ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

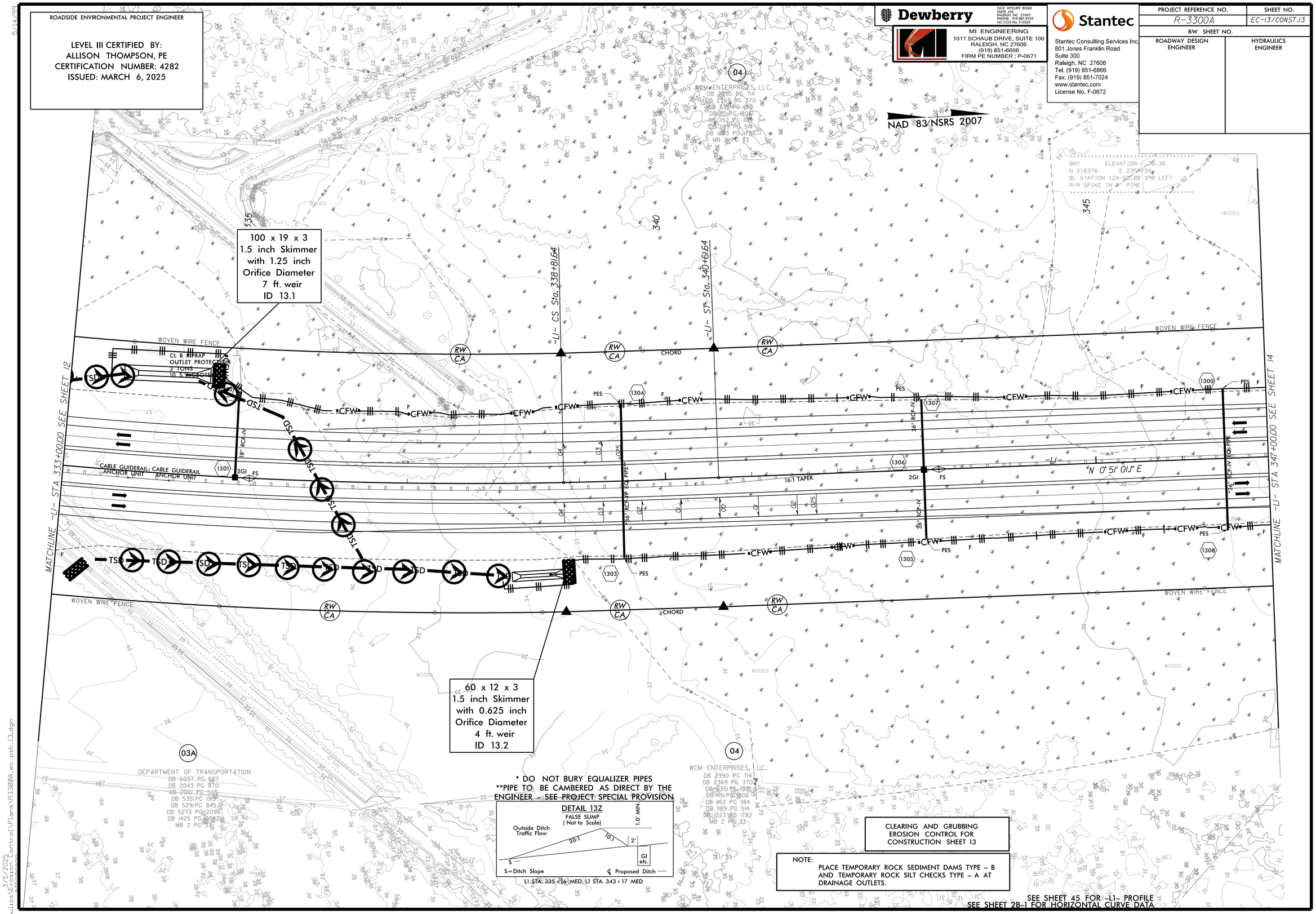
LEVEL III CERTIFIED BY:
ALLISON THOMPSON, PE
CERTIFICATION NUMBER: 4282
ISSUED: MARCH 6, 2025

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) 851-8866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-13/CONST.13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



5/14/99

3/5/2025
...hydraulics\Erosion Control\Plans\R3300A_ec_psh_13.dgn

DETAIL 14B
STANDARD BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1, Natural Ground; B
Min. D = 2.0Ft.
B = 3.0Ft.

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

DETAIL 14C
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1, 1'/Ft., b, B, Fill Slope
Min. D = 2.0Ft.
B = 4.0Ft.
b = 5.0Ft.

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

DETAIL 14D
SPECIAL CUT DITCH
(Not to Scale)

Front Ditch Slope, 3:1, D, 3:1, Front Ditch Slope
Min. D = 2.0Ft.

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

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

Natural Ground, 3:1, D, 3:1, 1'/Ft., b, Fill Slope
Min. D = 1.5Ft.
b = 5.0Ft.

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

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

Natural Ground, 3:1, D, 6:1 or Flatter, Fill Slope
Min. D = 1.5 Ft.

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

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

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CERTIFICATION NUMBER: 4282
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NAD 83/NSRS 2007

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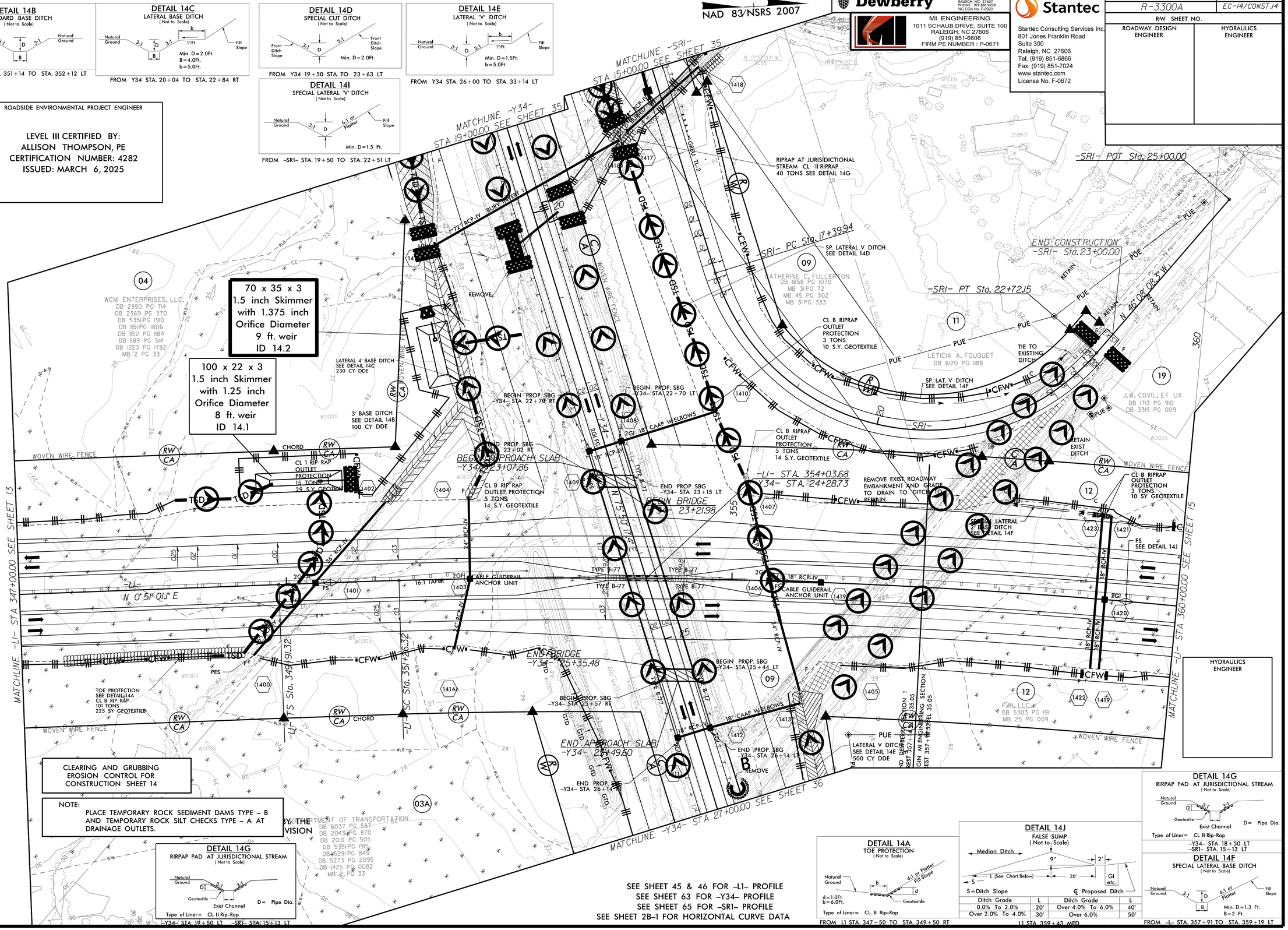
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-14/CONST.J4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

R/W REV. FEB 2024: REVISED PUE ON PARCEL 12. –STANTEC

5/14/99



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

Natural Ground, D, 3:1, 3:1, Geotextile, Exist Channel
D = Pipe Dia.
Type of Liner = CL II Rip-Rap
–Y34– STA. 19+50 LT
–SR1– STA. 15+13 LT

DETAIL 14A
TOE PROTECTION
(Not to Scale)

Natural Ground, b, 4:1 or Flatter Fill Slope, d, Geotextile
d = 1.0Ft.
b = 6.0Ft.
Type of Liner = CL. B Rip-Rap
FROM L1 STA. 347+50 TO STA. 349+50 RT

DETAIL 14J
FALSE SUMP
(Not to Scale)

Median Ditch, 9", 2', L (See Chart Below), 20', GI etc., S
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. 359+43 MED

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

Natural Ground, D, 3:1, 3:1, Geotextile, Exist Channel
D = Pipe Dia.
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)

Natural Ground, 3:1, D, 4:1 or Flatter, Fill Slope, B
Min. D = 1.3 Ft.
B = 2 Ft.
FROM –L– STA. 357+91 TO STA. 359+19 LT

3/5/2025
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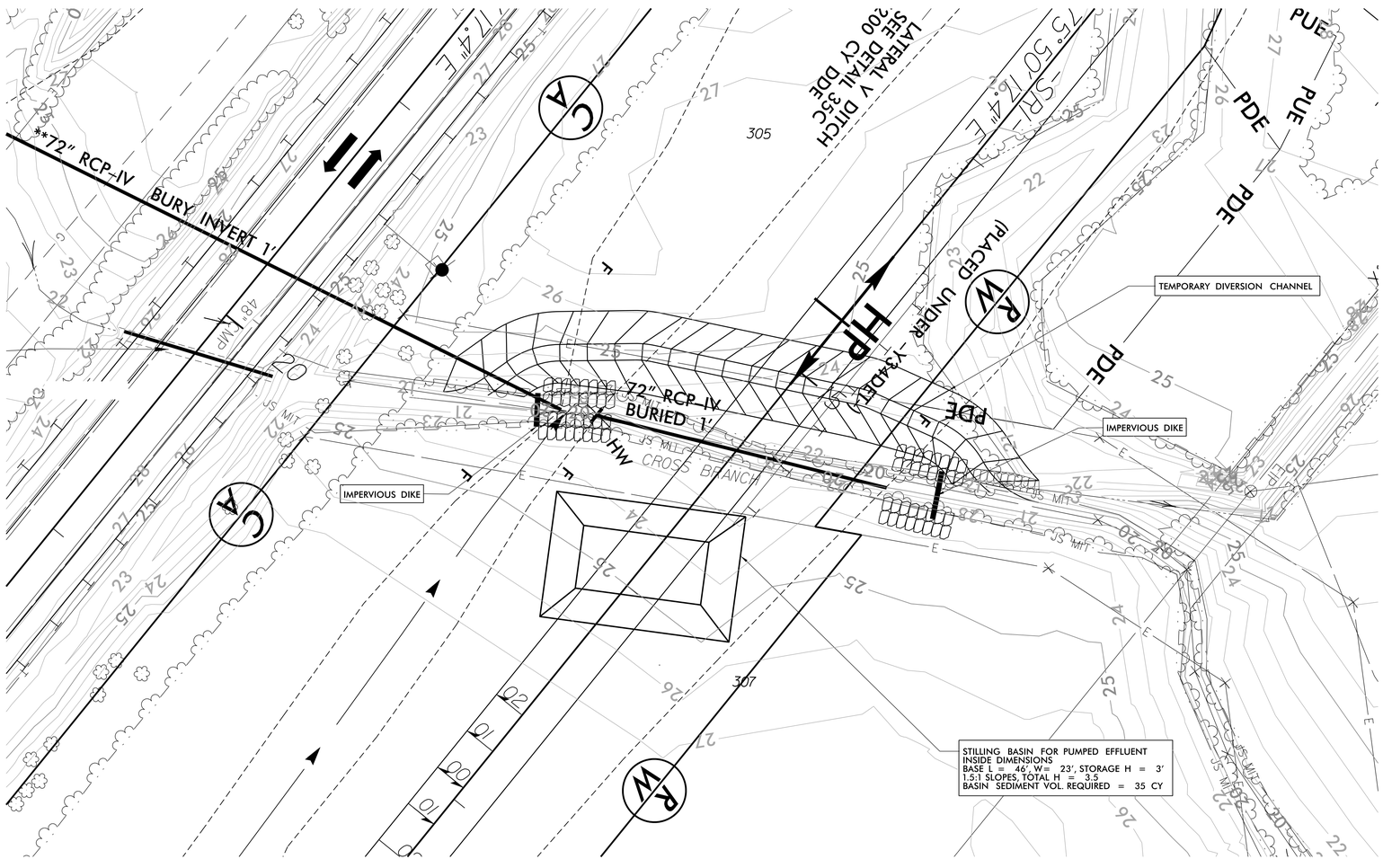
CULVERT CONSTRUCTION SEQUENCE STA. 15 + 35 –SR1–
72" RCP
(NOT TO SCALE)

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

1. CONSTRUCT STILLING BASIN PER NCDOT DWG 1630.04 AT SIZE SPECIFIED.
2. CONSTRUCT TEMPORARY DIVERSION CHANNEL WITH LINER.
3. CONSTRUCT IMPERVIOUS DIKE UPSTREAM AND DOWNSTREAM
4. DIVERT FLOW THROUGH TEMPORARY DIVERSION CHANNEL.
5. CONSTRUCT PROPOSED CULVERT.
6. CONSTRUCT WINGWALLS, INLET AND OUTLET CHANNEL.
7. REMOVE IMPERVIOUS DIKES, ALLOWING FLOW THROUGH PROPOSED CULVERT.
8. FILL TEMPORARY DIVERSION CHANNEL FROM UPSTREAM END.
9. REMOVE STILLING BASIN.
10. CONSTRUCT ROADWAY.



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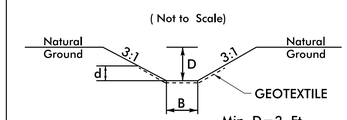
TEMP. DIVERSION CHANNEL

(Not to Scale)



Min. D=2 Ft.
Max. d=2 Ft.
B=6 Ft.

Type of Liner= GEOTEXTILE
DDE = 280 CY
GEOTEXTILE = 630 SY

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-15/CONST.J5
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

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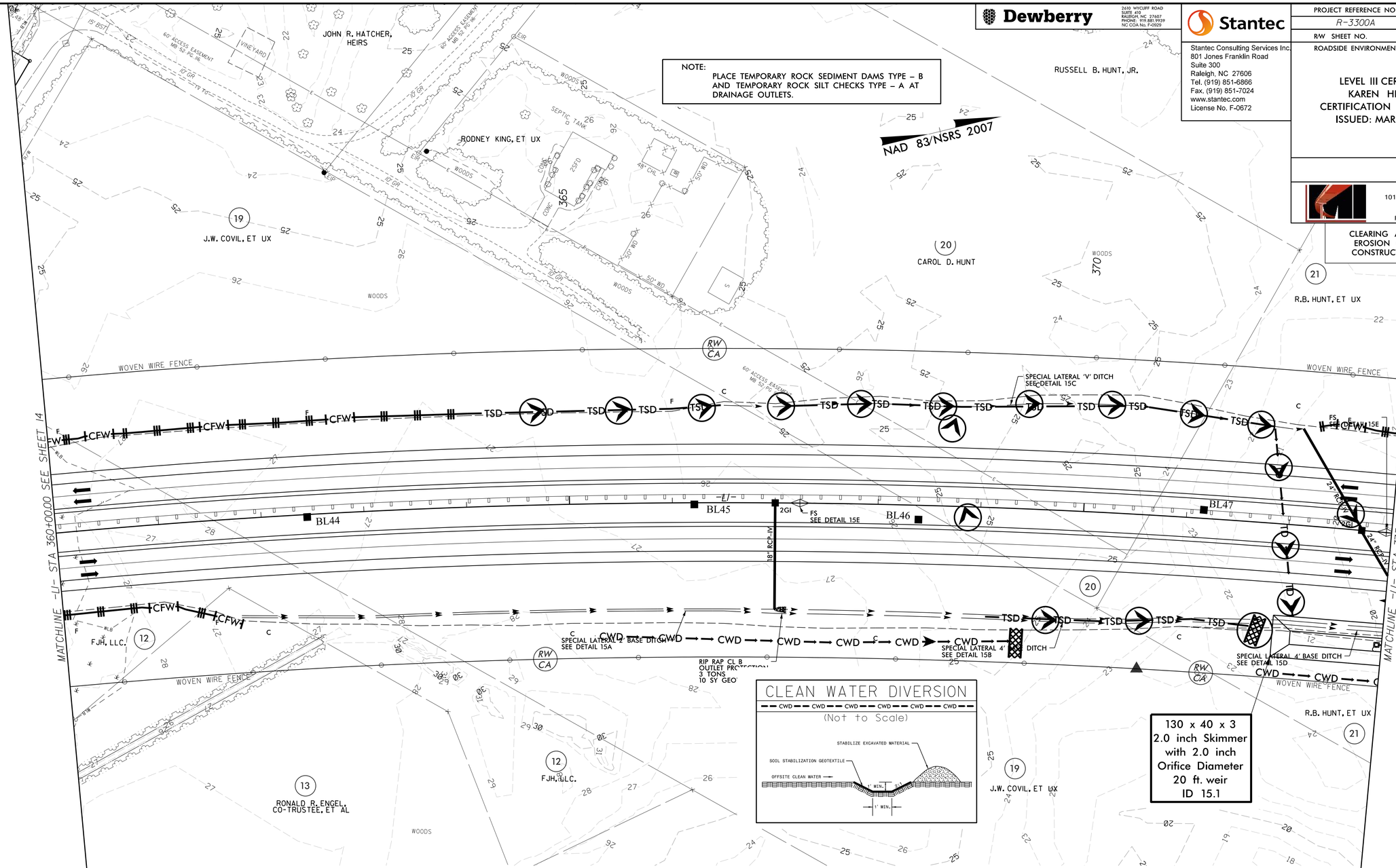
(919) 851-6606
FIRM PE NUMBER : P-0671

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 15

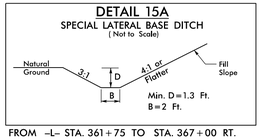
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.



CLEAN WATER DIVERSION

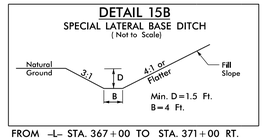
(Not to Scale)

DETAIL 15A
SPECIAL LATERAL BASE DITCH
(Not to Scale)



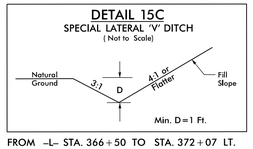
FROM –L– STA. 361+75 TO STA. 367+00 RT.

DETAIL 15B
SPECIAL LATERAL BASE DITCH
(Not to Scale)



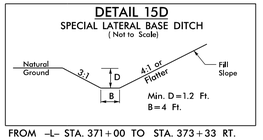
FROM –L– STA. 367+00 TO STA. 371+00 RT.

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



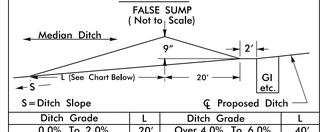
FROM –L– STA. 366+50 TO STA. 372+07 LT.

DETAIL 15D
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM –L– STA. 371+00 TO STA. 373+33 RT.

DETAIL 15E
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. 367+24 MED.
L1 STA. 372+95 MED.

SEE SHEET 46 FOR –L1– PROFILE

Dewberry
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-16/CONST J6
R/W SHEET NO.	

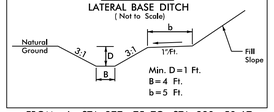
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

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

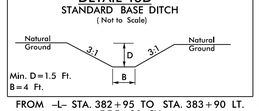
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 16

DETAIL 16C
LATERAL BASE DITCH
(Not to Scale)



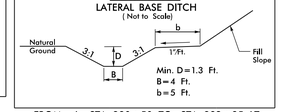
FROM –L– STA. 377+75 TO STA. 380+50 LT.

