09/09/99

TIP PROJECT: R-2828

CONTRACT: C204197

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2828	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
35516.3.GV1	NHP-0540(043)	DESIGN-BUILD
35516.2.3	NHP-0540(043)	R/W
35516.2.TA1	NHP-0540(043)	R/W

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

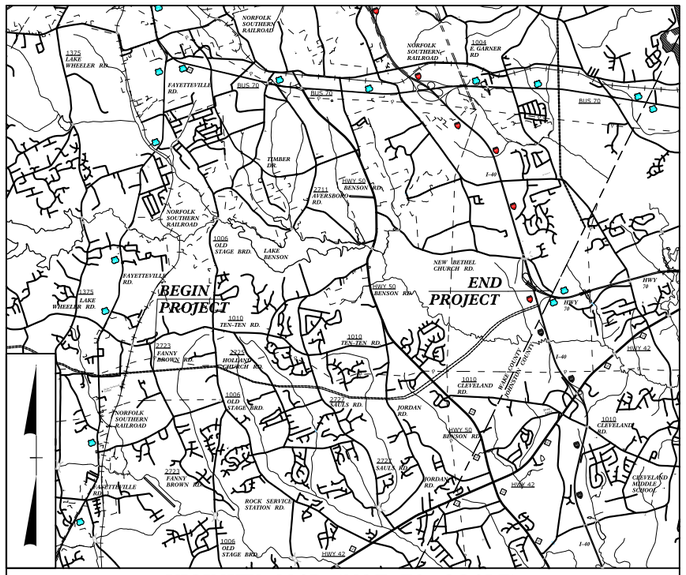
WAKE & JOHNSTON COUNTY

LOCATION: *TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION FROM EAST OF US 401 TO EAST OF I-40*

TYPE OF WORK: *DESIGN-BUILD AS SPECIFIED IN THE SCOPE OF WORK CONTAINED IN THE REQUEST FOR PROPOSALS*

WETLAND AND SURFACE WATER IMPACTS PERMIT

PACKAGE R-2828
DATE: JULY 18, 2019

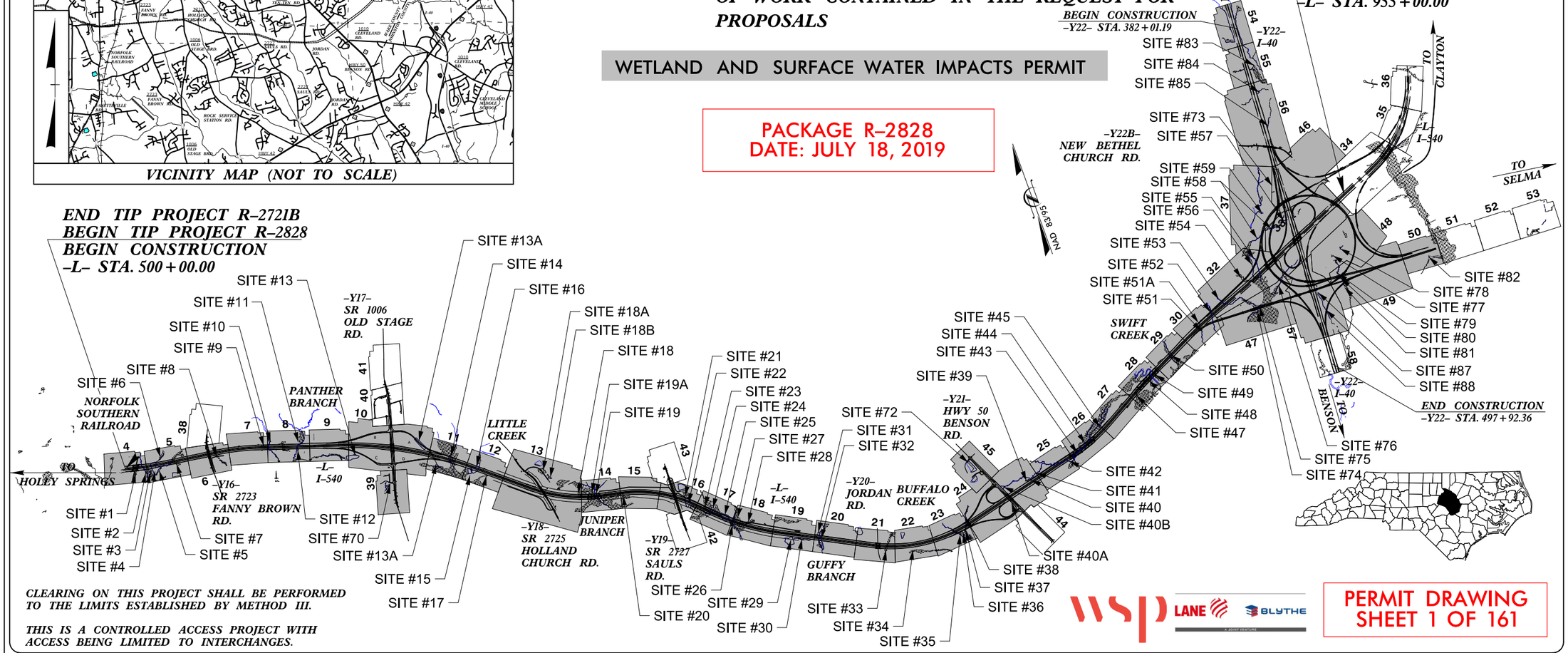


VICINITY MAP (NOT TO SCALE)

END TIP PROJECT R-2721B
BEGIN TIP PROJECT R-2828
BEGIN CONSTRUCTION
-L- STA. 500+00.00

END TIP PROJECT R-2828
BEGIN TIP PROJECT R-2829
BEGIN CONSTRUCTION
-L- STA. 955+00.00

BEGIN CONSTRUCTION
-Y22- STA. 382+01.19



END CONSTRUCTION
-Y22- STA. 497+92.36

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

WSP LANE BLYTHE A JOINT VENTURE

PERMIT DRAWING
SHEET 1 OF 161

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 2016 =
ADT 2040 = 534,000
DHV = 12 %
D = 65 %
T = 11 % *
V = 75 MPH
*(TTST 4 + DUAL 7)

FUNCTIONAL CLASS: FREEWAY

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT R-2828 = 8.055 Miles

LENGTH OF STRUCTURE PROJECT R-2828 = 0.562 Miles

TOTAL LENGTH OF TIP PROJECT R-2828 = 8.617 Miles

NCDOT CONTACT: *DESIGN BUILD PROJECT ENGINEER - TRANSPORTATION PROGRAM MANAGEMENT UNIT*

Prepared In the Office of
WSP USA
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
PHONE: 919.835.4500
FAX: (919)-836-4099
LICENSE NO. F-0165
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: SEPTEMBER 09, 2019

LETTING DATE: DECEMBER 12, 2019

DANIEL BRIDGES, PE
PROJECT ENGINEER

RONYELL THIGPEN, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

7/18/2019
\\prgdwics01\ics_workingdir\910\336429_975\R2828_hyd_prm_wet_psh_01.dgn
PRDPWICS01$

8/17/99

REVISIONS

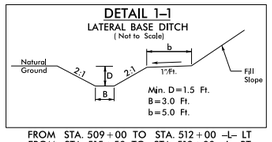
LANE BLYTHE — A JOINT VENTURE — WSP

PROJECT REFERENCE NO.	SHEET NO.
R-2828	2(1)
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

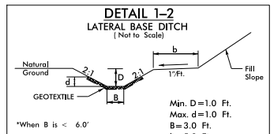
DETAIL 1–1
LATERAL BASE DITCH
(Not to Scale)



Min. D=1.5 Ft.
B=3.0 Ft.
b=5.0 Ft.

FROM STA. 509+00 TO STA. 512+00 –L– LT
FROM STA. 515+50 TO STA. 519+00 –L– RT

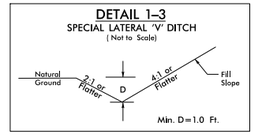
DETAIL 1–2
LATERAL BASE DITCH
(Not to Scale)



*When B is < 6.0'
Min. D=1.0 Ft.
Max. d=1.0 Ft.
B=3.0 Ft.
b=5.0 Ft.
Type of Liner= Class I Rip–Rap

FROM STA. 508+12 TO STA. 509+00 –L– LT
FROM STA. 511+26 TO STA. 515+50 –L– RT

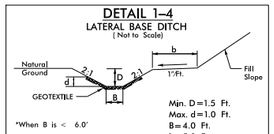
DETAIL 1–3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D=1.0 Ft.

FROM –Y16– STA. 12+00 LT TO –L– STA. 527+50 RT
FROM STA. 20+00 TO STA. 23+00 –Y16– LT
FROM STA. 47+50 TO STA. 52+00 –Y17– RT
FROM STA. 20+39 TO STA. 27+50 –Y17RPA– LT
FROM STA. 622+55 TO STA. 625+00 –L– RT

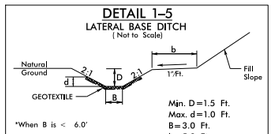
DETAIL 1–4
LATERAL BASE DITCH
(Not to Scale)



*When B is < 6.0'
Min. D=1.5 Ft.
Max. d=1.0 Ft.
B=4.0 Ft.
b=5.0 Ft.
Type of Liner=Class I Rip–Rap

FROM STA. 512+75 TO STA. 517+00 –L– LT

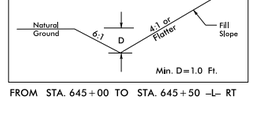
DETAIL 1–5
LATERAL BASE DITCH
(Not to Scale)



*When B is < 6.0'
Min. D=1.5 Ft.
Max. d=1.0 Ft.
B=3.0 Ft.
b=5.0 Ft.
Type of Liner=Class I Rip–Rap

FROM STA. 517+00 TO STA. 520+00 –L– LT

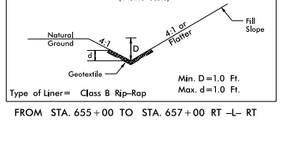
DETAIL 1–6
SPECIAL CUT DITCH wHINGE
(Not to Scale)



Min. D=1.0 Ft.

FROM STA. 522+50 TO STA. 525+00 –L– RT
FROM STA. 525+50 TO STA. 527+50 –L– RT
FROM STA. 529+50 TO STA. 532+00 –L– LT
FROM STA. 12+00 TO STA. 17+00 –Y17RPC– RT
FROM STA. 19+50 TO STA. 33+30 –Y17RPC– RT
FROM STA. 13+50 TO STA. 18+00 –Y17RPB– LT

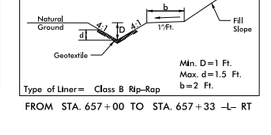
DETAIL 1–7
TOE PROTECTION
(Not to Scale)



d= Ft.
b= Ft.
Type of Liner= ? Rip–Rap

FROM STA. 551+00 TO STA. 552+50 –L– LT
FROM STA. 653+50 TO STA. 657+09 –L– LT
FROM STA. 661+73 TO STA 670+99 –L– RT

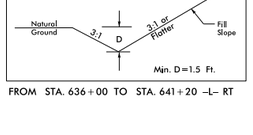
DETAIL 1–8
LATERAL BASE DITCH
(Not to Scale)



Min. D=1.0 Ft.
B=2.0 Ft.
b=5.0 Ft.

FROM STA. 519+00 TO STA. 520+50 –L– RT
FROM STA. 546+00 TO STA. 548+60 –L– LT
FROM STA. 551+75 TO STA. 552+50 –L– LT

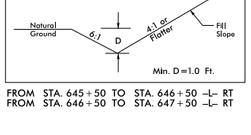
DETAIL 1–9
SPECIAL CUT DITCH
(Not to Scale)



Min. D=1.0 Ft.

FROM STA. 10+00 TO STA. 12+70 –Y16– RT
FROM STA. 11+00 TO STA. 12+00 –Y16– LT
FROM STA. 47+17 TO STA. 49+50 –Y17– LT
FROM STA. 56+00 TO STA. 57+50 –Y17– LT
FROM STA. 58+55 TO STA. 59+00 –Y17– LT
FROM STA. 62+50 TO STA. 64+00 –Y17– RT
FROM STA. 63+00 TO STA. 64+00 –Y17– LT
FROM STA. 15+00 TO STA. 16+30 –Y17B– LT
FROM STA. 16+50 TO STA. 17+00 –Y17B– LT
FROM STA. 19+50 TO STA. 20+57 –Y17B– LT
FROM STA. 13+50 TO STA. 14+45 –Y17B– RT
FROM STA. 10+00 TO STA. 12+23 –Y17C– RT
FROM STA. 10+23 TO STA. 12+23 –Y17C– LT
FROM STA. 583+85 TO STA. 588+76 –L– LT
FROM STA. 623+00 TO STA. 625+00 –L– RT
FROM STA. 10+27 TO STA. STA. 10+59 –Y18A– LT
FROM STA. 13+50 TO STA. 14+70 –Y18A– LT

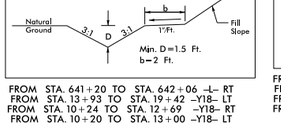
DETAIL 1–10
BERM 'V' DITCH
(Not to Scale)



Min. D=1.0 Ft.
b=5.0 Ft.

FROM STA. 526+75 TO STA. 530+00 –L– LT
FROM STA. 536+00 TO STA. 537+00 –L– LT
FROM STA. 585+00 TO STA. 588+40 –L– LT
FROM STA. 10+50 TO STA. 13+00 –Y17RPB– RT
FROM STA. 585+00 TO STA. 588+40 –L– LT
FROM STA. 31+50 TO STA. 33+50 –Y17RPC– LT

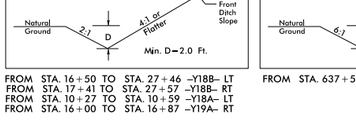
DETAIL 1–11
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D=1.0 Ft.
B=2.0 Ft.

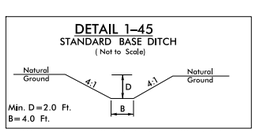
FROM STA. 544+00 TO STA. 546+00 –L– LT
FROM STA. 545+00 TO STA. 547+00 –L– RT

DETAIL 1–12
MEDIAN V DITCH
(Not to Scale)



FROM STA. 525+70 TO STA. 527+70 –L– MED
FROM STA. 528+74 TO STA. 531+00 –L– MED
FROM STA. 585+50 TO STA. 588+50 –L– MED
AT STA. 591+50 –L– MED

DETAIL 1–13
STANDARD 'V' DITCH
(Not to Scale)



Min. D=1.0 Ft.

FROM STA. 528+90.63 TO STA. 529+50 –L– LT
FROM STA. 13+88 TO STA. 14+88 –EY3C– RT
FROM STA. 15+76 TO STA. 16+48 –EY3C– RT

DETAIL 1–14
STANDARD BASE DITCH
(Not to Scale)



Min. D=1.0 Ft.
B=2.0 Ft.

STA. 15+75 –Y17B– RT

DETAIL 1–15
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Min. D=1.0 Ft.

FROM STA. 12+70 TO STA. 14+50 –Y16– RT
FROM STA. 17+80 TO STA. 20+00 –Y16– LT

DETAIL 1–16
LATERAL 'V' DITCH
(Not to Scale)

Min. D=1.0 Ft.
b=1.0 Ft.

FROM STA. 18+00 TO STA. 18+50 –Y16– RT

DETAIL 1–17
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Min. D=1.0 Ft.

FROM STA. 18+50 TO STA. 20+00 –Y16– RT
FROM STA. 11+40 TO STA. 11+90 –Y17RPD– LT

DETAIL 1–18
STANDARD BASE DITCH
(Not to Scale)

Min. D=1.0 Ft.
B=3.0 Ft.

STA. 15+75 –Y17B– RT
STA. 25+31 –Y17RPA– LT

DETAIL 1–19
STANDARD BASE DITCH
(Not to Scale)

Min. D=2.0 Ft.
B=3.0 Ft.

STA. 44+78 –Y17– RT

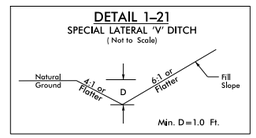
DETAIL 1–20
STANDARD BASE DITCH
(Not to Scale)



*When B is < 6.0'
Min. D=1.5 Ft.
Max. d=1.0 Ft.
B=3.0 Ft.
Type of Liner=Class B Rip–Rap

STA. 25+31 –Y17RPA– LT

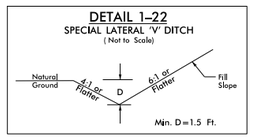
DETAIL 1–21
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D=1.0 Ft.

FROM STA. 600+00 TO STA. 602+50 –L– LT
FROM STA. 645+00 TO STA. 647+50 –L– RT

DETAIL 1–22
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D=1.5 Ft.

FROM STA. 18+10 TO STA. 18+90 –Y17RPA– RT
FROM STA. 21+50 TO STA. 25+25 –Y17RPA– RT
FROM STA. 613+13 TO STA. 614+37 –L– LT
FROM STA. 623+65 TO STA. 625+00 –L– LT

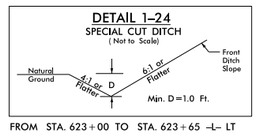
DETAIL 1–23
SPECIAL CUT DITCH
(Not to Scale)



Min. D=1.5 Ft.

FROM STA. 18+90 TO STA. 21+50 –Y17RPA– RT
FROM STA. 637+50 TO STA. 639+50 –L– LT
FROM STA. 16+50 TO STA. 17+22 –Y18B– LT

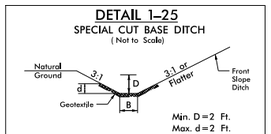
DETAIL 1–24
SPECIAL CUT DITCH
(Not to Scale)



Min. D=1.0 Ft.

FROM STA. 623+00 TO STA. 623+65 –L– LT

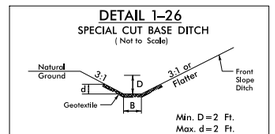
DETAIL 1–25
SPECIAL CUT BASE DITCH
(Not to Scale)



Min. D=2 Ft.
Max. d=2 Ft.
B=8 Ft.
Type of Liner=Class B Rip–Rap

FROM STA. 659+59 TO STA. 660+68 –L– LT

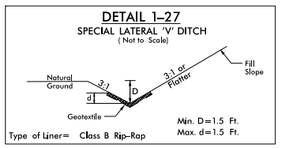
DETAIL 1–26
SPECIAL CUT BASE DITCH
(Not to Scale)



Min. D=2 Ft.
Max. d=2 Ft.
B=6 Ft.
Type of Liner=Class B Rip–Rap

FROM STA. 660+68 TO STA. 663+00 –L– LT

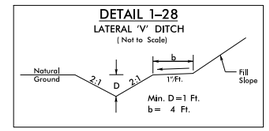
DETAIL 1–27
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D=1.5 Ft.
Max. d=1.5 Ft.
Type of Liner= Class B Rip–Rap

FROM STA. 663+00 TO STA. 655+50 –L– LT

DETAIL 1–28
LATERAL 'V' DITCH
(Not to Scale)



Min. D=1 Ft.
b= 4 Ft.

FROM STA. 660+68 TO STA. 671+99 –L– LT

DETAIL 1–29
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Min. D=1.0 Ft.

FROM STA. 645+00 TO STA. 645+50 –L– RT

DETAIL 1–30
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Min. D=1.0 Ft.
Max. d=1.0 Ft.
Type of Liner= Class B Rip–Rap

FROM STA. 655+00 TO STA. 657+00 RT –L– RT

DETAIL 1–31
LATERAL 'V' DITCH
(Not to Scale)

Min. D=1 Ft.
Max. d=1.5 Ft.
b=2 Ft.
Type of Liner= Class B Rip–Rap

FROM STA. 657+00 TO STA. 657+33 –L– RT

DETAIL 1–32
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Min. D=1.5 Ft.

FROM STA. 636+00 TO STA. 641+20 –L– RT

DETAIL 1–33
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Min. D=1.0 Ft.

FROM STA. 645+50 TO STA. 646+50 –L– RT
FROM STA. 646+50 TO STA. 647+50 –L– RT

DETAIL 1–34
LATERAL 'V' DITCH
(Not to Scale)

Min. D=1.5 Ft.
b=2 Ft.

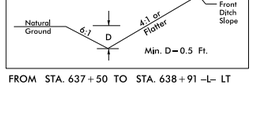
FROM STA. 641+20 TO STA. 642+06 –L– RT
FROM STA. 13+93 TO STA. 19+42 –Y18– LT
FROM STA. 10+24 TO STA. 12+69 –Y18– RT
FROM STA. 10+20 TO STA. 13+00 –Y18– LT

DETAIL 1–35
SPECIAL CUT DITCH
(Not to Scale)

Min. D=2.0 Ft.

FROM STA. 16+50 TO STA. 27+46 –Y18B– LT
FROM STA. 17+41 TO STA. 27+57 –Y18B– RT
FROM STA. 10+27 TO STA. 10+59 –Y18A– LT
FROM STA. 16+00 TO STA. 16+87 –Y19A– RT

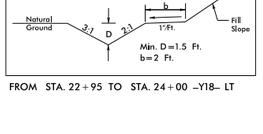
DETAIL 1–36
SPECIAL CUT DITCH
(Not to Scale)



Min. D=0.5 Ft.

FROM STA. 637+50 TO STA. 638+91 –L– LT

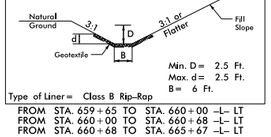
DETAIL 1–37
LATERAL 'V' DITCH
(Not to Scale)



Min. D=1.5 Ft.
b=2 Ft.

FROM STA. 22+95 TO STA. 24+00 –Y18– LT

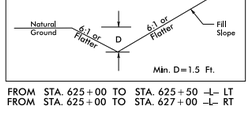
DETAIL 1–38
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D= 2.5 Ft.
Max. d= 2.5 Ft.
B= 6 Ft.
Type of Liner= Class B Rip–Rap

FROM STA. 659+65 TO STA. 660+00 –L– LT
FROM STA. 660+00 TO STA. 660+68 –L– LT
FROM STA. 660+68 TO STA. 665+67 –L– LT

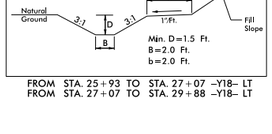
DETAIL 1–39
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D=1.5 Ft.

FROM STA. 625+00 TO STA. 625+50 –L– LT
FROM STA. 625+00 TO STA. 627+00 –L– RT

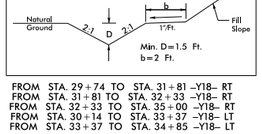
DETAIL 1–40
LATERAL BASE DITCH
(Not to Scale)



Min. D=1.5 Ft.
B=2.0 Ft.
b=2.0 Ft.

FROM STA. 25+93 TO STA. 27+07 –Y18– LT
FROM STA. 27+07 TO STA. 29+88 –Y18– LT

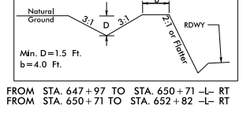
DETAIL 1–41
LATERAL 'V' DITCH
(Not to Scale)



Min. D=1.5 Ft.
b=2 Ft.

FROM STA. 29+74 TO STA. 31+81 –Y18– RT
FROM STA. 31+81 TO STA. 32+33 –Y18– RT
FROM STA. 32+33 TO STA. 35+00 –Y18– RT
FROM STA. 30+14 TO STA. 33+37 –Y18– LT
FROM STA. 33+37 TO STA. 34+85 –Y18– LT

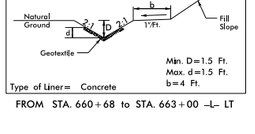
DETAIL 1–42
BERM 'V' DITCH
(Not to Scale)



Min. D=1.5 Ft.
b=4.0 Ft.

FROM STA. 647+97 TO STA. 650+71 –L– RT
FROM STA. 650+71 TO STA. 652+82 –L– RT

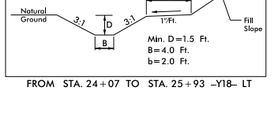
DETAIL 1–43
LATERAL 'V' DITCH
(Not to Scale)



Min. D=1.5 Ft.
Max. d=1.5 Ft.
b=4 Ft.
Type of Liner= Concrete

FROM STA. 660+68 to STA. 663+00 –L– LT

DETAIL 1–44
LATERAL BASE DITCH
(Not to Scale)



Min. D=1.5 Ft.
B=4.0 Ft.
b=2.0 Ft.

FROM STA. 24+07 TO STA. 25+93 –Y18– LT

DETAIL 1–45
STANDARD BASE DITCH
(Not to Scale)

Min. D=2.0 Ft.
B=4.0 Ft.

FROM STA. 17+22 TO STA. 17+22 –Y18B– RT

DETAIL 1–46
RIP RAP AT EMBANKMENT
(Not to Scale)

Type of Liner= Class I Rip–Rap

FROM STA. 659+58 to STA. 659+65 –L–

PERMIT DRAWING
SHEET 2 OF 161

7/18/2019
C:\pdots01\ncs_workingdir\1910\336429.1016\R2828_hyd_prm_wet_psh_02(1).dgn
PSHWETCS01

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	2(2)
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

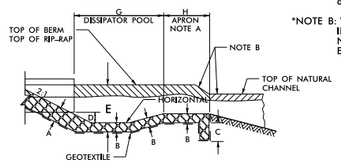
DETAIL 1–50

RIP–RAPPED ENERGY DISSIPATOR BASIN

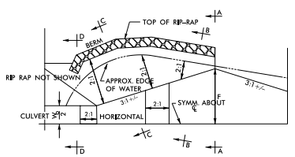
*NOTE A: IF EXIT VELOCITY OF BASIN IS SPECIFIED, EXTEND BASIN AS REQUIRED TO OBTAIN SUFFICIENT CROSS SECTIONAL AREA AT SECTION A–A SUCH THAT Q des/(CROSS SECTION AREA AT SEC. A–A)= SPECIFIED VELOCITY.

*NOTE B: WARP BASIN TO CONFORM TO NATURAL STREAM CHANNEL. TOP OF RIP–RAP IN FLOOR OF BASIN SHOULD BE AT SAME ELEVATION OR LOWER THAN NATURAL CHANNEL BOTTOM AT SEC. A–A. PROVIDE SMOOTH TRANSITION FROM END OF APRON TO NATURAL CHANNEL WIDTH.

℄ SECTION



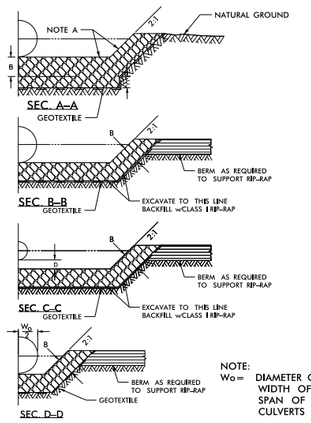
HALF PLAN



DIM	RIP RAP BASIN #							
	1	2	3	4	5	6	7	8
A	42"							
B	28"							
C	3'							
D	15"							
E	3.25'							
F	7.7'							
G	12.3'							
H	6.1'							

*ALL DIMENSIONS APPROXIMATE IN ?

BASIN #	LOCATION (AT OUTLET)
1	
2	
3	
4	
5	
6	
7	
8	



NOTE:
Wo= DIAMETER OF PIPE, WIDTH OF BOX OR SPAN OF PIPE–ARCH CULVERTS

5/05

STA. –L– 656+85

DETAIL ?

(NOT TO SCALE)

SINGLE BARREL CULVERT LOW FLOW CHANNEL AND SILLS

*NOTES:

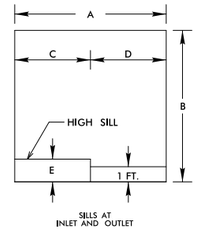
1) NATIVE MATERIAL BETWEEN SILLS/BAFFLES IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED AT THE PROJECT SITE DURING CONSTRUCTION. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

2) SILLS/BAFFLES ARE TO BE 1.0 FT. WIDE, CAST SEPARATELY AND ATTACHED BY DOWELS.

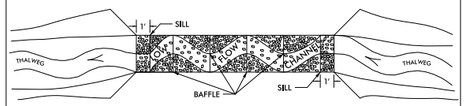
3) TOP OF LOW FLOW SILLS/BAFFLES SHOULD MATCH STREAM BED ELEVATION IN LOW FLOW CHANNEL OF STREAM. (THALWEG)

4) DO NOT SET ELEVATION OF HIGH SILL/BAFFLES ABOVE BANK FULL.

5) NUMBER OF SILL/BAFFLES DETERMINED BY THE ENGINEER.



SILLS AT INLET AND OUTLET



NUMBER AND SPACING OF BAFFLES=SEE TABLE BELOW

PLAN VIEW

913

STATION	A	B	C	D	E	BAFFLES
–L–, 506+04	9′	8′	5′	4′	2′	14 @ 25′ CTC
–L–, 549+08	6′	8′	2′	4′	2′	14 @ 25′ CTC
–L–, 609+74	10′	8′	6′	4′	2′	10 @ 25′ CTC

PERMIT DRAWING
SHEET 3 OF 161

7/18/2019
C:\projects01\ics_workingdir\19101\336429_1016\R2828_hyd_prm_wet_psh_02(1).dgn
ADP v10.01

8/17/99

REVISIONS

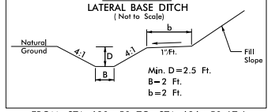
LANE BLYTHE A JOINT VENTURE — WSP

PROJECT REFERENCE NO.	SHEET NO.
R-2828	2(3)
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

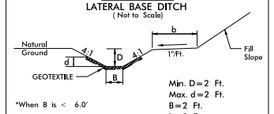
DETAIL 2–1
LATERAL BASE DITCH
(Not to Scale)



Min. D=2.5 Ft.
B=2 Ft.
b=2 Ft.

FROM STA. 690+50 TO STA. 696+50 LT L
FROM STA. 698+91 TO STA. 704+60 LT L

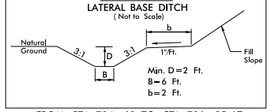
DETAIL 2–2
LATERAL BASE DITCH
(Not to Scale)



*When B is < 6.0'
Min. D=2 Ft.
Max. d=2 Ft.
B=2 Ft.
b=2 Ft.
Type of Liner= Class B Rip–Rap

FROM STA. 696+50 TO STA. 698+91 LT

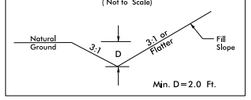
DETAIL 2–3
LATERAL BASE DITCH
(Not to Scale)



Min. D=2 Ft.
B=6 Ft.
b=2 Ft.

FROM STA. 704+60 TO STA. 706+95 LT

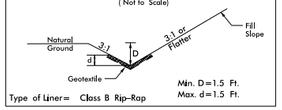
DETAIL 2–4
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D=2.0 Ft.

FROM STA. 690+00 TO STA. 692+00 RT L
FROM STA. 14+50 TO STA. 15+50 LT Y19
FROM STA. 31+75 TO STA. 33+50 LT Y19
FROM STA. 11+30 TO STA. 12+50 LT Y21C

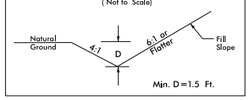
DETAIL 2–5
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D=1.5 Ft.
Max. d=1.5 Ft.
Type of Liner= Class B Rip–Rap

FROM STA. 692+00 TO STA. 692+25 RT L

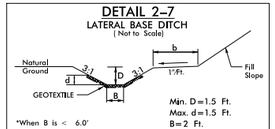
DETAIL 2–6
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D=1.5 Ft.

FROM STA. 800+50 TO 802+00 RT L
FROM STA. 799+50 TO STA. 801+00 LT L
FROM STA. 805+10 TO STA. 812+03 RT L
FROM STA. 812+41 TO STA. 821+90 RT L
FROM STA. 838+72 TO STA. 841+76 L
FROM STA. 844+69 TO STA. 848+32 L
FROM STA. 852+13 TO 852+50 L

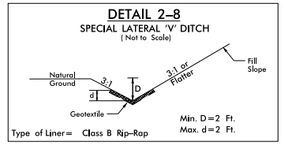
DETAIL 2–7
LATERAL BASE DITCH
(Not to Scale)



*When B is < 6.0'
Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=2 Ft.
b=2 Ft.
Type of Liner= Class I Rip–Rap

FROM STA. 854+26 TO STA. 855+00 RT L

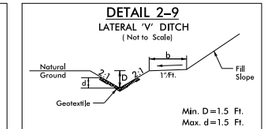
DETAIL 2–8
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D=2 Ft.
Max. d=2 Ft.
Type of Liner= Class B Rip–Rap

FROM STA. 663+00 TO STA. 665+50 LT L

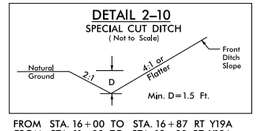
DETAIL 2–9
LATERAL 'V' DITCH
(Not to Scale)



Min. D=1.5 Ft.
Max. d=1.5 Ft.
b=4 Ft.
Type of Liner= Concrete

FROM STA. 660+61 TO STA. 678+97 LT L

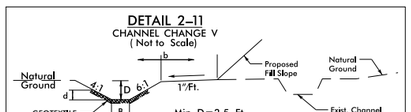
DETAIL 2–10
SPECIAL CUT DITCH
(Not to Scale)



Min. D=1.5 Ft.

FROM STA. 16+00 TO STA. 16+87 RT Y19A
FROM STA. 11+00 TO STA. 13+00 RT Y19A
FROM STA. 850+50 TO STA. 851+50 LT L

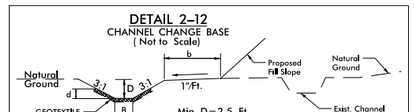
DETAIL 2–11
CHANNEL CHANGE V
(Not to Scale)



Min. D=2.5 Ft.
Max. d=2.5 Ft.
B=0 Ft.
b=0 Ft.
Type of Liner= Class II Rip–Rap

FROM STA. 727+73 TO STA. 728+71 RT L

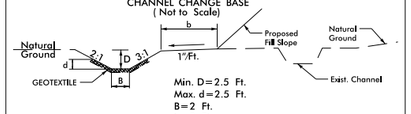
DETAIL 2–12
CHANNEL CHANGE BASE
(Not to Scale)



Min. D=2.5 Ft.
Max. d=2.5 Ft.
B=2 Ft.
b=0 Ft.
Type of Liner= Class II Rip–Rap

FROM STA. 728+71 TO STA. 730+00 RT L

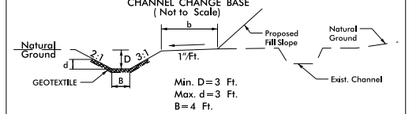
DETAIL 2–13
CHANNEL CHANGE BASE
(Not to Scale)



Min. D=2.5 Ft.
Max. d=2.5 Ft.
B=2 Ft.
b=2 Ft.
Type of Liner= Class II Rip–Rap

FROM STA. 730+00 TO STA. 732+17 RT L

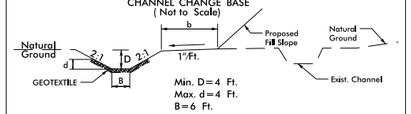
DETAIL 2–14
CHANNEL CHANGE BASE
(Not to Scale)



Min. D=3 Ft.
Max. d=3 Ft.
B=4 Ft.
b=2 Ft.
Type of Liner= Class II Rip–Rap

FROM STA. 732+17 TO STA. 733+55 RT L
FROM STA. 733+55 TO STA. 734+50 RT L

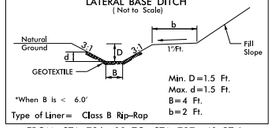
DETAIL 2–15
CHANNEL CHANGE BASE
(Not to Scale)



Min. D=4 Ft.
Max. d=4 Ft.
B=6 Ft.
b=0 Ft.
Type of Liner= Class II Rip–Rap

FROM STA. 821+50 TO STA. 830+50 LT L

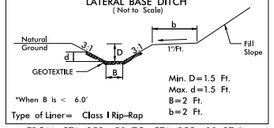
DETAIL 2–16
LATERAL BASE DITCH
(Not to Scale)



*When B is < 6.0'
Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=4 Ft.
b=2 Ft.
Type of Liner= Class B Rip–Rap

FROM STA. 786+00 TO STA. 787+40 RT L

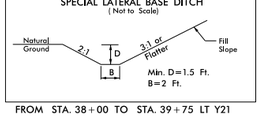
DETAIL 2–17
LATERAL BASE DITCH
(Not to Scale)



*When B is < 6.0'
Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=2 Ft.
b=2 Ft.
Type of Liner= Class I Rip–Rap

FROM STA. 852+50 TO STA. 855+00 RT L

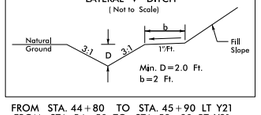
DETAIL 2–18
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D=1.5 Ft.
B=2 Ft.

FROM STA. 38+00 TO STA. 39+75 LT Y21

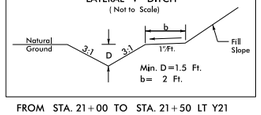
DETAIL 2–19
LATERAL 'V' DITCH
(Not to Scale)



Min. D=2.0 Ft.
b=2 Ft.

FROM STA. 44+80 TO STA. 45+90 LT Y21
FROM STA. 54+50 TO STA. 58+80 RT Y21
FROM STA. 842+59 TO STA. 843+50 RT L
FROM STA. 709+46 TO STA. 712+50 LT L
FROM STA. 28+00 TO STA. 31+75 LT Y19

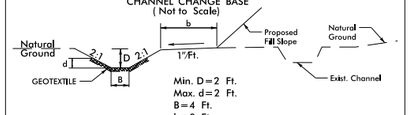
DETAIL 2–20
LATERAL 'V' DITCH
(Not to Scale)



Min. D=1.5 Ft.
b= 2 Ft.

FROM STA. 21+00 TO STA. 21+50 LT Y21

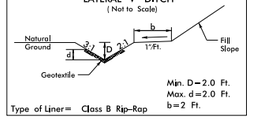
DETAIL 2–21
CHANNEL CHANGE BASE
(Not to Scale)



Min. D=2 Ft.
Max. d=2 Ft.
B=4 Ft.
b=0 Ft.
Type of Liner= Class II Rip–Rap

FROM STA. 813+40 TO STA. 814+00 LT L
FROM STA. 815+50 TO STA. 816+50 LT L

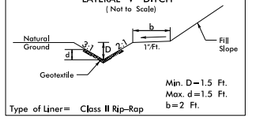
DETAIL 2–22
LATERAL 'V' DITCH
(Not to Scale)



Min. D=2.0 Ft.
Max. d=2.0 Ft.
b=2 Ft.
Type of Liner= Class B Rip–Rap

FROM STA. 21+50 TO STA. 26+50 LT Y21

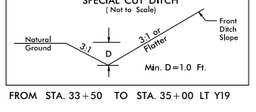
DETAIL 2–23
LATERAL 'V' DITCH
(Not to Scale)



Min. D=1.5 Ft.
Max. d=1.5 Ft.
b=2 Ft.
Type of Liner= Class II Rip–Rap

FROM STA. 22+50 TO STA. 26+50 RT Y21

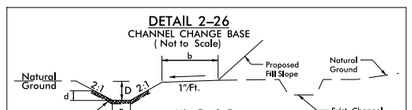
DETAIL 2–24
SPECIAL CUT DITCH
(Not to Scale)



Min. D=1.0 Ft.

FROM STA. 33+50 TO STA. 35+00 LT Y19

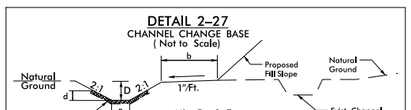
DETAIL 2–26
CHANNEL CHANGE BASE
(Not to Scale)



Min. D=3 Ft.
Max. d=3 Ft.
B=6 Ft.
b=0 Ft.
Type of Liner= Special Design

FROM STA. 830+50 TO STA. 831+11 LT L

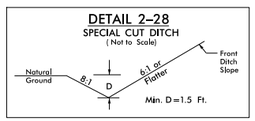
DETAIL 2–27
CHANNEL CHANGE BASE
(Not to Scale)



Min. D=3 Ft.
Max. d=3 Ft.
B=4 Ft.
b=2 Ft.
Type of Liner= Class II Rip–Rap

FROM STA. 699+00 TO STA. 706+94 RT L

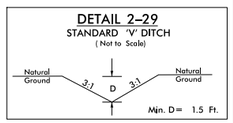
DETAIL 2–28
SPECIAL CUT DITCH
(Not to Scale)



Min. D=1.5 Ft.

FROM STA. 663+00 TO STA. 666+50 MED L

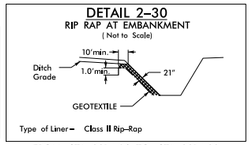
DETAIL 2–29
STANDARD 'V' DITCH
(Not to Scale)



Min. D= 1.5 Ft.

FROM STA. 17+64 TO STA. 17+83 RT Y19

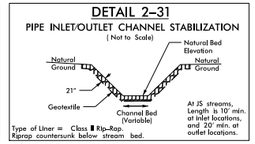
DETAIL 2–30
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= Class II Rip–Rap

FROM STA. 231+06 TO STA. 231+22

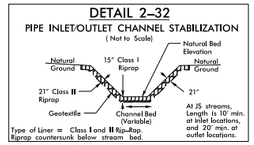
DETAIL 2–31
PIPE INLET/OUTLET CHANNEL STABILIZATION
(Not to Scale)



Type of Liner = Class II Rip–Rap Riprap countersunk below stream bed.

STA.

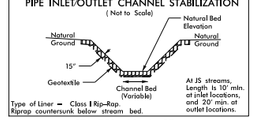
DETAIL 2–32
PIPE INLET/OUTLET CHANNEL STABILIZATION
(Not to Scale)



Type of Liner = Class I and II Rip–Rap. Riprap countersunk below stream bed.

STA. 707+71 –L– RT.
STA. 707+38 –L– LT.
STA. 736+74 –L– LT.
STA. 738+06 –L– RT.
STA. 782+00 –L– LT.
STA. 783+70 –L– RT.

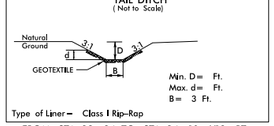
DETAIL 2–33
PIPE INLET/OUTLET CHANNEL STABILIZATION
(Not to Scale)



Type of Liner = Class I Rip–Rap. Riprap countersunk below stream bed.

STA. 758+93 –L– RT.
STA. 759+84 –L– LT.
STA. 785+93 –L– RT.
STA. 787+73 –L– LT.
STA. 843+27 –L– RT.

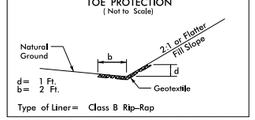
DETAIL 2–34
TAIL DITCH
(Not to Scale)



Min. D= Ft.
Max. d= Ft.
B= 3 Ft.
Type of Liner= Class I Rip–Rap

FROM STA. 23+94 TO STA. 24+10 –Y18– RT.
FROM STA. 17+64 TO STA. 17+84 –Y19– RT.

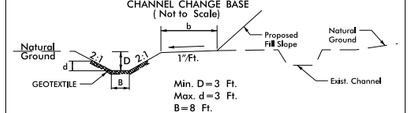
DETAIL 2–36
TOE PROTECTION
(Not to Scale)



d= 1 Ft.
b= 2 Ft.
Type of Liner= Class B Rip–Rap

FROM STA. 688+92 TO STA. 690+56 –L– LT.
FROM STA. 692+29 TO STA. 699+05 –L– RT.
FROM STA. 707+65 TO STA. 709+53 –L– LT.
FROM STA. 707+88 TO STA. 711+45 –L– RT.
FROM STA. 733+59 TO STA. 736+51 –L– LT.
FROM STA. 735+65 TO STA. 737+81 –L– RT.
FROM STA. 736+92 TO STA. 744+59 –L– LT.
FROM STA. 738+57 TO STA. 744+54 –L– RT.
FROM STA. 758+72 TO STA. 758+91 –L– RT.
FROM STA. 758+99 TO STA. 759+29 –L– RT.
FROM STA. 759+50 TO STA. 759+81 –L– LT.
FROM STA. 759+85 TO STA. 760+10 –L– LT.
FROM STA. 782+46 TO STA. 783+56 –L– RT.
FROM STA. 784+16 TO STA. 785+89 –L– RT.
FROM STA. 782+15 TO STA. 786+82 –L– LT.
FROM STA. 787+83 TO STA. 788+32 –L– LT.
FROM STA. 812+39 TO STA. 813+88 –L– LT.
FROM STA. 841+51 TO STA. 870+71 –L– LT.
FROM STA. 856+00 TO STA. 860+83 –L– LT.
FROM STA. 858+08 TO STA. 860+80 –L– RT.

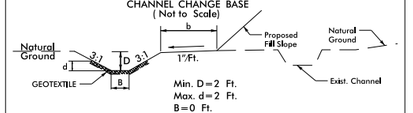
DETAIL 2–37
CHANNEL CHANGE BASE
(Not to Scale)



Min. D=3 Ft.
Max. d=3 Ft.
B=8 Ft.
b=2 Ft.
Type of Liner= Class II Rip–Rap

FROM STA. 706+94 TO STA. 707+71 –L– RT

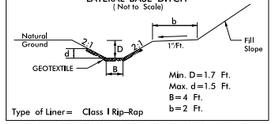
DETAIL 2–38
CHANNEL CHANGE BASE
(Not to Scale)



Min. D=2 Ft.
Max. d=2 Ft.
B=0 Ft.
b=2.5 Ft.
Type of Liner= Class II Rip–Rap

FROM STA. 709+50 TO STA. 712+95 –L– LT

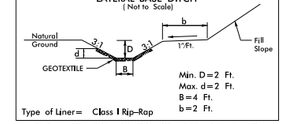
DETAIL 2–39
LATERAL BASE DITCH
(Not to Scale)



Min. D=1.7 Ft.
Max. d=1.5 Ft.
B=4 Ft.
b=2 Ft.
Type of Liner= Class I Rip–Rap

FROM STA. 738+21 TO STA. 738+65 –L– RT

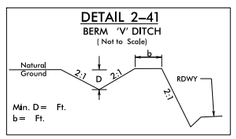
DETAIL 2–39
LATERAL BASE DITCH
(Not to Scale)



Min. D=2 Ft.
Max. d=2 Ft.
B=4 Ft.
b=2 Ft.
Type of Liner= Class I Rip–Rap

FROM STA. 781+00 TO STA. 781+85 –L– RT

DETAIL 2–41
BERM 'V' DITCH
(Not to Scale)



Min. D= Ft.
b= Ft.

FROM STA. 851+00 TO STA. 852+49 –L– RT.

PERMIT DRAWING
SHEET 4 OF 161

7/18/2019
C:\projects\01\ies.workingdir\19101\336429_1016\R2828_hyd_prm_wet_psh_02(1).dgn
PROPWISE

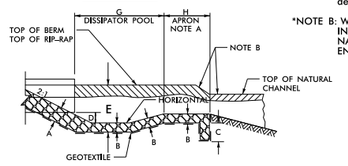
8/17/99

REVISIONS

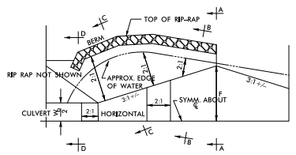
DETAIL 2–35

RIP–RAPPED ENERGY DISSIPATOR BASIN

℄ SECTION

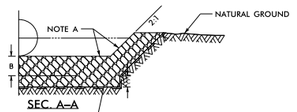


HALF PLAN

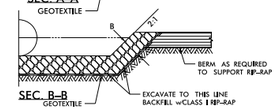


*NOTE A: IF EXIT VELOCITY OF BASIN IS SPECIFIED, EXTEND BASIN AS REQUIRED TO OBTAIN SUFFICIENT CROSS SECTIONAL AREA AT SECTION A–A SUCH THAT Q des(CROSS SECTION AREA AT SEC. A–A)= SPECIFIED VELOCITY.

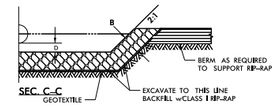
*NOTE B: WARP BASIN TO CONFORM TO NATURAL STREAM CHANNEL. TOP OF RIP–RAP IN FLOOR OF BASIN SHOULD BE AT SAME ELEVATION OR LOWER THAN NATURAL CHANNEL BOTTOM AT SEC. A–A. PROVIDE SMOOTH TRANSITION FROM END OF APRON TO NATURAL CHANNEL WIDTH.



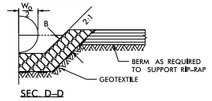
SEC. A–A



SEC. B–B



SEC. C–C



SEC. D–D

DIM.	RIP RAP BASIN # 1	2	3	4	5	6	7	8
A	42"							
B	28"							
C	3'							
D	15"							
E	1.5'							
F	8.1'							
G	12.3'							
H	6.1'							

*ALL DIMENSIONS APPROXIMATE IN ?

BASIN #	LOCATION (AT OUTLET)
1	
2	
3	
4	
5	
6	
7	
8	

NOTE:
Wo = DIAMETER OF PIPE, WIDTH OF BOX OR SPAN OF PIPE–ARCH CULVERTS

5/05

STA. –L– 868+94

DETAIL ?

(NOT TO SCALE)

SINGLE BARREL CULVERT LOW FLOW CHANNEL AND SILLS

*NOTES:

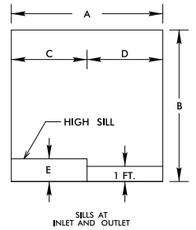
1) NATIVE MATERIAL BETWEEN SILLS/BAFFLES IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED AT THE PROJECT SITE DURING CONSTRUCTION. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

2) SILLS/BAFFLES ARE TO BE 1.0 FT. WIDE, CAST SEPARATELY AND ATTACHED BY DOWELS.

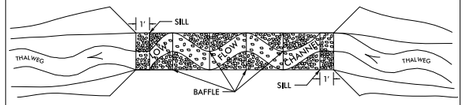
3) TOP OF LOW FLOW SILLS/BAFFLES SHOULD MATCH STREAM BED ELEVATION IN LOW FLOW CHANNEL OF STREAM. (THALWEG)

4) DO NOT SET ELEVATION OF HIGH SILL/BAFFLES ABOVE BANK FULL.

5) NUMBER OF SILL/BAFFLES DETERMINED BY THE ENGINEER.



