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PROJECT: U-2519BA

TIP #

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U2519BA	EC-1	

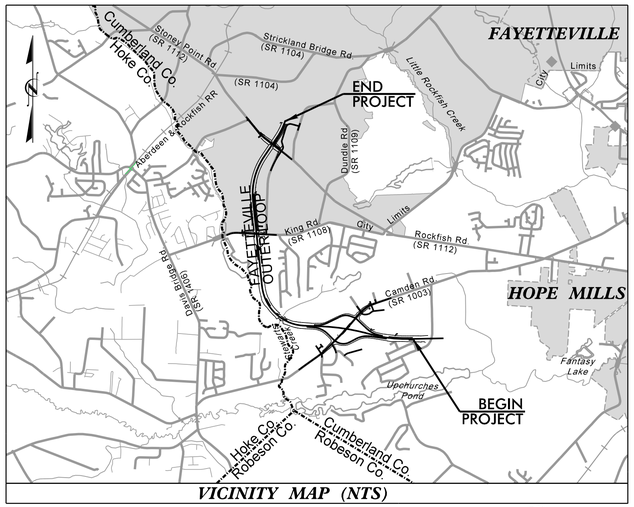
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

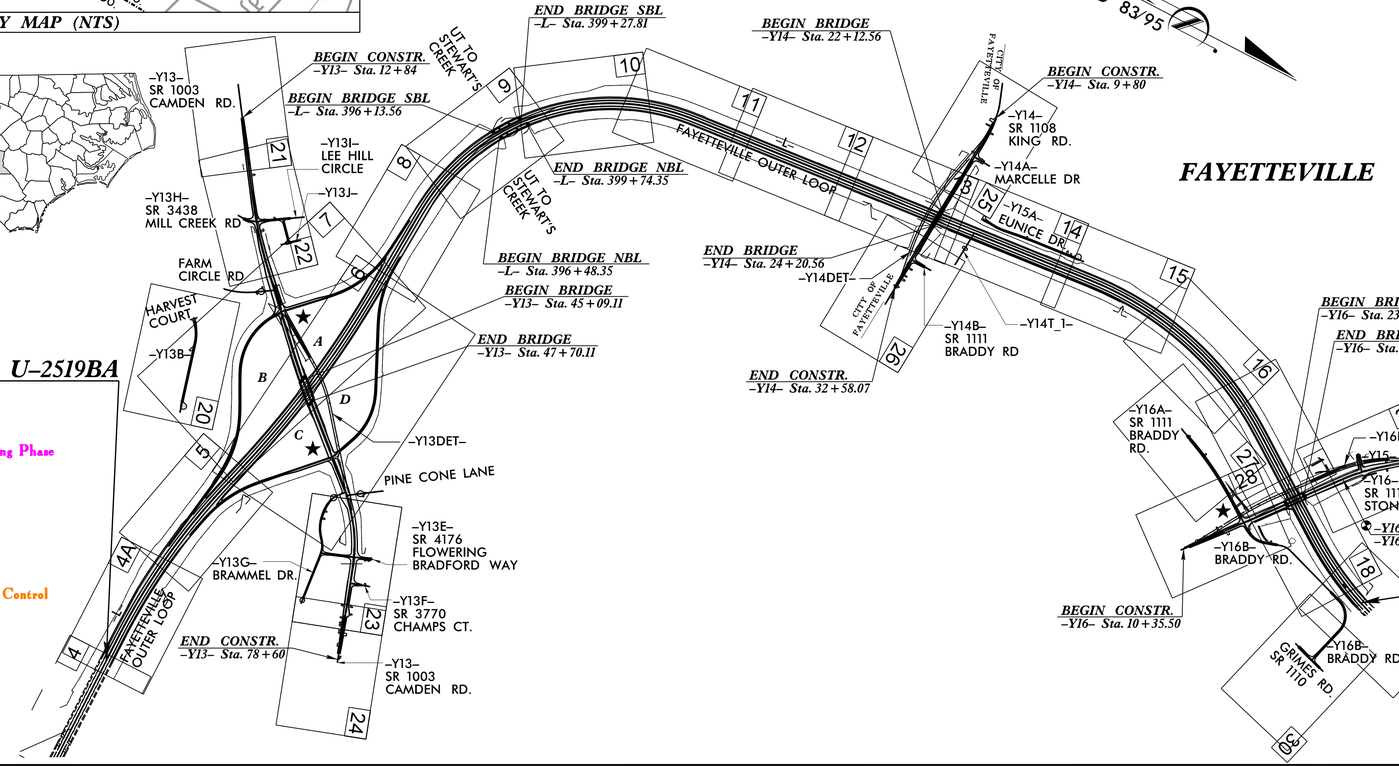
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

CUMBERLAND COUNTY

LOCATION: FAYETTEVILLE OUTER LOOP FROM SOUTH OF SR 1003 (CAMDEN ROAD) TO SOUTH OF SR 1104 (STRICKLAND BRIDGE ROAD)



VICINITY MAP (NTS)



THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	EW CFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES.

ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

Prepared In the Office of:
ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611

2018 STANDARD SPECIFICATIONS

LENGTH ROADWAY TIP PROJECT U-2519BA.....3.707 MILES
LENGTH STRUCTURE TIP PROJECT U-2519BA.....0.062 MILES
TOTAL LENGTH TIP PROJECT U-2519BA.....3.769 MILES

Prepared In the Office of:
RK&K
RUMMEL, KLEPPER & KAHL, LLP
8601 SIX FORKS ROAD, FORUM 1, SUITE 700
RALEIGH, NORTH CAROLINA 27615-3960
NC LICENSE NO. F-0112
1-888-521-4455 OR 919-878-9560

Alexis S. Burke, P.E.
EROSION CONTROL DESIGN ENGINEER
LEVEL III CERTIFICATION NO. 3413

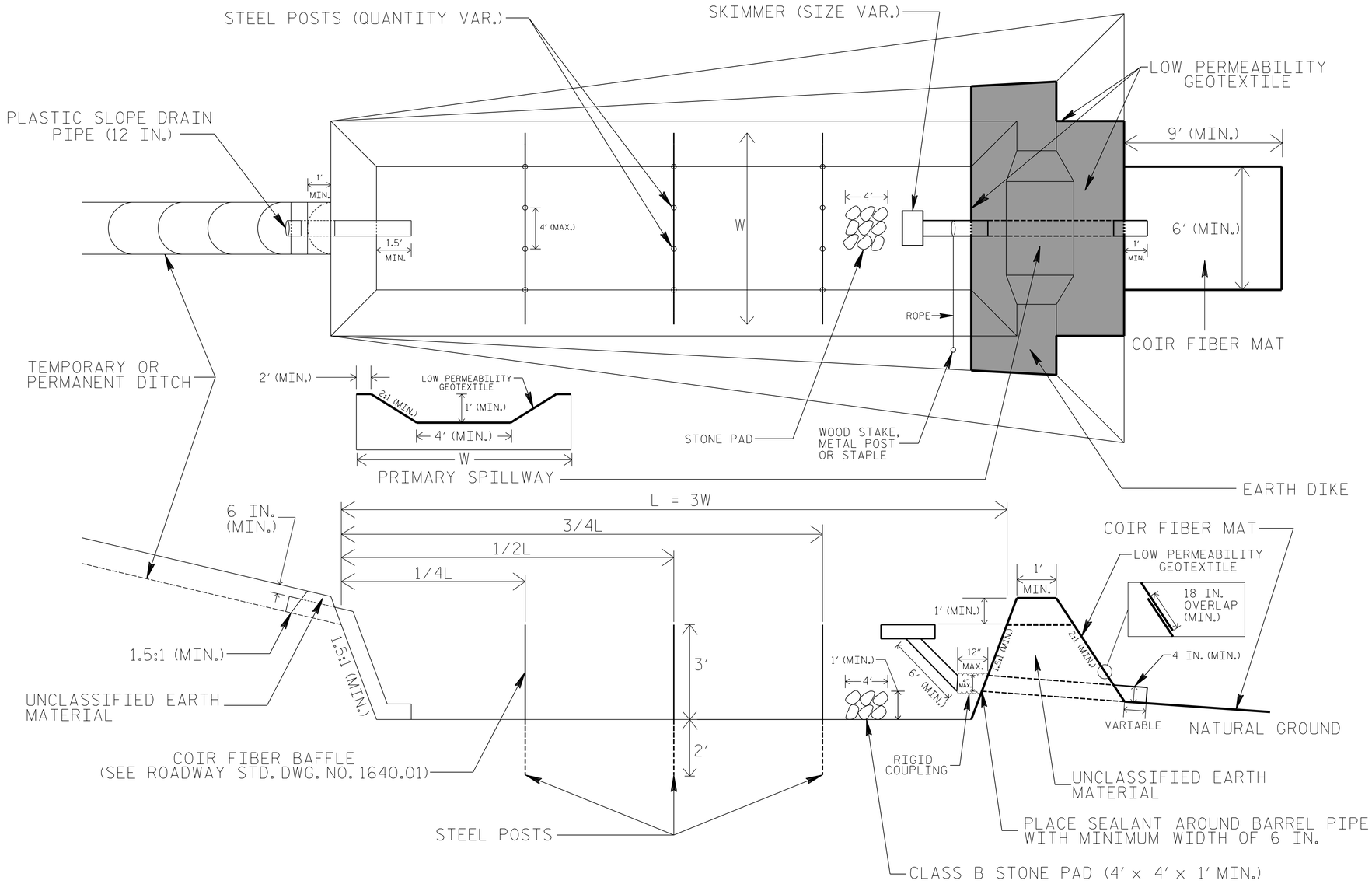
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2018 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

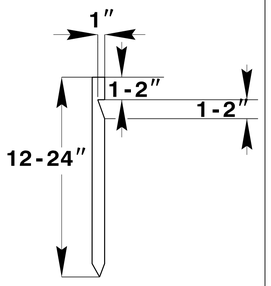
1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

PROJECT REFERENCE NO.	SHEET NO.
U-2915BA	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

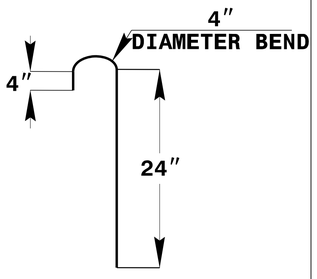
SKIMMER BASIN WITH BAFFLES DETAIL (EAST)



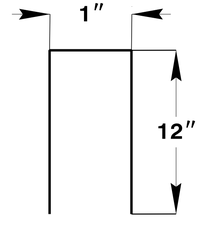
2" x 2" (nominal) WOODEN STAKE



#10 STEEL REINFORCEMENT BAR



1" (nominal) STAPLE



COIR FIBER MAT ANCHOR OPTIONS

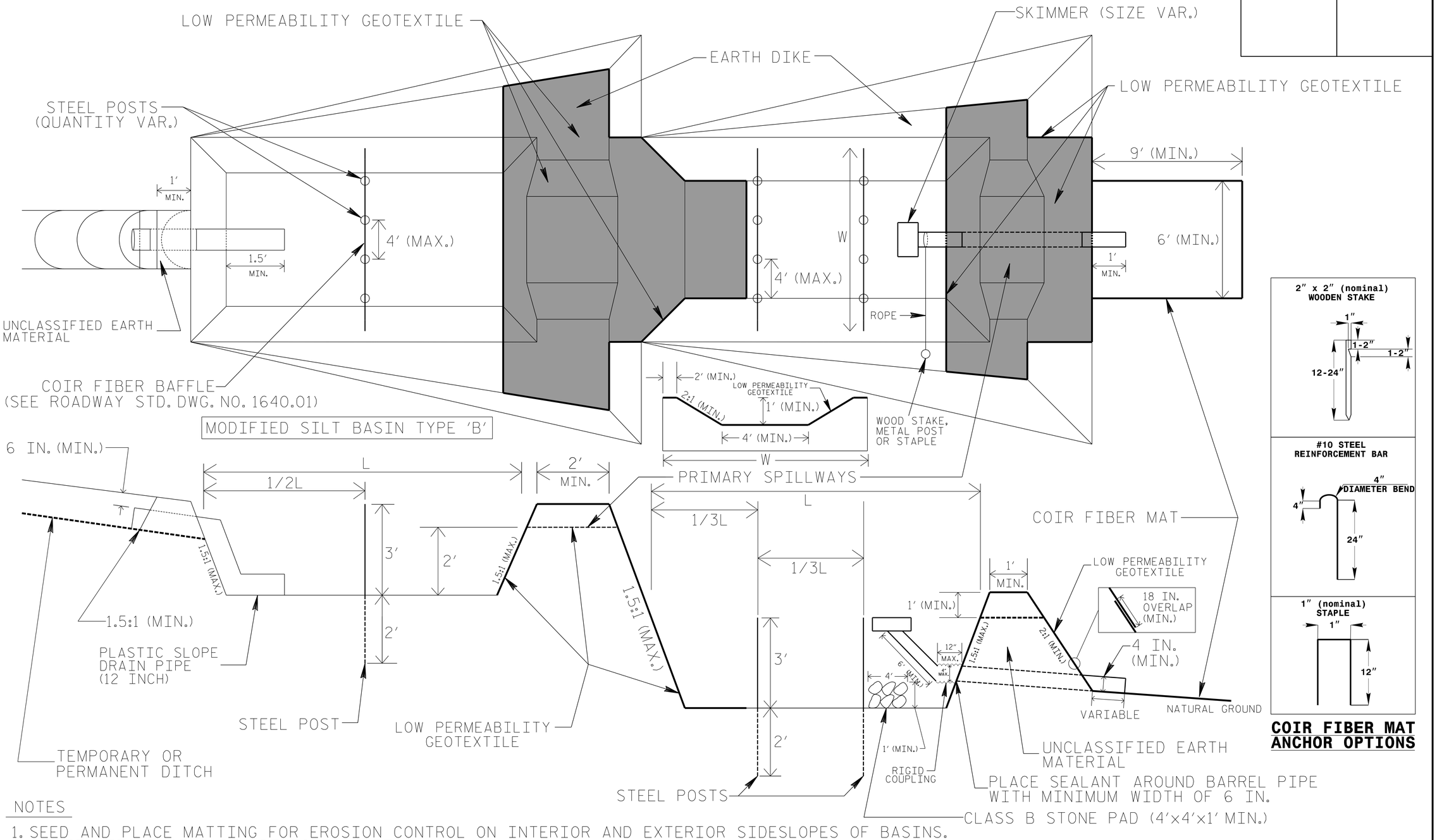
NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES.
2. LIMIT EARTH DIKE HEIGHT TO 5 FT.
3. FOR BASIN DEPTH OF 3 FT., THE MINIMUM BASIN WIDTH SHALL BE 9 FT.
4. DETERMINE PRIMARY SPILLWAY WEIR LENGTH (FT.) USING Q/0.8, WHERE Q IS FLOW RATE (CFS) INTO BASIN.
5. PLASTIC SLOPE DRAIN PIPE AT INLET OF BASIN MAY BE REPLACED BY FILTRATION GEOTEXTILE OR TARP AS DIRECTED.
6. LOW PERMEABILITY GEOTEXTILE FOR PRIMARY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
U-2915BA	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TIERED SKIMMER BASIN DETAIL (EAST)



2" x 2" (nominal) WOODEN STAKE

#10 STEEL REINFORCEMENT BAR

1" (nominal) STAPLE

COIR FIBER MAT ANCHOR OPTIONS

NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES OF BASINS.
2. LIMIT HEIGHT OF EARTH DIKES TO 5 FT.
3. ADDITIONAL MODIFIED SILT BASINS TYPE 'B' MAY BE NEEDED DEPENDING ON SLOPE.
4. FOR BASIN DEPTHS OF 3FT., THE MINIMUM BASIN WIDTHS SHALL BE 9 FT.
5. DETERMINE PRIMARY SPILLWAY WEIR LENGTHS (FT.) USING Q/0.8, WHERE Q IS FLOW RATE (CFS) INTO UPPER BASIN.
6. LOW PERMEABILITY GEOTEXTILE FOR PRIMARY SPILLWAYS SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

BORROW PIT DEWATERING BASIN DETAIL

GENERAL NOTES:

DETERMINE BORROW PIT DEWATERING BASIN SIZE USING V = 8.0203 * Q * T, WHERE V IS VOLUME (FT^3), Q IS PUMP FLOW RATE (GPM), AND T IS DEWATERING TIME (HR). USE MAXIMUM FLOW RATE OF 1000 GPM AND A MINIMUM DEWATERING TIME OF 2 HOURS.

RISER SHALL BE A NON-PERFORATED, SMOOTH OR CORRUGATED MATERIAL WITH A FLASHBOARD OPTION.

CONSTRUCT THE COIR FIBER BAFFLE IN ACCORDANCE WITH ROADWAY STANDARD DRAWING 1640.01 AND WITH MATERIAL THAT MEETS THE SPECIFICATIONS OF ROADWAY STANDARD 1640-14.

PROVIDE 5′ STEEL POSTS OF THE SELF-FASTENER ANGLE STEEL TYPE. INSTALL STEEL POSTS WITH NO MORE THAN 3′ OF THE POST APPEARING ABOVE THE GROUND.

ATTACH THE COIR FIBER MAT TO THE STEEL POSTS WITH WIRE OR OTHER ACCEPTABLE MEANS AND STAPLED INTO THE BOTTOM AND SIDE SLOPES OF THE BASIN WITH 12″ STAPLES.

INSTALL TYPE 2 GEOTEXTILE ON SIDESLOPES AND BOTTOM OF BASIN AT INLET AS SHOWN IN THE DETAIL.

USE THE TYPICAL SECTION SHOWN FOR THE BORROW PIT DEWATERING BASIN AS A GUIDE. THE BASIN MAY HAVE ANY TYPE CONFIGURATION AS LONG AS SUFFICIENT VOLUME IS PROVIDED AND PROVISIONS ARE MADE FOR A NON-PERFORATED RISER.

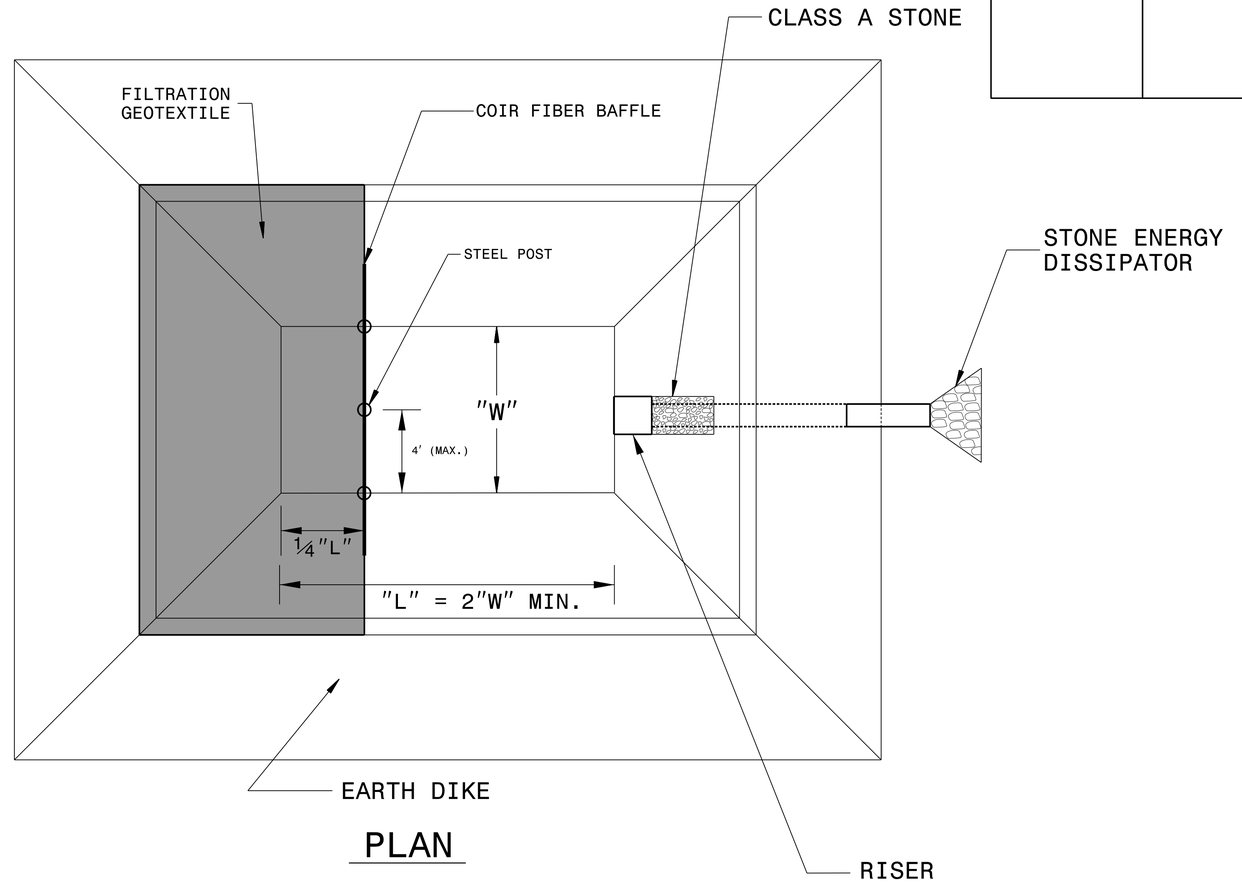
DO NOT EXCEED 3½ FT. IN HEIGHT FOR THE EARTH DIKES REQUIRED FOR BORROW PIT DEWATERING BASIN.

THE BORROW PIT DEWATERING BASIN SIZE IS VARIABLE AND DEPENDENT ON SPECIFIC SITE REQUIREMENTS AS WELL AS PROPOSED CONSTRUCTION OPERATIONS.

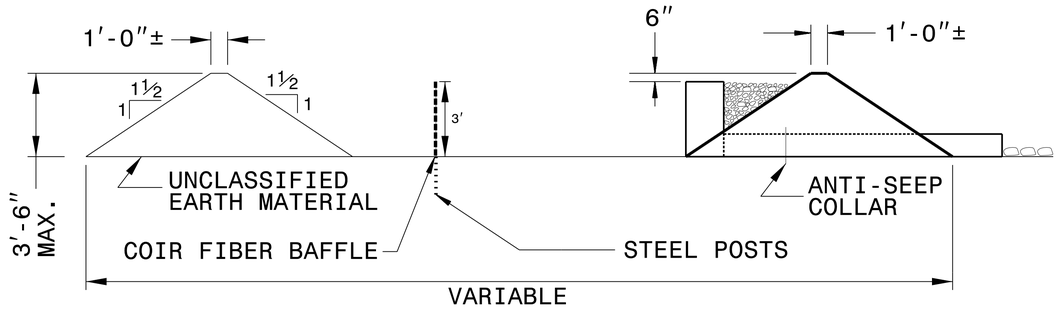
SUBMIT THE SIZE, LOCATION AND RISER PIPE MATERIAL FOR APPROVAL PRIOR TO CONSTRUCTION.

PUMP THE EFFLUENT INTO THE BORROW PIT DEWATERING BASIN TO A MAXIMUM DEPTH OF 6 IN. BELOW TOP OF EARTH DIKE.

PROVIDE A STONE ENERGY DISSIPATOR PAD AT THE OUTLET OF THE PUMP DISCHARGE HOSE AND OUTLET OF THE RISER BARREL IN ACCORDANCE WITH ROADWAY STANDARD DRAWING 876.02 FOR OUTLET W/O DITCH.



PLAN

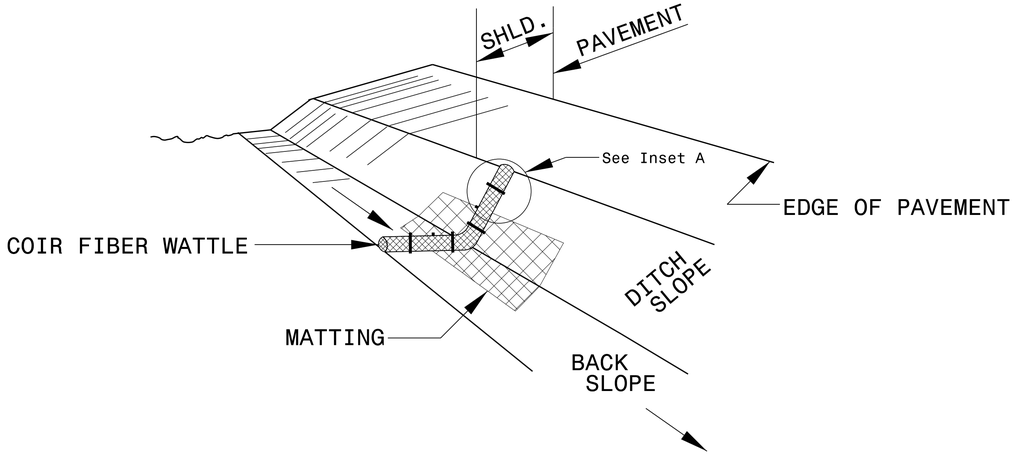


TYPICAL SECTION VIEW

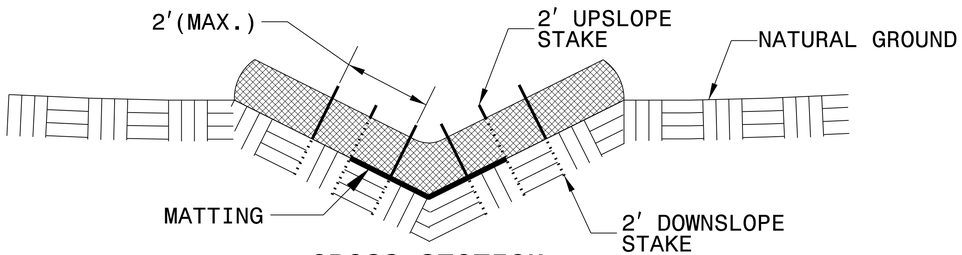
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
U-2915BA	EC-2C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

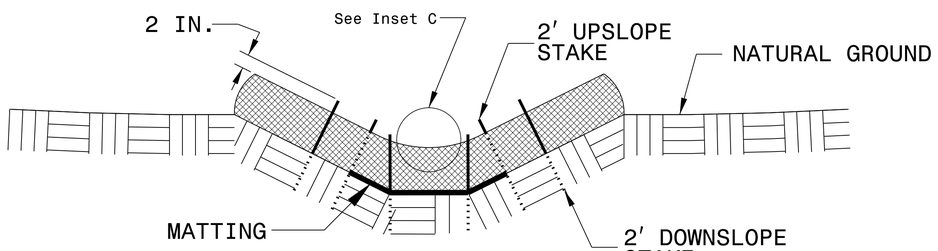
COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

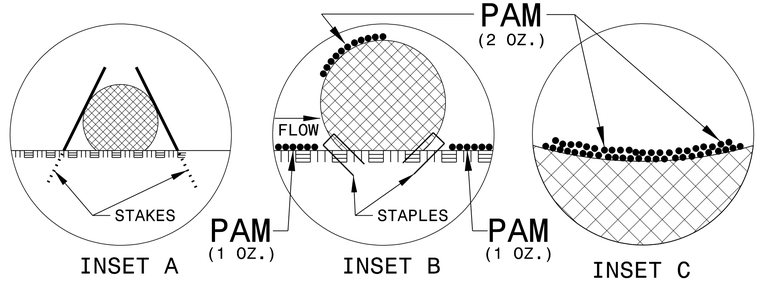
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

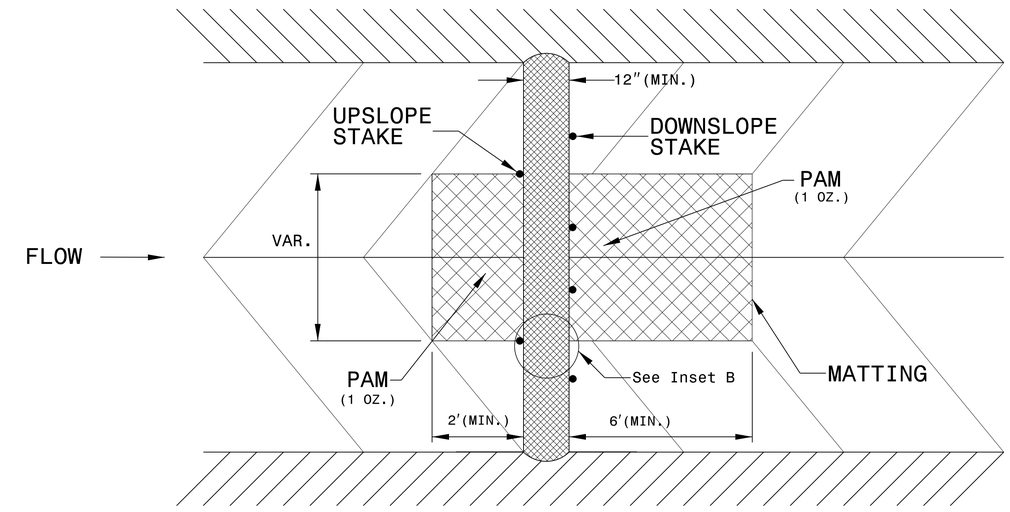
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.