DETAIL 16D
STANDARD BASE DITCH
(Not to Scale)



FROM –L– STA. 382+95 TO STA. 383+90 LT.
DDE=30 CY

DETAIL 16E
LATERAL BASE DITCH
(Not to Scale)



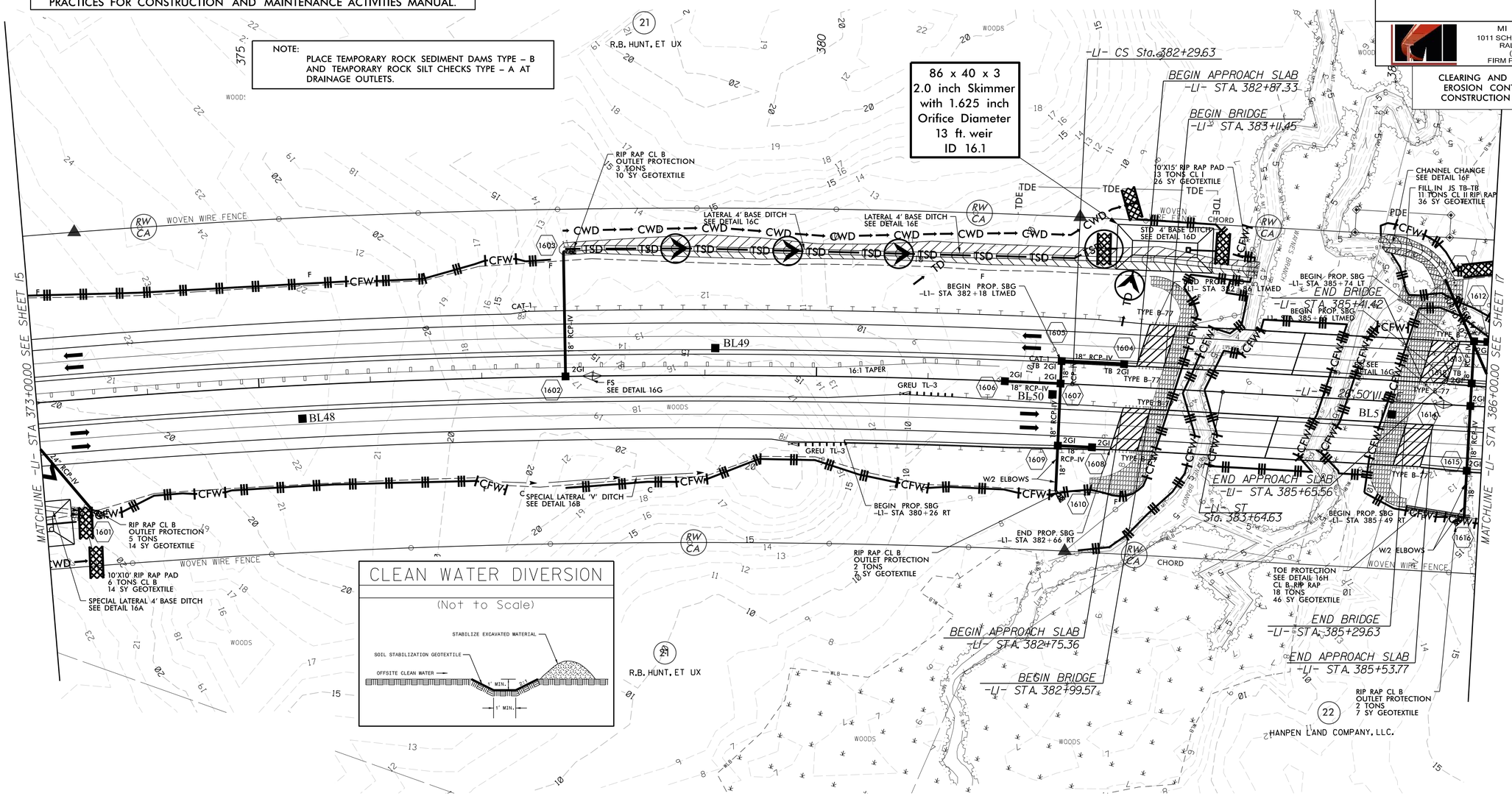
FROM –L– STA. 380+50 TO STA. 382+95 LT.

INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

86 x 40 x 3
2.0 inch Skimmer
with 1.625 inch
Orifice Diameter
13 ft. weir
ID 16.1

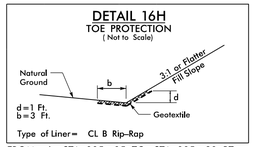
NAD 83/NSRS 2007



CLEAN WATER DIVERSION
(Not to Scale)

** PIPE TO BE CAMBERED AS DIRECT BY THE ENGINEER – SEE PROJECT SPECIAL PROVISION

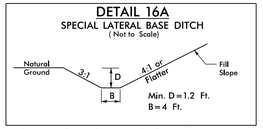
DETAIL 16H
TOE PROTECTION
(Not to Scale)



Type of Liner= CL B Rip-Rap

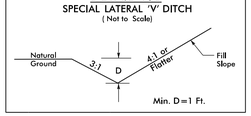
FROM –L– STA. 385+35 TO STA. 385+93 RT.

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



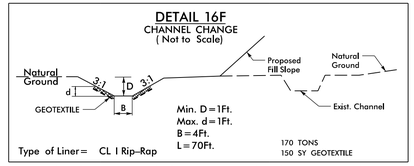
FROM –L– STA. 367+00 TO STA. 373+33 RT.

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



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

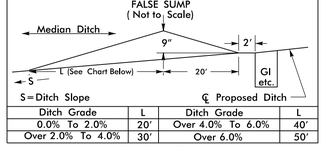
DETAIL 16F
CHANNEL CHANGE
(Not to Scale)



Type of Liner= CL I Rip-Rap

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 SHEETS 46 & 47 FOR –L1– PROFILE

3/6/2025
R:\Erosion Control\CADD\R3300A_EC_psh_16_C&G.dgn
MI ENGINEERING, RALEIGH NC

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-17/CONST.17
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
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CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

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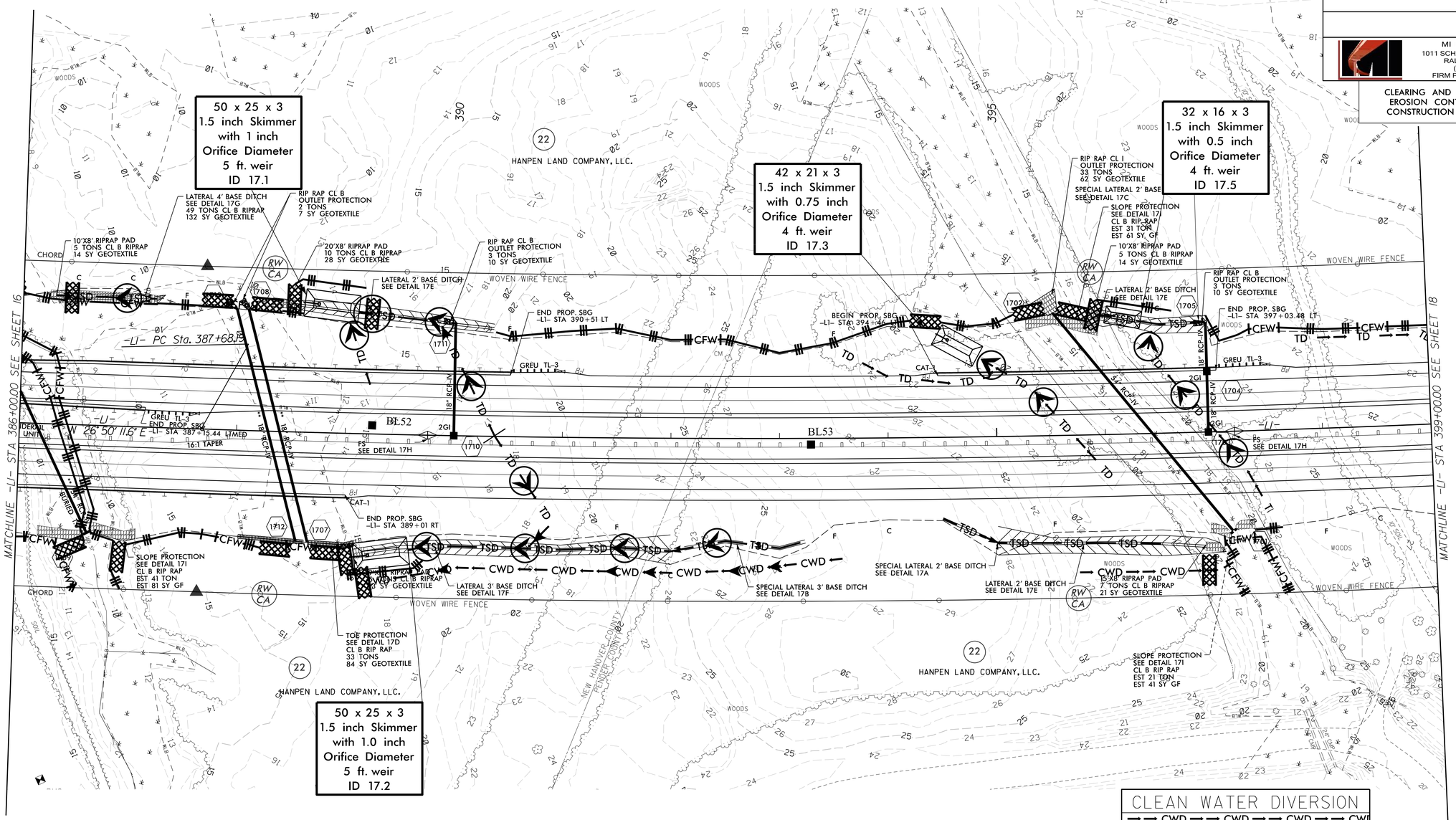
(919) 851-6606
FIRM PE NUMBER : P-0671

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 17

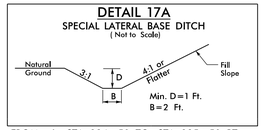
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NAD 83/NSRS 2007



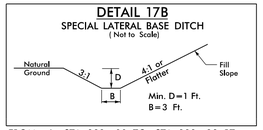
** PIPE TO BE CAMBERED AS DIRECT BY THE ENGINEER – SEE PROJECT SPECIAL PROVISION

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



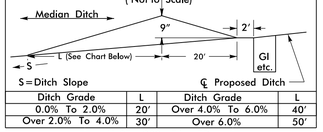
FROM –L– STA. 394+50 TO STA. 395+50 RT

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



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

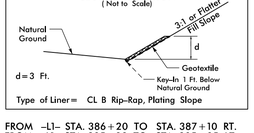
DETAIL 17H
FALSE SUMP
(Not to Scale)



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.

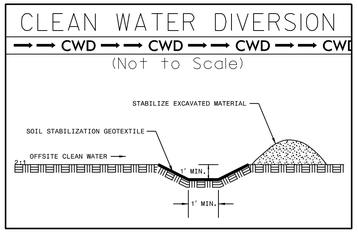
DETAIL 17I
SLOPE PROTECTION
(Not to Scale)



Type of Liner= CL B Rip-Rap, Plating Slope

FROM –L1– STA. 386+20 TO STA. 387+10 RT.
FROM –L1– STA. 395+28 TO STA. 395+95 LT.
FROM –L1– STA. 396+95 TO STA. 397+35 RT.

CLEAN WATER DIVERSION
(Not to Scale)



SEE SHEET 47 FOR –L1– PROFILE

3/6/2025
R:\Erosion Control\CADD\R3300A_ec_psh_17_C&G.dgn
MI ENGINEERING, RALEIGH NC

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PHONE: 919.881.9929
NC COA No. F-0929

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-18/CONST18
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
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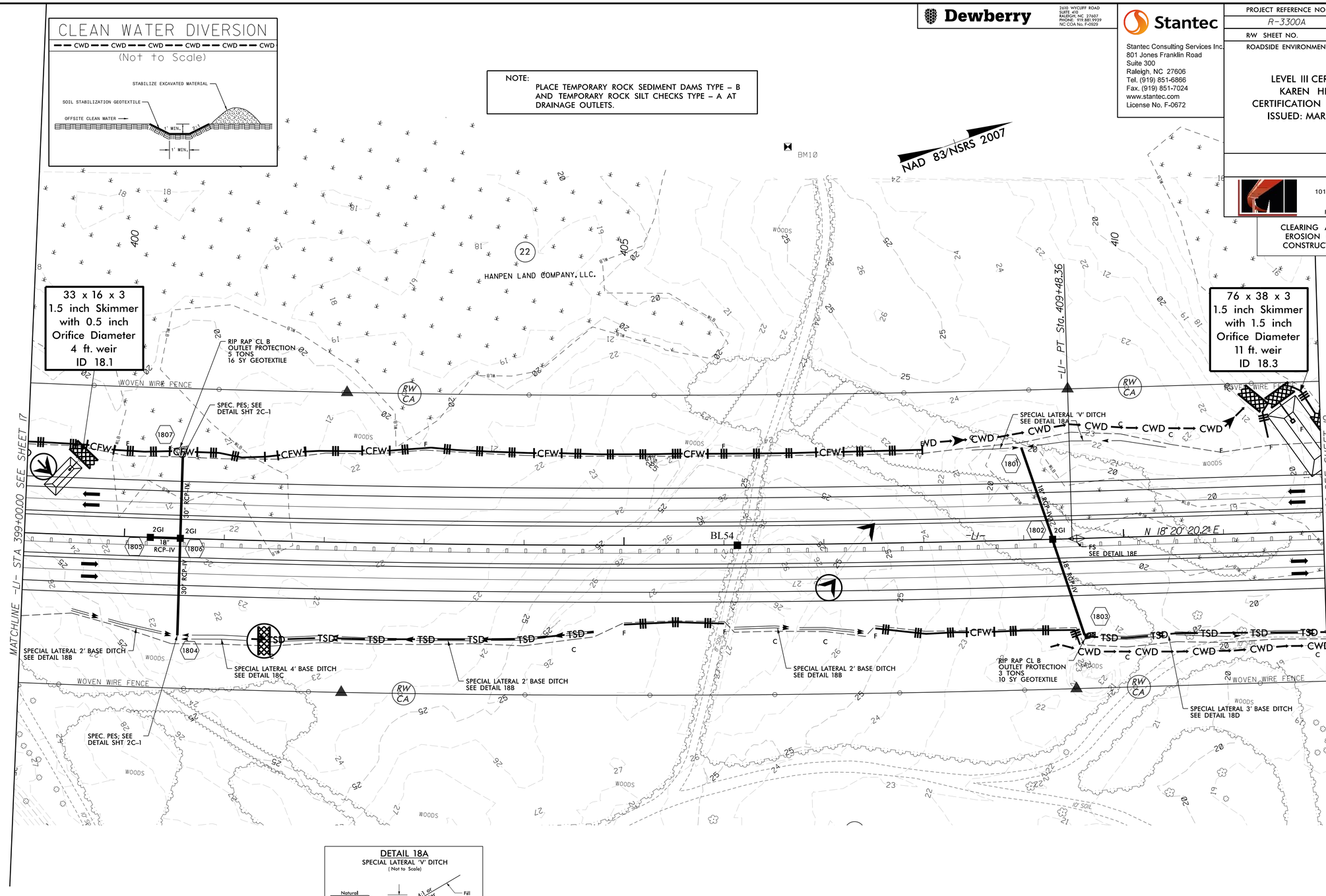
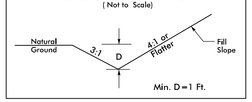
FIRM PE NUMBER : P-0671

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 18

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

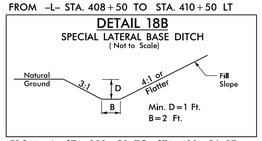


DETAIL 18A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



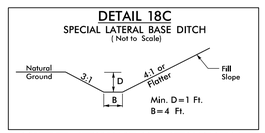
FROM –L– STA. 408+50 TO STA. 410+50 LT

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



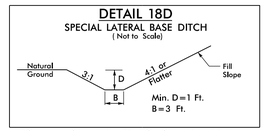
FROM –L– STA. 399+50 TO STA. 400+56 RT
FROM –L– STA. 402+50 TO STA. 404+70 RT
FROM –L– STA. 406+10 TO STA. 407+40 RT

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



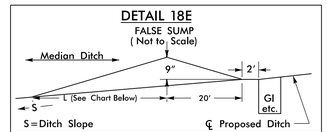
FROM –L– STA. 400+56 TO STA. 402+50 RT

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)



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 SHEETS 47 & 48 FOR –L1– PROFILE

3/6/2025
R-3300A Erosion Control\CADD\R3300A_ec_psh_18_C&G.dgn
MI ENGINEERING, RALEIGH NC

Dewberry
2610 WYCLIFF ROAD
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PHONE: 919.881.9929
NC COA No. F-0929

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License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-19/CONST.19
RW SHEET NO.	

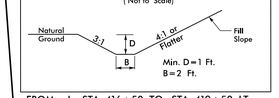
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

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

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 19

DETAIL 19A
SPECIAL LATERAL BASE DITCH
(Not to Scale)

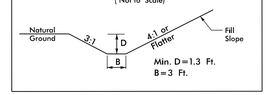


FROM –L– STA. 416+50 TO STA. 419+50 LT

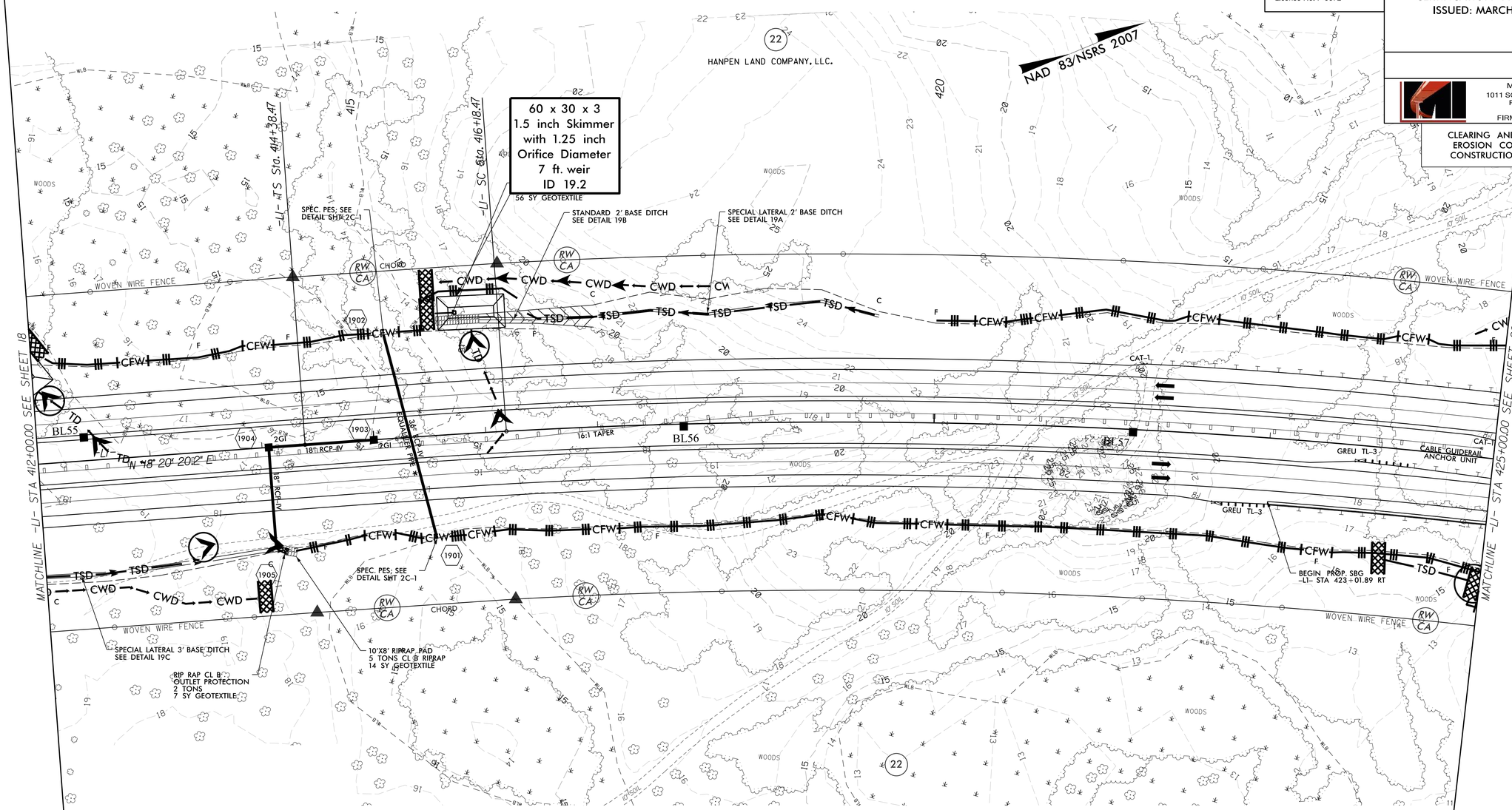
DETAIL 19B
STANDARD BASE DITCH
(Not to Scale)

FROM –L– STA. 416+00 TO STA. 416+50 LT.
L=50', S=0.34%, DDE=15 CY

DETAIL 19C
SPECIAL LATERAL BASE DITCH
(Not to Scale)



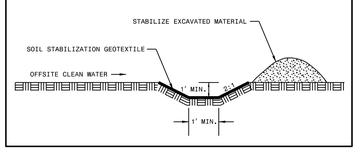
FROM –L– STA. 409+58 TO STA. 414+15 RT



* DO NOT BURY EQUALIZER PIPES

CLEAN WATER DIVERSION

CWD CWD CWD CWD
(Not to Scale)



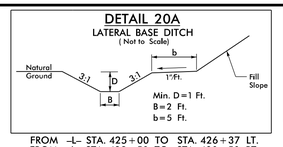
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

SEE SHEET 48 FOR –L1– PROFILE

3/6/2025
BEVECSON
MI ENGINEERING, RALEIGH NC
Erosion Control\CADD\R3300A_ec_psh_19_C&G.dgn

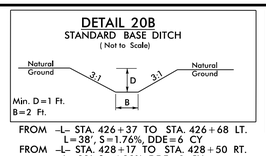
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

DETAIL 20A
LATERAL BASE DITCH
(Not to Scale)



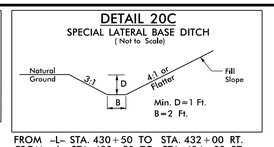
FROM –L– STA. 425+00 TO STA. 426+37 LT.
FROM –L– STA. 428+50 TO STA. 430+50 RT.
FROM –L– STA. 435+00 TO STA. 436+34 RT.
FROM –L– STA. 437+00 TO STA. 439+00 RT.