SILLS AT INLET AND OUTLET



NUMBER AND SPACING OF BAFFLES=SEE TABLE BELOW

PLAN VIEW

913

STATION	A	B	C	D	E	BAFFLES
–L–, 707+53	10'	8'	5'	5'	2'	7 @ 36.4' CTC
–L–, 782+88	9'	8'	4'	5'	2'	7 @ 50.5' CTC

LANE BLYTHE A JOINT VENTURE

wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	2(4)
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 5 OF 161

7/18/2019
\\Projects01\ncs_workingdir\1910I\336429.1016\R2828_hyd_prm_wet_psh_02(1).dgn
PWPWICS01$

8/17/99

REVISIONS

LANE BLYTHE A JOINT VENTURE

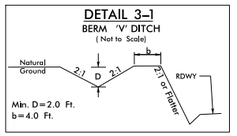
wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	2(5)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

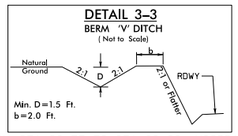
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL 3–1
BERM 'V' DITCH
(Not to Scale)



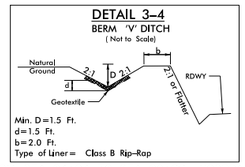
FROM STA. 869+24 TO STA. 871+15 –L– LT
FROM STA. 52+35 TO STA. 53+97 –FLYBD– LT

DETAIL 3–3
BERM 'V' DITCH
(Not to Scale)



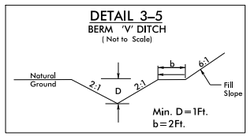
FROM STA. 23+77 TO STA. 33+99 –Y22RPA– LT
FROM STA. 38+13 TO STA. 41+92 –Y22RPA– LT
FROM STA. 417+25 TO STA. 420+64 –Y22_SEC2– LT

DETAIL 3–4
BERM 'V' DITCH
(Not to Scale)



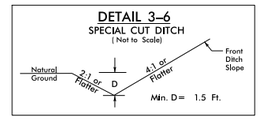
FROM STA. 34+24 TO STA. 38+00 –Y22RPA– LT

DETAIL 3–5
BERM 'V' DITCH
(Not to Scale)



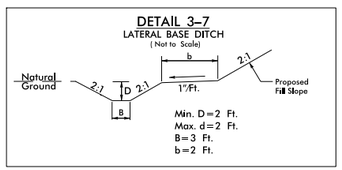
FROM STA. 54+02 TO STA. 55+54 –FLYBD– LT
FROM STA. 420+54 TO STA. 421+57 –Y22– RT
FROM STA. 944+60 TO STA. 949+55 –L– LT

DETAIL 3–6
SPECIAL CUT DITCH
(Not to Scale)



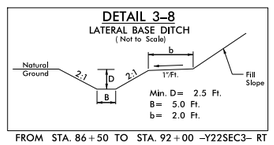
FROM STA. 459+00 TO STA. 459+65 –Y22SEC2– RT
FROM STA. 12+40 TO STA. 14+00 –Y22RPEA– RT
FROM STA. 14+50 TO STA. 16+00 –Y22RPD– RT
FROM STA. 28+00 –LFLYCC– TO STA. 31+50 –Y22FLYCC– LT
FROM STA. 18+50 TO STA. 19+50 –LFLYCC– LT

DETAIL 3–7
LATERAL BASE DITCH
(Not to Scale)



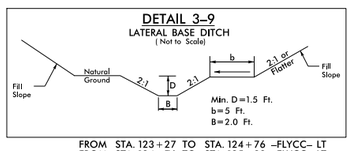
FROM STA. 890+49 TO STA. 891+73 –L– LT

DETAIL 3–8
LATERAL BASE DITCH
(Not to Scale)



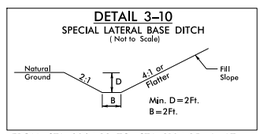
FROM STA. 86+50 TO STA. 92+00 –Y22SEC3– RT

DETAIL 3–9
LATERAL BASE DITCH
(Not to Scale)



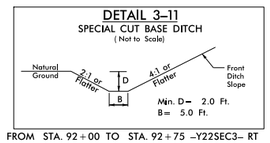
FROM STA. 123+27 TO STA. 124+76 –FLYCC– LT
FROM STA. 124+76 TO STA. 125+89 –FLYCC– LT
FROM STA. 125+89 TO STA. 126+82 –FLYCC– LT

DETAIL 3–10
SPECIAL LATERAL BASE DITCH
(Not to Scale)



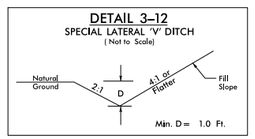
FROM STA. 906+22 TO STA. 910+95 –L– LT

DETAIL 3–11
SPECIAL CUT BASE DITCH
(Not to Scale)



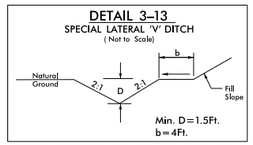
FROM STA. 92+00 TO STA. 92+75 –Y22SEC3– RT

DETAIL 3–12
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



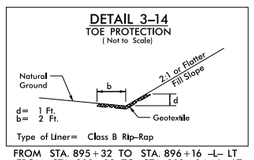
FROM STA. 16+00 TO STA. 19+50 –Y22RPD– RT
FROM STA. 19+80 TO STA. 24+00 –Y22RPDE– LT
FROM STA. 83+50 TO STA. 90+00 –Y22FLYCC– RT
FROM STA. 19+80 TO STA. 20+50 –Y22RPEA– LT

DETAIL 3–13
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



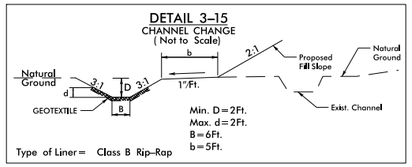
FROM STA. 21+60 TO STA. 22+77 –Y22B– RT

DETAIL 3–14
TOE PROTECTION
(Not to Scale)



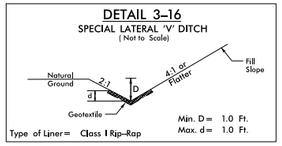
FROM STA. 895+32 TO STA. 896+16 –L– LT
FROM STA. 900+22 TO STA. 902+04 –L– LT
FROM STA. 913+19 TO STA. 913+33 –L– RT
FROM STA. 913+50 TO STA. 913+63 –L– RT
FROM STA. 913+99 TO STA. 916+04 –L– RT
FROM STA. 917+43 TO STA. 918+27 –L– RT
FROM STA. 32+57 TO STA. 32+67 –Y22SLIPRPB– LT
FROM STA. 32+83 TO STA. 34+02 –Y22SLIPRPB– LT
FROM STA. 37+03 TO STA. 38+57 –Y22SLIPRPB– LT
FROM STA. 10+00 TO STA. 21+69 –Y22LPC– RT
FROM STA. 16+50 TO STA. 18+00 –Y22LPC– LT
FROM STA. 83+00 TO STA. 83+79 –Y22FLYBD– LT
FROM STA. 42+55 TO STA. 44+56 –Y22FLYCC– LT
FROM STA. 31+75 TO STA. 34+09 –Y22FLYCC– LT
FROM STA. 130+20 TO STA. 131+21 –Y22FLYCC– LT
FROM STA. 18+70 TO STA. 23+92 –Y22RPDE– RT
FROM STA. 26+40 TO STA. 33+75 –Y22RPDE– LT
FROM STA. 416+35 TO STA. 416+95 –Y22–SEC2– LT

DETAIL 3–15
CHANNEL CHANGE
(Not to Scale)



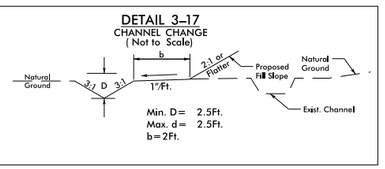
FROM STA. 904+00 TO STA. 906+52 –L– RT

DETAIL 3–16
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



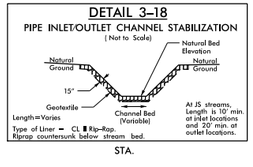
FROM STA. 19+50 TO STA. 20+50 –Y22RPD– RT

DETAIL 3–17
CHANNEL CHANGE
(Not to Scale)



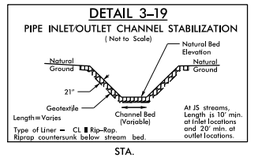
FROM STA. 10+90 TO STA. 12+36 –Y22LPA– RT

DETAIL 3–18
PIPE INLET/OUTLET CHANNEL STABILIZATION
(Not to Scale)



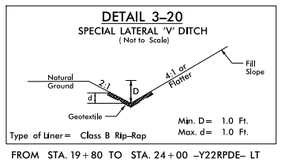
STA.

DETAIL 3–19
PIPE INLET/OUTLET CHANNEL STABILIZATION
(Not to Scale)



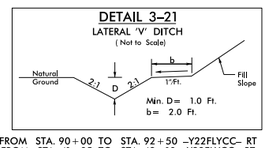
STA.

DETAIL 3–20
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



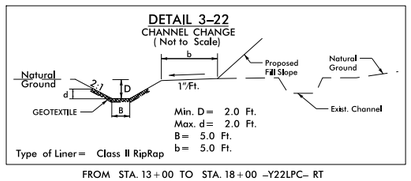
FROM STA. 19+80 TO STA. 24+00 –Y22RPDE– LT

DETAIL 3–21
LATERAL 'V' DITCH
(Not to Scale)



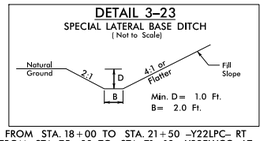
FROM STA. 90+00 TO STA. 92+50 –Y22FLYCC– RT
FROM STA. 41+05 TO STA. 42+10 –Y22FLYCC– RT

DETAIL 3–22
CHANNEL CHANGE
(Not to Scale)



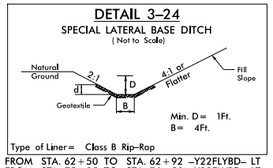
FROM STA. 13+00 TO STA. 18+00 –Y22LPC– RT

DETAIL 3–23
SPECIAL LATERAL BASE DITCH
(Not to Scale)



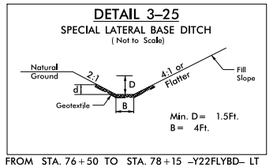
FROM STA. 18+00 TO STA. 21+50 –Y22LPC– RT
FROM STA. 75+00 TO STA. 71+10 –Y22FLYCC– LT
FROM STA. 74+50 TO STA. 75+85 –Y22FLYBD– LT

DETAIL 3–24
SPECIAL LATERAL BASE DITCH
(Not to Scale)



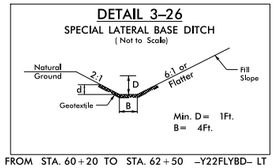
FROM STA. 62+50 TO STA. 62+92 –Y22FLYBD– LT
FROM STA. 75+85 TO STA. 76+50 –Y22FLYBD– LT

DETAIL 3–25
SPECIAL LATERAL BASE DITCH
(Not to Scale)



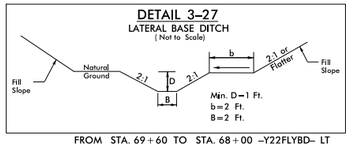
FROM STA. 76+50 TO STA. 78+15 –Y22FLYBD– LT

DETAIL 3–26
SPECIAL LATERAL BASE DITCH
(Not to Scale)



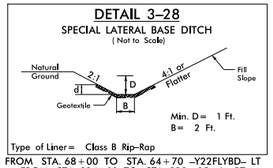
FROM STA. 60+20 TO STA. 62+50 –Y22FLYBD– LT

DETAIL 3–27
LATERAL BASE DITCH
(Not to Scale)



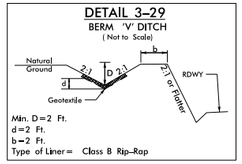
FROM STA. 69+60 TO STA. 68+00 –Y22FLYBD– LT

DETAIL 3–28
SPECIAL LATERAL BASE DITCH
(Not to Scale)



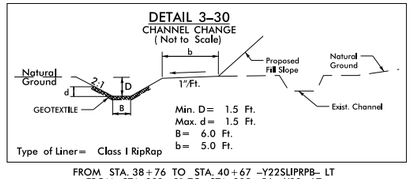
FROM STA. 68+00 TO STA. 64+70 –Y22FLYBD– LT
FROM STA. 924+10 TO STA. 923+05 –L– RT

DETAIL 3–29
BERM 'V' DITCH
(Not to Scale)



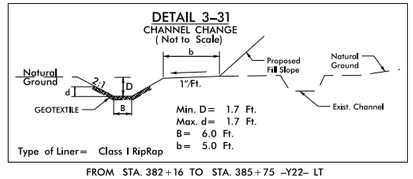
FROM STA. 15+60 TO STA. 19+25 –Y22RPE– RT

DETAIL 3–30
CHANNEL CHANGE
(Not to Scale)



FROM STA. 38+76 TO STA. 40+67 –Y22SLIPRPB– LT
FROM STA. 382+21 TO STA. 385+56 –Y22– LT

DETAIL 3–31
CHANNEL CHANGE
(Not to Scale)



FROM STA. 382+16 TO STA. 385+75 –Y22– LT

PERMIT DRAWING
SHEET 6 OF 161

7/18/2019
C:\Projects01\ics_workingdir\19101\336429.1016\R2828_hyd_prm_wet_psh_02(1).dgn
PRPWILCOX

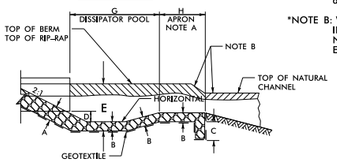
8/17/99

REVISIONS

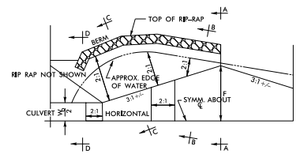
DETAIL 3–31

RIP–RAPPED ENERGY DISSIPATOR BASIN

℄ SECTION

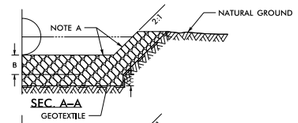


HALF PLAN

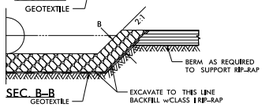


*NOTE A: IF EXIT VELOCITY OF BASIN IS SPECIFIED, EXTEND BASIN AS REQUIRED TO OBTAIN SUFFICIENT CROSS SECTIONAL AREA AT SECTION A–A SUCH THAT Q des/(CROSS SECTION AREA AT SEC. A–A)= SPECIFIED VELOCITY.

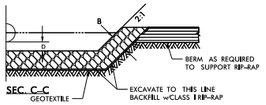
*NOTE B: WARP BASIN TO CONFORM TO NATURAL STREAM CHANNEL. TOP OF RIP–RAP IN FLOOR OF BASIN SHOULD BE AT SAME ELEVATION OR LOWER THAN NATURAL CHANNEL BOTTOM AT SEC. A–A. PROVIDE SMOOTH TRANSITION FROM END OF APRON TO NATURAL CHANNEL WIDTH.



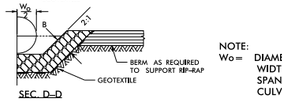
SEC. A–A



SEC. B–B



SEC. C–C



SEC. D–D

NOTE:
Wo= DIAMETER OF PIPE, WIDTH OF BOX OR SPAN OF PIPE–ARCH CULVERTS

DIM.	RIP RAP BASIN # 1	2	3	4	5	6	7	8
A	42"	42"						
B	28"	28"						
C	3'	3'						
D	15"	18"						
E	1.5'	4.5'						
F	8.1'	9.9'						
G	12.3'	14.5'						
H	6.1'	7.3'						

*ALL DIMENSIONS APPROXIMATE IN INCHES OR FEET

BASIN #	LOCATION (AT OUTLET)
1	STA. 867+00 –L– LT
2	STA. 143+08 –Y22FLYCG– RT
3	
4	
5	
6	
7	
8	

5/05

DETAIL 3–32

(NOT TO SCALE)

SINGLE BARREL CULVERT LOW FLOW CHANNEL AND SILLS

*NOTES:

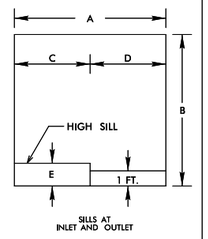
1) NATIVE MATERIAL BETWEEN SILLS/BAFFLES IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED AT THE PROJECT SITE DURING CONSTRUCTION. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

2) SILLS/BAFFLES ARE TO BE 1.0 FT. WIDE, CAST SEPARATELY AND ATTACHED BY DOWELS.

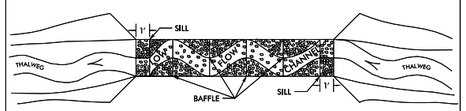
3) TOP OF LOW FLOW SILLS/BAFFLES SHOULD MATCH STREAM BED ELEVATION IN LOW FLOW CHANNEL OF STREAM. (THALWEG)

4) DO NOT SET ELEVATION OF HIGH SILL/BAFFLES ABOVE BANK FULL.

5) NUMBER OF SILL/BAFFLES DETERMINED BY THE ENGINEER.



SILLS AT INLET AND OUTLET



NUMBER AND SPACING OF BAFFLES=SEE TABLE BELOW

PLAN VIEW

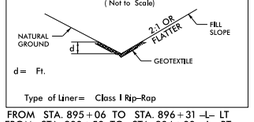
913

STATION	A	B	C	D	E	BAFFLES
–L–, 876+18	14'	8'	7'	7'	1'–7"	5 @ 60.3' CTC

DETAIL 3–33

TOE PROTECTION

(Not to Scale)



d= Ft.

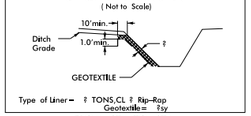
Type of Liner= Class I Rip–Rap

FROM STA. 895+06 TO STA. 896+31 –L– LT
FROM STA. 900+50 TO STA. 904+00 –L– RT
FROM STA. 46+67 TO STA. 47+25 –Y22FLYBD– LT

DETAIL ?

RIP RAP AT EMBANKMENT

(Not to Scale)



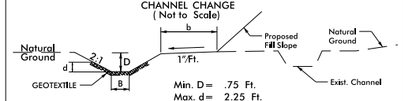
Type of Liner= ? TONS,CL ? Rip–Rap
Geotextile= ?sy

FROM STA. TO STA.

DETAIL 3–33

CHANNEL CHANGE

(Not to Scale)



Min. D= .75 Ft.
Max. d= 2.25 Ft.
B= 6.0 Ft.
b= 5.0 Ft.

Type of Liner= Class II RipRap

FROM STA. 38+76 TO STA. 40+67 –Y22SLIPRPB– LT

PROJECT REFERENCE NO.	SHEET NO.
R-2828	2(6)
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 7 OF 161

7/18/2019
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PROFICIS20$

8/17/99

REVISIONS

LANE BLYTHE wsp

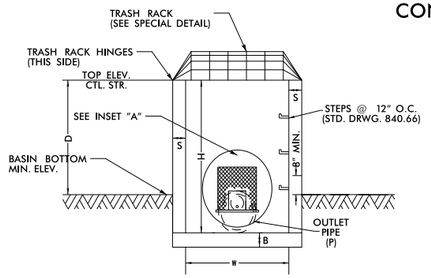
PROJECT REFERENCE NO.	SHEET NO.
R-2828	2(7)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

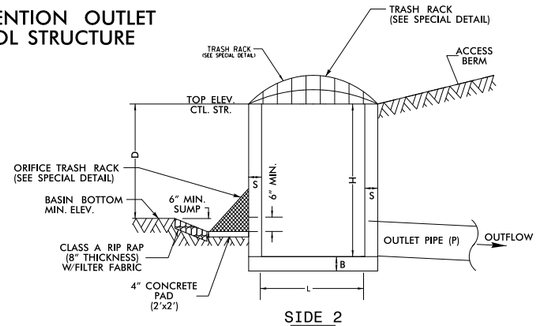
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL ?

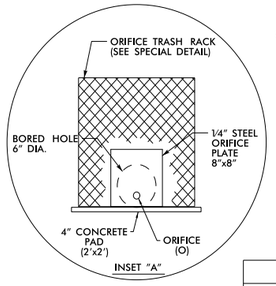
DRY DETENTION OUTLET CONTROL STRUCTURE

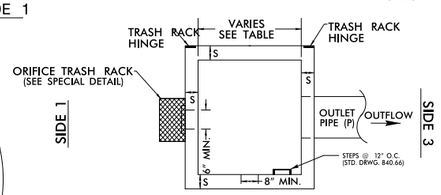


SIDE 1



SIDE 2





SIDE 2

PLAN VIEW
TRASH RACK NOT SHOWN FOR CLARITY

NOTES:
1. NO BEDDING MATERIAL TO BE USED. THERFORE, DO NOT FOLLOW STANDARD DRAWINGS FOR METHOD OF PIPE INSTALLATION FOR OUTLET PIPE THROUGH EMBANKMENT.
2. ENSURE TRASH RACK OPENS FREELY AND WITHOUT INTERFERENCE WITH SLUICE GATE.

MINIMUM DIMENSIONS FOR DRY DETENTION BASIN DRAWDOWN STRUCTURE

STATION	STRUCTURE NUMBER	S (INCHES)	B (INCHES)	TOP ELEVATION CONTROL STRUCTURE	CTL. STR. DIMENSIONS W	L	H	ORIFICE DIAMETER (O) INCHES	ORIFICE INV. ELEV.	OUTLET PIPE INV.	OUTLET PIPE DIAMETER(P) INCHES	OUTLET PIPE MATERIAL
Y22FLYBD STA. 112+00		6"	6"	224'	8'	8'	4'	N/A	N/A	219.5'	48"	RCP

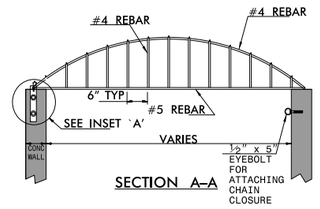
NOT TO SCALE

DETAIL ?

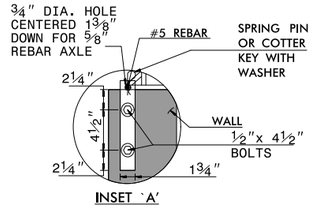
REBAR TRASH RACK

(N.T.S.)

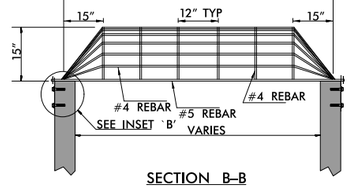
RISER TRASH RACK NOTES:
1) ALL JOINTS SHALL BE FULLY WELDED AROUND JOINT WITH A MINIMUM OF A *" BEAD.
2) IF BOLTS ARE ANCHORED IN CONCRETE, FOLLOW STD. DWG. 862.03 AND 862.04 FOR ANCHORING PROCEDURE.
3) EYEBOLT FOR CHAIN CLOSURE SHALL BE INSTALLED BY THE SAME METHOD AS THE HINGE PLATE BOLTS.
4) RACK AND HARDWARE SHALL BE ALUMINUM OR REBAR AND GALVANIZED IN ACCORDANCE WITH ASTM A-153.
5) PROVIDE OPENING IN TRASH RACK TO ACCOMODATE SLUICE GATE, IF APPLICABLE, ON THE OUTLET PIPE. ENSURE TRASH RACK OPENS FREELY AND WITHOUT INTERFERENCE WITH SLUICE GATES.



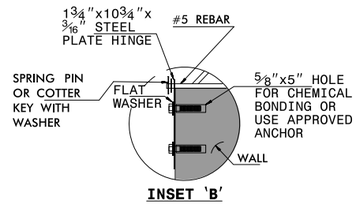
SECTION A–A



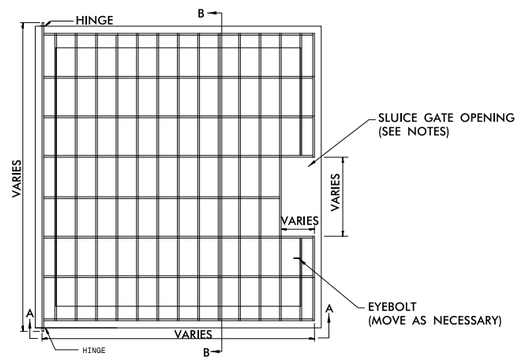
INSET 'A'



SECTION B–B



INSET 'B'



PLAN

PERMIT DRAWING
SHEET 8 OF 161

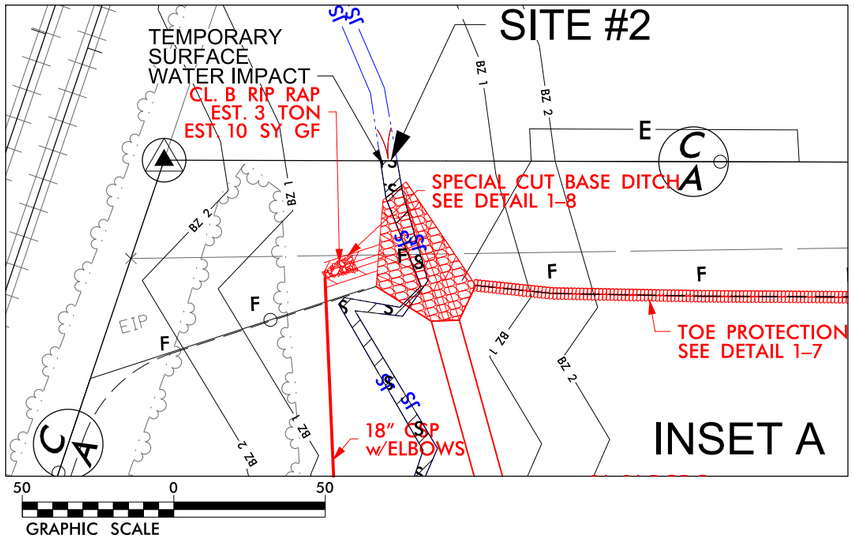
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PAUL.WILSON

8/17/99

REVISIONS

S S DENOTES IMPACTS IN SURFACE WATER

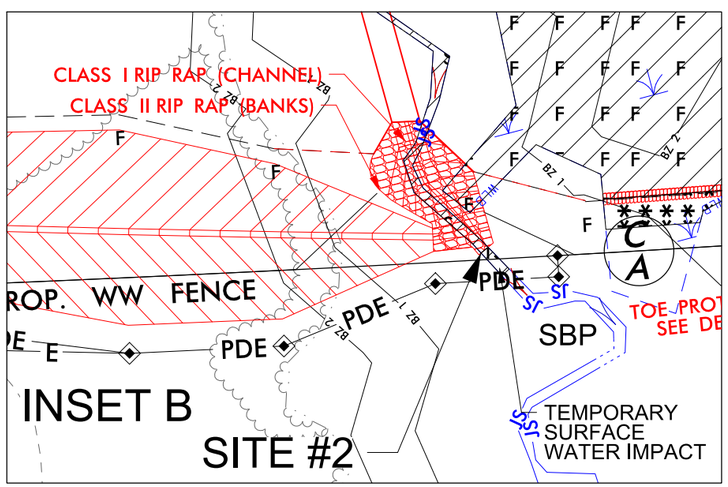
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

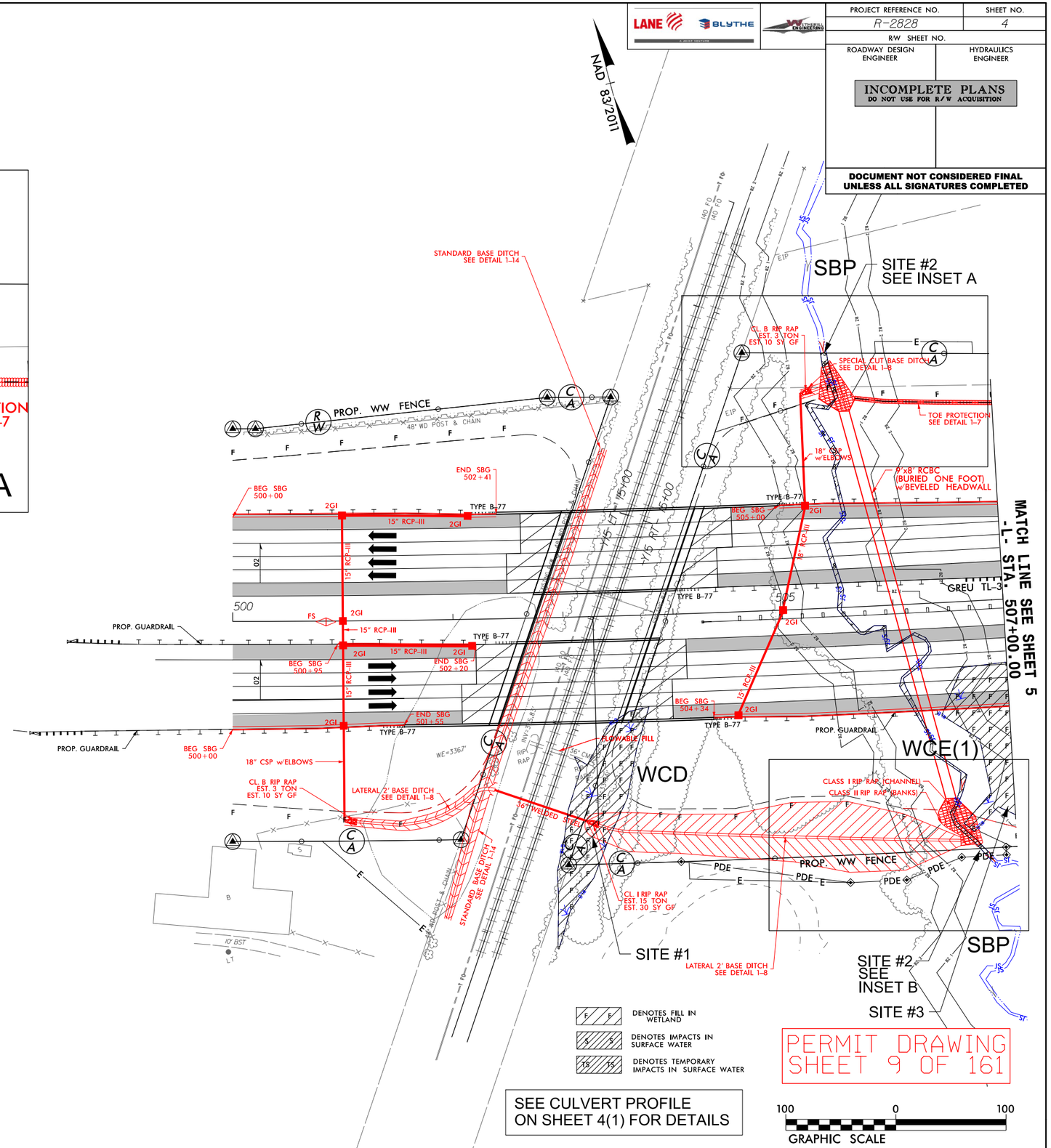


S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

F F DENOTES FILL IN WETLAND





LANE BLYTHE

PROJECT REFERENCE NO.	SHEET NO.
R-2828	4
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

PERMIT DRAWING SHEET 9 OF 161

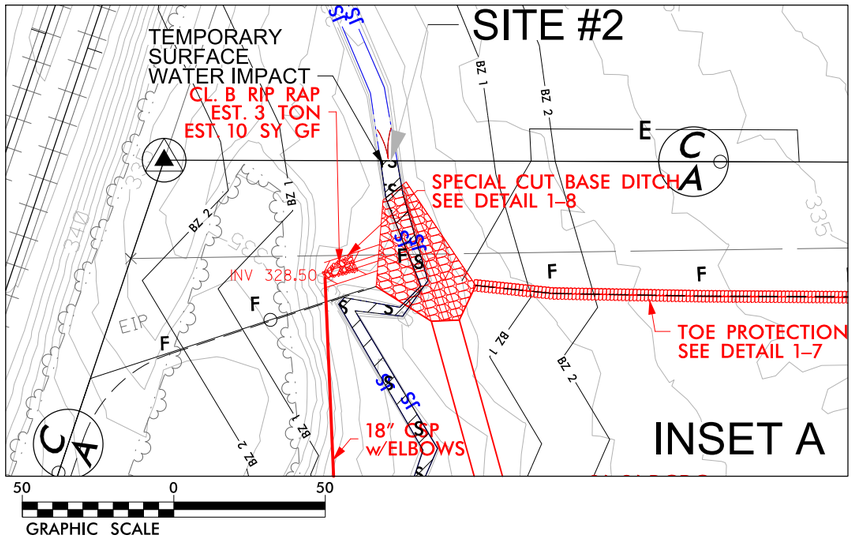
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mdpayne
USER:

8/17/99

REVISIONS

S S DENOTES IMPACTS IN SURFACE WATER

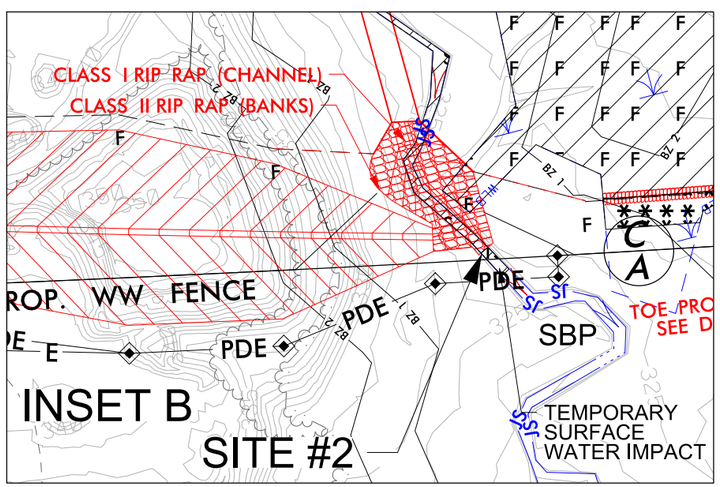
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

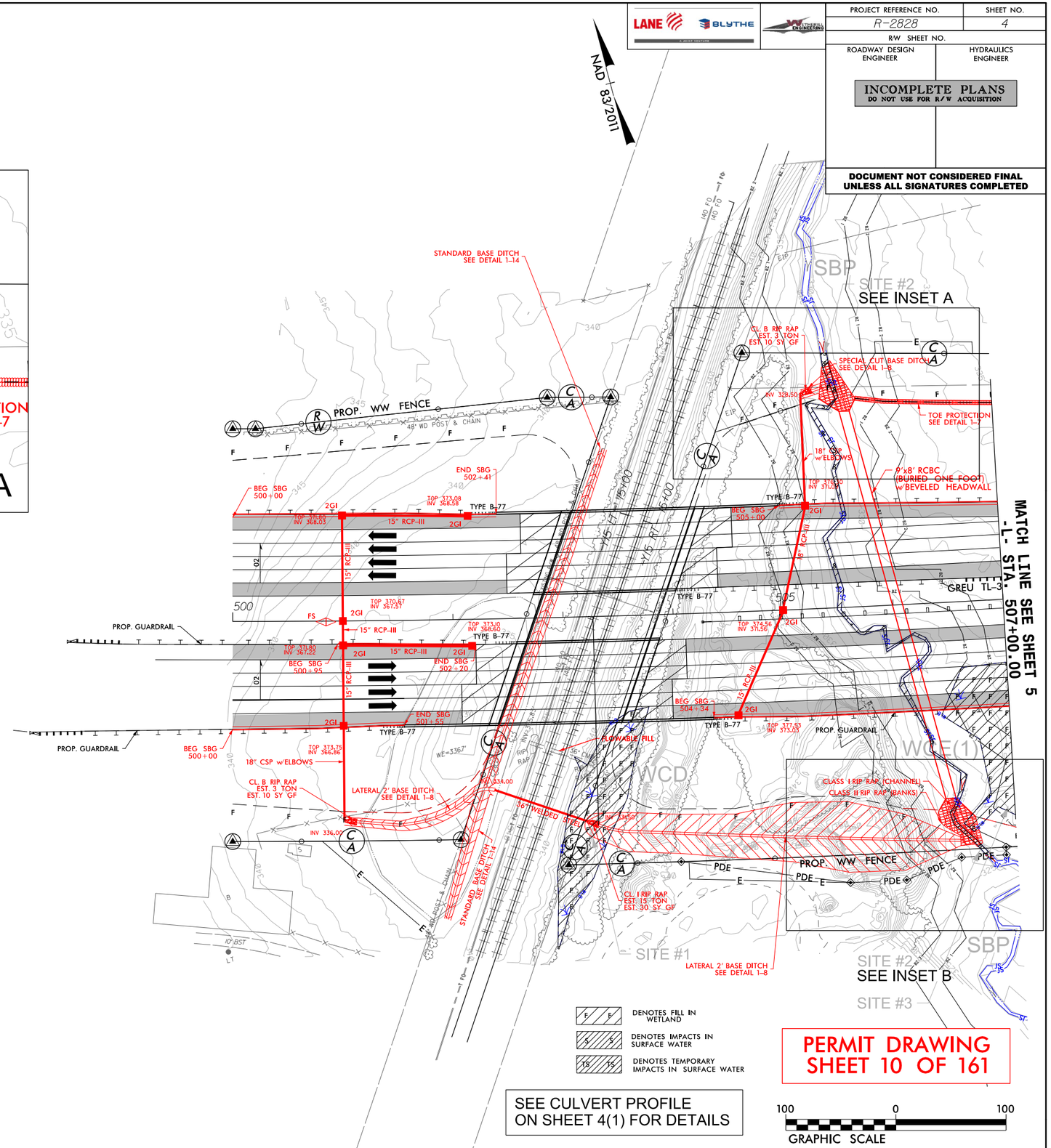


S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

F F DENOTES FILL IN WETLAND





PERMIT DRAWING
SHEET 10 OF 161

LANE BLYTHE MITCHELL ENGINEERING

PROJECT REFERENCE NO.	SHEET NO.
R-2828	4
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

7/18/2019
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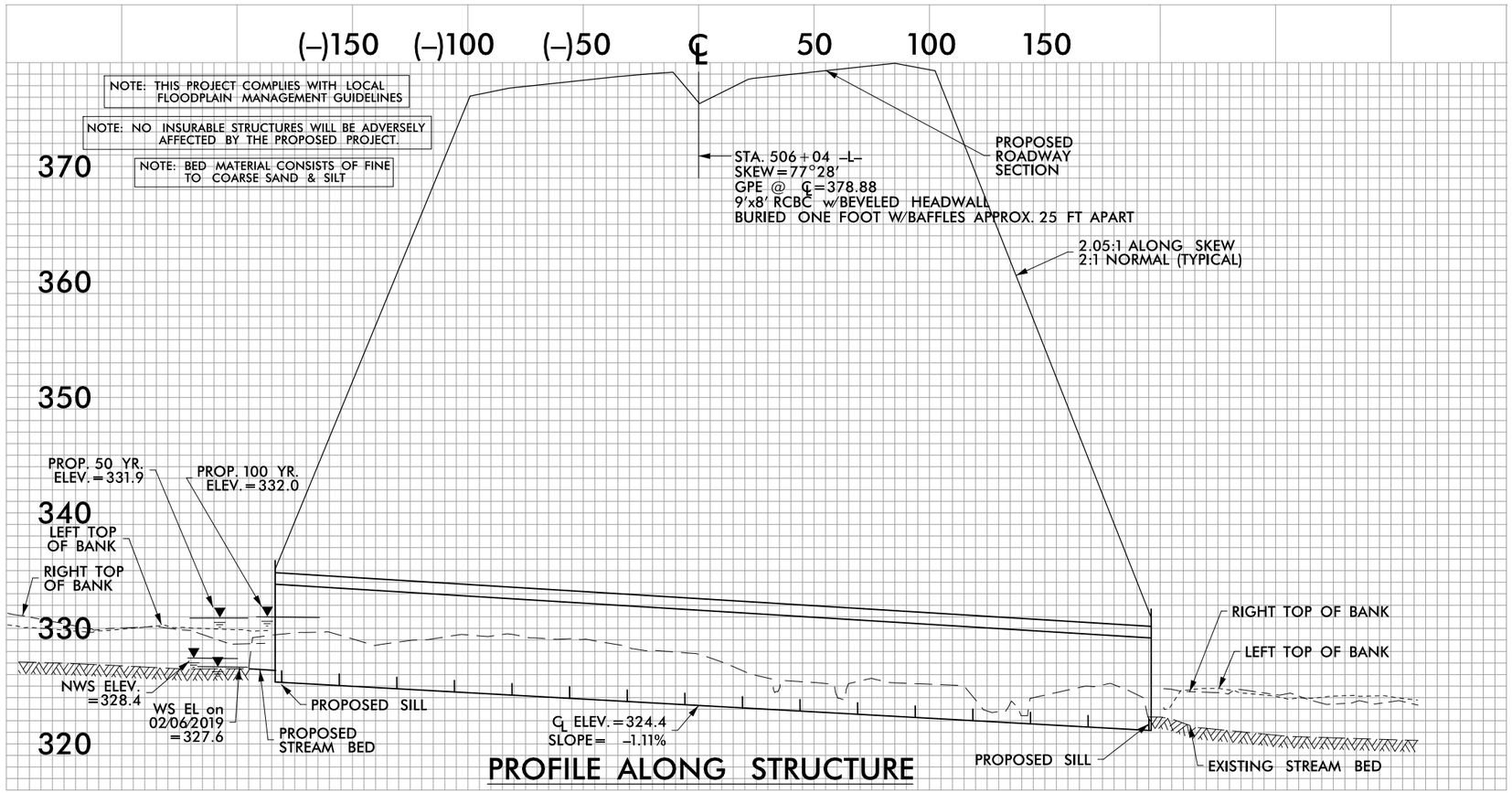
8/17/99

REVISIONS

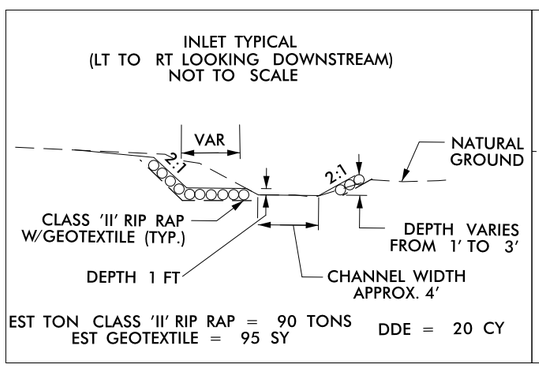
SITE #2

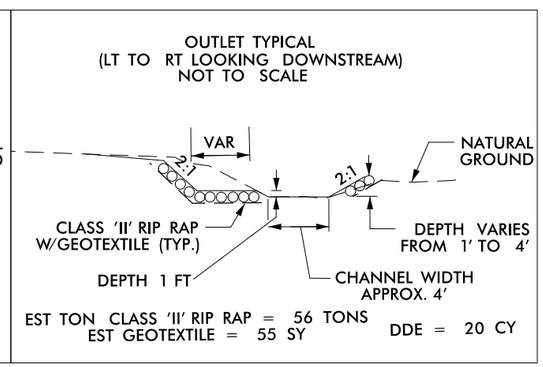
CULVERT PROFILE AT -L- STA. 506+04

(Stream SBP)



PROFILE ALONG STRUCTURE





LANE BLYTHE wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	4(1)
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

PERMIT DRAWING
SHEET 11 OF 161

7/18/2019
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mpeterson
PROFILE1.CSH

LANE BLYTHE

PROJECT REFERENCE NO.	SHEET NO.
R-2828	5
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

NAD 83/2011

REVISIONS 8/17/99

MATCH LINE SEE SHEET 4 -L- STA. 507+00.00

MATCH LINE SEE SHEET 6 -L- STA. 521+00.00

SITE #6

WCH

SBU

SITE #7

WCI

SURFACE WATER IMPACT

PM

SBS

SBR

WCE(1)

WCE(2)

WCF

SITE #4

SITE #5

SITE #3
SEE INSET A

WCG

LATERAL 3' BASE DITCH SEE DETAIL 1–2

LATERAL 3' BASE DITCH SEE DETAIL 1–1

LATERAL 4' BASE DITCH SEE DETAIL 1–4

LATERAL 3' BASE DITCH SEE DETAIL 1–5

TOE PROTECTION SEE DETAIL 1–7

PROP. WW FENCE

REMOVE

FLOWABLE FILL

CL. I RIP RAP EST. 34 TON EST. 56 SY GF SEE DETAIL 1–40

CL. I RIP RAP EST. 26 TON EST. 43 SY GF DDE=17 CY SEE DETAIL 1–42

CL. B RIP RAP EST. 2 TON EST. 7 SY GF

LATERAL 2' BASE DITCH SEE DETAIL 1–8

END SBG 520+47

CAT-1

INSET A

SITE #3

TEMPORARY SURFACE WATER IMPACT

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 12 OF 161

GRAPHIC SCALE 50 0 50

GRAPHIC SCALE 100 0 100

7/18/2019
DESIGNED
PREPARED

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PROJECT REFERENCE NO.	SHEET NO.
R-2828	5
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

LANE BLYTHE — A JOINT VENTURE

WETHERILL ENGINEERING

REVISIONS

8/17/99

NAD 83/2011

MATCH LINE SEE SHEET 4 -L- STA. 507+00.00

MATCH LINE SEE SHEET 6 -L- STA. 521+00.00

SITE #6 — WCH — SBU — SITE #7 — WCI

LATERAL 3' BASE DITCH SEE DETAIL 1–2

LATERAL 3' BASE DITCH SEE DETAIL 1–1

LATERAL 4' BASE DITCH SEE DETAIL 1–4

LATERAL 3' BASE DITCH SEE DETAIL 1–5

PROP. WW FENCE

TOE PROTECTION SEE DETAIL 1–7

SURFACE WATER IMPACT

PM — REMOVE — 42" RCP ELBOW (BURIED) — 2GI — 15" RCP III — 18" RCP III — 24" RCP III — 24" RCP ELBOW (BURIED) — 36" RCP — 36" SOIL — 2GI-A — 24" — 15" RCP

SBS — SBR — PDE — WCE(2) — WCF — WCG — SITE #4 — SITE #5

SITE #3 SEE INSET A

FLOWABLE FILL

CL I RIP RAP EST. 34 TON EST. 56 SY GF SEE DETAIL 1–40

CL I RIP RAP EST. 25 TON EST. 43 SY GF DDE=17 CY SEE DETAIL 1–42

END SBG 520+47

CAT-1

CL B RIP RAP EST. 2 TON EST. 7 SY GF

LATERAL 3' BASE DITCH SEE DETAIL 1–1

LATERAL 2' BASE DITCH SEE DETAIL 1–8

BL-102 — BL-103

INSET A

50 0 50

GRAPHIC SCALE

INSET A

WCE(2) — FLOWABLE FILL — TOE PROTECTION SEE DETAIL 1–7 — PDE — SBR — SITE #3 — TEMPORARY SURFACE WATER IMPACT — CL I RIP RAP EST. 25 TON EST. 43 SY GF DDE=17 CY SEE DETAIL 1–42

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 13 OF 161

100 0 100

GRAPHIC SCALE

7/18/2019
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PRINTED BY: ...