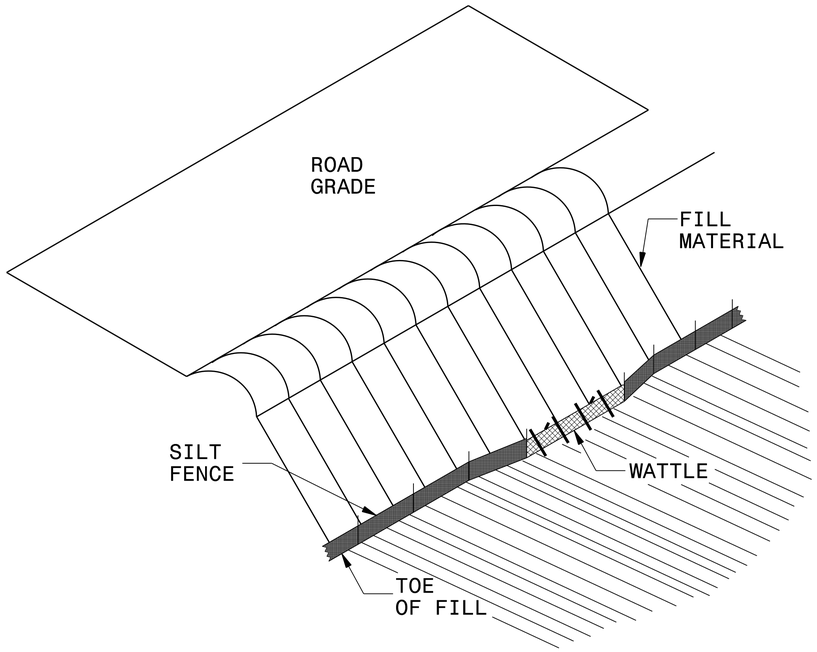




TOP VIEW

SILT FENCE COIR FIBER WATTLE BREAK DETAIL

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-2D
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



ISOMETRIC VIEW

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

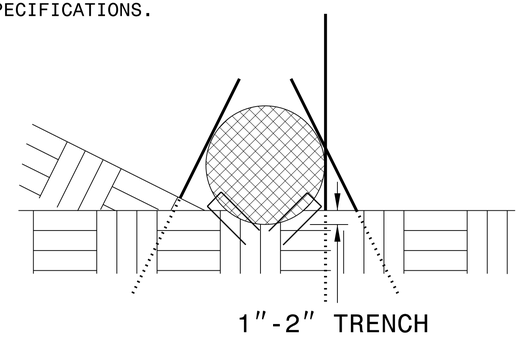
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

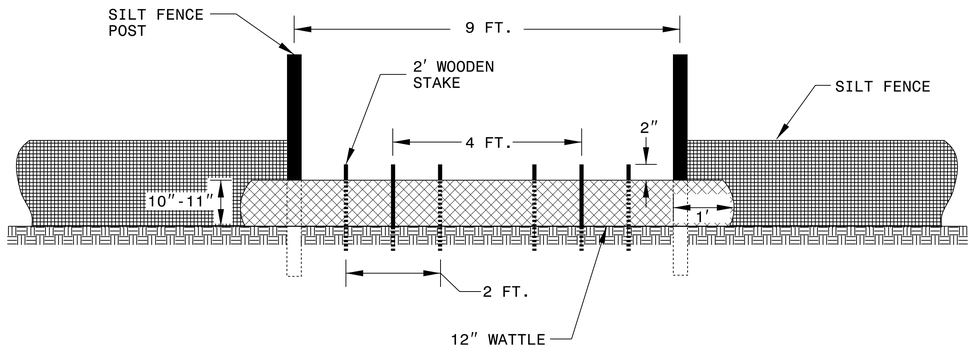
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

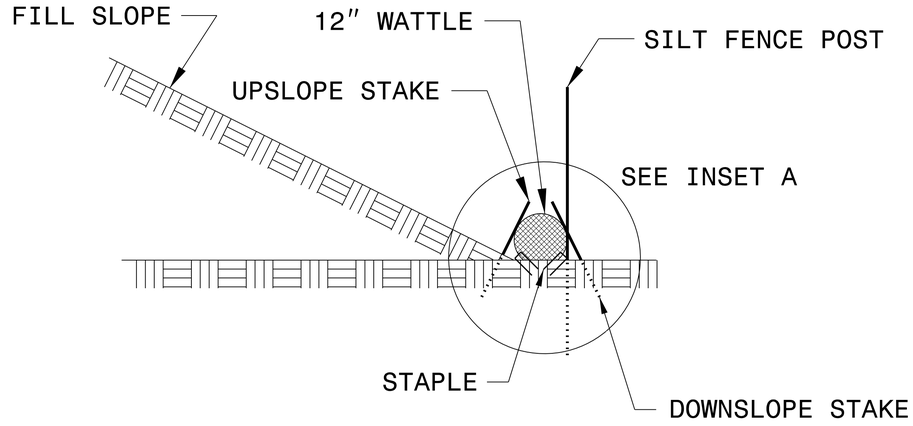
INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A





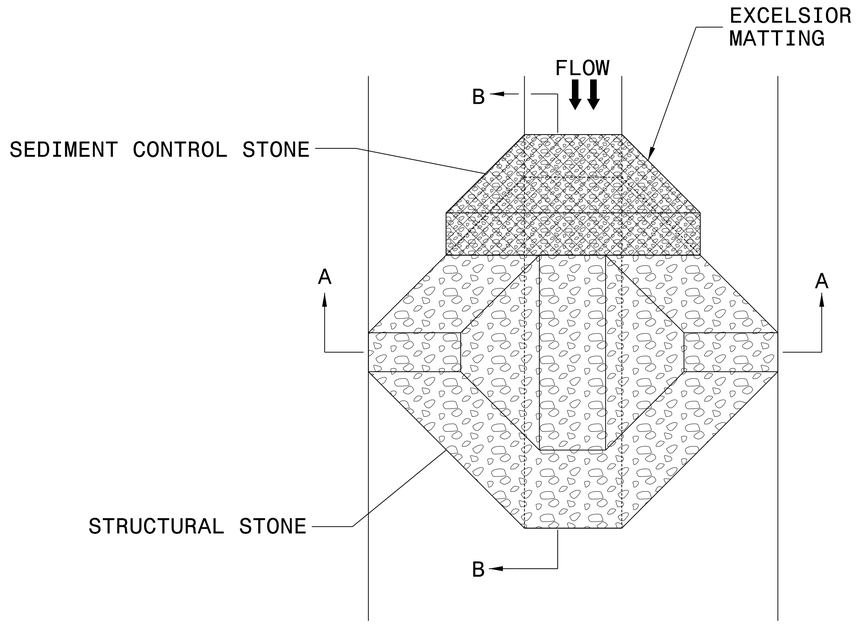
VIEW FROM SLOPE



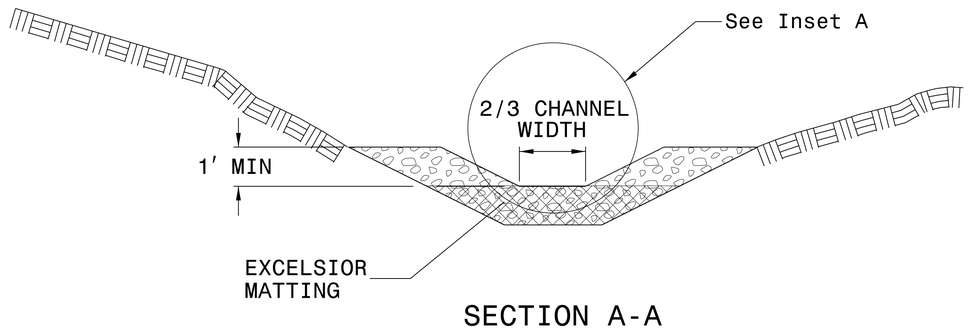
SIDE VIEW

PROJECT REFERENCE NO.	SHEET NO.
U-2915BA	EC-2E
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN



SECTION A-A

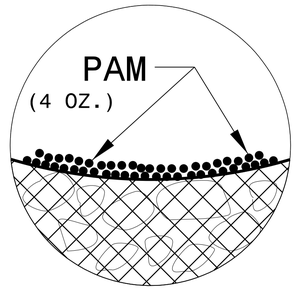
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

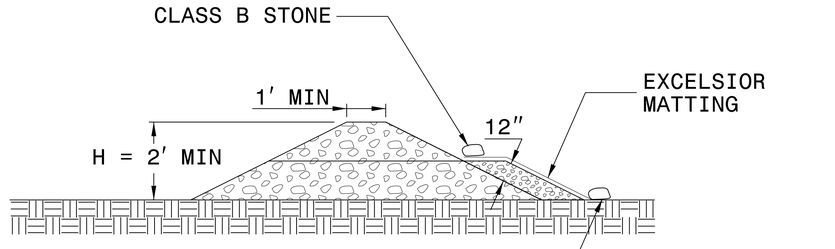
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A

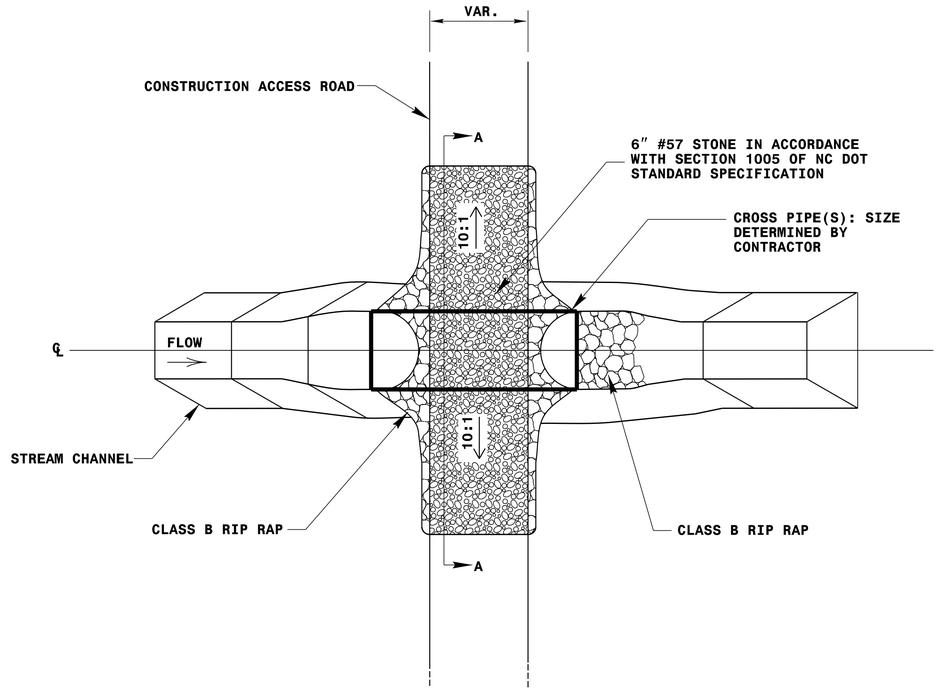


SECTION B-B

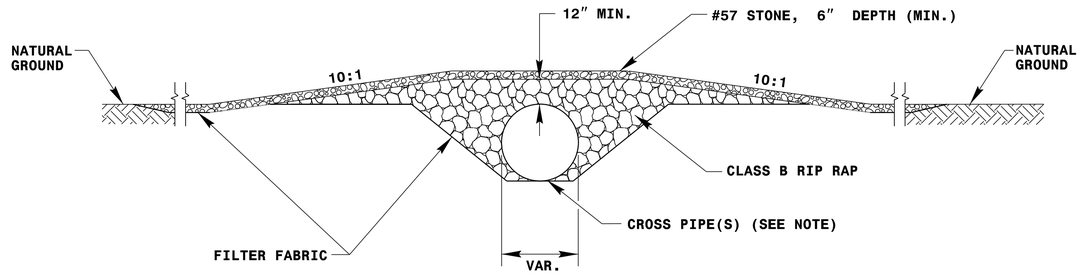
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-2F
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY STREAM CROSSING



PLAN VIEW



SECTION A-A

NOT TO SCALE

NOTE: PIPE(S) FOR TEMPORARY STREAM CROSSING SHALL BE DESIGNED TO PASS THE PEAK OR BANKFULL FLOW, WHICHEVER IS LESS, FROM A 2-YEAR PEAK STORM, WITHOUT OVER TOPPING.

8/17/99

–Y13– DETOUR

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-2H-1/CONST.2B-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 2B–1

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

–Y13DET– PC Sta. 0+18.01

BEGIN CONSTRUCTION
–Y13DET– PCC Sta. 0+86.84
–Y13– POT Sta. 24+54.89
2.46' OFFSET

53 x 25 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
5 ft. weir
ID 22–03

TEMP. SPECIAL CUT DITCH SEE DETAIL AC

TEMP. 2 TONS CL B RIP RAP W/ 7 SY GEOTEXTILE INV=175.3

8 TONS CL B RIPRAP W/9 SY GEOTEXTILE

TEMP. SPECIAL CUT DITCH SEE DETAIL AC

COLLAR AND ENTER 18" RCP

BEGIN CA FENCE –Y13– STA. 24+40.00

–Y13DET– PT Sta. 2+92.99

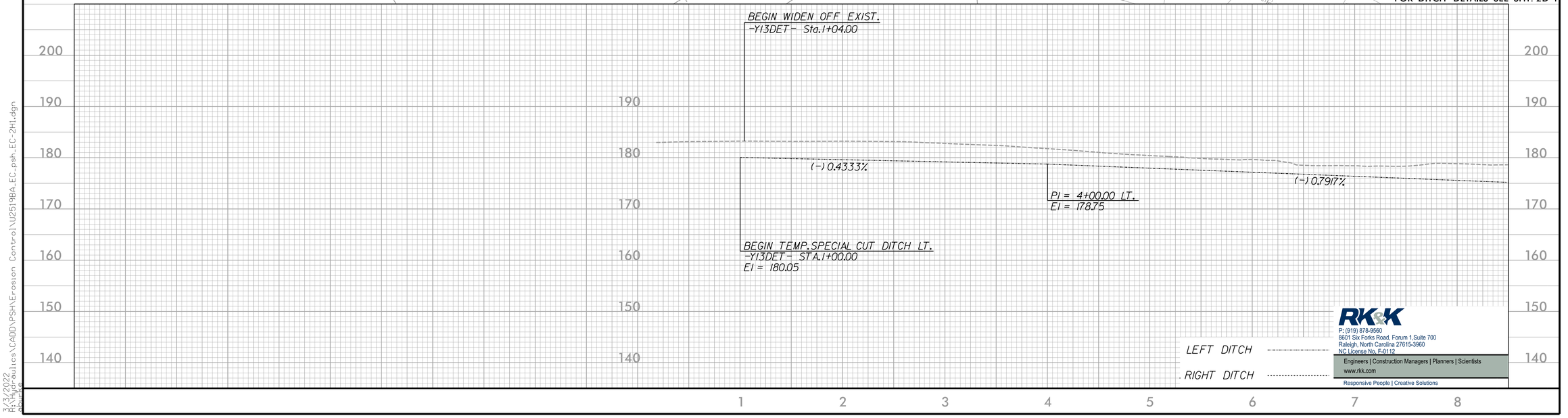
–Y13DET– PC Sta. 6+05.67

–Y13DET– PT Sta. 8+24.02

MATCHLINE –Y13DET– STA. 8+50
SEE SHEET 2B–1A

FOR R/W AND EASEMENT STATIONS/OFFSETS SEE SHT. 7
FOR DITCH DETAILS SEE SHT. 2D–1

NAD 83/95



LEFT DITCH

RIGHT DITCH

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
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Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

3/3/2022
R:\Highways\Projects\CADD\PSHVErosion Control\U2519BA_EC_psh_EC-2H1.dgn
aburke

-Y13- DETOUR

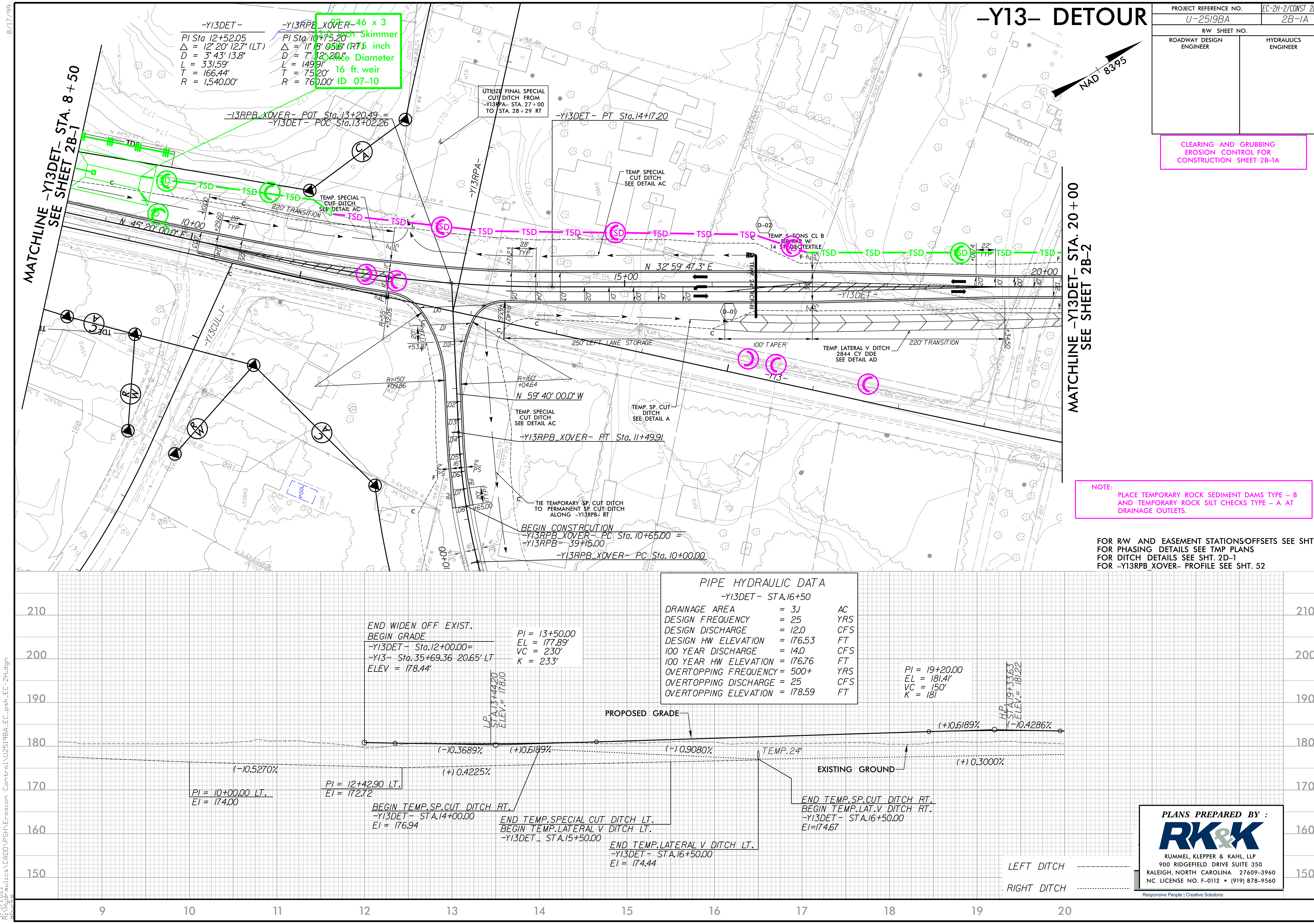
PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-2H-2/CONST 2B-1A
	2B-1A

RW SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

NAD 83/95

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 2B-1A



-Y13DET-
PI Sta 12+52.05
△ = 12° 20' 12.7" (LT)
D = 3° 43' 13.8"
L = 331.59'
T = 166.44'
R = 1,540.00'
-Y13RPB_XOVER-
PI Sta 10+75.20
D = 7° 32' 20.1"
L = 149.91'
T = 75.20'
R = 760.00'
22 - 46 x 3
1.5 inch Skimmer
Orifice Diameter
16 ft. weir
ID 07-10
-I3RPB_XOVER- POT Sta. 13+20.49 =
-Y13DET- POC Sta.13+02.26
UTILIZE FINAL SPECIAL CUT DITCH FROM -Y13RPA- STA. 27+00 TO STA. 28+29 RT
-Y13DET- PT Sta.14+17.20
TEMP. SPECIAL CUT DITCH SEE DETAIL AC
MATCHLINE -Y13DET- STA. 8+50 SEE SHEET 2B-1
MATCHLINE -Y13DET- STA. 20+00 SEE SHEET 2B-2
TSD
N 45° 20' 00.0" E
N 32° 59' 47.3" E
220' TRANSITION
TEMP. 5 TONS CL B RIP RAP W/ 14 SY GEOTEXTILE
250' LEFT LANE STORAGE
100' TAPER
TEMP. LATERAL V DITCH 2844 CY DDE SEE DETAIL AD
TEMP. SP. CUT DITCH SEE DETAIL A
N 59° 40' 00.0" W
-Y13RPB_XOVER- PT Sta. 11+49.91
TIE TEMPORARY SP. CUT DITCH TO PERMANENT SP. CUT DITCH ALONG -Y13RPB- RT
BEGIN CONSTRCUTION
-Y13RPB_XOVER- PC Sta. 10+65.00 =
-Y13RPB- 39+15.00
-Y13RPB_XOVER- PC Sta. 10+00.00
-Y13RPA-
-Y13CUL_I-
-Y13-
END WIDEN OFF EXIST.
BEGIN GRADE
-Y13DET- Sta.12+00.00=
-Y13- Sta.35+69.36 20.65' LT
ELEV = 178.44'
PI = 13+50.00
EL = 177.89'
VC = 230'
K = 233'
PI = 19+20.00
EL = 181.41'
VC = 150'
K = 181
PROPOSED GRADE
EXISTING GROUND
PI = 10+00.00 LT.
El = 174.00
PI = 12+42.90 LT.
El = 172.72
BEGIN TEMP.SP.CUT DITCH RT.
-Y13DET- STA.14+00.00
El = 176.94
END TEMP.SPECIAL CUT DITCH LT.
BEGIN TEMP.LATERAL V DITCH LT.
-Y13DET_ STA.15+50.00
END TEMP.LATERAL V DITCH LT.
-Y13DET- STA.16+50.00
El = 174.44
END TEMP.SP.CUT DITCH RT.
BEGIN TEMP.LAT.V DITCH RT.
-Y13DET- STA.16+50.00
El=174.67
LEFT DITCH
RIGHT DITCH

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

FOR RW AND EASEMENT STATIONS/OFFSETS SEE SHT. 7
FOR PHASING DETAILS SEE TMP PLANS
FOR DITCH DETAILS SEE SHT. 2D-1
FOR -Y13RPB_XOVER- PROFILE SEE SHT. 52

PIPE HYDRAULIC DATA

-Y13DET- STA.16+50

DRAINAGE AREA	=	3.1	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	12.0	CFS
DESIGN HW ELEVATION	=	176.53	FT
100 YEAR DISCHARGE	=	14.0	CFS
100 YEAR HW ELEVATION	=	176.76	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	25	CFS
OVERTOPPING ELEVATION	=	178.59	FT

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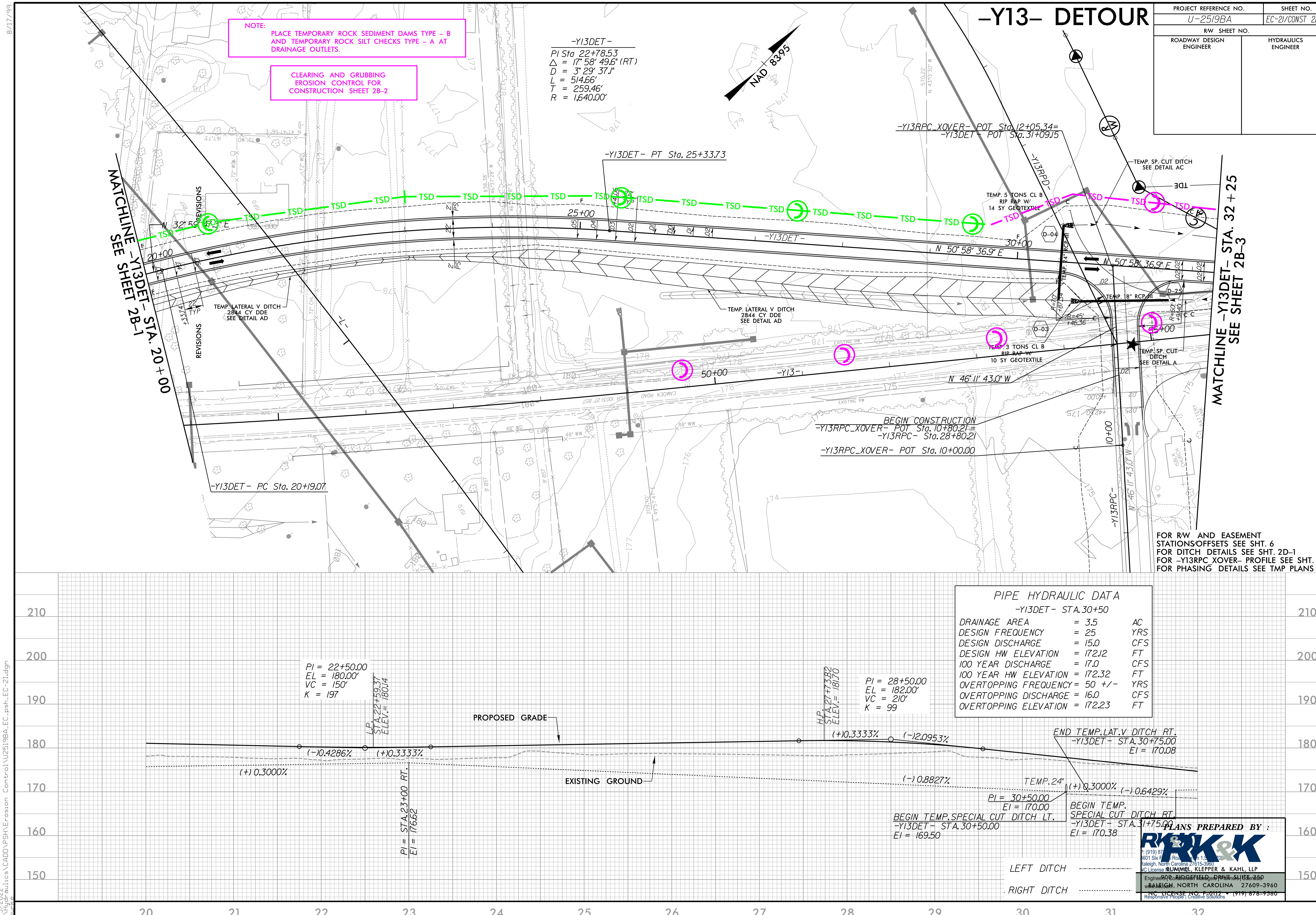
-Y13- DETOUR

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-21/CONST 2B-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 2B-2
-Y13DET-
PI Sta 22+78.53
Δ = 17° 58' 49.6" (RT)
D = 3° 29' 37.1"
L = 514.66'
T = 259.46'
R = 1,640.00'
NAD 83/95
-Y13DET- PT Sta. 25+33.73
-Y13RPC_XOVER- POT Sta. 12+05.34= -Y13DET- POT Sta. 31+09.15
MATCHLINE -Y13DET- STA. 20+00 SEE SHEET 2B-1
MATCHLINE -Y13DET- STA. 32+25 SEE SHEET 2B-3
TEMP. LATERAL V DITCH 2844 CY DDE SEE DETAIL AD
TEMP. 5 TONS CL B RIP RAP W/ 14 SY GEOTEXTILE
TEMP. 3 TONS CL B RIP RAP W/ 10 SY GEOTEXTILE
TEMP. SP. CUT DITCH SEE DETAIL AC
TEMP. SP. CUT DITCH SEE DETAIL A
N 50° 58' 36.9" E
N 46° 11' 43.0" W
BEGIN CONSTRUCTION -Y13RPC_XOVER- POT Sta. 10+80.21 = -Y13RPC- Sta. 28+80.21
-Y13RPC_XOVER- POT Sta. 10+00.00
-Y13DET- PC Sta. 20+19.07
PI = 22+50.00 EL = 180.00' VC = 150' K = 197
L.P. STA. 22+59.37 ELEV. = 180.14
PROPOSED GRADE
EXISTING GROUND
PI = 28+50.00 EL = 182.00' VC = 210' K = 99
H.P. STA. 27+73.82 ELEV. = 181.70
END TEMP. LAT. V DITCH RT. -Y13DET- STA. 30+75.00 El = 170.08
PI = STA. 23+00 RT. El = 176.62
BEGIN TEMP. SPECIAL CUT DITCH LT. -Y13DET- STA. 30+50.00 El = 169.50
PI = 30+50.00 El = 170.00
BEGIN TEMP. SPECIAL CUT DITCH RT. -Y13DET- STA. 31+75.00 El = 170.38
LEFT DITCH
RIGHT DITCH

FOR R/W AND EASEMENT STATIONS/OFFSETS SEE SHT. 6
FOR DITCH DETAILS SEE SHT. 2D-1
FOR -Y13RPC_XOVER- PROFILE SEE SHT. 52
FOR PHASING DETAILS SEE TMP PLANS

PIPE HYDRAULIC DATA
-Y13DET- STA. 30+50

DRAINAGE AREA	=	3.5	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	15.0	CFS
DESIGN HW ELEVATION	=	172.12	FT
100 YEAR DISCHARGE	=	17.0	CFS
100 YEAR HW ELEVATION	=	172.32	FT
OVERTOPPING FREQUENCY	=	50 +/-	YRS
OVERTOPPING DISCHARGE	=	16.0	CFS
OVERTOPPING ELEVATION	=	172.23	FT

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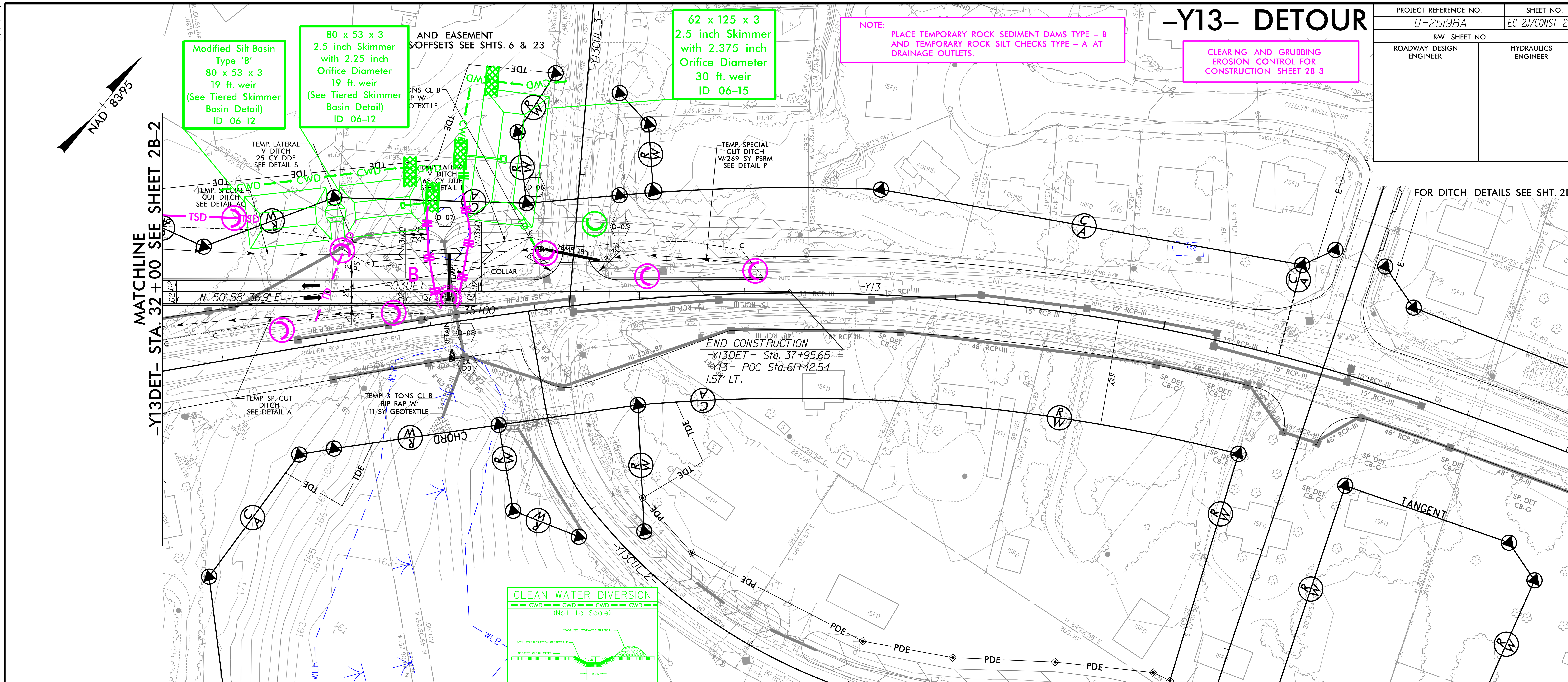
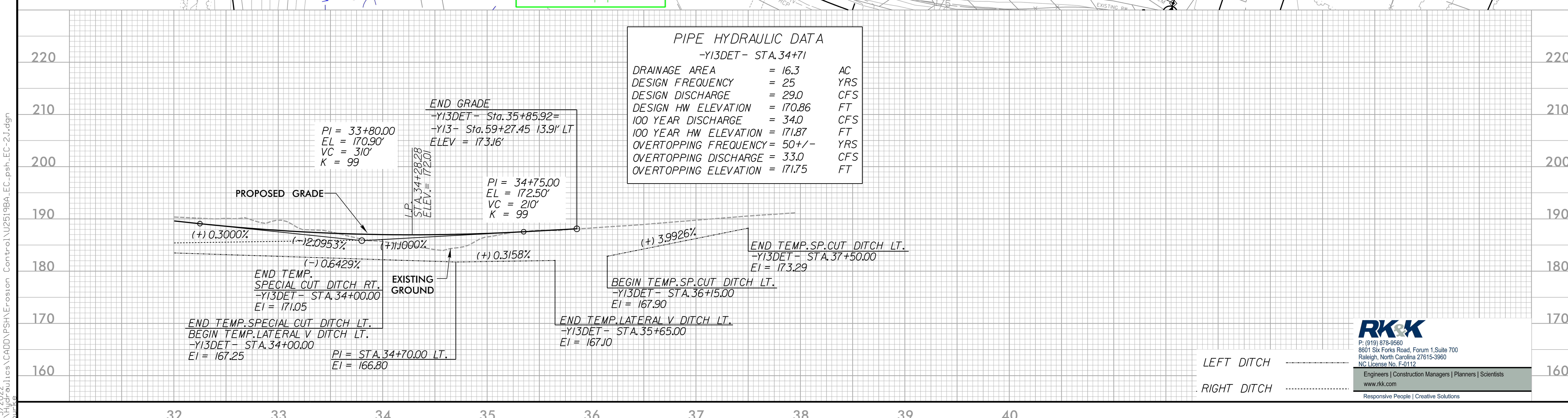
-Y13- DETOUR

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC 2J/CONST 2B-3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 2B-3





PIPE HYDRAULIC DATA

-Y13DET- STA. 34+71

DRAINAGE AREA	= 16.3	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 29.0	CFS
DESIGN HW ELEVATION	= 170.86	FT
100 YEAR DISCHARGE	= 34.0	CFS
100 YEAR HW ELEVATION	= 171.87	FT
OVERTOPPING FREQUENCY	= 50+/-	YRS
OVERTOPPING DISCHARGE	= 33.0	CFS
OVERTOPPING ELEVATION	= 171.75	FT

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–Y14– DETOUR

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-2K/CONST 2B-4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 2B-4

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

MATCHLINE –Y14DET– STA. 22+00 SEE SHEET 2B-5

NAD 83/95

BEGIN CONSTRUCTION
–Y14DET– PC Sta. 10+00.00 =
–Y14– POC Sta.10+74.82
0.00' OFFSET

–Y14DET– PT Sta. 12+66.93

–Y14DET– PC Sta.16+94.23

–Y14DET–

PI Sta 11+34.26
Δ = 15° 17' 38.6" (RT)
D = 5° 43' 46.5"
L = 266.93'
T = 134.26'
R = 1,000.00'
SE = 0.04
V = 40 MPH

PI Sta 22+35.25
Δ = 21° 52' 19.8" (LT)
D = 2° 02' 46.6"
L = 1,068.88'
T = 541.02'
R = 2,800.00'
SE = 0.04
V = 40 MPH

INSTALL 24" RCP-IV DURING CLEARING & GRUBBING PHASE

INSTALL PERMANENT LATERAL V DITCH DURING C&G. DITCH TO BE USED AS TSD.

