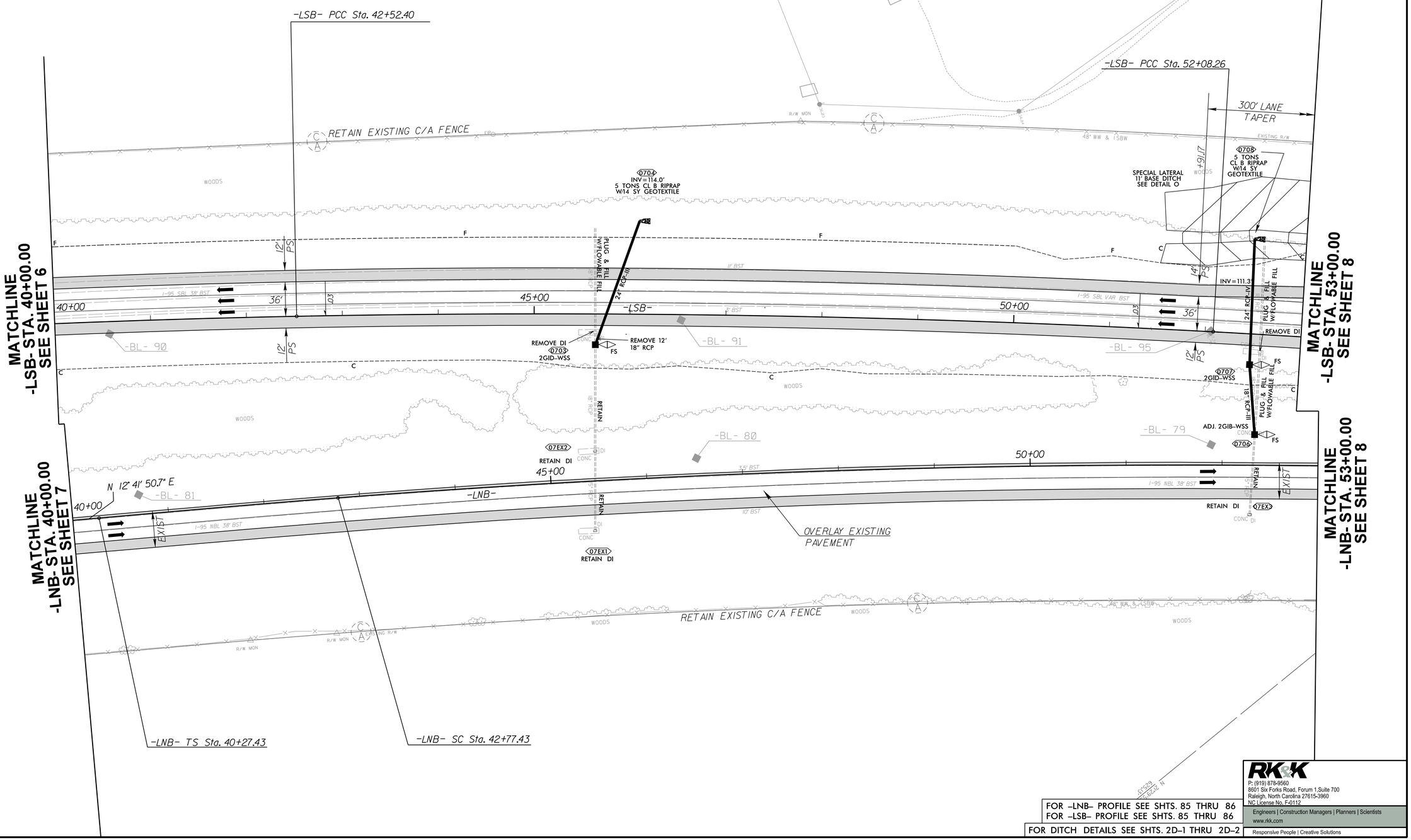
-LSB-			-LNB-	
PI Sta 37+67.32	PI Sta 47+30.54	PI Sta 55+59.06	PIs Sta 41+94.09	PI Sta 53+89.43
Δ = 4° 38' 04.8" (RT)	Δ = 4° 12' 46.1" (RT)	Δ = 3° 31' 43.7" (RT)	Θs = 0° 37' 22.0"	Δ = 11° 02' 46.4" (RT)
D = 0° 28' 38.9"	D = 0° 26' 26.7"	D = 0° 30' 11.2"	Ls = 250.00'	D = 0° 29' 53.6"
L = 970.68'	L = 955.86'	L = 701.38'	LT = 166.67'	L = 2,217.12'
T = 485.61'	T = 478.14'	T = 350.80'	ST = 83.33'	T = 1,112.01'
R = 12,000.00'	R = 13,000.00'	R = 11,388.00'		R = 11,500.00'
SE = 0.03	SE = 0.03	SE = 0.03		SE = EXISTING
DS = 75 MPH	DS = 75 MPH	DS = 75 MPH		DS = 75 MPH



FOR –LNB– PROFILE SEE SHTS. 85 THRU 86
FOR –LSB– PROFILE SEE SHTS. 85 THRU 86
FOR DITCH DETAILS SEE SHTS. 2D–1 THRU 2D–2

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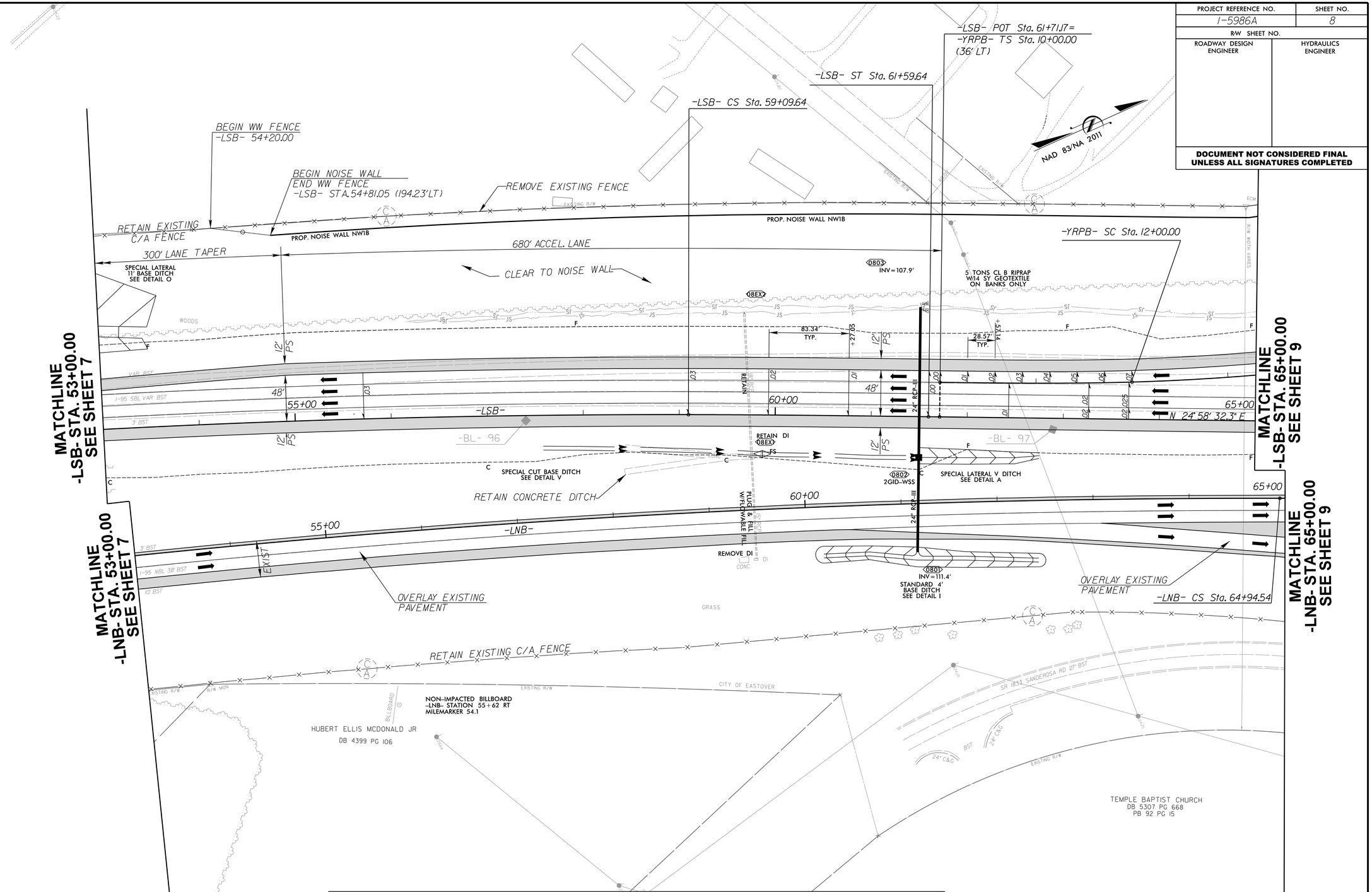
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-LSB-		-LNB-		-YRPB-	
PI Sta 55+59.06	PIs Sta 59+92.97	PI Sta 53+89.43	PIs Sta 65+77.88	PIs Sta 11+33.35	PI Sta 14+17.34
Δ = 3° 31' 43.7" (RT)	Θs = 0° 37' 44.1"	Δ = 11° 02' 46.4" (RT)	Θs = 0° 37' 22.0"	Θs = 2° 23' 14.4"	Δ = 10° 20' 56.4" (LT)
D = 0° 30' 11.2"	Ls = 250.00'	D = 0° 29' 53.6"	Ls = 250.00'	Ls = 200.00'	D = 2° 23' 14.4"
L = 701.38'	LT = 166.67'	L = 2,217.12'	LT = 166.67'	LT = 133.35'	L = 433.50'
T = 350.80'	ST = 83.33'	T = 1,112.01'	ST = 83.33'	ST = 66.68'	T = 217.34'
R = 11,388.00'		R = 11,500.00'			R = 2,400.00'
SE = 0.03		SE = EXISTING			SE = 0.07'
DS = 75 MPH		DS = 75 MPH			DS = 65 MPH

FOR -LNB- PROFILE SEE SHT. 86
FOR -LSB- PROFILE SEE SHT. 86
FOR -YRPB- PROFILE SEE SHT. 145

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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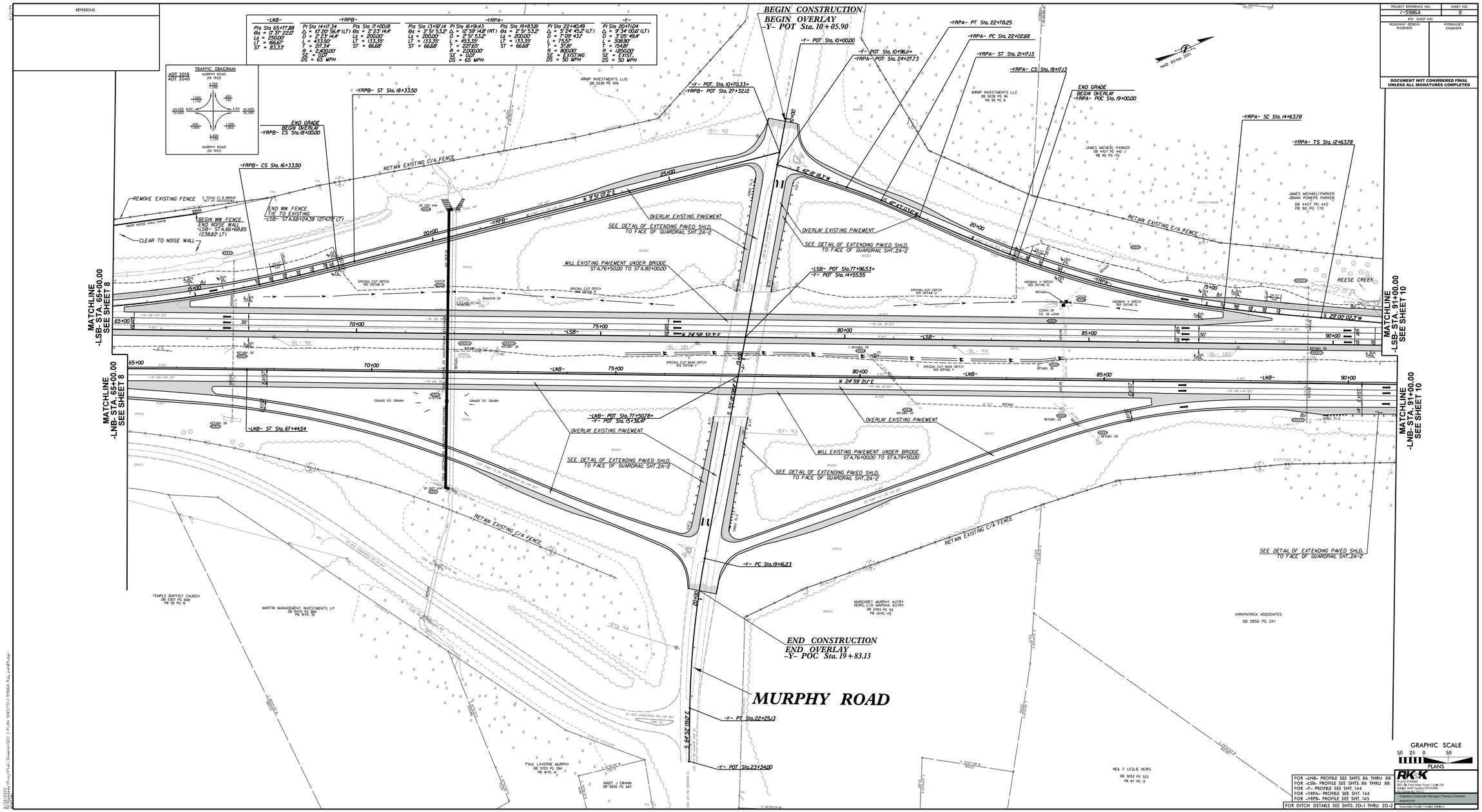
REVISIONS

-LNB-	-YRPB-		-YRPA-		-Y-
PI Sta 65+17.88	PI Sta 14+17.34	PI Sta 17+00.18	PI Sta 13+97.14	PI Sta 16+94.43	PI Sta 19+83.81	PI Sta 22+40.49	PI Sta 20+71.04
Θs = 0° 37' 22.0"	Δ = 10° 20' 56.4" (LT)	Θs = 2° 23' 14.4"	Θs = 2° 51' 53.2"	Δ = 12° 59' 14.8" (RT)	Θs = 2° 51' 53.2"	Δ = 5° 24' 45.2" (LT)	Δ = 9° 34' 00.8" (LT)
Ls = 250.00'	D = 2° 23' 14.4"	Ls = 200.00'	Ls = 200.00'	D = 2° 51' 53.2"	Ls = 200.00'	D = 7° 09' 43.7"	D = 3° 05' 49.4"
LT = 166.67'	L = 413.50'	LT = 133.35'	LT = 133.35'	L = 455.35'	LT = 133.35'	L = 675.57'	L = 308.90'
ST = 83.33'	T = 217.34'	ST = 66.68'	ST = 66.68'	T = 227.65'	ST = 66.68'	T = 337.81'	T = 154.18'
	R = 2,400.00'			R = 2,000.00'		R = 800.00'	R = 1,850.00'
	SE = 0.06'			SE = 0.07'		SE = EXISTING	SE = EXIST.
	DS = 65 MPH			DS = 65 MPH		DS = 50 MPH	DS = 50 MPH

TRAFFIC DIAGRAM

ADT 2018
ADT 2040

MURPHY ROAD (SR 1832)
4,500 / 7,500
1,600 / 1,900
400 / 700
44,500 / 56,800
1.95
1.95
44,600 / 56,400
400 / 1,000
1,300 / 1,600
8,400 / 7,700
MURPHY ROAD (SR 1832)



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I-5986A	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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GRAPHIC SCALE
50 25 0 50

PLANS

FOR -LNB- PROFILE SEE SHTS. 8б THRU 8B
FOR -LSB- PROFILE SEE SHTS. 8б THRU 8B
FOR -Y- PROFILE SEE SHT. 14A
FOR -YRPA- PROFILE SEE SHT. 14A
FOR -YRPB- PROFILE SEE SHT. 14B
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
I-5985A	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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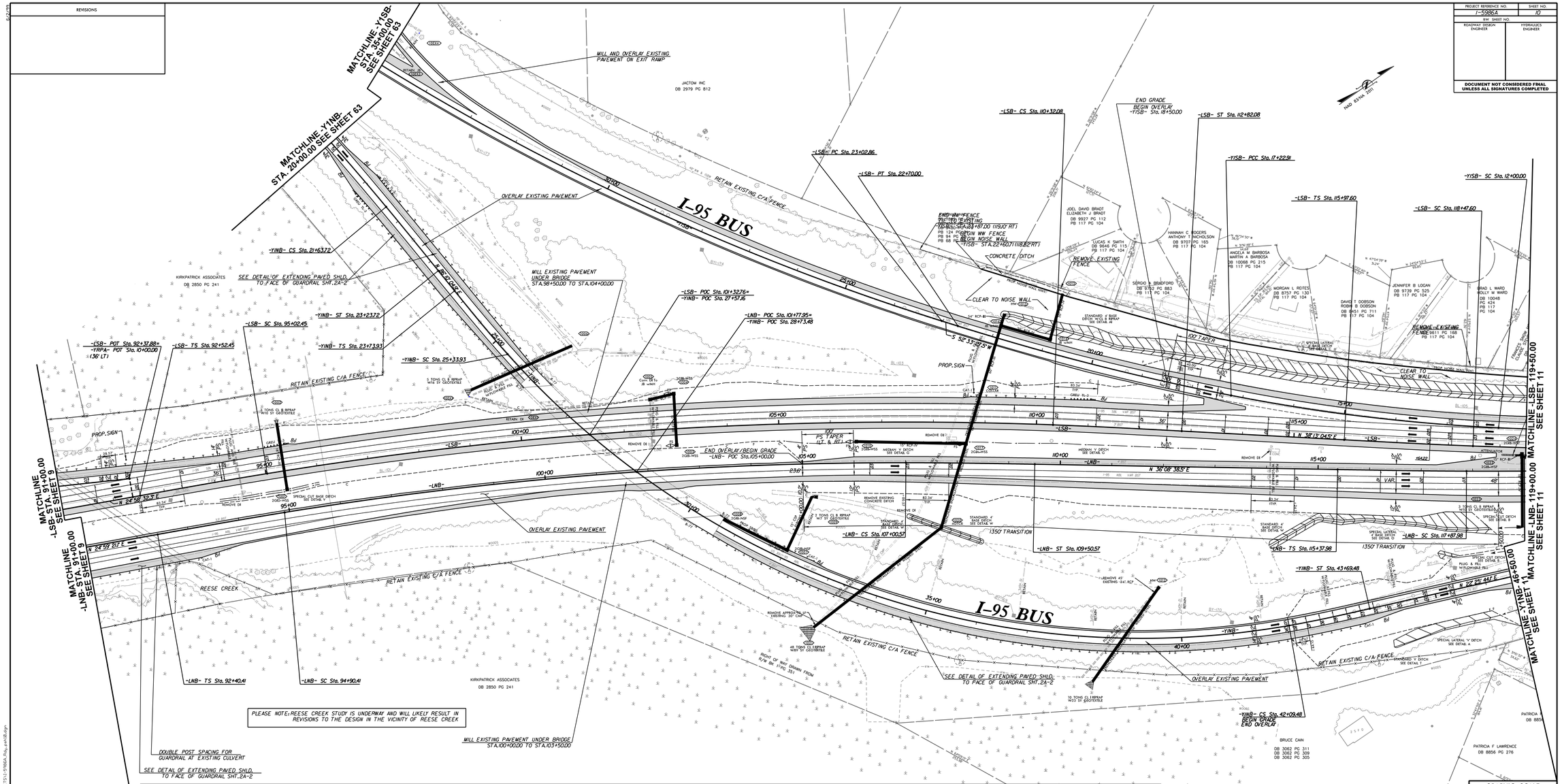

-LSB-							
Pls Sta 94+19.12	Pi Sta 102+69.79	Pls Sta 111+15.42	Pi Sta 123+16.67	Pls Sta 94+07.07	Pi Sta 100+96.81	Pls Sta 107+83.91	Pi Sta 122+20.00
Gs = 0° 55' 48.5"	Δ = 11° 22' 55.3" (RT)	Gs = 0° 55' 48.5"	Δ = 6° 52' 58.3" (LT)	Gs = 0° 57' 17.7"	Δ = 9° 46' 42.0" (RT)	Gs = 0° 57' 17.7"	Δ = 5° 09' 11.9" (LT)
Ls = 250.00'	D = 0° 44' 38.8"	Ls = 250.00'	D = 0° 44' 04.4"	Ls = 250.00'	D = 0° 45' 50.2"	Ls = 250.00'	D = 0° 35' 48.6"
LT = 166.67'	L = 1,529.63'	LT = 166.67'	L = 937.00'	LT = 166.67'	L = 1,203.11'	LT = 166.67'	L = 863.44'
ST = 83.34'	T = 767.34'	ST = 83.34'	T = 469.01'	ST = 83.34'	T = 606.40'	ST = 83.34'	T = 432.01'
	R = 7,730.00'		R = 7,800.00'		R = 7,500.00'		R = 9,600.00'
	SE = 0.03		SE = 0.03		SE = 0.03		SE = 0.03
	DS = 75 MPH		DS = 75 MPH		DS = 75 MPH		DS = 75 MPH

-LNB-				-YINB-				-Y1SB-			
Pls Sta 107+83.91	Pls Sta 117+04.65	Pi Sta 122+20.00	Pi Sta 17+56.04	Pi Sta 22+17.05	Pls Sta 24+80.61	Pi Sta 34+51.99	Pls Sta 42+62.83	Pls Sta 11+12.43	Pi Sta 19+96.73	Pi Sta 33+04.95
Gs = 0° 57' 17.7"	Gs = 0° 44' 45.7"	Δ = 5° 09' 11.9" (LT)	Δ = 8° 04' 04.2" (RT)	Gs = 0° 17' 41"	Gs = 2° 46' 40.7"	Δ = 58° 10' 59.4" (LT)	Gs = 2° 46' 40.7"	Gs = 0° 44' 16.5"	Δ = 6° 16' 22.6" (RT)	Δ = 23° 30' 47.2" (RT)
Ls = 250.00'	Ls = 250.00'	D = 0° 35' 48.6"	D = 0° 59' 16.3"	Ls = 160.00'	Ls = 160.00'	D = 3° 28' 20.9"	Ls = 160.00'	Gs = 7° 36' 50.5"	D = 1° 36' 50.3"	D = 1° 17' 23.8"
LT = 166.67'	LT = 166.67'	L = 863.44'	L = 867.17'	LT = 106.67'	LT = 106.67'	L = 1,675.06'	LT = 106.67'	Ls = 200.00'	L = 523.91'	L = 1,875.99'
ST = 83.34'	ST = 83.34'	T = 432.01'	T = 435.01'	ST = 53.33'	ST = 53.35'	T = 918.06'	ST = 53.35'	LT = 112.43'	T = 261.91'	T = 1,002.81'
		R = 9,600.00'	R = 5,800.00'			R = 1,650.00'		ST = 81.60'	R = 3,550.00'	R = 4,815.00'
		SE = 0.03	SE = EXIST			SE = 0.06			SE = 0.05	SE = EXIST
		DS = 75 MPH	DS = 60 MPH			DS = 60 MPH			DS = 65 MPH	DS = 60 MPH

-Y1SB-			
Pls Sta 19+96.73	Pi Sta 33+04.95	Pls Sta 41+62.83	Pi Sta 47+09.48
Δ = 6° 16' 22.6" (RT)	Δ = 23° 30' 47.2" (RT)	Gs = 2° 46' 40.7"	Δ = 1° 17' 23.8"
D = 1° 09' 04.5"	D = 1° 17' 23.8"	Ls = 160.00'	D = 1° 17' 23.8"
L = 541.69'	L = 1,875.99'	LT = 106.67'	L = 1,875.99'
T = 271.82'	T = 1,002.81'	ST = 53.35'	T = 1,002.81'
R = 4,976.82'	R = 4,815.00'		R = 4,815.00'
SE = EXIST	SE = EXIST		SE = EXIST
DS = 60 MPH	DS = 60 MPH		DS = 60 MPH

* TRANSITIONS TO EXISTING SUPERELEVATION 0.05 IS NOT ACHIEVED

TRAFFIC DIAGRAM
ADT 2018
ADT 2040

GRAPHIC SCALE
50 25 0 50

PLANS

FOR -LNB- PROFILE SEE SHTS. 88 THRU 90
FOR -LSB- PROFILE SEE SHTS. 88 THRU 90
FOR -YRPA- PROFILE SEE SHT. 144
FOR -YINB- PROFILE SEE SHTS. 146 THRU 147
FOR -Y1SB- PROFILE SEE SHT. 148
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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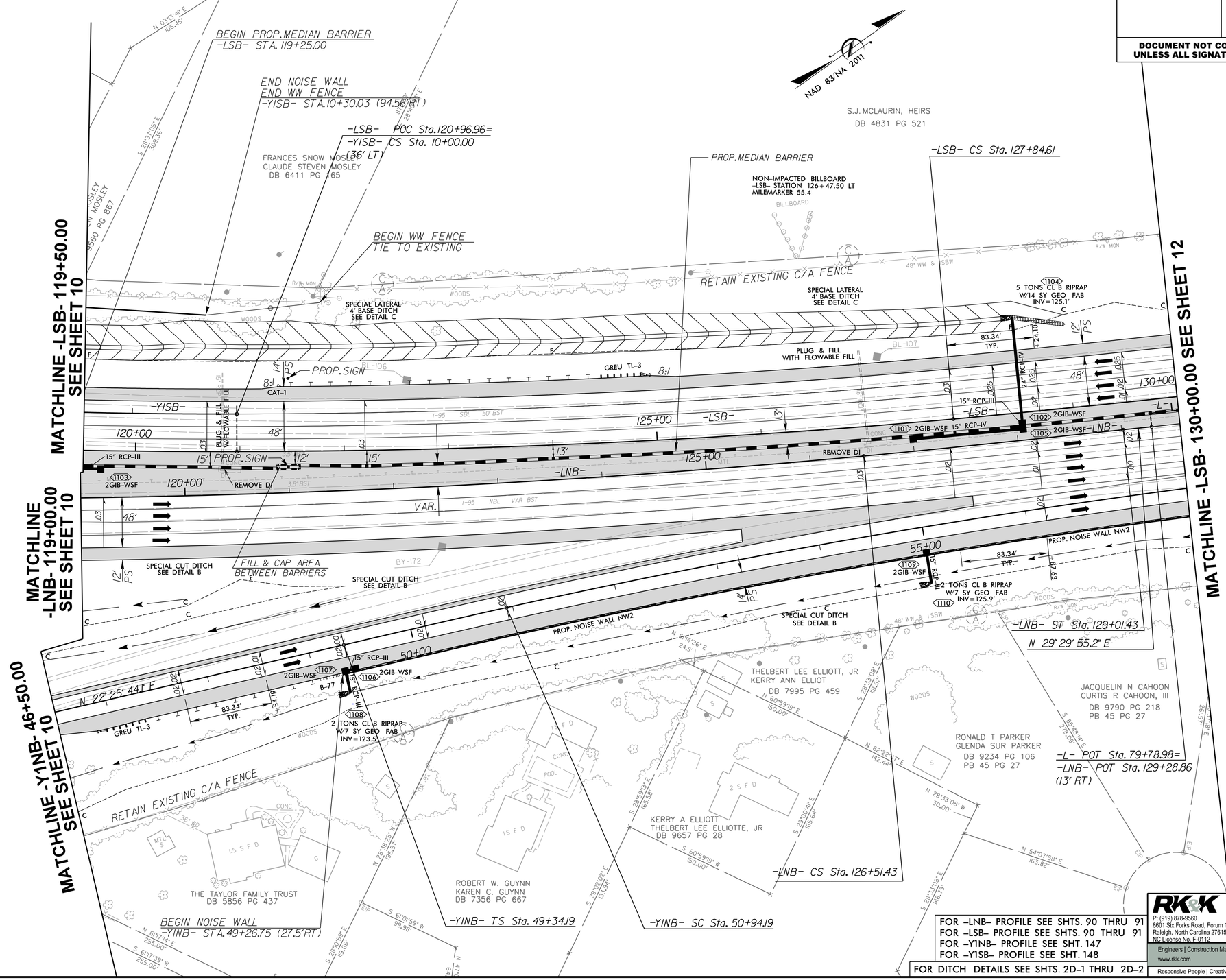
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-YISB-	-LSB-		-LNB-		-YINB-	
PIs Sta 11+12.43 Θs = 0° 44' 16.5" Θs = 1° 36' 50.5" Ls = 200.00' LT = 112.43' ST = 87.60'	PI Sta 123+16.67 Δ = 6° 52' 58.3" (LT) D = 0° 44' 04.4" L = 937.00' T = 469.07' R = 7,800.00' SE = 0.03 DS = 75 MPH	PIs Sta 128+67.94 Θs = 0° 55' 05.5" Ls = 250.00' LT = 166.67' ST = 83.34'	PI Sta 122+20.00 Δ = 5° 09' 11.9" (LT) D = 0° 35' 48.6" L = 863.44' T = 432.01' R = 9,600.00' SE = 0.03 DS = 75 MPH	PIs Sta 127+34.76 Θs = 0° 44' 45.7" Ls = 250.00' LT = 166.67' ST = 83.33'	PIs Sta 50+40.86 Θs = 0° 37' 00.9" Ls = 160.00' LT = 106.67' ST = 53.33'	PI Sta 54+72.91 Δ = 5° 50' 09.3" (RT) D = 0° 46' 16.1" L = 756.79' T = 378.72' R = 7,430.00' SE = 0.02 DS = 65 MPH



FOR –LNB– PROFILE SEE SHTS. 90 THRU 91
FOR –LSB– PROFILE SEE SHTS. 90 THRU 91
FOR –Y1NB– PROFILE SEE SHT. 147
FOR –Y1SB– PROFILE SEE SHT. 148

FOR DITCH DETAILS SEE SHTS. 2D–1 THRU 2D–2

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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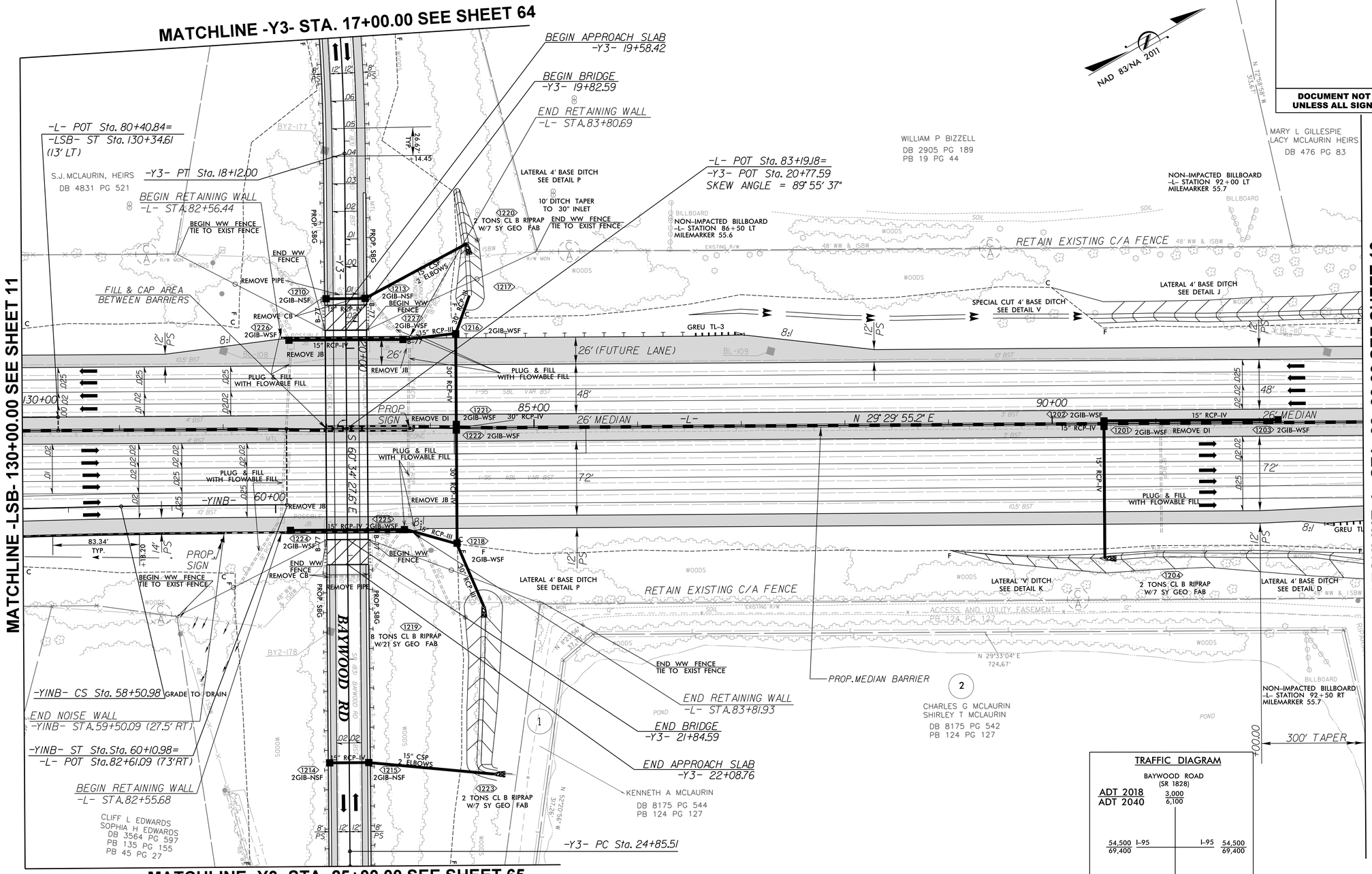

-YINB-	-LSB-	-Y3-	
PI Sta 54+72.91	PIs Sta 59+04.32	PIs Sta 128+67.94	PI Sta 15+82.98	PI Sta 26+62.32
Δ = 5° 50' 09.3" (RT)	Θs = 0° 37' 00.9"	Θs = 0° 55' 05.5"	Δ = 13° 10' 49.4" (RT)	Δ = 0° 24' 18.8" (RT)
D = 0° 46' 16.1"	Ls = 160.00'	Ls = 250.00'	D = 2° 51' 53.2"	D = 0° 06' 52.5"
L = 756.79'	LT = 106.67'	LT = 166.67'	L = 460.08'	L = 353.61'
T = 378.72'	ST = 53.33'	ST = 83.34'	T = 231.06'	T = 176.81'
R = 7,430.00'			R = 2,000.00'	R = 50,000.00'
SE = 0.02			SE = 0.06	SE = NC
DS = 65 MPH			DS = 60 MPH	DS = 60 MPH

FOR -LSB- PROFILE SEE SHT. 91
FOR -LLT SEC1- PROFILE SEE SHT. 92
FOR -LRT SEC1- PROFILE SEE SHT. 92
FOR -Y1NB- PROFILE SEE SHT. 147
FOR -Y3- PROFILE SEE SHT. 149

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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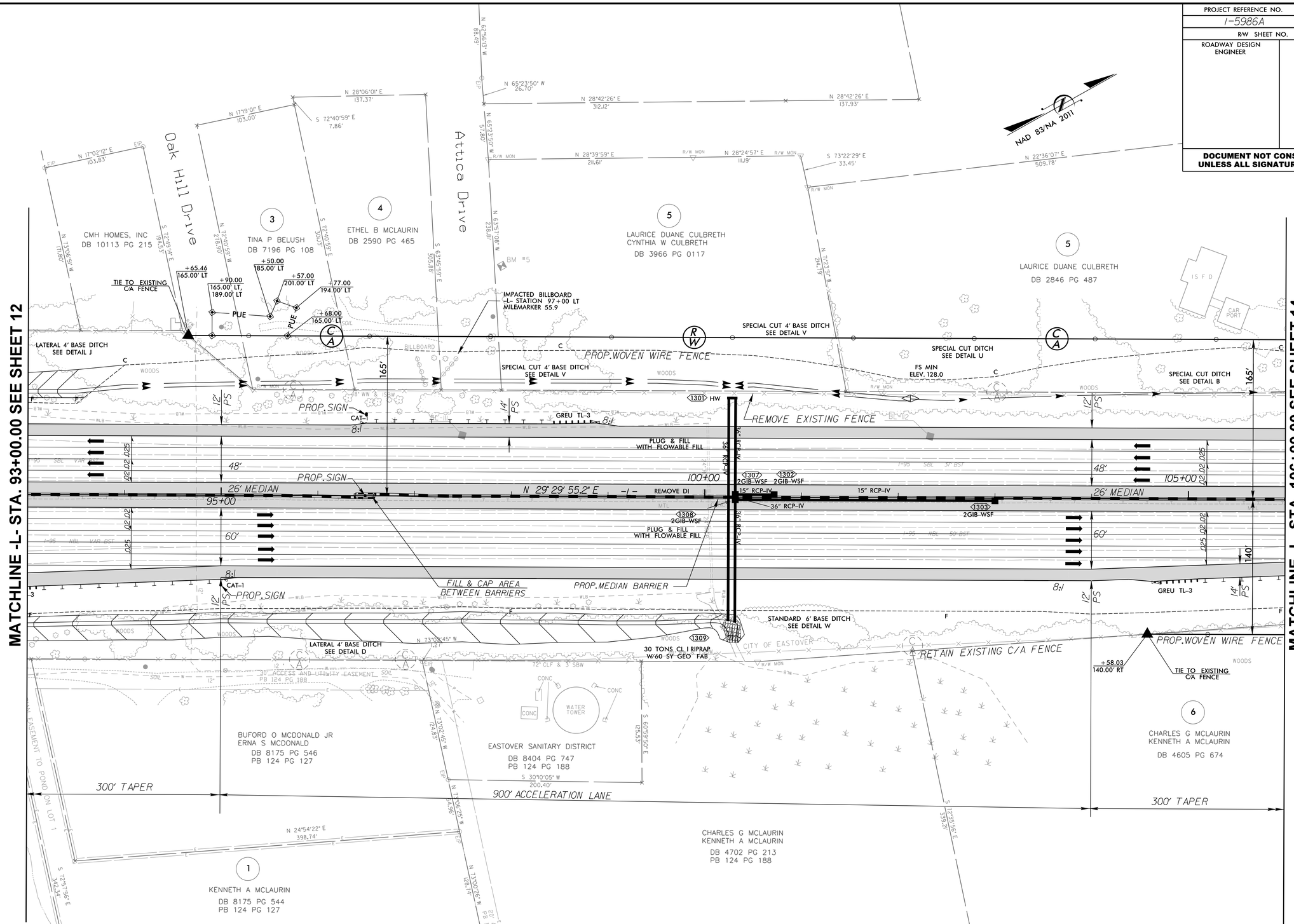

FOR -LLT SEC1- PROFILE SEE SHT. 93
FOR -LRT SEC1- PROFILE SEE SHT. 93

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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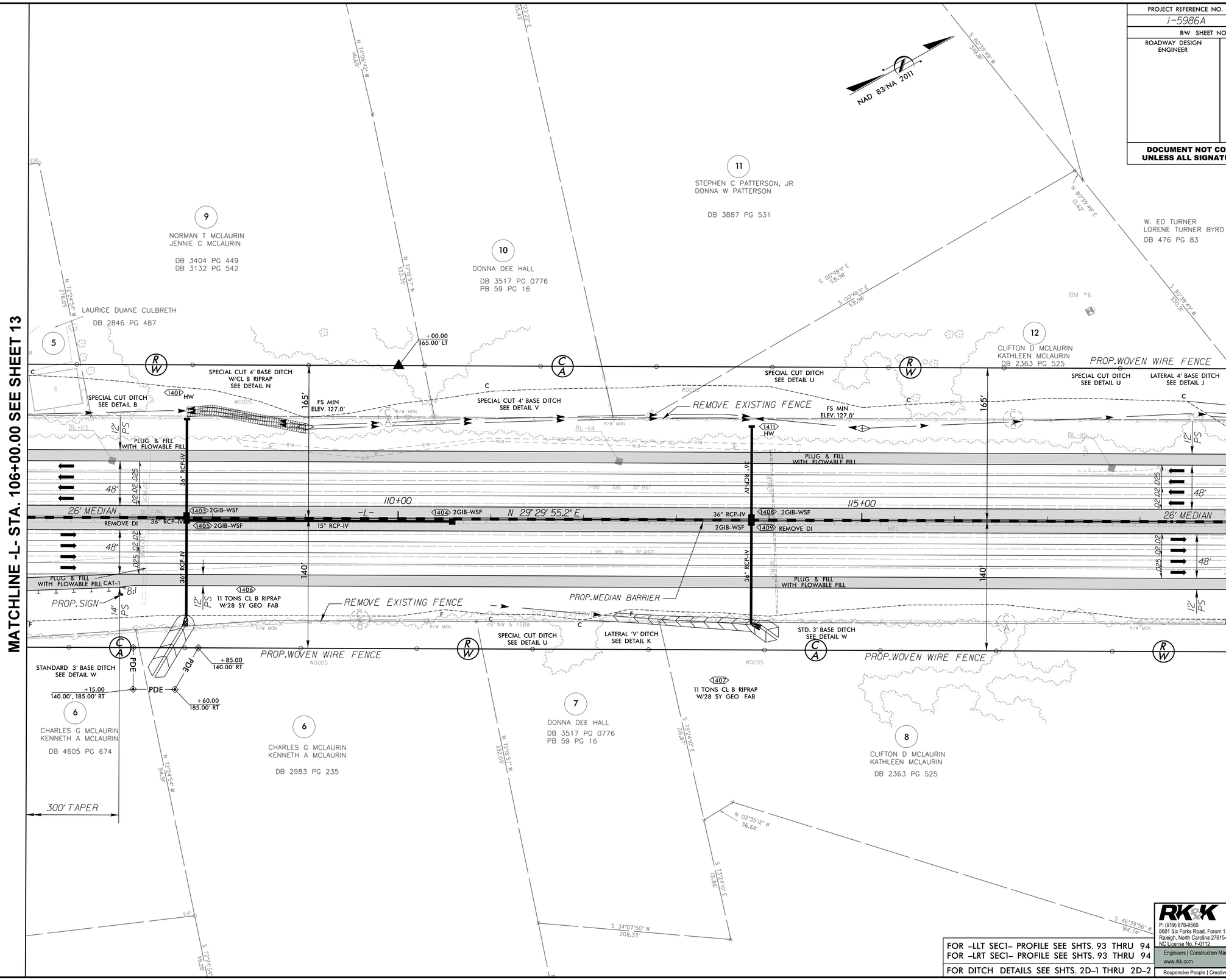

FOR –LLT SEC1– PROFILE SEE SHTS. 93 THRU 94
FOR –LRT SEC1– PROFILE SEE SHTS. 93 THRU 94

FOR DITCH DETAILS SEE SHTS. 2D–1 THRU 2D–2

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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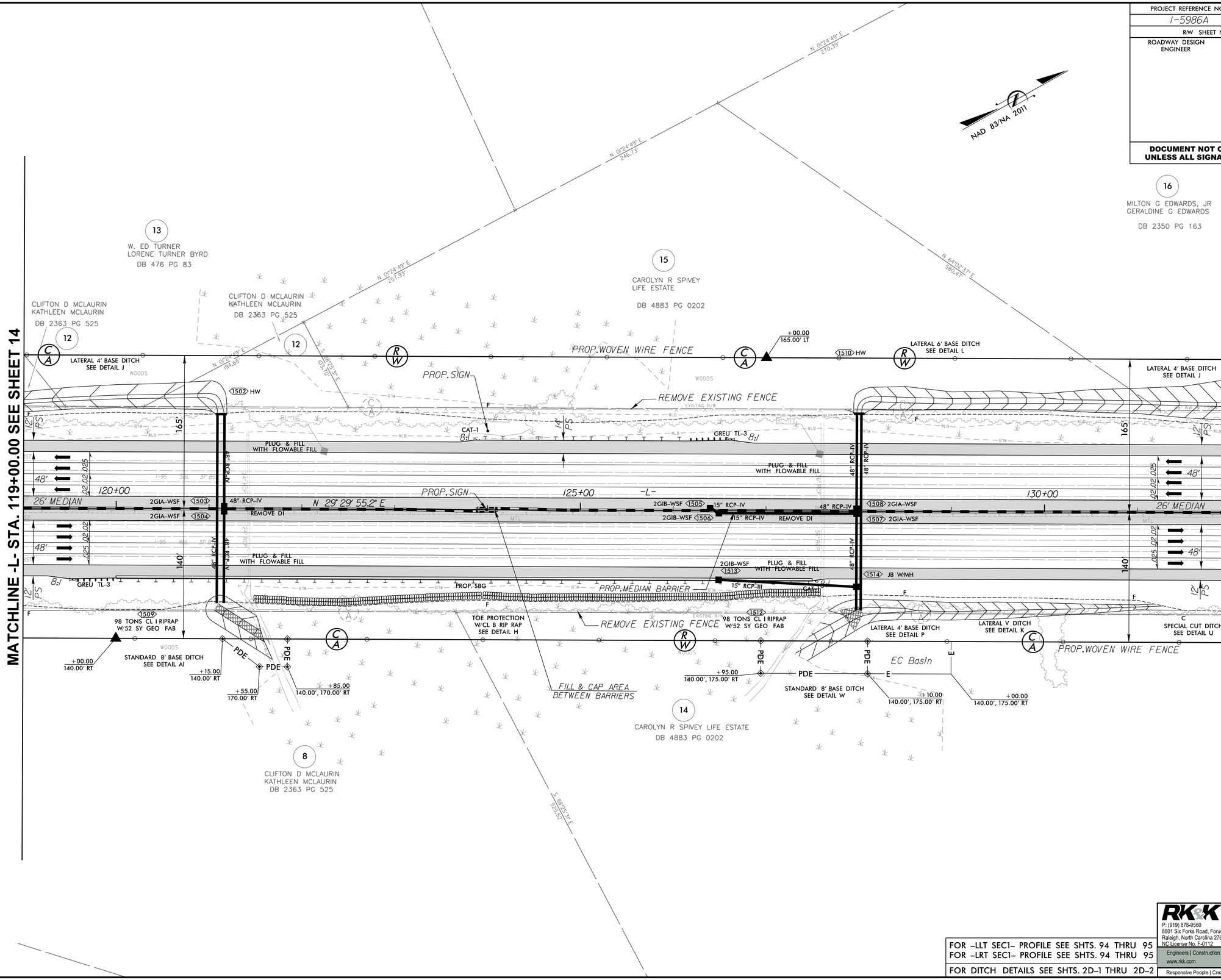

FOR -LLT SEC1- PROFILE SEE SHTS. 94 THRU 95
FOR -LRT SEC1- PROFILE SEE SHTS. 94 THRU 95
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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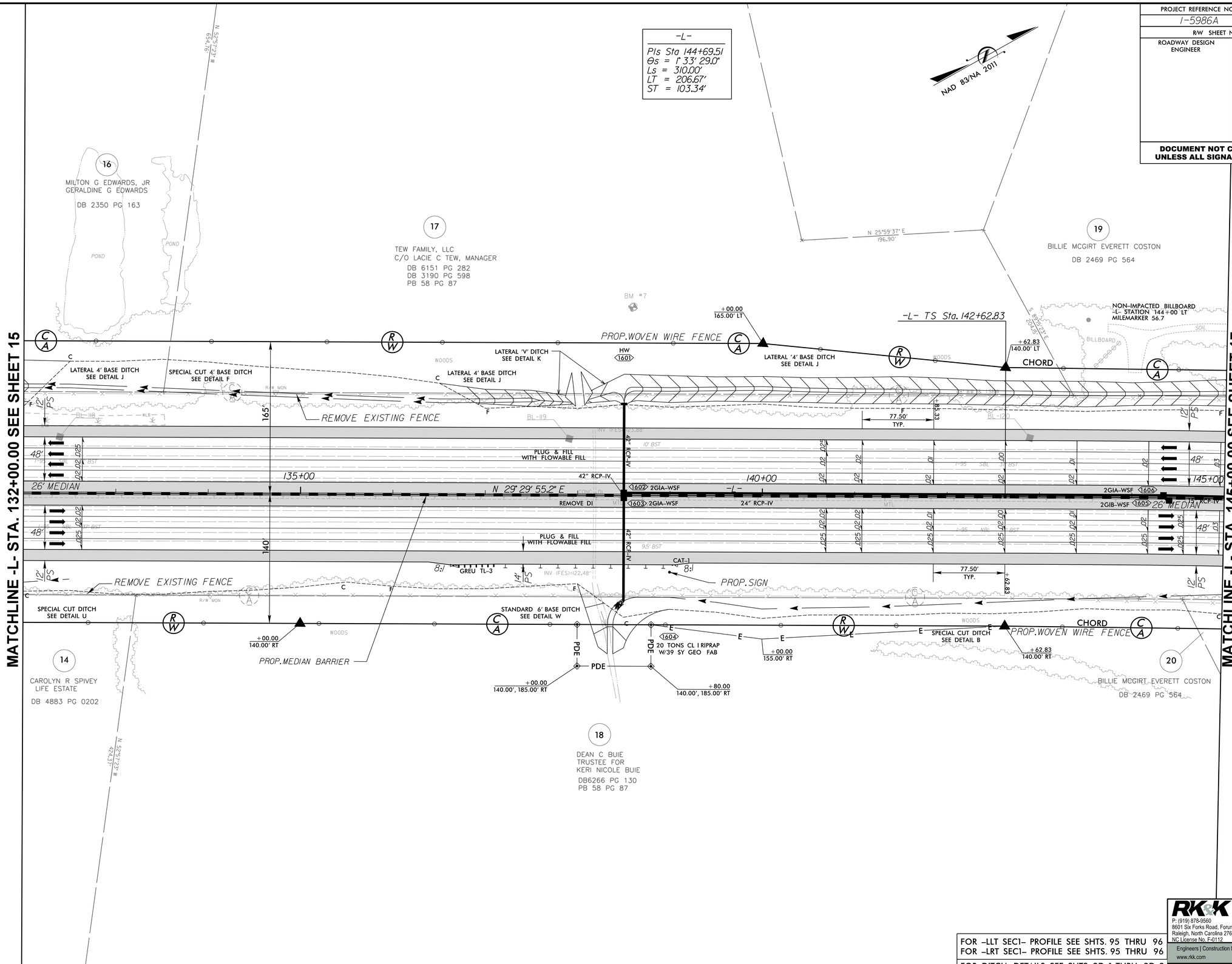

FOR -LLT SEC1- PROFILE SEE SHTS. 95 THRU 96
FOR -LRT SEC1- PROFILE SEE SHTS. 95 THRU 96
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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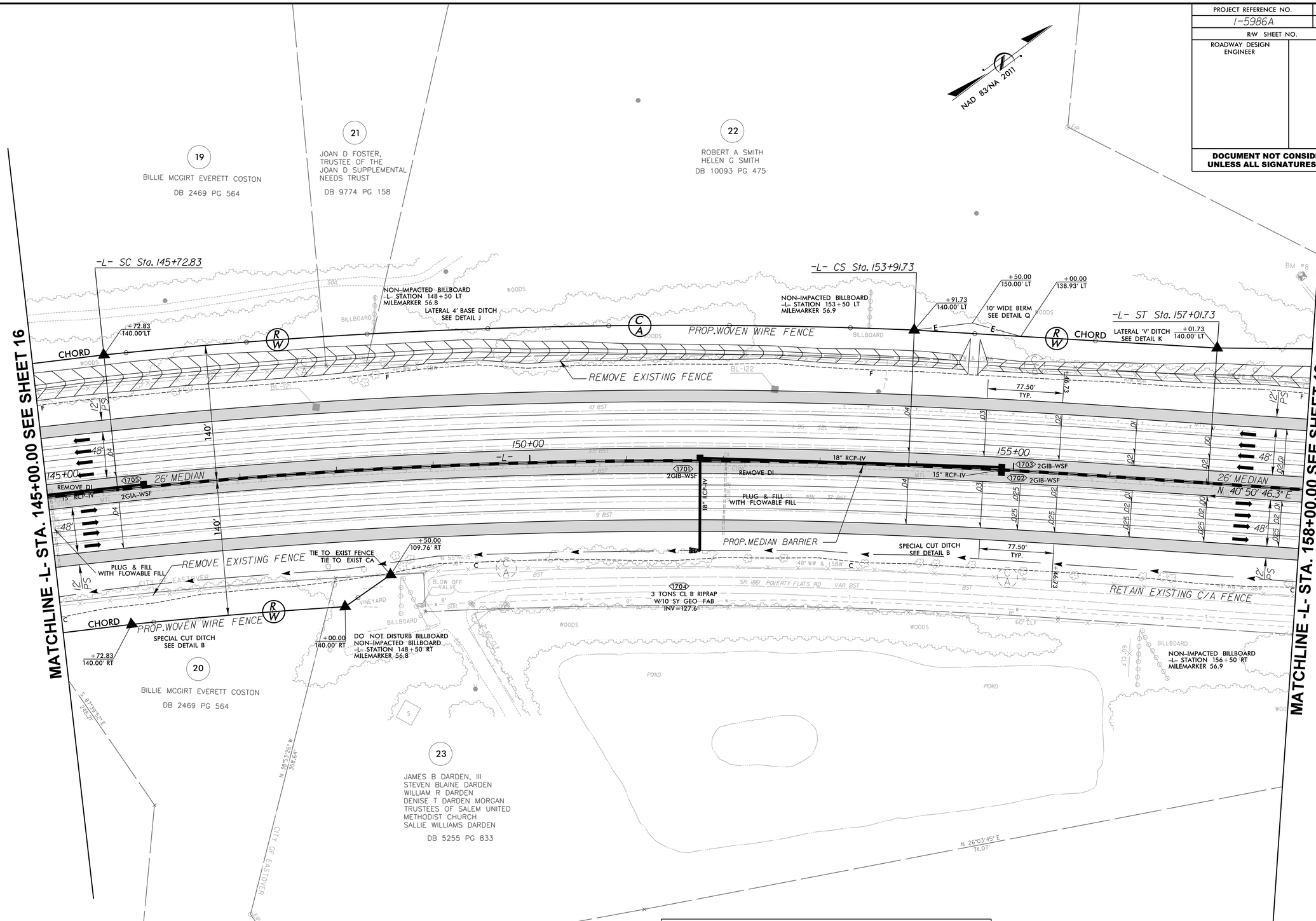

-L-		
PIs Sta 144+69.51	PI Sta 149+82.99	PIs Sta 154+95.07
Θs = 1° 33' 29.0"	Δ = 8° 13' 53.2" (RT)	Θs = 1° 33' 29.0"
Ls = 310.00'	D = 1° 00' 18.7"	Ls = 310.00'
LT = 206.67'	L = 818.90'	LT = 206.67'
ST = 103.34'	T = 410.15'	ST = 103.34'
	R = 5,700.00'	
	SE = 0.04	
	DS = 75 MPH	

FOR -LLT SEC1- PROFILE SEE SHTS. 96 THRU 97
FOR -LRT SEC1- PROFILE SEE SHTS. 96 THRU 97

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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REVISIONS

ROW REVISION - 07-09-2020 - PARCEL 23 REMOVED THE TEMPORARY CONSTRUCTION EASEMENT

8/17/99

8/24/2020
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sheiler

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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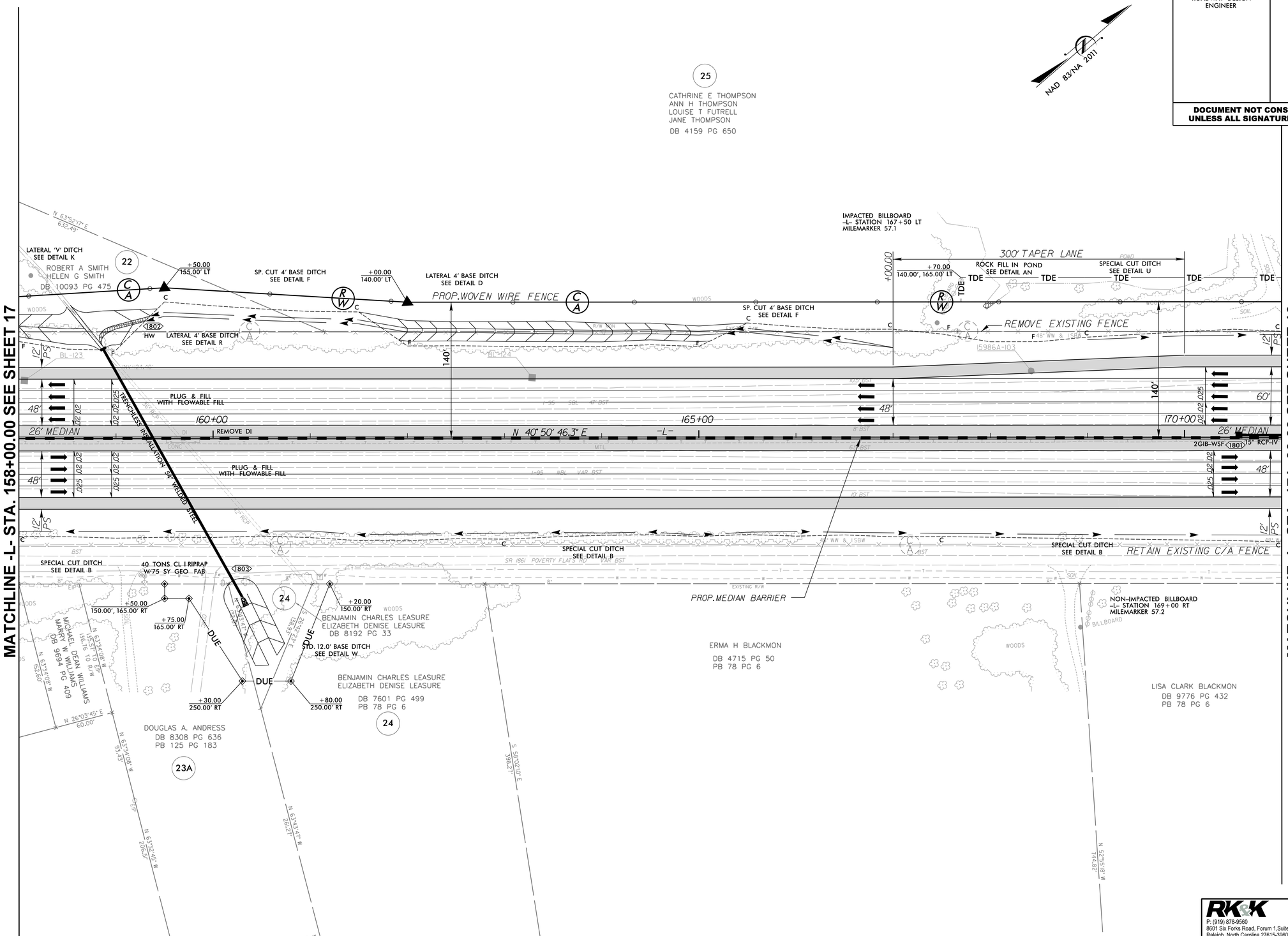

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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REVISIONS

ROW REVISION - 08-11-2020 - PARCEL 25 - ADDED TDE

8/17/99

8/24/2020
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shelter

REVISIONS
FROM REVISION - 06-05-2020 - REVISED ALIGNMENT DESIGNATION ON FLAG AT (3+3.50, 00.00) RT FROM -Y4- TO -Y5RPC-
FROM REVISION - 06-05-2020 - ADDED FLAG AT -Y4- 30+95.5, 33.33' LT.
FROM REVISION - 08-11-2020 - PARCEL 25 - ADDED TOE

PROJECT REFERENCE NO.	SHEET NO.
I-5986	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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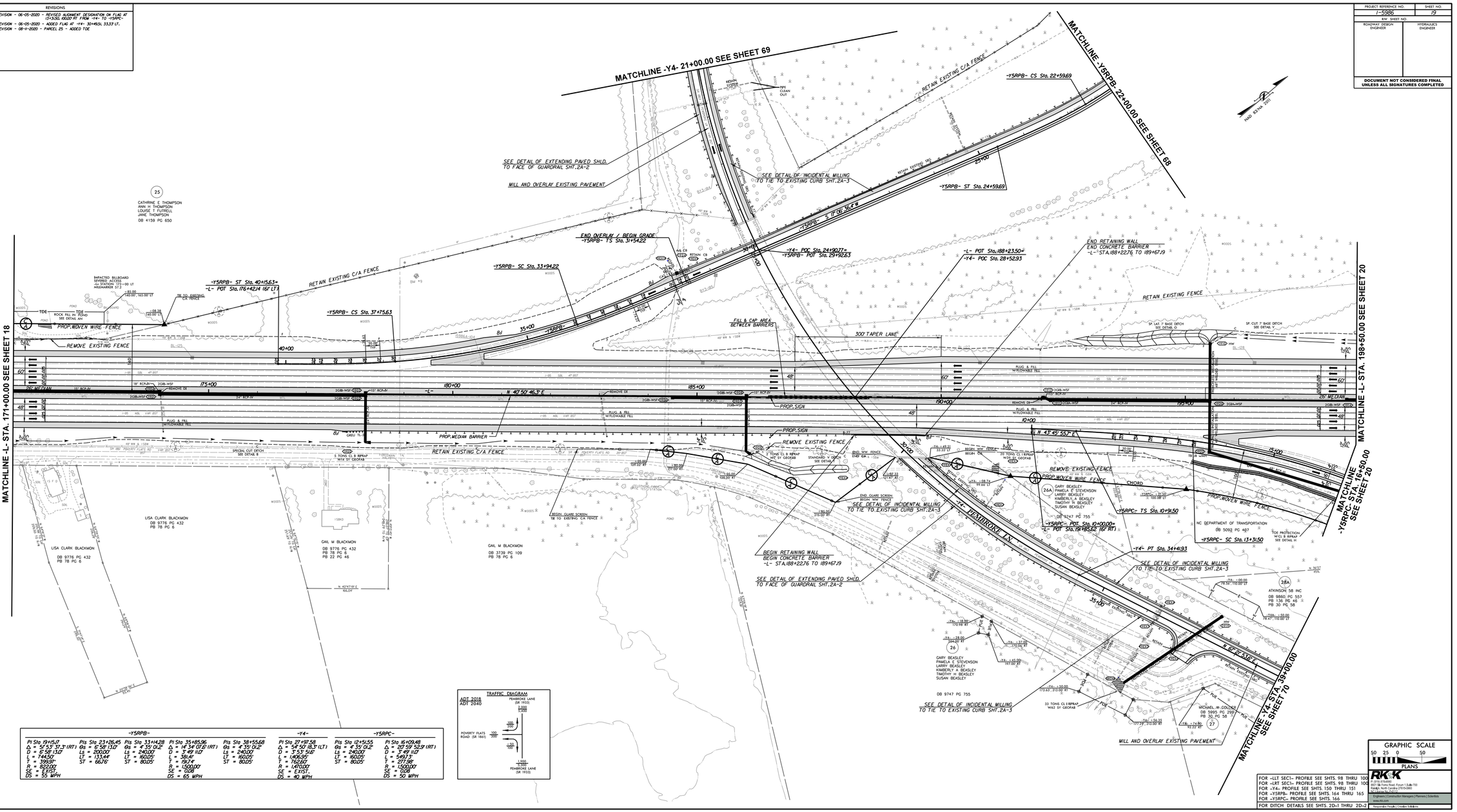

-Y5RPB-				-Y4-		-Y5RPC-	
PI Sta 19+15.17	Pts Sta 23+26.45	Pts Sta 33+14.28	Pi Sta 35+85.96	Pi Sta 27+97.58		Pts Sta 12+51.55	Pi Sta 16+09.48
Δ = 57°53' 37.3" (RT)	Θs = 6°58' 13.0"	Θs = 4°35' 01.2"	Δ = 14°34' 01.6" (RT)	Δ = 54°52' 18.3" (LT)		Θs = 4°35' 01.2"	Δ = 20°59' 52.9" (RT)
D = 6°58' 13.0"	Ls = 200.00'	Ls = 240.00'	D = 3°49' 11.0"	D = 3°53' 51.6"		Ls = 240.00'	D = 3°49' 11.0"
L = 744.50'	LT = 133.44'	LT = 160.05'	L = 384.41'	L = 1,406.95'		LT = 160.05'	L = 549.23'
T = 399.91'	ST = 66.76'	ST = 80.05'	T = 191.74'	T = 762.60'		ST = 80.05'	T = 277.98'
R = 822.00'			R = 1,500.00'	R = 1,470.00'			R = 1,500.00'
SE = EXIST.			SE = 0.08	SE = EXIST.			SE = 0.08
DS = 55 MPH			DS = 65 MPH	DS = 40 MPH			DS = 50 MPH

FOR -LLT SEC1- PROFILE SEE SHTS. 98 THRU 100
FOR -LRT SEC1- PROFILE SEE SHTS. 98 THRU 100
FOR -Y4- PROFILE SEE SHTS. 150 THRU 151
FOR -Y5RPB- PROFILE SEE SHTS. 164 THRU 165
FOR -Y5RPC- PROFILE SEE SHTS. 166
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

GRAPHIC SCALE
50 25 0 50
PLANS

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8/26/2020
8:26:21 AM
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REVISIONS
ROW REVISION - 06-05-2020 - PARCEL 28 REVISED SPIRAL TO CHORD ON -Y5RPC- "B" FROM 4+81.33 TO 20+74.50
ROW REVISION - 06-05-2020 - PARCEL 44 REVISED ALIGNMENT REFERENCE FOR PGL AT -Y5RPD- 21+59.00
ROW REVISION - 06-05-2020 - PARCELS 44 & 49 REVISED ROW LINE FROM -Y5RPD- 19+73.43, 85.00' RT TO 1'± CORRECTIO TO -Y5RPD- 19+73.43, 85.00' RT. ADDED ROW LINE FROM -Y5RPD- 21+50.00' RT TO 1'± CORRECTIO AT -Y5RPD- 21+50.00' RT
ROW REVISION - 06-17-2020 - PARCEL 29 REMOVED ROW

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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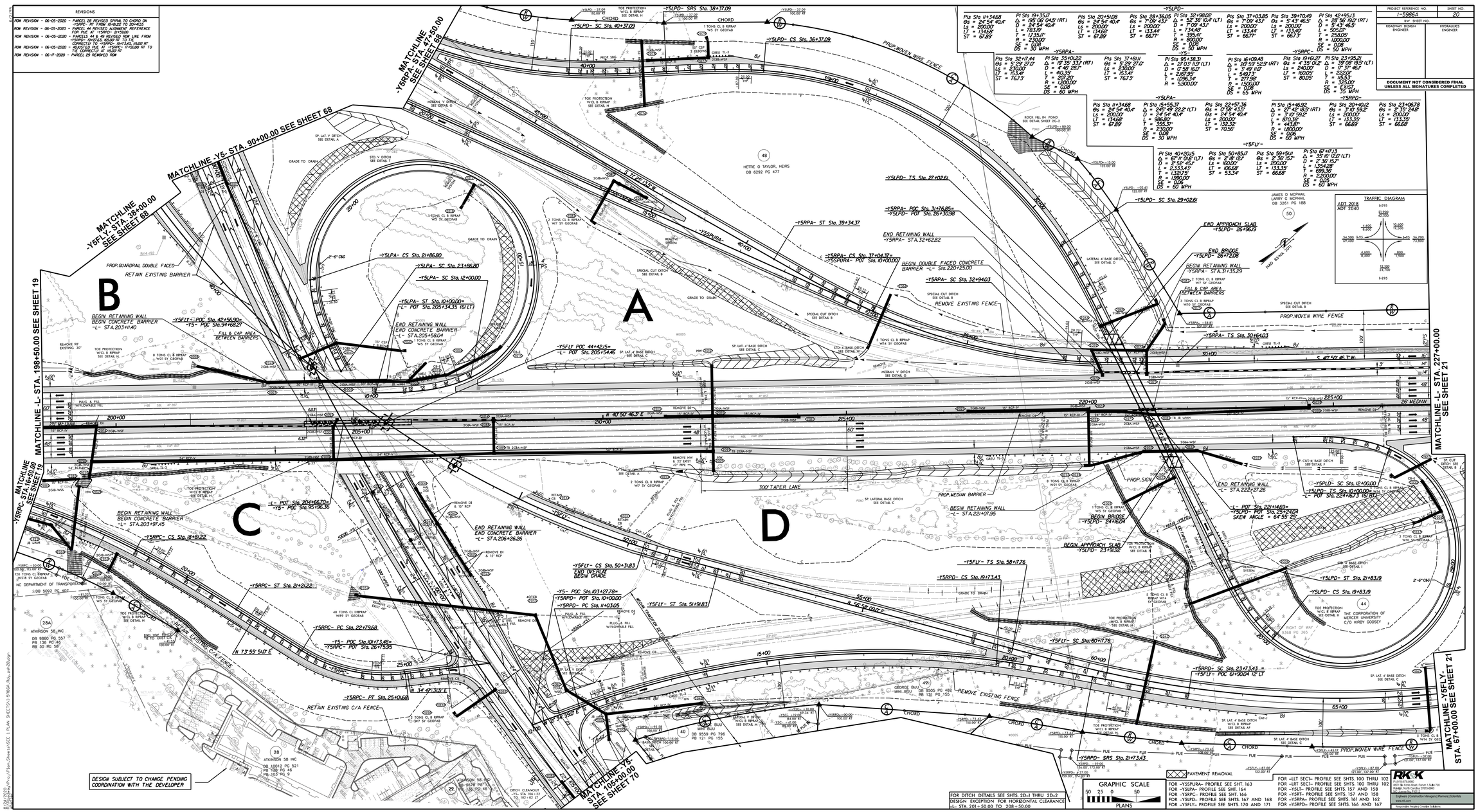

