09/08/99

TIP PROJECT: R-3300A

CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PERMIT DRAWING
SHEET 1 OF 120

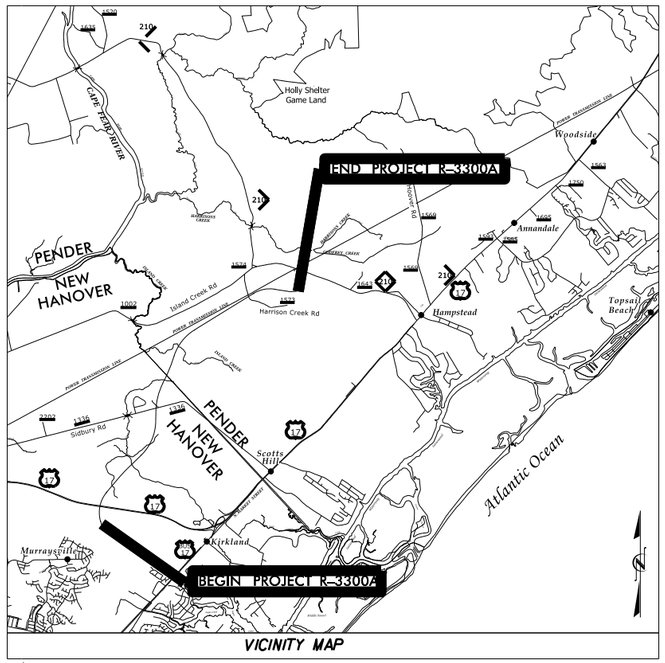
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3300A	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
40237.1.1	N/A	PE
40237.2.1	N/A	R/W
40237.2.U1	N/A	UTILITIES

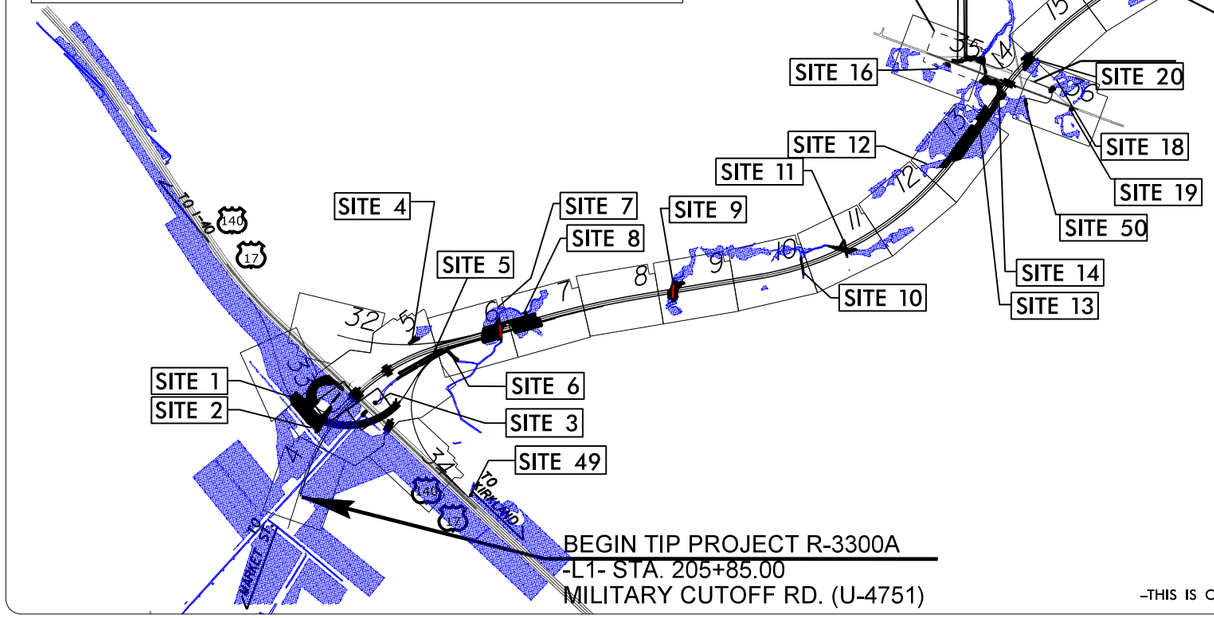
NEW HANOVER & PENDER COUNTIES

LOCATION: *NC 417 (HAMPSTEAD BYPASS) FROM I-140 (WILMINGTON BYPASS) TO SOUTH OF NC 210*

TYPE OF WORK: *GRADING, DRAINAGE, PAVING, STRUCTURES, AND CULVERTS*
WETLAND AND STREAM IMPACTS PERMIT



VICINITY MAP



END TIP PROJECT R-3300A
BEGIN TIP PROJECT R-3300B
-L1- STA. 578+00.00

BEGIN TIP PROJECT R-3300A
-L1- STA. 205+85.00
MILITARY CUTOFF RD. (U-4751)

–THIS IS CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-0929

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

PLANS 50 0 50 100
PROFILE (HORIZONTAL) 50 0 50 100
PROFILE (VERTICAL) 10 0 10 20

DESIGN DATA

ADT 2016 = N/A
ADT 2040 = 54,800
K = 8 %
D = 60 %
T = 6 % *
V = 70 MPH
*(TTST 2% + DUALS 4%)
FUNC CLASS = FREEWAY
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-3300A	=	6.897 MILES
LENGTH STRUCTURE TIP PROJECT R-3300A	=	0.151 MILES
TOTAL LENGTH TIP PROJECT R-3300A	=	7.044 MILES

PREPARED IN THE OFFICE OF:
STANTEC CONSULTING
801 Jones Franklin Road |Suite 300| Raleigh, NC 27606
Tel. (919) 851-6866 | Fax. (919) 851-7024 | www.stantec.com
License No. F-0672

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: APRIL 1, 2019

LETTING DATE: JULY 21, 2021

KATRINA N. HAZEL, P.E.
PROJECT DESIGN ENGINEER

TRACE HOWELL, P.E.
NCDOT DIVISION 3 CONTACT

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

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USER: athompson

REVISIONS

NOT TO SCALE

SKETCH SHOWING RELATIONSHIP OF PAVEMENT WIDTH TO BRIDGE WIDTH

MATCHLINE –Y33RPCA– STA 24+50.00 SEE SHEET 33

DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD 83/1985 2007

MATCHLINE –Y33RPE– STA 24+00.00 SEE SHEET 35

MATCHLINE –Y33RPA– STA 21+00.00 SEE SHEET 34

MATCHLINE –Y33– STA 82+50.00 SEE SHEET 34

MATCHLINE –Y33RPA– STA 21+00.00 SEE SHEET 35

SITE 1

SITE 2

SITE 3

SITE 4

SITE 5

SITE 6

A

B

C

D

FOR ENLARGEMENT SEE PERMIT DRAWING SHEET 3A

FOR ENLARGEMENT SEE PERMIT DRAWING SHEET 3B

WETLAND AREA INCLUDED IN U-4751 PERMITS

EXCAVATION IN WETLAND

MECHANIZED CLEARING

FILL IN WETLAND

TEMPORARY IMPACTS IN SURFACE WATER

IMPACTS IN SURFACE WATER

DRIVEWAY TO BE REMOVED BY OTHERS

DETAIL 5F
L STA 233+43 235+52 RT

DETAIL 5G
Y33 STA 77+24 RT

DETAIL 5E
Y33RPA STA 29+38 – 30+00 RT

DETAIL 5K
MEDIAN V DITCH w/CL8 RIP RAP

DETAIL 5A
LATERAL BASE DITCH

DETAIL 5B
LATERAL BASE DITCH

DETAIL 5C
LATERAL BASE DITCH

DETAIL 5D
LATERAL BASE DITCH

DETAIL 5G
STANDARD BASE DITCH

DETAIL 5H
SPECIAL LATERAL V DITCH

DETAIL 5I
OUTLET CHANNEL CHANGE WITH FLOODPLAIN BENCH

DETAIL 5J
LATERAL V DITCH

DETAIL 5M
LATERAL V DITCH

SEE SHEET 40 & 41 FOR –L– PROFILE
SEE SHEET 56 FOR –Y33– PROFILE
SEE SHEET 60 FOR –Y33RPB– PROFILE
SEE SHEET 58 FOR –Y33LPC– PROFILE
SEE SHEET 58 & 59 FOR –Y33RPA– PROFILE
SEE SHEET 61 & 62 FOR –Y33RPCA– PROFILE

PIPES INSTALLED UNDER TIP PROJECT U-4751 HAVE BEEN MODIFIED TO SHOW AS EXISTING ON TIP PROJECT R-3300A
SEE SHEET 28-1 FOR HORIZONTAL CURVE DATA

GRAPHIC SCALE

Dewberry
NC ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
PHONE (919) 381-8100
FIRM LICENSE NUMBER: C-0910

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel: (919) 851-6666
Fax: (919) 851-7024
www.stantec.com
License No. P-0672

PERMIT DRAWING
SHEET 2 OF 120

PROJECT REFERENCE NO. R-3300A
SHEET NO. 5
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER

9/27/2023 8:09:00 AM

REVISIONS

DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD 83/NSRS 2007

Dewberry
NC ENGINEERING
1011 SCHAUB DRIVE, SUITE 101
RALEIGH, NC 27606
PHONE NO. (919) 881-0000

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Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6666
Fax. (919) 851-7024
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PERMIT DRAWING
SHEET 3 OF 120

PROJECT REFERENCE NO. R-3300A
SHEET NO. 5
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER

SITE 1

SITE 2

SITE 3

SITE 4

SITE 5

SITE 6

MATCHLINE -Y33RPCA- STA 24+50.00 SEE SHEET 33

MATCHLINE -Y33- STA 82+50.00 SEE SHEET 34

MATCHLINE -Y33RPA- STA 29+00.00 SEE SHEET 35

MATCHLINE -Y33RPC- STA 24+50.00 SEE SHEET 4

FOR ENLARGEMENT SEE PERMIT DRAWING SHEET 3A

FOR ENLARGEMENT SEE PERMIT DRAWING SHEET 3B

DETAIL 5F
L STA 233+43 235+52 RT

DETAIL 5J
Y33 STA 77+24 RT

DETAIL 5E
Y33RPA STA 29+38 – 30+00 RT

SEE SHEET 40 & 41 FOR -L1- PROFILE
SEE SHEET 56 FOR -Y33- PROFILE
SEE SHEET 60 FOR -Y33RPB- PROFILE
SEE SHEET 58 FOR -Y33LPC- PROFILE
SEE SHEET 58 & 59 FOR -Y33RPA- PROFILE
SEE SHEET 61 & 62 FOR -Y33RPCA- PROFILE

PIPES INSTALLED UNDER TIP PROJECT U-4751 HAVE BEEN MODIFIED TO SHOW AS EXISTING ON TIP PROJECT R-3300A
SEE SHEET 28-1 FOR HORIZONTAL CURVE DATA

GRAPHIC SCALE

9/27/2021 JRANEY_AM

8/17/99

REVISIONS

F F — DENOTES FILL IN WETLAND

F F — DENOTES IMPACTS IN SURFACE WATER

F F — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

F F — DENOTES EXCAVATION IN WETLAND

DENOTES MECHANIZED CLEARING

NAD 83/NSRS 2007

PERMIT DRAWING
SHEET 3A OF 120

50′ 0′ 50′

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-2609

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
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PROJECT REFERENCE NO.	SHEET NO.
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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SITE 1

MECHANIZED CLEARING

EXCAVATION IN WETLAND

LATERAL 2′ BASE DITCH
SEE DETAIL 5B
210 CY DDE

WETLAND AREA
INCLUDED IN
U-4751 PERMITS

12″ PIPE SLOPE DRAIN

15″ RCP

36″ RCP

WLB

F

C

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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

E E DENOTES EXCAVATION IN WETLAND

DENOTES MECHANIZED CLEARING

NAD 83/NSRS 2007

PERMIT DRAWING
SHEET 3B OF 120

50′ 0′ 50′

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-2609

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
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PROJECT REFERENCE NO.	SHEET NO.
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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

36"
F
BM11
BTM
WLB
42" RCP-III
42" RCP
20′ 15.6" E
-Y33-
NCDOT GPS MON. U4751-11
U4751-11
RETAIN
JB w/MH
60" RCP-IV
RIPRAP AT JURISDICTIONAL STREAM
CL II RIP RAP
50 TONS
75 S.Y. GEOTEXTILE
SEE DETAIL 5J
66" RCP
8" CONC
66" RCP
TRENCHLESS INSTALLATION 60" WELDED STEEL
REMOVE 75′ OF 15" RCP
20′ OF FLOWABLE FILL
TRENCHLESS INSTALLATION
15" WELDED STEEL
JB w/MH
15" RCP-IV
JS MIT
20′ SOIL
REMOVED BY OTHERS
JS MIT
JS MIT
36" CMP
JS NONMIT
JS NONMIT
HW
INLET CHANNEL CLEANOUT
DDE 350 CY
SEE DETAIL 5J
JB w/MH
15"
TEMPORARY IMPACTS IN SURFACE WATER
IMPACTS IN SURFACE WATER
SITE 3

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	
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 4 OF 120

100 50 CL 50 100

60 50 40 30

CENTERLINE STA. –Y33RPCA– 49+88
1 @ 12' x 8' RCBC
GRADE POINT EL. = 66.9
BURIED 1'
SKEW = 68 DEG

3.29:1 SKEW
3.05:1 NORMAL

3.24:1 SKEW
3:1 NORMAL

NATURAL GROUND
ALONG C/L

PROP 100 YR = 37.8
PROP 50 YR = 37.2
NWSEL = 35.6
WSEL = 34.3 (11/27/17)

TOP OF BANK LT
TOP OF BANK RT
EXISTING STREAM BED

PROP CHANNEL

1 @ 12' X 8' RCBC
C/L EL. = 30.0'
SLOPE = 0.43%

PROP CHANNEL

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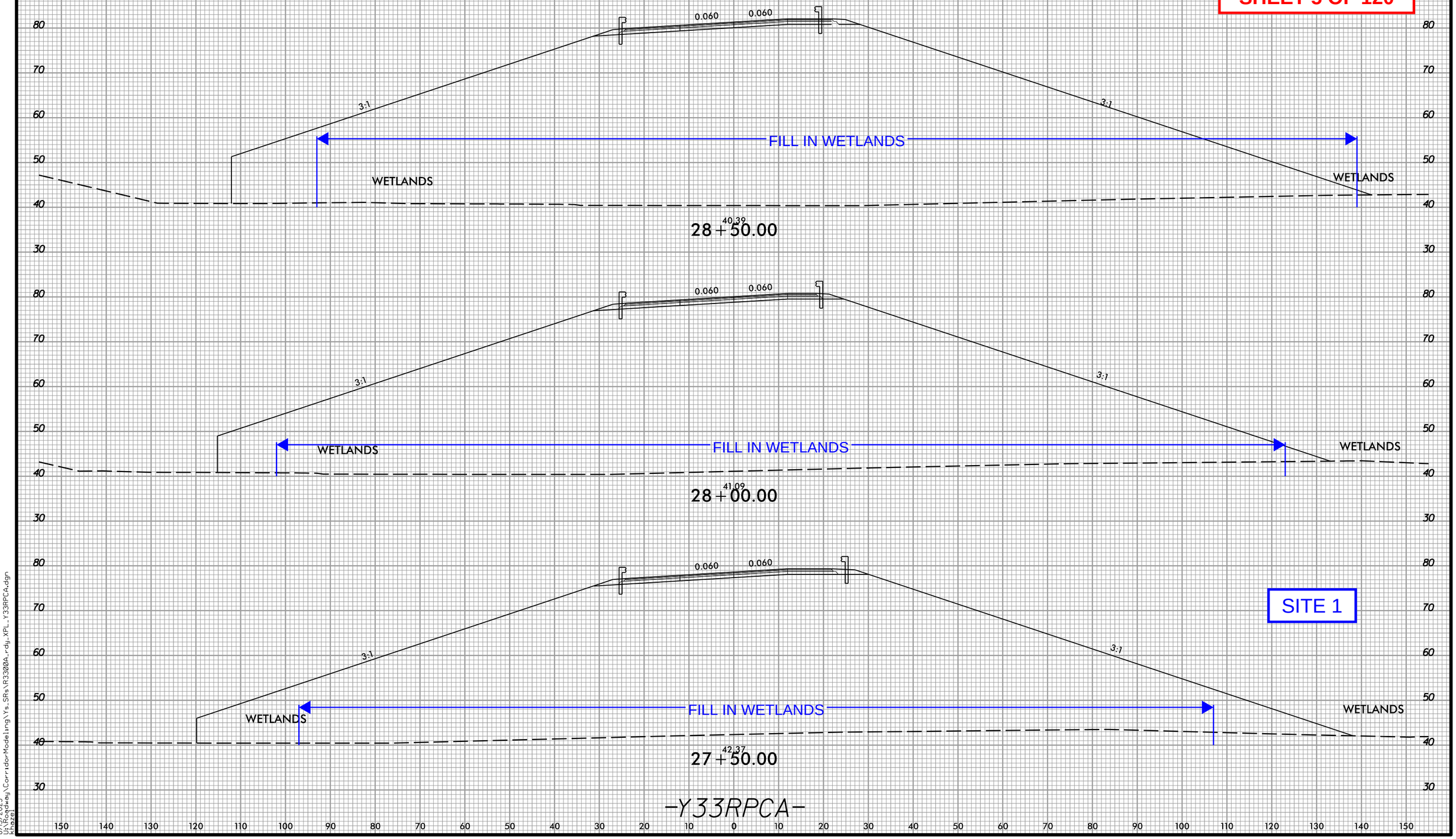
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-195

PERMIT DRAWING
SHEET 5 OF 120



-Y33RPCA-

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khazel

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-197

PERMIT DRAWING
SHEET 6 OF 120

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

80
70
60
50
40
30

83.48
0.060
0.060
3:1
3:1
WETLANDS
WETLANDS
41.32
30+50.00

SITE 2

0.060
0.060
3:1
3:1
FILL IN WETLANDS
WETLANDS
WETLANDS
41.14
30+00.00

-Y33RPCA-

8/15/2023
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khazel

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-28

PERMIT DRAWING
SHEET 7 OF 120

300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

SITE 4

80 70 60 50 40 30

–Y33RPB–
STA. 14+46.10
ELEV. 62.27
OFF. –174.55

61.59

0.026 0.026

3:1

FILL IN WETLANDS

WETLANDS

4.16:1

50.15

3:1

0.060

6:1

58.89

40.39

239+00.00

80 70 60 50 40 30

SITE 4

–Y33RPB–
STA. 15+02.07
ELEV. 62.56
OFF. –193.38

61.84

0.028 0.027

3:1

FILL IN WETLANDS

4.23:1

48.51

3:1

0.060

6:1

60.39

40.51

238+50.00

80 70 60 50 40 30

–Y33RPB–
STA. 15+58.95
ELEV. 62.51
OFF. –214.06

61.75

0.029 0.029

3:1

4.31:1

46.47

3:1

0.060

6:1

61.88

40.63

238+00.00

–L/–

300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

8/15/2023
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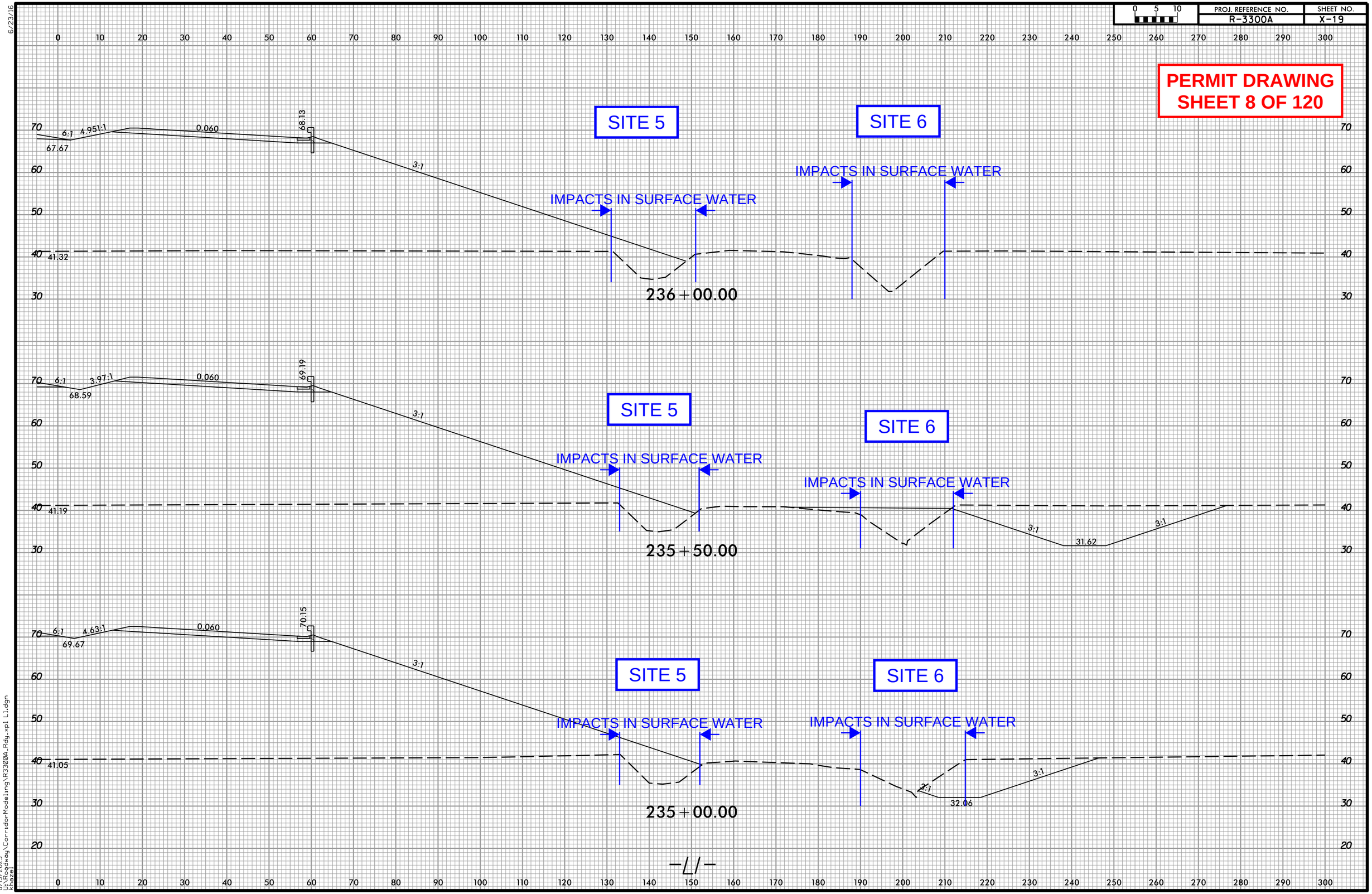
khazel

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-19

PERMIT DRAWING
SHEET 8 OF 120



8/15/2023
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khazel

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. F-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
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801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 9 OF 120

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL '6E'
NOT TO SCALE

SKEWED MULTI- BARREL CULVERT LOW FLOW CHANNEL,SILLS AND FLOOD PLAIN BENCH

*NOTES:

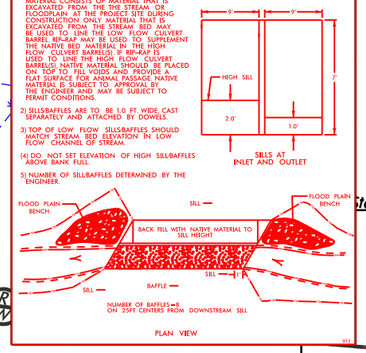
1) NATIVE MATERIAL BETWEEN SILLS/BAFFLES IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. NATIVE MATERIAL USED FOR THIS MATERIAL TO BE EXCAVATED FROM THE THE STREAM OR FLOODPLAIN AT THE PROJECT SITE DURING CONSTRUCTION. ONLY MATERIAL THAT IS EXCAVATED FROM THE STREAM BED MAY BE USED TO LINE THE LOW FLOW CULVERT BARREL. RIP-RAP MAY BE USED TO SUPPLEMENT THE NATIVE BED MATERIAL IN THE HIGH FLOW CULVERT BARRELS. IF RIP-RAP IS USED TO LINE THE HIGH FLOW CULVERT BARRELS, NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FILL VOIDS AND PROVIDE A NATURAL SURFACE FOR ANIMAL PASSAGE. NATIVE MATERIAL SURFACE SHALL BE APPROVED 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

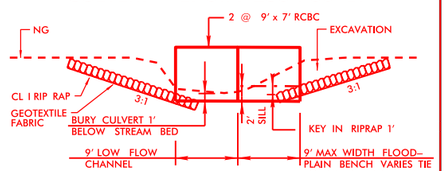
3) TOP OF LOW FLOW SILLS/BAFFLES SHOULD MATCH STREAM BED ELEVATION IN LOW FLOW CHANNEL OF STREAM.

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

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



DETAIL 6B
CULVERT – L1 STA 253+30 LT



OUTLET CHANNEL CHANGE DETAIL
(LOOKING DOWNSTREAM)
(NOT TO SCALE)

NAD 83/NSRS 2007

100' 0' 100'

BM2

-Y33RPB- TS Sta. 7+24.29

-Y33RPB- TS Sta. 8+24.29

-LI- POT STA 248+20.54
-Y33RPB- POT Sta. 5+00.00
47.00' LT

SITE 5

SITE 7

SITE 6

02
SIDBURY LAND & TIMBER LLC

01
CORBETT INDUSTRIES INC

03
CORBETT PACKAGE COMPANY

CHORD

CL B RIP RAP OUTLET PROTECTION 2 TONS 7 S.Y. GEOTEXTILE

18" CAAP W/ELBOWS

2GI

SP. LATERAL V DITCH SEE DETAIL 6D

TOE PROTECTION SEE DETAIL 6A

18" RCP IV

-Y33RPB- S 42° 48' 45.4" W

-LI-

N 39° 48' 45.4" E

REMOVE

RETAIN 48" CMP

18" CMP

-Y33RPCA-

-Y33RPCA- CS Sta. 57+82.99

-Y33RPCA- ST Sta. 59+98.99
-LI- POC Sta.246+70.28
47.00' RT

CL 1 RIP RAP OUTLET PROTECTION 20 TONS 39 S.Y. GEOTEXTILE

TIE TO EXISTING CHANNEL

OUTLET CHANNEL CHANGE DDE 11500 CY WITH FLOODPLAIN BENCH SEE DETAIL 5I

TEMPORARY SURFACE WATER IMPACTS

TEMPORARY EXCAVATION IN WETLAND

HAND CLEARING

OUTLET CHANNEL CHANGE WITH FLOODPLAIN BENCH SEE DETAIL 6B DDE 15 CY

EXCAVATION IN WETLAND

CL III RIP RAP EST 45 TON EST 65 SY GF

CL B RIP RAP OUTLET PROTECTION 2 TONS 7 S.Y. GEOTEXTILE

INLET CHANNEL CHANGE WITH FLOODPLAIN BENCH SEE DETAIL 6C DDE 20 CY

CL I RIP RAP EST 14 TON EST 20 SY GF

TEMPORARY EXCAVATION IN WETLAND

TEMPORARY SURFACE WATER IMPACTS

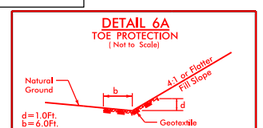
UNNAMED TRIB ISLAND CREEK

F F	FILL IN WETLAND
S S	SURFACE WATER IMPACTS
TS TS	TEMPORARY SURFACE WATER IMPACTS
E E	WETLAND EXCAVATION
* * * * * *	MECHANIZED CLEARING (GRUBBING)
HC HC	HAND CLEARING (NON-GRUBBING)

MATCHLINE -LI- STA 242+00.00 SEE SHEET 5

MATCHLINE -LI- STA 255+00.00 SEE SHEET 7

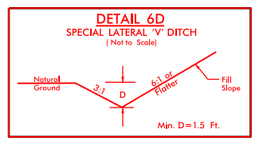
DETAIL 6A
TOE PROTECTION
(Not to Scale)



Type of Liner= CL B Rip-Rap

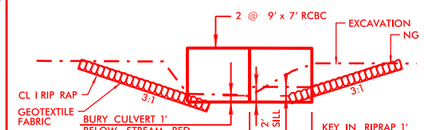
FROM L1 STA. 247+00 TO STA. 250+65 LT
FROM L1 STA. 253+33 TO STA. 254+90 RT

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



FROM Y33RPB STA. 7+00 TO STA. 8+28 RT
FROM Y33RPCA STA. 57+34 TO STA. 59+98 RT

DETAIL 6C
CULVERT – L1 STA 253+30 RT



INLET CHANNEL CHANGE DETAIL
(LOOKING DOWNSTREAM)
(NOT TO SCALE)

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA

9/27/2023 11:20:06 AM
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Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. F-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	6

RW SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 10 OF 120

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL '6E'
(NOT TO SCALE)

SKEWED MULTI- BARREL CULVERT LOW FLOW CHANNEL,SILLS AND FLOOD PLAIN BENCH

*NOTES:

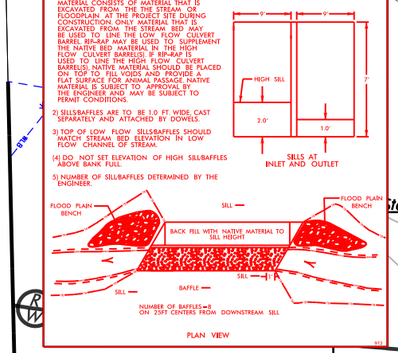
1) NATIVE MATERIAL BETWEEN SILLS/BAFFLES IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. NATIVE MATERIAL SUITABLE FOR MATERIAL TO BE EXCAVATED FROM THE THE STREAM OR FLOODPLAIN AT THE PROJECT SITE DURING CONSTRUCTION. ONLY MATERIAL THAT IS EXCAVATED FROM THE STREAM BED MAY BE USED TO LINE THE LOW FLOW CULVERT BARREL. RIP-RAP MAY BE USED TO SUPPLEMENT THE NATIVE BED MATERIAL IN THE HIGH FLOW CULVERT BARRELS. IF RIP-RAP IS USED TO LINE THE HIGH FLOW CULVERT BARRELS, NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FILL VOIDS AND PROVIDE A NATURAL SURFACE FOR ANIMAL PASSAGE. NATIVE MATERIAL SURFACE SHALL BE APPROVED 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

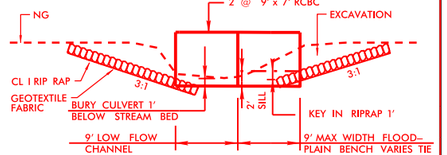
3) TOP OF LOW FLOW SILLS/BAFFLES SHOULD MATCH STREAM BED ELEVATION IN LOW FLOW CHANNEL OF STREAM.

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

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



DETAIL 6B
CULVERT – L1 STA 253+30 LT



OUTLET CHANNEL CHANGE DETAIL
(LOOKING DOWNSTREAM)
(NOT TO SCALE)

NAD 83/NSRS 2007

100' 0' 100'

-Y33RPB- TS Sta. 7+24.29

-L1- POT STA 248+20.54
-Y33RPB- POT Sta. 5+00.00
47.00' LT

SITE 7

SITE 5

SITE 6

02 SIDBURY LAND & TIMBER LLC

03 CORBETT PACKAGE COMPANY

01 CORBETT INDUSTRIES INC

TEMPORARY SURFACE WATER IMPACTS

TEMPORARY EXCAVATION IN WETLAND

HAND CLEARING

EXCAVATION IN WETLAND

CL I RIP RAP
EST 45 TON
EST 65 SY GF

OUTLET CHANNEL CHANGE WITH FLOODPLAIN BENCH SEE DETAIL 6B DDE 15 CY

CL B RIP RAP OUTLET PROTECTION 2 TONS 7 S.Y. GEOTEXTILE

TOE PROTECTION SEE DETAIL 6A

SP. LATERAL V DITCH SEE DETAIL 6D

-Y33RPB-

S 42° 48' 45.4" W

N 39° 48' 45.4" E

-L1-

-Y33RPCA-

-Y33RPCA- CS Sta. 57+82.99

-Y33RPCA- ST Sta. 59+98.99
-L1- POC Sta. 246+70.28
47.00' RT

CL I RIP RAP OUTLET PROTECTION 20 TONS 39 S.Y. GEOTEXTILE

TIE TO EXISTING CHANNEL

OUTLET CHANNEL CHANGE DDE 11500 CY WITH FLOODPLAIN BENCH SEE DETAIL 5I

CL B RIP RAP OUTLET PROTECTION 2 TONS 7 S.Y. GEOTEXTILE

INLET CHANNEL CHANGE WITH FLOODPLAIN BENCH SEE DETAIL 6C DDE 20 CY

CL I RIP RAP EST 14 TON EST 20 SY GF

TOE PROTECTION SEE DETAIL 6A

18" CAAP W/ELBOWS

18" CMP

48" CMP

REMOVE

RETAIN

UNNAMED TRIB TO LAND CREEK

F F	FILL IN WETLAND
S S	SURFACE WATER IMPACTS
TS TS	TEMPORARY SURFACE WATER IMPACTS
E E	WETLAND EXCAVATION
* * * *	MECHANIZED CLEARING (GRUBBING)
HC HC	HAND CLEARING (NON-GRUBBING)

DETAIL 6A
TOE PROTECTION
(Not to Scale)

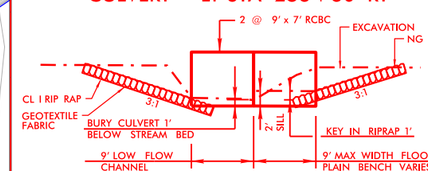
Type of Liner= CL. B Rip-Rap

FROM L1 STA. 247+00 TO STA. 250+65 LT
FROM L1 STA. 253+33 TO STA. 254+90 RT

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

FROM Y33RPB STA. 7+00 TO STA. 8+28 RT
FROM Y33RPCA STA. 57+34 TO STA. 59+98 RT

DETAIL 6C
CULVERT – L1 STA 253+30 RT



INLET CHANNEL CHANGE DETAIL
(LOOKING DOWNSTREAM)
(NOT TO SCALE)

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA

MATCHLINE -L1- STA 242+00.00 SEE SHEET 5

MATCHLINE -L1- STA 255+00.00 SEE SHEET 7

9/27/2023 10:43:3 AM
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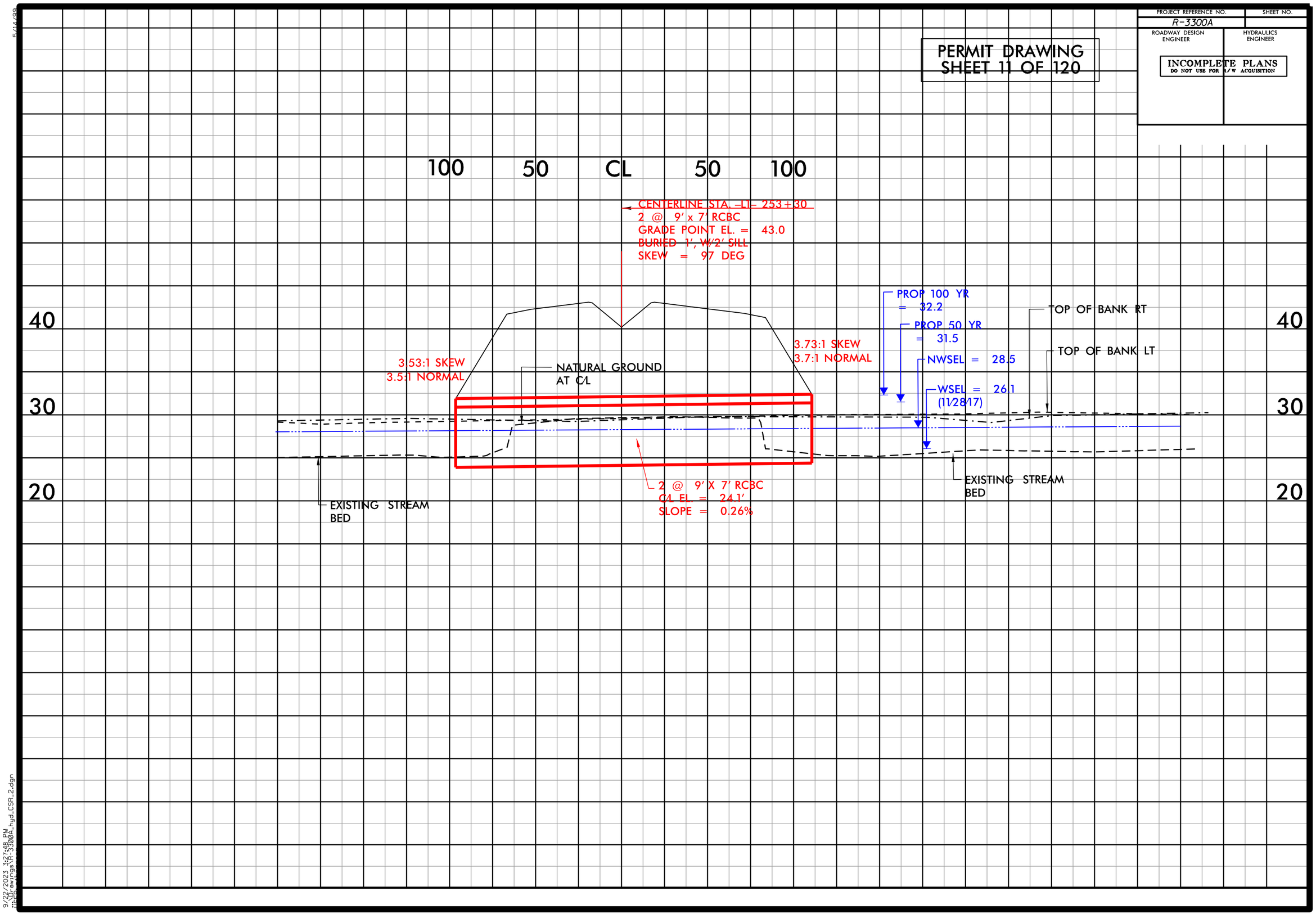
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING
SHEET 11 OF 120



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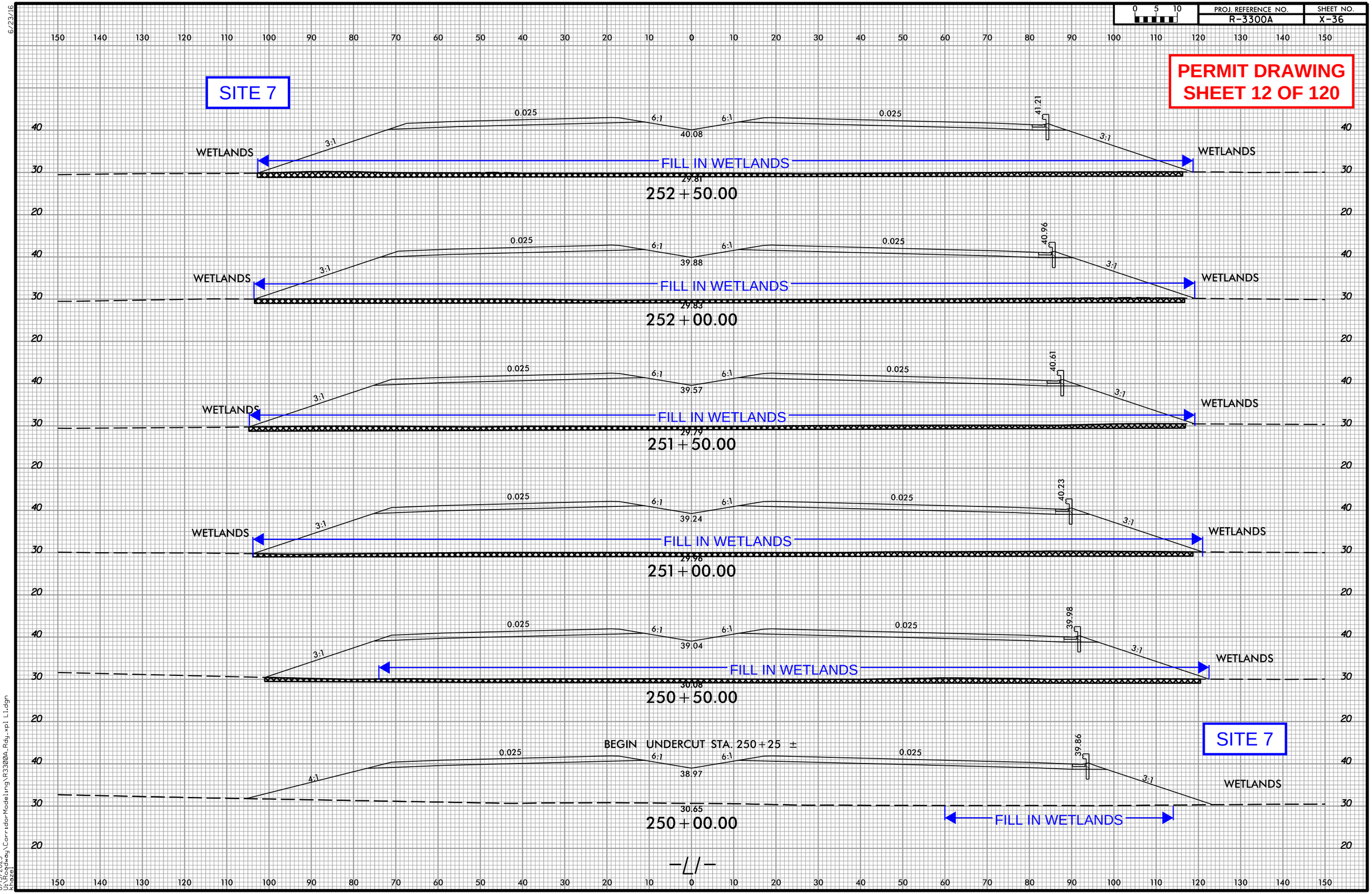
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-36

PERMIT DRAWING
SHEET 12 OF 120

SITE 7



SITE 7

8/15/2023
U:\Roadway\CorridorModeling\R3300A_Rdy.xpl L1.dgn
khazel

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. F-0929
MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
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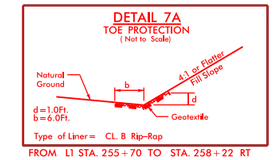
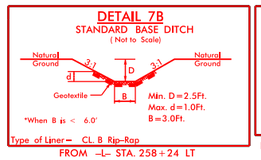
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 13 OF 120

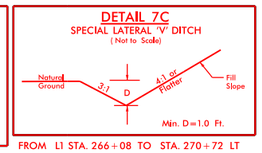
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



FROM L1 STA. 255+70 TO STA. 258+22 RT



FROM -L- STA. 258+24 LT



FROM L1 STA. 266+08 TO STA. 270+72 LT

100' 0' 100'

NAD 83/NSRS 2007

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES EXCAVATION IN WETLAND

SITE 8

EXCAVATION IN WETLAND

CORBETT PACKAGE COMPANY

SIDBURY LAND & TIMBER LLC

STANDARD BASE DITCH
-L- STA. 258+24 LT
LENGTH=75FT±
SLOPE=0.019 FT/FT
CL B RIPRAP
EST. 48 TONS
EST. 90 S.Y. GEOTEXTILE
76 ST. 06"
SEE DETAIL 7B

-L1- PC Sta. 261+70.96

N 36°48'45.6" E

CL B RIP RAP OUTLET PROTECTION 2 TONS 7 S.Y. GEOTEXTILE

CL B RIP RAP OUTLET PROTECTION 5 TONS 14 S.Y. GEOTEXTILE

SP LATERAL V DITCH SEE DETAIL 7C

CL B RIP RAP OUTLET PROTECTION 2 TONS 7 S.Y. GEOTEXTILE

18" CAAP W/ELBOWS

TOE PROTECTION SEE DETAIL 7A

PES

MATCHLINE -L1- STA 255+00.00 SEE SHEET 6

MATCHLINE -L1- STA 268+00.00 SEE SHEET 8

SEE SHEET 42 FOR -L1- PROFILE
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA

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Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0929
MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
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Raleigh, NC 27606
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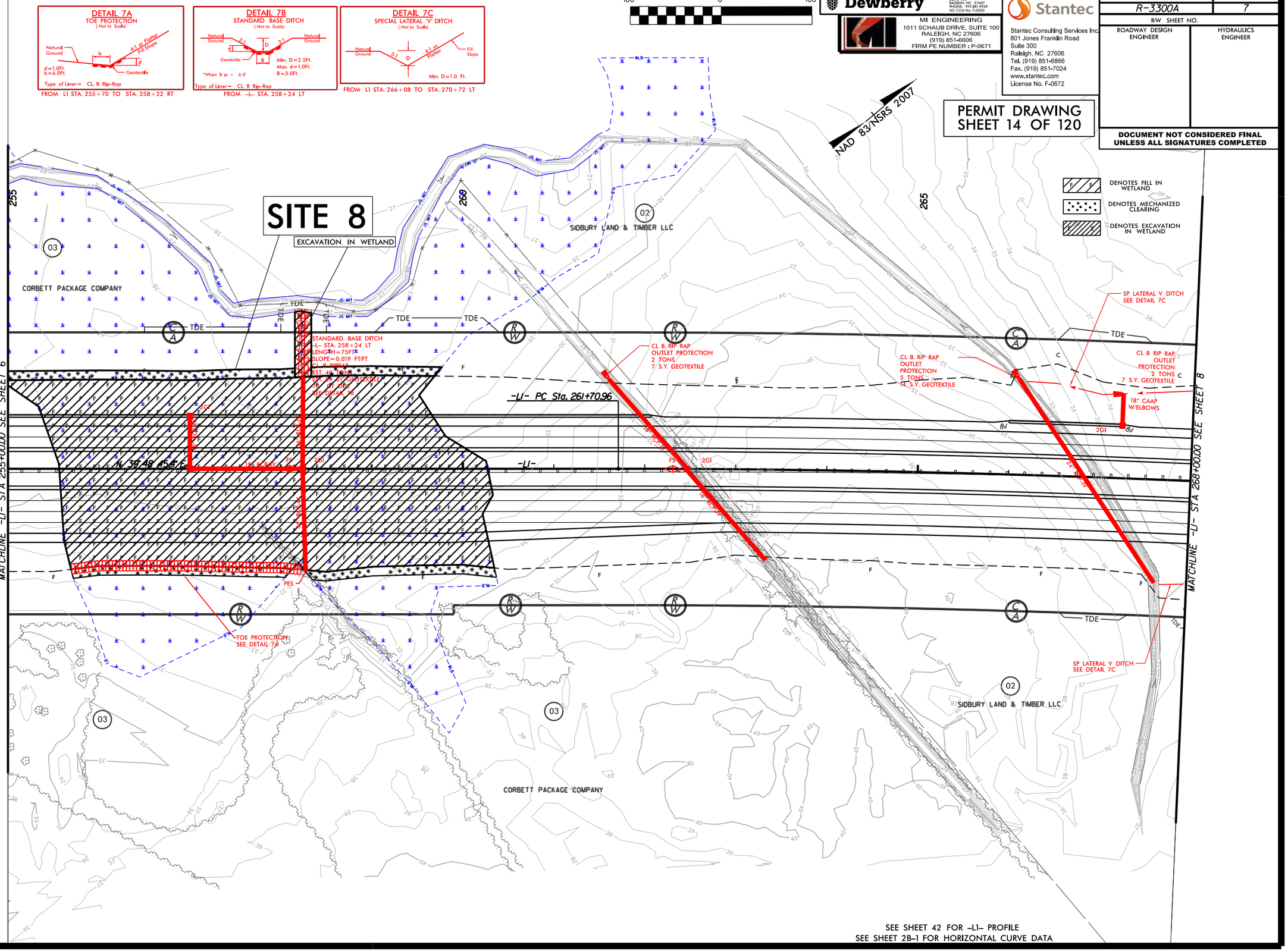
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 14 OF 120

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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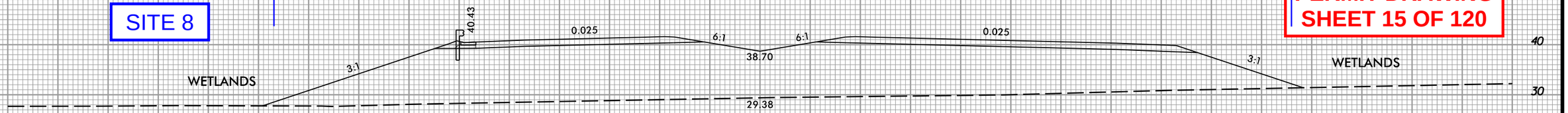
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-38

PERMIT DRAWING
SHEET 15 OF 120

SITE 8

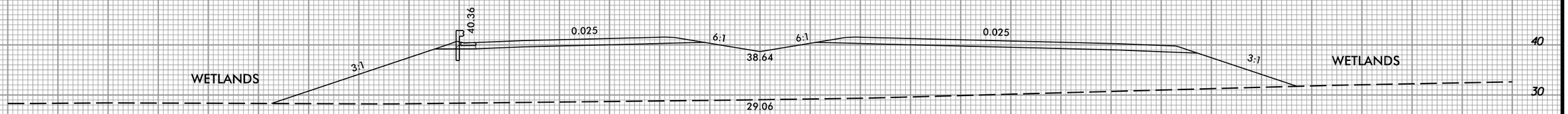
FILL IN WETLANDS



257+50.00

SITE 8

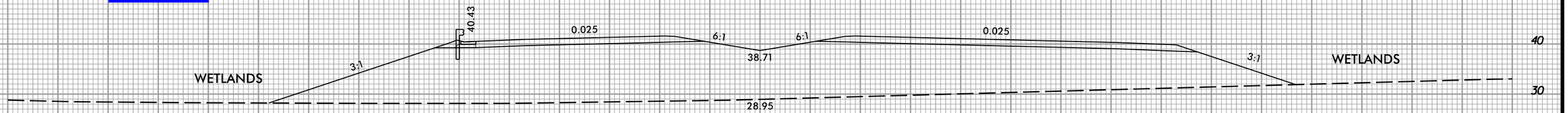
FILL IN WETLANDS



257+00.00

SITE 8

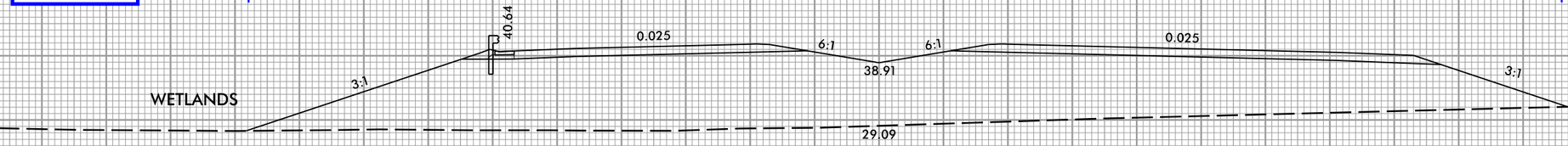
FILL IN WETLANDS



256+50.00

SITE 8

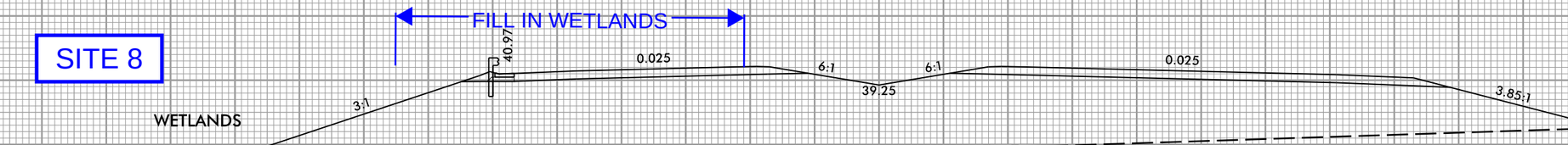
FILL IN WETLANDS



256+00.00

SITE 8

FILL IN WETLANDS



255+50.00

—L/—

8/5/2023
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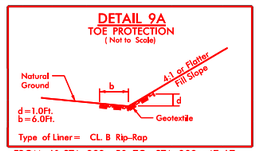
khazel

5/14/99

F F	FILL IN WETLAND
S S	SURFACE WATER IMPACTS
TS TS	TEMPORARY SURFACE WATER IMPACTS
E E	WETLAND EXCAVATION
HC HC	HAND CLEARING (NON-GRUBBING)

DETAIL 9A
TOE PROTECTION
(Not to Scale)



Type of Liner = CL. B Rip-Rap

FROM L1 STA. 282+50 TO STA. 283+47 LT
FROM L1 STA. 284+04 TO STA. 285+58 LT
FROM L1 STA. 283+45 TO STA. 283+82 RT
FROM L1 STA. 280+00 TO STA. 282+87 RT

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
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RALEIGH, NC 27606
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 16 OF 120

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007

100' 0' 100'
GRAPHIC SCALE

SITE 9

CULVERT 3 – L1 STA 283+45

285 290

02
SIDBURY LAND & TIMBER, LLC

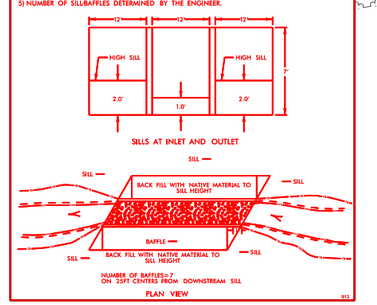
TEMPORARY IMPACTS IN SURFACE WATER
TEMPORARY EXCAVATION IN WETLAND
IMPACTS IN SURFACE WATER
HAND CLEARING
TOE PROTECTION SEE DETAIL 9A
FILL IN WETLAND
TEMPORARY IMPACTS IN SURFACE WATER
TDE
CA
RW
LIN ST
RCBW
RCBW
INV=22.5
TOP=34.2
INV=27.2
2GI FG
24" RCP-IV
TOP=35.9
INV=31.4
TOP=35.6
INV=28.6
INV=28.3
TOP=39.8
INV=29.3
36" CMP
361 CMP
CL B RIP RAP OUTLET PROTECTION 2 TONS 7 S.Y. GEOTEXTILE
INV=28.5
N 45° 49' 13.3" E
-L1-
18" RCP-IV FS
TOP=35.4
INV=30.4
TOP=34.7
INV=30.7
INV=35.6
TOP=36.9
INV=29.8
CL B. RIP RAP OUTLET PROTECTION 2 TONS 7 S.Y. GEOTEXTILE
INV=31.6
TOP=42.3
INV=32.5
15" RCP-IV
TOP=43.1
INV=33.0
TOP=41.4
INV=33.5
INV=34.0

MATCHLINE -L1- STA 281+00.00 SEE SHEET 8

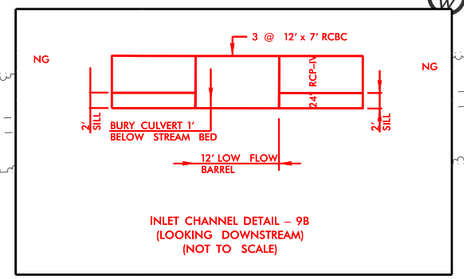
MATCHLINE -L1- STA 294+00.00 SEE SHEET 10

DETAIL '9D'
(NOT TO SCALE)
SKEWED MULTI- BARREL CULVERT LOW FLOW CHANNEL,SILLS AND FLOOD PLAIN BENCH

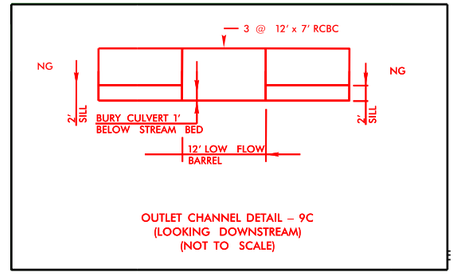
*NOTES:
1) NATIVE MATERIAL BETWEEN SILLS/BAFFLES IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE THE STREAM, OR FLOODPLAIN, AT THE PROJECT SITE DURING CONSTRUCTION. ONLY MATERIAL THAT IS EXCAVATED FROM THE STREAM BED MAY BE USED TO LINE THE LOW FLOW CULVERT BARREL. RIP-RAP MAY BE USED TO SUPPLEMENT THE NATIVE BED MATERIAL IN THE HIGH FLOW CULVERT BARREL(S). IF RIP-RAP IS USED TO LINE THE HIGH FLOW CULVERT BARREL(S), NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FILL VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE. 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.
(4) DO NOT SET ELEVATION OF HIGH SILL/BAFFLES ABOVE BANK FULL.
5) NUMBER OF SILL/BAFFLES DETERMINED BY THE ENGINEER.