UTILIZE FINAL SPECIAL CUT V DITCH FROM –Y14– STA. 10+00 TO STA. 10+50 RT, 10' DRIVEWAY PIPE, 24" RCP, AND STD. V DITCH AT –Y14– STA. 9+88 RT DURING PHASE

TEMP. SPECIAL CUT DITCH W/231 SY PSRM SEE DETAIL AJ

TEMP. SPECIAL CUT DITCH W/542 SY PSRM SEE DETAIL P

15 INCH TEMPORARY PIPE

TEMP. LATERAL V DITCH 982 CY DDE SEE DETAIL S

TEMP. SP. LAT. V DITCH SEE DETAIL G

TEMP. 8 TONS CL B RIP RAP W/ 21 SY GEOTEXTILE

100 x 39 x 3
2.0 inch Skimmer
with 1.625 inch
Orifice Diameter
15 ft. weir
ID 25–01

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

INSTALL TSD AND TIERED SKIMMER BASIN 13–05 AS PART OF DETOUR EROSION CONTROL

Modified Silt Basin
Type 'B'
33 x 50 x 3
13 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 13–05

33 x 50 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
13 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 13–05

FOR R/W AND EASEMENT STATIONS/OFFSETS SEE SHTS. 13 & 25

FOR DITCH DETAILS SEE SHT. 2D–1

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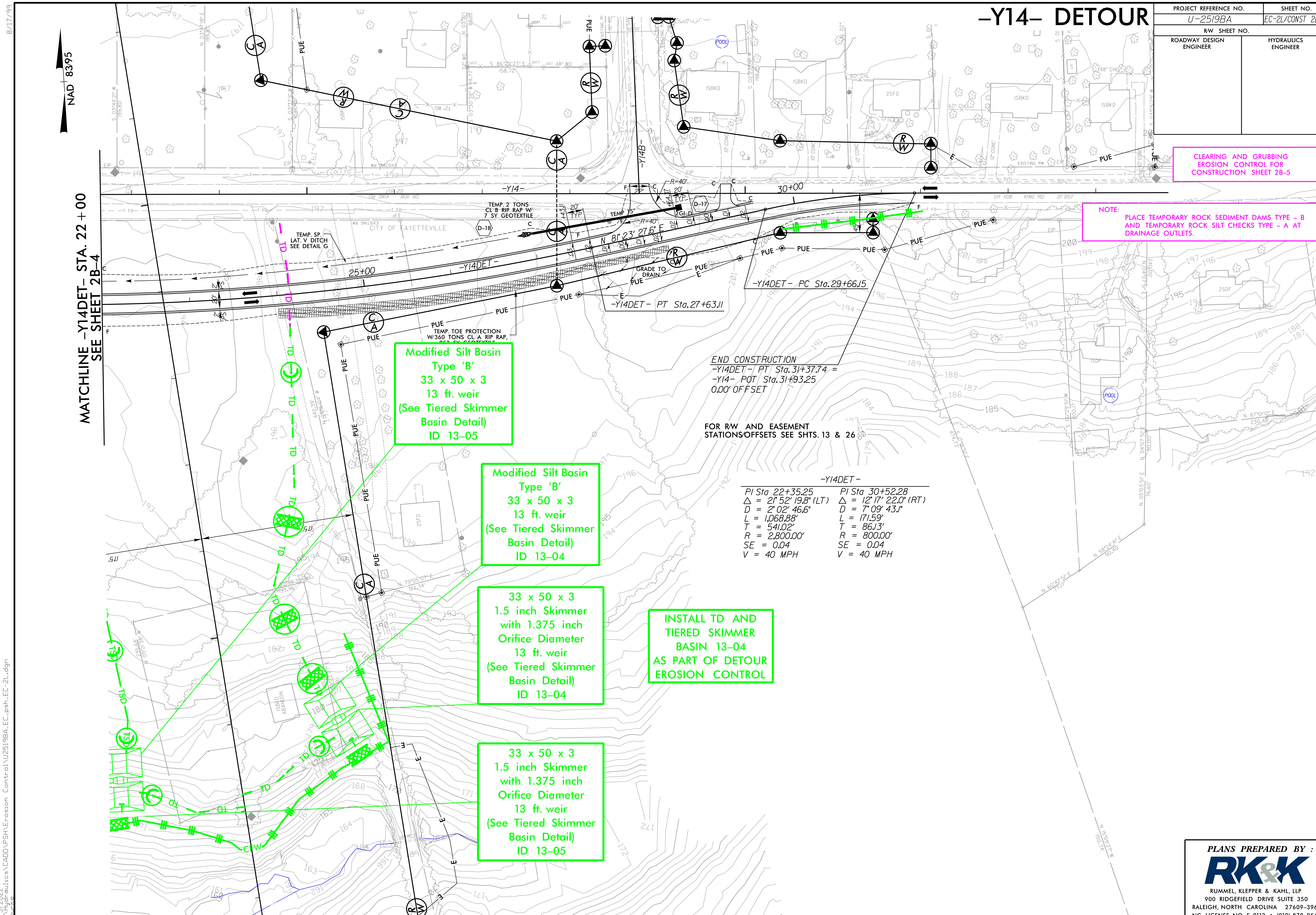
-Y14- DETOUR

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-2L/CONST 2B-5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NAD 83/95
MATCHLINE -Y14DET- STA. 22+00
SEE SHEET 2B-4
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 2B-5
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.
TEMP. 2 TONS CL B RIP RAP W/ 7 SY GEOTEXTILE
TEMP. SP. LAT. V DITCH SEE DETAIL G
CITY OF FAYETTEVILLE
-Y14-
-Y14DET-
25+00
30+00
GRADE TO DRAIN
TEMP. TOE PROTECTION W/360 TONS CL. A RIP RAP,
-Y14DET- PT Sta.27+63.11
-Y14DET- PC Sta.29+66.15
END CONSTRUCTION
-Y14DET- PT Sta.31+37.74 =
-Y14- POT Sta.31+93.25
0.00' OFFSET
FOR R/W AND EASEMENT STATIONS/OFFSETS SEE SHTS. 13 & 26
Modified Silt Basin Type 'B' 33 x 50 x 3 13 ft. weir (See Tiered Skimmer Basin Detail) ID 13-05
Modified Silt Basin Type 'B' 33 x 50 x 3 13 ft. weir (See Tiered Skimmer Basin Detail) ID 13-04
33 x 50 x 3 1.5 inch Skimmer with 1.375 inch Orifice Diameter 13 ft. weir (See Tiered Skimmer Basin Detail) ID 13-04
33 x 50 x 3 1.5 inch Skimmer with 1.375 inch Orifice Diameter 13 ft. weir (See Tiered Skimmer Basin Detail) ID 13-05
INSTALL TD AND TIERED SKIMMER BASIN 13-04 AS PART OF DETOUR EROSION CONTROL
-Y14DET-
PI Sta 22+35.25
Δ = 21° 52' 19.8" (LT)
D = 2° 02' 46.6"
L = 1,068.88'
T = 541.02'
R = 2,800.00'
SE = 0.04
V = 40 MPH
PI Sta 30+52.28
Δ = 12° 17' 22.0" (RT)
D = 7° 09' 43.1"
L = 171.59'
T = 86.13'
R = 800.00'
SE = 0.04
V = 40 MPH

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-Y16- DETOUR

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-2M/CONST 2B-6

R/W SHEET NO.

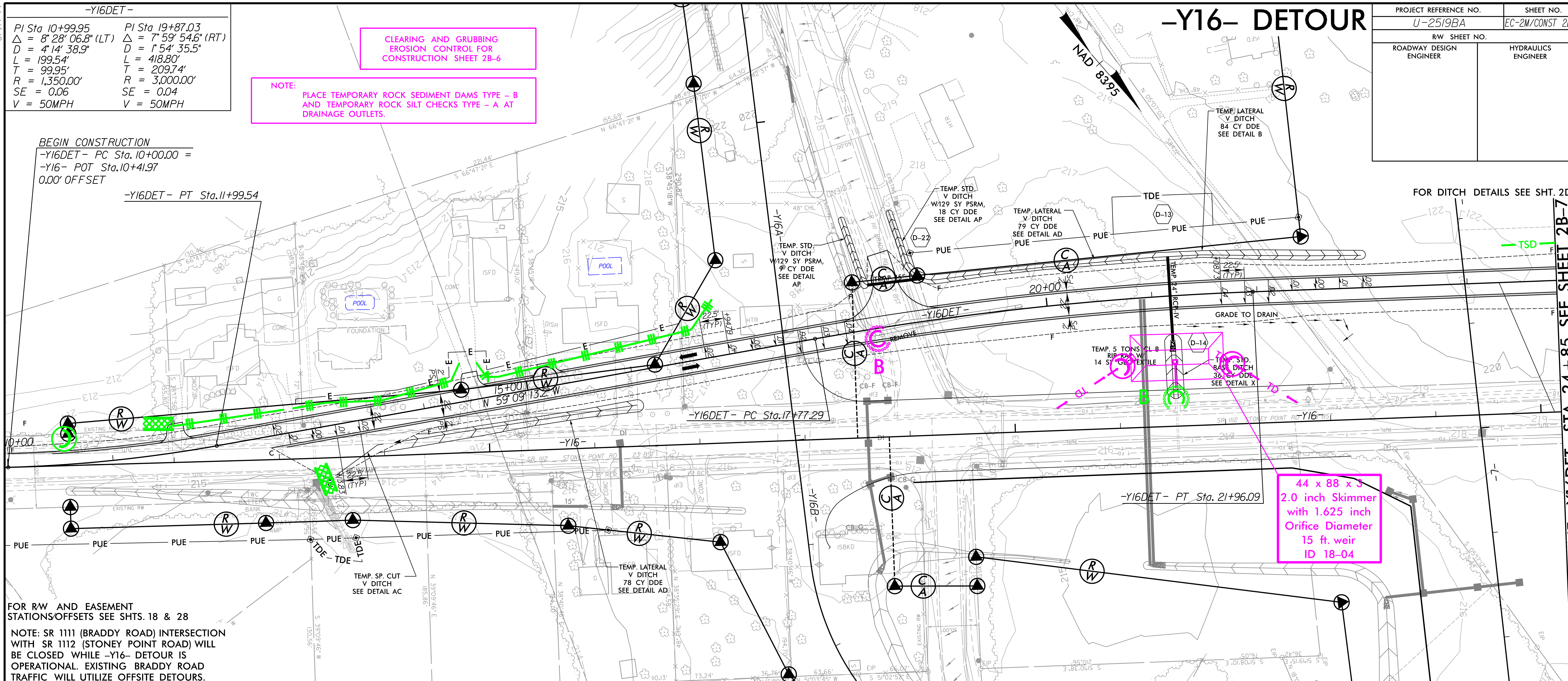
ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

-Y16DET-

PI Sta 10+99.95	PI Sta 19+87.03
Δ = 8° 28' 06.8" (LT)	Δ = 7° 59' 54.6" (RT)
D = 4° 14' 38.9"	D = 1° 54' 35.5"
L = 199.54'	L = 418.80'
T = 99.95'	T = 209.74'
R = 1,350.00'	R = 3,000.00'
SE = 0.06	SE = 0.04
V = 50MPH	V = 50MPH

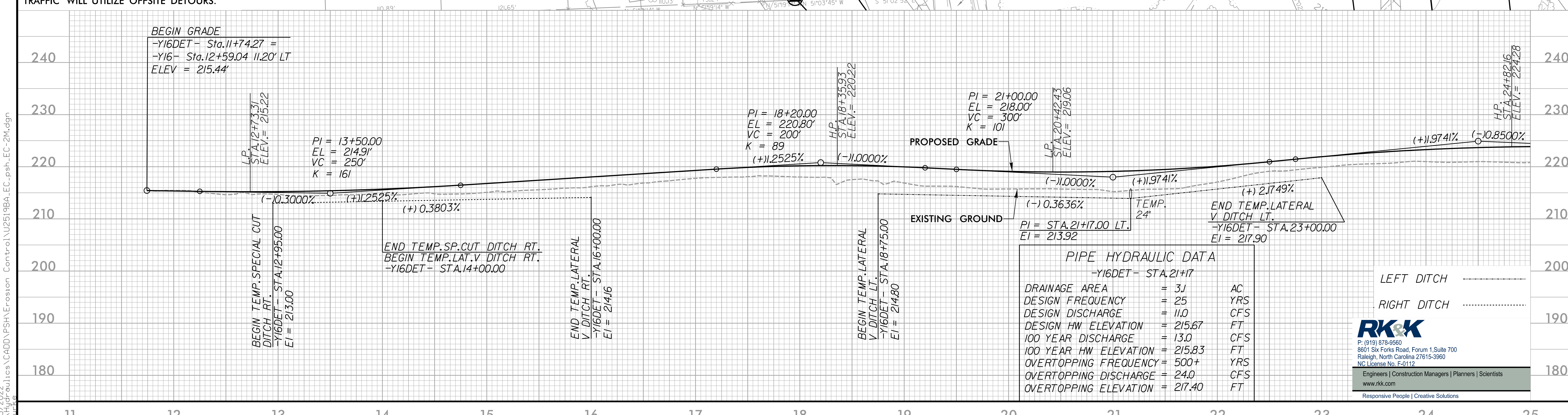
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 2B-6

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



FOR R/W AND EASEMENT STATIONS/OFFSETS SEE SHTS. 18 & 28

NOTE: SR 1111 (BRADDY ROAD) INTERSECTION WITH SR 1112 (STONEY POINT ROAD) WILL BE CLOSED WHILE -Y16- DETOUR IS OPERATIONAL. EXISTING BRADDY ROAD TRAFFIC WILL UTILIZE OFFSITE DETOURS.



PIPE HYDRAULIC DATA

-Y16DET- STA.21+17

DRAINAGE AREA	=	3.1	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	11.0	CFS
DESIGN HW ELEVATION	=	215.67	FT
100 YEAR DISCHARGE	=	13.0	CFS
100 YEAR HW ELEVATION	=	215.83	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	24.0	CFS
OVERTOPPING ELEVATION	=	217.40	FT

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-Y16- DETOUR

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-2N/CONST 2B-7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

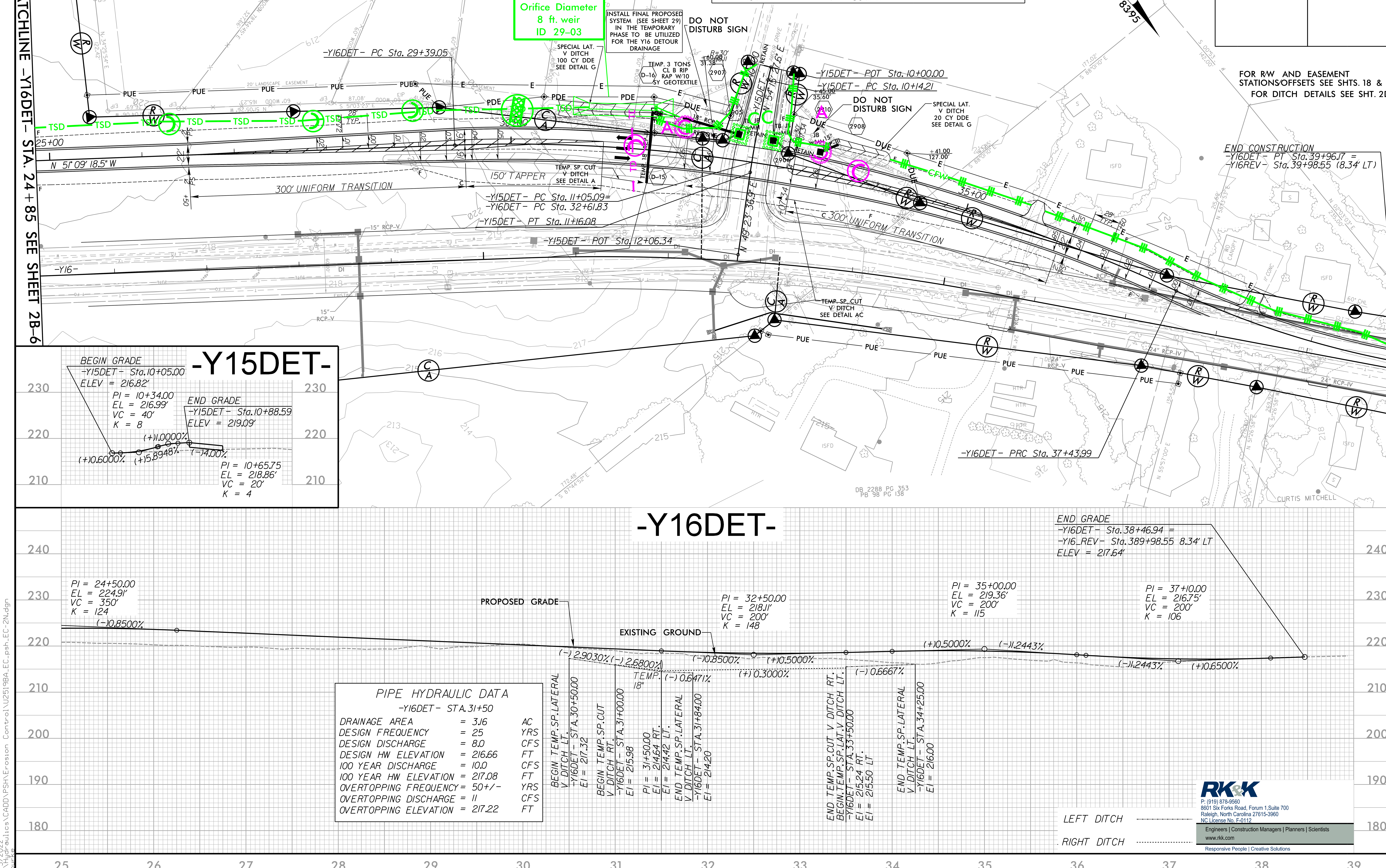
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 2B-7

108 x 20 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
8 ft. weir
ID 29-03

-Y16DET-	-Y16DET-	-Y15DET-
PI Sta 33+49.21	PI Sta 38+70.75	PI Sta 10+65.18
△ = 27° 07' 45.2" (RT)	△ = 14° 26' 55.4" (LT)	△ = 4° 51' 50.7" (LT)
D = 3° 22' 13.2"	D = 5° 43' 46.5"	D = 4° 46' 28.7"
L = 804.94'	L = 252.18'	L = 101.87'
T = 410.16'	T = 126.76'	T = 50.97'
R = 1,700.00'	R = 1,000.00'	R = 1,200.00'
SE = 0.04	SE = 0.06	
V = 40MPH	V = 50MPH	

FOR R/W AND EASEMENT STATIONS/OFFSETS SEE SHTS. 18 & 29
FOR DITCH DETAILS SEE SHT. 2D-1



MATCHLINE -Y16DET- STA. 24+85 SEE SHEET 2B-6
NAD 83/95
-Y16DET- PC Sta. 29+39.05
INSTALL FINAL PROPOSED SYSTEM (SEE SHEET 29) IN THE TEMPORARY PHASE TO BE UTILIZED FOR THE Y16 DETOUR DRAINAGE
DO NOT DISTURB SIGN
SPECIAL LAT. V DITCH 100 CY DDE SEE DETAIL G
TEMP. 3 TONS CL B RIP RAP W/10 SY GEOTEXTILE
-Y15DET- POT Sta. 10+00.00
-Y15DET- PC Sta. 10+14.21
DO NOT DISTURB SIGN
SPECIAL LAT. V DITCH 20 CY DDE SEE DETAIL G
N 51° 09' 18.5" W
150' TAPPER
300' UNIFORM TRANSITION
TEMP. SP. CUT V DITCH SEE DETAIL A
-Y15DET- PC Sta. 11+05.09=
-Y16DET- PC Sta. 32+61.83
-Y15DET- PT Sta. 11+16.08
-Y15DET- POT Sta. 12+06.34
N 49° 23' 36.9" E
C 300' UNIFORM TRANSITION
TEMP. SP. CUT V DITCH SEE DETAIL AC
END CONSTRUCTION
-Y16DET- PI Sta. 39+96.17 =
-Y16REV- Sta. 39+98.55 (8.34' LT)
-Y16DET- PRC Sta. 37+43.99
-Y16-
CURTIS MITCHELL
DB 2288 PG 353
PB 98 PG 138
-Y15DET-
BEGIN GRADE
-Y15DET- Sta. 10+05.00
ELEV = 216.82'
PI = 10+34.00
EL = 216.99'
VC = 40'
K = 8
END GRADE
-Y15DET- Sta. 10+88.59
ELEV = 219.09'
PI = 10+65.75
EL = 218.86'
VC = 20'
K = 4
(+)0.6000%
(+)5.8948%
(+)1.0000%
(-)4.00%
-Y16DET-
END GRADE
-Y16DET- Sta. 38+46.94 =
-Y16_REV- Sta. 389+98.55 8.34' LT
ELEV = 217.64'
PI = 24+50.00
EL = 224.91'
VC = 350'
K = 124
(-)0.8500%
PROPOSED GRADE
EXISTING GROUND
PI = 32+50.00
EL = 218.11'
VC = 200'
K = 148
PI = 35+00.00
EL = 219.36'
VC = 200'
K = 115
PI = 37+10.00
EL = 216.75'
VC = 200'
K = 106
(-) 2.9030%
(-) 2.6800%
TEMP. 18"
(-) 0.6471%
(-)0.8500%
(+)0.5000%
(+) 0.3000%
(-) 0.6667%
(+)0.5000%
(-)1.2443%
(-)1.2443%
(+)0.6500%
BEGIN TEMP. SP. LATERAL V DITCH LT. -Y16DET- STA. 30+50.00 El = 217.32
BEGIN TEMP. SP. CUT V DITCH RT. -Y16DET- STA. 31+00.00 El = 215.98
PI = 31+50.00 El = 214.64 RT. El = 214.42 LT.
END TEMP. SP. LATERAL V DITCH LT. -Y16DET- STA. 31+84.00 El = 214.20
END TEMP. SP. CUT V DITCH RT. BEGIN TEMP. SP. LAT. V DITCH LT. -Y16DET- STA. 33+50.00 El = 215.24 RT. El = 215.50 LT.
END TEMP. SP. LATERAL V DITCH LT. -Y16DET- STA. 34+25.00 El = 216.00
LEFT DITCH
RIGHT DITCH

PIPE HYDRAULIC DATA
-Y16DET- STA 31+50

DRAINAGE AREA	=	3.16	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	8.0	CFS
DESIGN HW ELEVATION	=	216.66	FT
100 YEAR DISCHARGE	=	10.0	CFS
100 YEAR HW ELEVATION	=	217.08	FT
OVERTOPPING FREQUENCY	=	50+/-	YRS
OVERTOPPING DISCHARGE	=	11	CFS
OVERTOPPING ELEVATION	=	217.22	FT

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-Y13- DETOUR
PROJECT REFERENCE NO.
U-2519BA
SHEET NO.
EC-20-1/CONST 2B-1
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
53 x 25 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
5 ft. weir
ID 22-03
-Y13DET- PC Sta. 0+18.01
BEGIN CONSTRUCTION
-Y13DET- PCC Sta. 0+86.84
-Y13- POT Sta. 24+54.89
2.46' OFFSET
-Y13DET- PT Sta. 2+92.99
-Y13DET- PC Sta. 6+05.67
-Y13DET- PT Sta. 8+24.02
TEMP. SPECIAL CUT DITCH SEE DETAIL AC
8 TONS CL B RIPRAP W/ 7 SY GEOTEXTILE
TEMP. 2 TONS CL B RIP RAP W/ 7 SY GEOTEXTILE
MATCHLINE -Y13DET- STA. 8+50
SEE SHEET 2B-1A
NAD 83/95
FOR RW AND EASEMENT STATIONS/OFFSETS SEE SHT. 7
FOR DITCH DETAILS SEE SHT. 2D-1
-Y13DET-
PI Sta 1+90.01
Δ = 5° 54' 20.4" (LT)
D = 2° 51' 53.2"
L = 206.15'
T = 103.16'
R = 2,000.00'
PI Sta 0+52.43
Δ = 0° 47' 19.5" (LT)
D = 1° 08' 45.3"
L = 68.83'
T = 34.42'
R = 5,000.00'
PI Sta 7+14.86
Δ = 2° 27' 45.7" (LT)
D = 1° 07' 40.3"
L = 218.35'
T = 109.19'
R = 5,080.00'
BEGIN WIDEN OFF EXIST.
-Y13DET- Sta.1+04.00
(-) 0.4333%
PI = 4+00.00 LT.
El = 178.75
(-) 0.7917%
BEGIN TEMP.SPECIAL CUT DITCH LT.
-Y13DET- STA.1+00.00
El = 180.05
LEFT DITCH
RIGHT DITCH
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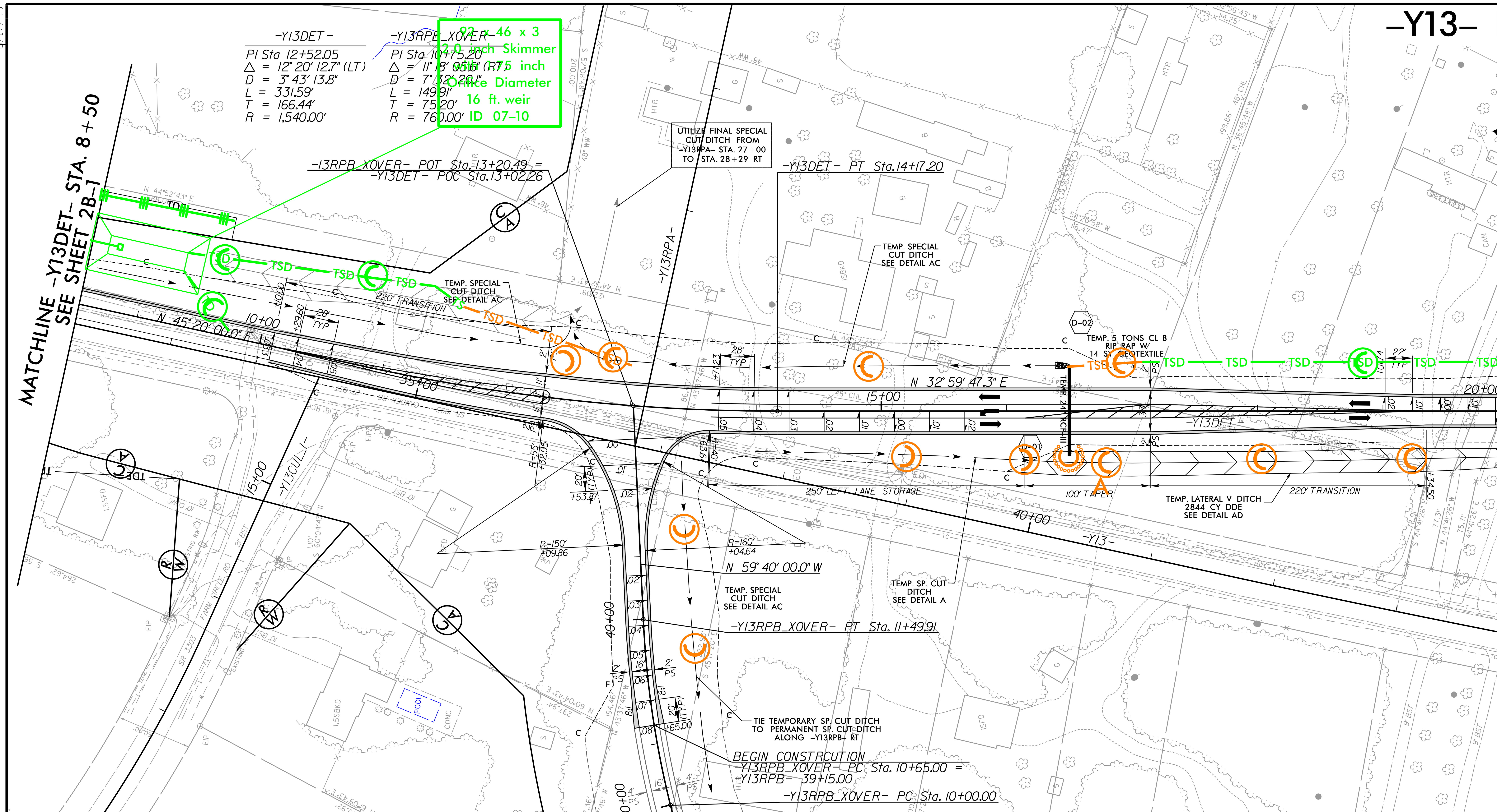
-Y13- DETOUR

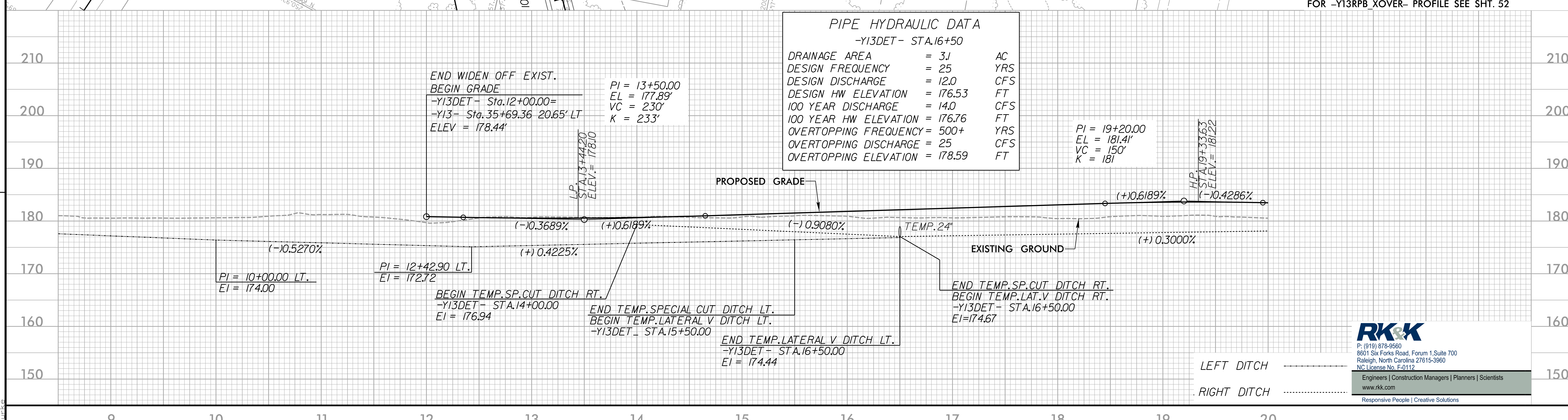
PROJECT REFERENCE NO.	EC-20-2/CONST 2B-IA
U-2519BA	2B-IA
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



FOR R/W AND EASEMENT STATIONS/OFFSETS SEE SHT. 7
FOR PHASING DETAILS SEE TMP PLANS
FOR DITCH DETAILS SEE SHT. 2D-1
FOR -Y13RPB_XOVER- PROFILE SEE SHT. 52

PIPE HYDRAULIC DATA
-Y13DET- STA.16+50

DRAINAGE AREA	= 3.1	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 12.0	CFS
DESIGN HW ELEVATION	= 176.53	FT
100 YEAR DISCHARGE	= 14.0	CFS
100 YEAR HW ELEVATION	= 176.76	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 25	CFS
OVERTOPPING ELEVATION	= 178.59	FT