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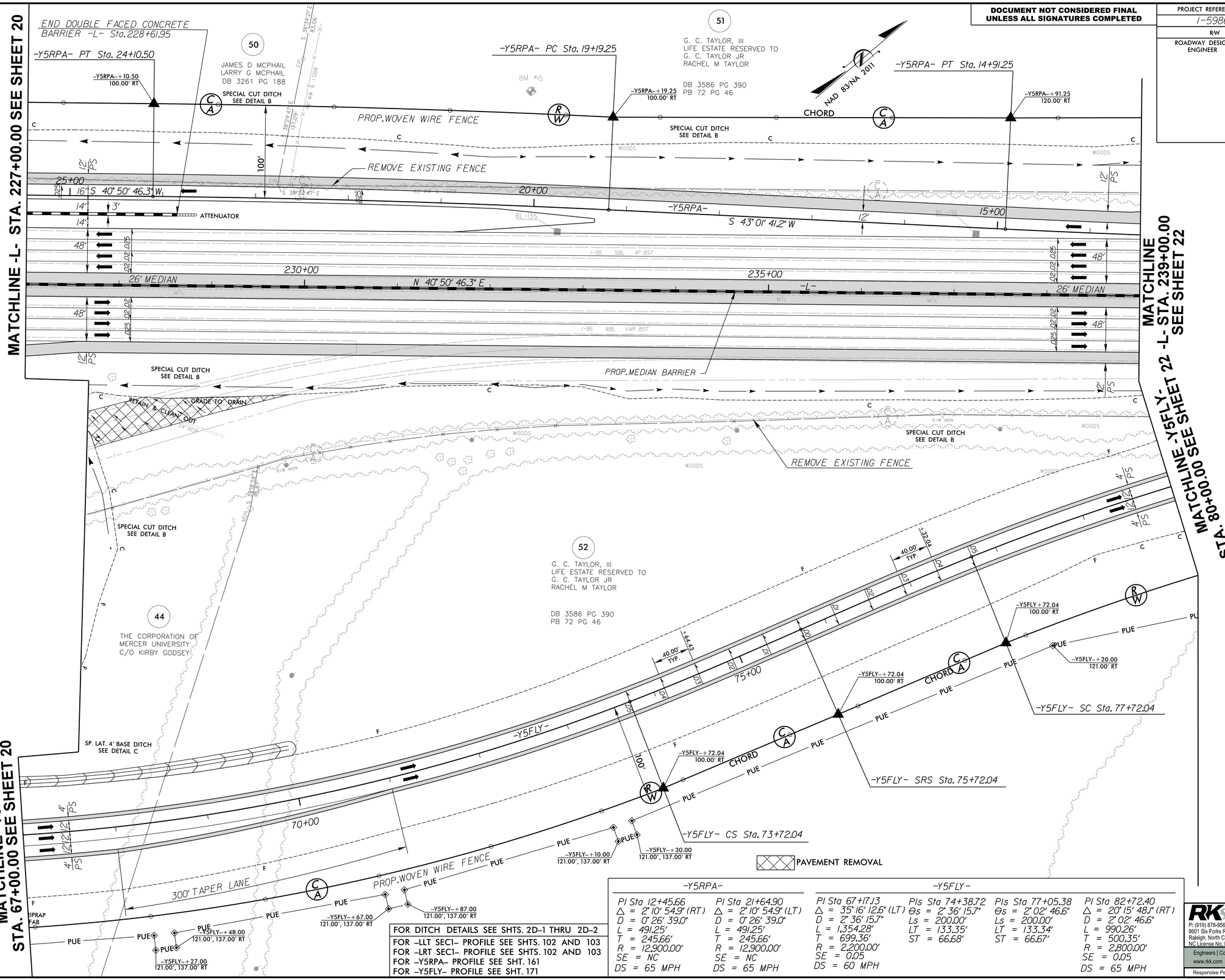
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2
FOR -LLT SEC1- PROFILE SEE SHTS. 102 AND 103
FOR -LRT SEC1- PROFILE SEE SHTS. 102 AND 103
FOR -Y5RPA- PROFILE SEE SHT. 161
FOR -Y5FLY- PROFILE SEE SHT. 171

-Y5RPA-		-Y5FLY-			
PI Sta 12+45.66	PI Sta 21+64.90	PI Sta 67+17.13	PIs Sta 74+38.72	PIs Sta 77+05.38	PI Sta 82+72.40
Δ = 2° 10' 54.9" (RT)	Δ = 2° 10' 54.9" (LT)	Δ = 35° 16' 12.6" (LT)	Θs = 2° 36' 15.7"	Θs = 2° 02' 46.6"	Δ = 20° 15' 48.1" (RT)
D = 0° 26' 39.0"	D = 0° 26' 39.0"	D = 2° 36' 15.7"	Ls = 200.00'	Ls = 200.00'	D = 2° 02' 46.6"
L = 491.25'	L = 491.25'	L = 1,354.28'	LT = 133.35'	LT = 133.34'	L = 990.26'
T = 245.66'	T = 245.66'	T = 699.36'	ST = 66.68'	ST = 66.67'	T = 500.35'
R = 12,900.00'	R = 12,900.00'	R = 2,200.00'			R = 2,800.00'
SE = NC	SE = NC	SE = 0.05			SE = 0.05
DS = 65 MPH	DS = 65 MPH	DS = 60 MPH			DS = 65 MPH

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8/24/2020
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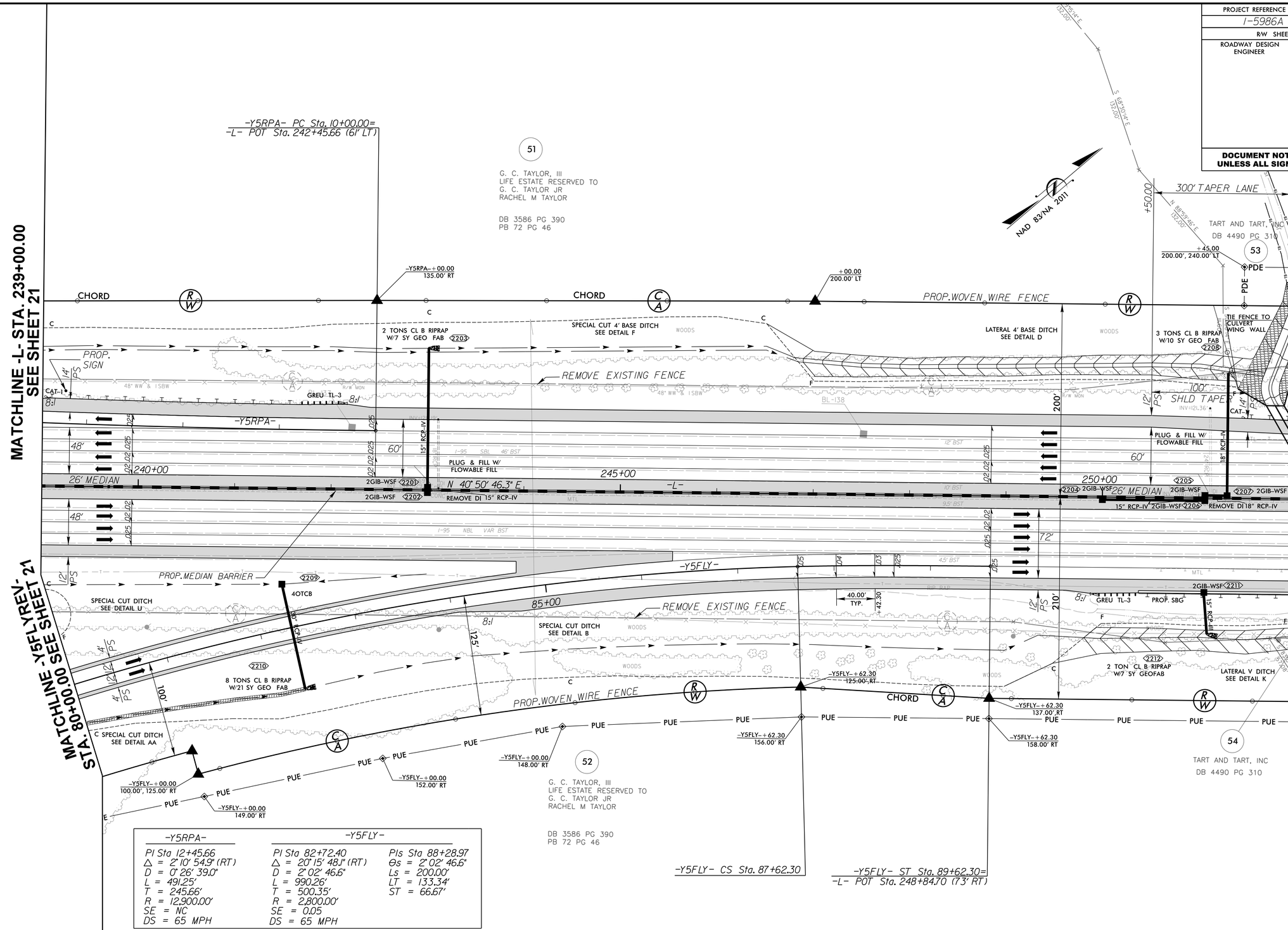
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-Y5RPA-	-Y5FLY-	
PI Sta 12+45.66	PI Sta 82+72.40	PIs Sta 88+28.97
Δ = 2° 10' 54.9" (RT)	Δ = 20° 15' 48.1" (RT)	Θs = 2° 02' 46.6"
D = 0° 26' 39.0"	D = 2° 02' 46.6"	Ls = 200.00'
L = 491.25'	L = 990.26'	LT = 133.34'
T = 245.66'	T = 500.35'	ST = 66.67'
R = 12,900.00'	R = 2,800.00'	
SE = NC	SE = 0.05	
DS = 65 MPH	DS = 65 MPH	

FOR -LLT SEC1- PROFILE SEE SHTS. 103 AND 104
FOR -LRT SEC1- PROFILE SEE SHTS. 103 AND 104
FOR -Y5RPA- PROFILE SEE SHT. 161
FOR -Y5FLY- PROFILE SEE SHT. 171
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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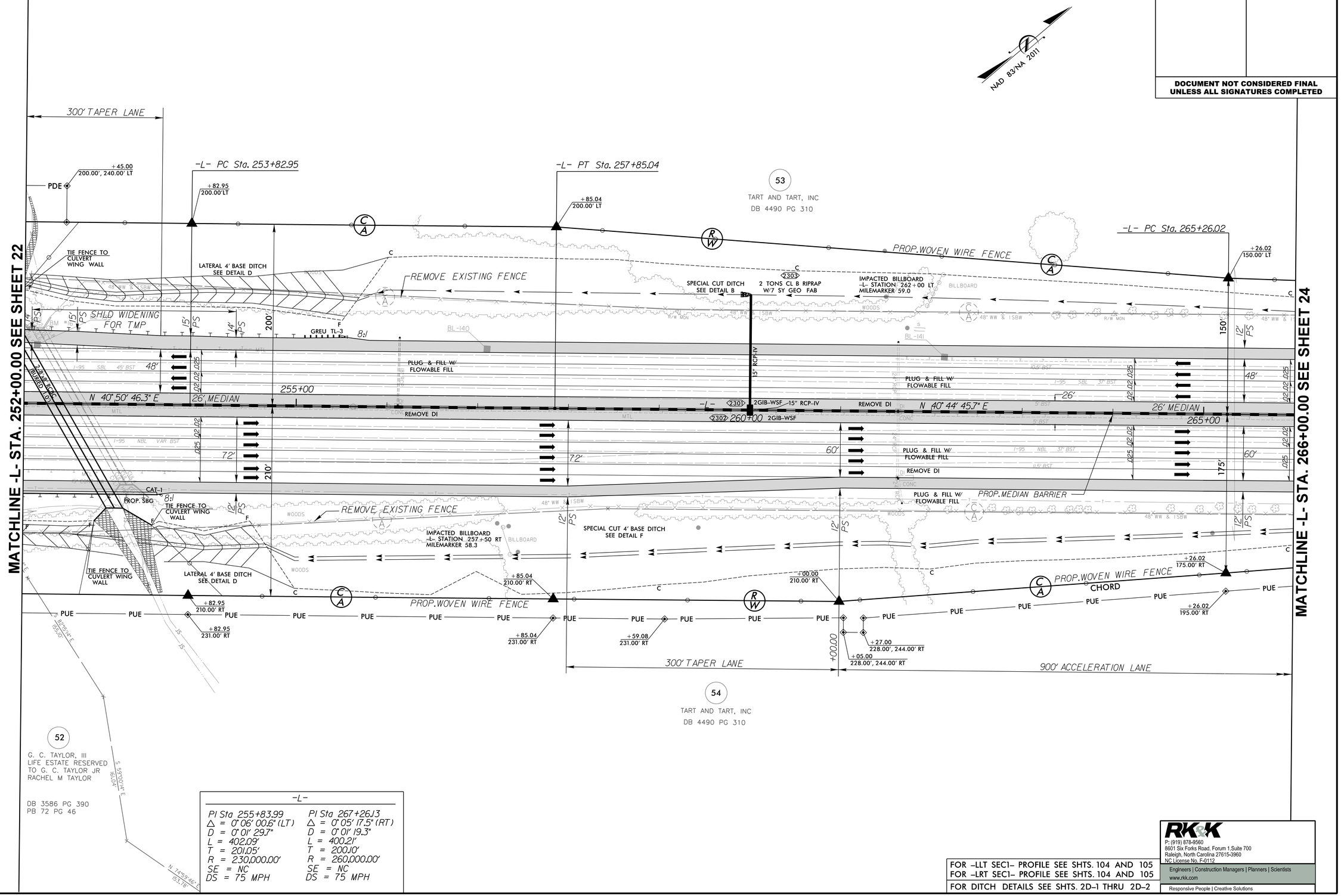
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-L-	
PI Sta 255+83.99	PI Sta 267+26.13
Δ = 0° 06' 00.6" (LT)	Δ = 0° 05' 17.5" (RT)
D = 0° 01' 29.7"	D = 0° 01' 19.3"
L = 402.09'	L = 400.21'
T = 201.05'	T = 200.10'
R = 230,000.00'	R = 260,000.00'
SE = NC	SE = NC
DS = 75 MPH	DS = 75 MPH

FOR -LLT SEC1- PROFILE SEE SHTS. 104 AND 105
FOR -LRT SEC1- PROFILE SEE SHTS. 104 AND 105
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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REVISIONS

ROW REVISION - 06-05-2020 - PARCEL 54 ADDED MISSING PERMANENT EASEMENT MARKER -L- 259+08 231.00' RT.

8/17/99

8/24/2020
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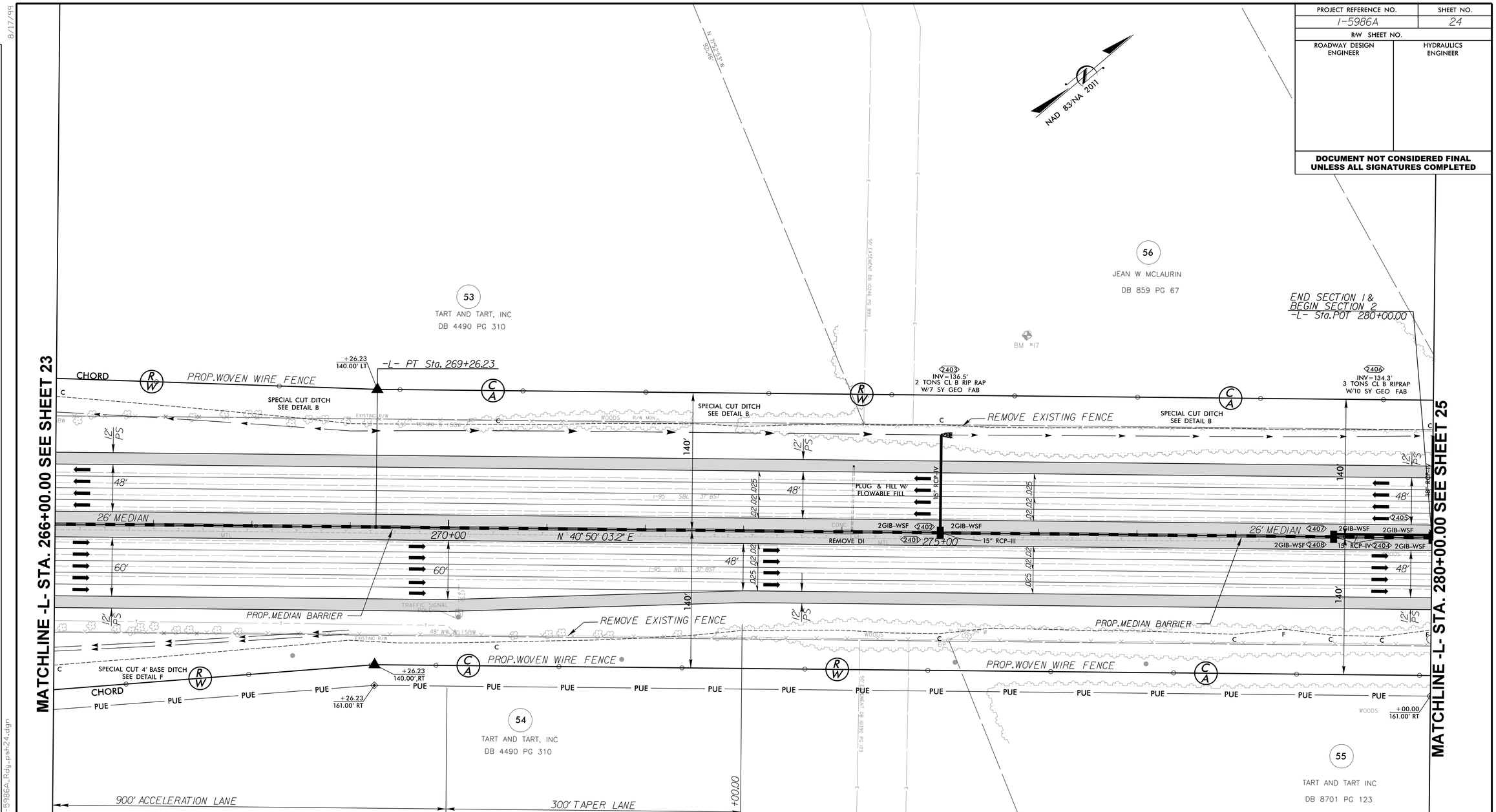
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-L-

PI Sta 267+26.13
Δ = 0° 05' 17.5" (RT)
D = 0° 01' 19.3"
L = 400.21'
T = 200.10'
R = 260,000.00'
SE = NC
DS = 75 MPH

FOR –LLT SEC1– PROFILE SEE SHTS. 105 AND 106
FOR –LRT SEC1– PROFILE SEE SHTS. 105 AND 106
FOR DITCH DETAILS SEE SHTS. 2D–1 THRU 2D–2

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RW REVISION - 06-05-2020 - PARCEL 55 ADDED MISSING PERMANENT EASEMENT REVISIONS -L- 280+00 161.00' RT.

8/17/99

8/24/2020
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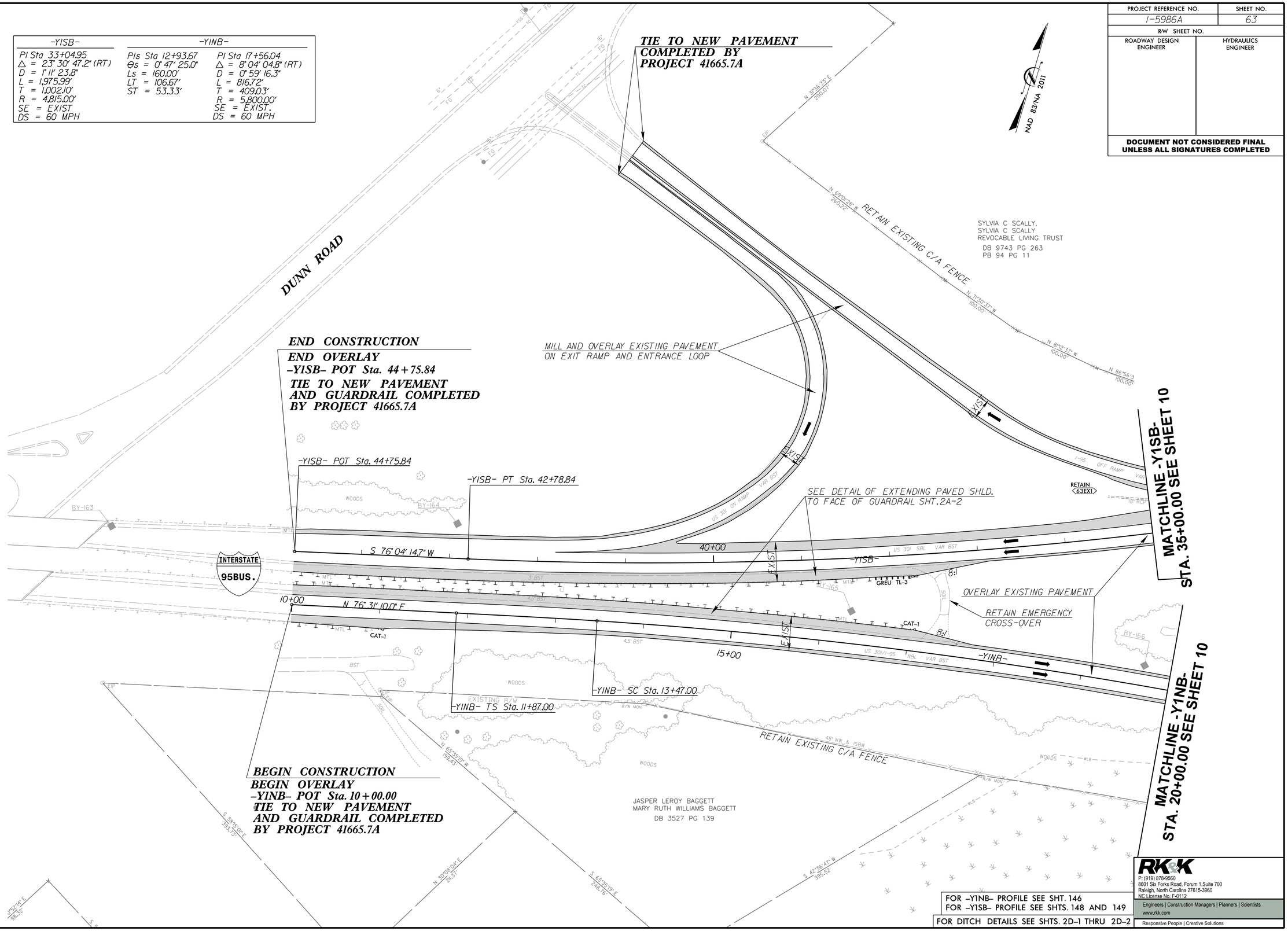
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	63
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y1SB-	-Y1NB-	
PI Sta 33+04.95	PIs Sta 12+93.67	PI Sta 17+56.04
Δ = 23° 30' 47.2" (RT)	Θs = 0° 47' 25.0"	Δ = 8° 04' 04.8" (RT)
D = 1° 11' 23.8"	Ls = 160.00'	D = 0° 59' 16.3"
L = 1,975.99'	LT = 106.67'	L = 816.72'
T = 1,002.10'	ST = 53.33'	T = 409.03'
R = 4,815.00'		R = 5,800.00'
SE = EXIST		SE = EXIST.
DS = 60 MPH		DS = 60 MPH



FOR -Y1NB- PROFILE SEE SHT. 146
FOR -Y1SB- PROFILE SEE SHTS. 148 AND 149

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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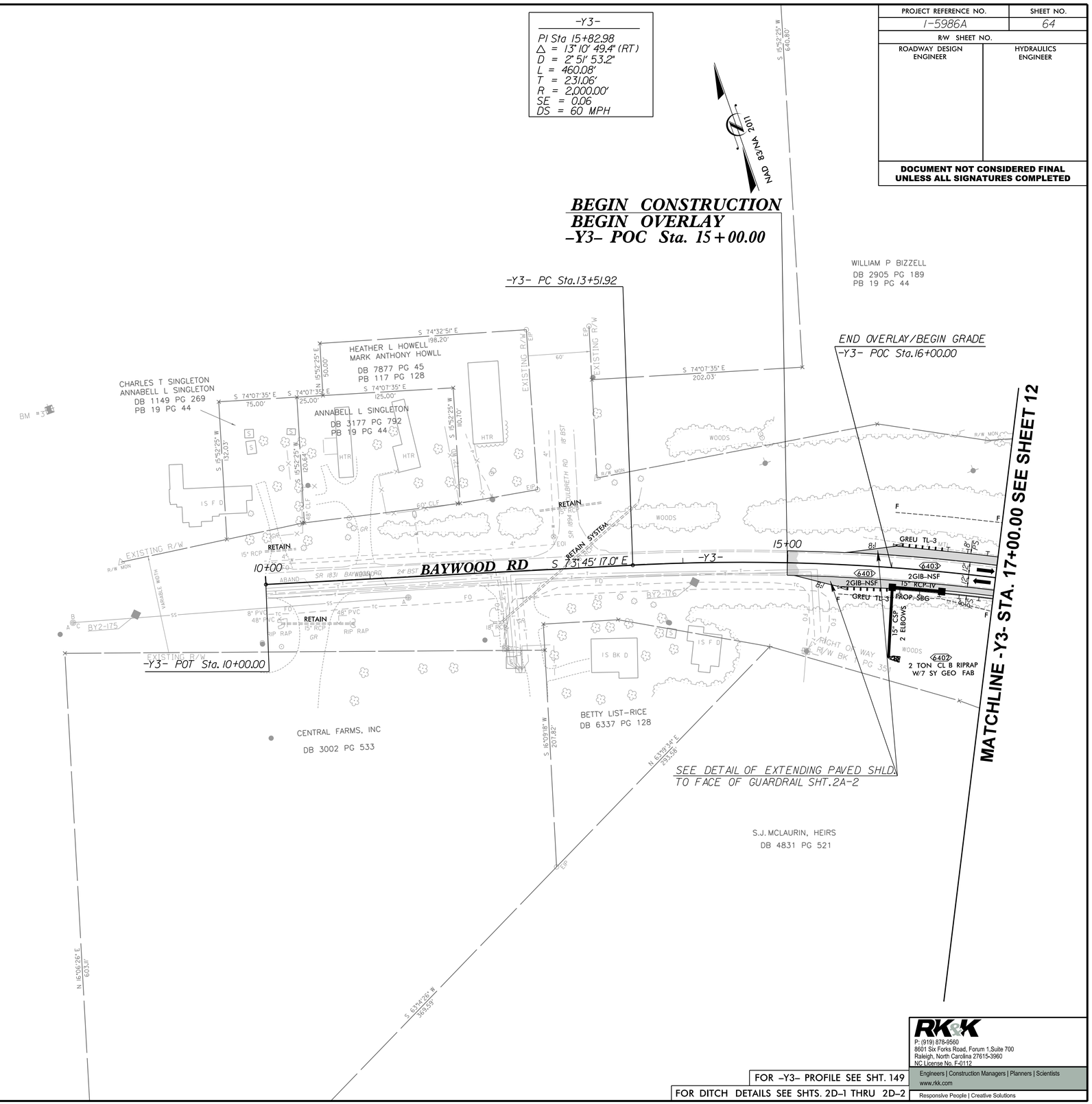
abeller

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	64
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y3-
PI Sta 15+82.98
△ = 13° 10' 49.4" (RT)
D = 2° 51' 53.2"
L = 460.08'
T = 231.06'
R = 2,000.00'
SE = 0.06
DS = 60 MPH



FOR -Y3- PROFILE SEE SHT. 149

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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apeller

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	65
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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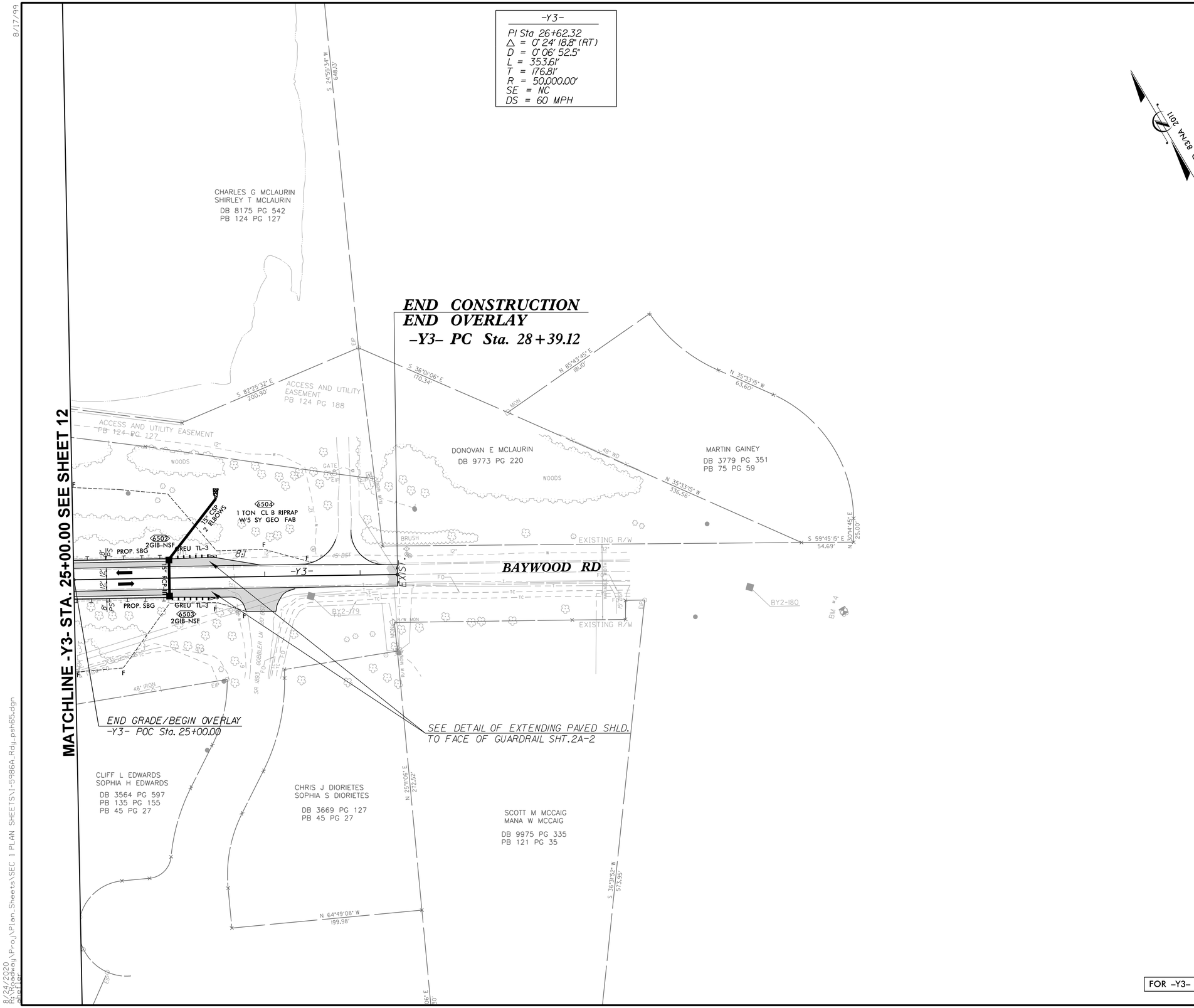

FOR -Y3- PROFILE SEE SHT. 149

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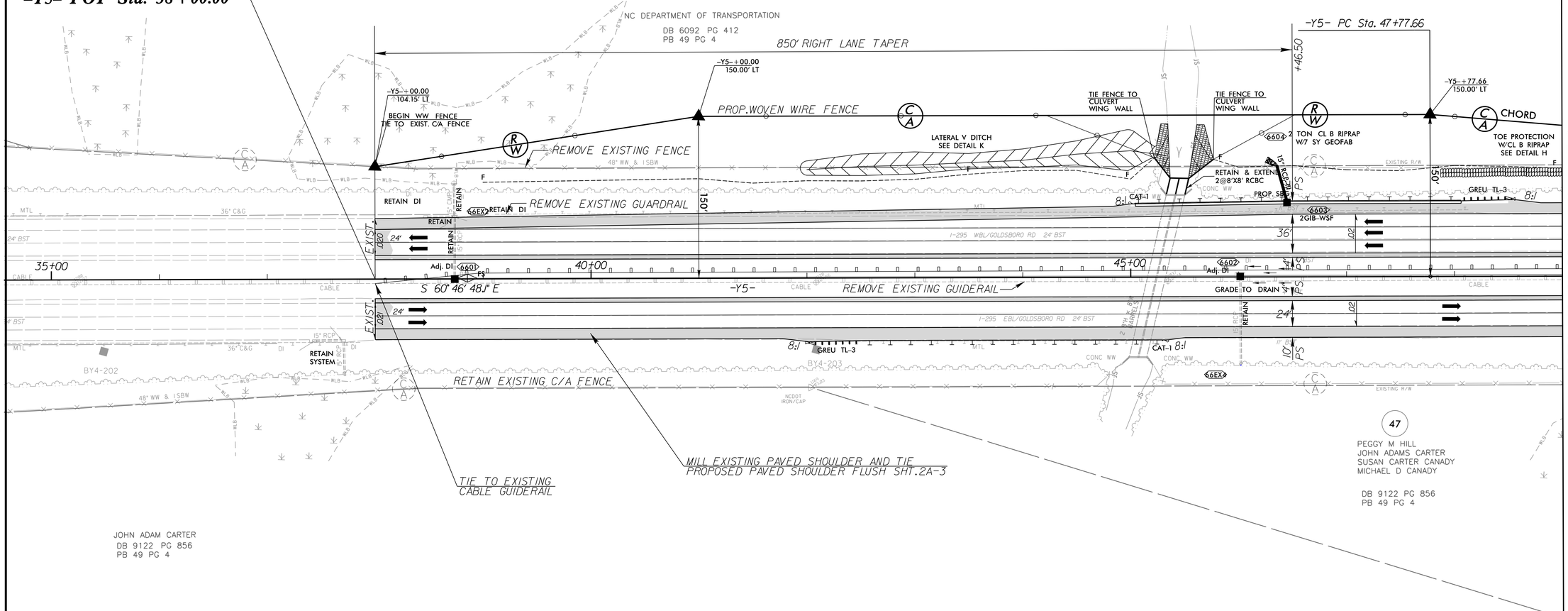
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	66
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y5-
PI Sta 49+24.54
△ = 0° 05' 03.0" (LT)
D = 0° 01' 43.1"
L = 293.78'
T = 146.89'
R = 200,000.00'
SE = NC
DS = 70 MPH

NAD 83/NA 2011

BEGIN CONSTRUCTION
-Y5- POT Sta. 38+00.00



MATCHLINE -Y5- STA. 49+00.00 SEE SHEET 67

FOR -Y5LT- PROFILE SEE SHTS. 153 AND 154
FOR -Y5RT- PROFILE SEE SHTS. 153 AND 154
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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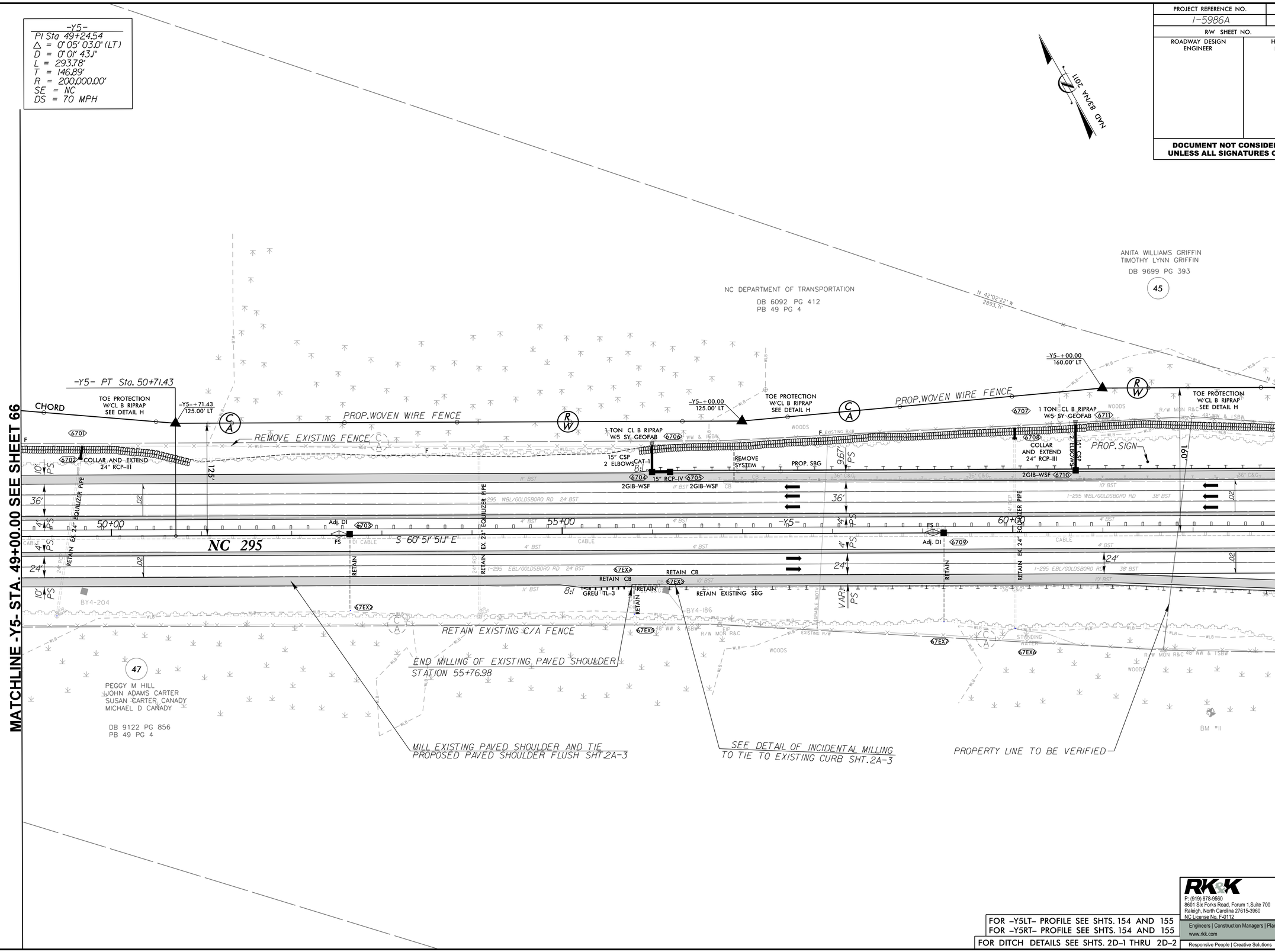
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	67
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



FOR -Y5LT- PROFILE SEE SHTS. 154 AND 155
FOR -Y5RT- PROFILE SEE SHTS. 154 AND 155
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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shestler

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	68
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

ROW REVISION - 06-05-2020 - PARCEL 45 ADDED PUE

ROW REVISION - 06-05-2020 - PARCEL 46 ADDED PUE AND REVISED ROW LINE FROM -Y5RPA- 60+29.40 ADDED RT TO TIE CORRECT TO -Y5RPA- 57+99.40 ADDED RT

ROW REVISION - 06-05-2020 - ADDED PARCEL 47 AS A RESULT OF THE ADDITION OF PUE

-Y5LPD-

Pis Sta 46+39.58	Pi Sta 42+95.13
Bs = 4°49'20.4"	Δ = 28°56'19.0" (RT)
Es = 5°43'47.4"	D = 5°43'46.5"
Ls = 200.00'	L = 505.07'
LT = 103.15'	T = 258.05'
ST = 97.42'	R = 1,200.00'
	SE = 0.08
	DS = 50 MPH

-Y5RPA-

Pis Sta 58+76.14	Pi Sta 54+28.47	Pis Sta 49+53.46
Bs = 5°29'27.0"	Δ = 36°44'01.3" (RT)	Bs = 5°29'27.0"
Es = 2°30.00"	D = 4°46'28.7"	Es = 2°30.00"
LT = 153.41'	L = 769.35'	LT = 153.41'
ST = 76.73'	T = 398.42'	ST = 76.73'
	R = 1,200.00'	
	SE = 0.08	
	DS = 60 MPH	

-Y5SPURA-

Pi Sta 23+14.19
Δ = 37°01'59.6" (LT)
D = 12°43'56.6"
L = 291.64'
T = 150.15'
R = 450.00'
SE = 0.06
DS = 30 MPH (STOP CONDITION)

-Y14-

Pis Sta 41+66.39	Pi Sta 43+73.26
Bs = 1°44'10.4"	Δ = 4°51'57.7" (RT)
Es = 2°00.00"	D = 1°44'10.4"
LT = 133.34'	L = 280.25'
ST = 66.67'	T = 140.21'
	R = 3,300.00'
	SE = E.XIST.
	DS = 60 MPH

-Y5RPB-

Pis Sta 14+48.63	Pi Sta 19+15.17
Bs = 6°58'13.0"	Δ = 51°53'37.3" (RT)
Es = 2°00.00"	D = 6°58'13.0"
LT = 133.44'	L = 744.55'
ST = 66.76'	T = 399.97'
	R = 822.00'
	SE = E.XIST.
	DS = 55 MPH

-Y5FLY-

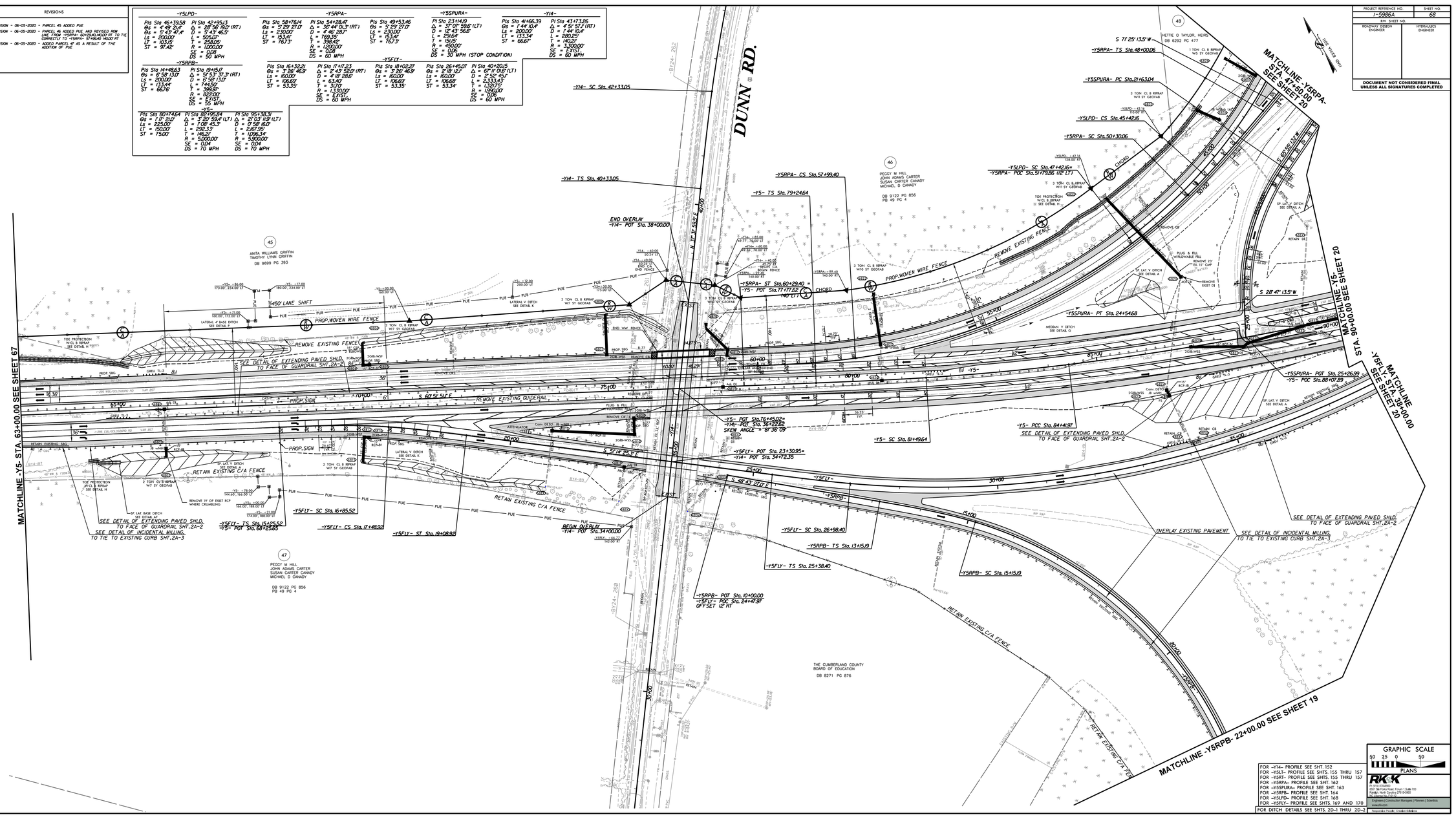
Pis Sta 16+32.21	Pis Sta 17+17.23	Pis Sta 18+02.27
Bs = 3°26'46.5"	Δ = 2°43'52.0" (RT)	Bs = 3°26'46.5"
Es = 160.00'	D = 4°18'28.6"	Es = 160.00'
LT = 106.69'	L = 63.40'	LT = 106.69'
ST = 53.35'	T = 31.70'	ST = 53.35'
	R = 1,330.00'	
	SE = E.XIST.	
	DS = 60 MPH	

-Y5FLY-

Pis Sta 26+45.07	Pi Sta 40+20.15
Bs = 2°18'12.2"	Δ = 62°11'01.6" (LT)
Es = 160.00'	D = 2°52'45.1"
LT = 106.68'	L = 2,333.43'
ST = 53.34'	T = 1,313.75'
	R = 1,990.00'
	SE = 0.06
	DS = 60 MPH

-Y6-

Pis Sta 80+74.64	Pi Sta 82+95.84	Pi Sta 95+38.31
Bs = 1°11'21.0"	Δ = 3°20'59.4" (LT)	Δ = 21°03'11.9" (LT)
Es = 225.00'	D = 1°08'45.3"	D = 21°52'15.0"
LT = 150.00'	L = 292.33'	L = 615.95'
ST = 75.00'	T = 146.21'	T = 1,096.57'
	R = 5,000.00'	R = 5,900.00'
	SE = 0.04	SE = 0.04
	DS = 70 MPH	DS = 70 MPH



FOR -Y14- PROFILE SEE SHT. 152
FOR -Y5LT- PROFILE SEE SHTS. 155 THRU 157
FOR -Y5RT- PROFILE SEE SHTS. 155 THRU 157
FOR -Y5RPA- PROFILE SEE SHT. 162
FOR -Y5SPURA- PROFILE SEE SHT. 163
FOR -Y5RPB- PROFILE SEE SHT. 164
FOR -Y5LPD- PROFILE SEE SHT. 168
FOR -Y5FLY- PROFILE SEE SHTS. 169 AND 170
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

GRAPHIC SCALE
50 25 0 50
PLANS

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	69
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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-Y4-	
PI Sta 14+83.44	PI Sta 27+97.58
△ = 0° 23' 06.9" (RT)	△ = 54° 50' 18.3" (LT)
D = 0° 17' 11.3"	D = 3° 53' 51.6"
L = 134.48'	L = 1,406.95'
T = 67.24'	T = 762.60'
R = 20,000.00'	R = 1,470.00'
SE = EXIST.	SE = EXIST.
DS = 45 MPH	DS = 45 MPH

TRAFFIC DIAGRAM

ADT 2018
ADT 2040

DUNN ROAD

2,400 / 3,300

200 / 800

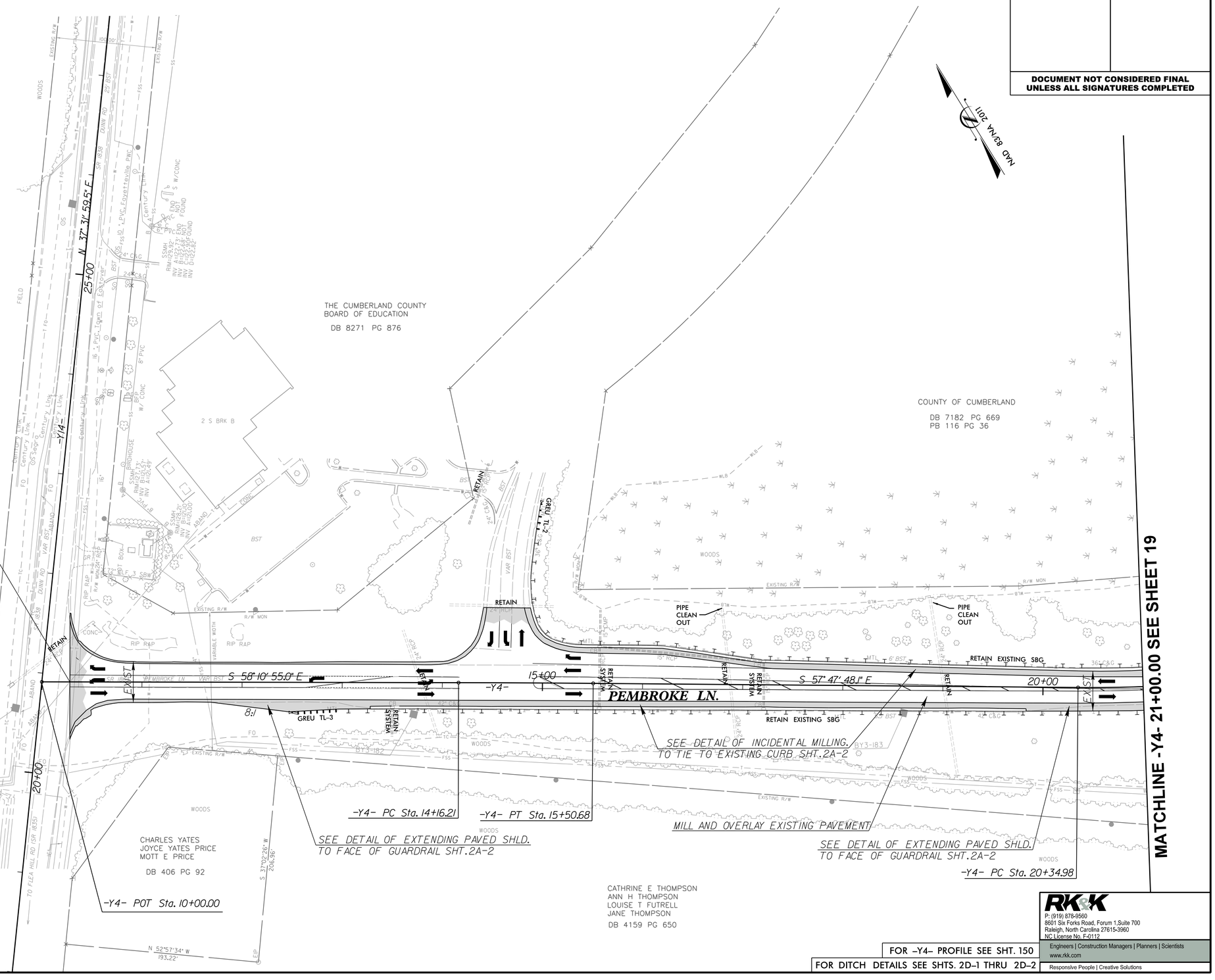
PEMBROKE LANE (SR 1933)

2,000 / 5,400

1,800 / 4,600

4,000 / 7,100

DUNN ROAD



MATCHLINE -Y4- 21+00.00 SEE SHEET 19

FOR -Y4- PROFILE SEE SHT. 150

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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8/24/2020
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REVISIONS
ROW REVISION - 06-05-2020 - PARCEL 27 ADDED MISSING EASEMENT FLAG -Y4- 41+52.77 HEADER
ROW REVISION - 06-05-2020 - PARCEL 42 ADDED PUE TO THE ORIGINAL PUE AND REVISED THE FLAGS FOR THE ORIGINAL PUE TO REFERENCE -Y5C- ALIGNMENT AT 23+26.97
ROW REVISION - 06-05-2020 - PARCEL 43 ADDED PUE TO THE ORIGINAL PUE, ADDED A NEW PUE FLAG AT -Y5A- 113+38.49, 42.00' LT AND REVISED ALIGNMENT REFERENCE FROM -Y5- TO -Y5A- FOR FLAGS AT 109+80.62,80' AND 90.00' LT
ROW REVISION - 06-05-2020 - PARCEL 44 REVISED ROW FROM -Y5RPO- 94+73.63, 60.00' RT TO THE CORRECTLY TO -Y5RPO- 94+73.63, 45.00' RT
ROW REVISION - 06-15-2020 - PARCEL 35 REMOVED
ROW REVISION - 06-15-2020 - PARCEL 28 REVISED ROW AND REVISED PUE
ROW REVISION - 06-17-2020 - PARCEL 34 REVISED PUE
ROW REVISION - 08-11-2020 - PARCEL 37 REVISED PUE
ROW REVISION - 08-11-2020 - PARCEL 38 REVISED CA
ROW REVISION - 08-11-2020 - PARCEL 36 REVISED CA
ROW REVISION - 08-11-2020 - PARCELS 32 AND 33 ADDED ACCESS POINT LABEL

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	70
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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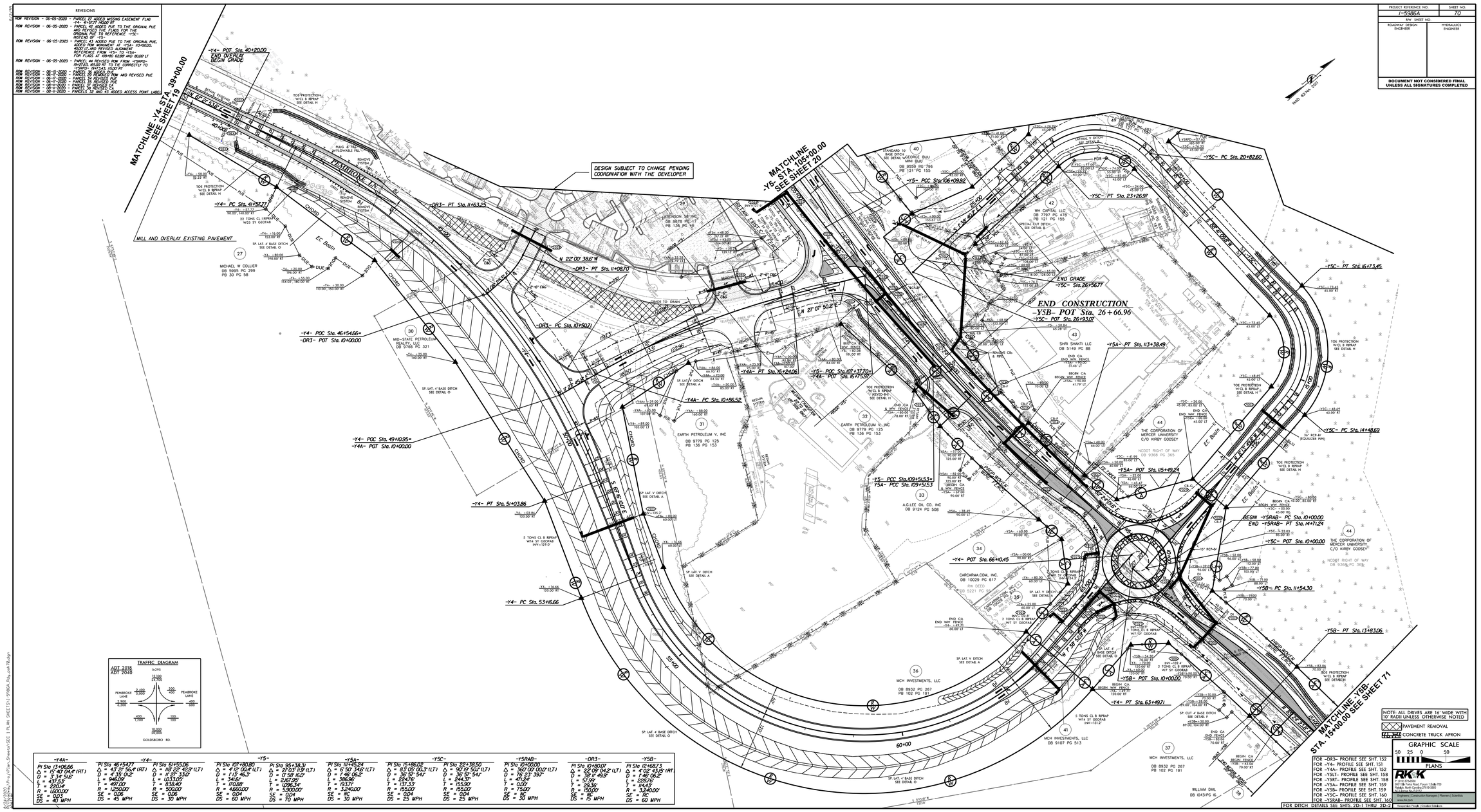


-Y4A-	-Y4-	-Y5-	-Y5A-	-Y5C-	-Y5RAB-	-DR3-	-Y5B-
PI Sta 13+06.66	PI Sta 46+54.77	PI Sta 107+80.80	PI Sta 111+85.24	PI Sta 15+86.02	PI Sta 10+00.00	PI Sta 10+80.07	PI Sta 12+68.73
Δ = 15°47'04.6" (RT)	Δ = 43°27'56.4" (RT)	Δ = 4°12'00.4" (LT)	Δ = 6°50'34.6" (LT)	Δ = 83°05'00.3" (LT)	Δ = 360°00'00.0" (LT)	Δ = 52°19'04.2" (LT)	Δ = 4°02'43.5" (RT)
D = 3°34'51.6"	D = 4°35'01.2"	D = 1°13'46.3"	D = 1°46'06.2"	D = 36°57'54.1"	D = 36°57'54.1"	D = 38°11'49.9"	D = 1°46'06.2"
L = 437.53'	L = 946.09'	L = 346.51'	L = 386.96'	L = 224.70'	L = 244.37'	L = 511.24'	L = 228.76'
T = 220.14'	T = 497.00'	T = 173.88'	T = 193.71'	T = 137.33'	T = 155.30'	T = 273.56'	T = 114.43'
R = 1600.00'	R = 1250.00'	R = 4660.00'	R = 3240.00'	R = 155.00'	R = 155.00'	R = 750.00'	R = 3240.00'
SE = 0.03	SE = 0.06	SE = 0.04	SE = NC	SE = 0.04	SE = 0.04	SE = NC	SE = NC
DS = 40 MPH	DS = 45 MPH	DS = 60 MPH	DS = 30 MPH	DS = 25 MPH	DS = 25 MPH	DS = 30 MPH	DS = 60 MPH

-Y5-	-Y5A-
PI Sta 61+55.06	PI Sta 109+51.53
Δ = 118°22'42.9" (LT)	Δ = 90°00'00.0" (RT)
D = 11°27'33.0"	D = 5°00'00.0"
L = 1033.09'	L = 314.16'
T = 838.40'	T = 200.00'
R = 500.00'	R = 1146.28'
SE = 0.06	SE = 0.03
DS = 30 MPH	DS = 45 MPH

-Y5B-
PI Sta 13+83.06
Δ = 90°00'00.0" (RT)
D = 14°19'11.0"
L = 125.66'
T = 80.00'
R = 400.00'
SE = 0.03
DS = 30 MPH

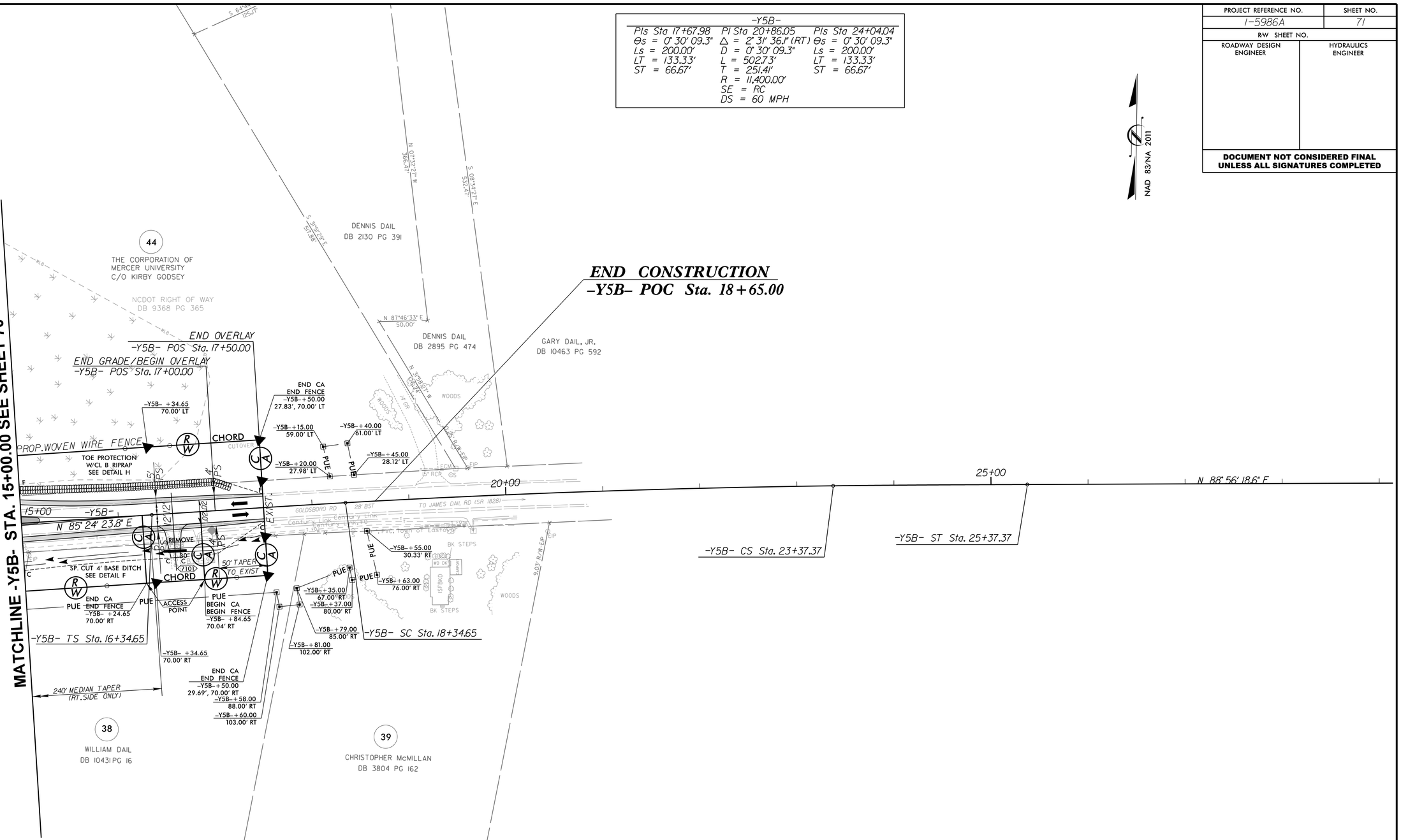
FOR -DR3- PROFILE SEE SHT. 152
FOR -Y4A- PROFILE SEE SHT. 152
FOR -Y5LT- PROFILE SHT. 158
FOR -Y5RT- PROFILE SHT. 158
FOR -Y5A- PROFILE SHT. 159
FOR -Y5B- PROFILE SHT. 159
FOR -Y5C- PROFILE SHT. 160
FOR -Y5RAB- PROFILE SEE SHT. 160

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	71
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y5B-		
PIs Sta 17+67.98	PI Sta 20+86.05	PIs Sta 24+04.04
Θs = 0° 30' 09.3"	Δ = 2° 31' 36.1" (RT)	Θs = 0° 30' 09.3"
Ls = 200.00'	D = 0° 30' 09.3"	Ls = 200.00'
LT = 133.33'	L = 502.73'	LT = 133.33'
ST = 66.67'	T = 251.41'	ST = 66.67'
	R = 11,400.00'	
	SE = RC	
	DS = 60 MPH	



NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

FOR -Y5B- PROFILE SEE SHT. 159

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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ROW REVISION - 06-05-2020 - PARCELS 38 AND 44 REVISED SPIRALS TO CHORDS FROM -Y5B- 16+34.65 TO 17+50.00 LT AND RT
ROW REVISION - 08-11-2020 - PARCEL 38 REVISED CA
ROW REVISION - 08-11-2020 - PARCEL 44 REVISED CA

8/17/99

8/24/2020
R:\Roadway\Proj\Plan_Sheets\SEC 1 PLAN SHEETS\I-5986A_Rdy_psh71.dgn

TIP PROJECT: I-5986A

CONTRACT: C204283

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

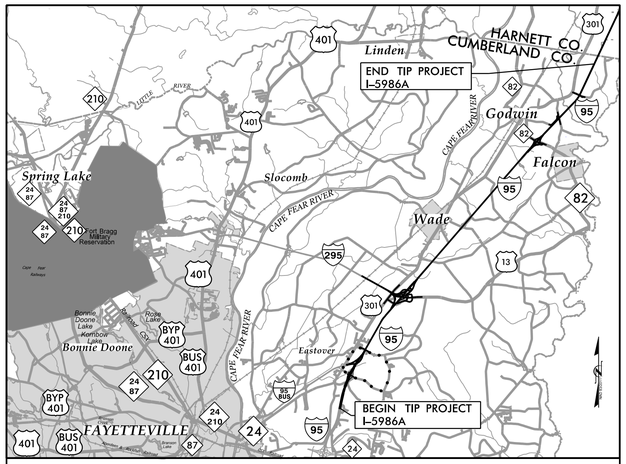
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5986A	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
47532.2.2		R/W
47532.3.2	NHP-0095(057)	PE, UTILITIES, CON

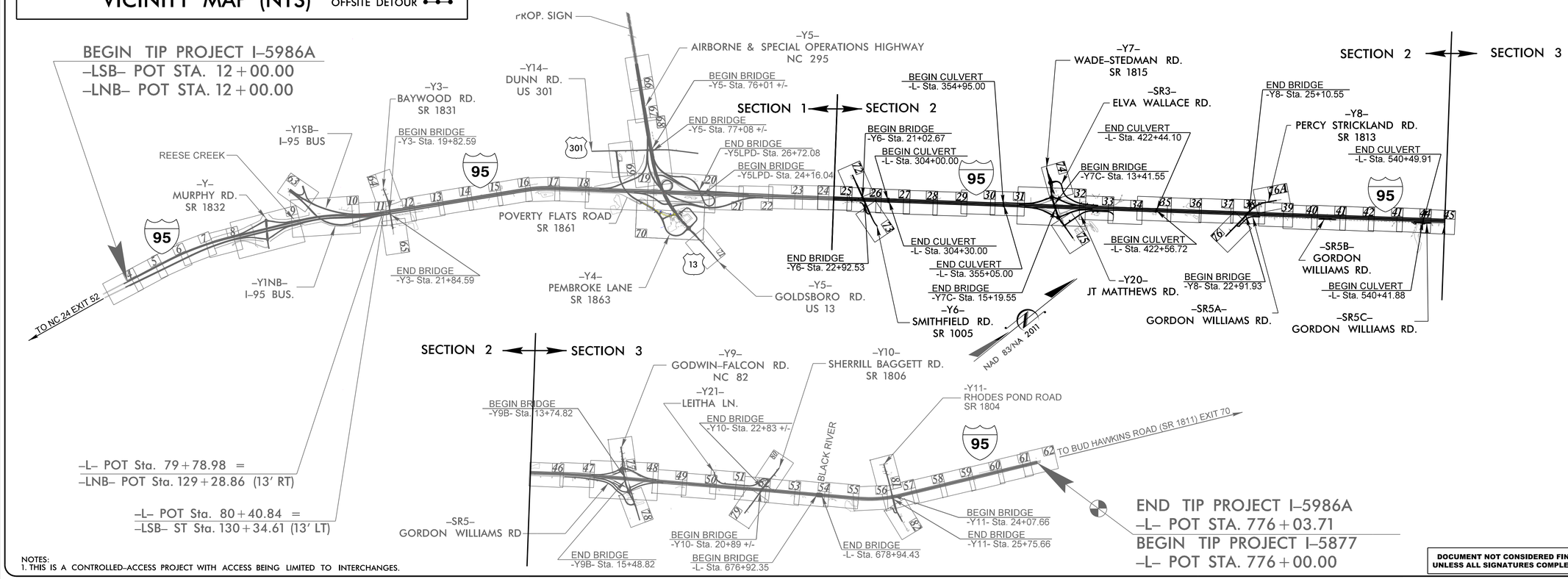
CUMBERLAND COUNTY

LOCATION: I-95 WIDENING FROM SOUTH OF SR 1832 (MURPHY ROAD- EXIT 55) TO SOUTH OF SR 1811 (BUD HAWKINS ROAD-EXIT 70)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, LIGHTING, SIGNING, ITS, CULVERTS & STRUCTURES



VICINITY MAP (NTS) OFFSITE DETOUR



NOTES:
1. THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

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 2018 = 56,700
ADT 2040 = 73,800
K = 55%
D = 7%
T = 18% *
V = 75 MPH

FUNC CLASS: INTERSTATE
* (TTST 13% + DUALS 5%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT I-5986A.....15.368 MILES
LENGTH STRUCTURE TIP PROJECT I-5986A.....0.048 MILES
TOTAL LENGTH TIP PROJECT I-5986A.....15.416 MILES

NCDOT CONTACT

Michael Penney, PE
PROJECT ENGINEER - DESIGN-BUILD UNIT

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

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

S.T. WOOTEN

2018 STANDARD SPECIFICATIONS

LETTING DATE:
AUGUST 20, 2019

Michael T. Merritt, P.E.
PROJECT ENGINEER

Anthony A. Houser, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

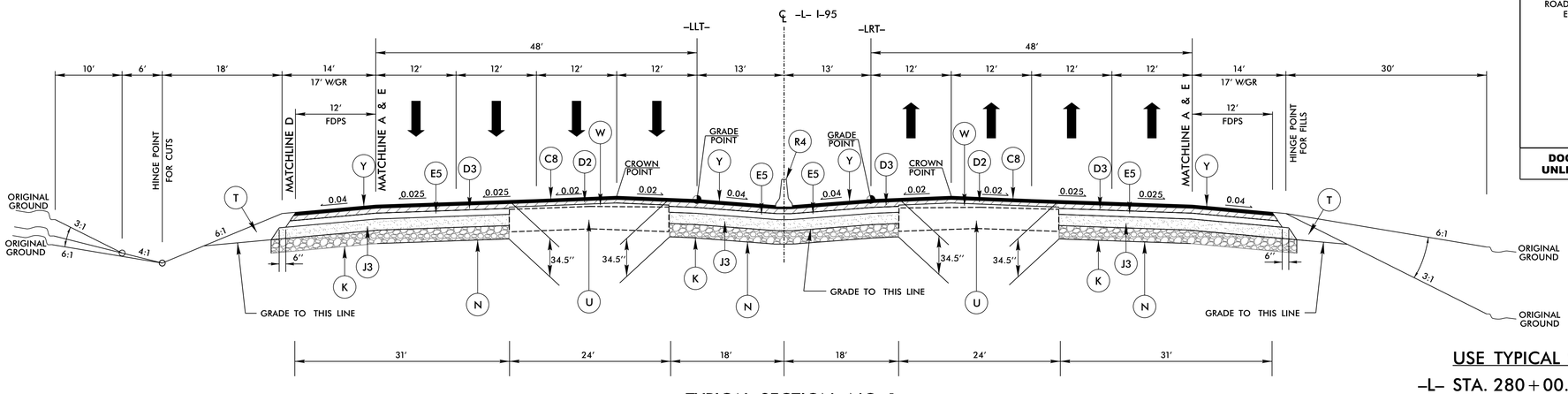
09/08/99

8/24/2020
R:\Roadway\Proj\I-5986A_Rdy_tsh_Sec2.dgn
lkitchings

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

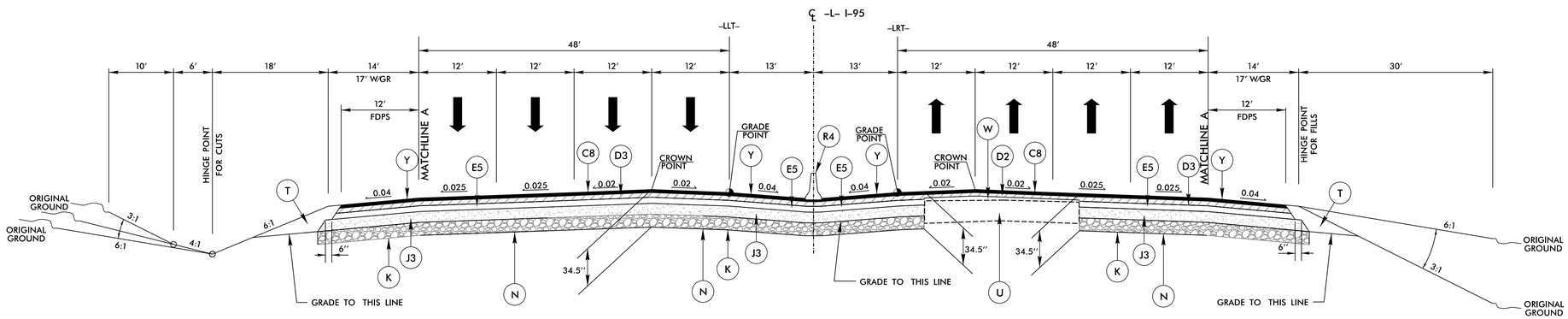
C2	3" TYPE S9.5B
C8	3" TYPE S9.5D
D1	2.5" TYPE I19.0C
D2	3" TYPE I19.0C
D3	4" TYPE I19.0C
E2	4" TYPE B25.0C
E5	5.5" TYPE B25.0C
J3	10'' ABC
K	12" TYPE 1 AGGREGATE SUBGRADE
N	GEOTEXTILE FOR PAVEMENT STABILIZATION
R3	SINGLE FACED CONCRETE BARRIER
R4	TYPE T CONCRETE BARRIER
T	EARTH
U	EXISTING PAVEMENT
W	WEDGING
Y	MILLED RUMBLE STRIPS