DETAIL 20B
STANDARD BASE DITCH
(Not to Scale)



FROM –L– STA. 426+37 TO STA. 426+68 LT.
L=38', S=1.76%, DDE=6 CY
FROM –L– STA. 428+17 TO STA. 428+50 RT.
L=33', S=4.29%, DDE=8 CY

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



FROM –L– STA. 430+50 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.

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License No. F-0672

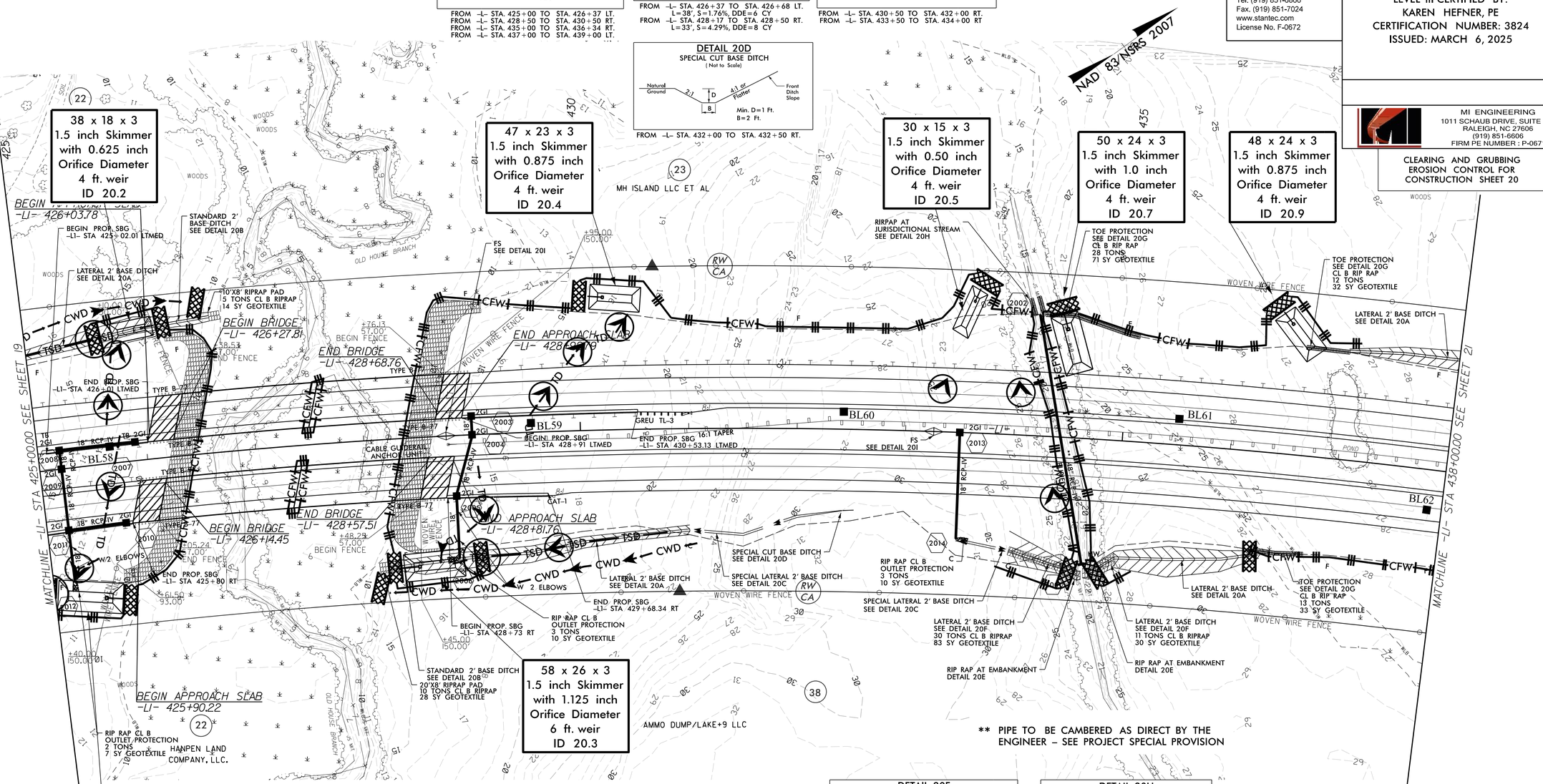
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-20/CONST.20
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

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

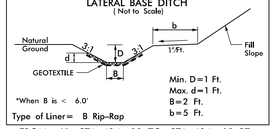
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 20



** PIPE TO BE CAMBERED AS DIRECT BY THE ENGINEER – SEE PROJECT SPECIAL PROVISION

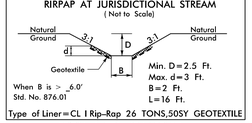
INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

DETAIL 20F
LATERAL BASE DITCH
(Not to Scale)



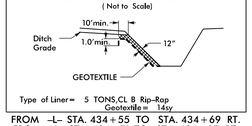
FROM –L1– STA. 434+00 TO STA. 434+65 RT.
FROM –L1– STA. 434+77 TO STA. 435+00 RT.

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



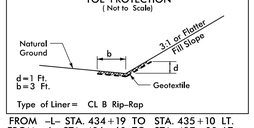
FROM L STA. 434+19 LT.

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



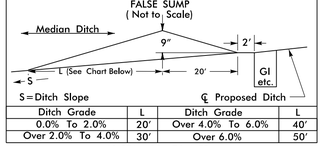
FROM –L– STA. 434+55 TO STA. 434+69 RT.
FROM –L– STA. 434+71 TO STA. 434+87 RT.

DETAIL 20G
TOE PROTECTION
(Not to Scale)



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.

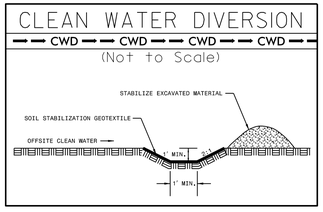
DETAIL 20I
FALSE SUMP
(Not to Scale)



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

CLEAN WATER DIVERSION
(Not to Scale)



3/6/2025
R:\Roadway\Erosion_Control\CADD\R3300A_ec_psh_20_C&G.dgn
MI ENGINEERING, RALEIGH NC

Dewberry
2610 WYCLIFF ROAD
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License No. F-0672

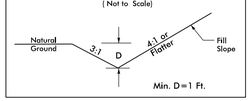
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-21/CONST.21
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

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

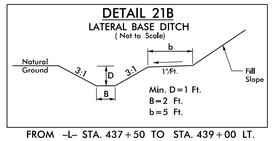
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 21

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



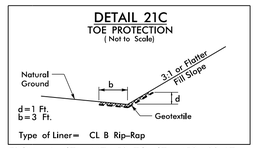
FROM –L– STA. 438+77 TO STA. 439+77 RT.
FROM –L– STA. 445+94 TO STA. 447+50 LT.
FROM –L– STA. 450+90 TO STA. 454+04 LT.
FROM –L– STA. 446+55 TO STA. 447+25 RT.

DETAIL 21B
LATERAL BASE DITCH
(Not to Scale)



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

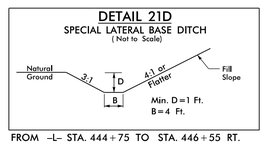
DETAIL 21C
TOE PROTECTION
(Not to Scale)



d=1 Ft.
b=3 Ft.
Type of Liner= CL B Rip-Rap

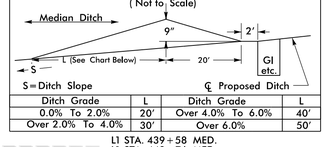
FROM –L– STA. 447+50 TO STA. 450+03 LT.
FROM –L– STA. 447+34 TO STA. 449+43 RT.

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



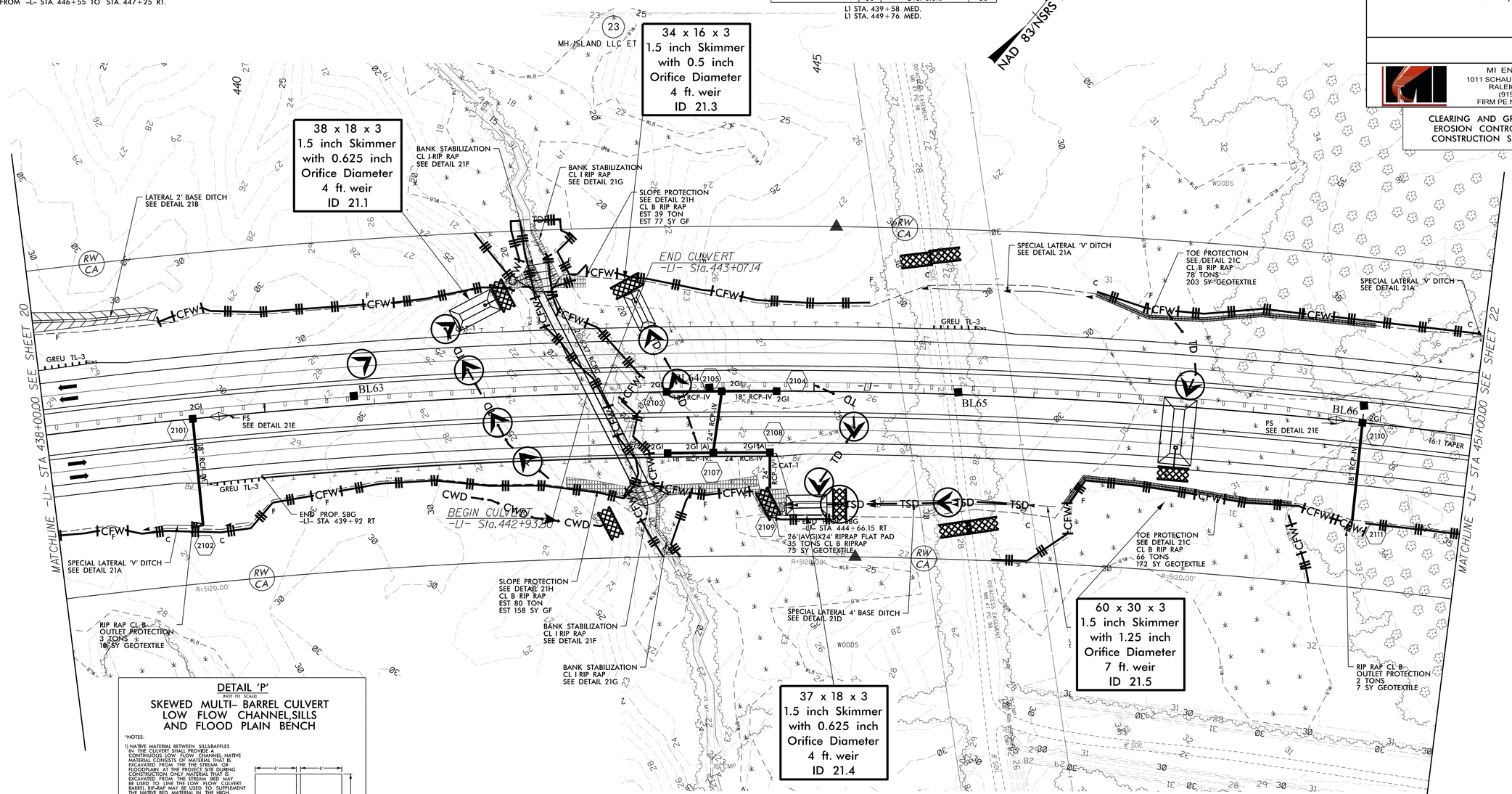
FROM –L– STA. 444+75 TO STA. 446+55 RT.

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

*NOTES:

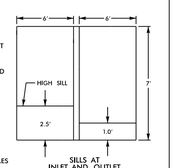
1) NATIVE MATERIAL BETWEEN SILLS/BAFFLES IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE THE STREAM OR FLOODPLAIN AT THE PROJECT SITE DURING CONSTRUCTION. ONLY MATERIAL THAT IS SUITABLE TO SUPPORT AQUATIC LIFE MAY BE USED TO LINE 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.

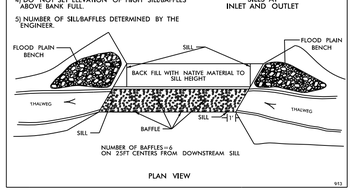
2) SILLS/BAFFLES ARE TO BE 1.0 FT WIDE CAST SEPARATELY AND ATTACHED BY DOWELS.

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

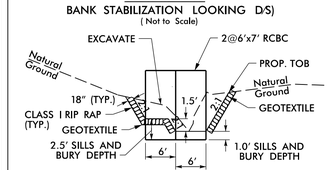
4) DO NOT SET ELEVATION OF HIGH SILL/BAFFLES ABOVE BANK FULL.

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





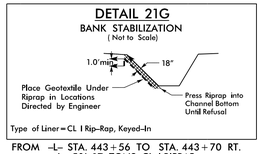
DETAIL 21F
BANK STABILIZATION LOOKING D/S)
(Not to Scale)



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

L1 STA. 442+50 LT. ±; DDE=20 CY (DS)
L1 STA. 443+50 RT. ±; DDE=17 CY (US)

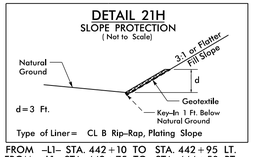
DETAIL 21G
BANK STABILIZATION
(Not to Scale)



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

DETAIL 21H
SLOPE PROTECTION
(Not to Scale)

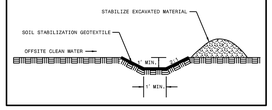


Type of Liner= CL B Rip-Rap, Plating Slope

FROM –L1– STA. 442+10 TO STA. 442+95 LT.
FROM –L1– STA. 442+75 TO STA. 444+50 RT.

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

CLEAN WATER DIVERSION
CWD CWD CWD CWD
(Not to Scale)



SEE SHEET 49 FOR –L1– PROFILE

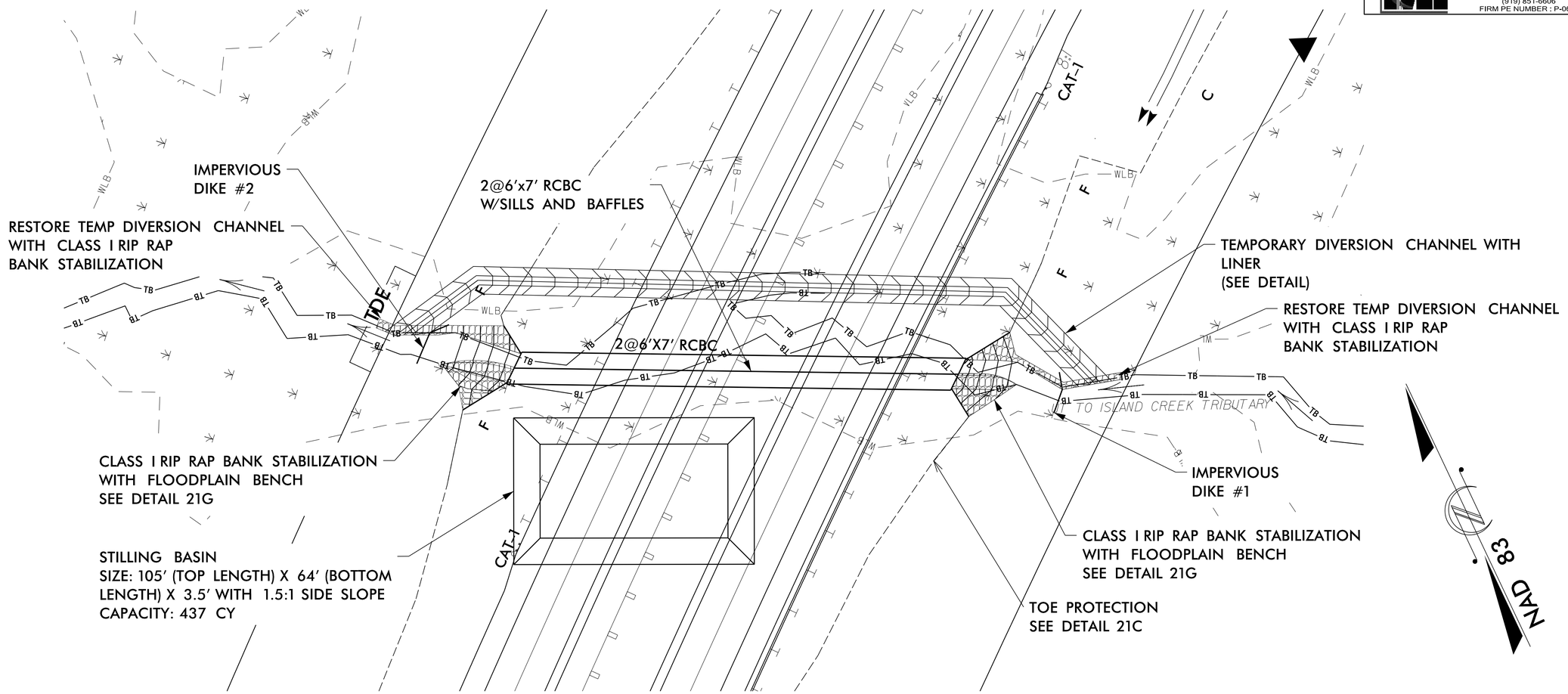
3/6/2025
R:\Erosion_Control\CADD\R3300A_ec_psh_21_C&G.dgn
MI ENGINEERING, RALEIGH NC

CULVERT CONSTRUCTION SEQUENCE STA. 443+00.5 –L–
2@6'X7' RCBC
(NOT TO SCALE)

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-21A/CONST.21
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

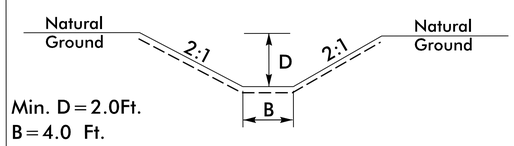
LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

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



1. CONSTRUCT STILLING BASIN
2. CONSTRUCT TEMPORARY DIVERSION CHANNEL WITH LINER (SEE DETAIL), IMPERVIOUS DIKES #1 AND #2, AND DIRECT FLOW INTO TEMPORARY DIVERSION CHANNEL.
3. DEWATER CONSTRUCTION AREA UTILIZING STILLING BASIN FOR PUMPED EFFLUENT.
4. CONSTRUCT PROPOSED 2@6'X7' RCBC WITH SILLS, UPSTREAM AND DOWNSTREAM CLASS I RIP RAP STABILIZATION WITH FLOODPLAIN BENCH IN ACCORDANCE WITH THE PLANS.
5. EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES.
6. REMOVE TEMPORARY DIVERSION CHANNEL WITH LINER AND IMPERVIOUS DIKES #1 AND #2.
7. DIRECT FLOW THROUGH 2@6'X7' RCBC WITH SILLS.
8. COMPLETE ROADWAY.

DETAIL
TEMPORARY DIVERSION CHANNEL
(Not to Scale)



TYPE OF LINER = GEOTEXTILE

550 SY GEOTEXTILE
187 CY DDE

3/6/2025
R:\Erosion Control\CADD\R3300A_ec_psh_21A_C&G_CUL1.dgn
MI ENGINEERING, RALEIGH NC

Dewberry
2610 WYCLIFF ROAD
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PHONE: 919.881.9929
NC COA No. F-0929

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Fax. (919) 851-7024
www.stantec.com
License No. F-0672

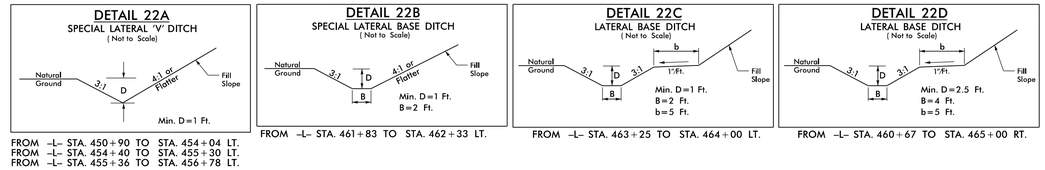
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-22/CONST.22
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

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

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 22



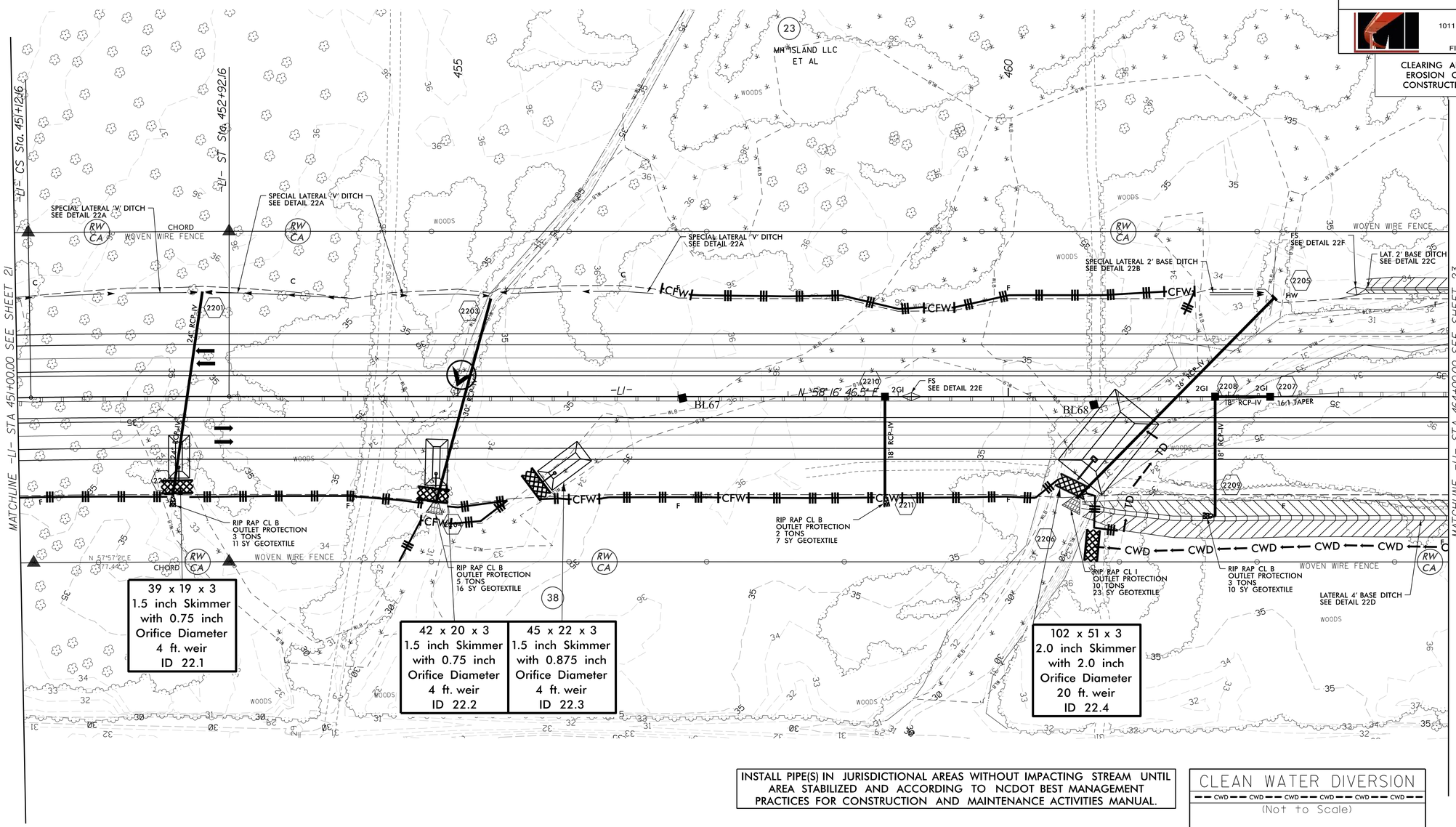
FROM –L– STA. 450+90 TO STA. 454+04 LT.
FROM –L– STA. 454+40 TO STA. 455+30 LT.
FROM –L– STA. 455+36 TO STA. 456+78 LT.