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REVISIONS

8/17/99

3/3/2022
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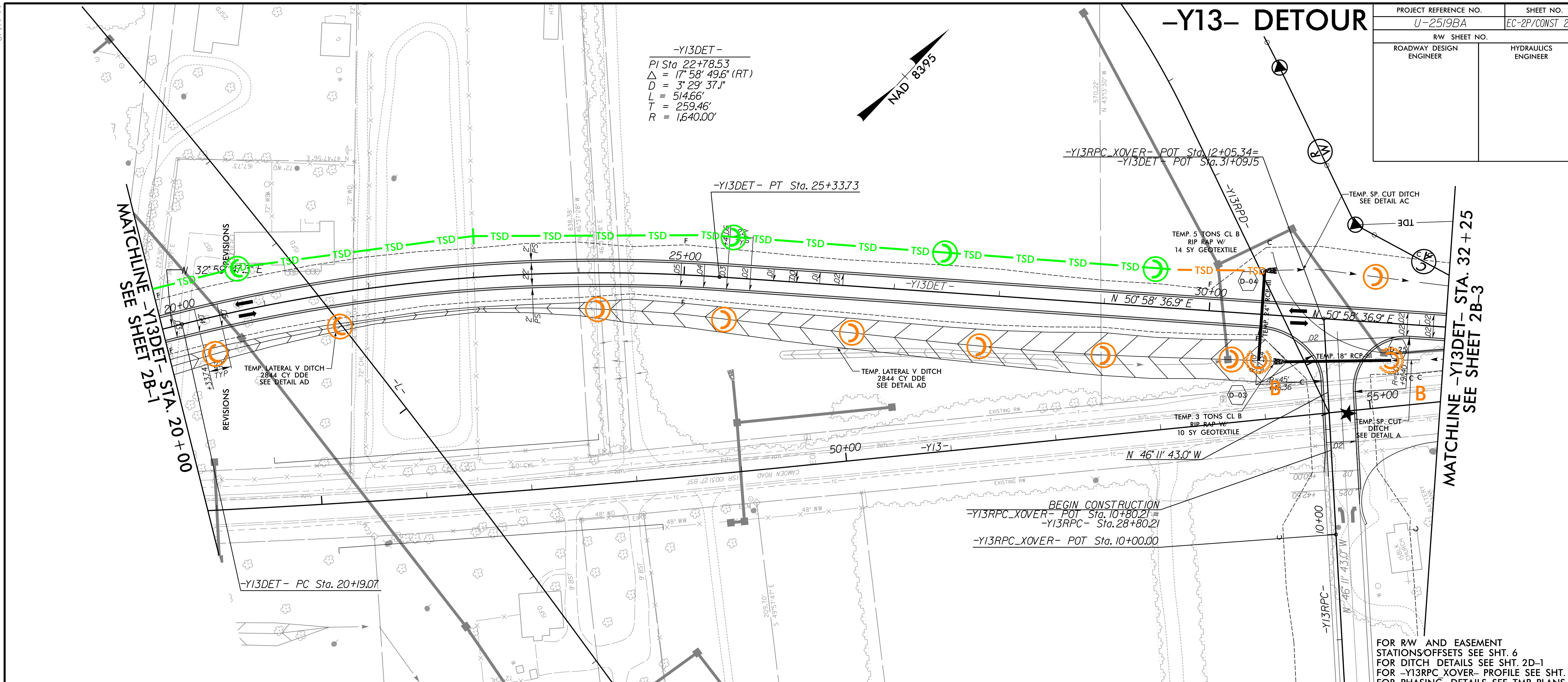
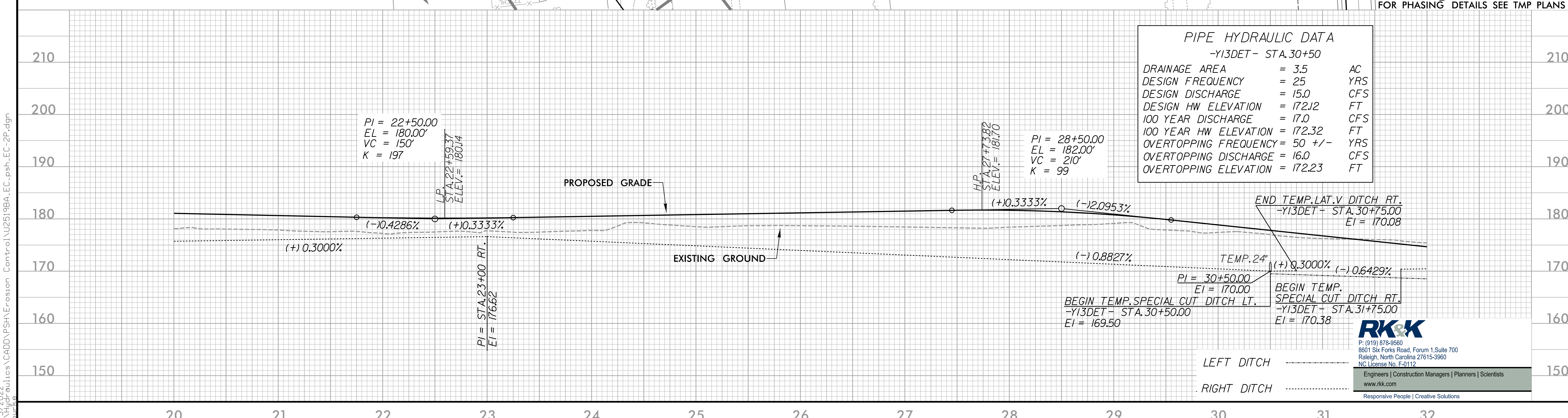
–Y13– DETOUR

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-2P/CONST 2B-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



-Y13DET-
PI Sta 22+78.53
Δ = 17° 58' 49.6" (RT)
D = 3° 29' 37.1"
L = 514.66'
T = 259.46'
R = 1,640.00'
NAD 83/95
-Y13RPC_XOVER- POT Sta. 12+05.34=
-Y13DET- POT Sta. 31+09.15
-Y13DET- PT Sta. 25+33.73
-Y13RPC-
TEMP. SP. CUT DITCH SEE DETAIL AC
TDE
TEMP. 5 TONS CL B RIP RAP W/ 14 SY GEOTEXTILE
MATCHLINE -Y13DET- STA. 20+00 SEE SHEET 2B-1
MATCHLINE -Y13DET- STA. 32+25 SEE SHEET 2B-3
N 32° 59' 47.5" E
N 50° 58' 36.9" E
25+00
30+00
20+00
TSD
REVISIONS
-Y13DET-
TEMP. LATERAL V DITCH 2844 CY DDE SEE DETAIL AD
TEMP. 18" RCP
TEMP. 24" RCP
TEMP. 3 TONS CL B RIP RAP W/ 10 SY GEOTEXTILE
TEMP. SP. CUT DITCH SEE DETAIL A
55+00
50+00
-Y13-
N 46° 11' 43.0" W
-L-
BEGIN CONSTRUCTION
-Y13RPC_XOVER- POT Sta. 10+80.21 =
-Y13RPC- Sta. 28+80.21
-Y13RPC_XOVER- POT Sta. 10+00.00
-Y13DET- PC Sta. 20+19.07
10+00
N 46° 11' 43.0" W
-Y13RPC-
B

FOR R/W AND EASEMENT STATIONS/OFFSETS SEE SHT. 6
FOR DITCH DETAILS SEE SHT. 2D-1
FOR -Y13RPC_XOVER- PROFILE SEE SHT. 52
FOR PHASING DETAILS SEE TMP PLANS



PI = 22+50.00
EL = 180.00'
VC = 150'
K = 197
L.P. STA. 22+59.37 ELEV. = 180.14
PROPOSED GRADE
(-)0.4286%
(+)0.3333%
(+) 0.3000%
PI = STA.23+00 RT.
EI = 176.62
EXISTING GROUND
H.P. STA. 27+73.82 ELEV. = 181.70
PI = 28+50.00
EL = 182.00'
VC = 210'
K = 99
(+)0.3333%
(-)2.0953%
(-) 0.8827%
END TEMP. LAT. V DITCH RT.
-Y13DET- STA. 30+75.00
EI = 170.08
TEMP. 24"
(+) 0.3000%
(-) 0.6429%
PI = 30+50.00
EI = 170.00
BEGIN TEMP. SPECIAL CUT DITCH LT.
-Y13DET- STA. 30+50.00
EI = 169.50
BEGIN TEMP. SPECIAL CUT DITCH RT.
-Y13DET- STA. 31+75.00
EI = 170.38
LEFT DITCH
RIGHT DITCH
210
200
190
180
170
160
150
20
21
22
23
24
25
26
27
28
29
30
31
32

PIPE HYDRAULIC DATA

-Y13DET- STA. 30+50

DRAINAGE AREA	=	3.5	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	15.0	CFS
DESIGN HW ELEVATION	=	172.12	FT
100 YEAR DISCHARGE	=	17.0	CFS
100 YEAR HW ELEVATION	=	172.32	FT
OVERTOPPING FREQUENCY	=	50 +/-	YRS
OVERTOPPING DISCHARGE	=	16.0	CFS
OVERTOPPING ELEVATION	=	172.23	FT

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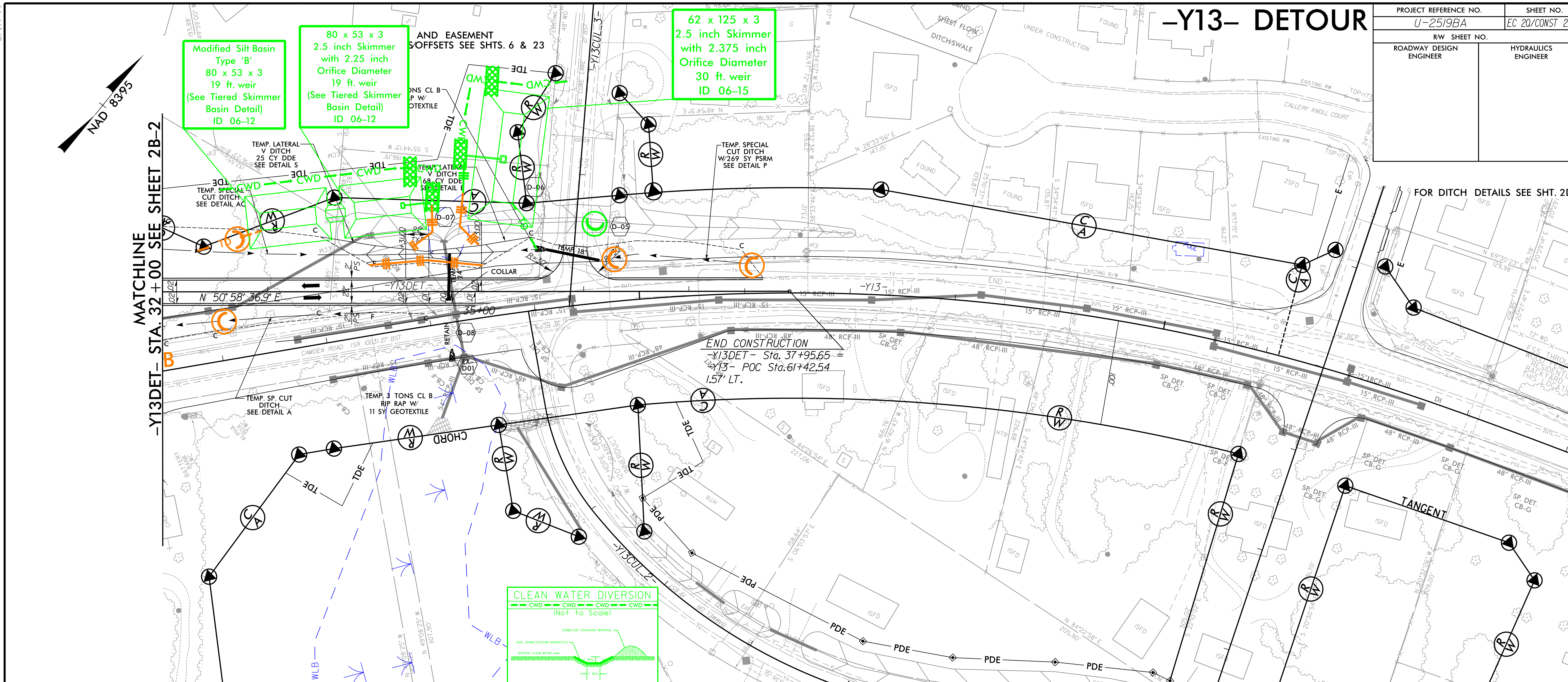
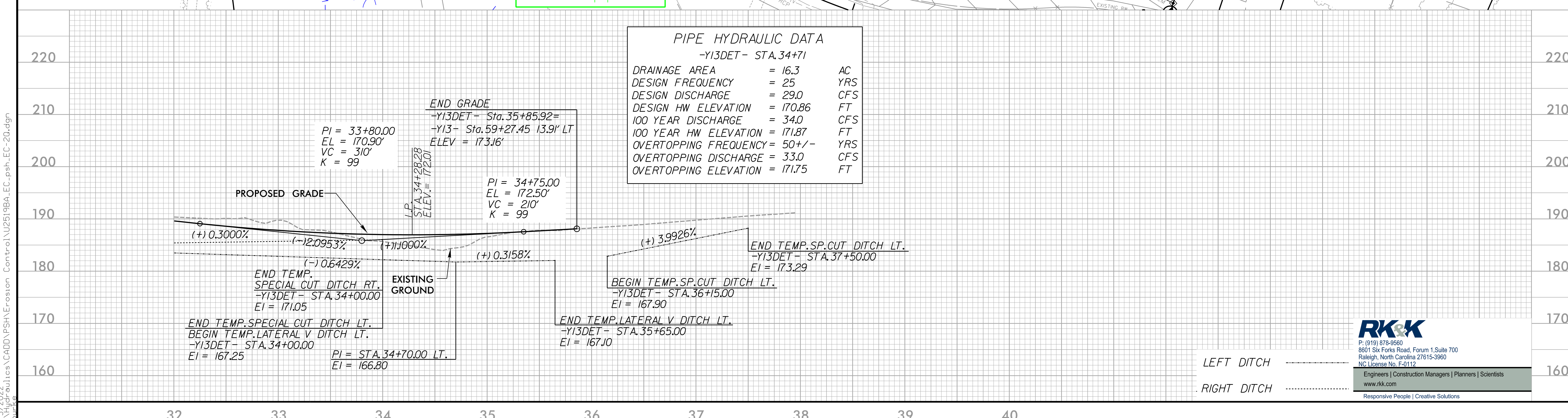
-Y13- DETOUR

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC 20/CONST 2B-3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FOR DITCH DETAILS SEE SHT. 2D-1



NAD 83/95
MATCHLINE -Y13DET- STA. 32+00 SEE SHEET 2B-2
Modified Silt Basin Type 'B' 80 x 53 x 3 19 ft. weir (See Tiered Skimmer Basin Detail) ID 06-12
80 x 53 x 3 2.5 inch Skimmer with 2.25 inch Orifice Diameter 19 ft. weir (See Tiered Skimmer Basin Detail) ID 06-12
AND EASEMENT S/OFFSETS SEE SHTS. 6 & 23
62 x 125 x 3 2.5 inch Skimmer with 2.375 inch Orifice Diameter 30 ft. weir ID 06-15
TEMP. LATERAL V DITCH 25 CY DDE SEE DETAIL S
TEMP. SPECIAL CUT DITCH SEE DETAIL AC
TEMP. SPECIAL CUT DITCH W/269 SY PSRM SEE DETAIL P
N 50° 58' 36.9" E
COLLAR
END CONSTRUCTION -Y13DET- Sta. 37+95.65 = -Y13- POC Sta.61+42.54 1.57' LT.
TEMP. SP. CUT DITCH SEE DETAIL A
TEMP. 3 TONS CL B RIP RAP W/ 11 SY GEOTEXTILE
CHORD
TANGENT
CLEAN WATER DIVERSION (Not to Scale)



220
210
200
190
180
170
160
PI = 33+80.00
EL = 170.90'
VC = 310'
K = 99
END GRADE
-Y13DET- Sta. 35+85.92=
-Y13- Sta. 59+27.45 13.91' LT
ELEV = 173.16'
L.P. STA. 34+28.28 ELEV. = 172.01
PI = 34+75.00
EL = 172.50'
VC = 210'
K = 99
PROPOSED GRADE
(+) 0.3000%
(-)2.0953%
(+)1.1000%
(-) 0.6429%
(+) 0.3158%
(+) 3.9926%
END TEMP. SPECIAL CUT DITCH RT.
-Y13DET- STA. 34+00.00
El = 171.05
EXISTING GROUND
END TEMP. SPECIAL CUT DITCH LT.
BEGIN TEMP. LATERAL V DITCH LT.
-Y13DET- STA. 34+00.00
El = 167.25
PI = STA. 34+70.00 LT.
El = 166.80
END TEMP. LATERAL V DITCH LT.
-Y13DET- STA. 35+65.00
El = 167.10
BEGIN TEMP. SP. CUT DITCH LT.
-Y13DET- STA. 36+15.00
El = 167.90
END TEMP. SP. CUT DITCH LT.
-Y13DET- STA. 37+50.00
El = 173.29
LEFT DITCH
RIGHT DITCH
32 33 34 35 36 37 38 39 40

PIPE HYDRAULIC DATA

-Y13DET- STA. 34+71

DRAINAGE AREA	= 16.3	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 29.0	CFS
DESIGN HW ELEVATION	= 170.86	FT
100 YEAR DISCHARGE	= 34.0	CFS
100 YEAR HW ELEVATION	= 171.87	FT
OVERTOPPING FREQUENCY	= 50+/-	YRS
OVERTOPPING DISCHARGE	= 33.0	CFS
OVERTOPPING ELEVATION	= 171.75	FT

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–Y14– DETOUR

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-2R/CONST 2B-4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

MATCHLINE –Y14DET– STA. 22+00 SEE SHEET 2B-5

NAD 83/95

BEGIN CONSTRUCTION
–Y14DET– PC Sta. 10+00.00 =
–Y14– POC Sta.10+74.82
0.00' OFFSET

UTILIZE FINAL SPECIAL CUT V DITCH FROM –Y14– STA. 10+00 TO STA. 10+50 RT, 18" DRIVEWAY PIPE, 24" RCP, AND STD. V DITCH AT –Y14– STA. 9+88 RT

TEMP. SPECIAL CUT DITCH W/231 SY PSRM SEE DETAIL AJ

TEMP. SPECIAL CUT DITCH W/542 SY PSRM SEE DETAIL P

TEMP. LATERAL V DITCH 982 CY DDE SEE DETAIL S

TEMP. SP. LAT. V DITCH SEE DETAIL G

TEMP. 8 TONS CL B RIP RAP W/ 21 SY GEOTEXTILE

–Y14DET– PC Sta.16+94.23

–Y14DET– PT Sta. 12+66.93

–Y14DET–
PI Sta 11+34.26
Δ = 15° 17' 38.6" (RT)
D = 5° 43' 46.5"
L = 266.93'
T = 134.26'
R = 1,000.00'
SE = 0.04
V = 40 MPH

–Y14DET–
PI Sta 22+35.25
Δ = 21° 52' 19.8" (LT)
D = 2° 02' 46.6"
L = 1,068.88'
T = 541.02'
R = 2,800.00'
SE = 0.04
V = 40 MPH

CLEAN WATER DIVERSION
CWD CWD CWD CWD
(Not to Scale)
STABILIZED EXCAVATED MATERIAL
REEL STABILIZATION GEOTEXTILE
OFFSITE CLEAN WATER

100 x 39 x 3
2.0 inch Skimmer
with 1.625 inch
Orifice Diameter
15 ft. weir
ID 25–01

INSTALL TSD AND TIERED SKIMMER BASIN 13–05 AS PART OF DETOUR EROSION CONTROL

Modified Silt Basin
Type 'B'
33 x 50 x 3
13 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 13–05

33 x 50 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
13 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 13–05

FOR R/W AND EASEMENT STATIONS/OFFSETS SEE SHTS. 13 & 25

FOR DITCH DETAILS SEE SHT. 2D–1

PLANS PREPARED BY :
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RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609–3960
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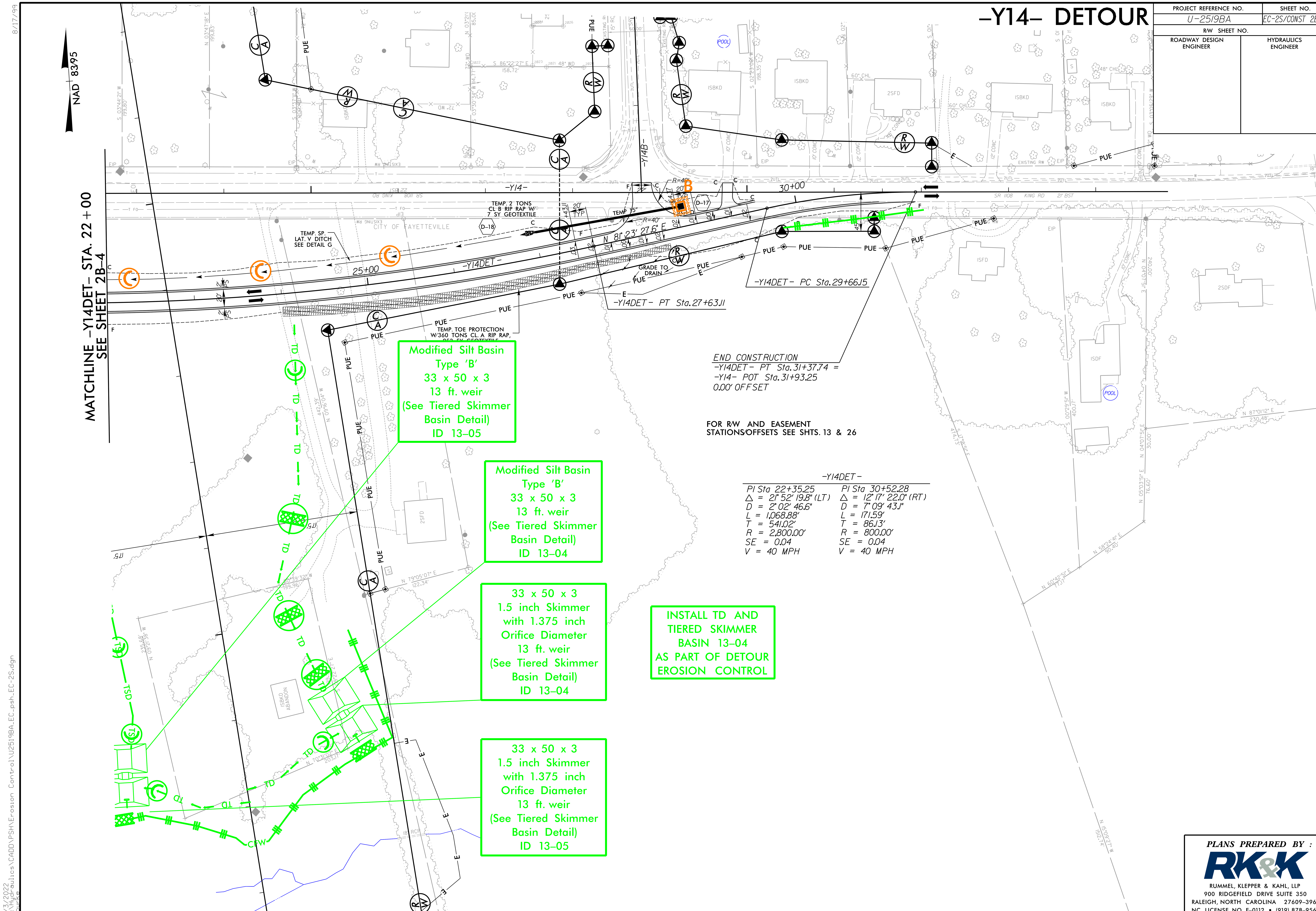
-Y14- DETOUR
PROJECT REFERENCE NO.
U-2519BA
SHEET NO.
EC-2S/CONST 2B-5
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NAD 83
MATCHLINE -Y14DET- STA. 22+00
SEE SHEET 2B-4
-Y14-
-Y14DET-
25+00
30+00
CITY OF FAYETTEVILLE
TEMP. 2 TONS CL B RIP RAP W/ 7 SY GEOTEXTILE
TEMP. SP. LAT. V DITCH SEE DETAIL G
TEMP. TOE PROTECTION
GRADE TO DRAIN
-Y14DET- PT Sta.27+63.11
-Y14DET- PC Sta.29+66.15
END CONSTRUCTION
-Y14DET- PT Sta.31+37.74 =
-Y14- POT Sta.31+93.25
0.00' OFFSET
FOR R/W AND EASEMENT STATIONS/OFFSETS SEE SHTS. 13 & 26
-Y14DET-
PI Sta 22+35.25
Δ = 21° 52' 19.8" (LT)
D = 2° 02' 46.6"
L = 1,068.88'
T = 541.02'
R = 2,800.00'
SE = 0.04
V = 40 MPH
PI Sta 30+52.28
Δ = 12° 17' 22.0" (RT)
D = 7° 09' 43.1"
L = 171.59'
T = 86.13'
R = 800.00'
SE = 0.04
V = 40 MPH
Modified Silt Basin Type 'B' 33 x 50 x 3 13 ft. weir (See Tiered Skimmer Basin Detail) ID 13-05
Modified Silt Basin Type 'B' 33 x 50 x 3 13 ft. weir (See Tiered Skimmer Basin Detail) ID 13-04
33 x 50 x 3 1.5 inch Skimmer with 1.375 inch Orifice Diameter 13 ft. weir (See Tiered Skimmer Basin Detail) ID 13-04
33 x 50 x 3 1.5 inch Skimmer with 1.375 inch Orifice Diameter 13 ft. weir (See Tiered Skimmer Basin Detail) ID 13-05
INSTALL TD AND TIERED SKIMMER BASIN 13-04 AS PART OF DETOUR EROSION CONTROL
PLANS PREPARED BY :
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–Y16– DETOUR

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-2T/CONST 2B-6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

–Y16DET –

PI Sta 10+99.95	PI Sta 19+87.03
△ = 8° 28' 06.8" (LT)	△ = 7° 59' 54.6" (RT)
D = 4° 14' 38.9"	D = 1° 54' 35.5"
L = 199.54'	L = 418.80'
T = 99.95'	T = 209.74'
R = 1,350.00'	R = 3,000.00'
SE = 0.06	SE = 0.04
V = 50MPH	V = 50MPH

BEGIN CONSTRUCTION
–Y16DET– PC Sta. 10+00.00 =
–Y16– POT Sta.10+41.97
0.00' OFFSET

–Y16DET– PT Sta.11+99.54

35 x 70 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
9 ft. weir
ID 2B–04

NAD 83'95

TEMP. LATERAL V DITCH 84 CY DDE SEE DETAIL B

TEMP. STD. V DITCH W/129 SY PSRM, 18 CY DDE SEE DETAIL AP

TEMP. LATERAL V DITCH 79 CY DDE SEE DETAIL AD

TEMP. STD. V DITCH W/129 SY PSRM, 9 CY DDE SEE DETAIL AP

FOR DITCH DETAILS SEE SHT. 2D–1

TSD

GRADE TO DRAIN

TEMP. 5 TONS CL B RIP RAP W/ 14 SY GEOTEXTILE

TEMP. STD. BASE DITCH 36 CY DDE SEE DETAIL X

–Y16DET– PC Sta.17+77.29

–Y16DET– PT Sta. 21+96.09

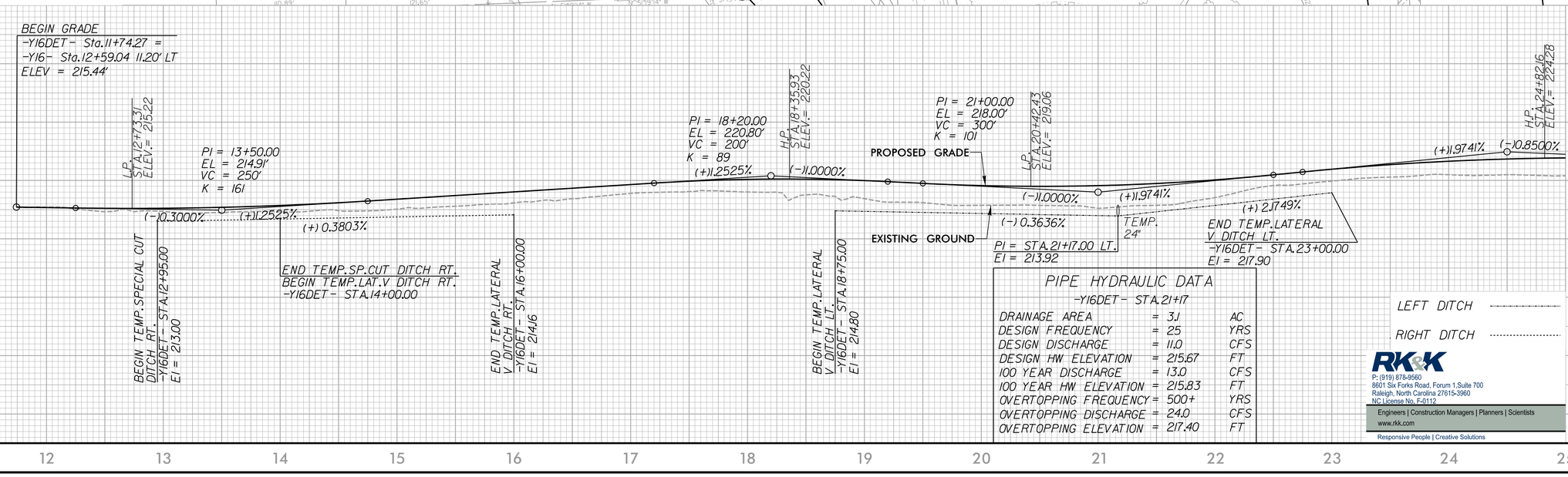
TEMP. SP. CUT V DITCH SEE DETAIL AC

TEMP. LATERAL V DITCH 78 CY DDE SEE DETAIL AD

FOR R/W AND EASEMENT STATIONS/OFFSETS SEE SHTS. 18 & 28

NOTE: SR 1111 (BRADDY ROAD) INTERSECTION WITH SR 1112 (STONEY POINT ROAD) WILL BE CLOSED WHILE –Y16– DETOUR IS OPERATIONAL. EXISTING BRADDY ROAD TRAFFIC WILL UTILIZE OFFSITE DETOURS.

MATCHLINE –Y16DET– STA. 24+85 SEE SHEET 2B–7



PIPE HYDRAULIC DATA
–Y16DET– STA.21+17

DRAINAGE AREA	= 3.1	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 11.0	CFS
DESIGN HW ELEVATION	= 215.67	FT
100 YEAR DISCHARGE	= 13.0	CFS
100 YEAR HW ELEVATION	= 215.83	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 24.0	CFS
OVERTOPPING ELEVATION	= 217.40	FT

LEFT DITCH

RIGHT DITCH

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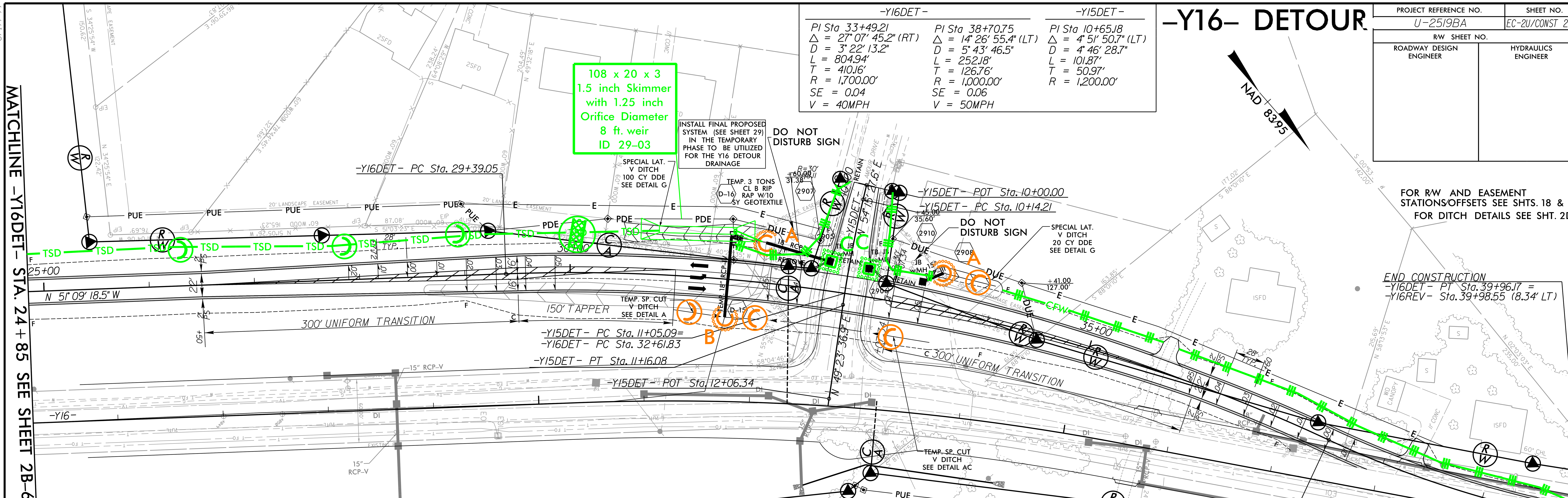
Laurie

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-2U/CONST 2B-7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-Y16- DETOUR

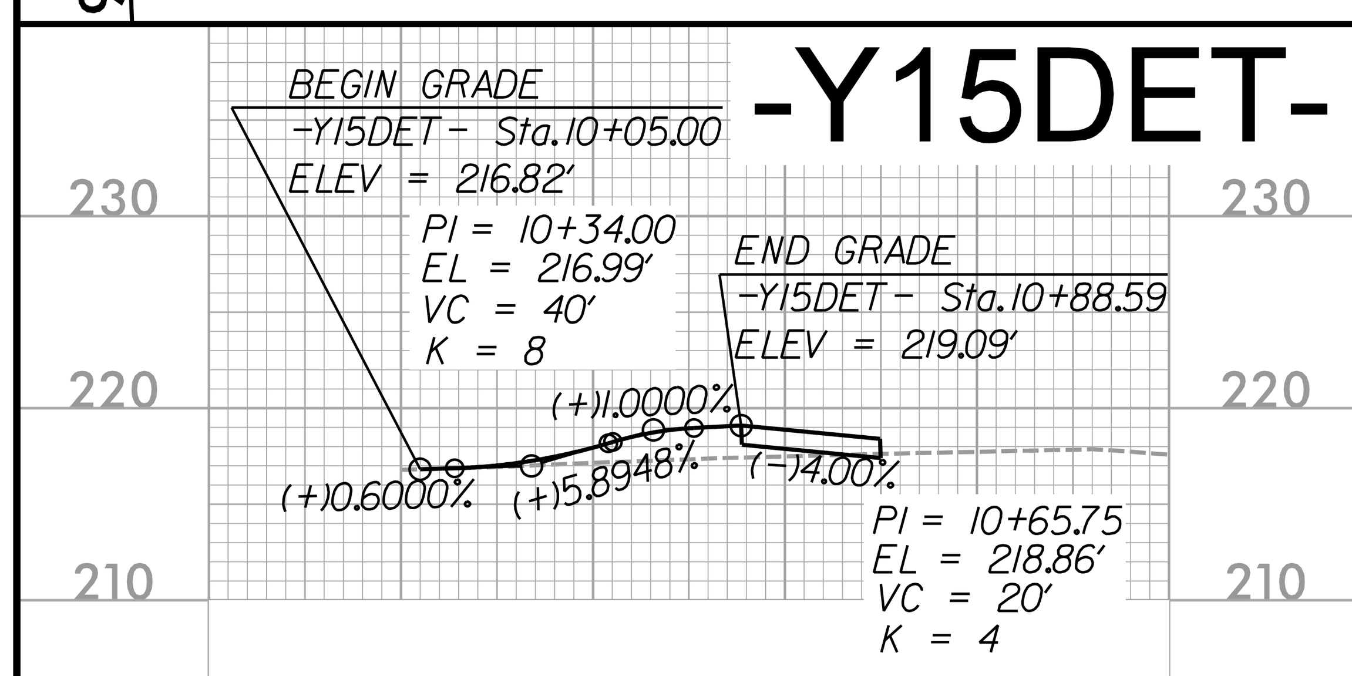
-Y16DET-	-Y16DET-	-Y15DET-
PI Sta 33+49.21	PI Sta 38+70.75	PI Sta 10+65.18
Δ = 27°07' 45.2" (RT)	Δ = 14°26' 55.4" (LT)	Δ = 4°51' 50.7" (LT)
D = 3°22' 13.2"	D = 5°43' 46.5"	D = 4°46' 28.7"
L = 804.94'	L = 252.18'	L = 101.87'
T = 410.16'	T = 126.76'	T = 50.97'
R = 1,700.00'	R = 1,000.00'	R = 1,200.00'
SE = 0.04	SE = 0.06	
V = 40MPH	V = 50MPH	