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

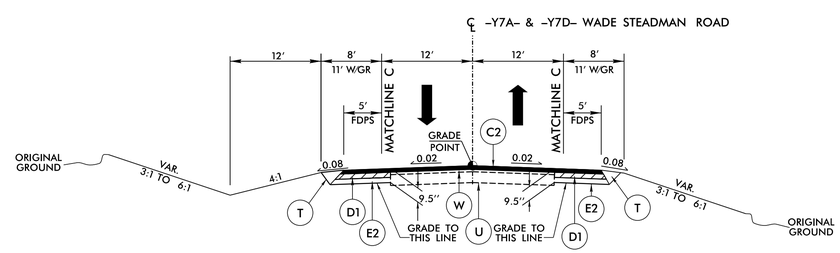
-L- STA. 280+00.00 TO STA. 349+00.00
-L- STA. 361+00.00 TO STA. 550+00.00



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

-L- STA. 349+00.00 TO STA. 361+00.00



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-Y7A- STA. 12+35.00 TO STA. 15+50.00
-Y7D- STA. 14+42.33 TO STA. 16+25.00

NOTES:

SEE PLANS FOR LOCATION OF AUXILARY LANES, TURN LANES, TAPERS, AND CONCRETE ISLANDS.
PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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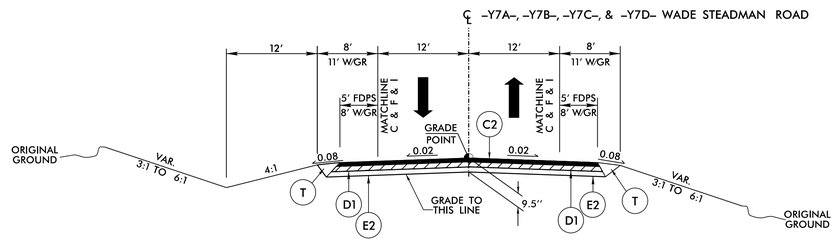
R:\Roadway\Proj\I5986A_Rdy_typ_sec2.dgn

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

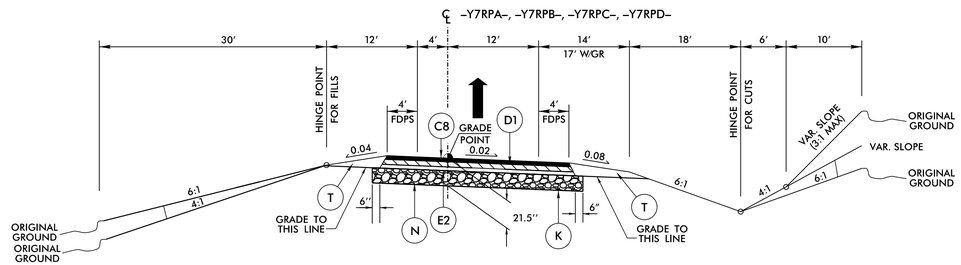
C2	3" TYPE S9.5B
C8	3" TYPE S9.5D
D1	2.5" TYPE I19.0C
D3	4" TYPE I19.0C
E2	4" TYPE B25.0C
J1	6" ABC
K	12" TYPE 1 AGGREGATE SUBGRADE
N	GEOTEXTILE FOR PAVEMENT STABILIZATION
R	9" X 18" CURB
R1	1'-6" C&G
R7	12" CONCRETE TRUCK APRON WITH WIRE MESH
R8	12" CONCRETE TRUCK APRON
R9	4" CONCRETE COVER
T	EARTH



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4
–Y7A– STA. 15+50.00 TO STA. 16+15.65
–Y7B– STA. 10+71.70 TO STA. 15+68.81
*–Y7C– STA. 10+71.70 TO STA. 13+41.55 (BEGIN BRIDGE)
*–Y7C– STA. 15+19.55 (END BRIDGE) TO STA. 18+60.38
–Y7D– STA. 10+71.70 TO STA. 14+42.33

PAVE TO THE FACE OF GUARDRAIL
*USE 4:1 OR FLATTER INSIDE INTERCHANGE AREA

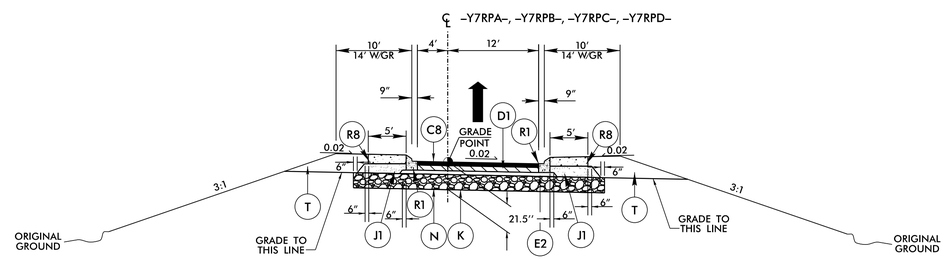


TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5
–Y7RPA– STA. 10+00.00 TO STA. 23+30.00
–Y7RPC– STA. 10+00.00 TO STA. 23+62.06

USE REVERSE TYPICAL AND LANE ARROW
–Y7RPB– STA. 10+00.00 TO STA. 23+18.00
–Y7RPD– STA. 10+00.00 TO STA. 23+92.00

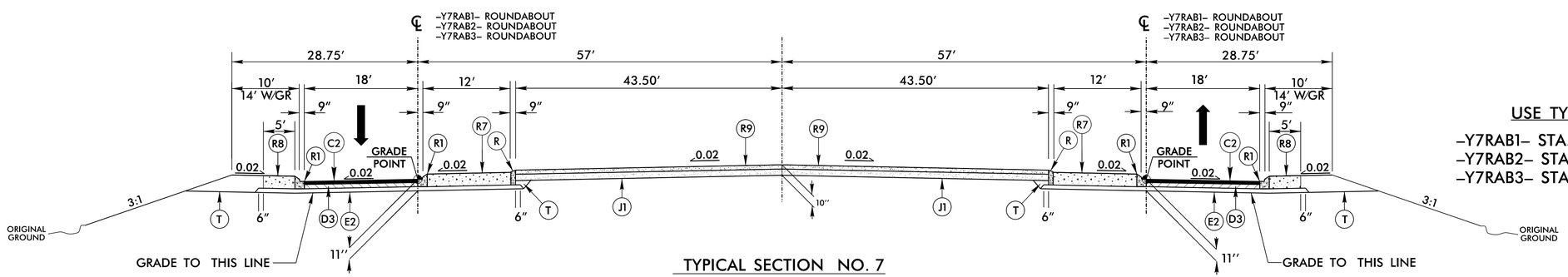
NOTE: USE –L– PAVEMENT DESIGN
IN THE FOLLOWING LOCATIONS:
–Y7RPA– STA. 10+00.00 TO STA. 14+60.92
–Y7RPB– STA. 10+00.00 TO STA. 14+95.59
–Y7RPC– STA. 10+00.00 TO STA. 14+54.98
–Y7RPD– STA. 10+00.00 TO STA. 14+70.53



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6
–Y7RPA– STA. 23+30.00 TO STA. 24+43.85
–Y7RPC– STA. 23+62.06 TO STA. 24+92.32

USE REVERSE TYPICAL AND LANE ARROW
–Y7RPB– STA. 23+18.00 TO STA. 24+32.14
–Y7RPD– STA. 23+92.00 TO STA. 25+06.13



TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7
–Y7RAB1– STA. 10+00.00 TO STA. 13+58.14
–Y7RAB2– STA. 10+00.00 TO STA. 13+58.14
–Y7RAB3– STA. 10+00.00 TO STA. 13+58.14

NOTES:
SEE PLANS FOR LOCATION OF AUXILARY LANES, TURN LANES, TAPERS, AND CONCRETE ISLANDS.
*4:1 MAXIMUM SLOPES WITHIN INTERCHANGES.
PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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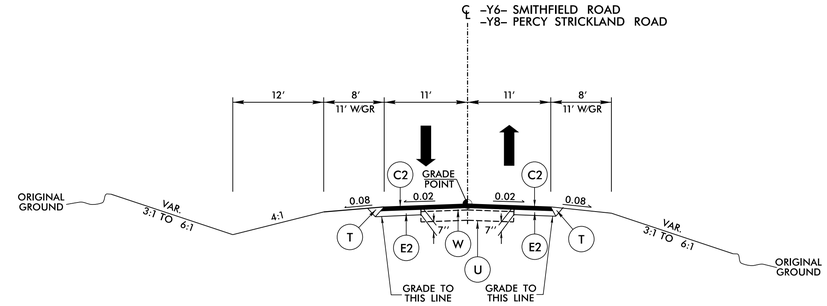
8/24/2020
R:\Roadway\Proj\I5986A_Rdy_typ_sec2.dgn

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

C2	3" TYPE S9.5B
E2	4" TYPE B25.0C
J2	8" ABC
T	EARTH
U	EXISTING PAVEMENT
W	WEDGING

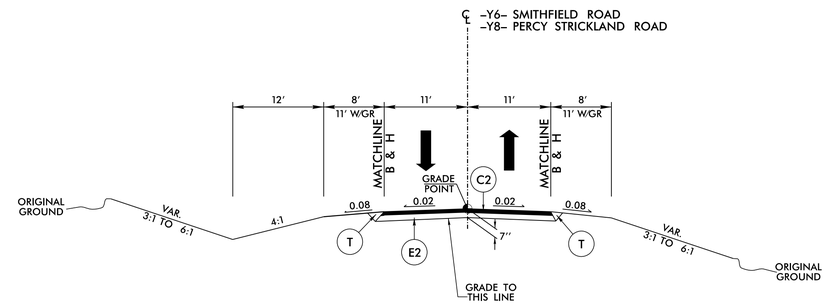


TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8

–Y6– STA. 11+00.00 TO STA. 11+82.74
–Y6– STA. 30+56.54 TO STA. 31+50.00
–Y8– STA. 11+10.00 TO STA. 15+75.00
–Y8– STA. 33+75.21 TO STA. 36+00.00

PAVE TO THE FACE OF GUARDRAIL



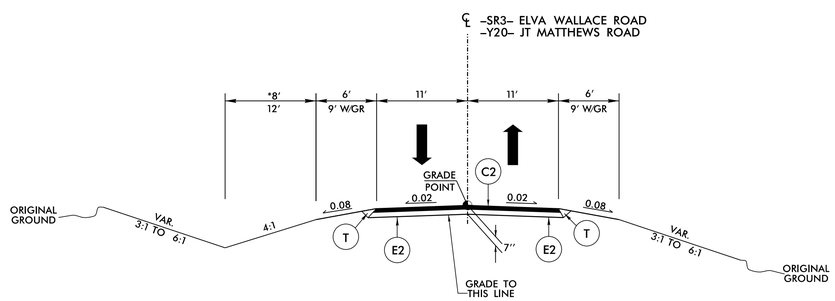
TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9

–Y6– STA. 11+82.74 TO STA. 21+02.67 (BEGIN BRIDGE)
–Y6– STA. 22+92.67 (END BRIDGE) TO STA. 30+56.54

–Y8– STA. 15+75.00 TO STA. 22+91.93 (BEGIN BRIDGE)
–Y8– STA. 25+10.55 (END BRIDGE) TO STA. 33+75.21

PAVE TO THE FACE OF GUARDRAIL

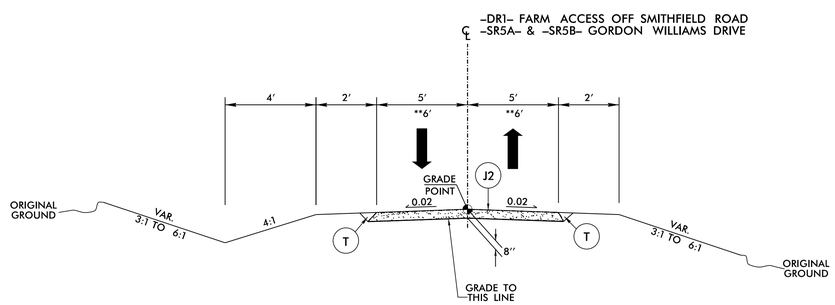


TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10

–SR3– STA. 10+71.70 TO STA. 36+00.00
*–Y20– STA. 10+12.00 TO STA. 33+42.00

PAVE TO THE FACE OF GUARDRAIL



TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 11

–DR1– STA. 10+27.00 TO STA. 17+35.53
** –DR4– STA. 10+00.00 TO STA. 19+60.00
** –SR5A– STA. 10+11.00 TO STA. 20+60.00
** –SR5B– STA. 12+40.00 TO STA. 17+50.00

NOTES:

SEE PLANS FOR LOCATION OF AUXILARY LANES, TURN LANES, TAPERS, AND CONCRETE ISLANDS.
PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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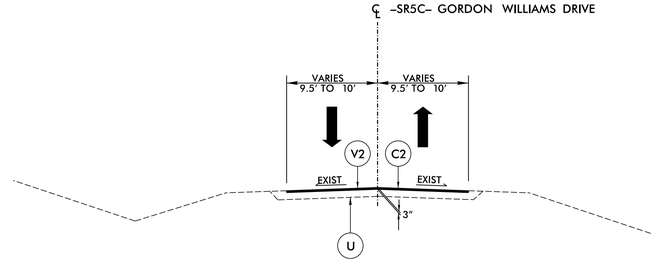
C2	3" TYPE S9.5B
C10	2" TYPE S9.5C
E2	4" B25.0C
T	EARTH
U	EXISTING PAVEMENT
V2	3" MILLING
U	EXISTING PAVEMENT

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-5
R/W SHEET NO.	

TEMPORARY PAVEMENT ENGINEER	ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER

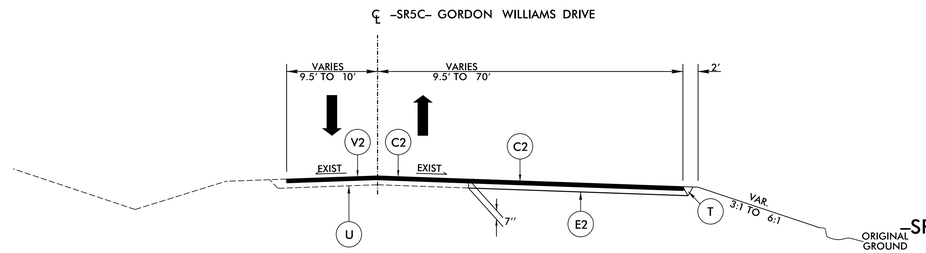
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12

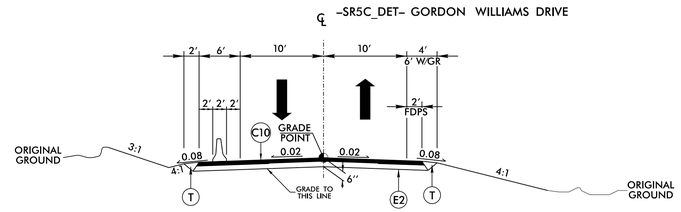
-SR5C- STA. 11+43.00 TO STA. 16+00.00



TYPICAL SECTION NO. 13

USE TYPICAL SECTION NO. 13

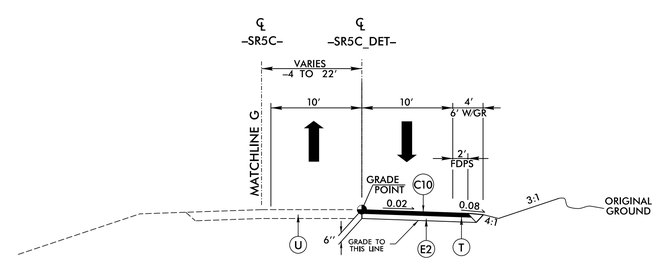
-SR5C- STA. 10+14.25 TO STA. 11+43.00



TYPICAL SECTION NO. 14

USE TYPICAL SECTION NO. 14

-SR5C_DET- STA. 12+58.03 TO STA. 14+67.87



TYPICAL SECTION NO. 15

USE TYPICAL SECTION NO. 15

-SR5C_DET- STA. 12+15.34 TO STA. 12+58.03
-SR5C_DET- STA. 14+67.87 TO STA. 15+75.60

NOTES:

SEE PLANS FOR LOCATION OF AUXILARY LANES, TURN LANES, TAPERS, AND CONCRETE ISLANDS.
PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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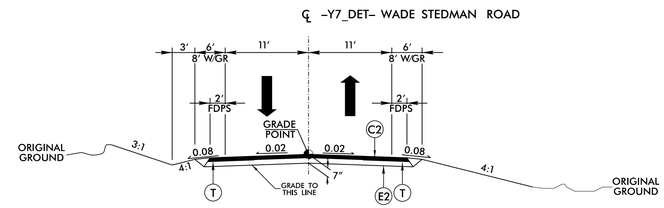
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-6
R/W SHEET NO.	

TEMPORARY PAVEMENT ENGINEER	ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER

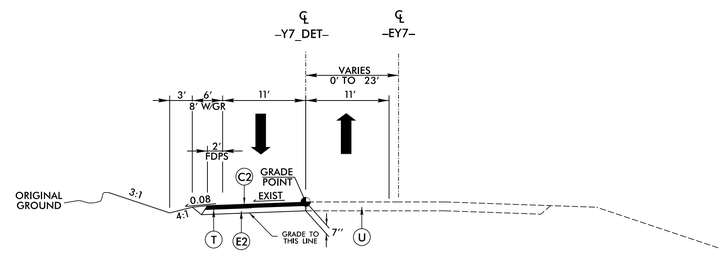
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

C2	3" TYPE S9.5B
C8	3" TYPE S9.5D
C10	2" TYPE S9.5C
D3	4" TYPE I19.0C
E2	4" B25.0C
E5	5.5" TYPE B25.0C
J3	10" ABC
K	12" TYPE 1 AGGREGATE SUBGRADE
N	GEOTEXTILE FOR PAVEMENT STABILIZATION
R1	1'-6" CURB AND GUTTER
R2	2'-6" CURB AND GUTTER
R5	SHOULDER BERM GUTTER
R8	12" TRUCK APRON
T	EARTH
U	EXISTING PAVEMENT
Y	MILLED RUMBLE STRIPS



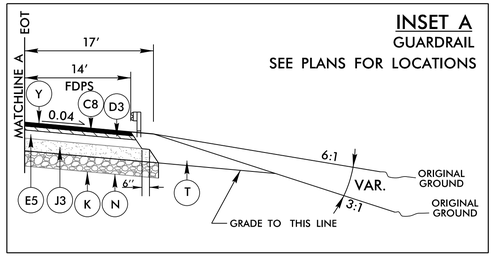
TYPICAL SECTION NO. 16

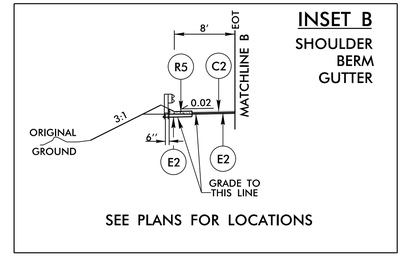
USE TYPICAL SECTION NO. 16
-Y7_DET- STA. 11+13.24 TO STA. 17+94.02

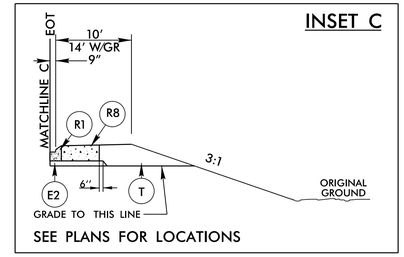


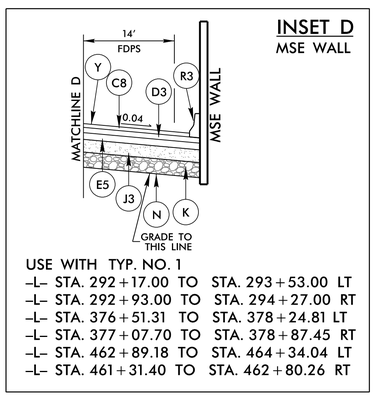
TYPICAL SECTION NO. 17

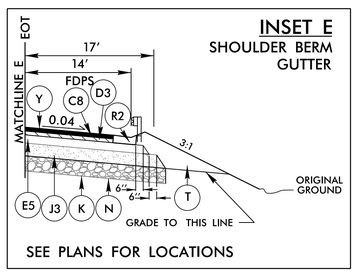
USE TYPICAL SECTION NO. 17
-Y7_DET- STA. 10+00.00 TO STA. 11+13.24
-Y7_DET- STA. 17+94.02 TO STA. 19+13.74

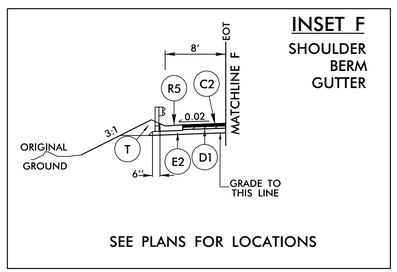


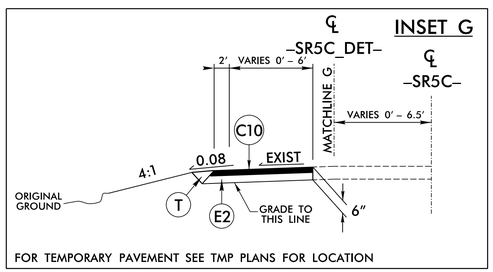


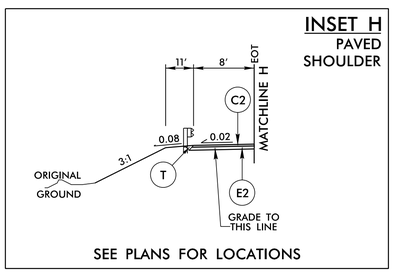


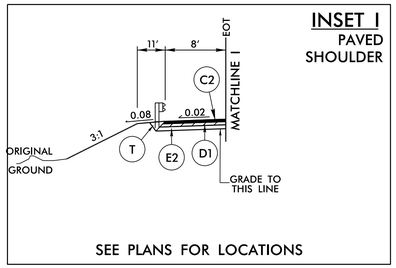












NOTES:
PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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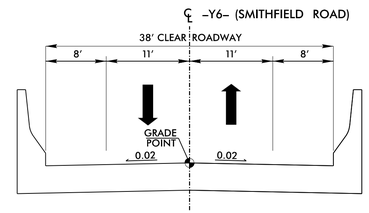
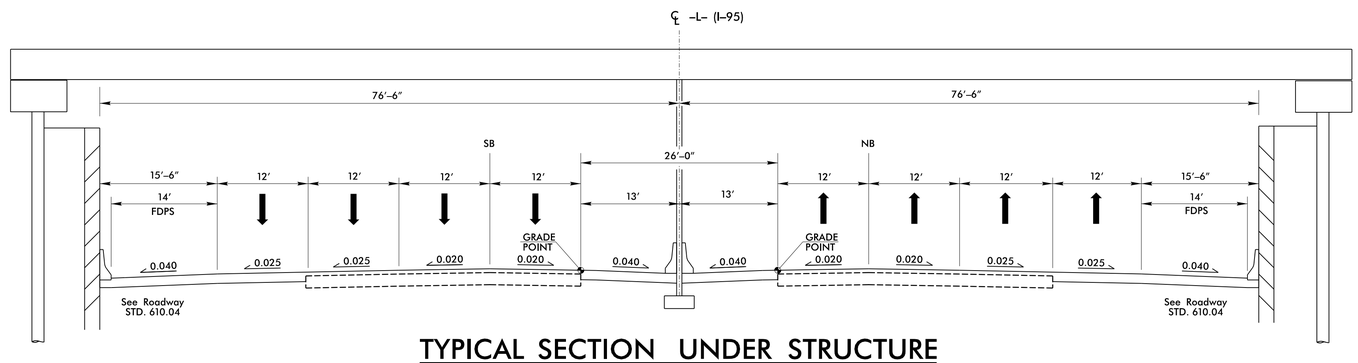
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BRIDGE AT –Y6– STATION 21+97.67 OVER –L– STATION 293+22.24



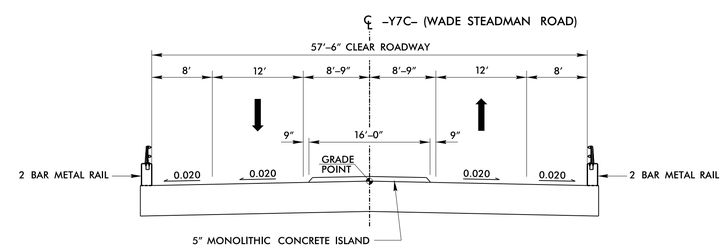
STRUCTURE TYPICAL SECTION



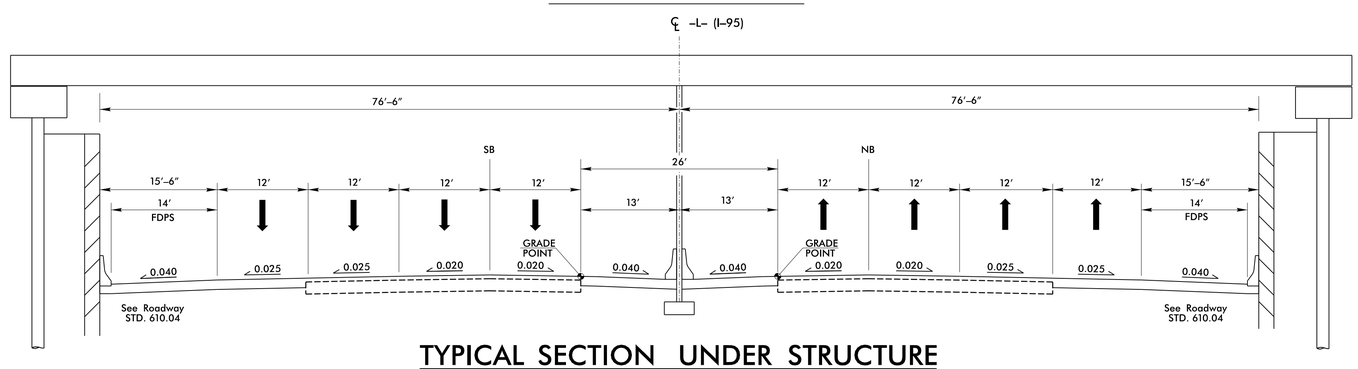
TYPICAL SECTION UNDER STRUCTURE

NOTES:
1. SEE SHEET 26 FOR PLAN VIEW.
2. SEE SHEET 174 FOR PROFILE VIEW.

BRIDGE AT –Y7C– STATION 14+30.55 OVER –L– STATION 377+68.88



STRUCTURE TYPICAL SECTION



TYPICAL SECTION UNDER STRUCTURE

NOTES:
1. SEE SHEET 32 FOR PLAN VIEW.
2. SEE SHEET 175 FOR PROFILE VIEW.

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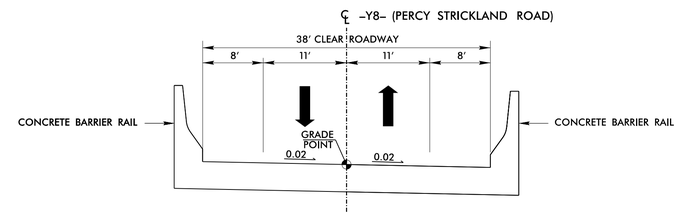
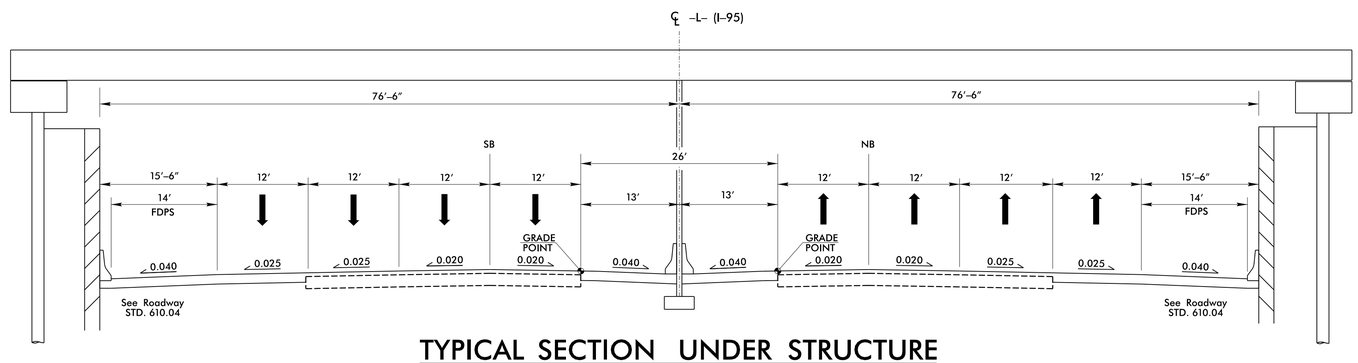
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BRIDGE AT –Y8– STATION 24+01.24 OVER –L– STATION 462+84.22



STRUCTURE TYPICAL SECTION



TYPICAL SECTION UNDER STRUCTURE

NOTES:
1. SEE SHEET 38 FOR PLAN VIEW.
2. SEE SHEET 180 FOR PROFILE VIEW.

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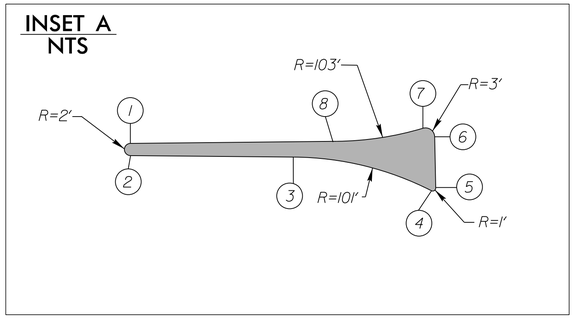
–Y7RAB1– ROUNDABOUT LAYOUT

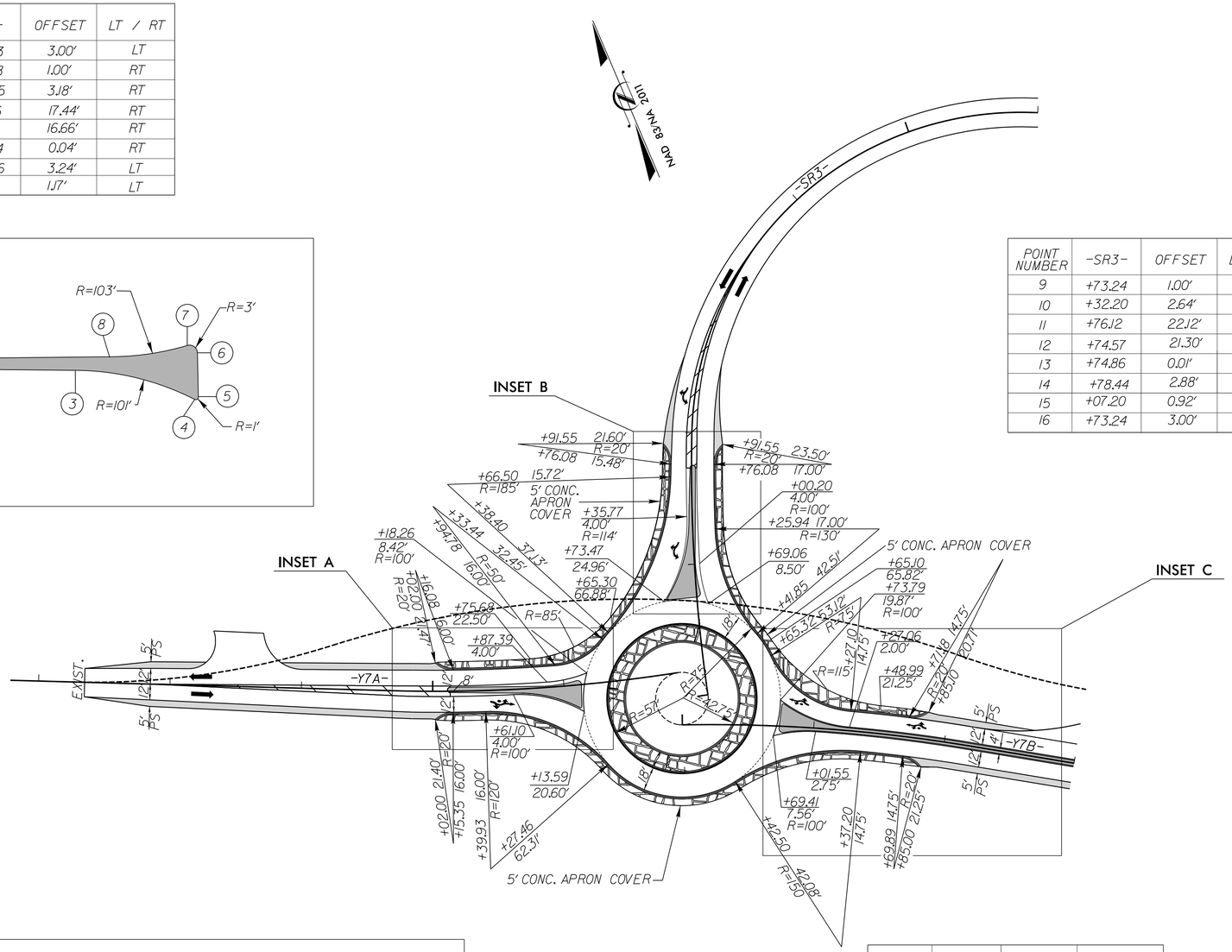
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2B-4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

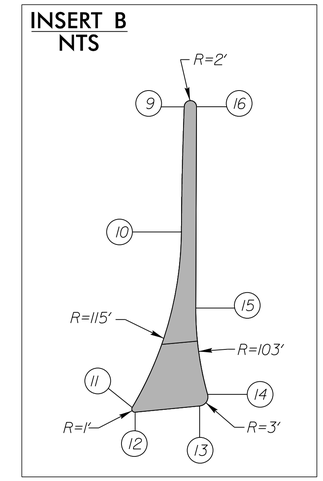
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

POINT NUMBER	–Y7A–	OFFSET	LT / RT
1	+13.23	3.00′	LT
2	+13.28	1.00′	RT
3	+66.95	3.18′	RT
4	+10.66	17.44′	RT
5	+12.17	16.66′	RT
6	+13.34	0.04′	RT
7	+09.76	3.24′	LT
8	+81.16	1.17′	LT

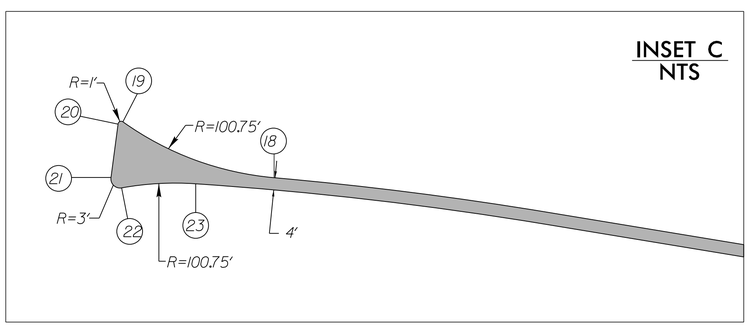
POINT NUMBER	–SR3–	OFFSET	LT / RT
9	+73.24	1.00′	LT
10	+32.20	2.64′	LT
11	+76.12	22.12′	LT
12	+74.57	21.30′	LT
13	+74.86	0.01′	LT
14	+78.44	2.88′	RT
15	+07.20	0.92′	RT
16	+73.24	3.00′	RT







POINT NUMBER	–Y7B–	OFFSET	LT / RT
18	+27.06	2.00′	LT
19	+76.67	16.99′	LT
20	+75.15	16.23′	LT
21	+73.60	1.52′	RT
22	+77.25	4.71′	RT
23	+01.55	2.00′	RT



MONOLITHIC ISLAND

CONCRETE APRON COVER

FOR –Y7A SEC2– PLAN SEE SHT. 74
FOR –Y7B_SEC2– PLAN SEE SHT. 74
FOR –SR3_SEC2– PLAN SEE SHT. 74
FOR –Y7RAB1– PLAN SEE SHT. 74
FOR –Y7A– PROFILE SEE SHT. 175
FOR –Y7B– PROFILE SEE SHT. 175
FOR –SR3– PROFILE SEE SHT. 182
FOR –Y7RAB1– PRO SEE SHT. 176

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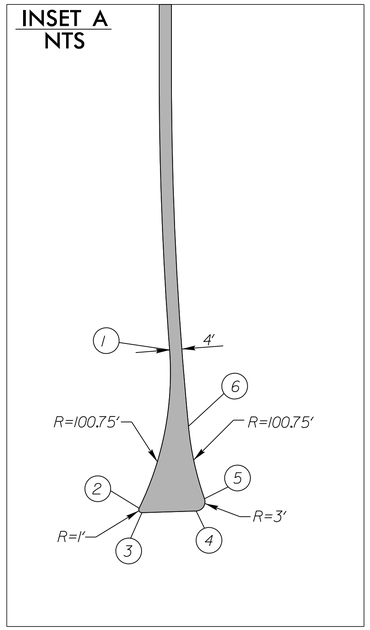
–Y7RAB2– ROUNDABOUT LAYOUT

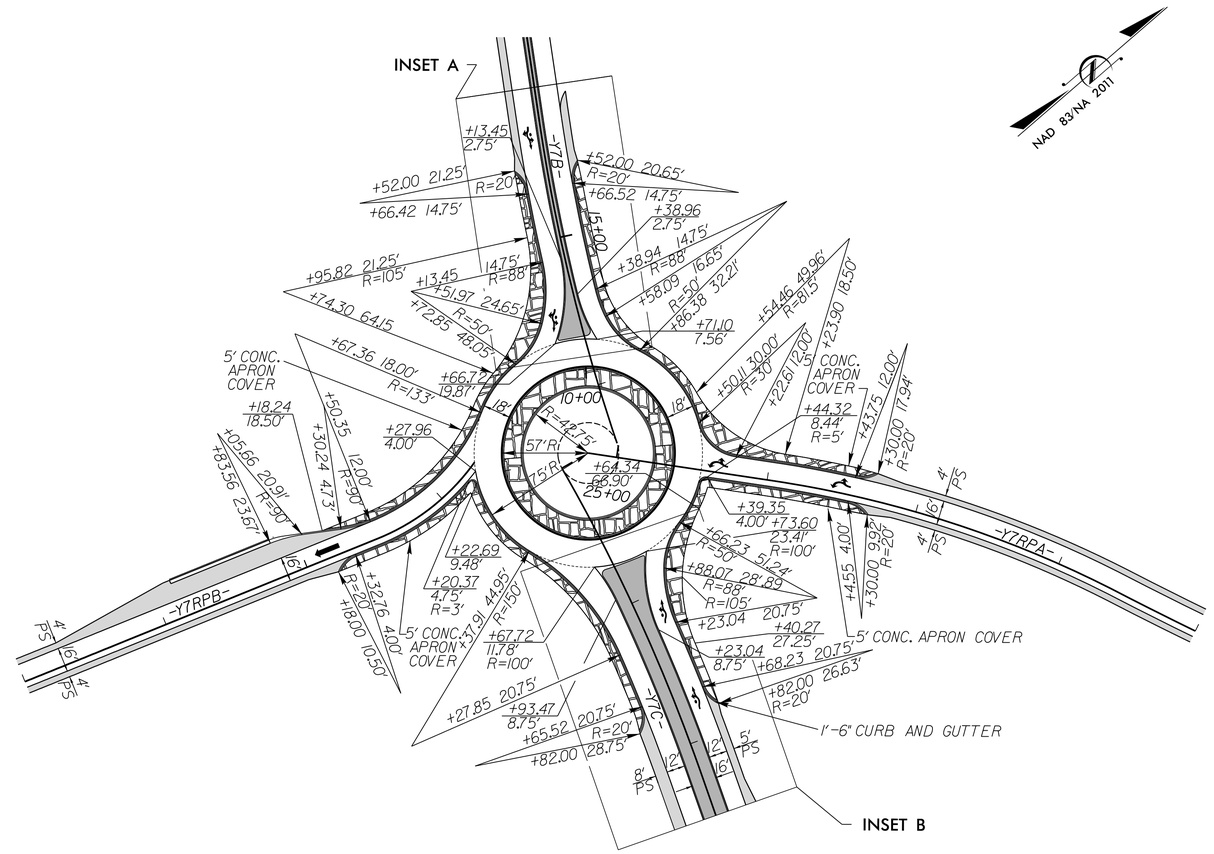
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2B-5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

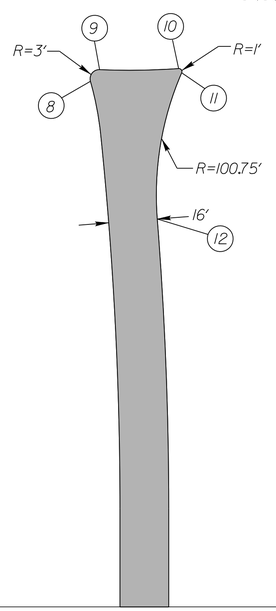
INSET A
NTS



POINT NUMBER	–Y7B–	OFFSET	LT / RT
1	+13.45	2.00'	RT
2	+63.84	16.99'	RT
3	+65.36	16.23'	RT
4	+66.91	1.52'	LT
5	+63.26	4.71'	LT
6	+38.96	2.00'	LT



INSET B
NTS



POINT NUMBER	–Y7C–	OFFSET	LT / RT
8	+75.85	9.40'	RT
9	+72.39	5.96'	RT
10	+75.12	19.86'	LT
11	+76.60	20.67'	LT
12	+23.04	8.00'	LT

MONOLITHIC ISLAND
CONCRETE APRON COVER

FOR –Y7B– PLAN SEE SHT. 32
FOR –Y7C– PLAN SEE SHT. 32
FOR –Y7RAB2– PLAN SEE SHT. 32
FOR –Y7B– PROFILE SEE SHT. 175
FOR –Y7C– PROFILE SEE SHT. 175
FOR –Y7RAB2– PROFILE SEE SHT. 176

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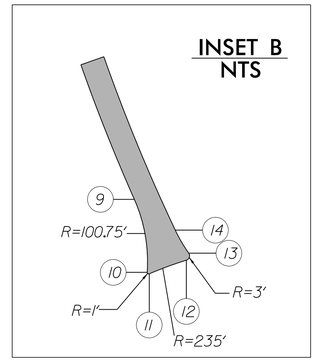
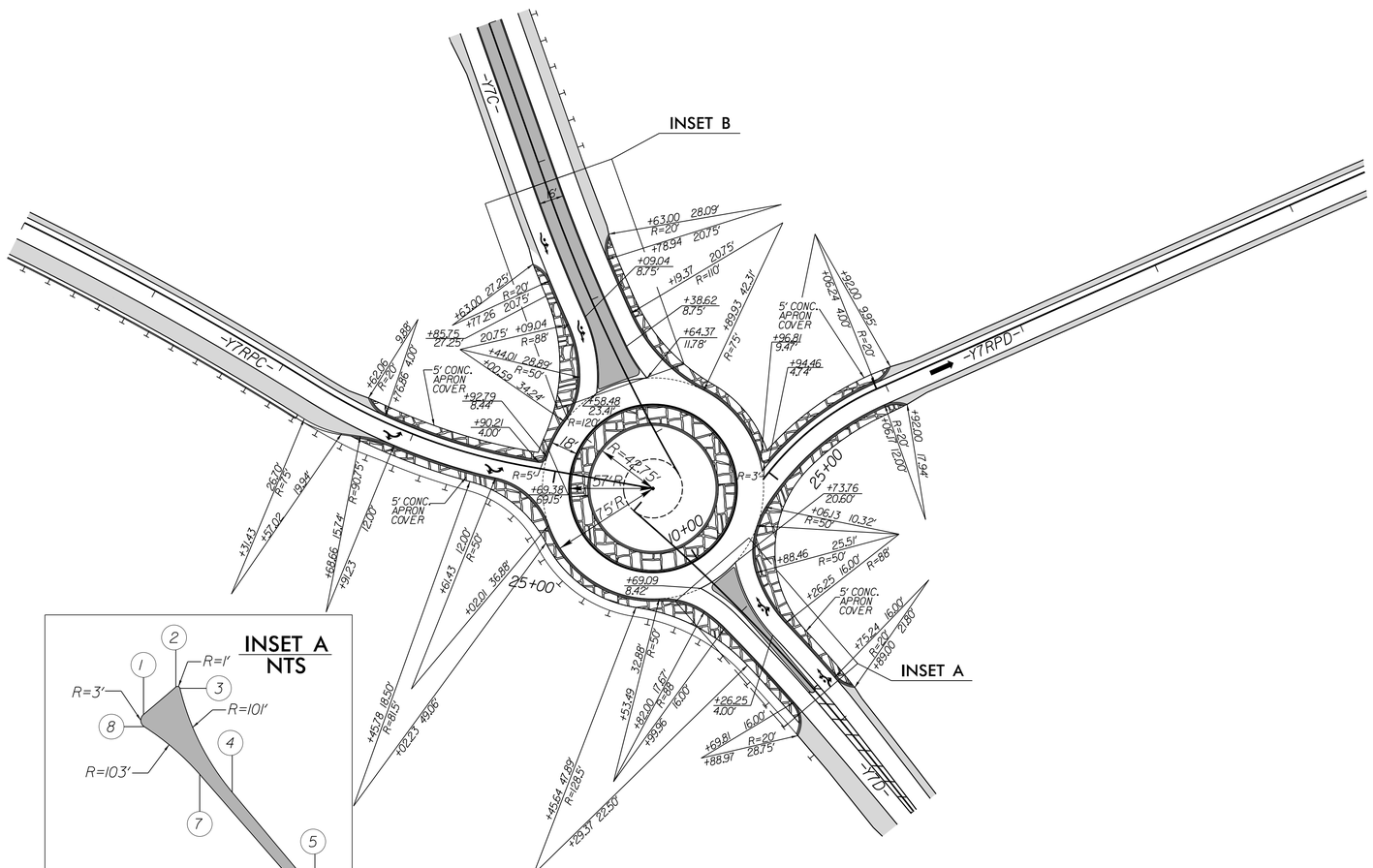
–Y7RAB3– ROUNDABOUT LAYOUT

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2B-6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

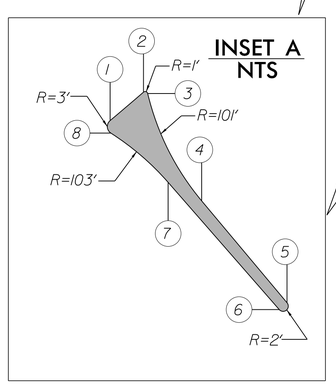
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

POINT NUMBER	–Y7C–	OFFSET	LT / RT
9	+09.04	8.00'	RT
10	+55.48	20.67'	RT
11	+56.96	19.86'	RT
12	+59.69	5.96'	LT
13	+56.23	9.40'	LT
14	+38.62	8.00'	LT





POINT NUMBER	–Y7D–	OFFSET	LT / RT
1	+73.47	0.00'	LT
2	+75.04	16.76'	LT
3	+76.55	17.52'	LT
4	+20.30	3.19'	LT
5	+71.56	1.00'	LT
6	+71.47	3.00'	RT
7	+06.19	1.17'	RT
8	+77.05	3.35'	RT



MONOLITHIC ISLAND

CONCRETE APRON COVER

FOR –Y7C– PLAN SEE SHT. 32
FOR –Y7D– PLAN SEE SHT. 32
FOR –Y7RAB3– PLAN SEE SHT. 32
FOR –Y7C– PROFILE SEE SHT. 175
FOR –Y7D– PROFILE SEE SHT. 176
FOR –Y7RAB3– PROFILE SEE SHT. 176

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8/24/2020
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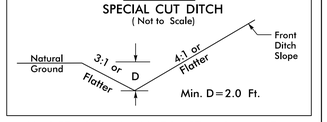
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2B-7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y7_DET-

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



-Y7_DET- STA. 10+00 TO STA. 10+77 LT
-Y7_DET- STA. 11+77 TO STA. 12+80 LT
-Y7_DET- STA. 15+50 TO STA. 17+86 LT
-Y7DET- STA. 12+80 TO STA. 14+15 RT
-Y7_DET- STA. 14+86 TO STA. 16+68 RT

A TEMPORARY ALIGNMENT SUBMITTAL HAS BEEN SUBMITTED SEPARATELY TO NCDOT FOR REVIEW.

BEGIN CONSTRUCTION
-Y7_DET- PC Sta. 10+00.00

-SR3- POC Sta.11+51.50
TIE TO PROPOSED -SR3-

-Y7_DET- PRC Sta. 12+00.85

-Y7_DET- PRC Sta. 16+88.24

END CONSTRUCTION
-Y7_DET- PT Sta. 19+13.74

BARNES JR, LUTHER CURTIS
DB 7616 PG 736
PB 117 PG 33

BARNES JR, LUTHER CURTIS
DB 7071 PG 797
PB 117 PG 33

DUKE ENERGY PROGRESS INC
DB 7616 PG 736
PB 117 PG 33

SHIVA REAL ESTATE LLC
DB 9015 PG 281

BANSAL, SHIVRAJ KUMAR
DB 8365 PG 296

2 TONS CL B RIP RAP
7 SY GEOTEXTILE

SPECIAL CUT DITCH
SEE DETAIL B

UTILIZE TEMP. 15" PIPE WHEN BUILDING UP Y7 ROUNDABOUT TO AVOID TRAPPING WATER. PLUG & FILL UPON REMOVAL OF DETOUR

JB w/Slab Lid

REMOVE 10'

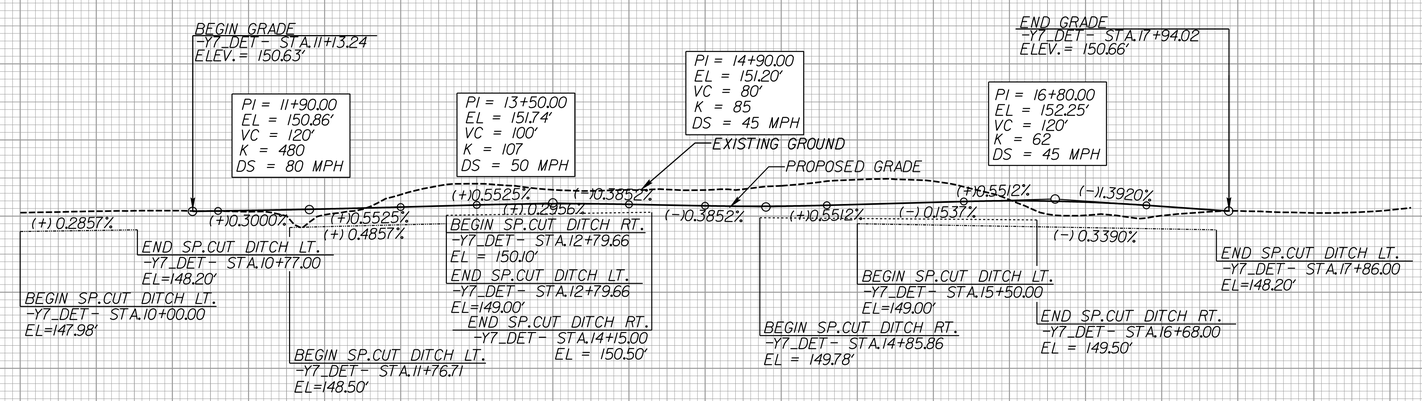
RETAIN SYSTEM

NAD 83/NA 2011

-Y7_DET-		
PI Sta 11+01.37	PI Sta 14+53.50	PI Sta 18+02.33
△ = 19° 10' 46.8" (LT)	△ = 37° 14' 01.2" (RT)	△ = 21° 32' 01.3" (LT)
D = 9° 32' 57.5"	D = 7° 38' 22.0"	D = 9° 32' 57.5"
L = 200.85'	L = 487.39'	L = 225.50'
T = 101.37'	T = 252.65'	T = 114.10'
R = 600.00'	R = 750.00'	R = 600.00'
SE = 0.04	SE = 0.04	SE = 0.04
DS = 40 MPH	DS = 40 MPH	DS = 40 MPH

NOTE: FORCE MAIN SEWER LINE NEEDS TO BE RELOCATED PRIOR TO DETOUR CONSTRUCTION TO AVOID CONFLICTS WITH TEMPORARY DRAINAGE.

FOR R/W ADN EASEMENT STATIONS AND OFFSET SEE SHT.74



LEFT DITCH
RIGHT DITCH

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8/24/2020
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-SR5C_DET-

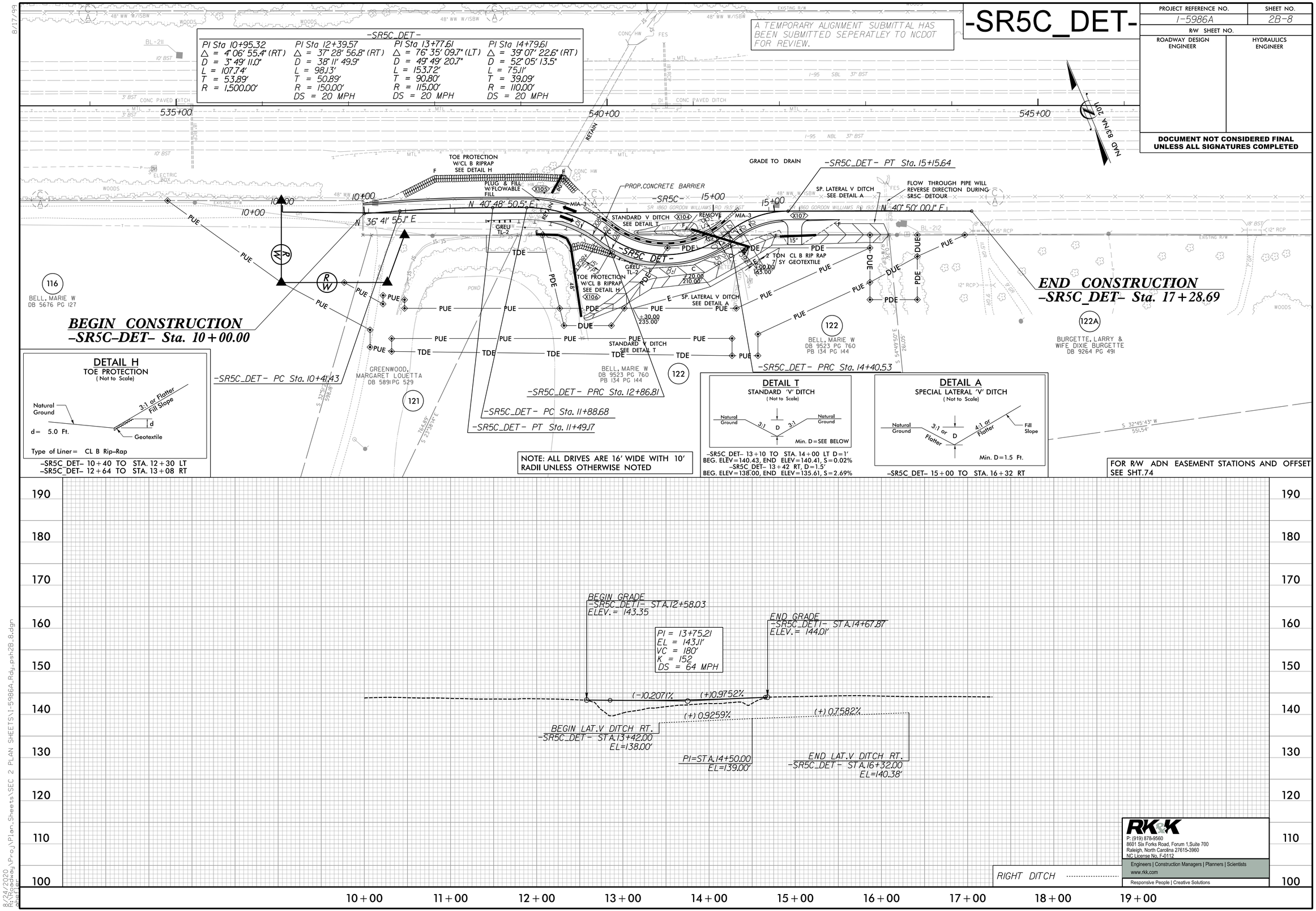
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2B-8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

A TEMPORARY ALIGNMENT SUBMITTAL HAS BEEN SUBMITTED SEPERATLEY TO NCDOT FOR REVIEW.

-SR5C_DET-

PI Sta 10+95.32	PI Sta 12+39.57	PI Sta 13+77.61	PI Sta 14+79.61
△ = 4° 06' 55.4" (RT)	△ = 37° 28' 56.8" (RT)	△ = 76° 35' 09.7" (LT)	△ = 39° 07' 22.6" (RT)
D = 3° 49' 11.0"	D = 38° 11' 49.9"	D = 49° 49' 20.7"	D = 52° 05' 13.5"
L = 107.74'	L = 98.13'	L = 153.72'	L = 75.11'
T = 53.89'	T = 50.89'	T = 90.80'	T = 39.09'
R = 1,500.00'	R = 150.00'	R = 115.00'	R = 110.00'
	DS = 20 MPH	DS = 20 MPH	DS = 20 MPH



DETAIL H
TOE PROTECTION
(Not to Scale)

Type of Liner= CL B Rip-Rap

-SR5C_DET- 10+40 TO STA. 12+30 LT
-SR5C_DET- 12+64 TO STA. 13+08 RT

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

-SR5C_DET- 13+10 TO STA. 14+00 LT D=1'
BEG. ELEV=140.43, END ELEV=140.41, S=0.02%
-SR5C_DET- 13+42 RT, D=1.5'
BEG. ELEV=138.00, END ELEV=135.61, S=2.69%

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

-SR5C_DET- 15+00 TO STA. 16+32 RT

NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

FOR R/W ADN EASEMENT STATIONS AND OFFSET SEE SHT.74

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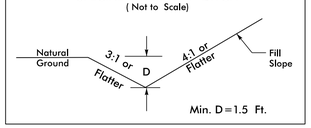
R:\Roadway\Proj\Plan_Sheets\SEC 2 PLAN SHEETS\I-5986A_Rdy_psh28_8.dgn

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2D-3
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

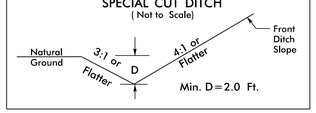
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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



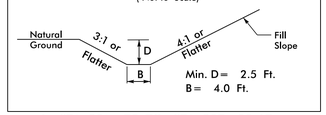
–L– STA. 333+00 TO STA. 340+50 RT
–L– STA. 341+00 TO STA. 345+00 LT
–L– STA. 499+65 TO STA. 500+00 LT
–SR5A– STA. 10+50 TO STA. 11+77 LT
–Y6– STA. 28+00 TO STA. 28+50 LT
–Y7A– STA. 15+00 TO STA. 16+00 LT
–Y8– STA. 16+00 TO STA. 16+50 RT
–Y8– STA. 29+50 TO STA. 34+50 RT

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



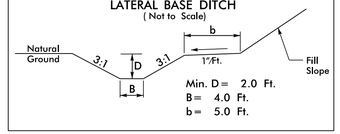
–L– STA. 280+00 TO STA. 280+50 LT
–L– STA. 313+50 TO STA. 320+00 RT
–L– STA. 322+00 TO STA. 324+00 RT
–L– STA. 379+00 TO STA. 381+00 LT
–L– STA. 379+50 TO STA. 385+00 RT
–L– STA. 401+00 TO STA. 403+00 LT
–L– STA. 401+50 TO STA. 402+50 RT
–L– STA. 407+50 TO STA. 409+00 RT
–L– STA. 406+50 TO STA. 421+50 LT
–L– STA. 448+50 TO STA. 453+50 LT
–L– STA. 474+50 TO STA. 485+00 LT
–L– STA. 475+00 TO STA. 489+50 RT
–L– STA. 500+00 TO STA. 518+00 RT
–L– STA. 541+00 TO STA. 550+00 RT
–Y20– STA. 10+35 TO STA. 12+00 LT
–Y20– STA. 10+35 TO STA. 12+00 RT
–Y20– STA. 17+50 TO STA. 19+00 LT
–Y20– STA. 20+87.64 TO STA. 22+44.57 RT
–Y6– STA. 11+00 TO STA. 13+50 LT
–Y6– STA. 11+00 TO STA. 13+00 RT
–Y6– STA. 29+50 TO STA. 32+00 LT
–Y6– STA. 29+00 TO STA. 32+00 RT
–Y7A– STA. 12+00 TO STA. 15+00 LT
–Y7A– STA. 12+00 TO STA. 14+50 RT
–Y7D– STA. 14+50 TO STA. 16+25 RT
–Y7RPA– STA. 11+40.19 TO STA. 15+43.19 RT
–Y7RPC– STA. 19+50 TO STA. 20+50 LT
–Y7RPD– STA. 11+84.98 TO STA. 17+96.54 LT

DETAIL C
SPECIAL LATERAL BASE DITCH
(Not to Scale)



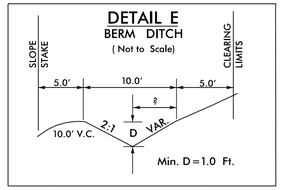
–L– STA. 306+75 TO STA. 307+00 LT
–L– STA. 339+00 TO STA. 341+00 LT
–L– STA. 422+20 TO STA. 427+50 RT
–L– STA. 496+50 TO STA. 499+65 LT
–L– STA. 504+50 TO STA. 508+50 LT
–L– STA. 529+50 TO STA. 538+77 LT
–L– STA. 541+75 TO STA. 550+50 LT
–L– STA. 425+58 TO STA. 435+00 LT
–L– STA. 440+50 TO STA. 448+50 LT
–L– STA. 510+00 TO STA. 513+00 LT
–L– STA. 539+70 TO STA. 540+58 LT
–SR3– STA. 32+78.79 TO STA. 34+17 LT
–Y8– STA. 33+50 TO STA. 36+00 LT

DETAIL D
LATERAL BASE DITCH
(Not to Scale)



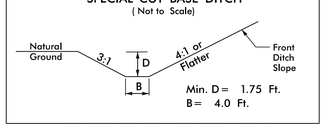
–L– STA. 280+50 TO STA. 282+50 LT
–L– STA. 296+50 TO STA. 301+00 LT
–L– STA. 316+50 TO STA. 327+50 LT
–L– STA. 327+50 TO STA. 336+00 LT
–L– STA. 300+50 TO STA. 302+30 RT
–L– STA. 357+79 TO STA. 364+00 RT
–L– STA. 370+00 TO STA. 370+50 LT
–L– STA. 372+00 TO STA. 375+50 LT
–L– STA. 405+46 TO STA. 407+50 RT
–L– STA. 470+50 TO STA. 474+50 LT
–L– STA. 500+00 TO STA. 504+50 LT
–Y7RPB– STA. 18+29 TO STA. 24+32.14 LT
–Y7B– STA. 14+72 TO STA. 15+71.74 RT
–Y7D– STA. 11+50 TO STA. 14+13 LT

DETAIL E
BERM DITCH
(Not to Scale)



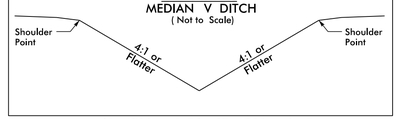
DETAIL NOT USED IN SECTION 2

DETAIL F
SPECIAL CUT BASE DITCH
(Not to Scale)



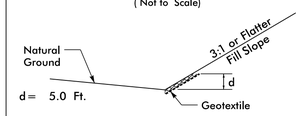
–L– STA. 282+50 TO STA. 288+50 LT
–L– STA. 307+00 TO STA. 316+50 LT
–L– STA. 296+50 TO STA. 300+50 RT
–L– STA. 307+50 TO STA. 308+50 RT
–L– STA. 336+00 TO STA. 339+00 LT
–L– STA. 361+00 TO STA. 362+00 LT
–L– STA. 364+00 TO STA. 364+50 RT
–L– STA. 370+50 TO STA. 372+00 LT
–L– STA. 371+50 TO STA. 372+50 RT
–L– STA. 453+50 TO STA. 461+50 LT
–L– STA. 465+00 TO STA. 470+50 LT
–L– STA. 438+00 TO STA. 460+00 RT
–L– STA. 435+00 TO STA. 440+50 LT
–L– STA. 493+00 TO STA. 496+50 LT
–Y7D– STA. 14+80 TO STA. 16+25 LT
–Y7RPB– STA. 10+18.97 TO STA. 18+29.27 LT
–Y7RPC– STA. 10+05.01 TO STA. 16+73.59 RT

DETAIL G
MEDIAN V DITCH
(Not to Scale)



–L– STA. 390+50 TO STA. 392+50 LT
–Y20– STA. 21+93.18 TO STA. 22+44.57 LT
–Y7RPA– STA. 10+40.05 TO STA. 11+40.19 RT
–Y7RPD– STA. 10+84.95 TO STA. 11+84.98 LT

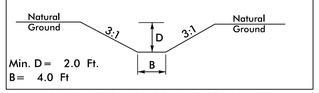
DETAIL H
TOE PROTECTION
(Not to Scale)



Type of Liner= CL B Rip–Rap

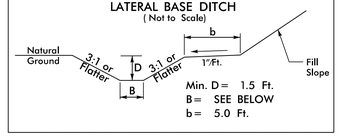
–L– STA. 300+78 TO STA. 303+84 LT
–L– STA. 423+10 TO STA. 425+20 LT
–L– STA. 508+50 TO STA. 509+52 LT
–L– STA. 522+75 TO STA. 525+40 LT
–L– STA. 435+00 TO STA. 437+00 RT
–SR3– STA. 34+16 TO STA. 35+78 LT
–Y7RPC– STA. 17+50 TO STA. 24+10 RT

DETAIL I
STANDARD BASE DITCH
(Not to Scale)



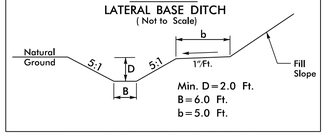
–L– STA. 307+38 RT, S=0.42%, L=12',
BEG EL=126.90', END EL=126.85'
–L– STA. 498+38 LT, S=0.02%, L=65',
BEG EL=169.73', END EL=169.72'
–SR3– STA. 23+79 LT, S=1.29%, L=35',
BEG EL=147.45', END EL=147.00'
–SR5A– STA. 17+00 LT, S=2.14%, L=65',
BEG EL=169.32', END EL=167.93'
–L– STA. 293+37 LT, S=0.30%, L=112',
BEG EL=135.23', END EL=134.89'
–Y7RPB– STA. 15+38 LT, S=0.00%, L=25',
BEG EL=136.50', END EL=136.50'

DETAIL J
LATERAL BASE DITCH
(Not to Scale)



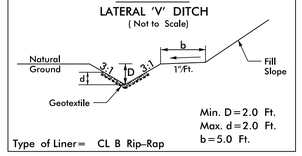
–L– STA. 340+50 TO STA. 355+00 RT, B=2'
–L– STA. 360+50 TO STA. 361+00 LT, B=4'
–L– STA. 372+50 TO STA. 376+50 RT, B=4'
–SR3– STA. 11+00 TO STA. 24+50 RT, B=4'
–Y7B– STA. 11+00 TO STA. 15+50 LT, B=4'
–Y7C– STA. 12+53 TO STA. 13+84 LT, B=4'
–Y7D– STA. 11+03 TO STA. 11+50 LT, B=4'
–Y7RPB– STA. 20+00 TO STA. 21+00 RT, B=4'
–Y7RPD– STA. 24+30 TO STA. 25+06 LT, B=4'

DETAIL L
LATERAL BASE DITCH
(Not to Scale)



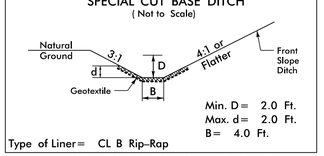
DETAIL NOT USED IN SECTION 2

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



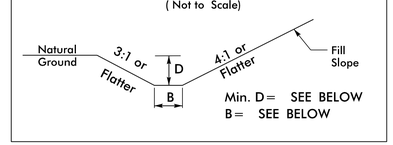
–Y7RPD– STA. 24+00 TO STA. 24+42 RT
–Y7C– STA. 11+00 TO STA. 12+53 LT

DETAIL N
SPECIAL CUT BASE DITCH
(Not to Scale)



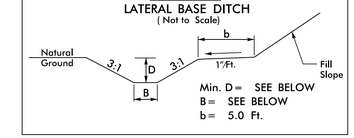
–L– STA. 513+00 TO STA. 517+50 LT
–Y20– STA. 32+51.25 TO STA. 33+42 RT

DETAIL O
SPECIAL LATERAL BASE DITCH
(Not to Scale)



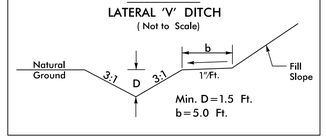
DETAIL NOT USED IN SECTION 2

DETAIL P
LATERAL BASE DITCH
(Not to Scale)