6/23/16

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	R-2828	5(1)

300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

380 360 340

0.020 0.020 6.76:1 8:1 0.020 0.020 377.65 2:1 2:1 328.94

509+00.00

380 360 340

0.020 0.020 6.76:1 8:1 0.020 0.020 377.40 2:1 2:1 335.29

508+50.00

WETLAND (WCE(2))
SITE #3

380 360 340

0.020 0.020 6.76:1 8:1 0.020 0.020 377.11 2:1 2:1 332.09

508+00.00

WETLAND (WCE(1))
SITE #2 / 3

380 360 340

0.020 0.020 6.76:1 8:1 0.020 0.020 376.78 2:1 2:1 331.02

507+50.00

PERMIT DRAWING
SHEET 14 OF 161

7/18/2019
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6/23/16

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380
360

0.020 0.020 8:1 381.37 8:1 0.020 0.020
2:1 2:1
358.30
517+50.00

380
360

0.020 0.020 8:1 381.15 8:1 0.020 0.020
2:1 2:1
353.35
517+00.00

380
360

0.020 0.019 7.97:1 380.93 8:1 0.020 0.019
2:1 2:1
349.69
516+50.00

WETLAND (WCI)
SITE #7

380
360
340

0.020 0.011 7.69:1 380.71 8:1 0.020 0.011
2:1 2:1
346.84
516+00.00

380
360
340

0.020 0.003 7.43:1 380.49 8:1 0.020 0.003
2:1 2:1
343.44
515+50.00

—L—

PERMIT DRAWING
SHEET 15 OF 161

7/18/2019
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PROPWICS01$

LANE BLYTHE — A JOINT VENTURE

SMITHPHILL ENGINEERING

PROJECT REFERENCE NO.	SHEET NO.
R-2828	6
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

REVISIONS 8/17/99

NAD 83/2011

MATCH LINE SEE SHEET 38 -Y16- STA. 19+50.00

MATCH LINE SEE SHEET 5 -L- STA. 521+00.00

MATCH LINE SEE SHEET 7 -L- STA. 535+00.00

MATCH LINE SEE SHEET 6A -Y16- STA. 11+00.00

SPECIAL LATERAL V DITCH SEE DETAIL 1-15

REMOVE

PROP. WW FENCE

BERM 'V' DITCH SEE DETAIL 1-10

OTCB

15" CSP w/ELBOWS

SPECIAL LATERAL 'V' DITCH SEE DETAIL 1-17

STANDARD BERM DITCH

LATERAL 'V' DITCH SEE DETAIL 1-16 CL B RIP RAP EST. 2 TON EST. 7 SY GF

STANDARD 'V' DITCH SEE DETAIL 1-13

SPECIAL CUT DITCH WITH HINGE SEE DETAIL 1-6

MEDIAN 'V' DITCH SEE DETAIL 1-12

GREU TL-3

TYPE B-77

JB w/MH

TOE PROTECTION SEE DETAIL 1-7

ENERGY DISSIPATOR BASIN SEE DETAIL 1-38

PROPOSED NOISE WALL

SITE #8

WCJ

SBZ

WCK

SPECIAL LATERAL V DITCH SEE DETAIL 1-3

SPECIAL CUT DITCH SEE DETAIL 1-9

EXISTING R/W PER 30702RW_PSD

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

PERMIT DRAWING SHEET 16 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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LANE | BLYTHE | KITTELSON & ASSOCIATES, INC. ENGINEERING

PROJECT REFERENCE NO.	SHEET NO.
R-2828	6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

8/17/99

MATCH LINE SEE SHEET 5 -L- STA. 521+00.00

MATCH LINE SEE SHEET 38 -Y16- STA. 19+50.00

MATCH LINE SEE SHEET 7 -L- STA. 535+00.00

MATCH LINE SEE SHEET 6A -Y16- STA. 11+00.00

NAD 83/2011

GREU TL-3

PROP. WW FENCE

EXISTING R/W PER 30702RW PSD

SPECIAL LATERAL V DITCH SEE DETAIL 1-15

REMOVE

BERM 'V' DITCH SEE DETAIL 1-10

OTCB

15" CSP w/ELBOWS

STANDARD 'V' DITCH SEE DETAIL 1-13

STANDARD BERM DITCH

SPECIAL CUT DITCH WITH HINGE SEE DETAIL 1-6

LATERAL 'V' DITCH SEE DETAIL 1-16

CL B RIP RAP EST. 2 TON EST. 7.5Y GF

SPECIAL LATERAL 'V' DITCH SEE DETAIL 1-17

END SBG 522+00

MEDIAN 'V' DITCH SEE DETAIL 1-12

TYPE B-77

TYPE III

TYPE RCP-III

JB w/MH

TOE PROTECTION SEE DETAIL 1-7

ENERGY DISSIPATOR BASIN SEE DETAIL 1-38

PROPOSED NOISE WALL

SPECIAL CUT DITCH SEE DETAIL 1-9

SPECIAL LATERAL V DITCH SEE DETAIL 1-3

PUE

WCJ

SITE #8

SBZ

WCK

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

PERMIT DRAWING SHEET 17 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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6/23/16

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400
380

389.24
2:1
4:1
383.95
6:1
0.008
0.020
18.15:1
8.18:1
385.66
13.37:1
0.008
0.020
4.25:1

530+50.00

WETLAND (WCJ)
SITE #8

387.40
2:1
4:1
384.10
6:1
0.001
0.020
15.35:1
8.18:1
385.97
12.81:1
0.001
0.020
4:1
385.28

530+00.00

385.56
2:1
4:1
384.26
6:1
0.006
0.020
15.02:1
386.28
13.39:1
0.006
0.020
7:1
385.58

529+50.00

394.17
2:1
4:1
384.29
6:1
0.013
0.020
16.26:1
15.26:1
386.59
0.013
0.020
3:1
384.99

529+00.00

399.63
0.020
0.020
387.55
0.020
0.020

528+50.00

405.02
0.020
0.020
387.62
0.020
0.020

528+00.00

PERMIT DRAWING
SHEET 18 OF 161

7/18/2019
\\cdot1\ncs_workingdir\19101\336429_987\R2828_hyd_prm_wet_psh_0611.dgn
PRDPWICS01$

PROJECT REFERENCE NO.	SHEET NO.
R-2828	7
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

LANE BLYTHE — A JOINT VENTURE

MITCHELL ENGINEERING

REVISIONS

8/17/99

NAD 83/2011

WOODS

50' COLONIAL PIPELINE EASEMENT
APPROXIMATE LOCATION

10' SOIL

-L-
+70.00
175.00
196.00

-L-
+05.0
175.00
196.00

STANDARD BERM DITCH

BERM V DITCH
SEE DETAIL 1-10

OTCB

30" CSP w/ELBOWS

PROP. WW FENCE

CL. B RIP RAP
EST. 2 TON
EST. 7 SY GF

CHORD

SITE #9

SPECIAL LATERAL
2' BASE DITCH
SEE DETAIL 1-11

LATERAL 2' BASE DITCH
SEE DETAIL 1-8

PROP. DOUBLE FACED GUARDRAIL

PROP. GUARDRAIL

CAT-1

BEG SBG
544+31

WCL

MATCH LINE SEE SHEET 6
-L- STA. 535+00.00

MATCH LINE SEE SHEET 8
-L- STA. 548+00.00

BL-107

BL-108

GREU TL-3

BEG SBG
543+75

CL. I RIP RAP
EST. 15 TON
EST. 30 SY GF

PROP. GUARDRAIL

36" CSP w/ELBOWS

OTCB

SPECIAL LATERAL
2' BASE DITCH
SEE DETAIL 1-11

-L- +73.00
175.13

PROP. WW FENCE

48" WD RAIL

2SFD

CONC

BK

72" PVC

E/P

F F DENOTES FILL IN WETLAND

PERMIT DRAWING
SHEET 19 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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RPORTER01$

PROJECT REFERENCE NO.	SHEET NO.
R-2828	7
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

REVISIONS 8/17/99

NAD 83/2011

MATCH LINE SEE SHEET 6 -L- STA. 535+00.00

MATCH LINE SEE SHEET 8 -L- STA. 548+00.00

50' COLONIAL PIPELINE EASEMENT APPROXIMATE LOCATION

WOODS

STANDARD BERM DITCH

BERM V DITCH SEE DETAIL 1-10

TOP 405.90 INV 402.57 OTCB

30" CSP w/ELBOWS

TOP 380.45 INV 374.40 2GI

PROP. DOUBLE FACED GUARDRAIL

PROP. WW FENCE

TOP 377.53 INV 372.73 2GI

15"

TOP 379.75 INV 373.25 2GI

30" RCP-III

BL-107

TOP 376.83 INV 371.58 2GI

15" RCP-III

BL-108

TOP 379.17 INV 372.67 2GI-A

30"

TOP 375.25 INV 365.09 2GI-A

24"

10' SOIL

48" WD

48" WD RAIL

72" PVC

CONC

BK

2SFD

E/P

G

CHORD

L- +70.00 175.00 196.00

L- +05.00 175.00 196.00

SITE #9

CL B RIP RAP EST. 2 TON EST. 7 SY GF

TOP 371.34 INV 366.05

INV 366.05

SPECIAL LATERAL 2' BASE DITCH SEE DETAIL 1-11

LATERAL 2' BASE DITCH SEE DETAIL 1-8

PROP. GUARDRAIL

CAT-1

BEG SBG 544+31

WCL

545

GREU TL-3

BEG SBG 543+75

CL. I RIP RAP EST. 15 TON EST. 30 SY GF

PROP. GUARDRAIL

TOP 361.23 INV 361.47

INV 361.23

36" CSP w/ELBOWS

OTCB

TOP 356.03 INV 350.20

SPECIAL LATERAL 2' BASE DITCH SEE DETAIL 1-11

CHORD

PROP. WW FENCE

L- +73.00 175.13

F F DENOTES FILL IN WETLAND

PERMIT DRAWING SHEET 20 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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PROFILE01$

6/23/16

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	R-2828	7(1)

300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

360
340

0.020 0.020 8:1 8:1 0.020 0.020
3:1 2.52:1
362.81
339.52
547+50.00

0.014 0.020 8:1 7.78:1 0.014 0.020
3:1 3.43:1
363.76
342.42
547+00.00

WETLAND (WCL)
SITE #9

0.007 0.020 8:1 7.54:1 0.007 0.020
3:1 4:1
364.76
344.90
546+50.00

0.001 0.020 8:1 7.31:1 0.001 0.020
2.34:1 4:1
365.76
345.28
546+00.00

0.008 0.020 8:1 7.10:1 0.008 0.020
3.51:1 4:1
366.76
348.12
545+50.00

0.015 0.020 8:1 6.90:1 0.015 0.020
4.48:1 5:1
367.76
353.38
545+00.00

PERMIT DRAWING
SHEET 21 OF 161

300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

7/18/2019
\\pwdpwcs01\ics_workingdir\11910\336429_988\R2828_hyd_prm_wet_psh_07(1).dgn
PROPWICS01$

PROJECT REFERENCE NO.	SHEET NO.
R-2828	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

LANE BLYTHE — A JOINT VENTURE

NORTHPILL ENGINEERING

NAD 83/2011

REVISIONS

8/17/99

MATCH LINE -L- STA. 548+00.00 SEE SHEET 7

MATCH LINE -L- STA. 562+00.00 SEE SHEET 9

SITE #11 — INSET B

TEMPORARY SURFACE WATER IMPACT

ROCK

2GI

GRAPHIC SCALE

SITE #10 SEE INSET A

WCM

SBY

LATERAL 2' BASE DITCH SEE DETAIL 1-8

TOE PROTECTION SEE DETAIL 1-7

50' COLONIAL PIPELINE EASEMENT APPROXIMATE LOCATION DB 1756 PG 395 DB 1713 PG 329

ROCK PLATING ON SLOPE

PROP. WW FENCE

EXISTING R/W PER 14002RW_PSD

+62.00, 122.0' LT

+62.00 122.0' LT 110.0' LT

CAT-1

END SBG 552+06

BEG SBG 552+81

SITE #9

6'x8' RCBC (BURIED ONE FOOT) w/BEVELED HEADWALL

PROP. DOUBLE FACED GUARDRAIL

GREU TL-3

PROP. GUARDRAIL

END SBG 553+69

30" RCP-III

24" CSP w/ELBOWS

30" CSP w/ELBOWS

JB w/MH

36" RCP-III

OTCB

END PROP. GUARDRAIL +74.00

BEG SBG 555+43

CL B RIP RAP EST. 5 TON EST. 14 SY GF

LATERAL 2' BASE DITCH SEE DETAIL 1-8

SITE #10

SBY

WCN

WCO

WCP

INSET A

SITE #10

SBY

TEMPORARY SURFACE WATER IMPACT

LATERAL 2' BASE SEE DETAIL 1-8

SEE INSET A ON THIS SHEET FOR PARCEL ACCESS PROVIDED FROM TROTTER DRIVE

WCQ

SITE #11 SEE INSET B

SBX

ROCK PLATING ON SLOPE

15" RCP-III

1@9'x8' RCBC (BURIED ONE FOOT) WITH 6" BEVELED HEADWALL

GREU TL-3

PROP. GUARDRAIL

WCR

LATERAL 10' BASE DITCH SEE DETAIL 1-25

54" CSP w/ELBOWS

30" CSP w/ELBOWS

PROP. WW FENCE

CL I RIP RAP EST. 20 TON EST. 39 SY GF

CL B RIP RAP EST. 11 TON EST. 22 SY GF

SITE #11

SITE #12

SBX

WCS

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SEE CULVERT PROFILES ON SHEET 8(1) & 8(2) FOR DETAILS

PERMIT DRAWING SHEET 22 OF 161

GRAPHIC SCALE

7/18/2019
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PWICS01\$

PROJECT REFERENCE NO.	SHEET NO.
R-2828	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

8/17/99

REVISIONS

SITE #11 — INSET B

TEMPORARY SURFACE WATER IMPACT

GRAPHIC SCALE 50 0 50

NAD 83/2011

SITE #10 SEE INSET A

SITE #11 SEE INSET B

LATERAL 2' BASE DITCH SEE DETAIL 1–8

TOE PROTECTION SEE DETAIL 1–7

50' COLONIAL PIPELINE EASEMENT APPROXIMATE LOCATION DB 1565 PG 395 DB 1713 PG 329

PROP. WW FENCE

EXISTING R/W PER I-4002RW_PSD

ROCK PLATING ON SLOPE

+62.00, 122.0' LT

+62.00 122.0' LT 110.0' LT

END SBG 552+06

BEG SBG 552+81

CAT-1

15" RCP-III

6'x8' RCBC (BURIED ONE FOOT) w/BEVELED HEADWALL

1@9'x8' RCBC (BURIED ONE FOOT) WITH 6" BEVELED HEADWALL

PROP. DOUBLE FACED GUARDRAIL

PROP. GUARDRAIL

GREU TL-3

30" RCP-III

24" CSP w/ELBOWS

30" CSP w/ELBOWS

36" RCP-III

END PROP. GUARDRAIL +74.00

OTCB

CL B RIP RAP EST. 5 TON EST. 14 SY GF

BEG SBG 555+43

LATERAL 10' BASE DITCH SEE DETAIL 1–25

54" CSP w/ELBOWS

CL I RIP RAP EST. 20 TON EST. 39 SY GF

CL B RIP RAP EST. 11 TON EST. 22 SY GF

MATCH LINE -L- STA. 548+00.00 SEE SHEET 7

MATCH LINE -L- STA. 562+00.00 SEE SHEET 9

INSET A SITE #10 SBY

TEMPORARY SURFACE WATER IMPACT

LATERAL 2' BASE SEE DETAIL 1–8

GRAPHIC SCALE 50 0 50

SEE INSET A ON THIS SHEET FOR PARCEL ACCESS PROVIDED FROM TROTTER DRIVE

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SEE CULVERT PROFILES ON SHEET 8(1) & 8(2) FOR DETAILS

PERMIT DRAWING SHEET 23 OF 161

GRAPHIC SCALE 100 0 100

20' UTILITY AND ACCESS EASEMENT SCALED FROM BM 2020 PG 2268

7/18/2019
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PRIMWICS01$

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	8(1)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

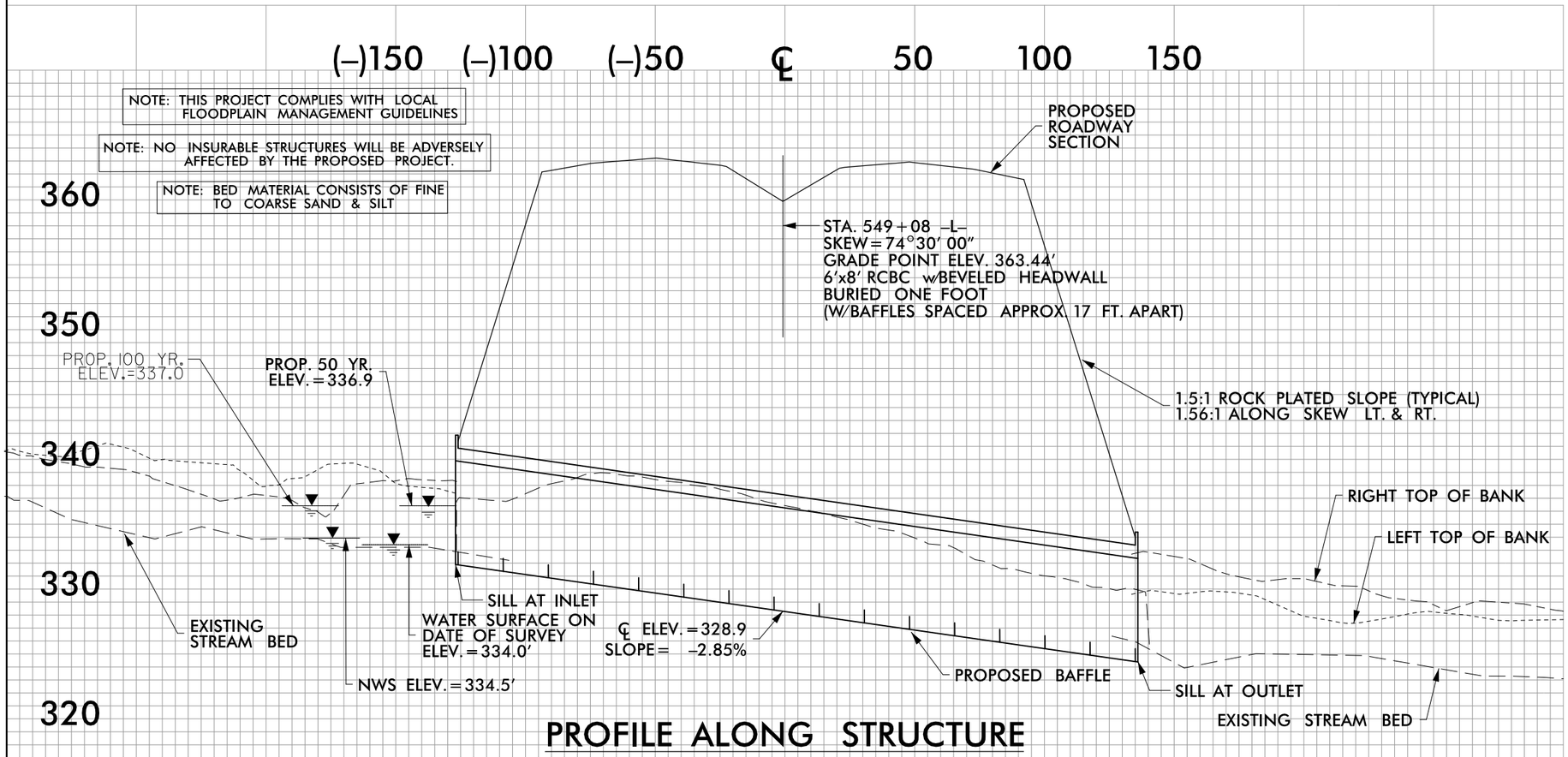
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

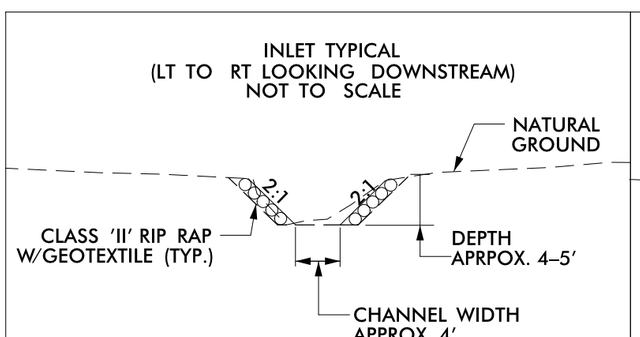
SITE #10

CULVERT PROFILE AT -L- STA. 549+08

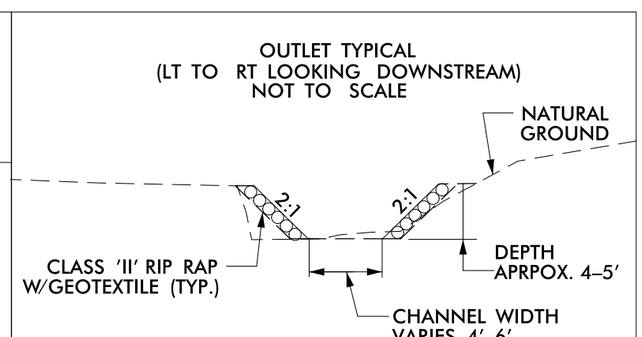
(Stream SBY)



PROFILE ALONG STRUCTURE



EST TON CLASS 'II' RIP RAP = 36 TONS
EST GEOTEXTILE = 49 SY



EST TON CLASS 'II' RIP RAP = 53 TONS
EST GEOTEXTILE = 72 SY

PERMIT DRAWING
SHEET 24 OF 161

50 0 50
GRAPHIC SCALE

7/18/2019
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PROFILE01$

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	8(2)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

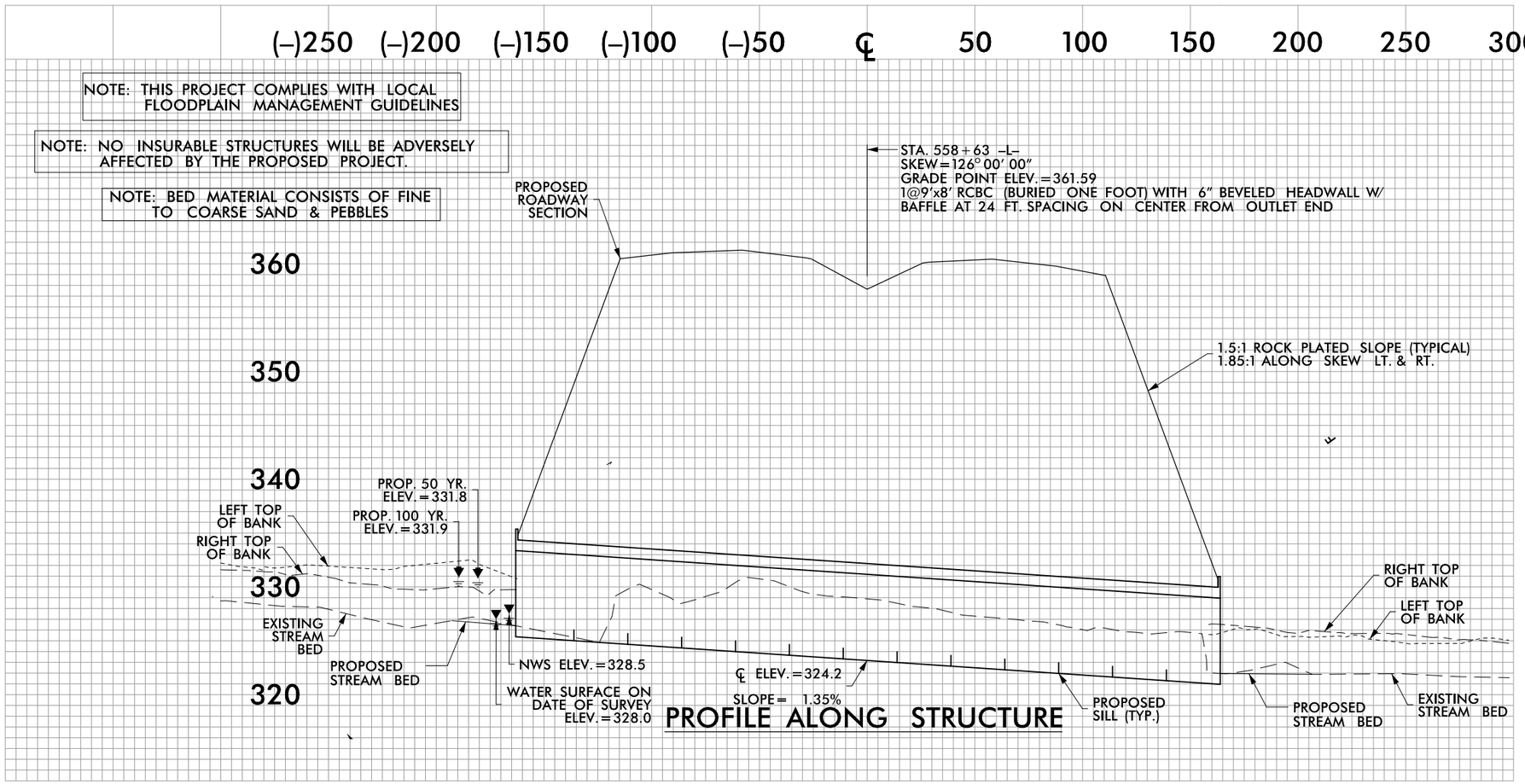
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SITE #11

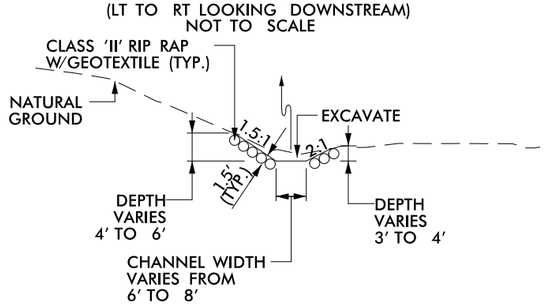
CULVERT PROFILE AT -L- STA. 558+63

(Stream SBX)



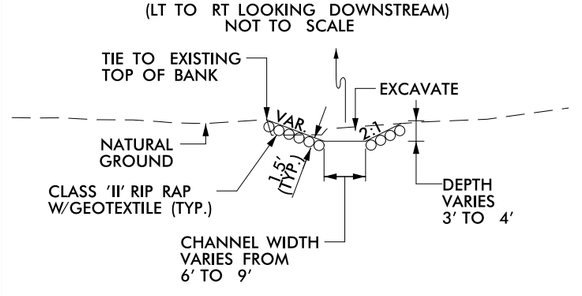
PROFILE ALONG STRUCTURE

INLET TYPICAL
(LT TO RT LOOKING DOWNSTREAM)
NOT TO SCALE



EST TON CLASS 'II' RIP RAP = 35 TONS
EST GEOTEXTILE = 47 SY
DDE = 20 CY

OUTLET TYPICAL
(LT TO RT LOOKING DOWNSTREAM)
NOT TO SCALE



EST TON CLASS 'II' RIP RAP = 37 TONS
EST GEOTEXTILE = 50 SY
DDE = 32 CY

PERMIT DRAWING
SHEET 25 OF 161

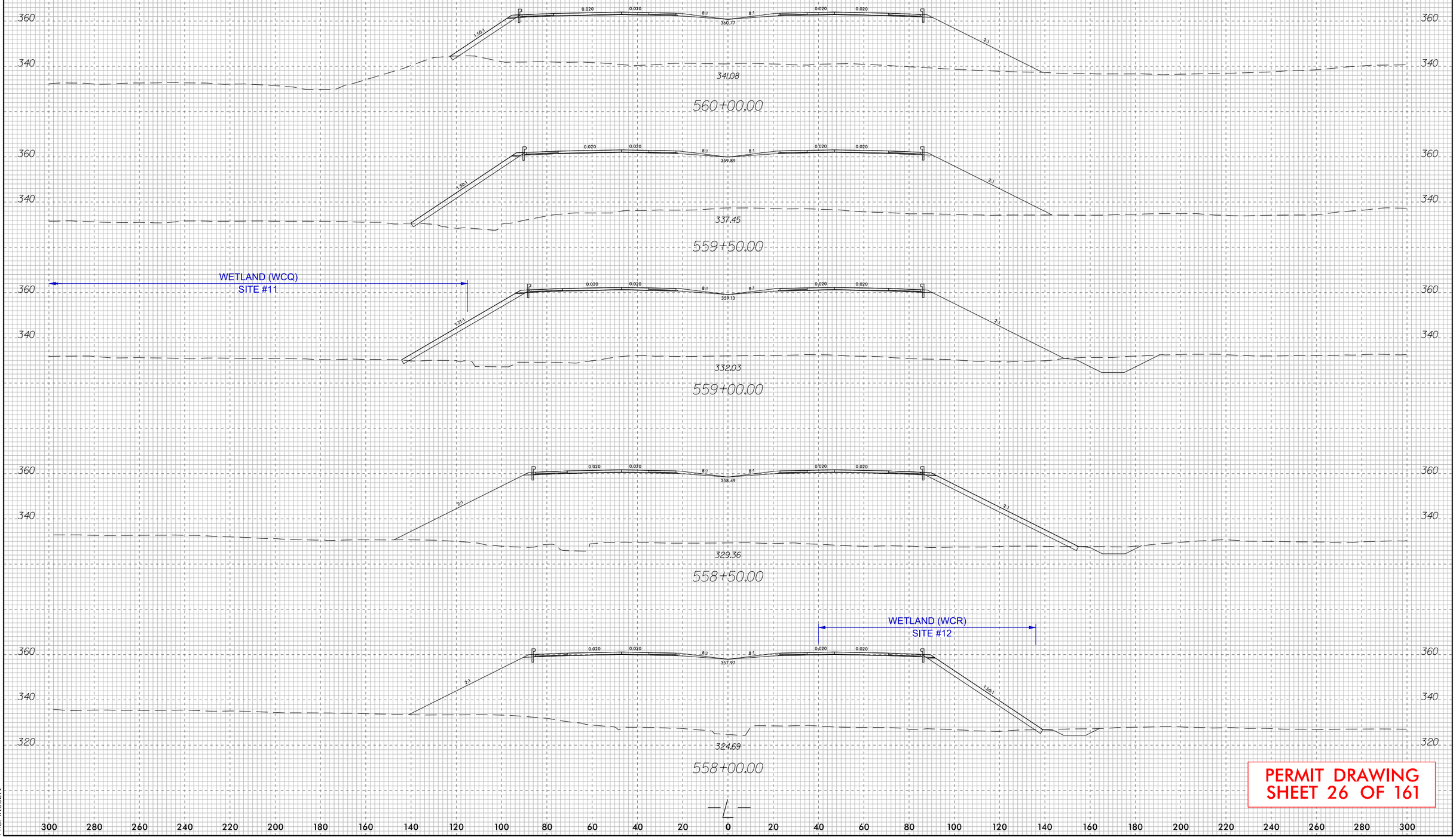
60 0 60
GRAPHIC SCALE

7/18/2019
DGN: c:\projects01\ics_workingdir\19101\336429_980\R2828_hyd_prm_wet_psh_08(2).dgn
PRP: WETSH1

6/23/16

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	R-2828	8(3)

300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300



PERMIT DRAWING
SHEET 26 OF 161

7/18/2019
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PRDPWTCS01$

PROJECT REFERENCE NO.	SHEET NO.
R-2828	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

LANE BLYTHE — A JOINT VENTURE

NAD 83/2011

REVISIONS

8/17/99

MATCH LINE SEE SHEET 8
-L- STA. 562+00.00

MATCH LINE SEE SHEET 10
-L- STA. 575+00.00

PROP. WW FENCE

EXISTING R/W PER 14002RW_PSD

SPECIAL CUT DITCH w/HINGE SEE DETAIL 1-6

BERM V DITCH SEE DETAIL 1-10

3OTCB

18" CSP w/ELBOWS

END SBG 562+25

GREU TL-3

PROP. DOUBLE FACED GUARDRAIL

S 71° 40' 00.6" E

565

570

BL-114

BL-113

END SBG 563+50

JB w/MH

PUE

72" PVC

3SFD

CONC

IZ CONC

20' UTILITY AND ACCESS EASEMENT SCALED FROM BM 2000 PG 2298

20.00'

50' COLONIAL PIPELINE EASEMENT APPROXIMATE LOCATION BB 1643-PG 395 BB 1713-PG 329

CAT-1

-Y17RPC- +65.00
94.28
112.00 SPECIAL CUT DITCH w/HINGE SEE DETAIL 1-6

-Y17RPC- +05.00
103.61
116.00

-Y17RPB- 15+00

-Y17RPC- 15+00

SBV

WCV

SBV

SBW

SITE #13

PN

PERMIT DRAWING
SHEET 27 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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PROFICIS01$

PROJECT REFERENCE NO.	SHEET NO.
R-2828	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

LANE BLYTHE — A JOINT VENTURE

CATHEDRAL ENGINEERING

REVISIONS

8/17/99

MATCH LINE SEE SHEET 8
-L- STA. 562+00.00

MATCH LINE SEE SHEET 10
-L- STA. 575+00.00

NAD 83/2011

PROP. WW FENCE

EXISTING R/W PER 14002RW_PSD

SPECIAL CUT DITCH w/HINGE SEE DETAIL 1-6

BERM V DITCH SEE DETAIL 1-10

END SBG 562+25

END SBG 563+50

3OTCB

18" CSP w/ELBOWS

-Y17RPB- 15+00

-Y17RPC- 15+00

PROP. DOUBLE FACED GUARDRAIL

S 71° 40' 00.6" E

565

570

BL-114

BL-113

CAT-1

-Y17RPC- +65.00
94.28
112.00 SPECIAL CUT DITCH w/HINGE SEE DETAIL 1-6

-Y17RPC- +05.00
103.61
116.00

20' UTILITY AND ACCESS EASEMENT SCALED FROM BM 2000 PG 2298

50' COLONIAL PIPELINE EASEMENT APPROXIMATE LOCATION BB 1661 PG 395 BB 1713 PG 329

JB w/MH

PUE

SBV

WCV

SBV

SBW

SITE #13

PN

PERMIT DRAWING
SHEET 28 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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PROFICIS01$

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	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

NAD 83/2011

MATCH LINE SEE SHEET 40
-Y17- STA. 48+00.00

MATCH LINE SEE SHEET 9
-L- STA. 575+00.00

MATCH LINE SEE SHEET 11
-L- STA. 602+00.00

MATCH LINE SEE SHEET 39
-Y17- STA. 33+00.00

SITE #13A

SITE #13

B

A

C

D

WCZ(2)

WCW

PN

PP

PROP. WW FENCE

CHORD

-Y17RPB- 50+00

-Y17RPC- 30+00

-Y17RPD- 20+00

-Y17RPA- 90+00

SPECIAL LATERAL 'V' DITCH SEE DETAIL 1+2

SPECIAL CUT DITCH SEE DETAIL 1+3

SPECIAL CUT DITCH SEE DETAIL 1+22

'V' BASE DITCH SEE DETAIL 1+20

'V' BASE DITCH w/CL B RIPRAP SEE DETAIL 1+20

BERM 'V' DITCH SEE DETAIL 1+20

MEDIAN 'V' DITCH SEE DETAIL 1+12

SPECIAL DITCH SEE DETAIL 1+22

REMOVE

GREEN TL-3

TYPE B-77

15" RCP-H

DDE=1680CY

DENOTES IMPACTS IN SURFACE WATER (POND)

DENOTES FILL IN WETLAND

PERMIT DRAWING
SHEET 29 OF 161

GRAPHIC SCALE 100 0 100

LOCATION:	
TIP NO.:	COUNTY:
DESIGNED BY:	
CHECKED BY:	DATE:

REVISIONS

LANE | BLYTHE

PROJECT REFERENCE NO. R-2828 | SHEET NO. 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

NAD 83/2011

MATCH LINE SEE SHEET 40 -Y17- STA. 48+00.00

MATCH LINE SEE SHEET 9 -L- STA. 575+00.00

MATCH LINE SEE SHEET 11 -L- STA. 602+00.00

MATCH LINE SEE SHEET 39 -Y17- STA. 33+00.00

SITE #13

SITE #13A

A

B

C

D

PROP. WW FENCE

PROP. CHORD

DENOTES IMPACTS IN SURFACE WATER (POND)

DENOTES FILL IN WETLAND

PERMIT DRAWING SHEET 30 OF 161

100 0 100
GRAPHIC SCALE

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:

PROJECT REFERENCE NO.	SHEET NO.
R-2828	11
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

NAD 83/2011

REVISIONS

8/17/99

SITE #14

WCZ(1)

SCC

SEE SHEET 11A

WOODS

WETLAND 2 CONT.

80' COLONIAL PIPELINE EASEMENT APPROXIMATE LOCATION SCALED FROM AERIALS

-Y17RPA- +08.00
102.46
109.00

-Y17RPA- +70.00
102.95
113.00

-Y17RPA- +90.00
103.06
113.00

CHORD

SPECIAL LATERAL 'V' DITCH SEE DETAIL 1-22

PROP. WW FENCE

PROP. GUARDRAIL

TOE PROTECTION SEE DETAIL 1-7

CAT-1

24" RCP-III

36"

JB w/MH

15"

2GI

36" RCP-III

605

BL-149

PROP. DOUBLE FACED GUARDRAIL

2GI-A

FS

WCZ(2)

GREU TL-3

18"

CLASS I RIP RAP EST. 52 TON EST. 55 SY GF SEE DETAIL 1-43

REMOVE

SCE

-Y17RPD- 15+00

-Y17RPD- +31.00
120.00

-Y17RPD- +90.00
120.00

-Y17RPD- +12.00
139.00

SITE #13A

SCD

WCZ(2)

MATCH LINE SEE SHEET 10 -L- STA. 602+00.00

SCK

WCZ(1)

606

BL-120

24"

15" RCP-III

48" WD & CHAIN

SPECIAL LATERAL 'V' DITCH SEE DETAIL 1-22

GREU TL-3

2GI

15"

MATCH LINE SEE SHEET 12 -L- STA. 615+00.00

SCC

WCZ(1)

WCZ(2)

TWO 8'x8' RCBC (BURIED ONE FOOT) WITH 6" BEVELED HEADWALL

36" RCP-III

15" RCP-III

BEG SBG 11+00

SPECIAL LATERAL 'V' DITCH SEE DETAIL 1-17

TOE PROTECTION SEE DETAIL 1-7

36" YELLOWS

PROP. GUARDRAIL

SITE #14

SCC

WCZ(1)

WCZ(2)

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES TEMPORARY FILL IN WETLAND

SEE CULVERT PROFILE ON SHEET 11(1) FOR DETAILS

PERMIT DRAWING SHEET 31 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
c:\projects01\ics_workingdir\19108\336429_967\R2828_hyd_prm_wet_psh_11.dgn
ARP@ICSOS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	11
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

REVISIONS

8/17/99

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

SEE SHEET 11A

MATCH LINE SEE SHEET 10 -L- STA. 602+00.00

MATCH LINE SEE SHEET 12 -L- STA. 615+00.00

SEE CULVERT PROFILE ON SHEET 11(1) FOR DETAILS

PERMIT DRAWING SHEET 32 OF 1161

GRAPHIC SCALE 100 0 100

7/18/2019
R2828_hyd_prm_wet_psh_11_cont.dgn
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WCZ(1)

SITE #14

–Y17RPA–
+70.00
102.95
113.00

–Y17RPA–
+50.00
103.06
113.00

TEMPORARY SURFACE WATER IMPACT

PROP. WW FENCE

RAIL

TOE PROTECTION SEE DETAIL 1–7

TOE PROTECTION SEE DETAIL 1–7

SPECIAL LA

NAD 83/2011

48" WD & CHAIN

50' COLONIAL PIPELINE EASEMENT
APPROXIMATE LOCATION
SCALED FROM AERIALS

WCZ(1)

SCK

SCC

BL-120

2GI–A FS

24"

24"

2GI–A FS

15" RCP–III

1@10'x8' RCBC (BURIED ONE FOOT) WITH 6" BEVELED HEADWALL

36" RCP–III

2GI–A

2GI

BEG SBG 11+00

2GI–A

36" w/ELBOWS

JB w/MH

PROP. GUARDRAIL

TOE PROTECTION SEE DETAIL 1–7

SPECIAL LATERAL 'V' DITCH SEE DETAIL 1–17

TEMPORARY SURFACE WATER IMPACT

TOE PROTECTION SEE DETAIL 1–7

SITE #14

07 06 05 04 03 02

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES TEMPORARY FILL IN WETLAND

SEE CULVERT PROFILE ON SHEET 11(1) FOR DETAILS

PERMIT DRAWING
SHEET 33 OF 161

50 0 50
GRAPHIC SCALE

LANE BLYTHE wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	IIA
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

REVISIONS
8/17/99

7/18/2019
pmccoy1cs
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PROJECT REFERENCE NO.	SHEET NO.
R-2828	IIA
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

LANE BLYTHE wsp

REVISIONS 8/17/99

SITE #14

–Y17RPA–
+70.00
102.95
113.00

–Y17RPA–
+50.00
103.06
113.00

TEMPORARY SURFACE WATER IMPACT

PROP. WW FENCE

RAIL

TOE PROTECTION SEE DETAIL 1–7

TOE PROTECTION SEE DETAIL 1–7

NAD 83/2011

SPECIAL LA

50' COLONIAL PIPELINE EASEMENT APPROXIMATE LOCATION SCALED FROM AERIALS

WCZ(1)

SCK

WCZ(1)

SCK

BL-120

TOP 374.13 2GI–A
INV 367.50

FS

15" RCP–III

24"

24"

TOP 370.77 2GI–A
INV 364.27

FS

36" RCP–III

1@10'x8' RCBC (BURIED ONE FOOT) WITH 6" BEVELED HEADWALL

TOP 372.57
INV 363.09

2GI–A

36" RCP–III

36" w/ELBOWS

JB w/MH

2GI–A TOP 37
INV 36

PROP. GUARDRAIL

INV 361.00

TOE PROTECTION SEE DETAIL 1–7

TOP 371.36
INV 368.61

2GI

BEG SBG
11+00

SPECIAL LATERAL 'V' DITCH SEE DETAIL 1–17

TOE PROTECTION SEE DETAIL 1–7

TEMPORARY SURFACE WATER IMPACT

SEE CULVERT PROFILE ON SHEET 11(1) FOR DETAILS

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

PERMIT DRAWING
SHEET 34 OF 161

50 0 50
GRAPHIC SCALE

SITE #14

7/18/2019
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8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	II(1)
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

SITE #14

CULVERT PROFILE AT -L- STA. 609+74

(Stream SCK)

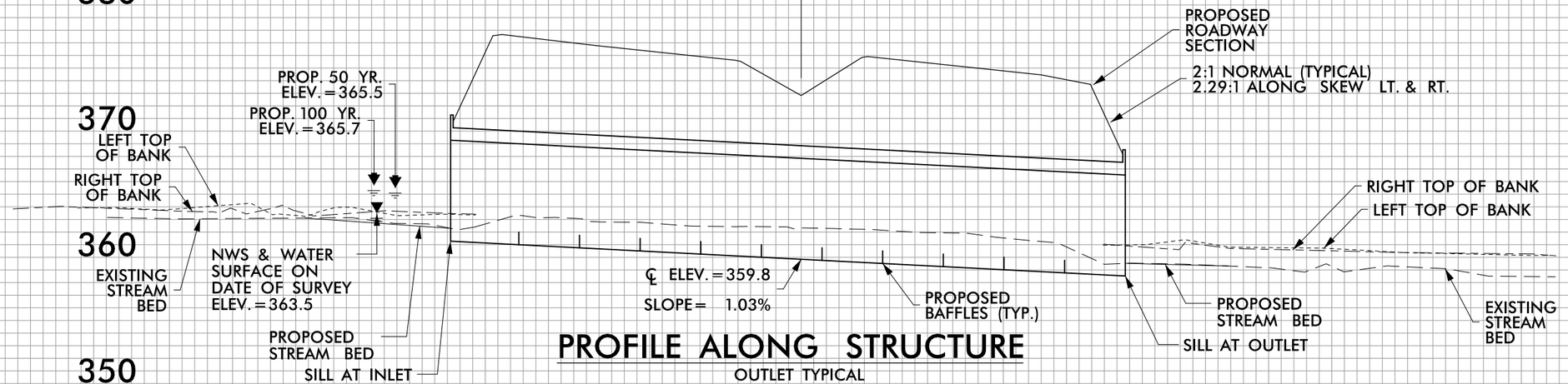
(–)250 (–)200 (–)150 (–)100 (–)50 ℄ 50 100 150 200 250

NOTE: THIS PROJECT COMPLIES WITH LOCAL FLOODPLAIN MANAGEMENT GUIDELINES

NOTE: NO INSURABLE STRUCTURES WILL BE ADVERSELY AFFECTED BY THE PROPOSED PROJECT.

NOTE: BED MATERIAL CONSISTS OF FINE TO COARSE SAND & SILT

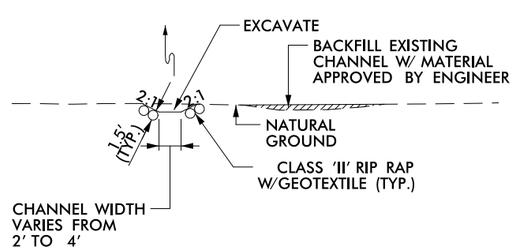
STA. 609+74 –L–
SKEW = 61°00′00″
GRADE POINT ELEV. 375.76
1@10′x8′ RCBC (BURIED ONE FOOT) WITH 6″ BEVELED HEADWALL W/ BAFFLE AT 24 FT. SPACING ON CENTER FROM OUTLET END



PROFILE ALONG STRUCTURE

OUTLET TYPICAL
(LT TO RT LOOKING DOWNSTREAM)
NOT TO SCALE

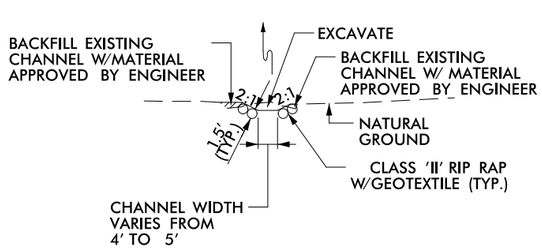
INLET TYPICAL
(LT TO RT LOOKING DOWNSTREAM)
NOT TO SCALE



EST TON CLASS 'II' RIP RAP = 21 TONS
EST GEOTEXTILE = 28 SY

DDE = 30 CY
FILL = 40 CY

OUTLET TYPICAL
(LT TO RT LOOKING DOWNSTREAM)
NOT TO SCALE



EST TON CLASS 'II' RIP RAP = 15 TONS
EST GEOTEXTILE = 21 SY

DDE = 7 CY
FILL = 9 CY

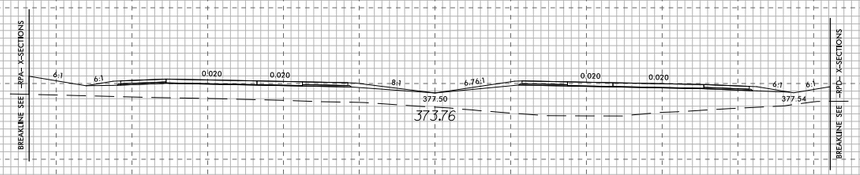
PERMIT DRAWING
SHEET 35 OF 161

7/18/2019
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RHPW\CS01$

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	R-2828	11(2)

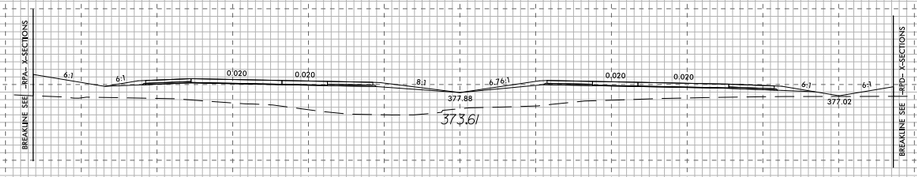
300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

380
360



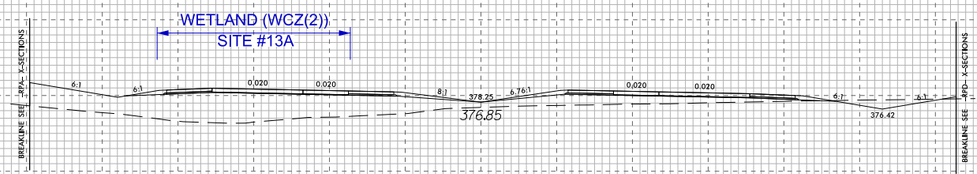
603+50.00

380
360



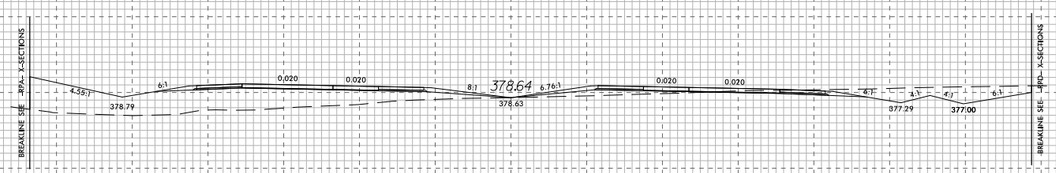
603+00.00

400
380
360



602+50.00

400
380
360



602+00.00

PERMIT DRAWING
SHEET 36 OF 161

300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

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6/23/16

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	R-2828	11(3)

300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

360

5.44:1 | 0.020 | 0.020 | 8:1 | 371.13 | 6.76:1 | 0.020 | 0.020 | 3.40:1

365.54

612+00.00

360

3.53:1 | 0.020 | 0.020 | 8:1 | 371.50 | 6.76:1 | 0.020 | 0.020 | 2.99:1

364.31

611+50.00

360

2.95:1 | 0.020 | 0.020 | 8:1 | 371.88 | 6.76:1 | 0.020 | 0.020 | 2:1

363.01

611+00.00

WETLAND (WCZ(1))
SITE #14

360

2:1 | 0.020 | 0.020 | 8:1 | 372.25 | 6.76:1 | 0.020 | 0.020 | 2.31:1

362.16

610+50.00

380

360

BREAKLINE SEE –RPA– X-SECTIONS

0.020 | 0.020 | 8:1 | 372.63 | 6.76:1 | 0.020 | 0.020 | 2:1

362.07

610+00.00

380

360

BREAKLINE SEE –RPA– X-SECTIONS

0.020 | 0.020 | 8:1 | 372.90 | 6.76:1 | 0.020 | 0.020 | 2.63:1

362.44

609+63.47

—L—

300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

PERMIT DRAWING
SHEET 37 OF 161

7/18/2019
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PRDPWICS01$

PROJECT REFERENCE NO.	SHEET NO.
R-2828	12
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

LANE BLYTHE A JOINT VENTURE — NORTH TRIPOLI ENGINEERING — DRMP

NAD 83/2011

8/17/99

REVISIONS

MATCH LINE SEE SHEET 11 -L- STA. 615+00.00

MATCH LINE SEE SHEET 13 -L- STA. 628+00.00

WDA

SITE #16

PR

PQ

SITE #15

SITE #15A

SITE #17

WCZ(1)

WCZ(2)

SPECIAL CUT DITCH WITH HINGE SEE DETAIL 1-6

SPECIAL CUT DITCH SEE DETAIL 1-24

SPECIAL LATERAL 'V' DITCH SEE DETAIL 1-22

SPECIAL LATERAL V-DITCH SEE DETAIL 1-39

PROP. DOUBLE FACED GUARDRAIL

ENERGY DISSIPATOR BASIN SEE DETAIL 1-38

STANDARD BASE DITCH SEE DETAIL 1-39

TOE PROTECTION SEE DETAIL 1-7

SPECIAL LATERAL 'V' DITCH SEE DETAIL 1-3

SPECIAL LATERAL V-DITCH

24" RCP-III

625

620

-L- +89.00
175.00
180.00

DENOTES IMPACTS IN SURFACE WATER (POND)

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES TEMPORARY FILL IN WETLAND

PERMIT DRAWING
SHEET 38 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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PRM_WC_SOIS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	12
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

LANE BLYTHE A JOINT VENTURE — DRMP

NAD 83/2011

REVISIONS 8/17/99

-L- STA. 615+00.00 MATCH LINE SEE SHEET 11

-L- STA. 628+00.00 MATCH LINE SEE SHEET 13

WDA
SITE #16
PR
PQ
WCZ(2)
SITE #15
SITE #15A
SITE #17
WCZ(1)

SPECIAL CUT DITCH WITH HINGE SEE DETAIL 1-6
SPECIAL CUT DITCH SEE DETAIL 1-24
SPECIAL LATERAL 'V' DITCH SEE DETAIL 1-22
SPECIAL LATERAL V-DITCH SEE DETAIL 1-39
PROP. DOUBLE FACED GUARDRAIL
PROP. GUARDRAIL
TOE PROTECTION SEE DETAIL 1-7
SPECIAL LATERAL 'V' DITCH SEE DETAIL 1-3
SPECIAL LATERAL V-DITCH
ENERGY DISSIPATOR BASIN SEE DETAIL 1-38
STANDARD BASE DITCH SEE DETAIL 1-39
24" RCP-III
30" RCP-III
2GI
2GI-A
FS
TOP 376.80 INV 374.30
TOP 376.58 INV 370.16
TOP 379.56 INV 372.24
-L- +89.00 175.00 180.00