SIDBURY LAND & TIMBER, LLC
02



INLET CHANNEL DETAIL – 9B
(LOOKING DOWNSTREAM)
(NOT TO SCALE)



OUTLET CHANNEL DETAIL – 9C
(LOOKING DOWNSTREAM)
(NOT TO SCALE)

SEE SHEET 43 FOR -L1- PROFILE

9/27/2023 11:20:09 AM
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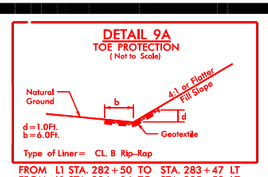
5/14/99

F F	FILL IN WETLAND
S S	SURFACE WATER IMPACTS
TS TS	TEMPORARY SURFACE WATER IMPACTS
E E	WETLAND EXCAVATION
HC HC	HAND CLEARING (NON-GRUBBING)

DETAIL 9A
TOE PROTECTION
(Not to Scale)



Type of Liner = CL. B Rip-Rap

FROM L1 STA. 282+50 TO STA. 283+47 LT
FROM L1 STA. 284+04 TO STA. 285+58 LT
FROM L1 STA. 283+45 TO STA. 283+82 RT
FROM L1 STA. 280+00 TO STA. 282+87 RT

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MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

PERMIT DRAWING
SHEET 17 OF 120

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-8866
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007

100' 0' 100'

SITE 9

TEMPORARY IMPACTS IN SURFACE WATER
TEMPORARY EXCAVATION IN WETLAND
IMPACTS IN SURFACE WATER
HAND CLEARING
TOE PROTECTION SEE DETAIL 9A
FILL IN WETLAND
TEMPORARY IMPACTS IN SURFACE WATER
36" CMP
36" CMP

SIDBURY LAND & TIMBER, LLC
02

CL B RIP RAP OUTLET PROTECTION 2 TONS 7 S.Y. GEOTEXTILE

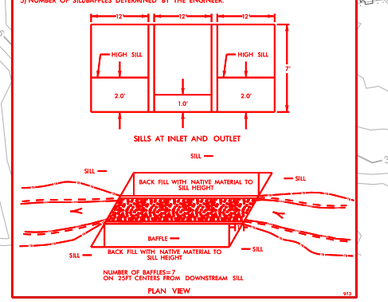
N 45° 49' 13.3" E

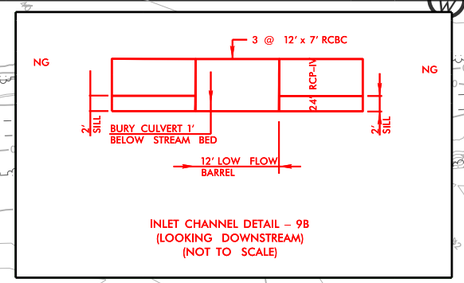
18" RCP-IV FS
24" RCP-IV
2GI FG
15" RCP-IV

MATCHLINE -L1- STA 281+00.00 SEE SHEET 8
MATCHLINE -L1- STA 294+00.00 SEE SHEET 10

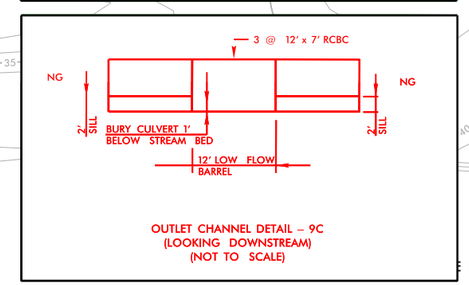
DETAIL '9D'
(NOT TO SCALE)
SKEWED MULTI- BARREL CULVERT LOW FLOW CHANNEL,SILLS AND FLOOD PLAIN BENCH

*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 THE STREAM, OR FLOODPLAIN AT THE PROJECT SITE DURING CONSTRUCTION. ONLY MATERIAL THAT IS EXCAVATED FROM THE STREAM BED MAY BE USED TO LINE THE LOW FLOW CULVERT BARREL. RIP-RAP MAY BE USED TO SUPPLEMENT THE NATIVE BED MATERIAL IN THE HIGH FLOW CULVERT BARREL(S). IF RIP-RAP IS USED TO LINE THE HIGH FLOW CULVERT BARREL(S), NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FILL VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE. 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.
4) DO NOT SET ELEVATION OF HIGH SILL&BAFFLES ABOVE BANK FULL.
5) NUMBER OF SILL&BAFFLES DETERMINED BY THE ENGINEER.





INLET CHANNEL DETAIL – 9B
(LOOKING DOWNSTREAM)
(NOT TO SCALE)



OUTLET CHANNEL DETAIL – 9C
(LOOKING DOWNSTREAM)
(NOT TO SCALE)

SEE SHEET 43 FOR -L1- PROFILE

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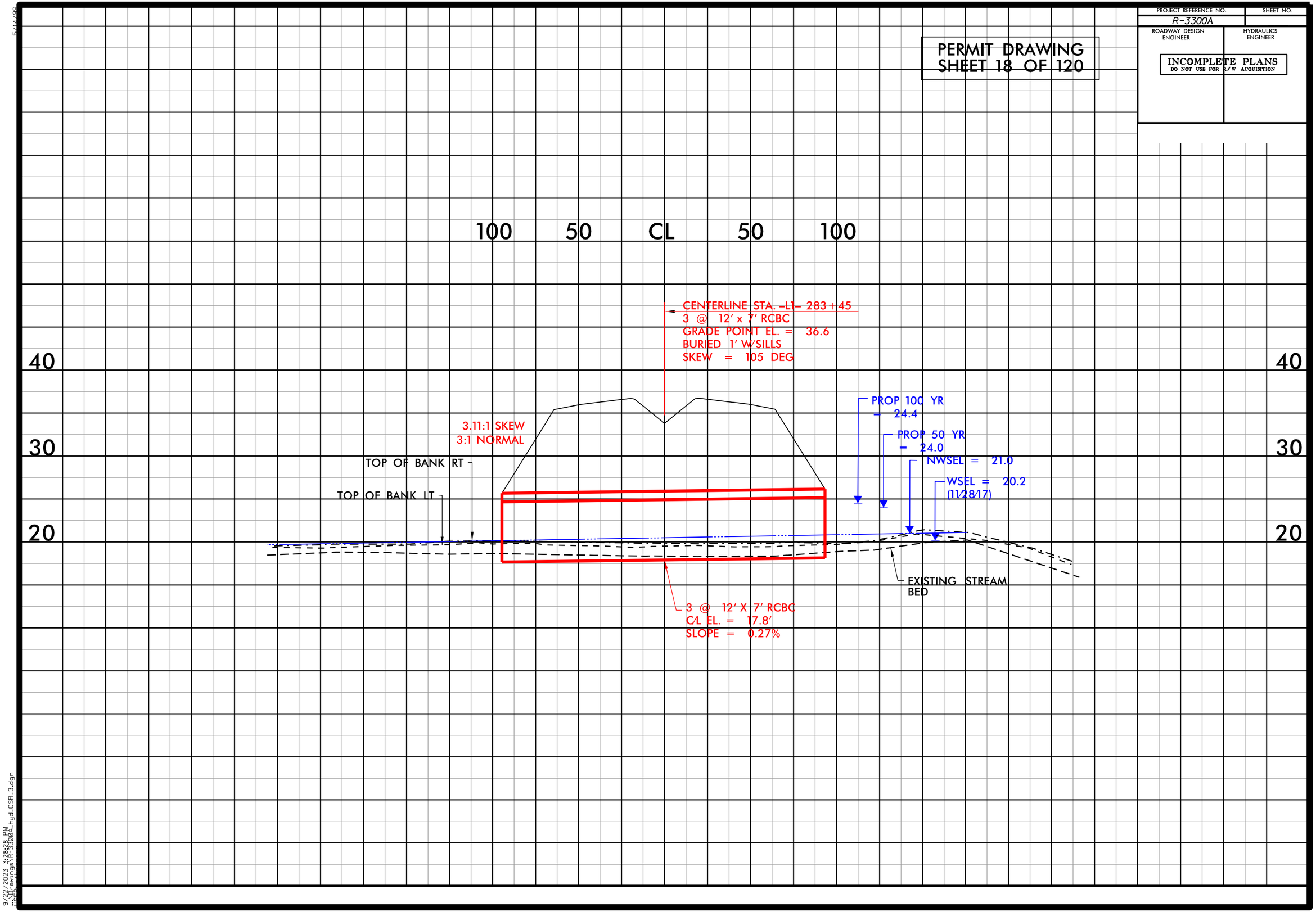
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING
SHEET 18 OF 120



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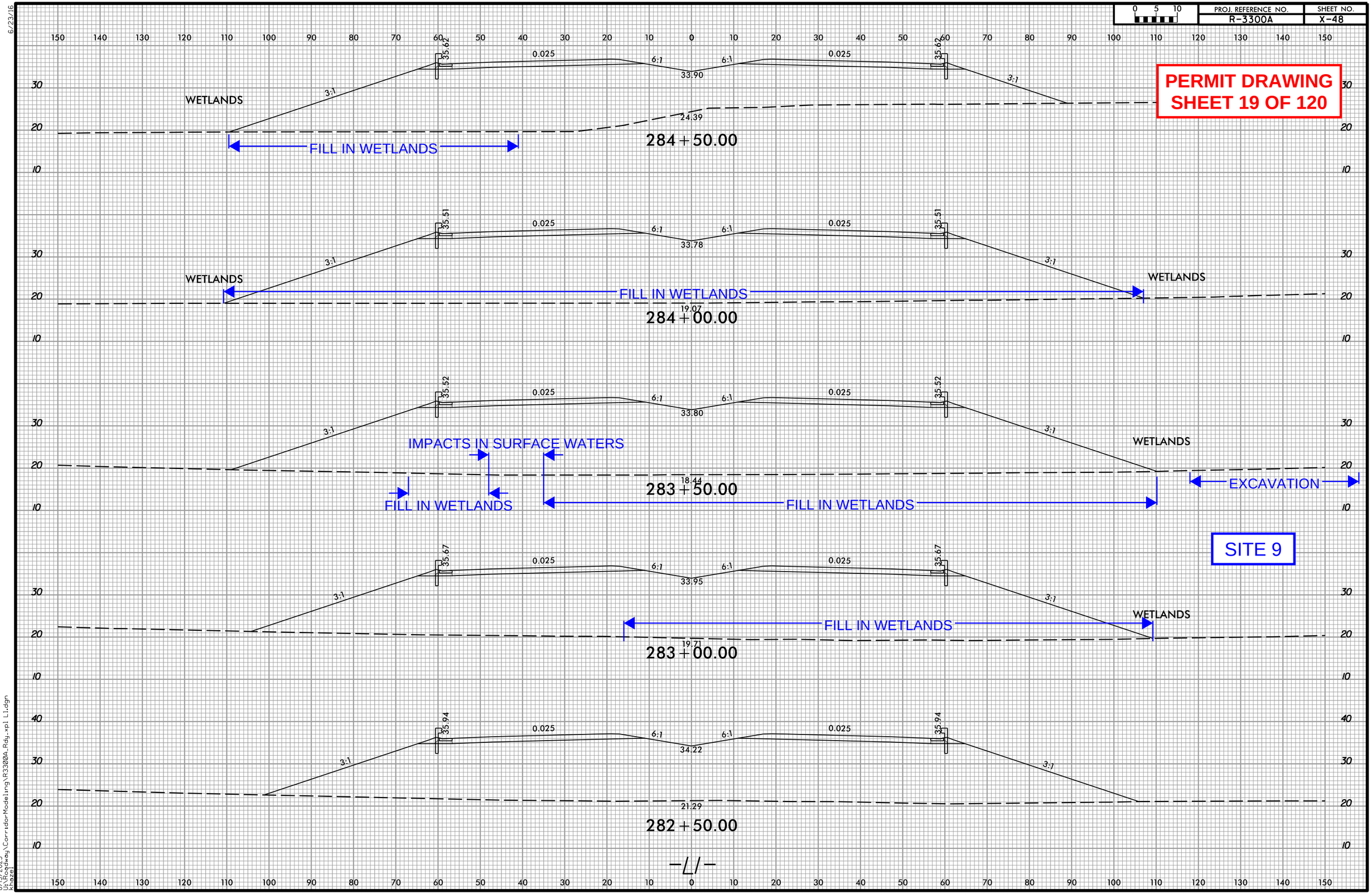
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-48

PERMIT DRAWING
SHEET 19 OF 120



8/5/2023
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khazel

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

100' 0' 100'

GRAPHIC SCALE

NAD 83/NSRS 2007

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 20 OF 120

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BM5

295

SIDBURY LAND & TIMBER, LLC

02

300

305

DEPARTMENT OF TRANSPORTATION

03A

-L1- TS Sta. 297+45.35

-L1- SC Sta. 299+25.35

CHORD

TDE

5' BERM TO TIE TO EXISTING DITCH

SITE 10

TEMPORARY IMPACTS IN SURFACE WATER

SP. LATERAL V DITCH SEE DETAIL 11B 98 CY DDE

CL II RIP RAP 6'W X 20'L EST 7 TON EST 10 SY GF

OUTLET CHANNEL SEE DETAIL 10A DDE 15 CY

CL B RIP RAP OUTLET PROTECTION 2 TONS 7 S.Y. GEOTEXTILE

INV. 21.1'

INV. 24.32'

36" HDPE

INV. 25.06'

INV. 24.99'

42" CMP

INV. 24.59'

INV. 24.61'

15" RCP-IV

18" RCP-IV

2GI

2GI FO

18" CAP WELDON

FS

N 45°49'13.3" E

-L1-

IMPACTS IN SURFACE WATER

7' x 5' RCBC

1 @ 7' x 5' RCBC

BURIED 1' BELOW NATIVE MATERIAL

SP. LATERAL V DITCH SEE DETAIL 11B

INLET CHANNEL SEE DETAIL 10B

MATCHLINE -L1- STA 294+00.00 SEE SHEET 9

MATCHLINE -L1- STA 307+00.00 SEE SHEET 11

WOODS

C

F

GRADE TO DRAIN

FILL EXISTING TO ELEV. 42.0'

R3300-1

POND

LITTLE ISLAND CREEK

TEMPORARY IMPACTS IN SURFACE WATER

DETAIL 10A
CULVERT – L1 STA 305+99 LT

1 @ 7' x 5' RCBC

NG

3:1

BURY CULVERT 1' BELOW STREAM BED

7'

CL II RIP RAP 6'W X 20'L

GEOTEXTILE FABRIC

OUTLET CHANNEL DETAIL (LOOKING DOWNSTREAM) (NOT TO SCALE)

DETAIL 10B
CULVERT – L1 STA 305+99 RT

1 @ 7' x 5' RCBC

NG

3:1

BURY CULVERT 1' BELOW STREAM BED

7'

CL II RIP RAP 6'W X 20'L

GEOTEXTILE FABRIC

INLET CHANNEL DETAIL (LOOKING DOWNSTREAM) (NOT TO SCALE)

DETAIL 10C
SPECIAL LATERAL "V" DITCH
(Not to Scale)

Natural Ground

3:1

D

6:1 or Flatter

Fill Slope

Min. D=1.5 Ft.

FROM –L1– STA. 306+27 TO STA. 308+50 LT
FROM –L1– STA. 306+00 TO STA. 309+50 RT

SEE SHEET 43 & 44 FOR –L1– PROFILE
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA

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DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

100' 0' 100'

NAD 83/NSRS 2007

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. F-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

PERMIT DRAWING
SHEET 21 OF 120

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Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
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Fax. (919) 851-7024
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BM5

SIDBURY LAND & TIMBER, LLC

DEPARTMENT OF TRANSPORTATION

-L1- TS Sta. 297+45.35

-L1- SC Sta. 299+25.35

MATCHLINE -L1- STA 294+00.00 SEE SHEET 9

MATCHLINE -L1- STA 307+00.00 SEE SHEET 11

N 45°49'13.3" E

R3300-1

TDE

CHORD

5' BERM TO TIE TO EXISTING DITCH

15" RCP-IV

18" RCP-IV

42" CMP

36" HDPE

INV. 25.06'
INV. 24.99'

INV. 24.53'

INV. 24.61'

INV. 20.7'

INV. 24.32'

SP. LATERAL V DITCH SEE DETAIL 11B
96 CY DDE

TEMPORARY IMPACTS IN SURFACE WATER

CL II RIP RAP 6'W X 20'L EST 7 TON EST 10 SY GF

OUTLET CHANNEL SEE DETAIL 10A DDE 15 CY

CL B RIP RAP OUTLET PROTECTION 2 TONS 7 S.Y. GEOTEXTILE

18" CAP WELDWALL

2GI FG

2GI

FS

IMPACTS IN SURFACE WATER

7' x 5' RCBC

1 @ 7' x 5' RCBC BURIED 1' BELOW NATURAL BACKFILL WITH NATIVE MATERIAL

INLET CHANNEL SEE DETAIL 10B

GRADE TO DRAIN

FILL EXISTING TO ELEV. 42.0'

WOODS

POND

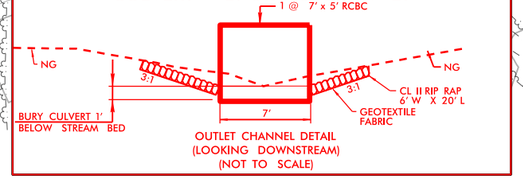
US ISLAND CREEK

SITE 10

03A

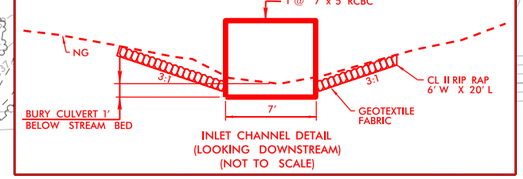
02

DETAIL 10A
CULVERT – L1 STA 305+99 LT



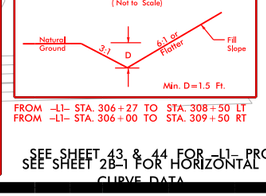
OUTLET CHANNEL DETAIL
(LOOKING DOWNSTREAM)
(NOT TO SCALE)

DETAIL 10B
CULVERT – L1 STA 305+99 RT



INLET CHANNEL DETAIL
(LOOKING DOWNSTREAM)
(NOT TO SCALE)

DETAIL 10C
SPECIAL LATERAL "V" DITCH
(Not to Scale)



FROM –L1– STA. 306+27 TO STA. 308+50 LT
FROM –L1– STA. 306+00 TO STA. 309+50 RT

SEE SHEET 43 & 44 FOR –L1– PROFILE
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA

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PERMIT DRAWING
SHEET 22 OF 120

PROJECT REFERENCE NO.	SHEET NO.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
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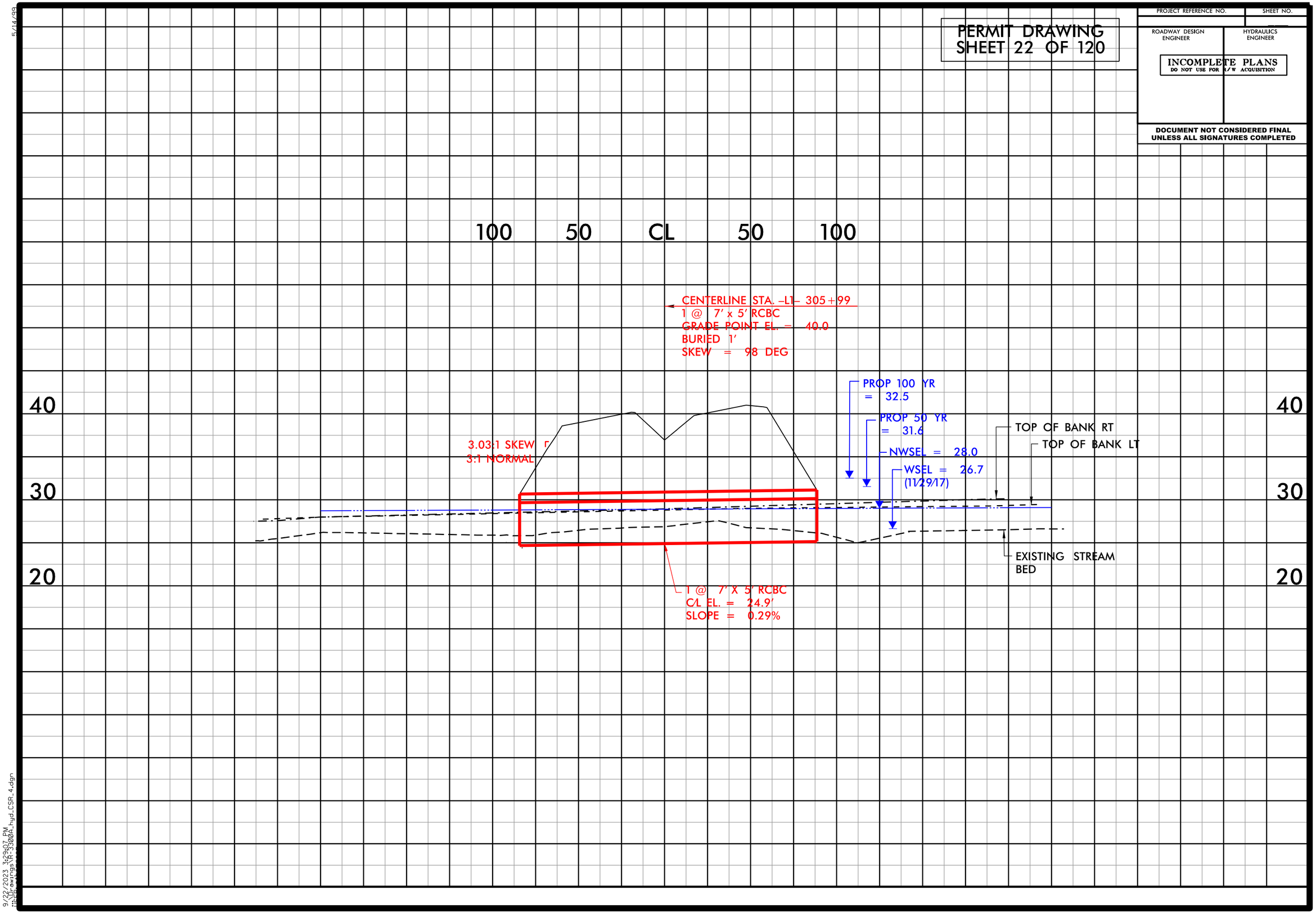

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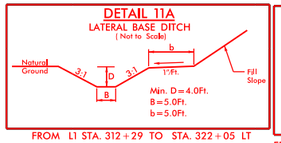
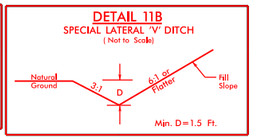
5/14/99

DETAIL 11A
LATERAL BASE DITCH
(Not to Scale)



FROM LT STA. 312+29 TO STA. 322+05 LT

DETAIL 11B
SPECIAL LATERAL "V" DITCH
(Not to Scale)



FROM -L1- STA. 306+27 TO STA. 308+50 LT
FROM -L1- STA. 306+00 TO STA. 309+50 RT

100' 0' 100'

NAD 83/NSRS 2007

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. F-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

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SHEET 23 OF 120

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	11
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

F / F — DENOTES FILL IN WETLAND
HC / HC — DENOTES HAND CLEARING
S / S — DENOTES IMPACTS IN SURFACE WATER
TS / TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SITE 11

310 315 320

WOODS

WOVEN WIRE FENCE

LATERAL 5' BASE DITCH
SEE DETAIL 11A
2500 CY DDE

TEMPORARY IMPACTS IN SURFACE WATER

IMPACTS IN SURFACE WATER

FILL IN WETLAND

TIE EXIST CHANNEL TO LATERAL BASE DITCH

SP. LATERAL V DITCH
SEE DETAIL 11B

CL B RIP RAP OUTLET PROTECTION

CL 1 RIP RAP OUTLET PROTECTION
26 TONS
50 S.Y. GEOTEXTILE
SEE DETAIL 11B

CL B RIP RAP OUTLET PROTECTION
3 TONS
10 S.Y. GEOTEXTILE

FILL EXISTING DITCHES TO ELEV. 200 CY

FILL EXISTING DITCHES TO SS

PES

12" RCP

10' SOIL

INV. 29.40+

INV. 29.62+

HW

REMOVE 40' OF ROAD EMBANKMENT GRADE TO DRAIN

RETAIN DITCH

MATCHLINE -L1- STA 307+00.00 SEE SHEET 10

MATCHLINE -L1- STA 320+00.00 SEE SHEET 12

SEE SHEET 44 FOR -L1- PROFILE
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA

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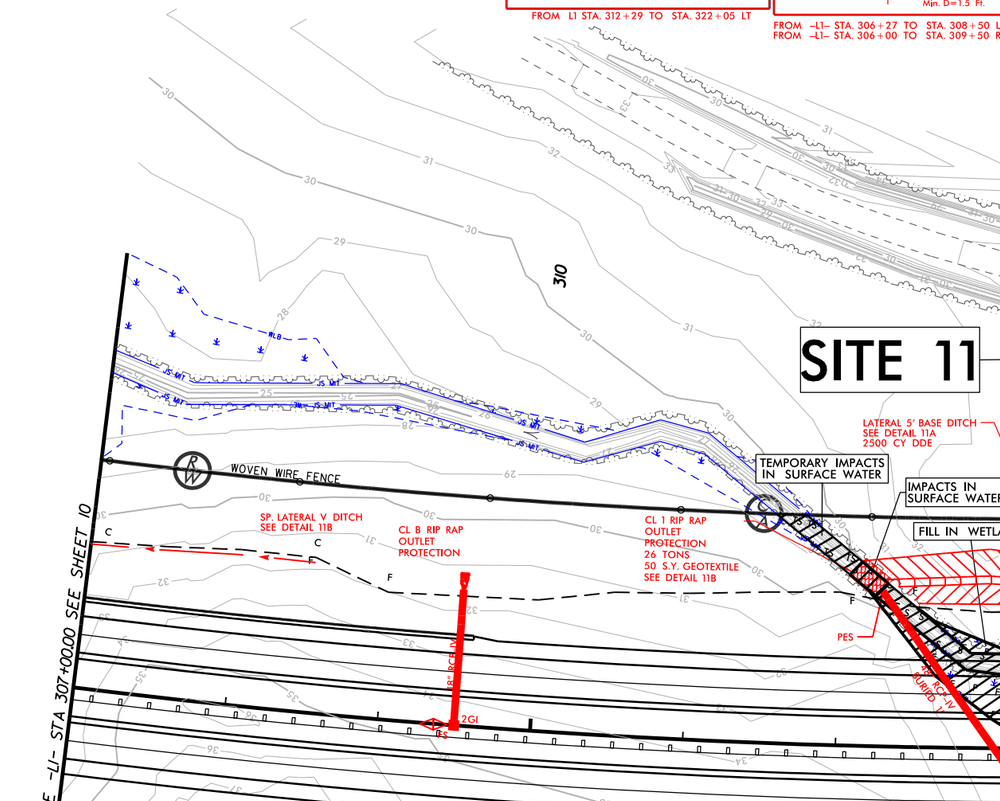
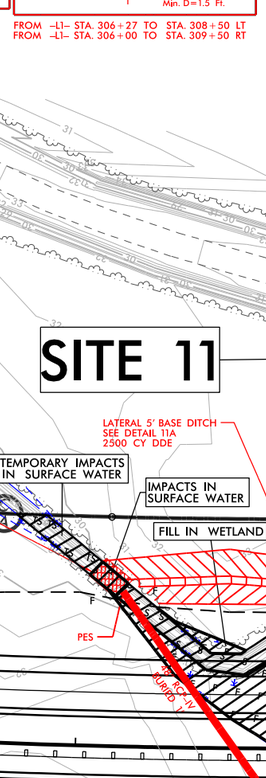
5/14/99





100' 0' 100'

NAD 83/NSRS 2007

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

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SHEET 24 OF 120

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801 Jones Franklin Road
Suite 300
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Tel. (919) 851-6866
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License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

F F DENOTES FILL IN WETLAND
HC HC DENOTES HAND CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SITE 11

WOVEN WIRE FENCE
SP. LATERAL V DITCH SEE DETAIL 11B
CL B RIP RAP OUTLET PROTECTION
CL 1 RIP RAP OUTLET PROTECTION 26 TONS 50 S.Y. GEOTEXTILE SEE DETAIL 11B
TEMPORARY IMPACTS IN SURFACE WATER
IMPACTS IN SURFACE WATER
FILL IN WETLAND
LATERAL 5' BASE DITCH SEE DETAIL 11A 2500 CY DDE
TIE EXIST CHANNEL TO LATERAL BASE DITCH
FILL EXISTING DITCHES TO ELEV. = 200 CY
CL B RIP RAP OUTLET PROTECTION 3 TONS 10 S.Y. GEOTEXTILE
PES
FILL EXISTING DITCHES TO SS
IMPACTS IN SURFACE WATER
TEMPORARY IMPACTS IN SURFACE WATER
REMOVE 40' OF ROAD EMBANKMENT GRADE TO DRAIN
RETAIN DITCH
WOODS
10' SOIL
INV. 29.40'
12" RCP
INV. 29.62'
MATCHLINE -L1- STA 307+00.00 SEE SHEET 10
MATCHLINE -L1- STA 320+00.00 SEE SHEET 12

SEE SHEET 44 FOR -L1- PROFILE
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-60

PERMIT DRAWING
SHEET 25 OF 120

SITE 11

WETLANDS

IMPACTS IN SURFACE WATER

FILL IN WETLANDS

314 + 00.00

313 + 50.00

313 + 00.00

SITE 11

312 + 50.00

312 + 00.00

8/15/2023
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khazel

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

100' 0' 100'

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

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SHEET 26 OF 120

NAD 83/NSRS 2007

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Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	13

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SITE 12

SITE 13

MATCHLINE -L1- STA 333+00.00 SEE SHEET 12

MATCHLINE -L1- STA 347+00.00 SEE SHEET 14

-L1- CS Sta. 338+81.64

-L1- ST Sta. 340+61.64

WOVEN WIRE FENCE

CL B RIPRAP
OUTLET PROTECTION
3 TONS
10 S.Y. GEOTEXTILE

CHORD

WOODS

10' SOIL

PES

2GI

FS

18" RCP

SEE SHEET 45 FOR -L1- PROFILE
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA

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DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

100' 0' 100'

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. F-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

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SHEET 27 OF 120

NAD 83/NSRS 2007

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Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
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License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	13

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SITE 12

SITE 13

-L1- CS Sta. 338+81.64

-L1- ST Sta. 340+61.64

CHORD

WOVEN WIRE FENCE

CL B RIPRAP
OUTLET PROTECTION
3 TONS
10 S.Y GEOTEXTILE

18" RCP

PES

2GI

FS

WOODS

10' SOIL

MATCHLINE -L1- STA 333+00.00 SEE SHEET 12

MATCHLINE -L1- STA 347+00.00 SEE SHEET 14

SEE SHEET 45 FOR -L1- PROFILE
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-69

PERMIT DRAWING
SHEET 28 OF 120

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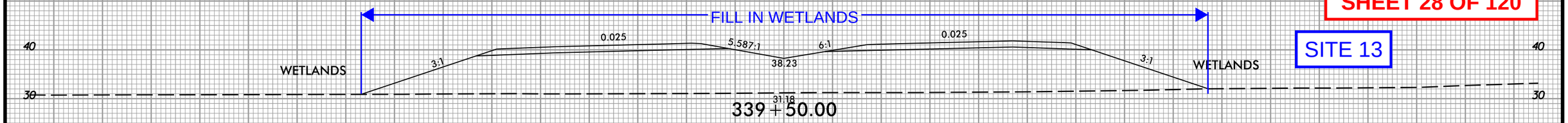

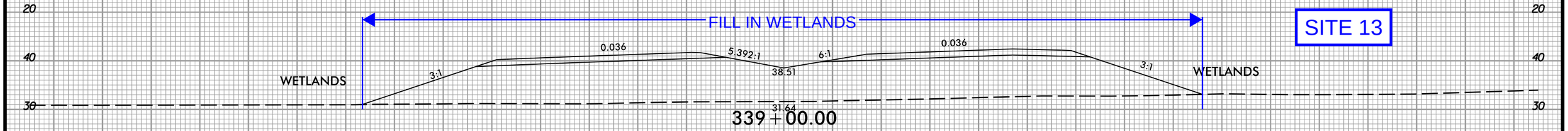

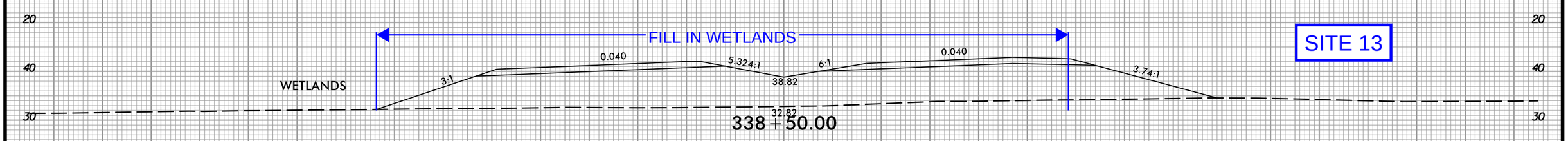

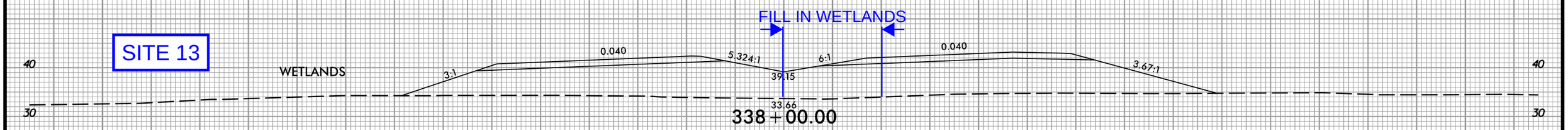

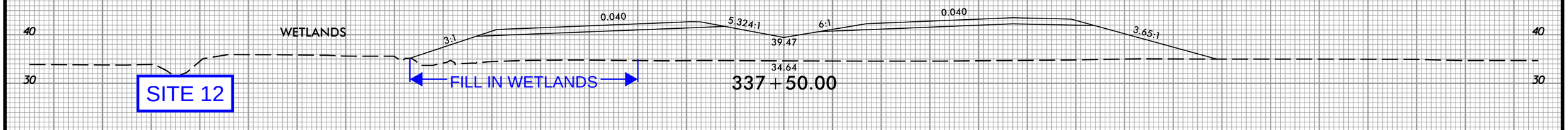

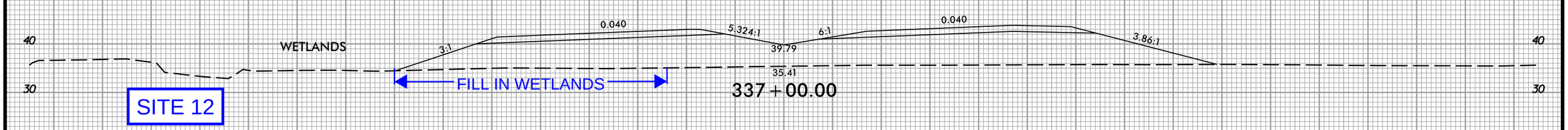

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8/15/2023
U:\Roadway\CorridorModeling\R3300A_Rdy_xpl L1.dgn
khazel

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-70

PERMIT DRAWING
SHEET 29 OF 120

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

40
30
20

FILL IN WETLANDS

WETLANDS — 3:1 — 0.025 — 6:1 — 36.24 — 6:1 — 0.025 — 3:1 — WETLANDS

30.34

342 + 50.00

SITE 13

FILL IN WETLANDS

WETLANDS — 3:1 — 0.025 — 6:1 — 36.65 — 6:1 — 0.025 — 3:1 — WETLANDS

30.26

342 + 00.00

SITE 13

FILL IN WETLANDS

WETLANDS — 3:1 — 0.025 — 5.934:1 — 37.01 — 6:1 — 0.020 — 3:1 — WETLANDS

30.40

341 + 50.00

SITE 13

FILL IN WETLANDS

WETLANDS — 3:1 — 0.025 — 5.843:1 — 37.34 — 6:1 — 0.009 — 3:1 — WETLANDS

30.51

341 + 00.00

SITE 13

FILL IN WETLANDS

WETLANDS — 3:1 — 0.025 — 5.756:1 — 37.65 — 6:1 — 0.003 — 3:1 — WETLANDS

30.53

340 + 50.00

SITE 13

FILL IN WETLANDS

WETLANDS — 3:1 — 0.025 — 5.670:1 — 37.95 — 6:1 — 0.014 — 3:1 — WETLANDS

30.93

340 + 00.00

SITE 13

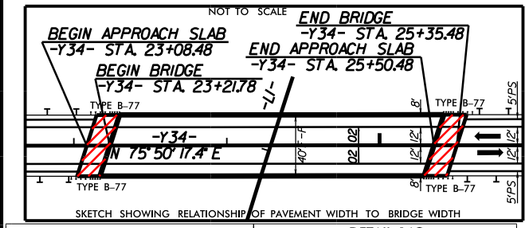
—L/—

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

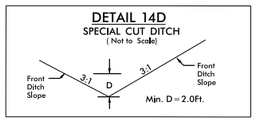
8/15/2023
U:\Roadway\CorridorModeling\R3300A_Rdy_xpl L1.dgn
khazel

5/14/99

NOT TO SCALE

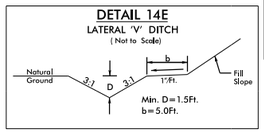


DETAIL 14D
SPECIAL CUT DITCH
(Not to Scale)



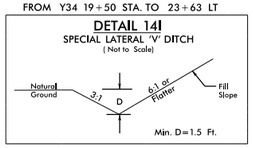
FROM Y34 19+50 STA. TO 23+63 LT

DETAIL 14E
LATERAL 'V' DITCH
(Not to Scale)



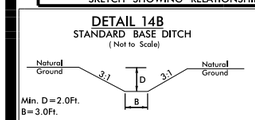
FROM Y34 STA. 26+00 TO STA. 33+14 LT

DETAIL 14I
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



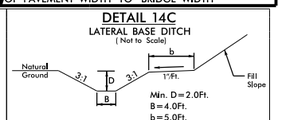
FROM –SR1– STA. 19+50 TO STA. 22+51 LT

DETAIL 14B
STANDARD BASE DITCH
(Not to Scale)



FROM L1 STA. 351+14 TO STA. 352+12 LT

DETAIL 14C
LATERAL BASE DITCH
(Not to Scale)



FROM Y34 STA. 20+04 TO STA. 22+84 RT

100' 0' 100'
GRAPHIC SCALE

SITE 15

NAD 83/NSRS 2007

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. F-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PERMIT DRAWING
SHEET 30 OF 120

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MATCHLINE –Y34– STA 19+00.00 SEE SHEET 35

IMPACTS IN SURFACE WATER

RIPRAP AT JURISDICTIONAL STREAM CL II RIPRAP 40 TONS SEE DETAIL 14G

–SRI– POT Sta. 25+00.00

–SRI– PC Sta. 17+39.94

SP. LATERAL V DITCH SEE DETAIL 14D

09 CATHERINE C. FULLERTON

–SRI– PT Sta. 22+72.15

N 46°08'08.3" W

CL B RIPRAP OUTLET PROTECTION 3 TONS 10 S.Y. GEOTEXTILE

11 LETICIA A. FOUQUET

SP. LAT. V DITCH SEE DETAIL 14F

TIE TO EXISTING DITCH

19 J.W. COVIL, ET UX

RETAIN EXIST DITCH

CL B RIPRAP OUTLET PROTECTION 5 TONS 14 S.Y. GEOTEXTILE

–LI– STA. 354+03.68
–Y34– STA. 24+28.73

REMOVE EXIST ROADWAY EMBANKMENT AND GRADE TO DRAIN TO DITCH TO S REMAIN

SPECIAL LATERAL 2' BASE DITCH SEE DETAIL 14F

12 F.JH, LLC

INDIRECT IMPACTS – TOTAL TAKE

SITE 14

EXCAVATION IN WETLAND

04 WCM ENTERPRISES, LLC.

LATERAL 4' BASE DITCH SEE DETAIL 14C 230 CY DDE

3' BASE DITCH SEE DETAIL 14B 100 CY DDE

CL 1 RIP RAP OUTLET PROTECTION 15 TONS 29 S.Y. GEOTEXTILE

CL B RIP RAP OUTLET PROTECTION 5 TONS 14 S.Y. GEOTEXTILE

WOVEN WIRE FENCE

SITE 13

MATCHLINE –LI– STA 347+00.00 SEE SHEET 13

MATCHLINE –LI– STA 360+00.00 SEE SHEET 15

–LI– TS Sta. 349+91.32

–LI– SC Sta. 351+26.32

TOE PROTECTION SEE DETAIL 14A

03A DEPARTMENT OF TRANSPORTATION

SIZE AND MATERIAL TYPE UNKNOWN

50' UTILITY EASEMENT

MATCHLINE –Y34– STA 27+00.00 SEE SHEET 36

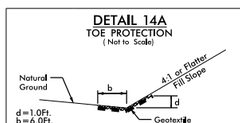
SEE SHEET 45 & 46 FOR –L1– PROFILE
SEE SHEET 63 FOR –Y34– PROFILE
SEE SHEET 65 FOR –SR1– PROFILE
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA

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

DETAIL 14H
RIPRAP PAD AT JURISDICTIONAL STREAM
(Not to Scale)

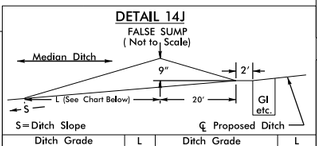
Type of Liner= CL II Rip-Rap
–Y34– STA. 18+50 LT –SR1– STA. 15+13 LT

DETAIL 14A
TOE PROTECTION
(Not to Scale)



Type of Liner= CL. B Rip-Rap
FROM L1 STA. 347+50 TO STA. 349+50 RT

DETAIL 14J
FALSE SUMP
(Not to Scale)

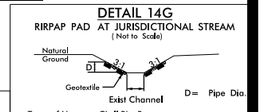


S=Ditch Slope

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

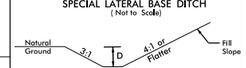
L1 STA. 350+42 MED

DETAIL 14G
RIPRAP PAD AT JURISDICTIONAL STREAM
(Not to Scale)



Type of Liner= CL II Rip-Rap
–Y34– STA. 18+50 LT
–SR1– STA. 15+13 LT

DETAIL 14F
SPECIAL LATERAL BASE DITCH
(Not to Scale)



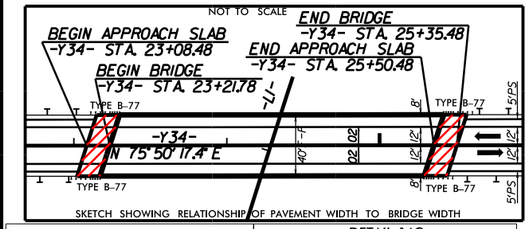
FROM –L– STA. 357+91 TO STA. 359+19 LT

SITE 20

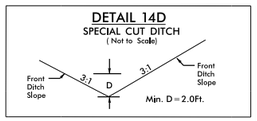
9/26/2023 10:51:41 AM
C:\Projects\R3300A_rdy_psh_14.dgn

5/14/99

NOT TO SCALE

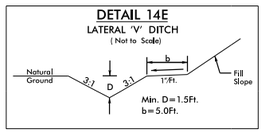


DETAIL 14D
SPECIAL CUT DITCH
(Not to Scale)



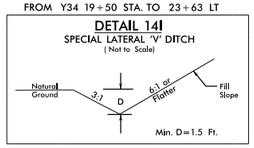
FROM Y34 19+50 STA. TO 23+63 LT

DETAIL 14E
LATERAL 'V' DITCH
(Not to Scale)



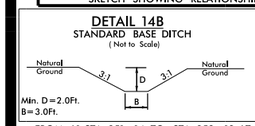
FROM Y34 STA. 26+00 TO STA. 33+14 LT

DETAIL 14I
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



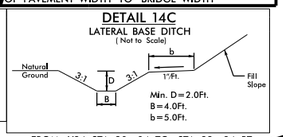
FROM –SR1– STA. 19+50 TO STA. 22+51 LT

DETAIL 14B
STANDARD BASE DITCH
(Not to Scale)



FROM L1 STA. 351+14 TO STA. 352+12 LT

DETAIL 14C
LATERAL BASE DITCH
(Not to Scale)



FROM Y34 STA. 20+04 TO STA. 22+84 RT

100' 0' 100'

SITE 15

NAD 83/NSRS 2007

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. F-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PERMIT DRAWING
SHEET 31 OF 120

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SITE 14

SITE 13

MATCHLINE –Y34– STA 19+00.00 SEE SHEET 35

MATCHLINE –Y34– STA 27+00.00 SEE SHEET 36

MATCHLINE –L1– STA 347+00.00 SEE SHEET 13

MATCHLINE –L1– STA 360+00.00 SEE SHEET 15

IMPACTS IN SURFACE WATER

EXCAVATION IN WETLAND

RIPRAP AT JURISDICTIONAL STREAM CL II RIPRAP 40 TONS SEE DETAIL 14G

–SR1– PC Sta. 17+39.94

–SR1– PT Sta. 22+72.15

SP. LATERAL V DITCH SEE DETAIL 14D

–SR1– POT Sta. 25+00.00

N 46°08'03"W

04 WCM ENTERPRISES, LLC.

09 CATHERINE C. FULLERTON

11 LETICIA A. FOUQUET

19 J.W. COVIL, ET UX

12 FJH, LLC

03A DEPARTMENT OF TRANSPORTATION

LATERAL 4' BASE DITCH SEE DETAIL 14C 230 CY DDE

3' BASE DITCH SEE DETAIL 14B 100 CY DDE

CL 1 RIP RAP OUTLET PROTECTION 15 TONS 29 S.Y. GEOTEXTILE

CL B RIPRAP OUTLET PROTECTION 5 TONS 14 S.Y. GEOTEXTILE

CL B RIPRAP OUTLET PROTECTION 3 TONS 14 S.Y. GEOTEXTILE

CL B RIPRAP OUTLET PROTECTION 3 TONS 10 S.Y. GEOTEXTILE

SP. LAT. V DITCH SEE DETAIL 14F

TIE TO EXISTING DITCH

RETAIN EXIST DITCH

REMOVE EXIST ROADWAY EMBANKMENT AND GRADE TO DRAIN TO DITCH TO REMAIN

SPECIAL LATERAL 2' BASE DITCH SEE DETAIL 14F

LATERAL V DITCH SEE DETAIL 14E 500 CY DDE

TOE PROTECTION SEE DETAIL 14A

–L1– STA. 354+03.68
–Y34– STA. 24+28.73

–L1– TS Sta. 349+91.32

–L1– SC Sta. 351+26.32

2GHA 18" RCP-IV FES ANCHOR UNIT

2GLA 18" CAAP W/ELBOWS

2GHA 18" RCP-IV FES ANCHOR UNIT

2GLA 18" CAAP W/ELBOWS

2GHA 24" RCP-IV FES ANCHOR UNIT

2GLA 24" CAAP W/ELBOWS

2GHA 36" RCP-IV FES ANCHOR UNIT

2GLA 36" CAAP W/ELBOWS

2GHA 42" RCP-IV FES ANCHOR UNIT

2GLA 42" CAAP W/ELBOWS

2GHA 48" RCP-IV FES ANCHOR UNIT

2GLA 48" CAAP W/ELBOWS

2GHA 54" RCP-IV FES ANCHOR UNIT

2GLA 54" CAAP W/ELBOWS

2GHA 60" RCP-IV FES ANCHOR UNIT

2GLA 60" CAAP W/ELBOWS

2GHA 72" RCP-IV FES ANCHOR UNIT

2GLA 72" CAAP W/ELBOWS

WOVEN WIRE FENCE

WOODS

CHORD

PES

PUE

F

GTD

SITE END MATERIAL TYPE UNKNOWN

50' UTILITY EASEMENT

EXISTING R/W

FARM POND

DK

CONC

2SBKD

GR

BM8

12" CMP

15" CMP

18" RCP

24" RCP

36" SMP

INV. 20.39'

INV. 20.35'

60' R/W

EXISTING R/W

DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

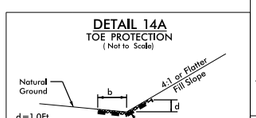
DENOTES IMPACTS IN SURFACE WATER

DENOTES MECHANIZED CLEARING

DETAIL 14H
RIPRAP PAD AT JURISDICTIONAL STREAM
(Not to Scale)

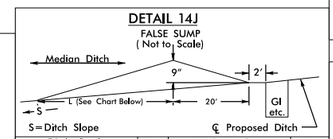
Type of Liner = CL II Rip-Rap
–Y34– STA. 18+50 LT
–SR1– STA. 15+13 LT

DETAIL 14A
TOE PROTECTION
(Not to Scale)



Type of Liner = CL B Rip-Rap
FROM L1 STA. 347+50 TO STA. 349+50 RT

DETAIL 14J
FALSE SUMP
(Not to Scale)

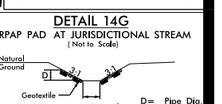


S = Ditch Slope

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

L1 STA. 350+42 MED

DETAIL 14G
RIPRAP PAD AT JURISDICTIONAL STREAM
(Not to Scale)



Type of Liner = CL II Rip-Rap
–Y34– STA. 18+50 LT
–SR1– STA. 15+13 LT

DETAIL 14F
SPECIAL LATERAL BASE DITCH
(Not to Scale)

FROM –L– STA. 357+91 TO STA. 359+19 LT

SEE SHEET 45 & 46 FOR –L1– PROFILE
SEE SHEET 63 FOR –Y34– PROFILE
SEE SHEET 65 FOR –SR1– PROFILE
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA

SITE 20

9/26/2023 10:53:28 AM
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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-74

PERMIT DRAWING
SHEET 32 OF 120

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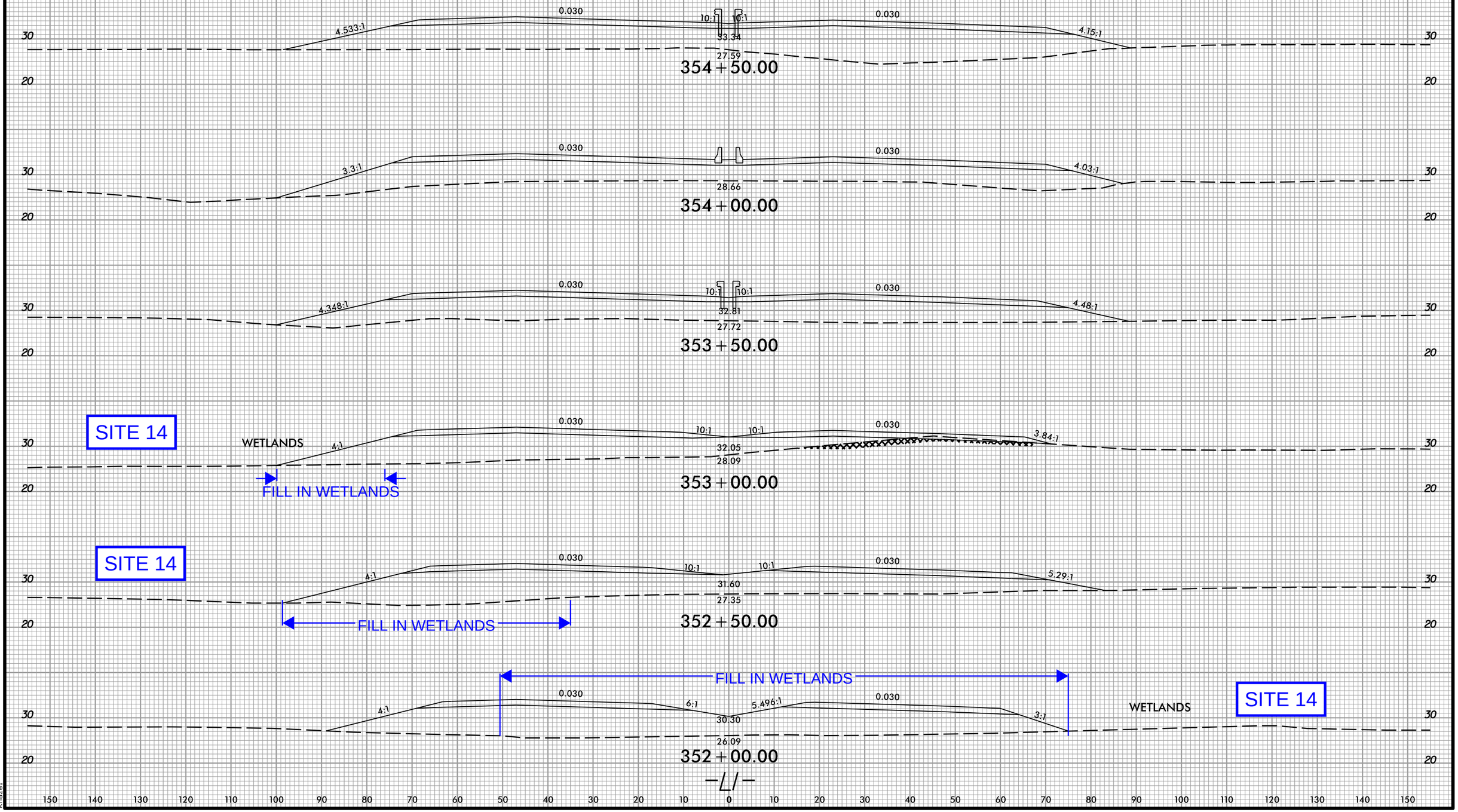


150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

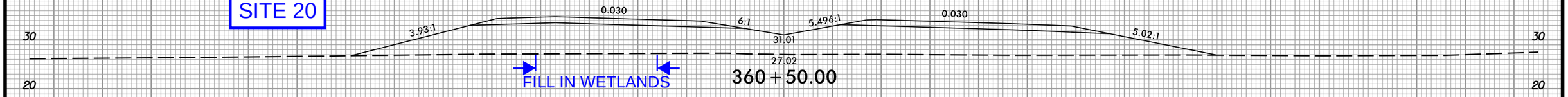
6/23/16

8/15/2023
U:\Roadway\CorridorModeling\R3300A_Rdy_xpl L1.dgn
khazel

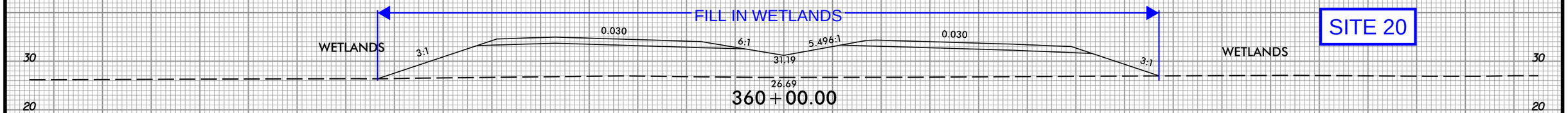
PERMIT DRAWING SHEET 33 OF 120

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

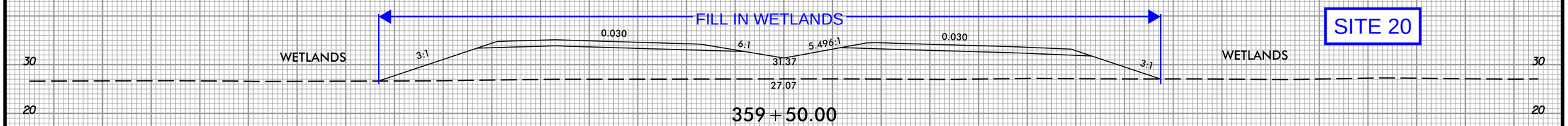
SITE 20



SITE 20



SITE 20



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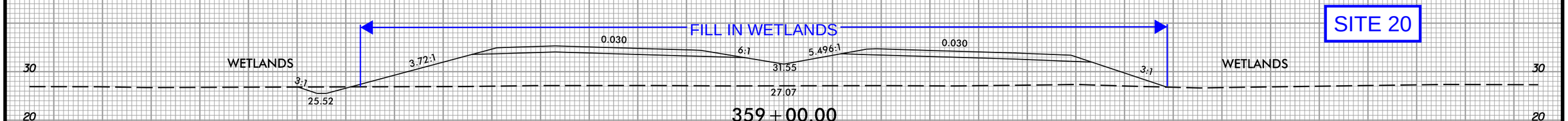

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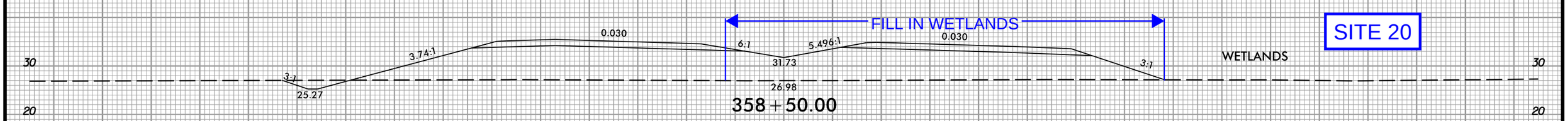

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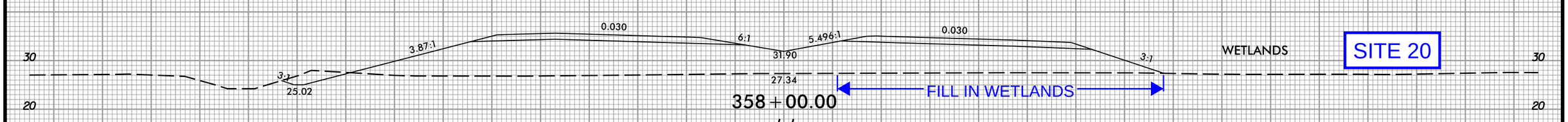

-L/-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

6/23/16

8/15/2023
U:\Roadway\CorridorModeling\R3300A_Rdy.xpl L1.dgn
khazel

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. F-0929
MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

PERMIT DRAWING
SHEET 34 OF 120

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801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
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License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

100' 0' 100'

NAD 83/NSRS 2007

DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING

JOHN R. HATCHER, HEIRS
VINEYARD
ESS EASEMENT D.B. PG 46
60' ACCESS EASEMENT MB 52 PG 86
10' GR
TV
WOODS
RODNEY KING, ET UX
SEPTIC TANK
CONC
25FD
365
48" CHL
MH
50" WD
J.W. COVIL, ET UX
CAROL D. HUNT
370
R.B. HUNT, ET UX
WOVEN WIRE FENCE
SPECIAL LATERAL 'V' DITCH SEE DETAIL 15C
FS SEE DETAIL 15E
-L1- STA 360+00.00 SEE SHEET 14
-L1- STA 373+00.00 SEE SHEET 16
MATCHLINE -L1-
18" RCP CL III
2GI
SPECIAL LATERAL 2' BASE DITCH SEE DETAIL 15A
RIP RAP CL B OUTLET PROTECTION 3 TONS 10 SY GEOTEXTILE
SPECIAL LATERAL 4' BASE DITCH SEE DETAIL 15B
SPECIAL LATERAL 4' BASE DITCH SEE DETAIL 15D
±60.00
150.00'
FJH, LLC.
RONALD R. ENGEL, CO-TRUSTEE, ET AL
THOMAS L. SKINNER
ROGER G. VAN DE BERG, ET UX

SITE 20

DETAIL 15A
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 3:1, D, B, 4:1 or Flatter, Fill Slope
Min. D=1.3 Ft.
B=2 Ft.
FROM -L- STA. 361+75 TO STA. 367+00 RT.