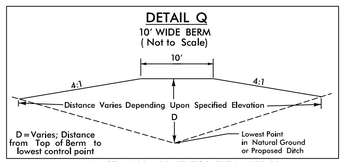
–SR3– STA. 18+50 TO 19+50 LT, B=6', D=1'
–Y8– STA. 33+00 TO 33+50 LT, B=6', D=1'
–L– STA. 355+00 TO STA. 360+50 LT, B=4', D=3'
–L– STA. 403+00 TO STA. 405+46 RT, B=4', D=4.5'
–Y20– STA. 22+95.34 TO STA. 24+46 RT, B=4', D=3'

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



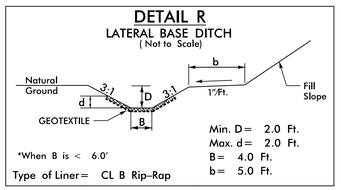
–L– STA. 280+00 TO STA. 289+00 RT
–L– STA. 320+00 TO STA. 322+00 RT
–L– STA. 324+00 TO STA. 333+00 RT
–L– STA. 345+00 TO STA. 351+00 LT
–L– STA. 353+00 TO STA. 355+00 LT
–L– STA. 402+50 TO STA. 403+00 RT
–L– STA. 403+00 TO STA. 406+50 LT
–SR3– STA. 24+50 TO STA. 28+00 LT
–Y20– STA. 19+00 TO STA. 21+93.18 LT
–Y20– STA. 22+44.57 TO STA. 22+95.34 RT
–Y6– STA. 13+50 TO STA. 15+50 LT
–Y6– STA. 23+00 TO STA. 28+50 RT
–Y6– STA. 28+50 TO STA. 29+50 LT
–Y7C– STA. 16+50 TO STA. 19+00 LT
–Y7D– STA. 11+00 TO STA. 14+50 RT
–Y7RPB– STA. 21+00 TO STA. 23+74 RT
–Y7RPC– STA. 17+13.38 TO STA. 19+00 LT
–Y7RPC– STA. 20+50 TO STA. 23+90 LT
–Y7RPD– STA. 22+00 TO STA. 24+00 RT
–Y8– STA. 26+19 TO STA. 29+50 RT

DETAIL Q
10' WIDE BERM
(Not to Scale)



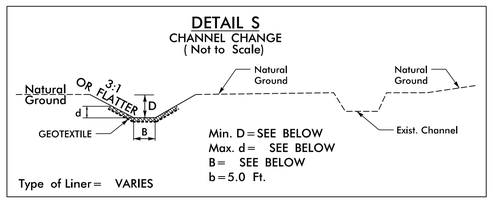
–L– STA. 500+00 LT, TOP ELEV.=173.0'
–L– STA. 500+00 RT, TOP ELEV.=172.3'
–SR3– STA. 20+50 RT, TOP ELEV.=151.0'
–SR3– STA. 24+50 RT, TOP ELEV.=150.0'

DETAIL R
LATERAL BASE DITCH
(Not to Scale)



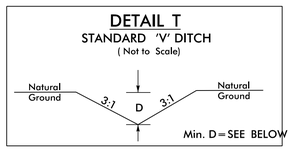
–L– STA. 517+50 TO STA. 521+00 LT

DETAIL S
CHANNEL CHANGE
(Not to Scale)



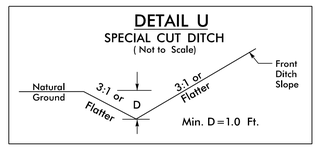
DETAIL NOT USED IN SECTION 2

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



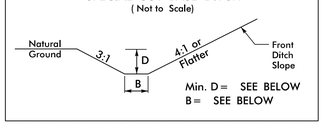
–Y9RPA– STA. 20+00, D=1'
BEG. ELEV=150.00 END ELEV=146.50, S=3.5%

DETAIL U
SPECIAL CUT DITCH
(Not to Scale)



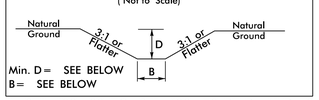
–L– STA. 518+00 TO STA. 522+50 RT
–SR5A– STA. 11+76.57 TO STA. 12+27.18 LT
–SR5A– STA. 11+76.57 TO STA. 12+27.18 RT
–SR5A– STA. 13+79.06 TO STA. 19+00 LT
–SR5A– STA. 13+79.06 TO STA. 19+00 RT
–Y8– STA. 11+00 TO STA. 12+00 LT
–Y8– STA. 11+00 TO STA. 16+00 RT
–Y8– STA. 34+50 TO STA. 36+00 RT

DETAIL V
SPECIAL CUT BASE DITCH
(Not to Scale)



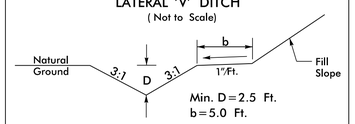
–Y20– STA. 24+45.78 TO STA. 32+51.25 RT, B=4', D=3.5'

DETAIL W
STANDARD BASE DITCH
(Not to Scale)



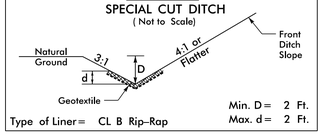
–L– STA. 499+00 TO STA. 499+70 RT, B=4', D=3'
–SR5B– STA. 15+70 RT, B=4', D=3', M=3.0
BEG EL=168.57', END EL=168.33', S=0.30%, L=78'
–Y20– STA. 32+51 LT, B=4', D=4.0'
BEG. ELEV=141.11 END ELEV=141.06, S=0.1%, M=4.0
–L– STA. 405+64 LT, B=4', D=3.0'
BEG. ELEV=140.22 END ELEV=139.80, S=0.3%, M=4.0

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



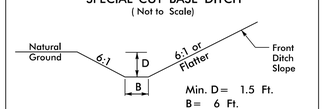
DETAIL NOT USED IN SECTION 2

DETAIL Y
SPECIAL CUT DITCH
(Not to Scale)



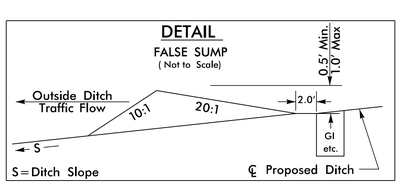
DETAIL NOT USED IN SECTION 2

DETAIL Z
SPECIAL CUT BASE DITCH
(Not to Scale)

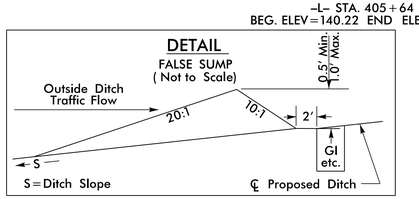


–L– STA. 437+00 TO STA. 438+00 RT

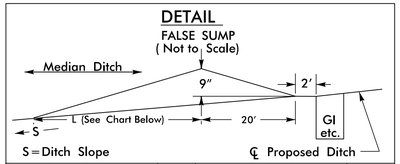
DETAIL
FALSE SUMP
(Not to Scale)



DETAIL
FALSE SUMP
(Not to Scale)



DETAIL
FALSE SUMP
(Not to Scale)



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

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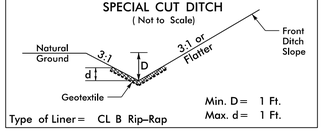
shelfler

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2D-4
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

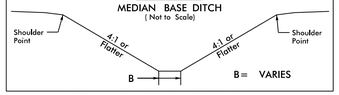
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL AA
SPECIAL CUT DITCH
(Not to Scale)



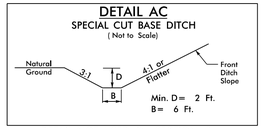
DETAIL NOT USED IN SECTION 2

DETAIL AB
MEDIAN BASE DITCH
(Not to Scale)



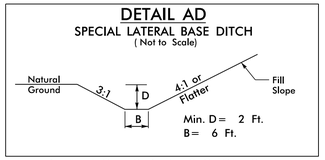
DETAIL NOT USED IN SECTION 2

DETAIL AC
SPECIAL CUT BASE DITCH
(Not to Scale)



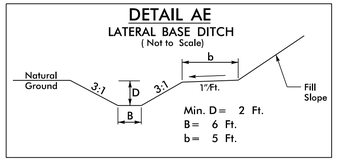
DETAIL NOT USED IN SECTION 2

DETAIL AD
SPECIAL LATERAL BASE DITCH
(Not to Scale)



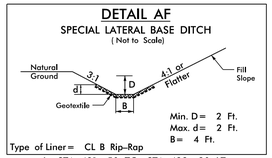
DETAIL NOT USED IN SECTION 2

DETAIL AE
LATERAL BASE DITCH
(Not to Scale)



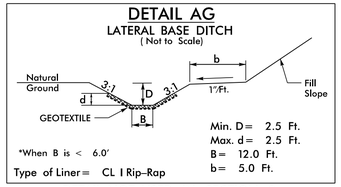
DETAIL NOT USED IN SECTION 2

DETAIL AF
SPECIAL LATERAL BASE DITCH
(Not to Scale)



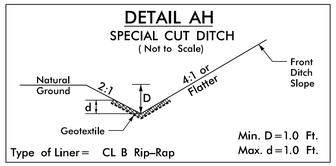
-L- STA. 421+50 TO STA. 422+80 LT
-L- STA. 521+00 TO STA. 522+90 LT

DETAIL AG
LATERAL BASE DITCH
(Not to Scale)



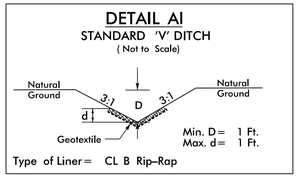
DETAIL NOT USED IN SECTION 2

DETAIL AH
SPECIAL CUT DITCH
(Not to Scale)



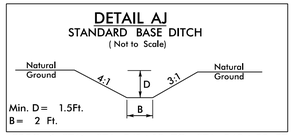
-L- STA. 296+00 TO STA. 296+50 LT

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



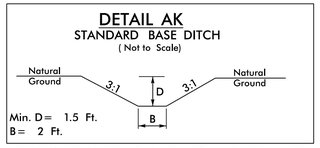
-Y9RPA- STA. 20+00, D=1'
BEG. ELEV=155.88 END ELEV=150.00, S=25.6%

DETAIL AJ
STANDARD BASE DITCH
(Not to Scale)



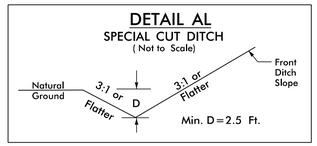
-SR5C (L STA)- STA. 541+19 TO STA. 543+50 RT

DETAIL AK
STANDARD BASE DITCH
(Not to Scale)



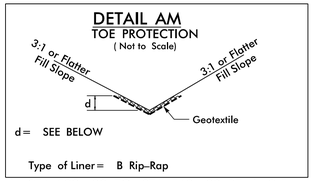
-SR5C (L STA)- STA. 543+26 RT, S=1.00%, L=75',
BEG EL=142.50', END EL=141.75'

DETAIL AL
SPECIAL CUT DITCH
(Not to Scale)



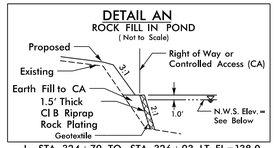
-L- STA. 489+50 TO STA. 499+60 RT

DETAIL AM
TOE PROTECTION
(Not to Scale)

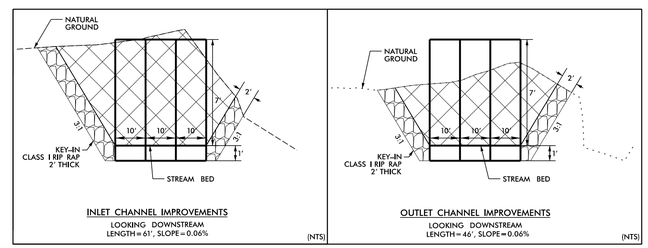


-L- STA. 522+00 TO STA. 540+00 RT, d=2.5

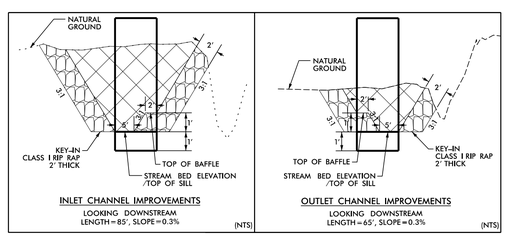
DETAIL AN
ROCK FILL IN POND
(Not to Scale)



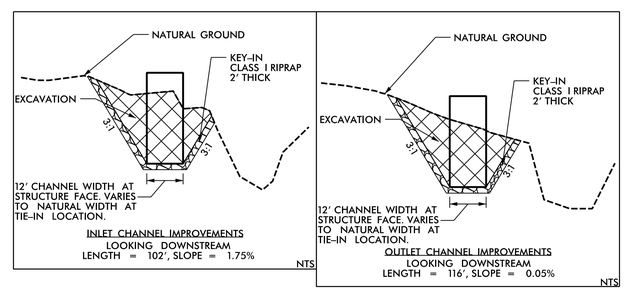
-L- STA 324+79 TO STA 326+93 LT, EL=138.0
-L- STA 452+12 TO STA 454+94 LT, EL=155.0
-L- STA 491+59 TO STA 492+86 LT, EL=170.0



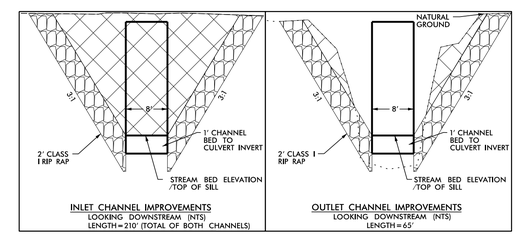
CULVERT INLET AND OUTLET DETAILS
-L- STA. 304+15



CULVERT INLET AND OUTLET DETAILS
-L- STA. 355+00



CULVERT INLET AND OUTLET DETAILS
-L- STA. 422+50.5



CULVERT INLET AND OUTLET DETAILS
-L- STA. 540+46

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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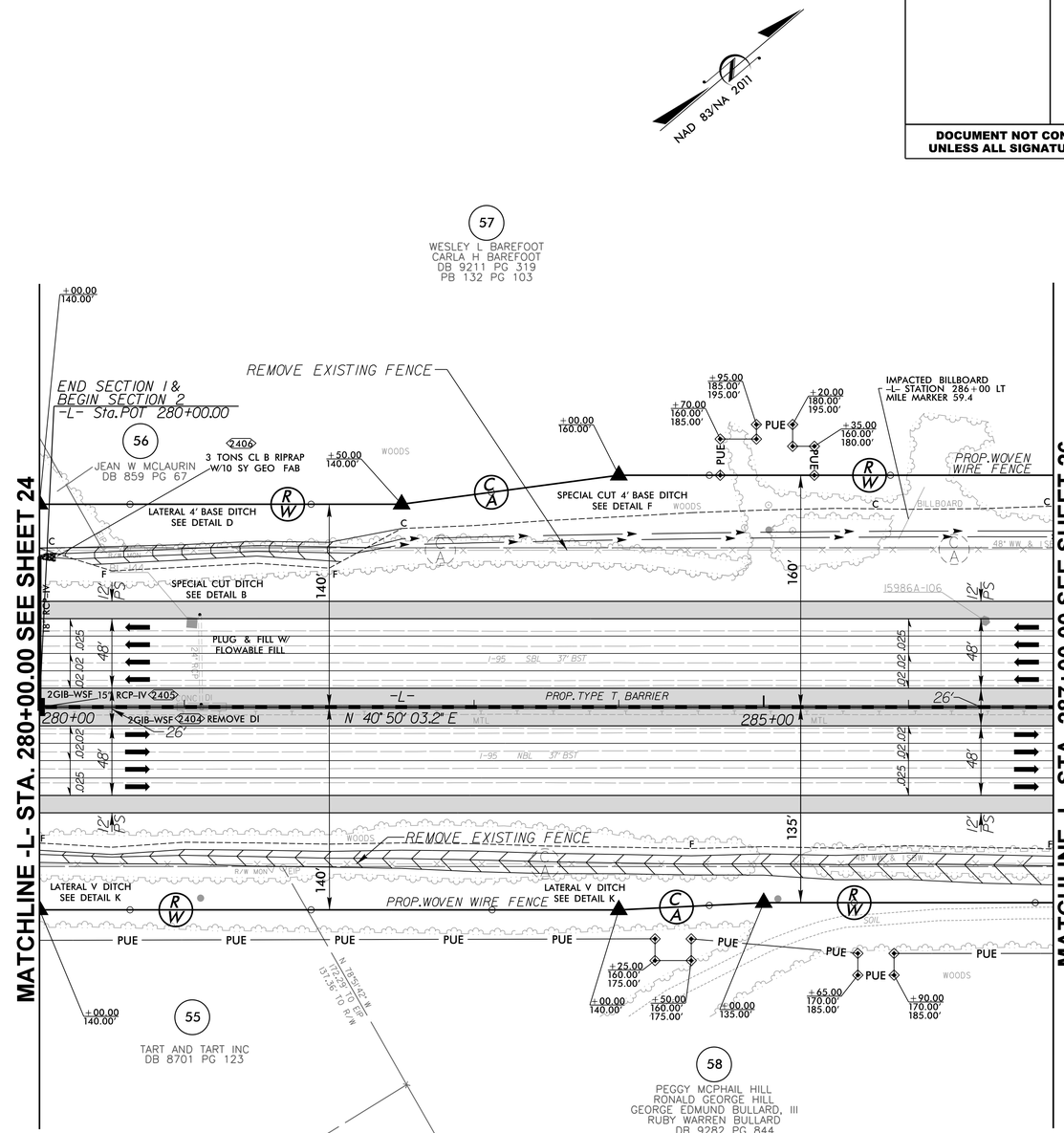

FOR –LLT SEC2– PROFILE SEE SHT. 107
FOR –LRT SEC2– PROFILE SEE SHT. 107
FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	26
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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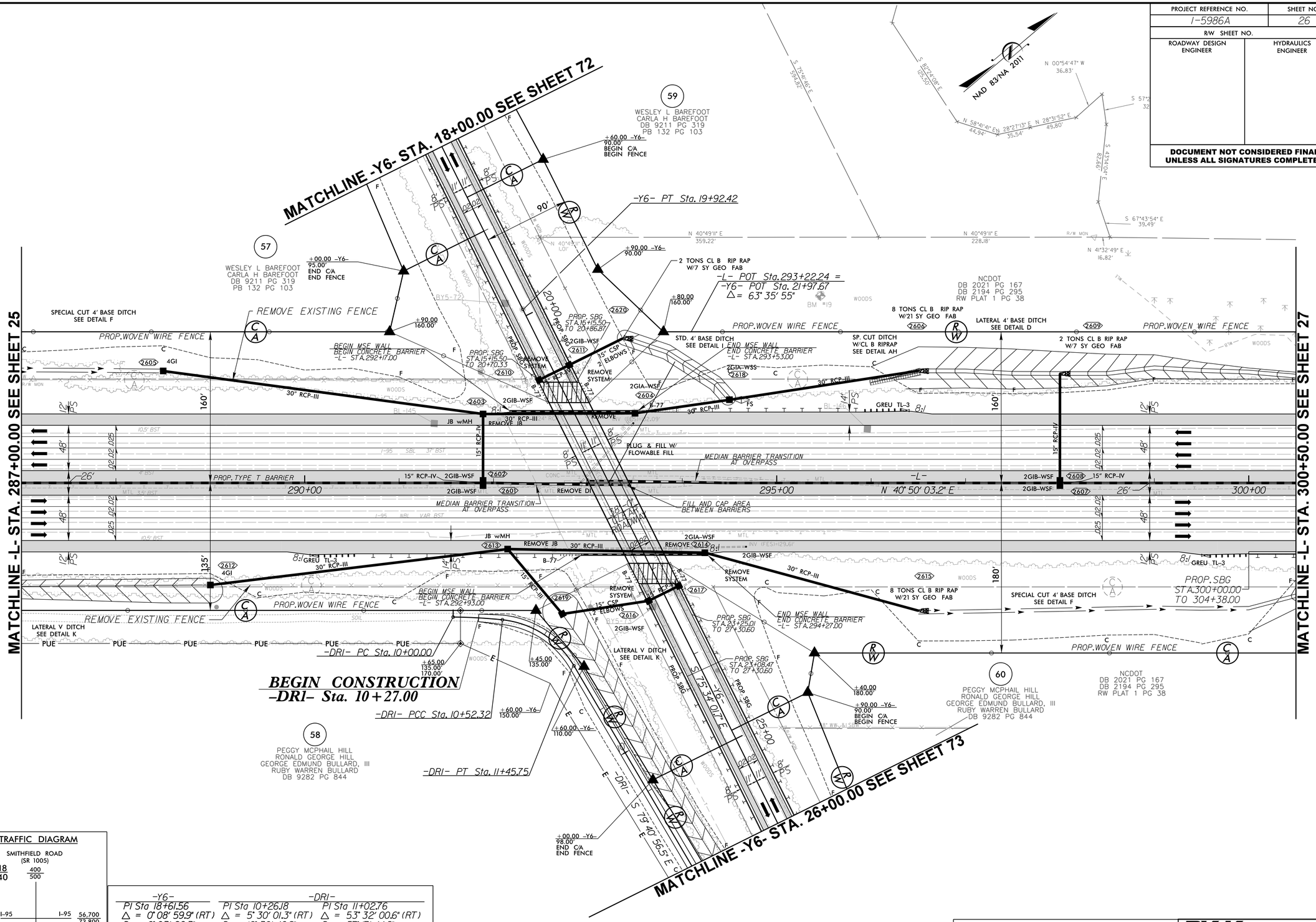
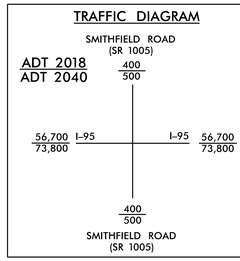


TRAFFIC DIAGRAM



-Y6-	-DR1-	
PI Sta 18+61.56	PI Sta 10+26.18	PI Sta 11+02.76
Δ = 0° 08' 59.9" (RT)	Δ = 5° 30' 01.3" (RT)	Δ = 53° 32' 00.6" (RT)
D = 0° 03' 26.3"	D = 10° 30' 46.8"	D = 57° 17' 44.8"
L = 261.73'	L = 52.32'	L = 93.43'
T = 130.87'	T = 26.18'	T = 50.44'
R = 100,000.00'	R = 545.00'	R = 100.00'
SE = NC	SE = NC	SE = NC
DS = 60 MPH	DS = 20 MPH	DS = 20 MPH

FOR BRIDGE SKETCH SEE SHT. 2A-6
FOR CROSS SECTION LAYOUT SEE SHT. 2B-1
FOR -LLT SEC2- PROFILE SEE SHTS. 107 THRU 108
FOR -LRT SEC2- PROFILE SEE SHTS. 107 THRU 108
FOR -Y6- PROFILE SEE SHT. 174
FOR -DR1- PROFILE SEE SHT. 184
FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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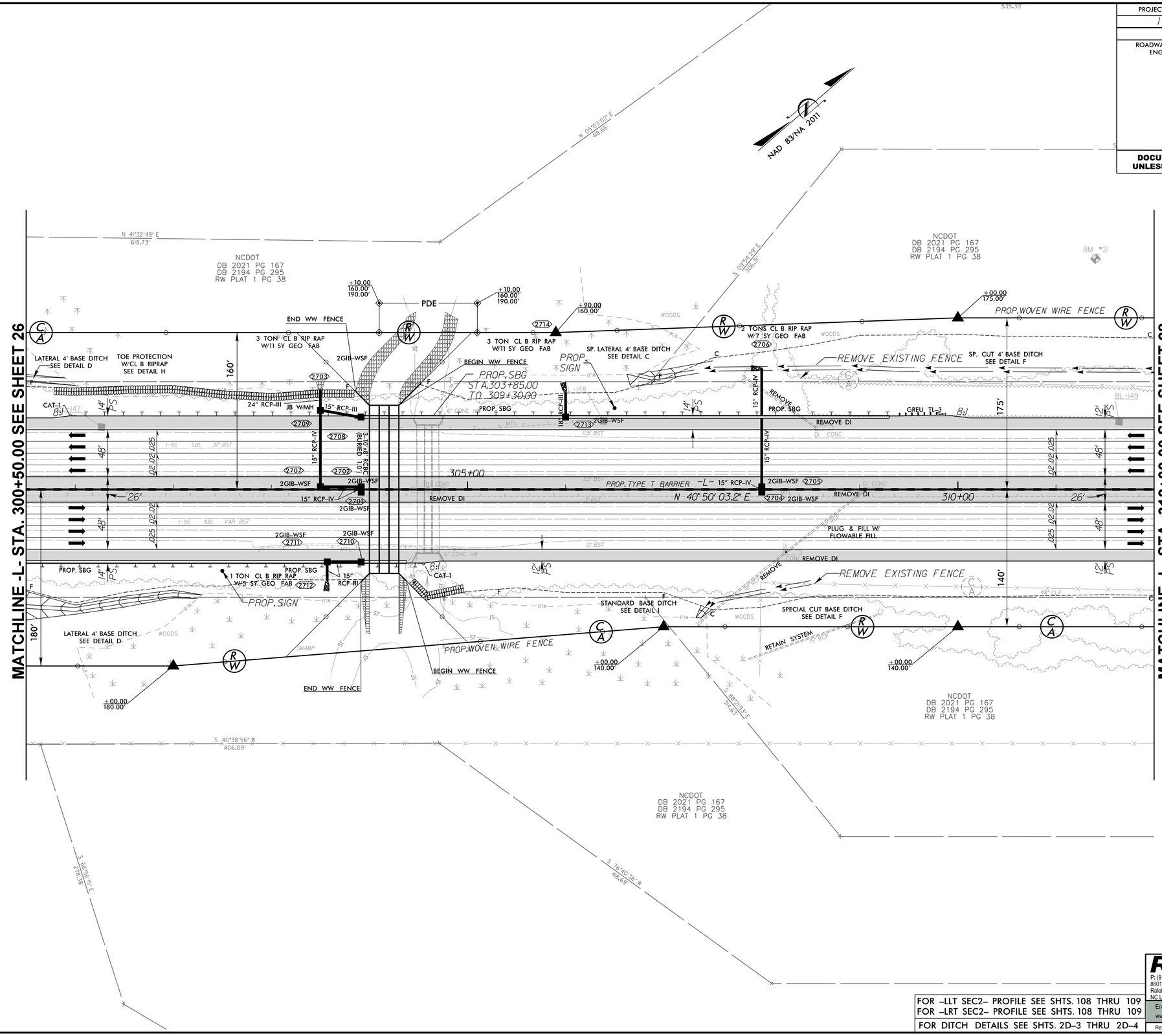
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	27
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



FOR -LLT SEC2- PROFILE SEE SHTS. 108 THRU 109
FOR -LRT SEC2- PROFILE SEE SHTS. 108 THRU 109
FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	28
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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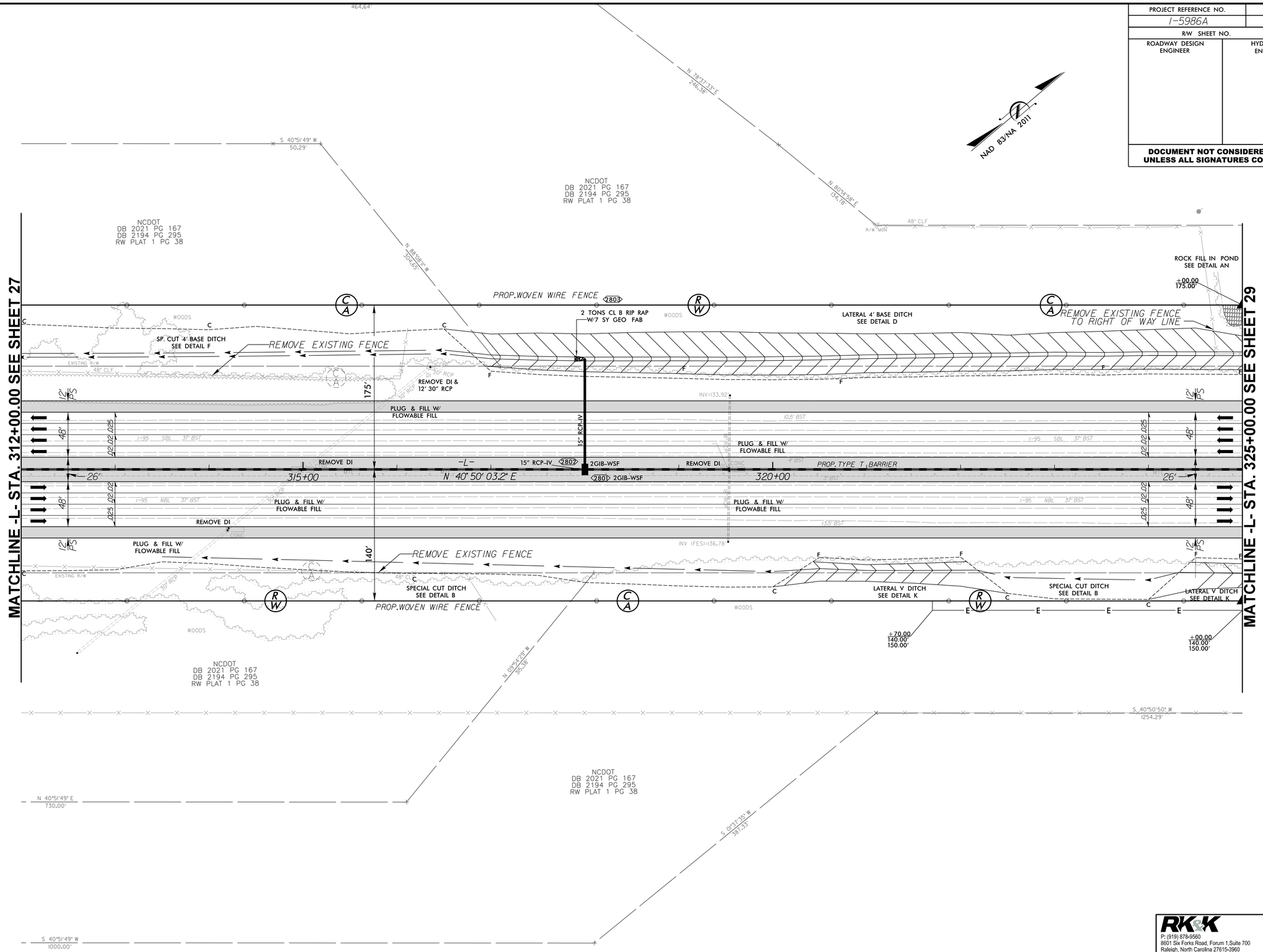

FOR –LLT SEC2– PROFILE SEE SHTS. 109 THRU 110
FOR –LRT SEC2– PROFILE SEE SHTS. 109 THRU 110
FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	29
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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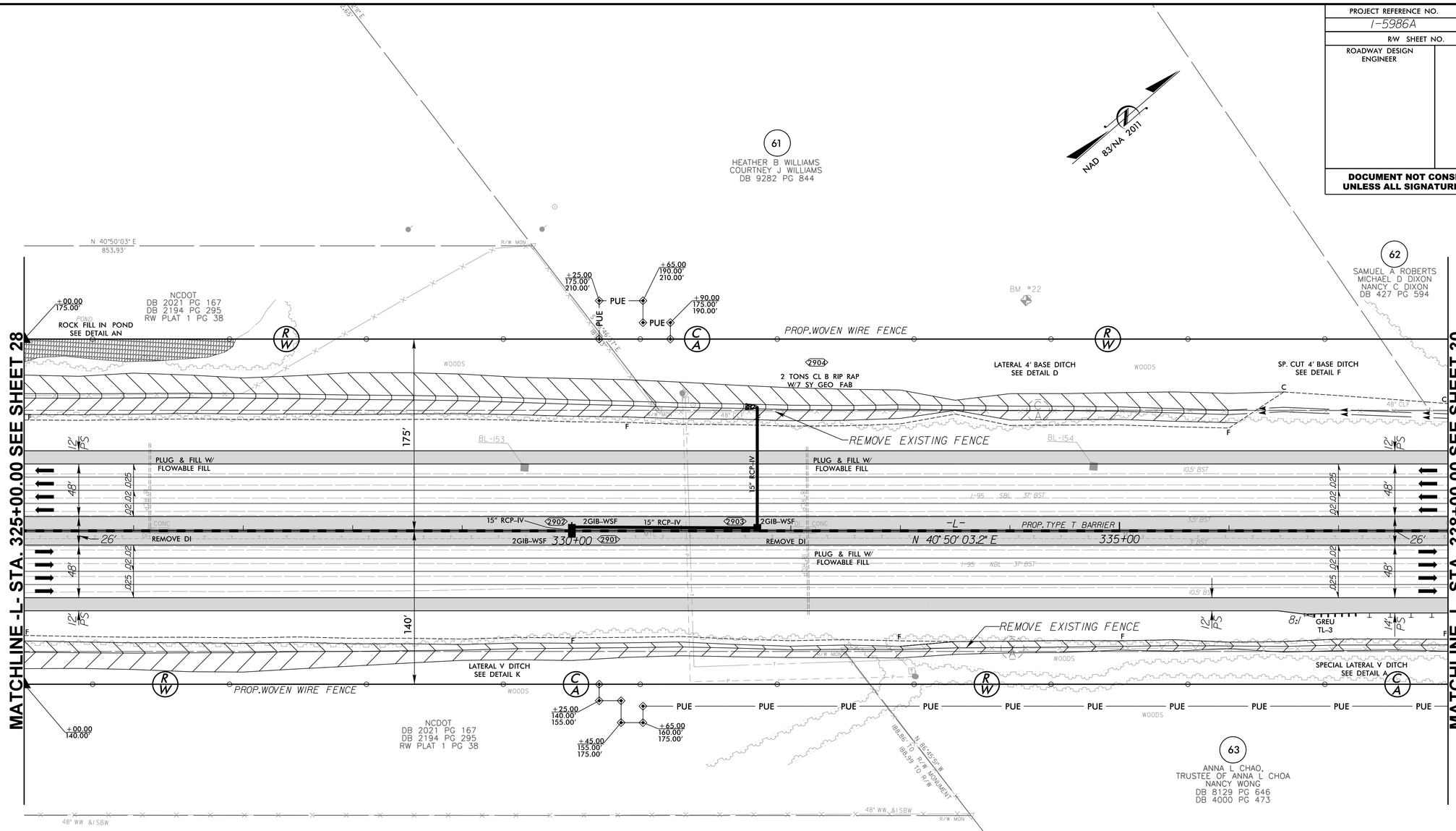

FOR –LLT SEC2– PROFILE SEE SHTS. 110 THRU 111
FOR –LRT SEC2– PROFILE SEE SHTS. 110 THRU 111
FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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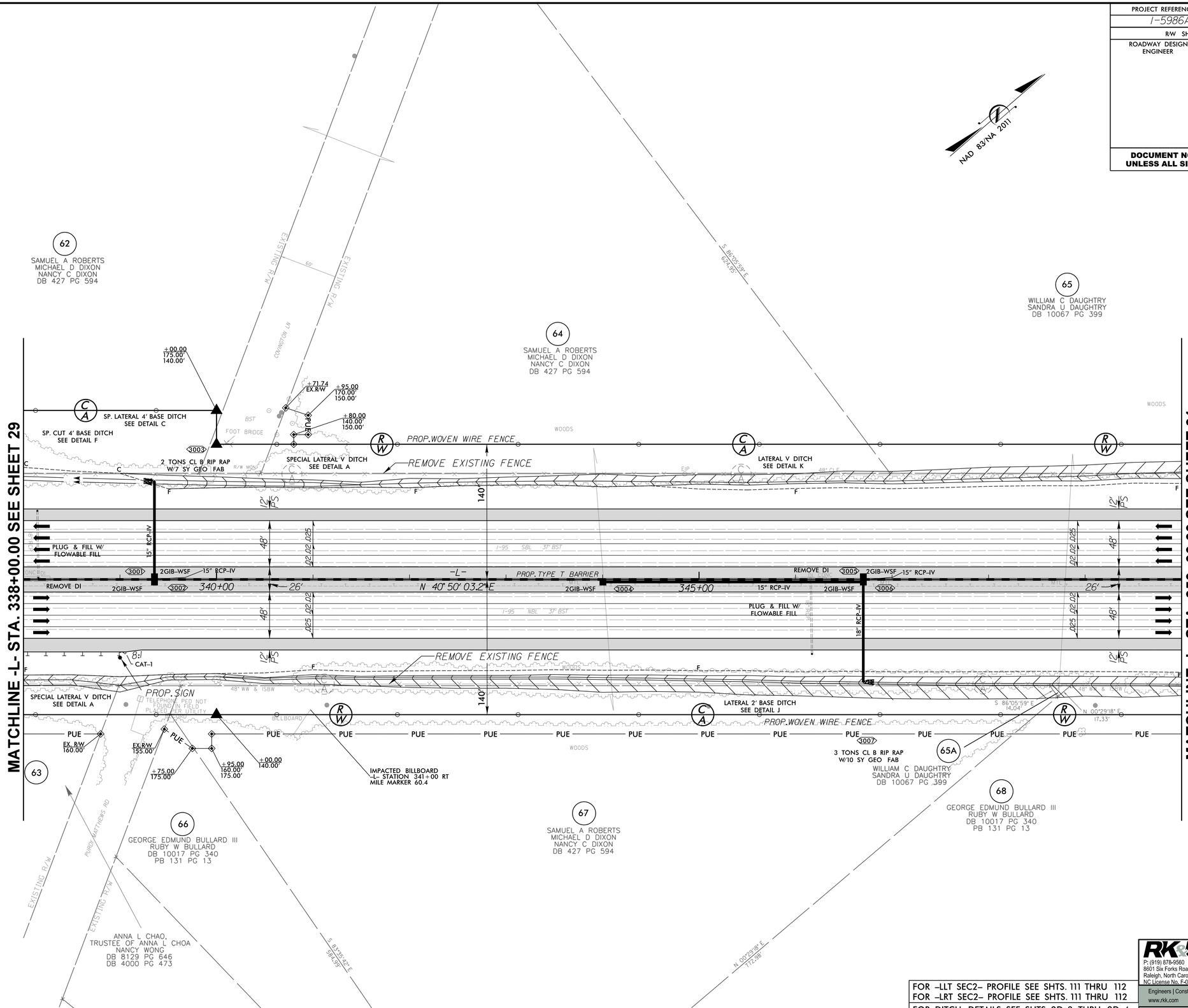
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	30
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



FOR –LLT SEC2– PROFILE SEE SHTS. 111 THRU 112
FOR –LRT SEC2– PROFILE SEE SHTS. 111 THRU 112
FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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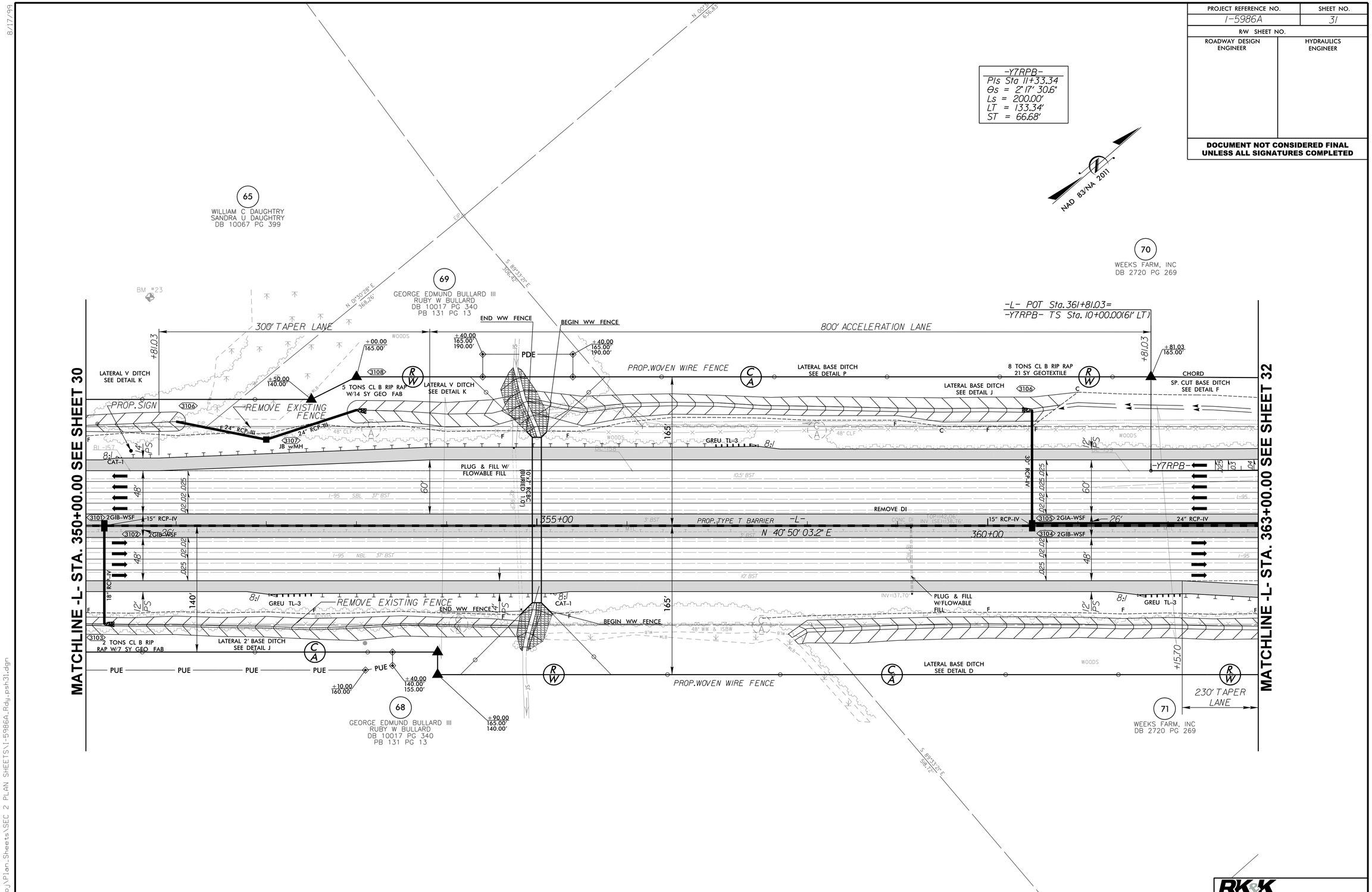
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



FOR -LLT SEC2- PROFILE SEE SHTS. 112 THRU 113
FOR -LRT SEC2- PROFILE SEE SHTS. 112 THRU 113
FOR -Y7RPB- PROFILE SEE SHT. 178
FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	32

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

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6/2/99

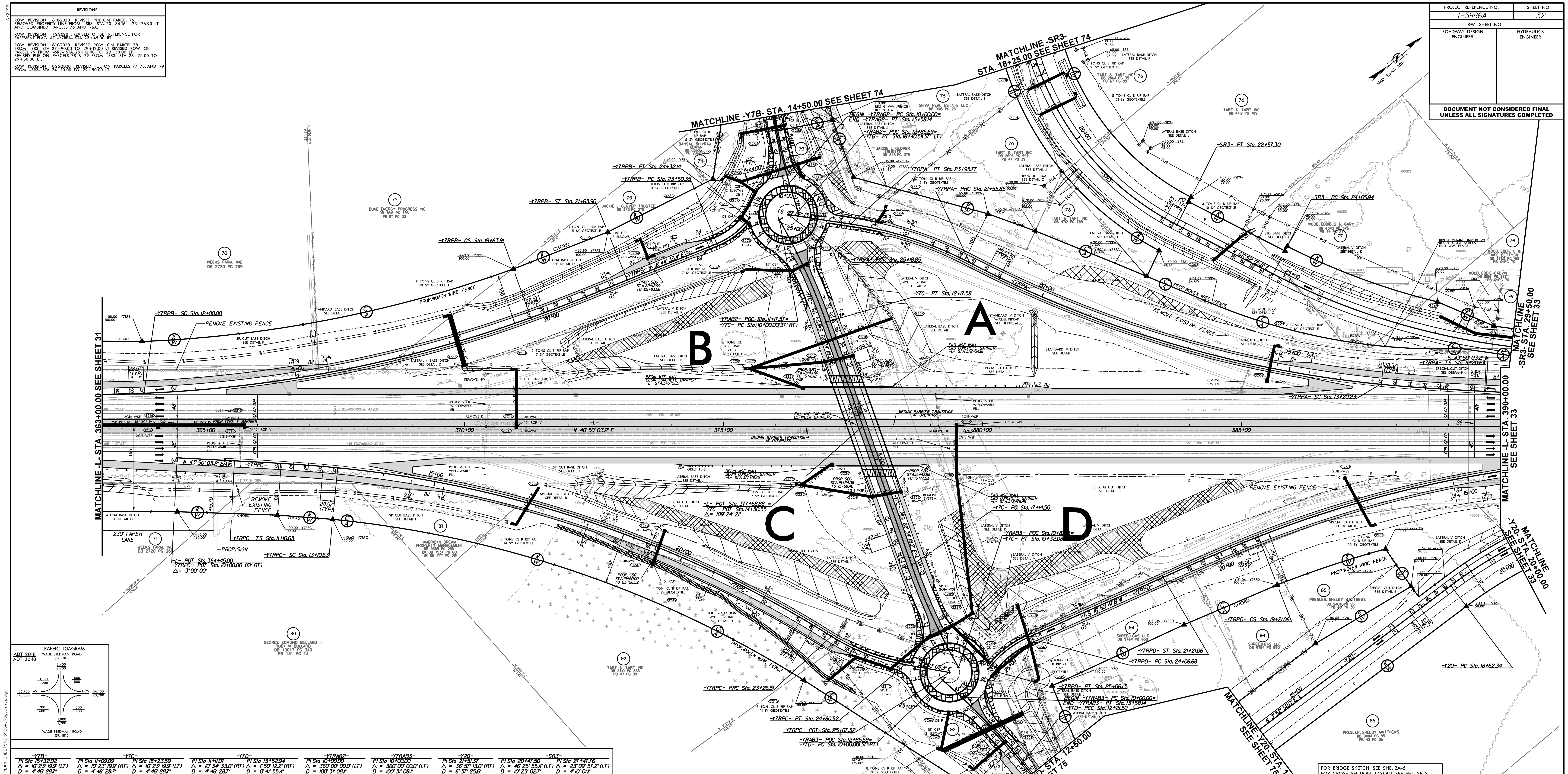
REVISIONS

ROW REVISION : 6/18/2020 : REVISED PDE ON PARCEL 76. REMOVED PROPERTY LINE FROM –SR3– STA. 20+34.16 – 23+76.90 LT AND COMBINED PARCELS 76 AND 76A.

ROW REVISION : 7/2/2020 : REVISED OFFSET REFERENCE FOR EASEMENT FLAG AT –Y7RPA– STA. 23+45.00 RT.

ROW REVISION : 8/10/2020 : REVISED ROW ON PARCEL 78 FROM –SR3– STA. 27+90.00 TO 29+12.00 LT. REVISED ROW ON PARCEL 79 FROM –SR3– STA. 29+12.00 TO 29+50.00 LT. REVISED PUE ON PARCELS 78 & 79 FROM –SR3– STA. 28+75.00 TO 29+50.00 LT.

ROW REVISION : 8/25/2020 : REVISED PUE ON PARCELS 77, 78, AND 79 FROM –SR3– STA. 24+10.00 TO 29+50.00 LT.



-Y7B-	-Y7C-		-Y7D-		-Y7RAB2-	-Y7RAB3-	-Y20-	-SR3-	
PI Sta 15+32.02	PI Sta 11+09.09	PI Sta 18+23.59	PI Sta 11+11.07	PI Sta 13+52.94	PI Sta 10+00.00	PI Sta 10+00.00	PI Sta 21+51.37	PI Sta 20+47.50	PI Sta 27+47.76
Δ = 10° 23′ 19.9″ (LT)	Δ = 10° 23′ 19.9″ (RT)	Δ = 10° 23′ 19.9″ (LT)	Δ = 10° 34′ 33.0″ (RT)	Δ = 1° 50′ 12.2″ (RT)	Δ = 360° 00′ 00.0″ (LT)	Δ = 360° 00′ 00.0″ (LT)	Δ = 36° 57′ 13.0″ (RT)	Δ = 46° 25′ 55.4″ (LT)	Δ = 23° 09′ 57.2″ (LT)
D = 4° 46′ 28.7″	D = 4° 46′ 28.7″	D = 4° 46′ 28.7″	D = 4° 46′ 28.7″	D = 0° 41′ 55.4″	D = 100° 31′ 08.1″	D = 100° 31′ 08.1″	D = 6° 37′ 25.6″	D = 10° 25′ 02.7″	D = 4° 10′ 01.1″
L = 217.58′	L = 217.58′	L = 217.58′	L = 221.50′	L = 262.87′	L = 358.14′	L = 358.14′	L = 557.89′	L = 445.72′	L = 555.94′
T = 109.09′	T = 109.09′	T = 109.09′	T = 111.07′	T = 131.44′	T = 0.00′	T = 0.00′	T = 289.04′	T = 235.91′	T = 281.82′
R = 1,200.00′	R = 1,200.00′	R = 1,200.00′	R = 1,200.00′	R = 8,200.00′	R = 57.00′	R = 57.00′	R = 865.00′	R = 550.00′	R = 1,375.00′
SE = 0.03	SE = 0.03	SE = 0.03	SE = 0.03	SE = NC			SE = 0.04	SE = 0.04	SE = 0.03
DS = 25 MPH	DS = 25 MPH	DS = 25 MPH	DS = 25 MPH	DS = 50 MPH			DS = 40 MPH	DS = 40 MPH	DS = 40 MPH

-Y7RPA-			-Y7RPB-			
PIs Sta 12+53.58	PI Sta 17+43.14	PI Sta 22+76.90	PIs Sta 11+33.34	PI Sta 15+84.95	PIs Sta 20+30.58	PI Sta 23+92.37
θs = 2° 36′ 15.7″	Δ = 21° 45′ 45.3″ (RT)	Δ = 18° 49′ 50.6″ (LT)	θs = 2° 17′ 30.6″	Δ = 17° 30′ 26.6″ (LT)	θs = 2° 17′ 30.6″	Δ = 32° 19′ 02.7″ (LT)
Ls = 200.00′	D = 2° 36′ 15.7″	D = 7° 50′ 55.5″	Ls = 200.00′	D = 2° 17′ 30.6″	Ls = 200.00′	D = 39° 30′ 51.6″
LT = 133.35′	L = 835.62′	L = 239.92′	LT = 133.34′	L = 763.90′	LT = 133.34′	L = 81.79′
ST = 66.68′	T = 422.91′	T = 121.05′	ST = 66.68′	T = 384.95′	ST = 66.68′	T = 42.01′
	R = 2,200.00′	R = 730.00′		R = 2,500.00′		R = 145.00′
	SE = 0.07	SE = 0.04		SE = 0.07		SE = 0.07
	DS = 65 MPH	DS = 25 MPH		DS = 65 MPH		DS = 25 MPH

-Y7RPC-			-Y7RPD-		
PIs Sta 12+43.98	PI Sta 18+27.80	PI Sta 24+04.49	PI Sta 15+63.79	PIs Sta 19+87.74	PI Sta 24+57.51
θs = 2° 36′ 15.7″	Δ = 26° 27′ 25.6″ (RT)	Δ = 22° 03′ 37.2″ (LT)	Δ = 18° 46′ 44.3″ (LT)	θs = 2° 36′ 15.7″	Δ = 29° 13′ 16.6″ (LT)
Ls = 200.00′	D = 2° 36′ 15.7″	D = 14° 19′ 26.2″	D = 2° 36′ 15.7″	Ls = 200.00′	D = 29° 22′ 56.8″
LT = 133.35′	L = 1,015.88′	L = 154.01′	L = 721.06′	LT = 133.35′	L = 99.45′
ST = 66.68′	T = 517.16′	T = 77.97′	T = 363.79′	ST = 66.68′	T = 50.83′
	R = 2,200.00′	R = 400.00′	R = 2,200.00′		R = 195.00′
	SE = 0.07	SE = 0.06	SE = 0.07		SE = 0.06
	DS = 65 MPH	DS = 25 MPH	DS = 65 MPH		DS = 25 MPH

NOTE: ALL DRIVES ARE 16′ WIDE WITH 10′ RADII UNLESS OTHERWISE NOTED

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PAVEMENT REMOVAL

FOR BRIDGE SKETCH SEE SHE. 2A–5
FOR CROSS SECTION LAYOUT SEE SHT. 2B–2
FOR –LLT_SEC2– PROFILE SEE SHTS. 113 THRU 115
FOR –LRT_SEC2– PROFILE SEE SHTS. 113 THRU 115
FOR –Y7B– PROFILE SEE SHT. 175
FOR –Y7C– PROFILE SEE SHT. 175
FOR –Y7D– PROFILE SEE SHT. 176
FOR –Y7RPA– PROFILE SEE SHT. 177
FOR –Y7RPB– PROFILE SEE SHT. 178
FOR –Y7RPC– PROFILE SEE SHTS. 178 THRU 179
FOR –Y7RPD– PROFILE SEE SHT. 179
FOR –Y7RAB2– PROFILE SEE SHT. 176
FOR –Y7RAB3– PROFILE SEE SHT. 176
FOR –Y20– PROFILE SEE SHT. 181
FOR –SR3– PROFILE SEE SHT. 182
FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	33
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-SR3-

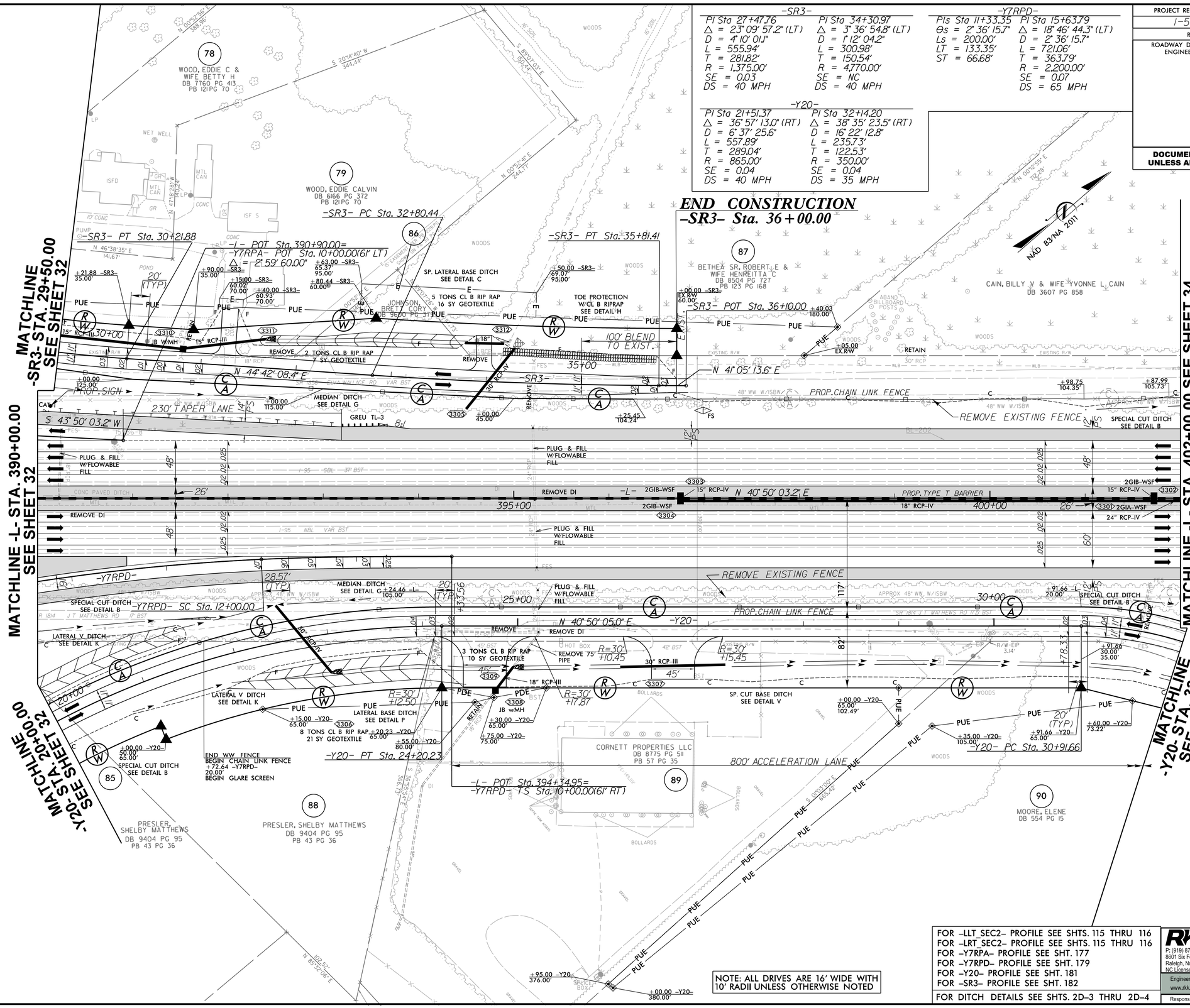
PI Sta 27+47.76	PI Sta 34+30.97
Δ = 23° 09' 57.2" (LT)	Δ = 3° 36' 54.8" (LT)
D = 4° 10' 01.1"	D = 1° 12' 04.2"
L = 555.94'	L = 300.98'
T = 281.82'	T = 150.54'
R = 1,375.00'	R = 4,770.00'
SE = 0.03	SE = NC
DS = 40 MPH	DS = 40 MPH

-Y7RPD-

PIs Sta 11+33.35	PI Sta 15+63.79
Θs = 2° 36' 15.7"	Δ = 18° 46' 44.3" (LT)
Ls = 200.00'	D = 2° 36' 15.7"
LT = 133.35'	L = 721.06'
ST = 66.68'	T = 363.79'
	R = 2,200.00'
	SE = 0.07
	DS = 65 MPH

-Y20-

PI Sta 21+51.37	PI Sta 32+14.20
Δ = 36° 57' 13.0" (RT)	Δ = 38° 35' 23.5" (RT)
D = 6° 37' 25.6"	D = 16° 22' 12.8"
L = 557.89'	L = 235.73'
T = 289.04'	T = 122.53'
R = 865.00'	R = 350.00'
SE = 0.04	SE = 0.04
DS = 40 MPH	DS = 35 MPH



FOR –LLT_SEC2– PROFILE SEE SHTS. 115 THRU 116
FOR –LRT_SEC2– PROFILE SEE SHTS. 115 THRU 116
FOR –Y7RPA– PROFILE SEE SHT. 177
FOR –Y7RPD– PROFILE SEE SHT. 179
FOR –Y20– PROFILE SEE SHT. 181
FOR –SR3– PROFILE SEE SHT. 182

FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

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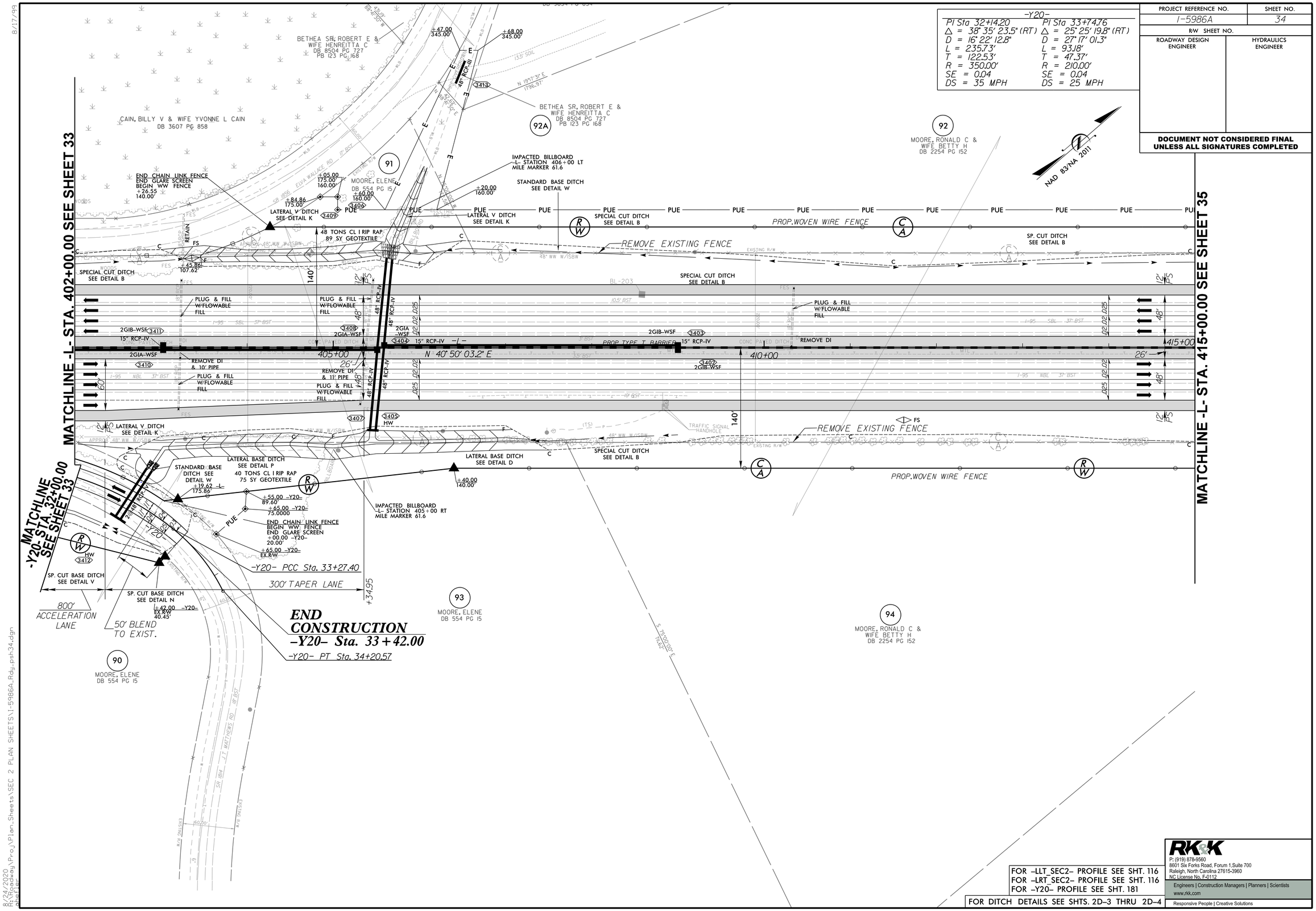
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	34
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y20-

PI Sta 32+14.20	PI Sta 33+74.76
Δ = 38° 35' 23.5" (RT)	Δ = 25° 25' 19.8" (RT)
D = 16° 22' 12.8"	D = 27° 17' 01.3"
L = 235.73'	L = 93.18'
T = 122.53'	T = 47.37'
R = 350.00'	R = 210.00'
SE = 0.04	SE = 0.04
DS = 35 MPH	DS = 25 MPH



FOR -LLT_SEC2- PROFILE SEE SHT. 116
FOR -LRT_SEC2- PROFILE SEE SHT. 116
FOR -Y20- PROFILE SEE SHT. 181

FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	35
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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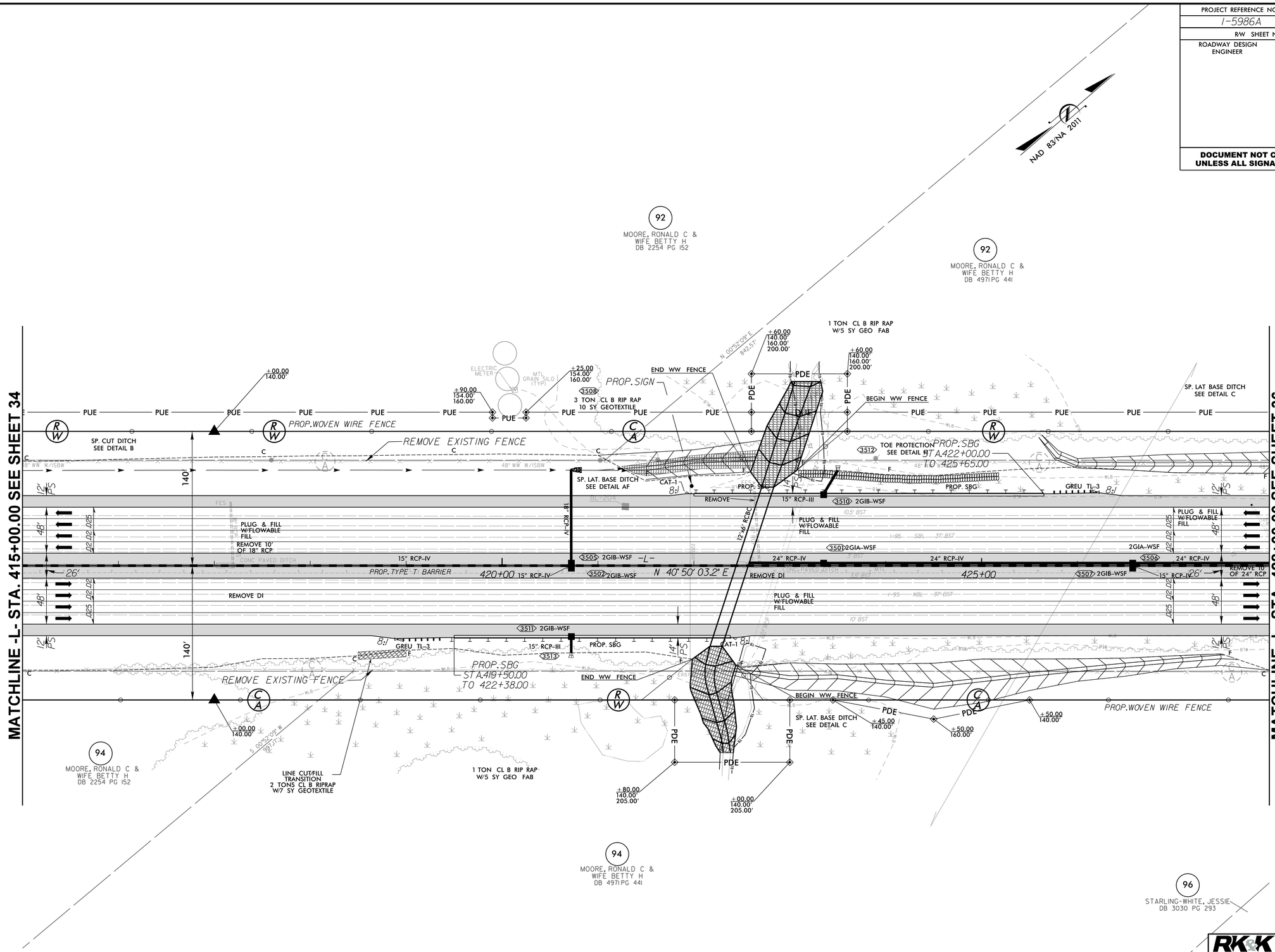

FOR -LLT_SEC2- PROFILE SEE SHT. 117
FOR -LRT_SEC2- PROFILE SEE SHT. 117

FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	36
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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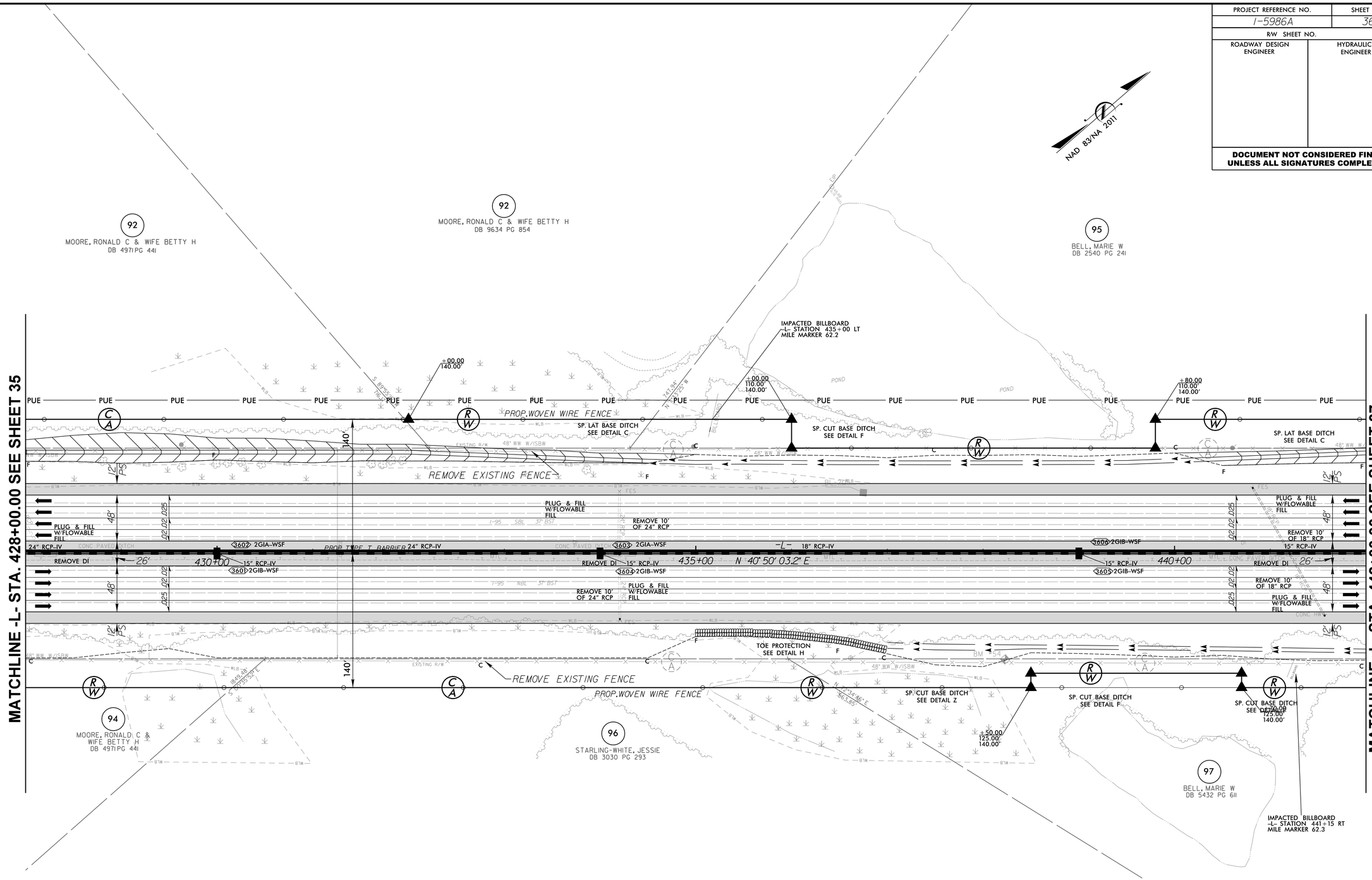