FOR R/W AND EASEMENT STATIONS/OFFSETS SEE SHTS. 18 & 29
FOR DITCH DETAILS SEE SHT. 2D-1

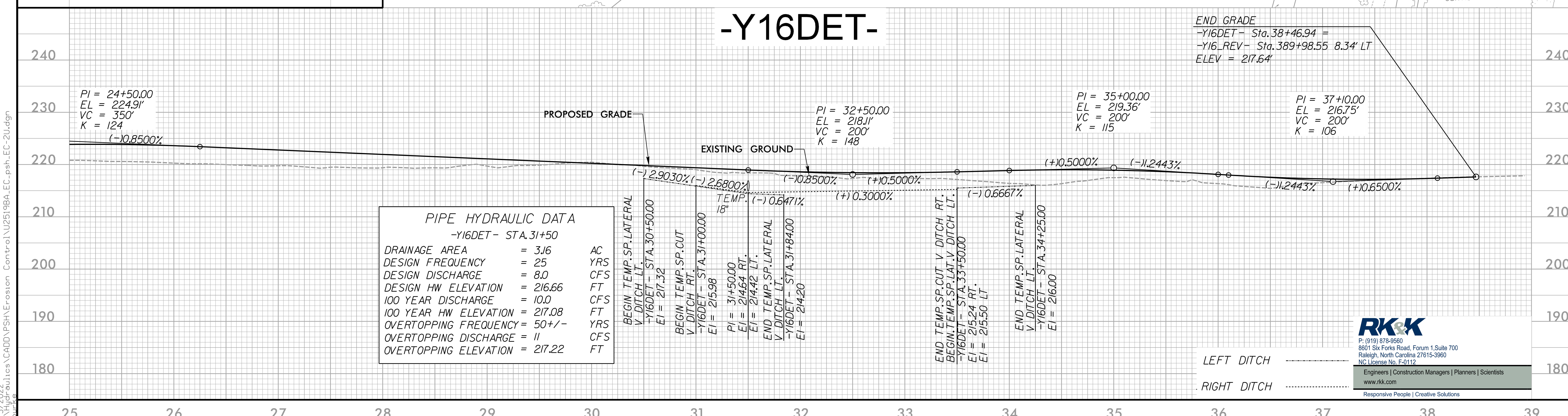


MATCHLINE -Y16DET- STA. 24+85 SEE SHEET 2B-6
108 x 20 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
8 ft. weir
ID 29-03
INSTALL FINAL PROPOSED SYSTEM (SEE SHEET 29) IN THE TEMPORARY PHASE TO BE UTILIZED FOR THE Y16 DETOUR DRAINAGE
DO NOT DISTURB SIGN
NAD 83
-Y16DET- PC Sta. 29+39.05
SPECIAL LAT. V DITCH 100 CY DDE SEE DETAIL G
TEMP. 3 TONS CL B RIP RAP W/10 SY GEOTEXTILE
-Y15DET- POT Sta. 10+00.00
-Y15DET- PC Sta. 10+14.21
SPECIAL LAT. V DITCH 20 CY DDE SEE DETAIL G
END CONSTRUCTION
-Y16DET- PT Sta. 39+96.17 =
-Y16REV- Sta. 39+98.55 (8.34' LT)
N 51°09' 18.5" W
150' TAPPER
300' UNIFORM TRANSITION
TEMP. SP. CUT V DITCH SEE DETAIL A
-Y15DET- PC Sta. 11+05.09=
-Y16DET- PC Sta. 32+61.83
-Y15DET- PT Sta. 11+16.08
-Y15DET- POT Sta. 12+06.34
300' UNIFORM TRANSITION
TEMP. SP. CUT V DITCH SEE DETAIL AC
-Y16DET- PRC Sta. 37+43.99
-Y16-
CURTIS MITCHELL
DB 2288 PG 353
PB 98 PG 138

-Y15DET-



-Y16DET-



END GRADE
-Y16DET- Sta.38+46.94 =
-Y16_REV- Sta.389+98.55 8.34' LT
ELEV = 217.64'
PI = 24+50.00
EL = 224.91'
VC = 350'
K = 124
(-)0.8500%
PROPOSED GRADE
EXISTING GROUND
PI = 32+50.00
EL = 218.11'
VC = 200'
K = 148
PI = 35+00.00
EL = 219.36'
VC = 200'
K = 115
PI = 37+10.00
EL = 216.75'
VC = 200'
K = 106
(-) 2.9030%
(-) 2.6800%
(-)0.8500%
(+)0.5000%
(+) 0.3000%
(-) 0.6667%
(+)0.5000%
(-)1.2443%
(-)1.2443%
(+)0.6500%
TEMP. 18"
(-) 0.6471%
BEGIN TEMP.SP.LATERAL V DITCH LT. -Y16DET - STA.30+50.00 EI = 217.32
BEGIN TEMP.SP.CUT V DITCH RT. -Y16DET - STA.31+00.00 EI = 215.98
PI = 31+50.00 EI = 214.54 RT. EI = 214.42 LT.
END TEMP.SP.LATERAL V DITCH LT. -Y16DET - STA.31+84.00 EI = 214.20
END TEMP.SP.CUT V DITCH RT. BEGIN TEMP.SP.LAT.V DITCH LT. -Y16DET - STA.33+50.00 EI = 215.24 RT. EI = 215.50 LT
END TEMP.SP.LATERAL V DITCH LT. -Y16DET - STA.34+25.00 EI = 216.00
LEFT DITCH
RIGHT DITCH

PIPE HYDRAULIC DATA
-Y16DET- STA.31+50

DRAINAGE AREA	=	3.16	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	8.0	CFS
DESIGN HW ELEVATION	=	216.66	FT
100 YEAR DISCHARGE	=	10.0	CFS
100 YEAR HW ELEVATION	=	217.08	FT
OVERTOPPING FREQUENCY	=	50+/-	YRS
OVERTOPPING DISCHARGE	=	11	CFS
OVERTOPPING ELEVATION	=	217.22	FT

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8/17/99

3/3/2022
R:\Hydraulics\CADD\PSH\Erosion Control\U2519BA_EC_psh_EC-2U.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	332+00	338+00	RT	895
4	-L-	322+00	327+50	MED	1040
4-5	-L-	327+50	334+00	MED	1225
5	-L-	334+00	339+00	MED	945
5	-L-	341+00	347+50	MED	1190
5	-L-	339+00	341+00	RT	250
5-6	-L-	346+00	350+50	RT	825
6	-L-	347+50	350+50	MED	550
6	-L-	350+50	354+00	MED	640
6	-L-	350+00	354+00	LT	450
6	-L-	354+00	358+82	LT - BD	505
6	-L-	355+50	356+50	RT	115
6	-L-	356+50	358+00	LT	170
6	-L-	361+00	371+00	RT	1685
6	-L-	361+50	364+50	LT	340
6	-L-	364+50	368+00	LT	395
6	-L-	360+50	363+50	MED-LT	600
6	-L-	360+50	363+50	MED-RT	600
6	-L-	363+50	364+50	MED	190
6	-L-	364+50	368+00	MED	650
6	-L-	368+00	371+91	MED	725
6	-L-	372+50	373+29	LT	120
8	-L-	371+91	376+00	MED	730
8	-L-	380+00	385+00	MED	945
8	-L-	375+35	377+00	RT	190
8	-L-	375+40	379+00	LT	380
8	-L-	377+50	380+42	RT	330
8	-L-	380+00	385+00	LT	565
8	-L-	380+42	385+00	RT	515
8	-L-	380+42	383+50	BERM -RT	325

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
8	-L-	385+00	387+50	RT	285
8	-L-	385+00	389+50	LT	510
9	-L-	387+50	390+50	RT	340
9	-L-	390+50	393+50	RT	340
9	-L-	390+50	395+00	MED	1045
9	-L-	390+50	392+00	LT	175
9	-L-	392+00	394+00	LT	230
10	-L-	405+00	413+50	MED	1975
10	-L-	403+00	405+00	RT	225
11	-L-	413+50	419+50	MED	1395
11	-L-	415+50	417+50	RT	225
11	-L-	422+00	426+50	LT	605
11/12	-L-	422+00	431+00	MED	1600
11	-L-	422+00	425+00	RT	405
11/12	-L-	425+00	431+00	RT	675
12	-L-	428+50	431+00	LT	285
12	-L-	435+00	435+50	BERM -RT	55
12	-L-	431+00	434+00	LT	340
12	-L-	431+00	435+00	RT	450
12	-L-	435+00	437+00	RT	225
12/13	-L-	437+00	440+00	RT	340
13	-L-	444+00	446+00	MED	355
13	-L-	444+00	446+50	LT	285
13	-L-	446+50	449+00	LT	420
13	-L-	444+00	446+50	RT	285
13	-L-	446+50	449+00	RT	420
			SUBTOTAL		31,575

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
14	-L-	454+00	456+00	LT	185
14	-L-	454+00	456+00	RT	185
14	-L-	456+00	456+65	RT	60
14	-L-	456+00	457+00	LT	70
14	-L-	459+00	462+00	RT	340
14	-L-	458+00	461+00	LT	405
14	-L-	462+50	464+20	RT	120
14-15	-L-	464+20	467+00	RT	195
15	-L-	469+50	472+50	RT	310
15	-L-	472+50	473+00	RT	35
15	-L-	473+00	474+00	RT	70
15	-L-	474+00	475+00	RT	70
15	-L-	472+95	473+50	LT	40
15	-L-	473+50	474+50	LT	70
15	-L-	474+50	477+00	LT	175
15-16	-L-	477+00	485+00	RT	1075
16	-L-	485+00	486+50	RT	175
16	-L-	486+50	489+00	RT	415
16	-L-	489+39	490+00	LT	75
16-17	-L-	490+00	491+00	LT	80
16-17	-L-	491+00	496+00	LT	420
17	-L-	493+50	502+00	RT	955
17	-L-	496+50	502+00	LT	620
18	-L-	506+00	513+00	RT	975
18-19	-L-	513+00	519+00	RT	880
14	-L-	455+00	457+00	MED	355
14	-L-	457+00	462+00	MED	890
14-15	-L-	462+00	464+50	MED	445
15	-L-	464+50	472+50	MED	1420

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
16	-L-	475+77	482+00	MED	1110
16	-L-	485+00	489+35	MED	775
16-17	-L-	489+75	496+50	MED	1200
17	-L-	496+50	499+50	MED	535
17-18	-L-	499+50	500+50	MED	180
18	-L-	510+00	512+86	MED	570
22	-Y13-	21+00	25+50	LT	690
22	-Y13-	21+00	25+50	RT	920
22	-Y13-	26+50	28+00	RT	205
22	-Y13-	28+00	31+66	RT	255
22	-Y13-	28+50	29+50	LT	105
22	-Y13-	29+50	31+66	LT	330
22/7	-Y13-	31+66	36+25	LT	640
22/7	-Y13-	31+66	34+00	RT	240
7	-Y13-	37+38	41+00	RT	380
7	-Y13-	41+00	45+00	RT	420
6	-Y13-	49+50	52+50	LT	210
6	-Y13-	52+50	53+70	LT	100
6	-Y13-	53+50	54+00	RT	70
6	-Y13-	55+00	56+00	RT	115
6	-Y13-	55+00	57+50	LT	285
6	-Y13-	56+00	57+45	RT	135
6	-Y13-	57+50	58+22	LT	135
6	-Y13-	58+60	59+00	RT	75
6/23	-Y13-	59+00	62+00	RT	365
6/23	-Y13-	60+00	67+00	LT	1770
23	-Y13-	62+00	67+50	RT	665
23/24	-Y13-	67+50	76+50	RT	940
				SUBTOTAL	24,530

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-3B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
23	-Y13-	69+00	71+00	LT	370
23/24	-Y13-	71+00	77+00	LT	1100
3	-Y13-	77+00	78+53	LT	285
24	Y13-	77+15	78+00	RT	70
20	-Y130-	12+17	13+00	LT	60
20	-Y130-	13+00	20+00	LT	705
20	-Y130-	20+00	20+50	LT	45
20	-Y130-	14+00	18+00	RT	325
6	-Y13GUL3-	12+00	13+35	LT	110
6	-Y13GUL3-	12+00	13+46	RT	120
6/23	-Y13GUL2-	12+12	00+00	LT	1450
6	-Y13GUL2-	10+66	12+12	LT	235
20-1A	-Y13DET-	1+00	4+00	LT	510
20-1	-Y13DET-	10+00	12+60	LT	210
20-1	-Y13DET-	12+60	15+50	LT	350
20-1	-Y13DET-	15+50	16+50	LT	140
20-1	-Y13DET-	13+50	16+50	RT	245
20-1/2	-Y13DET-	16+50	23+00	RT	680
20-2	-Y13DET-	23+00	30+50	RT	785
20-2	-Y13DET-	30+50	34+00	LT	425
20-3	-Y13DET-	34+00	34+70	LT	100
20-3	-Y13DET-	34+70	35+65	LT	70
23	-Y13F-	10+58	11+50	RT	65
23	-Y136-	10+36	13+50	LT	255
23	-Y136-	10+20	13+50	RT	400
22	-Y13H-	10+15	11+56	LT	150
22	-Y131-	11+00	13+75	LT	225
22	-Y131-	13+75	00+00	LT	450
22	-Y13J-	10+50	12+50	LT	210

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
7	-Y13RPA-	22+50	28+00	LT	620
7	-Y13RP0-	24+50	40+50	LT	1800
7	-Y13RP0-	24+50	40+50	RT	2695
5	-Y13RPC-	14+00	15+93	RT	240
6	-Y13RPC-	20+00	28+50	LT	955
6	-Y13RPC-	20+50	28+50	RT	900
6	-Y13RPD-	12+53	16+50	LT	590
6	-Y13RPD-	16+50	19+00	LT	285
6	-Y13RPD-	19+00	21+50	LT	375
6	-Y13RPD-	16+15	19+50	RT	350
6	-Y13RPD-	19+50	22+00	RT	175
6	-Y13RPD-	22+50	26+50	RT	450
6	-Y13RPD-	26+50	31+00	RT	510
6	-Y13RPD-	31+00	33+78	RT	315
6	-Y13RPD-	33+78	34+50	RT	85
6	-Y13RPD-	23+50	27+50	LT	540
6	-Y13RPD-	27+50	33+78	LT	845
6	-Y13RPD-	33+78	34+50	LT	85
25	-Y14-	14+00	15+00	RT	100
25	-Y14-	15+00	18+67	RT	410
25	-Y14-	6+80	7+80	RT	115
25	-Y14-	13+00	14+00	LT	115
26	-Y14-	26+90	29+50	RT	185
26	-Y14-	29+18	32+00	LT	320
26	-Y140-	10+75	11+50	LT	65
26	-Y140-	11+50	12+05	LT	40
26	-Y140-	10+59	11+50	RT	75
26	-Y140-	11+50	12+40	RT	65
14	-Y14TI-	12+25	13+30	RT	95
				SUBTOTAL	23,545

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-3C
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
20-4	-Y14DET-	14+50	19+20	RT	655
20-4	-Y14DET-	14+50	19+20	LT	495
20-4/5	-Y14DET-	19+20	27+00	LT	815
29	-Y15-	10+80	11+00	RT	20
29	-Y15-	11+00	11+50	RT	40
14	-Y15A-	12+20		LT	355
14	-Y15A-	13+00	15+00	RT	165
14	-Y15A-	13+00	14+50	LT	125
28	-Y16-	12+00	13+35	RT	110
28	-Y16-	13+35	17+00	RT	295
28	-Y16-	18+74	20+12	LT	115
28	-Y16-	13+65		RT	60
18	-Y16-	21+27	23+56	RT	320
29	-Y16-	29+00	32+00	LT	230
29	-Y16-	37+00	44+25	LT	610
29	-Y16-	44+05		LT	90
29	-Y16-	35+00	45+68	RT	1715
27	-Y16A-	11+00	13+00	LT	165
27	-Y16A-	13+00	16+17	LT	305
27	-Y16A-	11+00	13+00	RT	165
27-28	-Y16A-	16+50	18+50	RT	165
19	-Y16B-	23+00	26+62	RT	570
19	-Y16B-	26+62	27+50	RT	315
19	-Y16B-	23+00	25+00	LT	185
30	-Y16B-	29+50	33+00	LT	425
28-16	-Y16B-	10+92	13+50	LT	540
16	-Y16B-	13+50	15+28	LT	310

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
28	-Y16B-	13+50	14+00	RT	35
30	-Y16B-	33+34		LT	80
30	-Y16C-	11+00	12+13	LT	80
20-6	-Y16DET-	13+35	14+00	RT	70
20-6	-Y16DET-	14+00	16+00	RT	210
20-6	-Y16DET-	21+60		RT	125
20-6	-Y16DET-	18+75	21+60	LT	300
20-6	-Y16DET-	21+60	23+00	LT	100
20-6	-Y16DET-	30+00	32+25	RT	185
			SUBTOTAL		10,545
			U-2519BA SUBTOTAL		90,195
	MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER				394,890
			U-2519BA TOTAL		485,085
			U-2519BA SAY		490,000
			U-2519BB TOTAL		90,445
			PROJECT TOTAL		580,445

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-3D
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

PERMANENT SOIL REINFORCEMNT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
12	-L-	431+00	435+00	BERM-RT	420
21	-Y13-	14+00	21+00	LT	790
21	-Y13-	14+00	21+00	RT	1180
7	-Y13RPB-	23+50	36+00	BERM-RT	1305
6/7	-Y13RPA-	18+59	22+00	LT	360
7	-Y13RPA-	23+50	27+50	RT	675
25	-Y14-	8+20	9+87	RT	140
25	-Y14-	11+00	13+00	LT	225
25	-Y14-	13+00	14+00	RT	115
14	-Y14T1-	12+00	12+50	LT	45
28-4	-Y14DET-	10+00	10+50	RT	45
28-27	-Y16A-	16+17	20+00	LT	310
		U-2519BA SUBTOTAL			5,610
	ADDITIONAL PSRM TO BE INSTALLED				0
		U-2519BA TOTAL			5,610
		U-2519BA SAY			5,700
		U-2519BB TOTAL			70
		PROJECT TOTAL			5,770

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-3E
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

DENOTES AREAS TO BE MATTED ON FINAL GRADE FILL SLOPES

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-4/CONST 4
R/W SHEET NO.	4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 1983

NOTE FOR WETLAND/STREAM CROSSING
IF WETLANDS NEED TO BE CROSSED DURING CONSTRUCTION, UTILIZE A TEMPORARY STREAM CROSSING BY PLACING A TEMPORARY 18" PIPE IN THE JURISDICTIONAL STREAM AND CONSTRUCTING A 15' WIDE HAUL ROAD THROUGH THE WETLANDS AND OVER THE PIPE. LINE BOTH SIDES OF THE HAUL ROAD WITH SILT FENCE.

115 x 57 x 3
2.5 inch Skimmer
with 2.25 inch
Orifice Diameter
25 ft. weir
ID 04-02

68 x 34 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
9 ft. weir
ID 04-01

128 x 63 x 3
2.5 inch Skimmer
with 2.5 inch
Orifice Diameter
31 ft. weir
ID 04-03

SEE NOTE ABOVE FOR WETLAND/STREAM CROSSING

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

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

MATCHLINE -L- STA. 319+00 SEE SHEET 4

MATCHLINE -L- STA. 333+00 SEE SHEET 5

BEGIN TIP PROJECT U-2519BA
-L- Sta. 320+00.00

FUTURE TIP U-2519AB S 89° 38' 03.7" W

-L- TS Sta. 322+14.21

-L- SC Sta. 323+64.21

-L-

PIs Sta 323+14.22	PI Sta 333+35.86
Θs = 0° 33' 44.9"	Δ = 14° 29' 45.0" (RT)
Ls = 150.00'	D = 0° 44' 59.8"
LT = 100.00'	L = 1,932.92'
ST = 50.00'	T = 971.65'
	R = 7,640.00'
	SE = 0.03

CLEAN WATER DIVERSION
(Not to Scale)

FOR -L- PROFILE SEE SHT. 31
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2

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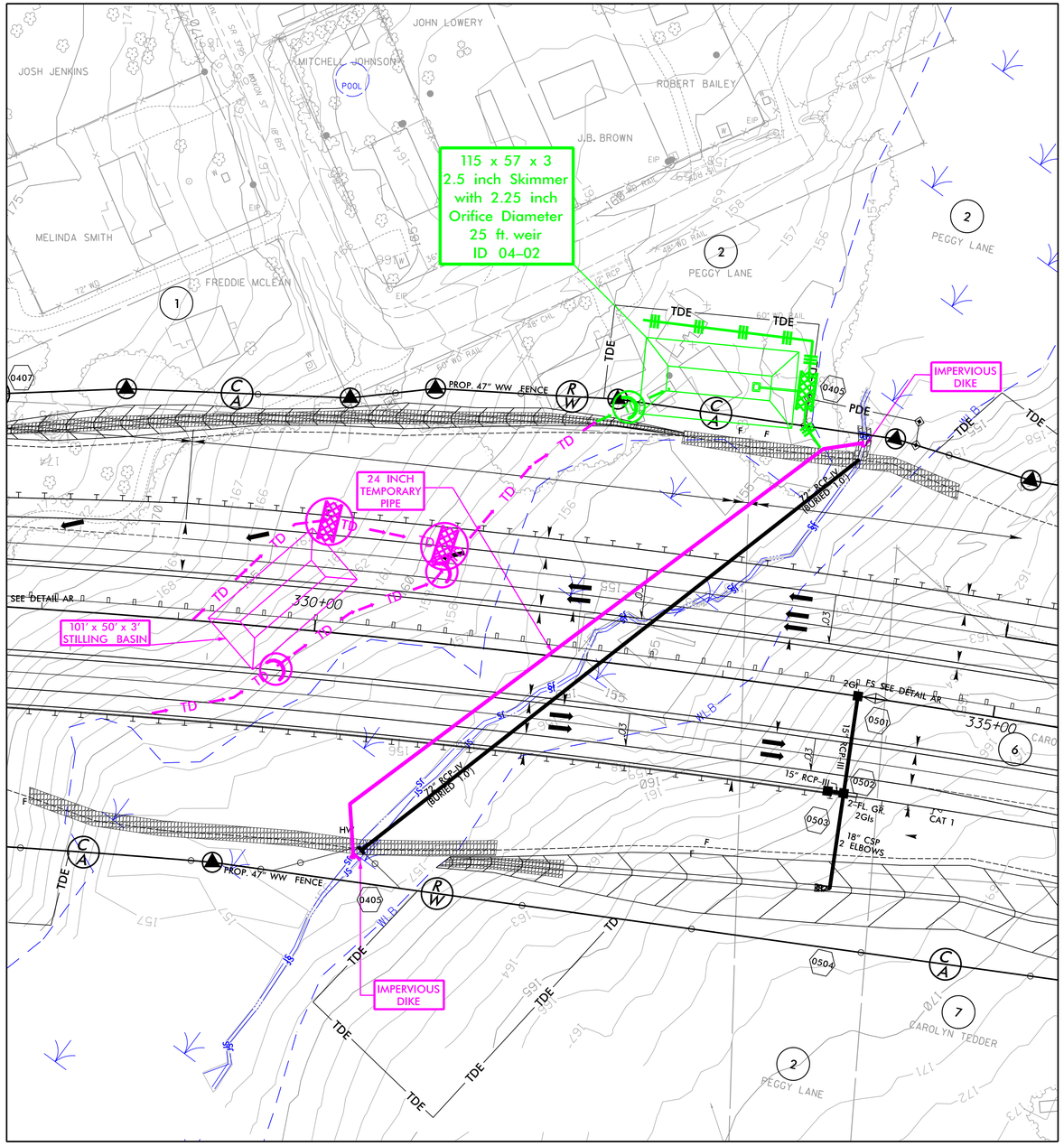
PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-4A/CONST 4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83

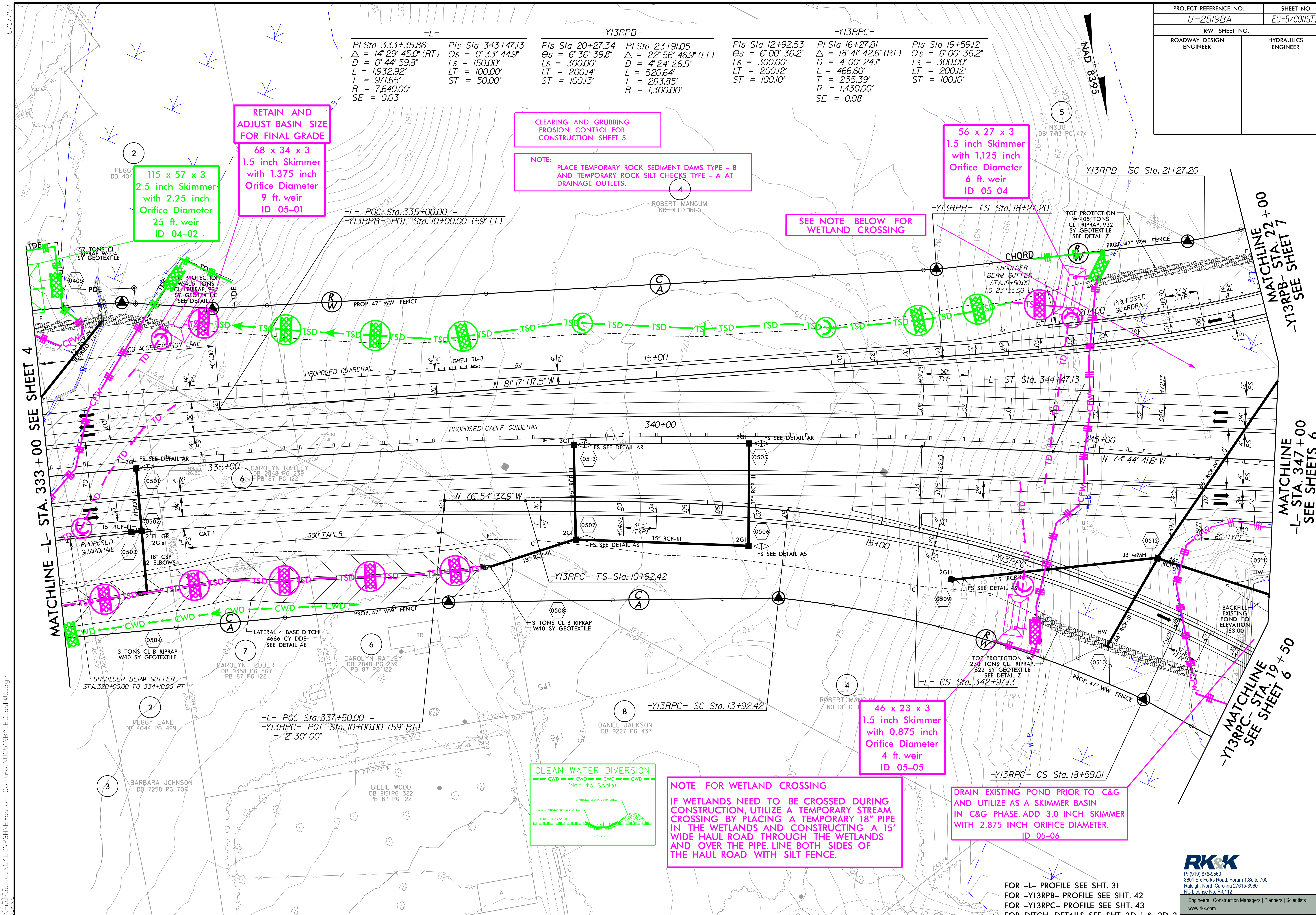


CULVERT CONSTRUCTION SEQUENCE –L– STA. 332+11

1. INSTALL STILLING BASIN WITH A MINIMUM CAPACITY OF 944 C.Y.
2. INSTALL IMPERVIOUS DIKES AND TEMPORARY 24" PIPE AS SHOWN ON PLAN.
3. INSTALL 72" RCP AND HEADWALL AT INLET END.
4. REMOVE TEMPORARY PIPE AND IMPERVIOUS DIKES.
5. CONSTRUCT ROADWAY PAVEMENT AND FILL.