DETAIL 15B
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 3:1, D, B, 4:1 or Flatter, Fill Slope
Min. D=1.5 Ft.
B=4 Ft.
FROM -L- STA. 367+00 TO STA. 371+00 RT.

DETAIL 15C
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground, 3:1, D, 4:1 or Flatter, Fill Slope
Min. D=1 Ft.
FROM -L- STA. 366+50 TO STA. 372+07 LT.

DETAIL 15D
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 3:1, D, B, 4:1 or Flatter, Fill Slope
Min. D=1.2 Ft.
B=4 Ft.
FROM -L- STA. 371+00 TO STA. 373+33 RT.

DETAIL 15E
FALSE SUMP
(Not to Scale)
Median Ditch, 9", 2', L (See Chart Below), 20', S, GI etc.
S=Ditch Slope
℄ Proposed Ditch

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

L1 STA. 367+24 MED.
L1 STA. 372+95 MED.

SEE SHEET 46 FOR -L1- PROFILE
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA

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SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0929
MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

PERMIT DRAWING
SHEET 35 OF 120

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801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

100' 0' 100'

NAD 83/NSRS 2007

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

JOHN R. HATCHER, HEIRS
VINEYARD
ESS EASEMENT D. PG. 16
10' GR
TV TP
60' ACCESS EASEMENT MB 52 PG. 16
EIR
WOODS
SEPTIC TANK
RODNEY KING, ET UX
CONC
25FD
365
45° CHL
MH
50' WD
J.W. COVIL, ET UX
CAROL D. HUNT
370
R.B. HUNT, ET UX
WOVEN WIRE FENCE
SPECIAL LATERAL 'V' DITCH SEE DETAIL 15C
FS SEE DETAIL 15E
-L1- STA 360+00.00 SEE SHEET 14
-L1- STA 373+00.00 SEE SHEET 16
MATCHLINE -L1-
FJH, LLC.
SPECIAL LATERAL 2' BASE DITCH SEE DETAIL 15A
RIP RAP CL B OUTLET PROTECTION 3 TONS 10 SY GEOTEXTILE
SPECIAL LATERAL 4' BASE DITCH SEE DETAIL 15B
SPECIAL LATERAL 4' BASE DITCH SEE DETAIL 15D
±60.00 150.00'
RONALD R. ENGEL, CO-TRUSTEE, ET AL

SITE 20

DETAIL 15A
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 3:1, D, B, 4:1 or Flatter, Fill Slope
Min. D=1.3 Ft.
B=2 Ft.
FROM -L- STA. 361+75 TO STA. 367+00 RT.
THOMAS L. SKINNER

DETAIL 15B
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 3:1, D, B, 4:1 or Flatter, Fill Slope
Min. D=1.5 Ft.
B=4 Ft.
FROM -L- STA. 367+00 TO STA. 371+00 RT.

DETAIL 15C
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground, 3:1, D, 4:1 or Flatter, Fill Slope
Min. D=1 Ft.
FROM -L- STA. 366+50 TO STA. 372+07 LT.
ROGER G. VAN DE BERG, ET UX

DETAIL 15D
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 3:1, D, B, 4:1 or Flatter, Fill Slope
Min. D=1.2 Ft.
B=4 Ft.
FROM -L- STA. 371+00 TO STA. 373+33 RT.

DETAIL 15E
FALSE SUMP
(Not to Scale)
Median Ditch, 9", 2', L (See Chart Below), 20', GI etc., S, ℄ Proposed Ditch

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

L1 STA. 367+24 MED.
L1 STA. 372+95 MED.

SEE SHEET 46 FOR -L1- PROFILE
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA

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2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. F-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

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801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	33
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 36 OF 120

NAD 83/NSRS 2007

SITE 1

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DRAINAGE FROM PROJECT U-4751

U-4751 ROADWAY DESIGN FILES ARE DASHED LINES IN THE PROPOSED ROADWAY

-Y33RPCA- TS Sta 18+61.73

-Y33RPCA- SC Sta 20+05.73

BEGIN CONSTRUCTION
Y33RPCA STA 22+61.33

MATCHLINE -Y33RPCA- STA 24+50.00 SEE SHEET 5

-Y33RPCA- CS Sta 13+67.73

-Y33RPCA- ST Sta 14+51.73

S 50°13'47.4" E

DONE BY OTHERS

CLEANOUT & RETAIN EX. PIPE EST 177 LF

EQ. PIPE

24" RCP

30" RCP

15"

2GI

WETLAND AREA INCLUDED IN U-4751 PERMITS

GREU 3L-3

REMOVED BY OTHERS

BURY INLET 1.0'

KENNETH WAYNE BARROW

ETTA P WILSON, HEIRS

KAY A. LEE

MARK F. HOLLIFIELD

LENIER FURR

WILD MAGNOLIA RD

30' PUBLIC RIGHT OF WAY EASEMENT EACH SIDE OF PROPERTY LINE

30" HDPE

24" RCP

15' SOIL

9' SOIL

8' SOIL

JS NONMT

LINNON ST

EXISTING R/W

1SFD

2SFD

100' 0' 100'

PIPES INSTALLED UNDER TIP PROJECT U-4751 HAVE BEEN MODIFIED TO SHOW AS EXISTING ON TIP PROJECT R-3300A
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA

SEE SHEET 61 FOR -Y33RPCA- PROFILE

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2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. F-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	33
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 37 OF 120

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

SITE 1

DRAINAGE FROM PROJECT U-4751

U-4751 ROADWAY DESIGN FILES ARE DASHED LINES IN THE PROPOSED ROADWAY

-Y33RPCA- TS Sta 18+61.73

-Y33RPCA- SC Sta 20+05.73

BEGIN CONSTRUCTION
Y33RPCA STA 22+61.33

MATCHLINE -Y33RPCA- STA 24+50.00 SEE SHEET 5

-Y33RPCA- CS Sta 13+67.73

-Y33RPCA- ST Sta 14+51.73

S 50°13'47.4"E

DONE BY OTHERS

CLEANOUT & RETAIN EX. PIPE EST 177 LF

WETLAND AREA INCLUDED IN U-4751 PERMITS

KENNETH WAYNE BARROW

ETTA P WILSON, HEIRS

KAY A. LEE

MARK F. HOLLIFIELD

LENIER FURR

WILD MAGNOLIA RD

30' PUBLIC RIGHT OF WAY EASEMENT EACH SIDE OF PROPERTY LINE

30' PUBLIC RIGHT OF WAY EASEMENT EACH SIDE OF PROPERTY LINE

30' HDPE

24" RCP

BURY INLET 1.0'

2SFD

1SFD

100' 0' 100'

PIPES INSTALLED UNDER TIP PROJECT U-4751 HAVE BEEN MODIFIED TO SHOW AS EXISTING ON TIP PROJECT R-3300A
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA

SEE SHEET 61 FOR -Y33RPCA- PROFILE

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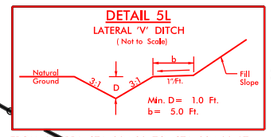
DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DETAIL 5L
LATERAL 'V' DITCH
(Not to Scale)

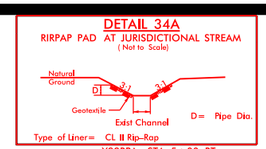


Min. D= 1.0 Ft.
b= 5.0 Ft.

FROM -Y33RPA STA. 20+80 TO STA. 23+00 LT

01

DETAIL 34A
RIPRAP PAD AT JURISDICTIONAL STREAM
(Not to Scale)



Type of Liner= CL II Rip-Rap
-Y33RPA- STA. 5+00 RT
-Y33RPA- STA. 10+66 RT

NAD 83/NSRS 2007

100' 0' 100'

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	34
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 37A OF 120

MATCHLINE -Y33RPA- STA 2+68.00 SEE SHEET 5

WOVEN WIRE FENCE

24" RCP-IV

EXISTING R/W

-Y33RPA- SC Sta.13+73.89

-Y33RPA- TS Sta.12+73.89

CL B. RIP RAP OUTLET PROTECTION
2 TONS
7 S.Y. GEOTEXTILE

BEGIN PROP. SBG
-Y33RPA- STA 14+96 RT

2' CAP W/ WELDWS

2GI 2GI

18" RCP-IV

RIPRAP ON BANKS ONLY
CL. II RIPRAP
20 TONS
SEE DETAIL 34A

INV=34.32

N 78° 50' 15.6" W

-Y33RPA-

DONE BY OTHERS

US 17 / I-140 W 36'BST

2GI

S 81° 20' 15.6" E

-Y33-

48" RCP

408.31

+00.93

END CONST.

US 17 / I-140 E 37'BST

MATCHLINE -Y33- STA 82+50.00 SEE SHEET 5

MATCHLINE -Y33- STA 96+00.00 SEE INSET

INV=37.70 HW

42" RCP-V 42" RCP-V HW

42" RCP-III

44.20'
S 80°44'09" E

10' DRAINAGE EASEMENT

S 80°44'09" E
459.65'

1340' R

24" RCP-III
TO TIE

2GI

15° CMP
2 ELBOWS

EXISTING R/W

S 07°33'51" W

30' PUBLIC RIGHT OF WAY EASEMENT EACH SIDE OF PROPERTY LINE

DIANE THIMINH CHAU TA
DB 5503 PG 1237
MB 8 PG 97

INSET

WOVEN WIRE FENCE

01

TEMPORARY IMPACTS IN SURFACE WATER

END FENCE

RIPRAP AT JURISDICTIONAL STREAM
CL. II RIPRAP
20 TONS
SEE DETAIL 34A
W/ COLLAR

END CONSTRUCTION
-Y33- Sta.102+75.11

48" WW JSBW

INV=38.02

IMPACTS IN SURFACE WATER

REMOVE 8' OF 48" RCP

N 78° 50' 15.6" W

-Y33RPA-

I-140 38' BST JOHN JAY BURNEY JR FREEWAY

RETAIN

48" RCP

DI W/CONC

INV=41.56'

I-140 37.5' BST JOHN JAY BURNEY JR FREEWAY

18" RCP

INV=39.79'

INV=38.29'

48" WW ISBW

MATCHLINE -Y33- STA 96+00.00 THIS SHEET

SITE 49

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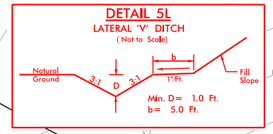
DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DETAIL 5L
LATERAL 'V' DITCH
(Not to Scale)



FROM -Y33RPA STA. 20+80 TO STA. 23+00 LT

DETAIL 34A
RIPRAP PAD AT JURISDICTIONAL STREAM
(Not to Scale)

Type of Liner= CL II Rip-Rap
-Y33RPA- STA. 5+00 RT
-Y33RPA- STA. 10+66 RT

100' 0' 100'

90

NAD 83/NSRS 2007

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. P-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	34
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 37B OF 120

MATCHLINE -Y33RPA- STA 2+68.00 SEE SHEET 5

MATCHLINE -Y33- STA 82+50.00 SEE SHEET 5

MATCHLINE -Y33- STA 96+00.00 THIS SHEET

MATCHLINE -Y33- STA 96+00.00 SEE INSET

WOVEN WIRE FENCE

24" RCP-IV

CL B. RIP RAP OUTLET PROTECTION 2 TONS 7 S.Y. GEOTEXTILE

BEGIN PROP. SBG -Y33RPA- STA. 14+96 RT

18" CAP W/ WELDWS

18" RCP-IV

-Y33RPA- SC Sta. 13+73.89

-Y33RPA- TS Sta. 10+73.89

RIPRAP ON BANKS ONLY CL II RIPRAP 20 TONS SEE DETAIL 34A

INV=37.70

N 78° 50' 15.6" W

-Y33RPA-

US 17 / I-140 W 36'BST

DONE BY OTHERS

+00.93 END CONST. -Y33- Sta. 82+08.31

S 81° 20' 15.6" E

-Y33-

48" RCP

US 17 / I-140 E 37'BST

INV=37.70

42" RCP-V

42" RCP-III

S 80°44'09" E 44.20'

S 80°44'09" E 459.65'

10' DRAINAGE EASEMENT

36" RCP-III EQ. PIPE

5' CAAP W/ 2 ELBOWS

DIANE THI MINH CHAU TA
DB 5503 PG 1237
MB 8 PG 97

S 07°33'51" W

30' PUBLIC RIGHT OF WAY EASEMENT EACH SIDE OF PROPERTY LINE

INSET

TEMPORARY IMPACTS IN SURFACE WATER

IMPACTS IN SURFACE WATER

END FENCE

END CONSTRUCTION -Y33- Sta. 102+75.11

RIPRAP AT JURISDICTIONAL STREAM CL II RIPRAP 20 TONS SEE DETAIL 34A

24" RCP-IV

24" W COLLAR

INV=38.07

REMOVE 8' OF 48" RCP

N 78° 50' 15.6" W

-Y33RPA-

I-140 38' BST

JOHN JAY BURNEY JR FREEWAY

RETAIN

48" RCP

INV=41.56

D1 W/CONC

18" RCP

I-140 37.5' BST

INV=39.79

INV=38.29

48" WW ISBW

SITE 49

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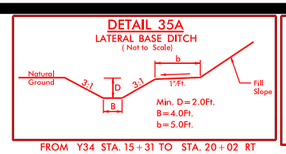
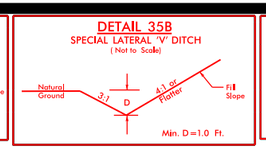
5/14/99

DETAIL 35A
LATERAL BASE DITCH
(Not to Scale)



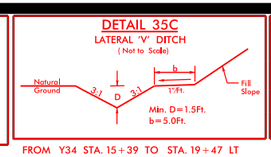
FROM Y34 STA. 15+31 TO STA. 20+02 RT

DETAIL 35B
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



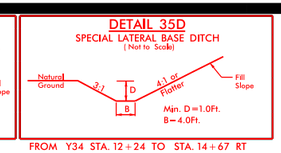
FROM Y34 STA. 12+23 TO STA. 14+50 LT

DETAIL 35C
LATERAL 'V' DITCH
(Not to Scale)



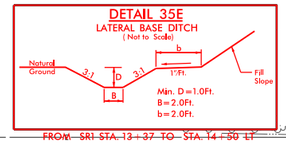
FROM Y34 STA. 15+39 TO STA. 19+47 LT

DETAIL 35D
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM Y34 STA. 12+24 TO STA. 14+67 RT

DETAIL 35E
LATERAL BASE DITCH
(Not to Scale)



FROM SR1 STA. 13+37 TO STA. 14+50 LT

HC DENOTES HAND CLEARING

F DENOTES FILL IN WETLAND

FW DENOTES TEMPORARY IMPACTS IN SURFACE WATER

E DENOTES EXCAVATION IN WETLAND

DENOTES MECHANIZED CLEARING

NAD 83/NSRS 2007

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. F-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

PERMIT DRAWING
SHEET 38 OF 120

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Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	35

RW SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

LANWILLO DEVELOPMENT CO.

SITE 17

SITE 15

SITE 16

100' 0' 100'

-SR1- PT Sta. 12+55.27

-Y34- POT Sta. 9+50.00

-SR1- PC Sta. 10+35.36

-Y34- POT Sta. 15+00.00
-SR1- POT Sta. 10+00.00
BRG AH=N 14° 09' 42.6" W

-SR1- N 75° 50' 17.4" E

-Y34- N 75° 50' 17.4" E

MATCHLINE -SR1- STA 15+00.00
SEE SHEET 14

MATCHLINE -Y34- STA 19+00.00
SEE SHEET 14

30' DRAINAGE EASEMENT
MB 45 PG 357, MB 23 PG 51-52

DEBRA R. KNOWLES

RAMSON WARD

LARRY D. CAPPS, ET UX

EWELL D. SCALES, III, ET UX

CHARLES L. BRYANT, ET UX

MARY E. PHILLIPS, LIFE ESTATE
05
NO CLAIM

WCM ENTERPRISES, LLC.

04

07

08

09

ISBKD
ISFD
2SFD
CONC
DK
S
GR
WOODS

48" WD
48" WW
48" THL
18" CMP
24" CMP
42" CMP
42" RCP
40" PVC
18" RCP
12" WD HW
10" WD HW
18" SLATE HW
12" CONC
20" CONC
15" CMP
8" CMP

PUE
PDE
E
F
C
W
S
G
A

EXCAVATION IN WETLAND
HAND CLEARING
LAT 2' BASE DITCH
SEE DETAIL 35E
21 CY DDE
SP. LAT V DITCH
SEE DETAIL 35B
LATERAL V DITCH
SEE DETAIL 35C
1200 CY DDE
SP. LAT 4' BASE DITCH
SEE DETAIL 35D
LATERAL 4' BASE DITCH
SEE DETAIL 35A
2300 CY DDE
RETAIN
REMOVE
16' DRIVE
5' DRIVE
12' DRIVE
50' UTILITY EASEMENT
DB 5351PG 1904
60' ACCESS EASEMENT
MB 47 PG 61
AZALEA COAST FARM
GATE

INV. = 22.5
INV. = 23.7
INV. = 24.7
INV. = 24.0
INV. = 23.5
INV. 23.10'
INV. 23.46'
INV. = 23.1
INV. 24.20'
INV. 24.40'

SR 1336 SIDBURY RD 24' BST

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SEE SHEET 65 FOR -SR1- PROFILE
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA SEE SHEET 63 FOR -Y34- PROFILE

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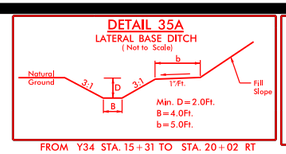
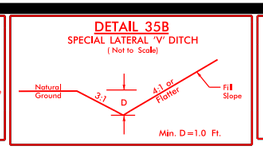
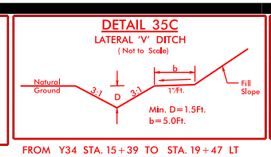
5/14/99



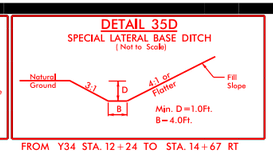
FROM Y34 STA. 15+31 TO STA. 20+02 RT



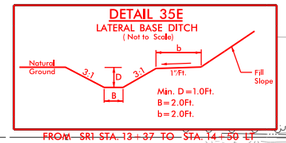
FROM Y34 STA. 12+23 TO STA. 14+50 LT



FROM Y34 STA. 15+39 TO STA. 19+47 LT



FROM Y34 STA. 12+24 TO STA. 14+67 RT



FROM -SRI- STA. 13+37 TO STA. 14+50 LT

HC HC	DENOTES HAND CLEARING
F F	DENOTES FILL IN WETLAND
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
E E	DENOTES EXCAVATION IN WETLAND
	DENOTES MECHANIZED CLEARING

NAD 83/NSRS 2007

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FIRM PE NUMBER : P-0671

PERMIT DRAWING SHEET 39 OF 120

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Raleigh, NC 27606
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	35
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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LANWILLO DEVELOPMENT CO.

SITE 17

SITE 15

SITE 16

100' 0' 100'

-SRI- PT Sta. 12+55.27

-Y34- POT Sta. 9+50.00

-SRI- PC Sta. 10+35.36

-SRI- N 75° 50' 17.4" E

-Y34- N 75° 50' 17.4" E

-Y34- POT Sta. 15+00.00
-SRI- POT Sta. 10+00.00
BRG AH=N 14° 09' 42.6" W

DEBRA R. KNOWLES

RAMSON WARD

LARRY D. CAPPS, ET UX

EWELL D. SCALES, III, ET UX

CHARLES L. BRYANT, ET UX

MARY E. PHILLIPS, LIFE ESTATE
05
NO CLAIM

WCM ENTERPRISES, LLC.
04

30' DRAINAGE EASEMENT
MB 45 PG 357, MB 23 PG 51-52

50' UTILITY EASEMENT
DB 5351PG 1904

60' ACCESS EASEMENT
MB 41 PG 67

SR 1336 SIDBURY RD 24' BST

LAT 2' BASE DITCH
SEE DETAIL 35E
21 CY DDE

EXCAVATION IN WETLAND

LATERAL V DITCH
SEE DETAIL 35C
1200 CY DDE

HAND CLEARING

SP. LAT V DITCH
SEE DETAIL 35B

SP. LAT 4' BASE DITCH
SEE DETAIL 35D

LATERAL 4' BASE DITCH
SEE DETAIL 35A
2300 CY DDE

RETAIN

REMOVE

MATCHLINE -Y34- STA 19+00.00
SEE SHEET 14

MATCHLINE -SRI- STA 15+00.00
SEE SHEET 14

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SEE SHEET 65 FOR -SRI- PROFILE
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA SEE SHEET 63 FOR -Y34- PROFILE

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-264

PERMIT DRAWING
SHEET 40 OF 120

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

30 20 10 30 20

0.020 0.020 3.774:1 3.8:1 25.00

16+00.00

0.020 0.020 3.759:1 3.156:1 27.67

15+50.00

SITE 15

IMPACTS IN SURFACE WATER

WETLANDS FILL IN WETLANDS WETLANDS

0.020 0.020 3:1 4.1:1 23.99

15+00.00

WETLANDS WETLANDS

0.020 0.020 3:1 3.87:1 24.72

14+50.00

FILL IN WETLANDS

FILL IN WETLANDS

WETLANDS

0.020 0.020 4:1 3.844:1 24.67

14+00.00

SITE 15

FILL IN WETLANDS

WETLANDS

0.020 0.020 3.72:1 4:1 24.25

13+50.00

-SR1-

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khazel

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-222

PERMIT DRAWING
SHEET 41 OF 120

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

SITE 17

EXCAVATE IN WETLANDS

WETLANDS

30 / 20

0.020 0.020

3:1 4:1 4:1 3:1

24.26 29.00 23.70

14+00.00

SITE 16

EXCAVATION IN WETLANDS

WETLANDS

30 / 20

0.020 0.020

3:1 4:1 4:1 3:1

24.58 29.10 24.02

13+50.00

30 / 20

0.020 0.020

3:1 4:1 4:1 3:1

24.84 29.11 24.33

13+00.00

30 / 20

0.020 0.020

3:1 4:1 4:1 3:1

25.10 29.27 24.65

12+50.00

30 / 20

0.020 0.020

3:1 3:1

29.33

12+00.00

30 / 20

0.015 0.015

3:1 4:1

29.33

11+50.00

30 / 20

29.45

11+00.00

-Y34-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

8/15/2023
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khazel

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-223

PERMIT DRAWING
SHEET 42 OF 120

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

40 / 30 / 20

0.020 0.020

3:1 3:1 3:1 3:1 3:1 3:1

22.64 28.81 22.87

16+50.00

0.020 0.020

3:1 3:1 3:1 3:1 3:1 3:1

23.49 28.77 22.98

16+00.00

0.020 0.020

3:1 3:1 3:1 3:1 3:1 3:1

23.49 28.89 23.09

15+50.00

WETLANDS

0.020 0.020

3:1 3:1

28.95

15+00.00

SITE 17

EXCAVATE IN WETLANDS

WETLANDS

0.020 0.020

3:1 3:1 4:1 3:1

24.00 28.97 23.38

14+50.00

-Y34-

8/15/2023
U:\Roadway\CorridorModeling\Ys_SRs\R3300A_rdy_XPL_Y34.dgn
khazel

5/14/99

F F DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

HC HC DENOTES HAND CLEARING

T T DENOTES TEMPORARY FILL IN WETLAND

NAD 83/NSRS 2007

SITE 18

SITE 50

SITE 19

-SR9- POT Sta. 10+00.00

-SR9- PC Sta. 13+07.25

-SR9- PT Sta. 14+95.75
BRG AH=S 14°09'42.6" E
-Y34- POT Sta. 32+00.00
-SR2- POT Sta. 10+00.00
-SR9- POT Sta. 15+51.11
-SR2- PC Sta. 10+11.62
BRG BK=S 14°09'42.6" E

-Y34- POT Sta. 37+00.00

-Y34- STA 27+00.00 SEE SHEET 14

-SR2- PT Sta. 14+81.98

-SR2- PC Sta. 15+14.06
BRG BK= S 48°04'09.6" E

-SR2- POT Sta. 17+12.29
BRG BK=S 45°32'56.5" E

-SR2- PT Sta. 16+37.66

-SR2- PT Sta. 11+38.83

-SR2- POT Sta. 14+30.21

-SR2- PC Sta. 14+30.21
BRG AH= S 75°20.2" W

-Y34- N 75°50'17.4" E

-SR9- N 75°50'17.4" E

SR 1336 SIDBURY RD 24' BST

FILL IN WETLAND

HAND CLEARING

EXCAVATION IN WETLAND

LATERAL V DITCH
SEE DETAIL 36A
500 CY DDE

LATERAL 4' BASE DITCH
SEE DETAIL 36C
240 CY DDE

LATERAL 4' BASE DITCH
SEE DETAIL 36D
110 CY DDE

SP. LATERAL 4' BASE DITCH
SEE DETAIL 36D
110 CY DDE

SP. LATERAL 4' BASE DITCH
SEE DETAIL 36E

CL B RIP RAP
OUTLET PROTECTION
5 TONS
14 S.Y GEOTEXTILE

ISFDI S.Y GEOTEXTILE

REMOVE 24" CMP

18" CMP

24" RCP-IV

12" RCP

8" SOIL & GR

INV. =25.0
INV. =25.7
INV. =26.8
INV. =25.5
INV. =26.2
INV. =26.7
INV. =25.6
INV. 24.40'
INV. 24.84'
INV. 24.20'
INV. 23.10'
INV. 25.36'
INV. 25.23'

ROGER G. VAN DE BERG, ET UX

BRANCES H. HUBIS

RONALD R. ENGEL, CO-TRUSTEE, ET AL

FJH, LLC.

SEAGREEN LLC

RICHARD O. PARROTT, ET UX

SHEILA C. JUSTICE
NO CLAIM

KEVIN HUTSON, ET UX
NO CLAIM

WILLIAM W. SOUTHER

DOUGLAS H. GRANT, ET UX

DEPARTMENT OF TRANSPORTATION

DECRA TED ACCESS

DEER RUN DR

12' GR

20' DRAINAGE EASEMENT DB 4535 PG 315

DEDICATED RIGHT OF WAY ACCESS MB 25 PG

10' DRAINAGE EASEMENT DB 5398 PG 475

10' DRAINAGE EASEMENT DB 1450 PG 052

50' NATURAL GAS EASEMENT DB 5067 PG 886

POOL

ISBKD

GATE

DK

S

2SFD

5

3MBY3

CONC R/W

EXISTING R/W

EIP

24" RCP

100' 0' 100'

DETAIL 36A
LATERAL 'V' DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1, b, 1'Ft., Fill Slope

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

FROM Y34 STA. 26+00 TO STA. 33+14 LT

DETAIL 36B
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Natural Ground, 3:1, D, 4:1 or Flatter, Fill Slope

Min. D=1.0 Ft.

FROM Y34 STA. 33+23 TO STA. 35+82 LT

DETAIL 36E
SPECIAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, B, 4:1 or Flatter, Front Ditch Slope

Min. D= 1.0 Ft.
B= 4.0 Ft.

FROM SR2 STA. 15+00 TO STA. 15+50 LT

DETAIL 36C
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1, b, 1'Ft., B, Fill Slope

Min. D=2.0Ft.
B=4.0Ft.
b=5.0Ft.

FROM Y34 STA. 28+23 TO STA. 31+40 RT

DETAIL 36D
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, B, 4:1 or Flatter, Fill Slope

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

FROM Y34 STA. 32+25 STA. TO STA. 36+20 RT

SEE SHEET 63 FOR -Y34- PROFILE
SEE SHEET 65 FOR -SR2- PROFILE
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA SEE SHEET 66 FOR -SR9- PROFILE

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
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NC COA No. F-0929

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	36
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 43 OF 120

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DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

DENOTES HAND CLEARING

DENOTES TEMPORARY FILL IN WETLAND

NAD 83/NSRS 2007

SITE 18

SITE 50

SITE 19

-SR9- POT Sta. 10+00.00

-SR9- PC Sta. 13+07.25

-SR9- PT Sta. 14+95.75
BRG AH=S 14°09'42.6" E
-Y34- POT Sta. 32+00.00

-SR2- POT Sta. 10+00.00
-SR9- POT Sta. 15+51.11

-SR2- PC Sta. 10+11.62
BRG BK=S 14°09'42.6" E

-Y34- POT Sta. 37+00.00

-SR9- N 75°50'17.4" E

-Y34- N 75°50'17.4" E

-SR2- S 70°35'20.2" W

-SR2- PC Sta. 14+30.21

-SR2- PT Sta. 14+81.98

-SR2- PC Sta. 15+14.06
BRG BK=
S 48°04'09.6" E

-SR2- PT Sta. 16+37.66

-SR2- PT Sta. 11+38.23

-SR2- POT Sta. 17+12.29
BRG BK=S 45°32'56.5" E

MATCHLINE -Y34- STA 27+00.00 SEE SHEET 14

FJH, LLC.

RONALD R. ENGEL, CO-TRUSTEE, ET AL

BRANCES H. HUBIS

ROGER G. VAN DE BERG, ET UX

SHEILA C. JUSTICE

NO CLAIM

SEAGREEN LLC

RICHARD O. PARROTT, ET UX

KEVIN HUTSON, ET UX

NO CLAIM

WILLIAM W. SOUTHER

DOUGLAS H. GRANT, ET UX

DEPARTMENT OF TRANSPORTATION

SR 1336 SIDBURY RD 24' BST

FILL IN WETLAND

HAND CLEARING

LATERAL 'V' DITCH
SEE DETAIL 36A
500 CY DDE

REMOVE

24" CMP

18" CMP

12' DRIVE

GREU TL-3

INV. 24.20

INV. 25.36

INV. 25.23

INV. 24.40

INV. 24.84

INV. 23.10

CL B RIP RAP OUTLET PROTECTION
5 TONS
14 S.Y GEOTEXTILE

LATERAL 4' BASE DITCH
SEE DETAIL 36C
240 CY DDE

SP. LATERAL 4' BASE DITCH
SEE DETAIL 36D
110 CY DDE

SP. LATERAL 4' BASE DITCH
SEE DETAIL 36E

SP. LATERAL 4' BASE DITCH
SEE DETAIL 36
110 CY DDE

EXCAVATION IN WETLAND

HAND CLEARING

FILL IN EXISTING DITCH

GATE

POOL

10' DRAINAGE EASEMENT DB 5358 PG 475

10' DRAINAGE EASEMENT DB 1350 PG 052

20' DRAINAGE EASEMENT MB 46 PG 95

DECRA TEMP ACCESS

DETAIL 36A
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground, 3:1, D, 3:1, b, 1'Ft., Fill Slope
Min. D=1.5Ft.
b=5.0Ft.
FROM Y34 STA. 26+00 TO STA. 33+14 LT

DETAIL 36B
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground, 3:1, D, 4:1 or Flatter, Fill Slope
Min. D=1.0 Ft.
FROM Y34 STA. 33+23 TO STA. 35+82 LT

DETAIL 36E
SPECIAL BASE DITCH
(Not to Scale)
Natural Ground, 3:1, D, 4:1 or Flatter, Front Ditch Slope, B
Min. D= 1.0 Ft.
B= 4.0 Ft.
FROM SR2 STA. 15+00 TO STA. 15+50 LT

DETAIL 36C
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 3:1, D, 3:1, b, 1'Ft., Fill Slope, B
Min. D=2.0Ft.
B=4.0Ft.
b=5.0Ft.
FROM Y34 STA. 28+23 TO STA. 31+40 RT

DETAIL 36D
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 3:1, D, 4:1 or Flatter, Fill Slope, B
Min. D=1.5 Ft.
B=4.0Ft.
FROM Y34 STA. 32+25 STA. TO STA. 36+20 RT

SEE SHEET 63 FOR -Y34- PROFILE
SEE SHEET 65 FOR -SR2- PROFILE
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA SEE SHEET 66 FOR -SR9- PROFILE

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R-3300A	36
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 44 OF 120

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100' 0' 100'

9/25/2023 8:57:14 AM
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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-268

PERMIT DRAWING
SHEET 45 OF 120

30.03
17+00.00

29.65
16+50.00

29.50
16+00.00

FILL IN WETLANDS

SITE 13

3:1 0.020 0.020 3:1
29.48
15+50.00

FILL IN WETLANDS

SITE 13

3:1 0.020 0.020 3:1
29.48
15+00.00

3:1 0.020 0.020 3:1
24.59
14+50.00

3:1 0.020 0.020 3:1
28.38
14+00.00

3:1 0.020 0.020 3:1
28.65
13+50.00

-SR2-

30 20 30 20 10

8/15/2023
U:\Roadway\CorridorModeling\Ys_SRs\R3300A_rdy_XPL_SR2.dgn
khazel

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R3300A	X-273

PERMIT DRAWING
SHEET 46 OF 120

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

30 20 40 30 20 40 30 20 40 30 20 40 30 20 40 30 20 40 30 20

28.87

15 + 50.0000

0.011 0.011 3:1 3:1

28.53

15 + 00.0000

0.020 0.020 3:1 3:1

28.09

14 + 50.0000

SITE 18

0.020 0.020 WETLANDS 3:1 3:1 WETLANDS

FILL IN WETLAND

14 + 00.0000

0.020 0.020 3:1 3:1

13 + 50.0000

0.020 0.020 3:1 3:1

13 + 00.0000

-SR9-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

8/15/2023
U:\Roadway\CorridorModeling\Ys_SRs\R3300A_rdy_XPL_SR9.dgn
khazel

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-233

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

EXCAVATION IN WETLAND

SITE 19

PERMIT DRAWING
SHEET 47 OF 120

WETLANDS

30 / 20

0.020 0.020 4:1 3:1 28.29 24.37

36 + 00.00

0.020 0.020 3:1 4:1 25.15 28.39 4:1 3:1 24.53

35 + 50.00

0.020 0.020 3:1 4:1 25.15 28.48 4:1 3:1 24.69

35 + 00.00

0.020 0.020 3:1 4:1 25.15 28.56 4:1 3:1 24.85

34 + 50.00

0.020 0.020 3:1 4:1 25.15 28.63 4:1 3:1 25.02

34 + 00.00

0.020 0.020 3:1 4:1 25.15 28.62 4:1 3:1 25.18

33 + 50.00

0.020 0.020 3:1 3:1 3:1 4:1 25.87 28.68 4:1 3:1 25.35

33 + 00.00

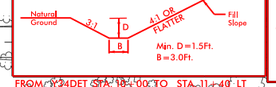
-Y34-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

8/15/2023
U:\Roadway\Corridor Modeling\Ys_SRs\R3300A_rdy_XPL_Y34.dgn
khazel

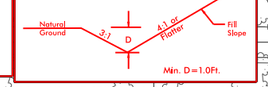
–Y34DET–

DETAIL 2B–2A
TEMP. SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM –Y34DET STA. 10+00.00 TO STA. 11+40 LT

DETAIL 2B–2B
TEMP. SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM Y34DET STA. 12+50 TO STA. 13+50 LT
FROM Y34DET STA. 34+72 TO STA. 37+55 LT

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. P-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
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License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	2B-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 47A OF 120

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

100' 0' 100'

SITE 15
SITE 17
SITE 16
SITE 14
SITE 18
SITE 19

-Y34DET- PRC Sta. 13+85.63

BEGIN CONSTRUCTION
-Y34DET- PC Sta. 10+00.00
-Y34- POT Sta. 10+00.00

-Y34DET- PT Sta. 17+71.26

LAT 2' BASE DITCH SEE DETAIL 35E
Q10=11.2 CFS
V10=2.0 FPS

RIPRAP AT JURISIDICTIONAL STREAM
CL II RIPRAP
40 TONS
SEE DETAIL 14G

NAD 83 NSRS 2007

EWELL O. SCALES, III, ET UX
CHARLES L. BRYANT, ET UX
CATHERINE C. FULLERTON
MARY E. PHILLIPS, LIFE ESTATE
FJH, LLC.
RONALD R. ENGEL, CO-TRUSTEE, ET AL
FRANCES H. HOBBS
ROGER G. VAN DE BERG, ET UX
SHEILA C. JUSTICE
RICHARD O. PARROTT, ET UX
KEVIN HUTSON, ET UX

TEMP SP. LAT V. DITCH SEE DETAIL 2B-2A
TEMP SP. LAT V. DITCH SEE DETAIL 2B-2B
TIE TO EXISTING DITCH
TEMP. 18"
REMOVE
RETAIN
50' PDE PER NCDOT 1W PLANS R-3325BD4 PG 231
TEMP. SP. LATERAL V. DITCH SEE DETAIL 2B-2B

SR 1336 SIDBURY RD 24' BST
SR 2259 22' BST

-L- STA. 354+03.68
-Y34- STA. 24+28.73

DRIVEWAY RADII ARE 15' UNLESS NOTED OTHERWISE
FOR –Y34DET– PROFILE SEE SHEETS 2B–3

MATCHLINE –Y34DET– STA. 24+50.00

MATCHLINE –Y34DET– STA. 24+50.00

REVISIONS

8/17/99

9/28/2023 9:33:15 AM
R-3300A_rdy_psh_det.dgn

5/14/99

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. P-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	16

RW SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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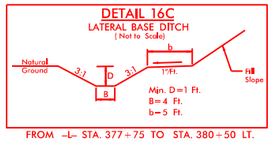
NAD 83/NSRS 2007

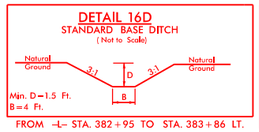
PERMIT DRAWING SHEET 48 OF 120

DETAIL 16C
LATERAL BASE DITCH
(Not to Scale)



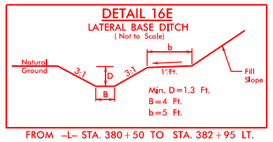
FROM –L– STA. 377+75 TO STA. 380+50 LT.

DETAIL 16D
STANDARD BASE DITCH
(Not to Scale)

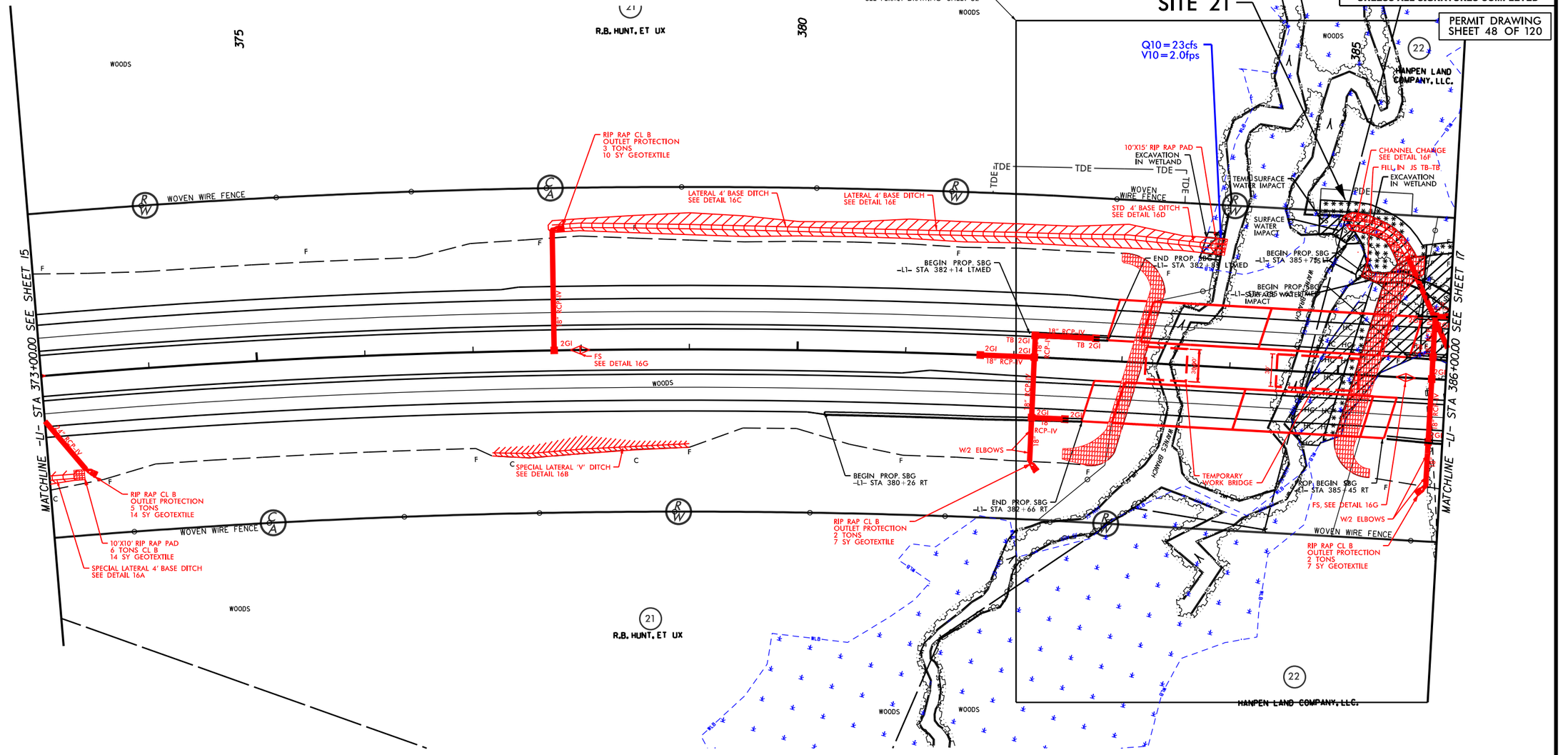


FROM –L– STA. 382+95 TO STA. 383+86 LT.

DETAIL 16E
LATERAL BASE DITCH
(Not to Scale)



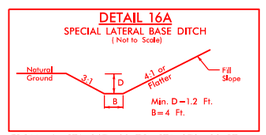
FROM –L– STA. 380+50 TO STA. 382+95 LT.



TE TE	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
S S	DENOTES IMPACTS IN SURFACE WATER
F F	DENOTES FILL IN WETLAND
E E	DENOTES EXCAVATION IN WETLAND
	DENOTES MECHANIZED CLEARING
HC HC	HAND CLEARING (NON-GRUBBING)

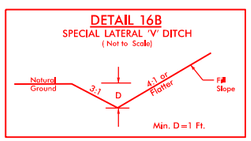
50' 0' 50' 100' 150'
GRAPHIC SCALE

DETAIL 16A
SPECIAL LATERAL BASE DITCH
(Not to Scale)



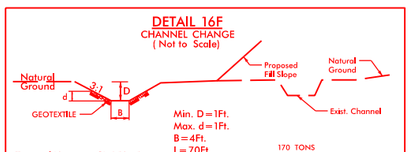
FROM –L– STA. 367+00 TO STA. 373+33 RT.

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



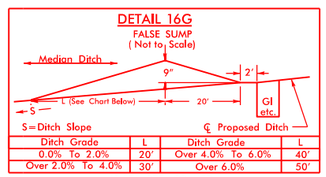
FROM –L– STA. 377+15 TO STA. 379+00 RT.

DETAIL 16F
CHANNEL CHANGE
(Not to Scale)



FROM STA. 384+98 TO STA. 385+58 LT, S=0.63%, DDE=129 CY

DETAIL 16G
FALSE SUMP
(Not to Scale)



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

L1 STA. 377+99 MED.
L1 STA. 385+63 MED.

SEE SHEET 46 & 47 FOR –L1– PROFILE

9/29/2023
Hunter
N:\Proj\Hydro\MI7006_R-3300A Hampstead Bypass\Hydraulics\PERMITS_Environmental (Drawings)\R3300A_hyd_psh_16.dgn
29-SEP-2023 13:09
Hampstead Bypass\Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_16.dgn

5/14/99

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. P-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
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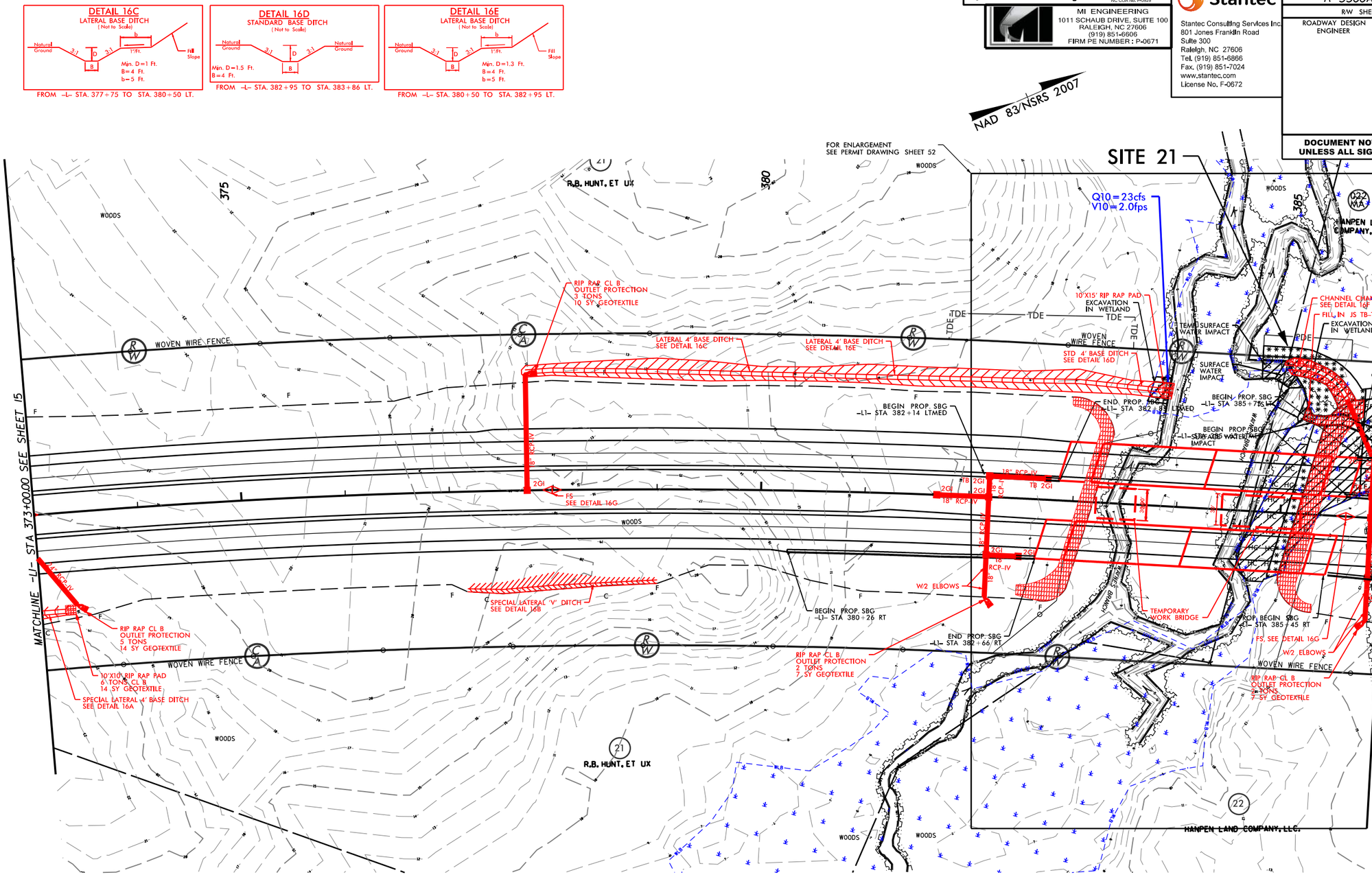
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 49 OF 120

NAD 83/NSRS 2007



DETAIL 16C
LATERAL BASE DITCH
(Not to Scale)

FROM -L- STA. 377+75 TO STA. 380+50 LT.

DETAIL 16D
STANDARD BASE DITCH
(Not to Scale)

FROM -L- STA. 382+95 TO STA. 383+86 LT.

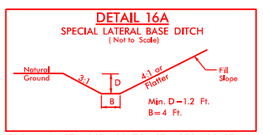
DETAIL 16E
LATERAL BASE DITCH
(Not to Scale)

FROM -L- STA. 380+50 TO STA. 382+95 LT.

TB TB DENOTES TEMPORARY IMPACTS IN SURFACE WATER
S S DENOTES IMPACTS IN SURFACE WATER
F F DENOTES FILL IN WETLAND
E E DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING
HC HC HAND CLEARING (NON-GRUBBING)

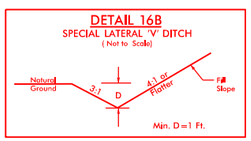
50' 0' 50' 100' 150'
GRAPHIC SCALE

DETAIL 16A
SPECIAL LATERAL BASE DITCH
(Not to Scale)



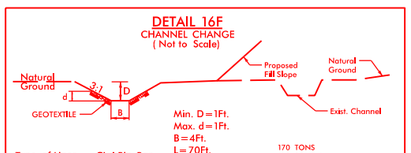
FROM -L- STA. 367+00 TO STA. 373+33 RT.

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



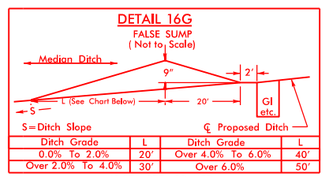
FROM -L- STA. 377+15 TO STA. 379+00 RT.

DETAIL 16F
CHANNEL CHANGE
(Not to Scale)



FROM STA. 384+98 TO STA. 385+58 LT, S=0.63%, DDE=129 CY

DETAIL 16G
FALSE SUMP
(Not to Scale)



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

L1 STA. 377+99 MED.
L1 STA. 385+63 MED.

SEE SHEET 46 & 47 FOR -L1- PROFILE

9/29/2023
Hunter
H:\NC_Hydro\MJ7006_R-3300A Hampstead Bypass\Hydraulics\PERMITS_Environmental (Drawings)\R3300A_hyd_psh_16_con.dgn
29-SEP-2023 13:09
Bypass_HydroNuke
H:\NC_Hydro\MJ7006_R-3300A Hampstead Bypass\Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_16_con.dgn

5/14/99

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	17
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

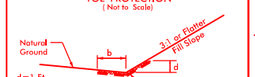
PERMIT DRAWING
SHEET 50 OF 120

NAD 83/NSRS 2007

DETAIL 17C
SPECIAL LATERAL BASE DITCH
(Not to Scale)

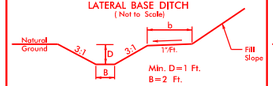
FROM -L- STA. 396+50 TO STA. 396+95 LT.

DETAIL 17D
TOE PROTECTION
(Not to Scale)



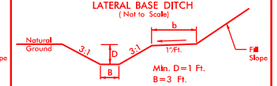
Type of Liner= CL B Rip-Rap
FROM -L- STA. 395+55 TO STA. 395+95 LT.
FROM -L- STA. 388+04 TO STA. 389+10 RT.
FROM -L- STA. 386+20 TO STA. 387+10 RT.

DETAIL 17E
LATERAL BASE DITCH
(Not to Scale)



FROM -L- STA. 388+30 TO STA. 390+36 LT.
FROM -L- STA. 395+50 TO STA. 397+00 RT.
FROM -L- STA. 395+95 TO STA. 396+50 LT.

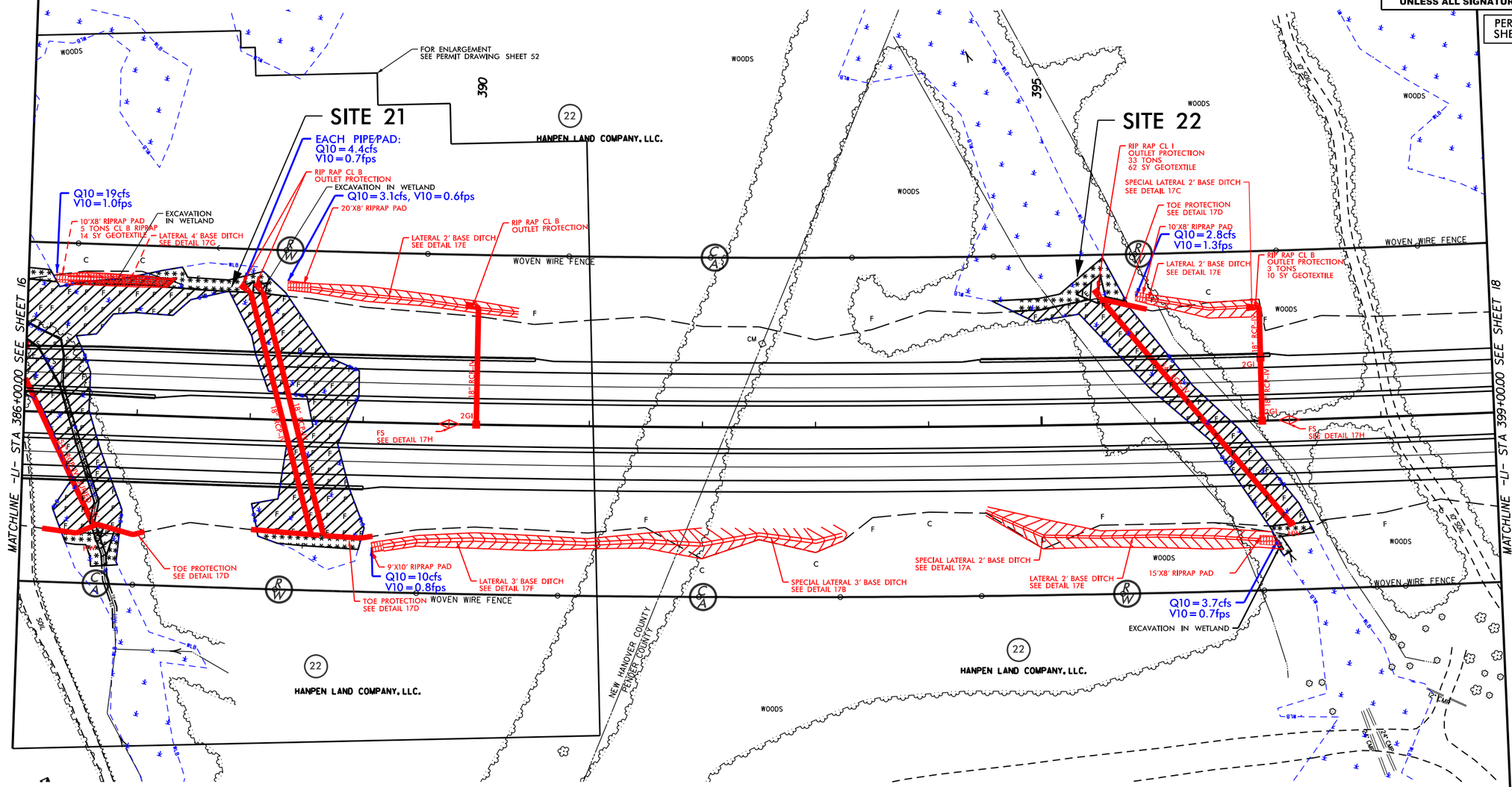
DETAIL 17F
LATERAL BASE DITCH
(Not to Scale)



FROM -L- STA. 389+10 TO STA. 392+00 RT.