FOR -LLT_SEC2- PROFILE SEE SHTS. 117 THRU 118
FOR -LRT_SEC2- PROFILE SEE SHTS. 117 THRU 118
FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	37
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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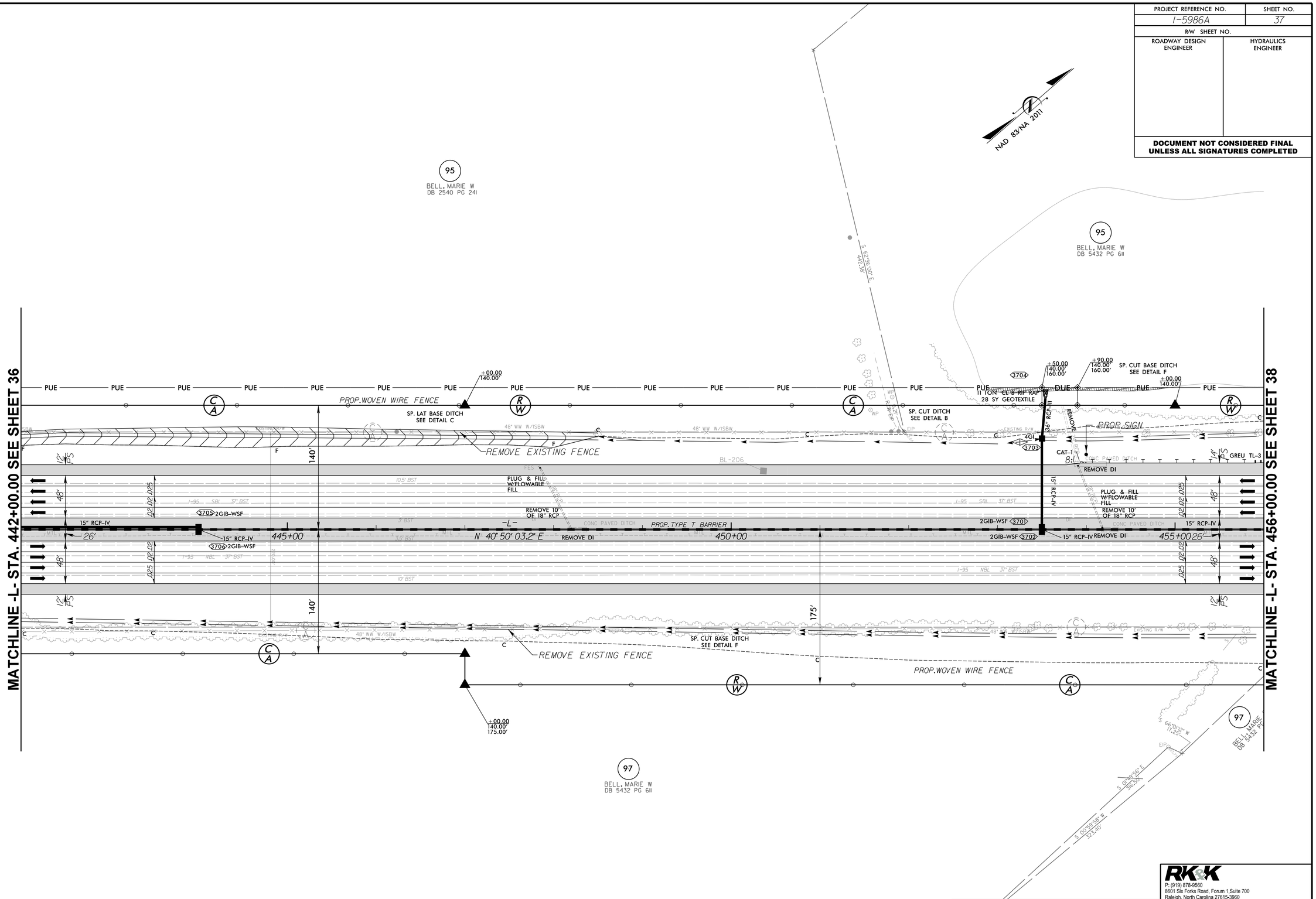

FOR –LLT_SEC2– PROFILE SEE SHTS. 118 THRU 119
FOR –LRT_SEC2– PROFILE SEE SHTS. 118 THRU 119

FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	38
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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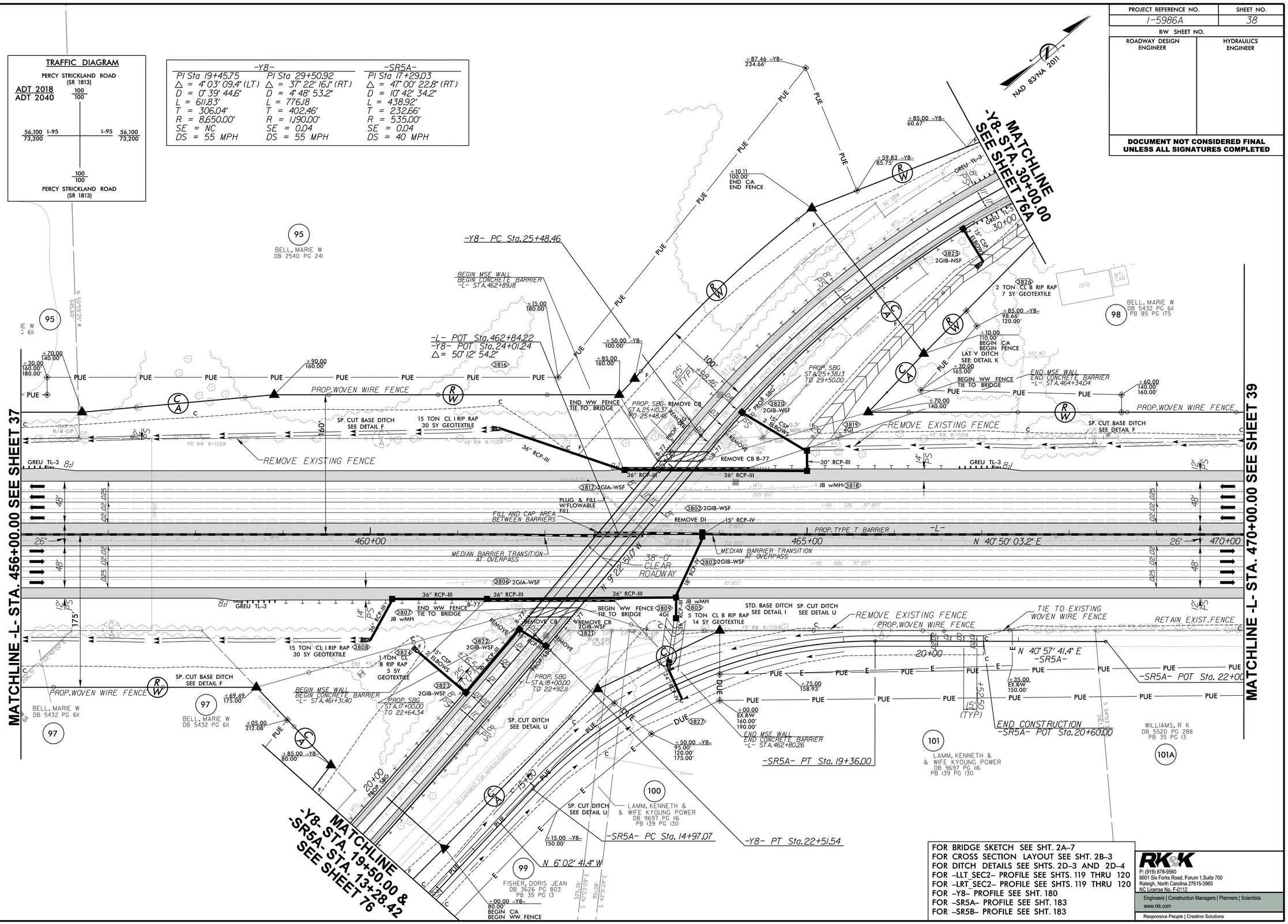

FOR BRIDGE SKETCH SEE SHT. 2A-7
FOR CROSS SECTION LAYOUT SEE SHT. 2B-3
FOR DITCH DETAILS SEE SHTS. 2D-3 AND 2D-4
FOR -LLT_SEC2- PROFILE SEE SHTS. 119 THRU 120
FOR -LRT_SEC2- PROFILE SEE SHTS. 119 THRU 120
FOR -Y8- PROFILE SEE SHT. 180
FOR -SR5A- PROFILE SEE SHT. 183
FOR -SR5B- PROFILE SEE SHT. 183

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	39
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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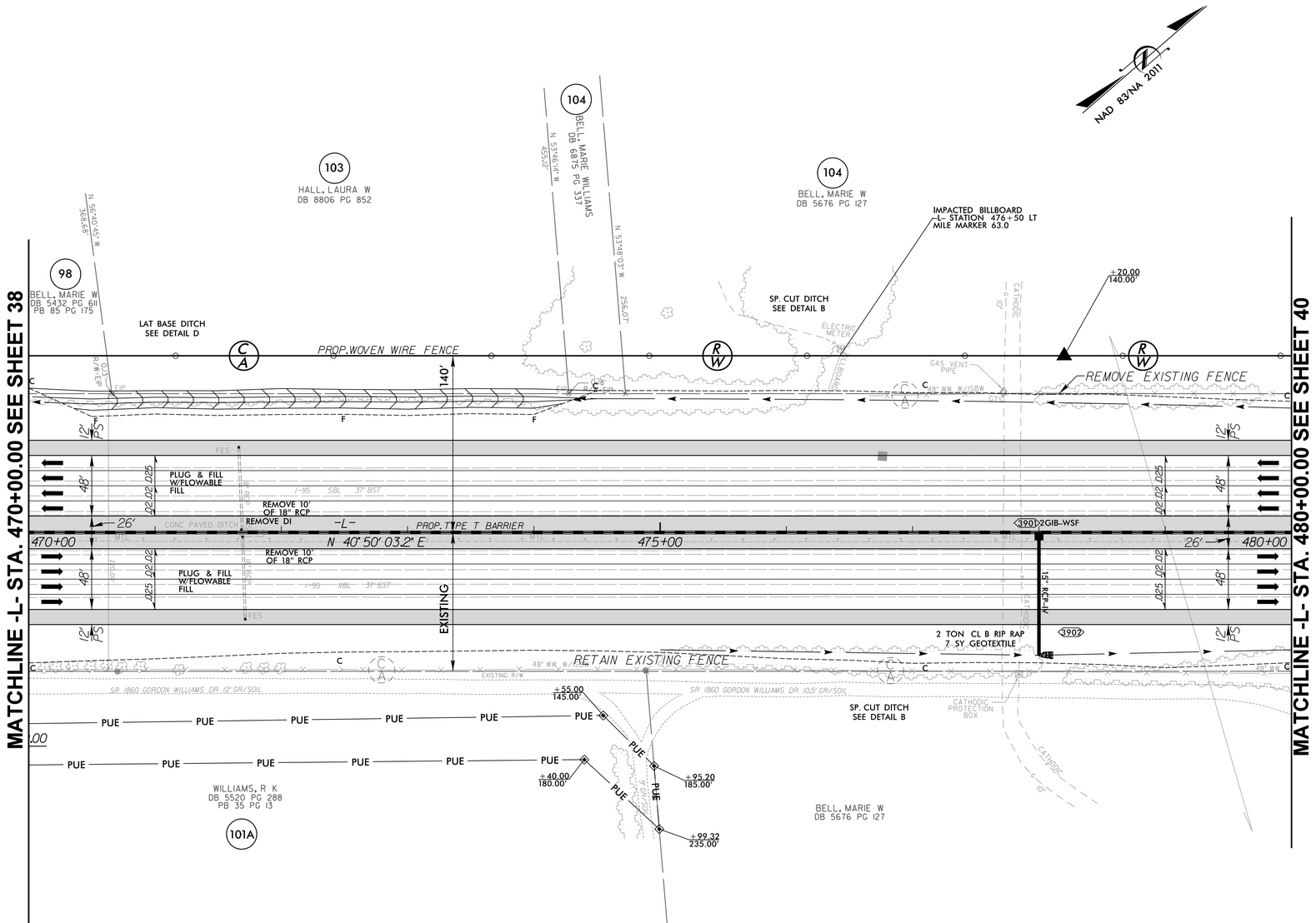

NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

FOR –LLT_SEC2– PROFILE SEE SHTS. 120 THRU 121
FOR –LRT_SEC2– PROFILE SEE SHTS. 120 THRU 121

FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	40
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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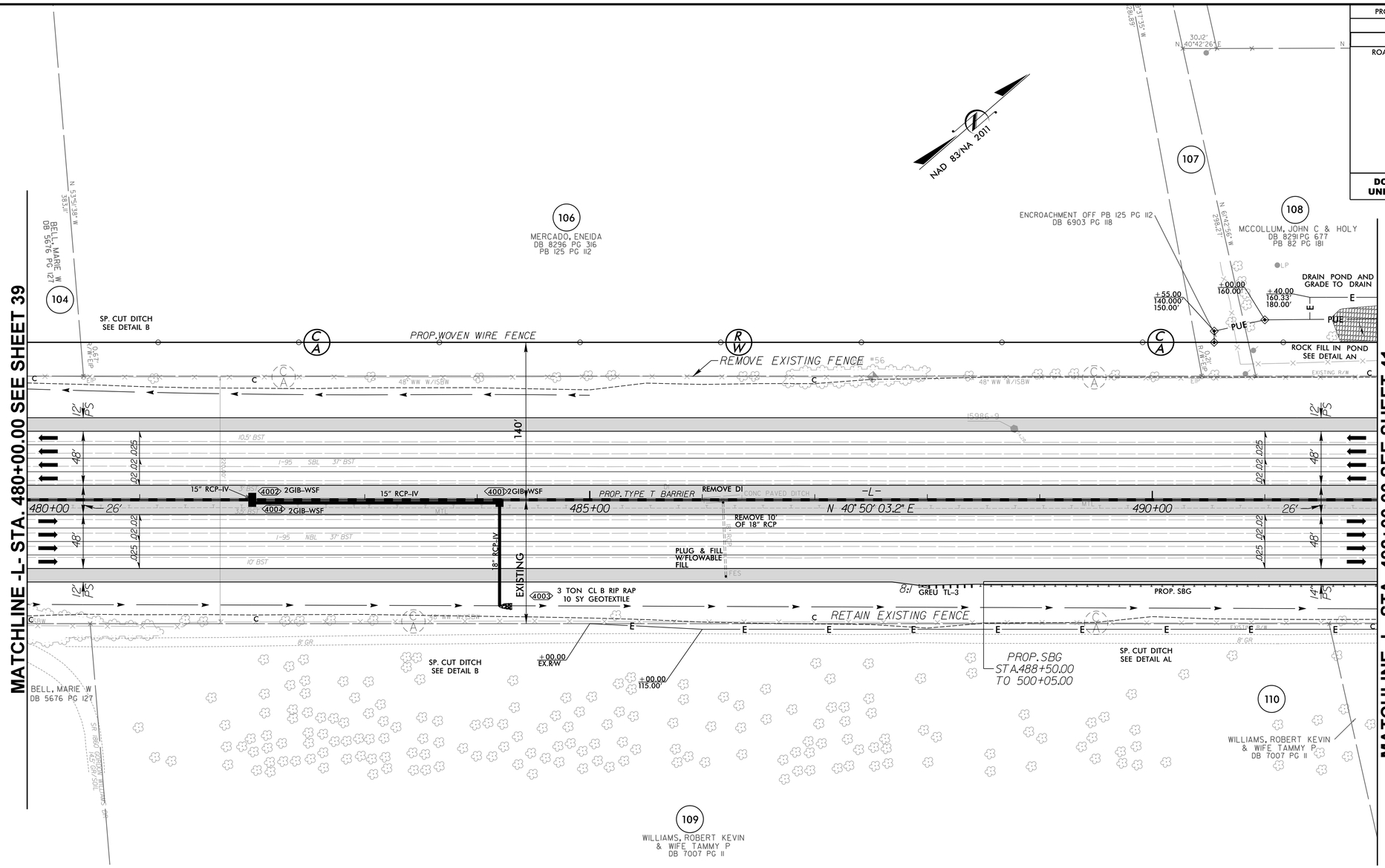

NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

FOR –LLT_SEC2– PROFILE SEE SHTS. 121 THRU 122
FOR –LRT_SEC2– PROFILE SEE SHTS. 121 THRU 122

FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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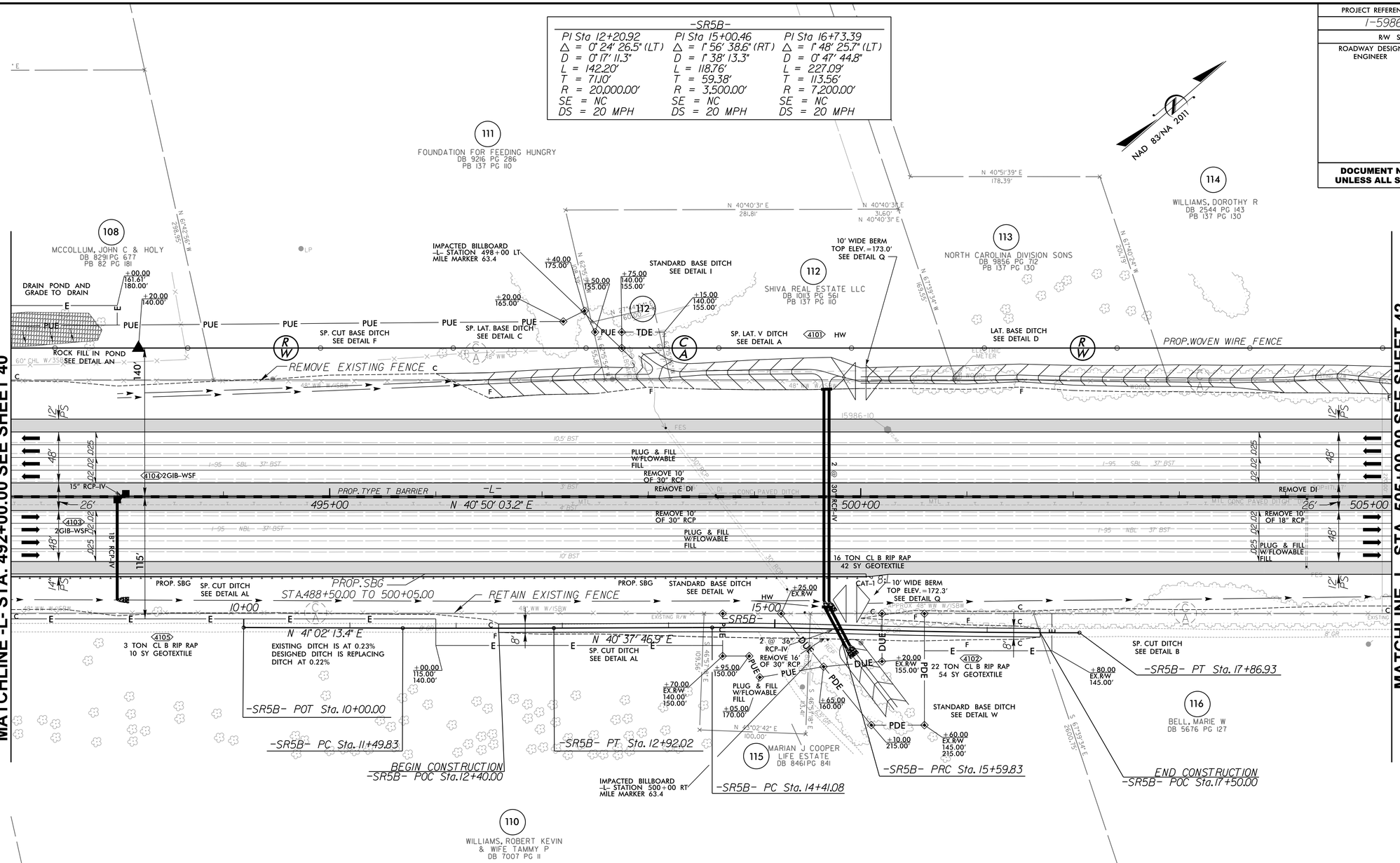
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	41
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-SR5B-		
PI Sta 12+20.92	PI Sta 15+00.46	PI Sta 16+73.39
△ = 0° 24' 26.5" (LT)	△ = 1° 56' 38.6" (RT)	△ = 1° 48' 25.7" (LT)
D = 0° 17' 11.3"	D = 1° 38' 13.3"	D = 0° 47' 44.8"
L = 142.20'	L = 118.76'	L = 227.09'
T = 71.10'	T = 59.38'	T = 113.56'
R = 20,000.00'	R = 3,500.00'	R = 7,200.00'
SE = NC	SE = NC	SE = NC
DS = 20 MPH	DS = 20 MPH	DS = 20 MPH



NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

FOR –LLT_SEC2– PROFILE SEE SHTS. 122 THRU 123
FOR –LRT_SEC2– PROFILE SEE SHTS. 122 THRU 123
FOR –SR5B– PROFILE SEE SHT. 183

FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	42
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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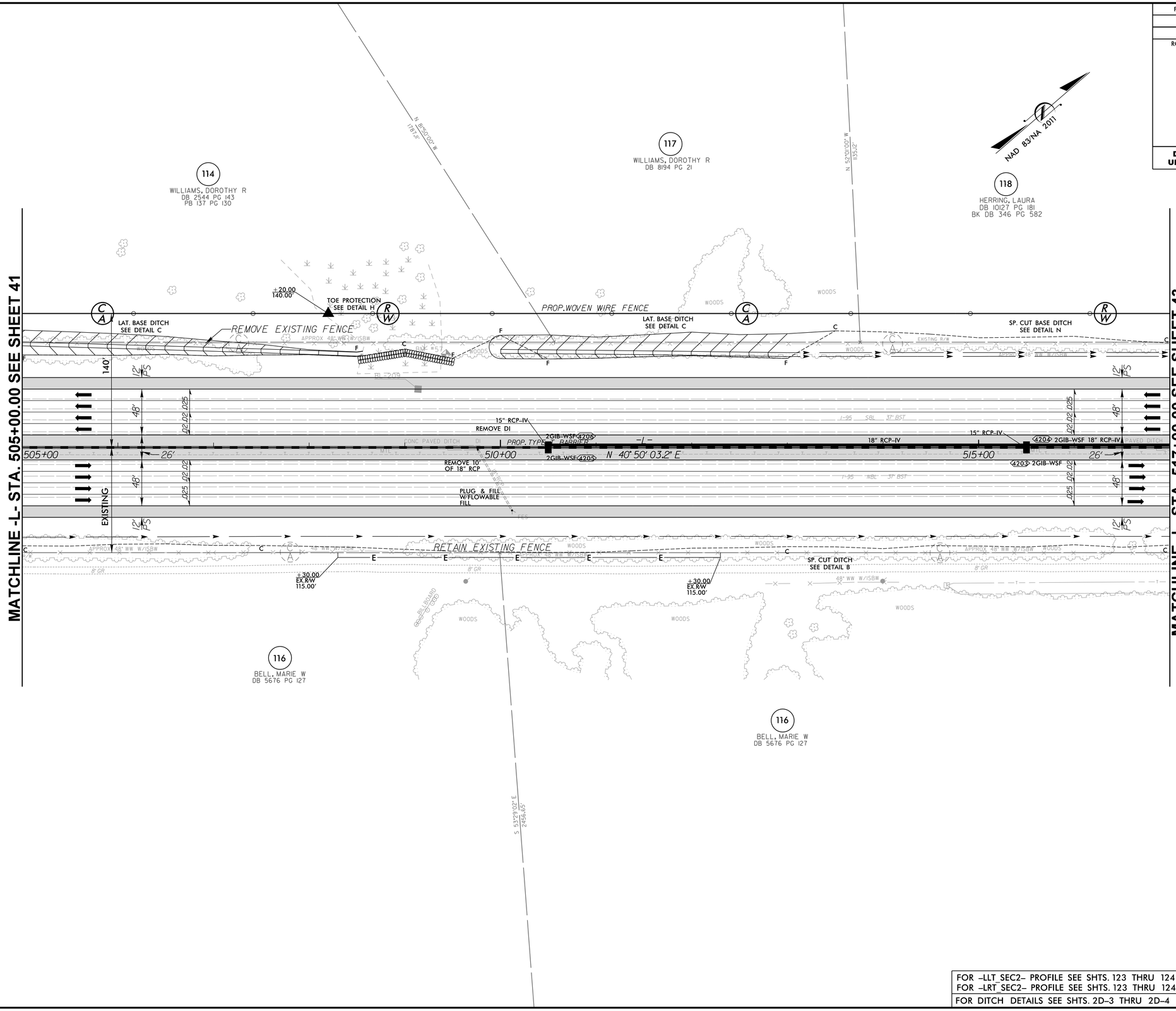

FOR –LLT_SEC2– PROFILE SEE SHTS. 123 THRU 124
FOR –LRT_SEC2– PROFILE SEE SHTS. 123 THRU 124
FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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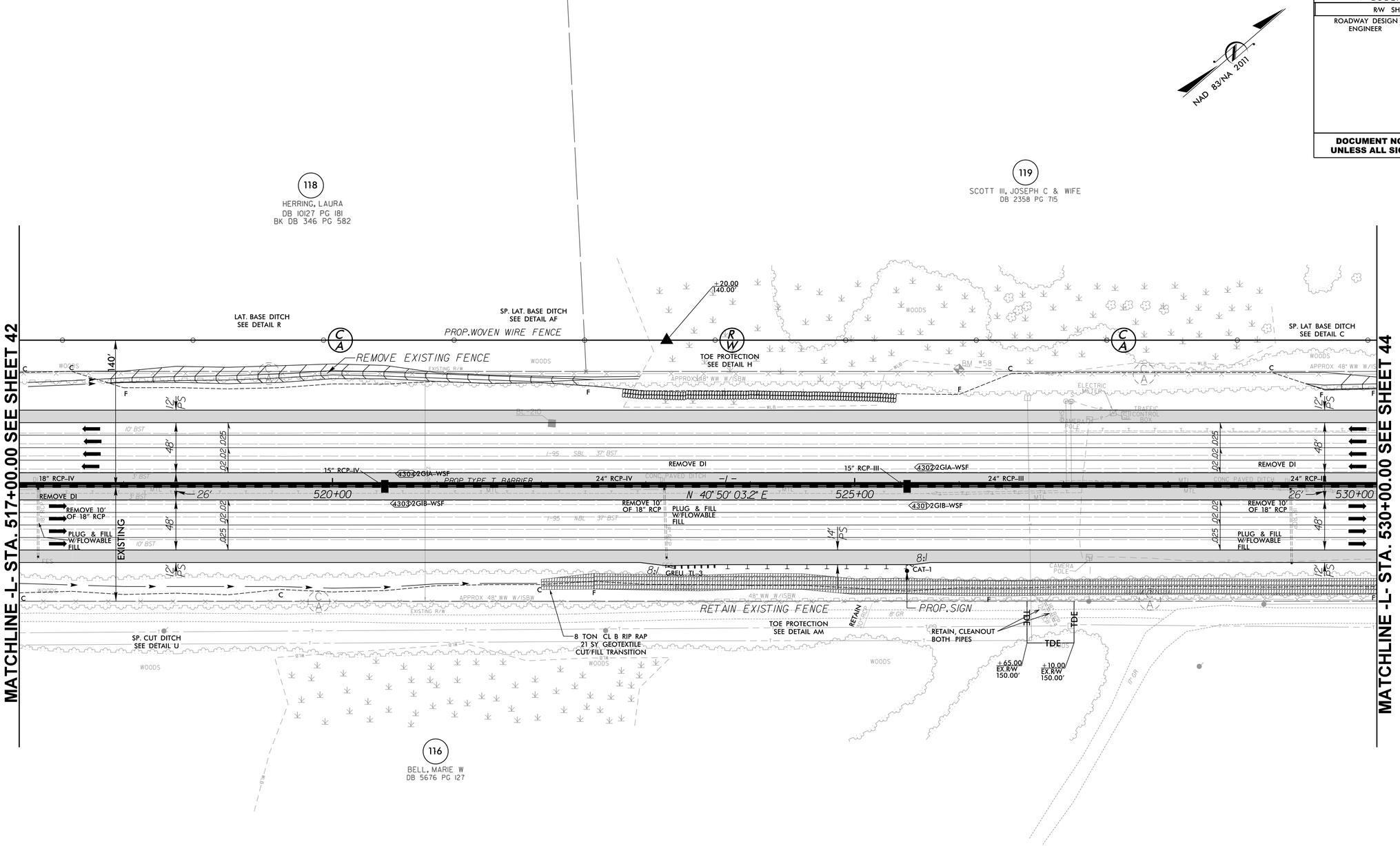
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	43
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

FOR –LLT_SEC2– PROFILE SEE SHTS. 124 THRU 125
FOR –LRT_SEC2– PROFILE SEE SHTS. 124 THRU 125
FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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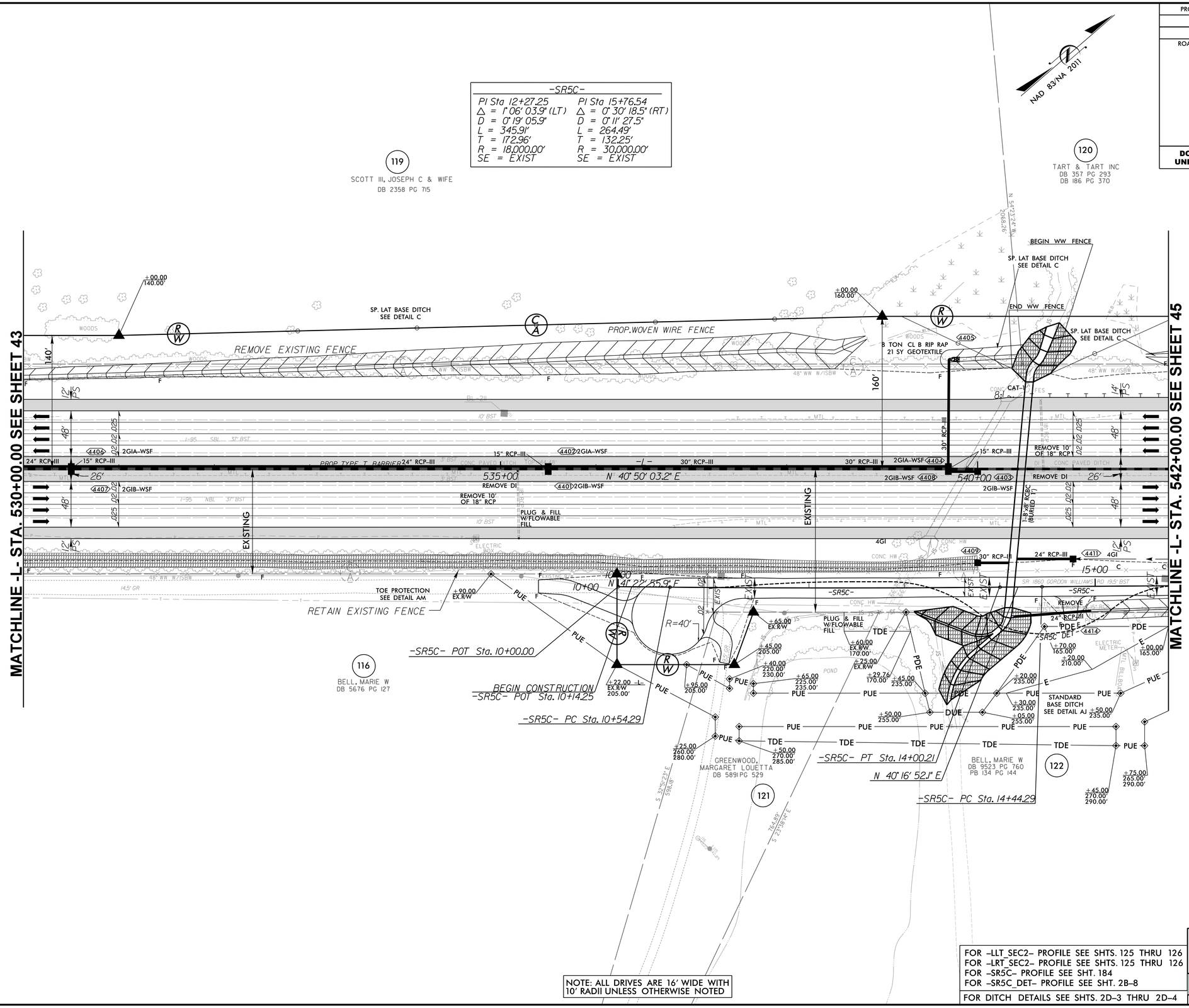
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	44
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-SR5C-	
PI Sta 12+27.25	PI Sta 15+76.54
△ = 1° 06' 03.9" (LT)	△ = 0° 30' 18.5" (RT)
D = 0° 19' 05.9"	D = 0° 11' 27.5"
L = 345.91'	L = 264.49'
T = 172.96'	T = 132.25'
R = 18,000.00'	R = 30,000.00'
SE = EXIST	SE = EXIST



NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

FOR –LLT_SEC2– PROFILE SEE SHTS. 125 THRU 126
FOR –LRT_SEC2– PROFILE SEE SHTS. 125 THRU 126
FOR –SR5C– PROFILE SEE SHT. 184
FOR –SR5C_DET– PROFILE SEE SHT. 2B–8

FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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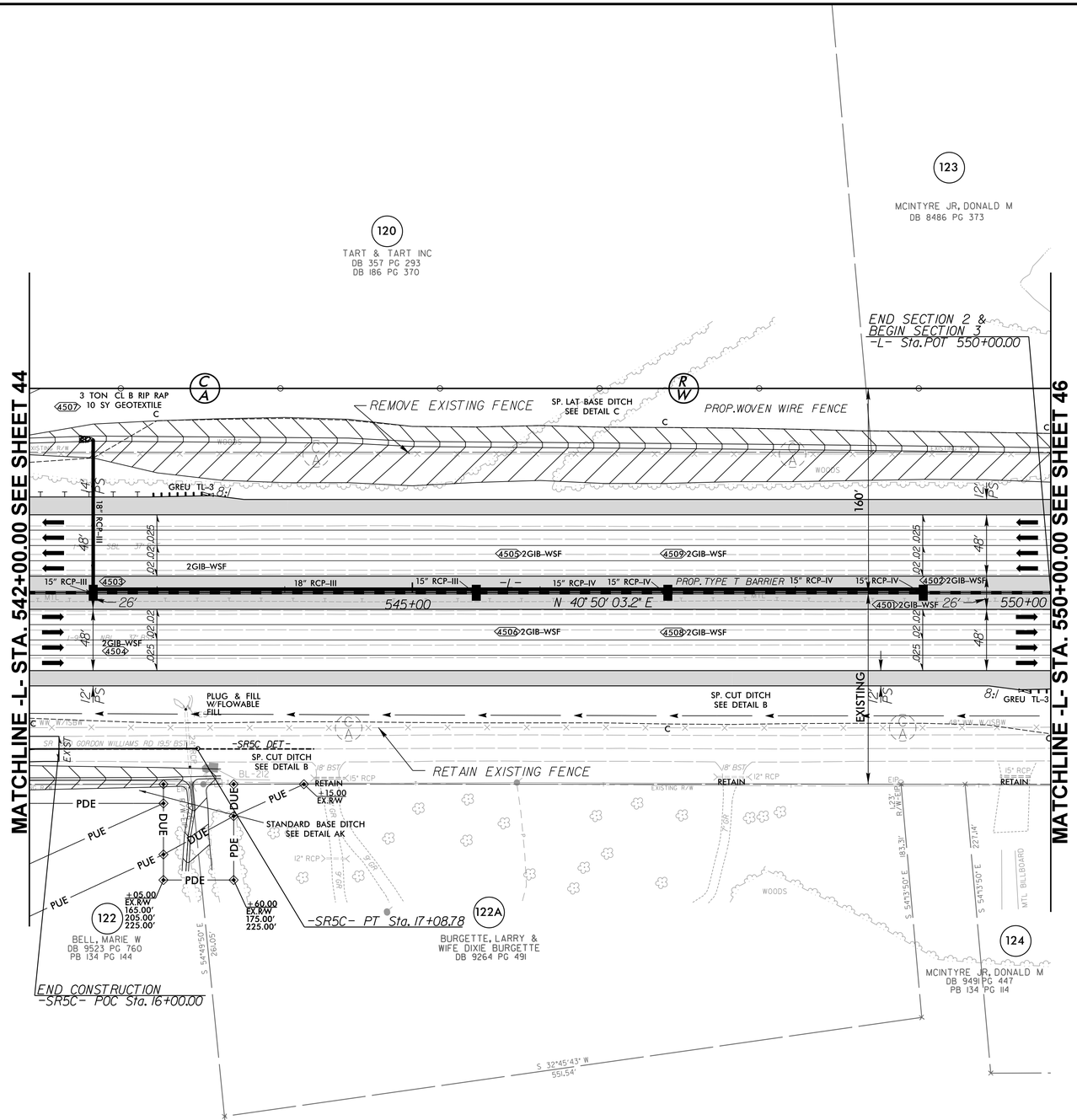
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	45
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-SR5C-
PI Sta 15+76.54
△ = 0° 30' 18.5" (RT)
D = 0° 11' 27.5"
L = 264.49'
T = 132.25'
R = 30,000.00'
SE = EXIST

NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

FOR -LLT_SEC2- PROFILE SEE SHT. 126
FOR -LRT_SEC2- PROFILE SEE SHT. 126

FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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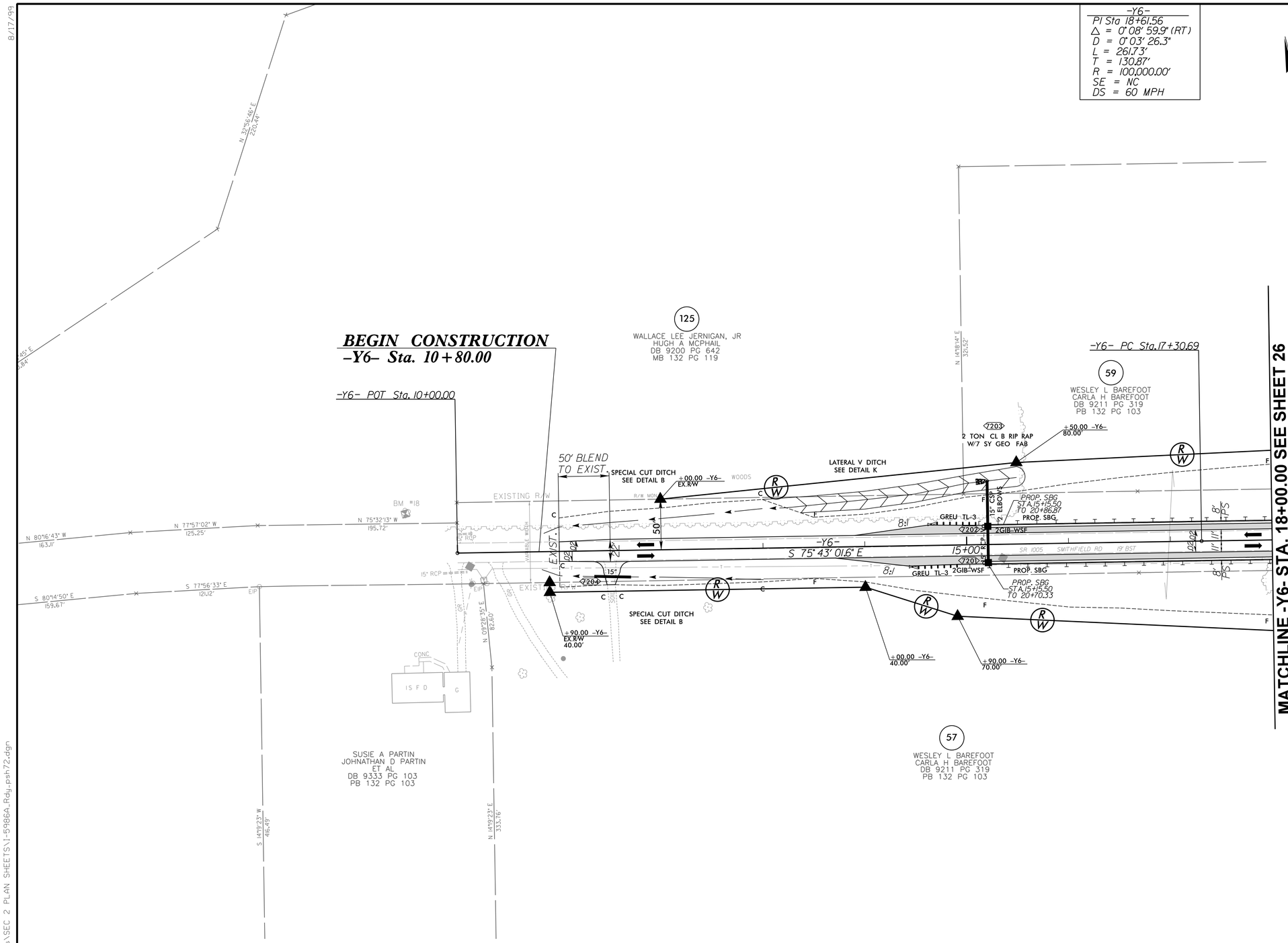
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	72
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y6-
PI Sta 18+61.56
△ = 0° 08' 59.9" (RT)
D = 0° 03' 26.3"
L = 261.73'
T = 130.87'
R = 100,000.00'
SE = NC
DS = 60 MPH



NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

FOR -Y6- PROFILE SEE SHT. 174

FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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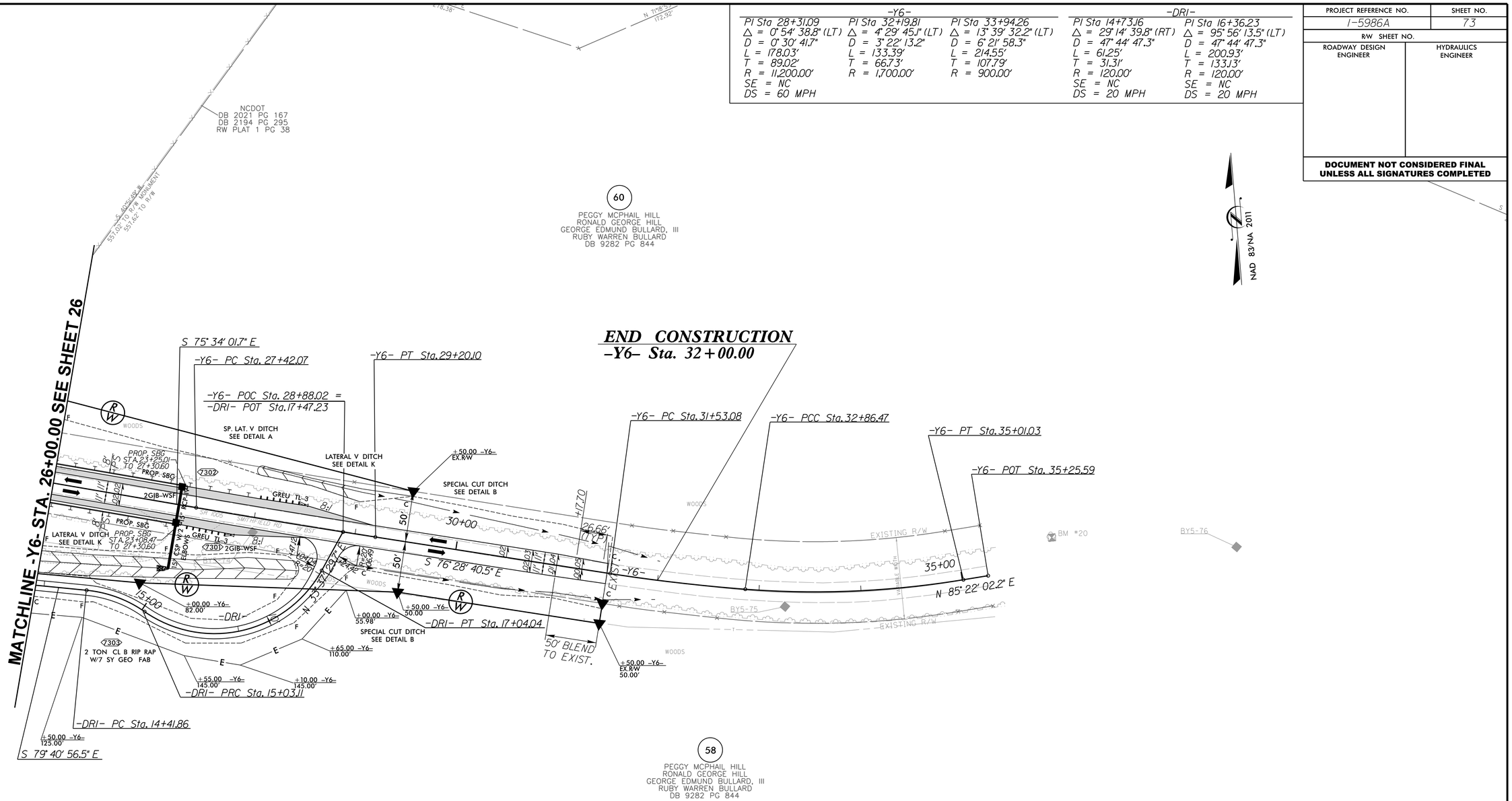
-Y6-			-DRI-	
PI Sta 28+31.09	PI Sta 32+19.81	PI Sta 33+94.26	PI Sta 14+73.16	PI Sta 16+36.23
△ = 0° 54' 38.8" (LT)	△ = 4° 29' 45.1" (LT)	△ = 13° 39' 32.2" (LT)	△ = 29° 14' 39.8" (RT)	△ = 95° 56' 13.5" (LT)
D = 0° 30' 41.7"	D = 3° 22' 13.2"	D = 6° 21' 58.3"	D = 47° 44' 47.3"	D = 47° 44' 47.3"
L = 178.03'	L = 133.39'	L = 214.55'	L = 61.25'	L = 200.93'
T = 89.02'	T = 66.73'	T = 107.79'	T = 31.31'	T = 133.13'
R = 11,200.00'	R = 1,700.00'	R = 900.00'	R = 120.00'	R = 120.00'
SE = NC			SE = NC	SE = NC
DS = 60 MPH			DS = 20 MPH	DS = 20 MPH

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	73
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



FOR -Y6- PROFILE SEE SHT. 174
FOR -DRI- PROFILE SEE SHT. 184

FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	74
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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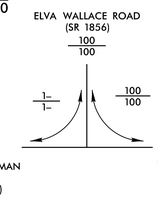
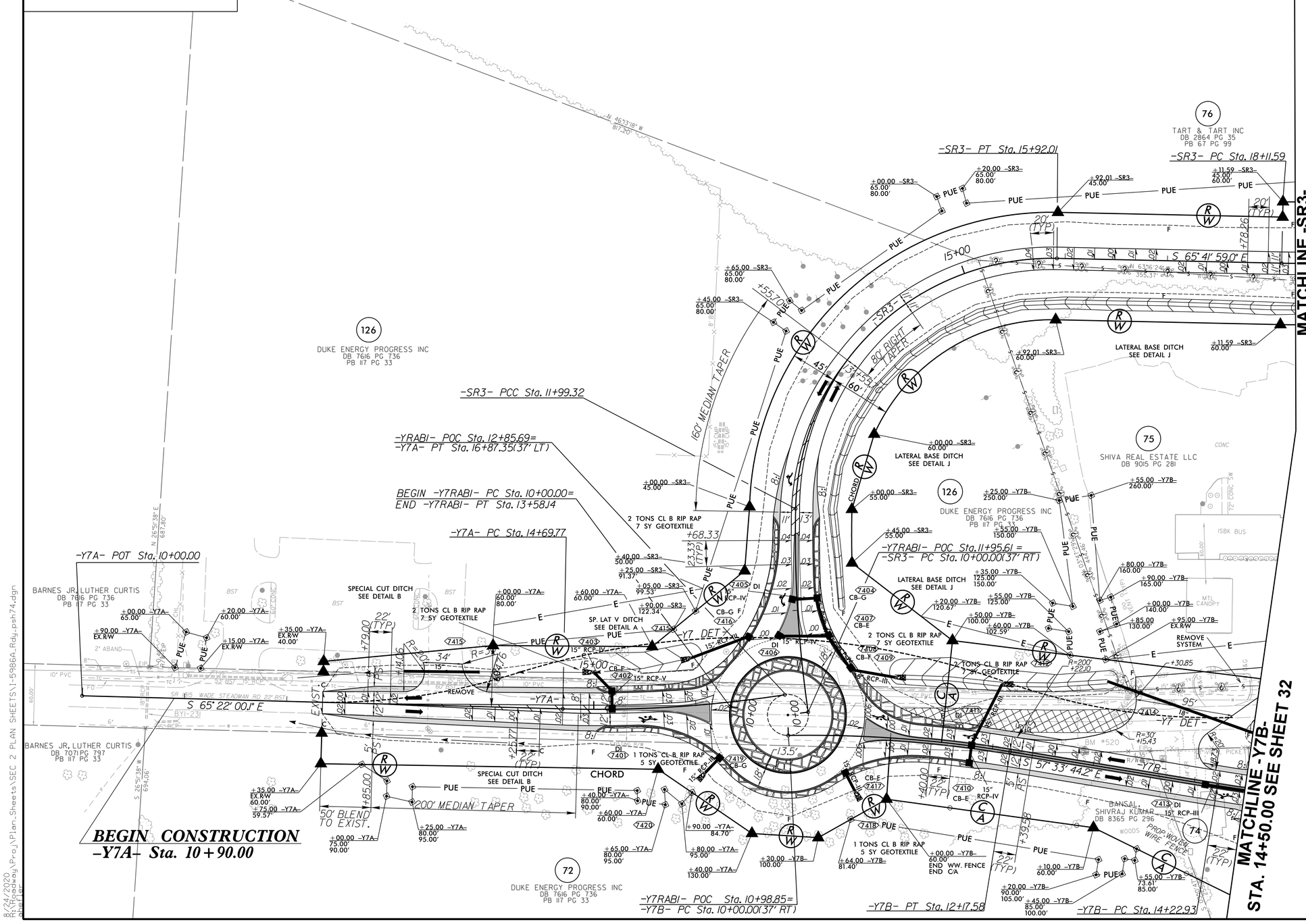
TRAFFIC DIAGRAM

ADT 2018
ADT 2040



-Y7A-	-Y7B-		-Y7RABI-	-SR3-		
PI Sta 15+78.86	PI Sta 11+09.09	PI Sta 15+32.02	PI Sta 10+00.00	PI Sta 10+99.89	PI Sta 14+49.31	PI Sta 20+47.50
Δ = 10° 23' 19.9" (LT)	Δ = 10° 23' 19.9" (LT)	Δ = 10° 23' 19.9" (LT)	Δ = 360° 00' 00.0" (LT)	Δ = 9° 31' 01.1" (RT)	Δ = 89° 59' 51.2" (RT)	Δ = 46° 25' 55.4" (LT)
D = 4° 46' 28.7"	D = 4° 46' 28.7"	D = 4° 46' 28.7"	D = 100° 31' 08.2"	D = 4° 46' 28.7"	D = 22° 55' 05.9"	D = 10° 25' 02.7"
L = 217.58'	L = 217.58'	L = 217.58'	L = 358.14'	L = 199.32'	L = 392.69'	L = 445.72'
T = 109.09'	T = 109.09'	T = 109.09'	T = 0.00'	T = 99.89'	T = 249.99'	T = 235.91'
R = 1,200.00'	R = 1,200.00'	R = 1,200.00'	R = 57.00'	R = 1,200.00'	R = 250.00'	R = 550.00'
SE = 0.03	SE = 0.03	SE = 0.03		SE = 0.03	SE = 0.04	SE = 0.04
DS = 25 MPH	DS = 25 MPH	DS = 25 MPH		DS = 25 MPH	DS = 30 MPH	DS = 40 MPH

NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED



FOR -Y7RAB1- PROFILE SEE SHT. 176
FOR -Y7A- PROFILE SEE SHT. 175
FOR -Y7B- PROFILE SEE SHT. 175
FOR -Y7 DET- PROFILE SEE SHT. 2B-7
FOR -SR3- PROFILE SEE SHT. 182

FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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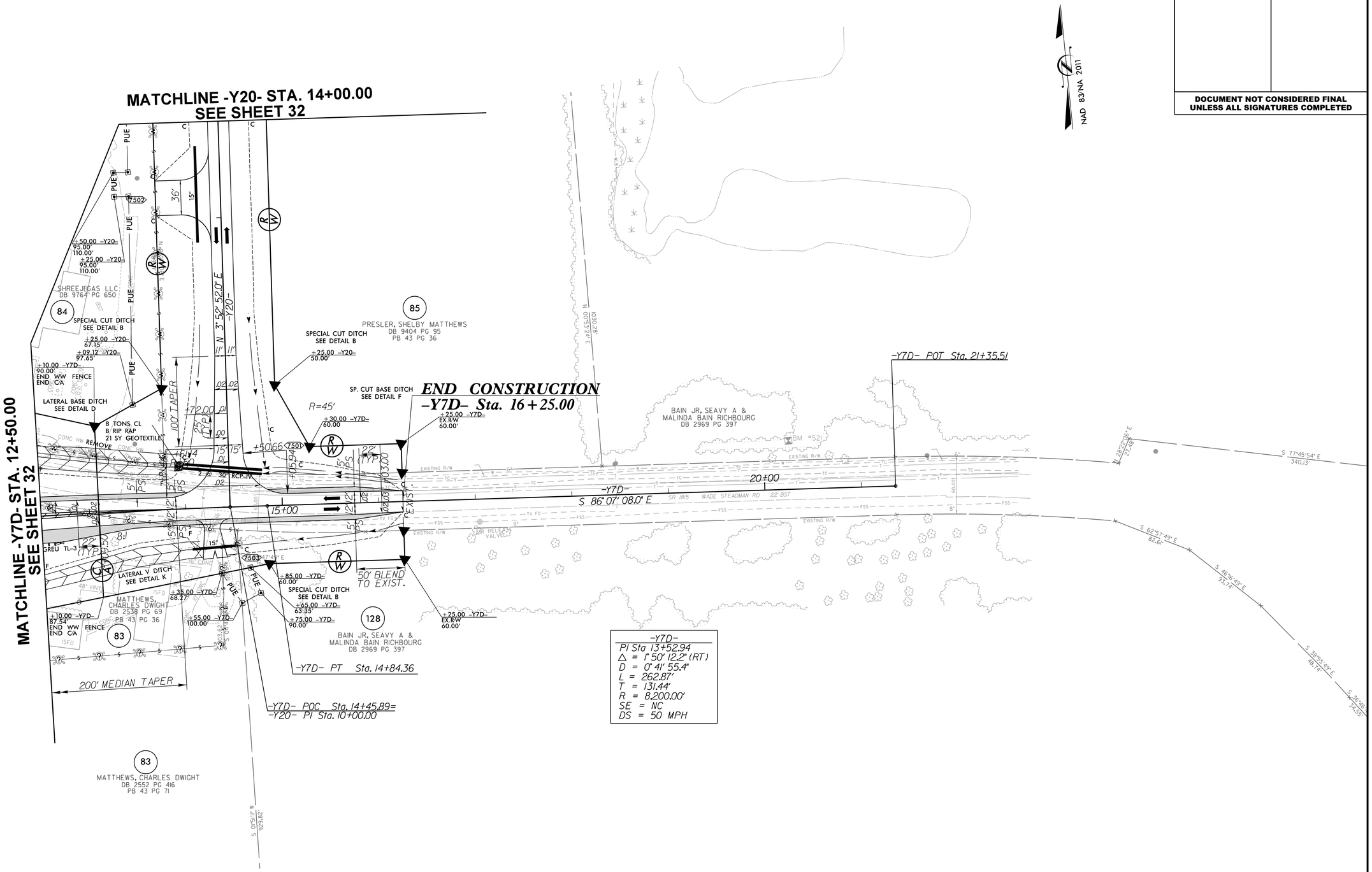
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	75
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

FOR -Y7D- PROFILE SEE SHT. 176
FOR -Y20- PROFILE SEE SHT. 181

FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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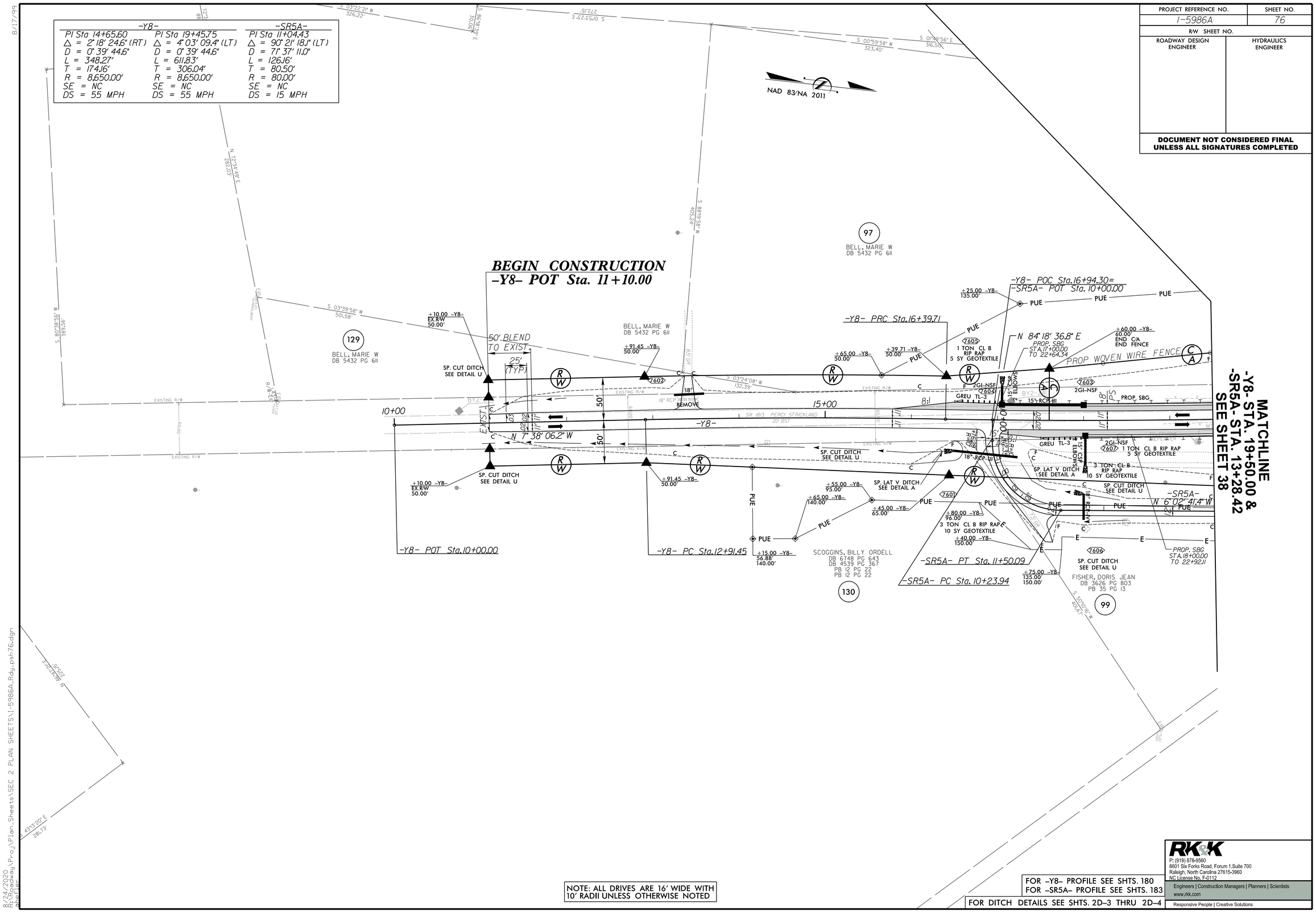
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	76
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y8-	-Y8-	-SR5A-
PI Sta 14+65.60	PI Sta 19+45.75	PI Sta 11+04.43
Δ = 2° 18' 24.6" (RT)	Δ = 4° 03' 09.4" (LT)	Δ = 90° 21' 18.1" (LT)
D = 0° 39' 44.6"	D = 0° 39' 44.6"	D = 71° 37' 11.0"
L = 348.27'	L = 611.83'	L = 126.16'
T = 174.16'	T = 306.04'	T = 80.50'
R = 8,650.00'	R = 8,650.00'	R = 80.00'
SE = NC	SE = NC	SE = NC
DS = 55 MPH	DS = 55 MPH	DS = 15 MPH



NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

FOR -Y8- PROFILE SEE SHTS. 180
FOR -SR5A- PROFILE SEE SHTS. 183

FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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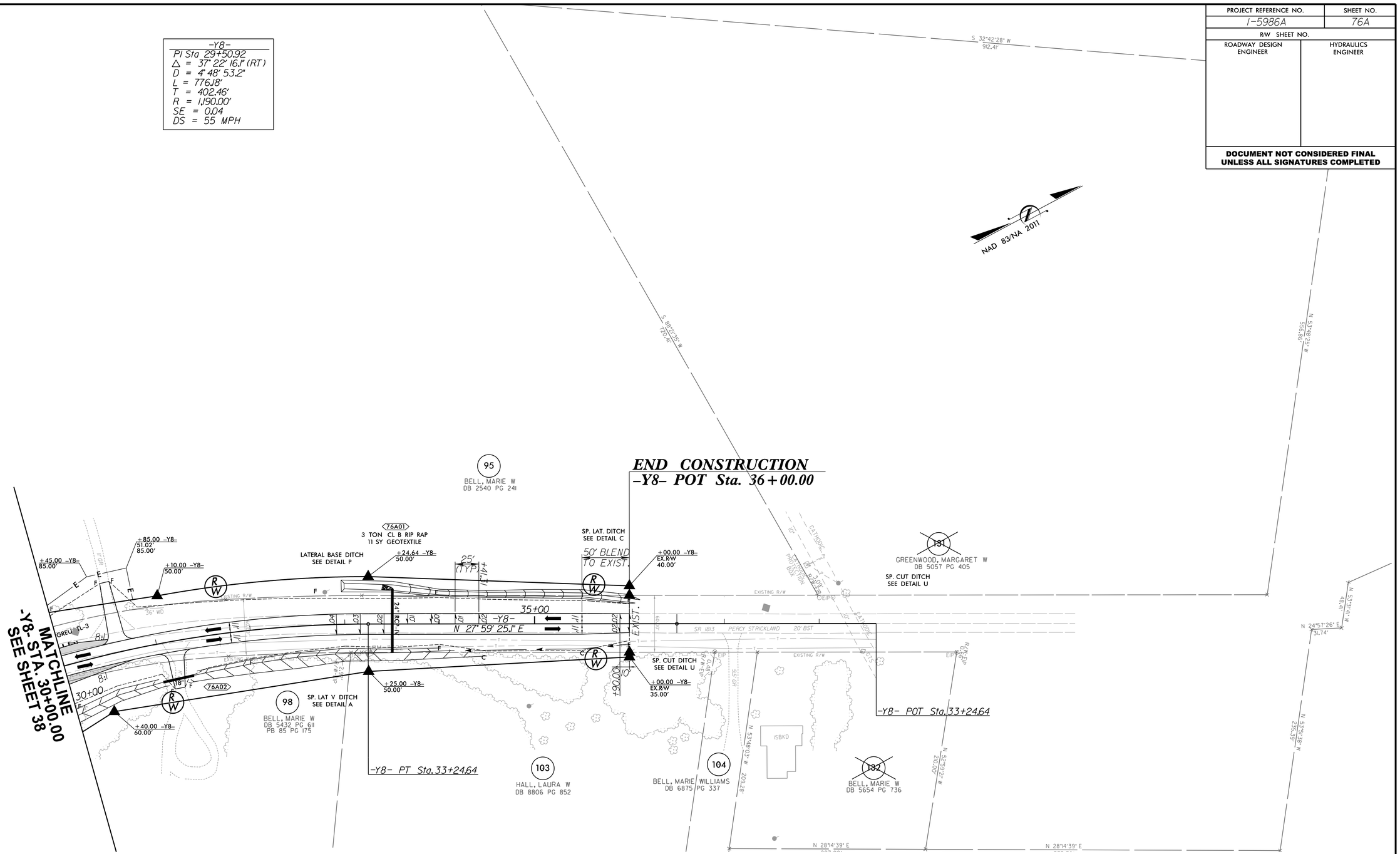
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	76A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y8-
PI Sta 29+50.92
Δ = 37° 22' 16.1" (RT)
D = 4° 48' 53.2"
L = 776.18'
T = 402.46'
R = 1,190.00'
SE = 0.04
DS = 55 MPH



NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

FOR -Y8- PROFILE SEE SHT. 180

FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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09/08/99

See Sheet 1-B For Conventional Symbols

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5986A	1	

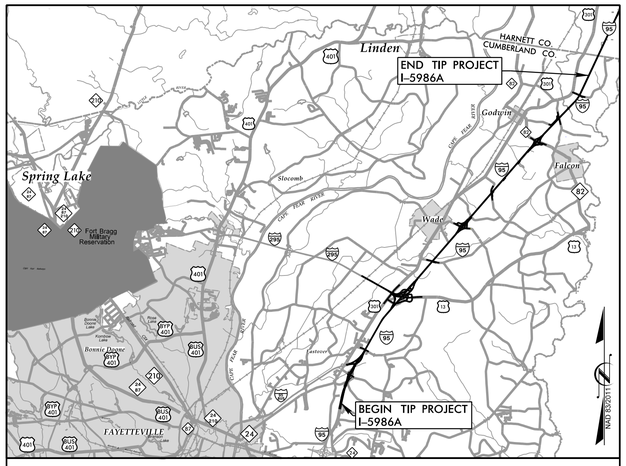
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
47532.2.2	NHP-0095(057)	R/W
47532.3.2	NHP-0095(057)	PE, UTIL., CONST.