DENOTES IMPACTS IN SURFACE WATER (POND)
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES TEMPORARY FILL IN WETLAND

PERMIT DRAWING
SHEET 39 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
Projects01\ics_workingdir\19108\336429_1004\R2828_hyd_prm_wet_psh_12_cont.dgn
PHILWICSON

6/23/16

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	R-2828	12(1)

300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

380

4:1 377.90 6:1 0.020 0.020 8:1 380.06 8:1 0.020 0.020 4.37:1

375.94

624+50.00

380

4:1 376.80 6:1 0.020 0.020 8:1 379.56 8:1 0.020 0.020 4.27:1

375.41

624+00.00

380

4:1 377.25 6:1 0.020 0.020 8:1 379.06 8:1 0.020 0.020 4.28:1

375.50

623+50.00

380

6:1 377.71 6:1 0.020 0.020 8:1 378.57 8:1 0.020 0.020 4.02:1

375.64

623+00.00

WETLAND (WCZ(1))
SITE #17

380

5.60:1 377.22 6:1 0.020 0.020 8:1 378.07 8:1 0.020 0.020 3.74:1

375.60

622+50.00

380

4.29:1 376.72 6:1 0.020 0.020 8:1 377.57 8:1 0.020 0.020 4.08:1

375.79

622+00.00

380

3.07:1 4:1 376.22 6:1 0.020 0.020 8:1 377.08 8:1 0.020 0.020 4.70:1

376.41

621+50.00

380

3.13:1 4:1 375.73 6:1 0.020 0.020 8:1 376.58 8:1 0.020 0.020 4.89:1

377.07

621+00.00

380

4.10:1 375.23 6:1 0.020 0.020 8:1 377.71 376.08 8:1 0.020 0.020 5.24:1

620+50.00

PERMIT DRAWING
SHEET 40 OF 161

300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

7/18/2019
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PRDPWICS01$

REVISIONS

PROJECT REFERENCE NO. R-2828 | SHEET NO. 13
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

NAD 83/2011

PA (HDR)

SITE #18A

WWD (HDR)

WDE

WDC

WDB

SCF

SITE #18B
SEE INSET A

SITE #18

PS

MATCH LINE SEE SHEET 13
-Y1B- STA. 35+38.00

MATCH LINE SEE SHEET 12
-L- STA. 628+00.00

MATCH LINE SEE SHEET 14
-L- STA. 655+00.00

TEMPORARY SURFACE WATER IMPACT

PIPE OUTLET CHANNEL STABILIZATION CLASS I RIP RAP SEE DETAIL X-XX

SURFACE WATER IMPACT

SCF

SITE #18B

INSET A

50 0 50
GRAPHIC SCALE

TAIL DITCH WITH CLASS I RIP RAP

REMOVE

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 41 OF 161

100 0 100
GRAPHIC SCALE

LOCATION:
TIP NO.: COUNTY:
DESIGNED BY:
CHECKED BY: DATE:

REVISIONS

LANE | BLYTHE | DRMP

PROJECT REFERENCE NO.	SHEET NO.
R-2828	13

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

NAD 83/2011

MATCH LINE SEE SHEET 13 -L- STA. 635+00.00

MATCH LINE SEE SHEET 12 -L- STA. 628+00.00

PA (HDR)

SITE #18A

WWD (HDR)

WDE

WDC

WDB

SCF

SITE #18B
SEE INSET A

PSF

SITE #18

WDB

TEMPORARY SURFACE WATER IMPACT

PIPE OUTLET CHANNEL STAILIZATION CLASS I RIP RAP SEE DETAIL X-XX

SURFACE WATER IMPACT

SCF

SITE #18B

INSET A

GRAPHIC SCALE 50 0 50

GRAPHIC SCALE 100 0 100

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 42 OF 161

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:

PROJECT REFERENCE NO.	SHEET NO.
R-2828	14
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

LANE BLYTHE DRMP

REVISIONS 8/17/99

NAD 83/2011

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

MATCH LINE SEE SHEET 13 -L- STA. 655+00.00

MATCH LINE SEE SHEET 15 -L- STA. 668+00.00

SCG
WDD
SCG
SCI
WDB
SITE #18
SITE #19 SEE INSET
SCG
SCG
SCJ
WDB
WDB
SITE #19A
SITE #20
SITE #20

STA. = -L- 656+85
Q = 52.5 cfs
V = 1.69 fps
S = 0.3%
SS = 2:1
N = 0.056
LINER = Class B

STA. = -L- 657+94
Q = 2.84 cfs
V = 1.99 fps
S = 3.73%
SS = 4:1
N = 0.063
LINER = Class B

ENERGY DISSIPATOR BASIN SEE DETAIL 1-50
TOE PROTECTION SEE DETAIL 1-7
RIP RAP AT EMBANKMENT CLASS I SEE DETAIL 1-46
TEMPORARY FILL IMPACT, TYP
CLASS B RIP RAP
SPECIAL LATERAL V DITCH W/CLASS B RIPRAP SEE DETAIL 1-30
LATERAL V DITCH W/CLASS B RIPRAP SEE DETAIL 1-31
PERMANENT WETLAND FILL, TYP
LATERAL 6' BASE DITCH WITH CLASS B RIPRAP SEE DETAIL 1-38
LATERAL V CONCRETE DITCH SEE DETAIL 2-9
SPECIAL LATERAL V DITCH WITH CLASS B RIPRAP SEE DETAIL 2-8
LATERAL V CONCRETE DITCH SEE DETAIL 2-9
SPECIAL CUT V DITCH SEE DETAIL 2-28
TOE PROTECTION SEE DETAIL 1-7
20' DRAINAGE EASEMENT BM 2002 PG 1979
20' DRAINAGE EASEMENT TRACED FROM BM 2002 PG 1979
20' PERMANENT & PUBLIC DRAINAGE EASEMENT SCALED FROM BM 2006 PG 2008
70' PERMANENT & PUBLIC DRAINAGE EASEMENT SCALED FROM BM 2006 PG 2008
JUNIPER BRANCH
JB w/MH
CGAU
GREU 350 TL-3
CAT 1
2SFD
S99
72" WD
48" WD RAIL
DK
20.00'

INSET
TEMPORARY SURFACE WATER IMPACT

PERMIT DRAWING SHEET 43 OF 161

GRAPHIC SCALE 50 0 50
GRAPHIC SCALE 100 0 100

7/18/2019
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PSHEETS01

LANE BLYTHE DRMP

PROJECT REFERENCE NO.	SHEET NO.
R-2828	14
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

8/17/99 REVISIONS

NAD 83/2011

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

MATCH LINE SEE SHEET 13 -L- STA. 655+00.00

MATCH LINE SEE SHEET 15 -L- STA. 668+00.00

SCG WDD SCG SCG WDB SCG SCG WDB WDB SCG WDB

SITE #18 SITE #19 SEE INSET SITE #19A SITE #20

STA. = -L- 656+85
Q = 52.5 cfs
V = 1.69 fps
S = 0.3%
SS = 2:1
N = 0.056
LINER = Class B

ENERGY DISSIPATOR BASIN SEE DETAIL 1-50

TOE PROTECTION SEE DETAIL 1-7

RIP RAP AT EMBANKMENT CLASS I SEE DETAIL 1-46

TEMPORARY FILL IMPACT, TYP

LATERAL 6' BASE DITCH WITH CLASS B RIPRAP SEE DETAIL 1-38

LATERAL V CONCRETE DITCH SEE DETAIL 2-8

LATERAL V CONCRETE DITCH SEE DETAIL 2-9

SPECIAL LATERAL V DITCH WITH CLASS B RIPRAP SEE DETAIL 2-8

20' DRAINAGE EASEMENT BM 2002 PG 1979

CLASS B RIP RAP

GREU 350 TL-3

2SFD

SPECIAL CUT V DITCH SEE DETAIL 2-28

SPECIAL LATERAL V DITCH W/CLASS B RIPRAP SEE DETAIL 1-30

LATERAL V DITCH W/CLASS B RIPRAP SEE DETAIL 1-31

STA. = -L- 657+94
Q = 2.84 cfs
V = 1.99 fps
S = 3.73%
SS = 4:1
N = 0.063
LINER = Class B

CAT 1

PERMANENT WETLAND FILL, TYP

TEMPORARY SURFACE WATER IMPACT

INSET

50 0 50
GRAPHIC SCALE

100 0 100
GRAPHIC SCALE

PERMIT DRAWING
SHEET 44 OF 161

7/18/2019
DGN: c:\projects01\ics_workingdir\19108\336429_1012\R2828_hyd_prm_wet_psh_14_cont.dgn
PRM: VTC_01

PROJECT REFERENCE NO.	SHEET NO.
R-2828	14A
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

REVISIONS 8/17/99

NOTES
DESIGN ALLOWS FOR THE FUTURE CONSTRUCTION OF ONE ADDITIONAL MEDIAN LANE IN EACH DIRECTION OF NC 540.

GRADE DATA
PVI STA. 654+00.00 -L-
PVI EL. 367.42'
LVC = 330.00'
(-)2.0000% △ (-)0.5000%

GRADE DATA
PVI STA. 664+50.00 -L-
PVI EL. 362.17'
LVC = 325.00'
(-)0.5000% △ (+)1.0752%

SPAN A | SPAN B | SPAN C | SPAN D

FILL FACE @ END BENT 1
STA. 657+35.00 -L-
G.P. ELEV. 365.74

BEGIN FRONT SLOPE
STA. 657+24.75 -L-
EL. 365.79'

BENT 1
STA. 658+30.62 -L-
G.P. ELEV. 365.26

BENT 2
STA. 659+26.28 -L-
G.P. ELEV. 364.78

BENT 3
STA. 660+22.08 -L-
G.P. ELEV. 364.31

FILL FACE @ END BENT 2
STA. 660+87.36 -L-
G.P. ELEV. 363.98

BEGIN FRONT SLOPE
STA. 660+97.50 -L-
EL. 363.93'

RIP RAP CLASS II (TYP.)
EXP. FIX. FIX. FIX. FIX. FIX. FIX. EXP.
1½:1 SLOPE NORMAL TO CAP (TYP.)
APPROACH SLAB (TYP.)
FINISHED GRADE
FILL
EL. 360±
1'-0" (TYP.)
CUT
EL. 354±
EL. 350±
APPROX. EXISTING GROUND LINE
EL. 349±
STEEL PIPE PILES (TYP. @ BENT)
EL. 349±
FILL
EL. 351±
STEEL PILES (TYP. @ END BENTS)
380 370 360 350 340 330
END BENT 1 | BENT 1 | BENT 2 | BENT 3 | END BENT 2

SECTION ALONG WESTBOUND WORKLINE
(SECTION TAKEN AT RIGHT ANGLES TO END BENTS

79,000-87,000 lbs (FIB45)

RIP RAP CLASS II (TYP.)
1'-0" MIN. EARTH BERM (TYP.)
W.P.1
FILL FACE @ END BENT 1
STA. 657+35.00 -L-
GUARDRAIL (TYP.)
CONCRETE BARRIER RAIL WITH AESTHETIC TREATMENT (TYP.)
W.P.5
FILL FACE @ END BENT 2
STA. 660+87.36 -L-
BEGIN FRONT SLOPE
STA. 660+97.50 -L-
TO SR 2725 HOLLAND CHURCH RD.
TO SR 2727 SAULS RD.
W.P.2 @ BENT 1 CONTROL LINE STA. 658+30.62 -L-
W.P.4 @ BENT 3 CONTROL LINE STA. 660+22.08 -L-
W.P.3 @ BENT 2 CONTROL LINE STA. 659+26.28 -L-
WORKLINE (WESTBOUND)
63'-4"
63'-7" (OUT TO OUT)
65'-0"
68'-2"
78'-6"
70'-3"
END APPROACH SLAB
STA. 661+17.89 -L-
BEGIN APPROACH SLAB
STA. 657+09.25 -L-
BEGIN FRONT SLOPE
STA. 657+24.75 -L-
97°-22'-39" (TO TAN.)
87°-17'-09" (TO TAN.)
87°-22'-44" (TO TAN.)
68°-16'-17" (TO TAN.)
62°-36'-48" (TO TAN.)
657+00 658+00 659+00 660+00 661+00 662+00
44 ft 66 ft 20 ft 40 ft 226 ft 60 ft 59 ft
CS STA. 660+00.86 -L-
BRIDGE NO. STA. 660+06.26 -L-
15'-9⅞" ALONG -L-
-L- (NC-540)
94'-11½" (ALONG ARC) (SPAN A)
95'-0" (ALONG ARC) (SPAN B)
95'-2" (ALONG ARC) (SPAN C)
64'-10½" (ALONG ARC) (SPAN D)
TOTAL BRIDGE LENGTH = 350'-0" (ALONG ARC)
(FILL FACE END BENT 1 TO FILL FACE END BENT 2)
30 ft
JUNIPER BRANCH

CRANE MATS WITHOUT STONE
CRANE MATS WITH STONE
250 TN CRANE TRESTLE
STRUCTURE #5
ATC#15

PLAN
PILES NOT SHOWN FOR CLARITY

HORIZ. CURVE DATA
-L-
PI STA. = 649+64.92 -L-
△ = 23°-51'-27.6"(LT)
D = 1°-08'-04.5"
L = 2,102.80'
T = 1,066.86'
R = 5,050.00'
PLS STA. = 661+05.87 -L-
θS = 1°-47'-13.0"
LS = 315.00'
LT = 210.01'
ST = 105.01

PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

PROJECT NO. R-2828
WAKE & JOHNSTON COUNTY
STATION: 660+06.26 -L-
SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PRELIMINARY
GENERAL DRAWING
DUAL BRIDGES ON -L- (NC-540)
OVER JUNIPER BRANCH
(WESTBOUND)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S5-1
1			3			TOTAL SHEETS
2			4			XX

STR. #5

DESIGNED BY: V.WU	DATE: AUG 2018	
DRAWN BY: V.WU	DATE: AUG 2018	
CHECKED BY: A.PETER	DATE: AUG 2018	
DESIGN ENGINEER OF RECORD:	DATE:	

$DATE$
$FILE$

LANE | BLYTHE — A JOINT VENTURE | WSP | DRMP

PERMIT DRAWING
SHEET 45 OF 161

7/18/2019
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8/17/99

REVISIONS

LANE BLYTHE A JOINT VENTURE

wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	14(1)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

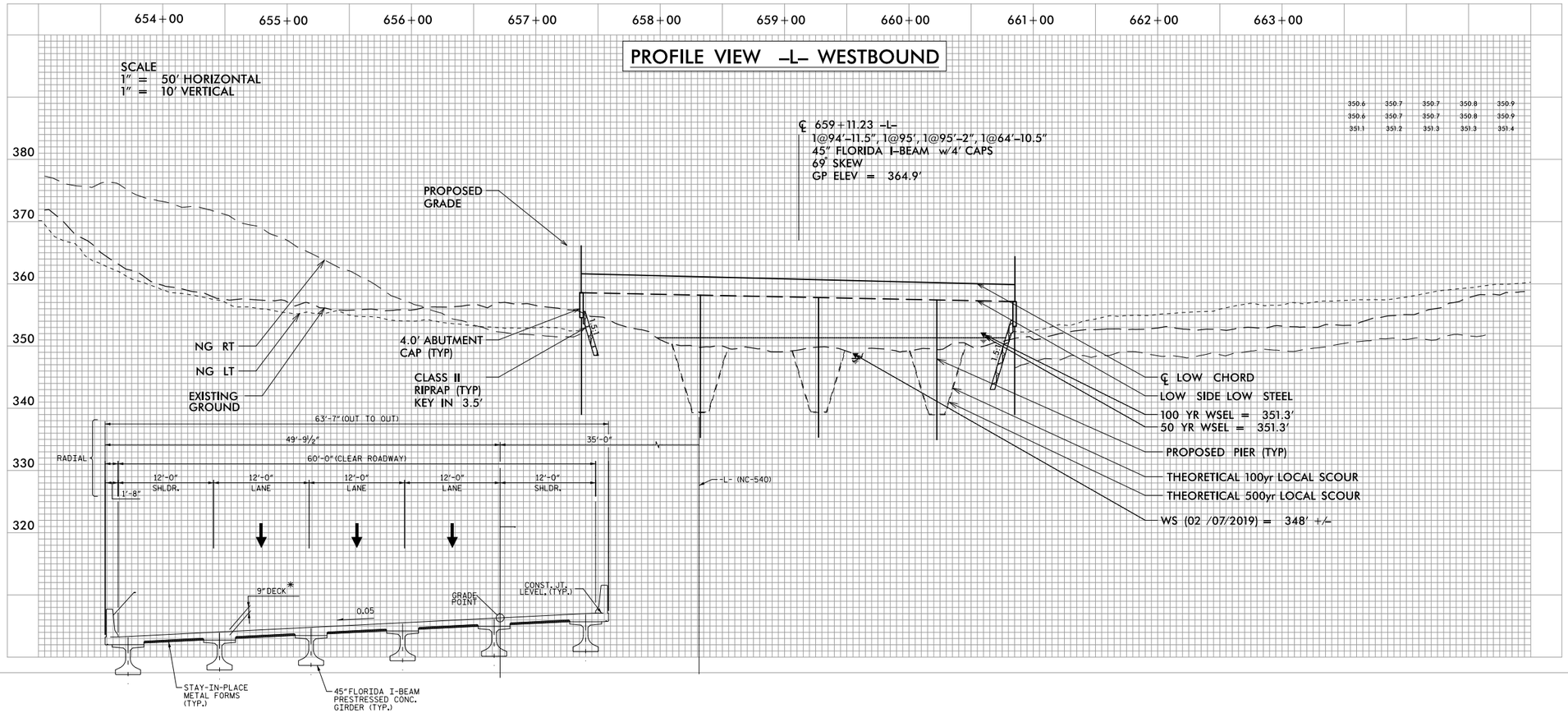
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SITE #19

BRIDGE PROFILE AT -L- STA. 659+00 (WBL)

(Juniper Branch)



PERMIT DRAWING
SHEET 46 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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PROJECT REFERENCE NO.	SHEET NO.
R-2828	14(2)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

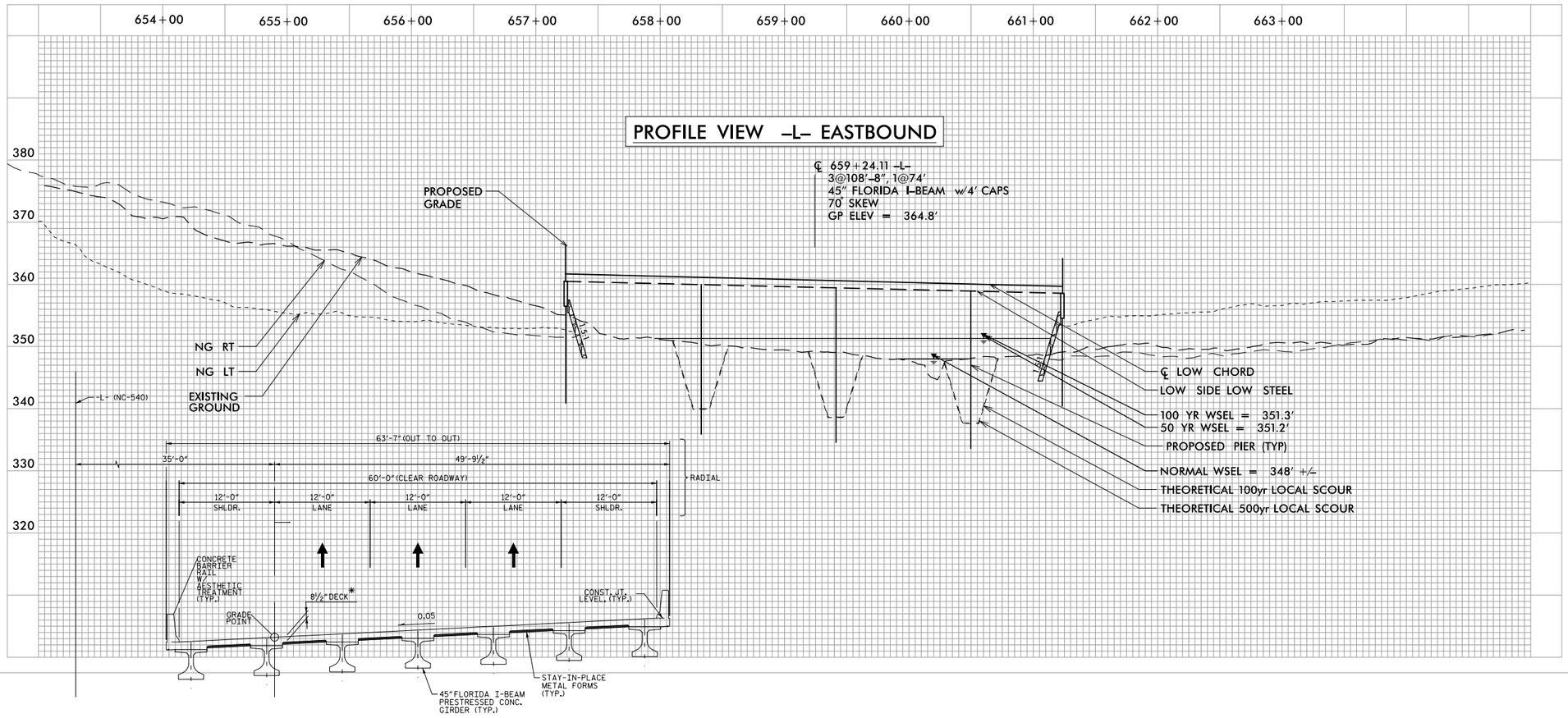
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS 8/17/99

SITE #19

CULVERT PROFILE AT -L- STA. 659+00 (EBL)

(Juniper Branch)



PERMIT DRAWING
SHEET 47 OF 161

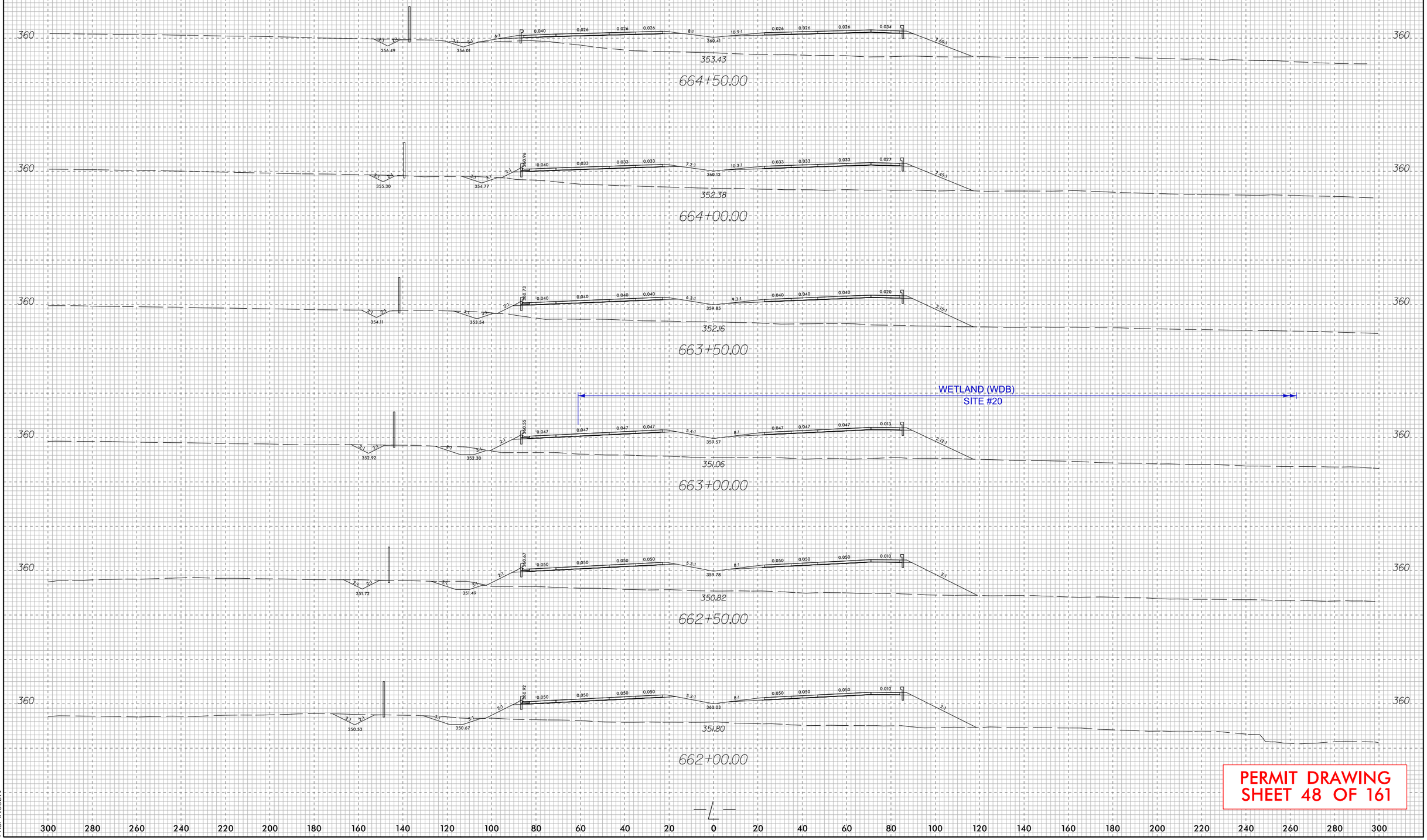
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GRAPHIC SCALE

7/18/2019
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6/23/16

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	R-2828	14(3)

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PERMIT DRAWING
SHEET 48 OF 161

7/18/2019
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PRDPWICS01$

8/17/99

REVISIONS

15

LANE BLYTHE DRMP

PROJECT REFERENCE NO.	SHEET NO.
R-2828	15
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

NAD 83/2011

SR 5396 CONTENDER DRIVE
50' R/W

EXISTING R/W

20' DRAINAGE EASEMENT BM 2002 PG 279

20' DRAINAGE EASEMENT BM 2002 PG 1979

LATERAL V CONCRETE DITCH SEE DETAIL 2-9

PDE

OTCB

GRADE TO DRAIN

2GI

2GI-A

2GI-D

15" RCP-III

24" RCP-III

30"

36"

MATCH LINE SEE SHEET 14 -L- STA. 668+00.00

MATCH LINE SEE SHEET 16 -L- STA. 681+00.00

TOE PROTECTION SEE DETAIL 1-7

WDB

SITE #20

20' PERMANENT & PUBLIC DRAINAGE EASEMENT BM 2000 PG 1909

20' PERMANENT & PUBLIC DRAINAGE EASEMENT BM 2007 PG 1926

20' PERMANENT & PUBLIC DRAINAGE EASEMENT BM 2007 PG 2728

8" SOIL

6" LINK MATERIAL

48" WROUGHT IRON

SR 5928 TAVERNIER KNOLL LANE
50' R/W

2SFD

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

PERMIT DRAWING SHEET 49 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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PROJECT REFERENCE NO.	SHEET NO.
R-2828	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

LANE BLYTHE DRMP

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

SR 5396 CONTENDER DRIVE
50' R/W

SR 5928 TAVERNIER KNOLL LANE
50' R/W

MATCH LINE SEE SHEET 14
-L- STA. 668+00.00

MATCH LINE SEE SHEET 16
-L- STA. 681+00.00

LATERAL V CONCRETE DITCH SEE DETAIL 2-9

TOE PROTECTION SEE DETAIL 2-7

OTCB

GRADE TO DRAIN

PDE

20' DRAINAGE EASEMENT BM 2002 PG 1979

20' PERMANENT & PUBLIC DRAINAGE EASEMENT BM 2000 PG 1909

20' PERMANENT & PUBLIC DRAINAGE EASEMENT BM 2007 PG 1926

20' PERMANENT & PUBLIC DRAINAGE EASEMENT BM 2007 PG 2781

20' PERMANENT & PUBLIC DRAINAGE EASEMENT PEDESTRIAN/GREENWAY SPACE ACCESS BM 2007 PG 1926

SITE #20

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

PERMIT DRAWING SHEET 50 OF 161

100 0 100
GRAPHIC SCALE

REVISIONS 8/17/99

7/18/2019
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PROJECT USER

PROJECT REFERENCE NO.	SHEET NO.
R-2828	16
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

LANE BLYTHE DRMP

REVISIONS 8/17/99

MATCH LINE SEE SHEET 43 -Y19- STA. 30+00.00

MATCH LINE SEE SHEET 15 -L- STA. 681+00.00

MATCH LINE SEE SHEET 17 -L- STA. 694+00.00

MATCH LINE SEE SHEET 42 -Y19- STA. 20+00.00

NAD 83/2011

PT

WDF

PU

WDG(1)

SITE #21

SITE #22

SITE #23

SPECIAL CUT 'V' DITCH SEE DETAIL 2-10

CLASS B RIP RAP

LATERAL 2' BASE DITCH SEE DETAIL 2-1

STA. =-L- 690+50
Q = 6.30 cfs
V = 1.31 ft/s
S = 0.37%
SS = 4:1
N = 0.045
LINER = GRASS

TOE PROTECTION SEE DETAIL 2-36

GRADE TO DRAIN FROM FILL

REMOVE

CAT-1

2GI

FS

15" RCP III

18" RCP III

24" RCP III

JB w/MH

15" CSP W/ELBOWS

CL. B RIP RAP EST. 1 TON EST. 5 SY GF

CL. B RIP RAP EST. 2 TON EST. 7 SY GF

SPECIAL LATERAL 'V' DITCH SEE DETAIL 2-4

SPECIAL LATERAL V DITCH W/CLASS B RIPRAP SEE DETAIL 2-5

LATERAL 'V' DITCH SEE DETAIL 2-31

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER (POND)

PERMIT DRAWING SHEET 51 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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LANE | BLYTHE | DRMP

PROJECT REFERENCE NO.	SHEET NO.
R-2828	16
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

REVISIONS 8/17/99

MATCH LINE SEE SHEET 43 -Y19- STA. 30+00.00

MATCH LINE SEE SHEET 15 -L- STA. 681+00.00

MATCH LINE SEE SHEET 17 -L- STA. 694+00.00

MATCH LINE SEE SHEET 42 -Y19- STA. 20+00.00

NAD 83/2011

SITE #21 — WDF

SITE #22 — PF

SITE #23 — WDG(1)

SPECIAL CUT 'V' DITCH SEE DETAIL 2-10

CLASS B RIP RAP

REMOVE

GRADE TO DRAIN

CAT-1

STA. =-L- 690+50
Q = 6.30 cfs
V = 1.31 ft/s
S = 0.37%
SS = 4:1
N = 0.045
LINER = GRASS

LATERAL 2' BASE DITCH SEE DETAIL 2-1

TOE PROTECTION SEE DETAIL 2-36

GRADE TO DRAIN FROM FROM

18" RCP-III

15" RCP-III

24" RCP-III

JB w/MH

2GI

2GI-A

FS

15" CSP W/ELBOWS

CL. B RIP RAP EST. 1 TON EST. 5 SY GF

CL. B RIP RAP EST. 2 TON EST. 7 SY GF

SPECIAL LATERAL 'V' DITCH SEE DETAIL 2-4

SPECIAL LATERAL V DITCH W/CLASS B RIPRAP SEE DETAIL 2-5

LATERAL 'V' DITCH SEE DETAIL 2-31

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER (POND)

PERMIT DRAWING SHEET 52 OF 161

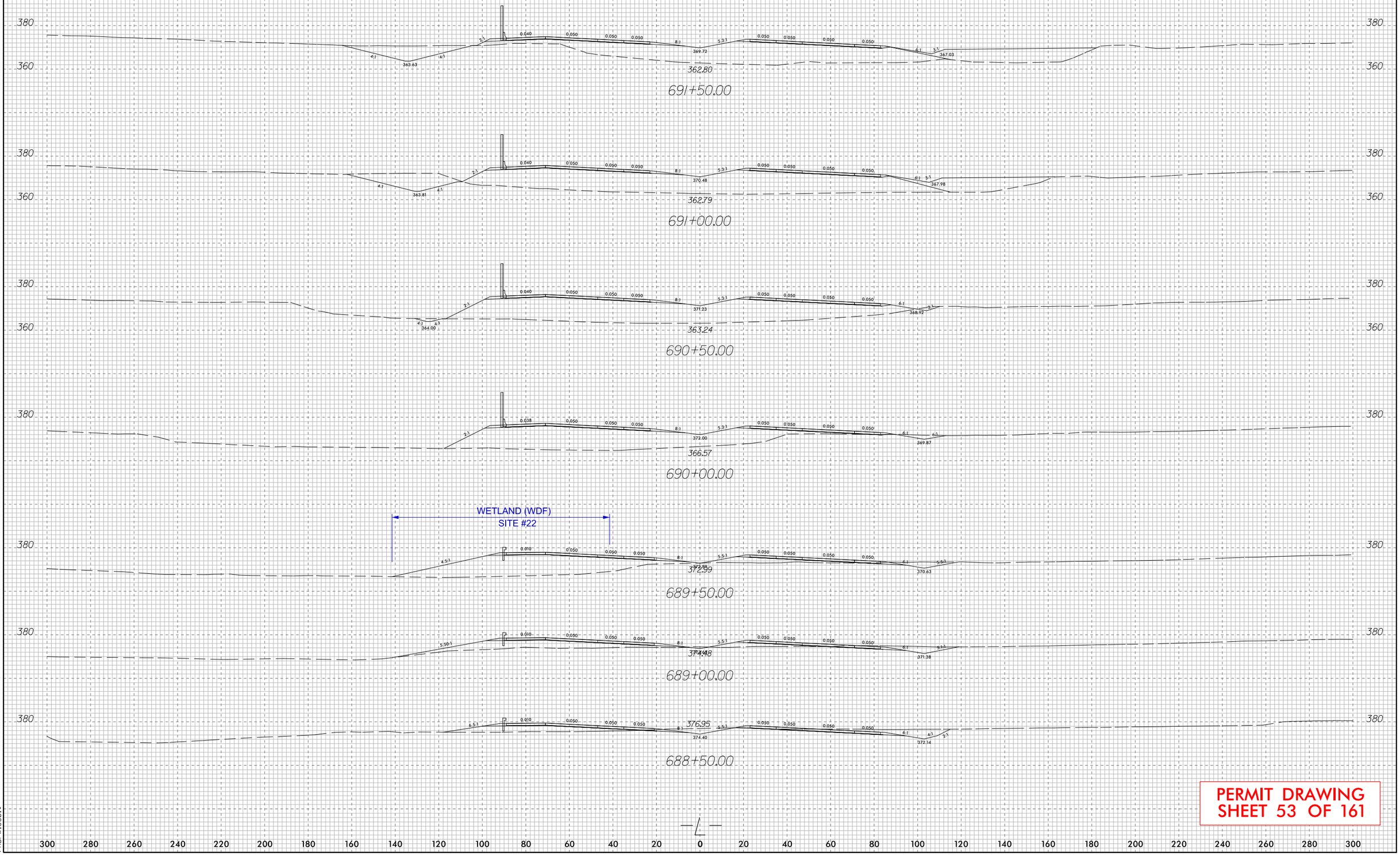
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6/23/16

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	R-2828	16(1)

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PERMIT DRAWING
SHEET 53 OF 161

7/18/2019
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LANE BLYTHE DRMP

PROJECT REFERENCE NO.	SHEET NO.
R-2828	17
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

NAD '83/2011

REVISIONS 8/17/99

MATCH LINE SEE SHEET 16 -L- STA. 694+00.00

SEE SHEET 18 707+00.00

WDG(1)

SITE #23

SITE #24

LATERAL 2' BASE DITCH SEE DETAIL 2-1

LATERAL 2' BASE DITCH WITH CLASS B RIP RAP SEE DETAIL 2-2

DRAIN AND FILL POND

PW

SCL

PV

WDG(1)

LATERAL 2' BASE DITCH SEE DETAIL 2-1

SITE #24

SURFACE WATER IMPACT

SITE #25

DRAIN AND FILL POND

LATERAL 6' BASE DITCH SEE DETAIL 2-3

REMOVE

SCL

WDH

CAT-1

GREU 350 TL-3

CL B RIPRAP

TOE PROTECTION SEE DETAIL 2-36

WDG(1)

SITE #23

SITE #24

SURFACE WATER IMPACT

CHANNEL CHANGE 4' BASE WITH CLASS II RIP RAP SEE DETAIL 2-27

SITE #27

SITE #26

CHANNEL CHANGE 8' BASE WITH CLASS II RIP RAP SEE DETAIL 2-37

DENOTES TEMPORARY FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER (POND)

DENOTES EXCAVATION IN WETLAND

PERMIT DRAWING SHEET 54 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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LANE BLYTHE DRMP

PROJECT REFERENCE NO.	SHEET NO.
R-2828	17
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

NAD 83/2011

REVISIONS 8/17/99

MATCH LINE SEE SHEET 16 -L- STA. 694+00.00

SEE SHEET 18 707+00.00 -L- STA.

WDG(1) SITE #23 SITE #24 WDG(1) SITE #24 SITE #25 SITE #26 SITE #27

LATERAL 2' BASE DITCH SEE DETAIL 2-1

LATERAL 2' BASE DITCH WITH CLASS B RIP RAP SEE DETAIL 2-2

DRAIN AND FILL POND

LATERAL 6' BASE DITCH SEE DETAIL 2-3

SURFACE WATER IMPACT

TOE PROTECTION SEE DETAIL 2-36

CHANNEL CHANGE 4' BASE WITH CLASS II RIP RAP SEE DETAIL 2-27

CHANNEL CHANGE 8' BASE WITH CLASS II RIP RAP SEE DETAIL 2-37

REMOVE

CAT-1

GREU 350 TL-3

CL B RIPRAP

SCL

DENOTES TEMPORARY FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER (POND)

DENOTES EXCAVATION IN WETLAND

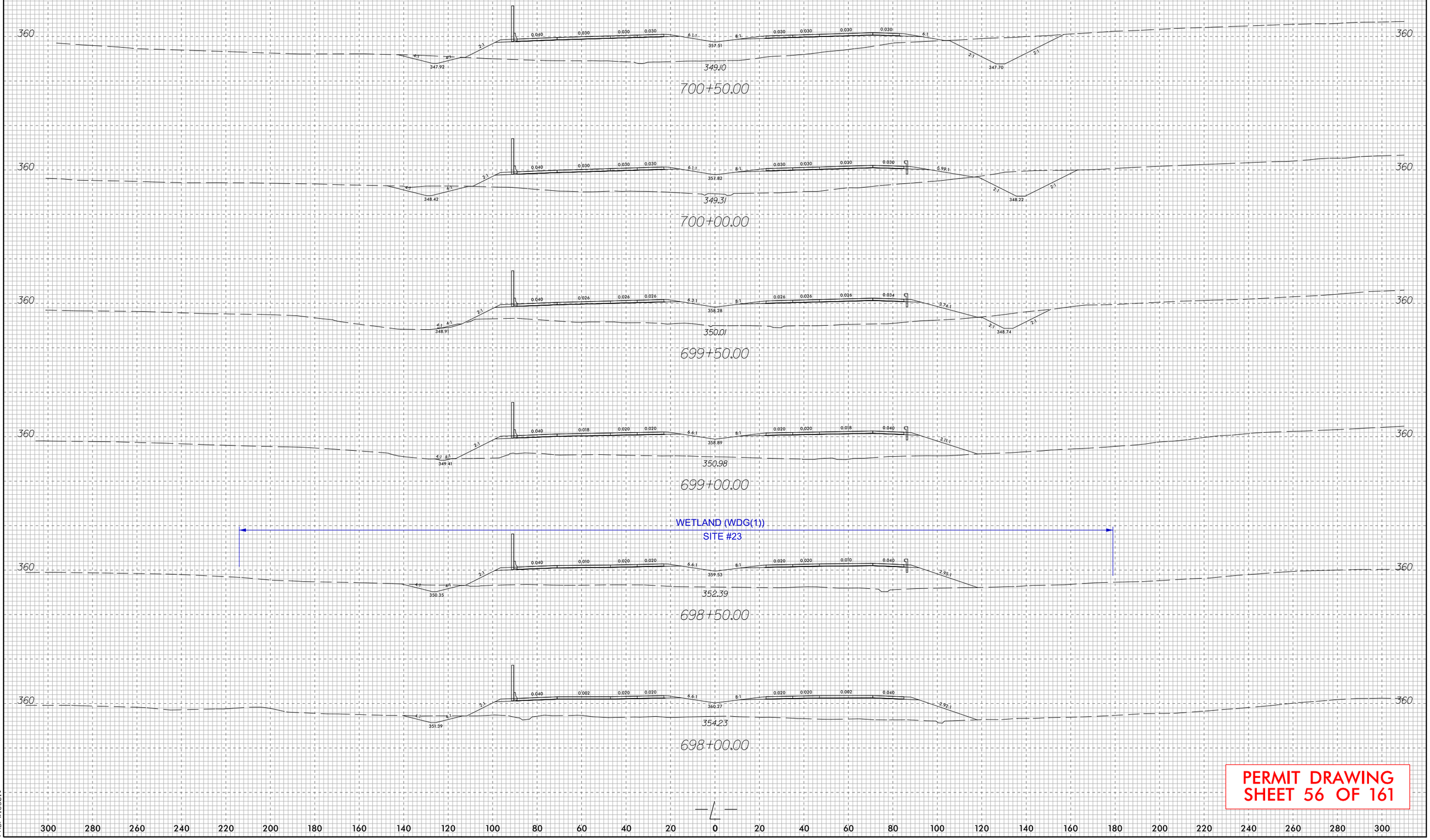
PERMIT DRAWING SHEET 55 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	R-2828	17(1)

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PERMIT DRAWING
SHEET 56 OF 161

300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

7/18/2019
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PRDPWTCS01$

LANE BLYTHE DRMP	
PROJECT REFERENCE NO. R-2828	SHEET NO. 18
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

NAD 83/2011

REVISIONS

8/17/99

WDH

SCM

SITE #26A

SITE #27

SITE #28

WDH

SCN

PROPOSED NOISE WALL

OUTLET CHANNEL STABILIZATION CLASS I AND II RIPRAP SEE DETAIL 2-32

TOE PROTECTION SEE DETAIL 2-36

CL II RIP RAP EST. 23 TON EST. 52 SY GF

"V" CHANNEL CHANGE CL II RIP RAP SEE DETAIL 2-38

GRADE TO DRAIN

STA. =-L- 709+52
Q = 8.78 cfs
V = 1.19 fps
S = 0.3%
SS = 3:1
N = 0.056
LINER = Class B

MATCH LINE SEE SHEET 17 -L- STA. 707+00.00

MATCH LINE SEE SHEET 19 -L- STA. 721+00.00

SCM

CAT-1

CL I RIP RAP EST. 22 TON EST. 24 SY GF

CL II RIP RAP EST. 11 TON EST. 5 SY GF

CL II RIP RAP EST. 13 TON EST. 10 SY GF

TOE PROTECTION SEE DETAIL 2-36

SCL

WDH

OUTLET CHANNEL STABILIZATION CLASS I AND II RIPRAP SEE DETAIL 2-32

SITE #26A

SEE SHEET 18A

SCL

SITE #26

PX

SEE CULVERT PROFILE ON SHEET 18(1) FOR DETAILS

PERMIT DRAWING SHEET 57 OF 161

DENOTES EXCAVATION IN WETLAND

DENOTES TEMPORARY FILL IN WETLAND

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

100 0 100
GRAPHIC SCALE

7/18/2019
\\rs-projects01\ics_workingdir\19110\336429_972\R2828_hyd_prm_wet_psh_18.dgn
RDPW\CSU$

LANE BLYTHE DRMP

PROJECT REFERENCE NO.	SHEET NO.
R-2828	18
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

NAD 83/2011

REVISIONS

8/17/99

MATCH LINE SEE SHEET 17 -L- STA. 707+00.00

MATCH LINE SEE SHEET 19 -L- STA. 721+00.00

PROPOSED NOISE WALL

SEE SHEET 18A

STA. =-L- 709+52
Q = 8.78 cfs
V = 1.19 fps
S = 0.3%
SS = 3:1
N = 0.056
LINER = Class B

OUTLET CHANNEL STABILIZATION CLASS I AND II RIPRAP SEE DETAIL 2-32

CL II RIP RAP EST. 23 TON EST. 52 SY GF

TOE PROTECTION SEE DETAIL 2-36

"V" CHANNEL CHANGE CL II RIP RAP SEE DETAIL 2-38

GRADE TO DRAIN

CL I RIP RAP EST. 22 TON EST. 24 SY GF

CL II RIP RAP EST. 11 TON EST. 5 SY GF

CL II RIP RAP EST. 13 TON EST. 10 SY GF

TOE PROTECTION SEE DETAIL 2-36

OUTLET CHANNEL STABILIZATION CLASS I AND II RIPRAP SEE DETAIL 2-32

CAT-1

WE=332.4

WDH SCM SITE #26A SITE #27 SITE #28 WDH SCN SCL WDH SCL SITE #26A SITE #26 PX

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

PERMIT DRAWING
SHEET 58 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
N:\projects01\ies_workingdir\19110\336429_1009\R2828_hyd_prm_wet_psh_18_cont.dgn
RDPW\CSDS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	18A
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

LANE BLYTHE wsp

REVISIONS 8/17/99

SCM

SITE #26A

TEMPORARY SURFACE WATER IMPACT

OUTLET CHANNEL STABILIZATION
CLASS I AND II RIPRAP
SEE DETAIL 2-32

SITE #27

STA. = -L- 709+52
Q = 8.78 cfs
V = 1.19 ft/s
S = 0.3%
SS = 3:1
N = 0.056
LINER = Class B

CL. II RIP RAP
EST. 23 TON
EST. 52 SY GF

SITE #28

TOE PROTECTION
SEE DETAIL 2-36

'V' CHANNEL CHANGE
CL. II RIP RAP
SEE DETAIL 2-38

GRADE TO DRAIN

2GI
15"
GREU 350 TL-3

SURFACE WATER IMPACT

15" RCP-III

2GI
18"

WDH

SCM

CAT-1

CL. II RIP RAP
EST. 11 TON
EST. 5 SY GF

CL. I RIP RAP
EST. 22 TON
EST. 26 SY GF

CL. II RIP RAP
EST. 13 TON
EST. 10 SY GF

TOE PROTECTION
SEE DETAIL 2-36

SCL

WDH

TEMPORARY SURFACE WATER IMPACT

SITE #26
SITE #26A

OUTLET CHANNEL STABILIZATION
CLASS I AND II RIPRAP
SEE DETAIL 2-32

T T DENOTES TEMPORARY FILL IN WETLAND

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

SEE CULVERT PROFILE ON SHEET 18(1) FOR DETAILS

PERMIT DRAWING
SHEET 59 OF 161

50 0 50
GRAPHIC SCALE

7/18/2019
\\pcdocs01\ics_workingdir\19110\336429_977\R2828_hyd_prm_wet_psh_18A.dgn
PAUL.WILSON$

PROJECT REFERENCE NO.	SHEET NO.
R-2828	18A
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

LANE BLYTHE WSP

REVISIONS 8/17/99

SCM

SITE #26A

SITE #27

SITE #28

TEMPORARY SURFACE WATER IMPACT

OUTLET CHANNEL STABILIZATION CLASS I AND II RIPRAP SEE DETAIL 2-32

STA. = -L- 709+52
Q = 8.78 cfs
V = 1.19 ft/s
S = 0.3%
SS = 3:1
N = 0.056
LINER = Class B

CL. II RIP RAP EST. 23 TON EST. 52 SY GF

TOE PROTECTION SEE DETAIL 2-36

'V' CHANNEL CHANGE CL. II RIP RAP SEE DETAIL 2-38

GRADE TO DRAIN

GREU 350 TL-3

2GI 15"

2GI

15" RCP-III

SURFACE WATER IMPACT

2GI

FS 18"

CAT-1

SEE CULVERT PROFILE ON SHEET 18(1) FOR DETAILS

CL. II RIP RAP EST. 11 TON EST. 5 SY GF

CL. I RIP RAP EST. 22 TON EST. 26 SY GF

CL. II RIP RAP EST. 13 TON EST. 10 SY GF

TOE PROTECTION SEE DETAIL 2-36

TEMPORARY SURFACE WATER IMPACT

OUTLET CHANNEL STABILIZATION CLASS I AND II RIPRAP SEE DETAIL 2-32

SITE #26

SITE #26A

T T DENOTES TEMPORARY FILL IN WETLAND

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

PERMIT DRAWING SHEET 60 OF 161

GRAPHIC SCALE 50 0 50

7/18/2019
\\ncdotics01\ics_workingdir\19110\336429.1013\R2828_hyd_prm_wet_psh_18A_cont.dgn
RAP WLS01$