DETAIL 17G
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Type of Liner= CL B Rip-Rap
FROM -L- STA. 386+35 TO STA. 387+23 LT.



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

50' 0' 50' 100' 150'
GRAPHIC SCALE

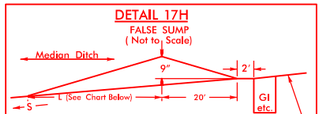
DETAIL 17A
SPECIAL LATERAL BASE DITCH
(Not to Scale)

FROM -L- STA. 394+50 TO STA. 395+50 RT

DETAIL 17B
SPECIAL LATERAL BASE DITCH
(Not to Scale)

FROM -L- STA. 392+00 TO STA. 393+23 RT.

DETAIL 17H
FALSE SUMP
(Not to Scale)



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

L1 STA. 389+76 MED.
L1 STA. 397+19 MED.

SEE SHEET 47 FOR -L1- PROFILE

9/29/2023
hturner
N:\NC Hydro\MI7706_R-3300A Hampstead Bypass\Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_17.dgn
29-SEP-2023 13:09
Hampstead Bypass\Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_17.dgn

5/14/99

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2650 WYCLIFF ROAD
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	17
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

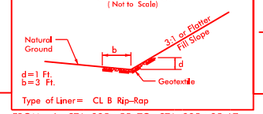
PERMIT DRAWING
SHEET 51 OF 120

NAD 83/NSRS 2007

DETAIL 17C
SPECIAL LATERAL BASE DITCH
(Not to Scale)

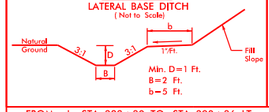
FROM -L- STA. 396+50 TO STA. 396+95 LT.

DETAIL 17D
TOE PROTECTION
(Not to Scale)



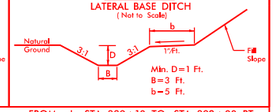
Type of Liner= CL B Rip-Rap
FROM -L- STA. 395+55 TO STA. 395+95 LT.
FROM -L- STA. 388+04 TO STA. 389+10 RT.
FROM -L- STA. 386+20 TO STA. 387+10 RT.

DETAIL 17E
LATERAL BASE DITCH
(Not to Scale)



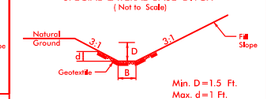
FROM -L- STA. 388+30 TO STA. 390+36 LT.
FROM -L- STA. 395+50 TO STA. 397+00 RT.
FROM -L- STA. 395+95 TO STA. 396+50 LT.

DETAIL 17F
LATERAL BASE DITCH
(Not to Scale)

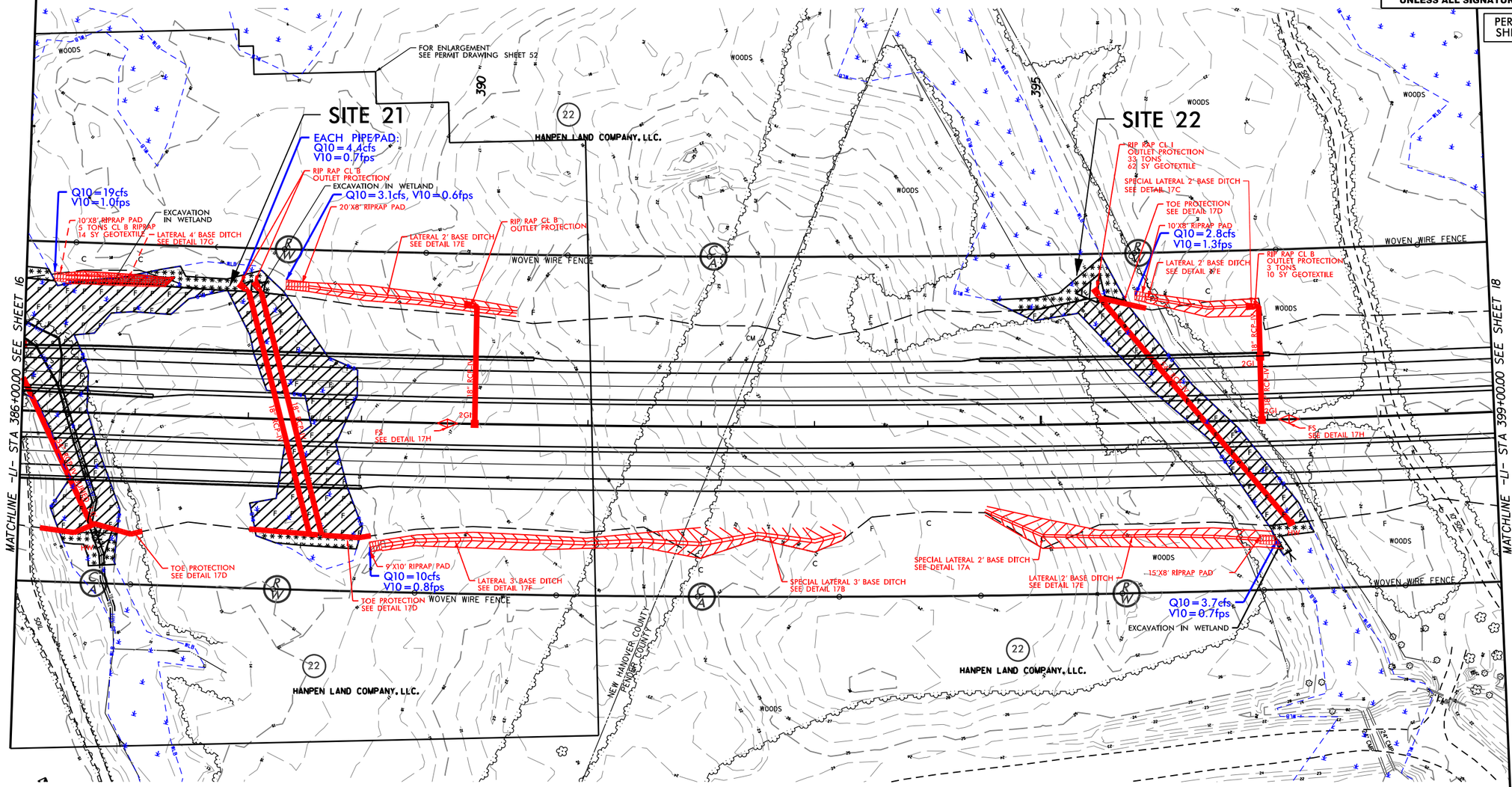


FROM -L- STA. 389+10 TO STA. 392+00 RT.

DETAIL 17G
SPECIAL LATERAL BASE DITCH
(Not to Scale)



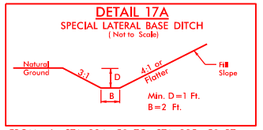
Type of Liner= CL B Rip-Rap
FROM -L- STA. 386+35 TO STA. 387+23 LT.



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

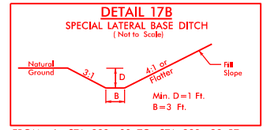
50' 0' 50' 100' 150'
GRAPHIC SCALE

DETAIL 17A
SPECIAL LATERAL BASE DITCH
(Not to Scale)



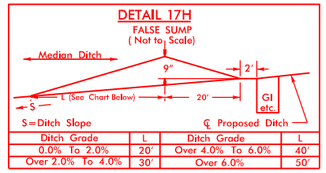
FROM -L- STA. 394+50 TO STA. 395+50 RT

DETAIL 17B
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM -L- STA. 392+00 TO STA. 393+23 RT.

DETAIL 17H
FALSE SUMP
(Not to Scale)



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

L1 STA. 389+76 MED.
L1 STA. 397+19 MED.

SEE SHEET 47 FOR -L1- PROFILE

9/29/2023
hturner
N:\NC Hydro\MI7706_R-3300A Hampstead Bypass\Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_17_con.dgn
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SITE 21

Q10 = 23cfs
V10 = 2.0fps

10'X15' RIP RAP PAD
13 TONS CL I
26 SY GEOTEXTILE

TDE
TDE
TDE
EXCAVATION IN WETLAND

STD 4' BASE DITCH
SEE DETAIL 16D

TEMP. SURFACE WATER IMPACT

SURFACE WATER IMPACT

CHANNEL CHANGE
SEE DETAIL 16F

FILL IN JS TB–TB

EXCAVATION IN WETLAND

PDE

Q10 = 19cfs
V10 = 1.0fps

10'X8' RIPRAP PAD
5 TONS CL B RIPRAP
14 SY GEOTEXTILE

EXCAVATION IN WETLAND

LATERAL 4' BASE DITCH
SEE DETAIL 17G

EACH PIPE/PAD:
Q10 = 4.4cfs
V10 = 0.7fps

RIP RAP CL B
OUTLET PROTECTION

EXCAVATION IN WETLAND

Q10 = 3.1cfs, V10 = 0.6fps

20'X8' RIPRAP PAD
10 TONS CL B RIPRAP
28 SY GEOTEXTILE

LATERAL 2' BASE DITCH
SEE DETAIL 17E

RIP RAP CL B
OUTLET PROTECTION
3 TONS
10 SY GEOTEXTILE

18" RCP–IV
TB 2GI
2GI
2GI
18" RCP–IV
18" RCP–IV
2GI
2GI
18" RCP–IV

TEMPORARY WORK BRIDGE

FS, SEE DETAIL 16G

W/2 ELBOWS

RIP RAP CL B
OUTLET PROTECTION
2 TONS
7 SY GEOTEXTILE

TOE PROTECTION
SEE DETAIL 17D

TOE PROTECTION
SEE DETAIL 17D

9'X10' RIPRAP PAD
5 TONS CL B RIPRAP
13 SY GEOTEXTILE

LATERAL 3' BASE DITCH
SEE DETAIL 17F

FS
SEE DETAIL 17H

18" RCP–IV
2GI

WOODS
WOODS
22
HANPEN LAND COMPANY, LLC.
383
390
MANES BRANCH
SOIL
WLB
RW
CA

DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING
HC HC HAND CLEARING (NON-GRUBBING)

30' 0' 30' 60' 90'
GRAPHIC SCALE

SITE 21 ENLARGEMENT

NAD 83/NSRS 2007

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0029

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	E-16_17

RW SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 52 OF 120

5/14/99

29-SEP-2023 13:09
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gnet
AT_FEB2023

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
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Fax. (919) 851-7024
www.stantec.com
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 53 OF 120

381+00 382+00 383+00 384+00 385+00

30
20
10
0

PI = 382+00.00
EL = 19.93'
VC = 500'
K = 189
DS = 70 mph

SITE 21

WAYNE'S BRANCH

C/L BRIDGE STA. 384+26.42 -L- GP LT (SBL)
2@115' 72" MBT GIRDER WITH 4.0' BENT CAPS
C/L GP EL. = 22.72'
SKEW = 105 DEGREE

(-)1.4286% (+)1.2236%

LOW CHORD ALONG GP
LOWEST LOW CHORD
TEMPORARY WORK BRIDGES
LOW CHORD EL=7.7'
3.5' KEY-IN (TYP.)
2:1
54" RCP
CLASS II RIP RAP (TYP.)
NORMAL WSE = 5.7'

30
20
10
0

PI = 382+00.00
EL = 19.93'
VC = 500'
K = 189
DS = 70 mph

C/L BRIDGE STA. 384+14.63 -L- GP RT (NBL)
2@115' 72" MBT GIRDER WITH 4.0' BENT CAPS
C/L GP EL. = 22.59'
SKEW = 105 DEGREE

(-)1.4286% (+)1.2236%

LOW CHORD ALONG GP
LOWEST LOW CHORD
TEMPORARY WORK BRIDGES
LOW CHORD EL=7.7'
3.5' KEY-IN (TYP.)
2:1
54" RCP
CLASS II RIP RAP (TYP.)
NORMAL WSE = 5.7'

50' 0' 50' 100' 150'

GRAPHIC SCALE

9/29/2023
hturner
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5/28/99

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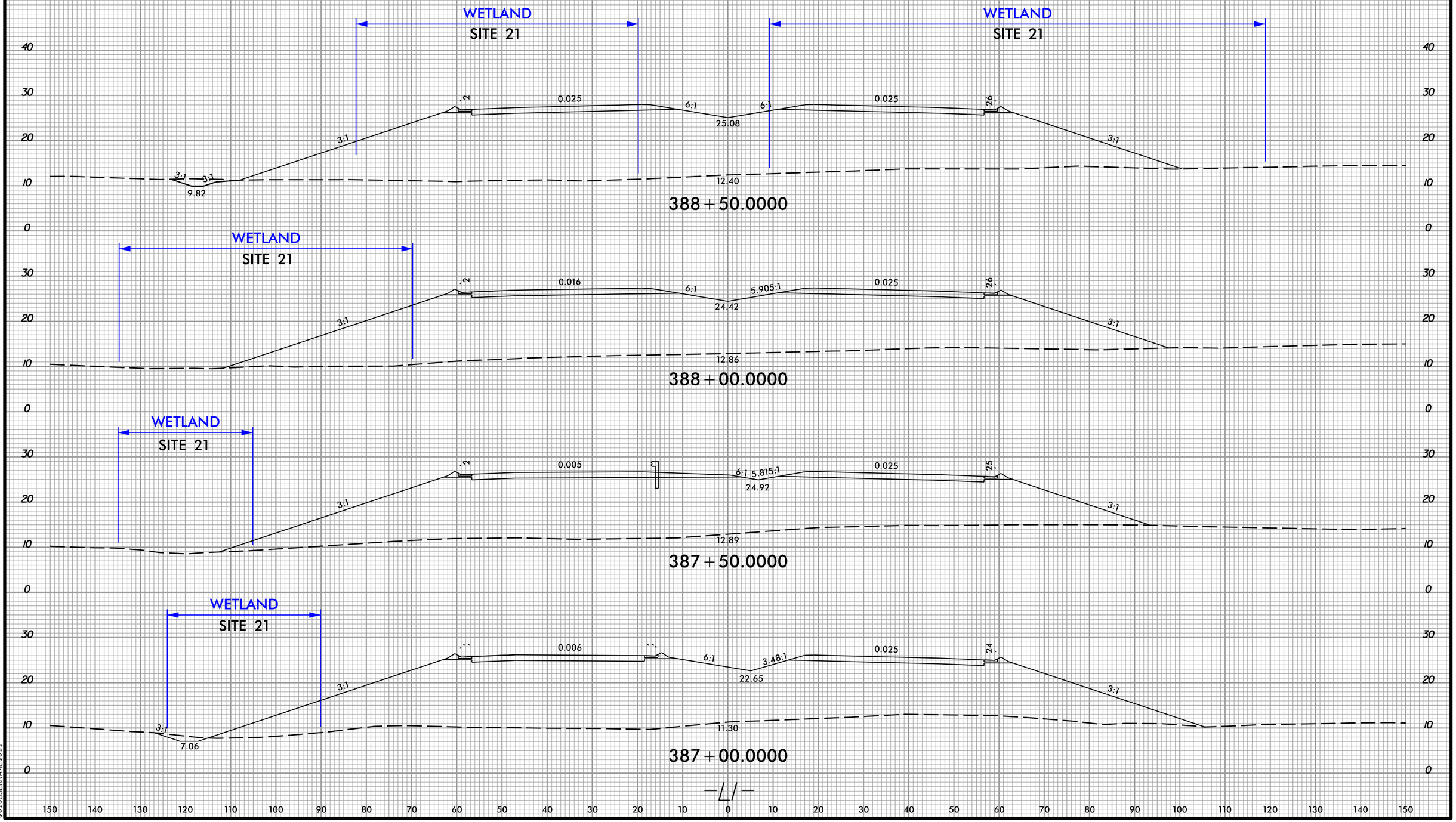
	R-3300A	X-108

PERMIT DRAWING
SHEET 54 OF 120



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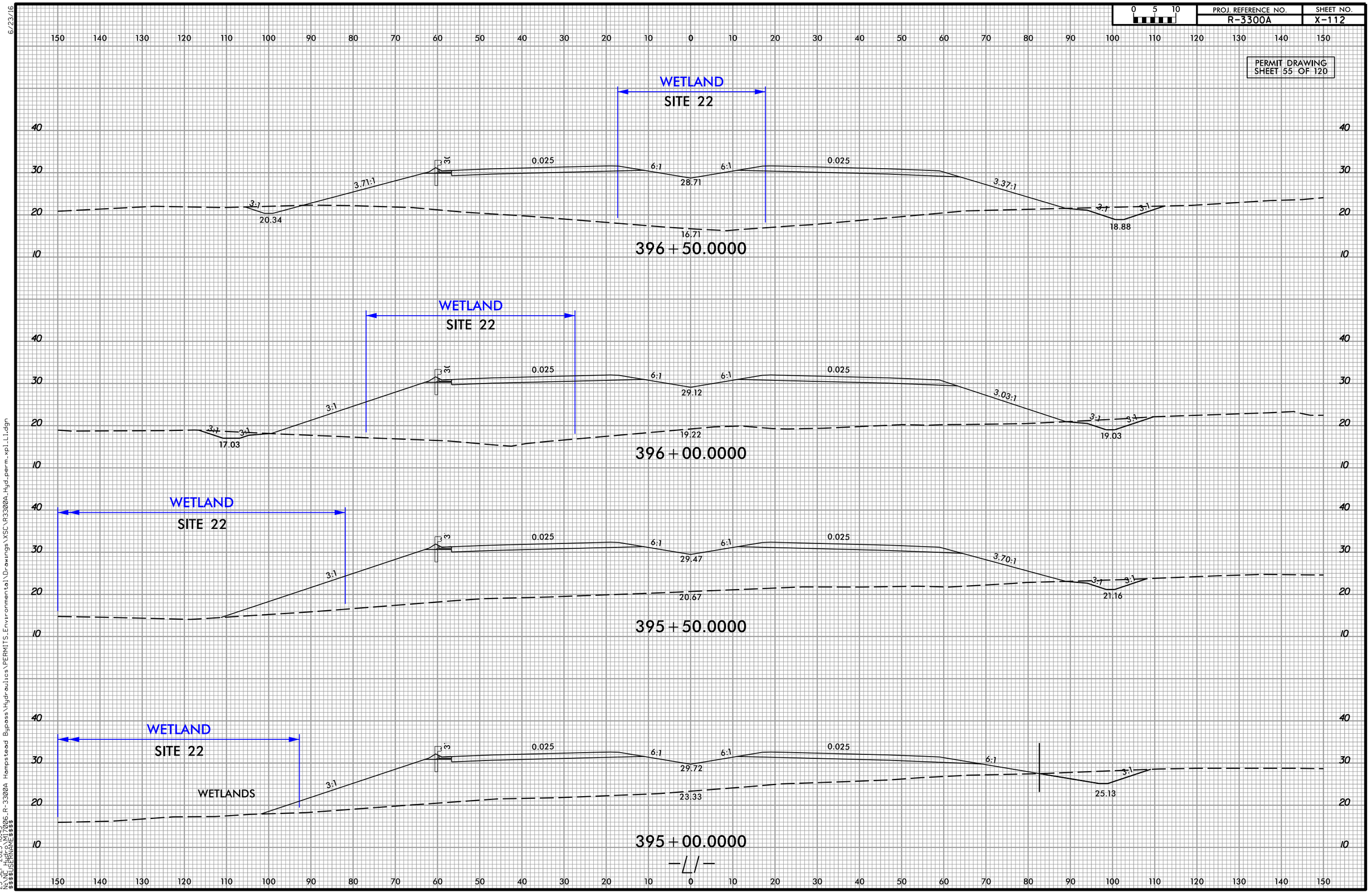
	R-3300A	X-112

PERMIT DRAWING
SHEET 55 OF 120



6/23/16
9252023
Plotted by: jwarner
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$$$$USERNAME$$$$

5/14/99

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. P-0029

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

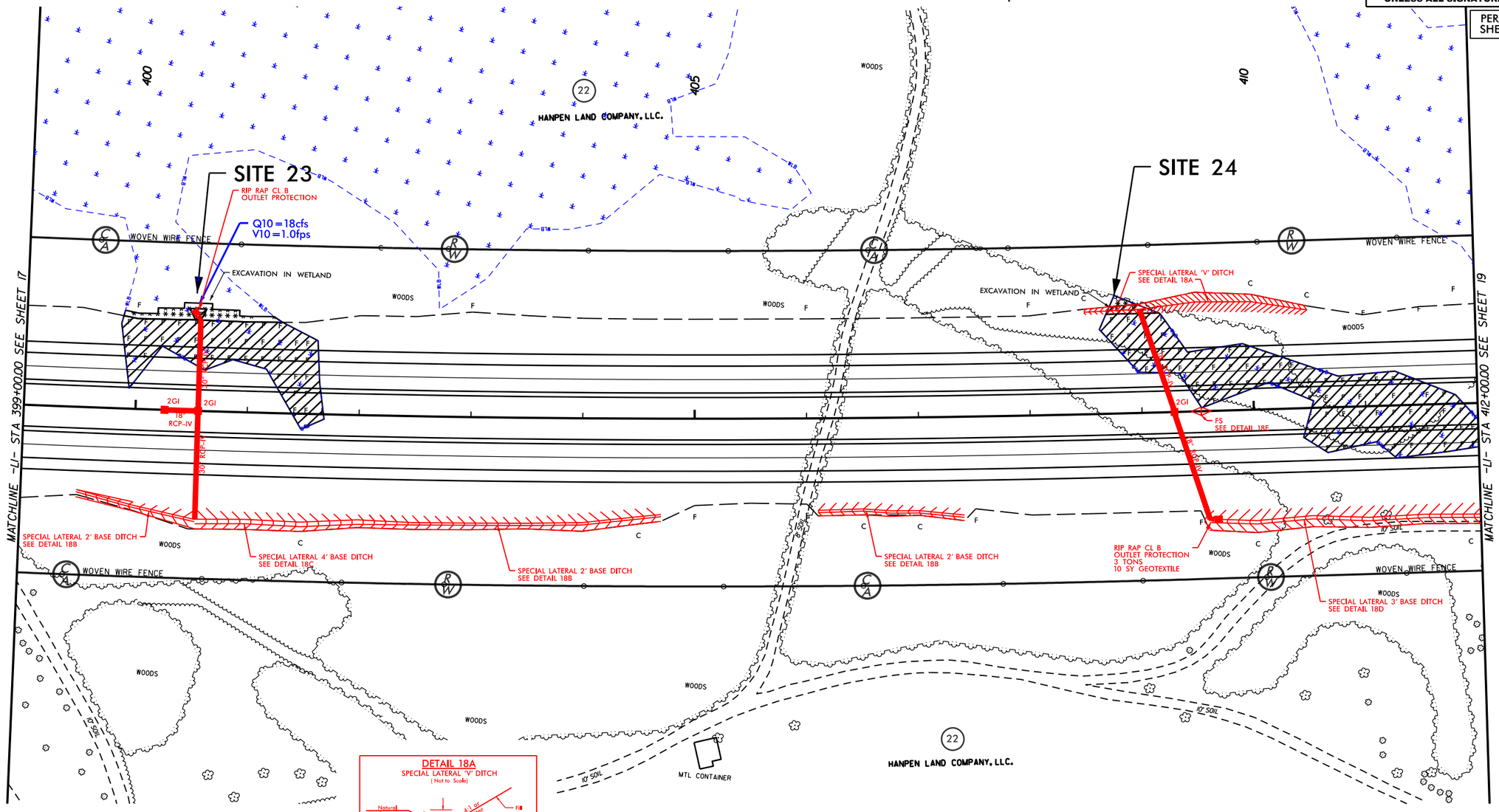
Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 56 OF 120

NAD 83/NSRS 2007



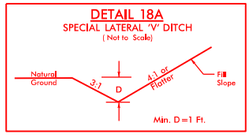
DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

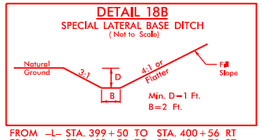
50' 0' 50' 100' 150'
GRAPHIC SCALE

DETAIL 18A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



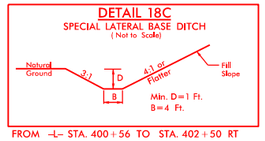
FROM -L- STA. 408+50 TO STA. 410+50 LT

DETAIL 18B
SPECIAL LATERAL BASE DITCH
(Not to Scale)



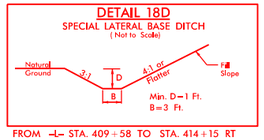
FROM -L- STA. 399+50 TO STA. 400+56 RT
FROM -L- STA. 402+50 TO STA. 404+70 RT
FROM -L- STA. 406+10 TO STA. 407+40 RT

DETAIL 18C
SPECIAL LATERAL BASE DITCH
(Not to Scale)



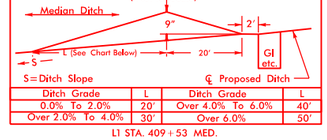
FROM -L- STA. 400+56 TO STA. 402+50 RT

DETAIL 18D
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM -L- STA. 409+58 TO STA. 414+15 RT

DETAIL 18E
FALSE SUMP
(Not to Scale)



S = Ditch Slope
℄ Proposed Ditch

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

L1 STA. 409+53 MED.

SEE SHEET 47 & 48 FOR -L1- PROFILE

9/29/2023
hnunc
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Dewberry
NC FIRM LICENSE No. C-0832
NC BOARD OF EXAMINERS FOR ENGINEERING & SURVEYING CERTIFICATE OF AUTHORIZATION No. F-0929
MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

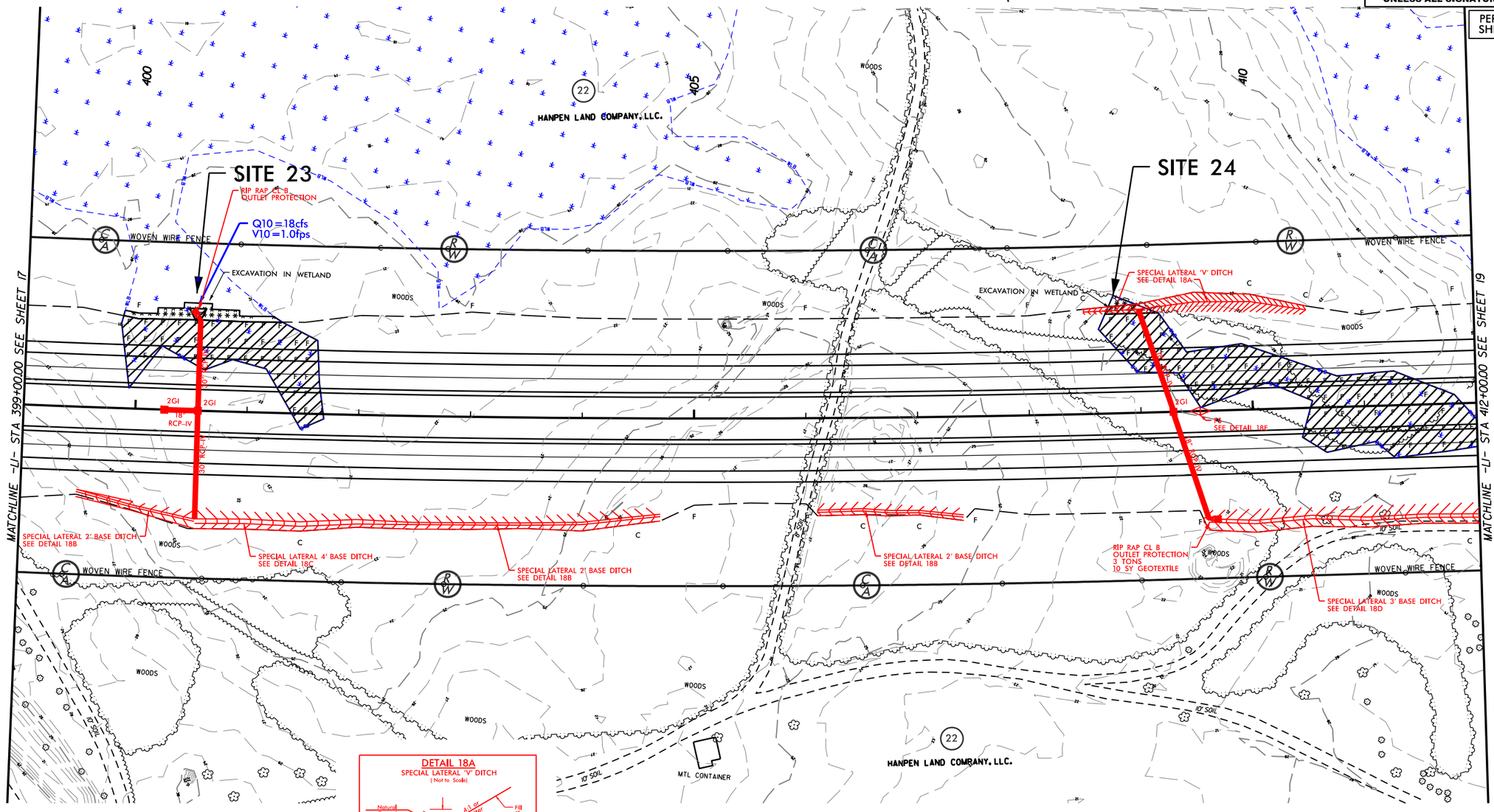
Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	18
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 57 OF 120

NAD 83/NSRS 2007



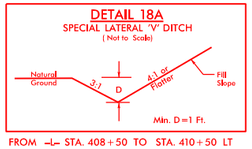
DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

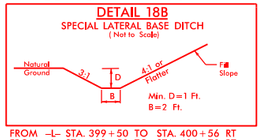
50' 0' 50' 100' 150'
GRAPHIC SCALE

DETAIL 18A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



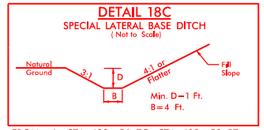
FROM -L- STA. 408+50 TO STA. 410+50 LT

DETAIL 18B
SPECIAL LATERAL BASE DITCH
(Not to Scale)



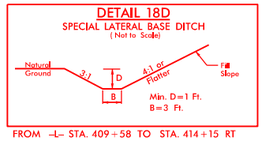
FROM -L- STA. 399+50 TO STA. 400+56 RT
FROM -L- STA. 402+50 TO STA. 404+70 RT
FROM -L- STA. 406+10 TO STA. 407+40 RT

DETAIL 18C
SPECIAL LATERAL BASE DITCH
(Not to Scale)



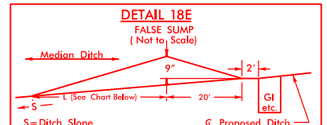
FROM -L- STA. 400+56 TO STA. 402+50 RT

DETAIL 18D
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM -L- STA. 409+58 TO STA. 414+15 RT

DETAIL 18E
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

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

L1 STA. 409+53 MED.

SEE SHEET 47 & 48 FOR -L1- PROFILE

9/29/2023
User: MC
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29-SEP-2023 13:10
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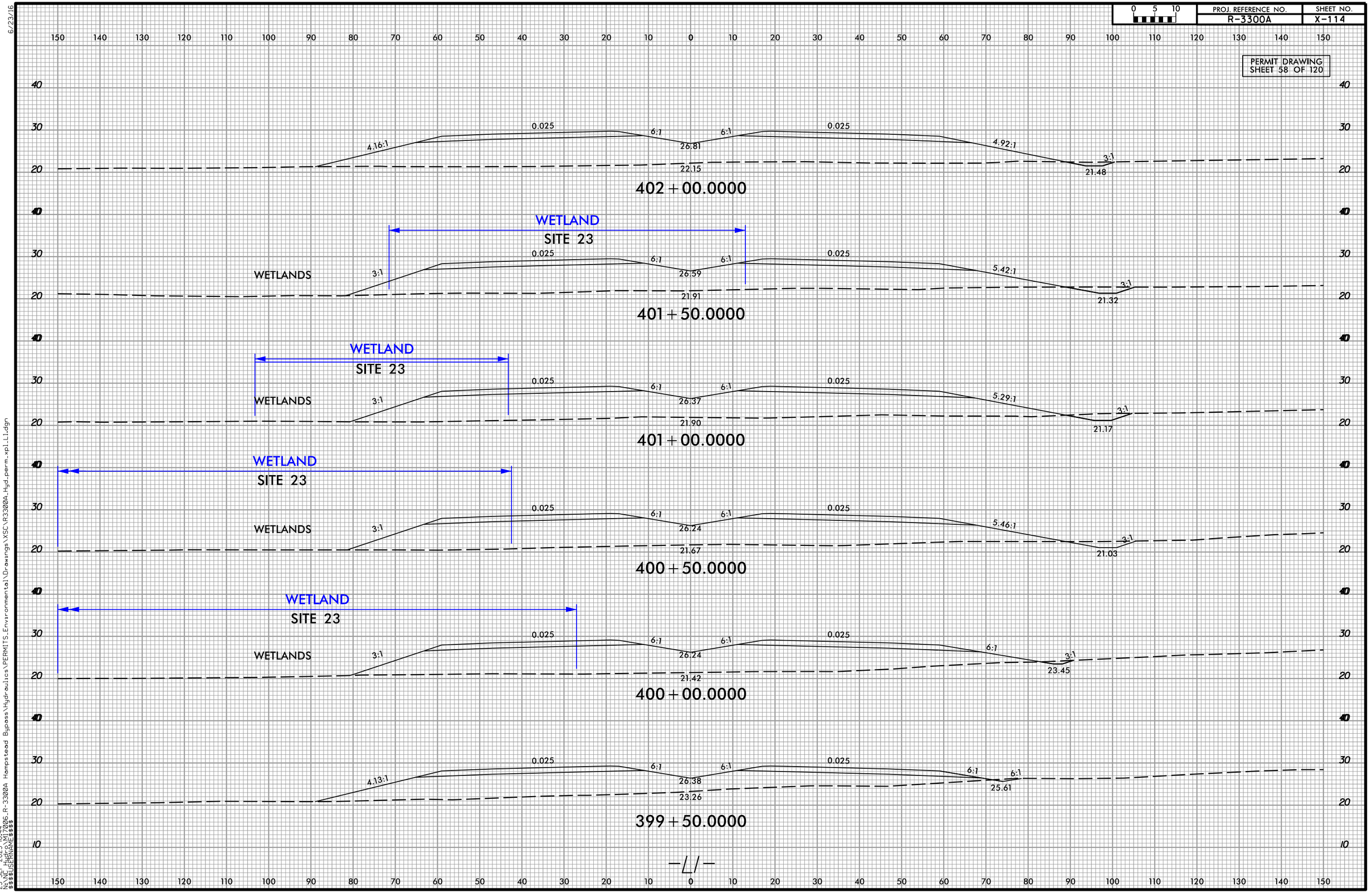

6/23/16
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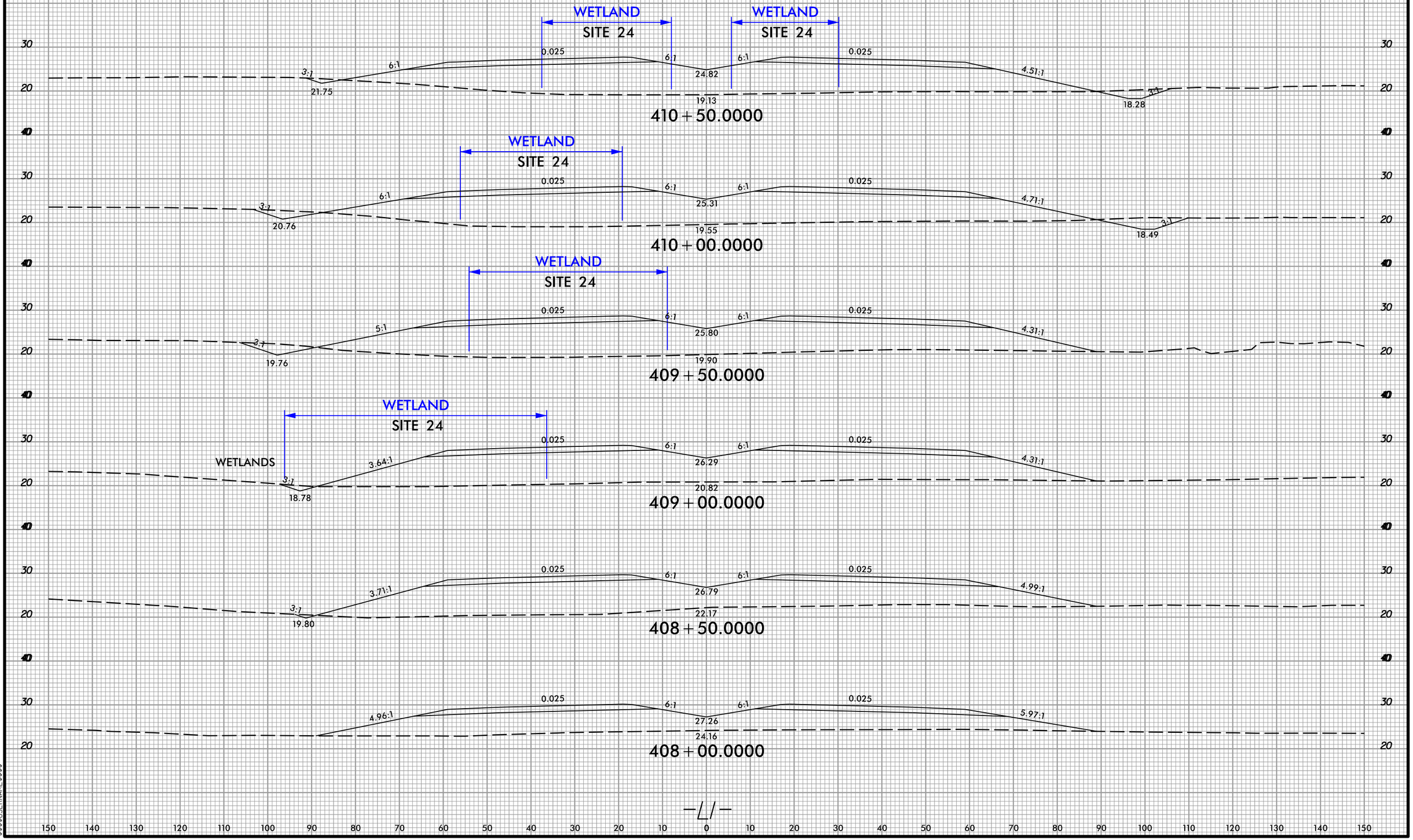
$$$$USERNAME$$$$

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-117

PERMIT DRAWING
SHEET 59 OF 120

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



6/23/16
9252023
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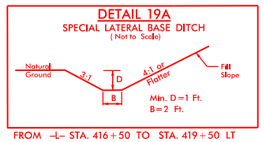
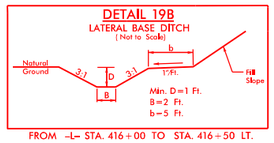
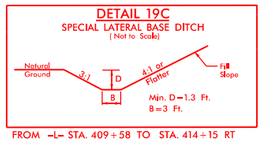
5/14/99



FROM –L– STA. 416+50 TO STA. 419+50 LT



FROM –L– STA. 416+00 TO STA. 416+50 LT.



FROM –L– STA. 409+58 TO STA. 414+15 RT

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0029

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

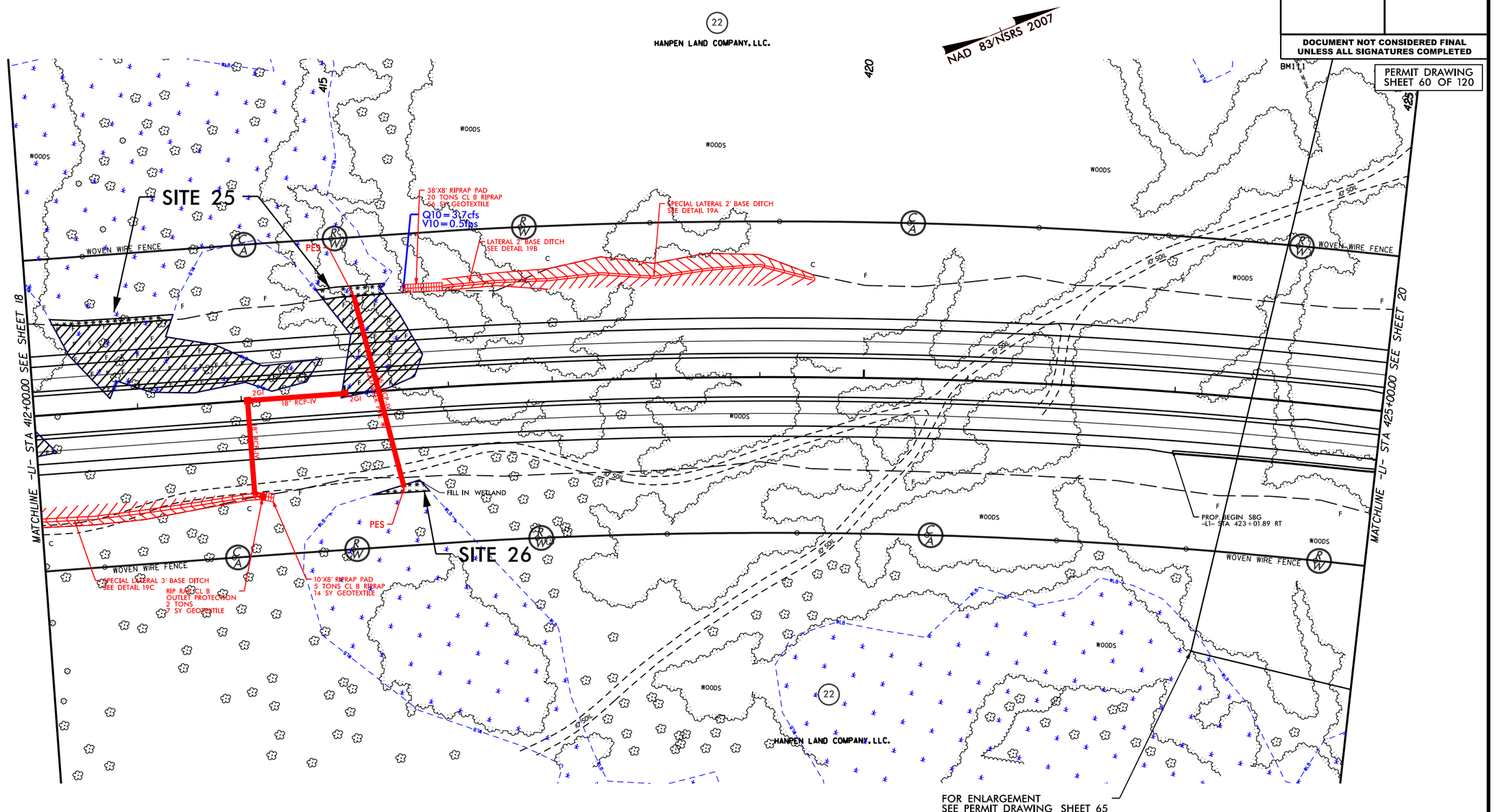
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	19

RW SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 60 OF 120



DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

* DO NOT BURY EQUALIZER PIPES

50' 0' 50' 100' 150'
GRAPHIC SCALE

SEE SHEET 48 FOR –L1– PROFILE

9/29/2023
lhunter
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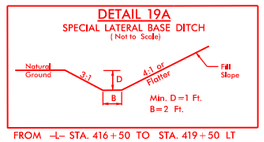
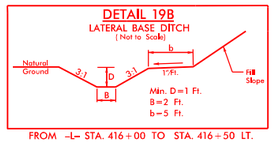
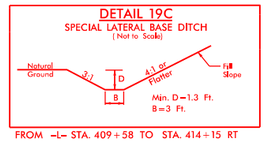
5/14/99



FROM –L– STA. 416+50 TO STA. 419+50 LT



FROM –L– STA. 416+00 TO STA. 416+50 LT.



FROM –L– STA. 409+58 TO STA. 414+15 RT

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0029

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
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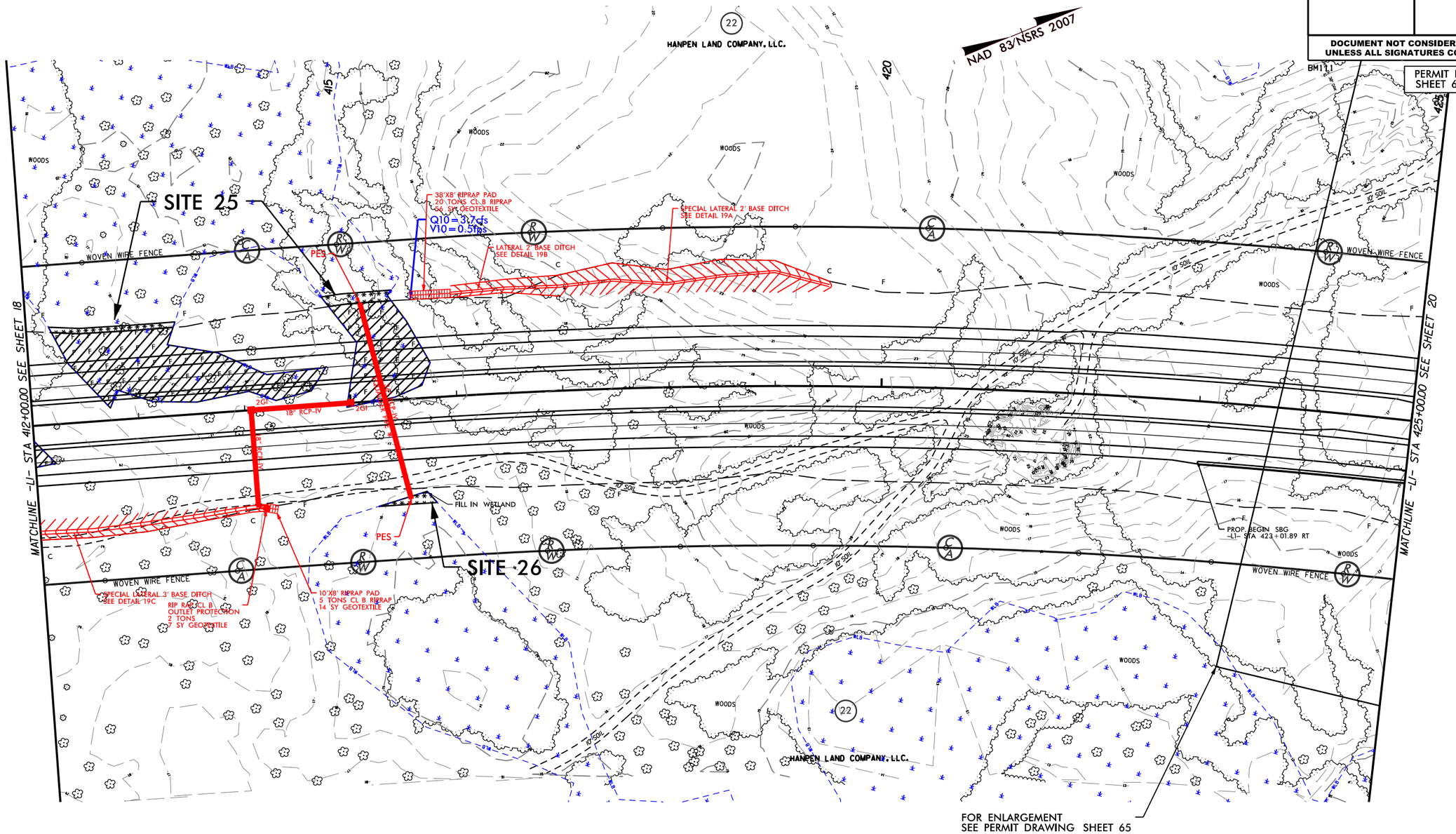
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	19
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 61 OF 120



DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

* DO NOT BURY EQUALIZER PIPES

50' 0' 50' 100' 150'
GRAPHIC SCALE

SEE SHEET 48 FOR –L1– PROFILE

9/29/2023
lhunter
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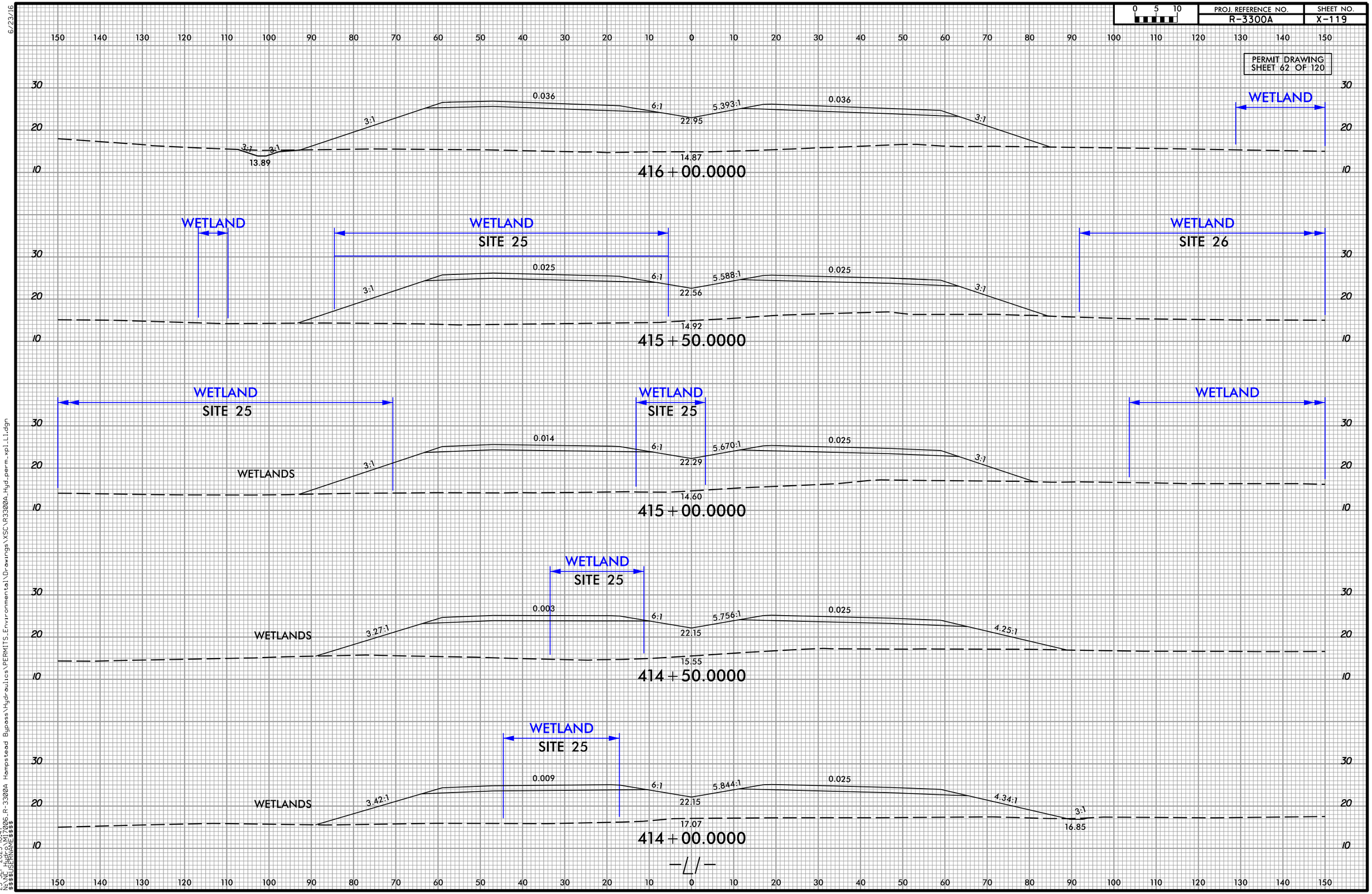
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-119

PERMIT DRAWING
SHEET 62 OF 120



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6/23/16
9252023
htaylor
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$$$$USERNAME$$$$

5/14/99

NAD 83/NSRS 2007

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
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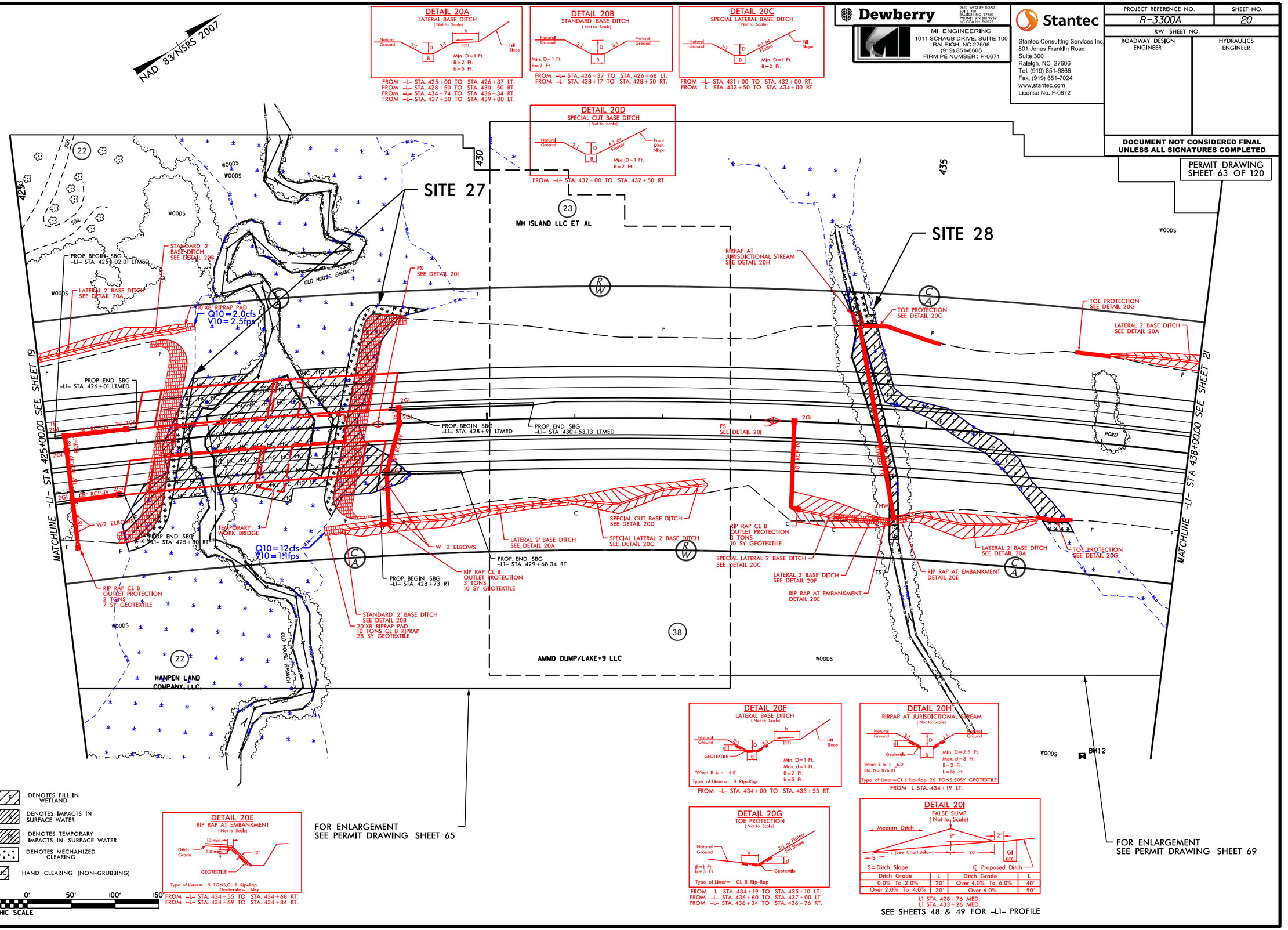
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 63 OF 120



FOR ENLARGEMENT SEE PERMIT DRAWING SHEET 65

FOR ENLARGEMENT SEE PERMIT DRAWING SHEET 69

SEE SHEETS 48 & 49 FOR –L1– PROFILE

9/29/2023
lhunter
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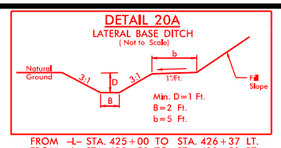
...ers: R1_EHERRING

5/14/99

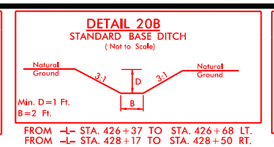
NAD 83/NSRS 2007

DETAIL 20A
LATERAL BASE DITCH
(Not to Scale)



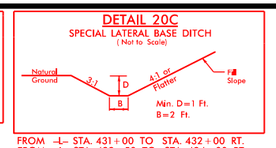
FROM –L– STA. 425+00 TO STA. 426+37 LT.
FROM –L– STA. 428+50 TO STA. 430+50 RT.
FROM –L– STA. 434+74 TO STA. 436+34 RT.
FROM –L– STA. 437+50 TO STA. 439+00 LT.