CUMBERLAND COUNTY

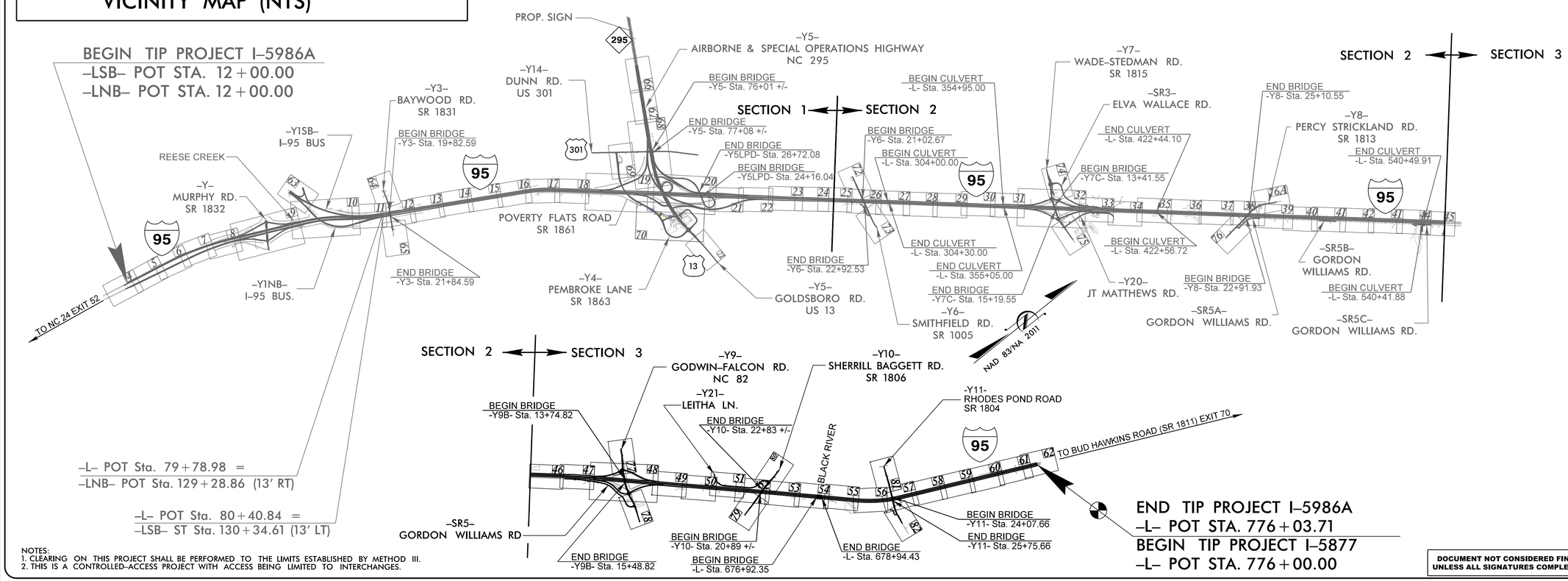
LOCATION: I-95 WIDENING FROM SOUTH OF SR 1832 (MURPHY ROAD- EXIT 55) TO SOUTH OF SR 1811 (BUD HAWKINS ROAD-EXIT 70)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, LIGHTING, SIGNING, ITS, CULVERTS & STRUCTURES

SECTION 3 - ROW ROADWAY PLANS FOR PARCELS #162 THRU #193



VICINITY MAP (NTS)



NOTES:
1. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
2. THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

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TIP PROJECT: I-5986A

CONTRACT: C204283

8/24/2020
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lkitchings

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 2018 = 56,700
ADT 2040 = 73,800
K = 55%
D = 7%
T = 18% *
V = 75 MPH

FUNC CLASS: INTERSTATE
* (TTST 13% + DUALS 5%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT I-5986A.....15.368 MILES
LENGTH STRUCTURE TIP PROJECT I-5986A.....0.048 MILES
TOTAL LENGTH TIP PROJECT I-5986A.....15.416 MILES

NCDOT CONTACT

Karen Capps, P.E.
PROJECT ENGINEER - DESIGN-BUILD UNIT

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

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

S.T. WOOTEN

2018 STANDARD SPECIFICATIONS

LETTING DATE:
AUGUST 20, 2019

Michael T. Merritt, P.E.
PROJECT ENGINEER

Anthony A. Houser, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER
SIGNATURE: P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PAVEMENT SCHEDULE	
~~C1~~	1.5" TYPE S9.5B
C2	3" TYPE S9.5B
C3	VAR. TYPE S9.5B
C4	1.5" TYPE S9.5C
C5	3" TYPE S9.5C
C6	VAR. TYPE S9.5C
C7	1.5" TYPE S9.5D
C8	3" TYPE S9.5D
C9	VAR. TYPE S9.5D
C10	2" TYPE S9.5C
D1	2.5" TYPE I19.0C
D2	3" TYPE I19.0C
D3	4" TYPE I19.0C
D4	VAR. TYPE I19.0C
E1	3" TYPE B25.0C
E2	4" TYPE B25.0C
E3	4.5" TYPE B25.0C
E4	5" TYPE B25.0C
E5	5.5" TYPE B25.0C
E6	VAR. TYPE B25.0C
J1	6" ABC
J2	8" ABC
J3	10" ABC
K	12" TYPE 1 AGGREGATE SUBGRADE
N	GEOTEXTILE FOR SOIL STABILIZATION
P	PRIME COAT
R	9" X 18" CURB
R1	1'-6" C&G
R2	2'-6" C&G
R3	SINGLE FACED CONCRETE BARRIER
R4	TYPE T CONCRETE BARRIER
R5	SBG
R6	5" MONOLITHIC CONCRETE ISLAND
R7	12" JOINTED TRUCK APRON WITH WIRE MESH
R8	12" JOINTED TRUCK APRON
R9	4" ISLAND COVER
S	4" CONC. SIDEWALK
T	EARTH
U	EXISTING PAVEMENT
W	WEDGING
V1	1.5" MILLING
V2	3" MILLING
V3	INCIDENTAL MILLING
Y	MILLED RUMBLE STRIPS

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-2
R/W SHEET NO.	
ROADWAY DESIGN	PAVEMENT ENGINEER

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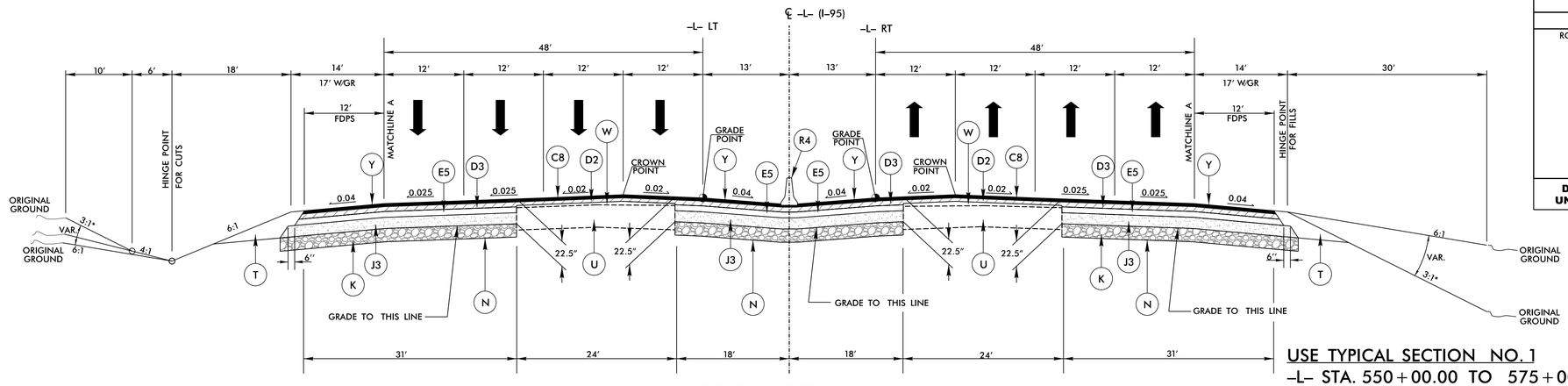
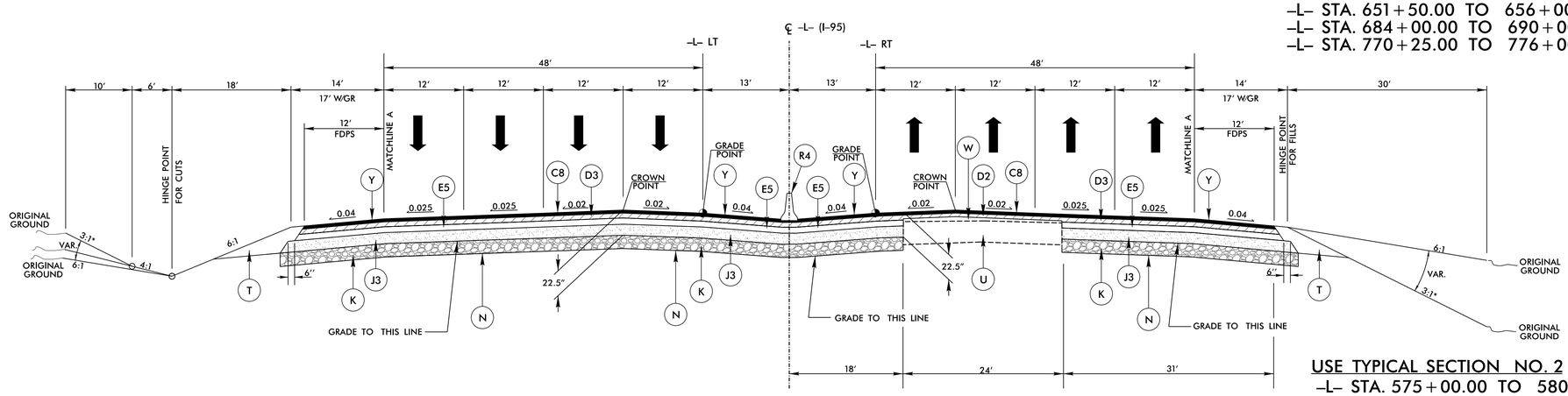


TYPICAL SECTION NO. 1

FOR MATCHLINE A, SEE SHEET 2A-1

USE TYPICAL SECTION NO. 1

-L- STA. 550+00.00 TO 575+00.00
-L- STA. 580+00.00 TO 598+00.00
-L- STA. 611+00.00 TO 624+00.00
-L- STA. 634+50.00 TO 636+50.00
-L- STA. 651+50.00 TO 656+00.00
-L- STA. 684+00.00 TO 690+00.00
-L- STA. 770+25.00 TO 776+00.00

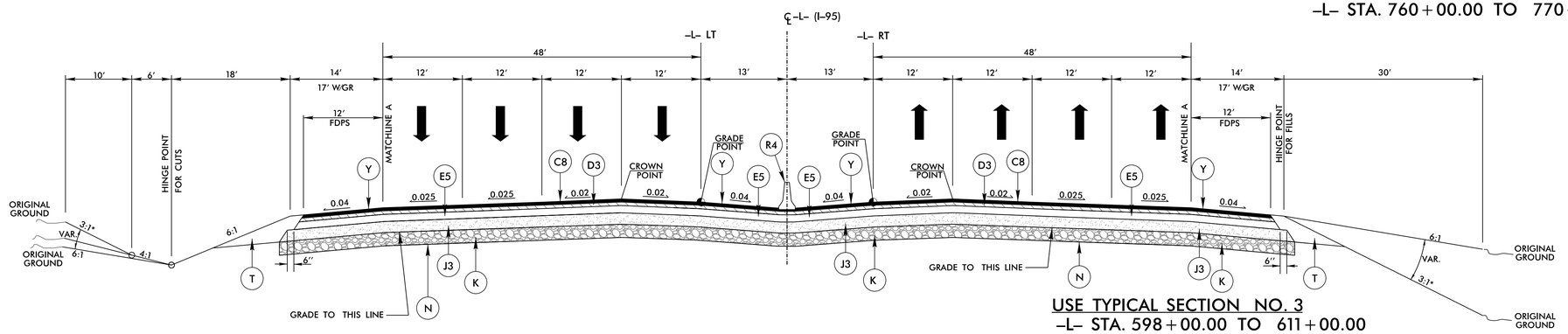


TYPICAL SECTION NO. 2

FOR MATCHLINE A, SEE SHEET 2A-1

USE TYPICAL SECTION NO. 2

-L- STA. 575+00.00 TO 580+00.00
-L- STA. 631+00.00 TO 634+50.00
-L- STA. 656+00.00 TO 670+00.00
-L- STA. 689+00.00 TO 735+00.00
-L- STA. 742+00.00 TO 751+50.00
-L- STA. 760+00.00 TO 770+25.00



TYPICAL SECTION NO. 3

FOR MATCHLINE A, SEE SHEET 2A-1

USE TYPICAL SECTION NO. 3

-L- STA. 598+00.00 TO 611+00.00
-L- STA. 624+00.00 TO 631+00.00
-L- STA. 636+50.00 TO 651+50.00
-L- STA. 670+00.00 TO 676+92.35 (BEGIN BRIDGE)
-L- STA. 678+94.43 (END BRIDGE) TO 689+00.00
-L- STA. 735+00.00 TO 742+00.00
-L- STA. 751+50.00 TO 760+00.00

NOTES:

SEE PLANS FOR LOCATION OF AUXILARY LANES, TURN LANES, TAPERS, AND CONCRETE ISLANDS.
*4:1 MAXIMUM SLOPES WITHIN INTERCHANGES.
PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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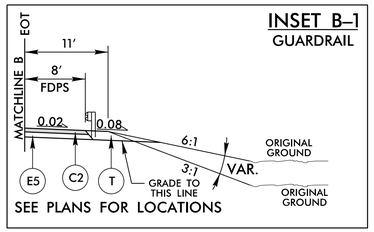
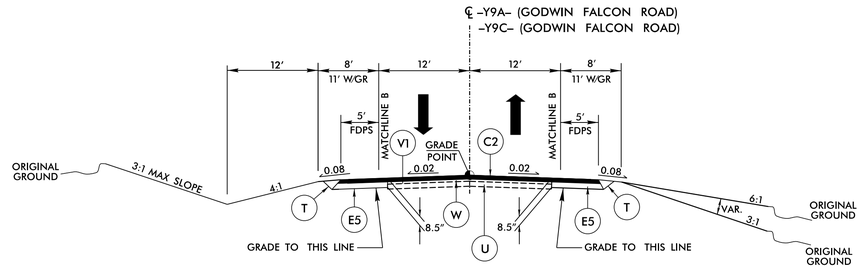
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE	
~~B1~~	1.5" TYPE S9.5B
C2	3" TYPE S9.5B
C3	VAR. TYPE S9.5B
C4	1.5" TYPE S9.5C
C5	3" TYPE S9.5C
C6	VAR. TYPE S9.5C
C7	1.5" TYPE S9.5D
C8	3" TYPE S9.5D
C9	VAR. TYPE S9.5D
C10	2" TYPE S9.5C
D1	2.5" TYPE I19.0C
D2	3" TYPE I19.0C
D3	4" TYPE I19.0C
D4	VAR. TYPE I19.0C
E1	3" TYPE B25.0C
E2	4" TYPE B25.0C
E3	4.5" TYPE B25.0C
E4	5" TYPE B25.0C
E5	5.5" TYPE B25.0C
E6	VAR. TYPE B25.0C
J1	6'' ABC
J2	8'' ABC
J3	10'' ABC
K	12" TYPE 1 AGGREGATE SUBGRADE
N	GEOTEXTILE FOR SOIL STABILIZATION
P	PRIME COAT
R	9" X 18" CURB
R1	1'-6'' C&G
R2	2'-6'' C&G
R3	SINGLE FACED CONCRETE BARRIER
R4	TYPE T CONCRETE BARRIER
R5	SBG
R6	5'' MONOLITHIC CONCRETE ISLAND
R7	12'' JOINTED TRUCK APRON WITH WIRE MESH
R8	12'' JOINTED TRUCK APRON
R9	4'' ISLAND COVER
S	4" CONC. SIDEWALK
T	EARTH
U	EXISTING PAVEMENT
W	WEDGING
V1	1.5" MILLING
V2	3" MILLING
V3	INCIDENTAL MILLING
Y	MILLED RUMBLE STRIPS



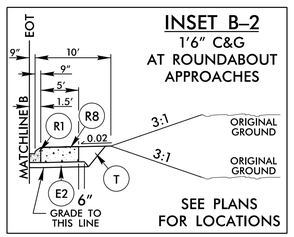


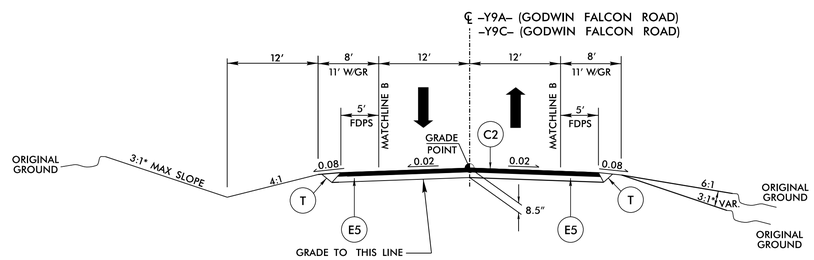
TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

–Y9A– STA. 10+00.00 TO STA 14+74.47
–Y9C– STA. 14+80.85 TO STA. 19+45.00

NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 4 IN THE FOLLOWING LOCATIONS:
–Y9A– STA. 10+00.00 TO STA. 10+50.00
–Y9C– STA. 18+95.00 TO STA. 19+45.00

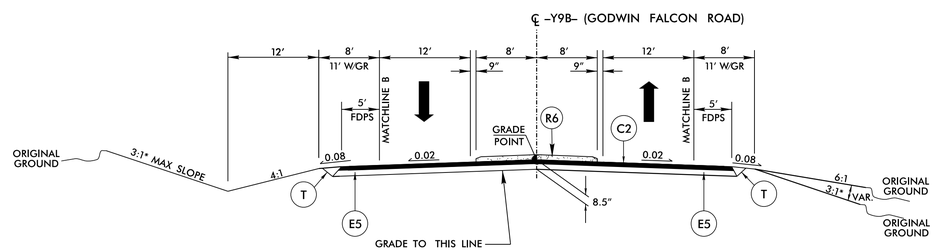




TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5

–Y9A– STA 14+74.47 TO STA 18+55.93 (BEGIN ROUNDABOUT)
–Y9C– STA. 10+72.28 (END ROUNDABOUT) TO 14+80.82



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6

–Y9B– STA. 10+71.70 (END ROUNDABOUT) TO 13+74.82 (BEGIN BRIDGE)
–Y9B– STA. 15+48.82 (END BRIDGE) TO 19+92.08 (BEGIN ROUNDABOUT)

NOTES:
SEE PLANS FOR LOCATION OF AUXILARY LANES, TURN LANES, TAPERS, AND CONCRETE ISLANDS.
*4:1 MAXIMUM SLOPES WITHIN INTERCHANGES.
PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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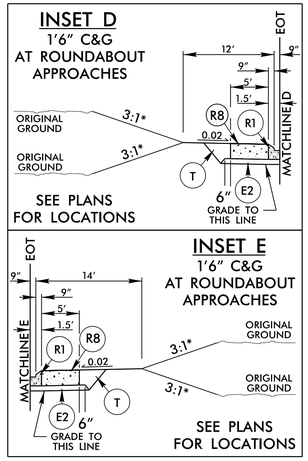
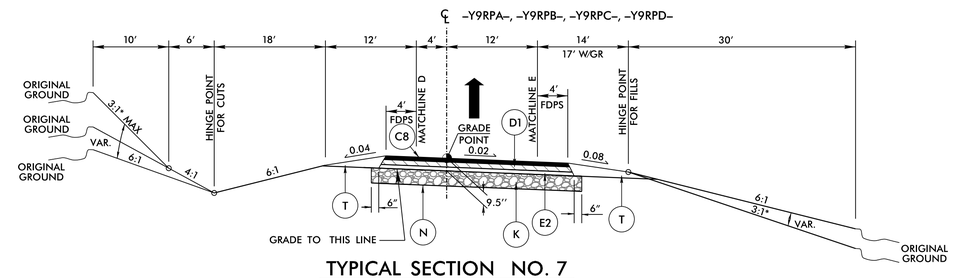
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE	
~~B1~~	1.5" TYPE S9.5B
C2	3" TYPE S9.5B
C3	VAR. TYPE S9.5B
C4	1.5" TYPE S9.5C
C5	3" TYPE S9.5C
C6	VAR. TYPE S9.5C
C7	1.5" TYPE S9.5D
C8	3" TYPE S9.5D
C9	VAR. TYPE S9.5D
C10	2" TYPE S9.5C
D1	2.5" TYPE I19.0C
D2	3" TYPE I19.0C
D3	4" TYPE I19.0C
D4	VAR. TYPE I19.0C
E1	3" TYPE B25.0C
E2	4" TYPE B25.0C
E3	4.5" TYPE B25.0C
E4	5" TYPE B25.0C
E5	5.5" TYPE B25.0C
E6	VAR. TYPE B25.0C
J1	6" ABC
J2	8" ABC
J3	10" ABC
K	12" TYPE 1 AGGREGATE SUBGRADE
N	GEOTEXTILE FOR SOIL STABILIZATION
P	PRIME COAT
R	9" X 18" CURB
R1	1'-6" C&G
R2	2'-6" C&G
R3	SINGLE FACED CONCRETE BARRIER
R4	TYPE T CONCRETE BARRIER
R5	SBG
R6	5" MONOLITHIC CONCRETE ISLAND
R7	12" JOINTED TRUCK APRON WITH WIRE MESH
R8	12" JOINTED TRUCK APRON
R9	4" ISLAND COVER
S	4" CONC. SIDEWALK
T	EARTH
U	EXISTING PAVEMENT
W	WEDGING
V1	1.5" MILLING
V2	3" MILLING
V3	INCIDENTAL MILLING
Y	MILLED RUMBLE STRIPS





TYPICAL SECTION NO. 7

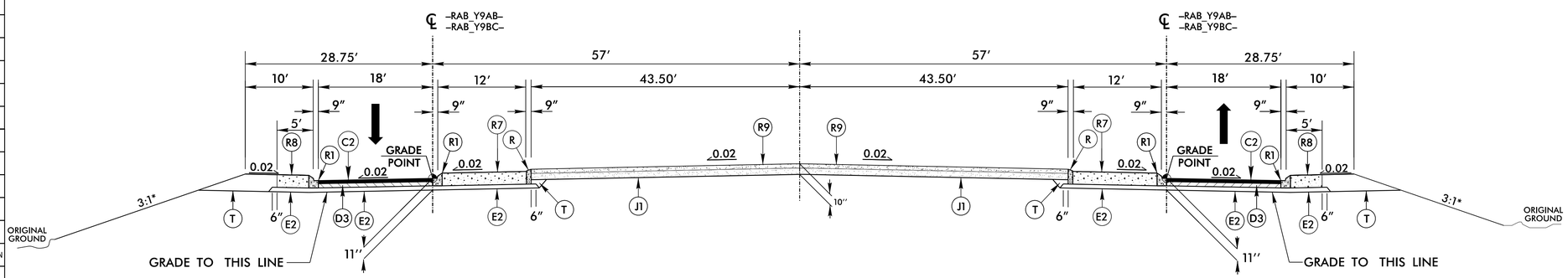
USE TYPICAL SECTION NO. 7

-Y9RPA- STA 10+00.00 TO STA. 25+33.96
-Y9RPC- STA 10+00.00 TO STA. 26+84.94

USE REVERSE TYPICAL AND LANE ARROW

-Y9RPB- STA 10+00.00 TO STA. 23+51.82
-Y9RPD- STA 10+00.00 TO STA. 25+38.67

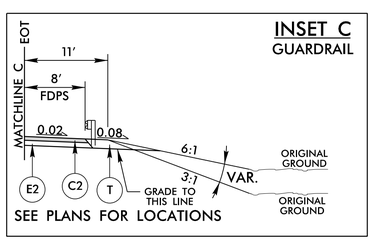
NOTE: USE -L- PAVEMENT DESIGN IN THE FOLLOWING LOCATIONS:
-Y9RPA- STA. 10+00.00 TO STA. 13+82.21
-Y9RPB- STA. 10+00.00 TO STA. 14+70.53
-Y9RPC- STA. 10+00.00 TO STA. 14+20.46
-Y9RPD- STA. 10+00.00 TO STA. 14+70.53

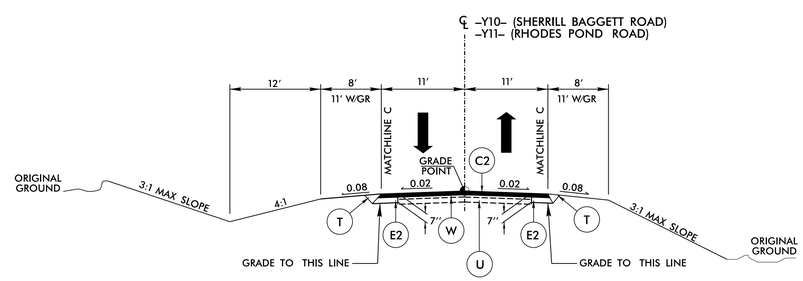


TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8

-RAB_Y9AB- STA 10+00.00 TO STA 13+58.14
-RAB_Y9BC- STA 10+00.00 TO STA 13+58.14





TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9

-Y10- STA 12+10.00 TO STA 13+75.00
-Y10- STA 32+25.00 TO STA. 34+25.00

-Y11- STA 12+50.00 TO STA 13+50.00
-Y11- STA 33+75.00 TO STA 35+50.00

NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 9 IN THE FOLLOWING LOCATIONS:
-Y10- STA. 12+10.00 TO STA. 12+60.00
-Y10- STA. 33+75.00 TO STA. 34+25.00
-Y11- STA. 12+00.00 TO STA. 12+50.00
-Y11- STA. 35+50.00 TO STA. 36+00.00

NOTES:
SEE PLANS FOR LOCATION OF AUXILARY LANES, TURN LANES, TAPERS, AND CONCRETE ISLANDS.
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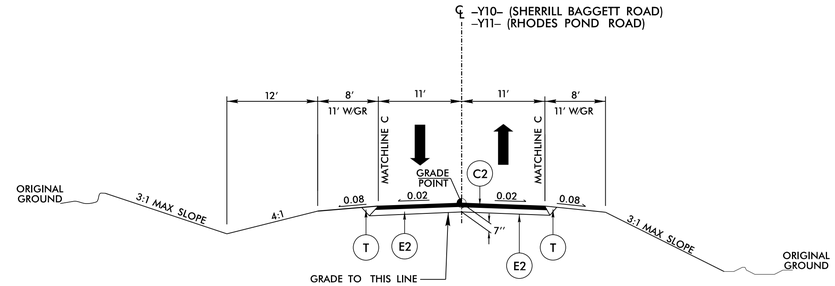
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE	
~~B1~~	1.5" TYPE S9.5B
C2	3" TYPE S9.5B
C3	VAR. TYPE S9.5B
C4	1.5" TYPE S9.5C
C5	3" TYPE S9.5C
C6	VAR. TYPE S9.5C
C7	1.5" TYPE S9.5D
C8	3" TYPE S9.5D
C9	VAR. TYPE S9.5D
C10	2" TYPE S9.5C
D1	2.5" TYPE I19.0C
D2	3" TYPE I19.0C
D3	4" TYPE I19.0C
D4	VAR. TYPE I19.0C
E1	3" TYPE B25.0C
E2	4" TYPE B25.0C
E3	4.5" TYPE B25.0C
E4	5" TYPE B25.0C
E5	5.5" TYPE B25.0C
E6	VAR. TYPE B25.0C
J1	6" ABC
J2	8" ABC
J3	10" ABC
K	12" TYPE 1 AGGREGATE SUBGRADE
N	GEOTEXTILE FOR SOIL STABILIZATION
P	PRIME COAT
R	9" X 18" CURB
R1	1'-6" C&G
R2	2'-6" C&G
R3	SINGLE FACED CONCRETE BARRIER
R4	TYPE T CONCRETE BARRIER
R5	SBG
R6	5" MONOLITHIC CONCRETE ISLAND
R7	12" JOINTED TRUCK APRON WITH WIRE MESH
R8	12" JOINTED TRUCK APRON
R9	4" ISLAND COVER
S	4" CONC. SIDEWALK
T	EARTH
U	EXISTING PAVEMENT
W	WEDGING
V1	1.5" MILLING
V2	3" MILLING
V3	INCIDENTAL MILLING
Y	MILLED RUMBLE STRIPS

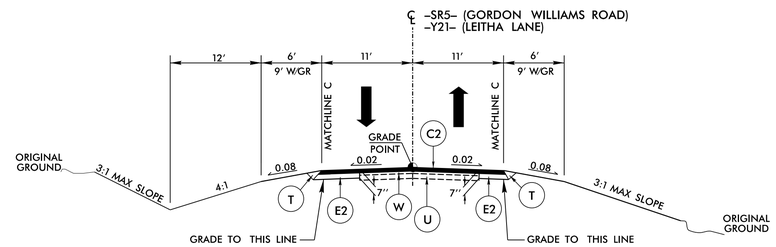


TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10

–Y10– STA 13+75.00 TO STA 20+89.43 (BEGIN BRIDGE)
–Y10– STA 22+83.52 (END BRIDGE) TO STA 32+25.00

–Y11– STA 13+50.00 TO STA 24+07.66 (BEGIN BRIDGE)
–Y11– STA 25+75.66 (END BRIDGE) TO STA 33+75.00

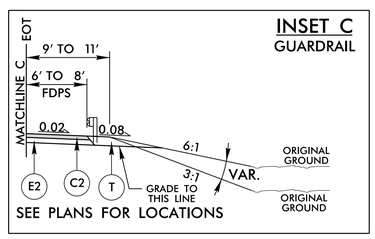


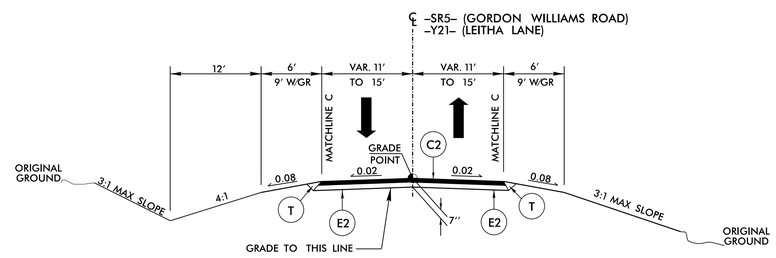
TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 11

–Y21– STA 13+55.00 TO STA 18+75.00
–SR5– STA 14+50.00 TO STA 20+88.68

NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 11 IN THE FOLLOWING LOCATIONS:
–Y21– STA 13+55.00 TO STA 14+05.00
–SR5– STA 14+00.00 TO STA 14+50.00

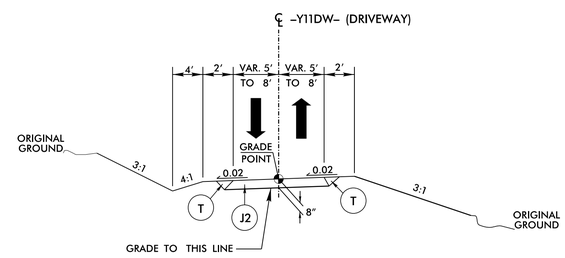




TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12

–Y21– STA 18+75.00 TO STA 38+24.80
–SR5– STA 20+88.68 TO STA 45+55.18



TYPICAL SECTION NO. 13

USE TYPICAL SECTION NO. 13

–Y11DW– STA 10+11.00.00 TO STA 15+50.00

NOTES:
SEE PLANS FOR LOCATION OF AUXILARY LANES, TURN LANES, TAPERS, AND CONCRETE ISLANDS.
*4:1 MAXIMUM SLOPES WITHIN INTERCHANGES.
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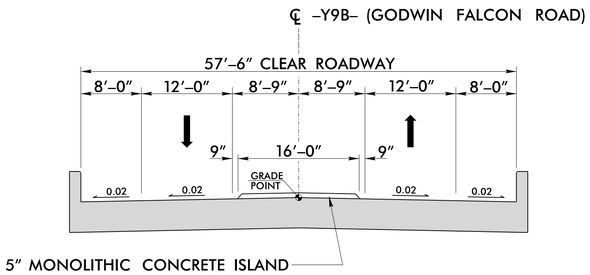
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

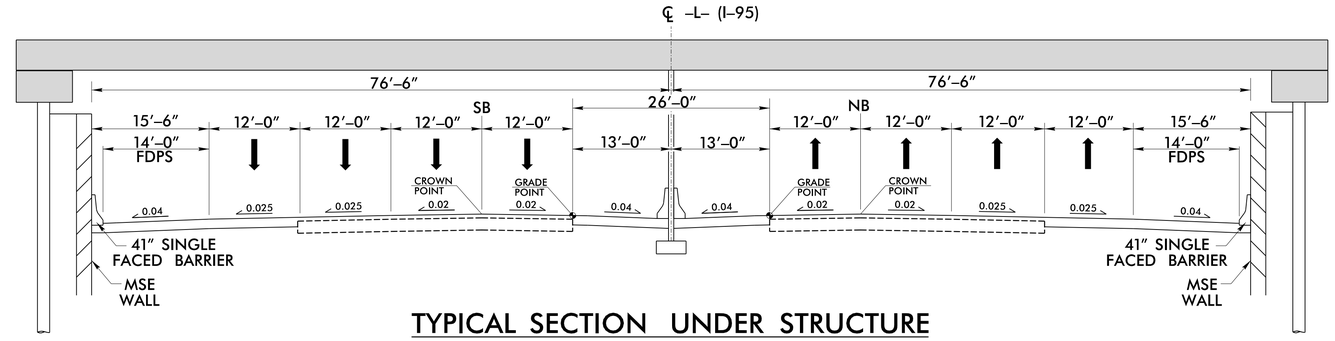
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SITE 6

BRIDGE AT –Y9B– STATION 14 + 61.82 OVER –L– STATION 591 + 70.22



STRUCTURE TYPICAL SECTION

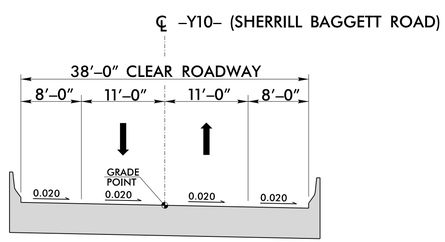


TYPICAL SECTION UNDER STRUCTURE

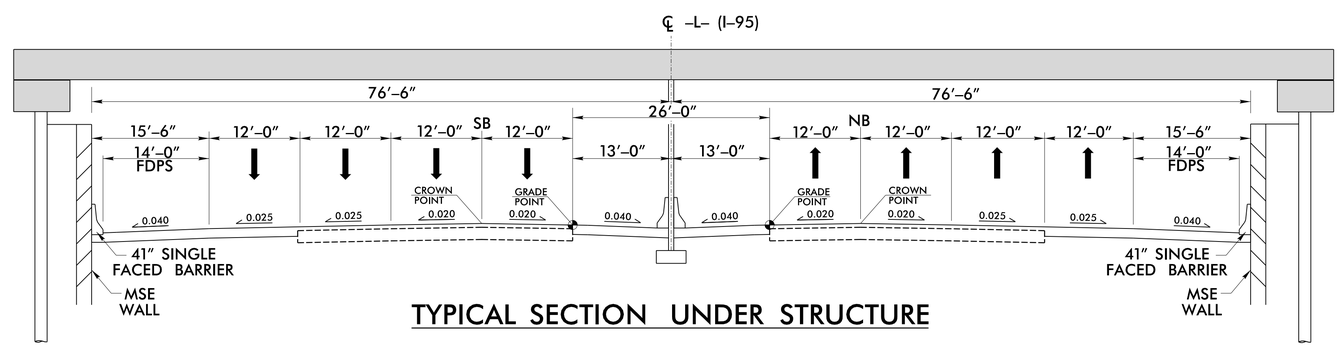
NOTES:
1. SEE SHEET 48 FOR PLAN VIEW.
2. SEE SHEET 187 FOR PROFILE VIEW.

SITE 7

BRIDGE AT –Y10– STATION 21 + 86.48 OVER –L– STATION 652 + 36.45



TYPICAL ON STRUCTURE



TYPICAL SECTION UNDER STRUCTURE

NOTES:
1. SEE SHEET 52 FOR PLAN VIEW.
2. SEE SHEET 193 FOR PROFILE VIEW.

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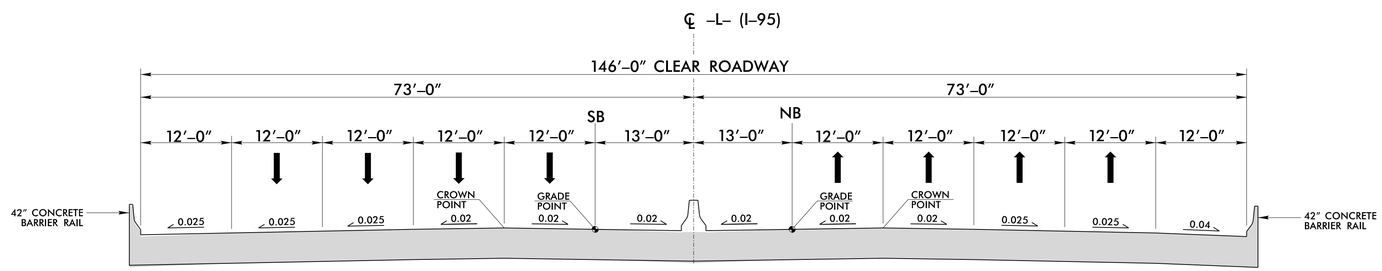
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2A-7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SITE 8

BRIDGE ON –L– STATION 677+93.39 OVER BLACK RIVER

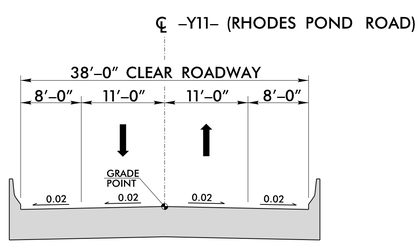


TYPICAL ON STRUCTURE

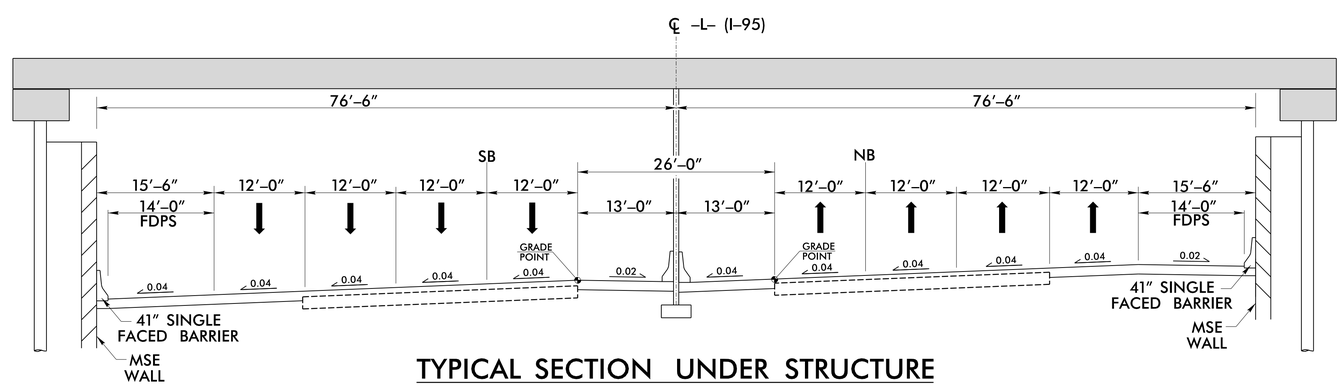
NOTES:
1. SEE SHEET 54 FOR PLAN VIEW.
2. SEE SHEET 136 FOR PROFILE VIEW.

SITE 9

BRIDGE AT –Y11– STATION 24+91.66 OVER –L– STATION 710+35.83



TYPICAL ON STRUCTURE



TYPICAL SECTION UNDER STRUCTURE

NOTES:
1. SEE SHEET 57 FOR PLAN VIEW.
2. SEE SHEET 194 FOR PROFILE VIEW.

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8/24/2020
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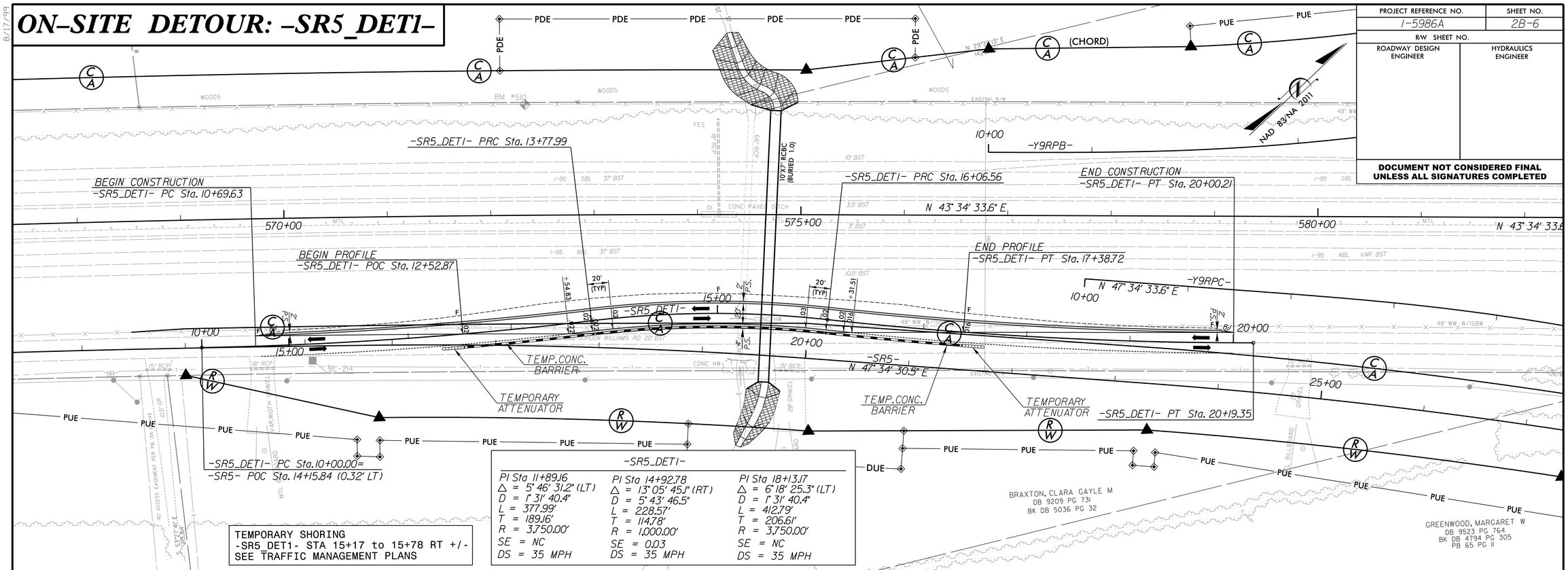
ON-SITE DETOUR: -SR5_DET1-

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2B-6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

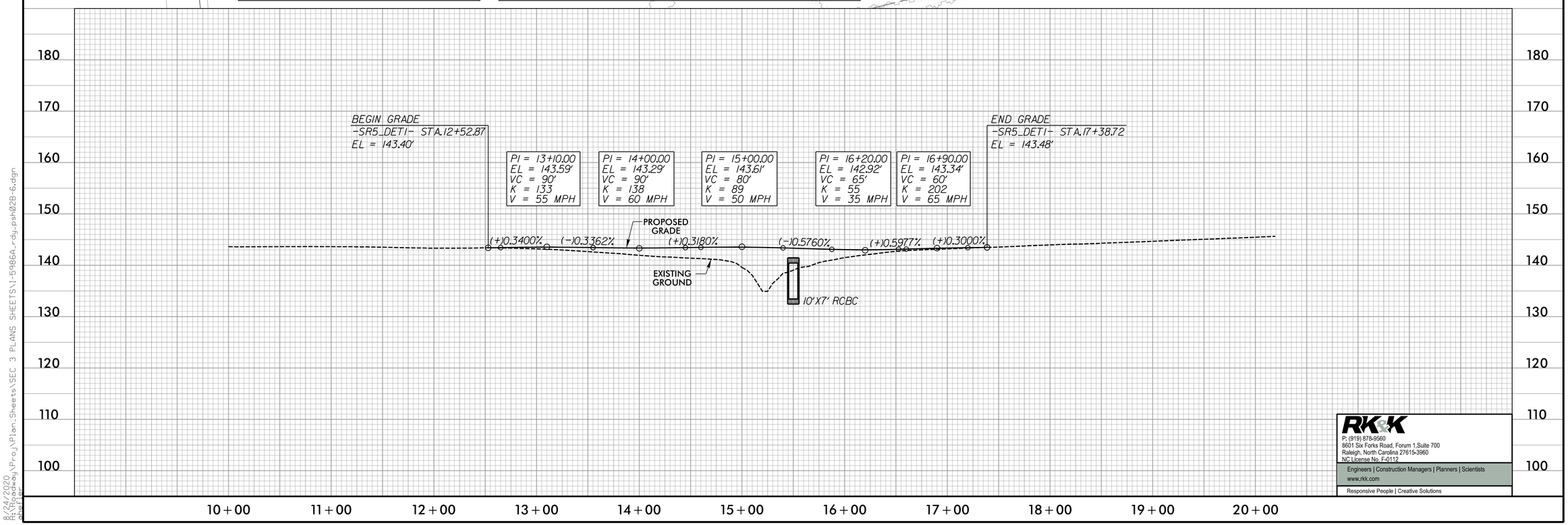
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TEMPORARY SHORING
-SR5_DET1- STA 15+17 to 15+78 RT +/-
SEE TRAFFIC MANAGEMENT PLANS

-SR5_DET1-

PI Sta 11+89.16	PI Sta 14+92.78	PI Sta 18+13.17
Δ = 5° 46' 31.2" (LT)	Δ = 13° 05' 45.1" (RT)	Δ = 6° 18' 25.3" (LT)
D = 1° 31' 40.4"	D = 5° 43' 46.5"	D = 1° 31' 40.4"
L = 377.99'	L = 228.57'	L = 412.79'
T = 189.16'	T = 114.78'	T = 206.61'
R = 3,750.00'	R = 1,000.00'	R = 3,750.00'
SE = NC	SE = 0.03	SE = NC
DS = 35 MPH	DS = 35 MPH	DS = 35 MPH



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8/17/99

8/24/2020
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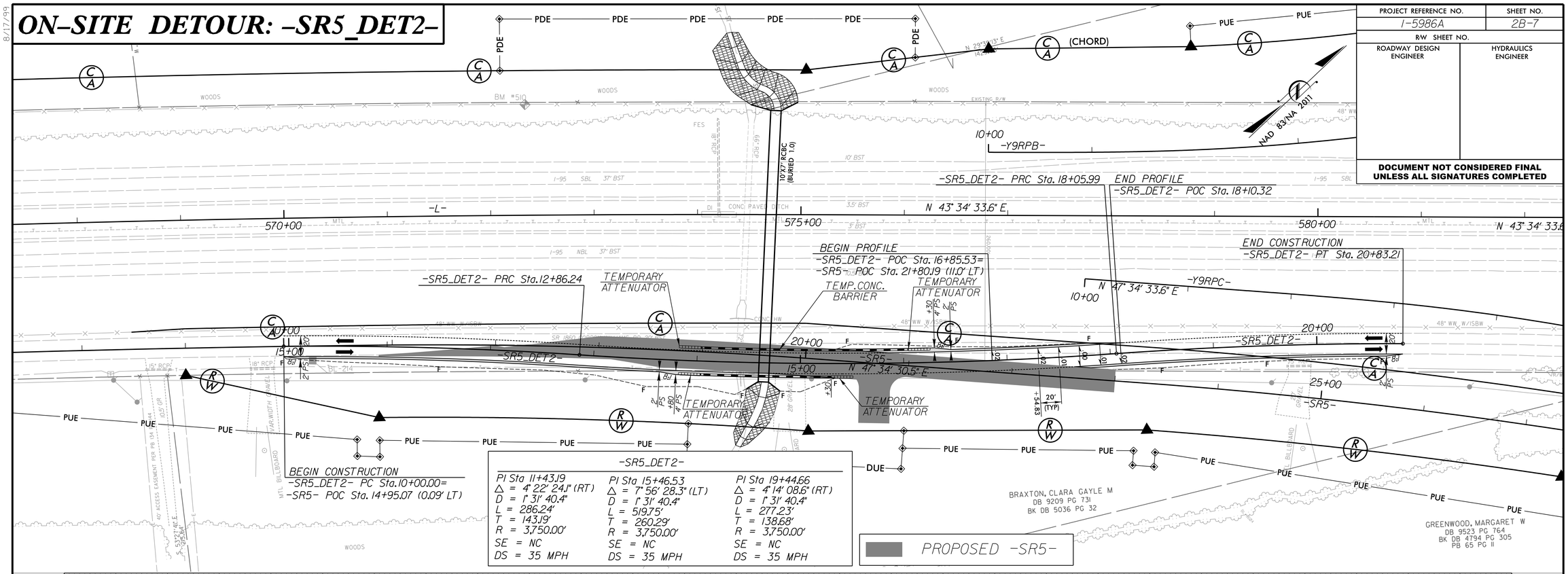
ON-SITE DETOUR: -SR5_DET2-

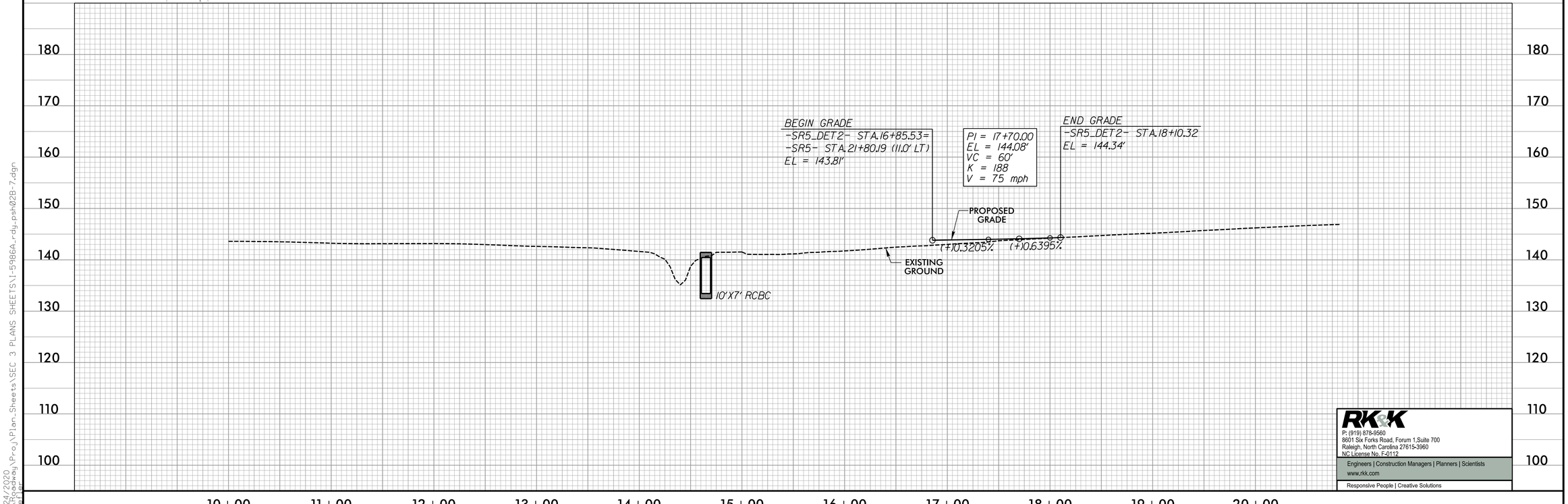
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2B-7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-SR5_DET2-

PI Sta 11+43.19	PI Sta 15+46.53	PI Sta 19+44.66
Δ = 4° 22' 24.1" (RT)	Δ = 7° 56' 28.3" (LT)	Δ = 4° 14' 08.6" (RT)
D = 1° 31' 40.4"	D = 1° 31' 40.4"	D = 1° 31' 40.4"
L = 286.24'	L = 519.75'	L = 277.23'
T = 143.19'	T = 260.29'	T = 138.68'
R = 3,750.00'	R = 3,750.00'	R = 3,750.00'
SE = NC	SE = NC	SE = NC
DS = 35 MPH	DS = 35 MPH	DS = 35 MPH



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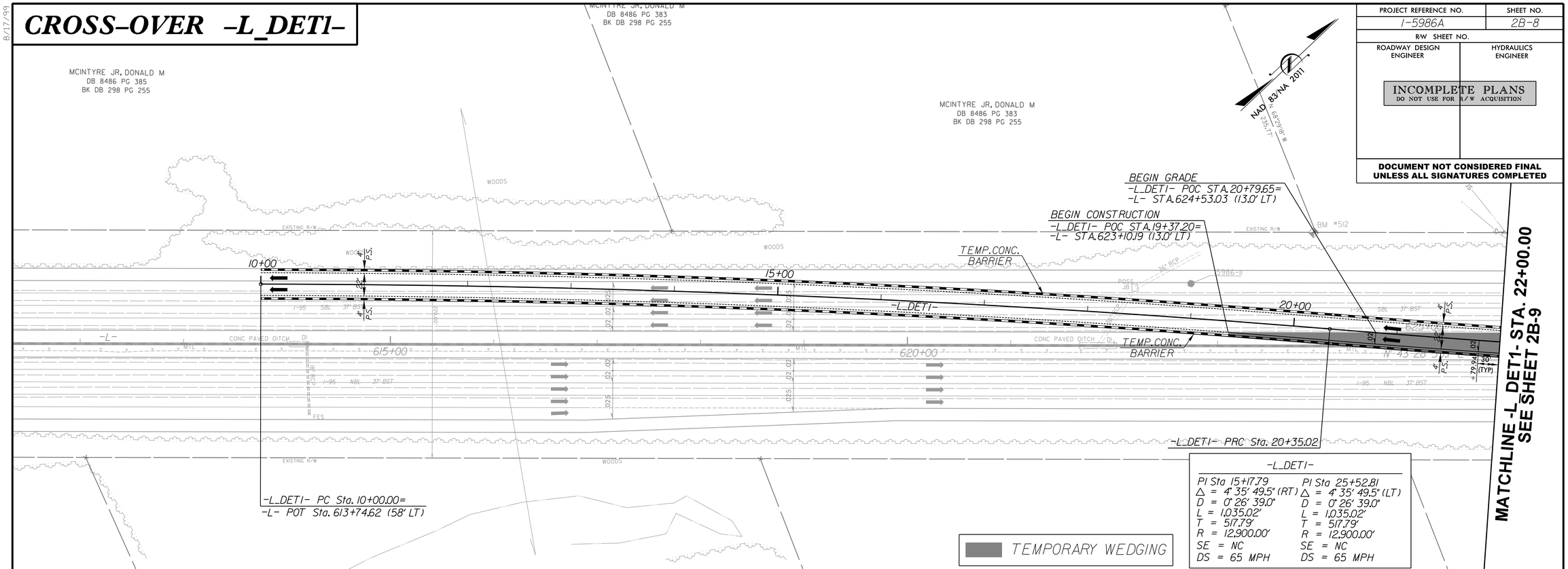
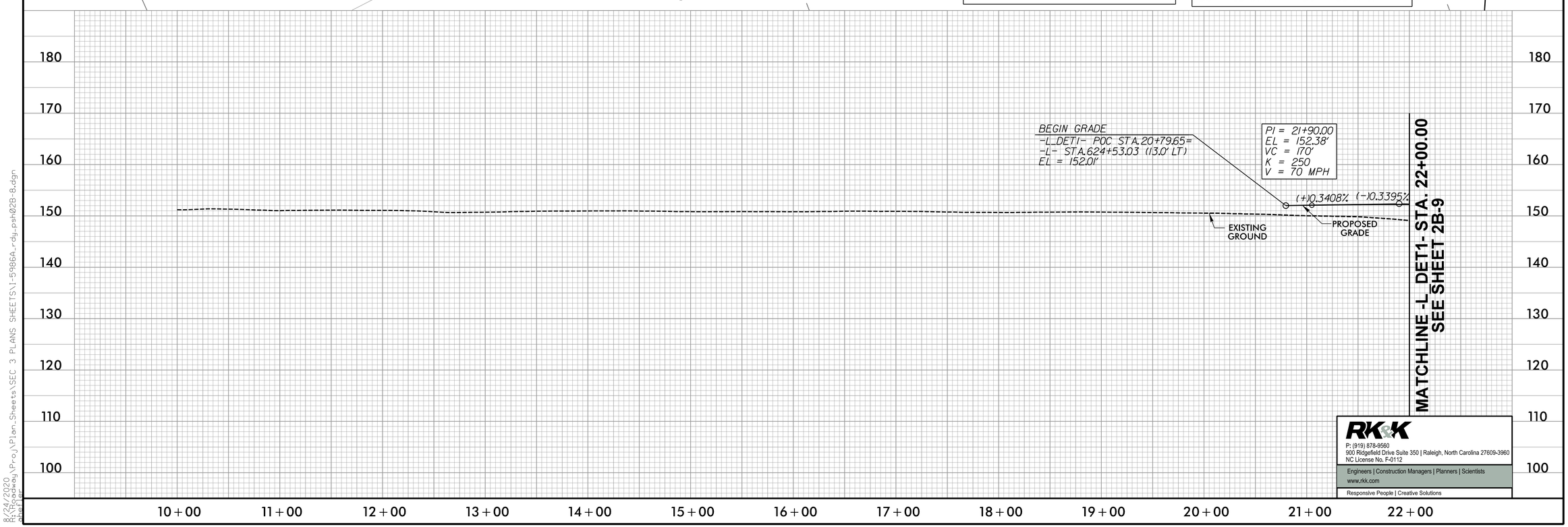
CROSS-OVER -L_DET1-

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2B-8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED





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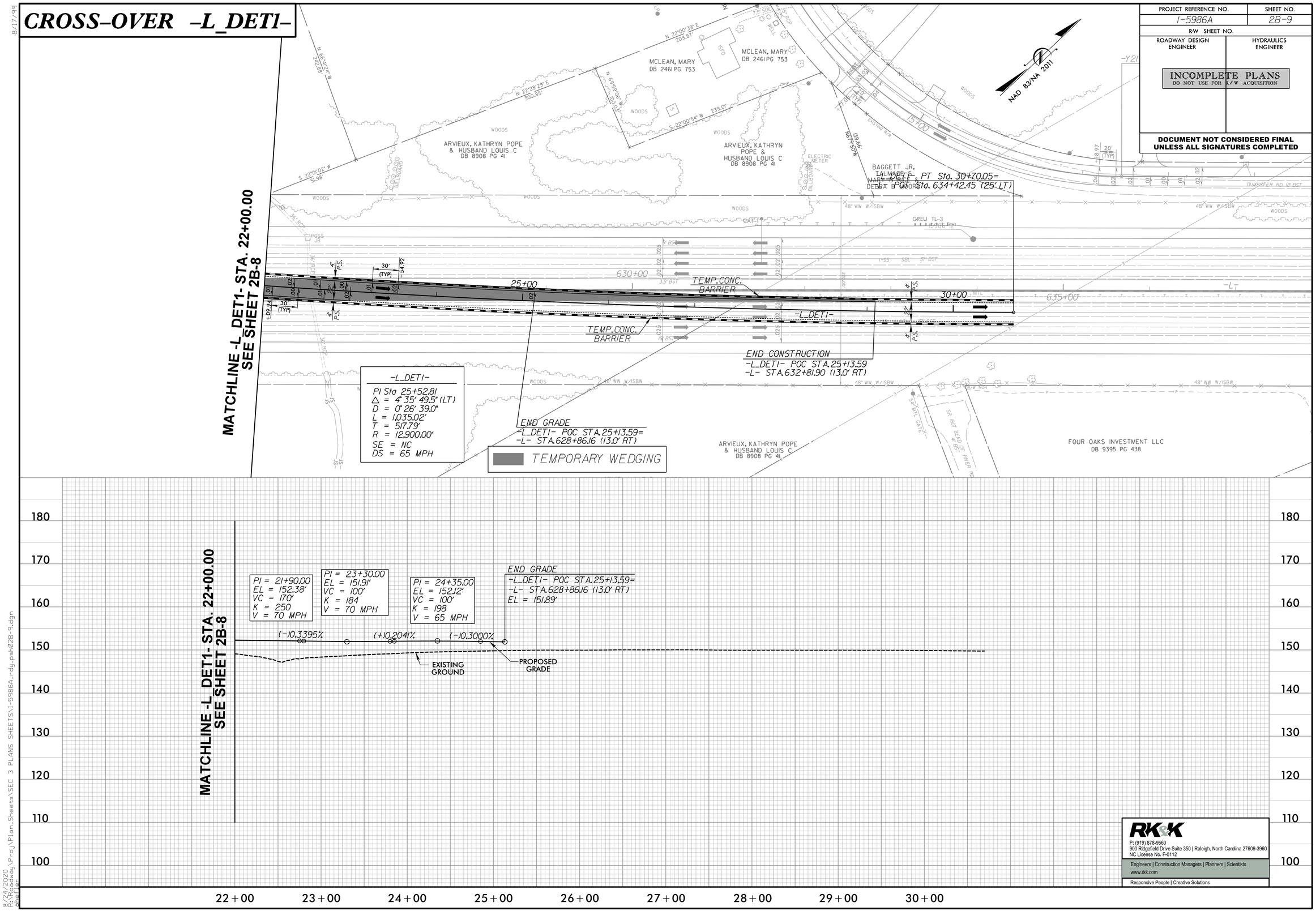
CROSS-OVER -L_DET1-

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2B-9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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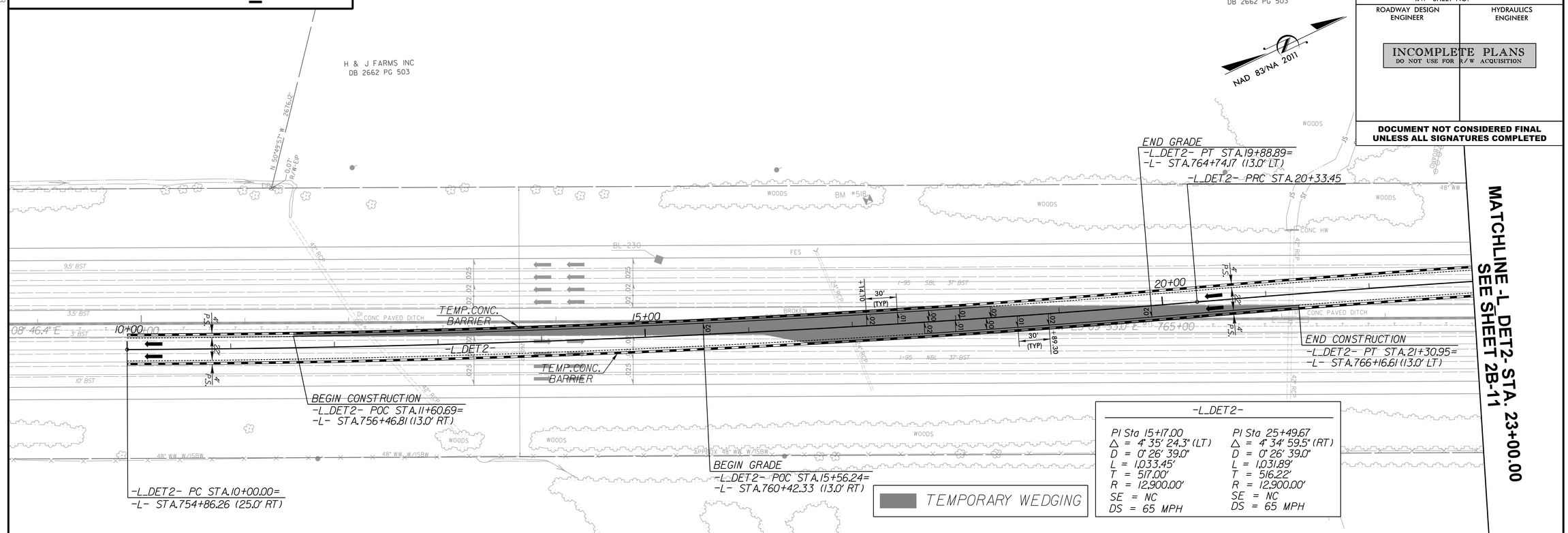
CROSS-OVER -L_DET2-

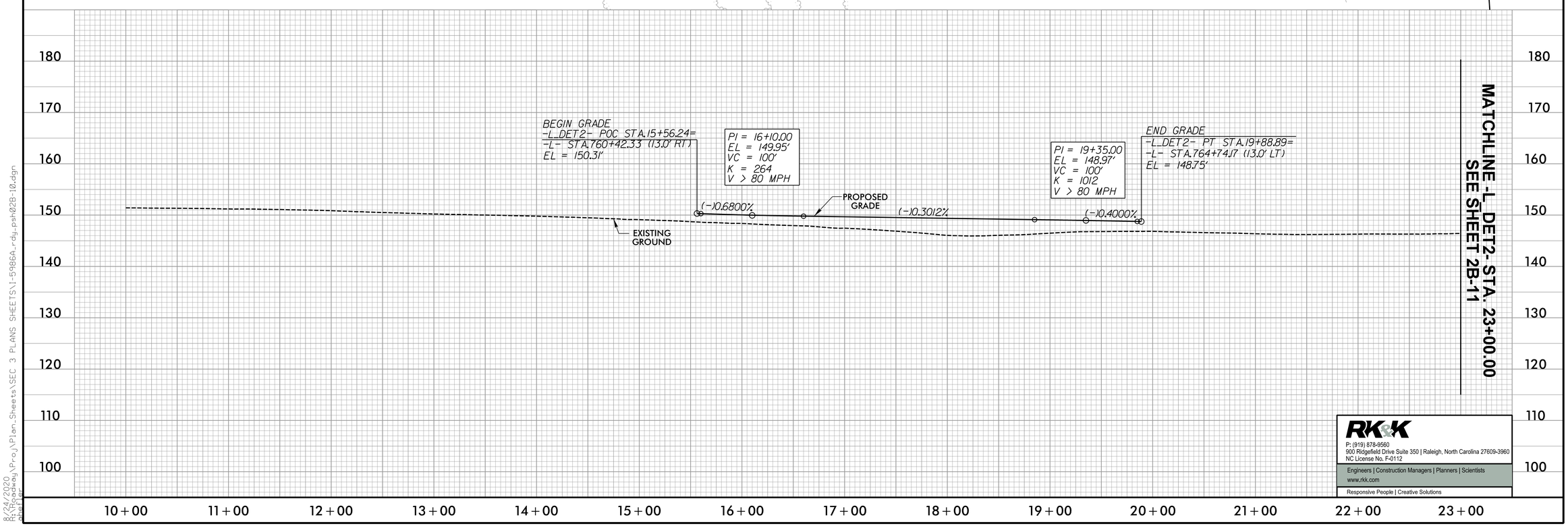
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2B-10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-L_DET2-	
PI Sta 15+17.00	PI Sta 25+49.67
△ = 4° 35' 24.3" (LT)	△ = 4° 34' 59.5" (RT)
D = 0° 26' 39.0"	D = 0° 26' 39.0"
L = 1,033.45'	L = 1,031.89'
T = 517.00'	T = 516.22'
R = 12,900.00'	R = 12,900.00'
SE = NC	SE = NC
DS = 65 MPH	DS = 65 MPH



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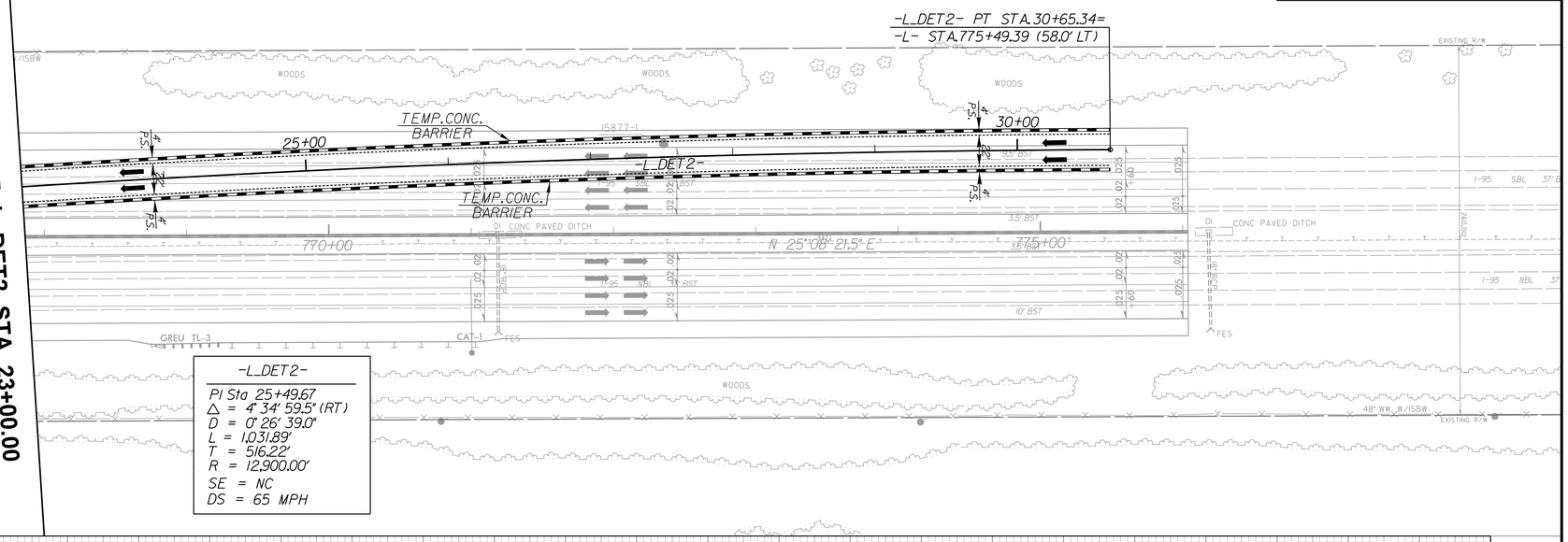
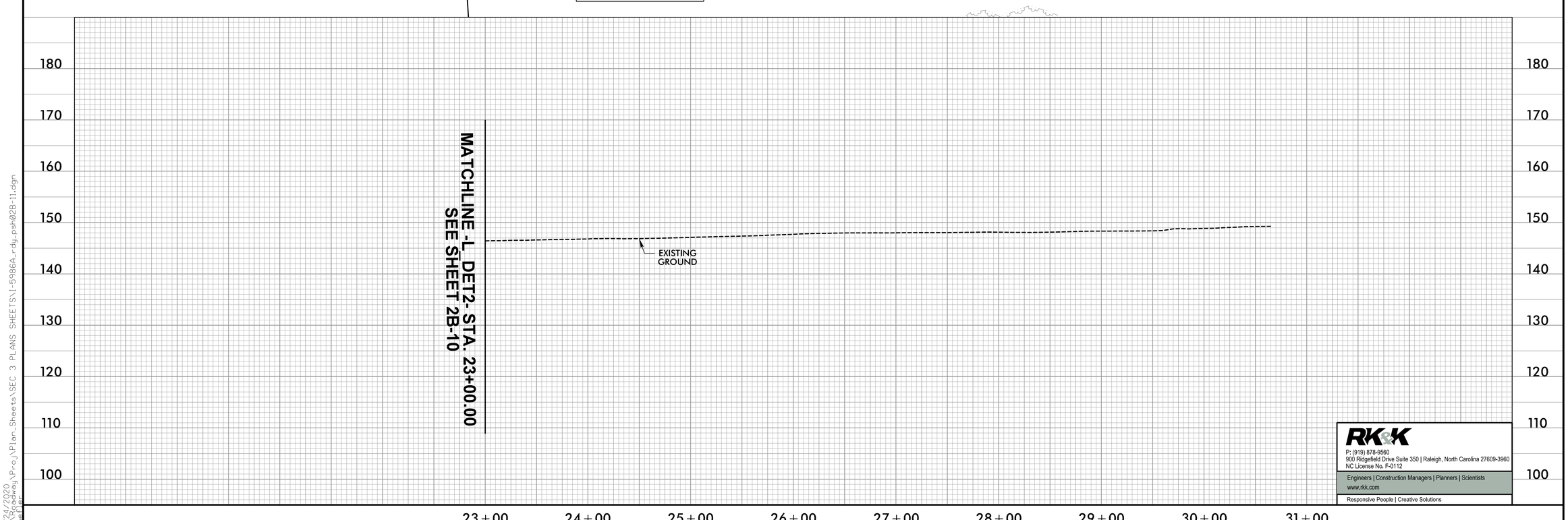
CROSS-OVER -L_DET2-

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2B-11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



MATCHLINE -L_DET2- STA. 23+00.00
SEE SHEET 2B-10



MATCHLINE -L_DET2- STA. 23+00.00
SEE SHEET 2B-10

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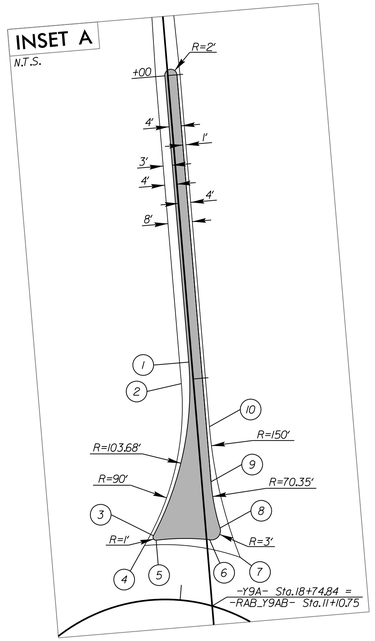
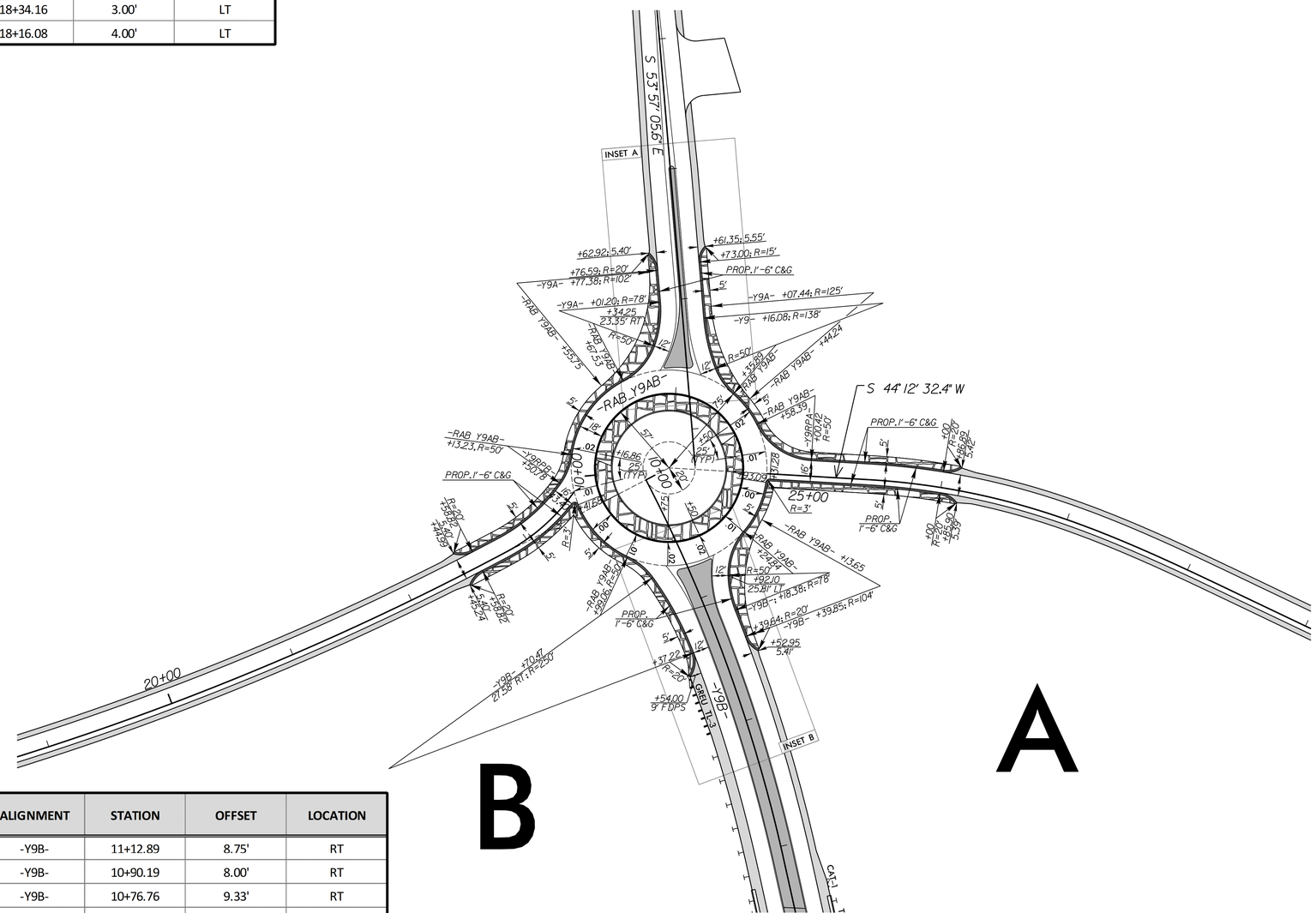
ROUNDABOUT LAYOUT