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

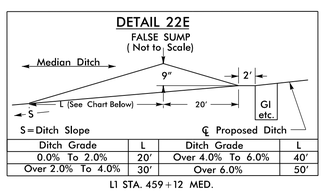
FROM –L– STA. 463+25 TO STA. 464+00 LT.

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

NAD 83/NSRS 2007

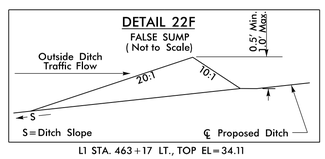


INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.



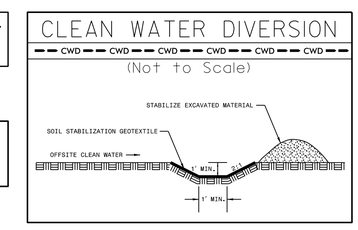
Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

L1 STA. 459+12 MED.



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

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.



SEE SHEETS 49 & 50 FOR –L1– PROFILE

3/6/2025
M:\Erosion Control\CADD\R3300A_ec_psh_22_C&G.dgn
MI ENGINEERING, RALEIGH NC

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License No. F-0672

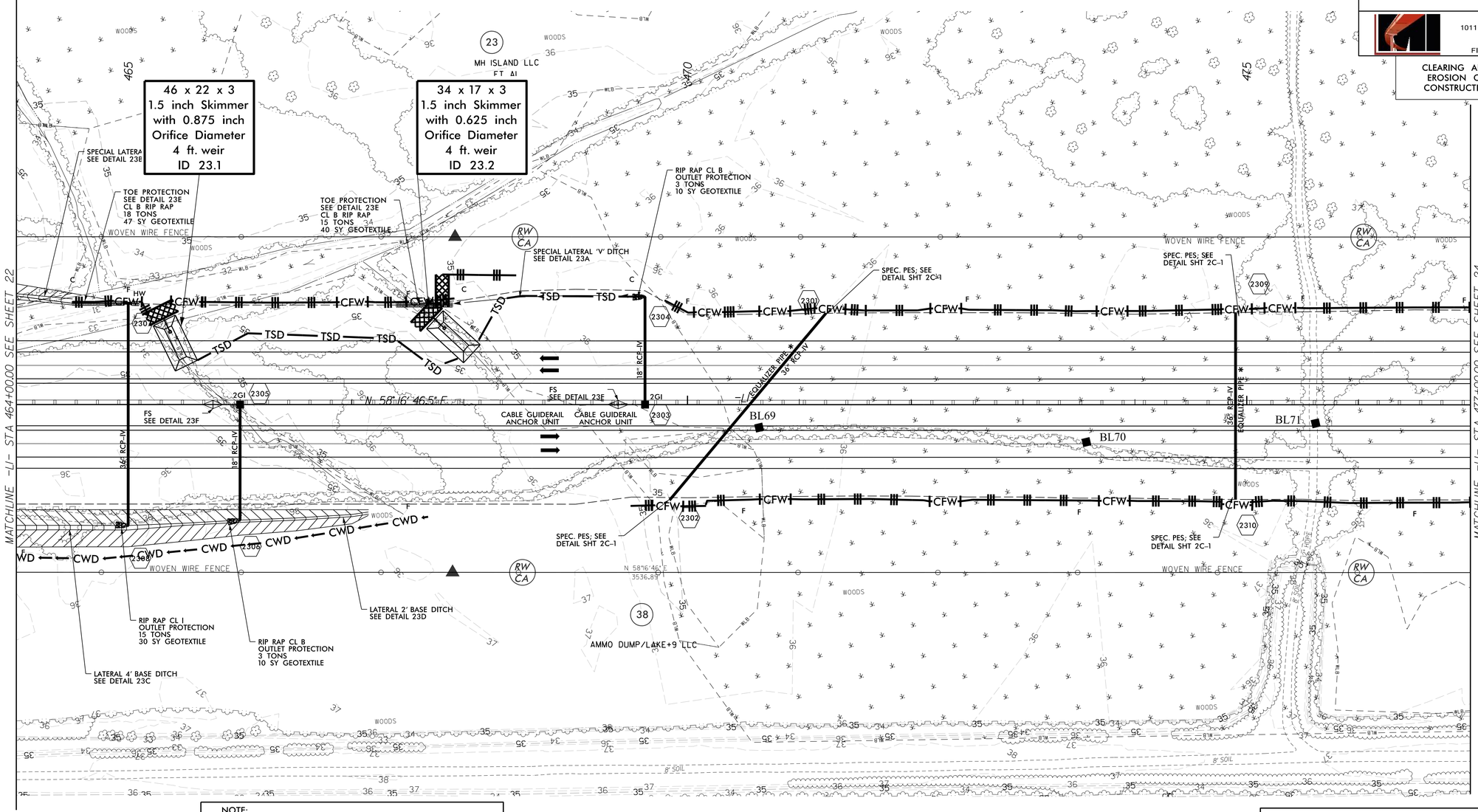
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-23/CONST.23
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

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

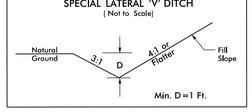
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 23



NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

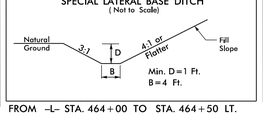
* DO NOT BURY EQUALIZER PIPES

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



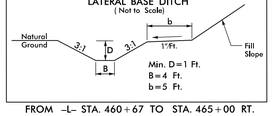
FROM –L– STA. 467+90 TO STA. 469+62 LT.

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



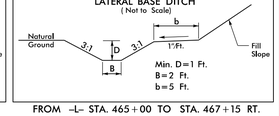
FROM –L– STA. 464+00 TO STA. 464+50 LT.

DETAIL 23C
LATERAL BASE DITCH
(Not to Scale)



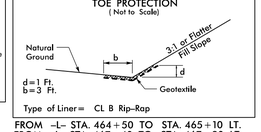
FROM –L– STA. 460+67 TO STA. 465+00 RT.

DETAIL 23D
LATERAL BASE DITCH
(Not to Scale)



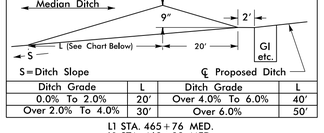
FROM –L– STA. 465+00 TO STA. 467+15 RT.

DETAIL 23E
TOE PROTECTION
(Not to Scale)



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

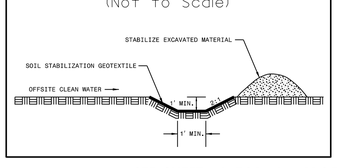
DETAIL 23F
FALSE SUMP
(Not to Scale)



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.

CLEAN WATER DIVERSION
(Not to Scale)



SEE SHEET 50 FOR –L1– PROFILE

3/6/2025
R:\Design Control\CADD\R3300A_ec_psh_23_C&G.dgn
MI ENGINEERING, RALEIGH NC

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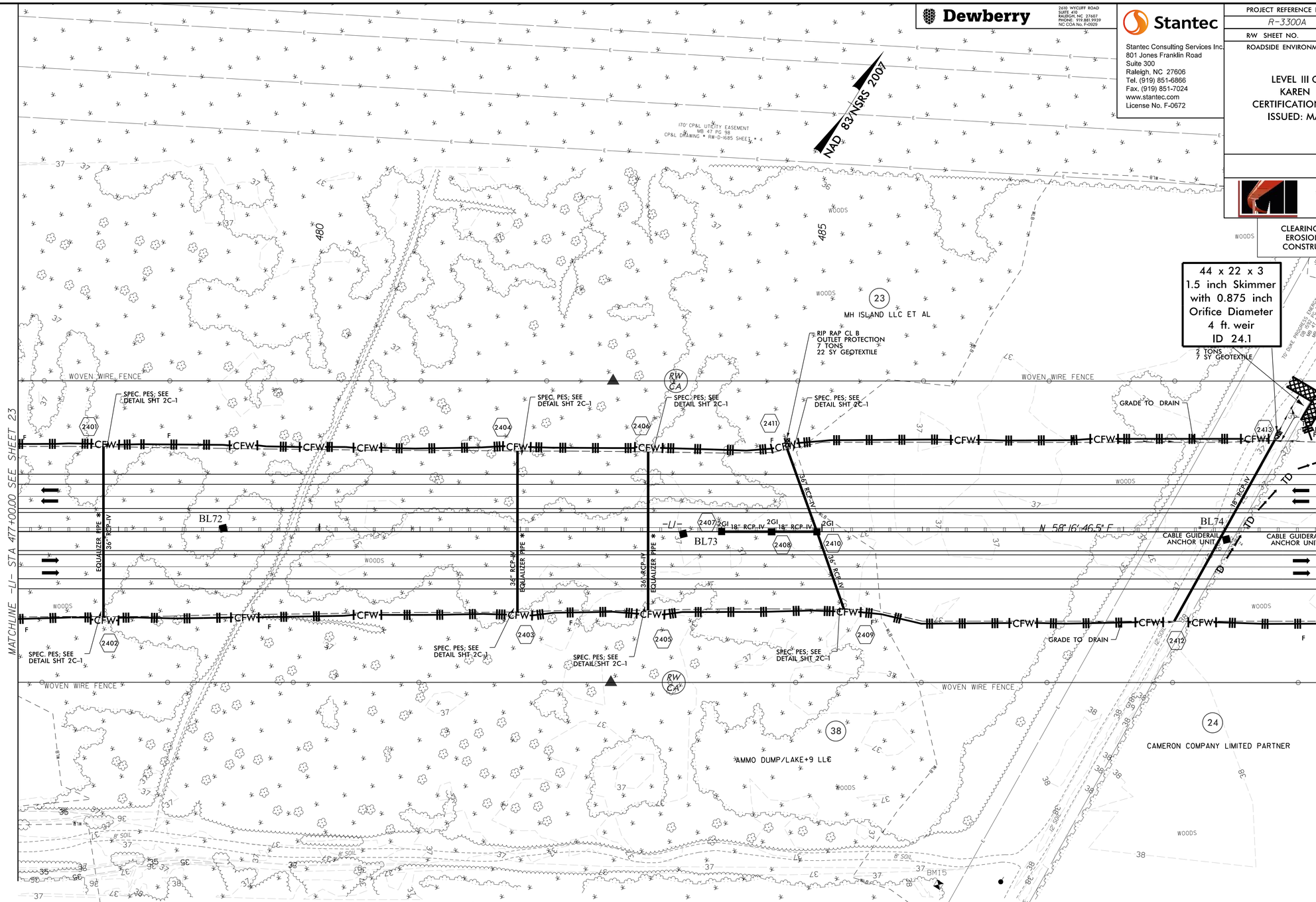
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-24/CONST.24
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

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

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 24



* DO NOT BURY EQUALIZER PIPES

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

SEE SHEETS 50 & 51 FOR -L1- PROFILE

3/6/2025
R:\Erosion_Control\CADD\R3300A_ec_psh_24_C&G.dgn
MI ENGINEERING, RALEIGH NC

Dewberry
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PHONE: 919.881.9929
NC COA No. F-0929

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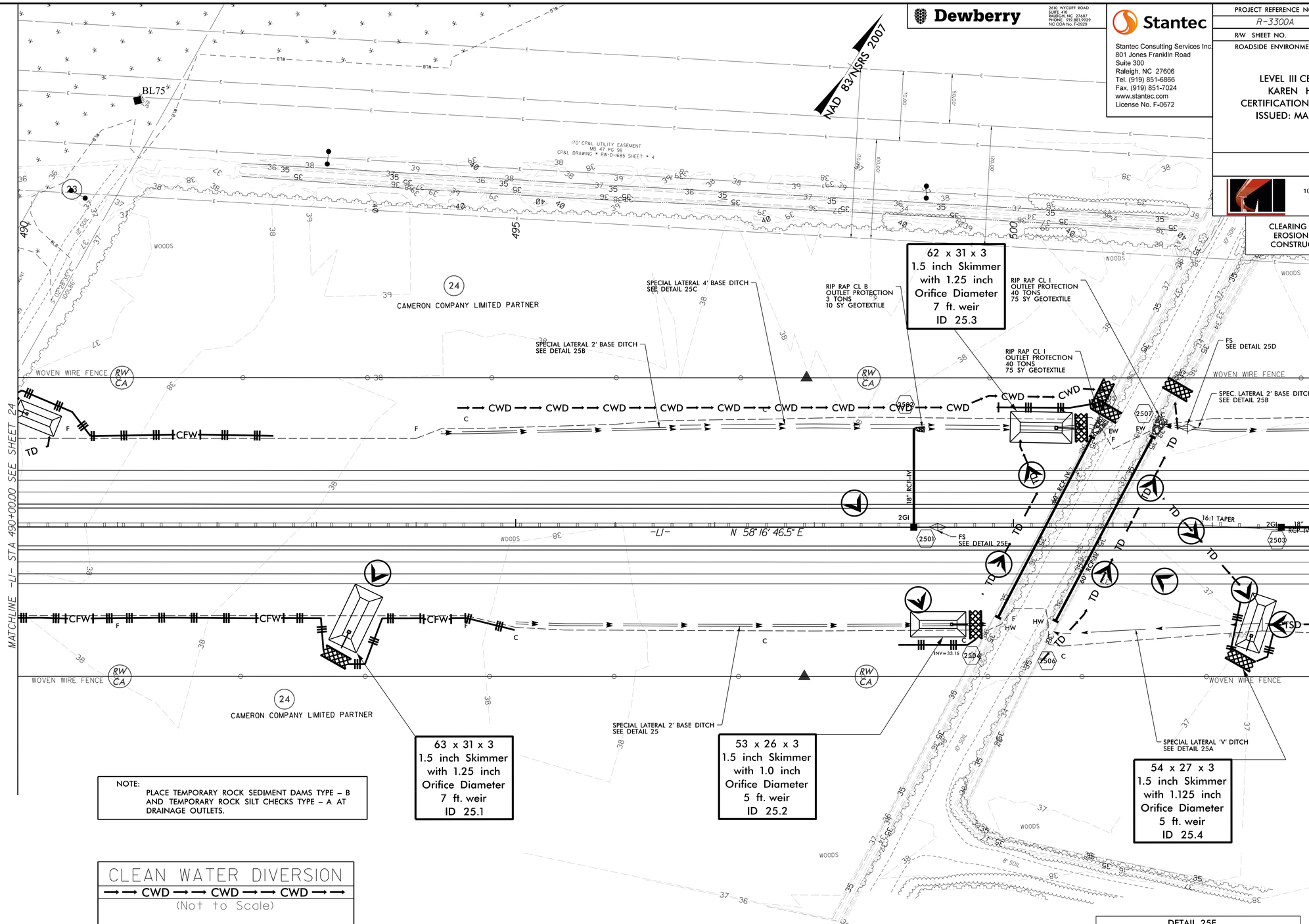
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-25/CONST.25
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

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

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 25

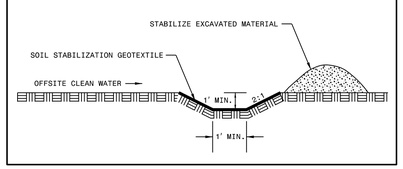


NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

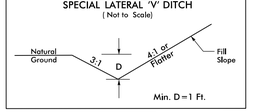
CLEAN WATER DIVERSION

→→ CWD →→ CWD →→ CWD →→

(Not to Scale)

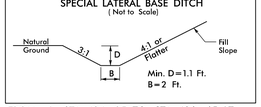


DETAIL 25A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



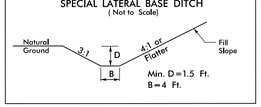
FROM –L– STA. 500+36 TO STA. 504+00 RT.

DETAIL 25B
SPECIAL LATERAL BASE DITCH
(Not to Scale)



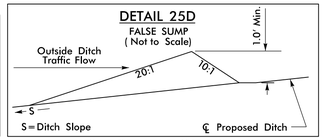
FROM –L– STA. 494+25 TO STA. 496+65 LT.
FROM –L– STA. 495+00 TO STA. 499+78 RT.
FROM –L– STA. 501+48 TO STA. 515+50 LT.

DETAIL 25C
SPECIAL LATERAL BASE DITCH
(Not to Scale)



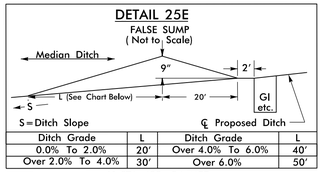
FROM –L– STA. 496+65 TO STA. 500+75 LT.

DETAIL 25D
FALSE SUMP
(Not to Scale)



L1 STA. 501+75 LT., TOP EL=35.71

DETAIL 25E
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. 499+24 MED.

SEE SHEET 51 FOR –L1– PROFILE

3/6/2025
R:\Erosion Control\CADD\R3300A_ec_psh_25_C&G.dgn
MI ENGINEERING, RALEIGH NC

Dewberry
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NC COA No. F-0929

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www.stantec.com
License No. F-0672

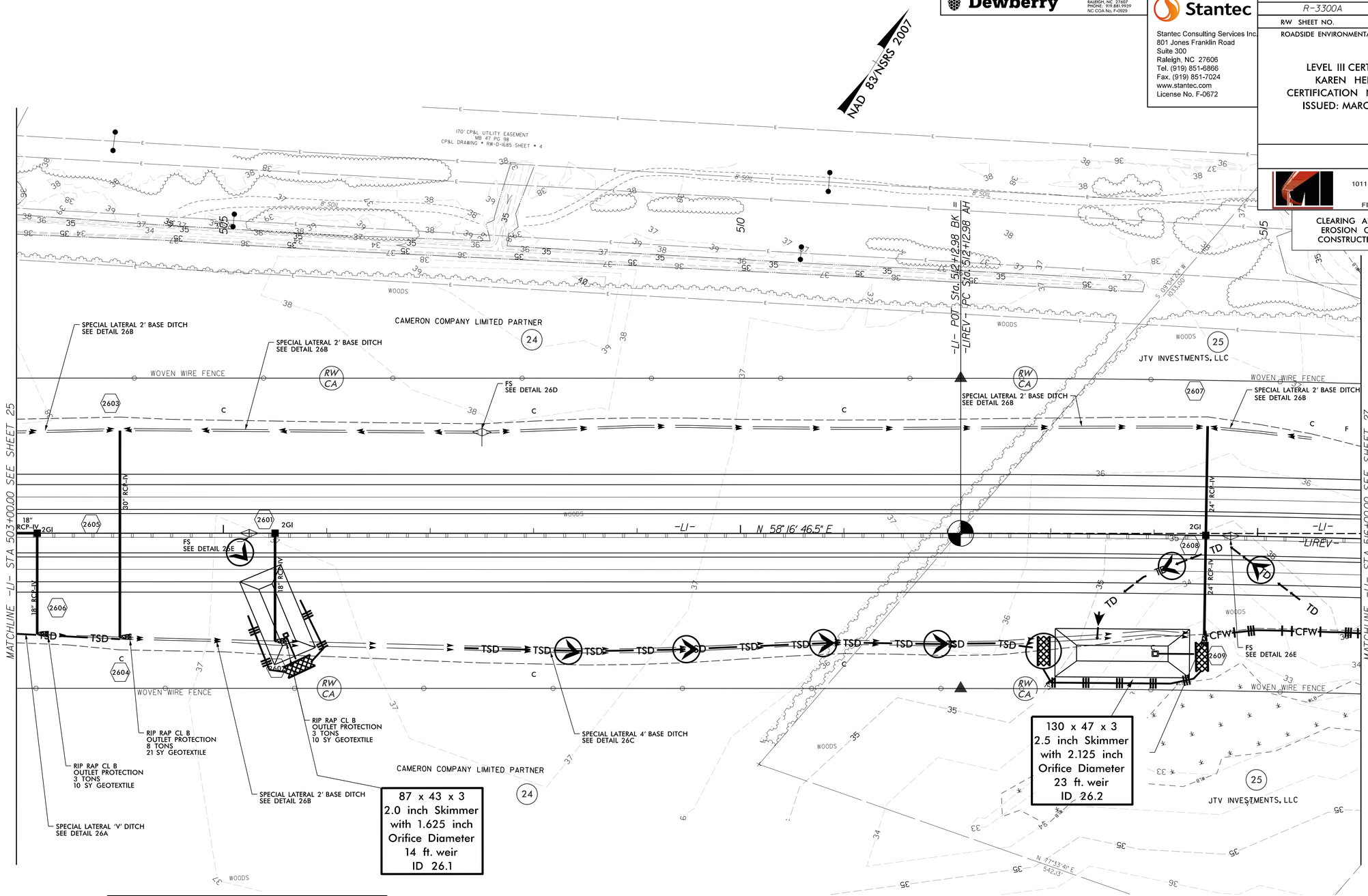
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-26/CONST.26
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

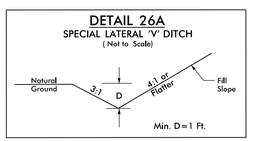
MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 26



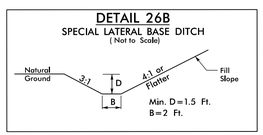
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

DETAIL 26A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



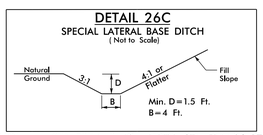
FROM –L– STA. 500+36 TO STA. 504+00 RT.