DETAIL 20B
STANDARD BASE DITCH
(Not to Scale)



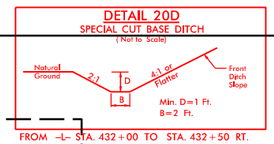
FROM –L– STA. 426+37 TO STA. 426+68 LT.
FROM –L– STA. 428+17 TO STA. 428+50 RT.

DETAIL 20C
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM –L– STA. 431+00 TO STA. 432+00 RT.
FROM –L– STA. 433+50 TO STA. 434+00 RT

DETAIL 20D
SPECIAL CUT BASE DITCH
(Not to Scale)



FROM –L– STA. 432+00 TO STA. 432+50 RT.

Dewberry
NC Lic. No. F-0929
MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
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Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
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www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 64 OF 120

SITE 27

SITE 28

MH ISLAND LLC ET AL

AMMO DUMP/LAKE+9 LLC

HANPEN LAND COMPANY, LLC

OLD HOUSE BRANCH

MATCHLINE –L1– STA 425+00.00 SEE SHEET 19

MATCHLINE –L1– STA 438+00.00 SEE SHEET 21

PROP. BEGIN SBG –L1– STA 425+02.01 LTMED

STANDARD 2' BASE DITCH SEE DETAIL 20B

LATERAL 2' BASE DITCH SEE DETAIL 20A

10'X8' RIPRAP PAD
Q10=2.0cfs
V10=2.5fps

FS SEE DETAIL 20I

PROP. END SBG –L1– STA 426+01 LTMED

PROP. BEGIN SBG –L1– STA 428+91 LTMED

PROP. END SBG –L1– STA 430+53.13 LTMED

FS SEE DETAIL 20I

RIPRAP AT JURISDICTIONAL STREAM SEE DETAIL 20H

TOE PROTECTION SEE DETAIL 20G

LATERAL 2' BASE DITCH SEE DETAIL 20A

PROP. END SBG –L1– STA 425+80 RT

TEMPORARY WORK BRIDGE

Q10=12cfs
V10=14fps

W 2 ELBOWS

PROP. BEGIN SBG –L1– STA 428+73 RT

PROP. END SBG –L1– STA 429+68.34 RT

SPECIAL CUT BASE DITCH SEE DETAIL 20D

SPECIAL LATERAL 2' BASE DITCH SEE DETAIL 20C

RIP RAP CL B OUTLET PROTECTION 3 TONS 10 SY GEOTEXTILE

RIP RAP CL B OUTLET PROTECTION 2 TONS 7 SY GEOTEXTILE

STANDARD 2' BASE DITCH SEE DETAIL 20B
20'X8' RIPRAP PAD
10 TONS CL B RIPRAP
28 SY GEOTEXTILE

RIP RAP CL B OUTLET PROTECTION 3 TONS 10 SY GEOTEXTILE

SPECIAL LATERAL 2' BASE DITCH SEE DETAIL 20C

LATERAL 2' BASE DITCH SEE DETAIL 20F

RIP RAP AT EMBANKMENT DETAIL 20E

TOE PROTECTION SEE DETAIL 20G

LATERAL 2' BASE DITCH SEE DETAIL 20A

RIP RAP AT EMBANKMENT DETAIL 20E

BM12

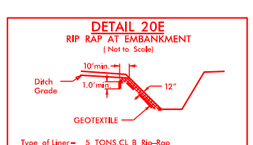
POND

WOODS

SOIL

F

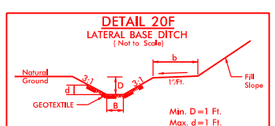
DETAIL 20E
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 5 TONS,CL B Rip-Rap
Geotextile= 14sy

FROM –L– STA. 434+55 TO STA. 434+68 RT.
FROM –L– STA. 434+69 TO STA. 434+84 RT.

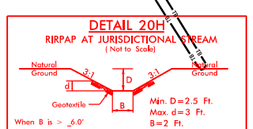
DETAIL 20F
LATERAL BASE DITCH
(Not to Scale)



Type of Liner= B Rip-Rap

FROM –L– STA. 434+00 TO STA. 435+55 RT.

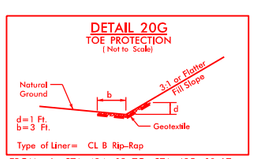
DETAIL 20H
RIPRAP AT JURISDICTIONAL STREAM
(Not to Scale)



Type of Liner=CL I Rip-Rap 26 TONS,50SY GEOTEXTILE

FROM L STA. 434+19 LT.

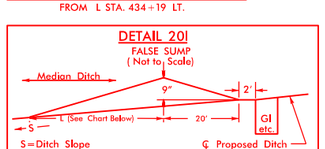
DETAIL 20G
TOE PROTECTION
(Not to Scale)



Type of Liner= CL B Rip-Rap

FROM –L– STA. 434+19 TO STA. 435+10 LT.
FROM –L– STA. 436+60 TO STA. 437+00 LT.
FROM –L– STA. 436+34 TO STA. 436+76 RT.

DETAIL 20I
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

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

L1 STA. 428+76 MED.
L1 STA. 433+26 MED.

SEE SHEETS 48 & 49 FOR –L1– PROFILE

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES MECHANIZED CLEARING

HC HC HAND CLEARING (NON-GRUBBING)

50' 0' 50' 100' 150'
GRAPHIC SCALE

FOR ENLARGEMENT
SEE PERMIT DRAWING SHEET 65

FOR ENLARGEMENT
SEE PERMIT DRAWING SHEET 69

9/29/2023
lhunter
N:\NC Hydro\M1700s_R-3300A_Hampstead Bypass\Hydraulics\PERMITS_Environmental Drawings\R3300A_hyd_psh_20_con.dgn
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Dewberry
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NC COA No. P-0029
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	E1-20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 65 OF 120

SITE 27 ENLARGEMENT (23)

MH ISLAND LLC ET AL

NAD 83/NSRS 2007

STANDARD 2' BASE DITCH SEE DETAIL 20B

LATERAL 2' BASE DITCH SEE DETAIL 20A

10'X8' RIPRAP PAD

Q10 = 2.0cfs
V10 = 2.5fps

FS SEE DETAIL 20I

OLD HOUSE BRANCH

425

430

22

TB 2GI — 18" RCP-IV — TB 2GI

18" RCP-IV 2GI

2GI — 18" RCP-IV — 2GI

18" RCP-IV 2GI

W/2 ELBOWS

RIP RAP CL B
OUTLET PROTECTION
2 TONS
7 SY GEOTEXTILE

TEMPORARY WORK BRIDGE

Q10 = 12cfs
V10 = 1.1fps

W 2 ELBOWS

RIP RAP CL B
OUTLET PROTECTION
3 TONS
10 SY GEOTEXTILE

STANDARD 2' BASE DITCH
SEE DETAIL 20B
20'X8' RIPRAP PAD
10 TONS CL B RIPRAP
28 SY GEOTEXTILE

LATERAL 2' BASE DITCH
SEE DETAIL 20A

SPECIAL CUT BASE DITCH
SEE DETAIL 20D

SPECIAL LATERAL 2' BASE DITCH
SEE DETAIL 20C

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES MECHANIZED CLEARING

HAND CLEARING (NON-GRUBBING)

30' 0' 30' 60' 90'
GRAPHIC SCALE

HANPEN LAND COMPANY LLC

AMMO DUMP/LAKE+9 LLC

38

5/14/99

9/29/2023
hturner
N:\Hydro\HI7006.8-3300A Hampstead Bypass\Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_E120.dgn
25-SEP-2023 13:10
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Dewberry
2610 WYCLIFF ROAD
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NC COA No. P-0929

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 66 OF 120

SITE 27

ISLAND CREEK TRIB.

425+00 426+00 427+00 428+00 429+00

PI = 425+00.00
EL = 27.53'
VC = 240'
K = 182
DS = 70 mph

PI = 430+00.00
EL = 30.29'
VC = 210'
K = 239
DS = 70 mph

(-)0.7667% (+)0.5504% (+)0.5504% (+)1.4286%

C/L STATION 427+48.28 -L- GP LT (SBL)
PROP 1@125', 1@117 72" MBT GIRDER
WITH 4.0' BENT CAPS
C/L GRADE POINT ELEV. = 28.90'
SKEW = 105 DEGREE

LOW CHORD ALONG GP
LOWEST LOW CHORD
TEMPORARY WORK BRIDGE
LOW CHORD EL=10.5
3.5' KEY-IN (TYP.)
NORMAL WSE = 7.2'
2:1
CLASS II RIP RAP (TYP.)

30 20 10 0

PI = 425+00.00
EL = 27.53'
VC = 240'
K = 182
DS = 70 mph

PI = 430+00.00
EL = 30.29'
VC = 210'
K = 239
DS = 70 mph

(-)0.7667% (+)0.5504% (+)0.5504% (+)1.4286%

C/L STATION 427+35.98 -L- GP RT (NBL)
PROP 1@125', 1@117 72" MBT GIRDER
WITH 4.0' BENT CAPS
C/L GRADE POINT ELEV. = 28.83'
SKEW = 105 DEGREE

LOW CHORD ALONG GP
LOWEST LOW CHORD
TEMPORARY WORK BRIDGE
LOW CHORD EL=10.5
3.5' KEY-IN (TYP.)
NORMAL WSE = 7.2'
2:1
CLASS II RIP RAP (TYP.)

40 30 20 10 0

50' 0' 50' 100' 150'
GRAPHIC SCALE

5/28/99

9292023
htumer
N:\NC Hydro\M17006_R-3300A Hampstead Bypass\Hydraulics\PERMITS_Environmental\Drawings\R-3300A_Hyd_prm_wet_Brg2.dgn
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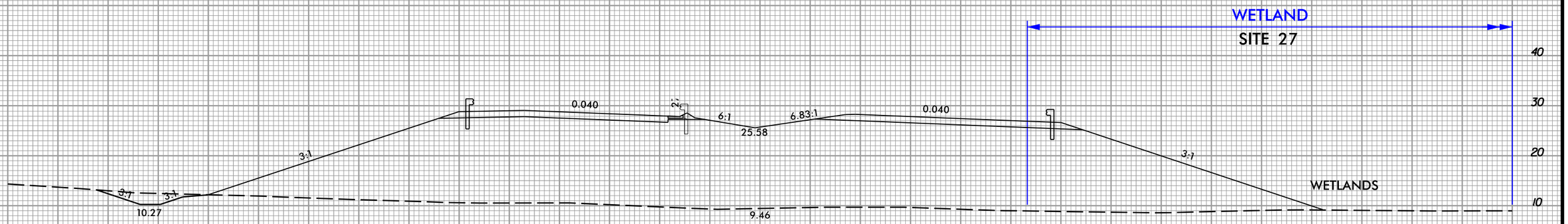
$$$$ Active $$$$

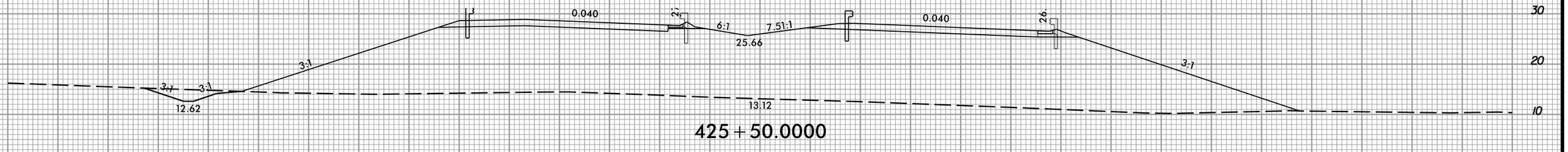
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-124

PERMIT DRAWING
SHEET 67 OF 120

WETLAND
SITE 27



426+00.0000



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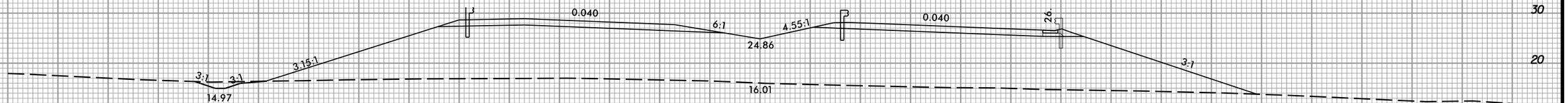

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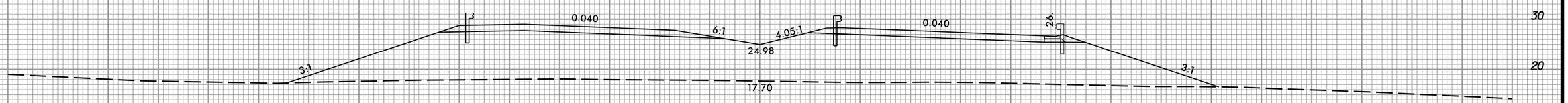

424+50.0000

6/23/16
9252023
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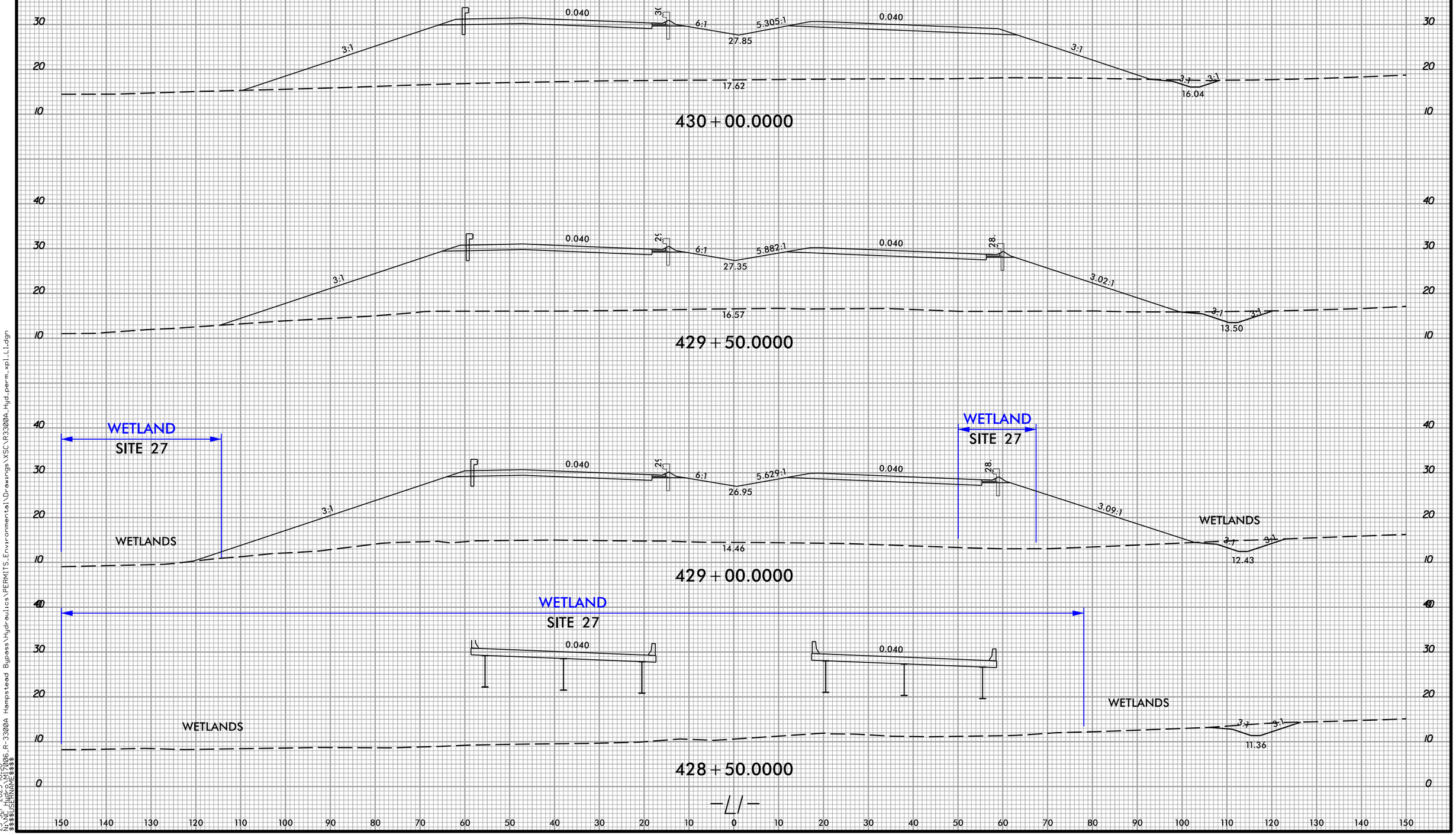
	R-3300A	X-126

PERMIT DRAWING
SHEET 68 OF 120



6/23/16

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5/14/99

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0029

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	E2-20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 69 OF 120

NAD 83/NSRS 2007

SITE 28 ENLARGEMENT

23
MH ISLAND LLC ET AL

431

435

438

WOODS

RIRPAP AT JURISDICTIONAL STREAM SEE DETAIL 20H

TOE PROTECTION SEE DETAIL 20G

LATERAL 2' BASE DITCH SEE DETAIL 20A

PROP. END SBG –L1– STA 430+53.13 LTMED

FS SEE DETAIL 20I

2GI –L1–

18" RCP-IV BURIED 1.0'

SPECIAL CUT BASE DITCH SEE DETAIL 20D

SPECIAL LATERAL 2' BASE DITCH SEE DETAIL 20C

RIP RAP CL B OUTLET PROTECTION 3 TONS 10 SY GEOTEXTILE

LATERAL 2' BASE DITCH SEE DETAIL 20A

PROP. END SBG –L1– STA 429+68.34 RT

SPECIAL LATERAL 2' BASE DITCH SEE DETAIL 20C

LATERAL 2' BASE DITCH SEE DETAIL 20F

RIP RAP AT EMBANKMENT DETAIL 20E

TOE PROTECTION SEE DETAIL 20G

LATERAL 2' BASE DITCH SEE DETAIL 20A

RIP RAP AT EMBANKMENT DETAIL 20E

SPECIAL LATERAL 'V' DITCH SEE DETAIL 21A

POND

POND

WOODS

38

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES MECHANIZED CLEARING

30' 0' 30' 60' 90'
GRAPHIC SCALE

9/29/2023
hunter
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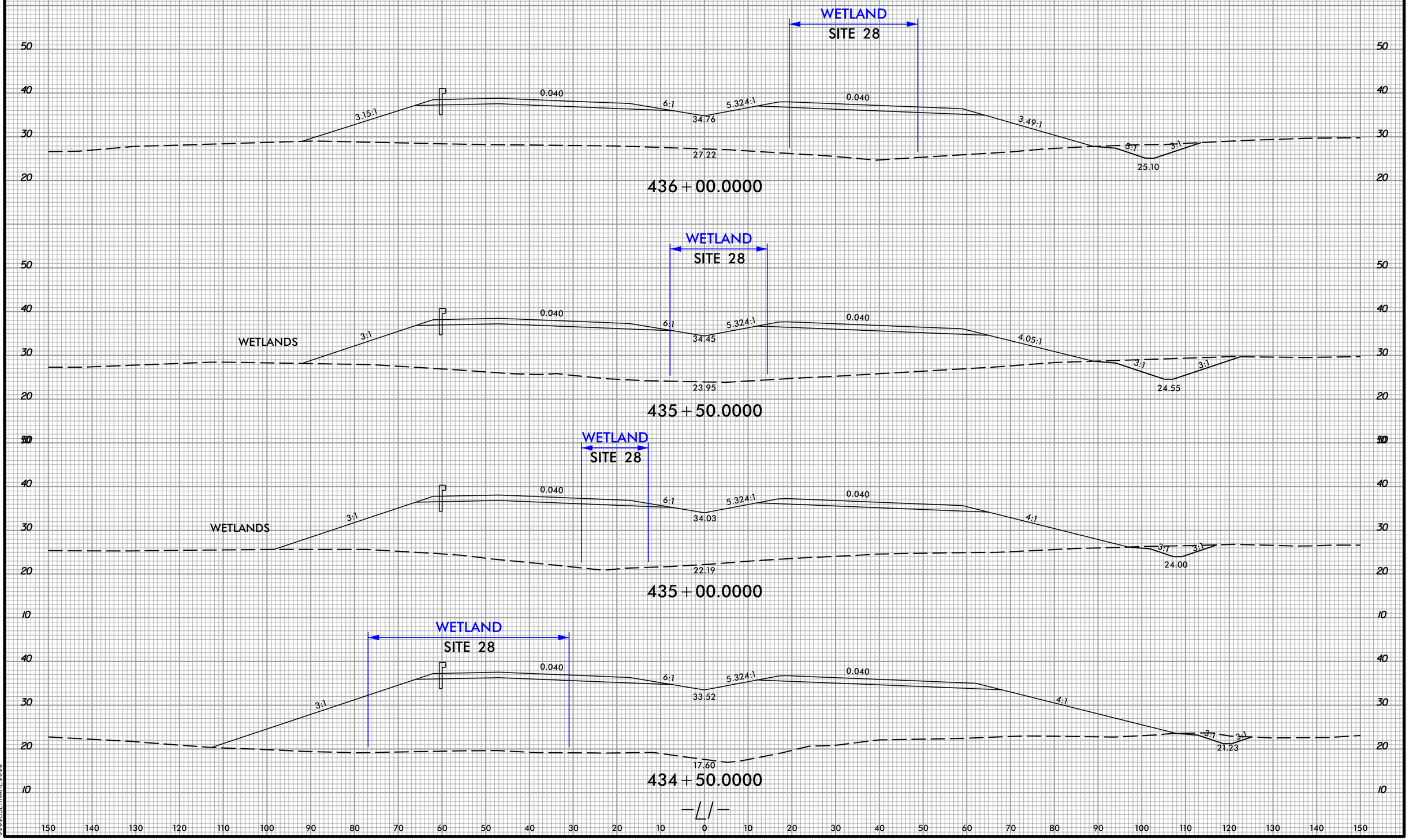
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-129

PERMIT DRAWING
SHEET 70 OF 120



6/23/16

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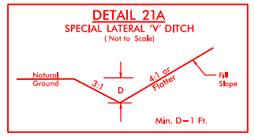
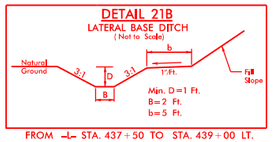
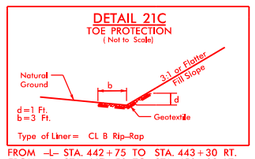
5/14/99



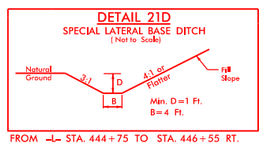
FROM –L– STA. 438+77 TO STA. 439+77 RT.
FROM –L– STA. 445+94 TO STA. 447+50 LT.
FROM –L– STA. 450+90 TO STA. 454+04 LT.
FROM –L– STA. 446+55 TO STA. 447+25 RT.



FROM –L– STA. 437+50 TO STA. 439+00 LT.



FROM –L– STA. 442+75 TO STA. 443+30 RT.
FROM –L– STA. 447+50 TO STA. 450+03 LT.
FROM –L– STA. 447+34 TO STA. 449+24 RT.



FROM –L– STA. 444+75 TO STA. 446+55 RT.

NAD 83/NSRS 2007

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
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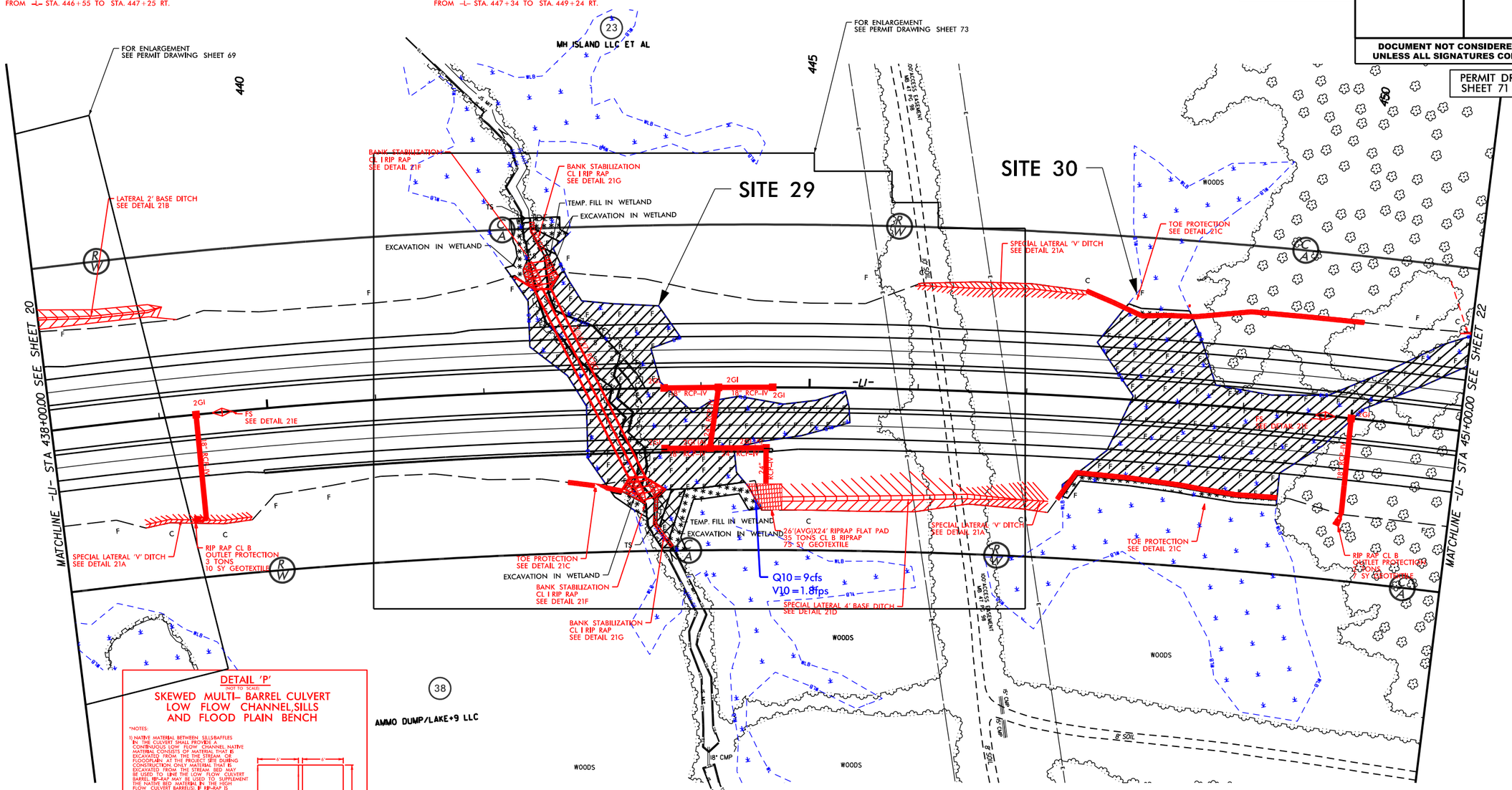
Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 71 OF 120



DETAIL 'P'
NOT TO SCALE
SKEWED MULTI– BARREL CULVERT LOW FLOW CHANNEL SILLS AND FLOOD PLAIN BENCH

*NOTES:

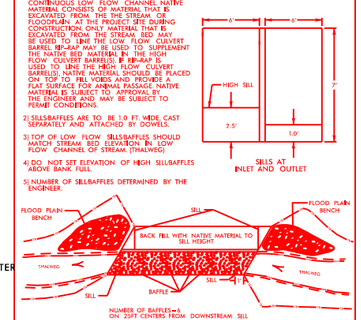
1) NATIVE MATERIAL BETWEEN SILLS/BAFFLES IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE THE STREAM OR FLOODPLAIN AT THE PROJECT SITE DURING CONSTRUCTION. ONLY MATERIAL THAT IS EXCAVATED FROM THE STREAM BED MAY BE USED TO LINE THE LOW FLOW CULVERT BARREL. NON-NATIVE MATERIAL IS USED TO SUPPLEMENT THE STREAM BED MATERIAL TO LINE THE HIGH FLOW CULVERT BARREL(S). RIP-RAP IS USED TO LINE THE HIGH FLOW CULVERT BARREL(S). NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FILL VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE. 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.

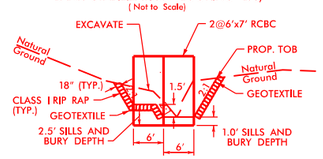
3) TOP OF LOW FLOW SILLS/BAFFLES SHOULD MATCH STREAM BED ELEVATION IN LOW FLOW CHANNEL OF STREAM. (THALWEG)

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

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

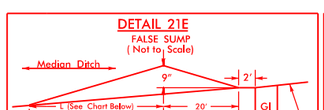


DETAIL 21F
BANK STABILIZATION LOOKING D/S
(Not to Scale)



LENGTH= 25 FT. (US)
30 FT. (DS)
EST.= 26 TONS OF CLASS I RIP RAP (US)
42 SY GEOTEXTILE (US)
46 TONS OF CLASS I RIP RAP (DS)
50 SY GEOTEXTILE (DS)

DETAIL 21E
FALSE SUMP
(Not to Scale)



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

L1 STA. 439+58 MED.
L1 STA. 449+76 MED.

DETAIL 21G
BANK STABILIZATION
(Not to Scale)

Type of Liner = CL I Rip-Rap, Keyed-In

FROM –L– STA. 443+56 TO STA. 443+70 RT.
L=50', 17 TONS CL I RIPRAP
FROM –L– STA. 442+60 TO STA. 442+48 LT.
L=35', TONS CL I RIPRAP

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

50' 0' 50' 100' 150'
GRAPHIC SCALE

SEE SHEET 49 FOR –L1– PROFILE

9/29/2023
hcline
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29-SEP-2023 13:10
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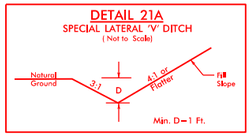
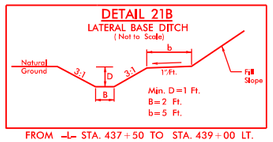
5/14/99

DETAIL 21A
SPECIAL LATERAL "V" DITCH
(Not to Scale)



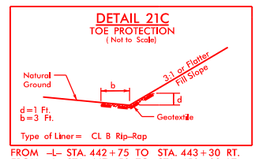
FROM –L– STA. 438+77 TO STA. 439+77 RT.
FROM –L– STA. 445+94 TO STA. 447+50 LT.
FROM –L– STA. 450+90 TO STA. 454+04 LT.
FROM –L– STA. 446+55 TO STA. 447+25 RT.

DETAIL 21B
LATERAL BASE DITCH
(Not to Scale)



FROM –L– STA. 437+50 TO STA. 439+00 LT.

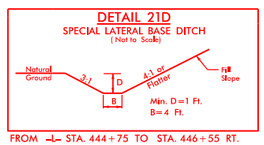
DETAIL 21C
TOE PROTECTION
(Not to Scale)



Type of Liner = CL B Rip-Rap

FROM –L– STA. 442+75 TO STA. 443+30 RT.
FROM –L– STA. 447+50 TO STA. 450+03 LT.
FROM –L– STA. 447+34 TO STA. 449+24 RT.

DETAIL 21D
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM –L– STA. 444+75 TO STA. 446+55 RT.

NAD 83/NSRS 2007

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0929

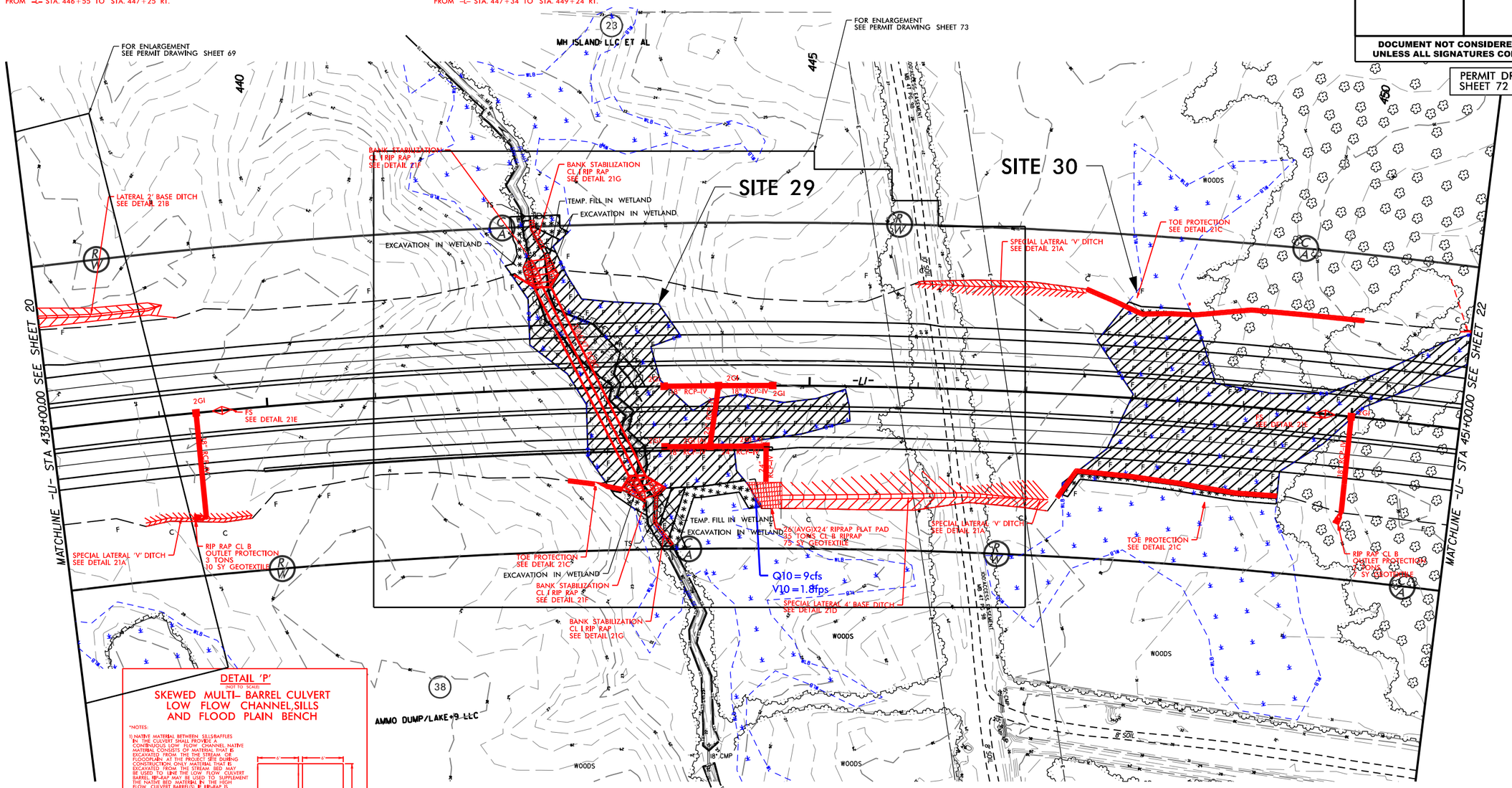
MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	21
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

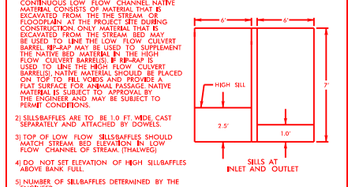
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 72 OF 120



DETAIL 'P'
NOT TO SCALE
SKEWED MULTI– BARREL CULVERT LOW FLOW CHANNEL SILLS AND FLOOD PLAIN BENCH

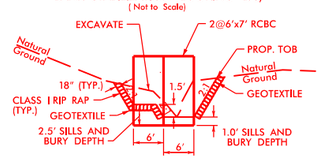
*NOTES:
1) NATIVE MATERIAL BETWEEN SILLS/BAFFLES IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE THE STREAM OR FLOODPLAIN AT THE PROJECT SITE DURING CONSTRUCTION. ONLY MATERIAL THAT IS EXCAVATED FROM THE STREAM BED MAY BE USED TO LINE THE LOW FLOW CULVERT BARREL. NON-NATIVE MATERIAL USED TO SUPPLEMENT THE STREAM BED MATERIAL USED TO LINE THE LOW FLOW CULVERT BARREL(S). RIP-RAP IS USED TO LINE THE HIGH FLOW CULVERT BARREL(S). NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FILL VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE. 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.



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

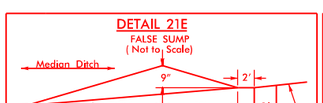
50' 0' 50' 100' 150'
GRAPHIC SCALE

DETAIL 21F
BANK STABILIZATION LOOKING D/S)
(Not to Scale)



LENGTH= 25 FT. (US)
30 FT. (DS)
EST.= 26 TONS OF CLASS I RIP RAP (US)
42 SY GEOTEXTILE (US)
46 TONS OF CLASS I RIP RAP (DS)
50 SY GEOTEXTILE (DS)

DETAIL 21E
FALSE SUMP
(Not to Scale)



S=Ditch Slope

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

L1 STA. 439+58 MED.
L1 STA. 449+76 MED.

DETAIL 21G
BANK STABILIZATION
(Not to Scale)

Type of Liner = CL I Rip-Rap, Keyed-In

FROM –L– STA. 443+56 TO STA. 443+70 RT.
L=50', 17 TONS CL I RIPRAP
FROM –L– STA. 442+60 TO STA. 442+48 LT.
L=35', TONS CL I RIPRAP

SEE SHEET 49 FOR –L1– PROFILE

9/29/2023
In: NC
N:\NC Hydro\MI7006_R-3300A Hampstead Bypass\Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_21_con.dgn
29-SEP-2023 13:10
...Bypass_Hyd_Rpts\PERMITS_Environmental\Drawings\R3300A_hyd_psh_21_con.dgn
...SEP-2023

SITE 29 ENLARGEMENT

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. F-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
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Stantec
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Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
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License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	E-21

RW SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 73 OF 120

NAD 83/NSRS 2007

BANK STABILIZATION
CL I RIP RAP
SEE DETAIL 21G

TEMP. FILL IN WETLAND

EXCAVATION IN WETLAND

EXCAVATION IN WETLAND

TOE PROTECTION
SEE DETAIL 21C

EXCAVATION IN WETLAND

BANK STABILIZATION
CL I RIP RAP
SEE DETAIL 21F

2GI
18" RCP–IV
2GI
18" RCP–IV
2GI
24" RCP–IV
2GI (A)
2GI (A)
18" RCP–IV
24" RCP–IV
24" RCP–IV

Q10 = 9cfs
V10 = 1.8fps

TEMP. FILL IN WETLAND
EXCAVATION IN WETLAND

26'(AVG)X24' RIPRAP FLAT PAD
35 TONS CL B RIPRAP
75 SY GEOTEXTILE

SPECIAL LATERAL 4' BASE DITCH

SPECIAL LATERAL 'V' DITCH
SEE DETAIL 21A

442

445

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

20' 0' 20' 40' 60'
GRAPHIC SCALE

9/29/2023
lhurner
N:\NC_Raleigh\W3706_R-3300A Hampstead Bypass\Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_E21.dgn
Hampstead Bypass\Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_E21.dgn

5/14/99

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

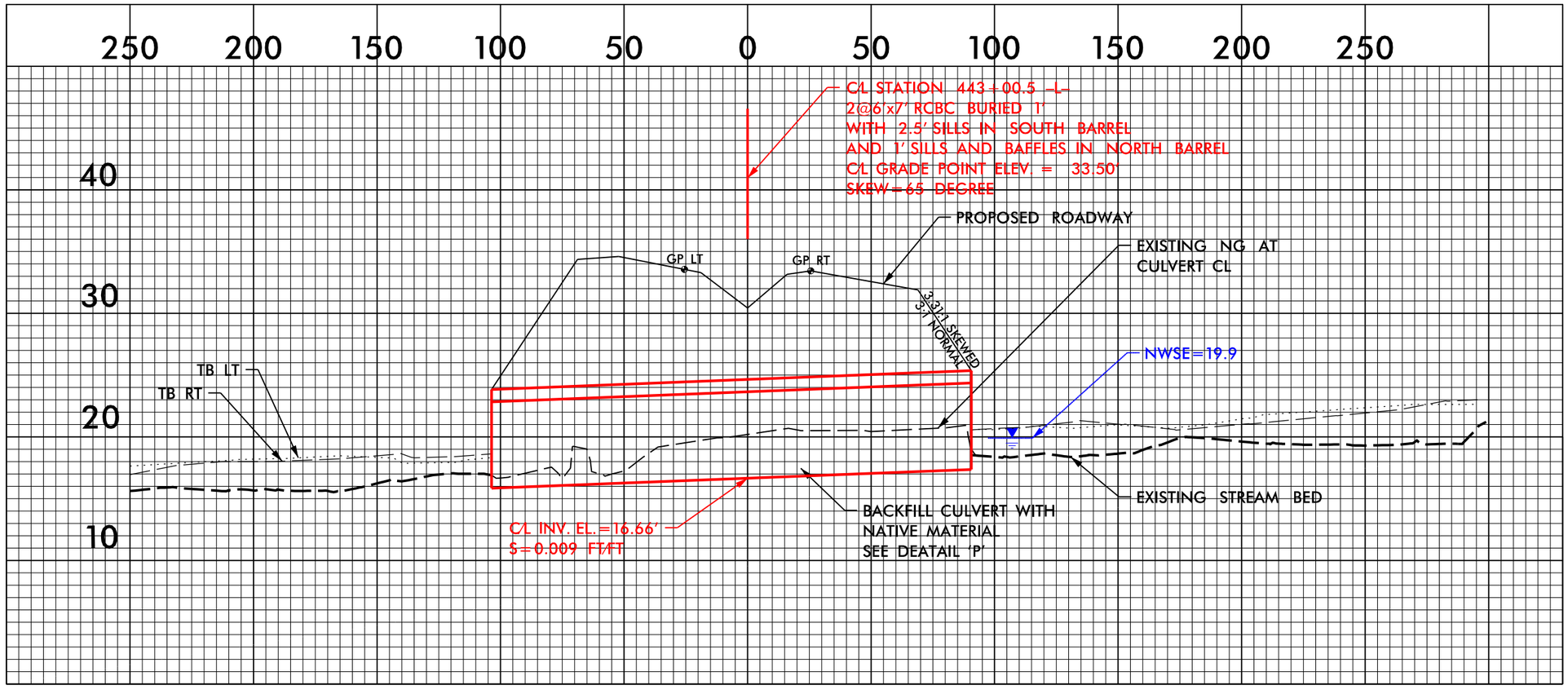
Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 74 OF 120

SITE 29



50' 0' 50' 100' 150'
GRAPHIC SCALE

9/29/2023
hturner
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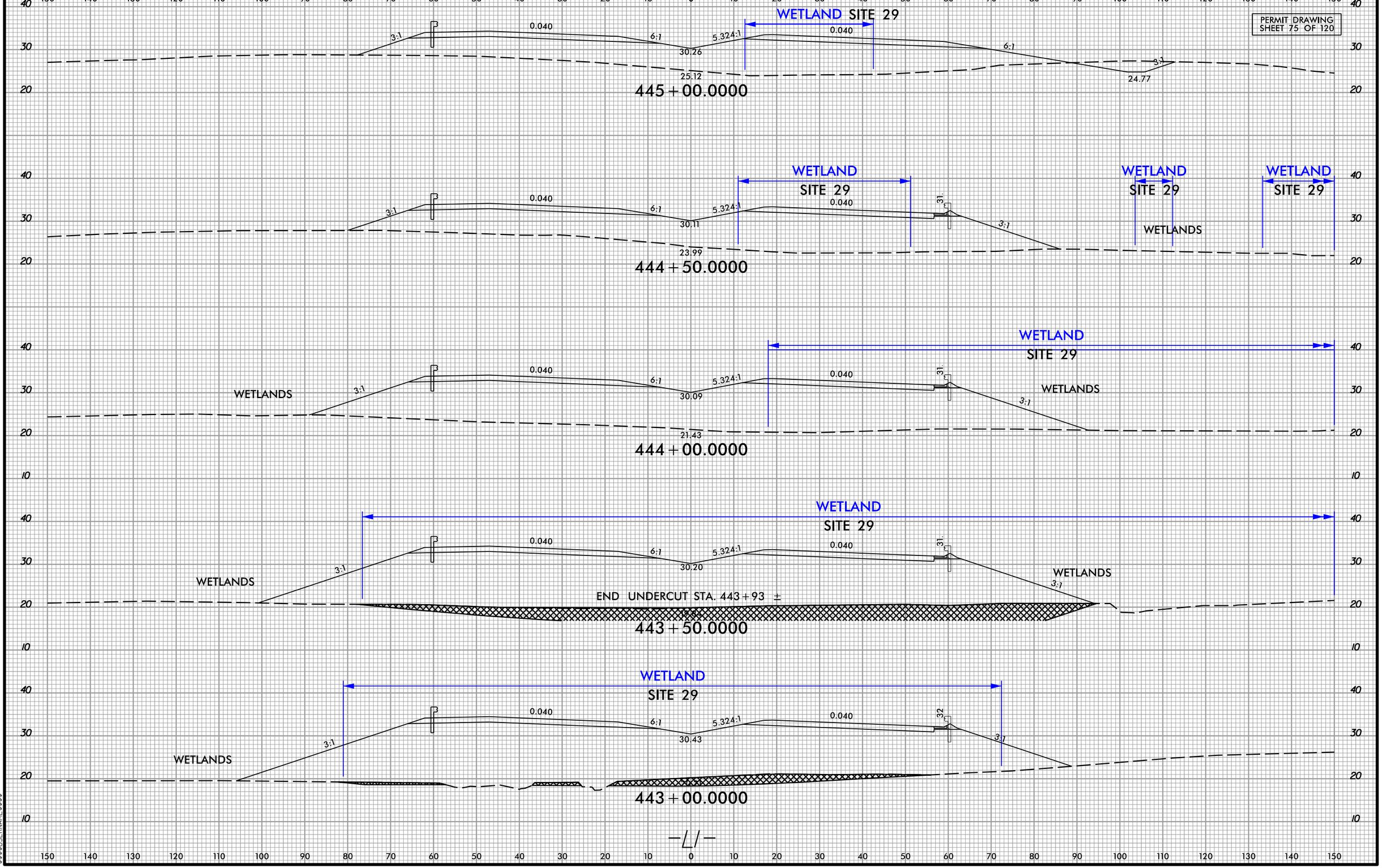
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-133

PERMIT DRAWING
SHEET 75 OF 120



-L/-

6/23/16
9252023
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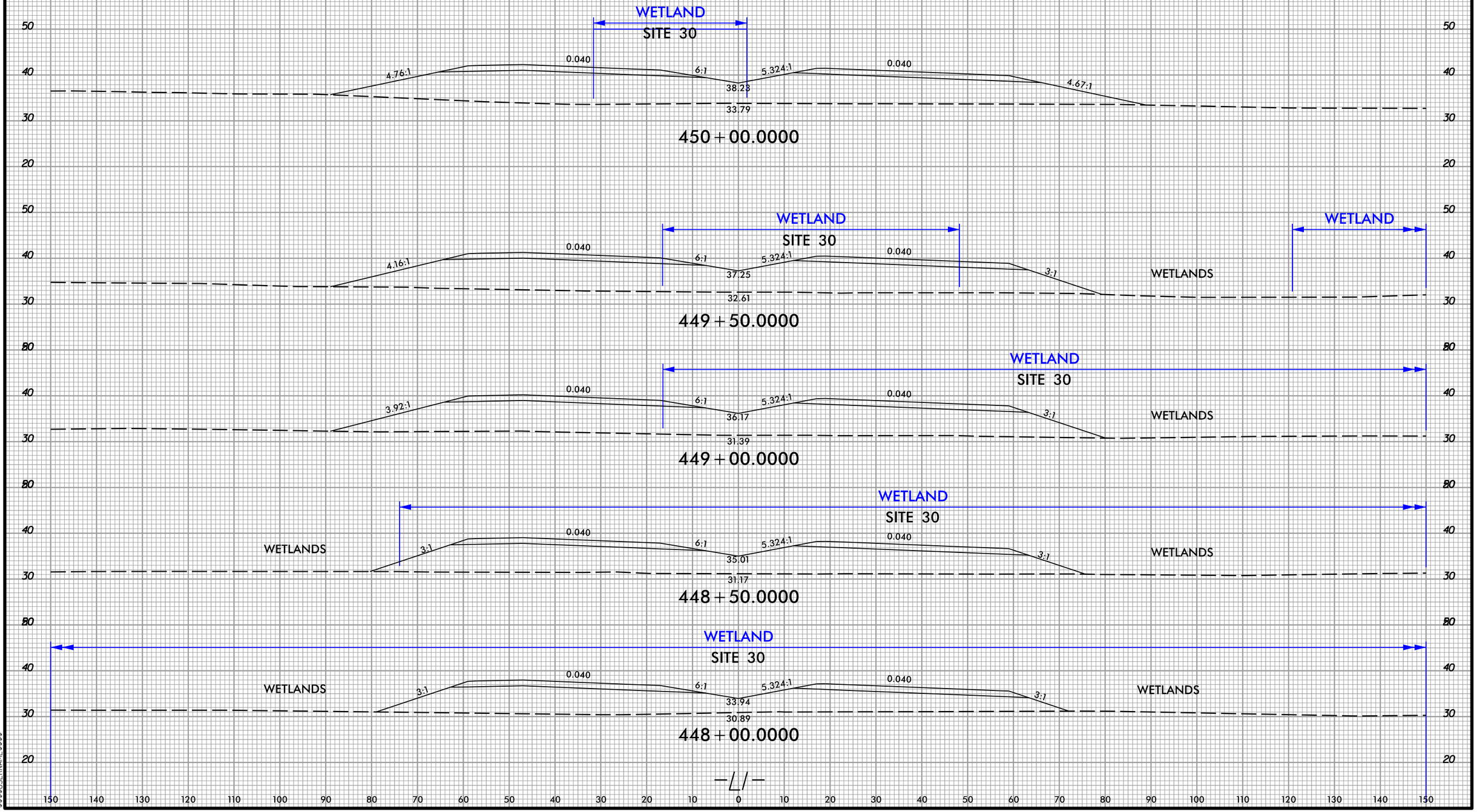
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-135

PERMIT DRAWING
SHEET 76 OF 120



6/23/16
9/25/2023
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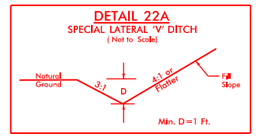
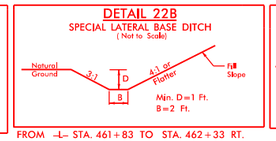
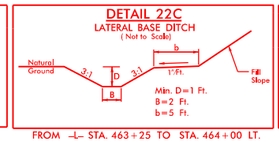
5/14/99



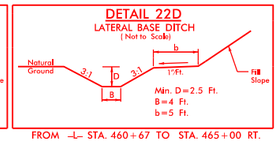
FROM –L– STA. 450+90 TO STA. 454+04 LT.
FROM –L– STA. 454+40 TO STA. 455+30 LT.
FROM –L– STA. 455+37 TO STA. 456+78 LT.



FROM –L– STA. 461+83 TO STA. 462+33 RT.



FROM –L– STA. 463+25 TO STA. 464+00 LT.



FROM –L– STA. 460+67 TO STA. 465+00 RT.

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0029

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

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Stantec Consulting Services Inc.
801 Jones Franklin Road
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Raleigh, NC 27606
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Fax. (919) 851-7024
www.stantec.com
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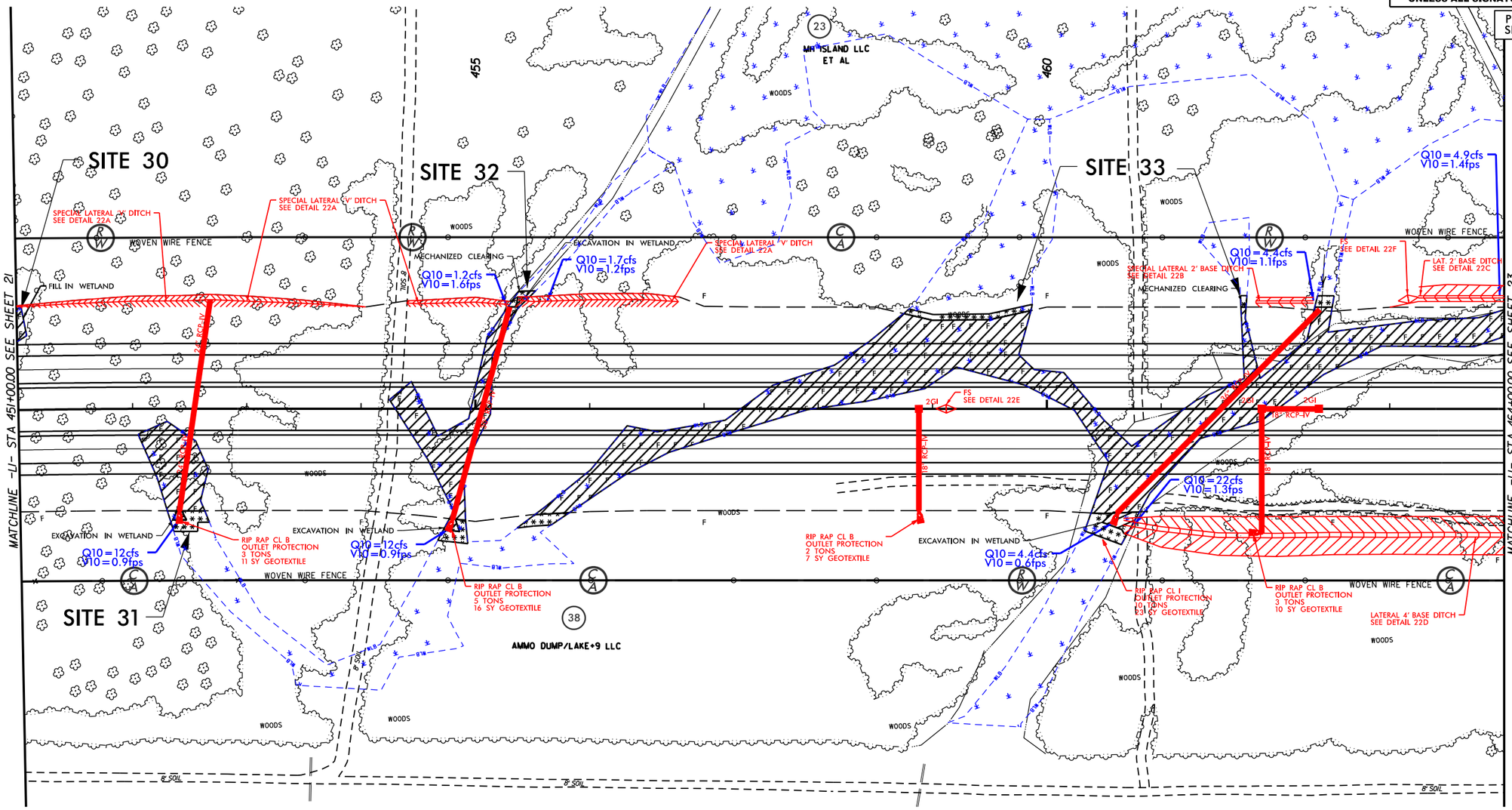
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	22
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 77 OF 120

NAD 83/NSRS 2007



DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

50' 0' 50' 100' 150'
GRAPHIC SCALE

DETAIL 22E
FALSE SUMP
(Not to Scale)
Median Ditch
9"
2'
L (See Chart Below)
20'
GI etc.
S=Ditch Slope
℄ Proposed Ditch

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

L1 STA. 459+12 MED.

DETAIL 22F
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
20:1
10:1
0.5' Min. 1.0' Max.
S=Ditch Slope
℄ Proposed Ditch

L1 STA. 463+17 LT., TOP EL=34.11

SEE SHEET 49 & 50 FOR –L1– PROFILE

9/29/2023
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29-SEP-2023 13:11
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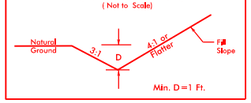
5/14/99

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

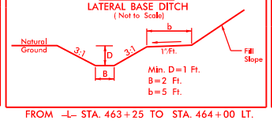


FROM –L– STA. 450+90 TO STA. 454+04 LT.
FROM –L– STA. 454+40 TO STA. 455+30 LT.
FROM –L– STA. 455+37 TO STA. 456+78 LT.

DETAIL 22B
SPECIAL LATERAL BASE DITCH
(Not to Scale)

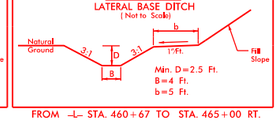
FROM –L– STA. 461+83 TO STA. 462+33 RT.

DETAIL 22C
LATERAL BASE DITCH
(Not to Scale)



FROM –L– STA. 463+25 TO STA. 464+00 LT.