FOR –L– PROFILE SEE SHT. 31
FOR DITCH DETAILS SEE SHT. 2D–1

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560



PROJECT REFERENCE NO.
U-2519BA
SHEET NO.
EC-5/CONST.5
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
-L-
PI Sta 333+35.86
Δ = 14° 29' 45.0" (RT)
D = 0° 44' 59.8"
L = 1,932.92'
T = 971.65'
R = 7,640.00'
SE = 0.03
PIs Sta 343+47.13
Θs = 0° 33' 44.9"
Ls = 150.00'
LT = 100.00'
ST = 50.00'
-Y13RPB-
PIs Sta 20+27.34
Θs = 6° 36' 39.8"
Ls = 300.00'
LT = 200.14'
ST = 100.13'
PI Sta 23+91.05
Δ = 22° 56' 46.9" (LT)
D = 4° 24' 26.5"
L = 520.64'
T = 263.85'
R = 1,300.00'
-Y13RPC-
PIs Sta 12+92.53
Θs = 6° 00' 36.2"
Ls = 300.00'
LT = 200.12'
ST = 100.10'
PI Sta 16+27.81
Δ = 18° 41' 42.6" (RT)
D = 4° 00' 24.1"
L = 466.60'
T = 235.39'
R = 1,430.00'
SE = 0.08
PIs Sta 19+59.12
Θs = 6° 00' 36.2"
Ls = 300.00'
LT = 200.12'
ST = 100.10'
NAD 83/95
RETAIN AND ADJUST BASIN SIZE FOR FINAL GRADE
68 x 34 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
9 ft. weir
ID 05-01
115 x 57 x 3
2.5 inch Skimmer
with 2.25 inch
Orifice Diameter
25 ft. weir
ID 04-02
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 5
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.
56 x 27 x 3
1.5 inch Skimmer
with 1.125 inch
Orifice Diameter
6 ft. weir
ID 05-04
SEE NOTE BELOW FOR WETLAND CROSSING
-Y13RPB- SC Sta. 21+27.20
-Y13RPB- TS Sta. 18+27.20
-L- POC Sta. 335+00.00 =
-Y13RPB- POT Sta. 10+00.00 (59' LT)
NCDOT DB 743 PG 474
ROBERT MANGUM NO DEED INFO
PEGGY LANE DB 4044 PG 499
CAROLYN RATLEY DB 2848 PG 239 PB 87 PG 122
CAROLYN TEDDER DB 9358 PG 567 PB 87 PG 122
DANIEL JACKSON DB 9227 PG 437
BARBARA JOHNSON DB 7258 PG 706
BILLIE WOOD DB 8151 PG 322 PB 87 PG 122
N 81° 17' 07.5" W
N 76° 54' 37.9" W
N 74° 44' 41.6" W
335+00
340+00
345+00
15+00
20+00
-L- ST Sta. 344+47.13
-L- CS Sta. 342+97.13
-Y13RPC- TS Sta. 10+92.42
-Y13RPC- SC Sta. 13+92.42
-Y13RPC- CS Sta. 18+59.01
-L- POC Sta. 337+50.00 =
-Y13RPC- POT Sta. 10+00.00 (59' RT)
= 2° 30' 00"
PROPOSED GUARDRAIL
PROPOSED CABLE GUIDERAIL
PROP. 47" WW FENCE
SHOULDER BERM GUTTER STA. 320+00.00 TO 334+10.00 RT
SHOULDER BERM GUTTER STA. 19+50.00 TO 23+55.00 LT
57 TONS CL I RIPRAP W/104 SY GEOTEXTILE
TOE PROTECTION W/405 TONS CL I RIPRAP, 932 SY GEOTEXTILE SEE DETAIL Z
TOE PROTECTION W/ 270 TONS CL I RIPRAP, 622 SY GEOTEXTILE SEE DETAIL Z
3 TONS CL B RIPRAP W/10 SY GEOTEXTILE
LATERAL 4' BASE DITCH 4666 CY DDE SEE DETAIL AE
BACKFILL EXISTING POND TO ELEVATION 163.00
MATCHLINE -L- STA. 333+00 SEE SHEET 4
MATCHLINE -Y13RPB- STA. 22+00 SEE SHEET 7
MATCHLINE -L- STA. 347+00 SEE SHEETS 6
MATCHLINE -Y13RPC- STA. 19+50 SEE SHEET 6
46 x 23 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
4 ft. weir
ID 05-05
CLEAN WATER DIVERSION
(Not to Scale)
NOTE FOR WETLAND CROSSING
IF WETLANDS NEED TO BE CROSSED DURING CONSTRUCTION, UTILIZE A TEMPORARY STREAM CROSSING BY PLACING A TEMPORARY 18" PIPE IN THE WETLANDS AND CONSTRUCTING A 15' WIDE HAUL ROAD THROUGH THE WETLANDS AND OVER THE PIPE. LINE BOTH SIDES OF THE HAUL ROAD WITH SILT FENCE.
DRAIN EXISTING POND PRIOR TO C&G AND UTILIZE AS A SKIMMER BASIN IN C&G PHASE. ADD 3.0 INCH SKIMMER WITH 2.875 INCH ORIFICE DIAMETER.
ID 05-06
FOR -L- PROFILE SEE SHT. 31
FOR -Y13RPB- PROFILE SEE SHT. 42
FOR -Y13RPC- PROFILE SEE SHT. 43
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
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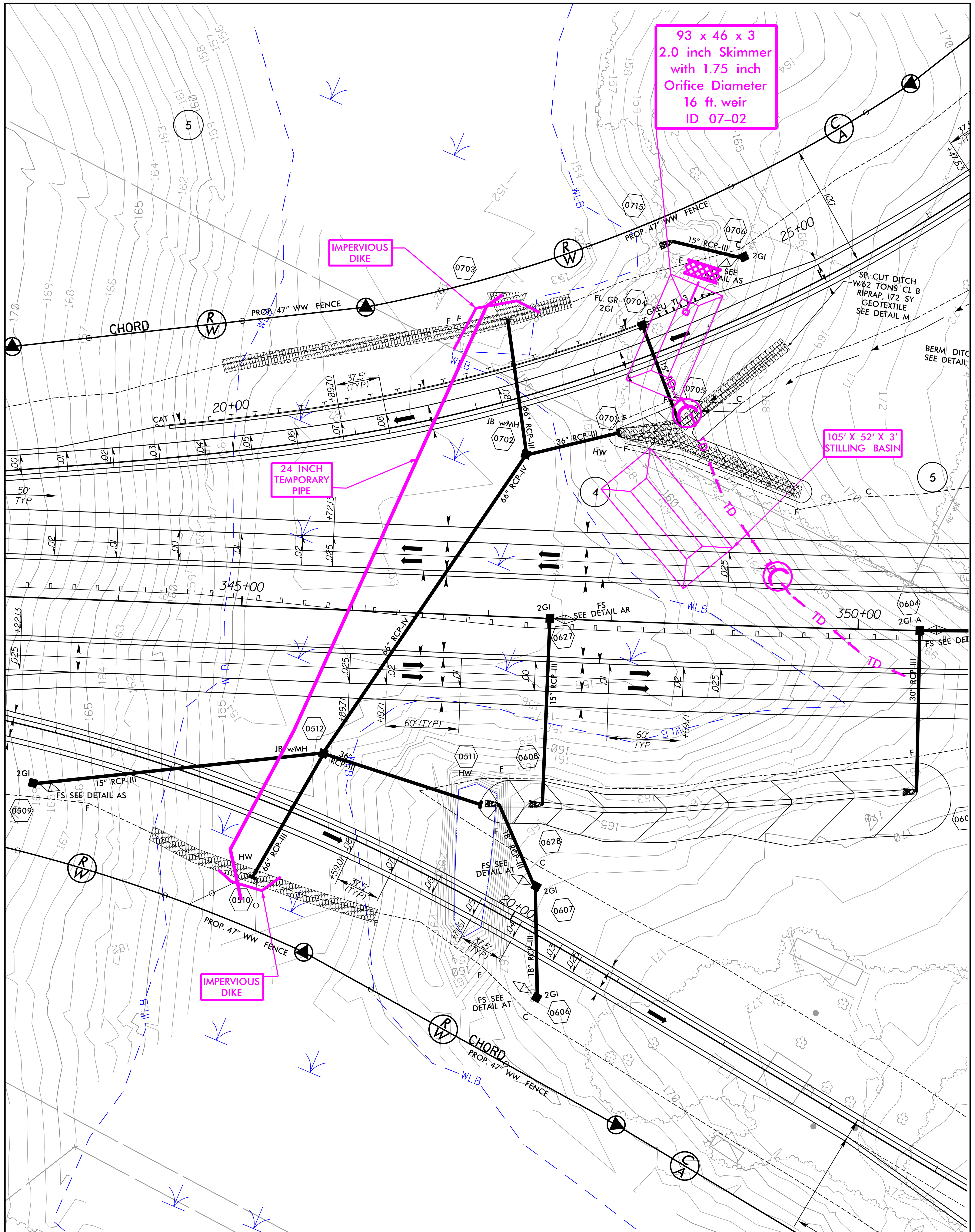
3/3/2022
R:\Hydraulics\CADD\PSH\Erosion Control\U2519BA_EC_psh05.dgn

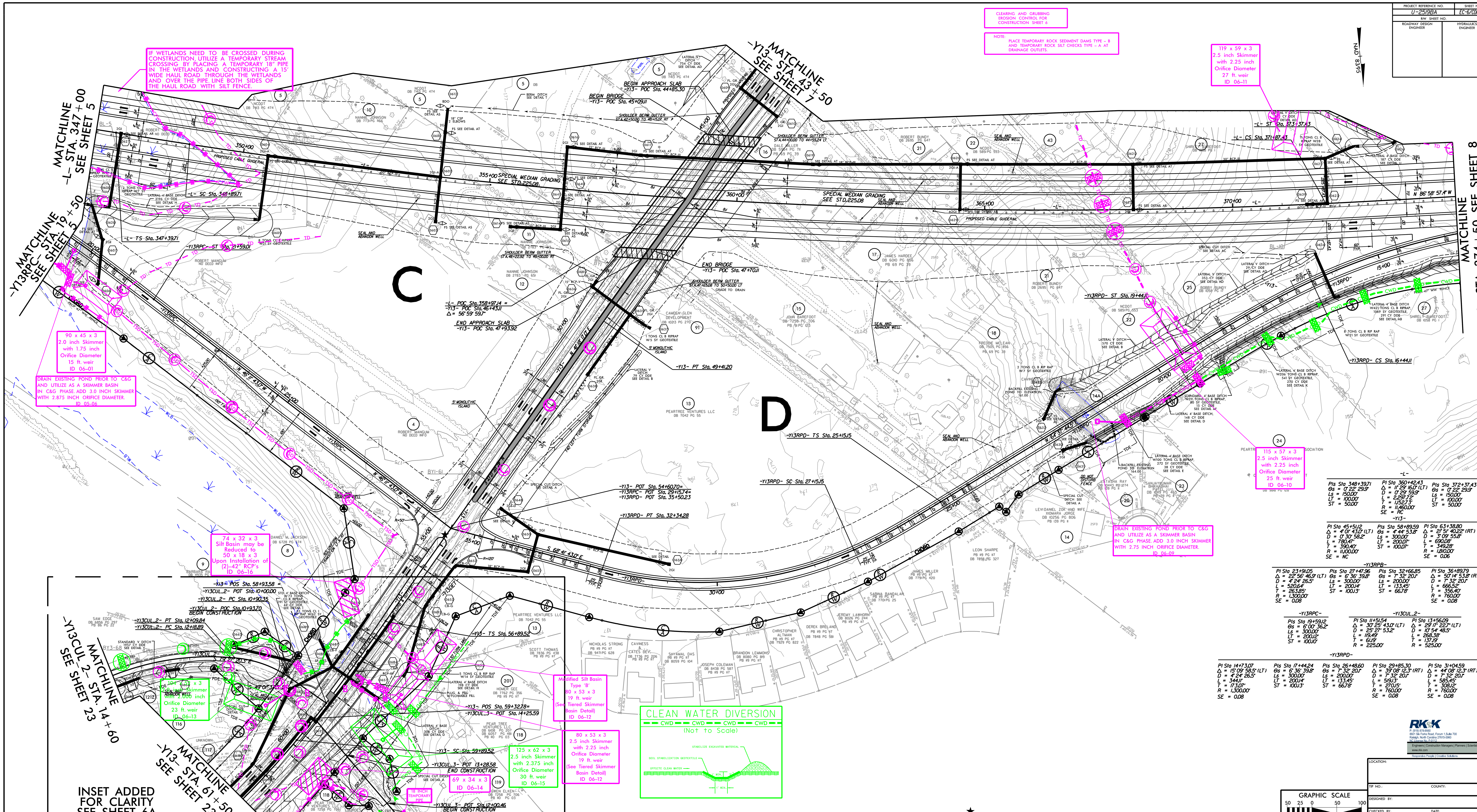
PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-5A/CONST.5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



CULVERT CONSTRUCTION SEQUENCE -L- STA. 346+40

1. INSTALL STILLING BASIN WITH A MINIMUM CAPACITY OF 1,017 C.Y.
2. INSTALL IMPERVIOUS DIKES AND TD's AS SHOWN ON PLAN.
3. UTILIZING PUMP AROUND OPERATIONS, INSTALL TEMPORARY 24" PIPE.
4. INSTALL 66" RCP'S, JUNCTION BOXES AND HEADWALL AT INLET END AS SHOWN ON PLAN.
5. REMOVE TEMPORARY PIPE AND IMPERVIOUS DIKES.
6. CONSTRUCT ROADWAY PAVEMENT AND FILL.

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560



CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 6
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.
IF WETLANDS NEED TO BE CROSSED DURING CONSTRUCTION, UTILIZE A TEMPORARY STREAM CROSSING BY PLACING A TEMPORARY 18" PIPE IN THE WETLANDS AND CONSTRUCTING A 15' WIDE HAUL ROAD THROUGH THE WETLANDS AND OVER THE PIPE LINE BOTH SIDES OF THE HAUL ROAD WITH SILT FENCE.
MATCHLINE -L- STA. 347+00 SEE SHEET 5
MATCHLINE -Y13RPC- STA. 19+50 SEE SHEET 5
MATCHLINE -Y13- STA. 43+50 SEE SHEET 7
MATCHLINE -L- STA. 374+50 SEE SHEET 8
MATCHLINE -Y13CUL_2- STA. 14+60 SEE SHEET 23
MATCHLINE -Y13- STA. 61+50 SEE SHEET 23
C
D
119 x 59 x 3
2.5 inch Skimmer
with 2.25 inch
Orifice Diameter
27 ft. weir
ID 06-11
90 x 45 x 3
2.0 inch Skimmer
with 1.75 inch
Orifice Diameter
15 ft. weir
ID 06-01
DRAIN EXISTING POND PRIOR TO C&G AND UTILIZE AS A SKIMMER BASIN IN C&G PHASE. ADD 3.0 INCH SKIMMER WITH 2.875 INCH ORIFICE DIAMETER. ID 05-06
115 x 57 x 3
2.5 inch Skimmer
with 2.25 inch
Orifice Diameter
25 ft. weir
ID 06-10
DRAIN EXISTING POND PRIOR TO C&G AND UTILIZE AS A SKIMMER BASIN IN C&G PHASE. ADD 3.0 INCH SKIMMER WITH 2.75 INCH ORIFICE DIAMETER. ID 06-09
74 x 32 x 3
Silt Basin may be Reduced to
50 x 18 x 3
Upon Installation of (2)-42" RCP's
ID 06-16
Modified Silt Basin Type 'B'
80 x 53 x 3
19 ft. weir
(See Tiered Skimmer Basin Detail)
ID 06-12
80 x 53 x 3
2.5 inch Skimmer
with 2.25 inch
Orifice Diameter
19 ft. weir
(See Tiered Skimmer Basin Detail)
ID 06-12
125 x 62 x 3
2.5 inch Skimmer
with 2.375 inch
Orifice Diameter
30 ft. weir
ID 06-15
69 x 34 x 3
ID 06-14
18 INCH TEMPORARY PIPE
CLEAN WATER DIVERSION
(Not to Scale)
INSET ADDED FOR CLARITY SEE SHEET 6A
SPECIAL MEDIAN GRADING SEE STD.225.08
PROPOSED CABLE GUIDERAIL
BEGIN APPROACH SLAB -Y13- POC Sta. 44+85.30
BEGIN BRIDGE -Y13- POC Sta. 45+09.11
END BRIDGE -Y13- POC Sta. 47+70.11
END APPROACH SLAB -Y13- POC Sta. 47+93.92
-L- POC Sta. 358+97.14 = -Y13- POC Sta. 46+43.11 Δ = 56°59' 59.7"
-Y13- PT Sta. 49+41.20
-Y13- POT Sta. 54+60.70 = -Y13RPC- POT Sta. 29+15.74 = -Y13RPD- POT Sta. 35+50.23
-Y13RPD- PT Sta. 32+34.28
-Y13RPD- TS Sta. 25+15.15
-Y13RPD- SC Sta. 27+15.15
-Y13RPD- ST Sta. 19+44.11
-Y13RPD- CS Sta. 16+44.11
-L- ST Sta. 373+37.43
-L- CS Sta. 371+87.43
-L- TS Sta. 347+39.71
-L- SC Sta. 348+89.71
-Y13RPC- ST Sta. 20+59.12
-Y13- POS Sta. 58+93.58
-Y13- TS Sta. 56+89.52
-Y13- SC Sta. 59+89.52
-Y13- POS Sta. 59+32.78 = -Y13CUL_3- POT Sta. 14+25.59
-Y13CUL_3- POT Sta. 13+28.58 END CONSTRUCTION
-Y13CUL_3- POT Sta. 12+00.46 BEGIN CONSTRUCTION
-Y13CUL_2- POT Sta. 10+00.00
-Y13CUL_2- PC Sta. 10+90.35
-Y13CUL_2- POC Sta. 10+93.70 BEGIN CONSTRUCTION
-Y13CUL_2- PT Sta. 12+19.84
-Y13CUL_2- PC Sta. 12+18.89
N 86° 58' 57.4" W
S 68° 41' 47.3" E
S 34° 23' 36.2" E
PEARTREE VENTURES LLC
NAD 83/95
GRAPHIC SCALE
50 25 0 50 100
PLANS

-L-		
PIs Sta 348+39.71 Θs = 0° 22' 29.9" Ls = 150.00' LT = 100.00' ST = 50.00'	PI Sta 360+42.43 Δ = 11° 29' 16.0" (LT) D = 0° 29' 59.9" L = 2,297.72' T = 1,152.73' R = 11,460.00' SE = RC	PIs Sta 372+37.43 Θs = 0° 22' 29.9" Ls = 150.00' LT = 100.00' ST = 50.00'

-Y13-		
PI Sta 45+51.12 Δ = 4° 01' 43.0" (LT) D = 0° 30' 58.2" L = 780.47' T = 390.40' R = 11,100.00' SE = NC	PIs Sta 58+89.59 Θs = 4° 44' 53.8" Ls = 300.00' LT = 200.07' ST = 100.07'	PI Sta 63+38.80 Δ = 21° 51' 40.22" (RT) D = 3° 09' 55.8" L = 690.08' T = 349.28' R = 1,810.00' SE = 0.06

-Y13RPB-			
PI Sta 23+91.05 Δ = 22° 56' 46.9" (LT) D = 4° 24' 26.5" L = 520.64' T = 263.85' R = 1,300.00' SE = 0.08	PIs Sta 27+47.96 Θs = 6° 36' 39.8" Ls = 300.00' LT = 200.14' ST = 100.13'	PIs Sta 32+66.85 Θs = 7° 32' 20.1" Ls = 200.00' LT = 133.45' ST = 66.78'	PI Sta 36+89.79 Δ = 50° 14' 53.8" (RT) D = 7° 32' 20.1" L = 666.52' T = 356.40' R = 760.00' SE = 0.08

-Y13RPC-
PIs Sta 19+59.12 Θs = 6° 00' 36.2" Ls = 300.00' LT = 200.12' ST = 100.10'

-Y13CUL_2-	
PI Sta 11+51.54 Δ = 30° 25' 43.0" (LT) D = 25° 27' 53.2" L = 119.49' T = 61.19' R = 225.00'	PI Sta 13+56.09 Δ = 29° 17' 22.7" (LT) D = 10° 54' 48.5" L = 268.38' T = 137.19' R = 525.00'

-Y13RPD-				
PI Sta 14+73.07 Δ = 15° 09' 58.5" (LT) D = 4° 24' 26.5" L = 344.11' T = 173.07' R = 1,300.00' SE = 0.08	PIs Sta 17+44.24 Θs = 6° 36' 39.8" Ls = 300.00' LT = 200.14' ST = 100.13'	PIs Sta 26+48.60 Θs = 7° 32' 20.1" Ls = 200.00' LT = 133.45' ST = 66.78'	PI Sta 29+85.30 Δ = 39° 08' 12.3" (RT) D = 7° 32' 20.1" L = 519.13' T = 270.15' R = 760.00' SE = 0.08	PI Sta 31+04.59 Δ = 44° 08' 12.3" (RT) D = 7° 32' 20.1" L = 585.45' T = 308.12' R = 760.00' SE = 0.08

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-6/CONST.6

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists

LOCATION:

TIP NO.: COUNTY:

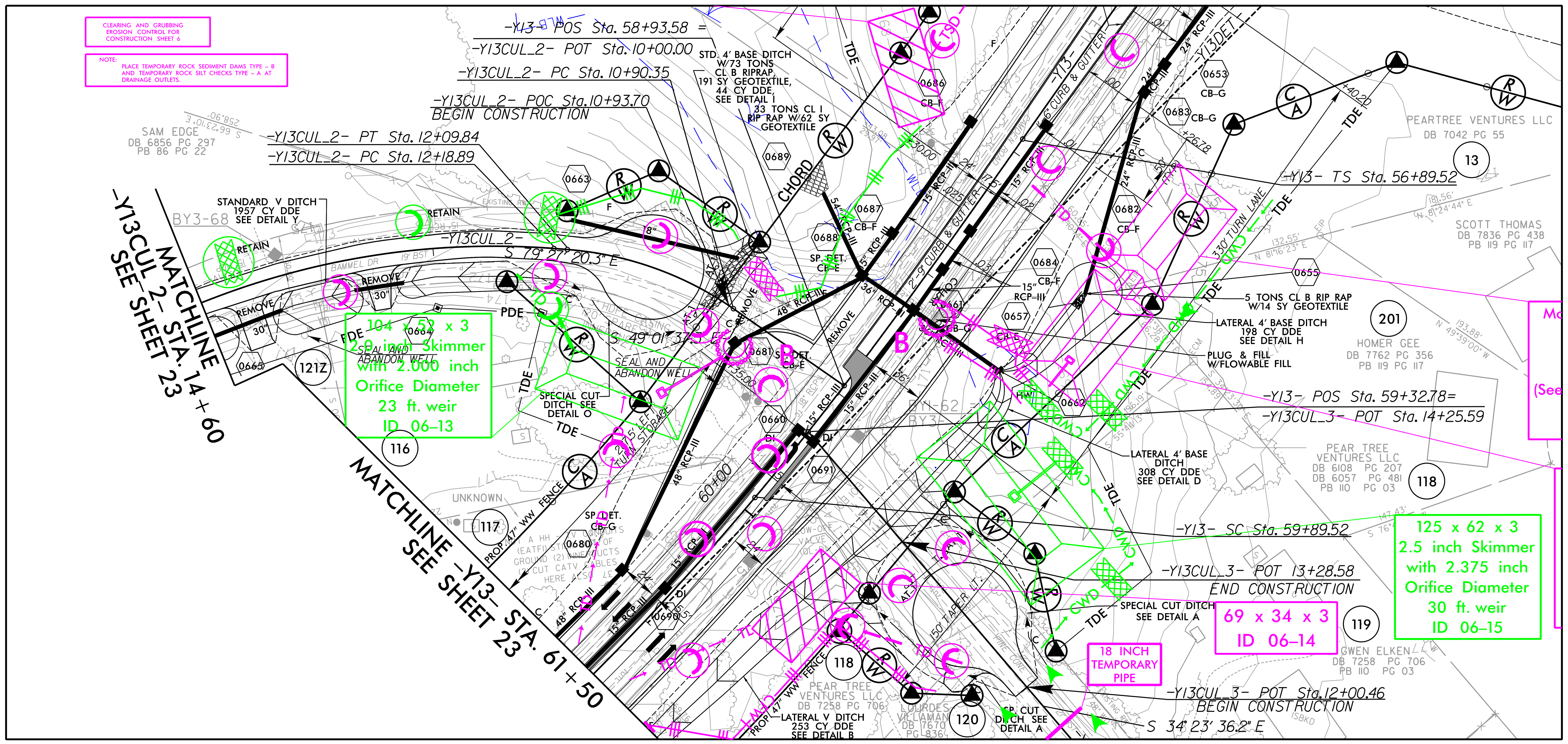
DESIGNED BY:

CHECKED BY: DATE:

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-6A/CONST.6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INSET FROM SHEET 6



-Y13-	
PIs Sta 58+89.59	PI Sta 63+38.80
Θs = 4° 44' 53.8"	Δ = 21° 51' 40.22" (RT)
Ls = 300.00'	D = 3° 09' 55.8"
LT = 200.07'	L = 690.08'
ST = 100.07'	T = 349.28'
	R = 1,810.00'
	SE = 0.06

-Y13CUL_2-	
PI Sta 11+51.54	PI Sta 13+56.09
Δ = 30° 25' 43.0" (LT)	Δ = 29° 17' 22.7" (LT)
D = 25° 27' 53.2"	D = 10° 54' 48.5"
L = 119.49'	L = 268.38'
T = 61.19'	T = 137.19'
R = 225.00'	R = 525.00'

FOR -Y13- PROFILE SEE SHT. 39
FOR -Y13CUL_2- PROFILE SEE SHT. 51
FOR -Y13CUL_3- PROFILE SEE SHT. 51
FOR -Y13DET- PLAN SEE SHT. 2B-1,2,3
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2

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Raleigh, North Carolina 27615-3960
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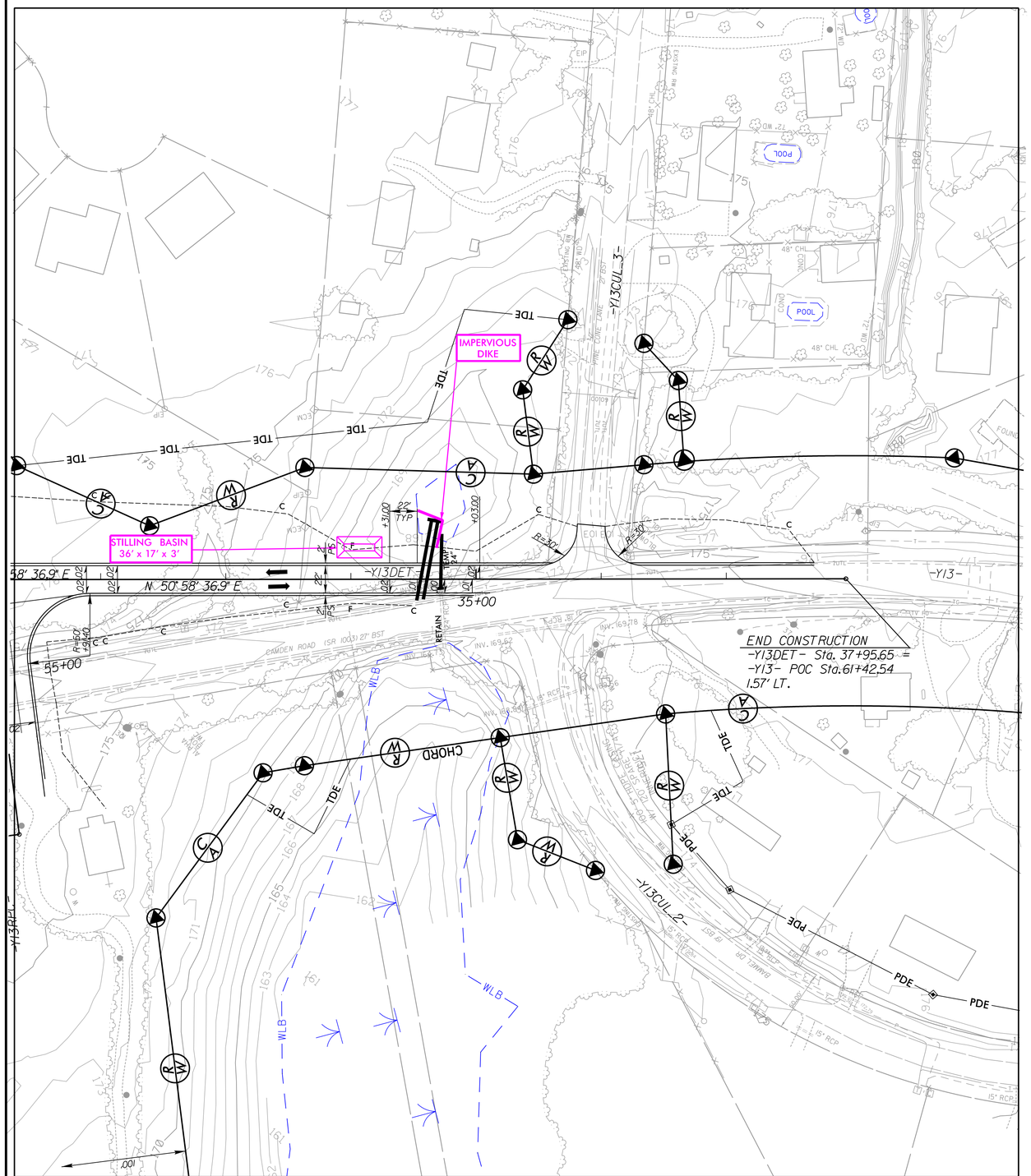
PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-6B/CONST.6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



CULVERT CONSTRUCTION SEQUENCE –Y13– STA. 58+00

PHASE I

– ALL EC DEVICES FOR TEMPORARY DETOUR ALONG –Y13DET–, PLACED AS SHOWN ON PLAN, SHALL BE IN PLACE PRIOR TO COMMENCMENT OF INSTALLATION OF (2)– 42" RCP's.

1. COLLAR AND EXTEND EXISTING 24" RCP WITH 24" TEMP. PIPE IN DRY CONDITIONS.
2. INSTALL STILLING BASIN WITH A MINIMUM CAPACITY OF 116 C.Y.
3. INSTALL IMPERVIOUS DIKE.
4. INSTALL 65LF OF (2) 42" RCP's AND HEADWALLS AT INLET END.
5. CONSTRUCT DETOUR –Y13– PAVEMENT AND FILL AS SHOWN ON TRAFFIC CONTROL PLANS.

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

3/3/2022
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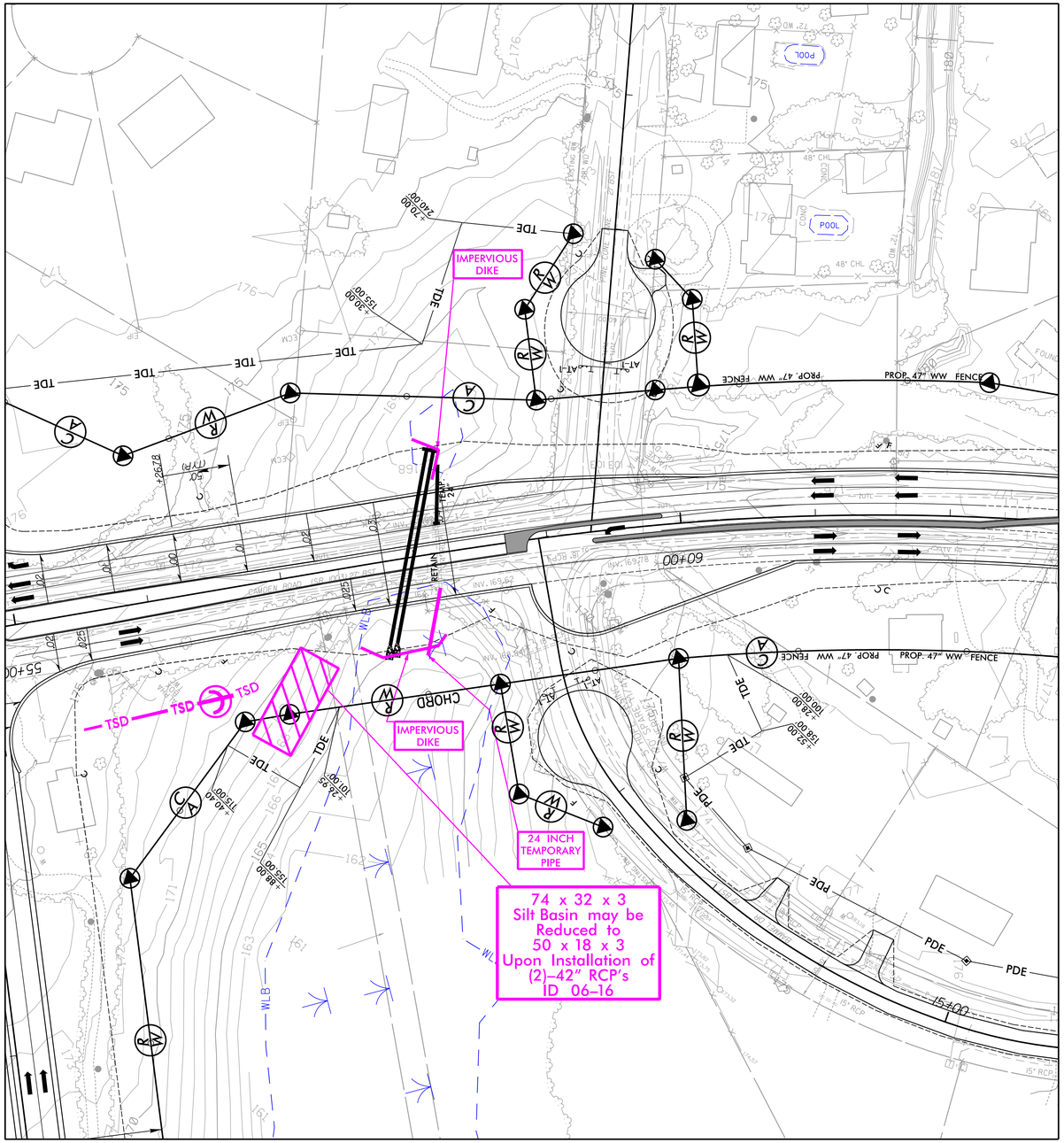
PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-6C/CONST.6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



CULVERT CONSTRUCTION SEQUENCE –Y13– STA. 58+00

PHASE II

1. SWITCH TRAFFIC FROM EXISTING CAMDEN ROAD TO TEMPORARY –Y13– DETOUR.
2. UTILIZE SILT BASIN ID 06–16.
3. INSTALL IMPERVIOUS DIKE.
4. USING PUMP AROUND OPERATIONS, INSTALL TEMORARY 24" PIPE.
5. INSTALL REMAINING 80LF OF (2)–42" RCP's AND HEADWALL AT OUTLET END.
6. REMOVE IMPERVIOUS DIKES. PLUG AND FILL TEMPORARY 24" PIPE AT INLET END AND EXISTING 24" RCP. REMOVE TEMPORARY 24" PIPE AT OUTLET END. DIVERT STREAM THROUGH NEW (2)–42" RCP's.
7. CONSTRUCT ROADWAY PAVEMENT AND FILL.