DETAIL 26B
SPECIAL LATERAL BASE DITCH
(Not to Scale)



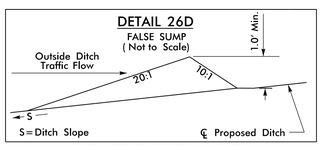
FROM –L– STA. 501+48 TO –L1REV– STA. 515+50 LT.
FROM –L– STA. 504+00 TO –L1REV– STA. 505+50 RT.

DETAIL 26C
SPECIAL LATERAL BASE DITCH
(Not to Scale)



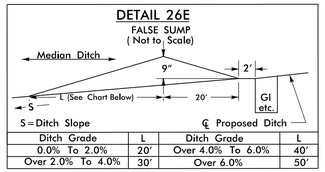
FROM –L– STA. 505+50 TO –L1REV– STA. 514+36 RT.

DETAIL 26D
FALSE SUMP
(Not to Scale)



L1 STA. 507+50 LT., TOP EL=36.50

DETAIL 26E
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. 505+25 MED.
L1REV STA. 514+74 MED.

SEE SHEETS 51 & 52 FOR –L1– & –L1REV– PROFILE

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PHONE: 919.881.9939
NC COA No. F-0929

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-27/CONST.27
R/W SHEET NO.	

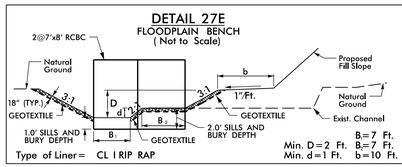
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

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

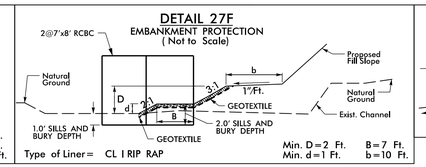
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 27

DETAIL 27E
FLOODPLAIN BENCH
(Not to Scale)



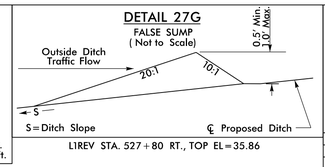
FROM –L1REV– STA. 520+34 TO STA. 522+15 RT.,L=203'
DDE=1125 CY, 621 TONS RIP RAP, 1100 SY GEOTEXTILE
FROM –Y35– STA. 20+80 TO STA. 22+71 LT., L=191'
DDE=430 CY, 400 TONS RIP RAP, 700 SY GEOTEXTILE

DETAIL 27F
EMBANKMENT PROTECTION
(Not to Scale)



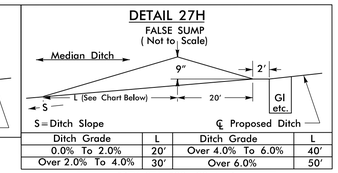
FROM –Y35– STA. 20+25 TO STA. 20+80 LT., L=55'
DDE=20 CY, 52 TONS RIP RAP, 105 SY GEOTEXTILE

DETAIL 27G
FALSE SUMP
(Not to Scale)



L1REV STA. 527+80 RT., TOP EL=35.86

DETAIL 27H
FALSE SUMP
(Not to Scale)

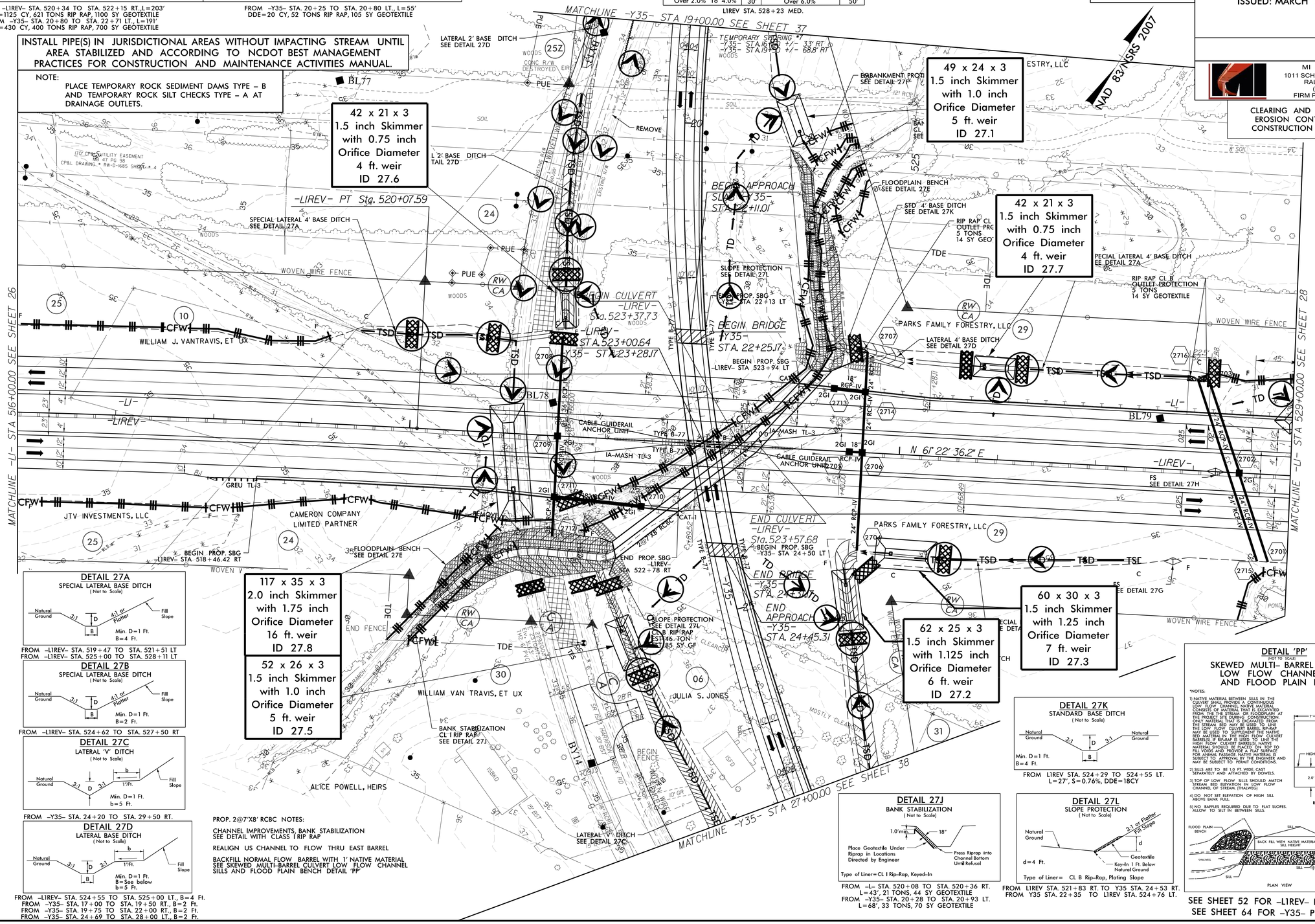


Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

L1REV STA. 528+23 MED.

INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.



DETAIL 27A
SPECIAL LATERAL BASE DITCH
(Not to Scale)

FROM –L1REV– STA. 519+47 TO STA. 521+51 LT
FROM –L1REV– STA. 525+00 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. 17+00 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.

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 1' NATIVE MATERIAL SEE SKEWED MULTI-BARREL CULVERT LOW FLOW CHANNEL SILLS AND FLOOD PLAIN BENCH DETAIL 'PP'

DETAIL 27K
STANDARD BASE DITCH
(Not to Scale)

FROM L1REV STA. 524+29 TO 524+55 LT.
L=27', S=0.76%, DDE=18CY

DETAIL 27J
BANK STABILIZATION
(Not to Scale)

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

FROM –L– STA. 520+08 TO STA. 520+36 RT.
L=43', 21 TONS, 44 SY GEOTEXTILE
FROM –Y35– STA. 20+28 TO STA. 20+93 LT.
L=68', 33 TONS, 70 SY GEOTEXTILE

DETAIL 27L
SLOPE PROTECTION
(Not to Scale)

Type of Liner= CL B Rip-Rap, Plating Slope

FROM L1REV STA. 521+83 RT. TO Y35 STA. 24+53 RT.
FROM Y35 STA. 22+35 TO L1REV STA. 524+76 LT.

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

*NOTES:

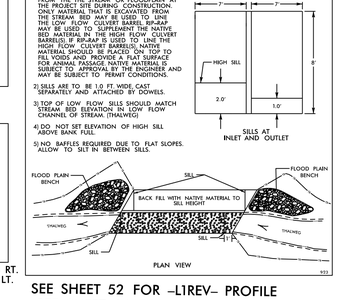
1) NATIVE MATERIAL BETWEEN SILLS IN THE CULVERT SHALL PROVIDE A CONTINUOUS CONVEX FLOW CHANNEL NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE THE STREAM OR FLOODPLAIN AT THE PROJECT SITE DURING CONSTRUCTION. ONLY MATERIAL THAT IS EXCAVATED FROM THE STREAM MAY BE USED TO FILL IN THE LOW FLOW CULVERT BARREL. RIP-RAP MAY BE USED TO SUPPLEMENT THE NATIVE BED MATERIAL IN THE HIGH FLOW CULVERT BARREL(S). IF RIPRAP IS USED TO LINE THE BARREL, THE NATIVE BED MATERIAL OVER THE RIPRAP 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 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.



SEE SHEET 52 FOR –L1REV– PROFILE
SEE SHEET 64 FOR –Y35– PROFILE

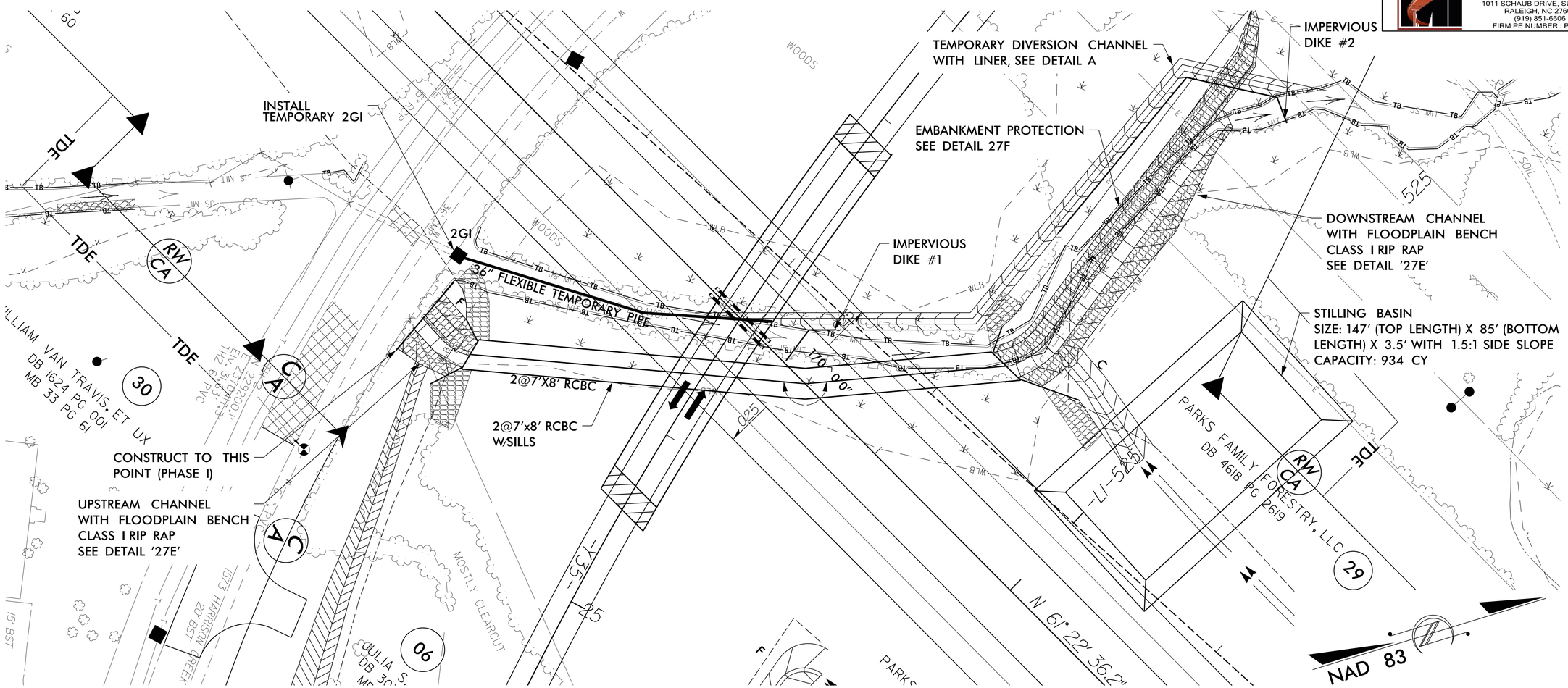
3/6/2025
R:\Erosion Control\CADD\R3300A_ec_psh_27_C&G.dgn
MI ENGINEERING, RALEIGH NC

CULVERT CONSTRUCTION SEQUENCE STA. 523 + 48.57 –L–
2@7'X8' RCBC, PHASE I
(NOT TO SCALE)

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-27A/CONST.27
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

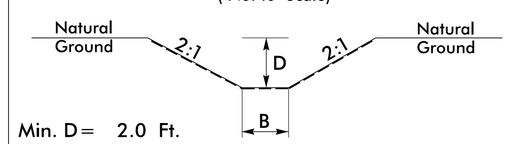
LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

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



1. CONSTRUCT STILLING BASIN.
2. CONSTRUCT TEMPORARY DIVERSION CHANNEL (DETAIL A) WITH LINER, TEMPORARY FLEXIBLE PIPE, TEMPORARY 2GI, IMPERVIOUS DIKES #1 AND #2, AND DIRECT FLOW INTO TEMPORARY DIVERSION CHANNEL.
3. DEWATER CONSTRUCTION AREA UTILIZING STILLING BASIN FOR PUMPED EFFLUENT.
4. CONSTRUCT PROPOSED 2@7'X8' RCBC WITH SILLS AND DOWNSTREAM CHANNEL WITH CLASS I RIP RAP STABILIZATION AND FLOODPLAIN BENCH IN ACCORDANCE WITH THE PLANS.
5. CONSTRUCT UPSTREAM CHANNEL WITH CLASS I RIP RAP STABILIZATION AND FLOODPLAIN BENCH TO DESIGNATED POINT IN ACCORDANCE WITH THE PLANS.

DETAIL A
TEMPORARY DIVERSION CHANNEL
(Not to Scale)



Min. D = 2.0 Ft.
B = 3.0 Ft.
Type of Liner = GEOTEXTILE

560 SY GEOTEXTILE
260 CY DDE
910 LF TEMP. PIPE

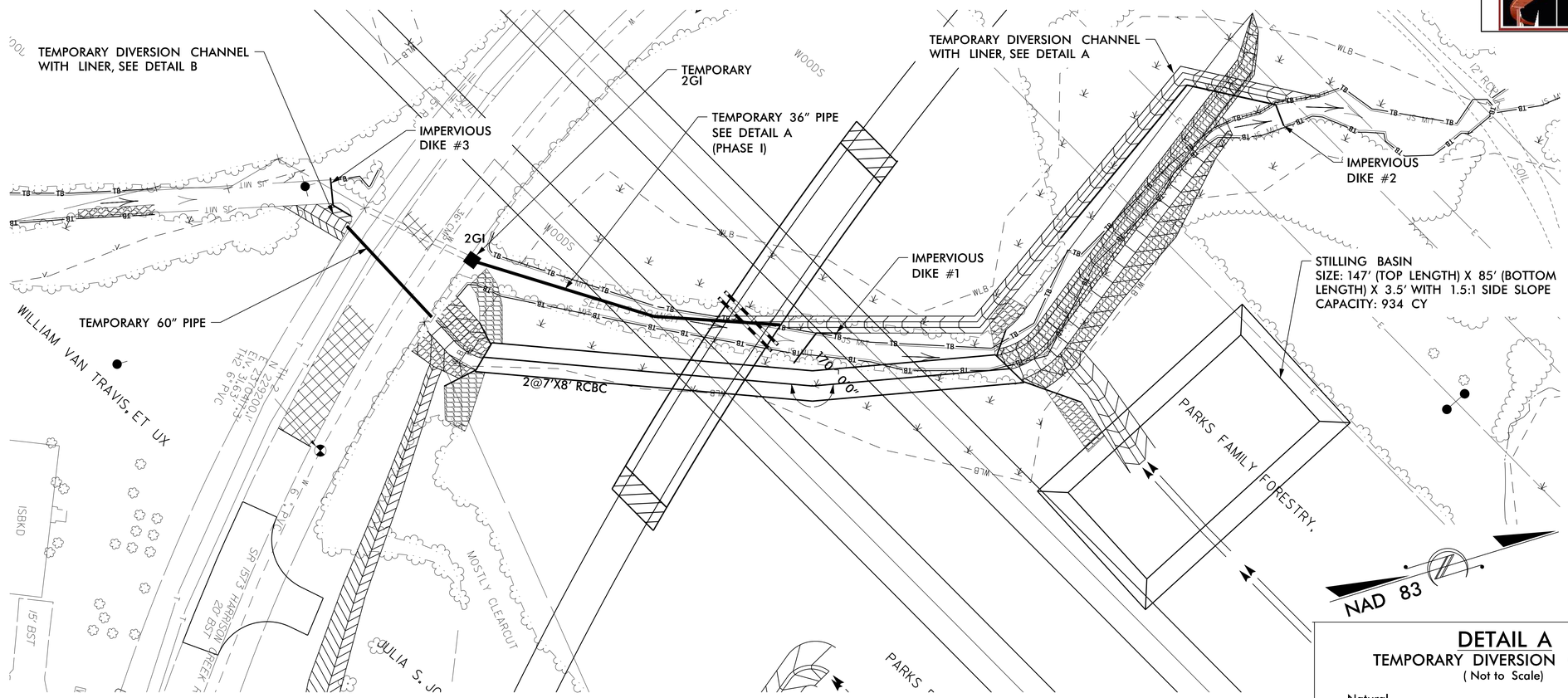
3/6/2025
R:\Erosion Control\CADD\R3300A_ec_psh_27A_C&G_CUL2_Ph1.dgn
MI ENGINEERING, RALEIGH NC

CULVERT CONSTRUCTION SEQUENCE STA. 523+48.57 –L–
2@7'X8' RCBC, PHASE II
(NOT TO SCALE)

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-27B/CONST.27
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

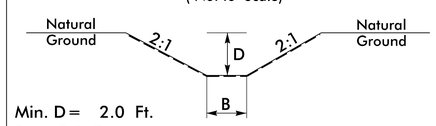
LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

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



6. INSTALL TEMPORARY 60" PIPE UNDER HARRISON CREEK RD ONE LANE AT A TIME.
7. CONSTRUCT TEMPORARY DIVERSION CHANNEL (DETAIL B) WITH LINER UPSTREAM OF TEMPORARY 60" PIPE, IMPERVIOUS DIKE #3, AND DIRECT FLOW THROUGH TEMPORARY 60" PIPE AND PROPOSED 2@7'X8' RCBC.
8. EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES.
9. REMOVE TEMPORARY 2GI, TEMPORARY DIVERSION CHANNEL (DETAIL A) WITH LINER, TEMPORARY 36" PIPE AND IMPERVIOUS DIKES #1, AND #2.
10. CONSTRUCT –Y35–.