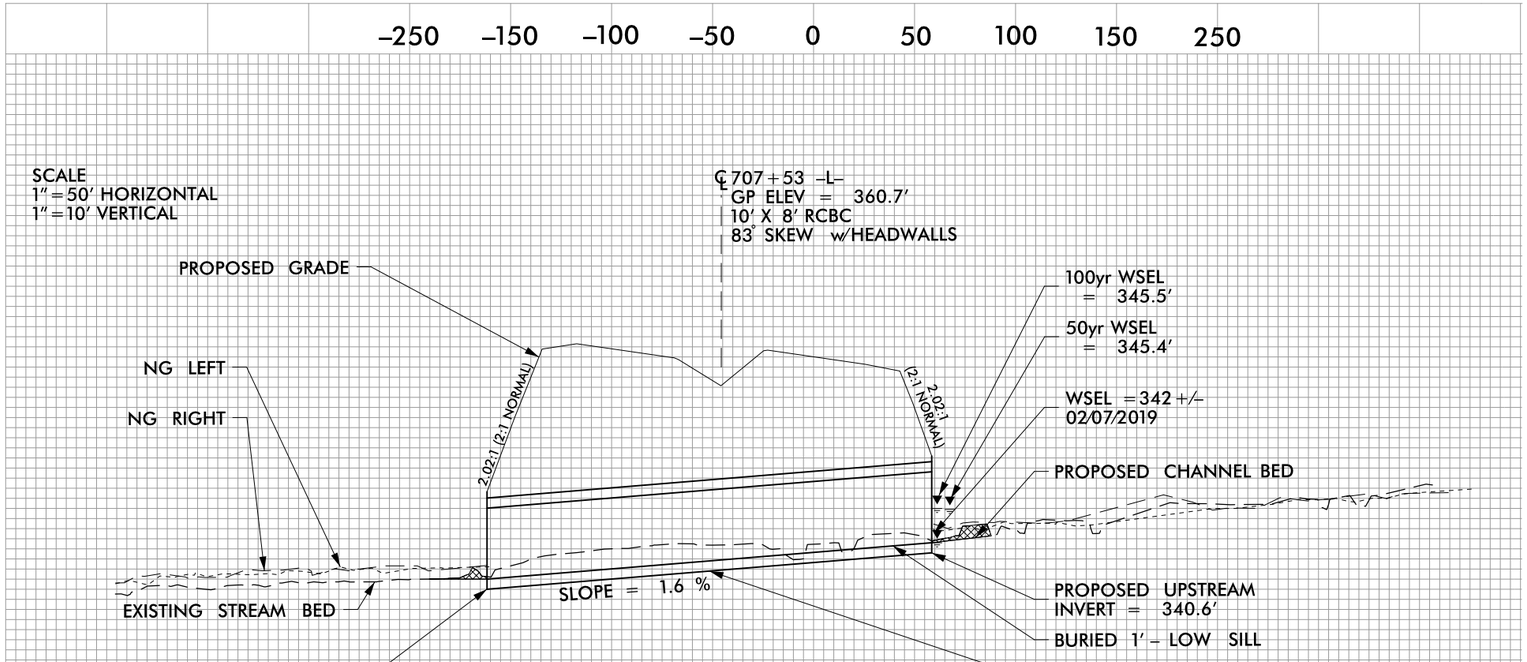
8/17/99

REVISIONS

SITE #26

CULVERT PROFILE AT -L- STA. 707+53

(Stream SCM)



CLASS II RIPRAP: LT: 57 TONS,
RT: 102 TONS

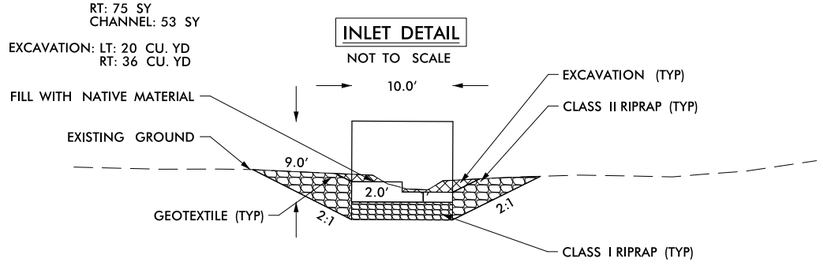
CLASS I RIPRAP: 42 TONS

GEOTEXTILE: LT: 30 SY
RT: 75 SY
CHANNEL: 53 SY

EXCAVATION: LT: 20 CU. YD
RT: 36 CU. YD

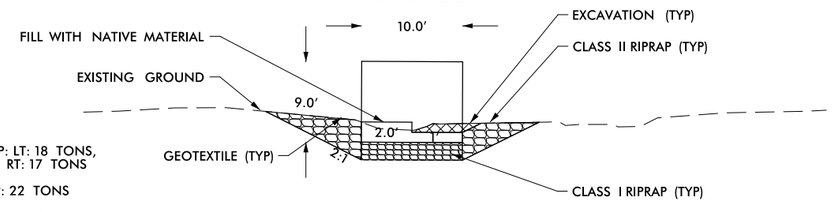
INLET DETAIL

NOT TO SCALE



OUTLET DETAIL

NOT TO SCALE



CLASS II RIPRAP: LT: 18 TONS,
RT: 17 TONS

CLASS I RIPRAP: 22 TONS

GEOTEXTILE: LT: 10 SY
RT: 15 SY
CHANNEL: 26 SY

PROJECT REFERENCE NO.	SHEET NO.
R-2828	18(1)
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

PERMIT DRAWING
SHEET 61 OF 161

7/18/2019
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PROFILE01$

6/23/16

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	R-2828	18(2)

300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

360 340

0.040 0.030 0.030 0.030 6:1 8:1 0.030 0.030 0.030 0.030 2:1 2:1

356.68 343.07

709+00.00

356.25 343.29

708+50.00

WETLAND (WDH)
SITE #27

356.75 341.83

708+00.00

357.17 341.50 3:1 338.50 3:1

707+50.00

357.52 341.96 3:1 340.74 3:1

707+00.00

3:1 3:1 343.26 357.80 343.79 2:1 341.46 3:1

706+50.00

PERMIT DRAWING
SHEET 62 OF 161

7/18/2019
\\prodwics01\ics_workingdir\19110\336429_996\R2828_hyd_prm_wet_psh_18(2).dgn
PROPWICS01$

LANE BLYTHE A JOINT VENTURE | WSP DRMP

PROJECT REFERENCE NO.	SHEET NO.
R-2828	19
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

NAD 83/2011

REVISIONS 8/17/99

MATCH LINE SEE SHEET 18 -L- STA. 721+00.00

MATCH LINE SEE SHEET 20 -L- STA. 735+00.00

WDI

ISFD

PUE

EXISTING TURNAROUND EASEMENT BM 1995 PG. 1018

50' INGRESS & EGRESS EASEMENT BM 1991 PG 1991

48" WD & CHAIN

BL-138

BL-139

BL-140

PROPOSED NOISE WALL

PROP. WW FENCE

TOE PROTECTION SEE DETAIL 2-36

10' SOIL

2GI

FS

15" RCP-III

18" RCP-III

30" RCP-III

2GI-A

30"

15"

18"

RUIN

CAT-1

730

735

GREU TL-3

JB W/MH

PROPOSED SBG

SCQ

PY

SITE #29

SITE #30

SURFACE WATER IMPACT

CHANNEL CHANGE V WITH CLASS II RIPRAP SEE DETAIL 2-11

CHANNEL CHANGE 2' BASE WITH CLASS II RIPRAP SEE DETAIL 2-12

CHANNEL CHANGE 2' BASE WITH CLASS II RIPRAP SEE DETAIL 2-13

CHANNEL CHANGE 4' BASE WITH CLASS II RIPRAP SEE DETAIL 2-14

DENOTES IMPACTS IN SURFACE WATER (POND)

DENOTES IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 63 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
R-2828_plan01\ics_workingdir\19110\336429_960\R2828_hyd_prm_wet_psh_19.dgn
RDPLAN01$

LANE BLYTHE A JOINT VENTURE

WSP DRMP

PROJECT REFERENCE NO.	SHEET NO.
R-2828	19
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

NAD 83/2011

REVISIONS

8/17/99

MATCH LINE SEE SHEET 18 -L- STA. 721+00.00

MATCH LINE SEE SHEET 20 -L- STA. 735+00.00

WDI

PROPOSED NOISE WALL

PROP. WW FENCE

TOE PROTECTION SEE DETAIL 2-36

ISFD

EXISTING TURNAROUND EASEMENT BM 1995 PG 1018

50' INGRESS & EGRESS EASEMENT BM 1991 PG 1991

PUE

48" WD & CHAIN

BL-138

BL-139

BL-140

EIP

RUIN

GREU TL-3

CAT-1

JB W/MH

PROPOSED SBG

SCQ

SITE #29

SITE #30

CHANNEL CHANGE 'V' WITH CLASS II RIPRAP SEE DETAIL 2-11

CHANNEL CHANGE 2' BASE WITH CLASS II RIPRAP SEE DETAIL 2-12

CHANNEL CHANGE 2' BASE WITH CLASS II RIPRAP SEE DETAIL 2-13

CHANNEL CHANGE 4' BASE WITH CLASS II RIPRAP SEE DETAIL 2-14

SURFACE WATER IMPACT

DENOTES IMPACTS IN SURFACE WATER (POND)

DENOTES IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 64 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
R-2828_sheets01\ics_workingdir\19110\336429_1010\R2828_hyd_prm_wet_psh_19_cont.dgn
RDPEWICS01$

8/17/99

REVISIONS

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES TEMPORARY FILL IN WETLAND

DENOTES MECHANIZED CLEARING

WDK

WDL

WDJ

SITE #31

SITE #32 SEE INSET A

SCP

PROP. WW FENCE

CL. II RIP RAP EST. 7 TON EST. 10 SY GF

CL. I RIP RAP EST. 17 TON EST. 20 SY GF

TOE PROTECTION SEE DETAIL 2-36

OUTLET CHANNEL STABILIZATION CLASS I AND II RIP RAP SEE DETAIL 2-32

CL. II RIP RAP EST. 30 TON EST. 15 SY GF

PROPOSED SBG

2GI

15" RCP-III

2-8'X 9'RCBC

30" CSP

735

740

745

BL-141

BL-142

BL-143

MATCH LINE SEE SHEET 19 -L- STA. 735+00.00

MATCH LINE SEE SHEET 21 -L- STA. 749+00.00

STANDARD RIP RAP APRON 14 L X 21 W w/0% SLOPE

CL. B RIP RAP EST. 10 TON EST. 28 SY GF

CL. II RIP RAP EST. 11 TON EST. 5 SY GF

JB W/MH

LATERAL 4' BASE DITCH W/CLASS I RIP RAP SEE DETAIL 2-32

CL. I RIP RAP EST. 22 TON EST. 26 SY GF

CHANNEL STABILIZATION CLASS I AND II RIP RAP SEE DETAIL 2-32

SCQ

SITE #31 SEE INSET B

SITE #32 SEE INSET B

INSET A

GRAPHIC SCALE 50 0 50

INSET B

GRAPHIC SCALE 50 0 50

SITE #30

TEMPORARY SURFACE WATER IMPACT

SITE #32

GRAPHIC SCALE 100 0 100

NAD 83/2011

SEE CULVERT PROFILE ON SHEET 20(1) FOR DETAILS

PERMIT DRAWING SHEET 65 OF 161

PROJECT REFERENCE NO.	SHEET NO.
R-2828	20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

LANE BLYTHE wsp

7/18/2019
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PROPWETSHT

PROJECT REFERENCE NO.	SHEET NO.
R-2828	20
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

LANE BLYTHE wsp

8/17/99 REVISIONS

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

MATCH LINE SEE SHEET 19 -L- STA. 735+00.00

MATCH LINE SEE SHEET 21 -L- STA. 749+00.00

WDK
WDL
WDJ
SCP
SCQ

SITE #31
SITE #32 SEE INSET A
SITE #30 SEE INSET B
SITE #32 SEE INSET B

PROP. WW FENCE
CL. II RIP RAP EST. 7 TON EST. 10 SY GF
TOE PROTECTION SEE DETAIL 2-36
CL. I RIP RAP EST. 17 TON EST. 20 SY GF
OUTLET CHANNEL STABILIZATION CLASS I AND II RIP RAP SEE DETAIL 2-32
CL. II RIP RAP EST. 30 TON EST. 15 SY GF
PROPOSED SBG
STANDARD RIP RAP APRON 14 L X 21 W w/0% SLOPE
CL. B RIP RAP EST. 10 TON EST. 28 SY GF
CL. II RIP RAP EST. 11 TON EST. 5 SY GF
JB W/MH
LATERAL 4' BASE DITCH W/CLASS I RIP RAP SEE DETAIL 2-32
CL. I RIP RAP EST. 22 TON EST. 26 SY GF
CHANNEL STABILIZATION CLASS I AND II RIP RAP SEE DETAIL 2-32
CL. II RIP RAP EST. 13 TON EST. 10 SY GF
2.8' X 9' RCBC
15" RCP
18" RCP
30" CSP
42"

INSET A
GRAPHIC SCALE 50 0 50
PROP. WW FENCE
SITE #32
CL. II RIP RAP EST. 7 TON EST. 10 SY GF
CL. I RIP RAP EST. 17 TON EST. 20 SY GF
TOE PROTECTION SEE DETAIL 2-36
OUTLET CHANNEL CLASS I AND II RIP SEE DETAIL 2-32
CL. II RIP RAP EST. 30 TON EST. 15 SY GF
TEMPORARY SURFACE WATER IMPACT
SCP

INSET B
GRAPHIC SCALE 50 0 50
SITE #30
TEMPORARY SURFACE WATER IMPACT
SCQ
SCP
RIP RAP 0 TON 8 SY GF
CL. II RIP RAP EST. 11 TON EST. 5 SY GF
JB W/M
CL. II RIP RAP EST. 13 TON EST. 10 SY GF
TOE PROTECTION SEE DETAIL 2-36
LATERAL 4' BASE D W/CLASS I RIP RAP SEE DETAIL 2-32
TEMPORARY SURFACE WATER IMPACT
CL. I RIP RAP EST. 22 TON EST. 26 SY GF
SITE #32
GRAPHIC SCALE 100 0 100

SEE CULVERT PROFILE ON SHEET 20(1) FOR DETAILS

PERMIT DRAWING SHEET 66 OF 161

NAD 83/2011

7/18/2019
DESIGNER
DRAWN BY
CHECKED BY
C:\pwworking\dot\ies.workingdir\19110\336429_1055\R2828_hyd_prm_wet_psh_20_cont.dgn

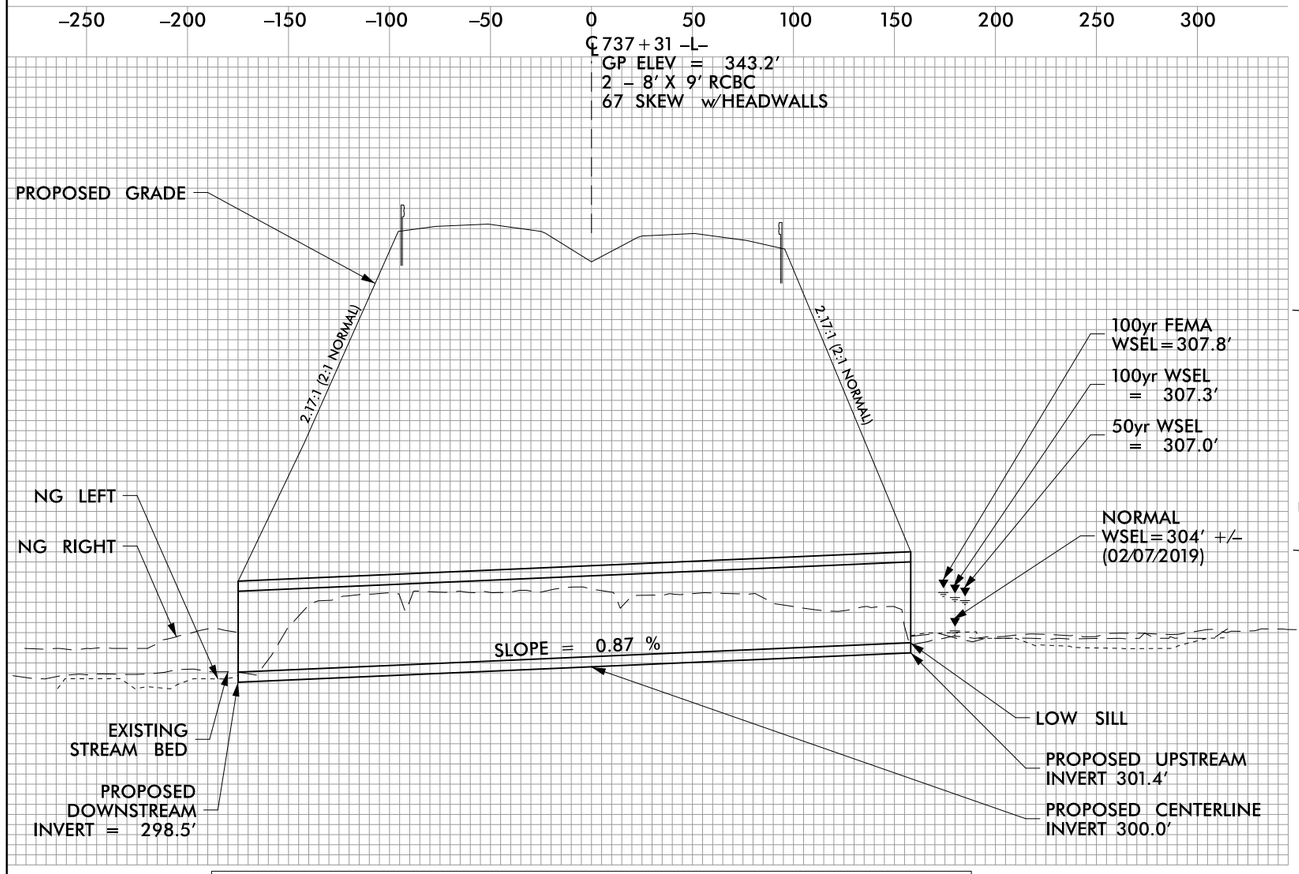
8/17/99

REVISIONS

SITE #32

CULVERT PROFILE AT -L- STA. 737+32

(Stream SCP, Guffy Branch)



ROADWAY CROSS SECTION /CULVERT PROFILE

(CULVERT PROFILE ALONG THE CULVERT)

EXCAVATION: RT: 8 CU. YD

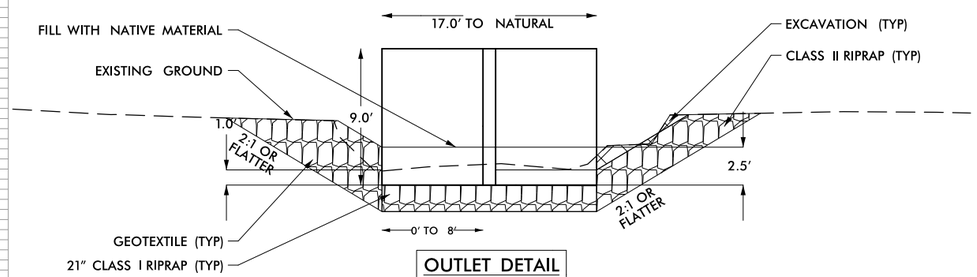
CLASS II RIPRAP: LT: 30 TONS
RT: 10 TONS

CLASS I RIPRAP: 17 TONS

GEOTEXTILE: LT: 15 SY
RT: 7 SY
CHANNEL: 20 SY

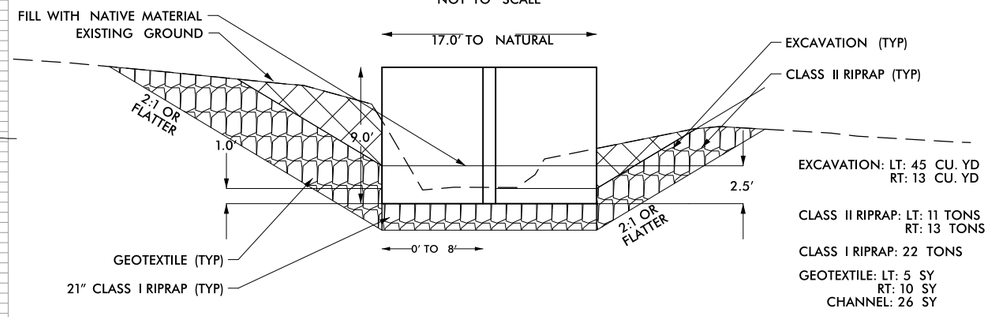
INLET DETAIL

NOT TO SCALE



OUTLET DETAIL

NOT TO SCALE



EXCAVATION: LT: 45 CU. YD
RT: 13 CU. YD

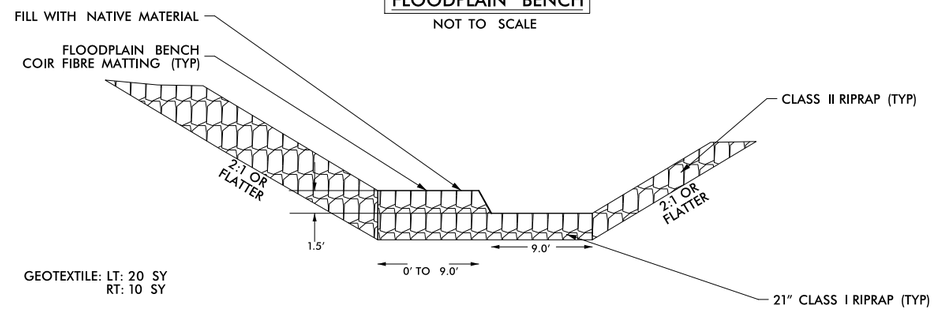
CLASS II RIPRAP: LT: 11 TONS
RT: 13 TONS

CLASS I RIPRAP: 22 TONS

GEOTEXTILE: LT: 5 SY
RT: 10 SY
CHANNEL: 26 SY

FLOODPLAIN BENCH

NOT TO SCALE



GEOTEXTILE: LT: 20 SY
RT: 10 SY

LANE BLYTHE wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	20(1)
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

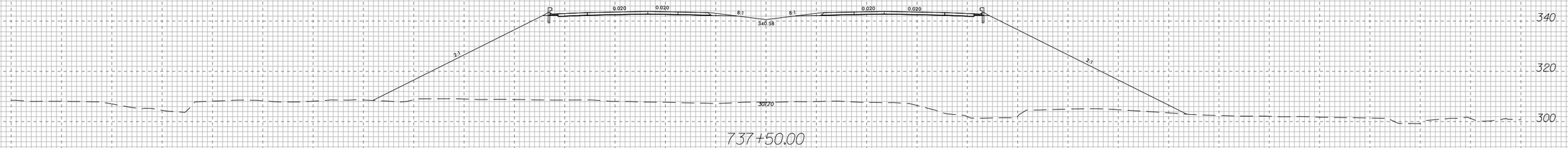
PERMIT DRAWING
SHEET 67 OF 161

7/18/2019
C:\pdprojects01\ncs_workingdir\19110\336429.1030\R2828_hyd_prm_wet_psh_20(1).dgn
mpowell
PWLCS01$

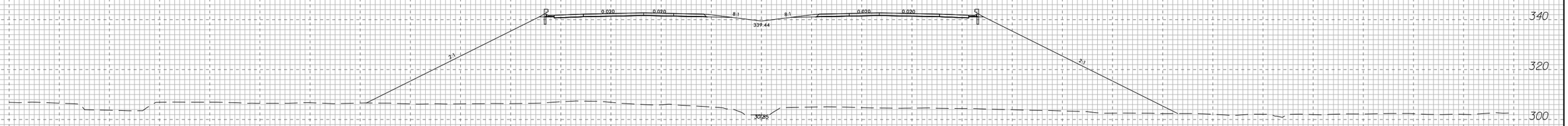
6/23/16

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	R-2828	20(2)

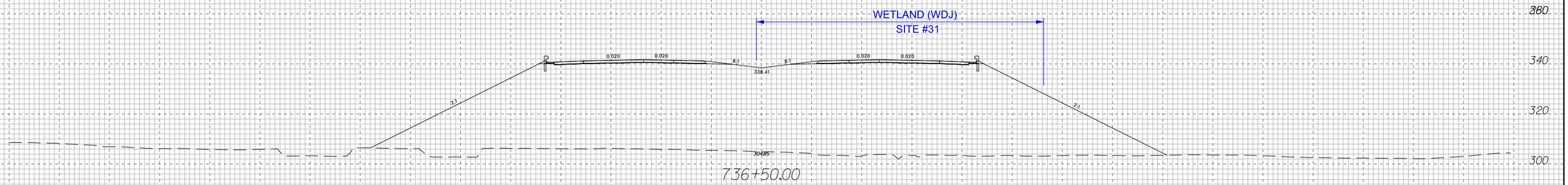
737+50.00



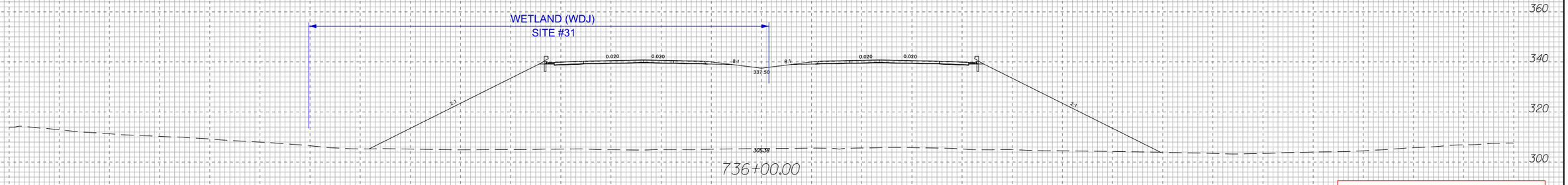
737+00.00



736+50.00



736+00.00



PERMIT DRAWING
SHEET 68 OF 161

7/18/2019
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FADPWICS01$

PROJECT REFERENCE NO.	SHEET NO.
R-2828	21
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

LANE BLYTHE wsp

NAD 83/2011

MATCH LINE SEE SHEET 20 -L- STA. 749+00.00

MATCH LINE SEE SHEET 22 -L- STA. 762+00.00

PZ

WE=344.6'

PROP. WW FENCE

TYPE B-77

STA. =-L- 759+81
Q = 2.40 cfs
V = 0.55 ft/s
S = 0.3%
SS = 3:1
N = 0.073
LINER = Class 1

WDM

SITE #33

CL I RIP RAP
EST. 16 TON
EST. 23 SY GF

PIPE OUTLET CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 2-33

TOE PROTECTION
SEE DETAIL 2-36

STA. =-L- 758+93
Q = 2.40 cfs
V = 0.49 ft/s
S = 0.3%
SS = 3:1
N = 0.073
LINER = Class 1

TOE PROTECTION
SEE DETAIL 2-36

PIPE INLET CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 2-33

CL I RIP RAP
EST. 8 TON
EST. 12 SY GF

SITE #33

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

PERMIT DRAWING
SHEET 69 OF 161

100 0 100
GRAPHIC SCALE

REVISIONS

8/17/99

7/18/2019
\\Projects01\ics_workingdir\19115\336429_1019\R2828_hyd_prm_wet_psh_21.dgn
RDPW\CSDS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	21
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

LANE BLYTHE wsp

NAD 83/2011

REVISIONS

8/17/99

MATCH LINE SEE SHEET 20 -L- STA. 749+00.00

MATCH LINE SEE SHEET 22 -L- STA. 762+00.00

PROP. WW FENCE

TYPE B-77

STA. =-L- 759+81
Q = 2.40 cfs
V = 0.55 fps
S = 0.3%
SS = 3:1
N = 0.073
LINER = Class 1

CL I RIP RAP
EST. 16 TON
EST. 23 SY GF

PIPE OUTLET CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 2-33

TOE PROTECTION
SEE DETAIL 2-36

STA. =-L- 758+93
Q = 2.40 cfs
V = 0.49 fps
S = 0.3%
SS = 3:1
N = 0.073
LINER = Class 1

TOE PROTECTION
SEE DETAIL 2-36

PIPE INLET CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 2-33

CL I RIP RAP
EST. 8 TON
EST. 12 SY GF

WDM

SITE #33

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

PERMIT DRAWING
SHEET 70 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
\\Projects01\ics_workingdir\19115\336429_1054\R2828_hyd_prm_wet_psh_21_cont.dgn
RDWY_ICS01$

6/23/16

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	R-2828	21(1)

300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

400 380 360 340

0.050 0.050 5.296:1 8:1 0.050 0.050 2:1 2:1 356.56 387.76

760+00.00

WETLAND (WDM)
SITE #33

0.050 0.050 5.135:1 8:1 0.050 0.050 2:1 2:1 354.28 383.26

759+50.00

WETLAND (WDM)
SITE #33

0.050 0.050 5:1 8:1 0.050 0.050 2:1 2:1 354.11 383.68

759+00.00

0.050 0.050 5.14:1 8:1 0.050 0.050 2:1 2:1 357.11 384.03

758+50.00

0.050 0.050 5.14:1 8:1 0.050 0.050 2:1 2:1 358.67 384.31

758+00.00

—L—

PERMIT DRAWING
SHEET 71 OF 161

7/18/2019
C:\projects\ics_workingdir\19115\336429_1038\R2828_hyd_prm_wet_psh_21(1).dgn
PRDPWICS01$

PROJECT REFERENCE NO.	SHEET NO.
R-2828	22
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

LANE BLYTHE WSP

NAD 83/2011

REVISIONS

8/17/99

MATCH LINE -L- STA. 762+00.00
SEE SHEET 21

MATCH LINE -L- STA. 775+00.00
SEE SHEET 23

PROP. WW FENCE

PAA

WDN

SCS

SITE #34

RUIN

CONC

AXLE

E1P

2GI

2GI-A

BL-146

BL-147

765

770

775

15"

18"

FS

PS

.05

8' SOIL

DENOTES MECHANIZED CLEARING

PERMIT DRAWING
SHEET 72 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
Design Data\01\cs_workingdir\19115\336429_1020\R2828_hyd_prm_wet_psh_22.dgn
RDP/KCS01$

PROJECT REFERENCE NO.	SHEET NO.
R-2828	22
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

LANE BLYTHE JOINT VENTURE

wsp

NAD 83/2011

REVISIONS

8/17/99

MATCH LINE -L- STA. 762+00.00
SEE SHEET 21

MATCH LINE -L- STA. 775+00.00
SEE SHEET 23

PROP. WW FENCE

PROP. WW FENCE

PAA

WDN

SCS

SITE #34

RUIN

CONC

DENOTES MECHANIZED CLEARING

PERMIT DRAWING SHEET 73 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
C:\pwworkingdir\jcs01\jcs_workingdir\19115\336429_1045\R2828_hyd_prm_wet_psh_22_cont.dgn
RDPW(JCS01)

PROJECT REFERENCE NO.	SHEET NO.
R-2828	23
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

REVISIONS 8/17/99

MATCH LINE SEE SHEET 22 -L- STA. 775+00.00

MATCH LINE SEE SHEET 24 -L- STA. 788+00.00

NAD 83/2011

SITE #38
SITE #37
SITE #35
SITE #36

WDP
SCV
WDO
SCT
SCS
WDN
SCU

PROP. WW FENCE

SEE SHEET 23A

SEE CULVERT PROFILE ON SHEET 23(1) FOR DETAILS

CL II RIP RAP EST. 30 TON EST. 22 SY GF

CL I RIP RAP EST. 15 TON EST. 18 SY GF

OUTLET CHANNEL STABILIZATION CLASS I AND II RIPRAP SEE DETAIL 2-32

CL II RIP RAP EST. 20 TON EST. 11 SY GF

CL B RIP RAP EST. 1 TON EST. 5 SY GF

PIPE INLET CHANNEL STABILIZATION CLASS I RIPRAP SEE DETAIL 2-23

TOE PROTECTION SEE DETAIL 2-36

LATERAL 4' BASE DITCH WITH CLASS I RIPRAP SEE DETAIL 2-40

CL II RIP RAP EST. 34 TON EST. 25 SY GF

CL I RIP RAP EST. 93 TON EST. 37 SY GF

CL I RIP RAP EST. 2 TON EST. 6 SY GF

LATERAL 4' BASE DITCH WITH CLASS B RIPRAP SEE DETAIL 2-16

PIPE OUTLET CHANNEL STABILIZATION CLASS I RIPRAP SEE DETAIL 2-33

EXISTING R/W PER 14503L PSD

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES EXCAVATION IN WETLAND

DENOTES TEMPORARY FILL IN WETLAND

PERMIT DRAWING SHEET 74 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
R:\projects01\ics_workingdir\19115\336429_1025\R2828_hyd_prm_wet_psh_23.dgn
RHP\ICS01$

LANE BLYTHE A JOINT VENTURE

wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	23
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

REVISIONS

8/17/99

MATCH LINE SEE SHEET 22 -L- STA. 775+00.00

MATCH LINE SEE SHEET 24 -L- STA. 788+00.00

NAD 83/2011

PROP. WW FENCE

SITE #35 SCT

SITE #36 WDO SCU

SITE #37 WDP SCV

SITE #38

SCS WDN

5532 WOODBRIEF DRIVE

20' DRAINAGE EASEMENT BK 2001 PG 2095

CL II RIP RAP EST. 30 TON EST. 22 SY GF

CL I RIP RAP EST. 15 TON EST. 18 SY GF

OUTLET CHANNEL STABILIZATION CLASS I AND II RIPRAP SEE DETAIL 2-32

CL II RIP RAP EST. 20 TON EST. 11 SY GF

PIPE INLET CHANNEL STABILIZATION CLASS I RIPRAP SEE DETAIL 2-33

CL B RIP RAP EST. 1 TON EST. 5 SY GF

TOE PROTECTION SEE DETAIL 2-36

EXISTING R/W PER 14503L PSD

LATERAL 4' BASE DITCH WITH CLASS 1 RIPRAP SEE DETAIL 2-40

36" RCP III

24" RCP III

15" RCP III

2GI-A FS JB W/MH 24'

2GI FS

JB w/MH

HW

CL II RIP RAP EST. 34 TON EST. 25 SY GF

CL I RIP RAP EST. 88 TON EST. 37 SY GF

CL I RIP RAP EST. 2 TON EST. 6 SY GF

LATERAL 4' BASE DITCH WITH CLASS B RIPRAP SEE DETAIL 2-16

PIPE OUTLET CHANNEL STABILIZATION CLASS I RIPRAP SEE DETAIL 2-33

SEE SHEET 23A

SEE CULVERT PROFILE ON SHEET 23(1) FOR DETAILS

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES EXCAVATION IN WETLAND

DENOTES TEMPORARY FILL IN WETLAND

PERMIT DRAWING SHEET 75 OF 161

100 0 100

GRAPHIC SCALE

7/18/2019
C:\pwworkingdir\jcs01\jcs_workingdir\19115\336429_1046\R2828_hyd_prm_wet_psh_23_cont.dgn
RRP/JCS01$

PROJECT REFERENCE NO.	SHEET NO.
R-2828	23A
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

LANE BLYTHE wsp

REVISIONS

8/17/99

SITE #35

TEMPORARY SURFACE WATER IMPACE

CL. I RIP RAP
EST. 15 TON
EST. 18 SY GF

OUTLET CHANNEL STABILIZATION
CLASS I AND II RIPRAP
SEE DETAIL 2-32

CL. II RIP RAP
EST. 20 TON
EST. 11 SY GF

TOE PROTECTION
SEE DETAIL 2-36

CL. B RIP RAP
EST. 1 TON
EST. 5 SY GF

PIPE INLET CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 2-33

TEMPORARY SURFACE WATER IMPACE

SITE #38

SITE #37

SCT

SCV

WDO

SCV

SCT

SITE #36

SITE #35

SCT

SITE #37

2GI

15" RCP-III

15" CSP

48" RCP-IV (BURIED)

JB w/MH

FS

785

BL-149

EXISTING R/W PER 14503L_PSD

BUFFALO CREEK

CL. II RIP RAP
EST. 50 TON
EST. 27 SY GF

CL. II RIP RAP
EST. 34 TON
EST. 25 SY GF

OUTLET CHANNEL STABILIZATION
CLASS I AND II RIPRAP
SEE DETAIL 2-32

CL. I RIP RAP
EST. 31 TON
EST. 37 SY GF

CL. I RIP RAP
EST. 2 TON
EST. 6 SY GF

WE=307.0'

PROP. WW FENCE

PIPE OUTLET CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 2-33

LATERAL 4' BASE DITCH
WITH CLASS B RIPRAP
SEE DETAIL 2-16

SEE CULVERT PROFILE ON SHEET 23(1) FOR DETAILS

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

T T DENOTES TEMPORARY FILL IN WETLAND

DENOTES MECHANIZED CLEARING

PERMIT DRAWING
SHEET 76 OF 161

50 0 50
GRAPHIC SCALE

NAD 83/2011

7/18/2019
C:\pwworkingdir\pwidot\pwidot1\vcs_workingdir\19115\336429.1028\R2828_hyd_prm_wet_psh_23A.dgn
pwidot1$

PROJECT REFERENCE NO.	SHEET NO.
R-2828	23A
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

LANE BLYTHE wsp

REVISIONS

8/17/99

SITE #35

TEMPORARY SURFACE WATER IMPACE

CL. I RIP RAP
EST. 15 TON
EST. 18 SY GF

OUTLET CHANNEL STABILIZATION
CLASS I AND II RIPRAP
SEE DETAIL 2-32

CL. II RIP RAP
EST. 20 TON
EST. 11 SY GF

TOE PROTECTION
SEE DETAIL 2-36

CL. B RIP RAP
EST. 1 TON
EST. 5 SY GF

PIPE INLET CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 2-33

SCT

SCV

WDO

SITE #38

SITE #37

SITE #36

SITE #35

2GI

15" RCP-III

15" CSP

48" RCP-IV (BURIED)

JB w/MH

CL. II RIP RAP
EST. 50 TON
EST. 27 SY GF

CL. II RIP RAP
EST. 34 TON
EST. 25 SY GF

CL. I RIP RAP
EST. 31 TON
EST. 37 SY GF

CL. I RIP RAP
EST. 2 TON
EST. 6 SY GF

PROP. WW FENCE

LATERAL 4' BASE DITCH
WITH CLASS B RIPRAP
SEE DETAIL 2-16

PIPE OUTLET CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 2-33

SEE CULVERT PROFILE ON SHEET 23(1) FOR DETAILS

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

T T DENOTES TEMPORARY FILL IN WETLAND

DENOTES MECHANIZED CLEARING

PERMIT DRAWING
SHEET 77 OF 161

50 0 50
GRAPHIC SCALE

EXISTING R/W PER 14503L PSD

NAD 83/2011

7/18/2019
c:\projects\01\ncs_workingdir\19115\336429.1056\R2828_hyd_prm_wet_psh_23A_cont.dgn
PRIMWCS01$

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	23(1)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

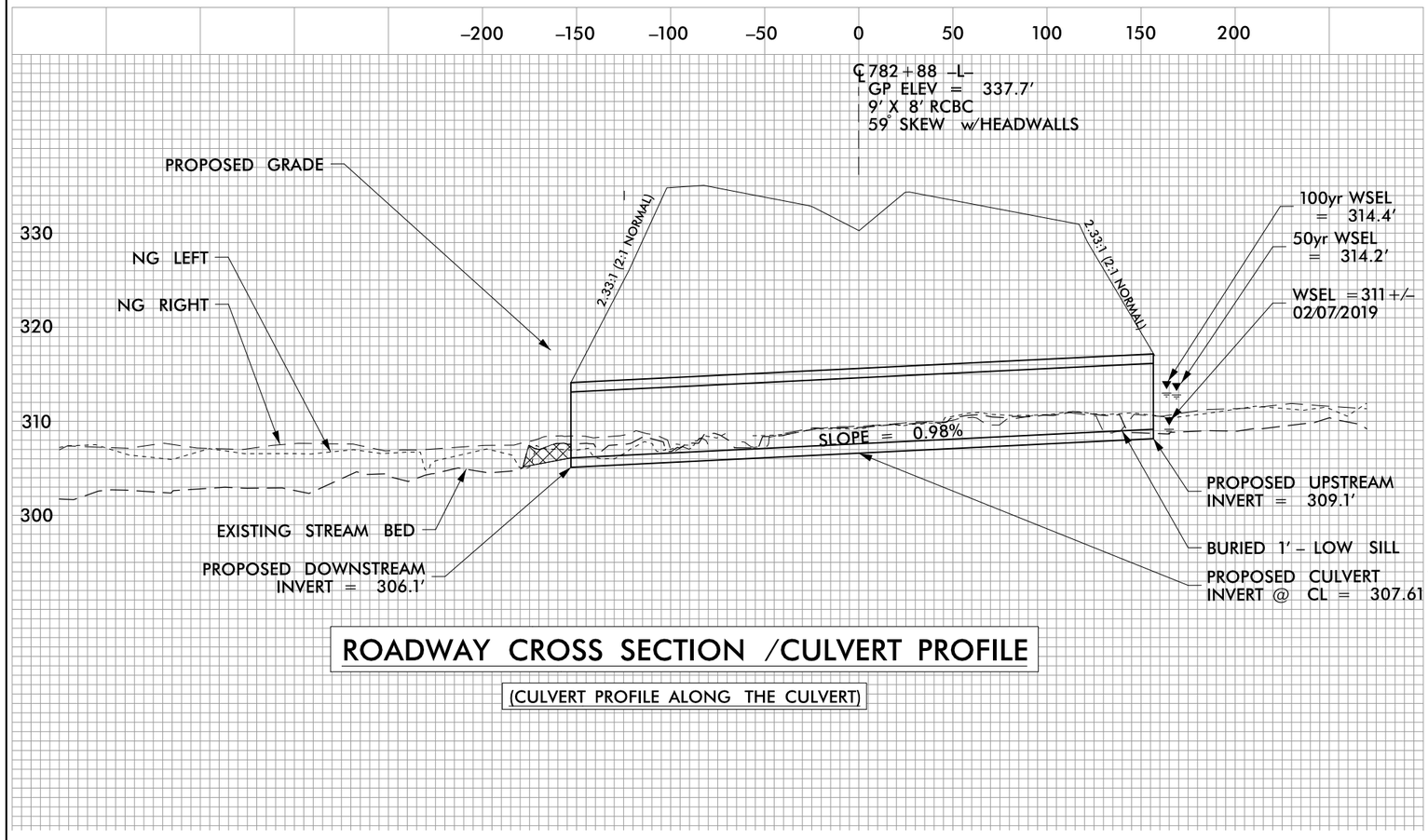
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SITE #35

CULVERT PROFILE AT -L- STA. 782+88

(Stream SCT)



ROADWAY CROSS SECTION /CULVERT PROFILE

(CULVERT PROFILE ALONG THE CULVERT)

CLASS II RIPRAP: LT: 38 TONS,
RT: 30 TONS,

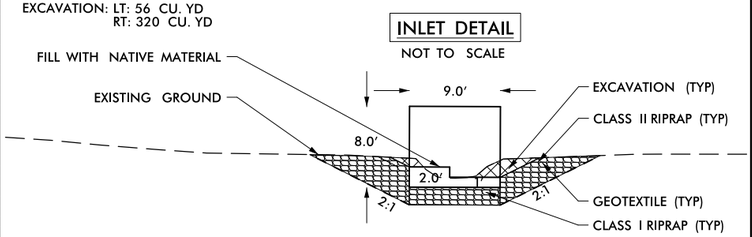
CLASS I RIPRAP: 15 TONS,

GEOTEXTILE: LT: 20 SY
RT: 22 SY
CHANNEL: 20 SY

EXCAVATION: LT: 56 CU. YD
RT: 320 CU. YD

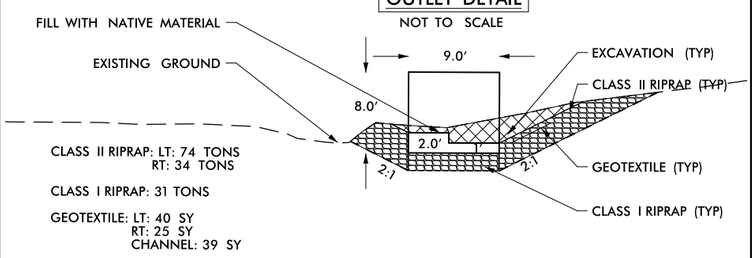
INLET DETAIL

NOT TO SCALE



OUTLET DETAIL

NOT TO SCALE



CLASS II RIPRAP: LT: 74 TONS
RT: 34 TONS

CLASS I RIPRAP: 31 TONS

GEOTEXTILE: LT: 40 SY
RT: 25 SY
CHANNEL: 39 SY

PERMIT DRAWING
SHEET 78 OF 161

7/18/2019
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PHP\TCSOLS

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	R-2828	23(2)

WETLAND (WDO)
SITE #36

783+00.00

-Y21RPC-
STA. 11+14.31

0.050 0.050 5.296:1 8:1 0.050 0.050 0.013

334.25

4:1 2:1

3W.53

782+50.00

-Y21RPC-
STA. 10+63.57

0.050 0.050 5.296:1 8:1 0.050 0.050 0.030

334.45

2:1 2:1

3W.05

782+00.00

-Y21RPC-
STA. 10+12.83

0.050 0.050 5.296:1 8:1 0.050 0.050 0.046

334.65

2:1 2:1

3W.71

781+50.00

0.050 0.050 5.296:1 8:1 0.050 0.050 3.25:1

334.84

2:1 3:1 3:1

313.32

324.32

781+00.00

0.050 0.050 5.296:1 8:1 0.050 0.050 4.25:1

335.04

2:1 2:1

316.00

329.03

PERMIT DRAWING
SHEET 79 OF 161

6/23/16

7/18/2019
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PRDPWTCS01$

6/23/16

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	R-2828	23(3)

300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

360 340 320 300

~Y218PB~ STA. 14 + 66.85
0.079 0.08 0.038 0.038 5:1 8:1 0.038 0.038
A:1 332.43 ~Y218PC~ STA. 16 + 23.33 0.041 0.041 2:1
338.61
788+00.00

~Y218PB~ STA. 14 + 37.09
0.080 0.08 0.045 0.045 5.484:1 8:1 0.045 0.045
A:1 332.54 ~Y218PC~ STA. 15 + 72.24 0.024 0.024 2:1
337.79
787+50.00

~Y218PB~ STA. 13 + 87.58
0.080 0.08 0.050 0.050 5.296:1 8:1 0.050 0.050
3.68:1 332.68 ~Y218PC~ STA. 15 + 21.14 0.007 0.008 2:1
342.80 3:1 3:1 312.72
787+00.00

WETLAND (WDP)
SITE #36

~Y218PB~ STA. 13 + 38.17
0.080 0.08 0.050 0.050 5.297:1 8:1 0.050 0.050
2.5:1 332.87 ~Y218PC~ STA. 14 + 70.10 0.009 0.009 2:1
345.42 3:1 3:1 311.45
786+50.00

~Y218PB~ STA. 12 + 88.83
0.080 0.08 0.050 0.050 5.296:1 8:1 0.050 0.050
2:1 333.07 ~Y218PC~ STA. 14 + 19.14 0.010 0.010 2:1
345.73
786+00.00

PERMIT DRAWING
SHEET 80 OF 161

7/18/2019
\\PSDprojects01\ics_workingdir\19115\336429_1040\R2828_hyd_prm_wet_psh_23(3).dgn
PRDPWTC501$

REVISIONS

INSET A

GRAPHIC SCALE 25 0 25

SURFACE WATER IMPACT

SITE #40B TEMPORARY SURFACE WATER IMPACT

JB w/MH

18" CSP

18"

CB

18" CSP

JB w/MH

PIPE OUTLET CHAN STABILIZATION CLASS I SEE DETAIL 2-33

MATCH LINE SEE SHEET 45 -Y21- STA. 49+50.00

PROP. WW FENCE

EXISTING R/W PER O'BRIEN/PLPSD

SITE #40B SEE INSET A

SEE SHEET 24A

SITE #41

SITE #40

SITE #39

SITE #38

SCZ

SCY

SCX

SCV

WDQ

WDP

WDS

WDR

SDC

SITE #40A ISOLATED WETLAND

MATCH LINE SEE SHEET 23 -L- STA. 788+00.00

MATCH LINE SEE SHEET 25 -L- STA. 816+00.00

MATCH LINE SEE SHEET 44 -Y21- STA. 34+00.00

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD 83/2011

LANE BLYTHE

PROJECT REFERENCE NO. R-2828 | SHEET NO. 24

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

PERMIT DRAWING SHEET 81 OF 161

GRAPHIC SCALE 100 0 100

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:

REVISIONS

INSET A

GRAPHIC SCALE 25 0 25

SURFACE WATER IMPACT

SITE #40B TEMPORARY SURFACE WATER IMPACT

JB w/MH

18" CSP

PIPE OUTLET CHAN STABILIZATION CLASS I SEE DETAIL 2-33

CB

JB w/MH

MATCH LINE SEE SHEET 45 -Y21- STA. 49+50.00

SITE #40B SEE INSET A

SEE SHEET 24A

SITE #38

SITE #39

SITE #40

SITE #41

SITE #40A ISOLATED WETLAND

WDQ

WDP

WDR

WDS

SCV

SCX

SCY

SCZ

SDC

PROP WW FENCE

MATCH LINE SEE SHEET 23 -L- STA. 788+00.00

MATCH LINE SEE SHEET 44 -Y21- STA. 34+00.00

MATCH LINE SEE SHEET 25 -L- STA. 816+00.00

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD 83/2011

LANE BLYTHE

PROJECT REFERENCE NO. R-2828 | SHEET NO. 24

RW SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 82 OF 161

GRAPHIC SCALE 100 0 100

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

LANE BLYTHE wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	24A
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

8/17/99

REVISIONS

SITE #41

SDB

4' BASE CHANNEL CHANGE WITH CLASS II RIPRAP SEE DETAIL 2-21

4' BASE CHANNEL CHANGE W/CLASS B RIPRAP SEE DETAIL 2-21

4' BASE CHANNEL CHANGE W/CLASS B RIPRAP SEE DETAIL 2-21

TEMPORARY SURFACE WATER IMPACT

SITE #39

SITE #40

FILL STREAM. GRADE AREA TO DRAIN TO CHANNEL CHANGE

WDS

SECTION SEE DETAIL 2-36

FILL STREAM. GRADE AREA TO DRAIN TO CHANNEL CHANGE

TEMPORARY SURFACE WATER IMPACT

FILL STREAM. GRADE ARE DRAIN TO CHANNEL C

TEMPORARY SURFACE WATER IMPACT

2GI

BL-155

SDC

2GI

15" RCP-III

.02

.02

15" RCP-III

2GI-A

FS

815

30"

2GI-A

FS

24" RCP-III

.02

.02

18" RCP-III

2GI-A

FS

FS

15" CSP

2GI

PERMIT DRAWING
SHEET 83 OF 161

50 0 50
GRAPHIC SCALE

7/18/2019
\\pcdocs01\ics_workingdir\19115\336429_1029\R2828_hyd_prm_wet_psh_24A.dgn
PAUL.WILSON$

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

LANE BLYTHE wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	24A
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

8/17/99

REVISIONS

SITE #41

SDB

4' BASE CHANNEL CHANGE WITH CLASS II RIPRAP SEE DETAIL 2-21

TEMPORARY SURFACE WATER IMPACT

4' BASE CHANNEL CHANGE W/CLASS B RIPRAP SEE DETAIL 2-21

4' BASE CHANNEL CHANGE W/CLASS B RIPRAP SEE DETAIL 2-21

SITE #39

SITE #40

FILL STREAM. GRADE AREA TO DRAIN TO CHANNEL CHANGE

WDS

SECTION SEE DETAIL 2-36

FILL STREAM. GRADE AREA TO DRAIN TO CHANNEL CHANGE

TEMPORARY SURFACE WATER IMPACT

2GI

15" RCP-III

SDC

2GI

2GI-A

FS

30"

815

.02

.02

15" RCP-III

2GI-A

FS

24" RCP-III

.02

.02

18" RCP-III

2GI-A

FS

15" CSP

2GI

FS

PERMIT DRAWING
SHEET 84 OF 161

50 0 50
GRAPHIC SCALE

7/18/2019
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PROFILES01$

6/23/16

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	R-2828	24(1)

813+50.00

813+00.00

812+50.00

WETLAND (WDS)
SITE #39

812+00.00

811+50.00

PERMIT DRAWING
SHEET 85 OF 161

7/18/2019
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PRDPWICS01$

PROJECT REFERENCE NO.	SHEET NO.
R-2828	25
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

LANE | BLYTHE | WSP

NAD 83/2011

REVISIONS

8/17/99

SITE #42
TEMPORARY SURFACE WATER IMPACT

INSET A

SCY

SDA

SDB

SITE #41
SEE SHEET 24A

SITE #42
SEE INSET A

4' BASE CHANNEL CHANGE W/CLASS B RIPRAP SEE DETAIL 2-21

FILL STREAM, GRADE AREA TO DRAIN TO CHANNEL CHANGE

FILL STREAM

6' BASE CHANNEL CHANGE W/CLASS II RIPRAP SEE DETAIL 2-15

50 0 50
GRAPHIC SCALE

MATCH LINE SEE SHEET 24 -L- STA. 816+00.00

MATCH LINE SEE SHEET 26 -L- STA. 829+00.00

BL-156

BL-158

820

825

15" RCP-III

18" RCP-III

24" RCP-III

54" RCP-III

36"

48"

15" CSP

2GI

2GI-A

FS

OTCB

PDE

100.00'

90.00'

50.00'

SPECIAL LATERAL V-DITCH SEE DETAI 2-6

PROP. WW FENCE

WDT

SCY

PAC

SDD(1)

WNO

SITE #42

SITE #43

TRESTLE BRIDGE BENTS, TYP.