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609–3960
NC LICENSE NO. F–0112 • (919) 878–9560

3/3/2022
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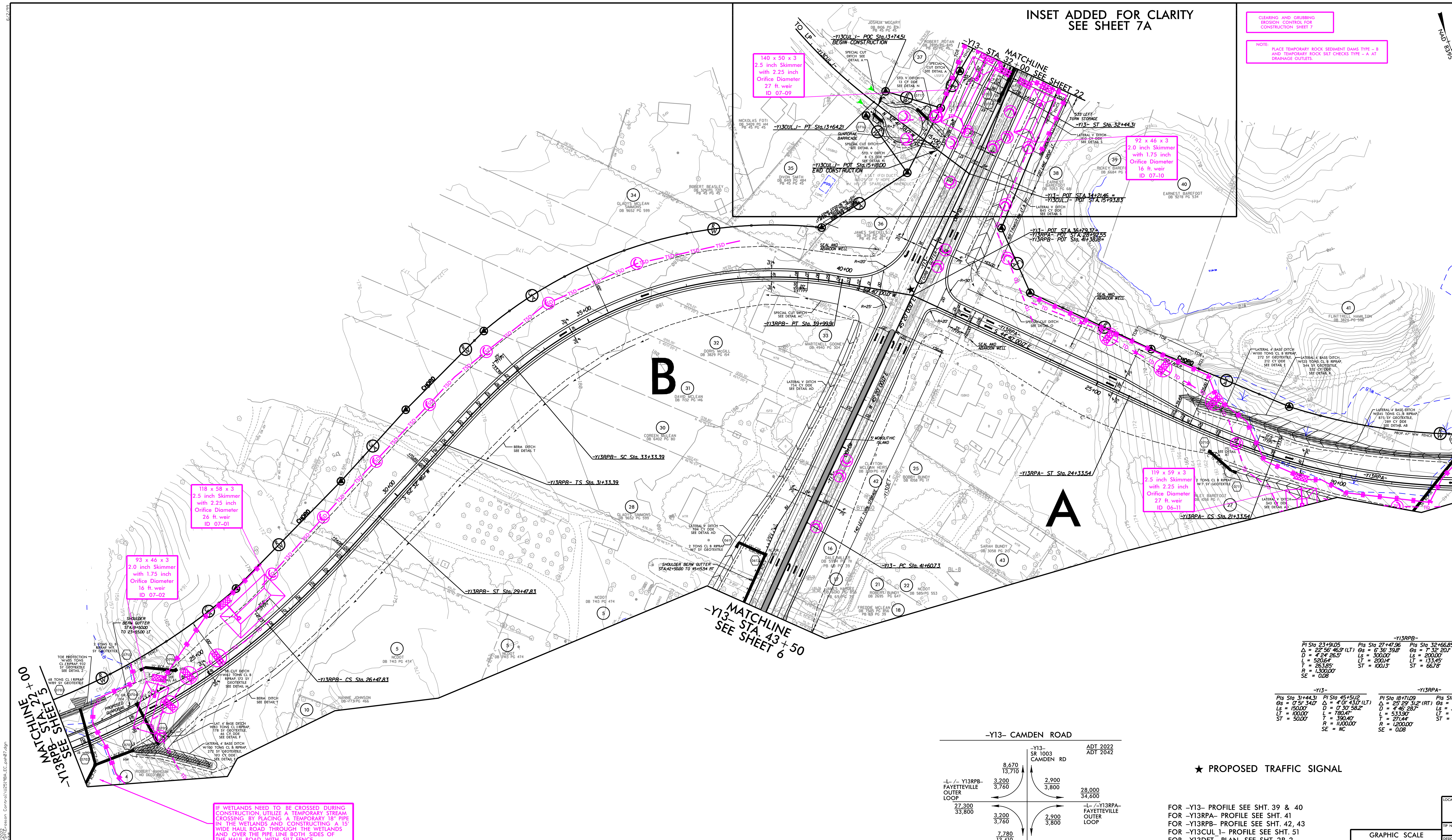
PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-7/CONST.7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 7

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



-Y13RPB-

PI Sta 23+91.05	PIs Sta 27+47.96	PIs Sta 32+66.85	PI Sta 36+89.79
Δ = 22° 56' 46.9" (LT)	Θs = 6° 36' 39.8"	Θs = 7° 32' 20.1"	Δ = 50° 14' 53.8" (RT)
D = 4° 24' 26.5"	Ls = 300.00'	Ls = 200.00'	D = 7° 32' 20.1"
L = 520.64'	LT = 200.14'	LT = 133.45'	L = 666.52'
T = 263.85'	ST = 100.13'	ST = 66.78'	T = 356.40'
R = 1,300.00'			R = 760.00'
SE = 0.08			SE = 0.08

-Y13-

PIs Sta 31+44.31	PI Sta 45+51.12
Θs = 0° 51' 34.0"	Δ = 4° 01' 43.0" (LT)
Ls = 150.00'	D = 0° 30' 58.2"
LT = 100.00'	L = 780.47'
ST = 50.00'	T = 390.40'
	R = 11,100.00'
	SE = NC

-Y13RPA-

PI Sta 18+71.09	PIs Sta 22+33.69
Δ = 25° 29' 31.2" (RT)	Θs = 7° 09' 43.1"
D = 4° 46' 28.7"	Ls = 300.00'
L = 533.90'	LT = 200.16'
T = 271.44'	ST = 100.15'
R = 1,200.00'	
SE = 0.08	

-Y13CUL_1-

PI Sta 11+84.37
Δ = 21° 57' 58.6" (LT)
D = 6° 01' 52.1"
L = 364.21'
T = 184.37'
R = 950.00'

-Y13- CAMDEN ROAD

ADT 2022
ADT 2042
-Y13-
SR 1003
CAMDEN RD
8,670
13,710
2,900
3,800
3,200
3,760
-L- /- Y13RPB-
FAYETTEVILLE
OUTER
LOOP
28,000
34,600
27,300
33,800
-L- /-Y13RPA-
FAYETTEVILLE
OUTER
LOOP
3,200
3,760
2,900
3,800
7,780
13,410
-Y13-
SR 1003
CAMDEN RD

★ PROPOSED TRAFFIC SIGNAL

FOR -Y13- PROFILE SEE SHT. 39 & 40
FOR -Y13RPA- PROFILE SEE SHT. 41
FOR -Y13RPB- PROFILE SEE SHT. 42, 43
FOR -Y13CUL_1- PROFILE SEE SHT. 51
FOR -Y13DET- PLAN SEE SHT. 2B-2
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2
FOR INTERSECTION DESIGN SEE SHT. 2B-10, 2B-13

GRAPHIC SCALE
50 25 0 50 100
PLANS

RK&K
P: (919) 878-9560
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LOCATION:
TIP NO.: COUNTY:
DESIGNED BY:
CHECKED BY: DATE:

5/14/99

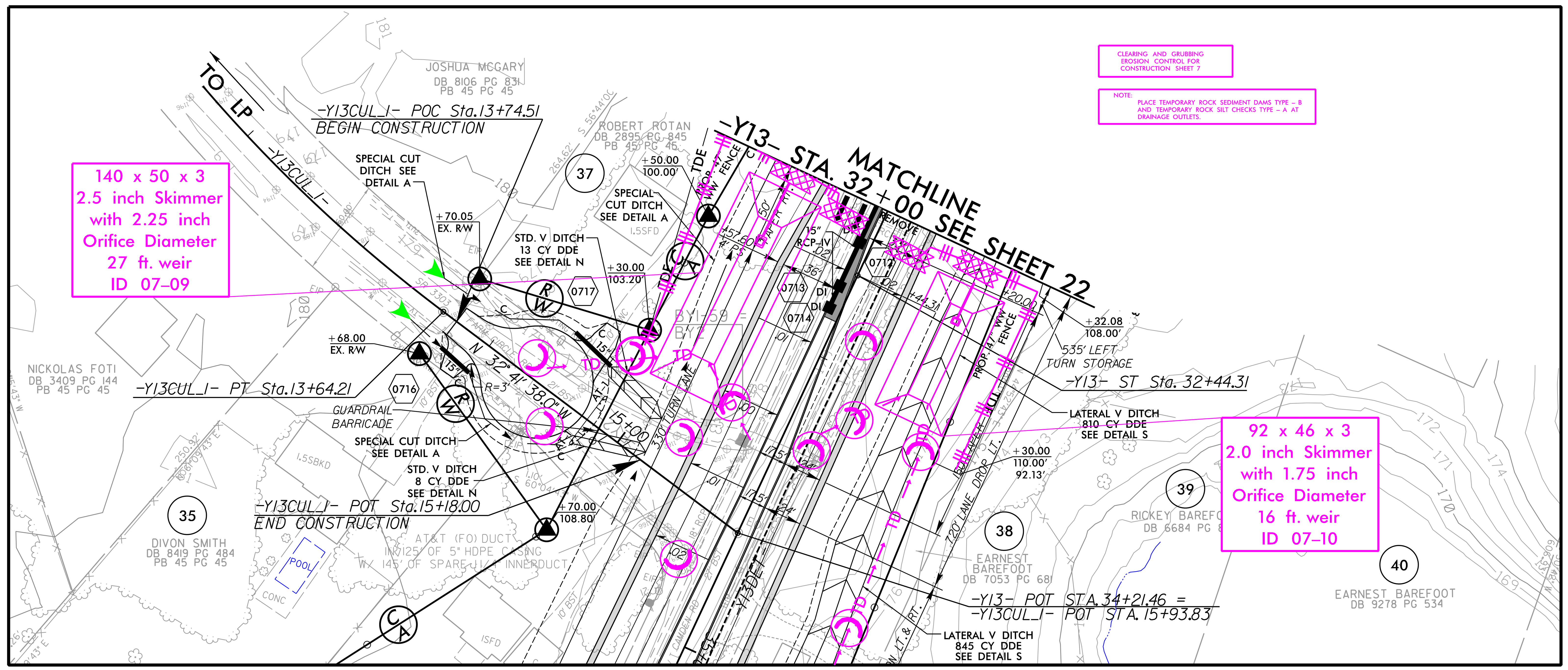
PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-7A/CONST.7
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT	NORTH CAROLINA PROFESSIONAL SEAL 33184 ENGINEER JEFFREY W. MEADOR

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/95

INSET FROM SHEET 7



-Y13-
PIs Sta 31+44.31
Θs = 0° 51' 34.0"
Ls = 150.00'
LT = 100.00'
ST = 50.00'

-Y13CUL_1-
PI Sta 11+84.37
Δ = 21° 57' 58.6" (LT)
D = 6° 01' 52.1"
L = 364.21'
T = 184.37'
R = 950.00'

FOR -Y13- PROFILE SEE SHT. 39
FOR -Y13CUL_1- PROFILE SEE SHT. 51
FOR -Y13DET- PLAN SEE SHT. 2B-2
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2

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PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-8/CONST.8

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

NAD 83/95

-L-

PIs Sta 383+98.25	PI Sta 404+50.03
Θs = 3° 22′ 13.2″	Δ = 74° 51′ 43.7″ (RT)
Ls = 300.00′	D = 2° 14′ 48.8″
LT = 200.04′	L = 3,331.81′
ST = 100.03′	T = 1,951.81′
	R = 2,550.00′
	SE = 0.07
	* DESIGN EXCEPTION REQUIRED SSD

-Y13RPA-

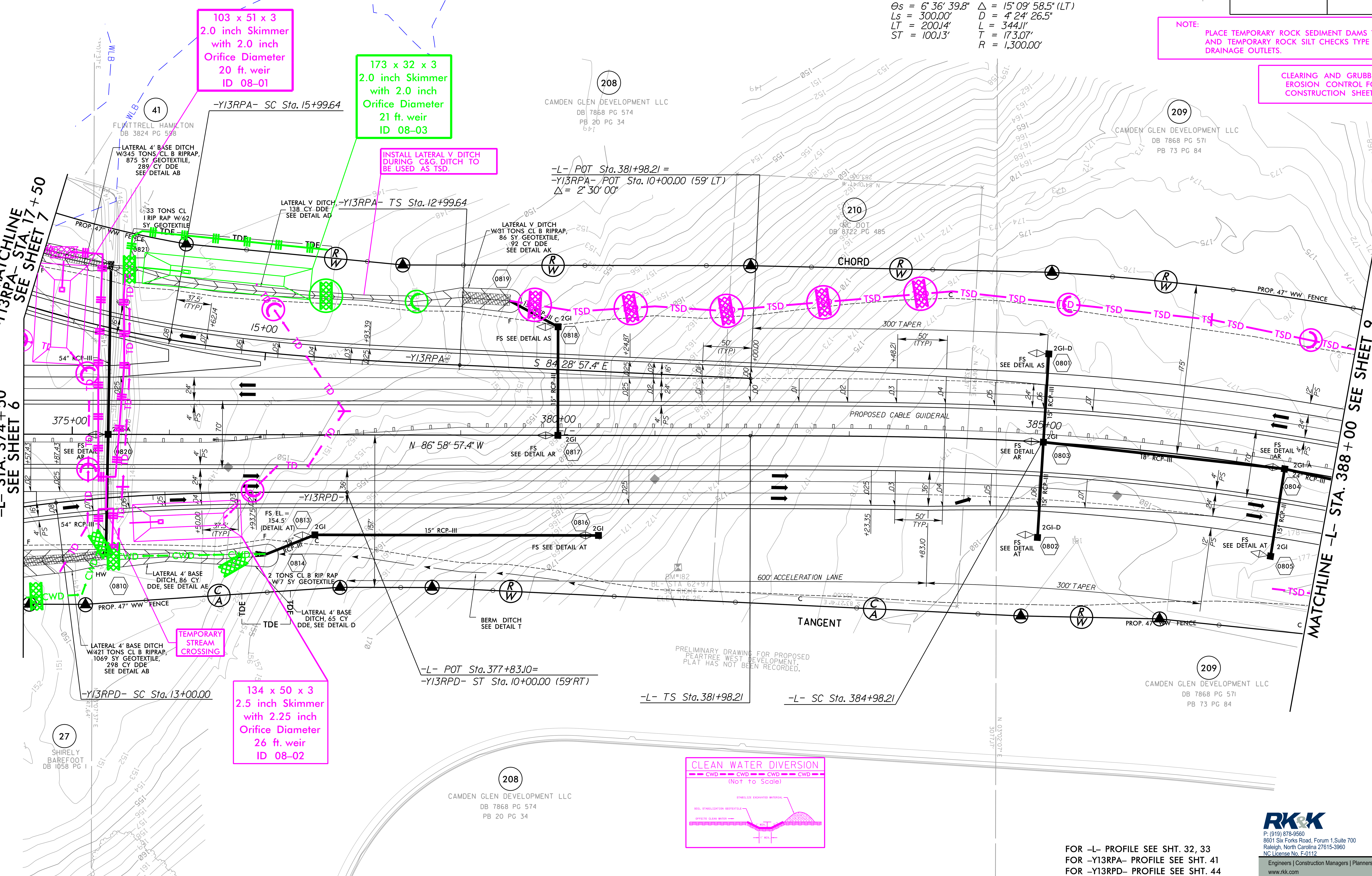
PIs Sta 14+99.80	PI Sta 18+71.09
Θs = 7° 09′ 43.1″	Δ = 25° 29′ 31.2″ (RT)
Ls = 300.00′	D = 4° 46′ 28.7″
LT = 200.16′	L = 533.90′
ST = 100.15′	T = 271.44′
	R = 1,200.00′
	SE = 0.08

-Y13RPD-

PIs Sta 12+00.14	PI Sta 14+73.07
Θs = 6° 36′ 39.8″	Δ = 15° 09′ 58.5″ (LT)
Ls = 300.00′	D = 4° 24′ 26.5″
LT = 200.14′	L = 344.11′
ST = 100.13′	T = 173.07′
	R = 1,300.00′

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

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 8



103 x 51 x 3
2.0 inch Skimmer
with 2.0 inch
Orifice Diameter
20 ft. weir
ID 08-01
173 x 32 x 3
2.0 inch Skimmer
with 2.0 inch
Orifice Diameter
21 ft. weir
ID 08-03
134 x 50 x 3
2.5 inch Skimmer
with 2.25 inch
Orifice Diameter
26 ft. weir
ID 08-02
INSTALL LATERAL V DITCH DURING C&G. DITCH TO BE USED AS TSD.
TEMPORARY STREAM CROSSING
MATCHLINE -Y13RPA- STA. 17+50 SEE SHEET 7
MATCHLINE -L- STA. 374+50 SEE SHEET 6
MATCHLINE -L- STA. 388+00 SEE SHEET 9
-Y13RPA- SC Sta. 15+99.64
-Y13RPA- TS Sta. 12+99.64
-L- POT Sta. 381+98.21 =
-Y13RPA- POT Sta. 10+00.00 (59′ LT)
Δ = 2° 30′ 00″
-L- POT Sta. 377+83.10=
-Y13RPD- ST Sta. 10+00.00 (59′ RT)
-Y13RPD- SC Sta. 13+00.00
-L- TS Sta. 381+98.21
-L- SC Sta. 384+98.21
S 84° 28′ 57.4″ E
N 86° 58′ 57.4″ W
CHORD
TANGENT
PROPOSED CABLE GUIDERAIL
600′ ACCELERATION LANE
300′ TAPER
PROP. 47″ WW FENCE
LATERAL 4′ BASE DITCH W/345 TONS CL B RIPRAP, 875 SY GEOTEXTILE, 289 CY DDE SEE DETAIL AB
33 TONS CL I RIP RAP W/62 SY GEOTEXTILE
LATERAL V DITCH 138 CY DDE SEE DETAIL AD
LATERAL V DITCH W/31 TONS CL B RIPRAP, 86 SY GEOTEXTILE, 92 CY DDE SEE DETAIL AK
LATERAL 4′ BASE DITCH W/421 TONS CL B RIPRAP, 1069 SY GEOTEXTILE, 298 CY DDE SEE DETAIL AB
LATERAL 4′ BASE DITCH, 86 CY DDE, SEE DETAIL AE
LATERAL 4′ BASE DITCH, 65 CY DDE, SEE DETAIL D
2 TONS CL B RIP RAP W/7 SY GEOTEXTILE
BERM DITCH SEE DETAIL T
FS EL.= 154.5′ (DETAIL AT)
54″ RCP-III
15″ RCP-III
18″ RCP-III
FS SEE DETAIL AS
FS SEE DETAIL AR
FS SEE DETAIL AT
FLINTTRELL HAMILTON DB 3824 PG 598
CAMDEN GLEN DEVELOPMENT LLC DB 7868 PG 574 PB 20 PG 34
CAMDEN GLEN DEVELOPMENT LLC DB 7868 PG 571 PB 73 PG 84
NC DOT DB 8722 PG 485
SHIRELY BAREFOOT DB 1058 PG 1
PRELIMINARY DRAWING FOR PROPOSED PEARTREE WEST DEVELOPMENT. PLAT HAS NOT BEEN RECORDED.
CLEAN WATER DIVERSION
(Not to Scale)

FOR -L- PROFILE SEE SHT. 32, 33
FOR -Y13RPA- PROFILE SEE SHT. 41
FOR -Y13RPD- PROFILE SEE SHT. 44
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2

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PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-9/CONST.9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-L-
PI Sta 404+50.03
△ = 74° 51' 43.7" (RT)
D = 2° 14' 48.8"
L = 3,331.81'
T = 1,951.81'
R = 2,550.00'
SE = 0.07
DESIGN EXCEPTION REQUIRED SSD

NAD 83'95

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 9

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

Modified Silt Basin Type 'B' 30 x 92 x 3 21 ft. weir (See Tiered Skimmer Basin Detail) ID 09–01

30 x 92 x 3 2.0 inch Skimmer with 1.75 inch Orifice Diameter 21 ft. weir (See Tiered Skimmer Basin Detail) ID 09–01

UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE

70 x 34 x 3 1.5 inch Skimmer with 1.375 inch Orifice Diameter 9 ft. weir ID 09–03

66 x 32 x 3 1.5 inch Skimmer with 1.25 inch Orifice Diameter 8 ft. weir ID 09–02

85 x 42 x 3 2.0 inch Skimmer with 1.75 inch Orifice Diameter 14 ft. weir ID 09–04

MATCHLINE –L– STA. 388+00 SEE SHEET 8

MATCHLINE –L– STA. 401+00 SEE SHEET 10

209 CAMDEN GLEN DEVELOPMENT LLC DB 7868 PG 571 PB 73 PG 84

44 JOHNNY BEASLEY DB 3757 PG 316 PB 73 PG 84

47 VERA KING DB 2281 PG 13

92 CAMDEN GLEN DEVELOPMENT

45 UNKNOWN

46 STEPHEN BRANCALASSO DB 4854 PG 399 PB 89 PG 96

LATERAL 4' BASE DITCH 1295 CY DDE SEE DETAIL D

LATERAL 4' BASE DITCH W/120 TONS CL B RIPRAP, 332 SY GEOTEXTILE, 426 CY DDE SEE DETAIL K

8 TONS CL B RIP RAP W/21 SY GEOTEXTILE

CLASS II RIP RAP PLACE TO EL 140.00 (STRUCTURE PAY ITEM)

CLASS II RIP RAP PLACE TO EL 140.0' (STRUCTURE PAY ITEM)

PROP. 47" WW FENCE

BEGIN BRIDGE -L- POC Sta. 396+13.56 SBL

BEGIN APPROACH SLAB -L- POC Sta. 395+90.00 SBL

END BRIDGE -L- POC Sta. 399+27.81 SBL

END APPROACH SLAB -L- POC Sta. 399+51.29 SBL

PROPOSED GUARDRAIL

PROPOSED CABLE GUIDERAIL

GREU TL-3

SHOULDER BERM GUTTER STA. 395+50.00 TO 395+94.57 LT

SHOULDER BERM GUTTER STA. 393+85.66 TO 394+21.21 RT

SHOULDER BERM GUTTER STA. 400+22.40 TO 401+50.00 RT

TOE PROTECTION W/171 TONS CL I RIPRAP, 393 SY GEOTEXTILE SEE DETAIL Z

15" RCP-III

30" RCP-III

24" RCP-III

15" CSP 2 ELBOWS

CAT-1

2-FL GR 2GIs

FL GR 2GI

2GI-A

2GI

TYPE B-77

TSD

TDE

CFW

DO NOT DISTURB

INSTALL LATERAL BASE DITCH DURING C&G DITCH TO BE USED AS TSD.

PRELIMINARY DRAWING FOR PROPOSED PEARTREE WEST DEVELOPMENT. PLAT HAS NOT BEEN RECORDED.

LATERAL 4' BASE DITCH W/79 TONS CL B RIP RAP, 488 SY GEOTEXTILE, 301 CY DDE SEE DETAIL E

LATERAL 4' BASE DITCH W/40 TONS CL B RIP RAP, 116 SY GEOTEXTILE, 139 CY DDE SEE DETAIL K

LATERAL 4' BASE DITCH W/227 TONS CL B RIP RAP, 617 SY GEOTEXTILE, 555 CY DDE SEE DETAIL E

BEGIN APPROACH SLAB -L- POC Sta. 396+24.14 NBL

BEGIN BRIDGE -L- POC Sta. 396+48.35 NBL

END BRIDGE -L- POC Sta. 399+74.35 NBL

END APPROACH SLAB -L- POC Sta. 399+98.47 NBL

FOR –L– PROFILE SEE SHT 3
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2
FOR BRIDGE SKETCH SEE SHT 2B-1 & 2B-2
FOR NBL STRUCTURE PLANS SEE SHTS S2–1 THRU S2–41
FOR SBL STRUCTURE PLANS SEE SHTS S3–1 THRU S3–41

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

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 10

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-10/CONST.10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/95

63 x 31 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
7 ft. weir
ID 10–01

52 x 26 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
5 ft. weir
ID 10–02

34 x 16 x 3
ID 10–06

82 x 41 x 3
2.0 inch Skimmer
with 1.625 inch
Orifice Diameter
13 ft. weir
ID 10–03

MATCHLINE –L– STA. 401+00 SEE SHEET 9

MATCHLINE –L– STA. 413+00 SEE SHEET 11

44
JOHNNY BEASLEY
DB 3757 PG 316
PB 73 PG 84

47
VERA KING
DB 2291PG113

46
STEPHEN BRANCALASSO
DB 4854 PG 399
PB 89 PG 96

LOIS RIVERA
DB 9343 PG 837
PB 89 PG 96

PROP. 47" WW FENCE

PROPOSED GUARDRAIL

PROPOSED CABLE GUIDERAIL

405+00

410+00

GREU TL-3

18" RCP-III

15" RCP-III

24" RCP-III

24" RCP-V

15" CSP
2 BARRELS

FS
SEE DETAIL AR

2GI

FL GR FL GR
2GI 2GI

5 TONS CL B RIP RAP
W/14 SY GEOTEXTILE

MAX. SLOPE 4:1

JB w/ MH

CAT 1

CWD
SPECIAL CUT DITCH
SEE DETAIL J

LATERAL 4' BASE DITCH
W/227 TONS CL B RIP RAP
617 SY GEOTEXTILE, 555 CY DDE
SEE DETAIL E

LATERAL 4' BASE DITCH
W/633 TONS CL B RIP RAP,
1723 SY GEOTEXTILE,
3982 CY DDE
SEE DETAIL E

SHOULDER BERM GUTTER
STA 400+22.41 TO 401+53.00 RT

SHOULDER BERM GUTTER
STA 407+00.00 TO 412+25.00 RT

TEMPORARY STREAM CROSSING

BM#183
BL, STA 84+57
85' RIGHT
ELEV 176.75

CLEAN WATER DIVERSION
(Not to Scale)
CWD CWD CWD CWD
STABILIZE EXCAVATED MATERIAL
SOIL STABILIZATION GEOTEXTILE
OFFSITE CLEAN WATER

–L–
PI Sta 404+50.03
Δ = 74° 51' 43.7" (RT)
D = 2° 14' 48.8"
L = 3,331.81'
T = 1,951.81'
R = 2,550.00'
SE = 0.07

FOR –L– PROFILE SEE SHTS. 33, 34
FOR DITCH DETAILS SEE SHT. 2D–1 & 2D–2

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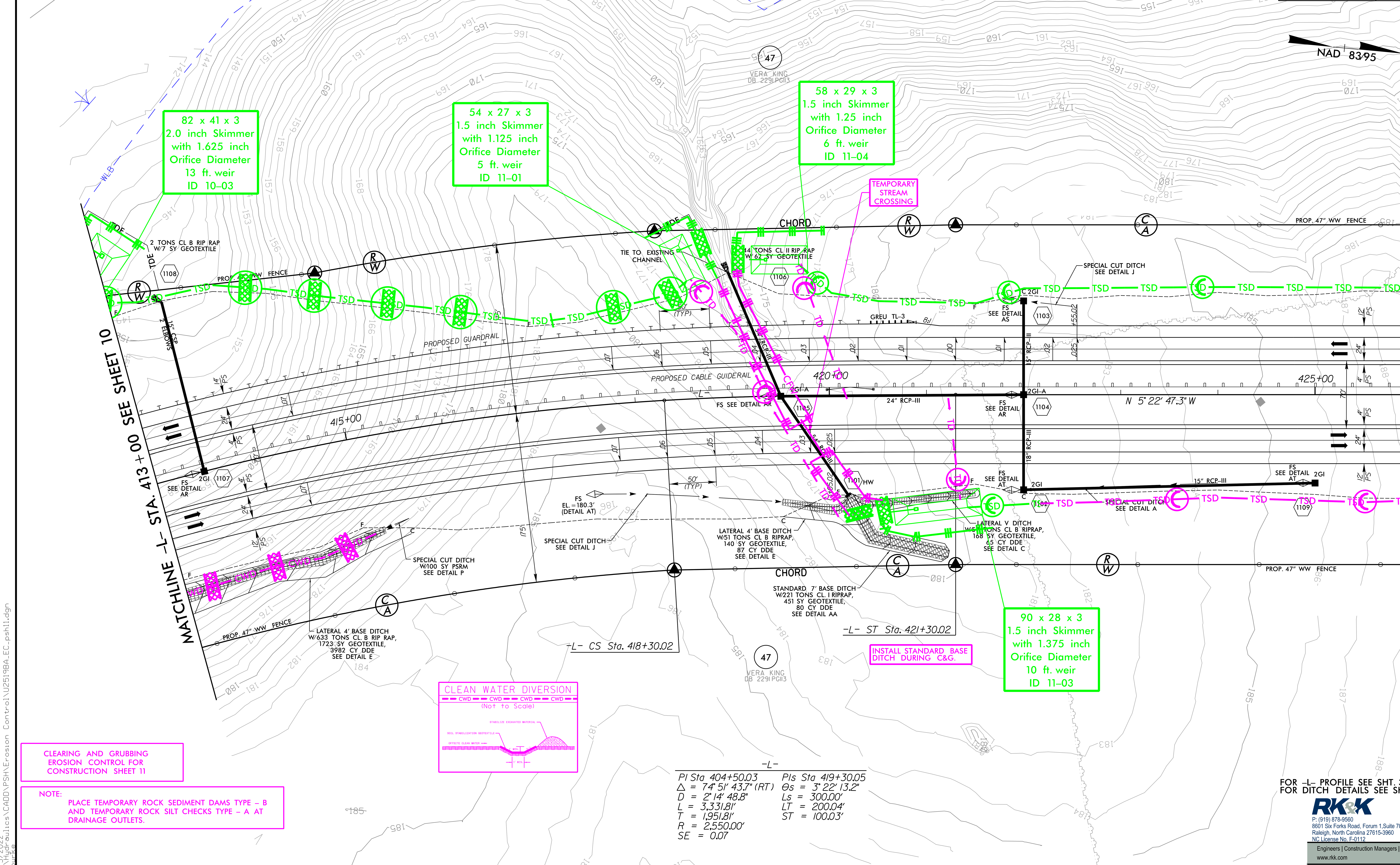
PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-11/CONST.11

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER



MATCHLINE -L- STA. 413+00 SEE SHEET 10
MATCHLINE -L- STA. 426+00 SEE SHEET 12
NAD 83/95
82 x 41 x 3
2.0 inch Skimmer
with 1.625 inch
Orifice Diameter
13 ft. weir
ID 10-03
54 x 27 x 3
1.5 inch Skimmer
with 1.125 inch
Orifice Diameter
5 ft. weir
ID 11-01
58 x 29 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
6 ft. weir
ID 11-04
90 x 28 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
10 ft. weir
ID 11-03
TEMPORARY STREAM CROSSING
INSTALL STANDARD BASE DITCH DURING C&G.
CHORD
PROP. 47" WW FENCE
2 TONS CL B RIP RAP W/7 SY GEOTEXTILE
TIE TO EXISTING CHANNEL
44 TONS CL II RIP RAP W/ 62 SY GEOTEXTILE
SPECIAL CUT DITCH SEE DETAIL J
PROPOSED GUARDRAIL
PROPOSED CABLE GUIDERAIL
415+00
420+00
425+00
24" RCP-III
N 5° 22' 47.3" W
15" RCP-III
18" RCP-III
FS EL.=180.3' (DETAIL AT)
SPECIAL CUT DITCH SEE DETAIL J
SPECIAL CUT DITCH W/100 SY PSRM SEE DETAIL P
LATERAL 4' BASE DITCH W/51 TONS CL B RIPRAP, 140 SY GEOTEXTILE, 87 CY DDE SEE DETAIL E
STANDARD 7' BASE DITCH W/221 TONS CL I RIPRAP, 451 SY GEOTEXTILE, 80 CY DDE SEE DETAIL AA
LATERAL V DITCH W/5 TONS CL B RIPRAP, 168 SY GEOTEXTILE, 65 CY DDE SEE DETAIL C
LATERAL 4' BASE DITCH W/633 TONS CL B RIP RAP, 1723 SY GEOTEXTILE, 3982 CY DDE SEE DETAIL E
SPECIAL CUT DITCH SEE DETAIL A
-L- CS Sta. 418+30.02
-L- ST Sta. 421+30.02
VERA KING DB 2291 PG113
CLEAN WATER DIVERSION
(Not to Scale)

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 11

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

-L-

PI Sta 404+50.03	PIs Sta 419+30.05
Δ = 74° 51' 43.7" (RT)	Θs = 3° 22' 13.2"
D = 2° 14' 48.8"	Ls = 300.00'
L = 3,331.81'	LT = 200.04'
T = 1,951.81'	ST = 100.03'
R = 2,550.00'	
SE = 0.07	

FOR -L- PROFILE SEE SHT. 34
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2

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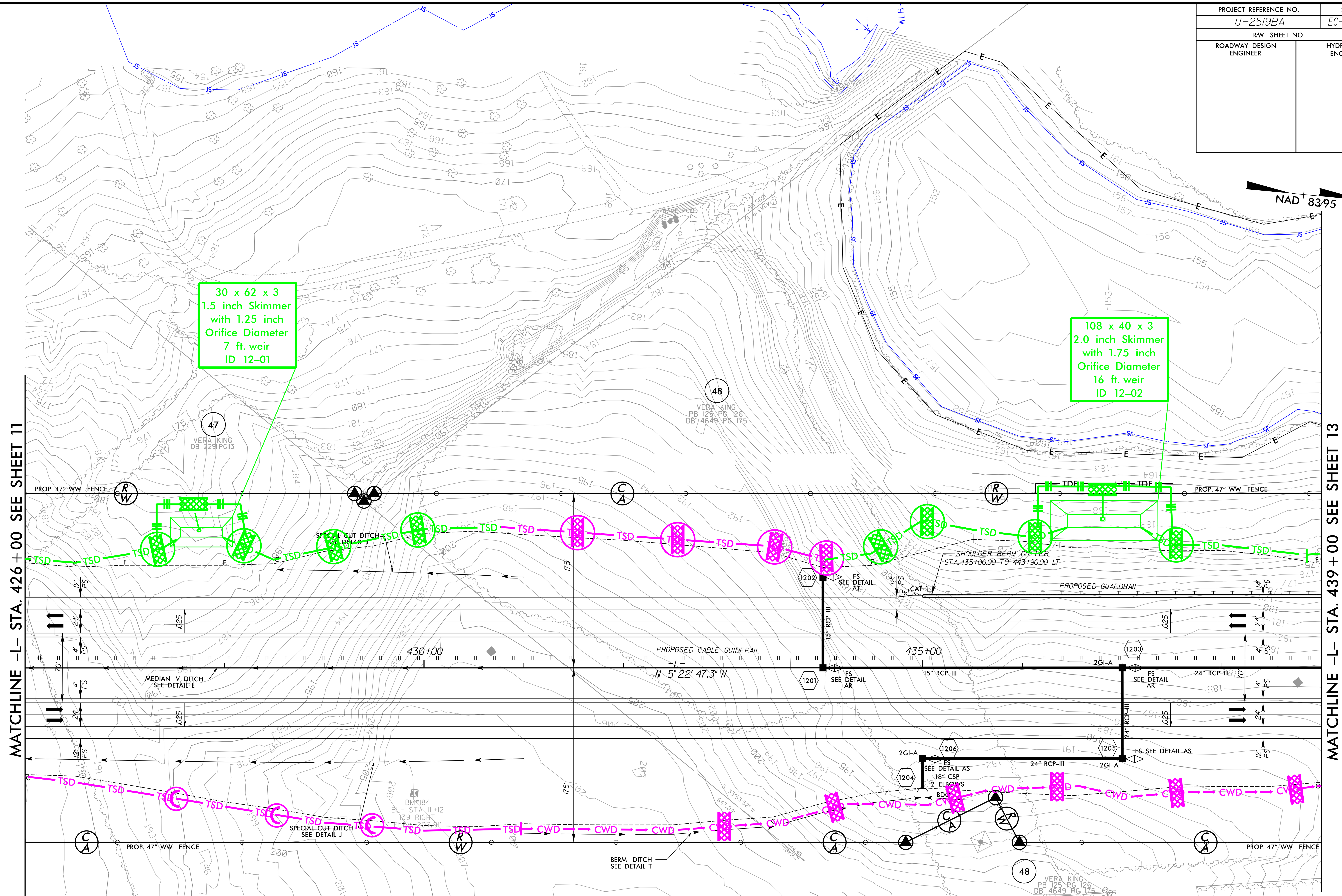
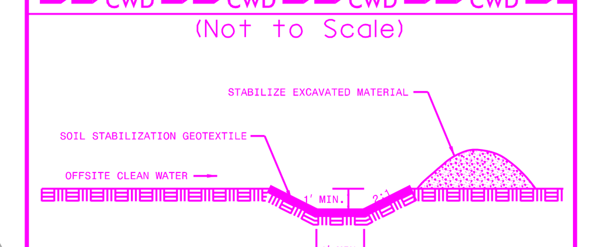
PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-12/CONST.12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



FOR -L- PROFILE SEE SHTS. 34, 35
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2

CLEAN WATER DIVERSION
(Not to Scale)



CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 12

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

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PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-13/CONST.13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/95

NOTE FOR WETLAND CROSSING

IF WETLANDS NEED TO BE CROSSED DURING CONSTRUCTION, UTILIZE A TEMPORARY STREAM CROSSING BY PLACING A TEMPORARY 18" PIPE IN THE WETLANDS AND CONSTRUCTING A 15' WIDE HAUL ROAD THROUGH THE WETLANDS AND OVER THE PIPE. LINE BOTH SIDES OF THE HAUL ROAD WITH SILT FENCE.