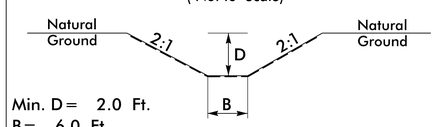
DETAIL A
TEMPORARY DIVERSION CHANNEL
(Not to Scale)



Min. D = 2.0 Ft.
B = 3.0 Ft.
Type of Liner = GEOTEXTILE (NCDOT TYPE 4)

690 SY GEOTEXTILE
260 CY DDE

DETAIL B
TEMPORARY DIVERSION CHANNEL
(Not to Scale)



Min. D = 2.0 Ft.
B = 6.0 Ft.
Type of Liner = GEOTEXTILE (NCDOT TYPE 4)

71 SY GEOTEXTILE
75 CY DDE

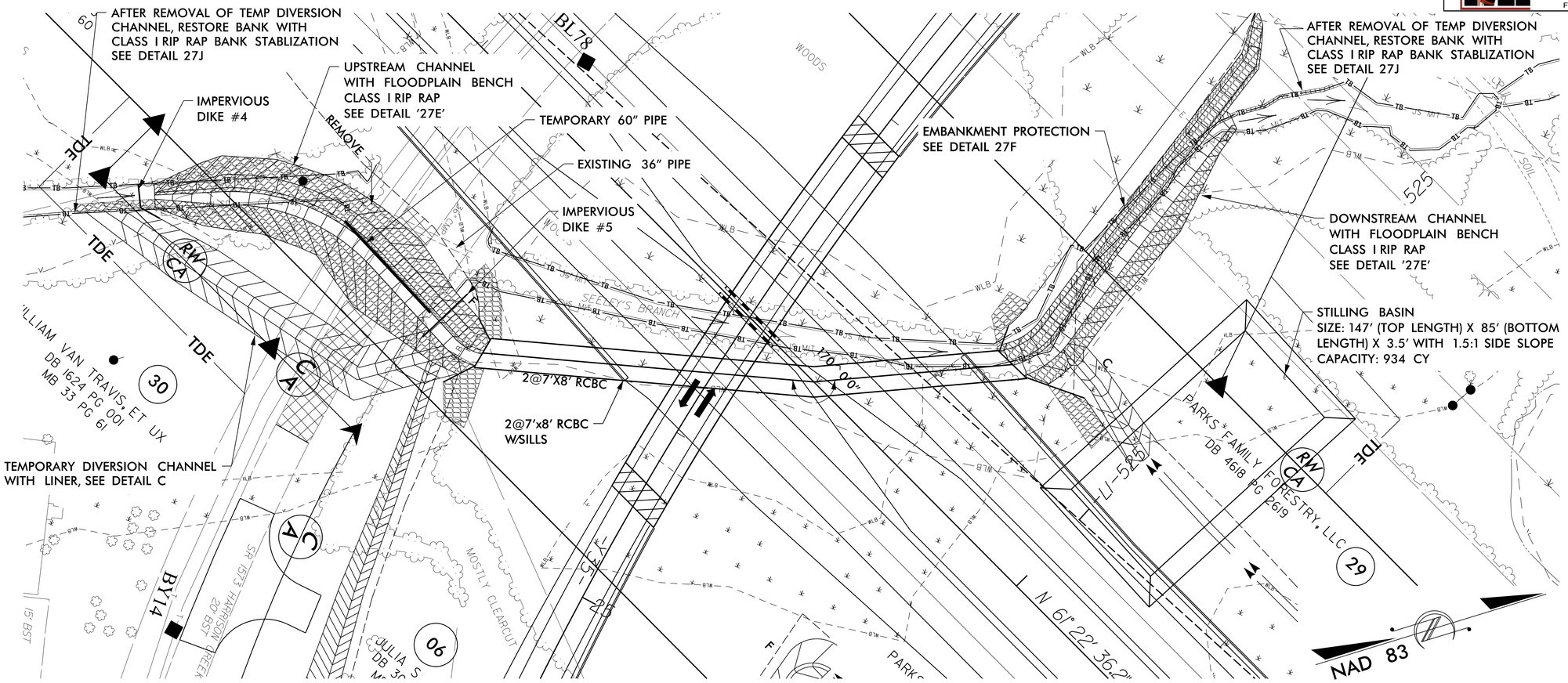
3/6/2025
R:\Erosion Control\CADD\R3300A_ec_psh_27B_C&G_CUL2_Ph2.dgn
MI ENGINEERING, RALEIGH NC

CULVERT CONSTRUCTION SEQUENCE STA. 523 + 48.57 –L–
2@7'X8' RCBC, PHASE III
(NOT TO SCALE)

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-27C/CONST.27
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

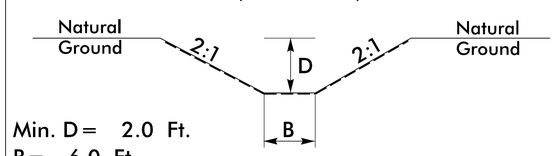
LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

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



11. CONSTRUCT TEMPORARY DIVERSION CHANNEL (DETAIL C) WITH LINER AND IMPERVIOUS DIKE #4 AND #5. DIRECT FLOW INTO TEMPORARY DIVERSION CHANNEL (DETAIL C) AND PROPOSED 2@7'X8' RCBC WITH SILLS.
12. REMOVE EXISTING 36" PIPE, TEMPORARY 60" PIPE, TEMPORARY DIVERSION CHANNEL (DETAIL B), AND IMPERVIOUS DIKE #3. CONSTRUCT REMAINING UPSTREAM CHANNEL WITH CLASS I RIP RAP STABILIZATION AND FLOODPLAIN BENCH IN ACCORDANCE WITH THE PLANS.
13. EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES.
14. REMOVE TEMPORARY DIVERSION CHANNEL (DETAIL C) WITH LINER AND IMPERVIOUS DIKES #4 AND #5. DIRECT FLOW THORUGH UPSTREAM CHANNEL REALIGNMENT AND 2@7'X8' RCBC WITH SILLS; REMOVE STILLING BASIN.
15. COMPLETE ROADWAY.

DETAIL C
TEMPORARY DIVERSION CHANNEL
(Not to Scale)



Min. D = 2.0 Ft.
B = 6.0 Ft.
Type of Liner = GEOTEXTILE (NCDOT TYPE 4)

600 SY GEOTEXTILE
500 CY DDE

3/6/2025
R:\Erosion Control\CADD\R3300A_ec_psh_27C_C&G_CUL2_Ph3.dgn
MI ENGINEERING, RALEIGH NC

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

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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	EC-28/CONST.28
RW SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

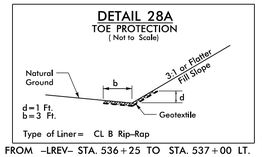
LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

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

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 28

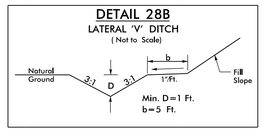
NAD 83/NSRS 2007

DETAIL 28A
TOE PROTECTION
(Not to Scale)



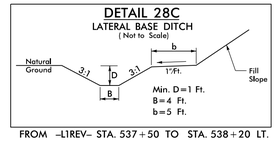
FROM –LREV– STA. 536+25 TO STA. 537+00 LT.

DETAIL 28B
LATERAL 'V' DITCH
(Not to Scale)



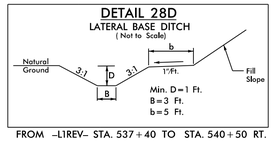
FROM –L1REV– STA. 537+00 TO STA. 537+50 LT.
FROM –L1REV– STA. 540+50 TO STA. 542+50 RT.

DETAIL 28C
LATERAL BASE DITCH
(Not to Scale)



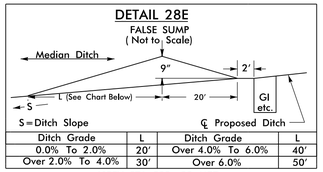
FROM –L1REV– STA. 537+50 TO STA. 538+20 LT.

DETAIL 28D
LATERAL BASE DITCH
(Not to Scale)



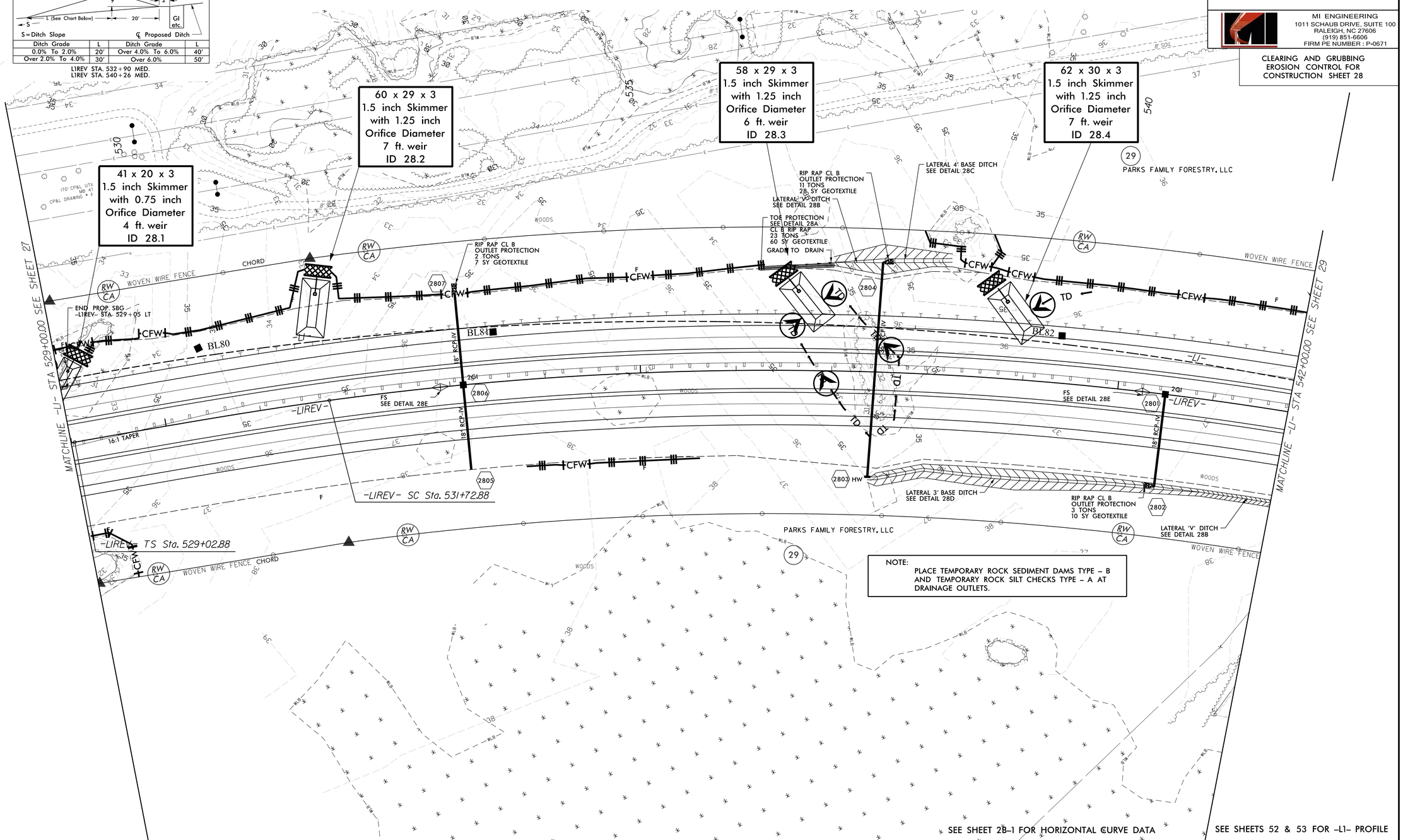
FROM –L1REV– STA. 537+40 TO STA. 540+50 RT.

DETAIL 28E
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'

L1REV STA. 532+90 MED.
L1REV STA. 540+26 MED.



NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA

SEE SHEETS 52 & 53 FOR –L1– PROFILE

3/6/2025
R:\Erosion Control\CADD\R3300A_ec_psh_28_C&G.dgn
MI ENGINEERING, RALEIGH NC

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www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-29/CONST.29
R/W SHEET NO.	

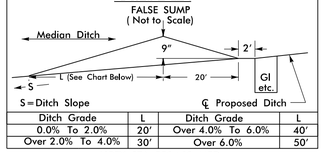
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

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

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 29

DETAIL 29G
FALSE SUMP
(Not to Scale)

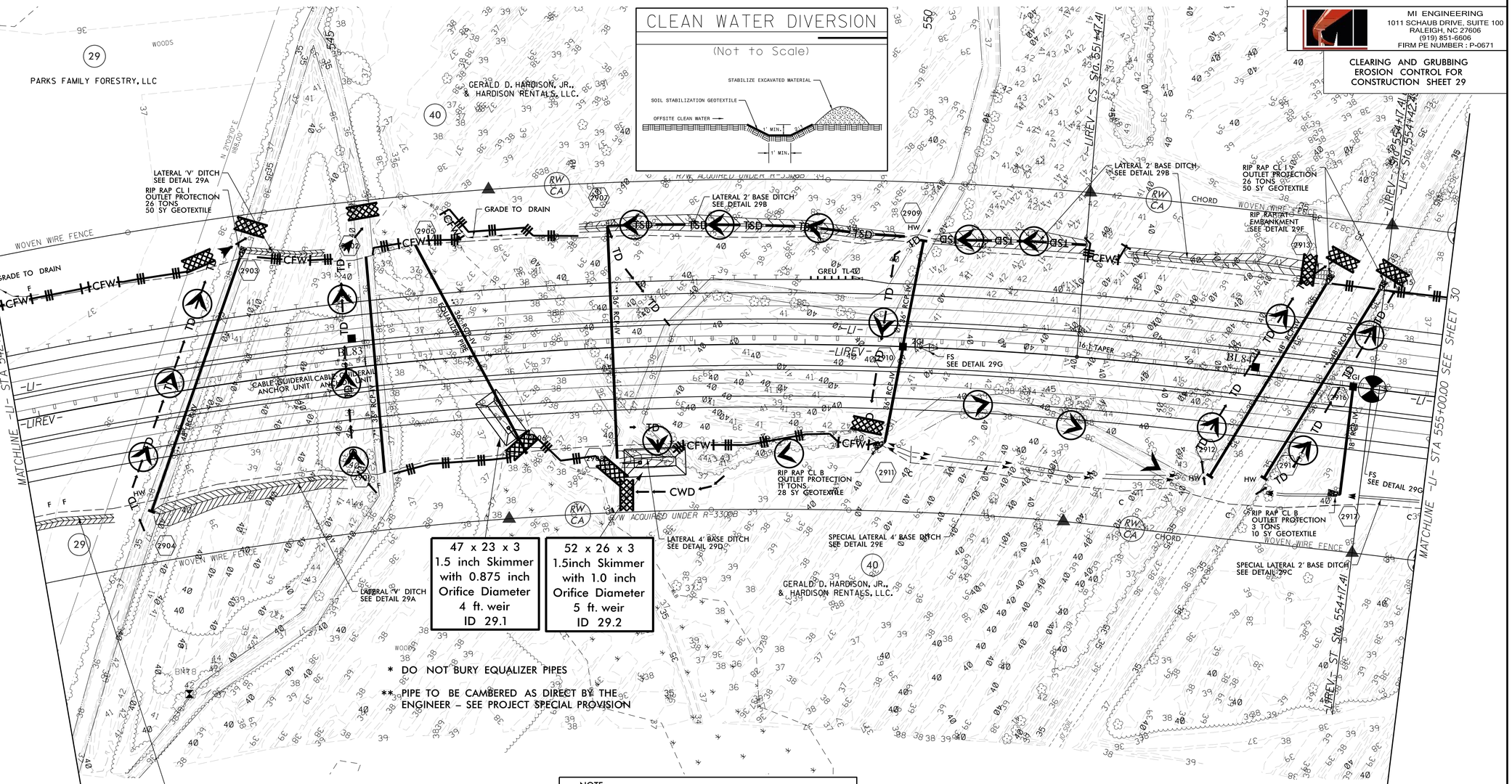


Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

L1REV STA. 550+13 MED.
L1 STA. 554+49 MED.

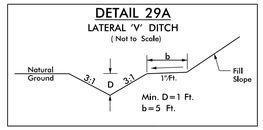
NAD 83/NSRS 2007

CLEAN WATER DIVERSION
(Not to Scale)



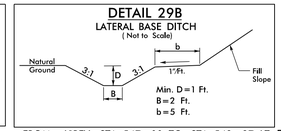
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

DETAIL 29A
LATERAL 'V' DITCH
(Not to Scale)



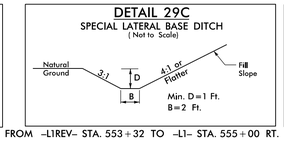
FROM –L1REV– STA. 544+08 TO STA. 544+75 LT.
FROM –L1REV– STA. 540+50 TO STA. 542+50 RT.
FROM –L1REV– STA. 542+88 TO STA. 544+71 RT.

DETAIL 29B
LATERAL BASE DITCH
(Not to Scale)



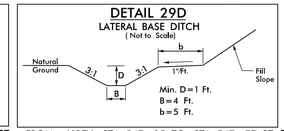
FROM –L1REV– STA. 547+00 TO STA. 549+87 LT.
FROM –L1REV– STA. 550+12 TO STA. 551+46 LT.
FROM –L1REV– STA. 551+85 TO STA. 553+62 LT.

DETAIL 29C
SPECIAL LATERAL BASE DITCH
(Not to Scale)



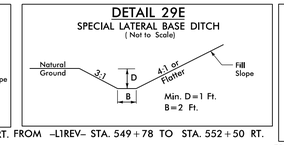
FROM –L1REV– STA. 553+32 TO –L1– STA. 555+00 RT.

DETAIL 29D
LATERAL BASE DITCH
(Not to Scale)



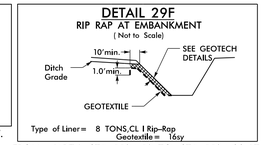
FROM –L1REV– STA. 547+25 TO STA. 547+77 RT.

DETAIL 29E
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM –L1REV– STA. 549+78 TO STA. 552+50 RT.

DETAIL 29F
RIP RAP AT EMBANKMENT
(Not to Scale)



FROM –L1REV– STA. 553+50 TO STA. 553+66 LT.

SEE SHEET 53 FOR –L1– PROFILE

3/6/2025
R:\Roadway\Project Control\CADD\R3300A_ec_psh_29_C&G.dgn
MI ENGINEERING, RALEIGH NC

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

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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

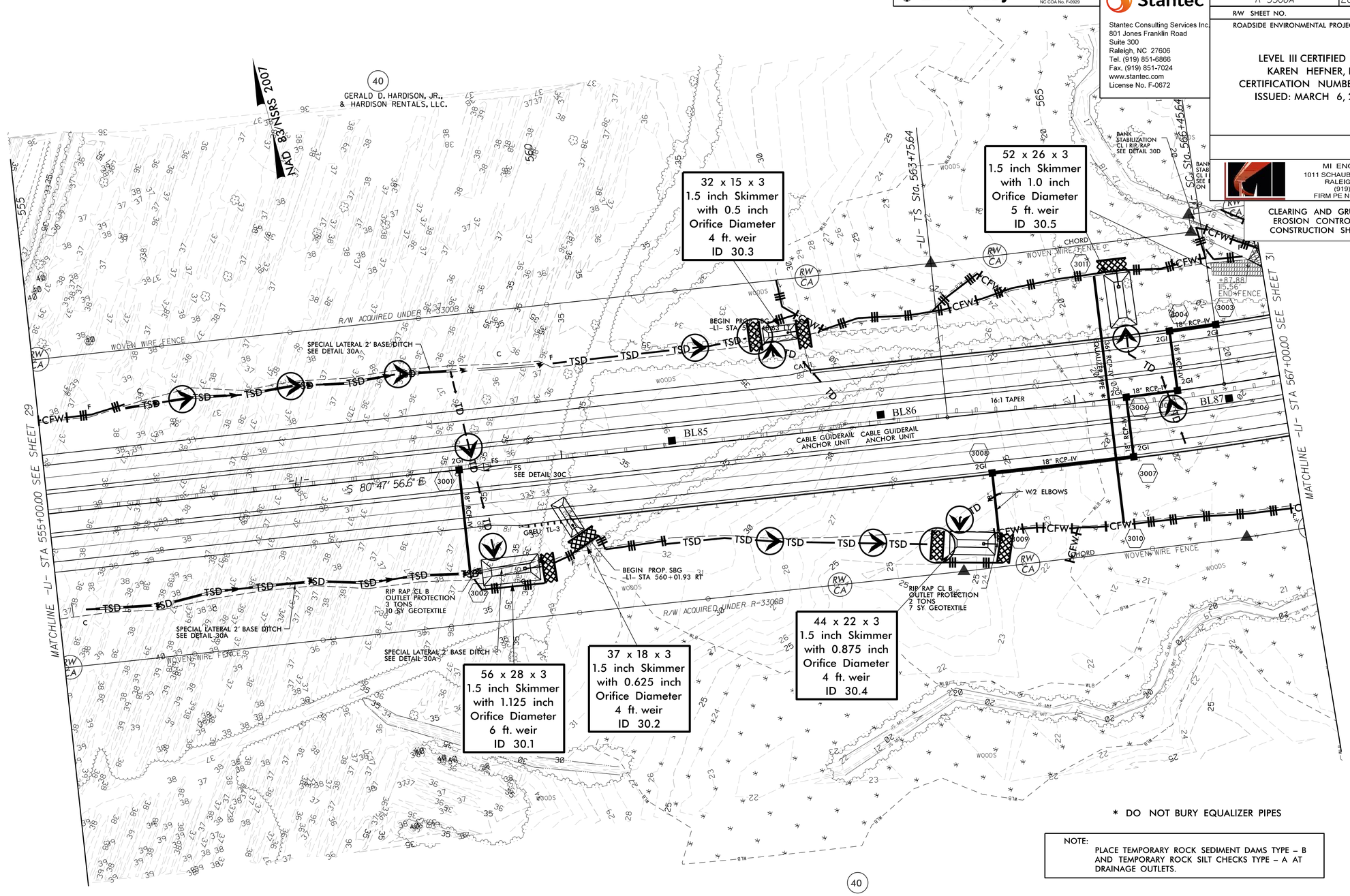
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-30/CONST.30
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

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

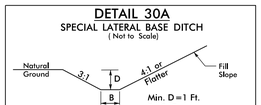
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 30



* DO NOT BURY EQUALIZER PIPES

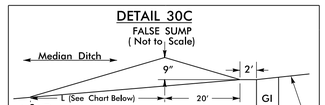
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

DETAIL 30A
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM –L– STA. 555+26 TO STA. 559+68 RT.
FROM –L– STA. 555+85 TO STA. 559+88 LT.

DETAIL 30C
FALSE SUMP
(Not to Scale)

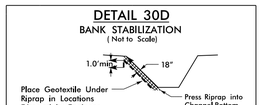


S = Ditch Slope ℄ Proposed Ditch

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. 559+24 MED.