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 86 OF 161

100 0 100
GRAPHIC SCALE

SEE SHEETS 72 & 73 FOR -L- PROFILE

7/18/2019
10:56:26 AM
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PSHWICS01

PROJECT REFERENCE NO.	SHEET NO.
R-2828	25
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

SITE #42
TEMPORARY SURFACE WATER IMPACT

INSET A

NAD 83/2011

SITE #41
SEE SHEET 24A

SITE #42
SEE INSET A

4' BASE CHANNEL CHANGE W/CLASS B RIPRAP SEE DETAIL 2-21

FILL STREAM, GRADE AREA TO DRAIN TO CHANNEL CHANGE

FILL STREAM

6' BASE CHANNEL CHANGE W/CLASS II RIPRAP SEE DETAIL 2-15

MATCH LINE SEE SHEET 24 -L- STA. 816+00.00

MATCH LINE SEE SHEET 26 -L- STA. 829+00.00

PROP. WW FENCE

WDT

PAC

SDD(1)

WNO

SCY

SDA

SDB

SITE #42

TRESTLE BRIDGE BENTS, TYP.

SPECIAL LATERAL V-DITCH SEE DETAI 2-6

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

GRAPHIC SCALE 50 0 50

GRAPHIC SCALE 100 0 100

PERMIT DRAWING SHEET 87 OF 161

SEE SHEETS 72 & 73 FOR -L- PROFILE

REVISIONS 8/17/99

7/18/2019
DRGarris01
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PWDGS01

LANE BLYTHE JOINT VENTURE

wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	26
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS 8/17/99

NAD 83/2011

MATCH LINE SEE SHEET 25 -L- STA. 829+00.00

MATCH LINE SEE SHEET 27 -L- STA. 843+00.00

SITE #44

SITE #45

WDV

SCY

WDU

SCY

SITE #43

SITE #43A

6' BASE CHANNEL CHANGE SPECIAL DESIGN SEE DETAIL 2-26

TEMPORARY SURFACE WATER IMPACT

TEMPORARY WETLAND FILL, TYP

WETLAND FILL IMPACT, TYP

TOE PROTECTION SEE DETAIL 2-36

RIPRAP AT EMANKMENT CLASS II RIPRAP SEE DETAIL 2-30

TEMPORARY SURFACE WATER IMPACT

SURFACE WATER IMPACT

TEMPORARY SURFACE WATER

TRESTLE BRIDGE

TEMPORARY WETLAND FILL

CL. B RIP RAP EST. 2 TON EST. 7 SY GF

15" CSP W/ 2 ELBOWS

JB w/MH

PROP. WW FENCE

SPECIAL LATERAL V-DITCH SEE DETAIL 2-6

20' PUBLIC DRAINAGE EASEMENT SCALED FROM BM 2007 PG 2823

EXISTING R/W PER I82031_PSD

TS denotes TEMPORARY IMPACTS IN SURFACE WATER

S denotes IMPACTS IN SURFACE WATER

HC denotes HAND CLEARING

F denotes FILL IN WETLAND

denotes MECHANIZED CLEARING

T denotes TEMPORARY FILL IN WETLAND

P denotes IMPACTS IN SURFACE WATER (POND)

PERMIT DRAWING SHEET 88 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
...\Projects01\ics_workingdir\19121\336429_1022\R2828_hyd_prm_wet_psh_26.dgn
PROWICS01$

LANE BLYTHE JOINT VENTURE

wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	26
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

REVISIONS 8/17/99

NAD 83/2011

MATCH LINE SEE SHEET 25 -L- STA. 829+00.00

MATCH LINE SEE SHEET 27 -L- STA. 843+00.00

SITE #44

SITE #45

WDV

SCY

WDU

SITE #43A

TRESTLE BRIDGE

6" BASE CHANNEL CHANGE SPECIAL DESIGN SEE DETAIL 2-26

TEMPORARY SURFACE WATER IMPACT

TEMPORARY WETLAND FILL, TYP

WETLAND FILL IMPACT, TYP

TOE PROTECTION SEE DETAIL 2-36

RIPRAP AT EMANKMENT CLASS II RIPRAP SEE DETAIL 2-30

TEMPORARY SURFACE WATER

TEMPORARY SURFACE WATER IMPACT

SURFACE WATER IMPACT

TEMPORARY WETLAND FILL

PROP. WW FENCE

SPECIAL LATERAL V-DITCH SEE DETAIL 2-6

CL B RIP RAP EST. 2 TON EST. 7 SY GF

JB w/MH

15" CSP W/ 2 ELBOWS

18" RCP-III

30" RCP-III

15" RCP-III

20' PUBLIC DRAINAGE EASEMENT SCALED FROM BM 2007 PG 2823

ESTIMATED R/W PER I8205I_PSD

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

DENOTES HAND CLEARING

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES TEMPORARY FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER (POND)

PERMIT DRAWING SHEET 89 OF 161

100 0 100
GRAPHIC SCALE

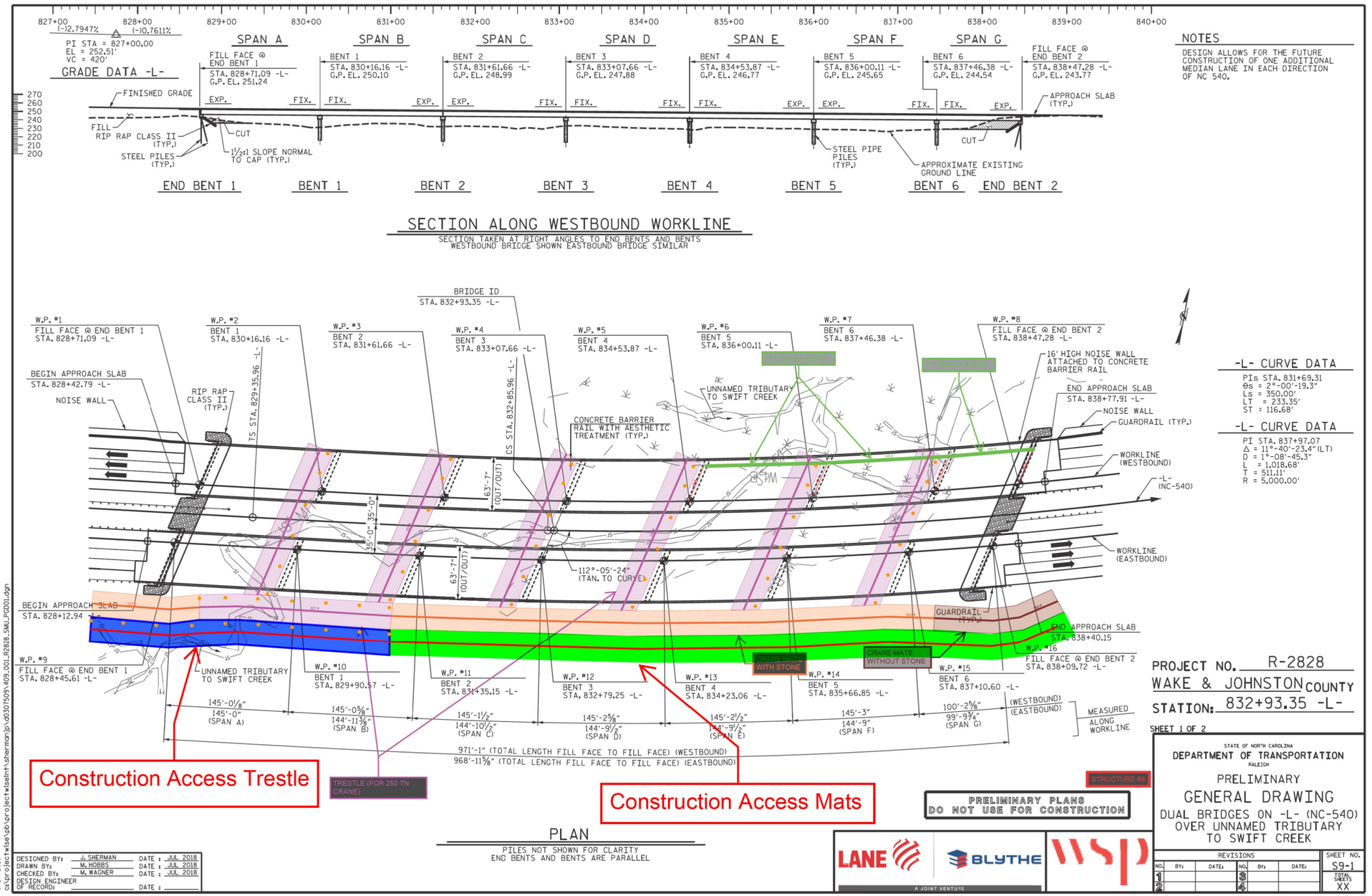
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\\prodgcs01\ics_workingdir\1912\336429.1049\R2828_hyd_prm_wet_psh_26_cont.dgn
PROFILE01$

Unnamed Tributary (Bridge #9)

PROJECT REFERENCE NO.	SHEET NO.
R-2828	26A
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



NOTES

DESIGN ALLOWS FOR THE FUTURE CONSTRUCTION OF ONE ADDITIONAL MEDIAN LANE IN EACH DIRECTION OF NC 540.

SECTION ALONG WESTBOUND WORKLINE

SECTION TAKEN AT RIGHT ANGLES TO END BENTS AND BENTS
WESTBOUND BRIDGE SHOWN EASTBOUND BRIDGE SIMILAR

PLAN

PILES NOT SHOWN FOR CLARITY
END BENTS AND BENTS ARE PARALLEL

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

STRUCTURE #1

-L- CURVE DATA

PIs STA. 831+69.31
θs = 2°-00'-19.3"
Ls = 350.00'
LT = 233.35'
ST = 116.68'

-L- CURVE DATA

PI STA. 837+97.07
Δ = 11°-40'-23.4"(LT)
D = 1°-08'-45.3"
L = 1,018.68'
T = 511.11'
R = 5,000.00'

PROJECT NO. R-2828
WAKE & JOHNSTON COUNTY
STATION: 832+93.35 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRELIMINARY
GENERAL DRAWING
DUAL BRIDGES ON -L- (NC-540) OVER UNNAMED TRIBUTARY TO SWIFT CREEK

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S9-1
1			3			TOTAL SHEETS
2			4			XX

DESIGNED BY:	J. SHERMAN	DATE: JUL 2018
DRAWN BY:	M. HOBBS	DATE: JUL 2018
CHECKED BY:	M. WAGNER	DATE: JUL 2018
DESIGN ENGINEER OF RECORD:		DATE:

LANE BLYTHE A JOINT VENTURE

• = Trestle Pile Bent containing 3 x 24" dia pipe piles
Distance Between Pile Bents = Approx 40' - 0"

PERMIT DRAWING
SHEET 90 OF 161

REVISIONS

8/17/99

9/17/2018
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7/18/2019
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PROFILE01$

8/17/99

REVISIONS

LANE BLYTHE — A JOINT VENTURE

wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	26(1)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

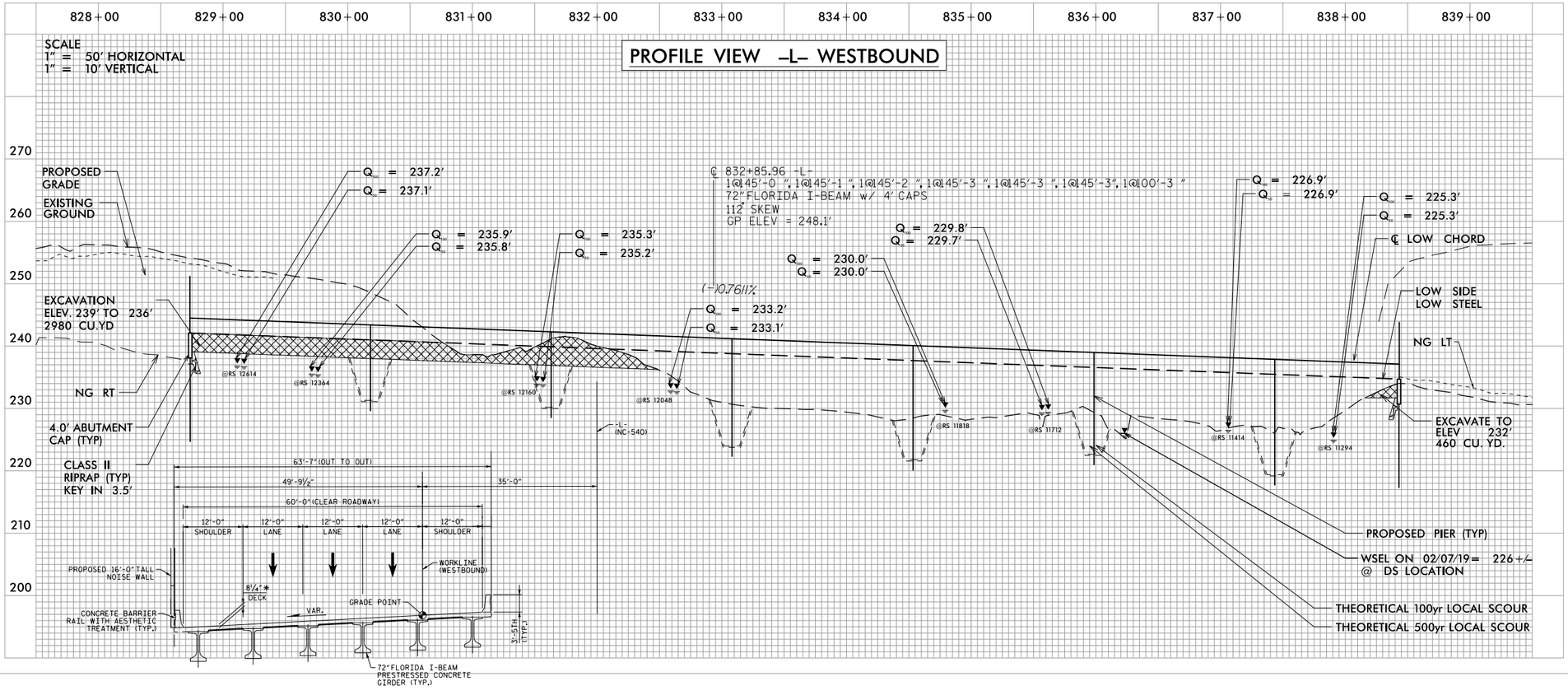
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SITE #44

BRIDGE PROFILE AT -L- STA. 835+00 (WBL)

(UT to Swift Creek)



PERMIT DRAWING
SHEET 91 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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PDOT_TCS01$

8/17/99

REVISIONS

LANE BLYTHE — A JOINT VENTURE

wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	26(2)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

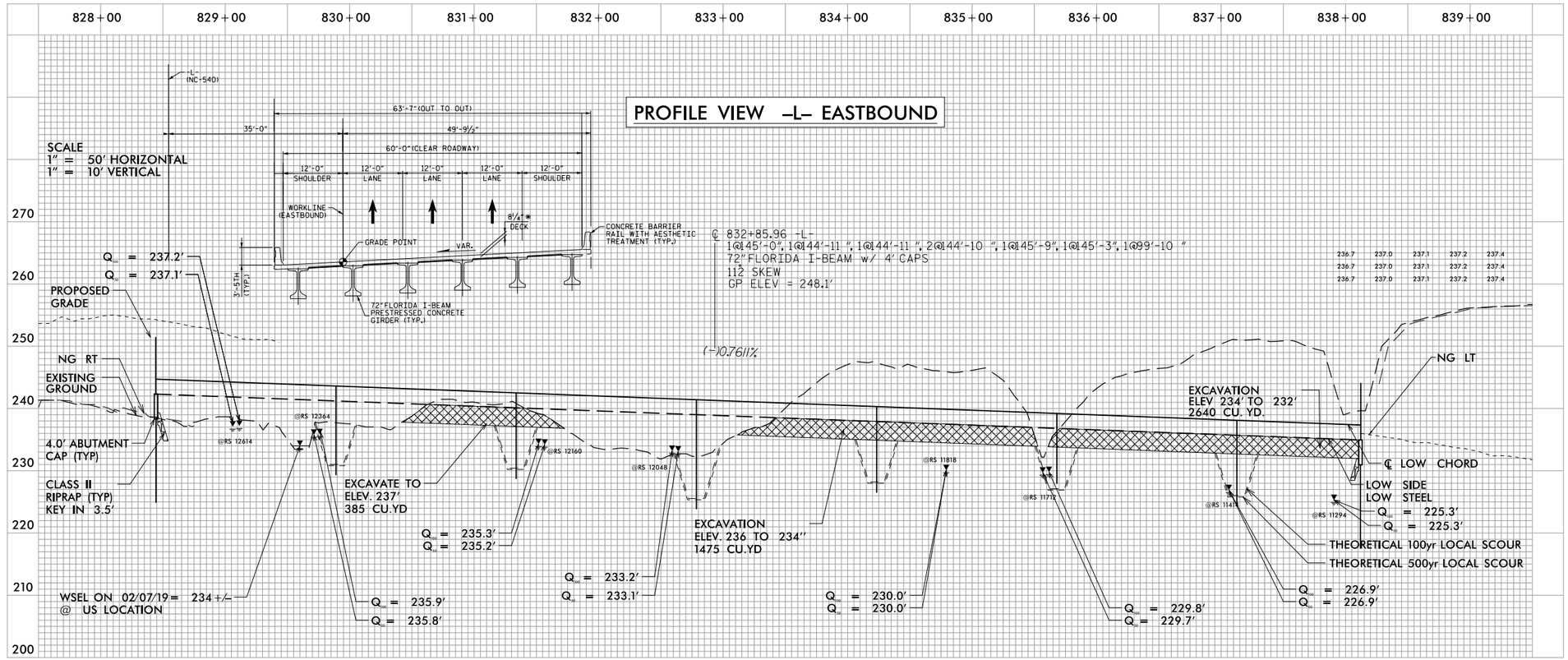
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SITE #44

BRIDGE PROFILE AT -L- STA. 835+00 (EBL)

(UT to Swift Creek)



PERMIT DRAWING
SHEET 92 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
DESIGNED
PREPARED
CHECKED

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6/23/16

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	R-2828	26(3)

WETLAND (WDV)
SITE #45

842+50.00

842+00.00

841+50.00

841+00.00

840+50.00

PERMIT DRAWING
SHEET 93 OF 161

7/18/2019
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FADPWICS01$

LANE BLYTHE JOINT VENTURE

wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	27
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

NAD 83/2011

REVISIONS

8/17/99

MATCH LINE SEE SHEET 26 -L- STA. 843+00.00

MATCH LINE SEE SHEET 28 -L- STA. 857+00.00

WDV
SCY
SDF
WDV
SITE #45
SITE #47
WDV

STA. -L- 848+16.16
Q = 3.8 cfs
V = 0.55 ft/s
S = 0.3%
SS = 3 ft
N = 0.061
LINER = Class I

STA. -L- 853+99
Q = 38.0 cfs
V = 1.34 ft/s
S = 0.3%
SS = 3 ft
N = 0.061
LINER = Class I

PROP. WW FENCE
PROP. WW FENCE
PROP. WW FENCE
PROP. WW FENCE

PDE
CLASS I RIP RAP APRON
OUTLET STRUCTURE WITH SLUICE GATE
HAZARDOUS SPILL BASIN WITH MEDIA FILTER SEE DETAIL 2-XX
CLASS B RIP RAP
SPECIAL CUT DITCH SEE DETAIL 2-10
JB w/MH
TOE PROTECTION SEE DETAIL 2-36
CL. I RIP RAP EST. 10 TONS EST. 23 SY GF
CL B RIPRAP
CL. B RIP RAP EST. 2 TON EST. 7 SY GF
LATERAL 'V' DITCH SEE DETAIL 2-19
PIPE INLET CHANNEL STABILIZATION CLASS I RIPRAP SEE DETAIL 2-33
SPECIAL LATERAL V-DITCH SEE DETAIL 2-6
REMOVE
SPECIAL CUT V-DITCH SEE DETAIL 2-6
BERM DITCH SEE DETAIL 2-41
DRAIN POND
LATERAL 2' BASE DITCH W/CLASS I RIPRAP SEE DETAIL 2-17
LATERAL 2' BASE DITCH W/CLASS II RIP RAP SEE DETAIL 2-7
GREU 350 TL-3

15" RCP-III
30" RCP-III
24" RCP-III
15" CSP W/ 2 ELBOWS
2GI
2GI-A
FS
CAT-1
845
850
855
BL-162
BL-163
BL-164

48" WD RAIL
48" WD & CHAIN
10' SOIL
15' GF
MTL CAN
SOIL
EIP
WLB

DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING

PERMIT DRAWING
SHEET 94 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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prmwetcsds

LANE BLYTHE wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	27
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

NAD 83/2011

REVISIONS

8/17/99

MATCH LINE SEE SHEET 26 -L- STA. 843+00.00

MATCH LINE SEE SHEET 28 -L- STA. 857+00.00

WDV
SDF
SITE #45
SITE #47
PROP. WW FENCE
EXISTING R/W
EIP
WLB
BL-162
BL-163
BL-164
CAT-1
GREU 350 TL-3
PDE
CL I RIP RAP
EST. 10 TONS
EST. 23 SY GF
CL B RIPRAP
CL B RIP RAP
EST. 2 TON
EST. 7 SY GF
JB w/MH
15" CSP W/ 2 ELBOWS
HW
LATERAL 'V' DITCH
SEE DETAIL 2-19
PIPE INLET CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 2-33
SPECIAL LATERAL V-DITCH
SEE DETAIL 2-6
REMOVE
SPECIAL CUT DITCH
SEE DETAIL 2-10
HAZARDOUS SPILL BASIN
WITH MEDIA FILTER
SEE DETAIL 2-XX
CLASS I RIP RAP APRON
OUTLET STRUCTURE
WITH SLUICE GATE
CLASS B RIP RAP
JB w/MH
FS
2GI
2GI-A
15" RCP-III
24" RCP-III
30" RCP-III
TOE PROTECTION
SEE DETAIL 2-36
BERM I DITCH
SEE DETAIL 2-41
DRAIN POND
LATERAL 2' BASE DITCH
W/CLASS II RIP RAP
SEE DETAIL 2-7
LATERAL 2' BASE DITCH
W/CLASS I RIPRAP
SEE DETAIL 2-17
SPECIAL CUT V-DITCH
SEE DETAIL 2-6
48" WD RAIL
48" WD & CHAIN
15' GR
10' SOIL
MTL CAN
SOIL

STA. -L- 843+16.16
Q = 3.8 cfs
V = 0.55 ft/s
S = 0.3%
SS = 3 ft
N = 0.061
LINER = Class I

STA. -L- 853+99
Q = 38.0 cfs
V = 1.34 ft/s
S = 0.3%
SS = 3 ft
N = 0.061
LINER = Class I

DENOTES IMPACTS IN SURFACE WATER (POND)
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING

PERMIT DRAWING SHEET 95 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
dgrogers01
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PROPWCS01$

LANE BLYTHE JOINT VENTURE

WSP

PROJECT REFERENCE NO.	SHEET NO.
R-2828	28
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

8/17/99

REVISIONS

NAD 83/2011

WDW

WDV

SDH

SITE #47

PROP. WW FENCE

TOE PROTECTION SEE DETAIL 2-36

SITE #48

TEMPORARY WETLAND FILL, TYP

WETLAND FILL IMPACT, TYP

SDG

WDX

PDE

CL B RIP RAP 5 TONS 14 SYFF

24" CSP w/ELBOWS

4B WMH

2GI

CL B RIP RAP EST. 7 TON EST. 22 SY GF

36"

ENERGY DISSIPATOR BASIN

MATCH LINE SEE SHEET 27 -L- STA. 857+00.00

MATCH LINE SEE SHEET 29 -L- STA. 870+00.00

WDV

WDY

WETLAND FILL IMPACT, TYP

TEMPORARY WETLAND FILL, TYP

SWIFT CREEK

TRESTLE BRIDGE

SITE #49

SITE #47

WDV

SITE #48

UNDERHILL MITIGATION AREA

WDV

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES HAND CLEARING

DENOTES TEMPORARY FILL IN WETLAND

PERMIT DRAWING SHEET 96 OF 161

100 0 100

GRAPHIC SCALE

7/18/2019
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PRIMICS01$

LANE BLYTHE JOINT VENTURE

wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	28
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

8/17/99

REVISIONS

MATCH LINE SEE SHEET 27 -L- STA. 857+00.00

MATCH LINE SEE SHEET 29 -L- STA. 870+00.00

NAD 83/2011

WDW

WDV

SITE #47

SITE #48

SITE #49

WDY

SDG

PROP. WW FENCE

TOE PROTECTION SEE DETAIL 2-36

TEMPORARY WETLAND FILL, TYP

WETLAND FILL IMPACT, TYP

SWIFT CREEK

TRESTLE BRIDGE

48" WD & CHAIN

ENERGY DISSIPATOR BASIN

CL B RIP RAP 5 TONS 14 SYFF

24" 24" CSP w/ELBOWS

CL B RIP RAP EST. 7 TON EST. 22 SY GF

UNDERHILL MITIGATION AREA

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES HAND CLEARING

DENOTES TEMPORARY FILL IN WETLAND

PERMIT DRAWING SHEET 97 OF 161

100 0 100

GRAPHIC SCALE

7/18/2019
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PRIMICS01$

Swift Creek (Bridge #10)

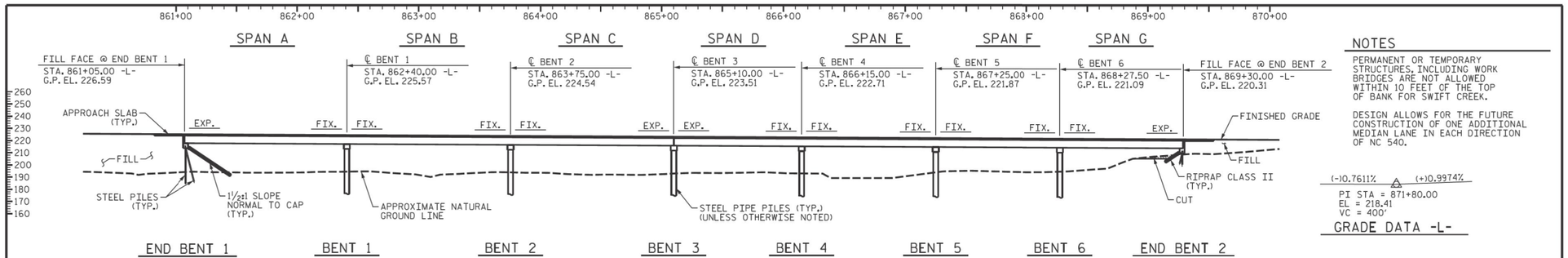
PROJECT REFERENCE NO.	SHEET NO.
R-2828	28A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

8/17/99



SECTION ALONG EASTBOUND WORK LINE

SECTION TAKEN AT RIGHT ANGLES TO END BENTS AND BENTS
EASTBOUND BRIDGE SHOWN, WESTBOUND BRIDGE SIMILAR

NOTES

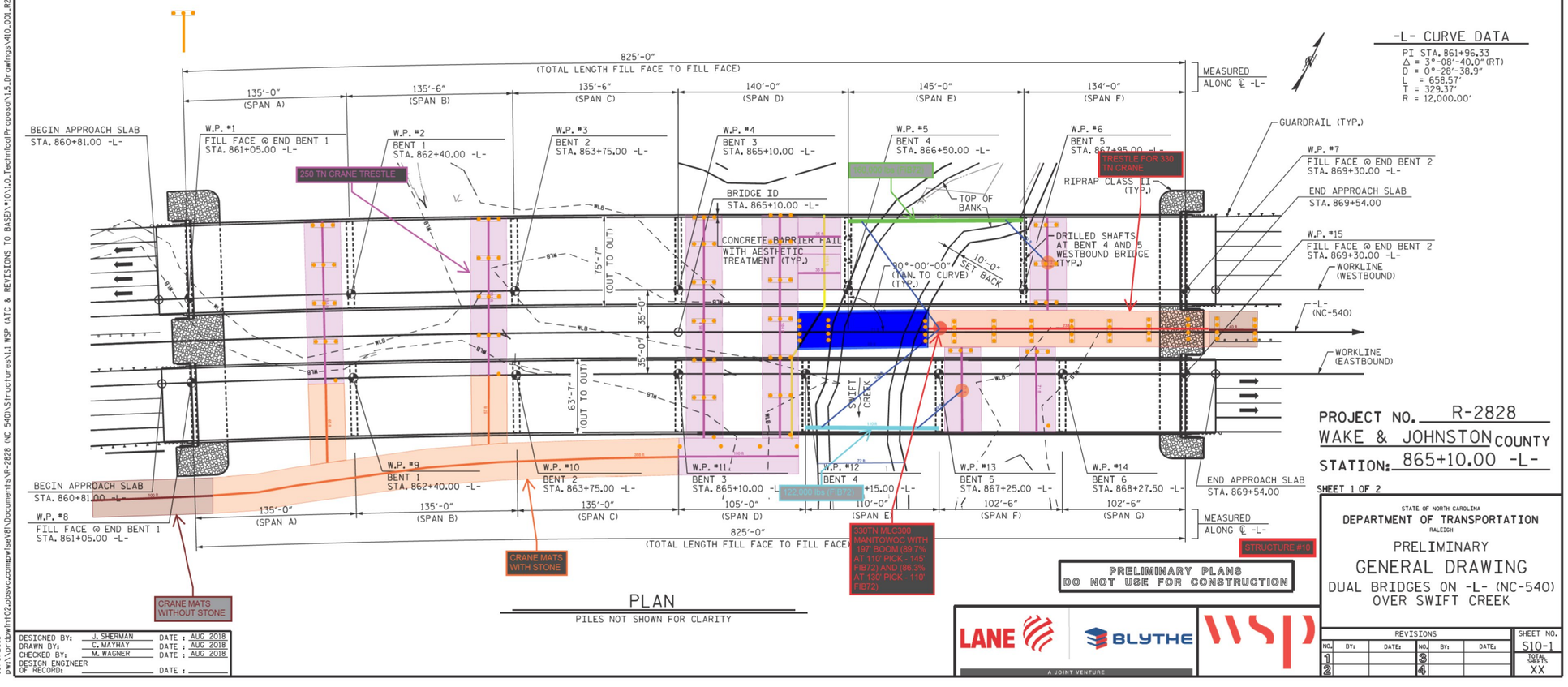
PERMANENT OR TEMPORARY STRUCTURES, INCLUDING WORK BRIDGES ARE NOT ALLOWED WITHIN 10 FEET OF THE TOP OF BANK FOR SWIFT CREEK.

DESIGN ALLOWS FOR THE FUTURE CONSTRUCTION OF ONE ADDITIONAL MEDIAN LANE IN EACH DIRECTION OF NC 540.

(-)0.7611% (+)0.9974%
PI STA = 871+80.00
EL = 218.41
VC = 400'
GRADE DATA -L-

-L- CURVE DATA

PI STA. 861+96.33
Δ = 3°-08'-40.0"(RT)
D = 0°-28'-38.9"
L = 658.57'
T = 329.37'
R = 12,000.00'



PLAN

PILES NOT SHOWN FOR CLARITY

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PROJECT NO. R-2828
WAKE & JOHNSTON COUNTY
STATION: 865+10.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRELIMINARY
GENERAL DRAWING
DUAL BRIDGES ON -L- (NC-540) OVER SWIFT CREEK

DESIGNED BY:	J. SHERMAN	DATE : AUG 2018
DRAWN BY:	C. MAYHAY	DATE : AUG 2018
CHECKED BY:	M. WAGNER	DATE : AUG 2018
DESIGN ENGINEER OF RECORD:		DATE :

LANE BLYTHE A JOINT VENTURE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S10-1
1			3			TOTAL SHEETS
2			4			XX

PERMIT DRAWING
SHEET 98 OF 161

7/18/2019
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ADP\MCS01$

D:\pr\dpwint02\pbsvc.comp\wsEV8\Documents\R-2828 INC 540\Structures\1_WSP IATC & REVISIONS TO BASE*10\1.0_TechnicalProposal\2.5_Drawings\410.001_R2828_SMU_PG001.dgn

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	28(1)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

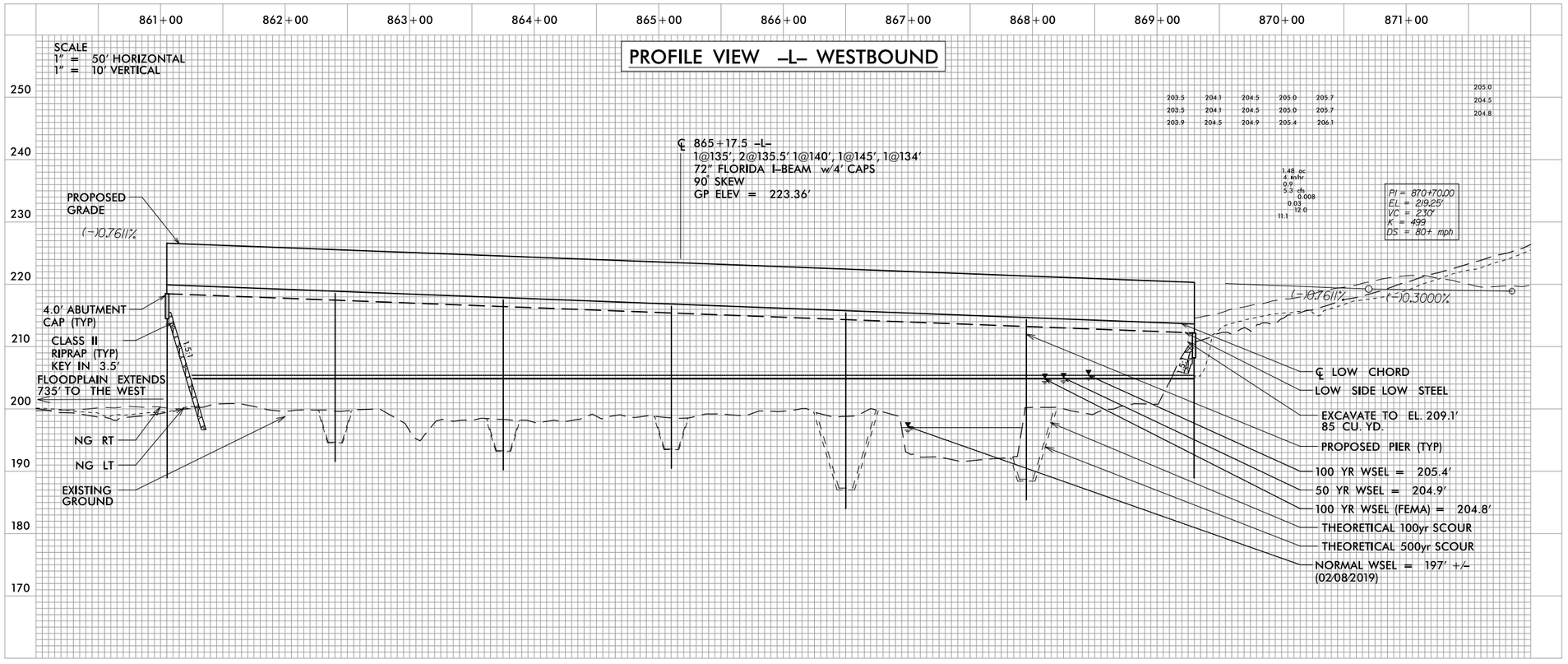
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SITE #48

BRIDGE PROFILE AT -L- STA. 865+00 (WBL)

(Swift Creek)



PERMIT DRAWING
SHEET 99 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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PROFICS01$

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	28(2)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

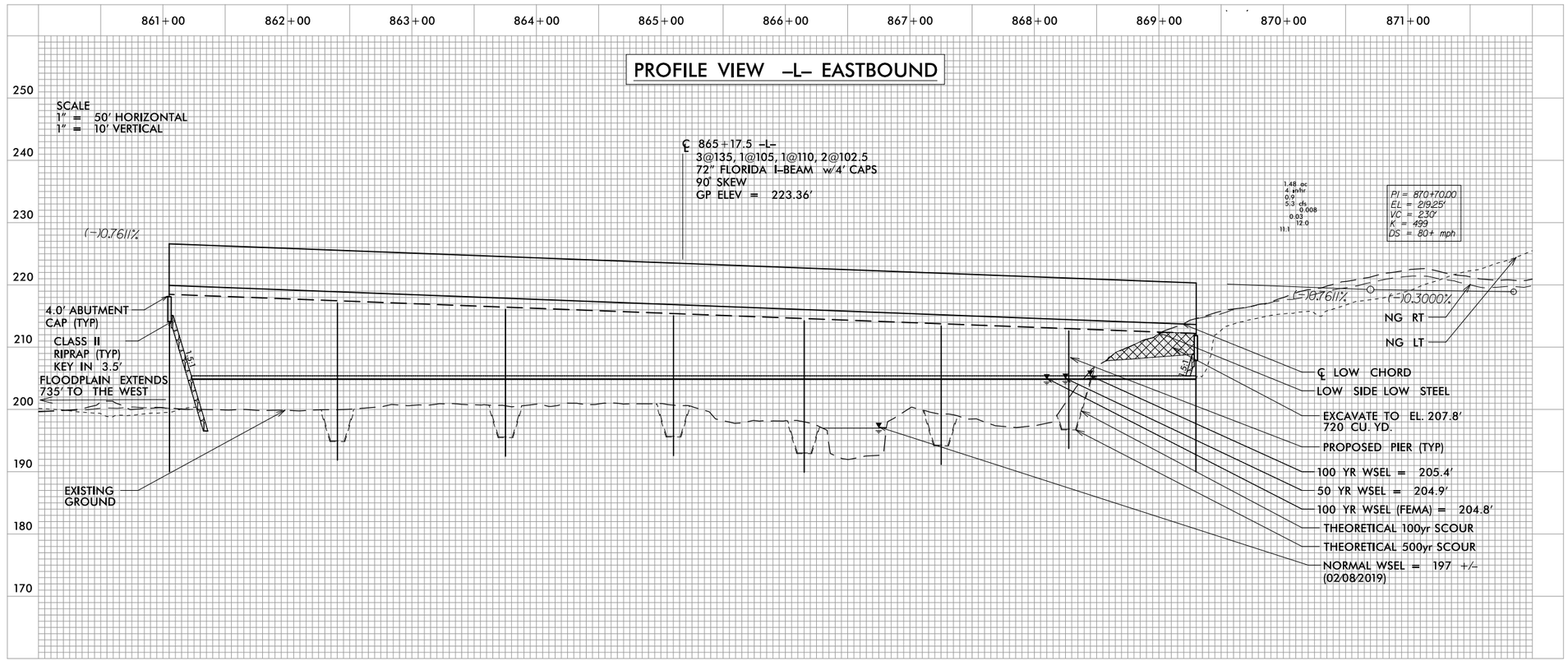
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SITE #48

BRIDGE PROFILE AT -L- STA. 865+00 (EBL)

(Swift Creek)



PERMIT DRAWING
SHEET 100 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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PHDFWICS01$

6/23/16

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	R-2828	28(3)

300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

240 220 200 240 220 200

0.030 0.030 8:1 6:1 0.030 0.030 2:1 2:1 223.87 199.45

860+50.00

0.030 0.030 8:1 6:1 0.030 0.030 2:1 2:1 224.25 199.96

860+00.00

0.030 0.030 8:1 6.096:1 0.030 0.030 2:1 2:1 224.63 199.83

859+50.00

WETLAND (WDV)
SITE #47

0.020 0.020 8:1 6.571:1 0.020 0.020 2:1 2:1 225.12 199.25

859+00.00

0.010 0.020 8:1 6.901:1 0.010 0.020 2:1 2:1 225.51 199.75

858+50.00

0.001 0.020 8:1 7.249:1 0.001 0.020 2:1 2:1 225.89 199.92

858+00.00

PERMIT DRAWING
SHEET 101 OF 161

7/18/2019
\\cdot1\dfs01\ncs_workingdir\19125\336429_1043\R2828_hyd_prm_wet_psh_28(3).dgn
PROPWICS01$

PROJECT REFERENCE NO.	SHEET NO.
R-2828	29
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

LANE BLYTHE wsp

NAD 83/2011

REVISIONS

8/17/99

INSET A

GRAPHIC SCALE 50 0 50

SITE #50

TOE PROTECTION SEE DETAIL 3-14

OUTLET CHANNEL STABILIZATION CLASS I AND II RIPRAP SEE DETAIL 3-32

SDJ

TEMPORARY SURFACE WATER IMPACT

STANDARD BASE DITCH

PDE

2GI

HAZARDOUS SPILL BASIN WITH MEDIA FILTER
CAPACITY=25,772 CF
FLOOR EL=204.5 FT
SEE DETAIL 3-XX

CL B RIP RAP
EST. 1 TON
EST. 5 SY GF

SLUICE GATE

PROP. WW FENCE

WDZ

SITE #50
SEE INSET A

SITE #50A

SITE #50
SEE INSET B

SDJ

WDZ

TOE PROTECTION
SEE DETAIL 3-14

OUTLET CHANNEL STABILIZATION CLASS I AND II RIPRAP

INSET B

GRAPHIC SCALE 50 0 50

SITE #50

TEMPORARY SURFACE WATER IMPACT

OUTLET CHANNEL STABILIZATION CLASS I AND II RIPRAP

SDJ

MATCH LINE SEE SHEET 28
-L- STA. 870+00.00

MATCH LINE SEE SHEET 30
-L- STA. 883+00.00

SPRAY FIELD

BL-I69

BL-I70

BL-I71

870

875

880

15" RCP-III

18" RCP-III

24" RCP-III

30" RCP-III

36" RCP-III

2GI-A

FS

DENOTES TEMPORARY FILL IN WETLAND

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SEE CULVERT PROFILE ON SHEET 29(1) FOR DETAILS

PERMIT DRAWING
SHEET 102 OF 161

GRAPHIC SCALE 100 0 100

7/18/2019
R-2828_hyd_prm_wet_psh_29.dgn
\\ncdot.org\dfs01\ies_workingdir\19125\336429_1027\R2828_hyd_prm_wet_psh_29.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2828	29
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

LANE BLYTHE wsp

NAD 83/2011

INSET A

GRAPHIC SCALE 50 0 50

SITE #50

TOE PROTECTION SEE DETAIL 3-14

OUTLET CHANNEL STABILIZATION CLASS I AND II RIPRAP SEE DETAIL 3-32

TEMPORARY SURFACE WATER IMPACT

SDJ

STANDARD BASE DITCH

PDE — PDE — 2GI

HAZARDOUS SPILL BASIN WITH MEDIA FILTER CAPACITY=25,772 CF FLOOR EL=204.5 FT SEE DETAIL 3-XX

CL B RIP RAP EST. 1 TON EST. 5 SY GF

SLUICE GATE

PROP. WW FENCE

SITE #50 SEE INSET A

WDZ

SDJ

TOE PROTECTION SEE DETAIL 3-14

OUTLET CHANNEL STABILIZATION CLASS I AND II RIPRAP SEE DETAIL 3-32

SPRAY FIELD

BL-169 BL-170 BL-171

15" RCP-III 18" RCP-III 24" 30" 36"

2GI 2GI-A FS

MATCH LINE SEE SHEET 28 -L- STA. 870+00.00

MATCH LINE SEE SHEET 30 -L- STA. 883+00.00

870 875 880

PROP. WW FENCE

OUTLET CHANNEL STABILIZATION CLASS I AND II RIPRAP

TOE PROTECTION SEE DETAIL 3-14

CL B RIP RAP EST. 1 TON EST. 5 SY GF

SITE #50A

SITE #50 SEE INSET B

SDJ

WDZ

SITE #50

2GI

TEMPORARY SURFACE WATER IMPACT

OUTLET CHANNEL STABILIZATION CLASS I AND II RIPRAP

SDJ

INSET B

GRAPHIC SCALE 50 0 50

T T DENOTES TEMPORARY FILL IN WETLAND

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SEE CULVERT PROFILE ON SHEET 29(1) FOR DETAILS

PERMIT DRAWING SHEET 103 OF 161

GRAPHIC SCALE 100 0 100

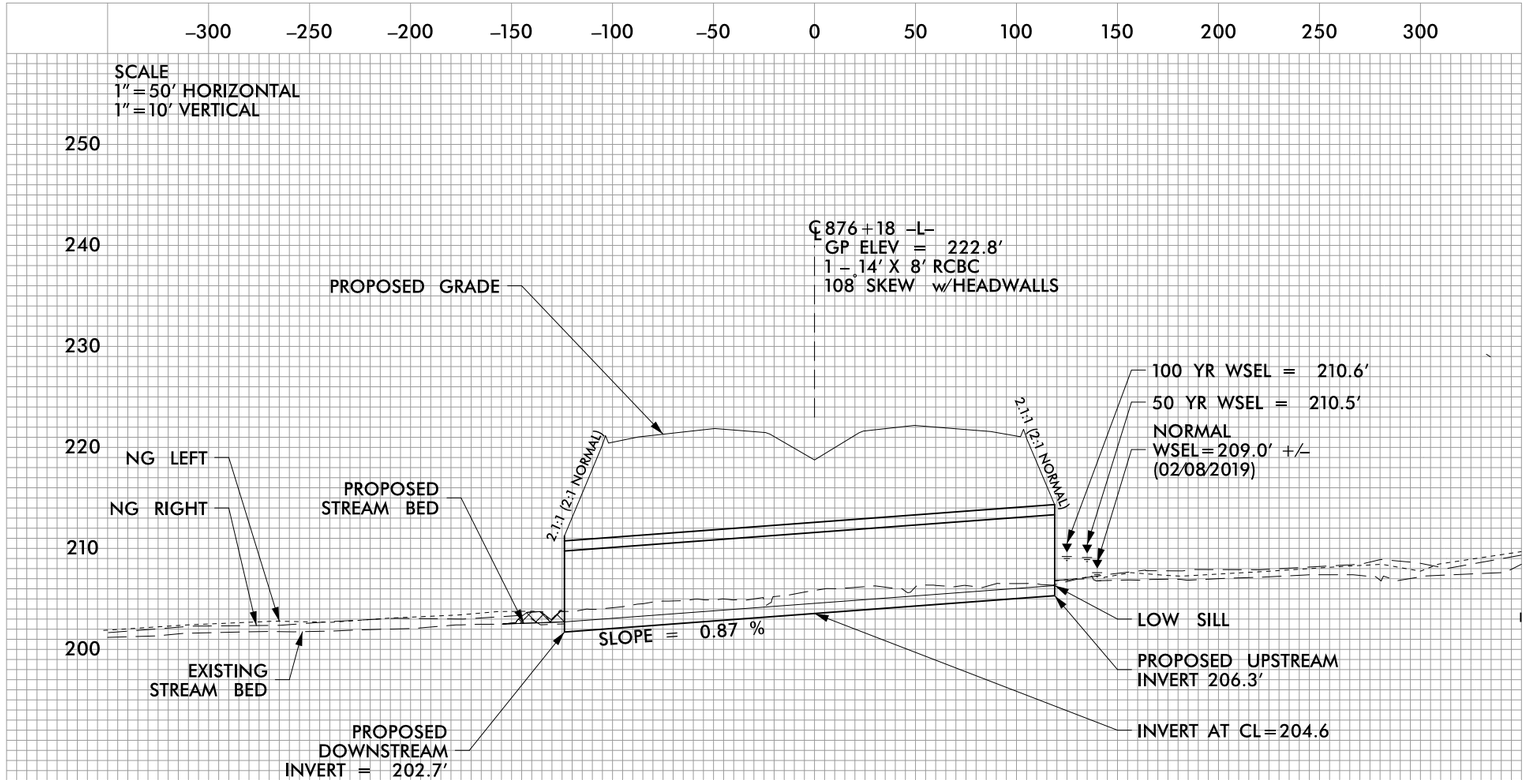
REVISIONS 8/17/99

7/18/2019
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SITE #50

CULVERT PROFILE AT -L- STA. 876+18

(Stream SDJ)



ROADWAY CROSS SECTION /CULVERT PROFILE

(CULVERT PROFILE ALONG THE CULVERT)

EXCAVATION: LT: 3 CU. YD
RT: 2 CU. YD

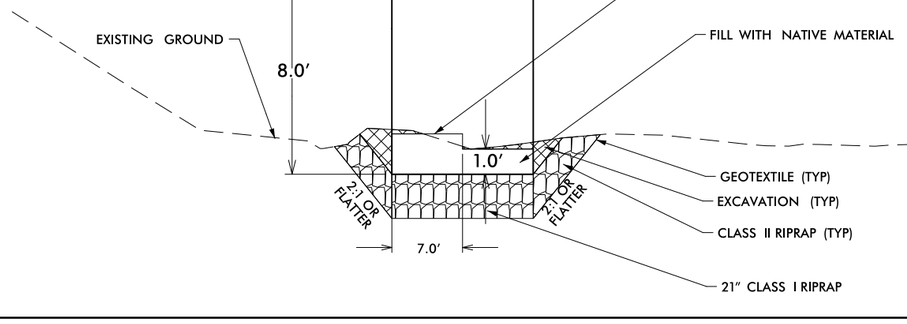
CLASS II RIPRAP: LT: 68 TONS
RT: 31 TONS

CLASS I RIPRAP: 21 TONS

GEOTEXTILE: LT: 36 SY
RT: 23 SY
CHANNEL: 26 SY

INLET DETAIL

NOT TO SCALE



EXCAVATION: LT: 6 CU. YD
RT: 7 CU. YD

CLASS II RIPRAP: LT: 89 TONS
RT: 12 TONS

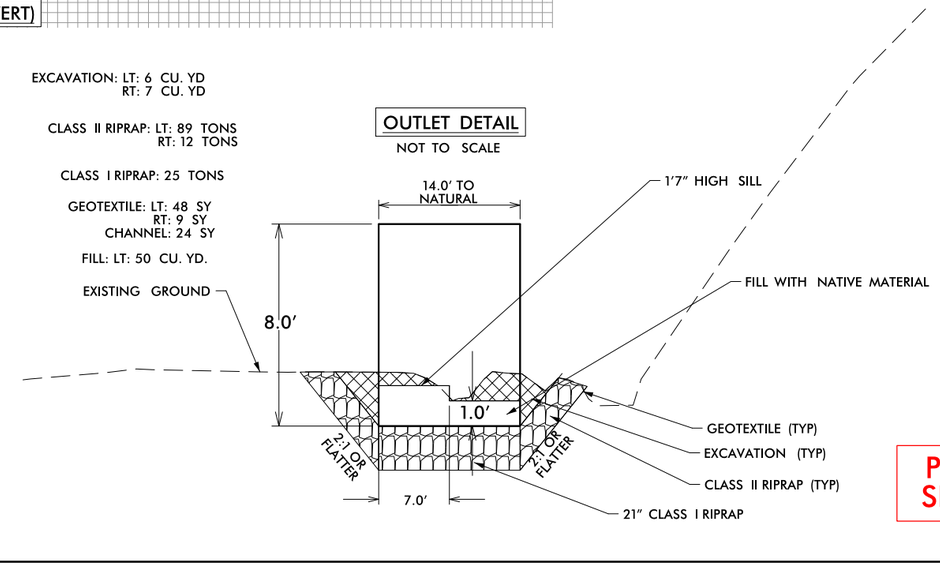
CLASS I RIPRAP: 25 TONS

GEOTEXTILE: LT: 48 SY
RT: 9 SY
CHANNEL: 24 SY

FILL: LT: 50 CU. YD.