DETAIL 22D
LATERAL BASE DITCH
(Not to Scale)



FROM –L– STA. 460+67 TO STA. 465+00 RT.

NAD 83/NSRS 2007

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	22
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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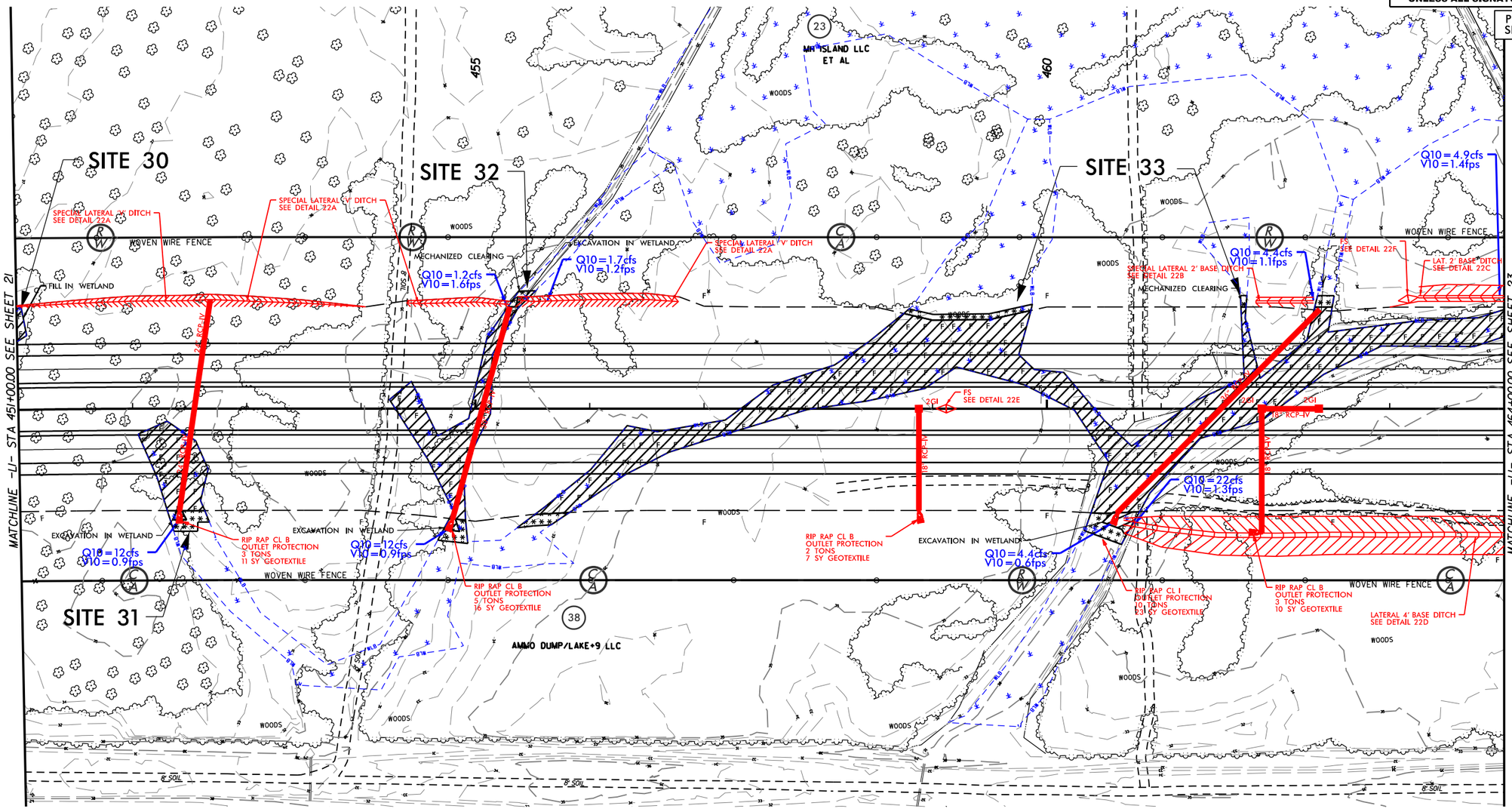
PERMIT DRAWING
SHEET 78 OF 120



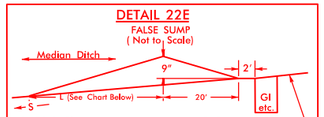
DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

50' 0' 50' 100' 150'
GRAPHIC SCALE

DETAIL 22E
FALSE SUMP
(Not to Scale)



S=Ditch Slope

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

L1 STA. 459+12 MED.

DETAIL 22F
FALSE SUMP
(Not to Scale)

L1 STA. 463+17 LT., TOP EL=34.11

SEE SHEET 49 & 50 FOR –L1– PROFILE

9/29/2023
Hydraulics
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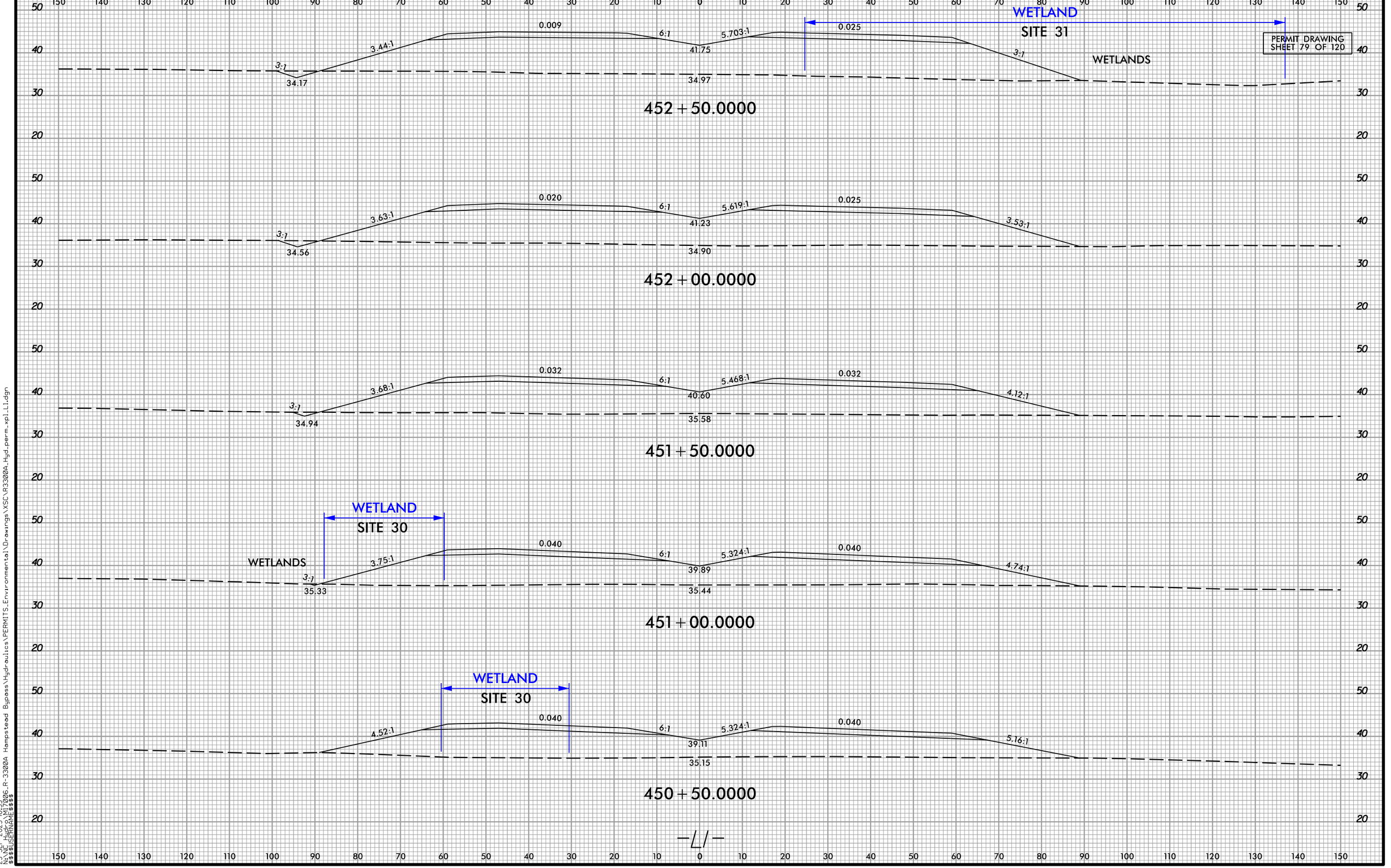
	R-3300A	X-136



6/23/16
9/25/2023
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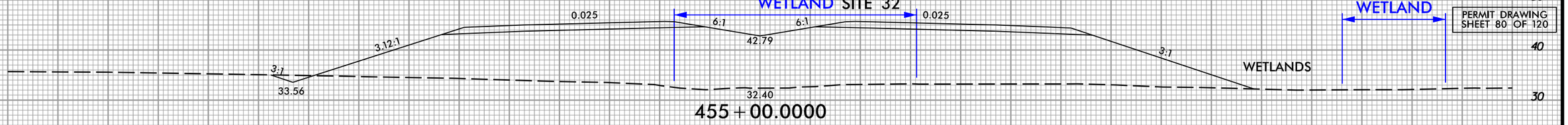
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-137

PERMIT DRAWING
SHEET 80 OF 120

WETLAND SITE 32

WETLAND

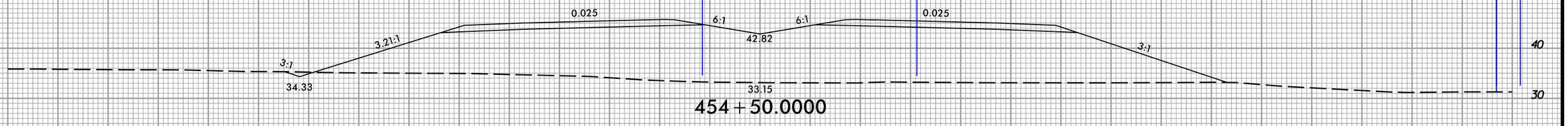
WETLANDS

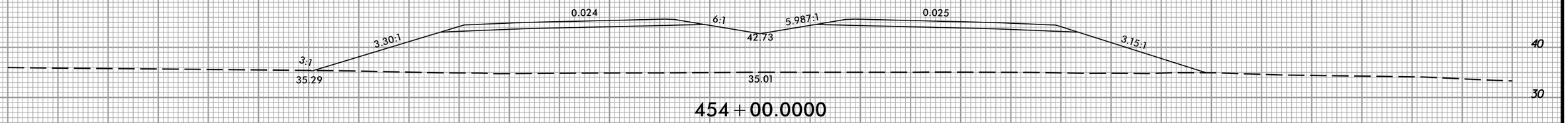


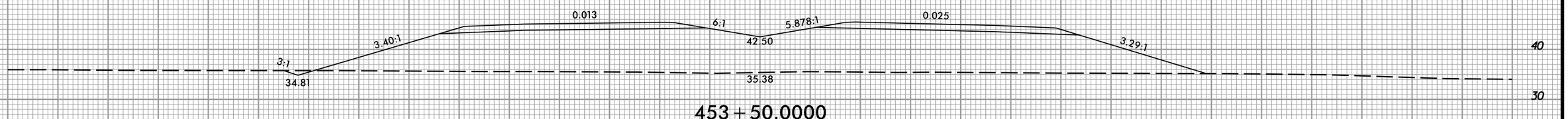
WETLAND

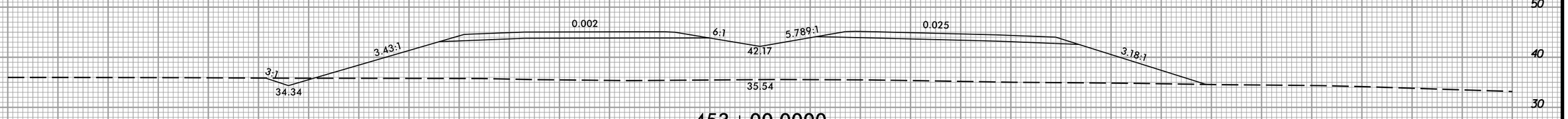
SITE 32

WETLAND









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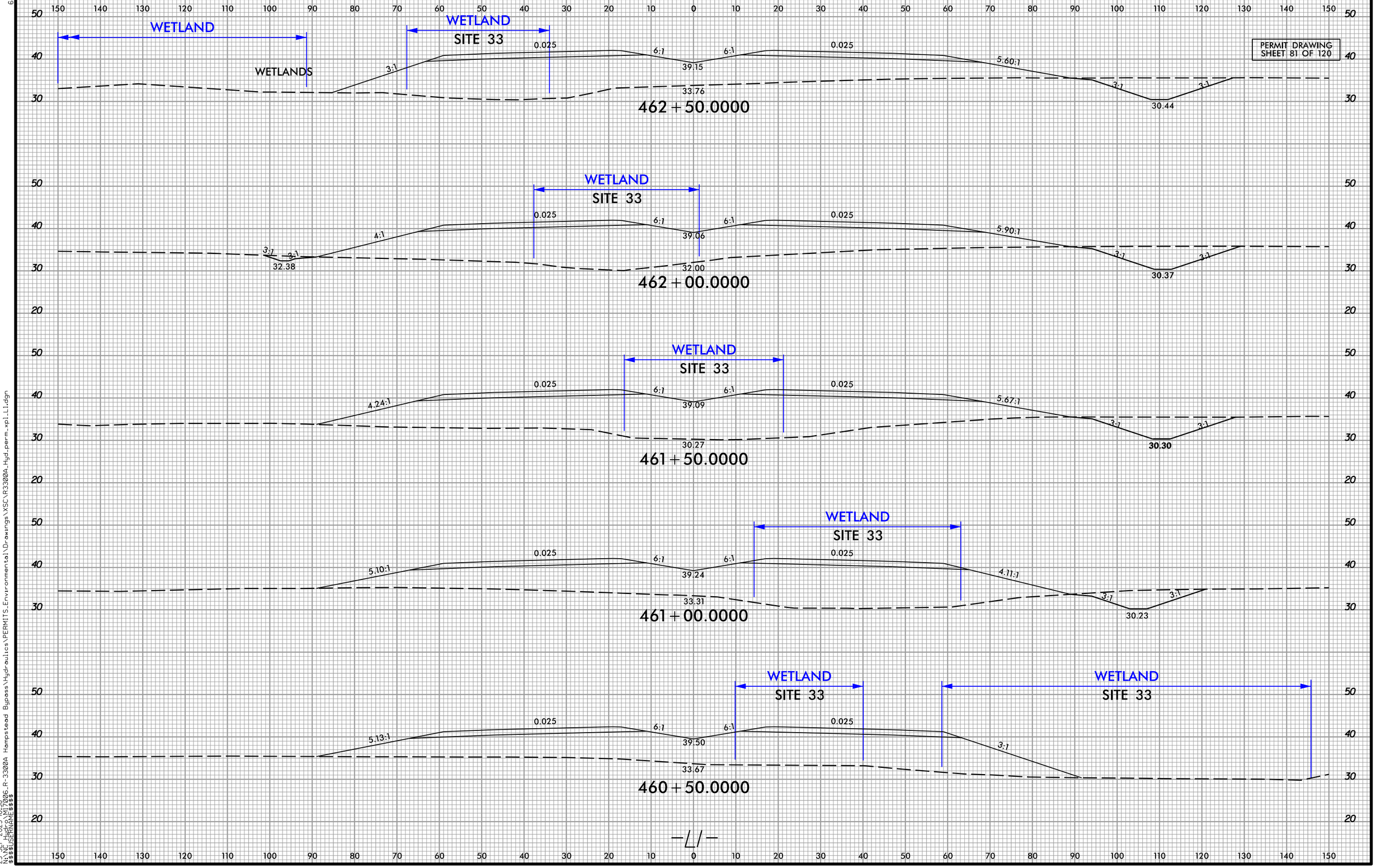
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-140

PERMIT DRAWING
SHEET 81 OF 120



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6/23/16
9/25/2023
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$$$$USERNAME$$$$

5/14/99

DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

50' 0' 50' 100' 150'

GRAPHIC SCALE

NAD 83/NSRS 2007

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. P-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
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(919) 851-6606
FIRM PE NUMBER : P-0671

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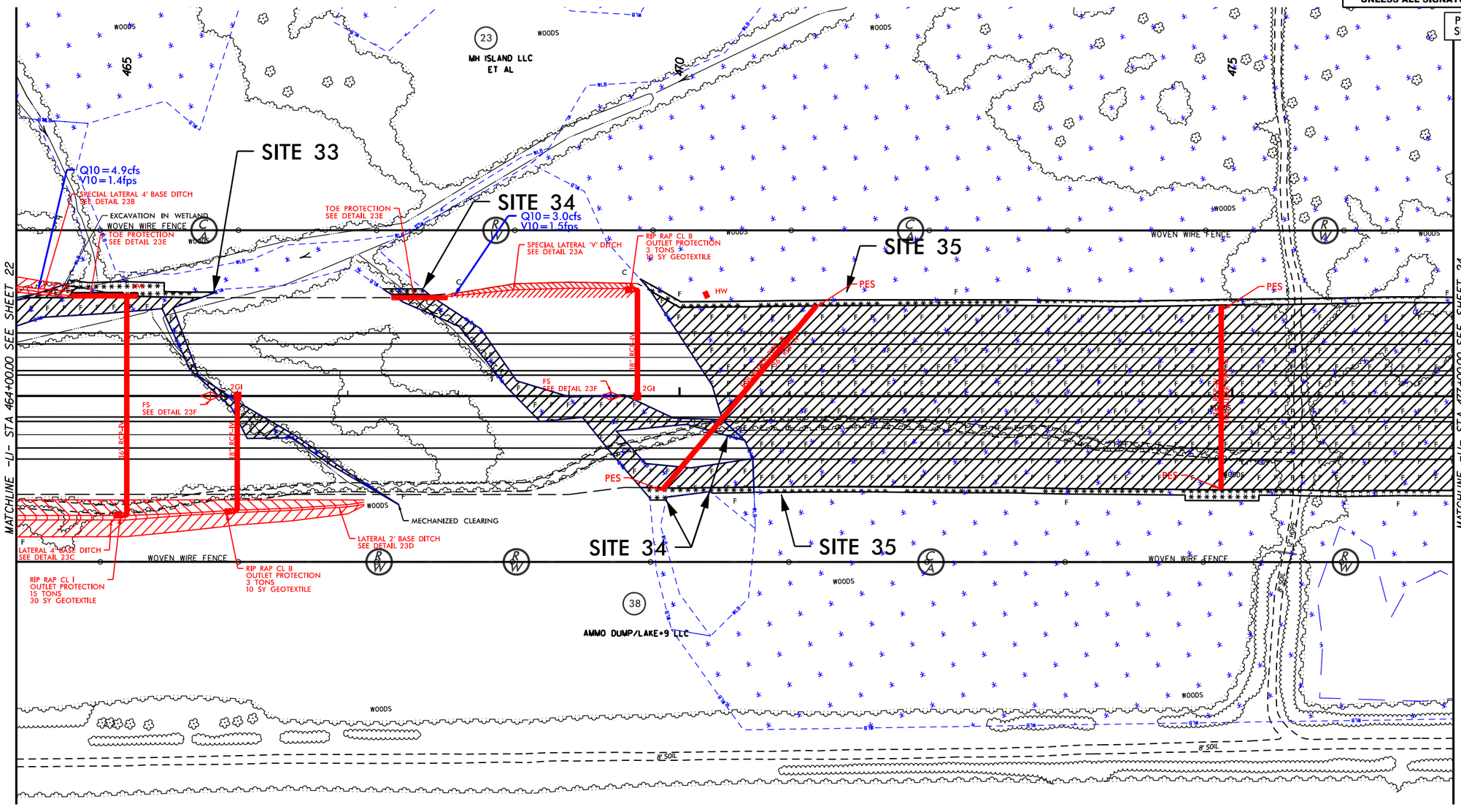
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

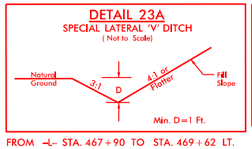
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 82 OF 120



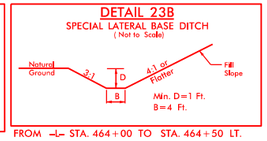
* DO NOT BURY EQUALIZER PIPES

DETAIL 23A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



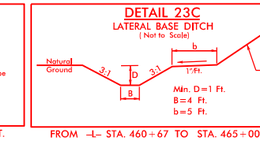
FROM -L- STA. 467+90 TO STA. 469+62 LT.

DETAIL 23B
SPECIAL LATERAL BASE DITCH
(Not to Scale)



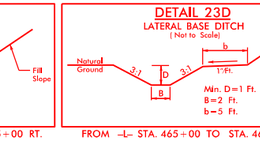
FROM -L- STA. 464+00 TO STA. 464+50 LT.

DETAIL 23C
LATERAL BASE DITCH
(Not to Scale)



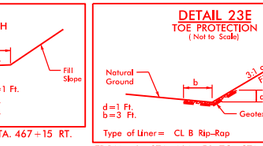
FROM -L- STA. 460+67 TO STA. 465+00 RT.

DETAIL 23D
LATERAL BASE DITCH
(Not to Scale)



FROM -L- STA. 465+00 TO STA. 467+15 RT.

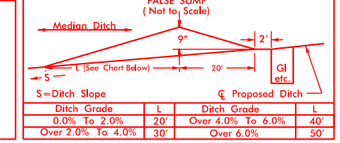
DETAIL 23E
TOE PROTECTION
(Not to Scale)



Type of Liner= CL B Rip-Rap

FROM -L- STA. 464+50 TO STA. 465+10 LT.
FROM -L- STA. 467+40 TO STA. 467+90 LT.

DETAIL 23F
FALSE SUMP
(Not to Scale)



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

L1 STA. 465+76 MED.
L1 STA. 469+38 MED.

SEE SHEET 50 FOR -L1- PROFILE

9/29/2023
User: NC
N:\NC Hydro\M17006_R-3300A Hampstead Bypass\Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_23.dgn
29-SEP-2023 13:11
Hampstead Bypass\Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_23.dgn
Plotted: 29-SEP-2023

5/14/99

DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

50' 0' 50' 100' 150'

GRAPHIC SCALE

NAD 83/NSRS 2007

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. P-0929

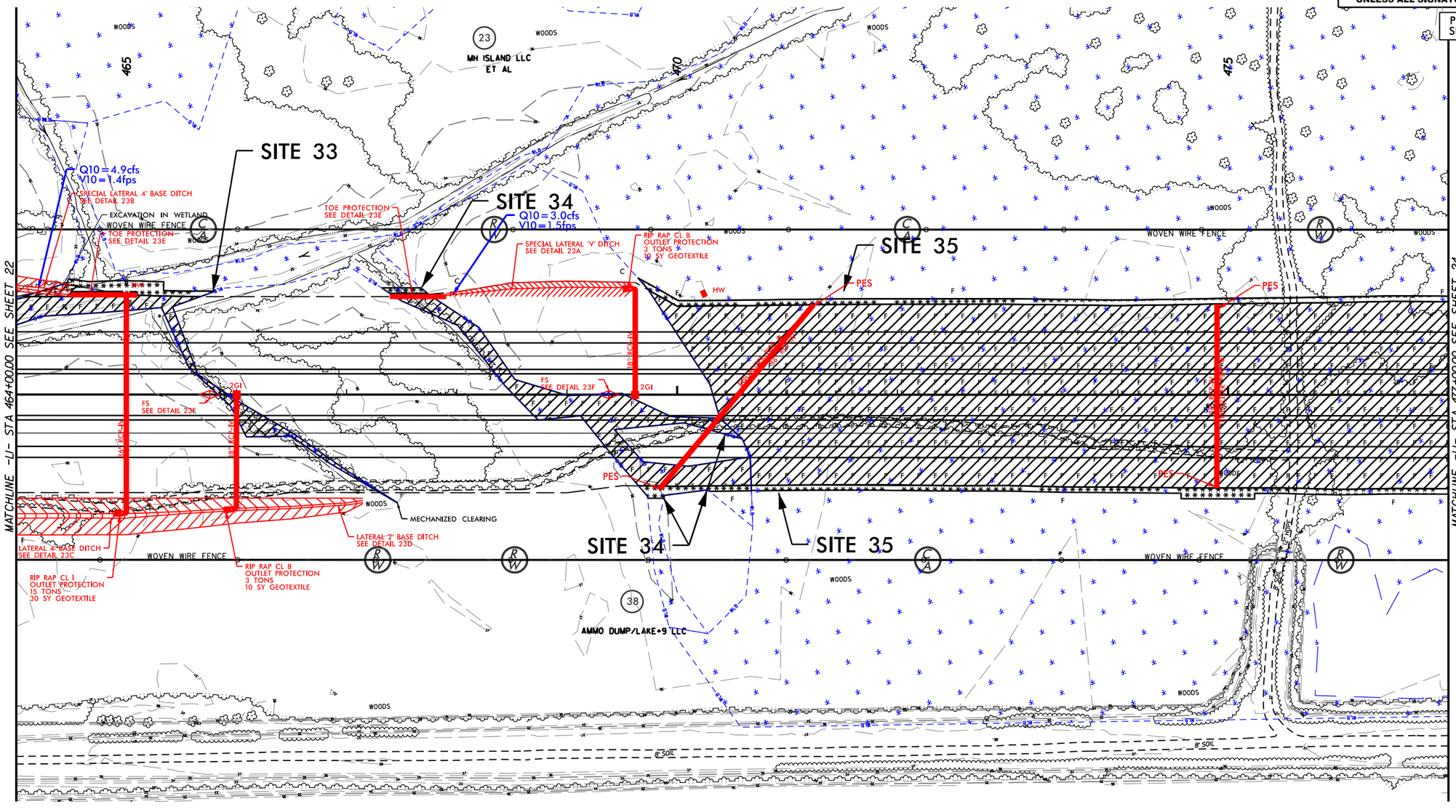
MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

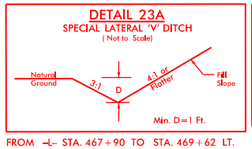
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 83 OF 120



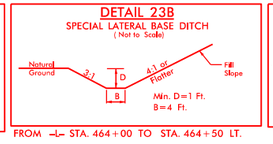
* DO NOT BURY EQUALIZER PIPES

DETAIL 23A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



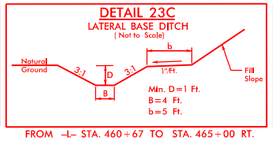
FROM -L- STA. 467+90 TO STA. 469+62 LT.

DETAIL 23B
SPECIAL LATERAL BASE DITCH
(Not to Scale)



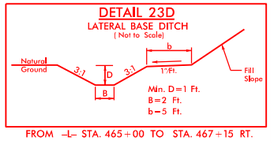
FROM -L- STA. 464+00 TO STA. 464+50 LT.

DETAIL 23C
LATERAL BASE DITCH
(Not to Scale)



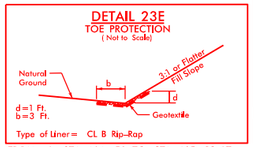
FROM -L- STA. 460+67 TO STA. 465+00 RT.

DETAIL 23D
LATERAL BASE DITCH
(Not to Scale)



FROM -L- STA. 465+00 TO STA. 467+15 RT.

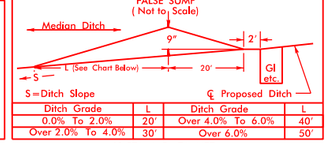
DETAIL 23E
TOE PROTECTION
(Not to Scale)



Type of Liner= CL B Rip-Rap

FROM -L- STA. 464+50 TO STA. 465+10 LT.
FROM -L- STA. 467+40 TO STA. 467+90 LT.

DETAIL 23F
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

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

L1 STA. 465+76 MED.
L1 STA. 469+38 MED.

SEE SHEET 50 FOR -L1- PROFILE

9/29/2023
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29-SEP-2023 13:11
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...ET SETTINGS

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	24
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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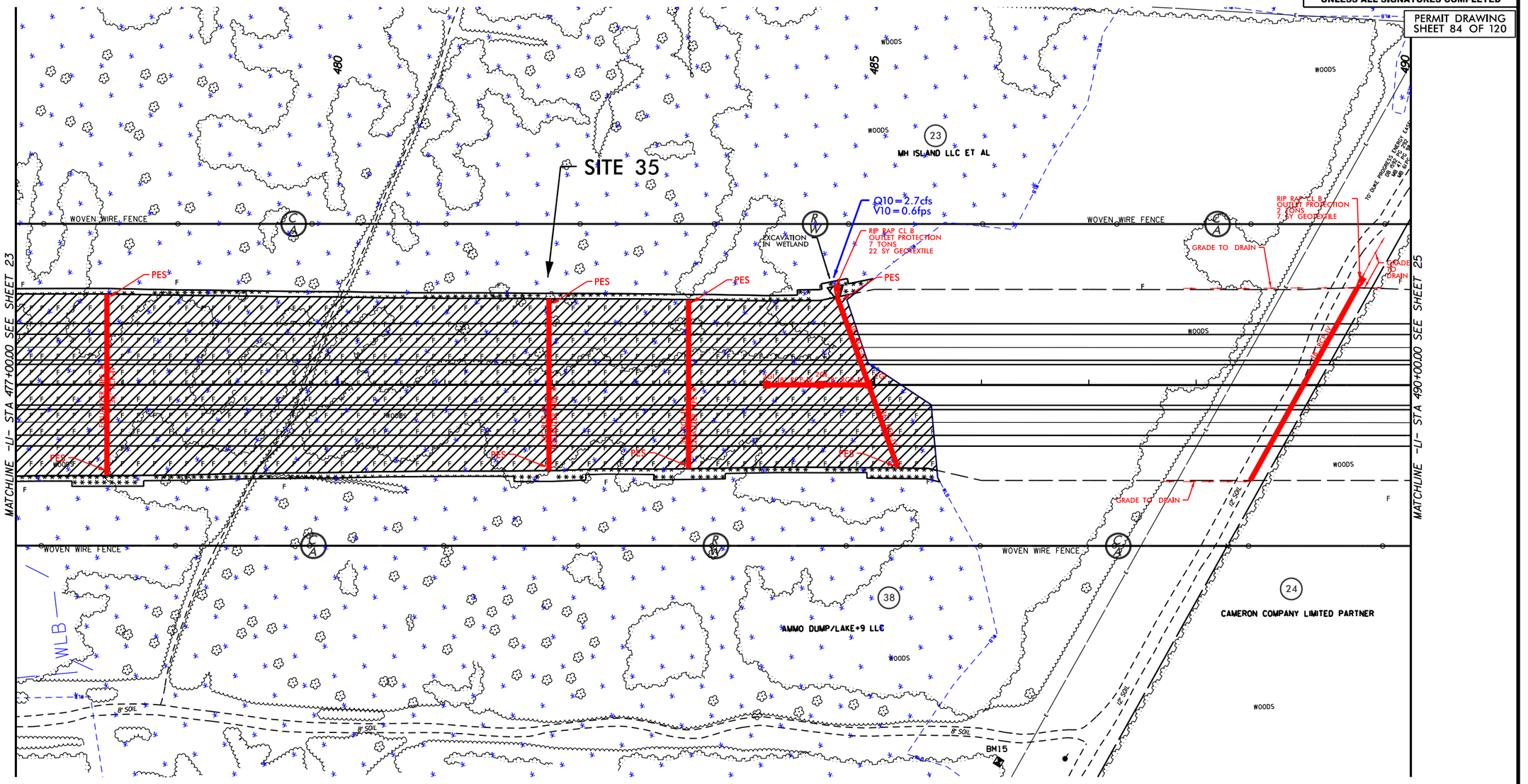
SHEET 84 OF 120

NAD 83/NSRS 2007



* DO NOT BURY EQUALIZER PIPES

DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

50' 0' 50' 100' 150'
GRAPHIC SCALE

SEE SHEETS 50 & 51 FOR -L1- PROFILE

5/14/99

9/29/2023
lhurner
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2650 WYCLIFF ROAD
SUITE 410
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PHONE: 919.881.9939
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R-3300A	24
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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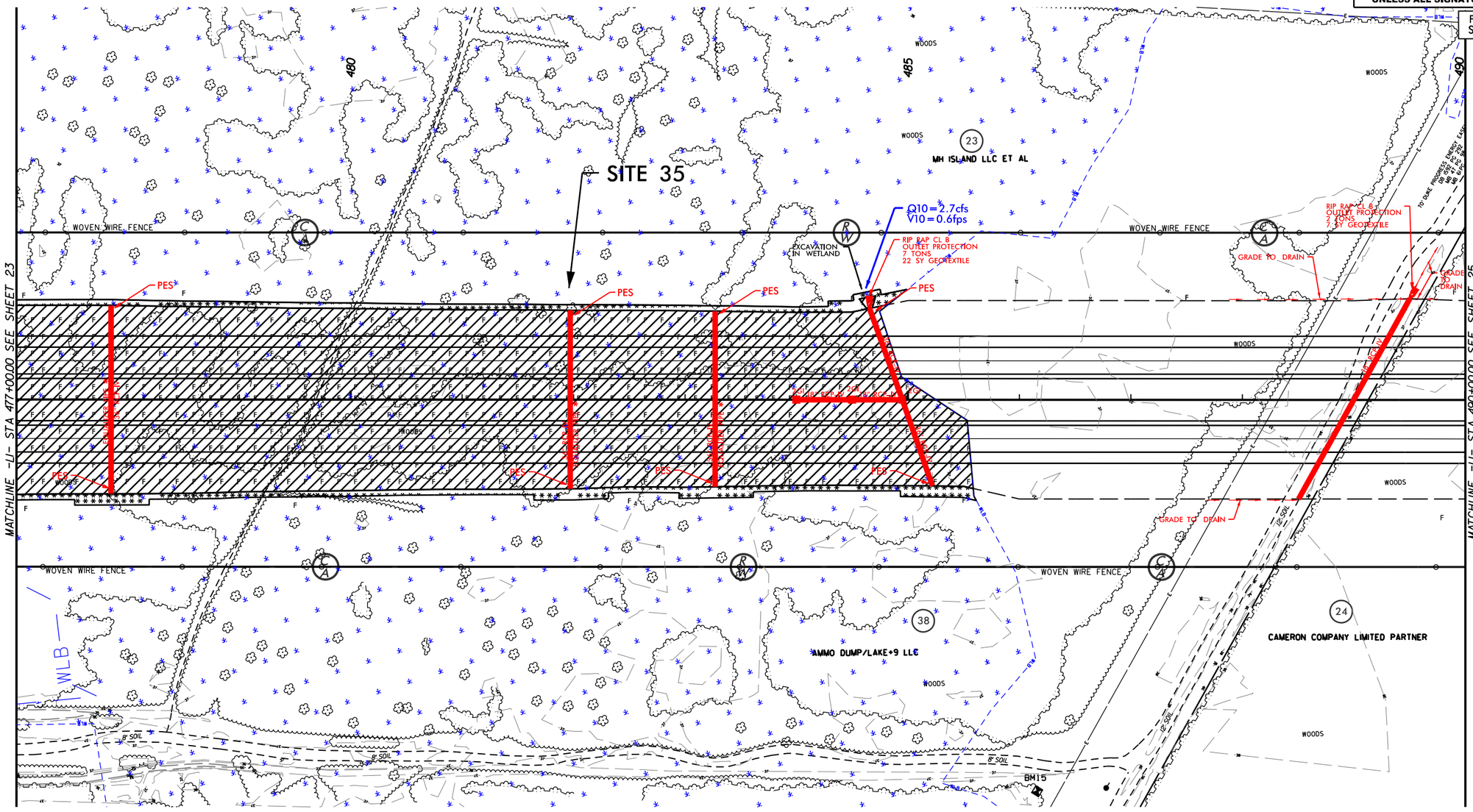
PERMIT DRAWING
SHEET 85 OF 120

NAD 83/NSRS 2007



* DO NOT BURY EQUALIZER PIPES

DENOTES EXCAVATION IN WETLAND
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING

50' 0' 50' 100' 150'
GRAPHIC SCALE

SEE SHEETS 50 & 51 FOR -L1- PROFILE

9/29/2023
lhurner
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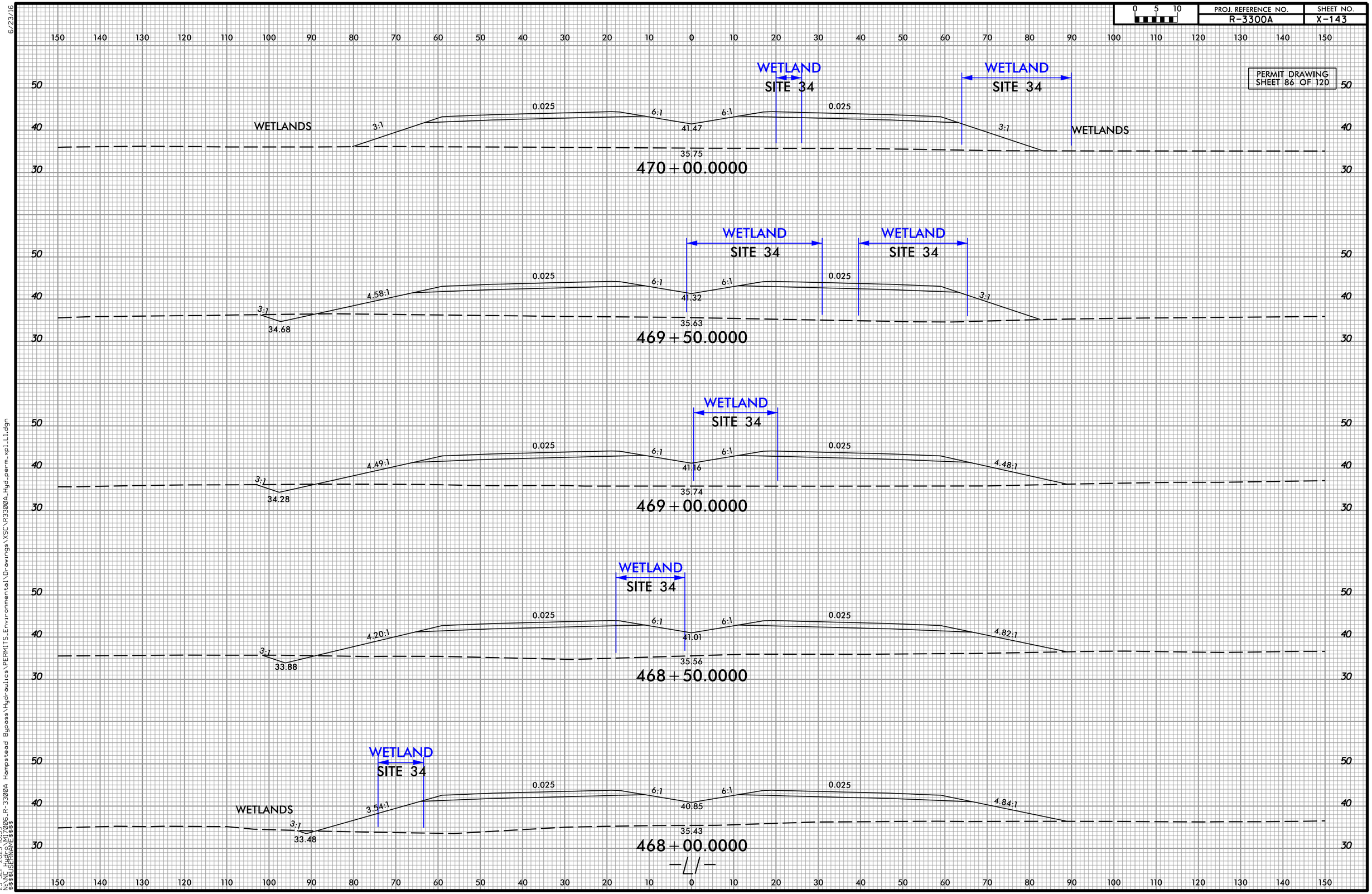
Level: 01 FEATURES

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-143

PERMIT DRAWING
SHEET 86 OF 120



6/23/16
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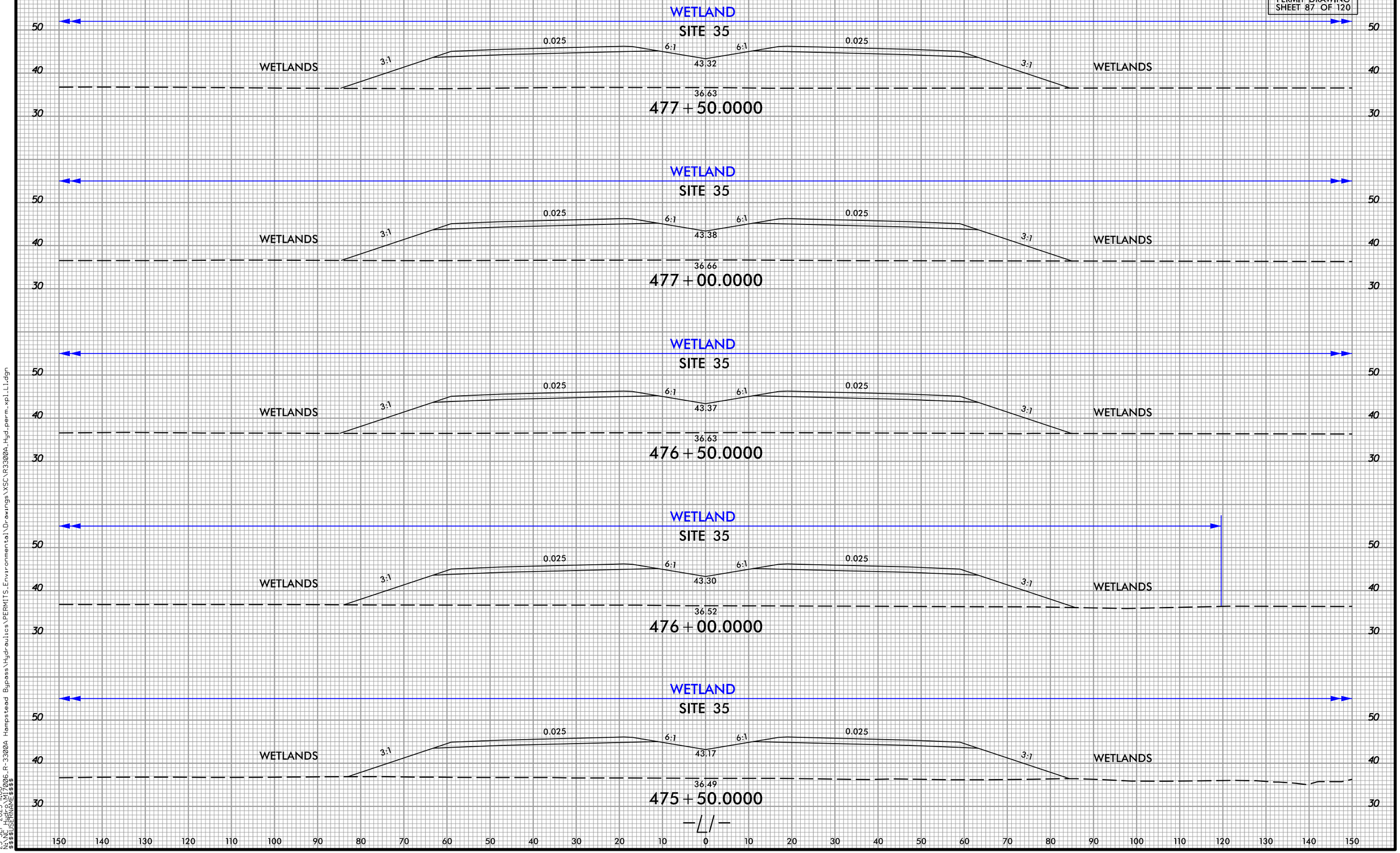
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-146

PERMIT DRAWING
SHEET 87 OF 120



6/23/16

9252023
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5/14/99

DENOTES EXCAVATION IN WETLAND
DENOTES FILL IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
50' 0' 50' 100' 150'
GRAPHIC SCALE

DETAIL 27E
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
20:1
10:1
0.5' Min. 1.0' Max
S=Ditch Slope
℄ Proposed Ditch
LIREV STA. 527+80 RT., TOP EL=35.86

DETAIL 27F
EMBANKMENT PROTECTION
(Not to Scale)
2@7'x8' RCBC
Natural Ground
Proposed Fill Slope
Natural Ground
Exist. Channel
1:1 Ft.
GEOTEXTILE
1.0' SILLS AND BURY DEPTH
2.0' SILLS AND BURY DEPTH
GEOTEXTILE
Type of Liner= CL I RIP RAP
Min. D=2 Ft. B=7 Ft.
Min. d=1 Ft. b=10 Ft.
FROM –Y35– STA. 20+25 TO STA. 20+80 LT., L=55'
DDE=20 CY, 52 TONS RIP RAP, 105 SY GEOTEXTILE

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

PERMIT DRAWING
SHEET 88 OF 120

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	27
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

JTV INVESTMENTS, LLC
MATCHLINE –Y35– STA 19+00.00 SEE SHEET 37
FOR ENLARGEMENT SEE PERMIT DRAWING SHEET 90
LATERAL 2' BASE DITCH SEE DETAIL 27D
WOODS
CONC R/W DESTROYED
EIR
PUE
SOIL
REMOVE
520
LATERAL 2' BASE DITCH SEE DETAIL 27D
170' CP&L UTILITY EASEMENT MB 47 PG 98
CP&L DRAWING # RW-D-1685 SHEET # 4
EXISTING R/W
60.00'
SR 1573 (HARRISON CREEK RD)
PARKS FAMILY FORESTRY, LLC
12" RCP
8" SOIL
525
BANK STABILIZATION CL I RIP RAP SEE DETAIL 27J
EMBANKMENT PROTECTION SEE DETAIL 27I
FLOODPLAIN BENCH SEE DETAIL 27H
SITE 36
SITE 37
SITE 38
TDE
EXCAVATION IN WETLAND
MECHANIZED CLEARING IN WETLAND
STD 4' BASE DITCH SEE DETAIL 27A
RIP RAP CL B OUTLET PROTECTION 5 TONS 14 SY GEOTEXTILE
SPECIAL LATERAL 4' BASE DITCH SEE DETAIL 27A
LATERAL 4' BASE DITCH SEE DETAIL 27D
WILLIAM J. VANTRAVIS, ET UX
MATCHLINE –L1– STA 516+00.00 SEE SHEET 26
MATCHLINE –L1– STA 529+00.00 SEE SHEET 28
NAD 83/NSRS 2007

JTV INVESTMENTS, LLC
CAMERON COMPANY LIMITED PARTNER
FILL IN WETLAND
FLOODPLAIN BENCH SEE DETAIL 27H
WOODS
EXCAVATION IN WETLAND
MOSTLY CLEARCUT
SITE 37
WILLIAM VAN TRAVIS, ET UX
JULIA S. JONES
SEELEY'S BRANCH
BANK STABILIZATION CL I RIP RAP SEE DETAIL 27J
LATERAL 'V' DITCH SEE DETAIL 27C
ALICE POWELL, HEIRS
SR 1573 HARRISON CREEK RD 20' BST
18" RCP
10' GR
15" RCP
15' BST
2GI
18" RCP-IV
24" RCP-IV
PARKS FAMILY FORESTRY, LLC
LATERAL 2' BASE DITCH SEE DETAIL 27
SPECIAL LATERAL 2' BASE DITCH SEE DETAIL 27B
FS SEE DETAIL 27E
FS SEE DETAIL 27G
POND
MATCHLINE –Y35– STA 27+00.00 SEE SHEET 38

DETAIL 27A
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Natural Ground
3:1
D
4:1 or Flatter
Fill Slope
B
Min. D=1 Ft.
B=4 Ft.
FROM –L1REV– STA. 519+47 TO STA. 521+51 LT
FROM –L1REV– STA. 524+26 TO STA. 528+11 LT

DETAIL 27B
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Min. D=1 Ft.
B=2 Ft.
FROM –L1REV– STA. 524+62 TO STA. 527+50 RT

DETAIL 27C
LATERAL 'V' DITCH
(Not to Scale)
b
1':Ft.
Min. D=1 Ft.
b=5 Ft.
FROM –Y35– STA. 24+20 TO STA. 29+50 RT.

DETAIL 27D
LATERAL BASE DITCH
(Not to Scale)
Min. D=1 Ft.
B=See below
b=5 Ft.
FROM –L1REV– STA. 524+55 TO STA. 525+00 LT., B=4 Ft.
FROM –Y35– STA. 14+25 TO STA. 19+50 RT., B=2 Ft.
FROM –Y35– STA. 19+75 TO STA. 22+00 RT., B=2 Ft.
FROM –Y35– STA. 24+69 TO STA. 28+00 LT., B=2 Ft.

DETAIL 27K
STANDARD BASE DITCH
(Not to Scale)
Min. D=1 Ft.
B=4 Ft.
FROM L1REV STA. 524+29 TO 524+55 LT.
L=27', S=0.76%, DDE=18CY

SEE SHEET 2B–1 FOR HORIZONTAL CURVE DATA

PROP. 2@7'X8' RCBC NOTES:
CHANNEL IMPROVEMENTS, BANK STABILIZATION SEE DETAIL WITH CLASS I RIP RAP
REALIGN US CHANNEL TO FLOW THRU EAST BARREL
BACKFILL NORMAL FLOW BARREL WITH 'I' NATIVE MATERIAL SEE SKEWED MULTI–BARREL CULVERT LOW FLOW CHANNEL SILLS AND FLOOD PLAIN BENCH DETAIL 'PP'

DETAIL 27G
FALSE SUMP
(Not to Scale)
Median Ditch
9"
2'
20'
L (See Chart Below)
GI etc.
S=Ditch Slope
℄ Proposed Ditch

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

LIREV STA. 528+23 MED.

DETAIL 27H
FLOODPLAIN BENCH
(Not to Scale)
2@7'x8' RCBC
Natural Ground
Proposed Fill Slope
18" (TYP.)
GEOTEXTILE
3:1
D
b
1':Ft.
GEOTEXTILE
Natural Ground
Exist. Channel
1.0' SILLS AND BURY DEPTH
2.0' SILLS AND BURY DEPTH
Type of Liner= CL I RIP RAP
Min. D=2 Ft. B=7 Ft.
Min. d=1 Ft. b=10 Ft.
FROM –L1REV– STA. 520+34 TO STA. 522+15 RT.,L=203'
DDE=1125 CY, 621 TONS RIP RAP, 1100 SY GEOTEXTILE
FROM –Y35– STA. 20+80 TO STA. 22+71 LT., L=191'
DDE=430 CY, 400 TONS RIP RAP, 700 SY GEOTEXTILE

DETAIL 'PP'
(NOT TO SCALE)
SKEWED MULTI– BARREL CULVERT LOW FLOW CHANNEL,SILLS AND FLOOD PLAIN BENCH

*NOTES:
1) NATIVE MATERIAL BETWEEN SILLS IN THE LOW FLOW CHANNEL IS TO BE REMOVED TO LOW FLOW CHANNEL NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE THE STREAM OR FLOODPLAIN AT THE PROJECT SITE DURING CONSTRUCTION. ONLY MATERIAL THAT IS EXCAVATED FROM THE LOW FLOW CHANNEL AND FLOODPLAIN AT THE PROJECT SITE DURING CONSTRUCTION, ONLY MATERIAL THAT IS EXCAVATED FROM THE LOW FLOW CULVERT BARREL RIP-RAP MAY BE USED TO SUPPLEMENT THE NATIVE MATERIAL IN THE HIGH FLOW CULVERT BARRELS. IF RIP-RAP IS USED TO LINE THE HIGH FLOW CULVERT BARRELS, NATIVE MATERIAL MAY BE USED TO SUPPLEMENT TO FILL VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.
2) SILLS ARE TO BE 1.0 FT. WIDE CAST SEPARATELY AND ATTACHED BY DOWELS.
3) TOP OF LOW FLOW SILLS SHOULD MATCH STREAM BED ELEVATION IN LOW FLOW CHANNEL OF STREAM. (THALWEG)
4) DO NOT SET ELEVATION OF HIGH SILL ABOVE BANK FULL.
5) NO BAFFLES REQUIRED DUE TO FLAT SLOPES. ALLOW TO SET IN BETWEEN SILLS.

SILLS AT INLET AND OUTLET
FLOOD PLAIN BENCH
SILL
BACK FILL WITH NATIVE MATERIAL TO SILL HEIGHT
THALWEG
PLAN VIEW

SEE SHEET 52 FOR –L1– PROFILE
SEE SHEET 64 FOR –Y35– PROFILE

9/29/2023
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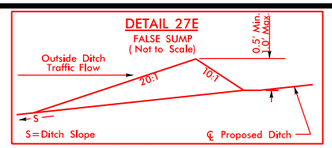
...ROF 81 FEB 2022

5/14/99

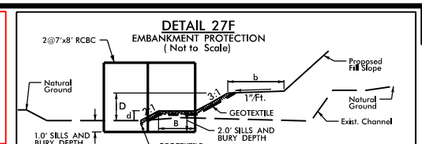
DENOTES EXCAVATION IN WETLAND
DENOTES FILL IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
50' 0' 50' 100' 150'
GRAPHIC SCALE

DETAIL 27E
FALSE SUMP
(Not to Scale)



LIREV STA. 527+80 RT., TOP EL=35.86

DETAIL 27F
EMBANKMENT PROTECTION
(Not to Scale)



Type of Liner= CL I RIP RAP
Min. D=2 Ft. B=7 Ft.
Min. d=1 Ft. b=10 Ft.

FROM –Y35– STA. 20+25 TO STA. 20+80 LT., L=55'
DDE=20 CY, 52 TONS RIP RAP, 105 SY GEOTEXTILE

Dewberry
2650 WYCLIFF ROAD
SUITE 410
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NC COA No. P-0929

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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 89 OF 120

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JTV INVESTMENTS, LLC
PARKS FAMILY FORESTRY, LLC
CAMERON COMPANY LIMITED PARTNER
WILLIAM J. VANTRAVIS, ET UX
WILLIAM VAN TRAVIS, ET UX
JULIA S. JONES
ALICE POWELL, HEIRS

MATCHLINE –L1– STA 19+00.00 SEE SHEET 37
MATCHLINE –L1– STA 516+00.00 SEE SHEET 26
MATCHLINE –L1– STA 529+00.00 SEE SHEET 28
MATCHLINE –Y35– STA 27+00.00 SEE SHEET 38

FOR ENLARGEMENT SEE PERMIT DRAWING SHEET 90

SITE 36
SITE 37
SITE 38

LATERAL 2' BASE DITCH SEE DETAIL 27D
REMOVE
SPECIAL LATERAL 4' BASE DITCH SEE DETAIL 27A
FLOODPLAIN BENCH SEE DETAIL 27H
BANK STABILIZATION CL I RIP RAP SEE DETAIL 27J
EMBANKMENT PROTECTION SEE DETAIL 27F
LATERAL 'V' DITCH SEE DETAIL 27C
SPECIAL LATERAL 2' BASE DITCH SEE DETAIL 27B
LATERAL 4' BASE DITCH SEE DETAIL 27D
STD 4' BASE DITCH SEE DETAIL 27G
RIP RAP CL B OUTLET PROTECTION 5 TONS 14 SY GEOTEXTILE
FS SEE DETAIL 27G
FS SEE DETAIL 27E

EXCAVATION IN WETLAND
MECHANIZED CLEARING IN WETLAND
FILL IN WETLAND
TDE
MOSTLY CLEARCUT
WOODS
SOIL
POND

DETAIL 27A
SPECIAL LATERAL BASE DITCH
(Not to Scale)

FROM –L1REV– STA. 519+47 TO STA. 521+51 LT
FROM –L1REV– STA. 524+26 TO STA. 528+11 LT

DETAIL 27B
SPECIAL LATERAL BASE DITCH
(Not to Scale)

FROM –L1REV– STA. 524+62 TO STA. 527+50 RT

DETAIL 27C
LATERAL 'V' DITCH
(Not to Scale)

FROM –Y35– STA. 24+20 TO STA. 29+50 RT.

DETAIL 27D
LATERAL BASE DITCH
(Not to Scale)

FROM –L1REV– STA. 524+55 TO STA. 525+00 LT., B=4 Ft.
FROM –Y35– STA. 14+25 TO STA. 19+50 RT., B=2 Ft.
FROM –Y35– STA. 19+75 TO STA. 22+00 RT., B=2 Ft.
FROM –Y35– STA. 24+69 TO STA. 28+00 LT., B=2 Ft.