DETAIL 30D
BANK STABILIZATION
(Not to Scale)



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

FROM –L– STA. 566+37 TO STA. 566+97 LT.
L=65', 12 TONS, 40 SY GEOTEXTILE

DETAIL 30E
SLOPE PROTECTION
(Not to Scale)

Type of Liner= CL B Rip-Rap, Plating Slope

FROM –L1– STA. 566+50 TO STA. 568+00 LT.

SEE SHEETS 53 & 54 FOR –L1– PROFILE
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA

3/6/2025
R:\Erosion Control\CADD\R3300A_ec_psh_30_C&G.dgn
MI ENGINEERING, RALEIGH NC

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-31/CONST.31
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

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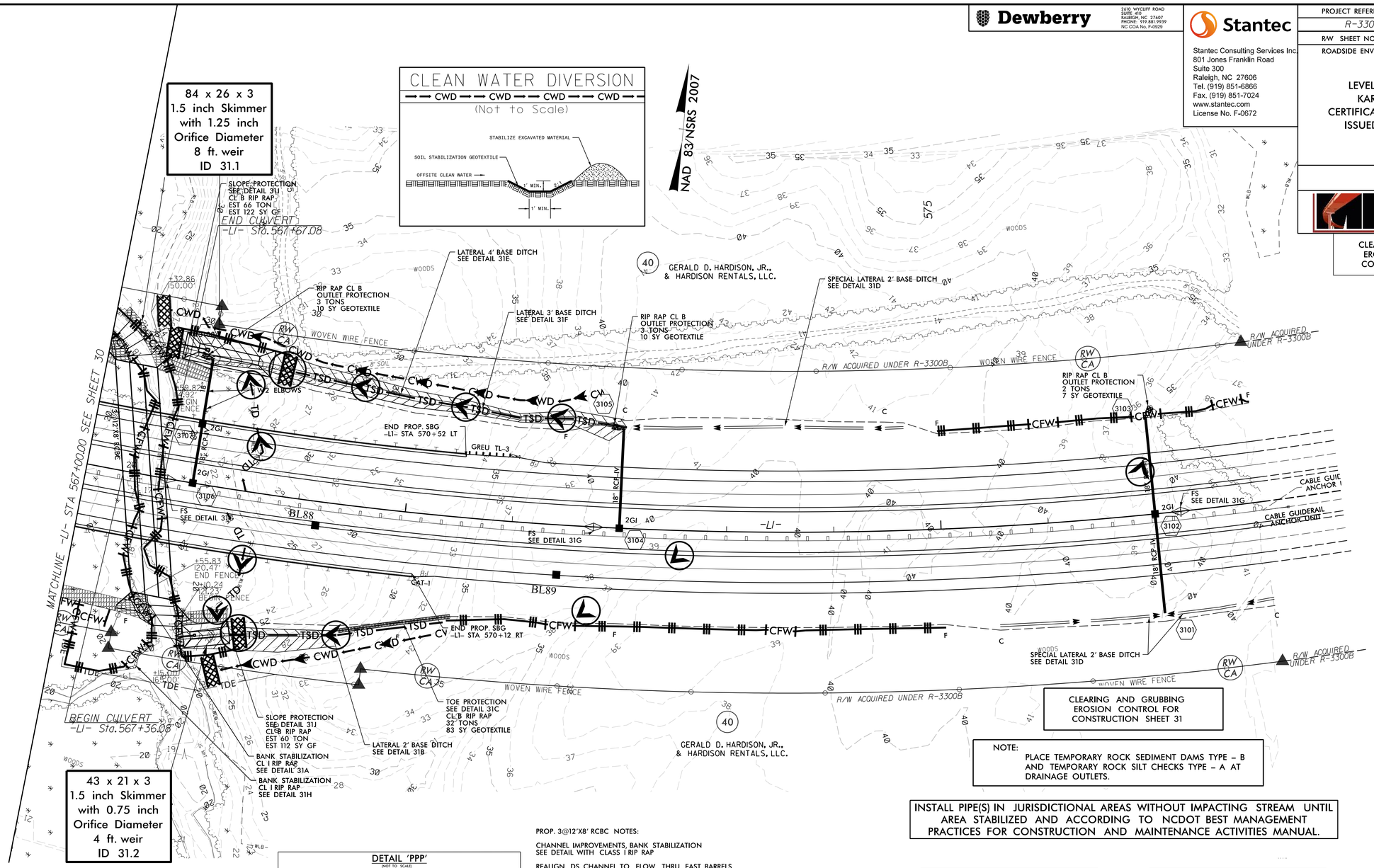
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 31



CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 31

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

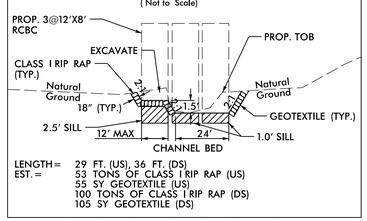
PROP. 3@12'X8' RCBC NOTES:

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)



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)

L1 STA. 567+35 LT. ±; DDE=38 CY (DS)
L1 STA. 568+00 RT. ±; DDE=31 CY (US)

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

*NOTES:

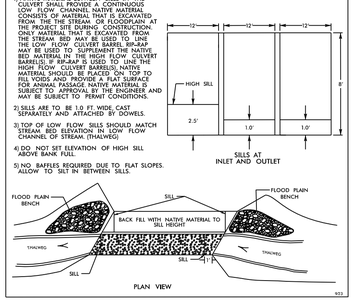
1) NATIVE MATERIAL BETWEEN SILLS IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED MAY BE USED TO LINE THE PROJECT SITE DURING CONSTRUCTION. ONLY MATERIAL THAT IS EXCAVATED FROM THE STREAM BED MAY BE USED TO LINE THE LOW FLOW CULVERT BARREL. RIP-RAP MAY BE USED TO SUPPLEMENT THE NATIVE MATERIAL IN THE LOW FLOW CULVERT BARREL. THE BARRELS OF RIP-RAP IS USED TO LINE THE HIGH FLOW CULVERT BARRELS, NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FILL VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE. NATIVE MATERIAL IS DEFINED AS MATERIAL IN THE STREAM BED AND MAY BE SUBJECT TO PERMIT CONDITIONS.

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

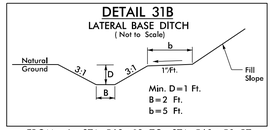
3) TOP OF LOW FLOW SILLS SHOULD MATCH STREAM BED ELEVATION IN LOW FLOW CHANNEL OF STREAM. (THALWEG)

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.



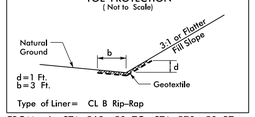
DETAIL 31B
LATERAL BASE DITCH
(Not to Scale)



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)

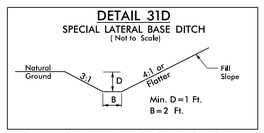


d=1 Ft.
b=3 Ft.

Type of Liner= CL B Rip-Rap

FROM –L– STA. 569+50 TO STA. 570+50 RT.

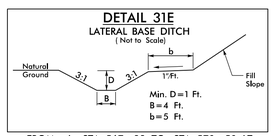
DETAIL 31D
SPECIAL LATERAL BASE DITCH
(Not to Scale)



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.

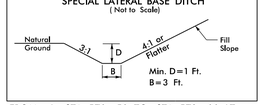
DETAIL 31E
LATERAL BASE DITCH
(Not to Scale)



Min. D=1 Ft.
B=4 Ft.
b=5 Ft.

FROM –L– STA. 567+39 TO STA. 570+50 LT.

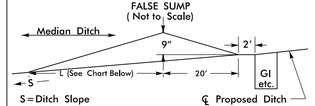
DETAIL 31F
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D=1 Ft.
B=3 Ft.

FROM –L– STA. 570+50 TO STA. 572+00 LT.

DETAIL 31G
FALSE SUMP
(Not to Scale)

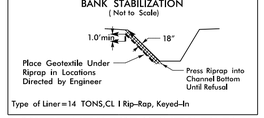


S = Ditch Slope
℄ Proposed Ditch

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. 567+76 MED.
L1 STA. 571+76 MED.
L1 STA. 577+24 MED.

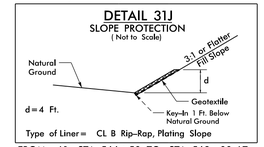
DETAIL 31H
BANK STABILIZATION
(Not to Scale)



Type of Liner=14 TONS,CL I Rip-Rap, Keyed-In

FROM –L– STA. 567+69 TO STA. 567+87 RT.
L=38', 30 TONS, 80 SY GEOTEXTILE

DETAIL 31J
SLOPE PROTECTION
(Not to Scale)



d=4 Ft.

Type of Liner= CL B Rip-Rap, Plating Slope

FROM –L1– STA. 566+50 TO STA. 568+00 LT.
FROM –L1– STA. 567+00 TO STA. 568+50 RT.

SEE SHEET 54 FOR –L1– PROFILE

3/6/2025
N:\Erosion Control\CADD\R3300A_ec_psh_31.C&G.dgn
MI ENGINEERING, RALEIGH NC

CULVERT CONSTRUCTION SEQUENCE STA. 567+53.7 –L–
3@12'X8' RCBC
(NOT TO SCALE)

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-31A/CONST.31
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

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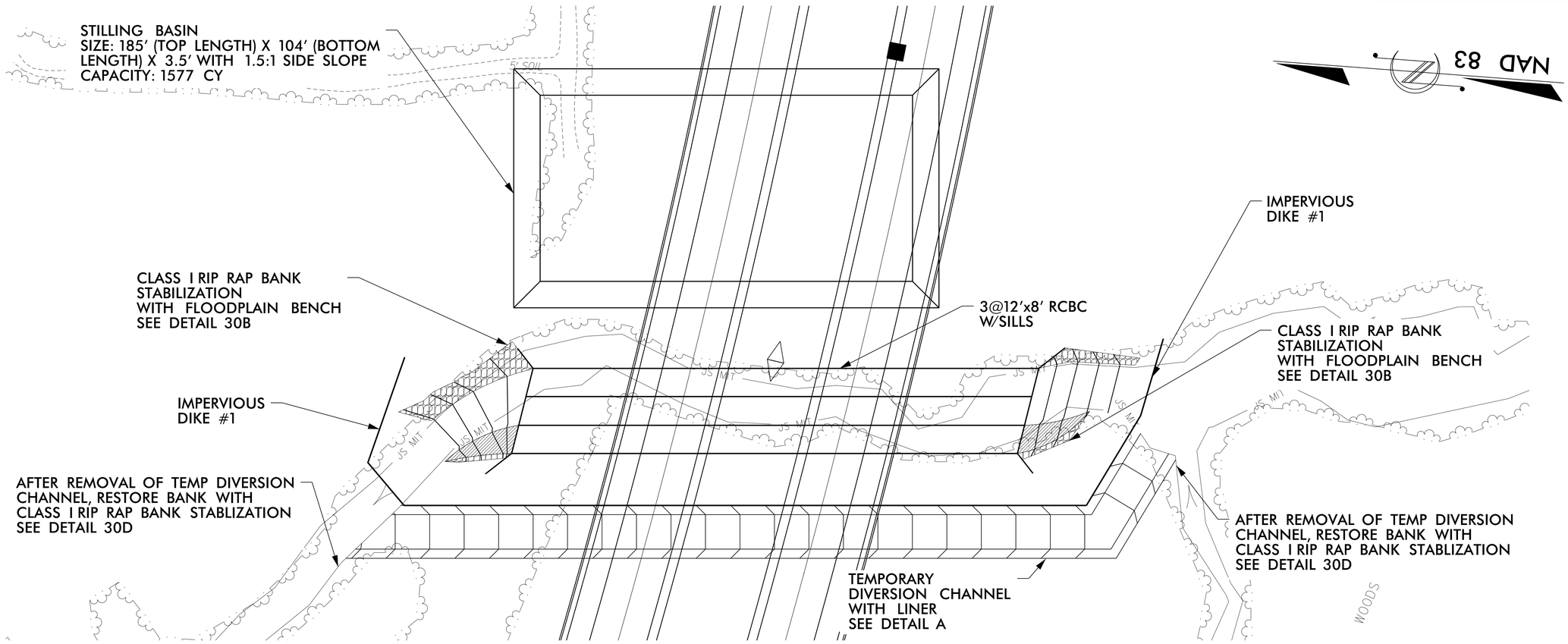
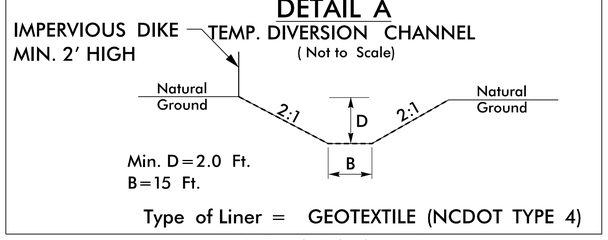
(919) 851-6606
FIRM PE NUMBER : P-0671



1. CONSTRUCT STILLING BASIN
2. CONSTRUCT TEMPORARY DIVERSION CHANNEL WITH LINER (SEE DETAIL A), IMPERVIOUS DIKE #1 AND DIRECT FLOW INTO TEMPORARY DIVERSION CHANNEL.
3. DEWATER CONSTRUCTION AREA UTILIZING STILLING BASIN FOR PUMPED EFFLUENT.
4. CONSTRUCT PROPOSED 3@12'X8' RCBC WITH SILLS, UPSTREAM AND DOWNSTREAM CLASS I RIP RAP STABILIZATION WITH FLOODPLAIN BENCH IN ACCORDANCE WITH THE PLANS.
5. EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES.
6. REMOVE TEMPORARY DIVERSION CHANNEL WITH LINER AND IMPERVIOUS DIKE #1.
7. DIRECT FLOW THROUGH 3@12'X8' RCBC WITH SILLS.
8. REMOVE STILLING BASIN AND COMPLETE ROADWAY.

DETAIL A



Type of Liner = GEOTEXTILE (NCDOT TYPE 4)

1078 SY GEOTEXTILE
507 CY DDE

3/6/2025
R:\Erosion Control\CADD\R3300A_ec_psh_31A_C&G_CUL3.dgn
MI ENGINEERING, RALEIGH NC

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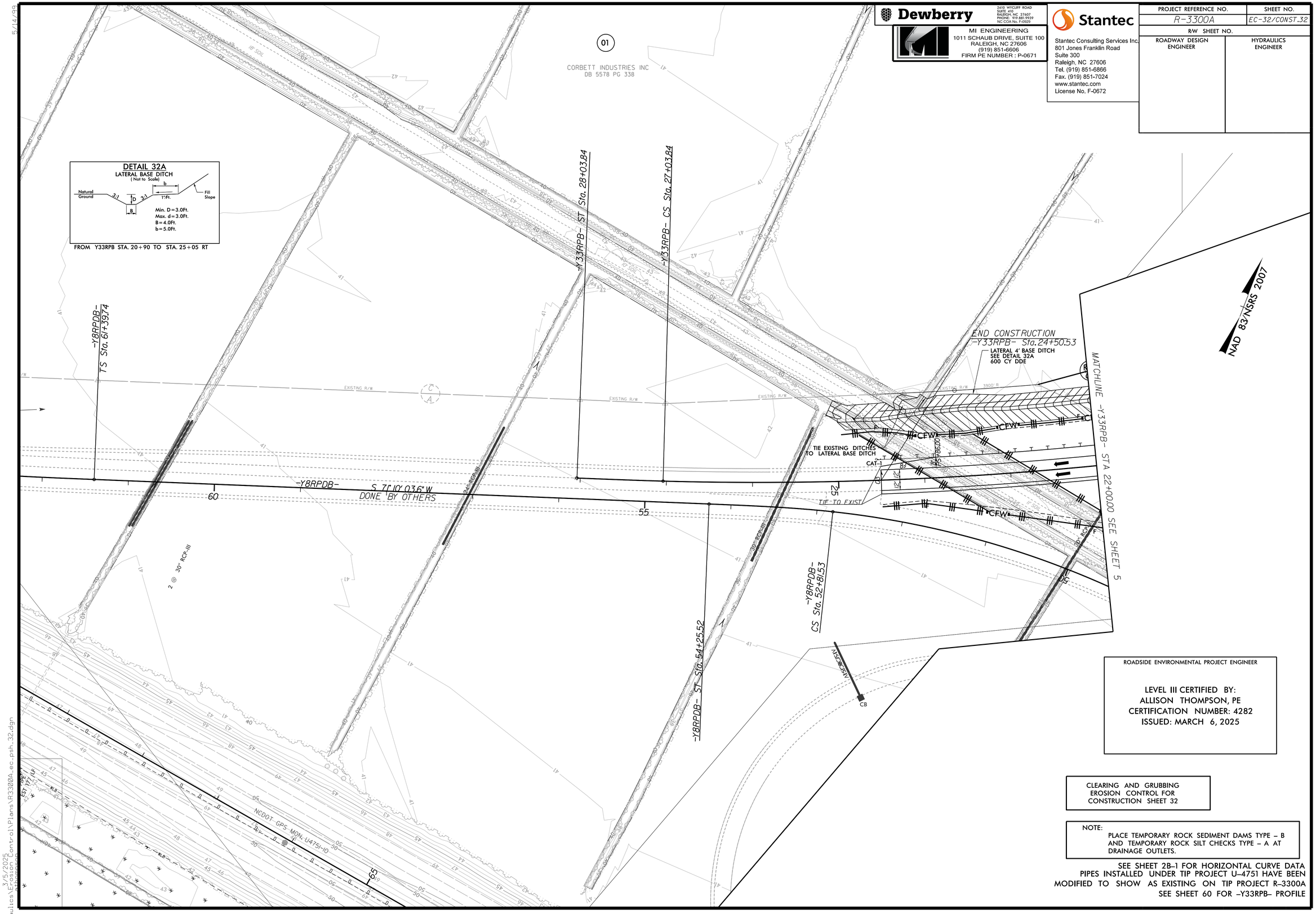
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-32/CONST.32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
ALLISON THOMPSON, PE
CERTIFICATION NUMBER: 4282
ISSUED: MARCH 6, 2025

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 32

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
PIPES INSTALLED UNDER TIP PROJECT U-4751 HAVE BEEN MODIFIED TO SHOW AS EXISTING ON TIP PROJECT R-3300A
SEE SHEET 60 FOR -Y33RPB- PROFILE

Dewberry
2610 WYCLIFF ROAD
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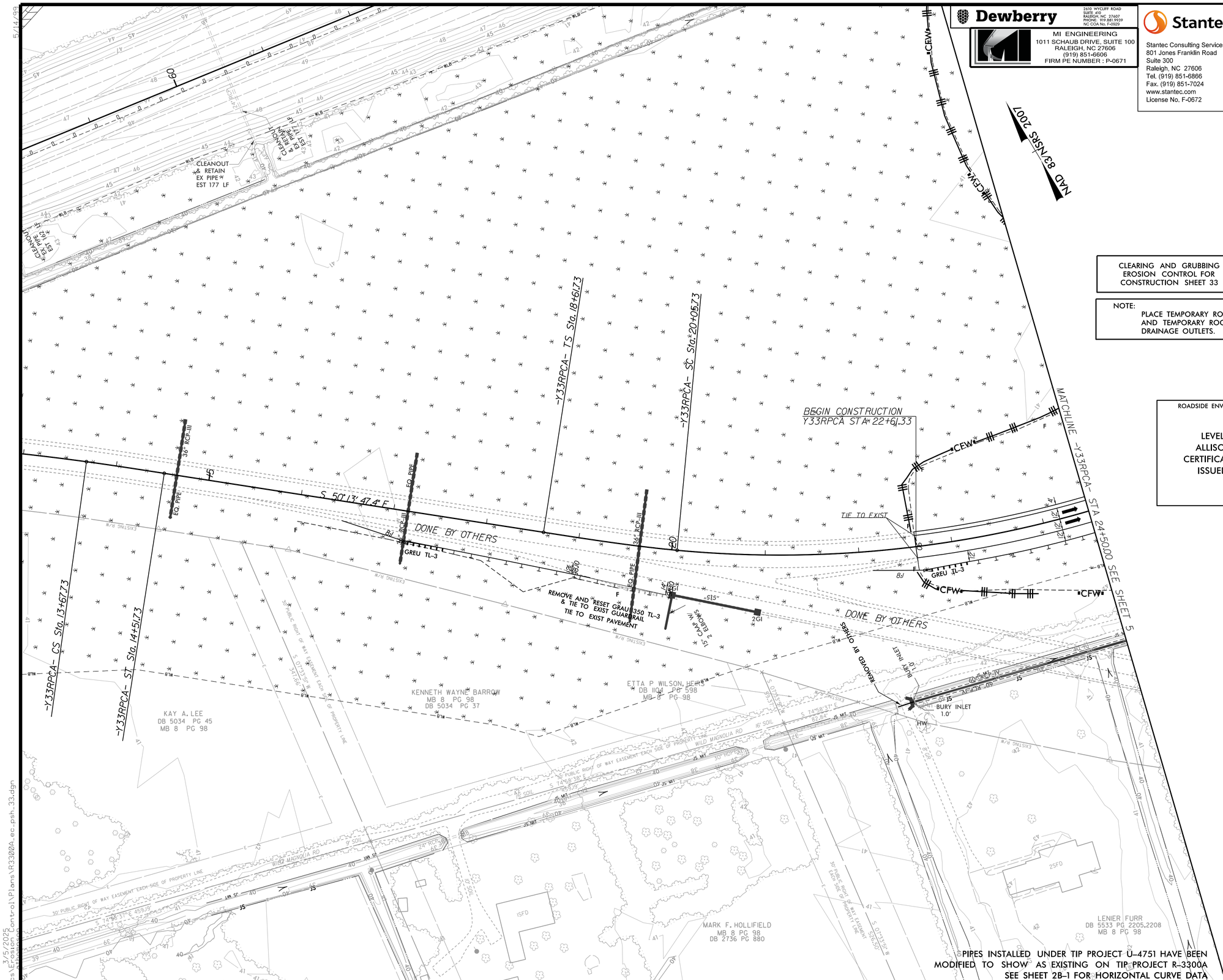
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-33/CONST.33
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 33