OUTLET DETAIL

NOT TO SCALE



PERMIT DRAWING
SHEET 104 OF 161

LANE BLYTHE A JOINT VENTURE

wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	29(1)
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

REVISIONS

8/17/99

7/18/2019
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RDPW\cstill

6/23/16

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	R-2828	29(2)

877+50.00

877+00.00

WETLAND (WDZ)
SITE #50A

876+50.00

876+00.00

875+50.00

875+00.00

874+50.00

PERMIT DRAWING
SHEET 105 OF 161

7/18/2019
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PRDPWTCS01$

PROJECT REFERENCE NO.	SHEET NO.
R-2828	30
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

NAD 83/2011

REVISIONS 8/17/99

SEE SHEET 30A

MATCH LINE SEE SHEET 29 -L- STA. 883+00.00

MATCH LINE SEE SHEET 32 -L- STA. 896+00.00

MATCH LINE SEE SHEET 47 -LFLYGC- STA. 19+52.79

STA. =-L- 891+42
Q = 16.90 cfs
V = 1.40 ft/s
S = 0.3%
SS = 3 ft
N = 0.056
LINER = Class B

3' BASE LATERAL BASE

SITE #51A

CL. B RIP RAP EST. 1 TON EST. 5 SY OF

TOE PROTECTION SEE DETAIL 3-33

PROP. WW FENCE

SITE #51
SEE INSET A

SITE #52

SDK

SDL

TEMPORARY SURFACE WATER IMPACT

PIPE OUTLET CHANNEL STABILIZATION CLASS I RIPRAP SEE DETAIL 3-18

SPECIAL CUT 'V' DITCH SEE DETAIL 3-6

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

INSET A

GRAPHIC SCALE 50 0 50

GRAPHIC SCALE 100 0 100

PERMIT DRAWING SHEET 106 OF 161

7/18/2019
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PRPWCS01$

LANE BLYTHE A JOINT VENTURE

wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	30
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

NAD 83/2011

REVISIONS 8/17/99

SEE SHEET 30A

MATCH LINE SEE SHEET 29 -L- STA. 883+00.00

MATCH LINE SEE SHEET 32 -L- STA. 896+00.00

MATCH LINE SEE SHEET 47 -LFLYGC- STA. 19+52.79

PROP. WW FENCE

SITE #51A

SITE #51
SEE INSET A

SITE #52

WEA

SDK

SDL

STA. -L- 891+42
Q = 16.90 cfs
V = 1.40 ft/s
S = 0.3%
SS = 3 ft
N = 0.056
LINER = Class B

3' BASE LATERAL BASE

CL B RIP RAP
EST. 1 TON
EST. 5 SY GF

TOE PROTECTION
SEE DETAIL 3-33

3OTCB

2GI

2GI-A

15"

24"

18"

FS

HW

RIPE OUTLET
CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 3-18

SPECIAL CUT
'V' DITCH
SEE DETAIL 3-6

OTCB

TEMPORARY SURFACE WATER IMPACT

INSET A

SITE #51

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

50 0 50
GRAPHIC SCALE

100 0 100
GRAPHIC SCALE

PERMIT DRAWING
SHEET 107 OF 161

7/18/2019
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PHILWICS01\$

0.3%
3 ft
0.056
= Class B

' BASE
ATERAL BASE

8/17/99

REVISIONS

SITE #52

TOE PROTECTION
SEE DETAIL 3-33

HW

TEMPORARY
SURFACE
WATER IMPACT

18" CSP
W/2 ELBOWS

15" RCP-III

18" RCP-III

60" RCP-IV (BURIED 1')

SPECIAL CUT
'V' DITCH
SEE DETAIL 3-6

OTCB

24"

2GI

2GIA

FS

SDL

BL-173

BL-174

BL-175

15

895

20

.02

08

07

06

05

04

03

02

SITE #52

TEMPORARY
SURFACE
WATER IMPACT

LANE BLYTHE wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	30A
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

NAD 83/2011

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 108 OF 161

50 0 50
GRAPHIC SCALE

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PROJECT REFERENCE NO.	SHEET NO.
R-2828	30A
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

LANE BLYTHE WSP

NAD 83/2011

SITE #52

TOE PROTECTION SEE DETAIL 3-33

TEMPORARY SURFACE WATER IMPACT

18" CSP W/2 ELBOWS

18" RCP-III

15" RCP-III

60" RCP-IV (BURIED 1')

SDL

SPECIAL CUT 'V' DITCH SEE DETAIL 3-6

OTCB

24"

2GI

2GIA

FS

HW

BL-173

BL-174

BL-175

895

.02

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 109 OF 161

50 0 50
GRAPHIC SCALE

REVISIONS

8/17/99

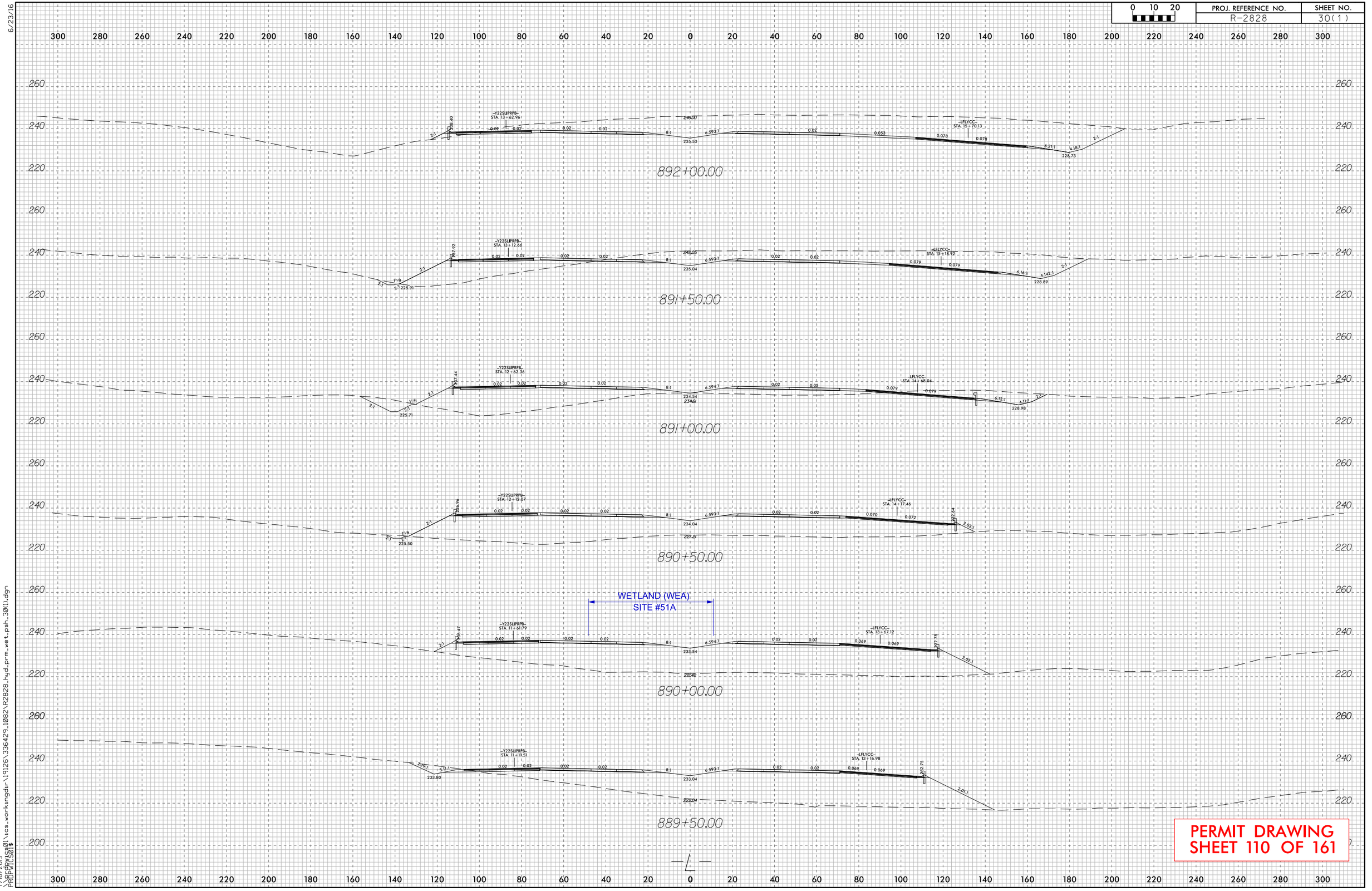
0.3%
3 ft
0.056
= Class B

BASE
ATERAL BASE

7/18/2019
Projects01\ncs_workingdir\19126\336429_1085\R2828_hyd_prm_wet_psh_30A_cont.dgn
prmWETCSH

6/23/16

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	R-2828	30(1)



PERMIT DRAWING
SHEET 110 OF 161

7/18/2019
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PROFWICS01$

REVISIONS

LANE | BLYTHE

PROJECT REFERENCE NO. R-2828 | SHEET NO. 32

RW SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

INSET A

GRAPHIC SCALE 25 0 25

C A

TEMPORARY SURFACE WATER IMPACT

SDM

PIPE INLET CHANNEL STABILIZATION CLASS I RIPRAP SEE DETAIL 3-18

SITE #53

SURFACE WATER IMPACT

TOE PROTECTION SEE DETAIL 3-32

CL. B RIP RAP EST. 1 TON EST. 5 SY GF

HW

15"

SITE #53 SEE INSET A

SITE #52 SEE SHEET 30A

SDL

SITE #54

WEC

SEE SHEET 32A

SITE #55

SITE #56

SDV

SDW

WED

SDT

MATCH LINE -Y22FLYCC- STA. 142+40.00

MATCH LINE SEE SHEET 37 -Y22FLYCC- STA. 139+00.00

MATCH LINE -Y22FLYBD- STA. 56+50.00

MATCH LINE SEE SHEET 30 -L- STA. 896+00.00

MATCH LINE SEE SHEET 33 -L- STA. 924+00.00

MATCH LINE SEE SHEET 47 -Y22FLYCC- STA. 142+00.00

MATCH LINE SEE SHEET 57 -Y22FLYBD- STA. 63+00.00

SITE #53

SITE #53 SEE INSET B

SDM

WEB

SITE #54

SITE #55

SEE SHEET 32B

SEE CULVERT PROFILE ON SHEET 32(1) FOR DETAILS

PERMIT DRAWING SHEET 111 OBSOLETE

INSET B

SURFACE WATER IMPACT

SITE #53

TEMPORARY SURFACE WATER IMPACT

SDM

WEB

PIPE OUTLET CHANNEL STABILIZATION CLASS II RIPRAP SEE DETAIL 3-19

GRAPHIC SCALE 25 0 25

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES TEMPORARY FILL IN WETLAND

GRAPHIC SCALE 100 0 100

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:

REVISIONS

LANE BLYTHE

PROJECT REFERENCE NO. R-2828 | SHEET NO. 32

RW SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

INSET A

GRAPHIC SCALE 25 0 25

C A

TEMPORARY SURFACE WATER IMPACT

SDM

PIPE INLET CHANNEL STABILIZATION CLASS I RIPRAP SEE DETAIL 3-18

SITE #53

SURFACE WATER IMPACT

TOE PROTECTION SEE DETAIL 3-32

CL. B RIP RAP EST. 1 TON EST. 5 SY GF

HW

F

15"

SITE #53

SITE #52
SEE SHEET 30A

SDL

SITE #54

SITE #55

SITE #56

SEE SHEET 32A

WED

SDT

MATCH LINE -Y22FLYCC- STA. 144+10.00

MATCH LINE SEE SHEET 37 -Y22FLYCC- STA. 139+00.00

MATCH LINE -Y22FLYBD- STA. 56+50.00

MATCH LINE SEE SHEET 30 -L- STA. 896+00.00

MATCH LINE SEE SHEET 33 -L- STA. 924+00.00

SDM

WEB

WEC

SDV

SITE #53
SEE INSET B

MATCH LINE SEE SHEET 47

SEE SHEET 32B

SITE #54

SITE #55

SITE #56

SURFACE WATER IMPACT

SITE #53

TEMPORARY SURFACE WATER IMPACT

SDM

WEB

PIPE OUTLET CHANNEL STABILIZATION CLASS II RIPRAP SEE DETAIL 3-19

INSET B

GRAPHIC SCALE 25 0 25

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES TEMPORARY FILL IN WETLAND

SEE CULVERT PROFILE ON SHEET 32(1) FOR DETAILS

PERMIT DRAWING SHEET 112 OF 161

GRAPHIC SCALE 100 0 100

MATCH LINE SEE SHEET 47 -Y22FLYCC- STA. 142+00.00

MATCH LINE SEE SHEET 57 -Y22FLYBD- STA. 63+00.00

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:

PROJECT REFERENCE NO.	SHEET NO.
R-2828	32A
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

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD 83/2011

SDW

SITE #55

SDV

SITE #56

TEMPORARY SURFACE WATER IMPACT

TEMPORARY SURFACE WATER IMPACT

SURFACE WATER IMPACT

OUTLET CHANNEL STABILIZATION CLASS I AND II RIPRAP 6' BASE CHANNEL CHANGE W/CLASS II RIPRAP SEE DETAIL 3-33

CL. B RIP RAP EST. 3 TON EST. 11 SY GF

TOE PROTECTION 3-14

24" CSP

18"

18" RCP-VI

9' x 9' RCBC

4-OTCB

2GI

FS

SEE CULVERT PROFILE ON SHEET 32(1) FOR DETAILS

PERMIT DRAWING SHEET 113 OF 161

50 0 50
GRAPHIC SCALE

REVISIONS 8/17/99

7/18/2019
J:\projects\01\ics_workingdir\19126\336429_1074\R2828_hyd_prm_wet_psh_32A.dgn
PrjWICS01$

PROJECT REFERENCE NO.	SHEET NO.
R-2828	32A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

LANE BLYTHE A JOINT VENTURE

wsp

REVISIONS 8/17/99

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD 83/2011

SDW

SITE #55

SDV

SITE #56

TEMPORARY SURFACE WATER IMPACT

SURFACE WATER IMPACT

TEMPORARY SURFACE WATER IMPACT

SURFACE WATER IMPACT

OUTLET CHANNEL STABILIZATION CLASS I AND II RIPRAP 6' BASE CHANNEL CHANGE W/CLASS II RIPRAP SEE DETAIL 3-33

CL. B RIP RAP EST. 3 TON EST. 11 SY GF

TOE PROTECTION 3-14

24" CSP

18"

2GI

18" RCP-III

FS

9' x 9' RCBC

4-OTCB

SEE CULVERT PROFILE ON SHEET 32(1) FOR DETAILS

PERMIT DRAWING SHEET 114 OF 161

50 0 50
GRAPHIC SCALE

7/18/2019
Projects01\ics_workingdir\19126\336429_10871\R2828_hyd_prm_wet_psh_32A_cont.dgn
PrintWiCS01$

LANE BLYTHE A JOINT VENTURE

wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	32B
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

REVISIONS 8/17/99

WEC

SURFACE WATER IMPACT

BL-179

48" RCP-CD (BURIED 0.8')

BL-180

18" RCP-III

2GI

15"

24" RCP-III

SURFACE WATER IMPACT

JB w/MH

15"

STA. =-L- 917+17
Q =12.20 cfs
V = 0.93 ft/s
S = 0.3%
FS = 3:1
BS = 3:1
N = 0.063
LINER = Class B

24" CSP

JB w/MH

24" CSP

NAD 83/2011

SITE #54

TOE PROTECTION
SEE DETAIL 3-14

OUTLET CHANNEL STABILIZATION CLASS I AND II RIPRAP

TOE PROTECTION
SEE DETAIL 3-14

CL. B RIP RAP
EST. 3 TON
EST. 10 SY GF

TOE PROTEC
SEE DETAIL 3

STA. =-L- 913+19
Q =6.20 cfs
V = 0.76 ft/s
S = 0.3%
SS = 3:1
N = 0.063
LINER = Class B

PIPE OUTLET CHANNEL STABILIZATION CLASS II RIPRAP SEE DETAIL 3-19

SITE #55

SDW

WEC

SITE #54

TEMPORARY FILL IMPACT

DENOTES IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES TEMPORARY FILL IN WETLAND

PERMIT DRAWING
SHEET 115 OF 161

SEE CULVERT PROFILE ON SHEET 32(1) FOR DETAILS

50 0 50
GRAPHIC SCALE

7/18/2019
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RDPW1C501$

8/17/99

REVISIONS

WEC

SURFACE WATER IMPACT

SURFACE WATER IMPACT

03

BL-179

BL-180

48" RCP-CD (BURIED 0'8")

18" RCP-III

24" RCP-III

15"

2GI

2GI

JB w/MH

JB w/MH

15"

24" CSP

24" CSP

STA. =-L- 917+17
Q =12.20 cfs
V = 0.93 ft/s
S = 0.3%
FS = 3:1
BS = 3:1
N = 0.063
LINER = Class B

SITE #54

TOE PROTECTION
SEE DETAIL 3-14

OUTLET CHANNEL
STABILIZATION
CLASS I AND II RIPRAP

TOE PROTECTION
SEE DETAIL 3-14

CL. B RIP RAP
EST. 3 TON
EST. 10 SY GF

TOE PROTEC
SEE DETAIL 3

STA. =-L- 913+19
Q =6.20 cfs
V = 0.76 ft/s
S = 0.3%
SS = 3:1
N = 0.063
LINER = Class B

PIPE OUTLET
CHANNEL STABILIZATION
CLASS II RIPRAP
SEE DETAIL 3-19

SITE #55

SDW

WEC

SITE #54

TEMPORARY
FILL IMPACT

S S DENOTES IMPACTS IN SURFACE WATER

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

T T DENOTES TEMPORARY FILL IN WETLAND

SEE CULVERT PROFILE ON SHEET 32(1) FOR DETAILS

PERMIT DRAWING
SHEET 116 OF 161

50 0 50
GRAPHIC SCALE

NAD 83/2011

LANE BLYTHE wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	32B
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

7/18/2019
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PWLCSD\$

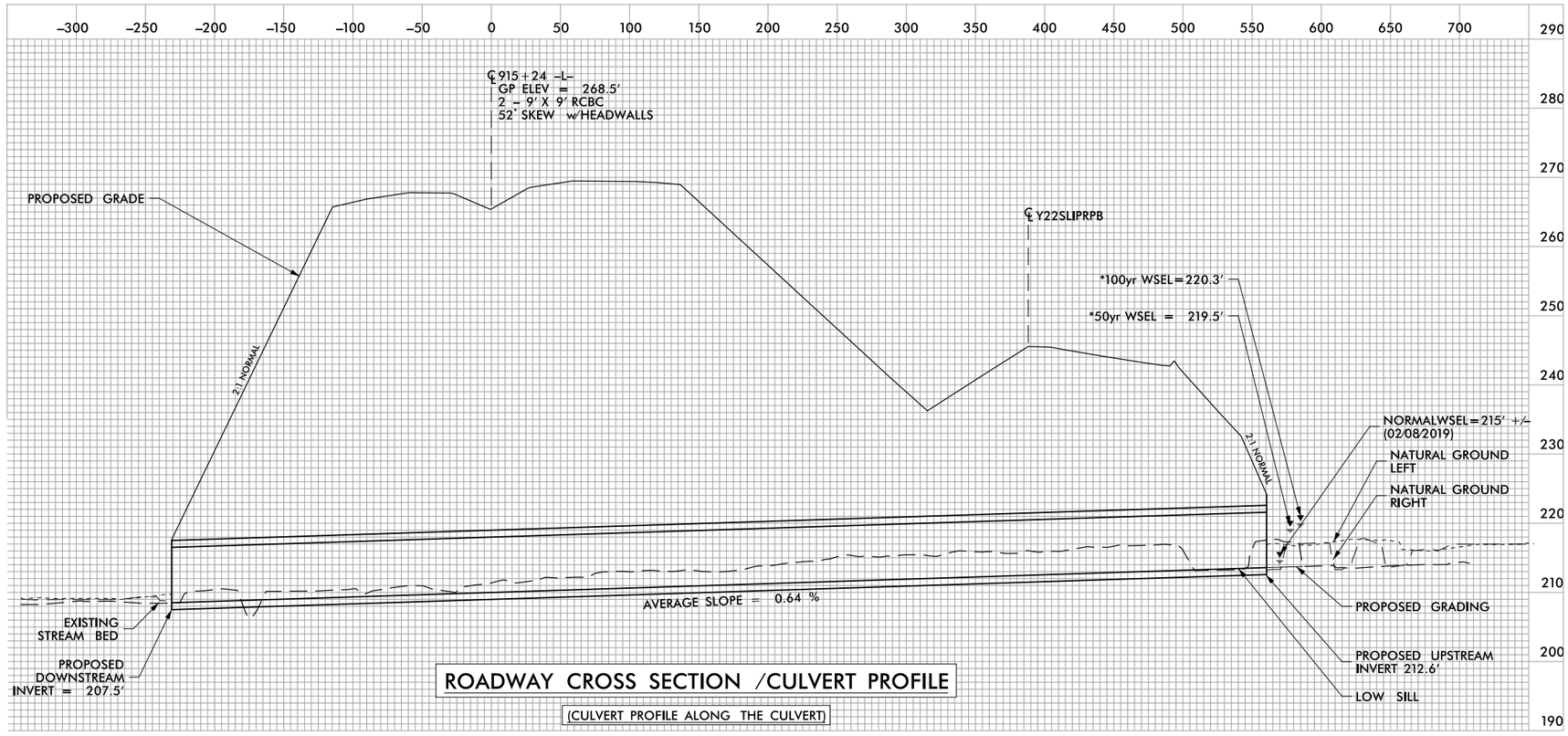
8/17/99

REVISIONS

SITE #55

CULVERT PROFILE AT -L- STA. 915+24

(Stream SDW, Basin 20, Stream 5)

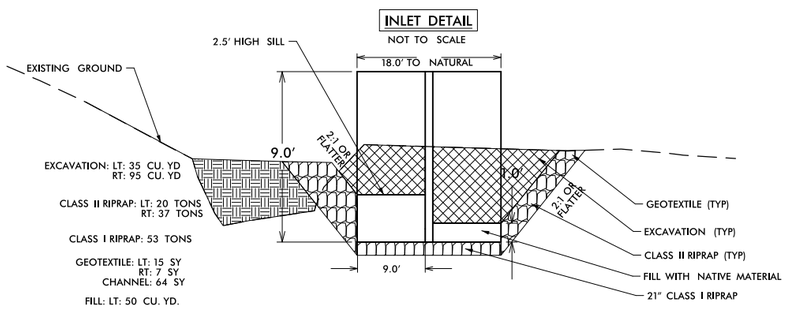


ROADWAY CROSS SECTION /CULVERT PROFILE

(CULVERT PROFILE ALONG THE CULVERT)

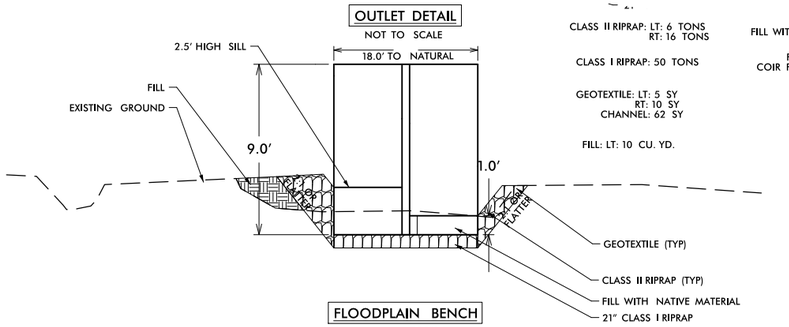
INLET DETAIL

NOT TO SCALE



OUTLET DETAIL

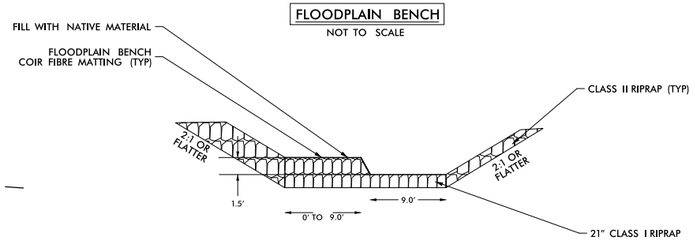
NOT TO SCALE



FLOODPLAIN BENCH

FLOODPLAIN BENCH

NOT TO SCALE



PERMIT DRAWING
SHEET 117 OF 161

PROJECT REFERENCE NO.	SHEET NO.
R-2828	32(1)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

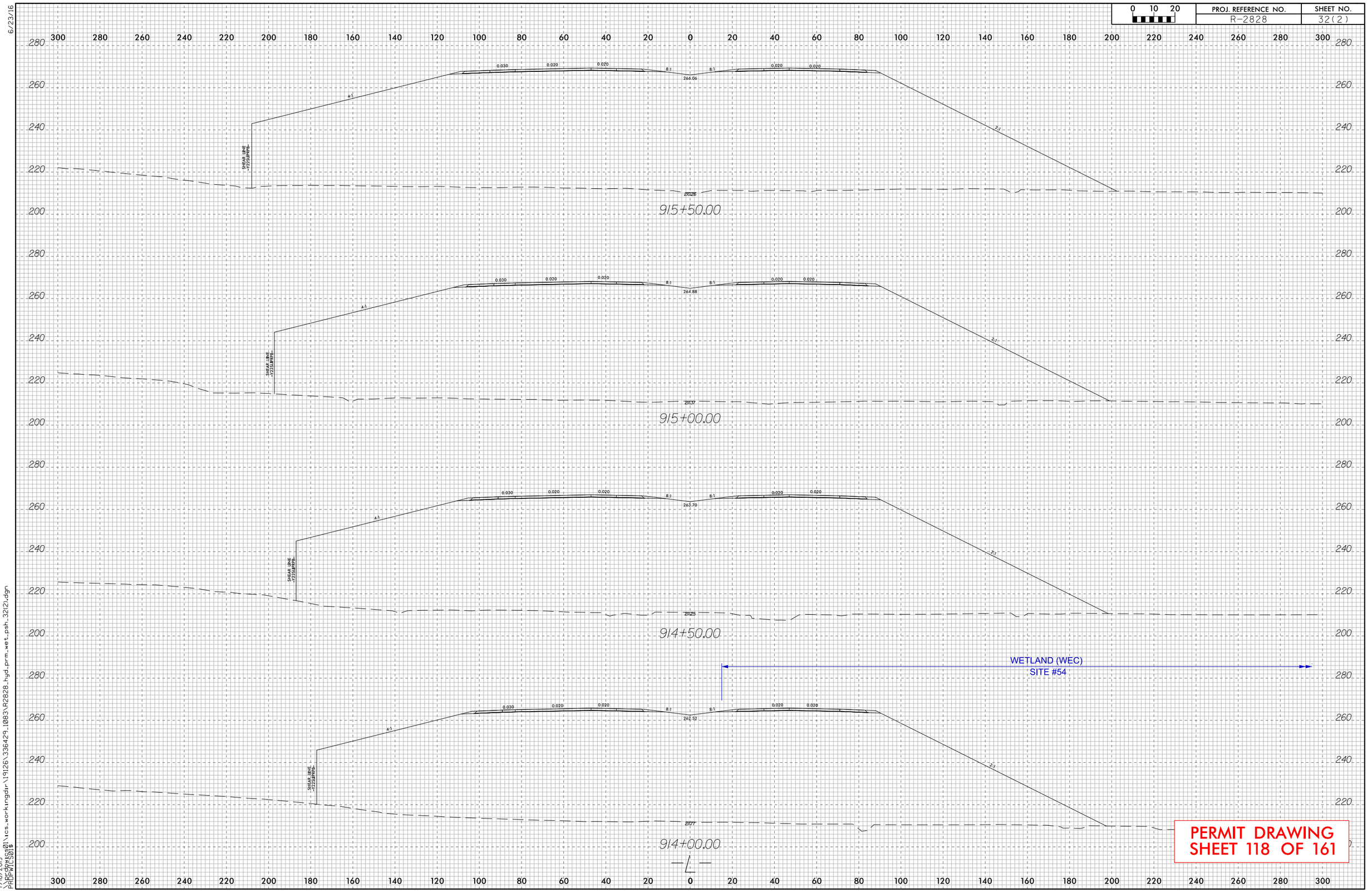
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

7/18/2019
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PRDWICS01$

6/23/16

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	R-2828	32(2)



PERMIT DRAWING
SHEET 118 OF 161

7/18/2019
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PROFWICS01$

REVISIONS

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SEE SHEET 33A

SITE #57

WEK

SDS

SDT

WEL

SDT

WFB

SDU

SDT

WFC

WFD

SDT

WFA

IMPACTS "BY OTHERS", TYP. (PROJECT I-5111)

MATCH LINE STA. -Y22RPB- 28+00.00

MATCH LINE SEE SHEET 46 -Y22- STA. 445+00.00

MATCH LINE SEE SHEET 46 -Y22SL1PRPA- STA. 15+00.00

MATCH LINE -Y22FLYCC- STA. 103+00.00

MATCH LINE SEE SHEET 37 -Y22FLYBD- STA. 50+00.00

MATCH LINE -Y22FLYBD- STA. 56+50.00

MATCH LINE SEE SHEET 32 -L- STA. 924+00.00

MATCH LINE SEE SHEET 34 -L- STA. 952+00.00

MATCH LINE SEE SHEET 57 -Y22LPLC- STA. 18+00.00

MATCH LINE -Y22LPLC- STA. 12+19.29

MATCH LINE SEE SHEET 57 -Y22- STA. 461+00.00

MATCH LINE -Y22RPA- STA. 17+00.00

MATCH LINE SEE SHEET 48

MATCH LINE SEE SHEET 48 -Y22FLYCC- STA. 87+75.00

NAD 83/2011

LANE BLYTHE

PROJECT REFERENCE NO.	SHEET NO.
R-2828	33

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

LOCATION:	
TIP NO.:	COUNTY:
DESIGNED BY:	
CHECKED BY:	DATE:

PERMIT DRAWING
SHEET 119 OF 161

100 0 100
GRAPHIC SCALE

6/2/25

11/18/2025
3:36:42 PM
R-2828_33.dgn

REVISIONS

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SEE SHEET 33A

MATCH LINE STA. -Y22RPB- 28+00.00

MATCH LINE SEE SHEET 46 -Y22- STA. 445+00.00

MATCH LINE SEE SHEET 46 -Y22SLIPRPA- STA. 15+00.00

MATCH LINE -Y22FLYCC- STA. 103+00.00

MATCH LINE SEE SHEET 37 -Y22FLYBD- STA. 50+00.00

MATCH LINE -Y22FLYBD- STA. 56+50.00

MATCH LINE SEE SHEET 32 -L- STA. 924+00.00

MATCH LINE SEE SHEET 34 -L- STA. 952+00.00

IMPACTS "BY OTHERS", TYP. (PROJECT I-5111)

NAD 83'2011

MATCH LINE -Y22LPC- STA. 12+19.29

MATCH LINE SEE SHEET 57 -Y22- STA. 461+00.00

MATCH LINE -Y22RPD- STA. 17+00.00

MATCH LINE SEE SHEET 57 -Y22LPC- STA. 18+00.00

MATCH LINE SEE SHEET 48

MATCH LINE SEE SHEET 48 -Y22FLYCC- STA. 87+75.00

PERMIT DRAWING SHEET 120 OF 161

GRAPHIC SCALE 100 0 100

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:

PROJECT REFERENCE NO. R-2828 SHEET NO. 33

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

6/2/25
\\Projects\2024\24-2828\Design\Roadway\Sheets\R2828_RDY_SHT_33.dgn

8/17/99

REVISIONS

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SITE #57

WEK

SDS

TEMPORARY SURFACE WATER IMPACT

SDT

WEL

PIPE OUTLET CHANNEL STABILIZATION CLASS II RIPRAP SEE DETAIL 3-19

IMPACTS "BY OTHERS" (PROJECT I-5111)

NAD 83/2011

LANE BLYTHE wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	33A
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

JB w/MH

2GI

18" RCP-III

15" RCP-III

15" CSP

2 ELBOWS

LATERAL BASE SWALE

STANDARD BASE W/RIP RAP BANKS SEE DETAIL ON ARLJ

54" RCP-III

PLACE FILL OVER COLLAR

15" COLLAR AND RE-EXTEND

54" WELDED STEEL (NOT BURIED)

TRENCH FLEES INSTALLATION

PLUG & FILL W/FLOWABLE FILL

REMOVE SYSTEM

REMOVE DI

WFB

WFD

SDU

WFA

24" RCP-III

24" RCP-IV (NOT BURIED)

REMOVE EXIST. 24" RCP

REMOVE EXIST. 24" RCP

REMOVE EXIST. 24" RCP

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

LANE BLYTHE wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	33A

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

8/17/99

REVISIONS

SITE #57

WEK

SDS

WEL

SDT

WFB

SDU

WFD

WFA

TEMPORARY SURFACE WATER IMPACT

IMPACTS "BY OTHERS" (PROJECT I-5111)

IMPACTS "BY OTHERS" (PROJECT I-5111)

NAD 83/2011

JB w/MH

2GI

18" RCP-III

15" RCP-III

24" RCP-III

54" RCP-III

15" CSP

2 ELBOWS

BDO

TRENCH FLEETS INSTALLATION

PLUG & FILL W/FLOWABLE FILL

REMOVE SYSTEM

REMOVE EXIST. 24" RCP

REMOVE EXIST. 54" RCP-IV (NOT BURIED)

PIPE OUTLET CHANNEL STABILIZATION CLASS II RIPRAP SEE DETAIL 3-19

COLLAR AND RE-EXTEND

PLACE FILL OVER COLLAR

SPECIAL LATERAL V DITCH

STANDARD BASE DITCH SEE DETAIL

CL. B RIP RAP EST. 3 TON EST. 11 SY GF

RIP RAP AT EMBANKMENT SEE DETAIL BA

PERMIT DRAWING SHEET 122 OF 161

50 0 50
GRAPHIC SCALE

7/18/2019
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mjohnson

REVISIONS

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SDT

PIPE OUTLET
CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 3-19

SITE #58

TEMPORARY SURFACE WATER IMPACT

SURFACE WATER IMPACT

INSET A

25 0 25
GRAPHIC SCALE

SITE #59

SDT

TEMPORARY SURFACE WATER IMPACT

PIPE OUTLET
CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 3-19

SURFACE WATER IMPACT

INSET B

25 0 25
GRAPHIC SCALE

NAD 83/2011

LANE BLYTHE

PROJECT REFERENCE NO.	SHEET NO.
R-2828	37

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

SITE #58
SEE INSET A

SITE #59
SEE
INSET B

SITE #58

SDT

SDQ

SDX

SDR

SDP

WEJ

WEH

WEI

2" BASE LATERAL DITCH

EXISTING R/W

MATCH LINE
-Y22SLTPRB-
STA. 44+61.77

MATCH LINE SEE SHEET 32
-Y22FLYCC- STA. 130+00.00

MATCH LINE SEE SHEET 33
-Y22FLYBD- STA. 50+00.00

MATCH LINE SEE SHEET 46
-Y22FLYCC- STA. 115+50.00

MATCH LINE
-Y22FLYBD-
STA. 41+50.00

MATCH LINE SEE SHEET 56
-EY19PC- STA. 23+23.53

SEE SHEET 37A

PERMIT DRAWING
SHEET 123 OF 161

100 0 100
GRAPHIC SCALE

LOCATION:	
TIP NO.:	COUNTY:
DESIGNED BY:	
CHECKED BY:	DATE:

REVISIONS

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SDT

PIPE OUTLET
CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 3-19

SITE #58
TEMPORARY
SURFACE
WATER IMPACT

SURFACE
WATER IMPACT

INSET A

25 0 25
GRAPHIC SCALE

SITE #59
TEMPORARY
SURFACE
WATER IMPACT

SURFACE
WATER IMPACT

INSET B

25 0 25
GRAPHIC SCALE

NAD 83/2011

LANE BLYTHE

PROJECT REFERENCE NO. R-2828
SHEET NO. 37
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

SITE #58
SEE INSET A

SITE #59
SEE
INSET B

MATCH LINE
-Y22SLIPRPB-
STA. 44+61.77

MATCH LINE SEE SHEET 32
-Y22FLYGC- STA. 130+00.00

MATCH LINE SEE SHEET 33
-Y22FLYBD- STA. 50+00.00

SEE SHEET 37A

MATCH LINE
-Y22FLYBD-
STA. 41+50.00

MATCH LINE SEE SHEET 46
-Y22FLYGC- STA. 115+50.00

MATCH LINE SEE SHEET 56
-EY9RPC- STA. 23+23.53

PERMIT DRAWING
SHEET 124 OF 161

100 0 100
GRAPHIC SCALE

LOCATION:
TIP NO.: COUNTY:
DESIGNED BY:
CHECKED BY: DATE:

plotted: 7/6/2021
10:36:43 AM
user: kmcgee
file: C:\Projects\R-2828_Design\Roadway\Sheets\R2828_Proof_Sheets_Set_Latest\R2828_Proof_Sheets_Set_Latest-37.dgn

8/17/99

REVISIONS

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD 83/2011

PROJECT REFERENCE NO.	SHEET NO.
R-2828	37A
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

2' BASE LATERAL DITCH

2GI

54" RCP-IV (BURIED 1.0')

15" CSP

PIPE INLET
CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 3-19

TEMPORARY SURFACE WATER IMPACT

2' BASE LATERAL DITCH

HW

CL. B RIP RAP
EST. 1 TON
EST. 5 SY GF

TEMPORARY SURFACE WATER IMPACT

SDT

SITE #58

PIPE OUTLET
CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 3-19

42" RCP-III (BURIED 0.7')

PIPE OUTLET
CHANNEL STABILIZATION
CLASS II RIPRAP
SEE DETAIL 3-19

SDT

TOE PROTECTION
SEE DETAIL 3-14

HW

FS

2GI

15"

PIPE INLET
CHANNEL STABILIZATION
CLASS II RIPRAP
SEE DETAIL 3-19

CL. B RIP RAP
EST. 9 TONS
EST. 19 SY GF

TEMPORARY SURFACE WATER IMPACT

EXISTING R/W

EXISTING R/W

EXISTING R/W

RIP RAP

PERMIT DRAWING
SHEET 125 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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PHILWICS01$

PROJECT REFERENCE NO.	SHEET NO.
R-2828	37A
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

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD 83/2011

REVISIONS

8/17/99

2' BASE LATERAL DITCH

2GI

54" RCP-IV (BURIED 1.0')

15" CSP

PIPE INLET
CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 3-19

TEMPORARY SURFACE WATER IMPACT

HW

2' BASE LATERAL DITCH

CL. B RIP RAP
EST. 1 TON
EST. 5 SY GF

SDT

TEMPORARY SURFACE WATER IMPACT

PIPE OUTLET
CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 3-19

42" RCP-III (BURIED 0.7')

SITE #58

SDT

PIPE OUTLET
CHANNEL STABILIZATION
CLASS II RIPRAP
SEE DETAIL 3-19

TOE PROTECTION
SEE DETAIL 3-14

HW

FS

2GI

15"

PIPE INLET
CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 3-19

TEMPORARY SURFACE WATER IMPACT

CL. B RIP RAP
EST. 9 TONS
EST. 19 SY GF

EXISTING R/W

EXISTING R/W

PERMIT DRAWING
SHEET 126 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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PHILWICS01$

PROJECT REFERENCE NO.	SHEET NO.
R-2828	39
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

LANE BLYTHE — A JOINT VENTURE

MATHERLY ENGINEERING

NAD 83/2011

REVISIONS 8/17/99

SITE #70
TEMPORARY SURFACE WATER IMPACT
SCB(1)
SURFACE WATER IMPACT

BED–CL. B RIP RAP
EST. 2 TON
EST. 4 SY GF
BANKS–CL. I RIP RAP
EST. 8 TON
EST. 14 SY GF
SEE DETAIL 1-41

24" CSR w/ ELBOWS
JB w/MH

INSET A
GRAPHIC SCALE 50 0 50

SCA
WCX
–DR2– EX RW EX PL
SITE #70 SEE INSET A
SCB(1)
RETAIN
REMOVE
SPECIAL CUT DITCH SEE DETAIL 1-9
SPECIAL LATERAL V DITCH SEE DETAIL 1-9
JULIA S. BOWLING DB 2114 PG 384
ISBK TRIANGLE BAPTIST CHURCH
CULTIVATED FIELD
–Y17– 20+00
–Y17– 25+00
–Y17– 30+00
–EY3–
SR 1006 OLD STAGE RD
BY3-3005

MATCH LINE SEE SHEET 10 -Y17- STA. 33+00.00

S S DENOTES IMPACTS IN SURFACE WATER

JS JS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

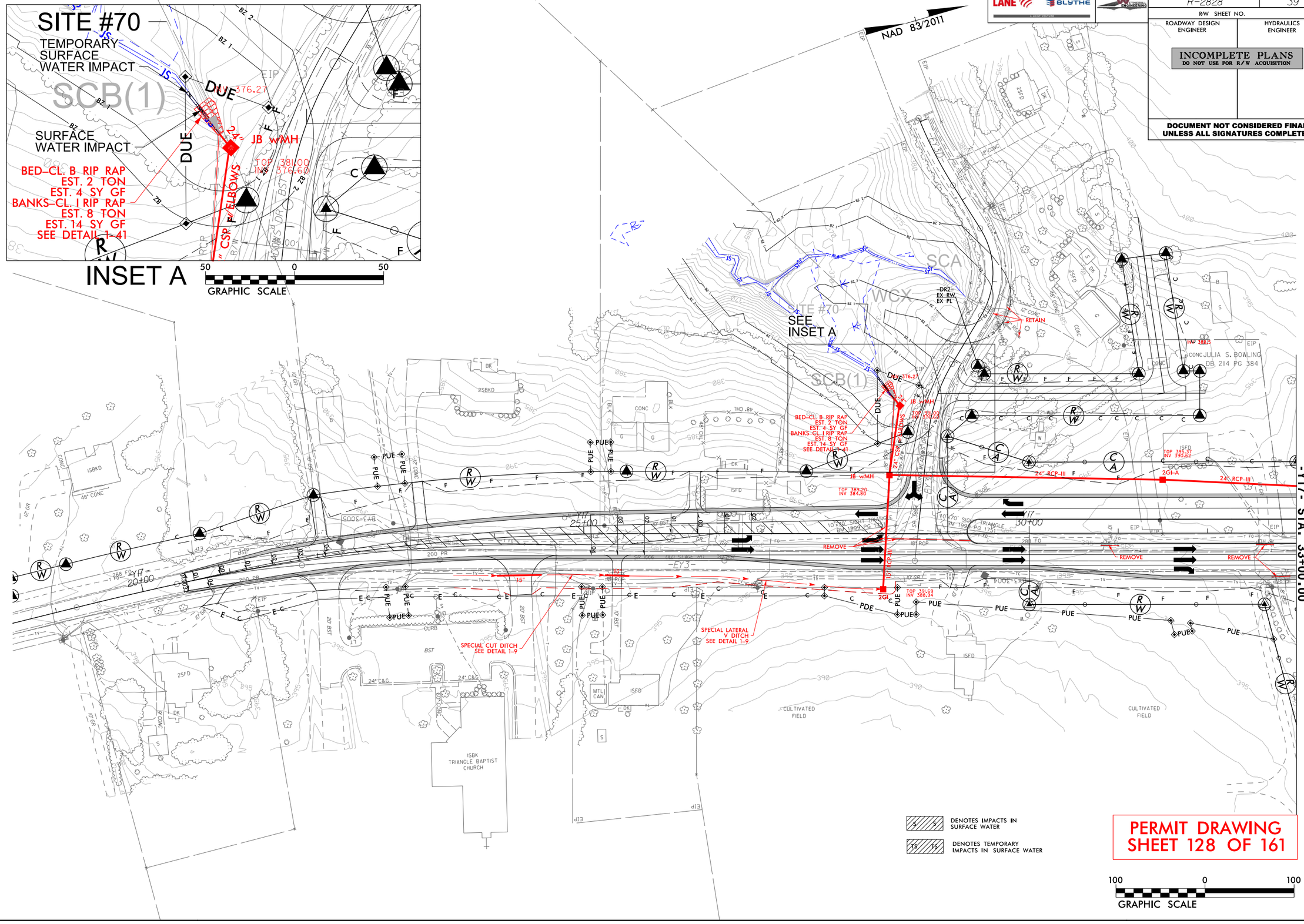
PERMIT DRAWING SHEET 127 OF 161

GRAPHIC SCALE 100 0 100

7/18/2019
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PROPWICS01$

8/17/99

REVISIONS



LANE BLYTHE

PROJECT REFERENCE NO.	SHEET NO.
R-2828	39
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

MATCH LINE SEE SHEET 10 -Y17- STA. 33+00.00

PERMIT DRAWING SHEET 128 OF 161

7/18/2019
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PROFILES

PROJECT REFERENCE NO.	SHEET NO.
R-2828	45
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

LANE BLYTHE wsp

REVISIONS

8/17/99

NAD 83/2011

PBI

PAB

SITE #72

TEMPORARY SURFACE WATER IMACT

CLASS I RIPRAP

PROP. DRIVE ASPHALT

PROP. WW FENCE

SPECIAL LATERAL V-DITCH SEE DETAIL 2-4

LATERAL V-DITCH SEE DETAIL 2-19

RETAIN

REMOVE

GRADE TO DRAIN

PUE

MATCH LINE SEE SHEET 24 -Y21- STA. 49+50.00

DENOTES IMPACTS IN SURFACE WATER (POND)

TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 129 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
DGrissett
P:\R2828\roadway\design\sheets\sht_336429_106\R2828_hyd_prm_wet_psh_45.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2828	45
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

LANE BLYTHE JOINT VENTURE — WSP

NAD 83/2011

MATCH LINE SEE SHEET 24 -Y21- STA. 49+50.00

PROP. DRIVE ASPHALT

PROP. WW FENCE

RETAIN

REMOVE

SPECIAL LATERAL V-DITCH SEE DETAIL 2-4

LATERAL V-DITCH SEE DETAIL 2-19

SITE #72
TEMPORARY SURFACE WATER IMACT

CLASS I RIRAP

GRADE TO DRAIN

PUE

DENOTES IMPACTS IN SURFACE WATER (POND)

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 130 OF 161

100 0 100
GRAPHIC SCALE

REVISIONS 8/17/99

7/18/2019
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prmWetCSO1$

REVISIONS

LANE	BLYTHE	

PROJECT REFERENCE NO.	SHEET NO.
R-2828	46

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

NAD 83/2011

P P DENOTES IMPACTS IN SURFACE WATER (POND)