DETAIL 27K
STANDARD BASE DITCH
(Not to Scale)

FROM L1REV STA. 524+29 TO 524+55 LT.
L=27', S=0.76%, DDE=18CY

SEE SHEET 2B–1 FOR HORIZONTAL CURVE DATA

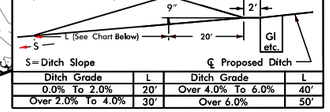
PROP. 2@7'X8' RCBC NOTES:

CHANNEL IMPROVEMENTS, BANK STABILIZATION SEE DETAIL WITH CLASS I RIP RAP

REALIGN US CHANNEL TO FLOW THRU EAST BARREL

BACKFILL NORMAL FLOW BARREL WITH 'I' NATIVE MATERIAL SEE SKEWED MULTI–BARREL CULVERT LOW FLOW CHANNEL SILLS AND FLOOD PLAIN BENCH DETAIL 'PP'

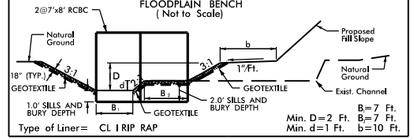
DETAIL 27G
FALSE SUMP
(Not to Scale)



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

LIREV STA. 528+23 MED.

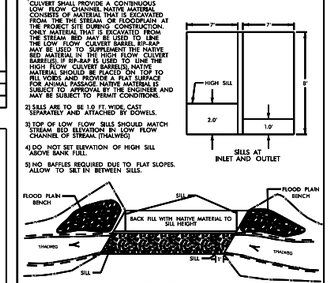
DETAIL 27H
FLOODPLAIN BENCH
(Not to Scale)



FROM –L1REV– STA. 520+34 TO STA. 522+15 RT.,L=203'
DDE=1125 CY, 621 TONS RIP RAP, 1100 SY GEOTEXTILE
FROM –Y35– STA. 20+80 TO STA. 22+71 LT., L=191'
DDE=430 CY, 400 TONS RIP RAP, 700 SY GEOTEXTILE

DETAIL 'PP'
(NOT TO SCALE)
SKEWED MULTI– BARREL CULVERT LOW FLOW CHANNEL,SILLS AND FLOOD PLAIN BENCH

*NOTES:
1) NATIVE MATERIAL RETURN: SILLS IN THE LOW FLOW CHANNEL PROVIDE A CONTINUOUS LOW FLOW CHANNEL NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE THE STREAM OR FLOODPLAIN AT THE PROJECT SITE DURING CONSTRUCTION, ONLY MATERIAL THAT IS EXCAVATED FROM THE STREAM BED AND BANKS BELOW THE LOW FLOW CULVERT BARREL RIP-RAP MAY BE USED TO SUPPLEMENT THE NATIVE BED MATERIAL IN THE HIGH FLOW CULVERT BARRELS. IF RIP-RAP IS USED TO LINE THE HIGH FLOW CULVERT BARRELS, NATIVE MATERIAL SHALL BE USED AS NEEDED TO FILL VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.
2) SILLS ARE TO BE 1.0 FT. WIDE, CAST SEPARATELY AND ATTACHED BY DOWELS.
3) TOP OF LOW FLOW SILLS SHOULD MATCH STREAM BED ELEVATION IN LOW FLOW CHANNEL OF STREAM. (THALWEG)
4) DO NOT SET ELEVATION OF HIGH SILL ABOVE BANK FULL.
5) NO BAFFLES REQUIRED DUE TO FLAT SLOPES. ALLOW TO SET IN BETWEEN SILLS.



SEE SHEET 52 FOR –L1– PROFILE
SEE SHEET 64 FOR –Y35– PROFILE

NAD 83/NSRS 2007

9/29/2023
hturner
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Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	E-27

RW SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 90 OF 120

5/14/99

SITE 36

SITE 37

SITE 37 ENLARGEMENT

NAD 83/NSRS 2007

DESTROYED EIR

PUE

SOIL

520

525

20

LATERAL 2' BASE DITCH
SEE DETAIL 27D

REMOVE

12" CMP

EXISTING R/W

20' BSL

HARRISON CREEK RD

SR 1513

BANK STABILIZATION
CL I RIP RAP
SEE DETAIL 27J

EMBANKMENT PROTECTION
SEE DETAIL 27F

FLOODPLAIN BENCH
SEE DETAIL 27H

TDE

EXCAVATION IN WETLAND

MECHANIZED CLEARING IN WETLAND

STD 4' BASE DITCH
SEE DETAIL 27K

RIP RAP CL B
OUTLET PROTECTION
5 TONS
14 SY GEOTEXTILE

PARKS FAMILY FORESTRY, LLC

SPECIAL LATERAL 4' BASE DITCH
SEE DETAIL 27A

WOODS

BEGIN CULVERT
-LIREV-
Sta. 523+37.73

PROP. END SBG
-Y35- STA 22+12 LT

PROP. BEGIN SBG
-L1REV- STA 523+94 LT

LATERAL 4' BASE DITCH
SEE DETAIL 27D

SPECIAL LATERAL 4' BASE DITCH
SEE DETAIL 27A

24" RCP-IV

36" RCP-IV

18" RCP-IV

2GI

HW

CAMERON COMPANY
LIMITED PARTNER

FILL IN WETLAND

PROPERTY LINE

FLOODPLAIN BENCH
SEE DETAIL 27H

PROP. END SBG
-L1REV-
STA 522+78 RT

2@7'X8' RCBC

END CULVERT
-LIREV-
Sta. 523+57.68

PROP. BEGIN SBG
-Y35- STA 24+50 LT

SPECIAL LATERAL 2' BASE DITCH
SEE DETAIL 27B

MOSTLY CLEARCUT

24

29

30

25

06

RW

CA

F F	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
	DENOTES MECHANIZED CLEARING

30' 0' 30' 60' 90'
GRAPHIC SCALE

9/29/2023
hturner
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SITE 37

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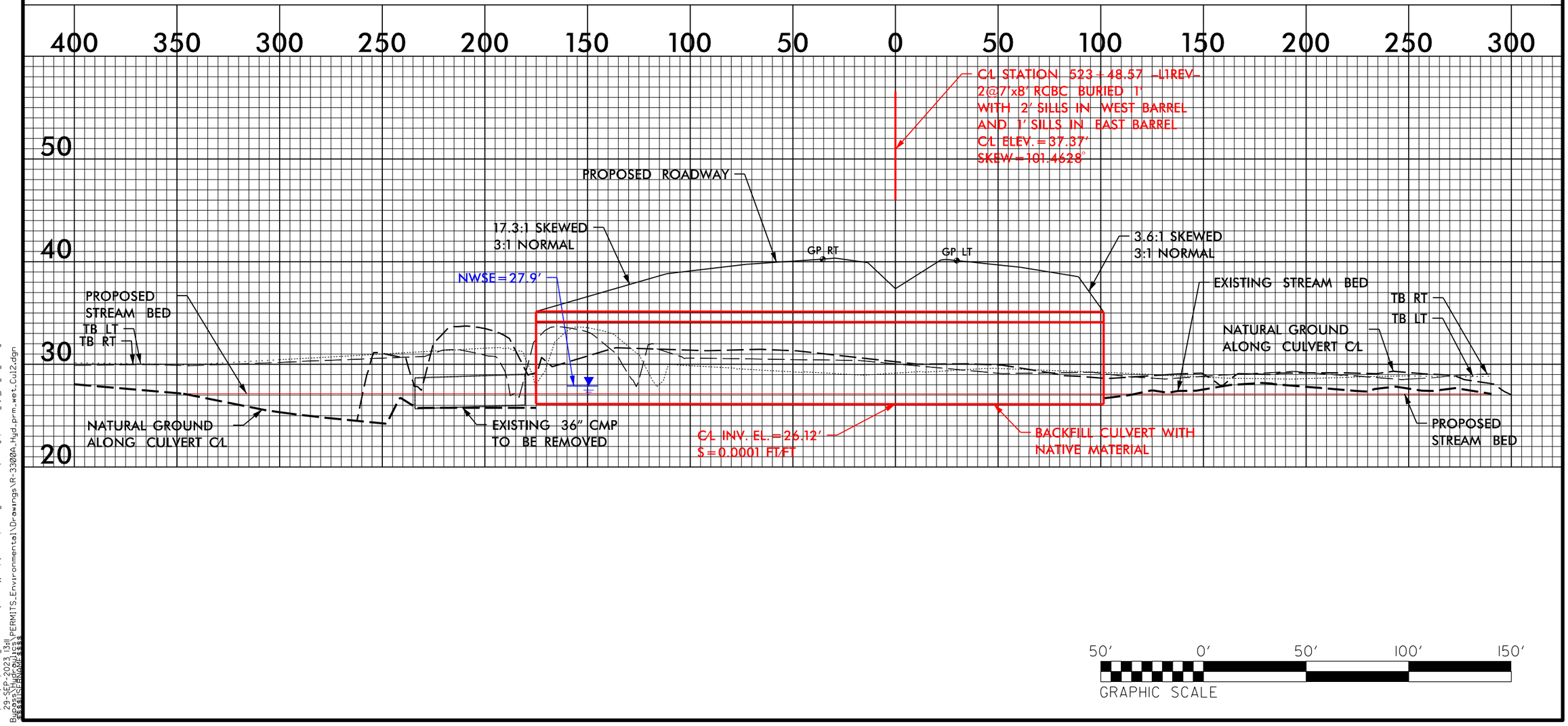
SHEET 91 OF 120



9/29/2023
lhunter
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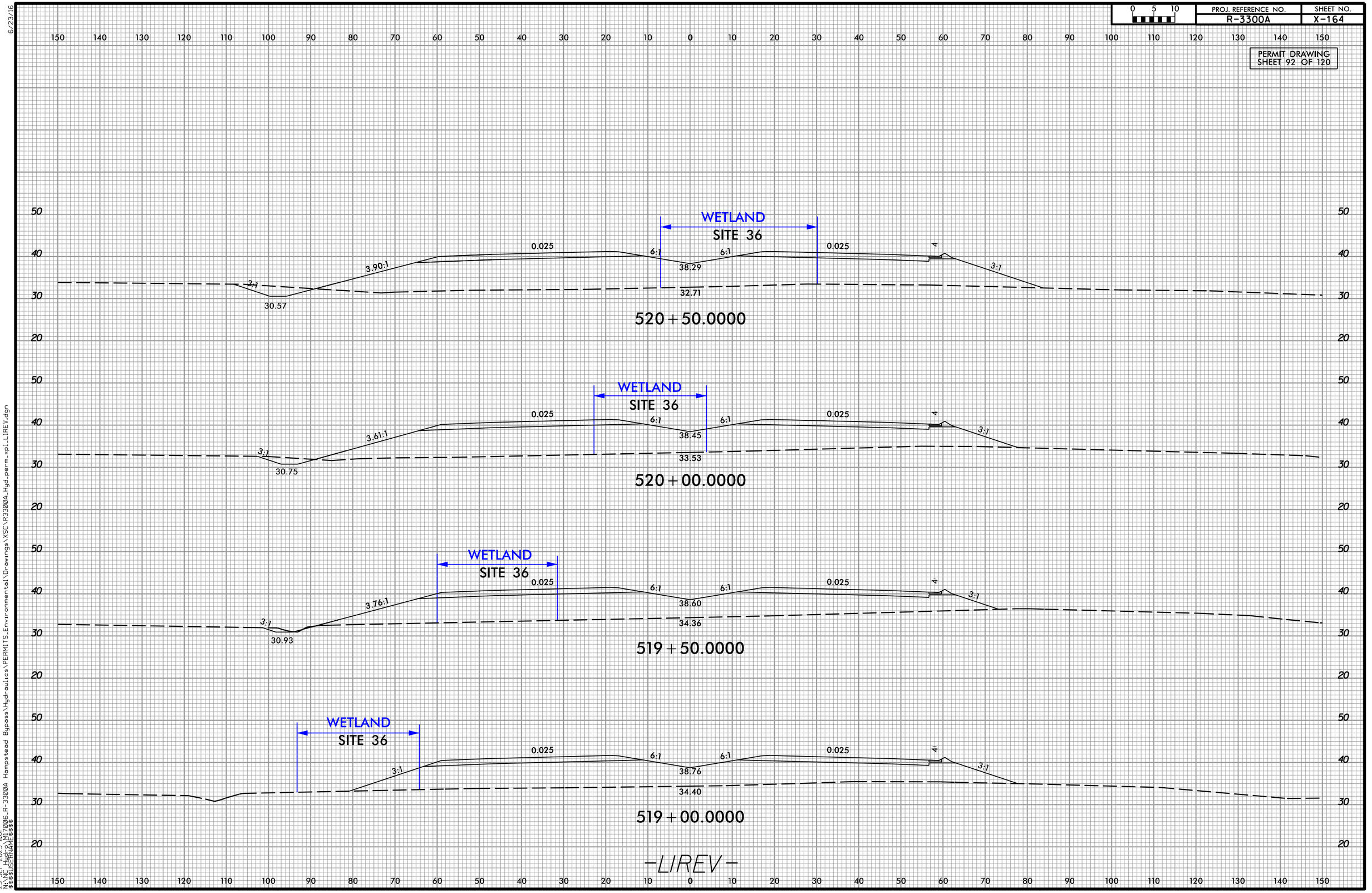

6/23/16
9/25/2023
hturner
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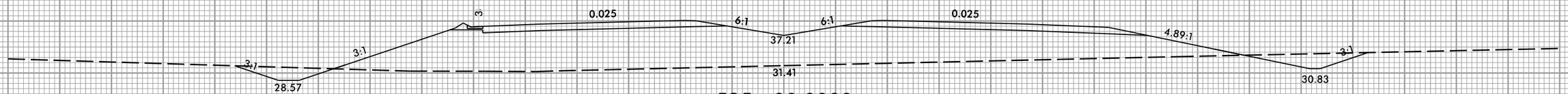
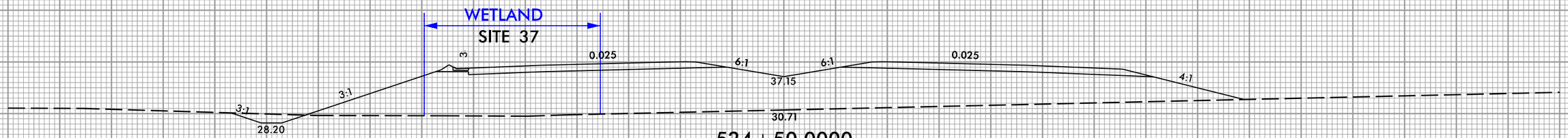
	R-3300A	X-166

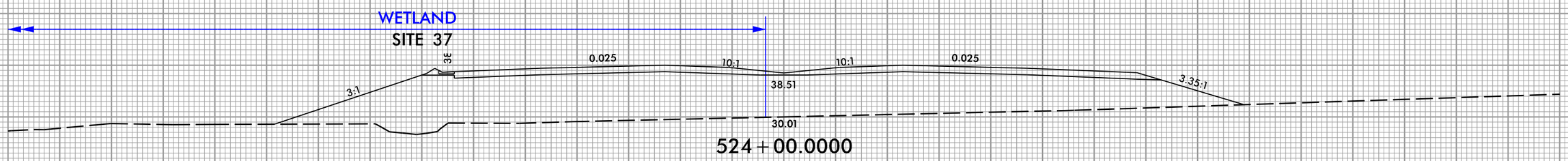
PERMIT DRAWING
SHEET 93 OF 120



525+00.0000



524+50.0000



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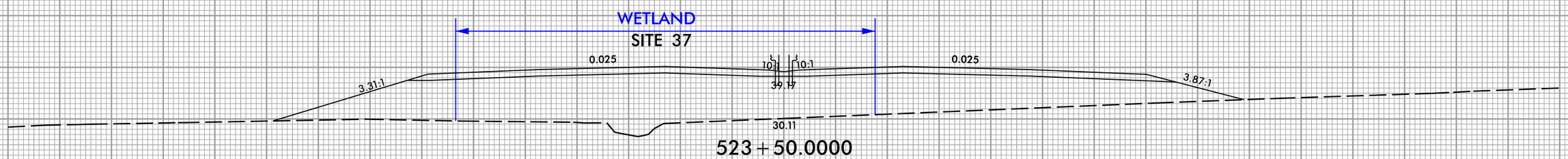
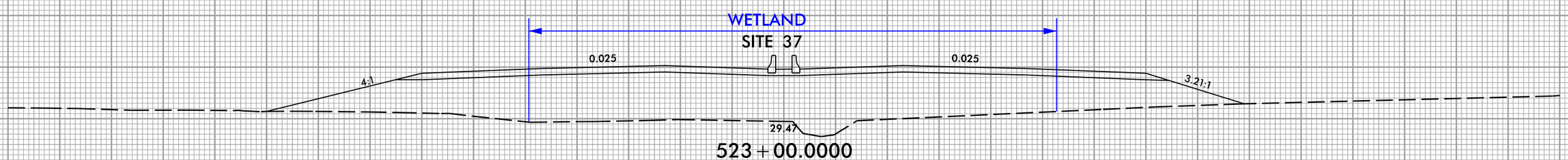


523+50.0000



523+00.0000

-LIREV-

6/23/16
9252023
hturner
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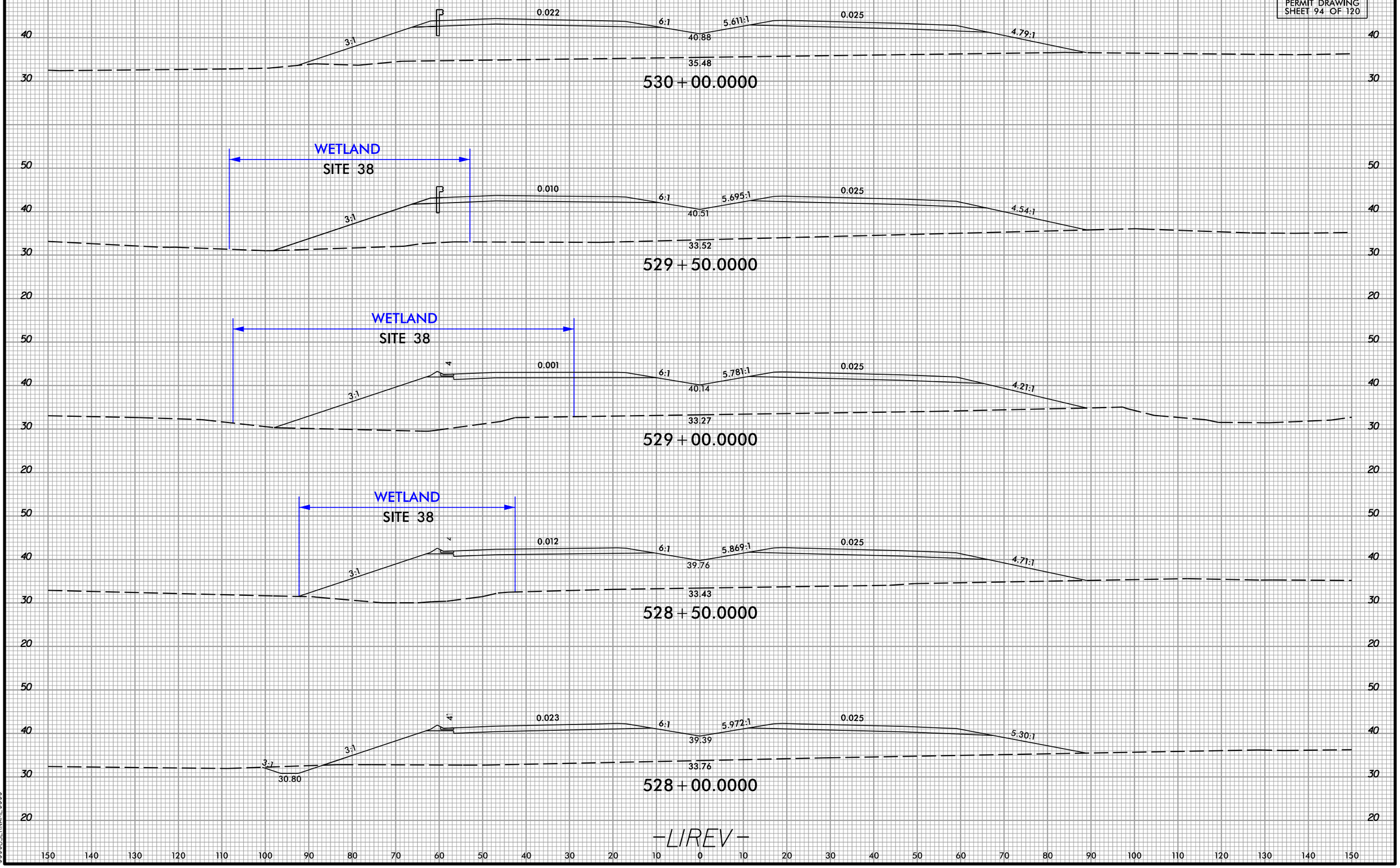
	R-3300A	X-168

PERMIT DRAWING
SHEET 94 OF 120



6/23/16
9/25/2023
hturner
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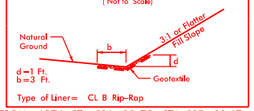
5/14/99

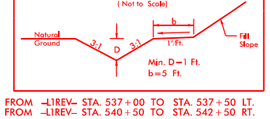
DETAIL 28A
TOE PROTECTION
(Not to Scale)



Type of Liner= CL B Rip-Rap

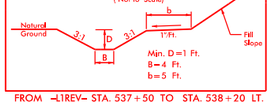
FROM –L1REV– STA. 536+25 TO STA. 537+00 LT.

DETAIL 28B
LATERAL "V" DITCH
(Not to Scale)



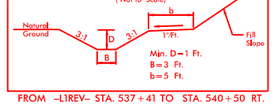
FROM –L1REV– STA. 537+00 TO STA. 537+50 LT.
FROM –L1REV– STA. 540+50 TO STA. 542+50 RT.

DETAIL 28C
LATERAL BASE DITCH
(Not to Scale)



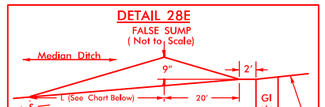
FROM –L1REV– STA. 537+50 TO STA. 538+20 LT.

DETAIL 28D
LATERAL BASE DITCH
(Not to Scale)



FROM –L1REV– STA. 537+41 TO STA. 540+50 RT.

DETAIL 28E
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

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

L1REV STA. 532+90 MED.
L1REV STA. 540+26 MED.

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	28
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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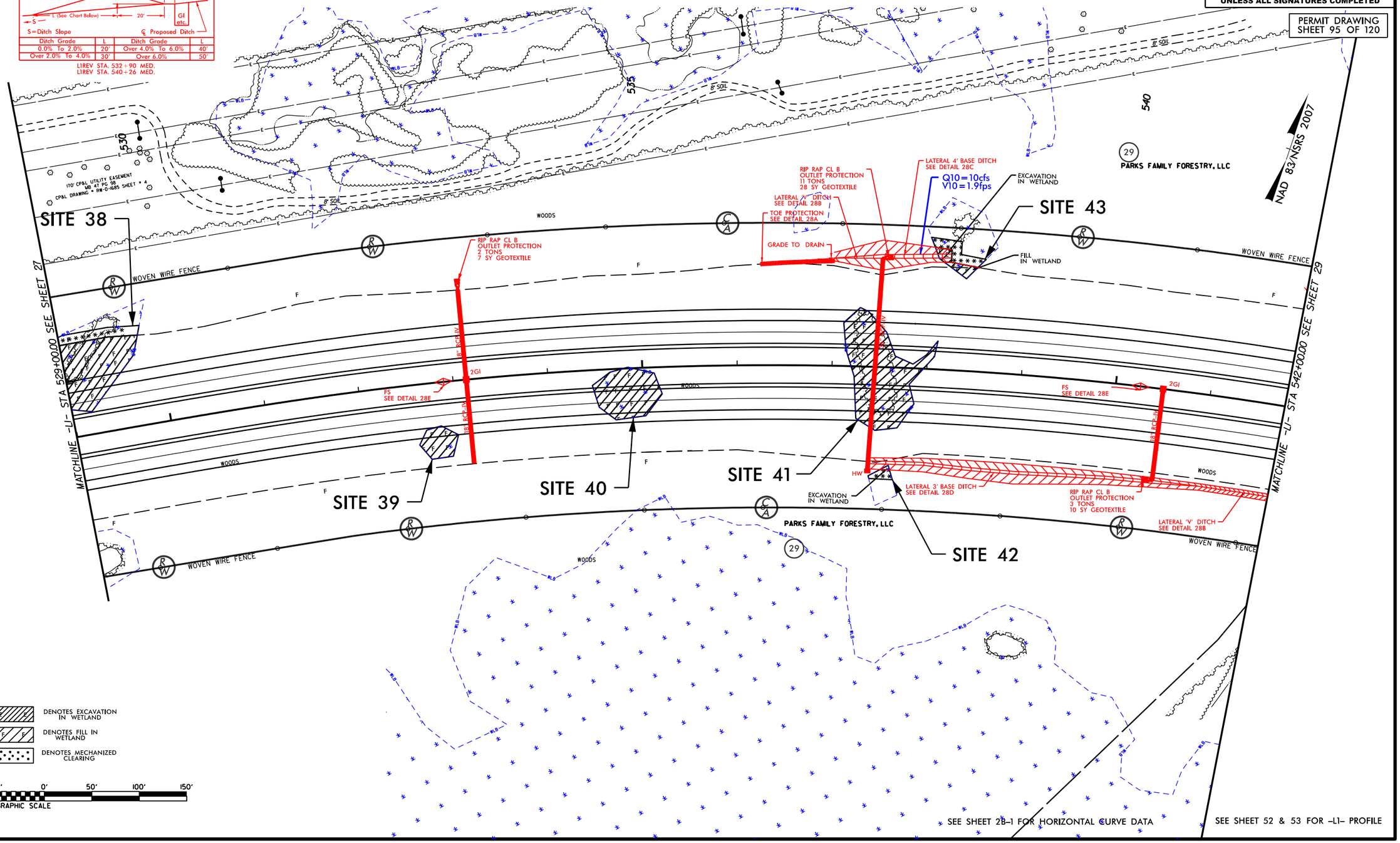
SHEET 95 OF 120



SEE SHEET 28-1 FOR HORIZONTAL CURVE DATA

SEE SHEET 52 & 53 FOR –L1– PROFILE

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hmorgan
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...ERS 81 FEB 2023

5/14/99

DETAIL 28A
TOE PROTECTION
(Not to Scale)

Type of Liner= CL B Rip-Rap

FROM –LIREV– STA. 536+25 TO STA. 537+00 LT.

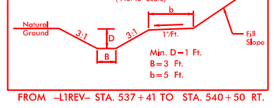
DETAIL 28B
LATERAL 'V' DITCH
(Not to Scale)

FROM –LIREV– STA. 537+00 TO STA. 537+50 LT.
FROM –LIREV– STA. 540+50 TO STA. 542+50 RT.

DETAIL 28C
LATERAL BASE DITCH
(Not to Scale)

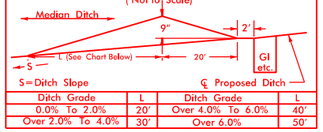
FROM –LIREV– STA. 537+50 TO STA. 538+20 LT.

DETAIL 28D
LATERAL BASE DITCH
(Not to Scale)



FROM –LIREV– STA. 537+41 TO STA. 540+50 RT.

DETAIL 28E
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

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

LIREV STA. 532+90 MED.
LIREV STA. 540+26 MED.

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	28
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING
SHEET 96 OF 120

SITE 38
SITE 39
SITE 40
SITE 41
SITE 42
SITE 43

MATCHLINE –L1– STA 529+00.00 SEE SHEET 27
MATCHLINE –L1– STA 542+00.00 SEE SHEET 29

530
535
540

ITO' CP&L UTILITY EASEMENT
MB 41 PG 98
CP&L DRAWING = RW-D-1685 SHEET 1-4

8" SOIL

WOODS

WOVEN WIRE FENCE

RIP RAP CL B
OUTLET PROTECTION
2 TONS
7 SY GEOTEXTILE

118' RCP (+/-)

2GI

FS
SEE DETAIL 28E

GRADE TO DRAIN

TOE PROTECTION
SEE DETAIL 28A

RIP RAP CL B
OUTLET PROTECTION
1 TONS
28 SY GEOTEXTILE

LATERAL 'V' DITCH
SEE DETAIL 28B

LATERAL 'A' BASE DITCH
SEE DETAIL 28C

Q10 = 10cfs
V10 = 1.9fps

EXCAVATION IN WETLAND

FILL IN WETLAND

HW

LATERAL 3' BASE DITCH
SEE DETAIL 28D

RIP RAP CL B
OUTLET PROTECTION
3 TONS
10 SY GEOTEXTILE

PARKS FAMILY FORESTRY, LLC

29

NAD 83/NSRS 2007

DENOTES EXCAVATION IN WETLAND
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING

50' 0' 50' 100' 150'
GRAPHIC SCALE

SEE SHEET 28-1 FOR HORIZONTAL CURVE DATA

SEE SHEET 52 & 53 FOR –L1– PROFILE

9/29/2023
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PLOTTED: 29-SEP-2023

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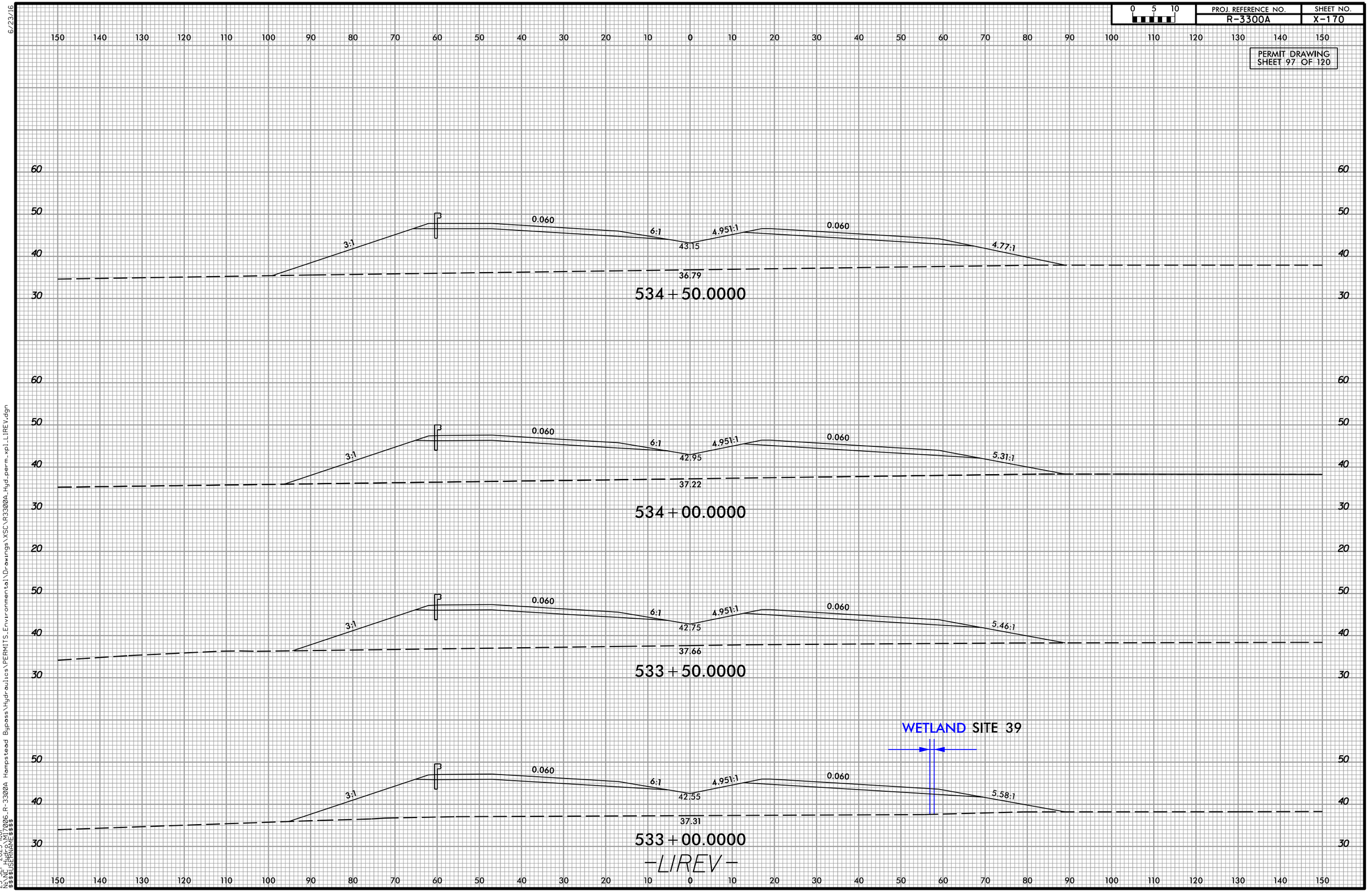
	R-3300A	X-170

PERMIT DRAWING
SHEET 97 OF 120



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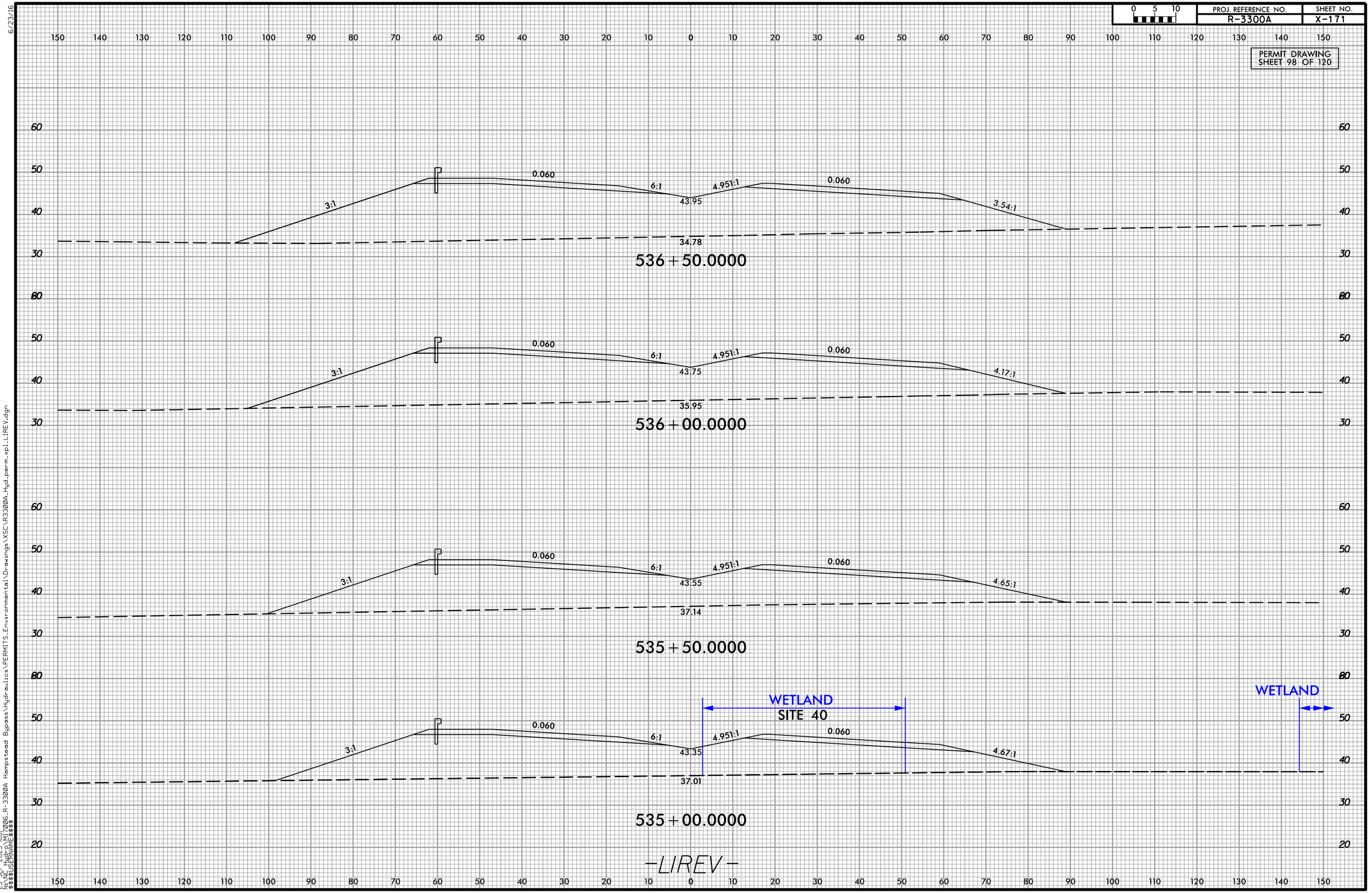
	R-3300A	X-171

PERMIT DRAWING
SHEET 98 OF 120



9252023
hturner
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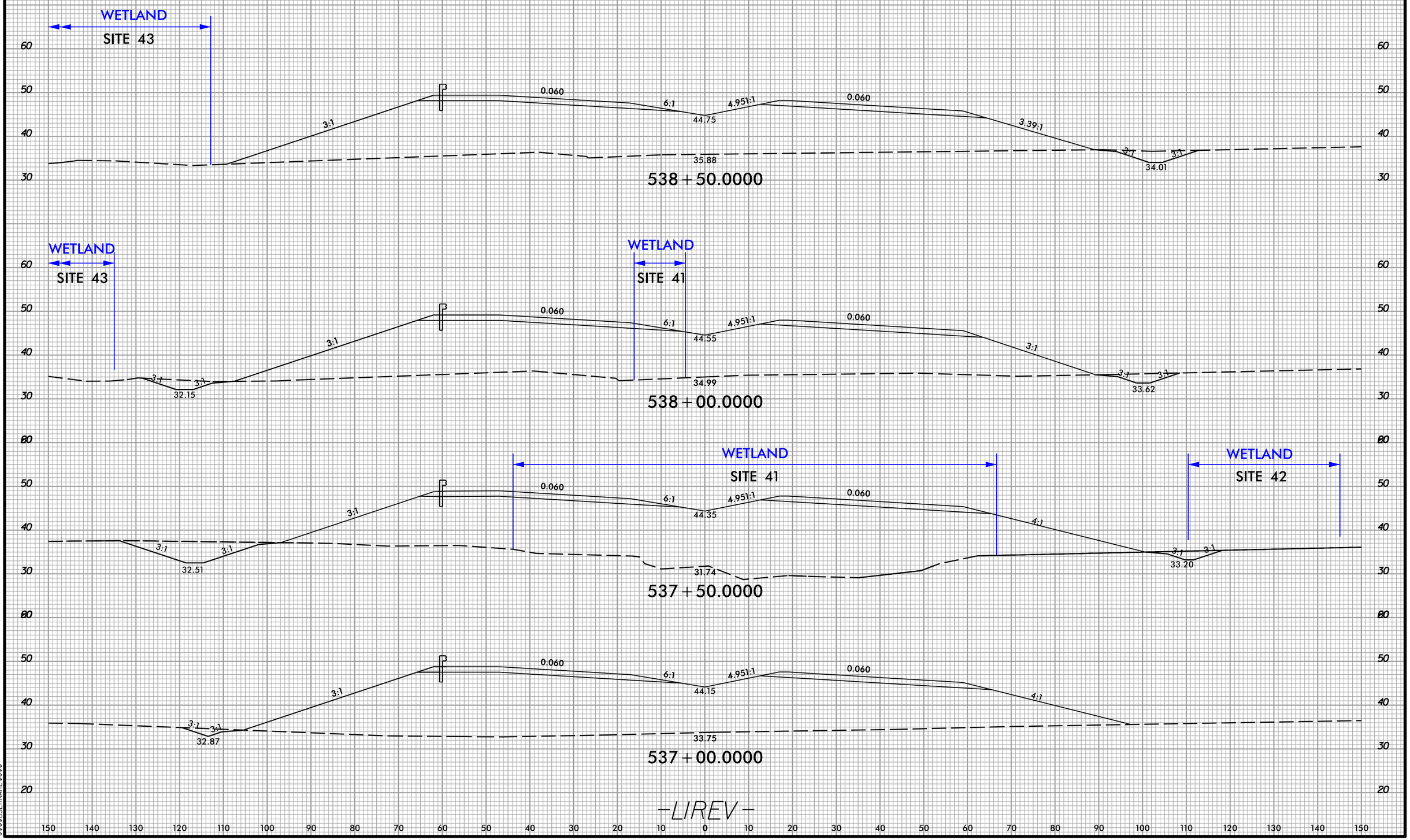
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-172

PERMIT DRAWING
SHEET 99 OF 120



6/23/16
9252023
hturner
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$$$$USERNAME$$$$

5/14/99

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. P-0029

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

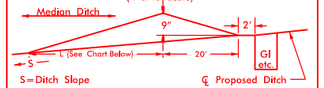
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	29
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 100 OF 120

NAD 83/NSRS 2007

DETAIL 29G
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

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

LIREV STA. 550+13 MED.
L1 STA. 554+49 MED.

* DO NOT BURY EQUALIZER PIPES

PARKS FAMILY FORESTRY, LLC

GERALD D. HARDISON, JR., & HARDISON RENTALS, LLC.

SITE 44

WOODS

WOVEN WIRE FENCE

GRADE TO DRAIN

SLOPE PROTECTION AT PIPE END SEE DETAIL 29J

LATERAL 'V' DITCH SEE DETAIL 29A

R/W TO BE ACQUIRE UNDER R-3300B

LATERAL 2' BASE DITCH SEE DETAIL 29B

LATERAL 4' BASE DITCH SEE DETAIL 29D

SPECIAL LATERAL 4' BASE DITCH SEE DETAIL 29E

SPECIAL LATERAL 2' BASE DITCH SEE DETAIL 29C

RIP RAP CL I OUTLET PROTECTION 26 TONS 50 SY GEOTEXTILE

RIP RAP AT EMBANKMENT SEE DETAIL 29F

RIP RAP CL B OUTLET PROTECTION 11 TONS 28 SY GEOTEXTILE

RIP RAP CL B OUTLET PROTECTION 3 TONS 10 SY GEOTEXTILE

FS SEE DETAIL 29G

PES

BM18

-L1- STA 542+00.00 SEE SHEET 28

-L1- STA 555+00.00 SEE SHEET 30

MATCHLINE -L1- STA 555+00.00

-LIREV-

-L1-

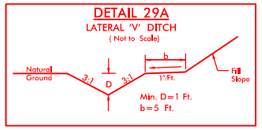
N 21°05'10" E 1886.00'

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

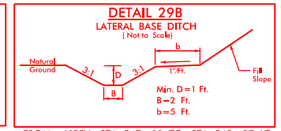
50' 0' 50' 100' 150'
GRAPHIC SCALE

DETAIL 29A
LATERAL 'V' DITCH
(Not to Scale)



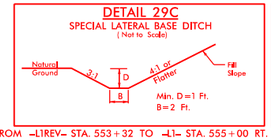
FROM -LIREV- STA. 544+08 TO STA. 544+75 LT.
FROM -LIREV- STA. 540+50 TO STA. 542+50 RT.
FROM -LIREV- STA. 542+93 TO STA. 544+71 RT.

DETAIL 29B
LATERAL BASE DITCH
(Not to Scale)



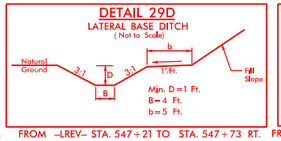
FROM -LIREV- STA. 547+00 TO STA. 549+87 LT.
FROM -LIREV- STA. 550+12 TO STA. 551+46 LT.
FROM -LIREV- STA. 551+85 TO STA. 553+62 LT.

DETAIL 29C
SPECIAL LATERAL BASE DITCH
(Not to Scale)



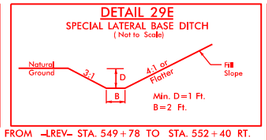
FROM -LIREV- STA. 553+32 TO -L1- STA. 555+00 RT.

DETAIL 29D
LATERAL BASE DITCH
(Not to Scale)



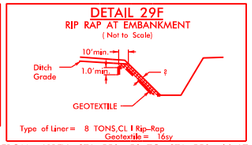
FROM -LIREV- STA. 547+21 TO STA. 547+73 RT.

DETAIL 29E
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM -LIREV- STA. 549+78 TO STA. 552+40 RT.

DETAIL 29F
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 8 TONS,CL I Rip-Rap
Geotextile = 16sy

FROM -LIREV- STA. 553+50 TO STA. 553+66 LT.

SEE SHEET 53 FOR -L1- PROFILE

9/29/2023
N:\NC Hydro\MI7006_R-3300A Hampstead Bypass\Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_29.dgn
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5/14/99

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. P-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

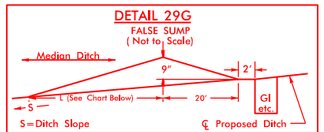
Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	29
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 101 OF 120

DETAIL 29G
FALSE SUMP
(Not to Scale)



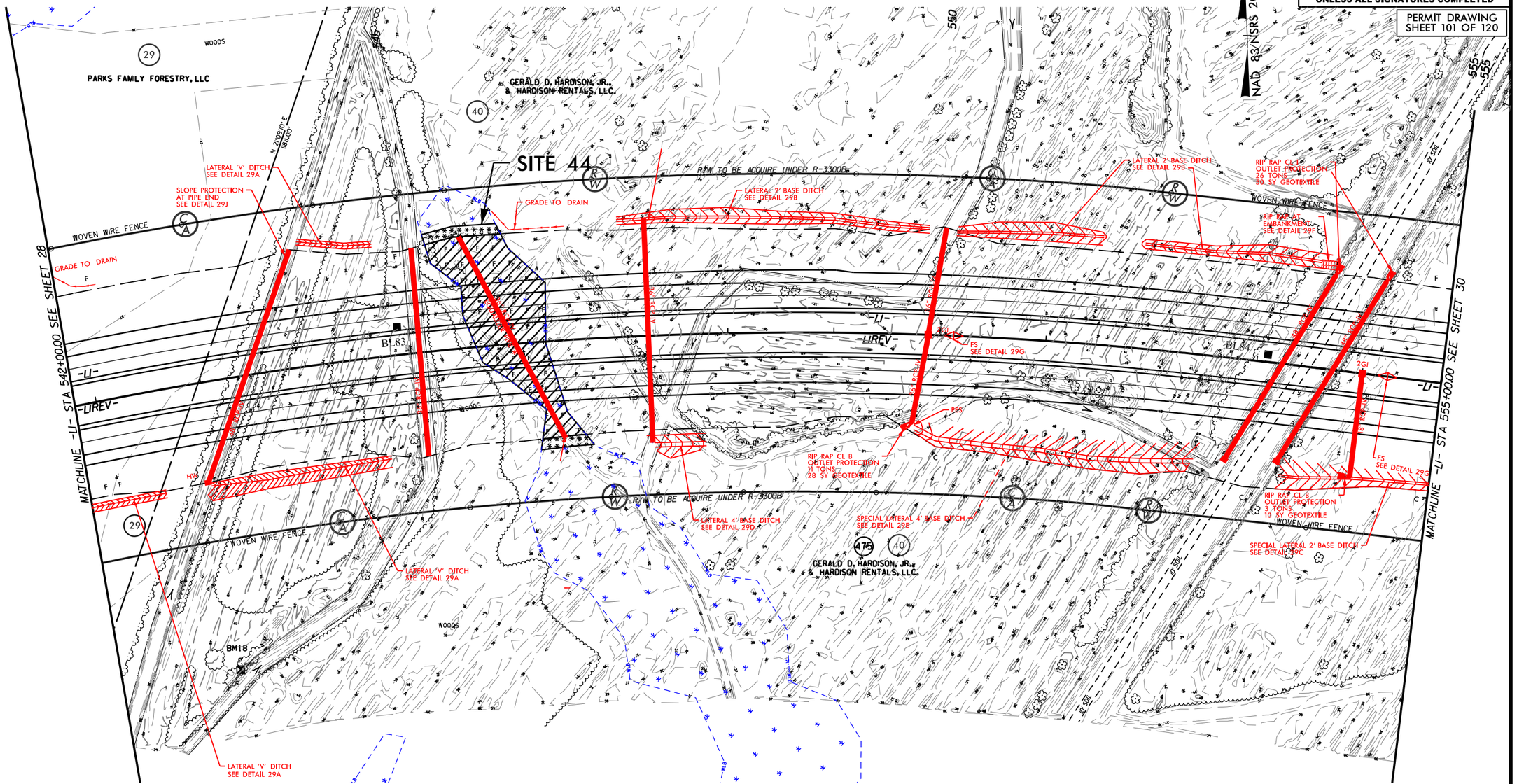
S=Ditch Slope ℄ Proposed Ditch

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

LIREV STA. 550+13 MED.
L1 STA. 554+49 MED.

* DO NOT BURY EQUALIZER PIPES

NAD 83/NSRS 2007

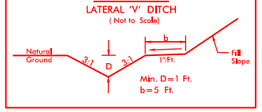


DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

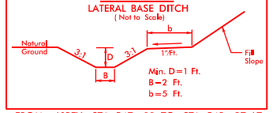
50' 0' 50' 100' 150'
GRAPHIC SCALE

DETAIL 29A
LATERAL 'V' DITCH
(Not to Scale)



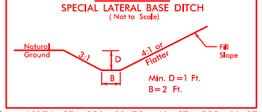
FROM -L1REV- STA. 544+08 TO STA. 544+75 LT.
FROM -L1REV- STA. 540+50 TO STA. 542+50 RT.
FROM -L1REV- STA. 542+93 TO STA. 544+71 RT.

DETAIL 29B
LATERAL BASE DITCH
(Not to Scale)



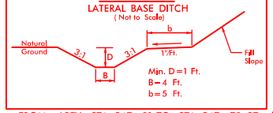
FROM -L1REV- STA. 547+00 TO STA. 549+87 LT.
FROM -L1REV- STA. 550+12 TO STA. 551+46 LT.
FROM -L1REV- STA. 551+85 TO STA. 553+62 LT.

DETAIL 29C
SPECIAL LATERAL BASE DITCH
(Not to Scale)



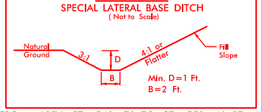
FROM -L1REV- STA. 553+32 TO -L1- STA. 555+00 RT.

DETAIL 29D
LATERAL BASE DITCH
(Not to Scale)



FROM -L1REV- STA. 547+21 TO STA. 547+73 RT.

DETAIL 29E
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM -L1REV- STA. 549+78 TO STA. 552+40 RT.

DETAIL 29F
RIP RAP AT EMBANKMENT
(Not to Scale)

Type of Liner= 8 TONS,CL I Rip-Rap
Geotextile = 16sy

FROM -L1REV- STA. 553+50 TO STA. 553+66 LT.

SEE SHEET 53 FOR -L1- PROFILE

9/29/2023
Hydraulics
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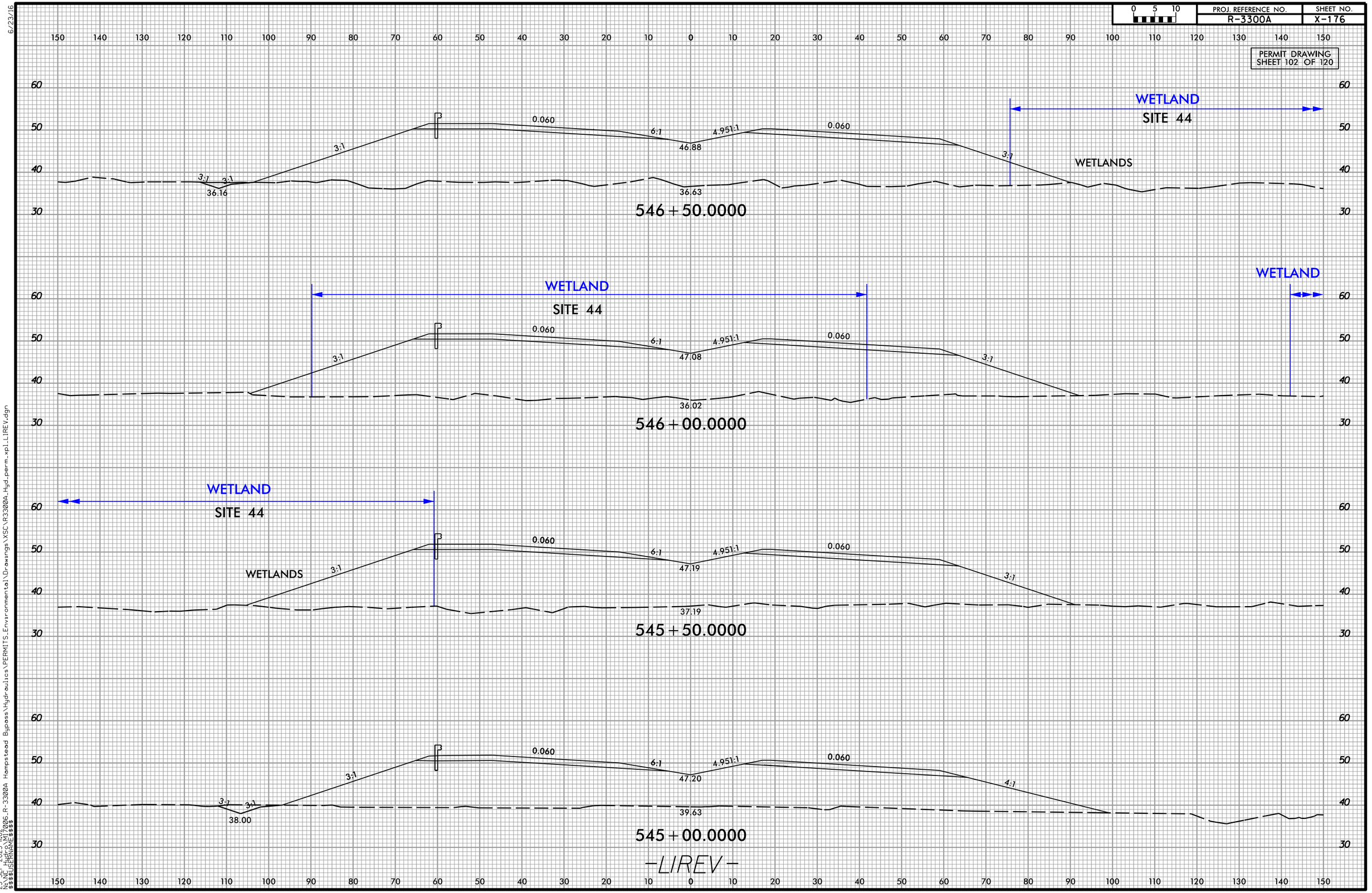
29-SEP-2023 13:12
User:
Bypass_Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_29_con.dgn

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-176

PERMIT DRAWING
SHEET 102 OF 120



6/23/16
9/25/2023
hturner
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25-SEP-2023 11:02
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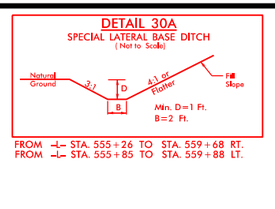
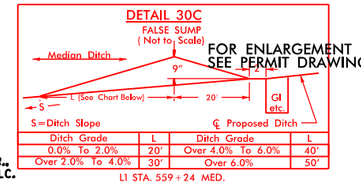
5/14/99



FROM –L– STA. 555+26 TO STA. 559+68 RT.
FROM –L– STA. 555+85 TO STA. 559+88 LT.

NAD 83/NSRS 2007

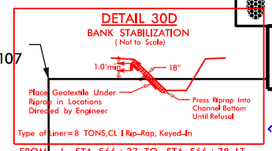
* DO NOT BURY EQUALIZER PIPES



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

L1 STA. 559+24 MED.

FOR ENLARGEMENT
SEE PERMIT DRAWING SHEET 107



Type of Liner=8 TONS,CL I Rip-Rap, Keyed-In

FROM –L– STA. 566+37 TO STA. 566+78 LT.