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
ALLISON THOMPSON, PE
CERTIFICATION NUMBER: 4282
ISSUED: MARCH 6, 2025



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

5/14/99

3/5/2025
ydraulics\Erosion Control\Plans\R3300A_ec_psh_33.dgn

Dewberry
2610 WYCLIFF ROAD
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RALEIGH, NC 27607
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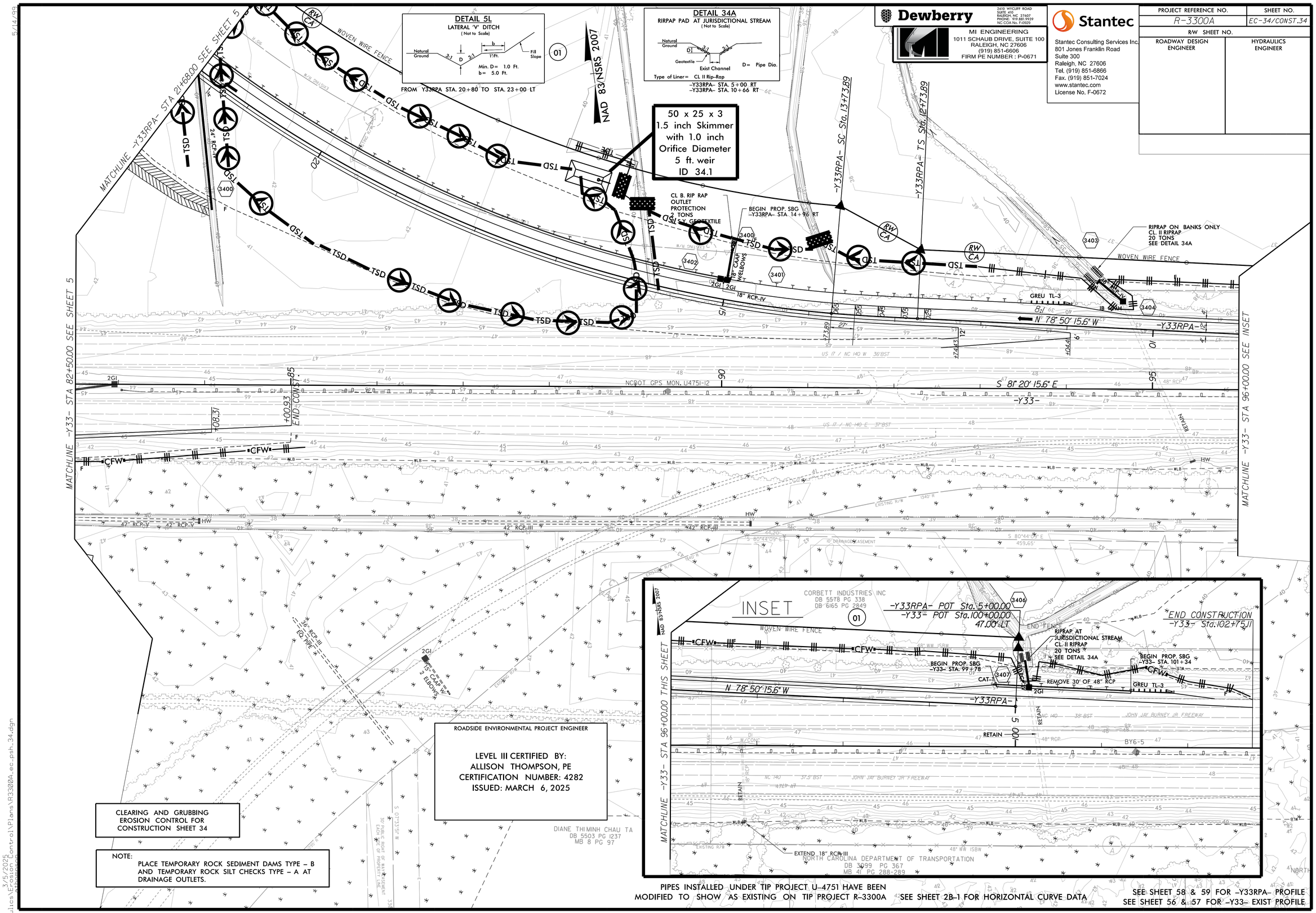
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-34/CONST.34
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
ALLISON THOMPSON, PE
CERTIFICATION NUMBER: 4282
ISSUED: MARCH 6, 2025

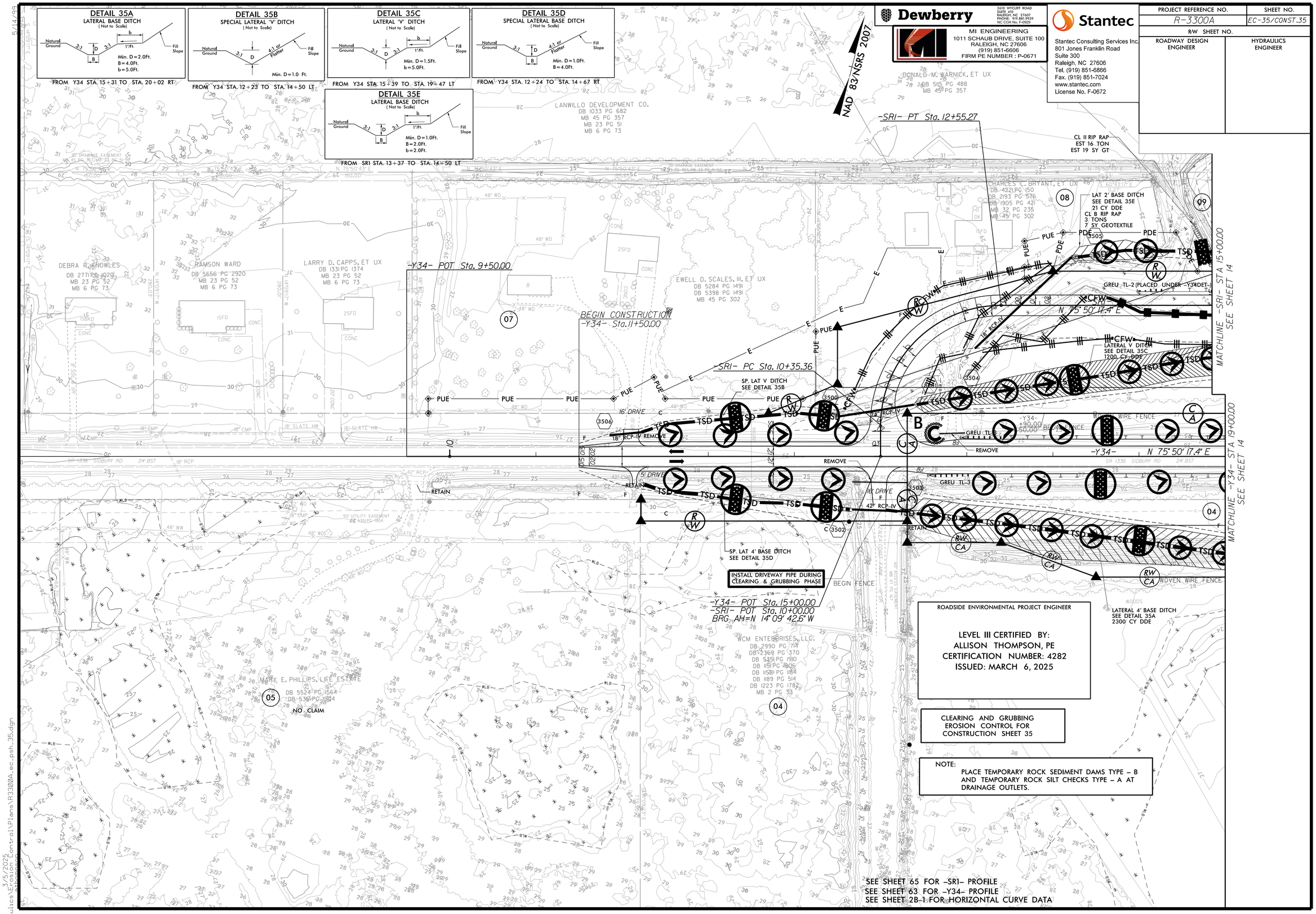
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 34

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

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 58 & 59 FOR -Y33RPA- PROFILE
SEE SHEET 56 & 57 FOR -Y33- EXIST PROFILE


DETAIL 35A
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. 15+31 TO STA. 20+02 RT
DETAIL 35B
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
4:1 or Flatter
Min. D = 1.0 Ft.
FROM Y34 STA. 12+23 TO STA. 14+50 LT
DETAIL 35C
LATERAL 'V' DITCH
(Not to Scale)
Min. D = 1.5Ft.
b = 5.0Ft.
FROM Y34 STA. 15+39 TO STA. 19+47 LT
DETAIL 35D
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Min. D = 1.0Ft.
B = 4.0Ft.
FROM Y34 STA. 12+24 TO STA. 14+67 RT
DETAIL 35E
LATERAL BASE DITCH
(Not to Scale)
Min. D = 1.0Ft.
B = 2.0Ft.
b = 2.0Ft.
FROM SR1 STA. 13+37 TO STA. 14+50 LT
Dewberry
2610 WYCLIFF ROAD
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PHONE: 919.881.9939
NC COA No. F-0929
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FIRM PE NUMBER : P-0671
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www.stantec.com
License No. F-0672
PROJECT REFERENCE NO.
R-3300A
SHEET NO.
EC-35/CONST.35
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NAD 83/NSRS 2007
-SRI- PT Sta. 12+55.27
CL II RIP RAP
EST 16 TON
EST 19 SY GT
LAT 2' BASE DITCH
SEE DETAIL 35E
21 CY DDE
CL B RIP RAP
3 TONS
7 SY GEOTEXTILE
GREU TL-2 (PLACED UNDER Y34 DET.)
N 75° 50' 17.4" E
LATERAL V DITCH
SEE DETAIL 35C
1200 CY DDE
-Y34- POT Sta. 9+50.00
BEGIN CONSTRUCTION
-Y34- Sta. 11+50.00
-SRI- PC Sta. 10+35.36
SP. LAT V DITCH
SEE DETAIL 35B
MATCHLINE -SRI- STA 15+00.00
SEE SHEET 14
MATCHLINE -Y34- STA 19+00.00
SEE SHEET 14
-Y34- +90.00
-SRI- +50.00 BEGIN FENCE
WOVEN WIRE FENCE
GREU TL-3
REMOVE
RETAIN
SP. LAT 4' BASE DITCH
SEE DETAIL 35D
INSTALL DRIVEWAY PIPE DURING CLEARING & GRUBBING PHASE
-Y34- POT Sta. 15+00.00
-SRI- POT Sta. 10+00.00
BRG AH=N 14° 09' 42.6" W
BEGIN FENCE
LATERAL 4' BASE DITCH
SEE DETAIL 35A
2300 CY DDE
DONALD M. WARNICK, ET UX
DB 515 PG 488
MB 45 PG 357
LANWILLO DEVELOPMENT CO.
DB 1033 PG 682
MB 45 PG 357
MB 23 PG 51
MB 6 PG 73
CHARLES L. BRYANT, ET UX
DB 4221 PG 150
DB 2193 PG 576
DB 1305 PG 421
MB 32 PG 235
MB 45 PG 302
DEBRA R. KNOWLES
DB 2771 PG 1029
MB 23 PG 52
MB 6 PG 73
RAMSON WARD
DB 5656 PG 2920
MB 23 PG 52
MB 6 PG 73
LARRY D. CAPPS, ET UX
DB 1331 PG 1374
MB 23 PG 52
MB 6 PG 73
EWELL D. SCALES, III, ET UX
DB 5284 PG 1491
DB 5398 PG 1491
MB 45 PG 302
WCM ENTERPRISES, LLC.
DB 2990 PG 718
DB 2369 PG 370
DB 535 PG 1910
DB 1151 PG 1806
DB 1152 PG 1184
DB 1189 PG 514
DB 1223 PG 1782
MB 2 PG 33
MARY E. PHILLIPS, LIFE ESTATE
DB 5524 PG 1564
DB 535 PG 1904
NO CLAIM
SR 1336 SIDBURY RD
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER
LEVEL III CERTIFIED BY:
ALLISON THOMPSON, PE
CERTIFICATION NUMBER: 4282
ISSUED: MARCH 6, 2025
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 35
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.
SEE SHEET 65 FOR –SRI– PROFILE
SEE SHEET 63 FOR –Y34– PROFILE
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
5/14/99
3/5/2025
ydraulics\Erosion Control\Plans\R3300A_ec_psh_35.dgn

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

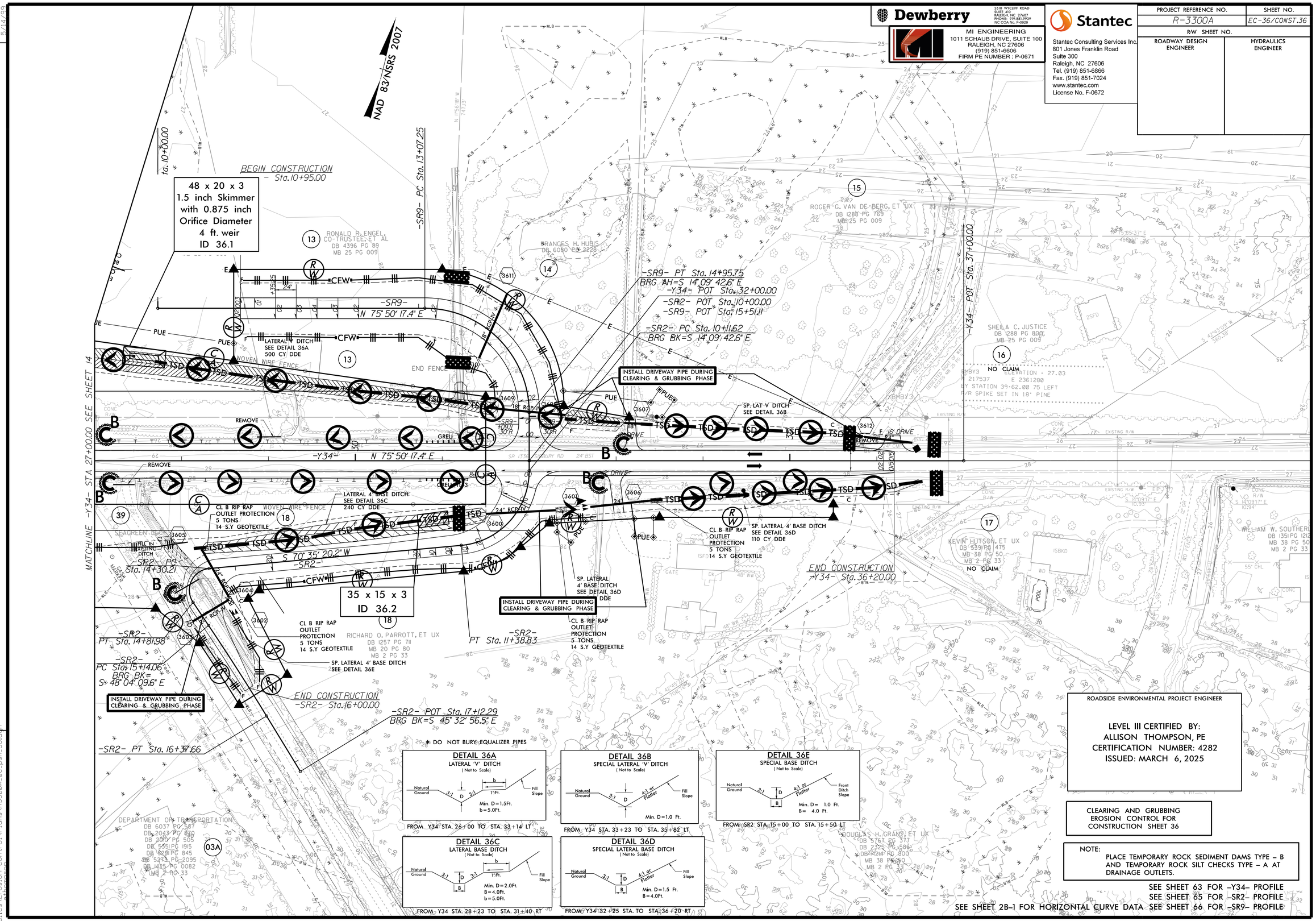
Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-8866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

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

REVISIONS

R/W REV. MARCH 2023: REVISED ROW ON PARCELS 18 & 39. -STANTEC
R/W REV. FEB 2024: REVISED PUE ON PARCEL 12. -STANTEC

5/14/99



ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
ALLISON THOMPSON, PE
CERTIFICATION NUMBER: 4282
ISSUED: MARCH 6, 2025

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 36

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

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

3/5/2025
hydraulics\Erosion Control\Plans\R3300A_ec_psh_36.dgn

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2610 WYCLIFF ROAD
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www.stantec.com
License No. F-0672

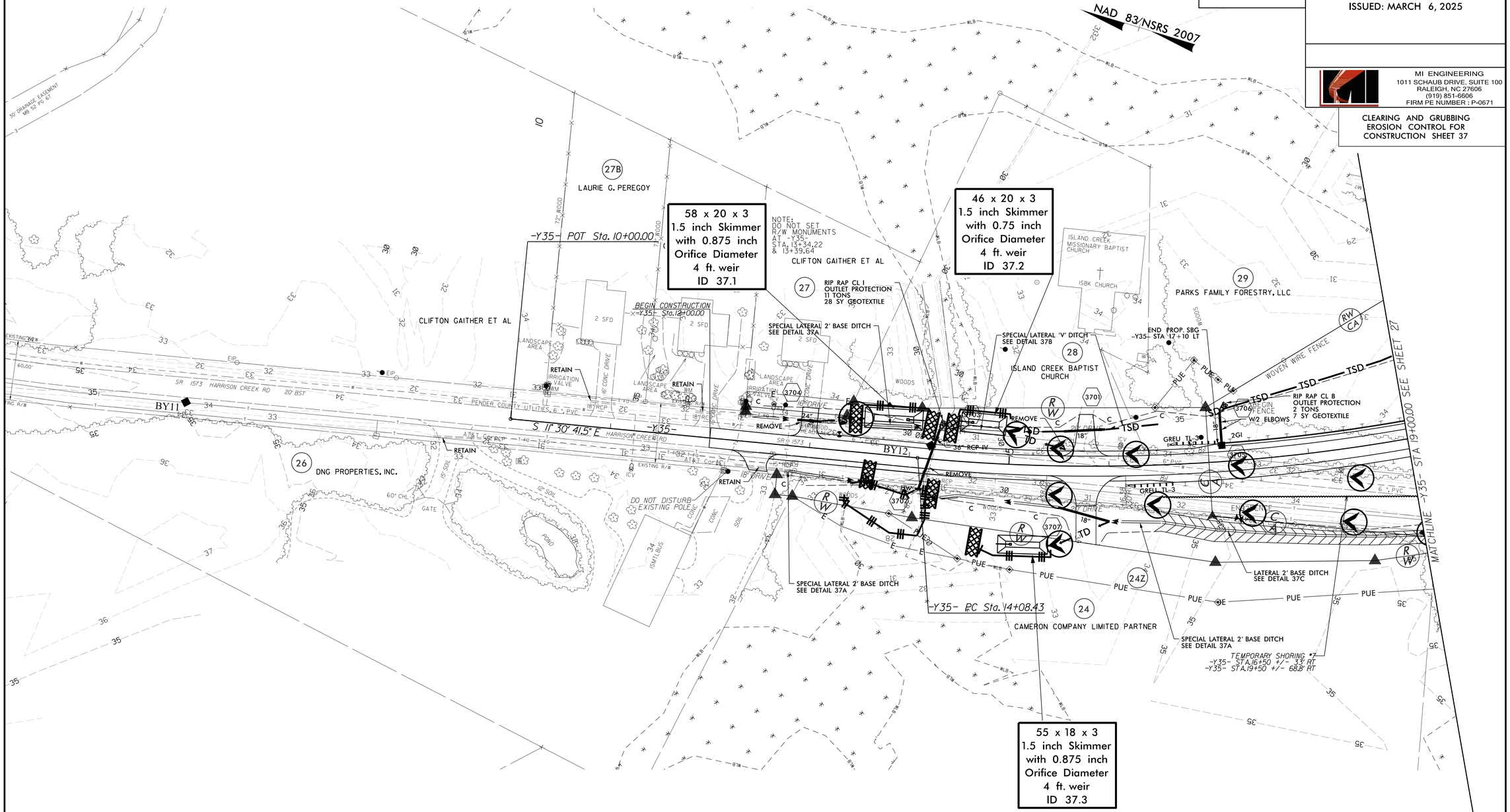
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	EC-37/CONST.37
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
KAREN HEFNER, PE
CERTIFICATION NUMBER: 3824
ISSUED: MARCH 6, 2025

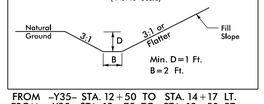
MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 37



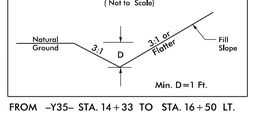
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

DETAIL 37A
SPECIAL LATERAL BASE DITCH
(Not to Scale)



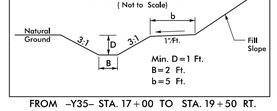
FROM –Y35– STA. 12+50 TO STA. 14+17 LT.
FROM –Y35– STA. 12+75 TO STA. 13+50 RT.
FROM –Y35– STA. 14+24 TO STA. 17+00 RT.

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

3/6/2025
H:\Erosion Control\CADD\R3300A_ec_psh_37_C&G.dgn
MI ENGINEERING, RALEIGH NC