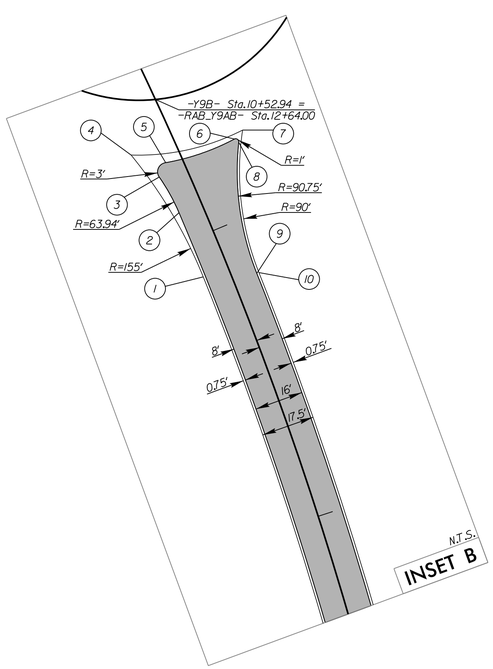
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2B-11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



POINT NUMBER	ALIGNMENT	STATION	OFFSET	LOCATION
1	-Y9A-	17+94.36	1.00'	RT
2	-Y9A-	18+01.20	4.00'	RT
3	-Y9A-	18+50.25	17.35'	RT
4	-RAB_Y9AB-	10+89.89	18.00'	LT
5	-RAB_Y9AB-	10+92.88	19.50'	LT
6	-RAB_Y9AB-	11+05.83	21.00'	LT
7	-RAB_Y9AB-	11+14.17	18.00'	LT
8	-Y9A-	18+49.54	4.70'	LT
9	-Y9A-	18+34.16	3.00'	LT
10	-Y9A-	18+16.08	4.00'	LT





POINT NUMBER	ALIGNMENT	STATION	OFFSET	LOCATION
1	-Y9B-	11+12.89	8.75'	RT
2	-Y9B-	10+90.19	8.00'	RT
3	-Y9B-	10+76.76	9.33'	RT
4	-RAB_Y9AB-	12+76.02	18.00'	LT
5	-RAB_Y9AB-	12+67.63	21.00'	LT
6	-RAB_Y9AB-	12+49.97	19.50'	LT
7	-RAB_Y9AB-	12+47.20	18.00'	LT
8	-Y9B-	10+76.77	19.18'	LT
9	-Y9B-	11+18.38	8.00'	LT
10	-Y9B-	11+18.38	8.75'	LT

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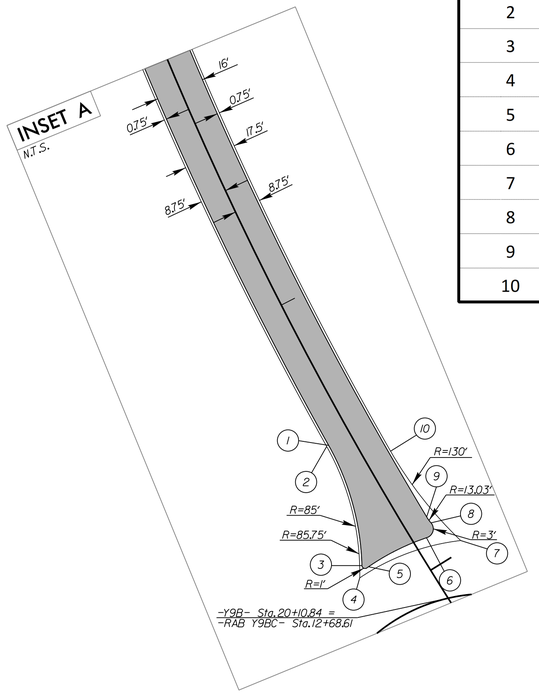
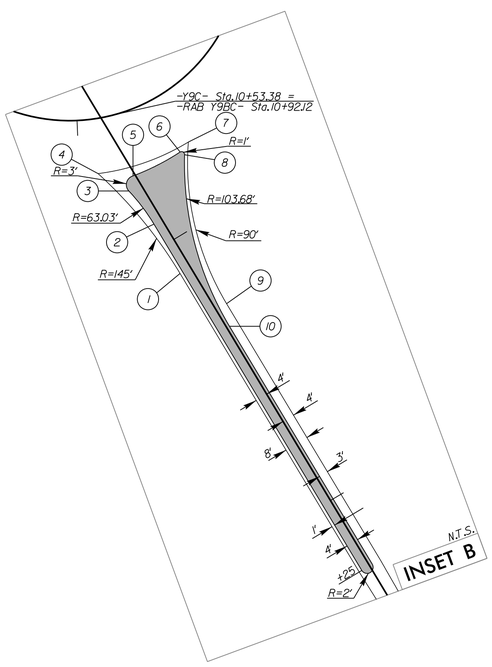
ROUNDABOUT LAYOUT

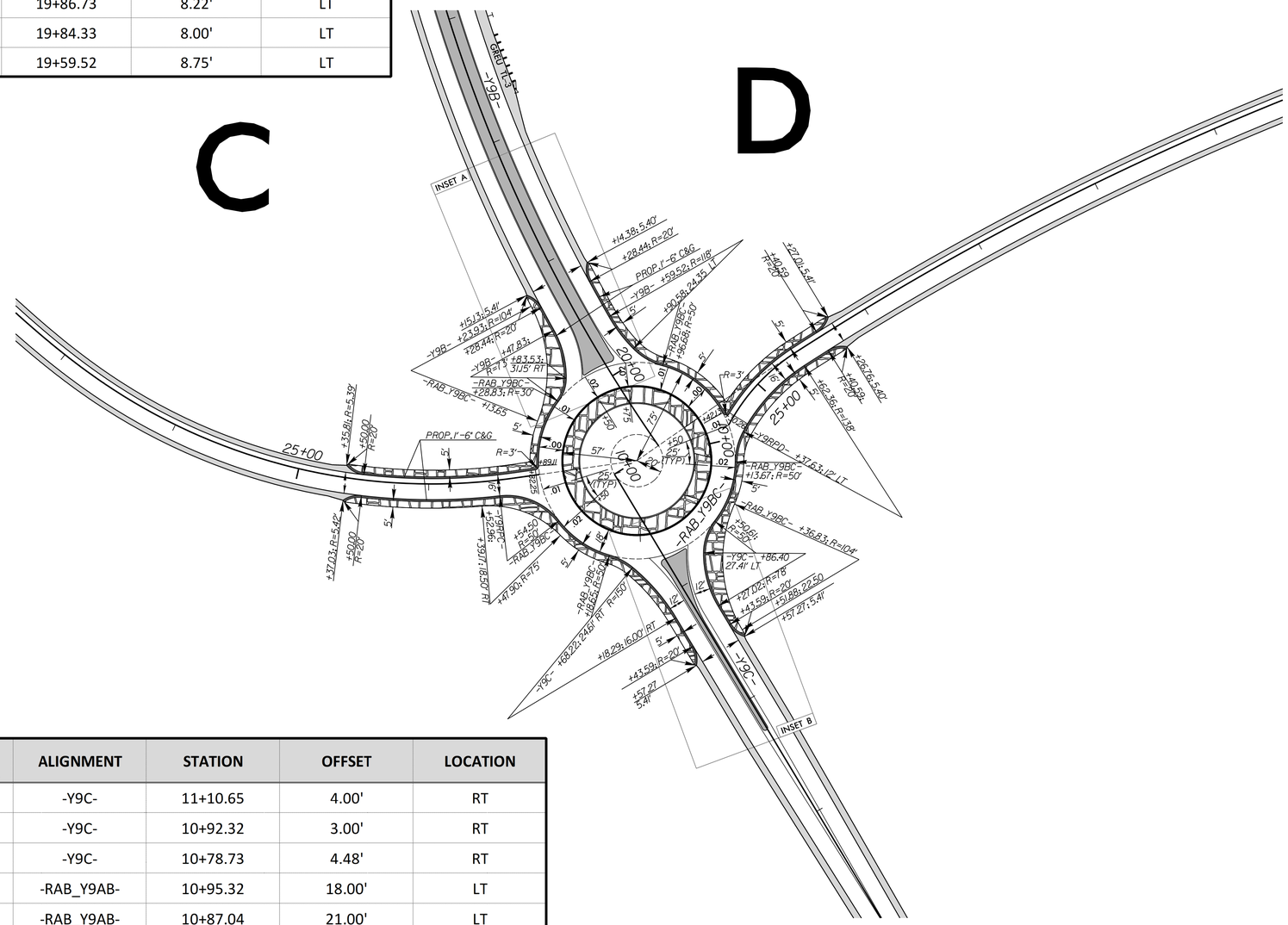
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2B-12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

POINT NUMBER	ALIGNMENT	STATION	OFFSET	LOCATION
1	-Y9B-	19+47.83	8.00'	RT
2	-Y9B-	19+47.83	8.75'	RT
3	-Y9B-	19+87.01	18.43'	RT
4	-RAB_Y9BC-	12+47.79	18.00'	LT
5	-RAB_Y9BC-	12+50.52	19.50'	LT
6	-RAB_Y9BC-	12+66.81	21.00'	LT
7	-RAB_Y9BC-	12+74.91	18.00'	LT
8	-Y9B-	19+86.73	8.22'	LT
9	-Y9B-	19+84.33	8.00'	LT
10	-Y9B-	19+59.52	8.75'	LT







POINT NUMBER	ALIGNMENT	STATION	OFFSET	LOCATION
1	-Y9C-	11+10.65	4.00'	RT
2	-Y9C-	10+92.32	3.00'	RT
3	-Y9C-	10+78.73	4.48'	RT
4	-RAB_Y9AB-	10+95.32	18.00'	LT
5	-RAB_Y9AB-	10+87.04	21.00'	LT
6	-RAB_Y9AB-	10+74.25	19.50'	LT
7	-RAB_Y9AB-	10+71.26	18.00'	LT
8	-Y9C-	10+77.96	17.35'	LT
9	-Y9C-	11+27.02	4.00'	LT
10	-Y9B-	11+33.85	1.00'	LT

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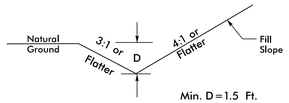
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2D-5
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

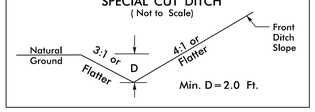
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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



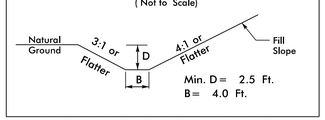
–L– STA. 626+93 TO STA. 629+50 LT
–L– STA. 627+50 TO STA. 629+00 RT
–L– STA. 735+00 TO STA. 735+85 LT
–L– STA. 740+00 TO STA. 742+50 LT
–L– STA. 761+00 TO STA. 761+35 LT

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



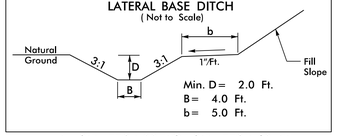
–L– STA. 582+00 TO STA. 585+00 LT
–L– STA. 595+00 TO STA. 599+50 LT
–L– STA. 599+00 TO STA. 600+00 RT
–L– STA. 609+50 TO STA. 610+50 LT
–L– STA. 620+00 TO STA. 620+50 LT
–L– STA. 629+50 TO STA. 635+00 LT
–L– STA. 629+00 TO STA. 637+00 RT
–L– STA. 647+00 TO STA. 649+00 LT
–L– STA. 646+00 TO STA. 650+50 RT
–L– STA. 653+00 TO STA. 659+00 RT
–L– STA. 696+00 TO STA. 709+00 LT
–L– STA. 711+50 TO STA. 715+00 RT
–L– STA. 711+50 TO STA. 735+00 LT
–L– STA. 725+50 TO STA. 726+50 RT
–L– STA. 731+50 TO STA. 732+50 RT
–L– STA. 742+50 TO STA. 753+00 LT
–L– STA. 758+50 TO STA. 759+00 LT
–L– STA. 760+00 TO STA. 761+00 LT
–SR5– STA. 14+00 TO STA. 17+96 RT
–SR5– STA. 20+92 TO STA. 22+92 RT
–SR5– STA. 33+47 TO STA. 37+00 RT
–SR5– STA. 37+50 TO STA. 41+50 LT
–Y9A– STA. 10+00 TO STA. 16+50 RT
–Y9A– STA. 10+00 TO STA. 16+00 LT
–Y9C– STA. 13+50 TO STA. 15+50 LT
–Y9C– STA. 13+00 TO STA. 15+50 RT
–Y9RPA– STA. 15+70 TO STA. 19+00 LT
–Y9RPA– STA. 14+73 TO STA. 18+50 RT
–Y9RPD– STA. 16+86 TO STA. 20+00 LT
–Y10– STA. 12+50 TO STA. 13+00 RT
–Y10– STA. 31+00 TO STA. 34+00 LT
–Y10– STA. 32+00 TO STA. 34+00 RT
–Y11– STA. 12+00 TO STA. 13+30 LT
–Y11– STA. 12+00 TO STA. 13+90 RT
–Y11– STA. 13+60 TO STA. 15+00 LT
–Y11– STA. 32+50 TO STA. 36+00 LT
–Y11DW– STA. 12+50 TO STA. 15+50 LT
–Y11DW– STA. 11+50 TO STA. 15+50 RT
–Y21– STA. 14+00 TO STA. 19+78 LT
Y21– STA. 14+50 TO STA. 16+82 RT

DETAIL C
SPECIAL LATERAL BASE DITCH
(Not to Scale)



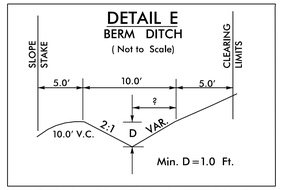
–L– STA. 541+75 TO STA. 550+50 LT
–L– STA. 620+50 TO STA. 622+47 LT
–L– STA. 756+50 TO STA. 758+50 LT
–Y9A– STA. 16+50 TO STA. 18+90 LT (3:1 FILL SLOPE)
–Y9C– STA. 13+50 TO STA. 15+50 LTT
–Y10– STA. 15+00 TO STA. 16+00 RT

DETAIL D
LATERAL BASE DITCH
(Not to Scale)



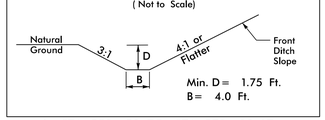
–L– STA. 573+00 TO STA. 573+60 LT
–L– STA. 639+50 TO STA. 640+35 RT
–L– STA. 642+70 TO STA. 646+00 RT
–L– STA. 656+00 TO STA. 660+10 LT
–L– STA. 666+00 TO STA. 667+00 LT
–L– STA. 694+80 TO STA. 696+50 RT
–L– STA. 699+50 TO STA. 704+40 RT
–L– STA. 732+50 TO STA. 742+00 RT
–L– STA. 748+00 TO STA. 756+40 RT
–L– STA. 753+00 TO STA. 756+40 LT
–L– STA. 764+00 TO STA. 776+50 LT
–SR5– STA. 17+96 TO STA. 19+55 RT
–SR5– STA. 19+65 TO STA. 20+92 RT
–Y9A– STA. 16+50 TO STA. 18+90 RT
–Y9C– STA. 11+40 TO STA. 13+00 RT
–Y9RPB– STA. 20+50 TO STA. 23+50 LT
–Y10– STA. 24+00 TO STA. 28+75 RT
–Y11– STA. 14+20 TO STA. 19+00 RT
–Y11– STA. 15+00 TO STA. 21+50 LT
–Y21– STA. 19+78 TO STA. 24+50 LT
–Y21– STA. 25+00 TO STA. 34+00 LT

DETAIL E
BERM DITCH
(Not to Scale)



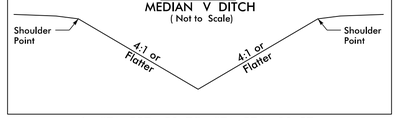
DETAIL NOT USED IN SECTION 3

DETAIL F
SPECIAL CUT BASE DITCH
(Not to Scale)



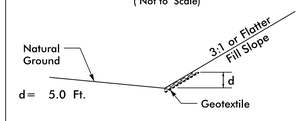
–L– STA. 550+50 TO STA. 573+00 LT
–L– STA. 585+00 TO STA. 590+15 LT
–L– STA. 585+00 TO STA. 590+50 RT
–L– STA. 594+50 TO STA. 599+00 RT
–L– STA. 637+50 TO STA. 639+50 RT
–L– STA. 654+50 TO STA. 656+00 LT
–L– STA. 659+00 TO STA. 660+10 RT
–L– STA. 660+10 TO STA. 666+00 LT
–L– STA. 696+50 TO STA. 699+50 RT
–L– STA. 742+00 TO STA. 748+00 RT
–Y9B– STA. 11+00 TO STA. 13+50 LT
–Y9B– STA. 16+00 TO STA. 19+50 LT
–Y9RPD– STA. 10+23 TO STA. 16+86 LT
–SR5– STA. 36+28 TO STA. 37+50 LT
–Y10– STA. 13+00 TO STA. 15+00 RT

DETAIL G
MEDIAN V DITCH
(Not to Scale)



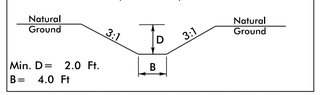
–L– STA. 557+50 TO STA. 574+00 RT
–L– STA. 599+50 TO STA. 600+50 LT
–L– STA. 643+00 TO STA. 647+00 LT

DETAIL H
TOE PROTECTION
(Not to Scale)



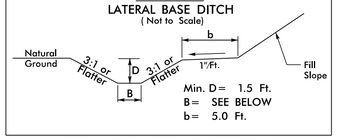
–L– STA. 605+75 TO STA. 606+83 LT
–L– STA. 622+50 TO STA. 627+00 LT
–L– STA. 625+75 TO STA. 627+50 RT
–L– STA. 674+70 TO STA. 677+10 RT
–L– STA. 678+75 TO STA. 684+10 RT
–L– STA. 692+30 TO STA. 694+76 RT
–L– STA. 735+85 TO STA. 736+10 LT
–Y9RPA– STA. 10+00 TO STA. 13+30 RT
–Y10– STA. 16+00 TO STA. 18+00 RT

DETAIL I
STANDARD BASE DITCH
(Not to Scale)



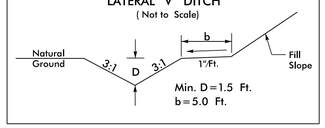
–L– STA. 695+15 TO STA. 696+00 LT,
BEG. EL=128.85', END EL=129.15', L=95', S=0.3%
–L– STA. 761+30 LT,
BEG. EL=145.03', END EL=144.20', L=28', S=3.0%
–L– STA. 593+50 LT,
BEG. EL=152.05', END EL=151.25', L=105', S=0.8%
–L– STA. 594+55 RT,
BEG. EL=152.60', END EL=151.20', L=53', S=2.6%
–Y9C– STA. 11+40 RT,
BEG. EL=153.80', END EL=151.00', L=300', S=0.9%
–Y9RPA– STA. 16+20 RT,
BEG. EL=150.32', END EL=150.15', L=54', S=0.3%

DETAIL J
LATERAL BASE DITCH
(Not to Scale)



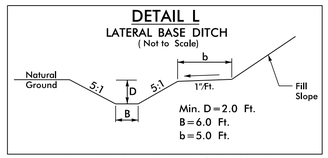
DETAIL NOT USED IN SECTION 3

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



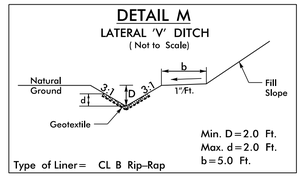
–Y9RPD– STA. 18+29 TO STA. 24+50 RT
–Y10– STA. 20+00 TO STA. 21+30 RT
–Y10– STA. 27+86 TO STA. 31+00 LT
–Y10– STA. 28+75 TO STA. 32+00 RT
–Y11– STA. 26+00 TO STA. 27+00 RT
–Y21– STA. 31+00 TO STA. 36+00 RT

DETAIL L
LATERAL BASE DITCH
(Not to Scale)



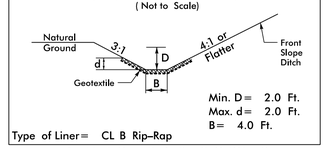
DETAIL NOT USED IN SECTION 3

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



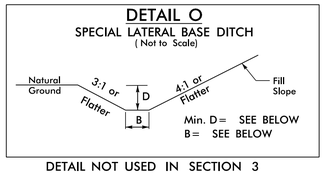
DETAIL NOT USED IN SECTION 3

DETAIL N
SPECIAL CUT BASE DITCH
(Not to Scale)



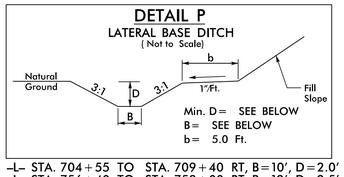
DETAIL NOT USED IN SECTION 3

DETAIL O
SPECIAL LATERAL BASE DITCH
(Not to Scale)



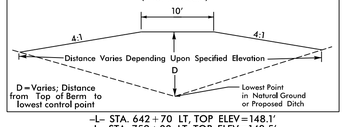
DETAIL NOT USED IN SECTION 3

DETAIL P
LATERAL BASE DITCH
(Not to Scale)



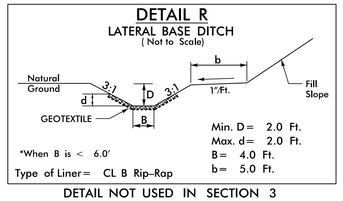
–L– STA. 704+55 TO STA. 709+40 RT, B=10', D=2.0'
–L– STA. 756+40 TO STA. 758+00 RT, B=12', D=2.5'
–Y11DW– STA. 11+00 TO STA. 11+50 LT, B=4', D=1.0'

DETAIL Q
10' WIDE BERM
(Not to Scale)



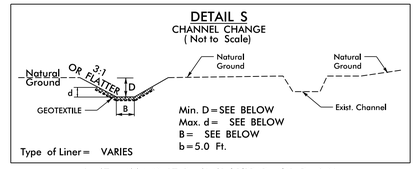
–L– STA. 642+70 LT, TOP ELEV=148.1'
–L– STA. 759+00 LT, TOP ELEV=148.5'
–L– STA. 762+00 LT, TOP ELEV=146.8'

DETAIL R
LATERAL BASE DITCH
(Not to Scale)



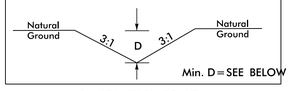
DETAIL NOT USED IN SECTION 3

DETAIL S
CHANNEL CHANGE
(Not to Scale)



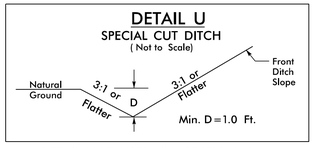
–L– STA. 766+40 LT, B=6', CL I RIPRAP, MIN D=3.0'
BEG. EL=138.55', END EL=137.85', L=55', S=1.3%
–L– STA. 766+40 RT, B=6', CL II RIPRAP, MIN D=3.0'
BEG. EL=134.80', END EL=134.35', L=48', S=0.9%

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



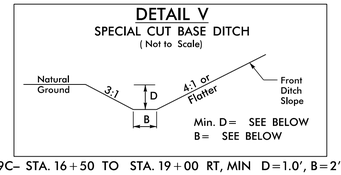
–L– STA. 735+85 LT,
BEG. EL=144.50', END EL=144.53', L=20', S=0.2%

DETAIL U
SPECIAL CUT DITCH
(Not to Scale)



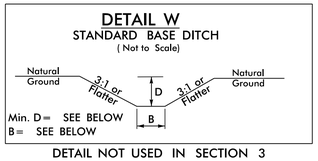
DETAIL NOT USED IN SECTION 3

DETAIL V
SPECIAL CUT BASE DITCH
(Not to Scale)



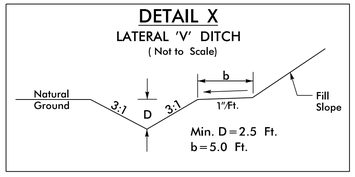
–Y9C– STA. 16+50 TO STA. 19+00 RT, MIN D=1.0', B=2'

DETAIL W
STANDARD BASE DITCH
(Not to Scale)



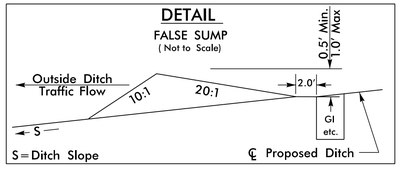
DETAIL NOT USED IN SECTION 3

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

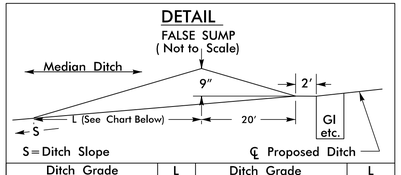


DETAIL NOT USED IN SECTION 3

DETAIL
FALSE SUMP
(Not to Scale)

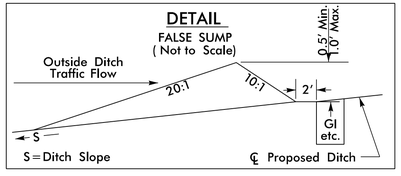


DETAIL
FALSE SUMP
(Not to Scale)

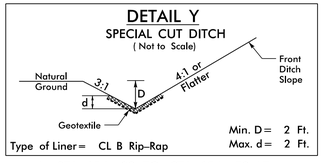


Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL
FALSE SUMP
(Not to Scale)

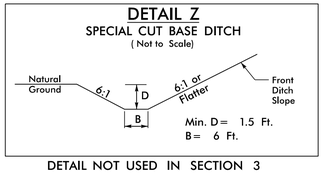


DETAIL Y
SPECIAL CUT DITCH
(Not to Scale)



–L– STA. 654+00 TO STA. 654+50 LT

DETAIL Z
SPECIAL CUT BASE DITCH
(Not to Scale)



DETAIL NOT USED IN SECTION 3

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P: (919) 878-9560
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8/24/2020
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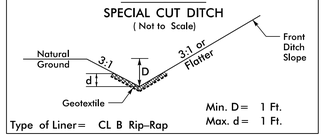
ahefner

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2D-6
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

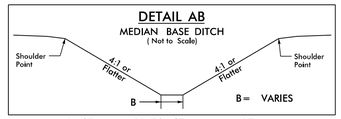
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL AA
SPECIAL CUT DITCH
(Not to Scale)



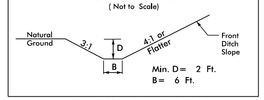
DETAIL NOT USED IN SECTION 3

DETAIL AB
MEDIAN BASE DITCH
(Not to Scale)



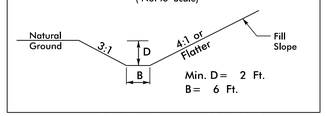
–L– STA. 575+00 TO STA. 577+75 RT
–L– STA. 635+00 TO STA. 642+50 LT
–Y9RPC– STA. 10+00 TO STA. 12+26 RT
–Y9RPC– STA. 17+50 TO STA. 24+00 RT

DETAIL AC
SPECIAL CUT BASE DITCH
(Not to Scale)



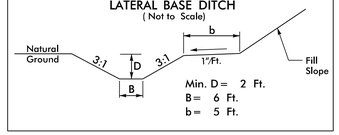
–L– STA. 608+66 TO STA. 625+50 RT
–Y9RPB– STA. 11+19 TO STA. 20+50 LT

DETAIL AD
SPECIAL LATERAL BASE DITCH
(Not to Scale)

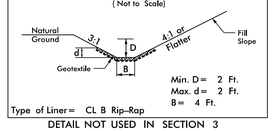


–L– STA. 625+50 TO STA. 625+90 RT

DETAIL AE
LATERAL BASE DITCH
(Not to Scale)

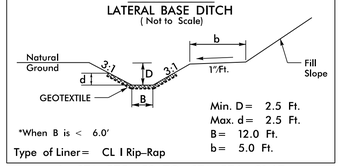


DETAIL AF
SPECIAL LATERAL BASE DITCH
(Not to Scale)



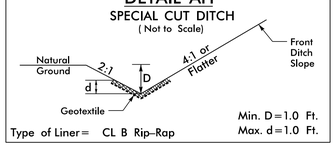
DETAIL NOT USED IN SECTION 3

DETAIL AG
LATERAL BASE DITCH
(Not to Scale)



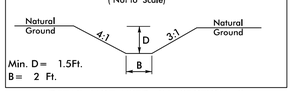
–L– STA. 575+50 TO STA. 576+81 LT
–Y9RPB– STA. 10+00 TO STA. 11+19 LT

DETAIL AH
SPECIAL CUT DITCH
(Not to Scale)



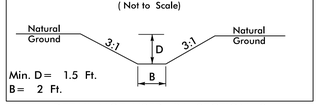
DETAIL NOT USED IN SECTION 3

DETAIL AJ
STANDARD BASE DITCH
(Not to Scale)



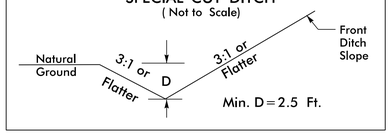
DETAIL NOT USED IN SECTION 3

DETAIL AK
STANDARD BASE DITCH
(Not to Scale)



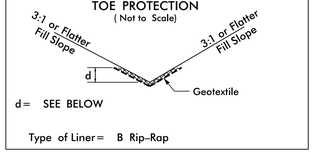
DETAIL NOT USED IN SECTION 3

DETAIL AL
SPECIAL CUT DITCH
(Not to Scale)

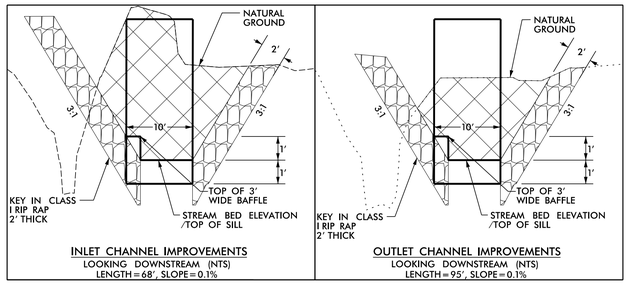


DETAIL NOT USED IN SECTION 3

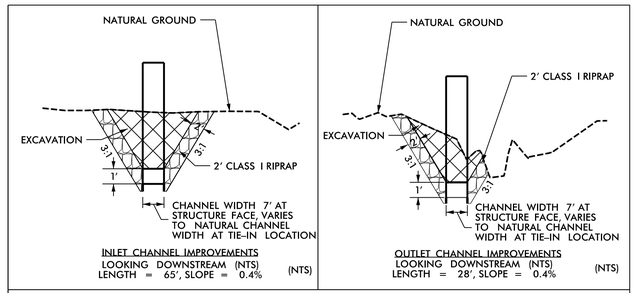
DETAIL AM
TOE PROTECTION
(Not to Scale)



DETAIL NOT USED IN SECTION 3

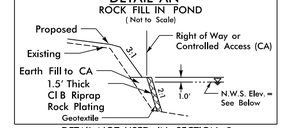


CULVERT INLET AND OUTLET DETAILS
–L– 574+71



CULVERT INLET AND OUTLET DETAILS
–L– 642+72

DETAIL AN
ROCK FILL IN POND
(Not to Scale)



DETAIL NOT USED IN SECTION 3

8/24/2020
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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	46
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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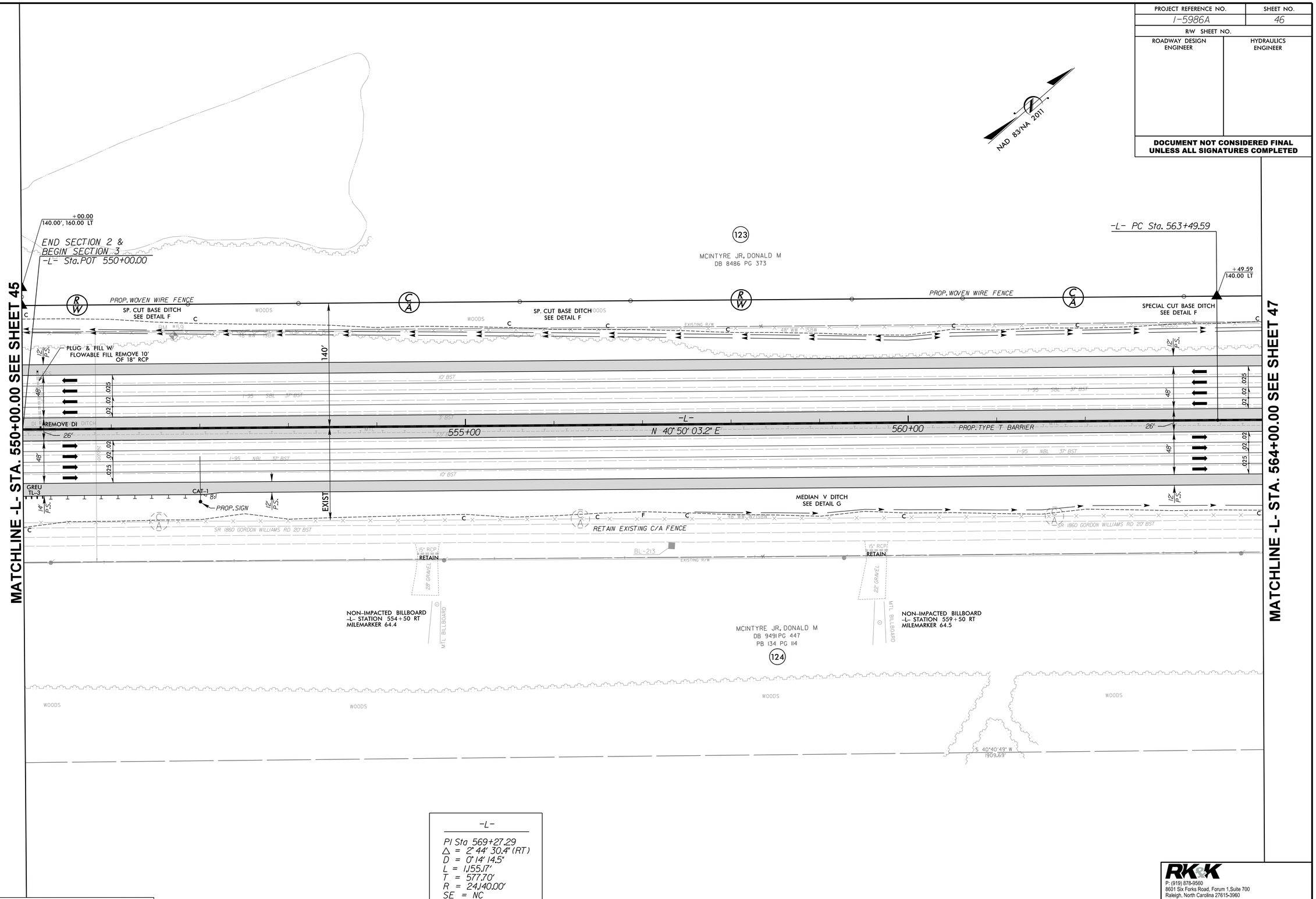

-L-

PI Sta 569+27.29
△ = 2° 44' 30.4" (RT)
D = 0° 14' 14.5"
L = 1,155.17'
T = 577.70'
R = 24,140.00'
SE = NC
DS = 75 MPH

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

FOR -L- PROFILES SEE SHTS. 127 & 128

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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REVISIONS

ROW REVISION 07/28/2020 - PARCELS #123 THRU #161 HAVE BEEN RELEASED FOR ROW ACQUISITION.

8/17/99

8/24/2020
R:\Roadway\Proj\Plan_Sheets\SEC 3 PLANS SHEETS\I-5986A_Rdy_psh46.dgn

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	47
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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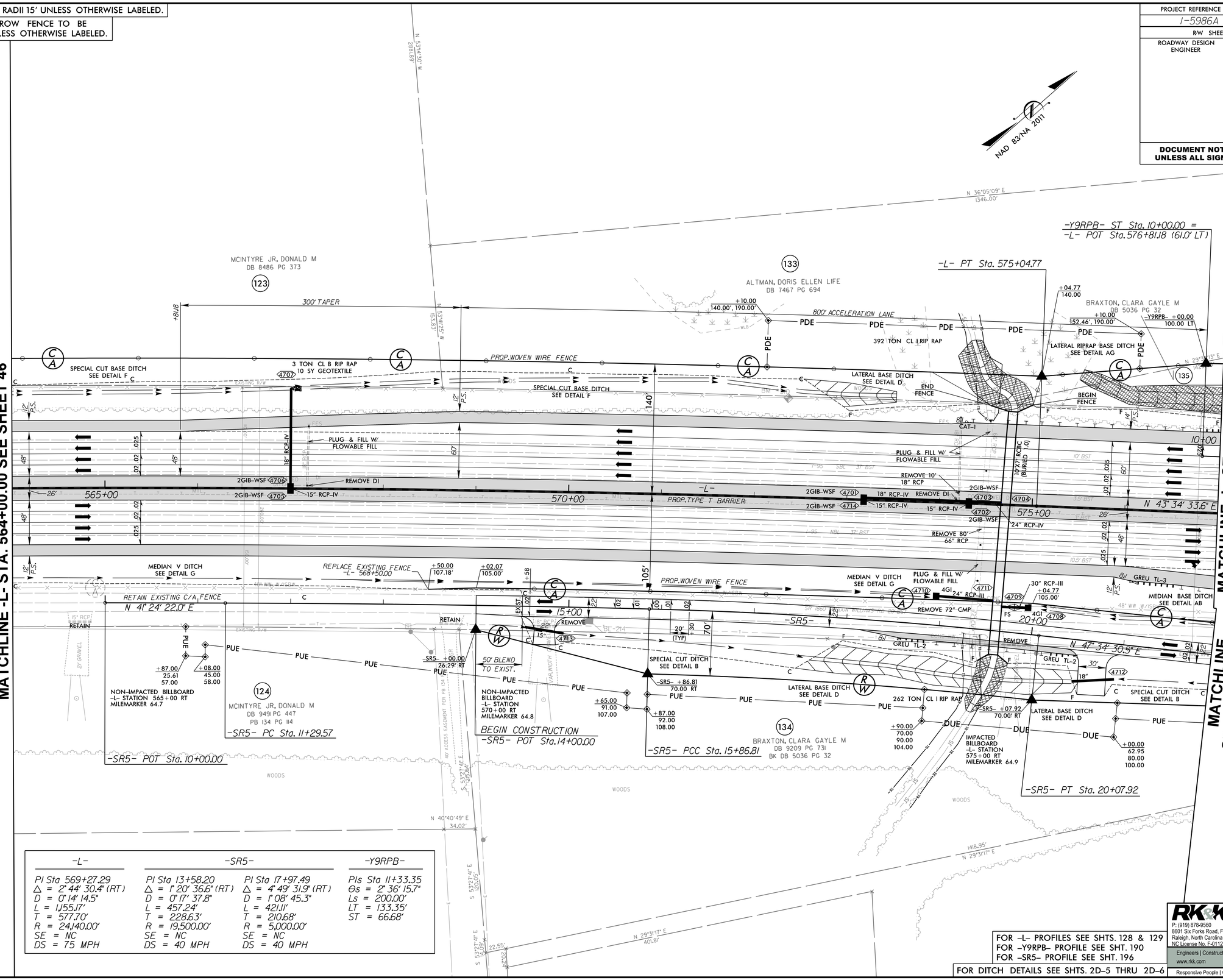
REVISIONS

8/17/99

RON REVISION 07/28/2020 - PARCELS #123 THRU #161 HAVE BEEN RELEASED FOR ROW ACQUISITION. PARCEL #134 CORRECTED DUE FLAG AT -SR5- STA.21+00 RT.



-L-	-SR5-		-Y9RPB-
PI Sta 569+27.29	PI Sta 13+58.20	PI Sta 17+97.49	PIs Sta 11+33.35
Δ = 2° 44' 30.4" (RT)	Δ = 1° 20' 36.6" (RT)	Δ = 4° 49' 31.9" (RT)	Θs = 2° 36' 15.7"
D = 0° 14' 14.5"	D = 0° 17' 37.8"	D = 1° 08' 45.3"	Ls = 200.00'
L = 1,155.17'	L = 457.24'	L = 421.11'	LT = 133.35'
T = 577.70'	T = 228.63'	T = 210.68'	ST = 66.68'
R = 24,140.00'	R = 19,500.00'	R = 5,000.00'	
SE = NC	SE = NC	SE = NC	
DS = 75 MPH	DS = 40 MPH	DS = 40 MPH	

FOR -L- PROFILES SEE SHTS. 128 & 129
FOR -Y9RPB- PROFILE SEE SHT. 190
FOR -SR5- PROFILE SEE SHT. 196
FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	48

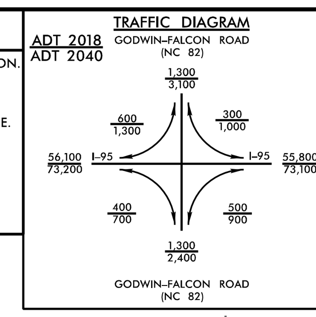
R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

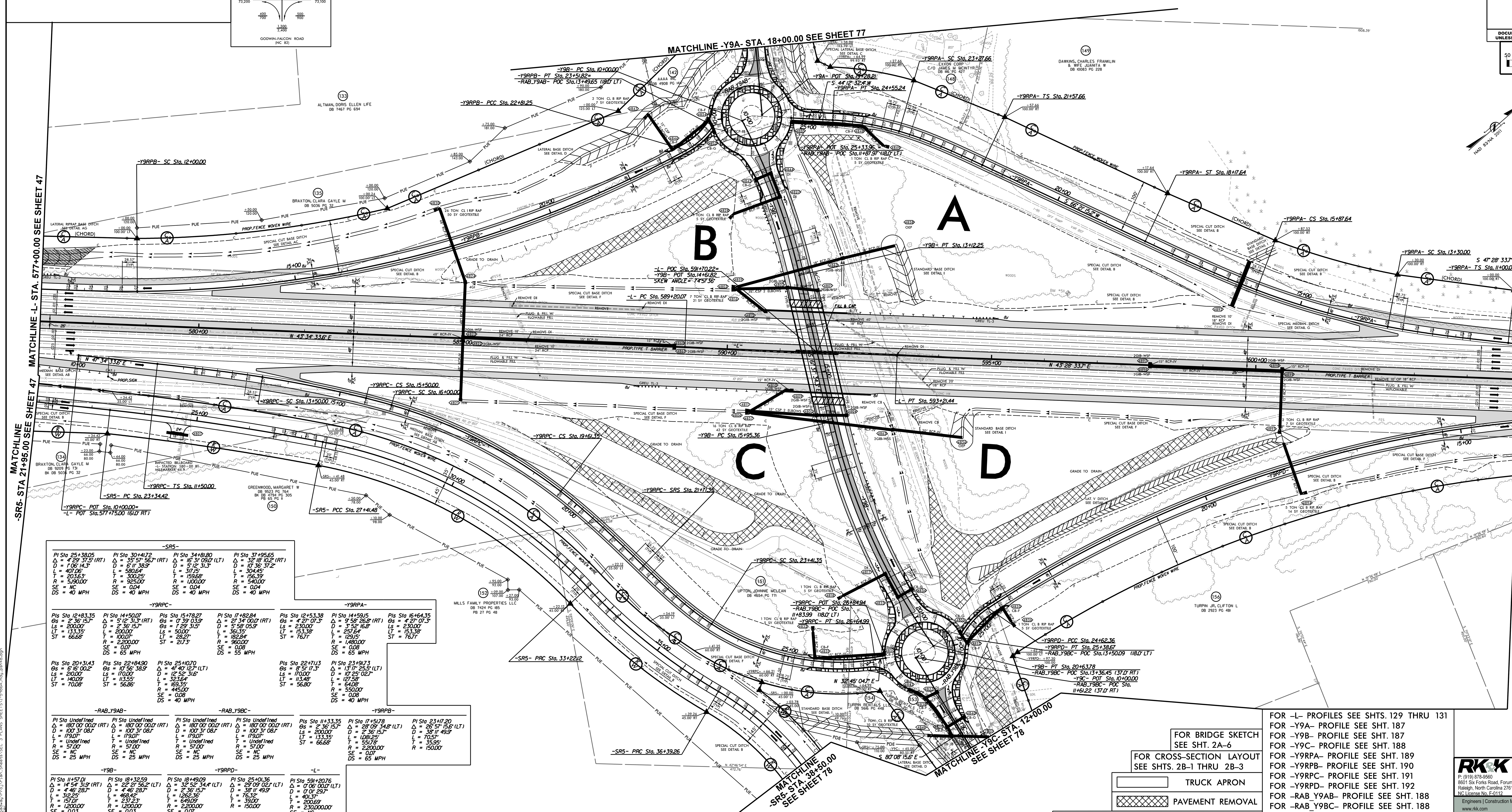
ROW REVISION 07/28/2020 – PARCELS #123 THRU #161 HAVE BEEN RELEASED FOR ROW ACQUISITION.
PARCEL #135: REVISED EXISTING ROW.
PARCEL #142: REVISED EXISTING ROW; REVISED PROPOSED ROW.
PARCEL #148: REVISED EXISTING ROW; REVISED C/A.
PARCEL #153: REVISED EXISTING ROW.
PARCEL #154: REVISED EXISTING ROW; REVISED PROPOSED ROW & TCE.
PARCEL #156: REVISED EXISTING ROW; REVISED C/A.
ROW REVISION 08/17/2020 – PARCEL #152: REVISED PUE.



ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

GRAPHIC SCALE
50 25 0 50 100
PLANS



-SR5-

PI Sta 25+38.05	PI Sta 30+41.72	PI Sta 34+81.80	PI Sta 37+95.65
Δ = 4° 29' 37.5" (RT)	Δ = 35° 57' 56.7" (RT)	Δ = 16° 31' 09.0" (LT)	Δ = 32° 18' 10.2" (RT)
D = 1° 06' 14.3"	D = 6° 11' 38.9"	D = 5° 12' 31.3"	D = 10° 36' 37.2"
L = 407.06'	L = 580.64'	L = 317.15'	L = 304.45'
T = 203.63'	T = 300.25'	T = 159.68'	T = 156.39'
R = 5,190.00'	R = 925.00'	R = 1,100.00'	R = 540.00'
SE = NC	SE = 0.04	SE = 0.04	SE = 0.04
DS = 40 MPH	DS = 40 MPH	DS = 40 MPH	DS = 40 MPH

-Y9RPC-

PIs Sta 12+83.35	PI Sta 14+50.07	PIs Sta 15+78.27	PI Sta 17+82.84
Θs = 2° 36' 15.7"	Δ = 5° 12' 31.3" (RT)	Θs = 0° 39' 03.9"	Δ = 21° 34' 00.0" (RT)
Ls = 200.00'	D = 2° 36' 15.7"	Θs = 1° 29' 31.5"	D = 5° 58' 05.9"
LT = 133.35'	L = 200.00'	Ls = 50.00'	L = 361.35'
ST = 66.68'	T = 100.07'	LT = 28.27'	T = 182.84'
	R = 2,200.00'	ST = 21.73'	R = 960.00'
	SE = 0.07		SE = 0.08
	DS = 65 MPH		DS = 55 MPH

PIs Sta 20+31.43	PIs Sta 22+84.90	PI Sta 25+10.70
Θs = 6° 16' 00.2"	Θs = 10° 56' 38.9"	Δ = 41° 40' 12.7" (LT)
Ls = 210.00'	Ls = 170.00'	D = 12° 52' 31.6"
LT = 140.09'	LT = 113.55'	L = 323.64'
ST = 70.08'	ST = 56.86'	T = 169.35'
		R = 445.00'
		SE = 0.08
		DS = 40 MPH

-Y9RPA-

PIs Sta 12+53.38	PI Sta 14+59.15	PIs Sta 16+64.35
Θs = 4° 27' 07.3"	Δ = 9° 58' 26.8" (RT)	Θs = 4° 27' 07.3"
Ls = 230.00'	D = 3° 52' 16.8"	Ls = 230.00'
LT = 153.38'	L = 257.64'	LT = 153.38'
ST = 76.71'	T = 129.15'	ST = 76.71'
	R = 1,480.00'	
	SE = 0.08	
	DS = 65 MPH	

PIs Sta 22+71.13	PI Sta 23+91.73
Θs = 8° 51' 17.3"	Δ = 13° 17' 25.5" (LT)
Ls = 170.00'	D = 10° 25' 02.7"
LT = 113.48'	L = 127.58'
ST = 56.80'	T = 64.08'
	R = 550.00'
	SE = 0.08
	DS = 40 MPH

-RAB_Y9AB-

PI Sta Undefined	PI Sta Undefined
Δ = 180° 00' 00.0" (RT)	Δ = 180° 00' 00.0" (RT)
D = 100° 31' 08.1"	D = 100° 31' 08.1"
L = 179.07'	L = 179.07'
T = Undefined	T = Undefined
R = 57.00'	R = 57.00'
SE = NC	SE = NC
DS = 25 MPH	DS = 25 MPH

-RAB_Y9BC-

PI Sta Undefined	PI Sta Undefined
Δ = 180° 00' 00.0" (RT)	Δ = 180° 00' 00.0" (RT)
D = 100° 31' 08.1"	D = 100° 31' 08.1"
L = 179.07'	L = 179.07'
T = Undefined	T = Undefined
R = 57.00'	R = 57.00'
SE = NC	SE = NC
DS = 25 MPH	DS = 25 MPH

-Y9RPB-

PIs Sta 11+33.35	PI Sta 17+51.78	PI Sta 23+17.20
Θs = 2° 36' 15.7"	Δ = 28° 09' 34.8" (LT)	Δ = 26° 57' 15.6" (LT)
Ls = 200.00'	D = 2° 36' 15.7"	D = 38° 11' 49.9"
LT = 133.35'	L = 1,081.25'	L = 70.57'
ST = 66.68'	T = 551.78'	T = 35.95'
	R = 2,200.00'	R = 150.00'
	SE = 0.07	
	DS = 65 MPH	

-Y9B-

PI Sta 11+57.01	PI Sta 18+32.59
Δ = 14° 54' 31.9" (RT)	Δ = 22° 21' 56.2" (LT)
D = 4° 46' 28.7"	D = 4° 46' 28.7"
L = 312.25'	L = 468.42'
T = 157.01'	T = 237.23'
R = 1,200.00'	R = 1,200.00'
SE = 0.03	SE = 0.03
DS = 50 MPH	DS = 50 MPH

-Y9RPD-

PI Sta 18+49.09	PI Sta 25+01.36
Δ = 32° 52' 34.4" (LT)	Δ = 29° 09' 02.1" (LT)
D = 2° 36' 15.7"	D = 38° 11' 49.9"
L = 1,262.36'	L = 76.32'
T = 649.09'	T = 39.00'
R = 2,200.00'	R = 150.00'
SE = 0.07	
DS = 65 MPH	

-L-

PI Sta 591+20.76
Δ = 0° 06' 00.0" (LT)
D = 0° 01' 29.7"
L = 401.37'
T = 200.69'
R = 230,000.00'
SE = NC
DS = 75 MPH

FOR BRIDGE SKETCH SEE SHT. 2A-6

FOR CROSS-SECTION LAYOUT SEE SHTS. 2B-1 THRU 2B-3

TRUCK APRON

PAVEMENT REMOVAL

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

FOR -L- PROFILES SEE SHTS. 129 THRU 131
FOR -Y9A- PROFILE SEE SHT. 187
FOR -Y9B- PROFILE SEE SHT. 187
FOR -Y9C- PROFILE SEE SHT. 188
FOR -Y9RPA- PROFILE SEE SHT. 189
FOR -Y9RPB- PROFILE SEE SHT. 190
FOR -Y9RPC- PROFILE SEE SHT. 191
FOR -Y9RPD- PROFILE SEE SHT. 192
FOR -RAB_Y9AB- PROFILE SEE SHT. 188
FOR -RAB_Y9BC- PROFILE SEE SHT. 188
FOR -SR5- PROFILE SEE SHTS. 196 & 197

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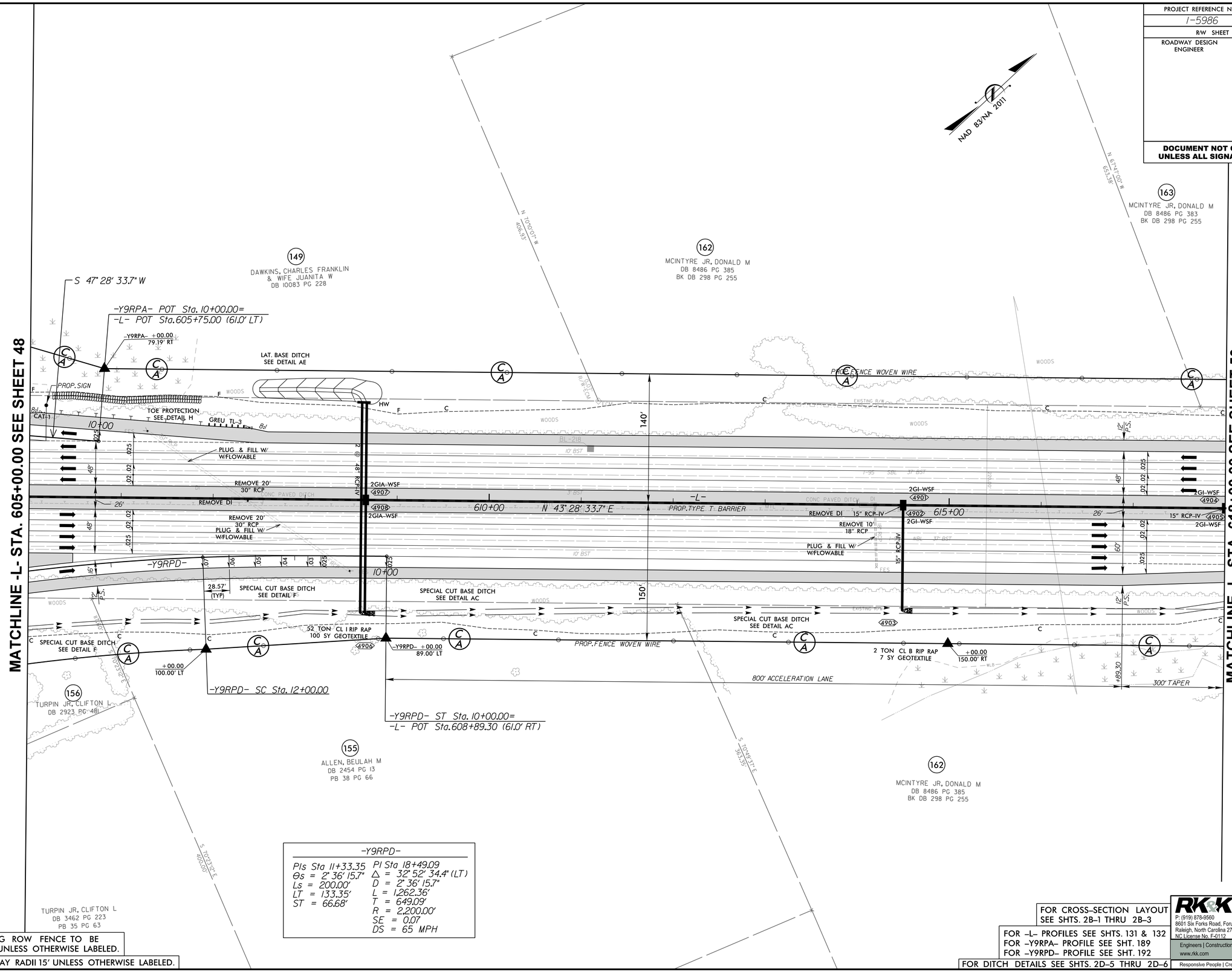
PROJECT REFERENCE NO.	SHEET NO.
I-5986	49
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

ROW REVISION 07/28/2020 - PARCELS *123 THRU *161 HAVE BEEN RELEASED FOR ROW ACQUISITION.



-Y9RPD-

PIs Sta 11+33.35	PI Sta 18+49.09
Θs = 2° 36' 15.7"	Δ = 32° 52' 34.4" (LT)
Ls = 200.00'	D = 2° 36' 15.7"
LT = 133.35'	L = 1,262.36'
ST = 66.68'	T = 649.09'
	R = 2,200.00'
	SE = 0.07
	DS = 65 MPH

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

FOR CROSS-SECTION LAYOUT SEE SHTS. 2B-1 THRU 2B-3

FOR -L- PROFILES SEE SHTS. 131 & 132
FOR -Y9RPA- PROFILE SEE SHT. 189
FOR -Y9RPD- PROFILE SEE SHT. 192

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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8/24/2020
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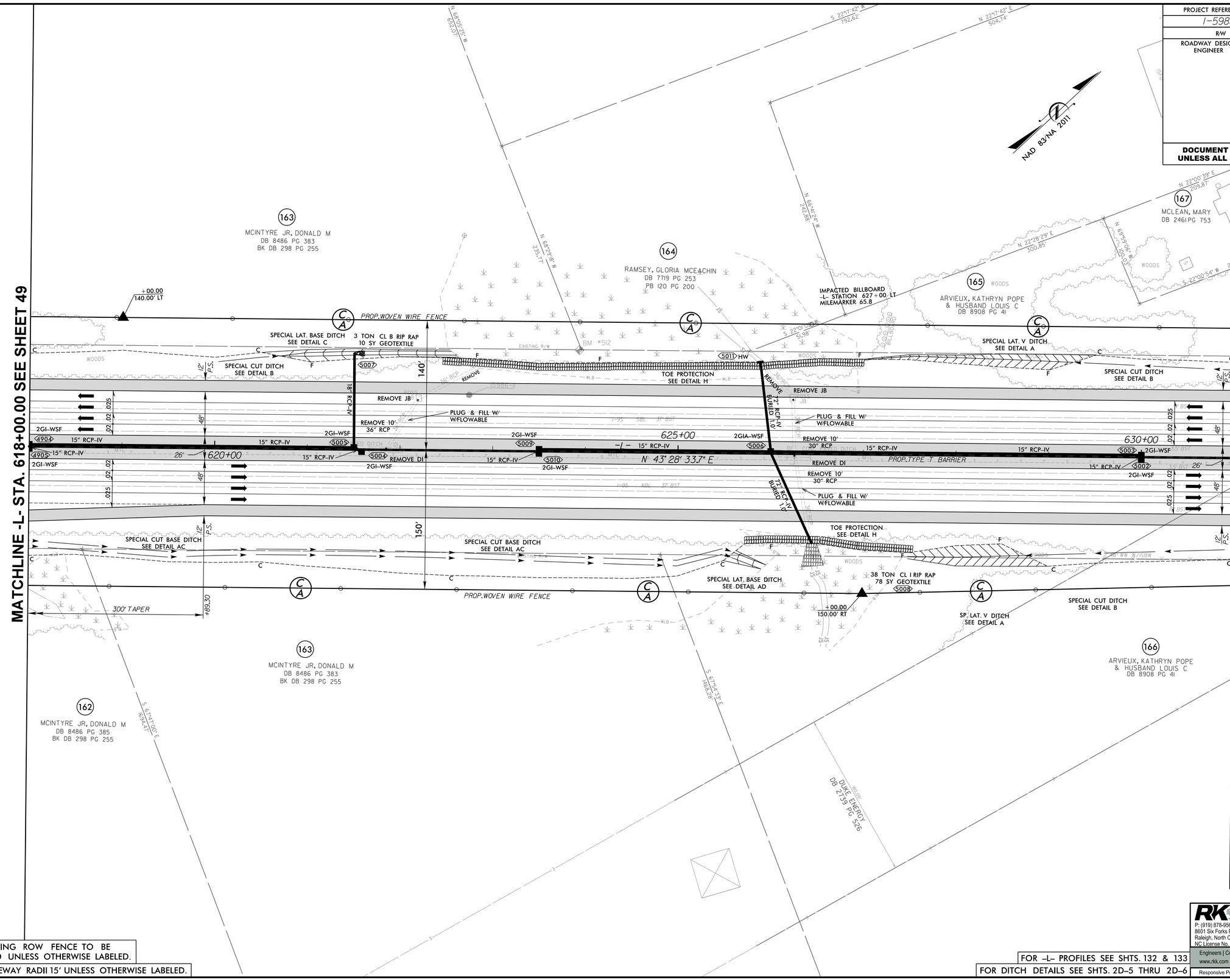
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	50
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

FOR -L- PROFILES SEE SHTS. 132 & 133

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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REVISIONS

ROW REVISION 08/17/2020 - PARCEL #163: REMOVED COMBINE PARCEL SYMBOL BETWEEN LT & RT PARCELS. PARCELS #165 & #166: REMOVED COMBINE PARCEL SYMBOL BETWEEN PARCELS.

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8/24/2020
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ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	51
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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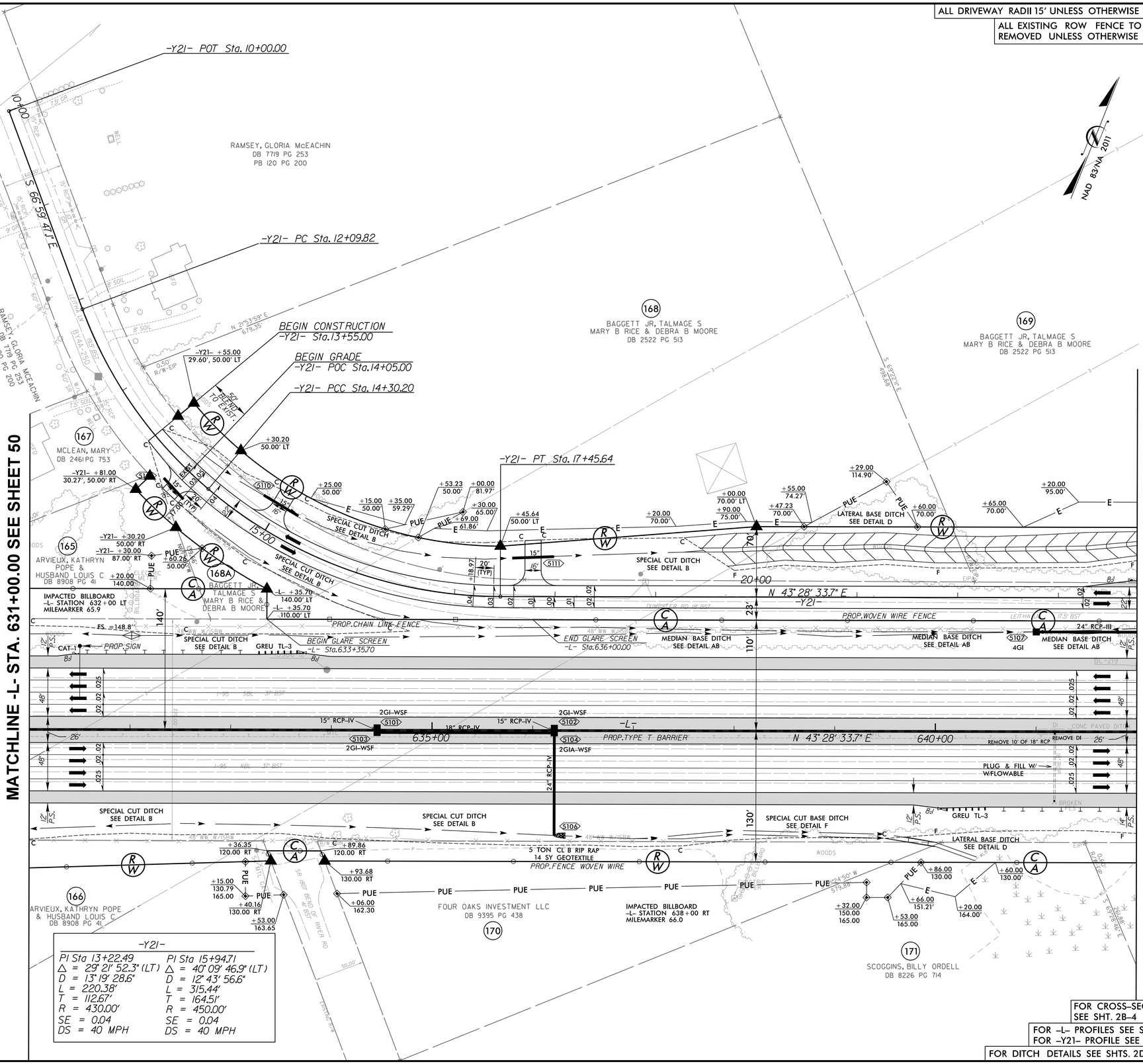

FOR CROSS-SECTION LAYOUT SEE SHT. 2B-4

FOR -L- PROFILES SEE SHTS. 133 & 134
FOR -Y21- PROFILE SEE SHT. 195

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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REVISIONS

ROW REVISION 08/17/2020 - DIVIDED PARCEL #165 INTO #165 & #168A, ADDED PARCEL #168A

8/17/99

8/24/2020
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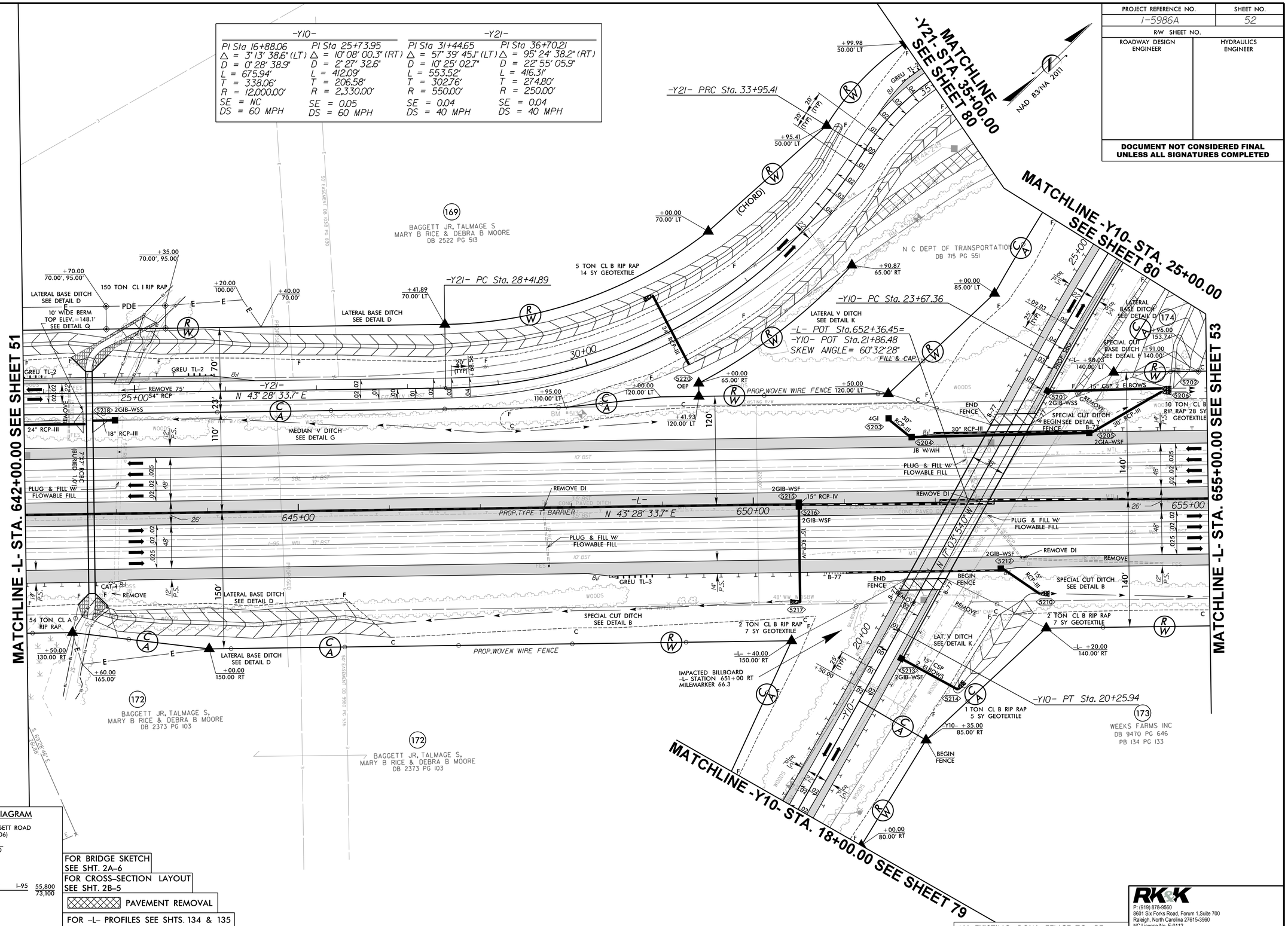
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	52
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y10-		-Y21-	
PI Sta 16+88.06	PI Sta 25+73.95	PI Sta 31+44.65	PI Sta 36+70.21
△ = 3° 13' 38.6" (LT)	△ = 10° 08' 00.3" (RT)	△ = 57° 39' 45.1" (LT)	△ = 95° 24' 38.2" (RT)
D = 0° 28' 38.9"	D = 2° 27' 32.6"	D = 10° 25' 02.7"	D = 22° 55' 05.9"
L = 675.94'	L = 412.09'	L = 553.52'	L = 416.31'
T = 338.06'	T = 206.58'	T = 302.76'	T = 274.80'
R = 12,000.00'	R = 2,330.00'	R = 550.00'	R = 250.00'
SE = NC	SE = 0.05	SE = 0.04	SE = 0.04
DS = 60 MPH	DS = 60 MPH	DS = 40 MPH	DS = 40 MPH



REVISIONS

ROW REVISION 08/17/2020 - PARCEL #174 - CHAGNED PDE INTO DUE.