40
GERALD D. HARDISON, JR.,
& HARDISON RENTALS, LLC.

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0929

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Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	30

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 103 OF 120

560
565
555

WOODS

SITE 46

EXCAVATION IN WETLAND

TEMPORARY FILL IN WETLAND

FILL IN WETLAND

WOVEN WIRE FENCE

R/W TO BE ACQUIRE UNDER R-3300B

SPECIAL LATERAL 2' BASE DITCH
SEE DETAIL 30A

BANK STABILIZATION CL I RIP RAP SEE DETAIL 30D

BANK STABILIZATION CL I RIP RAP SEE DETAIL 30B

136 RB F
105.2 F
END FENCE

2GI

FS

FS
SEE DETAIL 30C

18" RCP-IV

W2 ELBOWS

-L1-

S 80° 47' 56.6" E

MATCHLINE -L1- STA 555+00.00 SEE SHEET 29

MATCHLINE -L1- STA 567+00.00 SEE SHEET 31

RIP RAP CL B
OUTLET PROTECTION
3 TONS
10 SY GEOTEXTILE

RIP RAP CL B
OUTLET PROTECTION
2 TONS
7 SY GEOTEXTILE

MECHANIZED CLEARING

SITE 45

SITE 45
ENLARGEMENT

WLB

C

F

DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

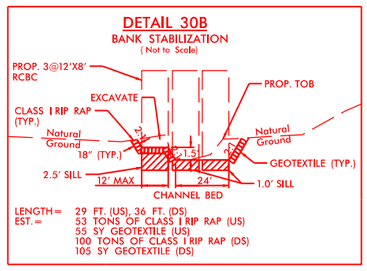
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

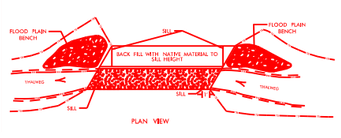
DENOTES MECHANIZED CLEARING

DENOTES TEMPORARY FILL IN WETLAND

50' 0' 50' 100' 150'
GRAPHIC SCALE

20' 0' 20' 40' 60'
GRAPHIC SCALE





SEE SHEET 53 & 54 FOR –L1– PROFILE

9/29/2023
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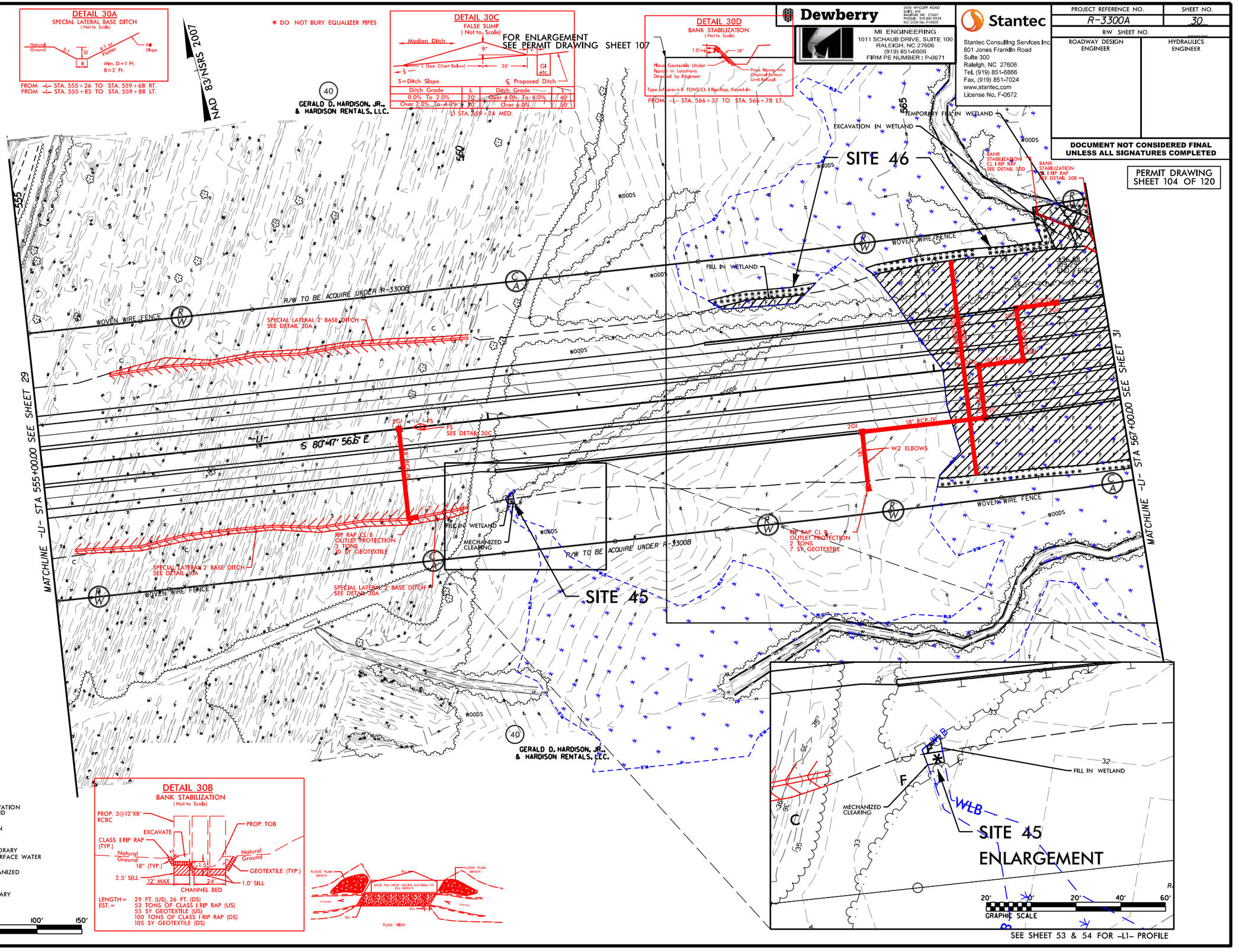
User: ALEBRON2
Hampstead Bypass Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_30.dgn

5/14/99



9/29/2023
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29-SEP-2023 13:12
J. Bypass\Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_30_con.dgn

5/14/99

50' 0' 50' 100' 150'
GRAPHIC SCALE

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

NAD 83/NSRS 2007

END PROJECT R-3300A -LI- STA. 578+00.00
BEGIN PROJECT R-3300B -LI- STA. 578+00.00

570

575

WOODS

BANK STABILIZATION CL I RIP RAP SEE DETAIL 31A

RIP RAP CL B OUTLET PROTECTION

SITE 46

EXCAVATION IN WETLAND

FOR ENLARGEMENT SEE PERMIT DRAWING SHEET 107

40 GERALD D. HARDISON, JR., & HARDISON RENTALS, LLC.

LATERAL 4' BASE DITCH SEE DETAIL 31E

LATERAL 3' BASE DITCH SEE DETAIL 31F

RIP RAP CL B OUTLET PROTECTION 3 TONS 10 SY GEOTEXTILE

B SOIL

R/W TO BE ACQUIRE UNDER R-3300B

W2 ELBOWS

SPECIAL LATERAL 2' BASE DITCH SEE DETAIL 31D

RIP RAP CL B OUTLET PROTECTION 2 TONS 7 SY GEOTEXTILE

18" RCP-LN

2GI

FS SEE DETAIL 31G

-LI-

MATCHLINE -LI- STA. 567+00.00 SEE SHEET 30

TOE

TOE PROTECTION SEE DETAIL 31C

LATERAL 2' BASE DITCH SEE DETAIL 31B

TEMPORARY FILL IN WETLAND

EXCAVATION IN WETLAND

BANK STABILIZATION CL I RIP RAP SEE DETAIL 31A

BANK STABILIZATION CL I RIP RAP SEE DETAIL 31H

40 GERALD D. HARDISON, JR., & HARDISON RENTALS, LLC.

R/W TO BE ACQUIRE UNDER R-3300B

DETAIL 31A
BANK STABILIZATION
(Not to Scale)

PROP. 3@12'X8' RCBC
EXCAVATE
CLASS I RIP RAP (TYP.)
PROP. TOB
Natural Ground
18" (TYP.)
GEOTEXTILE (TYP.)
2.5' SILL
12' MAX
24'
1.0' SILL
CHANNEL BED

LENGTH = 29 FT. (US), 36 FT. (DS)
EST. = 53 TONS OF CLASS I RIP RAP (US)
55 SY GEOTEXTILE (US)
100 TONS OF CLASS I RIP RAP (DS)
105 SY GEOTEXTILE (DS)

DETAIL 'PPP'
NOT TO SCALE
SKEWED MULTI-BARREL CULVERT LOW FLOW CHANNEL, SILLS AND FLOOD PLAIN BENCH

NOTES:
1) NATIVE MATERIAL BETWEEN SILLS IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS NATIVE TO THE PROJECT SITE AND NOT BROUGHT TO THE PROJECT SITE DURING CONSTRUCTION. ONLY MATERIAL THAT IS EXCAVATED FROM THE STREAM BED MAY BE USED TO LINE THE LOW FLOW CULVERT BARREL (BARRELS). IF RIP-RAP IS USED TO LINE THE LOW FLOW CULVERT BARREL (BARRELS), NATIVE BED MATERIAL BY THE HIGH FLOW CULVERT BARREL(S) IF RIP-RAP IS USED TO LINE THE HIGH FLOW CULVERT BARREL(S), NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FILL VOIDS IN THE RIP-RAP AND TO PROVIDE A FISH PASSAGE. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.
2) SILLS ARE TO BE 1.0 FT. WIDE, CAST SEPARATELY AND ATTACHED BY DOWELS.
3) TOP OF LOW FLOW SILLS SHOULD MATCH STREAM BED ELEVATION IN LOW FLOW CHANNEL OF STREAM. (THALWEG)
4) DO NOT SET ELEVATION OF HIGH SILL ABOVE BANK FULL.
5) NO BAFFLES REQUIRED DUE TO FLAT SLOPES. ALLOW TO SILT IN BETWEEN SILLS.

HIGH SILL
2.5'
1.0'
SILLS AT INLET AND OUTLET
FLOOD PLAIN BENCH
SILL
BACK FILL WITH NATIVE MATERIAL TO SILL HEIGHT
THALWEG
PLAN VIEW

PROP. 3@12'X8' RCBC NOTES:

CHANNEL IMPROVEMENTS, BANK STABILIZATION SEE DETAIL WITH CLASS I RIP RAP

REALIGN DS CHANNEL TO FLOW THRU EAST BARRELS

BACKFILL NORMAL FLOW BARREL WITH 1' NATIVE MATERIAL SEE SKEWED MULTI-BARREL CULVERT LOW FLOW CHANNEL SILLS AND FLOOD PLAIN BENCH DETAIL 'PPP'

DETAIL 31B
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 3:1, D, 3:1, b, 1'/Ft., Fill Slope, B
Min. D=1 Ft.
B=2 Ft.
b=5 Ft.

FROM -L- STA. 568+12 TO STA. 569+50 RT.

DETAIL 31C
TOE PROTECTION
(Not to Scale)
Natural Ground, b, 3:1 or Flatter Fill Slope, d
d=1 Ft.
b=3 Ft.
Geotextile
Type of Liner= CL B Rip-Rap

FROM -L- STA. 569+50 TO STA. 570+50 RT.

DETAIL 31D
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 3:1, D, 3:1, b, 1'/Ft., 4:1 or Flatter, Fill Slope, B
Min. D=1 Ft.
B=2 Ft.

FROM -L- STA. 575+50 TO STA. 578+00 RT.
FROM -L- STA. 572+00 TO STA. 574+68 LT.

DETAIL 31E
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 3:1, D, 3:1, b, 1'/Ft., Fill Slope, B
Min. D=1 Ft.
B=4 Ft.
b=5 Ft.

FROM -L- STA. 567+39 TO STA. 570+50 LT.

DETAIL 31F
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 3:1, D, 4:1 or Flatter, Fill Slope, B
Min. D=1 Ft.
B=3 Ft.

FROM -L- STA. 570+50 TO STA. 572+00 LT.

DETAIL 31G
FALSE SUMP
(Not to Scale)
Median Ditch
9"
2'
S
L (See Chart Below)
20'
GI etc.
℄ Proposed Ditch
S=Ditch Slope

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

L1 STA. 567+76 MED.
L1 STA. 571+76 MED.
L1 STA. 577+24 MED.

DETAIL 31H
BANK STABILIZATION
(Not to Scale)
1.0' min.
18"
Place Geotextile Under Riprap in Locations Directed by Engineer
Press Chan Until

Type of Liner=14 TONS,CL I Rip-Rap, Keyed-In

FROM -L- STA. 567+69 TO STA. 567+

SEE SHEET 54 FOR -L1- PROFILE

Dewberry
2650 WYCLIFF ROAD SUITE 410 RALEIGH, NC 27607 PHONE: 919.881.9929 NC COA No. P-0929
MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100 RALEIGH, NC 27606 (919) 851-6606 FIRM PE NUMBER : P-0671
Stantec
Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 105 OF 120

9/29/2023
Hydraulics
N:\NC Hydro\M17006_R-3300A Hampstead Bypass\Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_31.dgn
29-SEP-2023 14:04
Hampstead Bypass\Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_31.dgn
Preliminary Not For Construction

5/14/99

50' 0' 50' 100' 150'
GRAPHIC SCALE

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

NAD 83/NSRS 2007

END PROJECT R-3300A -LI- STA. 578+00.00
BEGIN PROJECT R-3300B -LI- STA. 578+00.00

570

575

BANK STABILIZATION CL I RIP RAP SEE DETAIL 31A

FOR ENLARGEMENT SEE PERMIT DRAWING SHEET 107

RIP RAP CL B OUTLET PROTECTION

WOODS

EXCAVATION IN WETLAND

SITE 46

40 GERALD D. HARDISON, JR., & HARDISON RENTALS, LLC.

LATERAL 4' BASE DITCH SEE DETAIL 31E

LATERAL 3' BASE DITCH SEE DETAIL 31F

RIP RAP CL B OUTLET PROTECTION 3 TONS 10 SY GEOTEXTILE

B SOIL

R/W TO BE ACQUIRE UNDER R-3300B

W/2 ELBOWS

SPECIAL LATERAL 2' BASE DITCH SEE DETAIL 31D

RIP RAP CL B OUTLET PROTECTION 2 TONS 7 SY GEOTEXTILE

18" RCP

2GI

FS SEE DETAIL 31G

-LI-

MATCHLINE -LI- STA 567+00.00 SEE SHEET 30

TOE PROTECTION SEE DETAIL 31C

TOE

TOB

LATERAL 2' BASE DITCH SEE DETAIL 31B

TEMPORARY FILL IN WETLAND

EXCAVATION IN WETLAND

BANK STABILIZATION CL I RIP RAP SEE DETAIL 31A

BANK STABILIZATION CL I RIP RAP SEE DETAIL 31H

SPECIAL LATERAL 2' BASE DITCH SEE DETAIL 31D

R/W TO BE ACQUIRE UNDER R-3300B

40 GERALD D. HARDISON, JR., & HARDISON RENTALS, LLC.

TEMPORARY FILL IN WETLAND

EXCAVATION IN WETLAND

PROP. 3@12'X8' RCBC NOTES:

CHANNEL IMPROVEMENTS, BANK STABILIZATION SEE DETAIL WITH CLASS I RIP RAP

REALIGN DS CHANNEL TO FLOW THRU EAST BARRELS

BACKFILL NORMAL FLOW BARREL WITH 1' NATIVE MATERIAL SEE SKEWED MULTI-BARREL CULVERT LOW FLOW CHANNEL SILLS AND FLOOD PLAIN BENCH DETAIL 'PPP'

DETAIL 31A
BANK STABILIZATION
(Not to Scale)

PROP. 3@12'X8' RCBC
EXCAVATE
CLASS I RIP RAP (TYP.)
PROP. TOB
Natural Ground
18" (TYP.)
Natural Ground
GEOTEXTILE (TYP.)
2.5' SILL
12' MAX
24'
1.0' SILL
CHANNEL BED

LENGTH = 29 FT. (US), 36 FT. (DS)
EST. = 53 TONS OF CLASS I RIP RAP (US)
55 SY GEOTEXTILE (US)
100 TONS OF CLASS I RIP RAP (DS)
105 SY GEOTEXTILE (DS)

DETAIL 'PPP'
SKEWED MULTI-BARREL CULVERT LOW FLOW CHANNEL,SILLS AND FLOOD PLAIN BENCH
(NOT TO SCALE)

*NOTES:
1) NATIVE MATERIAL BETWEEN SILLS IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS NATIVE TO THE PROJECT SITE AND NOT BROUGHT TO THE PROJECT SITE DURING CONSTRUCTION. ONLY MATERIAL THAT IS EXCAVATED FROM THE STREAM BED MAY BE USED TO LINE THE LOW FLOW CULVERT BARREL REPLACE THE NATIVE MATERIAL THAT IS LOST FROM BED MATERIAL BY THE HIGH FLOW CULVERT BARRELS) IF RIP-RAP IS USED TO LINE THE HIGH FLOW CULVERT BARRELS, NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FILL VOIDS. THE USE OF GEOTEXTILE OR OTHER LINING MATERIAL TO PREVENT PASSAGE WITH NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.
2) SILLS ARE TO BE 1.0 FT. WIRE CAST SEPARATELY AND ATTACHED BY DOWELS.
3) TOP OF LOW FLOW SILLS SHOULD MATCH STREAM BED ELEVATION IN LOW FLOW CHANNEL OF STREAM. (THALWEG)
4) DO NOT SET ELEVATION OF HIGH SILL ABOVE BANK FULL.
5) NO BAFFLES REQUIRED DUE TO FLAT SLOPES. ALLOW TO SILT IN BETWEEN SILLS.

HIGH SILL
2.5'
1.0'
1.0'
SILLS AT INLET AND OUTLET

FLOOD PLAIN BENCH
SILL
BACK FILL WITH NATIVE MATERIAL TO SILL HEIGHT
THALWEG
PLAN VIEW

DETAIL 31B
LATERAL BASE DITCH
(Not to Scale)

Natural Ground
3:1
D
3:1
1'/Ft.
b
Fill Slope
B
Min. D=1 Ft.
B=2 Ft.
b=5 Ft.

FROM -L- STA. 568+12 TO STA. 569+50 RT.

DETAIL 31C
TOE PROTECTION
(Not to Scale)

Natural Ground
b
3:1 or Flatter
Fill Slope
d
d=1 Ft.
b=3 Ft.
Geotextile
Type of Liner= CL B Rip-Rap

FROM -L- STA. 569+50 TO STA. 570+50 RT.

DETAIL 31D
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground
3:1
D
3:1
1'/Ft.
b
Fill Slope
B
Min. D=1 Ft.
B=2 Ft.
b=5 Ft.

FROM -L- STA. 575+50 TO STA. 578+00 RT.
FROM -L- STA. 572+00 TO STA. 574+68 LT.

DETAIL 31E
LATERAL BASE DITCH
(Not to Scale)

Natural Ground
3:1
D
3:1
1'/Ft.
b
Fill Slope
B
Min. D=1 Ft.
B=4 Ft.
b=5 Ft.

FROM -L- STA. 567+39 TO STA. 570+50 LT.

DETAIL 31F
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground
3:1
D
3:1 or Flatter
Fill Slope
B
Min. D=1 Ft.
B=3 Ft.

FROM -L- STA. 570+50 TO STA. 572+00 LT.

DETAIL 31G
FALSE SUMP
(Not to Scale)

Median Ditch
9"
2'
S
L (See Chart Below)
20'
GI etc.
℄ Proposed Ditch
S=Ditch Slope

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

L1 STA. 567+76 MED.
L1 STA. 571+76 MED.
L1 STA. 577+24 MED.

DETAIL 31H
BANK STABILIZATION
(Not to Scale)

1.0' min.
18"
Place Geotextile Under Riprap in Locations Directed by Engineer
Press Chan Until

Type of Liner=14 TONS,CL I Rip-Rap, Keyed-In

FROM -L- STA. 567+69 TO STA. 567+

SEE SHEET 54 FOR -L1- PROFILE

Dewberry
2610 WYCLIFF ROAD SUITE 410 RALEIGH, NC 27607 PHONE: 919.881.9939 NC COA No. P-0029

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 106 OF 120

9/29/2023
Microstation V8i
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29-SEP-2023 14:04
Bypass_HydroUsers
$(cell_scale) 1
$(cell_angle) 0

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0029

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	E-30_31

RW SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING
SHEET 107 OF 120

5/14/99

NAD 83/NSRS 2007

SITE 46

SITE 46 ENLARGEMENT

TEMPORARY FILL IN WETLAND

EXCAVATION IN WETLAND

WOODS

565

570

8" SOIL

W/2 ELBOWS

18" RCP-IV

2GI

18" RCP-IV @17.8% SLOPE

SEE DETAIL 31G

LATERAL 2' BASE DITCH
SEE DETAIL 31B

BANK STABILIZATION
CL I RIP RAP
SEE DETAIL 31A

TDE

DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES MECHANIZED CLEARING

DENOTES TEMPORARY FILL IN WETLAND

30' 0' 30' 60' 90'
GRAPHIC SCALE

DETAIL
(NOT TO
SKEWED MULTI-
LOW FLOW
AND FLOOD

9/29/2023
lhunter
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d Bypass\Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_E3031.dgn
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Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

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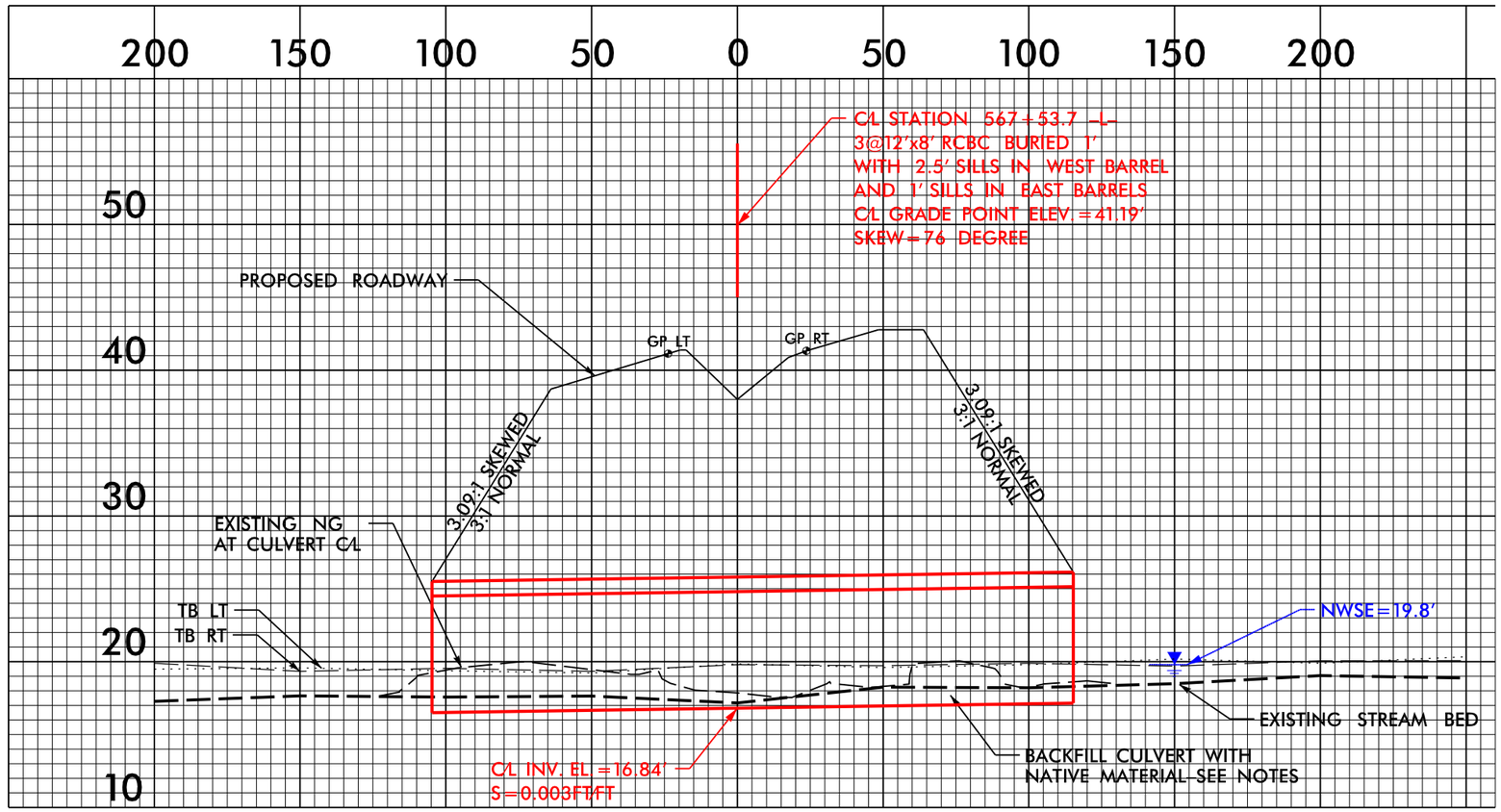
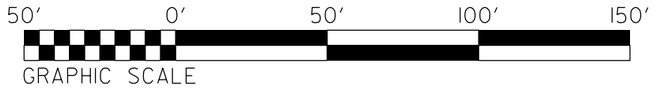
PERMIT DRAWING
SHEET 108 OF 120

SITE 46





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00A Hampstead
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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-165

PERMIT DRAWING
SHEET 109 OF 120

WETLAND
SITE 46

38.36 | 0.060 | 4.952:1 | 6.001:1 | 0.060 | 4:1 | 3:1 | 3:1
37.28
WETLANDS | WETLANDS
566+50.0000

WETLAND
SITE 46

38.5 | 0.050 | 5.133:1 | 5.998:1 | 0.050 | 4:1 | 3:1 | 3:1
37.20
WETLANDS | WETLANDS
566+00.0000

WETLAND
SITE 46

38.6 | 0.039 | 5.344:1 | 6:1 | 0.039 | 4:1 | 3:1 | 3:1
37.26
WETLANDS | WETLANDS
565+50.0000

WETLAND
SITE 46

WETLAND
SITE 46

39. | 0.030 | 5.514:1 | 6.001:1 | 0.028 | 4:1 | 3:1 | 3:1
37.43
WETLANDS | WETLANDS
20.71
565+00.0000

—L1—

6/23/16

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$$$$USERNAME$$$$

5/14/99

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. P-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	37
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 110 OF 120

NAD 83/NSRS 2007

30' DRAINAGE EASEMENT MB 52 PG 67

EXISTING R/W

SR 1573 HARRISON CREEK RD 20' BST

S 11°30'45" E HARRISON CREEK RD

-Y35-

-Y35DET- PC Sta. 12+10.00
-Y35- PC Sta. 12+10.00

BEGIN CONSTRUCTION -Y35- Sta.12+00.00

27B LAURIE G. PEREGOY

GARRETT BUTLER, ET AL

CLIFTON GAITHER ET AL

27A

27 CLIFTON GAITHER ET AL

26 DNG PROPERTIES, INC.

29 PARKS FAMILY FORESTRY, LLC

28 ISLAND CREEK BAPTIST CHURCH

ISLAND CREEK MISSIONARY BAPTIST CHURCH
ISBK CHURCH

24 CAMERON COMPANY LIMITED PARTNER

2 SFD

LANDSCAPE AREA

RETAIN IRRIGATION VALVE BOWM

RETAIN EXISTING WM

18' CONC DRIVE

18" RCP

15" RCP

24" RCP

30" RCP

6" PVC

6" WOOD HEADWALL

REMOVE

RIP RAP CL I OUTLET PROTECTION 11 TONS 28 SY GEOTEXTILE

SPECIAL LATERAL 2' BASE DITCH SEE DETAIL 37A

SPECIAL LATERAL 'V' DITCH SEE DETAIL 37B

PROP END SBG -Y35- STA 17+10.03 LT

RIP RAP CL B OUTLET PROTECTION 2 TONS 7 SY GEOTEXTILE W2 FABOWS 2GI

LATERAL 2' BASE DITCH SEE DETAIL 37C

EXCAVATION IN WETLAND

FILL IN WETLAND

Q10=7cfs
V10=1.6fps

Q10=5cfs
V10=1.6fps

-Y35DET-
SLOPE STAKE

-Y35DET-
SEE PERMIT DRAWING SHEET 113

SEE SHEET 27
MATCHLINE -Y35- STA 19+00.00

SITE 47

SEE SHEET 64 FOR -Y35- PROFILE

DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND

50' 0' 50' 100' 150'
GRAPHIC SCALE

DETAIL 37A
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, B, 4:1 or Flatter, Fill Slope
Min. D=1 Ft.
B=2 Ft.

FROM -Y35- STA. 12+50 TO STA. 14+17 LT.
FROM -Y35- STA. 12+75 TO STA. 13+50 RT.
FROM -Y35- STA. 14+23 TO STA. 17+00 RT.

DETAIL 37B
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1 or Flatter, Fill Slope
Min. D=1 Ft.

FROM -Y35- STA. 14+33 TO STA. 16+50 LT.

DETAIL 37C
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1, B, b, 1'Ft., Fill Slope
Min. D=1 Ft.
B=2 Ft.
b=5 Ft.

FROM -Y35- STA. 17+00 TO STA. 19+50 RT.

9/29/2023
N:\NC Hydro\M17006_R-3300A Hampstead Bypass\Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_37.dgn
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User:
Hampstead Bypass\Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_37.dgn
PSAC 11 FEB 2021

5/14/99

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. P-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	37
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 111 OF 120

NAD 83/NSRS 2007

30' DRAINAGE EASEMENT MB 52 PG 67

27B LAURIE G. PEREGOY

GARRETT BUTLER, ET AL

CLIFTON GAITHER ET AL

27A

27

CLIFTON GAITHER ET AL

ISLAND CREEK MISSIONARY BAPTIST CHURCH

ISBK CHURCH

29 PARKS FAMILY FORESTRY, LLC

28 ISLAND CREEK BAPTIST CHURCH

26 DNG PROPERTIES, INC.

24 CAMERON COMPANY LIMITED PARTNER

72" WOOD

2 SFD

BEGIN CONSTRUCTION –Y35– Sta.12+00.00

LANDSCAPE AREA

RETAIN IRRIGATION VALVE

18" CONC DRIVE

RETAIN WM

18" RCP

15" RCP

SR 1573 HARRISON CREEK RD 20' BST

EXISTING R/W

S 11° 30' 41.5" E HARRISON CREEK RD

–Y35–

SR 1573

RETAIN

15" SOIL

60" CMP

GATE

POND

–Y35DET– PC Sta. 12+10.00

–Y35– PC Sta. 12+10.00

CONC

SOIL

ISMTLBUS

RIP RAP CL I OUTLET PROTECTION 11 TONS 28 SY GEOTEXTILE

SPECIAL LATERAL 2' BASE DITCH SEE DETAIL 37A

REMOVE

6" WOOD HEADWALL

30" RCP

24" RCP

EXCAVATION IN WETLAND

Q10=7cfs
V10=1.6fps

FILL IN WETLAND

SPECIAL LATERAL 'V' DITCH SEE DETAIL 37B

PROP END SBG –Y35– STA 17+10.03 LT

6" PVC

RIP RAP CL B OUTLET PROTECTION 2 TONS 7 SY GEOTEXTILE

W2 FARROWS

2GI

LATERAL 2' BASE DITCH SEE DETAIL 37C

–Y35DET– SLOPE STAKE

–Y35DET– SEE PERMIT DRAWING SHEET 113

Q10=5cfs
V10=1.6fps

SEE SHEET 27

–Y35– STA 19+00.00 MATCHLINE

SITE 47

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

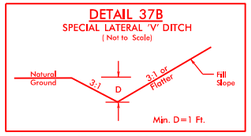
DENOTES EXCAVATION IN WETLAND

50' 0' 50' 100' 150'
GRAPHIC SCALE

DETAIL 37A
SPECIAL LATERAL BASE DITCH
(Not to Scale)

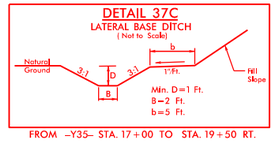
FROM –Y35– STA. 12+50 TO STA. 14+17 LT.
FROM –Y35– STA. 12+75 TO STA. 13+50 RT.
FROM –Y35– STA. 14+23 TO STA. 17+00 RT.

DETAIL 37B
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM –Y35– STA. 14+33 TO STA. 16+50 LT.

DETAIL 37C
LATERAL BASE DITCH
(Not to Scale)



FROM –Y35– STA. 17+00 TO STA. 19+50 RT.

SEE SHEET 64 FOR –Y35– PROFILE

9/29/2023
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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-254

PERMIT DRAWING
SHEET 112 OF 120

-Y35 DET-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

40 30 20

16+00.00

0.020 3:1 34.07

15+50.00

0.020 4:1 3:1 33.87 31.13

15+00.00

0.022 0.022 4:1 3:1 33.32

WETLAND

14+50.00

0.001 0.001 4:1 3:1

WETLAND
SITE 47

14+00.00

0.020 0.020 3:1 34.96

WETLAND
SITE 47

13+50.00

3:1 0.020 0.020 3:1 34.62

13+00.00

3:1 0.020 0.020 3:1 33.17

12+50.00

3:1 32.89

-Y35-

9/25/2023
hturner
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$$$$USERNAME$$$$

-Y35DET-

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. F-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	2B-4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 113 OF 120

5/14/99

NAD 83/NSRS 2007

CLIFTON GAITHER ET AL

LAURIE G. PEREGOY

GARRETT BUTLER, ET AL

CLIFTON GAITHER ET AL

-Y35- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y35DET- Sta. 12+00.00

-Y35- PC Sta. 14+08.43

ISLAND CREEK MISSIONARY BAPTIST CHURCH
ISBK CHURCH

ISLAND CREEK BAPTIST CHURCH

PARKS FAMILY FORESTRY, LLC

-L1- POT Sta. 522+94.58
-Y35- POC Sta. 22+90.50

-Y35DET- PT Sta. 21+10.55

-Y35DET- PC Sta. 12+10.00
-Y35- PC Sta. 12+10.00

-Y35DET- PRC Sta. 13+41.13

-Y35DET- PCC Sta. 14+86.65

-Y35DET- PRC Sta. 17+40.12

-Y35DET- PRC Sta. 19+39.88
END CONSTRUCTION

RIP RAP CL B
OUTLET PROTECTION
5 TONS
14 SY GEOTEXTILE

REMOVE 5 SF - 2 CY

GRADE TO DRAIN

SPECIAL LATERAL 2' BASE DITCH
SEE DETAIL 2B-A
ISMTL BUS

STD 2' BASE DITCH
SEE DETAIL 2B-B

Q10 = 7cfs
V10 = 1.5fps

Q10 = 4.1cfs
V10 = 1.3fps

RIP RAP CL B
OUTLET PROTECTION
2 TONS
1 SY GEOTEXTILE

RIP RAP CL B
OUTLET PROTECTION
2 TONS
7 SY GEOTEXTILE

SPECIAL LATERAL 2' BASE DITCH
SEE DETAIL 2B-A

CAMERON COMPANY LIMITED PARTNER

DNG PROPERTIES, INC.

WILLIAM J. VANTRAVIS, ET UX

SITE 47

-Y35- HARRISON CREEK RD

S 11°30'41.5"E

-L- SCALES SCHOOL RD

SR 1573 HARRISON CREEK RD

EXISTING R/W

CONC R/W DESTROYED

POND

GATE

WOODS

2 SFD

LANDSCAPE AREA

IRRIGATION VALVE

18" RCP

15" RCP

6" WOOD HEADWALL

6" PVC

12" CMP

72" WOOD

15" SOIL

18" SOIL

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

50' 0' 50' 100' 150'
GRAPHIC SCALE

DETAIL 2B-A
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1 or Flatter, Fill Slope, B
Min. D=1 Ft.
B=2 Ft.

FROM -Y35- STA. 12+80 TO STA. 13+00 RT.
FROM -Y35- STA. 14+25 TO STA. 19+00 RT.

DETAIL 2B-B
STANDARD BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1, Natural Ground, B
Min. D=1 Ft.
B=2 Ft.

FROM Y35 STA. 13+00 TO 13+32 RT
L=32', S=0.39%, DDE=27CY

9/29/2023
Horner
NAD 83/NSRS 2007
Hydro MT7006_R-3300A Hampstead Bypass\Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_2B-4.dgn
29-SEP-2023 13:13
Bypass_Hydraulics_PERMITS_Environmental\Drawings\R3300A_hyd_psh_2B-4.dgn

5/14/99

Dewberry
2650 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. P-0929

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

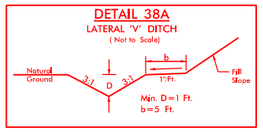
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	38
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 114 OF 120

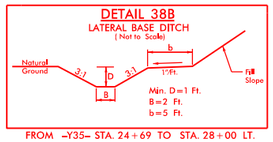
NAD 83/NSRS 2007

DETAIL 38A
LATERAL 'V' DITCH
(Not to Scale)



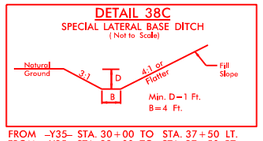
FROM –Y35– STA. 24+20 TO STA. 29+50 RT.

DETAIL 38B
LATERAL BASE DITCH
(Not to Scale)



FROM –Y35– STA. 24+69 TO STA. 28+00 LT.

DETAIL 38C
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM –Y35– STA. 30+00 TO STA. 37+50 LT.
FROM –Y35– STA. 33+00 TO STA. 37+50 RT.

JESSIE G. HAMPTON
31
LAURA L. GRADY, ET AL
32
PETER A. LAWRENCE
34
LESTER SHUFORD
35
ASHLEY GRAHAM, ET ALS
GERALD D. HARDISON, JR., & HARDISON RENTALS, LLC.
40
RAYMOND H. SIDBURY
BMBY17
ELEVATION = 38.98
N 228597
E 2371967
BY1 STATION 48+51.69
N 73°30'45" E DIST 89'
R/R SPIKE SET IN 18" PINE

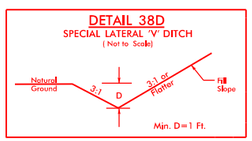
SITE 48

END CONSTRUCTION
-Y35- Sta. 37+50.00

SEE SHEET 27
MATCHLINE -Y35- STA 27+00.00 SEE SHEET 27

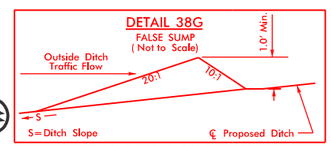
LATERAL 2' BASE DITCH SEE DETAIL 38E
RIP RAP CL B OUTLET PROTECTION 3 TONS 10 SY GEOTEXTILE
W/2 ELBOWS
PROP. END SBG -Y35- STA 28+01.10 LT
18"
2@
TDE
SPECIAL LATERAL 4' BASE DITCH SEE DETAIL 38C
ABAND
EXCAVATION IN WETLAND
R/W TO BE ACQUIRE UNDER R-3300B
SPECIAL LATERAL 4' BASE DITCH SEE DETAIL 38C
RETAIN
36" CMP
BY16
BY17
SR 1573
HARRISON CREEK DR
19.5' BST
18" RCP
WOODS
REMOVE
-Y35-
6" PVC
MARIE P. MILLER, ET AL
06
CONC R/W MONUMENT
CONC R/W DESTROYED
ECM DESTROYED
ECM BROKEN
60.00' EXISTING R/W
24" RCP
36" BK COLUMNS
10' SOIL
10' CONC
16' BK COLUMNS
RETAIN
WOODS
JSBKD
CONC
G
S
FS
SEE DETAIL 38G
SPECIAL LATERAL 'V' DITCH SEE DETAIL 38D
SPECIAL LATERAL 4' BASE DITCH SEE DETAIL 38C
JULIA S. JONES
UNDISTURBED AREA
30' ACCESS & UTILITY EASEMENT
33
LATERAL 'V' DITCH SEE DETAIL 38A
RETAIN
10' SOIL
18" RCP
TOE PROTECTION SEE DETAIL 38F
RETAIN
SHIRLEY W. HERMAN
STANDARD 4' BASE DITCH SEE DETAIL 38E
SPECIAL LATERAL 4' BASE DITCH SEE DETAIL 38C
SPECIAL LATERAL 'V' DITCH SEE DETAIL 38D
RIP RAP CL B OUTLET PROTECTION 3 TONS 10 SY GEOTEXTILE
18" RCP 'V'
SPECIAL LATERAL 'V' DITCH SEE DETAIL 38A
SPECIAL LATERAL 'V' DITCH SEE DETAIL 38D
RAYMOND H. SIDBURY
37
SEE SHE
EXISTING R/W
60.00'
15" RCP
RETAIN
GRAPEVINE
BRG BK= S 27°43'42.9"W
HTR
RUINS
WOODS
GERALD D. HARDISON, ET UX
36
MICHAEL A. BOOTH, ET UX
ISFD
S
ELIZABETH GRAHAM, ET AL
SPECIAL LATERAL 'V' DITCH SEE DETAIL 38D
S 24°00'185"W
MATCHLINE -SR3- STA 14+00.00 SEE SHEET 39

DETAIL 38D
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



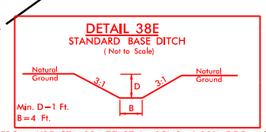
FROM –SR3– STA. 10+30 TO STA. 12+30 RT.
FROM –SR3– STA. 13+40 TO STA. 18+10 RT.
FROM –SR3– STA. 10+30 TO STA. 18+14 LT.

DETAIL 38G
FALSE SUMP
(Not to Scale)



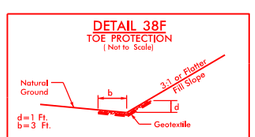
SR3 STA. 11+00 LT., TOP EL=38.00

DETAIL 38E
STANDARD BASE DITCH
(Not to Scale)



FROM Y35 STA. 33+77 RT. L=25', S=0.28%, DDE=4CY

DETAIL 38F
TOE PROTECTION
(Not to Scale)



FROM –Y35– STA. 30+90 TO STA. 31+25 RT.

DENOTES MECHANIZED CLEARING
DENOTES EXCAVATION IN WETLAND

50' 0' 50' 100' 150'
GRAPHIC SCALE

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA

SEE SHEET 64 FOR –Y35– PROFILE
SEE SHEET 65 FOR –SR3– PROFILE

9/29/2023
lhurner
N:\NC Hydro\M17006_R-3300A Hampstead Bypass\Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_38.dgn
29-SEP-2023 13:13
Hampstead Bypass Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_38.dgn

5/14/99

Dewberry
NC COA No. F-0929
MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
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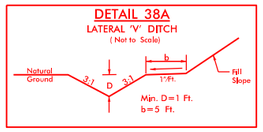
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	38
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 115 OF 120

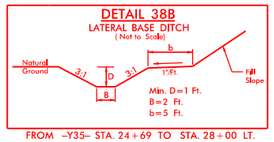
NAD 83/NSRS 2007

DETAIL 38A
LATERAL 'V' DITCH
(Not to Scale)



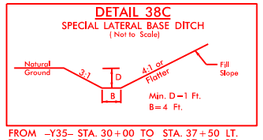
FROM –Y35– STA. 24+20 TO STA. 29+50 RT.

DETAIL 38B
LATERAL BASE DITCH
(Not to Scale)

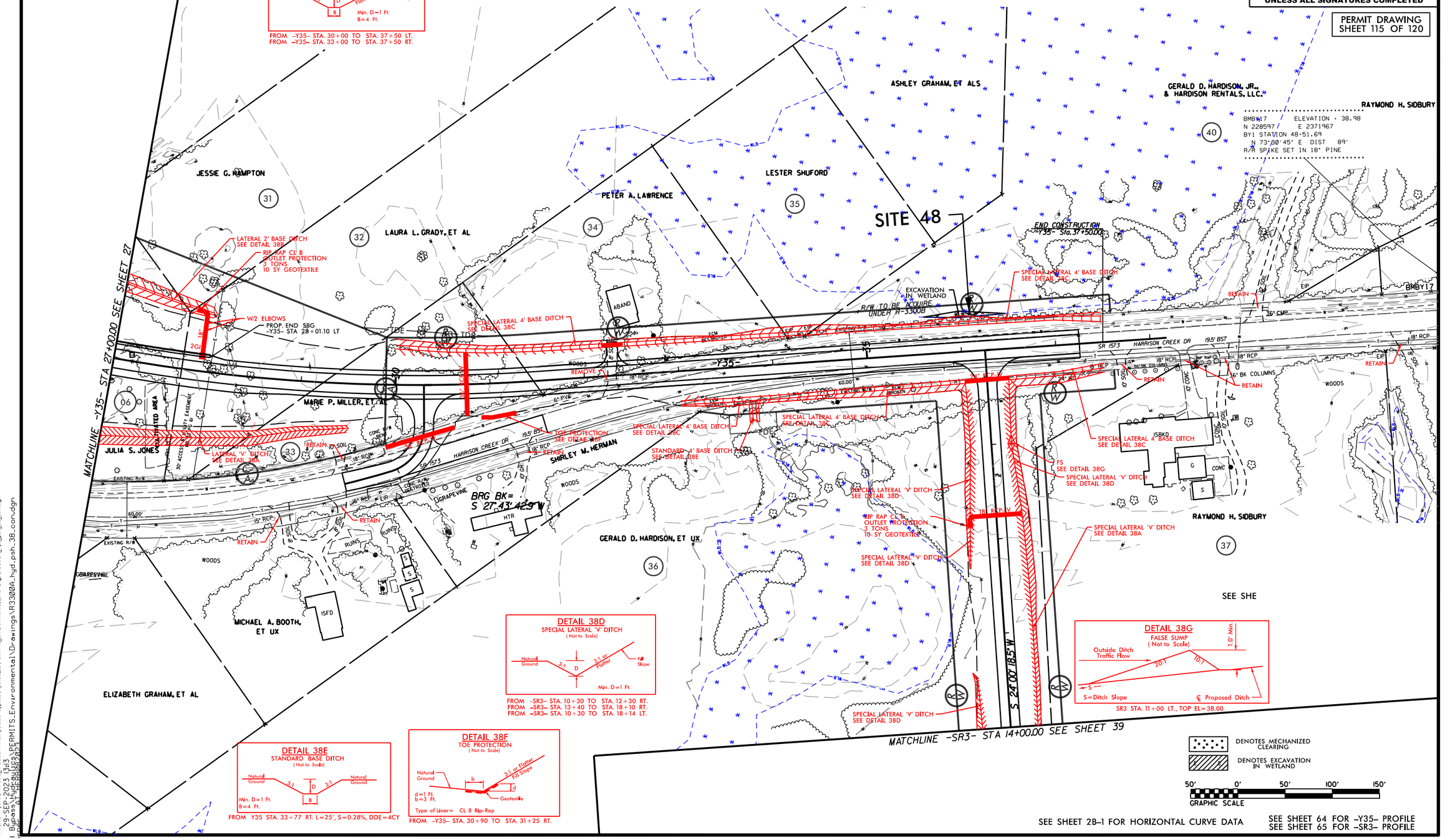


FROM –Y35– STA. 24+69 TO STA. 28+00 LT.

DETAIL 38C
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM –Y35– STA. 30+00 TO STA. 37+50 LT.
FROM –Y35– STA. 33+00 TO STA. 37+50 RT.



DETAIL 38D
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

FROM –SR3– STA. 10+30 TO STA. 12+30 RT.
FROM –SR3– STA. 13+40 TO STA. 18+10 RT.
FROM –SR3– STA. 10+30 TO STA. 18+14 LT.

DETAIL 38G
FALSE SUMP
(Not to Scale)

SR3 STA. 11+00 LT., TOP EL=38.00

DETAIL 38E
STANDARD BASE DITCH
(Not to Scale)

FROM Y35 STA. 33+77 RT. L=25', S=0.28%, DDE=4CY

DETAIL 38F
TOE PROTECTION
(Not to Scale)

FROM –Y35– STA. 30+90 TO STA. 31+25 RT.

DENOTES MECHANIZED CLEARING
DENOTES EXCAVATION IN WETLAND

50' 0' 50' 100' 150'
GRAPHIC SCALE

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA

SEE SHEET 64 FOR –Y35– PROFILE
SEE SHEET 65 FOR –SR3– PROFILE

9/29/2023
hurner
N:\NC Hydro MI\7006_R-3300A Hampstead Bypass\Hydraulics\PERMITS_Environmental\Drawings\R3300A_hyd_psh_38_con.dgn
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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	X-263

PERMIT DRAWING
SHEET 116 OF 120

WETLAND

37+00.00

WETLAND

36+50.00

WETLAND

SITE 48

36+00.00

WETLAND

35+50.00

35+00.00

34+50.00

34+00.00

33+50.00

33+00.00

-Y35-

9252023
lturner
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25-SEP-2023 11:03
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$$$$USERNAME$$$$
6/23/16

WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation in Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	WETLAND IMPACTS: Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	SURFACE WATER IMPACTS: Temp. SW impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacts Temp. (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
Site 1	Y33RPCA 23+50 TO Y33LPC 21+45 IMPACTS LOCATED AT Y33RPCA FILL, Y33LPC FILL, AND DITCH INSIDE Y33LPC	Roadway Fill	4.493		0.205	0.420						
Site 2	Y33RPCA 29+35 RT TO 30+87 LT, Y33LPC 5+47 TO 8+09 RT	Roadway Fill	0.672		0.016	0.036						
Site 3	Y33 77+38 LT	Bank Stabilization						0.049	0.021	89	27	
Site 49	Y33 100+10 LT	Bank Stabilization						0.004	0.007	14	15	
Site 4	Y33RPB 15+70 TO 14+00 RT	Roadway Fill	0.103			0.022						
Site 5	L 234+23 TO 243+02 RT	Roadway Fill						0.440		860		
Site 6	Y33RPCA 47+84 LT TO 49+50 LT	Bank Stabilization						0.108		300		
Site 6	Y33RPCA 49+50 LT TO 58+15 RT	Roadway Fill						0.592	0.021	940	36	
Site 7	L1 249+91 TO 254+73	Roadway Fill	1.655		0.009	0.126						
Site 7	L1 253+29 LT	CL. I RIPRAP						0.030	0.013	77	30	
Site 7	L1 253+29	2-9'X7' RCBC						0.096		226		
Site 7		Temp. Diversion Channel**			0.040		0.017					
Site 7	L1 252+86 RT	CL. I RIPRAP						0.027	0.003	75	12	
Site 8	L1 254+84 TO 260+33	36" Pipe/Roadway Fill	2.178		0.030	0.224						
Site 9	L1 282+72 TO 285+60	Roadway Fill	0.605				0.097					
Site 9	L1 283+46	3-12'X7' RCBC						0.088	0.016	375	93	
Site 9		Temp. Diversion Channel**			0.076							
Site 10	L1 306+20 LT	CL. II Riprap						0.013	0.005	50	17	
Site 10	L1 306+00	7'X5' RCBC						0.059		182		
Site 10	L1 305+81 RT	CL. II Riprap						0.017	0.002	53	8	
Site 11	L1 312+06 TO 312+33 LT	CL. I Riprap						0.006	0.015	22	56	
Site 11	L1 313+03	48" Pipe						0.149	0.013	483	52	
Sub Totals*:			9.706		0.376	0.828	0.114	1.678	0.116	3747	346	

*Rounded totals are sum of actual impacts

NOTES:
** Temporary Excavation Impact for the Diversion Channel

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
8/30/2023
PENDER & NEW HANOVER
R-3300A
40237.1.1
SHEET 117 OF 120

WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
Site 11	L1 312+20 LT TO 315+52 RT	Roadway Fill	0.278			0.031						
Site 12	L1 335+64 to 337+84 LT	Roadway Fill	0.211			0.045						
Site 13	L1 337+91 TO 350+22RT	Roadway Fill	3.762				0.405					
Site 50	SR2 14+30	24" Pipe	0.005				0.022					
Site 14	L1 350+22 RT to 353+09 LT	Roadway Fill	0.918		0.057		0.040					
Site 15	SR1 14+86 LT	CL. II Riprap						0.008	0.003	26	10	
Site 15	SR1 15+38	72" Pipe						0.073		231		
Site 15	SR1 11+87 to 15+36 RT	Roadway Fill	0.332		0.004	0.012	0.005					
Site 16	Y34 12+86 to 13+92 RT	Lateral 4' Base Ditch			0.018		0.018					
Site 17	Y34 13+88 to 15+70 LT	24" Pipe	0.046		0.025		0.010					
Site 18	SR9 13+67 to 14+16	18" Pipe	0.083				0.013					
Site 19	Y34 35+75 to 36+11 RT	Special Lateral 4' Base Ditch			0.015		0.008					
Site 20	L1 357+54 to 360+80	2 @ 18" Pipe	0.758		0.005	0.037						
Site 20**	L1 358+61 to 360+03 LT	Indirect Impacts - Total Take	0.035									
Site 21 ***	L1 383+67 LT - 385+75 LT	Dual 2@115', 72" MBT	0.108		0.031	0.087	0.075	0.021	0.011	83	51	
Site 21	L1 385+75 LT - 389+03 RT	54" RCP & 2@18" RCP	0.615		0.011	0.078		0.038	0.003	212	37	
Site 22	L1 394+75 LT - 397+33 RT	54" RCP	0.195		0.008	0.043						
Site 23	L1 399+85 LT - 401+69 RT	30" RCP	0.192		0.002	0.025						
Site 24	L1 408+64 LT - 412+19 RT	18" RCP	0.384		0.006	0.003						
Site 25	L1 412+20 LT - 414+78 LT	Roadway fill	0.255			0.014						
Site 25	L1 414+86 LT - 415+77 LT	36" RCP	0.240			0.013						
Site 26	L1 415+60 RT - 415+67 RT	36" RCP	0.001			0.007						
Site 27 ****	L1 425+74 RT - 429+10 LT	Dual 1@125',1@117', 72" MBT	0.192			0.111	0.424					
Site 27	L1 428+70 RT - 429+37 LT	Roadway fill	0.020			0.002						
Sub Totals*:			8.630		0.182	0.508	1.020	0.140	0.017	551	98	

*Rounded totals are sum of actual impacts

NOTES:

** Site 20: Total Site Impact of 0.79 acres includes 0.76 acres of direct impacts and 0.03 acres of indirect impacts. Total Take impacts 1:1 mitigation.

*** Site 21: Temp. work brg, Temp Fill in Wetlands (14HP piles): 40 sf total. (not included in quantities above)

**** Site 27: Temp. work brg, "Temp Fill in Wetlands": (14HP piles) 244sf total. (not included in quantities above)

**** Site 27: Temp. work brg, "Temp Fill in SW": (14HP piles) 20sf total. (not included in quantities above)

**** Site 27: Interior Bent "Fill in wetland": 6 @ 9' 6" square footings: 542 sf total, not included in quantities above

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
8/30/2023
PENDER & NEW HANOVER
R-3300A
40237.1.1
SHEET 118 OF 120

WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
Site 28	L1 434+12 LT - 436+70 RT	48" RCP	0.140			0.018		0.066		221		
Site 28	L1 434+12 LT - 436+70 RT	Bank Stabilization						0.006	0.008	27	41	
Site 29	L1 442+28 LT - 445+38 RT	2@6'x7' RCBC	0.490	0.009	0.037	0.062		0.074		215		
Site 29	L1 442+28 LT - 445+38 RT	Bank Stabilization						0.030	0.001	137	8	
Site 30	L1 447+37 RT - 451+09 LT	Roadway fill	0.617			0.031						
Site 31	L1 452+05 RT - 452+66 RT	24" RCP	0.070		0.002	0.010						
Site 32	L1 454+25 LT - 455+48 LT	30" RCP	0.106		0.004	0.010						
Site 33	L1 455+52 RT - 467+46 RT	Roadway fill & 2@36" RCP	0.797		0.015	0.062						
Site 34	L1 467+39 LT - 470+68 RT	Roadway fill & 36" RCP	0.197			0.015						
Site 35	L1 469+77 LT - 485+61 RT	5@36" RCP	5.599		0.002	0.391						
Site 36	L1REV 518+59 LT - 520+73 RT	Roadway fill	0.108			0.005						
Site 37 **	L1REV 519+89 RT - Y35 20+28 LT	2@7'x8' RCBC	0.715		0.091	0.051		0.089	0.008	285	30	
Site 37	L1REV 519+89 RT - Y35 20+28 LT	Channel Relocation						0.094		345		
Site 38	L1REV 528+18 LT - 529+81 LT	Roadway fill	0.185			0.024						
Site 39	L1REV 532+78 RT	Roadway fill	0.023									
Site 40	L1REV 534+46 - 535+20 RT	Roadway fill	0.067									
Site 41	L1REV 537+11 - 538+10 LT	36" RCP	0.151									
Site 42	L1REV 537+60 RT	Lateral ditch			0.001	0.005						
Site 43	L1REV 538+02 - 538+47 LT	Lateral ditch	0.006		0.005	0.015						
Site 44	L1REV 545+23 LT - 546+61 RT	36" RCP	0.267			0.027						
Site 45	L1 560+15 RT	Roadway fill	0.001			0.001						
Site 46	L1 562+69 LT - 563+66 LT	Roadway fill	0.015			0.025						
Site 46	L1 564+45 LT - 568+65 RT	1@36" RCP,3@12'X8' RCBC	1.808	0.037	0.094	0.169		0.101	0.023	238	34	
Site 46	L1 564+45 LT - 568+65 RT	Bank Stabilization						0.090		176		
Sub Totals*:			11.362	0.046	0.251	0.921		0.550	0.040	1644	113	0

*Rounded totals are sum of actual impacts

NOTES:
** Site 37 Temp. Fill in Wetlands entry is Temp Excavation in Wetlands

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
8/30/2023
PENDER & NEW HANOVER
R-3300A
40237.1.1
SHEET 119 OF 120

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)
Site 47	Y35 13+45 RT - 14+17 RT	36" RCP	0.070		0.001	0.009						
Site 48	Y35 36+00 LT	Lateral ditch			0.001	0.006						
Sub Totals	THIS SHEET		0.070		0.002	0.015						
Sub Totals	SHEETS 117-119		29.698	0.046	0.809	2.257	1.134	2.368	0.173	5942	557	
TOTALS*:			29.768	0.046	0.811	2.272	1.134	2.368	0.173	5942	557	

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
8/30/2023
PENDER & NEW HANOVER
R-3300A
40237.1.1
SHEET 120 OF 120