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

MATCH LINE -Y22FLY8D- STA. 26+00.00

MATCH LINE SEE SHEET 56 -Y22- STA. 429+50.00

MATCH LINE SEE SHEET 56 -Y22SLIPRPA- STA. 29+00.00

MATCH LINE -Y22RPA- STA. 37+50.00

MATCH LINE SEE SHEET 56 -Y22B- STA. 12+00.00

SITE #73 SEE INSET A

SDR

MATCH LINE SEE SHEET 37 -Y22FLLCC- STA. 115+50.00

MATCH LINE -Y22FLY8D- STA. 41+50.00

MATCH LINE SEE SHEET 33 -Y22RPB- STA. 28+00.00

MATCH LINE SEE SHEET 33 -Y22- STA. 445+00.00

MATCH LINE -Y22FLLCC- STA. 103+00.00

MATCH LINE SEE SHEET 33 -Y22SLIPRPA- STA. 15+00.00

MATCH LINE -Y22RPLY- STA. 51+00.00

MATCH LINE SEE SHEET 34 -Y22RPA- STA. 30+00.00

INSET A

SITE #73

PIPE OUTLET
CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 3-18

SDR

TEMPORARY SURFACE WATER IMPACT

30" RCP-III

COLLAR AND EXTEND 30"

SURFACE WATER IMPACT

RETAIN

BZ 2

BZ 1

25 0 25
GRAPHIC SCALE

PERMIT DRAWING
SHEET 131 OF 161

100 0 100
GRAPHIC SCALE

LOCATION:	
TIP NO.:	COUNTY:
DESIGNED BY:	
CHECKED BY:	DATE:

REVISIONS

LANE / BLYTHE	PROJECT REFERENCE NO. R-2828
	SHEET NO. 46
	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

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SITE #73
SEE
INSET A

SDR

MATCH LINE -Y22FLYBD- STA. 26+00.00

MATCH LINE SEE SHEET 56 -Y22- STA. 420+50.00

MATCH LINE SEE SHEET 56 -Y22SLIPRPA- STA. 29+00.00

MATCH LINE -Y22RPA- STA. 37+50.00

MATCH LINE SEE SHEET 56 -Y22B- STA. 12+00.00

MATCH LINE SEE SHEET 37 -Y22FLYCC- STA. 115+50.00

MATCH LINE -Y22FLYBD- STA. 41+50.00

MATCH LINE SEE SHEET 33 -Y22RPB- STA. 28+00.00

MATCH LINE SEE SHEET 33 -Y22- STA. 445+00.00

MATCH LINE -Y22FLYCC- STA. 105+00.00

MATCH LINE SEE SHEET 33 -Y22SLIPRPA- STA. 15+00.00

MATCH LINE -Y22RPAFLY- STA. 51+00.00

MATCH LINE SEE SHEET 34 -Y22RPA- STA. 20+00.00

NAD 83/2011

INSET A

SITE #73

PIPE OUTLET
CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 3-18

30" RCP-III

TEMPORARY SURFACE WATER IMPACT

SDR

COLLAR AND EXTEND 30"

SURFACE WATER IMPACT

RETAIN

JS

BZ 1

BZ 2

25 0 25
GRAPHIC SCALE

PERMIT DRAWING
SHEET 132 OF 161

100 0 100
GRAPHIC SCALE

LOCATION:	
TIP NO.:	COUNTY:
DESIGNED BY:	
CHECKED BY:	DATE:

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	47

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

NAD 83/2011

MATCH LINE SEE SHEET 32 -Y22FLYCC- STA. 142+00.00

MATCH LINE SEE SHEET 57

SHEET 57

SITE #76 SEE INSET A

SDO

WEC

MATCH LINE -Y22SLTFRC- STA. 18+00.00

MATCH LINE SEE SHEET 57 -Y22FLYCC- STA. 146+00.00

MATCH LINE SEE SHEET 32

SITE #74

WEB

SDM

SEE SHEET 47A

MATCH LINE SEE SHEET 30 -LFLYCC- STA. 19+52.79

SPECIAL CUT 'V' DITCH SEE DETAIL 3-43

TOE PROTECTION SEE DETAIL 3-22

JB w/MH

4706

4703

4702

4715

4714

4704

4705

20.4'

PROP. WW FENCE

SDV

WEC

SITE #75

MATCH LINE SEE SHEET 57 -Y22FLYCC- STA. 48+00.00

4709

LATERAL 'V' DITCH SEE DETAIL 3-01

4710

4711

GRADE BREAK

GRADE DRAIN

MATCH LINE SEE SHEET 57 -Y22RPC- STA. 16+15.00

SURFACE WATER IMPACT

SITE #76

F

JB w/MH

BZ 1

4713

42" CSP W/ELBOWS

JS

TS

BZ 2

WLB

SDO

ENERGY DISSIPATOR BASIN SEE DETAIL 3-34

TEMPORARY SURFACE WATER IMPACT

INSET A

25 0 25
GRAPHIC SCALE

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

PERMIT DRAWING SHEET 133 OF 161

100 0 100
GRAPHIC SCALE

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:

COUNTY LINE

6/2/25

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REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	47

RW SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

MATCH LINE SEE SHEET 32 -Y22FLYCC- STA. 142+00.00

MATCH LINE SEE SHEET 57

SITE #76 SEE INSET A

SDO

WEC

MATCH LINE -Y22SLTFRC- STA. 19+00.00

MATCH LINE SEE SHEET 57 -Y22FLYCC- STA. 146+00.00

MATCH LINE SEE SHEET 32

SITE #74

WEB

SDM

SEE SHEET 47A

MATCH LINE SEE SHEET 30 -LFLYCC- STA. 19+52.79

SPECIAL CUT 'H' DITCH SEE DETAIL 3-45

TOE PROTECTION SEE DETAIL 3-22

PROP. WW FENCE

SDV

WEC

SITE #75

MATCH LINE SEE SHEET 57 -Y22FLYCC- STA. 48+00.00

MATCH LINE SEE SHEET 57 -Y22RPC- STA. 16+15.00

LATERAL DITCH SEE DETAIL 3-21

GRADE BREAK

SURFACE WATER IMPACT

SITE #76

F

JB w/MH

BZ 1

42" CSP WELBOWS

JS

TS

WLB

SDO

ENERGY DISSIPATOR BASIN SEE DETAIL 3-34

TEMPORARY SURFACE WATER IMPACT

INSET A

25 0 25
GRAPHIC SCALE

DENOTES TEMPORARY FILL IN WETLAND

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES HAND CLEARING

PERMIT DRAWING
SHEET 134 OF 161

100 0 100
GRAPHIC SCALE

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:

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8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	47A
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

SDM

SITE #74

TEMPORARY FILL IMPACT, TYP

WETLAND FILL IMPACT, TYP

TEMPORARY FILL IMPACT, TYP

TEMPORARY SURFACE WATER IMPACT

SDV

WEC

SITE #75

4706

STA. = -L- 9+96
Q = 6.30 cfs
V = 0.96 fps
S = 0.2%
FS = 3.1
BS = 3.1
N = 0.073
LINER = Class B

STA. = -Y22RPC
Q = 6.23 cfs
V = 1.60 fps
S = 0.0162%
FS = 6.1
BS = 4.1
N = 0.063
LINER = Class

DENOTES MECHANIZED CLEARING

DENOTES TEMPORARY FILL IN WETLAND

DENOTES FILL IN WETLAND

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES HAND CLEARING

PERMIT DRAWING
SHEET 135 OF 161

50 0 50
GRAPHIC SCALE

7/18/2019
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8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	47A
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

SDM

SITE #74

TEMPORARY FILL IMPACT, TYP

WETLAND FILL IMPACT, TYP

TEMPORARY FILL IMPACT, TYP

TEMPORARY SURFACE WATER IMPACT

SDV

WEC

SITE #75

STA. = -L- 9+96
Q = 6.30 cfs
V = 0.96 fps
S = 0.2%
FS = 3:1
BS = 3:1
N = 0.073
LINER = Class B

STA. = -Y22RPC
Q = 6.23 cfs
V = 1.60 fps
S = 0.0162%
FS = 6:1
BS = 4:1
N = 0.063
LINER = Class

DENOTES MECHANIZED CLEARING

DENOTES TEMPORARY FILL IN WETLAND

DENOTES FILL IN WETLAND

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES HAND CLEARING

PERMIT DRAWING
SHEET 136 OF 161

50 0 50
GRAPHIC SCALE

7/18/2019
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PHP WIDGET

PROJECT REFERENCE NO.	SHEET NO.
R-2828	47B
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

34+00 35+00 36+00 37+00 38+00 39+00 40+00 41+00 42+00

SPAN A | SPAN B | SPAN C | SPAN D | SPAN E

280 260 250 240 230 220 210 200 190

FILL FACE @ END BENT 1
STA. 34+25.04 -Y22FLYCC-
G.P. EL. 232.62

℄ BENT 1
STA. 35+75.04 -Y22FLYCC-
G.P. EL. 233.43

℄ BENT 2
STA. 37+25.04 -Y22FLYCC-
G.P. EL. 234.24

℄ BENT 3
STA. 38+75.04 -Y22FLYCC-
G.P. EL. 235.05

℄ BENT 4
STA. 40+25.04 -Y22FLYCC-
G.P. EL. 235.86

FILL FACE @ END BENT 2
STA. 41+75.04 -Y22FLYCC-
G.P. EL. 236.67

EXP. | FIX. | FIX. | FIX. | FIX. | EXP. | EXP. | FIX. | FIX. | EXP.

APPROACH SLAB (TYP.)
FILL
FINISHED GRADE
1½:1 SLOPE NORMAL TO CAP (TYP.)
FILL
STEEL PILES (TYP.)
RIP RAP CLASS II (TYP.)
APPROXIMATE EXISTING GROUND LINE
STEEL PIPE PILES (TYP.)

END BENT 1 | BENT 1 | BENT 2 | BENT 3 | BENT 4 | END BENT 2

(+)0.5399% (+)3.5924%
PI STA = 44+80.00
EL = 238.31
VC = 450'

GRADE DATA -Y22FLYCC-

SECTION ALONG -Y22FLYCC-
SECTION TAKEN AT RIGHT ANGLES TO END BENTS AND BENTS

CRANE MATS WITH STONE

TRUCK TRESTLE (FOR GIRDER TRUCKS) - 17,000 LBS/SPAN (33% OF CRANE LBS/SPAN) WITH 24" PILES

BEGIN APPROACH SLAB
STA. 34+01.04
-Y22FLYCC-

W.P. #1 FILL FACE @ END BENT 1 STA. 34+25.04 -Y22FLYCC-
W.P. #2 BENT 1 STA. 35+75.04 -Y22FLYCC-
W.P. #3 BENT 2 STA. 37+25.04 -Y22FLYCC-
W.P. #4 BENT 3 STA. 38+75.04 -Y22FLYCC-
W.P. #5 BENT 4 STA. 40+25.04 -Y22FLYCC-
W.P. #6 FILL FACE @ END BENT 2 STA. 41+75.04 -Y22FLYCC-

RIP RAP CLASS II (TYP.)
40 ft
55'-7" OUT TO OUT
90°-00'-00" (TYP.)
BRIDGE ID STA. 38+00.04 -Y22FLYCC-
END APPROACH SLAB STA. 41+99.04 -Y22FLYCC-
-Y22FLYCC
CONCRETE BARRIER RAIL WITH AESTHETIC TREATMENT (TYP.)
250 TN CRANE TRESTLE
150'-0" (SPAN A)
150'-0" (SPAN B)
150'-0" (SPAN C)
150'-0" (SPAN D)
150'-0" (SPAN E)
750'-0" (TOTAL LENGTH FILL FACE TO FILL FACE)

PLAN
PILES NOT SHOWN FOR CLARITY
END BENTS AND BENTS ARE PARALLEL

TURBINE REDESIGN

STRUCTURE #15

PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

PROJECT NO. R-2828
WAKE & JOHNSTON COUNTY
STATION: 38+00.04 -Y22FLYCC-
SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRELIMINARY
GENERAL DRAWING
BRIDGE ON -Y22FLYCC-
OVER UNNAMED TRIBUTARY
TO SWIFT CREEK

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S15-1
1			3			TOTAL SHEETS
2			4			XX

DESIGNED BY:	J. SHERMAN	DATE: SEPT 2018
DRAWN BY:	C. MAYHAY	DATE: SEPT 2018
CHECKED BY:	M. WAGNER	DATE: SEPT 2018
DESIGN ENGINEER OF RECORD:		DATE:

LANE BLYTHE A JOINT VENTURE WSP

REVISIONS
8/17/99

10/2/2018
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7/18/2019
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PERMIT DRAWING
SHEET 137 OF 161

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	47(1)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

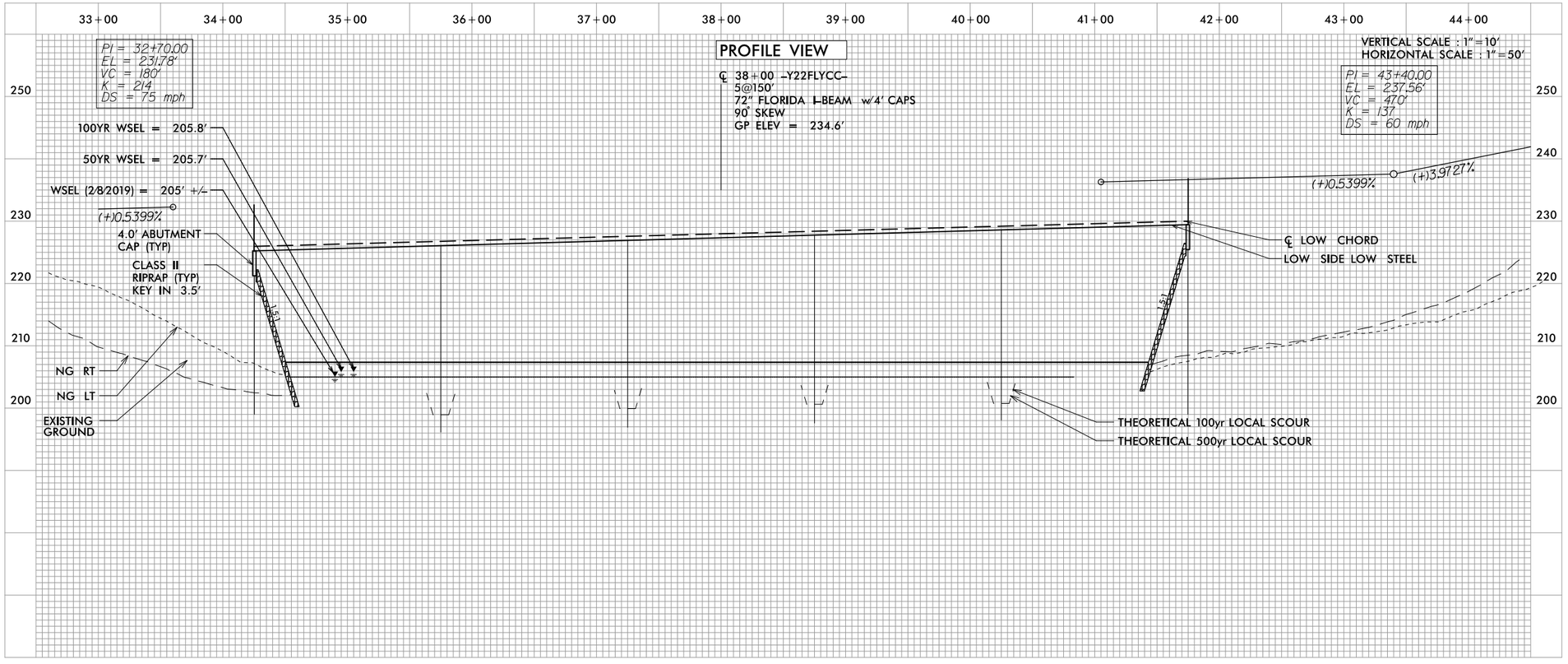
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SITE #74

BRIDGE PROFILE AT -Y22FLYCC- STA. 38+00

(Basin 20, Stream 5)



PERMIT DRAWING
SHEET 138 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	48
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

MATCH LINE SEE SHEET 33

MATCH LINE SEE SHEET 33 -Y22FLYCC- STA. 87+75.00

MATCH LINE SEE SHEET 34 -Y22RFE- STA. 37+00.00

MATCH LINE SEE SHEET 57

SEE SHEET 48A

SITE #77

IMPACTS "BY OTHERS", TYP. (PROJECT I-5111)

SITE #78

WFH

WEY

WFI

SET

TEMPORARY SURFACE WATER IMPACT

WEX

SET

MATCH LINE SEE SHEET 57

MATCH LINE SEE SHEET 49

MATCH LINE SEE SHEET 49 -Y22FLYCC- STA. 72+00.00

MATCH LINE SEE SHEET 49 -Y22RPEA- STA. 23+00.00

GRADE TO DRAIN

GRADE TO DRAIN

GRADE TO DRAIN

F F DENOTES FILL IN WETLAND

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 139 OF 161

100 0 100
GRAPHIC SCALE

LOCATION:	
TIP NO.:	COUNTY:
DESIGNED BY:	
CHECKED BY:	DATE:

11/8/2022
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REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	48
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

MATCH LINE SEE SHEET 33

MATCH LINE SEE SHEET 33 -Y22FLYCC- STA. 87+75.00

MATCH LINE SEE SHEET 34 STA. -Y22RFE- 37+00.00

MATCH LINE SEE SHEET 57

MATCH LINE SEE SHEET 57

MATCH LINE SEE SHEET 49

MATCH LINE SEE SHEET 49 -Y22FLYCC- STA. 72+00.00

MATCH LINE SEE SHEET 49 -Y22RPEA- STA. 23+00.00

SEE SHEET 48A

SITE #77

IMPACTS "BY OTHERS", TYP. (PROJECT I-5111)

SITE #78

WFH

WFI

WEY

WEX

SET

SET

TEMPORARY SURFACE WATER IMPACT

GRADE TO DRAIN

GRADE TO DRAIN

GRADE TO DRAIN

RETAIN

REMOVE

SPECIAL LATERAL V-DITCH SEE DETAIL 3of3

2' SPECIAL LATERAL DITCH SEE DETAIL 3of3

CAMDEN COUNTY CURRITUCK COUNTY

DARE COUNTY DUCK TOWN

DARE COUNTY DUCK TOWN

F F DENOTES FILL IN WETLAND

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 140 OF 161

100 0 100
GRAPHIC SCALE

LOCATION:	
TIP NO.:	COUNTY:
DESIGNED BY:	
CHECKED BY:	DATE:

USER:
DGN:
PLOT SCALE:
PLOT DATE:
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PROJECT REFERENCE NO.	SHEET NO.
R-2828	48A
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

LANE BLYTHE WSP

REVISIONS 8/17/99

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

F F DENOTES FILL IN WETLAND

NAD 83/2011

SITE #77

WEY

SITE #78

WFI

SET

WEX

REMOVE

RETAIN

EXISTING 60" RCP

TEMPORARY SURFACE WATER IMPACT

IMPACTS "BY OTHERS", TYP. (PROJECT I-5111)

PERMIT DRAWING SHEET 141 OF 161

GRAPHIC SCALE 100 0 100

7/18/2019
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LANE BLYTHE WSP

PROJECT REFERENCE NO.	SHEET NO.
R-2828	48A

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

REVISIONS 8/17/99

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

F F DENOTES FILL IN WETLAND

NAD 83/2011

SITE #77

WEY

SITE #78

WFI

SET

WEX

REMOVE

RETAIN

EXISTING 60" RCP

TEMPORARY SURFACE WATER IMPACT

IMPACTS "BY OTHERS", TYP. (PROJECT I-5111)

POSSIBLE JUNCTION

US 70 BYP EBL 24' BST

PERMIT DRAWING
SHEET 142 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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PRDFWLC501$

REVISIONS

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

LANE BLYTHE

PROJECT REFERENCE NO.	SHEET NO.
R-2828	49

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

NAD 83/2011

MATCH LINE SEE SHEET 48 -Y22FLYOC- STA. 72+00.00

MATCH LINE SEE SHEET 48 -Y22RPEA- STA. 23+00.00

MATCH LINE SEE SHEET 57 -Y22FLYBD- STA. 80+00.00

MATCH LINE -Y22FLYCC- STA. 62+00.00

MATCH LINE -Y22SILPRPC- STA. 32+00.00

MATCH LINE -Y22RPEA- STA. 13+00.00

MATCH LINE -Y22RPE- STA. 12+45.00

MATCH LINE SEE SHEET 50 -Y22FLYBD- STA. 105+04.82

MATCH LINE SEE SHEET 57 -Y22RPCD- STA. 14+50.00

MATCH LINE SEE SHEET 52 -Y22RPDE- STA. 25+00.00

SITE #79 SEE INSET A

SITE #80

SITE #81

WEW

SET

WEV

WEU

WET

PIPE INLET CHANNEL STABILIZATION CLASS II RIPRAP SEE DETAIL 3-19

TOE PROTECTION SEE DETAIL 3-22

SPECIAL LATERAL V DITCH SEE DETAIL 3-22

SPECIAL CUT V DITCH SEE DETAIL 3-22

REMOVE

RETAIN

GRADE TO DRAIN

SEE R/W ACQUISITION

BERM DITCH SEE DETAIL 3-22

TEMPORARY SURFACE WATER IMPACT

SURFACE WATER IMPACT

PIPE OUTLET CHANNEL STABILIZATION CLASS II RIPRAP SEE DETAIL 3-19

TOE PROTECTION SEE DETAIL 3-14

INSET A

INSET B

GRAPHIC SCALE 25 0 25

GRAPHIC SCALE 100 0 100

PERMIT DRAWING SHEET 143 OF 161

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:

REVISIONS

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

LANE BLYTHE

PROJECT REFERENCE NO.	SHEET NO.
R-2828	49

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

NAD 83/2011

MATCH LINE SEE SHEET 48 -Y22FLYOC- STA. 72+00.00

MATCH LINE SEE SHEET 48 -Y22RPEA- STA. 23+00.00

MATCH LINE SEE SHEET 57 -Y22FLYBD- STA. 80+00.00

MATCH LINE -Y22SLIPRPC- STA. 32+00.00

MATCH LINE -Y22FLYCC- STA. 62+00.00

MATCH LINE SEE SHEET 57 -Y22RPFD- STA. 14+50.00

MATCH LINE SEE SHEET 57A -Y22RPDE- STA. 25+00.00

MATCH LINE -Y22RPE- STA. 12+45.00

MATCH LINE -Y22RPEA- STA. 13+00.00

MATCH LINE SEE SHEET 50 -Y22FLYBD- STA. 105+04.82

SITE #79 WEW SET

SEE INSET A

SITE #80 SET WEU

SITE #81 WET

SITE #79

SITE #81

PIPE INLET CHANNEL STABILIZATION CLASS II RIPRAP SEE DETAIL 3-19

TOE PROTECTION SEE DETAIL 3-22

SPECIAL LATERAL V DITCH SEE DETAIL 3-22

REMOVE

RETAIN

GRADE TO DRAIN

BERM DITCH SEE DETAIL 3-22

SECT LATERAL V DITCH SEE DETAIL 3-22

DEL H ACCEPTABLE GRADE TO DRAIN

INSET A

SET

WEW

SITE #79

PIPE INLET CHANNEL STABILIZATION CLASS II RIPRAP SEE DETAIL 3-19

SURFACE WATER IMPACT

TEMPORARY SURFACE WATER IMPACT

TOE PROTECTION SEE DETAIL 3-14

25 0 25
GRAPHIC SCALE

INSET B

SITE #81

SET

SURFACE WATER IMPACT

WEU

PIPE OUTLET CHANNEL STABILIZATION CLASS II RIPRAP SEE DETAIL 3-19

SITE #79

25 0 25
GRAPHIC SCALE

PERMIT DRAWING SHEET 144 OF 161

100 0 100
GRAPHIC SCALE

LOCATION:	
TIP NO.:	COUNTY:
DESIGNED BY:	
CHECKED BY:	DATE:

PROJECT REFERENCE NO.	SHEET NO.
R-2828	50
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

LANE BLYTHE WSP

NAD 83/2011

REVISIONS 8/17/99

MATCH LINE SEE SHEET 49 -Y22FLYBD- STA. 105+04.82

MATCH LINE -Y22RPEA- STA. 13+00.00

MATCH LINE -Y22RPE- STA. 12+45.00

MATCH LINE SEE SHEET 51 -Y22RPDE- STA. 63+00.00

SPECIAL CUT 'V' DITCH SEE DETAIL 3-6

FLOWABLE FILL

REMOVE

RETAIN

12" RCP-III COLLAR AND EXTEND

48" WW & ISBW

36" C&G

42" RCP

24" RCP

CABLE

RIP RAP

CONC H/W

DRY DETENTION/HAZARDOUS SPILL BASIN
WQV= 44,599 CF
CAPACITY = 60,635 CF
FLOOR EL= 220 FT
TOP OF RISER= 224 FT
SEE DETAIL 3-XX

PIPE OUTLET CHANNEL STABILIZATION CLASS I RIPRAP SEE DETAIL 3-18

SITE #82
SEE INSET A

SEH

WFN(2)

SEG

INSET A

SURFACE WATER IMPACT

TEMPORARY SURFACE WATER IMPACT

50 0 50
GRAPHIC SCALE

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

F F DENOTES TEMPORARY FILL IN WETLAND

PERMIT DRAWING
SHEET 145 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
C:\pwworking\ncs01\ncs_workingdir\11936\336429_I063\R2828_hyd_prm_wet_psh_50.dgn
ppowell
PROJECT MANAGER

LANE BLYTHE A JOINT VENTURE

wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	50
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

NAD 83/2011

REVISIONS

8/17/99

MATCH LINE -Y22RPEA- STA. 13+00.00

MATCH LINE -Y22RPE- STA. 12+45.00

MATCH LINE SEE SHEET 49 -Y22FLYBD- STA. 105+04.82

MATCH LINE SEE SHEET 51 -Y22RPDE- STA. 63+00.00

SPECIAL CUT 'V' DITCH SEE DETAIL 3-6

FLOWABLE FILL

REMOVE

RETAIN

48" RCP

12" RCP-III

COLLAR AND EXTEND

INV=222.37'

CABLE

48" WW & ISBW

5001 36" FS

5002 36" FS

5003 42" RCP

5004 36" C&G

5005 36" C&G

5006 36" C&G

5007 42" RCP

5008 36" C&G

5009 36" C&G

5010 42" RCP

2GIA

2GI

2GIG

2GIH

EX10

BY10-10005

TOP=228.22'

TOP=228.32'

TOP=227.99'

OFFSET 2GI W/MH

DRY DETENTION/HAZARDOUS SPILL BASIN
WQV= 42,599 CF
CAPACITY = 60,635 CF
FLOOR EL= 220 FT
TOP OF RISER= 224 FT
SEE DETAIL 3-XX

PIPE OUTLET CHANNEL STABILIZATION CLASS I RIPRAP SEE DETAIL 3-18

SITE #82
SEE INSET A

SEH

WFN(2)

SEG

INSET A

50 0 50
GRAPHIC SCALE

SURFACE WATER IMPACT

TEMPORARY SURFACE WATER IMPACT

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

F F DENOTES TEMPORARY FILL IN WETLAND

PERMIT DRAWING SHEET 146 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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ADPWICS01$

PROJECT REFERENCE NO.	SHEET NO.
R-2828	54
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

REVISIONS

8/17/99

NAD 83/2011

IMPACT "BY OTHERS" (PROJECT I-5777)

SEM

SITE #82A

6' BASE CHANNEL CHANGE W/CLASS I RIPRAP SEE DETAIL 3-30

IMPACT "BY OTHERS" (PROJECT I-5777)

MARKED BY CITY OF RALEIGH PUBLIC UTILITIES POSSIBLY ABANDONED PER RALEIGH PUBLIC UTILITIES

SHOWN ACCORDING TO MAKE CO. GIS

MARKED BY CITY OF RALEIGH PUBLIC UTILITIES 215-14

SEE DETAIL

MATCH LINE SEE SHEET 55
-Y22- STA. 388+00.00

POSSIBLE FORCE MAIN AIR RELEASE MH

TOP=260.07'
INV=247.17'
FULL OF WATER.

IMPACT "BY OTHERS" (PROJECT I-5777)

PERMIT DRAWING
SHEET 147 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
C:\pwworkingdir\jcs01\jcs_workingdir\19138\336429_1104\R2828_hyd_prm_wet_psh_54.dgn
jcs01
pwworkingdir

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	54
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

LANE BLYTHE WSP

NAD 83/2011

IMPACT "BY OTHERS" (PROJECT I-5777)

SEM

6' BASE CHANNEL CHANGE W/CLASS I RIPRAP SEE DETAIL 3-30

IMPACT "BY OTHERS" (PROJECT I-5777)

IMPACT "BY OTHERS" (PROJECT I-5777)

SEM

SEM

MATCH LINE SEE SHEET 55
-Y22- STA. 388+00.00

PERMIT DRAWING
SHEET 148 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
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ppw(ics01)

LANE BLYTHE wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	55
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

NAD 83/2011

REVISIONS

8/17/99

MATCH LINE SEE SHEET 54
-Y22- STA. 388+00.00

MATCH LINE SEE SHEET 56
-Y22- STA. 401+00.00

SEN
SEM
SEK
WFF
WEG
WEE

SITE #83

IMPACT
"BY OTHERS"
(PROJECT I-5111)

PROPOSED GUARDRAIL

6' BASE CHANNEL CHANGE W/CLASS II RIPRAP SEE DETAIL 3.34

CL B RIP RAP ESTIMATED 2.3 TON EST. 11 SY GF

COLLAR AND EXTEND

REMOVE

PLUG & FILL W/FLOWABLE FILL

24" CSP 2 ELBOWS

RIP RAP AT EMBANKMENT SEE DETAIL BA

Conv. DI TO JB w/MH

JB w/MH

PERMIT DRAWING
SHEET 149 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
C:\Projects\01\ics_workingdir\19138\336429_1066\R2828_hyd_prm_wet_psh_55.dgn
PROFILE01$

LANE BLYTHE JOINT VENTURE

wsp

PROJECT REFERENCE NO.	SHEET NO.
R-2828	55
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

NAD 83/2011

REVISIONS 8/17/99

MATCH LINE SEE SHEET 54 -Y22- STA. 388+00.00

MATCH LINE SEE SHEET 56 -Y22- STA. 401+00.00

SEM

SITE #83 IMPACT "BY OTHERS" (PROJECT I-5111)

WFF

SEM

IMPACT "BY OTHERS" (PROJECT I-5111)

WEG

WEE

PROPOSED GUARDRAIL

GRED TL-3

CL B RIP RAP ES-823 TON EST. 11 SY GF

COLLAR AND EXTEND

6' BASE CHANNEL CHANGE W/CLASS II RIPRAP SEE DETAIL 3-34

15" CMP EXTENSION

REMOVE

2GI

RETAIN

10' CONC

10' BST

4' CONC

CABLE

15" RCP-III

24" RCP-III

24" CSP 2 ELBOWS

Conv. DI TO JB w/MH

PLUG & FILL W/FLOWABLE FILL

TRENCHLESS INSTALLATION METHOD (BORED & JACKED) 48" STEEL CASING

REMOVE EXIST. 15" RCP-III & 24" RCP-III

JB w/MH

2'-2.0" CONC. INV.

3.5' CONC. INV.

48" WW & 15BW

EXISTING R/W

R/W MON

RIP RAP AT EMBANKMENT SEE DETAIL BA

HW

FS

BDO

INV=285.38

INV=285.41

24" IN=258.41"

MARKED SHOWN ACCORDING TO FIELD SURVEY

SHOWN ACCORDING TO AS-BUILT PLANS

PERMIT DRAWING
SHEET 150 OF 161

100 0 100
GRAPHIC SCALE

7/18/2019
C:\pwworking\ics01\ics_workingdir\19138\336429_1100\R2828_hyd_prm_wet_psh_55_cont.dgn
PROPWL501$

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	56

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

NAD 83/2011

MATCH LINE SEE SHEET 55 -Y22- STA. 401+00.00

MATCH LINE SEE SHEET 46 -Y22- STA. 429+50.00

MATCH LINE SEE SHEET 46 -Y22FLYBD- STA. 26+00.00

MATCH LINE SEE SHEET 37 -EYBMPC- STA. 23+23.53

SITE #84
SEE INSET A

SITE #85
SEE INSET B

SEL

SEV

WFE

IMPACT "BY OTHERS" PROJECT (I-5111)

"BY OTHERS" (PROJECT I-5111)

INSET A

TEMPORARY SURFACE WATER IMPACT

PIPE OUTLET CHANNEL STABILIZATION CLASS I RIPRAP SEE DETAIL 3-19

SEE C800 OUTLET DETAIL –L2– STA. 405+38

SITE #84

PDE

SEL

JS

SP DET. HW

CL B RIP RAP EST. 5 TON EST. 10 SY GF

COLLAR AND EXTEND

"BY OTHERS" (PROJECT I-5111)

EXISTING R/W

BZ 2

INSET B

SITE #85

PIPE OUTLET CHANNEL STABILIZATION CLASS I RIPRAP SEE DETAIL 3-18

TOE PROTECTION SEE DETAIL 3-14

SEV

PDE

JS

TEMPORARY SURFACE WATER IMPACT

48" WW & ISBW

30"

2GI

JB 30"MH

30" RCP III

FS

"BY OTHERS" (PROJECT I-5111)

50 0 50
GRAPHIC SCALE

PERMIT DRAWING SHEET 151 OF 161

100 0 100
GRAPHIC SCALE

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

LOCATION:	
TIP NO.:	COUNTY:
DESIGNED BY:	
CHECKED BY:	DATE:

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	56

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

NAD 83/2011

SITE #84
SEE INSET A

SITE #85
SEE INSET B

MATCH LINE SEE SHEET 55
-Y22- STA. 401+00.00

MATCH LINE SEE SHEET 46
-Y22FLYBD- STA. 26+00.00

MATCH LINE SEE SHEET 46
-Y22- STA. 429+50.00

MATCH LINE SEE SHEET 37
-EYSRPC- STA. 23+23.53

MATCH LINE SEE SHEET 46
-Y22FLYBK- STA. 37+60.00

IMPACT
"BY OTHERS"
(PROJECT I-5111)

INSET A

TEMPORARY
SURFACE
WATER IMPACT

SITE #84

PIPE OUTLET
CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 3-19

SEE C800 OUT
DETAIL -L2-
STA. 405+38

PDE
SEL
SEV
JS
BZ 1
BZ 2
CL B RIP RAP
EST. 5 TON
EST. 10 SY GEO
SP. DET. HW
COLLAR AND
EXTEND
"BY OTHERS"
(PROJECT I-5111)
EXISTING R/W

INSET B

SITE #85

PIPE OUTLET
CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 3-18

TOE PROTECTION
SEE DETAIL 3-14

SEV
PDE
JS
TS
JB
30"
2GI
JB 30MH
RCP III
FS
48" WW & ISBW
"BY OTHERS"
(PROJECT I-5111)

TEMPORARY
SURFACE
WATER IMPACT

GRAPHIC SCALE 50 0 50

GRAPHIC SCALE 100 0 100

PERMIT DRAWING
SHEET 152 OF 161

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

LOCATION:
TIP NO.: COUNTY:
DESIGNED BY:
CHECKED BY: DATE:

REVISIONS

LANE BLYTHE

PROJECT REFERENCE NO.	SHEET NO.
R-2828	57

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

NAD 83/2011

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

MATCH LINE SEE SHEET 48

MATCH LINE -Y22RPBD- STA. 17+00.00

MATCH LINE SEE SHEET 49 -Y22FLYBD- STA. 80+00.00

MATCH LINE -Y22SLIPRPC- STA. 32+00.00

MATCH LINE -Y22FLYCC- STA. 62+00.00

MATCH LINE SEE SHEET 49 -Y22RPCD- STA. 14+50.00

MATCH LINE -Y22RPDE- STA. 25+00.00

SEE SHEET 57A

SITE #88

IMPACT "BY OTHERS" (PROJECT I-5111)

SITE #87 SEE INSET A

SITE #88

SITE #76

SURFACE WATER IMPACT

SURFACE WATER IMPACT

SDO

SDO

SDO

WEZ

SES

SES

SES

MATCH LINE SEE SHEET 33 -Y22- STA. 46+00.00

MATCH LINE -Y22LPC- STA. 12+19.29

MATCH LINE SEE SHEET 33 -Y22LPC- STA. 18+00.00

MATCH LINE SEE SHEET 32 -Y22FLYBD- STA. 63+00.00

MATCH LINE SEE SHEET -Y22SLIPRPC- STA. 18+00.00

MATCH LINE SEE SHEET 47 -Y22FLYCC- STA. 148+00.00

MATCH LINE SEE SHEET 47 -Y22FLYCC- STA. 48+00.00

MATCH LINE SEE SHEET 47 -Y22RPC- STA. 16+15.00

MATCH LINE SEE SHEET 58 -Y22- STA. 87+50.00

-Y22SEC2- POT Sta. 477+22.89
-Y22SEC3- POT Sta.75+39.92

GRAPHIC SCALE 50 0 50

INSET A

SITE #87

TEMPORARY SURFACE WATER IMPACT

JS

SES

PIPE OUTLET CHANNEL STABILIZATION CLASS I RIPRAP SEE DETAIL 3-18

SURFACE WATER IMPACT

COLLAR AND EXTEND 18" RCP-III

RETAIN

JB

BZ 1

BZ 2

GRAPHIC SCALE 25 0 25

PERMIT DRAWING SHEET 153 OF 161

GRAPHIC SCALE 100 0 100

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:

REVISIONS

LANE | BLYTHE

PROJECT REFERENCE NO.	SHEET NO.
R-2828	57

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

NAD 83/2011

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

MATCH LINE SEE SHEET 48

MATCH LINE SEE SHEET 49 -Y22FLYBD- STA. 80+00.00

MATCH LINE -Y22SLIPRPC- STA. 32+00.00

MATCH LINE -Y22FLYCC- STA. 62+00.00

MATCH LINE SEE SHEET 49 -Y22RPCD- STA. 14+50.00

MATCH LINE -Y22RPDE- STA. 25+00.00

SEE SHEET 57A

SITE #88

IMPACT "BY OTHERS" (PROJECT I-5111)

SITE #87 SEE INSET A

SITE #88

WEZ

SES

SES

SES

MATCH LINE -Y22RBD STA. 17+00.00

MATCH LINE SEE SHEET 33 -Y22- STA. 46+00.00

MATCH LINE SEE SHEET 58 -Y22- STA. 87+50.00

SITE #86

SDO

SURFACE WATER IMPACT

MATCH LINE -Y22LPC- STA. 12+19.29

MATCH LINE SEE SHEET 33 -Y22LPC- STA. 18+00.00

MATCH LINE SEE SHEET 32 -Y22FLYBD- STA. 63+00.00

SDO

SDO

SURFACE WATER IMPACT

MATCH LINE SEE SHEET -Y22SLIPRPC- STA. 18+00.00

MATCH LINE SEE SHEET 47 -Y22FLYCC- STA. 148+00.00

MATCH LINE SEE SHEET 47 -Y22FLYCC- STA. 48+00.00

MATCH LINE SEE SHEET 47 -Y22RPC- STA. 16+15.00

INSET A

SITE #87

TEMPORARY SURFACE WATER IMPACT

JS

SES

PIPE OUTLET CHANNEL STABILIZATION CLASS I RIPRAP SEE DETAIL 3-18

SURFACE WATER IMPACT

COLLAR AND EXTEND 18" RCP-III

RETAIN 18"

HWM 2

PERMIT DRAWING SHEET 154 OF 161

GRAPHIC SCALE

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:

PROJECT REFERENCE NO.	SHEET NO.
R-2828	57A
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

LANE BLYTHE JOINT VENTURE

wsp

NAD 83/2011

REVISIONS 8/17/99

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

TOE PROTECTION
SEE DETAIL 3-32

SITE #88

PIPE OUTLET
CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 3-18

SES

TEMPORARY SURFACE WATER IMPACT

48" RCP-III (BURIED 0.80')

HW

48" WW & ISBW

WOODS

TOE PROTECTION
W/CL B RIPRAP
SEE DETAIL O

-Y22SEC2- POT Sta. 477+22.89
-Y22SEC3- POT Sta. 75+39.92

RETAIN DI 3902

RETAIN 15" RCP

REMOVE DI 3903

TB 2GIB-ST

I-40 WBL 47' BST

10' CONC

10' BST

MTL

CABLE

TB 2G

PERMIT DRAWING
SHEET 155 OF 161

50 0 50
GRAPHIC SCALE

7/18/2019
DGN: R2828_hyd_prm_wet_psh_57A.dgn
USER: jcs
PRP_WL_SHTS

PROJECT REFERENCE NO.	SHEET NO.
R-2828	57A
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

LANE BLYTHE wsp

NAD 83/2011

REVISIONS 8/17/99

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SITE #88

TOE PROTECTION
SEE DETAIL 3-32

PIPE OUTLET
CHANNEL STABILIZATION
CLASS I RIPRAP
SEE DETAIL 3-18

TEMPORARY SURFACE WATER IMPACT

SES

48" RCP-III (BURIED 0.80')

HW

48" WW & ISBW

TOE PROTECTION
W/CL B RIPRAP
SEE DETAIL O

RETAIN DI 3902

REMOVE DI 3903

TB 2GIB-ST

-Y22SEC2- POT Sta. 477+22.89
-Y22SEC3- POT Sta. 75+39.92

I-40 WBL 47' BST

10' CONC

10' BST

CABLE

WOODS

PERMIT DRAWING
SHEET 156 OF 161

50 0 50
GRAPHIC SCALE

7/18/2019
DGN: wlcs01
RDP: wlcs01
C:\pwworkingdir\wlcs01\ics_workingdir\119139\336429.1102\R2828_hyd_prm_wet_psh_57A_cont.dgn

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)
1	503+27 (RT)	Roadway Fill	0.16									
2	505+24, 505+63 (LT)	9'x8' RCBC						0.04	< 0.01	612	20	
3	506+50 (RT)	42" RCP	0.52			0.02		< 0.01	< 0.01	125	10	
4	508+03 (RT)	Drain Pond						1.57				
5	508+60 - 515+40 (RT)	Roadway Fill	0.03					0.03		403		
6	512+15 (LT)	Roadway Fill	0.02		0.01	0.01		0.02		173		
7	515+32 (LT) - 518+25 (RT)	Roadway Fill	0.67		0.07	0.05		< 0.01		27		
8	529+75 - 531+00 (RT)	Roadway Fill	0.12			0.01						
9	545+63 - 548+40	Roadway Fill	0.22									
10	548+68 (LT) - 549+40 (RT)	6'x8' RCBC						0.06	< 0.01	545	8	
11	557+67 (RT) - 559+60 (LT)	9'x8' RCBC	0.06	0.01		0.02		0.09	< 0.01	522	10	
12	558+00 (RT)	Roadway Fill	0.06									
13	Ramp Quad C	Drain Pond						1.04				
13	Ramp Quad C	Roadway Fill	0.04									
13A	Ramp Quad A	Drain Pond	0.40					1.01				
14	609+07 (LT) - 610+38 (RT)	10'x8' RCBC	1.25	0.04		0.12		0.24	< 0.01	399	10	
15	616+50 (RT)	Drain Pond		< 0.01				0.35				
16	618+00 (RT)	Drain Pond						1.01				
17	622+30 - 622+54 (RT)	Roadway Fill	0.01			< 0.01						
18	653+75 - 655 + 50 (LT)	Roadway Fill	0.35			0.04						
18A	-Y18A- 15+00 - 17+50	Roadway Fill	0.19			0.10						
18B	-Y18A- 19+50	Roadway Fill						< 0.01	< 0.01	64	10	
19	BRIDGE	Bank Stabilization		< 0.01				< 0.01	< 0.01	10	17	
19A	BRIDGE	Roadway Fill	0.03	0.07			0.69					
TOTALS*:			4.13	0.13	0.08	0.37	0.69	5.48	< 0.01	2880	85	0

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
07/18/2019
WAKE & JOHNSTON
TIP NO. R-2828
WBS NO. 37673.1.TA2

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)
20	662+00 - 671+00	Roadway Fill	2.00			0.12						
21	689+00 - 691+00 (LT)	Roadway Fill	0.18			< 0.01						
22	690+00 - 691+75 (RT)	Drain Pond						1.19				
23	692+20 - 703+00	Roadway Fill	2.69	0.10	0.28	0.15		0.04		697		
24		Drain Pond						0.12				
25		Drain Pond						0.93				
26	705+75 - 709+00	Roadway Fill						0.02	< 0.01	380	10	
26A	709+00	Roadway Fill						0.02	< 0.01	330	10	
27	705+75 - 714+00	Roadway Fill	2.47	0.05	0.04	0.14						
28	711+00 - 714+00 (LT)	Roadway Fill						0.02	< 0.01	213	10	
29	726+50 - 728+00 (RT)	Drain Pond						1.40				
30	728+00 - 734+50 (RT)	Channel Change						0.06		673		
31	736+00	Roadway Fill	0.37	0.02		0.02		0.03	< 0.01	130	10	
32	736+70 (LT) - 738+00 (RT)	2 @ 8'x9' RCBC						0.07	< 0.01	430	25	
33	759+00 (RT) - 759+82 (LT)	Roadway Fill	0.38			0.03						
34	767+65 (RT)	Roadway Fill				< 0.01						
35	782+00 (LT)	9'x8' RCBC						0.06	< 0.01	489	20	
36	785+50	Roadway Fill	0.70	0.02	< 0.01	0.03						
37	785+90 (RT) - 787+70 (LT)	48" RCP						0.03	< 0.01	449	10	
38	788+00 (LT)	Roadway Fill	< 0.01			< 0.01						
39	812+00 - 813+00 (LT)	Roadway Fill	< 0.01			0.02						
40	813+50	Channel Change						< 0.01		93		
40A	-Y21- 40+00	Roadway Fill	0.09									
40B	-Y21- 44+40	Roadway Fill						< 0.01	< 0.01	79	10	
TOTALS*:			8.90	0.19	0.32	0.54		3.99	0.01	3963	105	0

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
07/18/2019
WAKE & JOHNSTON
TIP NO.R-2828
WBS NO. 37673.1.TA2

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)
41	813+50 (LT) - 816+50 (LT)	Channel Change						0.04	< 0.01	284	40	
42	822+00 (LT) - 827+50 (RT)	Channel Change						0.14	< 0.01	1015	10	
42A	BRIDGE	Work Trestle						0.02		107		
43	831+00	Bank Stabilization						< 0.01	0.09	22	357	
44	BRIDGE	Bridge	0.02	0.02			0.47		0.05		214	
45	841+78 - 843+00 (LT)	Roadway Fill	0.04			0.03						
46	REMOVED											
47	856+50 - 860+75	Roadway Fill	0.36			0.04						
48	860+75 - 868+50	Bridge	0.01	0.02			0.61					
49	860+75 - 868+50	Work Trestle	< 0.01	< 0.01			0.09					
50	876+00	RCBC						0.03	< 0.01	361	20	
50A	875+50 - 877+00	Roadway Fill	0.56	0.02		0.02						
51	890+00	42" RCP						< 0.01	< 0.01	134	10	
51A	890+00	Roadway Fill	0.28									
52	895+00	60" RCP						0.06	< 0.01	627	20	
53	900+50 (LT) - 906+50 (RT)	42" RCP						0.06	< 0.01	995	20	
54	911+00 (LT) - 913+75 (RT)	Roadway Fill	1.90	0.04		0.06						
55	914+00 (RT) - 918+50 (LT)	2@ 9'x9' RCBC						0.12	< 0.01	798	10	
56	-Y22SLIPRPB- 38+50 (LT)	Roadway Fill						0.02	< 0.01	487	10	
57		Roadway Fill						0.02	< 0.01	185	10	
58		42" and 54" RCP						0.07	< 0.01	783	40	
59		Roadway Fill						< 0.01	< 0.01	37	10	
60	REMOVED											
TOTALS*:			3.17	0.10		0.16	1.16	0.57	0.17	5835	771	0

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NOTES:

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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)
70	-Y17- 28+50	Pipe Extension						< 0.01	< 0.01	20	10	
71	REMOVED											
72	-Y21- 58+80 (LT)	Fill Pond						< 0.01	0.01		10	
73		Pipe Extension						< 0.01	< 0.01	67	10	
73A	REMOVED											
74	-Y22FLYCC- 34+00 - 41+00	Bridge	0.02	0.01			1.14					
75	-Y22FLYCC- 34+00 - 41+00	Work Trestle		0.16					0.01		254	
76	-Y22FLYCC- 143+00 (RT)	42" RCP	< 0.01	< 0.01				0.09	< 0.01	1101	10	
77		Roadway Fill	0.06									
78		Pipe Extension							< 0.01		10	
79	-Y22FLYBD- 83+00 (LT)	54" RCP						0.04	< 0.01	607	10	
80	-Y22FLYBD- 83+50 (RT)	Roadway Fill	0.03									
81	-Y22RPDE- 29+50 (RT)	Roadway Fill	0.04									
82	-Y22FLYBD- 113+30 (RT)	HSB Outlet		< 0.01				< 0.01	< 0.01	15	10	
82A	2SEC2- 382+00 - 386+00 (	Channel Change						0.03	< 0.01	362	20	
83	-Y22SEC2- 396+50 (LT)	Channel Change		< 0.01				< 0.01	< 0.01	30	10	
84	-Y22SEC2- 405+00 (LT)	Pipe Extension						< 0.01	< 0.01	80	10	
85	-Y22SEC2- 416+00 (LT)	Pipe Extension						< 0.01	< 0.01	88	10	
86	REMOVED											
87	-Y22SEC2- 474+20 (LT)	Bank Stabilization							< 0.01		10	
88	Y22SEC2 (LT) - 80+00 (LT	48" RCP						0.03	< 0.01	274	20	
58												
59												
TOTALS*:			0.16	0.18			1.14	0.22	0.04	2644	404	0

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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)
	SHEET 1 SUBTOTALS*		4.13	0.13	0.08	0.37	0.69	5.48	< 0.01	2880	85	
	SHEET 2 SUBTOTALS*		8.90	0.19	0.32	0.54		3.99	0.01	3963	105	
	SHEET 3 SUBTOTALS*		3.17	0.10		0.16	1.16	0.57	0.17	5835	771	
	SHEET 4 SUBTOTALS*		0.16	0.18			1.14	0.22	0.04	2644	404	
TOTALS*:			16.36	0.60	0.40	1.06	2.99	10.27	0.22	15322	1365	0

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