8/24/2020
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shelter

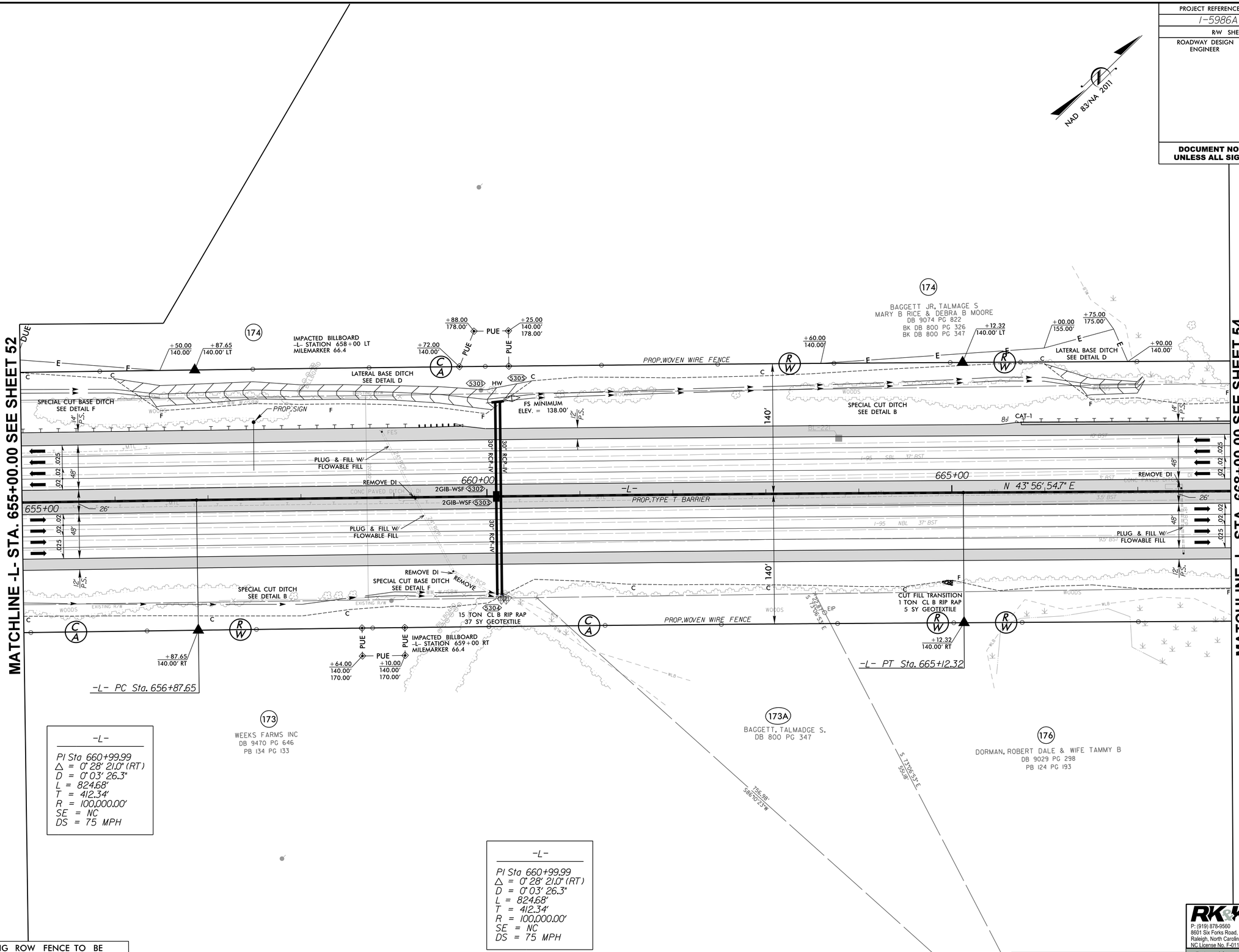
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	53
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

ROW REVISION 08/17/2020 - DIVIDED PARCEL #173 INTO PARCELS #173 & #173A ADDED PARCEL #173A PARCEL #174:CHANGED POE INTO DUE.

8/17/99



-L-

PI Sta 660+99.99
△ = 0° 28' 21.0" (RT)
D = 0° 03' 26.3"
L = 824.68'
T = 412.34'
R = 100,000.00'
SE = NC
DS = 75 MPH

-L-

PI Sta 660+99.99
△ = 0° 28' 21.0" (RT)
D = 0° 03' 26.3"
L = 824.68'
T = 412.34'
R = 100,000.00'
SE = NC
DS = 75 MPH

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

FOR -L- PROFILES SEE SHTS. 135 & 136

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	54
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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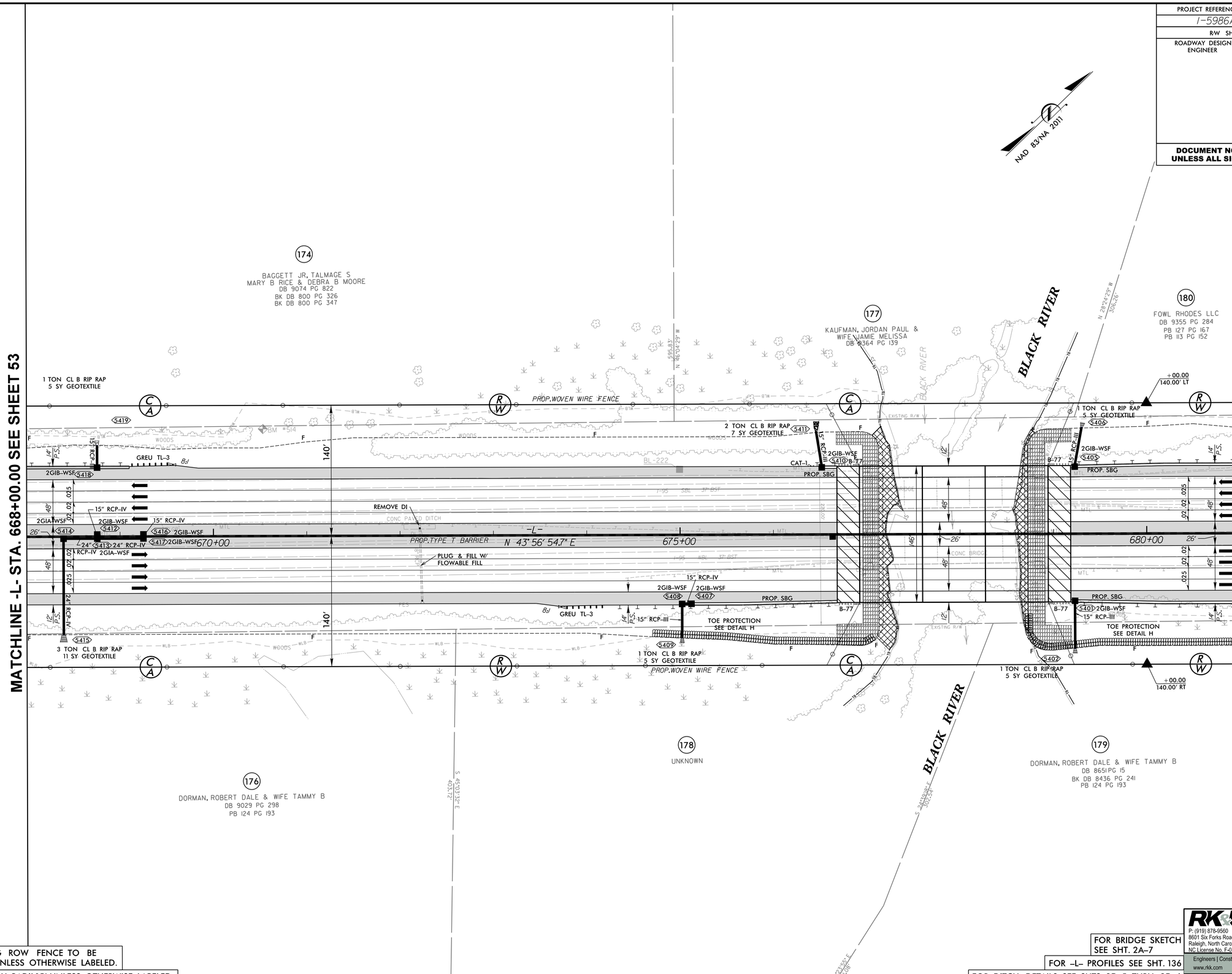

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

FOR BRIDGE SKETCH SEE SHT. 2A-7

FOR -L- PROFILES SEE SHT. 136

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	55
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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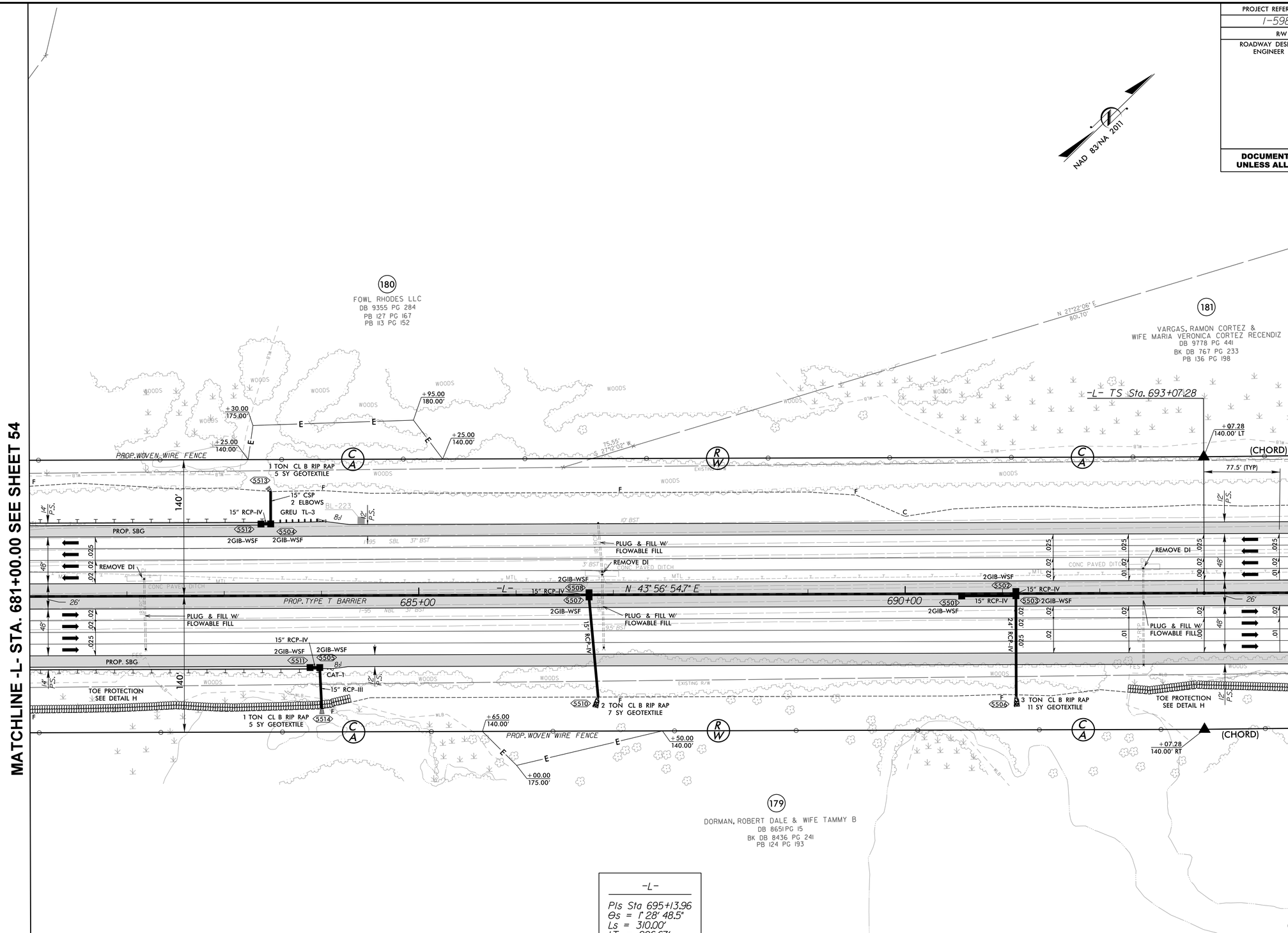

-L-

PIs Sta 695+13.96
Θs = 1° 28' 48.5"
Ls = 310.00'
LT = 206.67'
ST = 103.34'

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

FOR -L- PROFILES SEE SHT. 137

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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8/24/2020
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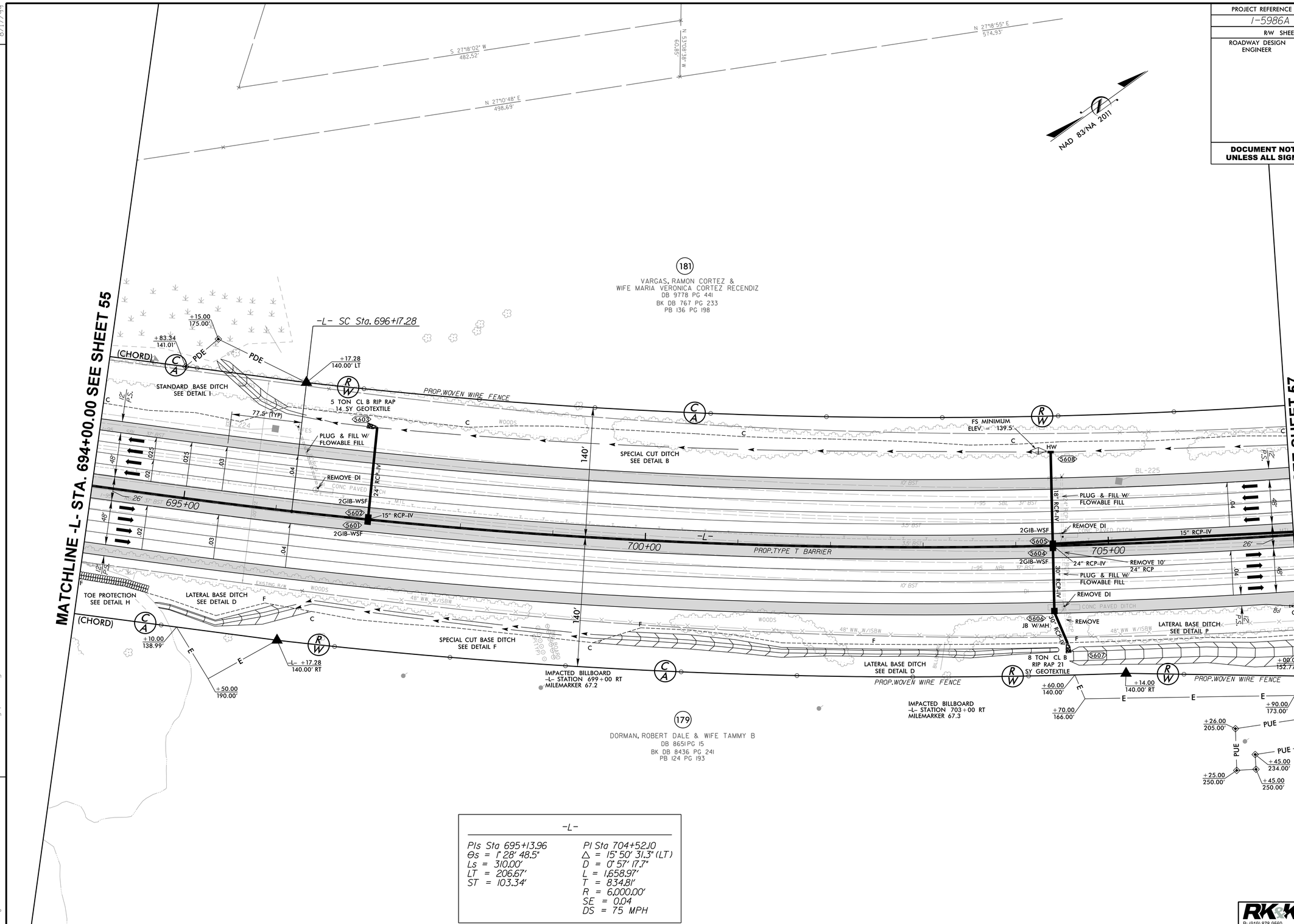
shelter

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	56
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-L-

PIs Sta 695+13.96	PI Sta 704+52.10
Θs = 1° 28' 48.5"	Δ = 15° 50' 31.3" (LT)
Ls = 310.00'	D = 0° 57' 17.7"
LT = 206.67'	L = 1,658.97'
ST = 103.34'	T = 834.81'
	R = 6,000.00'
	SE = 0.04
	DS = 75 MPH

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

FOR -L- PROFILES SEE SHTS. 137 & 138

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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REVISIONS

ROW REVISION 08/17/2020 - PARCEL #179: ADDED TCE.

8/17/99

8/24/2020
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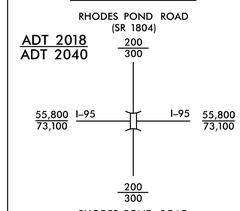
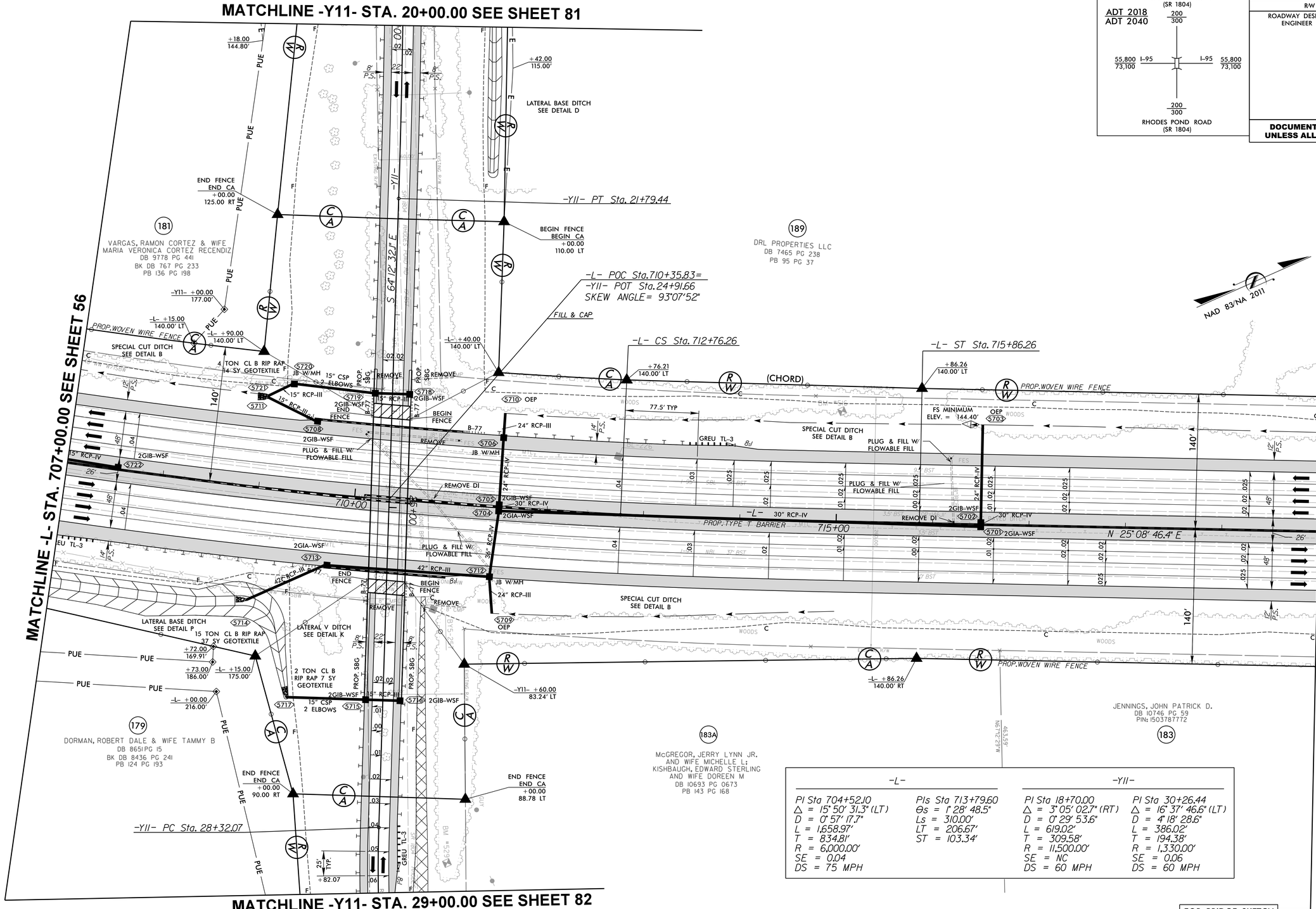
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	57
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TRAFFIC DIAGRAM





-L-		-Y11-	
PI Sta 704+52.10	PIs Sta 713+79.60	PI Sta 18+70.00	PI Sta 30+26.44
Δ = 15° 50' 31.3" (LT)	Θs = 1° 28' 48.5"	Δ = 3° 05' 02.7" (RT)	Δ = 16° 37' 46.6" (LT)
D = 0° 57' 17.7"	Ls = 310.00'	D = 0° 29' 53.6"	D = 4° 18' 28.6"
L = 1,658.97'	LT = 206.67'	L = 619.02'	L = 386.02'
T = 834.81'	ST = 103.34'	T = 309.58'	T = 194.38'
R = 6,000.00'		R = 11,500.00'	R = 1,330.00'
SE = 0.04		SE = NC	SE = 0.06
DS = 75 MPH		DS = 60 MPH	DS = 60 MPH

FOR BRIDGE SKETCH SEE SHT. 2A-7

PAVEMENT REMOVAL

FOR -L- PROFILES SEE SHTS. 138 & 139
FOR -Y11- PROFILE SEE SHT. 194

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

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REVISIONS

ROW REVISION 07/28/2020 - PARCEL #179; CORRECTED ROW FLAG AT -L- STA.709+15 RT.
ROW REVISION 08/17/2020 - PARCEL #183; DIVIDED PARCEL INTO #183 & #183A AND CHANGED PROPERTY OWNER NAMES.

8/17/99

8/24/2020
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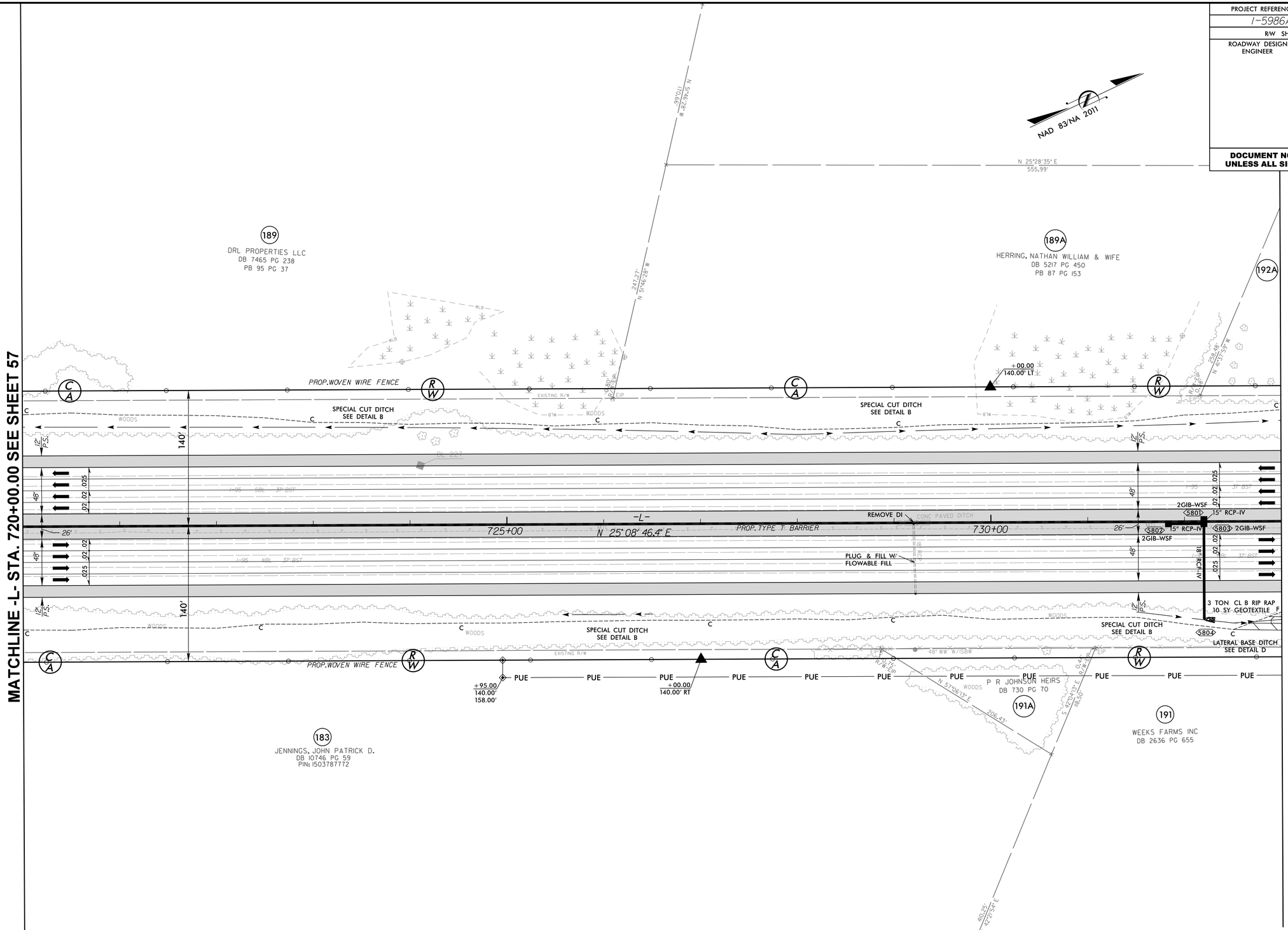
shelter

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	58
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

FOR -L- PROFILES SEE SHTS. 139 & 140

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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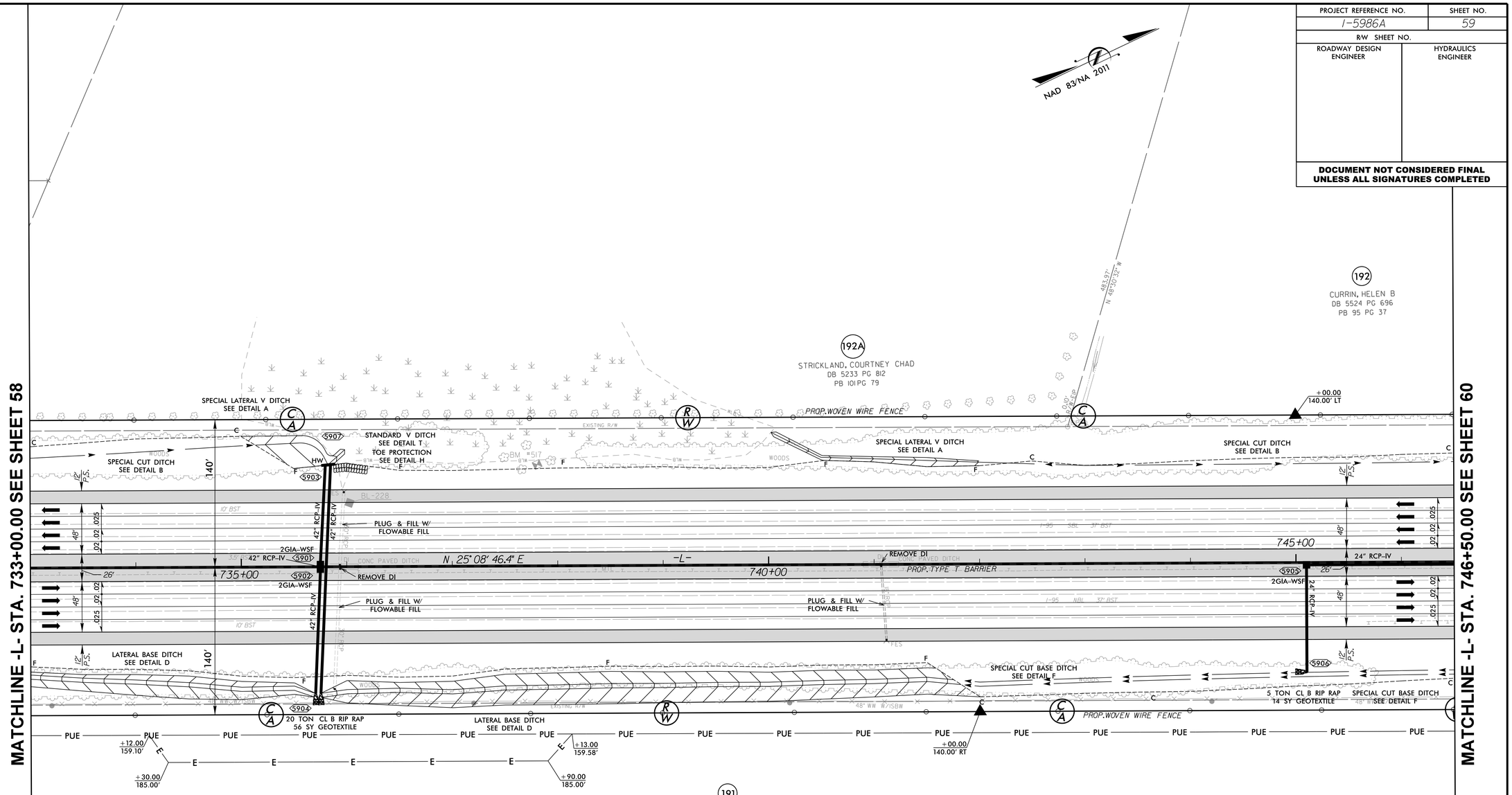
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	59
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

FOR -L- PROFILES SEE SHTS. 140 & 141

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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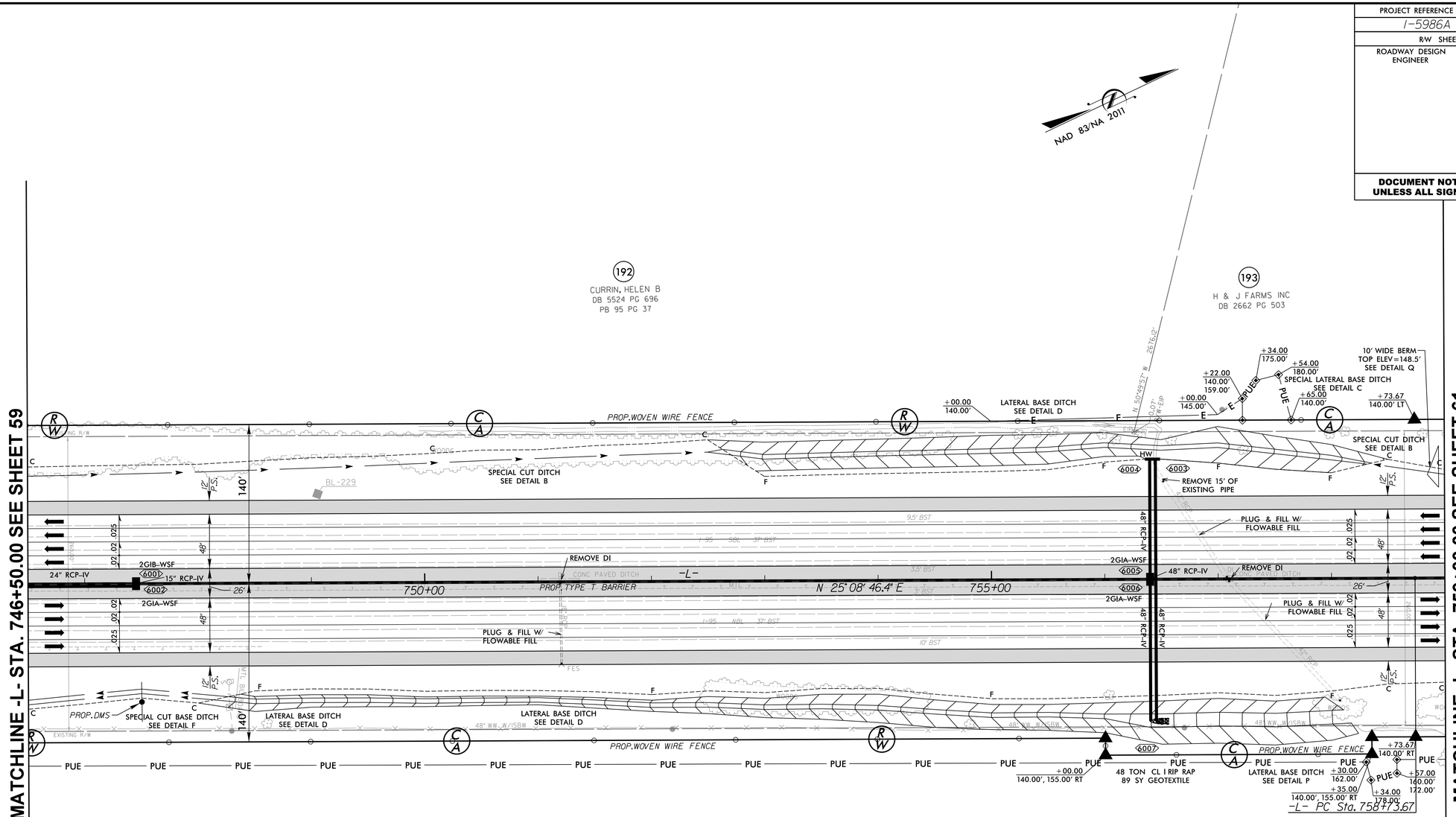
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	60
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-L-

PI Sta 761+15.78
△ = 0° 01' 06.6" (RT)
D = 0° 00' 13.8"
L = 484.20'
T = 242.10'
R = 1,500,000.00'
SE = NC
DS = 75 MPH

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

FOR -L- PROFILES SEE SHTS. 141 & 142

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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8/24/2020
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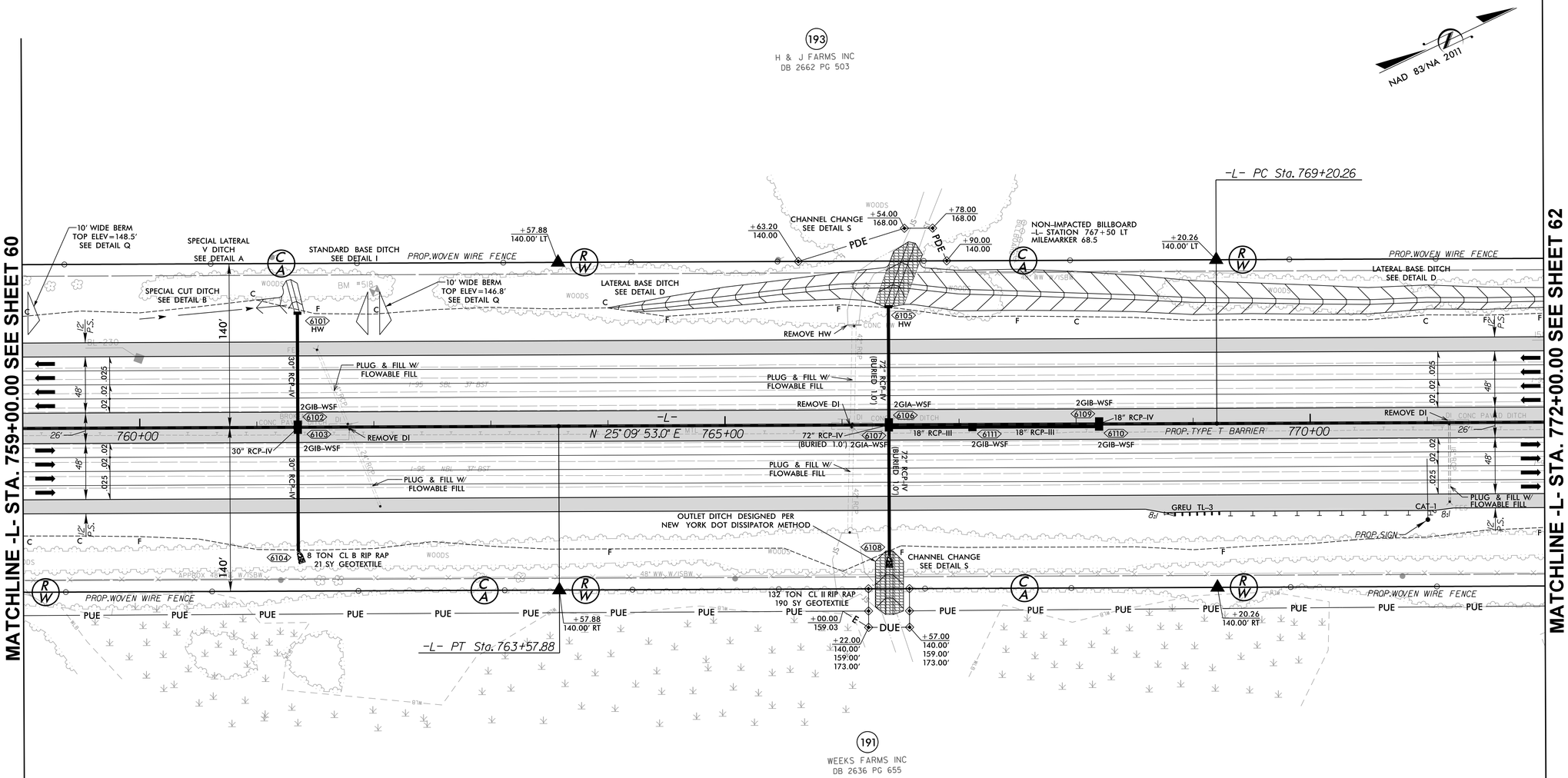
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	61
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-L-	
PI Sta 761+15.78	PI Sta 770+75.39
Δ = 0° 01' 06.6" (RT)	Δ = 0° 01' 31.4" (LT)
D = 0° 00' 13.8"	D = 0° 00' 29.5"
L = 484.20'	L = 310.28'
T = 242.10'	T = 155.14'
R = 1,500,000.00'	R = 700,000.00'
SE = NC	SE = NC
DS = 75 MPH	DS = 75 MPH

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

FOR -L- PROFILES SEE SHTS. 142 & 143

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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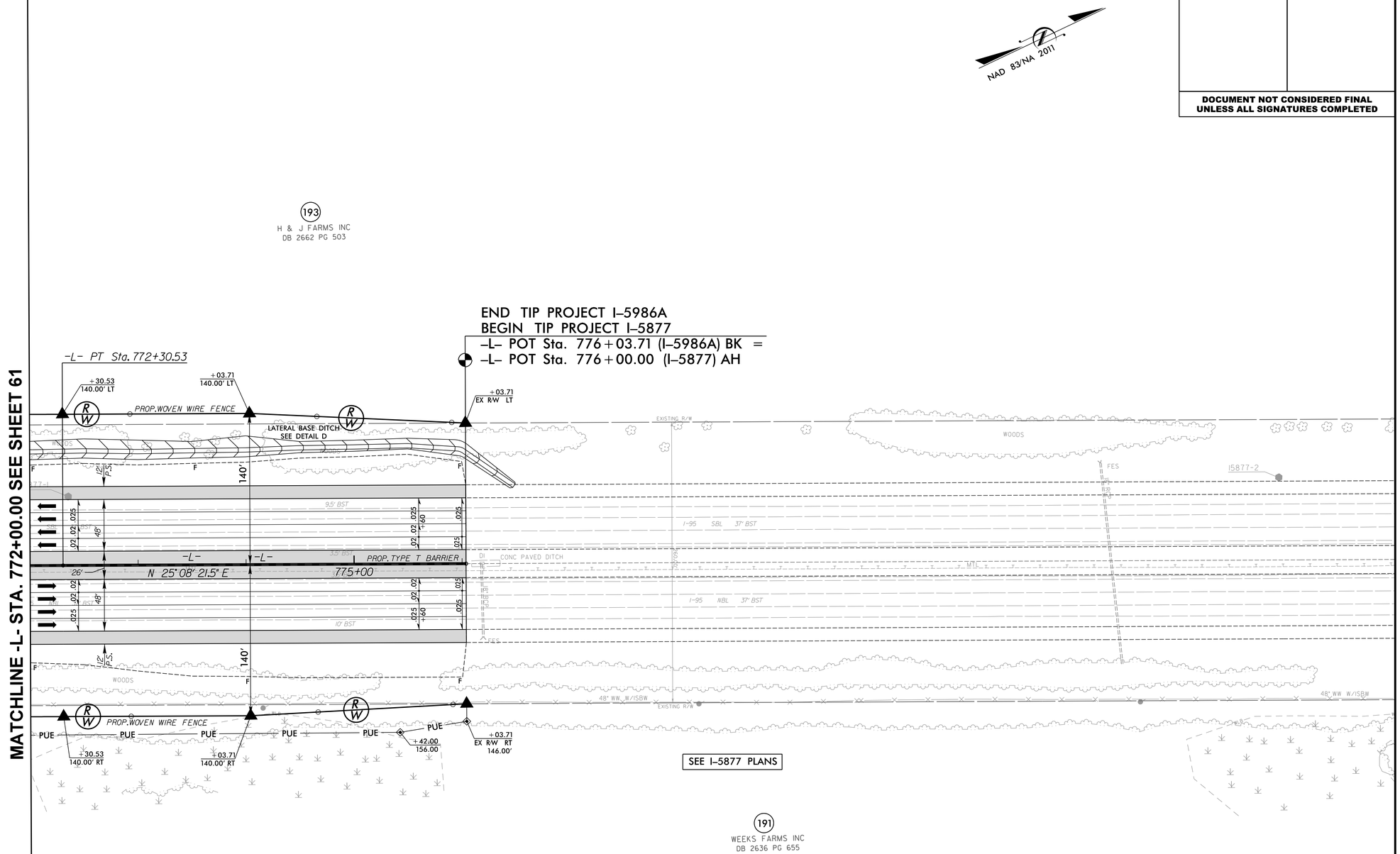
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	62
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-L-

PI Sta 770+75.39
Δ = 0°01' 31.4" (LT)
D = 0°00' 29.5"
L = 310.28'
T = 155.14'
R = 700,000.00'
SE = NC
DS = 75 MPH

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

FOR -L- PROFILES SEE SHT. 143

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	77
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

ROW REVISION 07/28/2020 – PARCELS #123 THRU #161 HAVE BEEN RELEASED FOR ROW ACQUISITION. PARCEL #136; REVISED EXISTING ROW; CLAIM ELIMINATED. PARCEL #137; REVISED EXISTING ROW; CLAIM ELIMINATED. PARCEL #138; REVISED EXISTING ROW; CLAIM ELIMINATED. PARCEL #139; REVISED EXISTING ROW; CLAIM ELIMINATED. PARCEL #140; REVISED EXISTING ROW; REVISED PROPOSED ROW & PUE. PARCEL #141; REVISED EXISTING ROW; REVISED PROPOSED ROW & PUE. PARCEL #142; REVISED EXISTING ROW; REVISED PROPOSED ROW. PARCEL #143; REVISED EXISTING ROW; CLAIM ELIMINATED. PARCEL #144; REVISED EXISTING ROW; ADDED PUE; ELIMINATED PDE, DUE & TCE. PARCEL #145; REVISED EXISTING ROW; REVISED PUE. PARCEL #146; REVISED EXISTING ROW; REVISED C/A. PARCEL #147; REVISED EXISTING ROW; REVISED C/A. PARCEL #148; REVISED EXISTING ROW; REVISED C/A.

8/17/99

8/24/2020
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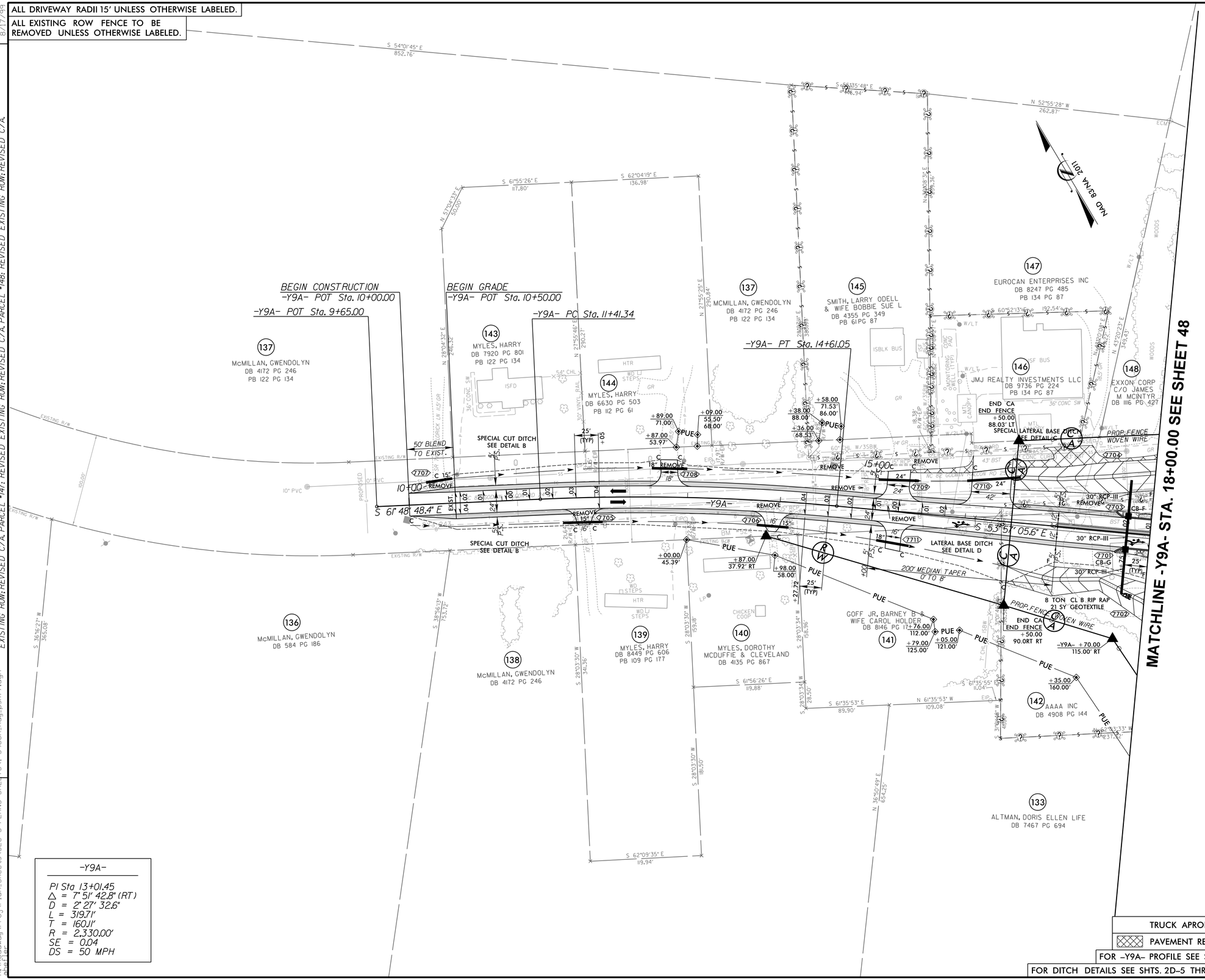
sheller



TRUCK APRON

PAVEMENT REMOVAL

FOR –Y9A– PROFILE SEE SHT. 187

FOR DITCH DETAILS SEE SHTS. 2D–5 THRU 2D–6

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ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

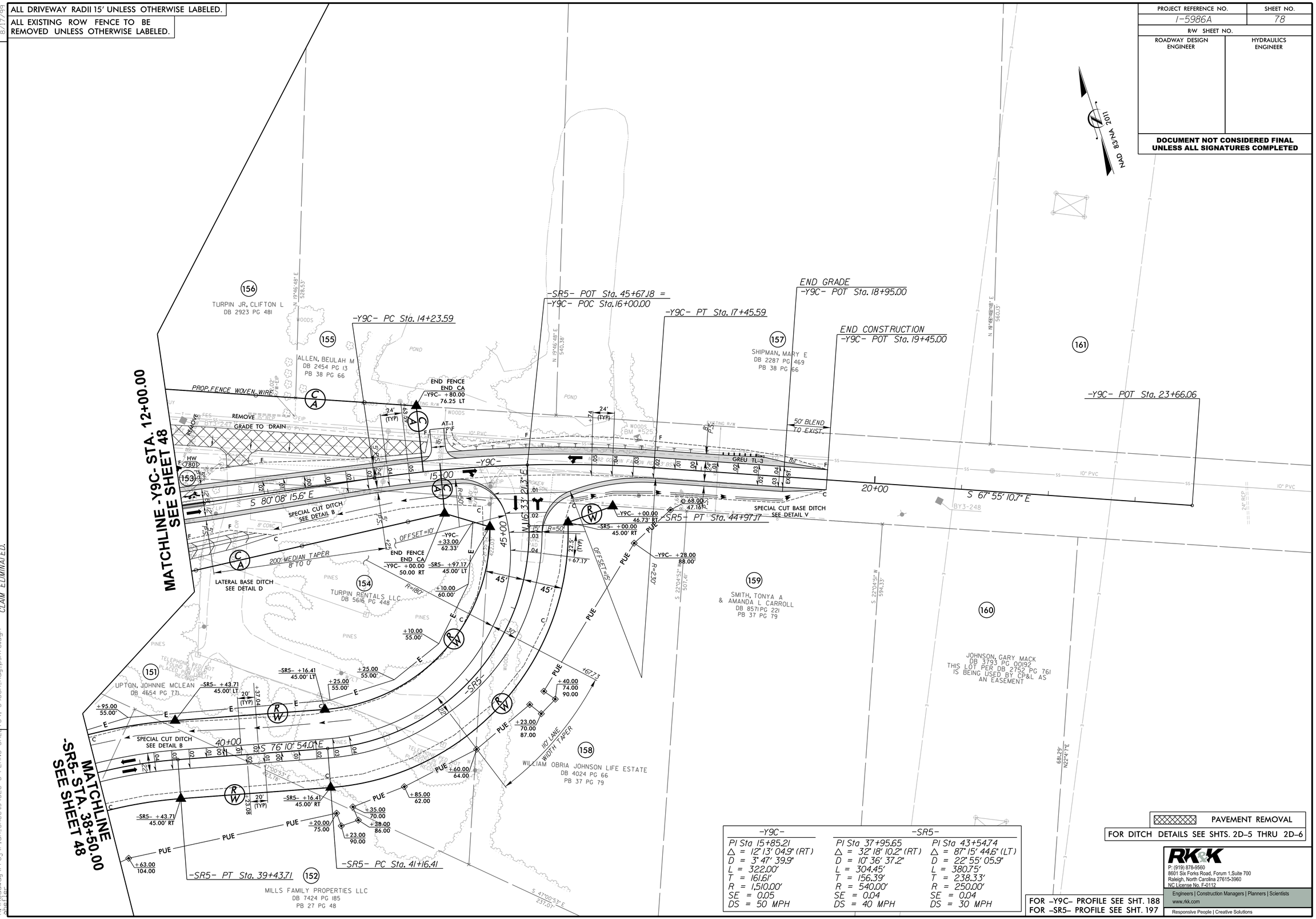
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	78
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

ROW REVISION 07/28/2020 – PARCELS #123 THRU #161 HAVE BEEN RELEASED FOR ROW ACQUISITION; PARCEL #153: REVISED EXISTING ROW; PARCEL #154: REVISED EXISTING ROW; REVISED PROPOSED ROW & TCE; PARCEL #155: REVISED EXISTING ROW; REVISED C/A; ELIMINATED TCE; PARCEL #156: REVISED EXISTING ROW; REVISED C/A; PARCEL #157: REVISED EXISTING ROW; REVISED PROPOSED ROW & PUE; PARCEL #158: REVISED EXISTING ROW; CLAIM ELIMINATED; PARCEL #159: REVISED EXISTING ROW; CLAIM ELIMINATED; PARCEL #160: REVISED EXISTING ROW; CLAIM ELIMINATED; PARCEL #161: REVISED EXISTING ROW; CLAIM ELIMINATED.

8/17/99



-Y9C-	-SR5-	
PI Sta 15+85.21	PI Sta 37+95.65	PI Sta 43+54.74
Δ = 12° 13' 04.9" (RT)	Δ = 32° 18' 10.2" (RT)	Δ = 87° 15' 44.6" (LT)
D = 3° 47' 39.9"	D = 10° 36' 37.2"	D = 22° 55' 05.9"
L = 322.00'	L = 304.45'	L = 380.75'
T = 161.61'	T = 156.39'	T = 238.33'
R = 1,510.00'	R = 540.00'	R = 250.00'
SE = 0.05	SE = 0.04	SE = 0.04
DS = 50 MPH	DS = 40 MPH	DS = 30 MPH

PAVEMENT REMOVAL

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

FOR -Y9C- PROFILE SEE SHT. 188
FOR -SR5- PROFILE SEE SHT. 197

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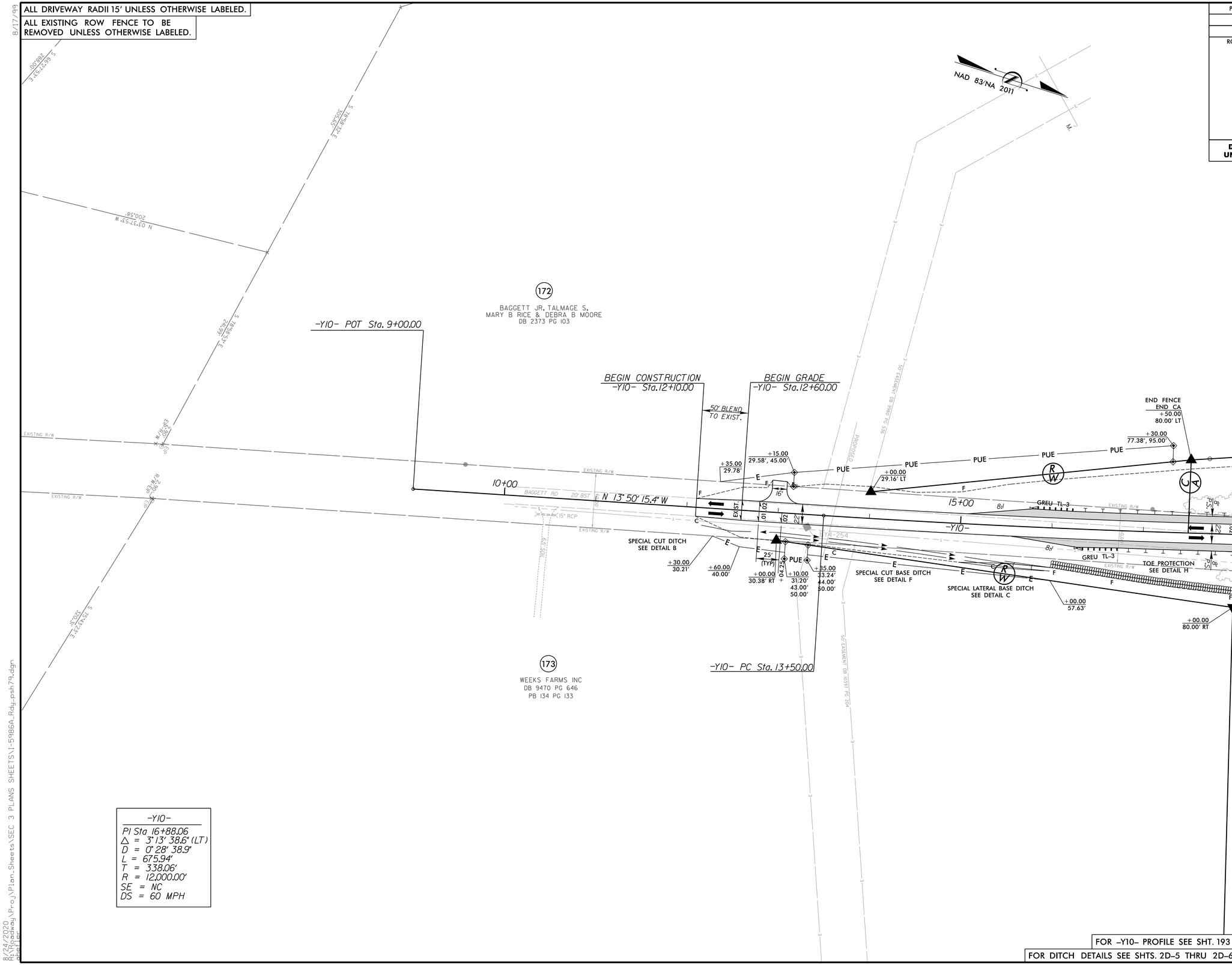
ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	79
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-Y10-

PI Sta 16+88.06
△ = 3° 13' 38.6" (LT)
D = 0° 28' 38.9"
L = 675.94'
T = 338.06'
R = 12,000.00'
SE = NC
DS = 60 MPH

FOR -Y10- PROFILE SEE SHT. 193

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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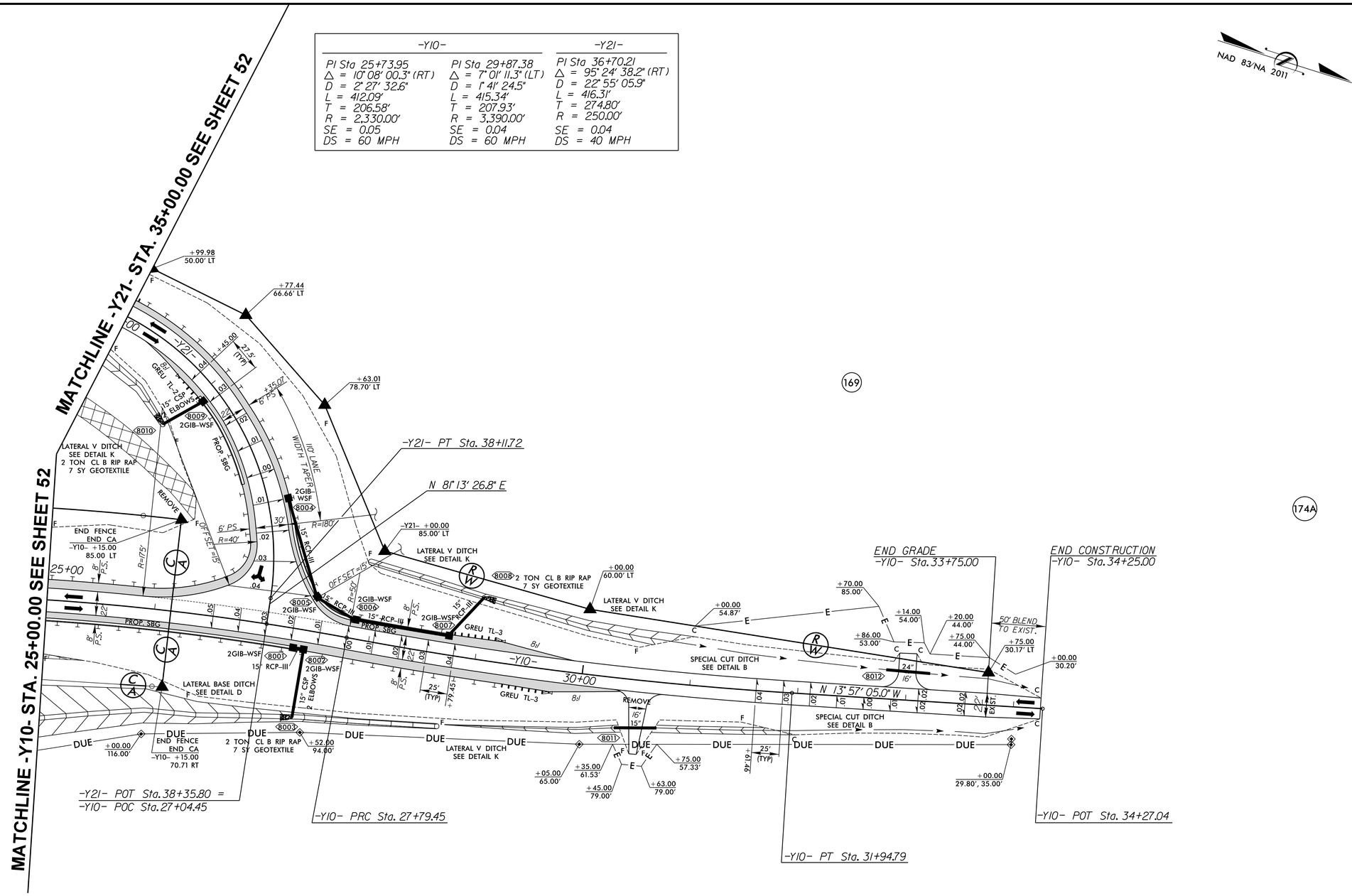
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	80
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y10-		-Y21-
PI Sta 25+73.95	PI Sta 29+87.38	PI Sta 36+70.21
△ = 10° 08' 00.3" (RT)	△ = 7° 01' 11.3" (LT)	△ = 95° 24' 38.2" (RT)
D = 2° 27' 32.6"	D = 1° 41' 24.5"	D = 22° 55' 05.9"
L = 412.09'	L = 415.34'	L = 416.31'
T = 206.58'	T = 207.93'	T = 274.80'
R = 2,330.00'	R = 3,390.00'	R = 250.00'
SE = 0.05	SE = 0.04	SE = 0.04
DS = 60 MPH	DS = 60 MPH	DS = 40 MPH

NAD 83/NA 2011



ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

PAVEMENT REMOVAL

FOR -Y10- PROFILE SEE SHT. 193
FOR -Y21- PROFILE SEE SHT. 195

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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REVISIONS

ROW REVISION 08/17/2020 - PARCEL #174:CHANGED PDE INTO DUE.

8/17/99

8/24/2020
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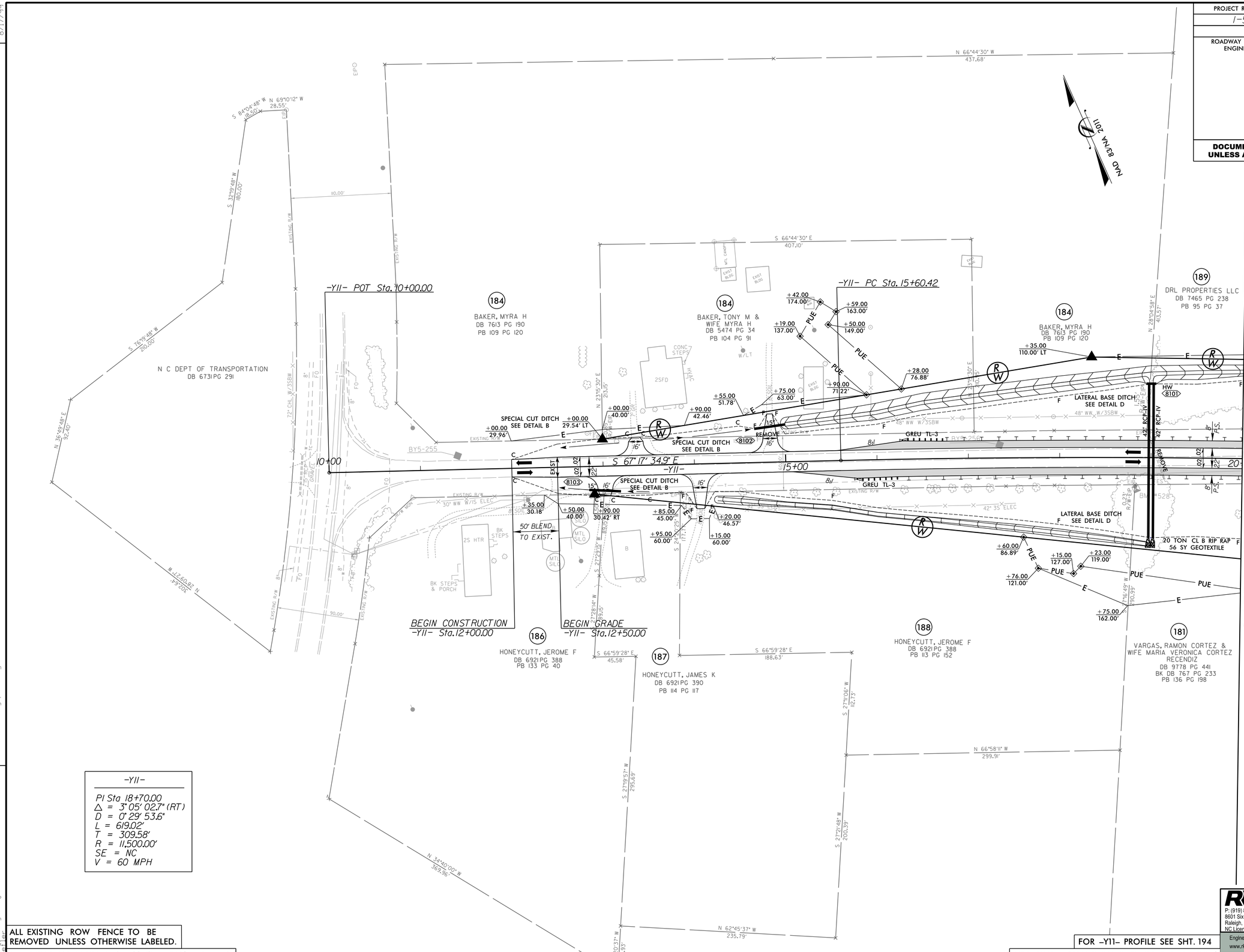
shelter

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	81
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-Y11-

PI Sta 18+70.00
△ = 3° 05' 02.7" (RT)
D = 0° 29' 53.6"
L = 619.02'
T = 309.58'
R = 11,500.00'
SE = NC
V = 60 MPH

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

FOR -Y11- PROFILE SEE SHT. 194

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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REVISIONS

ROW REVISION 07/28/2020 - PARCELS #184 & #185 HAVE BEEN COMBINED INTO PARCEL #184

8/17/99

8/24/2020
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ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

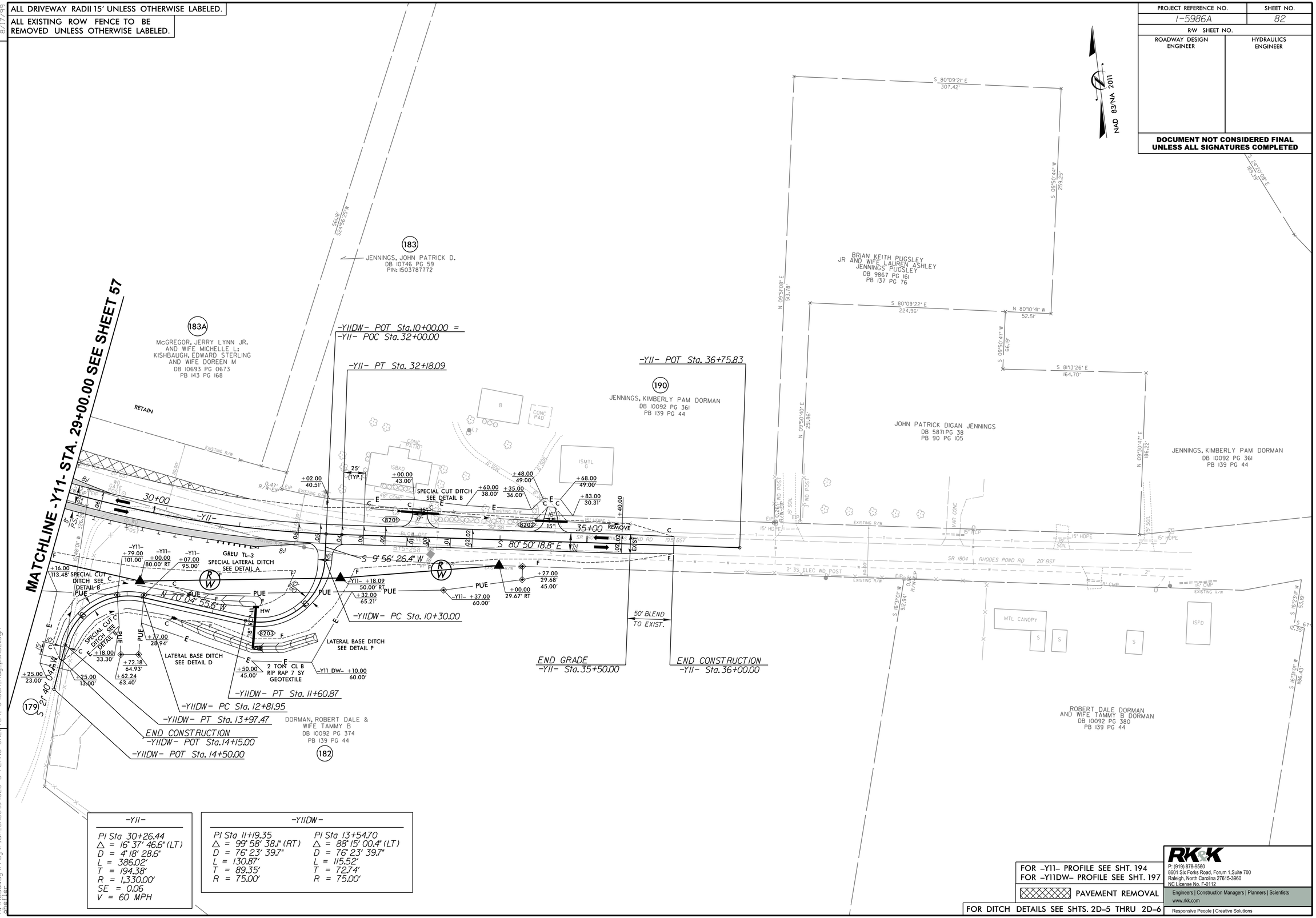
ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	82
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

ROW REVISION 07/28/2020 – PARCEL #182: CORRECTED PUE LABELS AT -Y11DW- STA.13+00 +/- LT.
ROW REVISION 08/17/2020 – PARCEL #183: DIVIDED INTO PARCEL #183 & #183A AND CHANGED PROPERTY OWNER NAMES.



-Y11-	
PI Sta 30+26.44	
△ = 16° 37' 46.6" (LT)	
D = 4° 18' 28.6"	
L = 386.02'	
T = 194.38'	
R = 1,330.00'	
SE = 0.06	
V = 60 MPH	

-Y11DW-	
PI Sta 11+19.35	PI Sta 13+54.70
△ = 99° 58' 38.1" (RT)	△ = 88° 15' 00.4" (LT)
D = 76° 23' 39.7"	D = 76° 23' 39.7"
L = 130.87'	L = 115.52'
T = 89.35'	T = 72.74'
R = 75.00'	R = 75.00'

FOR -Y11- PROFILE SEE SHT. 194
FOR -Y11DW- PROFILE SEE SHT. 197

PAVEMENT REMOVAL

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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