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

SEE NOTE ABOVE FOR WETLAND CROSSING

55 x 26 x 3
1.5 inch Skimmer
with 1.125 inch
Orifice Diameter
5 ft. weir
ID 13-01

33 x 50 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
13 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 13-05

Modified Silt Basin
Type 'B'
33 x 50 x 3
13 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 13-05

-Y14-
PI Sta 20+46.87
△ = 0° 15' 15.0" (LT)
D = 0° 17' 11.3"
L = 88.72'
T = 44.36'
R = 20,000.00'
SE = NC

-Y14- PC Sta. 20+02.51
-Y14- PT Sta. 20+91.23
BEGIN APPROACH SLAB
-Y14- PT Sta. 21+88.40
BEGIN BRIDGE
-Y14- PT Sta. 22+12.56
-L- POT Sta. 450+12.29 =
-Y14- POT Sta. 23+16.56
△ = 80° 56' 23.0"
END BRIDGE
-Y14- PT Sta. 24+20.56
END APPROACH SLAB
-Y14- PT Sta. 24+44.72

MATCHLINE -Y14- STA. 19+00 SEE SHEET 25

MATCHLINE -L- STA. 439+00 SEE SHEET 12

MATCHLINE -L- STA. 452+00 SEE SHEET 14

MATCHLINE -Y14- STA. 27+00 SEE SHEET 26

ROCK FILL IN POND SEE DETAIL SHT. 2G-1

TOE PROTECTION W/405 TONS CL I RIP RAP W/ 223 SY GEOTEXTILE SEE DETAIL Z

PROP. 47" WW FENCE

PROPOSED GUARDRAIL

PROPOSED CABLE GUIDERAIL

SHOULDER BERM GUTTER STA 435+00.00 TO 443+90.00 LT

SHOULDER BERM GUTTER STA.440+50.00 TO 443+10.00 RT

SHOULDER BERM GUTTER STA.18+60.00 TO 21+95.58

SHOULDER BERM GUTTER STA.18+60.00 TO 21+91.22 RT

SHOULDER BERM GUTTER STA.24+47.49 TO 26+95.00 RT

SHOULDER BERM GUTTER STA.24+41.91 TO 26+95.00 LT

LATERAL 4' BASE DITCH 149 CY DDE SEE DETAIL D

LATERAL V DITCH W/51 CY DDE SEE DETAIL B

LATERAL V DITCH 110 CY DDE SEE DETAIL B

2 TONS CL B RIP RAP W/ 7 SY GEOTEXTILE

REMOVE EXIST. ROADBED AND 18" RCP TO NATURAL GROUND SEE DETAIL AI

RETAIN AND ADJUST BASIN SIZE FOR FINAL GRADE

44 x 22 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
4 ft. weir
ID 13-02

33 x 50 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
13 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 13-04

Modified Silt Basin
Type 'B'
33 x 50 x 3
13 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 13-04

CONSTRUCT LAT. 'V' DITCH DURING C&G. DITCH TO BE USED AS TSD.

SPECIAL MEDIAN GRADING SEE STD.225.08

BEGIN NOISE WALL -NW4B- -L- Sta. 451+75.05 74.50' RT

SEAL AND ABANDON WELL

NCDOT DB 7696 PG 679

NCDOT DB 7103 PG 581 PB 27 PG 27

NORBERT WILLIAMS DB 4121 PG 220 PB 27 PG 27

NORBERT WILLIAMS DB 8936 PG 1 PB 27 PG 27

VERA KING DB 4649 PG PB 125 PG

LUCRETIA GILBERT DB 8022 PG 430 PB 125 PG 126

VERA KING PB 125 PG 125 DB 4649 PG

VERA KING DB/229I PG

NCD DB 9526 PB 71P

MEGAN MARIE PEKOL-EVANS DB 9688 PG 747 PB 134 PG 14

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 13

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

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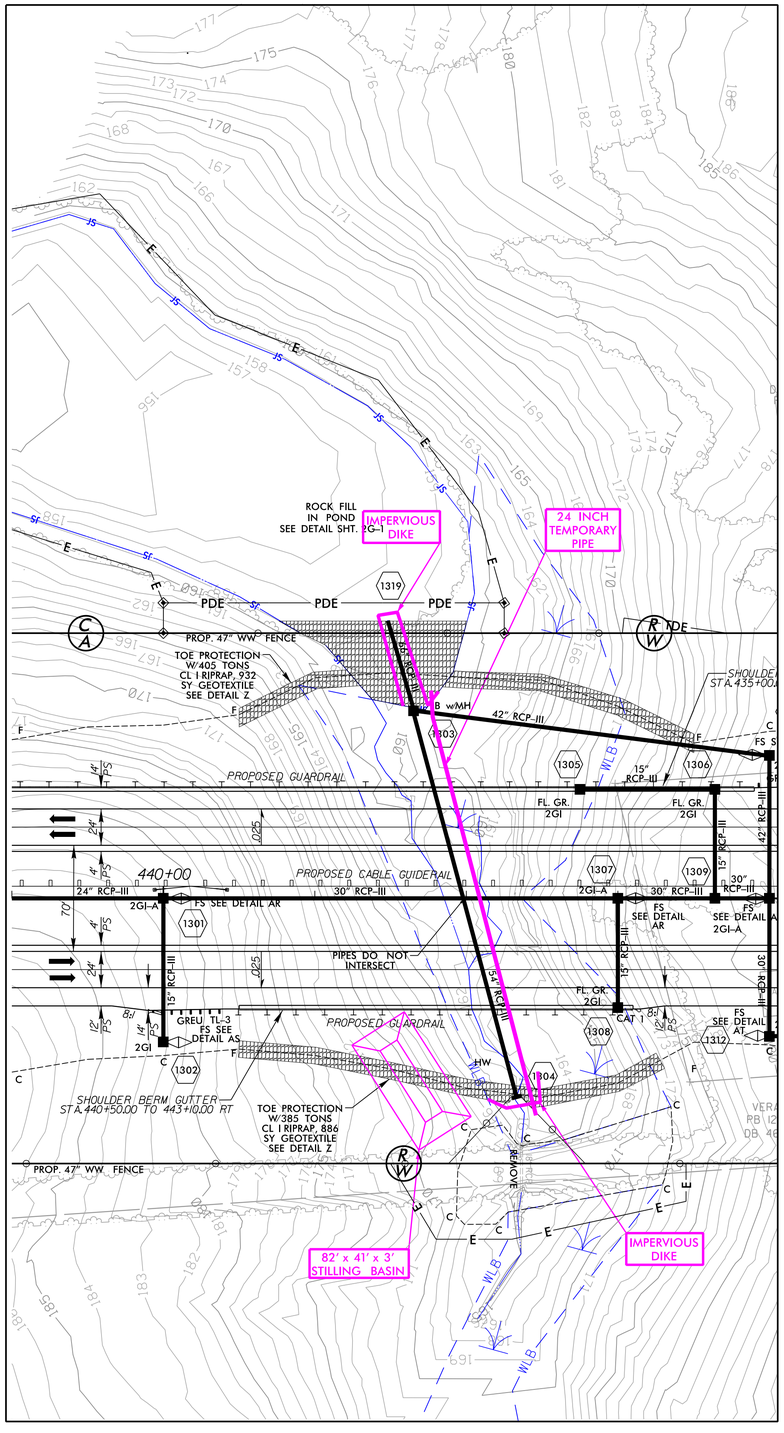
PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-13A/CONST.13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/95



CULVERT CONSTRUCTION SEQUENCE –L– STA. 442+00

1. INSTALL STILLING BASIN WITH A MINIMUM CAPACITY OF 627 C.Y.
2. INSTALL IMPERVIOUS DIKES AND TD's AS SHOWN ON PLAN.
3. UTILIZING PUMP AROUND OPERATIONS, INSTALL TEMPORARY 24" PIPE.
4. INSTALL 54" & 60" RCP'S, JUNCTION BOX AND HEADWALL AT INLET AND OUTLET END OF PROPOSED CROSSING.
5. REMOVE TEMPORARY PIPE AND IMPERVIOUS DIKES.
6. CONSTRUCT ROADWAY PAVEMENT AND FILL.

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PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-14/CONST.14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 14

-Y15A-
PI Sta 12+14.10
△ = 12° 35' 25.9" (LT)
D = 10° 03' 06.8"
L = 125.26'
T = 62.88'
R = 570.00'
SE = 0.04

PI Sta 15+35.77
△ = 3° 10' 38.8" (RT)
D = 0° 59' 59.7"
L = 317.77'
T = 158.92'
R = 5,730.00'
SE = NC

-Y14T_I-
PI Sta 11+40.20
△ = 1° 34' 52.5" (RT)
D = 3° 49' 11.0"
L = 41.40'
T = 20.70'
R = 1,500.00'

PI Sta 12+76.49
△ = 0° 59' 39.8" (LT)
D = 3° 49' 11.0"
L = 26.03'
T = 13.02'
R = 1,500.00'

NAD 83/95

MATCHLINE –L– STA. 452+00 SEE SHEET 13

MATCHLINE –L– STA. 466+00 –Y15A– STA. 21+00 SEE SHEET 15

-Y15A- PC Sta.11+51.22

BEGIN CONSTRUCTION
-Y15A- POT Sta.10+00.00

-Y15A- PT Sta.12+76.48

-Y15A- PC Sta.13+76.85

-Y15A- PT Sta.16+94.61

-L- POT Sta.463+12.53=
-Y14T_I- POT Sta.14+26.17

-Y14T_I- PT Sta.12+89.50

-Y14T_I- PC Sta.12+63.47

-Y14T_I- POC Sta.12+34.60
END CONSTRUCTION

-Y14T_I- POC Sta.11+84.60
BEGIN CONSTRUCTION

-Y14T_I- PT Sta.11+60.89

-Y14T_I- PC Sta.11+19.50

-Y14T_I- POT Sta.10+00.00

86 x 20 x 3
1.5 inch Skimmer
with 1.125 inch
Orifice Diameter
6 ft. weir
ID 14-09

52 x 17 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
4 ft. weir
ID 14-08

60 x 30 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
7 ft. weir
ID 14-04

64 x 32 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
5 ft. weir
ID 14-03

82 x 30 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
9 ft. weir
ID 14-01

38 x 16 x 3
ID 14-02

69 x 18 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
4 ft. weir
ID 14-07

94 x 46 x 3
2.0 inch Skimmer
with 1.75 inch
Orifice Diameter
16 ft. weir
ID 14-11

TEMPORARY STREAM CROSSING

TEMPORARY STREAM CROSSING

CLEAN WATER DIVERSION
(Not To Scale)

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

FOR –L– PROFILE SEE SHTS. 35, 36
FOR –Y15A– PROFILE SEE SHT. 48
FOR –Y14T_1– PROFILE SEE SHT. 52
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2
FOR –NW4B– SEE SHTS. 2N-1 & 2N-2

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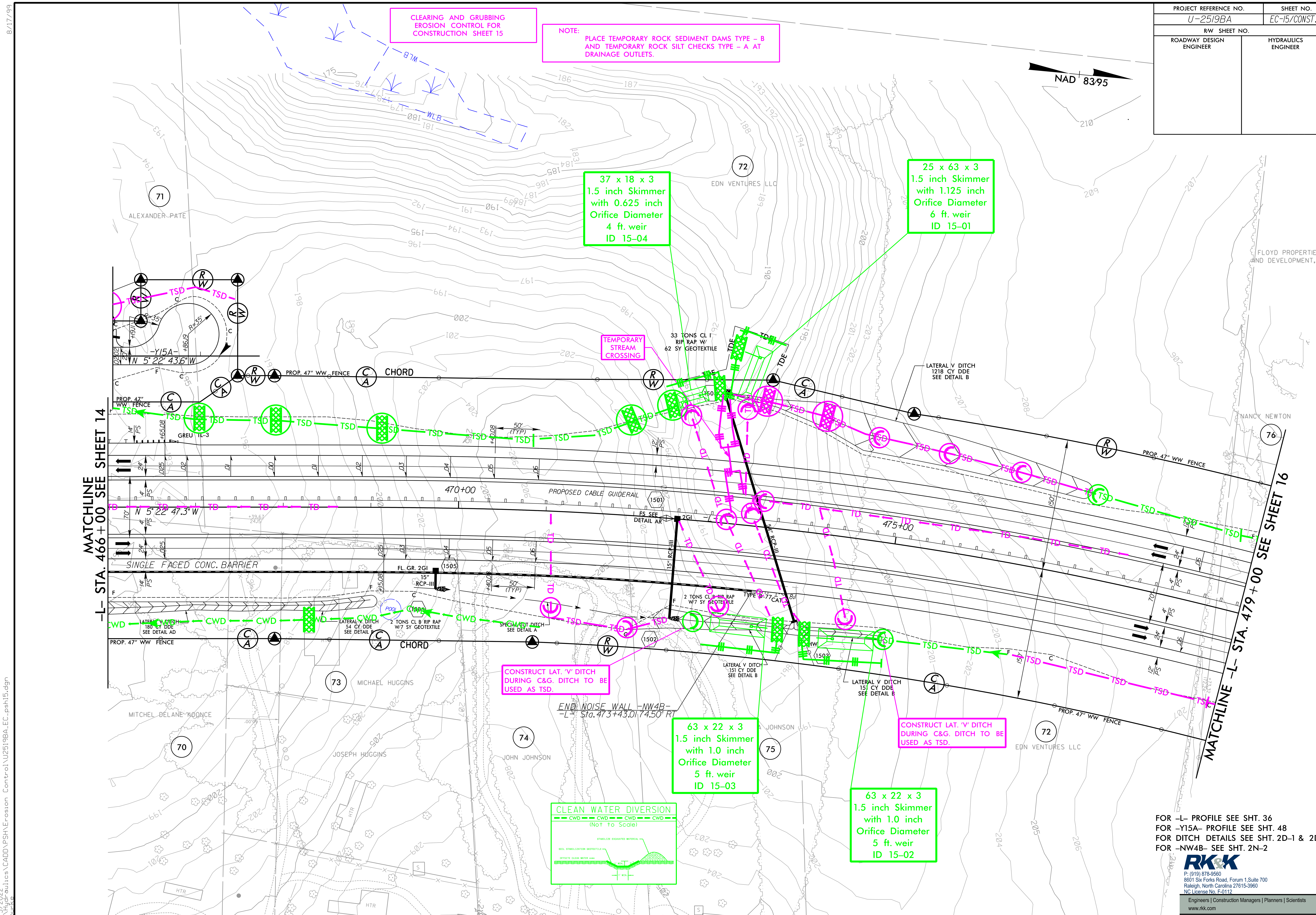

PROJECT REFERENCE NO.
U-2519BA
SHEET NO.
EC-15/CONST.15
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 15
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.
NAD 83/95
37 x 18 x 3 1.5 inch Skimmer with 0.625 inch Orifice Diameter 4 ft. weir ID 15-04
25 x 63 x 3 1.5 inch Skimmer with 1.125 inch Orifice Diameter 6 ft. weir ID 15-01
63 x 22 x 3 1.5 inch Skimmer with 1.0 inch Orifice Diameter 5 ft. weir ID 15-03
63 x 22 x 3 1.5 inch Skimmer with 1.0 inch Orifice Diameter 5 ft. weir ID 15-02
TEMPORARY STREAM CROSSING
33 TONS CL I RIP RAP W/ 62 SY GEOTEXTILE
LATERAL V DITCH 1218 CY DDE SEE DETAIL B
ALEXANDER PATE
EDN VENTURES LLC
FLOYD PROPERTIES AND DEVELOPMENT, INC
NANCY NEWTON
MATCHLINE -L- STA. 466+00 SEE SHEET 14
MATCHLINE -L- STA. 479+00 SEE SHEET 16
-Y15A-
N 5°22' 43.6" W
PROP. 47" WW FENCE
CHORD
PROPOSED CABLE GUIDERAIL
470+00
475+00
N 5°22' 47.3" W
SINGLE FACED CONC. BARRIER
LATERAL V DITCH 180 CY DDE SEE DETAIL AD
LATERAL V DITCH 54 CY DDE SEE DETAIL B
2 TONS CL B RIP RAP W/7 SY GEOTEXTILE
SPECIAL CUT DITCH SEE DETAIL A
CONSTRUCT LAT. 'V' DITCH DURING C&G. DITCH TO BE USED AS TSD.
LATERAL V DITCH 151 CY DDE SEE DETAIL B
END NOISE WALL -NW4B- -L- Sta.473+43.01 74.50' RT
MICHAEL HUGGINS
MITCHEL DELANE KOONCE
JOSEPH HUGGINS
JOHN JOHNSON
JOHNSON
CLEAN WATER DIVERSION (Not to Scale)
FOR -L- PROFILE SEE SHT. 36
FOR -Y15A- PROFILE SEE SHT. 48
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2
FOR -NW4B- SEE SHT. 2N-2
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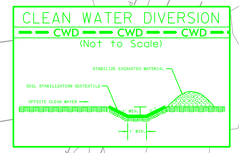

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-16/CONST.16

R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 16

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

-L-
PI Sta 483+11.99
△ = 35° 29′ 05.2″ (RT)
D = 1° 30′ 01.0″
L = 2,365.21′
T = 1,221.91′
R = 3,819.00′
SE = 0.06

SEE NOTE BELOW FOR
WETLAND CROSSING

Modified Silt Basin
Type 'B'
63 x 20 x 3
9 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 16-03

63 x 20 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
9 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 16-03

65 x 26 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
13 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 16-01

Modified Silt Basin
Type 'B'
65 x 26 x 3
13 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 16-01

NOTE FOR WETLAND CROSSING

IF WETLANDS NEED TO BE CROSSED DURING CONSTRUCTION, UTILIZE A TEMPORARY STREAM CROSSING BY PLACING A TEMPORARY 18" PIPE IN THE WETLANDS AND CONSTRUCTING A 15' WIDE HAUL ROAD THROUGH THE WETLANDS AND OVER THE PIPE. LINE BOTH SIDES OF THE HAUL ROAD WITH SILT FENCE.

Modified Silt Basin
Type 'B'
63 x 20 x 3
9 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 16-02

63 x 20 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
9 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 16-02

CLEAN WATER DIVERSION
(Not to Scale)

FOR -L- PROFILE SEE SHTS. 36, 37
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2

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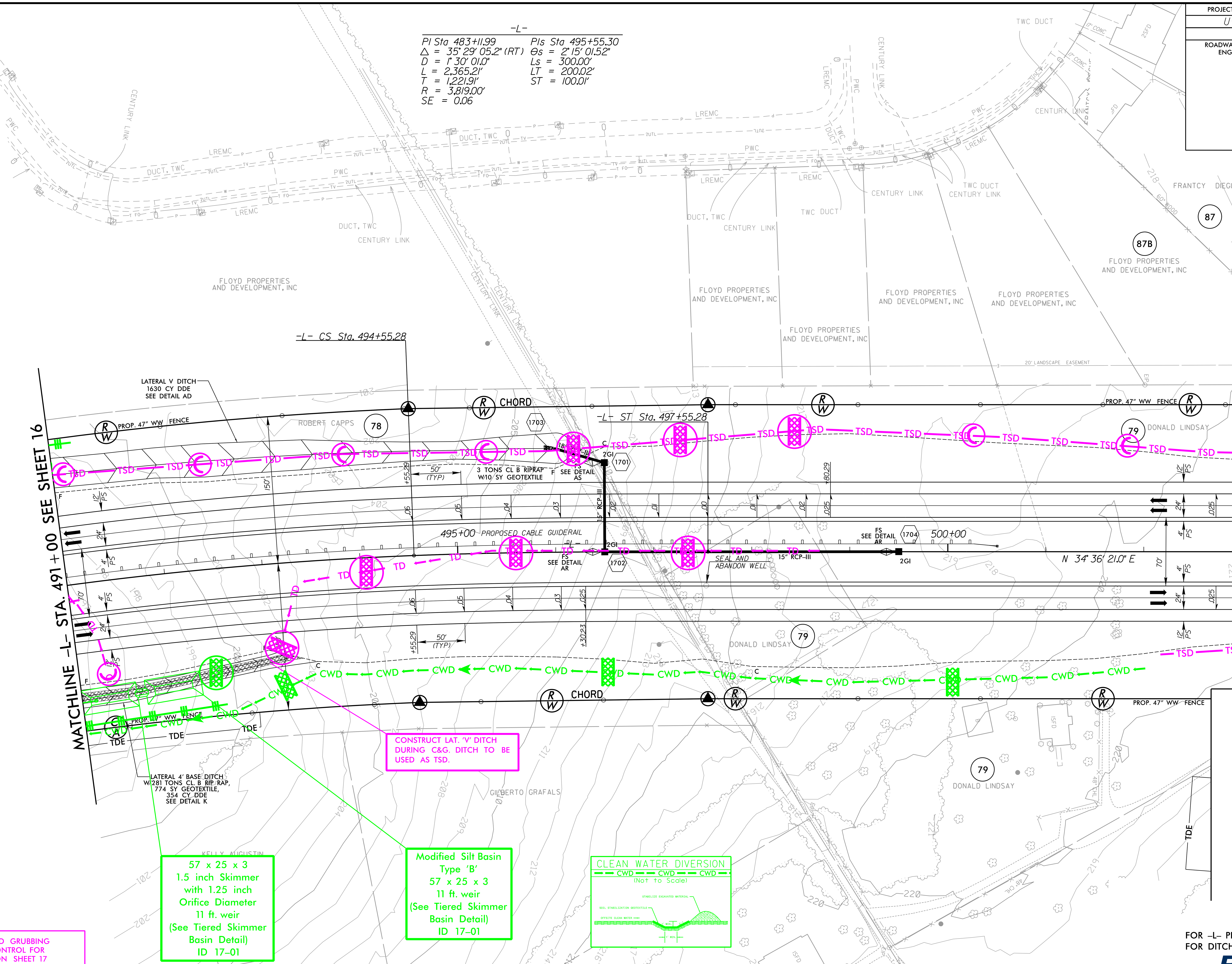
-L-
PI Sta 483+11.99
△ = 35° 29' 05.2" (RT)
D = 1° 30' 01.0"
L = 2,365.21'
T = 1,221.91'
R = 3,819.00'
SE = 0.06
PIs Sta 495+55.30
θs = 2° 15' 01.52"
Ls = 300.00'
LT = 200.02'
ST = 100.01'
-L- CS Sta. 494+55.28
-L- ST Sta. 497+55.28
MATCHLINE -L- STA. 491+00 SEE SHEET 16
MATCHLINE -L- STA. 503+00 SEE SHEET 18
NAD 83/95
FLOYD PROPERTIES AND DEVELOPMENT, INC
ROBERT CAPPS
DONALD LINDSAY
GILBERTO GRAFALS
FRANTCY DIEGUE
LATERAL V DITCH 1630 CY DDE SEE DETAIL AD
3 TONS CL B RIPRAP W/10 SY GEOTEXTILE
PROPOSED CABLE GUIDERAIL
SEAL AND ABANDON WELL
N 34° 36' 21.0" E
495+00
500+00
CHORD
PROP. 47" WW FENCE
CONSTRUCT LAT. 'V' DITCH DURING C&G. DITCH TO BE USED AS TSD.
LATERAL 4' BASE DITCH W/281 TONS CL B RIP RAP, 774 SY GEOTEXTILE, 354 CY DDE SEE DETAIL K
57 x 25 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
11 ft. weir
(See Tiered Skimmer Basin Detail)
ID 17-01
Modified Silt Basin Type 'B'
57 x 25 x 3
11 ft. weir
(See Tiered Skimmer Basin Detail)
ID 17-01
CLEAN WATER DIVERSION
(Not to Scale)

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.

FOR -L- PROFILE SEE SHT. 37
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2

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PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-18/CONST.18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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.

NAD 83/95

CLEAN WATER DIVERSION
CWD CWD CWD
(Not to Scale)
STABILIZE EXCAVATED MATERIAL
SOIL STABILIZATION GEOTEXTILE
OFFSITE CLEAN WATER
WIDTH
1' MIN

MATCHLINE –Y16– STA. 28+00 SEE SHEET 29

END APPROACH SLAB
–Y16– STA.25+67.54

END BRIDGE
–Y16– STA.25+43.38

–L– TS Sta. 508+25.53

–L– SC Sta. 511+25.53

–L– POT STA.504+87.41=
–Y16– POT STA.24+41.38
Δ = 85° 45' 39"

CHORD

N 34° 36' 21.0" E

PROPOSED CABLE GUIDERAIL

SINGLE FACED CONC. BARRIER

NOISE WALL –NW5–

–NW5– Sta.14+80.00 =
–L– Sta 505+66.44 74.50' RT

BEGIN BRIDGE
–Y16– STA.23+39.38

–NW5– Sta.14+20.00 =
–Y16– Sta.23+03 55.98' RT

BEGIN APPROACH SLAB
–Y16– STA.23+15.21

–NW5– Sta.13+60.00 =
–Y16– Sta.22+61.29 43.75' RT

–Y16B– PT Sta.16+70.34

–Y16B– PC Sta.15+31.14

–Y16B– PI Sta 16+03.05
Δ = 35° 26' 48.9" (RT)
D = 25° 27' 53.2"
L = 139.20'
T = 71.91'
R = 225.00'
SE = EXIST

–L– PIs Sta 510+25.55
Θs = 2° 14' 59.40"
Ls = 300.00'
LT = 200.02'
ST = 100.01'

–L– PI Sta 523+30.69
Δ = 35° 01' 11.1" (LT)
D = 1° 29' 59.6"
L = 2,334.82'
T = 1,205.17'
R = 3,820.00'
SE = 0.06

MATCHLINE –L– STA. 503+00 SEE SHEET 17

MATCHLINE –L– STA. 516+00 SEE SHEET 19

MATCHLINE –Y16B– STA. 23+00 SEE SHEET 19

MATCHLINE –Y16– STA. 21+00 SEE SHEET 28

MATCHLINE –Y16B– STA. 14+00 SEE SHEET 28

SPECIAL MEDIAN GRADING SEE STD. 225.08

SPECIAL MEDIAN GRADING SEE STD. 225.08

TYPE AT-350 W/ GRADE TO DRAIN

15" RCP–III

2 TON CL B RIP RAP 2GID W/7 SY GEOTEXTILE

1 TON CL B RIP RAP W/5 SY GEOTEXTILE

10 TONS CL B RIPRAP W/28 SY GEOTEXTILE

PLUG & FILL W/FLOWABLE FILL

2@24" RCP IV

15" RCP–III

LATERAL V DITCH 1354 CY DDE SEE DETAIL S

LATERAL V DITCH 684 CY DDE SEE DETAIL AN

LATERAL V DITCH 106 CY DDE SEE DETAIL S

SP. LAT. V DITCH 16 CY DDE SEE DETAIL G

SPECIAL CUT DITCH SEE DETAIL AO

CONSTRUCT LAT. 'V' DITCH DURING C&G. DITCH TO BE USED AS TSD.

END CONSTRUCTION
–Y16B– Sta.15+29.00

53 x 18 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
4 ft. weir
ID 18–03

168 x 40 x 3
2.5 inch Skimmer
with 2.25 inch
Orifice Diameter
26 ft. weir
ID 18–01

44 x 88 x 3
2.0 inch Skimmer
with 1.625 inch
Orifice Diameter
15 ft. weir
ID 18–04

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

FOR –L– PROFILE SEE SHT. 37, 38
FOR –Y16– PROFILE SEE SHT. 48, 49
FOR –Y16B– PROFILE SEE SHTS. 50
FOR –Y16DET– PLAN SEE SHTS. 2B–6 & 2B–7
FOR DITCH DETAILS SEE SHT. 2D–1 & 2D–2
FOR –Y16– BRIDGE SKETCH SEE SHT. 2B–9
FOR STRUCTURE PLANS SEE SHT. S5–1 THRU S5–39
FOR –NW5– SEE SHT. 2N–3 & 2N–4

DONALD LINDSAY
NCDOT
formerly DONALD CARMICHAEL LINDSAY
RONALD HOWELL
WILLIAM PAUL
WILLIAM MAIDEN
DAVID LO
ITON
CHAD VUYOVICH
KIMBERLY RAMSEY
ALEXANDER SPENCE
GILLIS DEVELOPMENT CORPORATION, INC.
JMORGAN CHASE BANK
CHARLES WENTZELL
JOHN A DELGADO
RENATE KONSTANTEELS

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PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	EC-19/CONST.19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-L-
PI Sta 523+30.69
△ = 35° 01' 11.1" (LT)
D = 1° 29' 59.6"
L = 2,334.82'
T = 1,205.17'
R = 3,820.00'
SE = 0.06

-Y16B-
PI Sta 27+13.33
△ = 87° 39' 17.1" (RT)
D = 22° 55' 05.9"
L = 382.47'
T = 239.97'
R = 250.00'
SE = 0.04

NAD 83/95

90 x 45 x 3
2.0 inch Skimmer
with 1.75 inch
Orifice Diameter
15 ft. weir
ID 19-01

END TIP PROJECT U-2519BA
BEGIN TIP PROJECT U-2519BB
-L- Sta. 519+00.00

LATERAL V DITCH
129 CY DDE
SEE DETAIL B
(TIE TO U-2519BB's
SP. CUT DITCH)

SPECIAL CUT DITCH
(PROPOSED FROM U-2519BB)

DONALD CARMICHAEL LINDSAY

NCDOT formerly
DONALD CARMICHAEL LINDSAY

MARVIN LINDSAY

MATCHLINE
-L- STA. 516+00
SEE SHEET 18

TDE
PROP. 47" WW FENCE
LATERAL V DITCH
129 CY DDE
SEE DETAIL B
TSD
HW
300'
TAPER
(12' TO 5.66')
54" RCP-IV
-L-
MEDIAN V DITCH
SEE DETAIL L
520+00
SINGLE FACED
CONC. BARRIER
PROPOSED CABLE GUIDERAIL
NOISE WALL -NW5-
LAT. V DITCH
72 CY DDE
SEE DETAIL AD
GILLIS DEVELOPMENT
CORPORATION, INC.
LATERAL V DITCH
684 CY DDE
SEE DETAIL AN
TYPE B-77
TIE TO PROP.
GUARDRAIL ON
U-2519BB
CONSTRUCT LAT. 'V' DITCH
DURING C&G. DITCH TO BE
USED AS TSD.
168 x 40 x 3
2.5 inch Skimmer
with 2.25 inch
Orifice Diameter
26 ft. weir
ID 18-01
MATCHLINE
-Y16B- STA. 23+00
SEE SHEET 18
PROP. 47" WW FENCE
33 TONS CL I RIPRAP
W/62 SY GEOTEXTILE
BACKFILL EXISTING
DITCHES
N 18° 08' 47.0" E
-Y16B-
DET. FW
3@49"x33"
ALUMINUM
PIPE
ARCH
CONSTRUCT LAT. BASE DITCH
DURING C&G. DITCH TO BE
USED FOR CLEAN WATER.
SPECIAL CUT DITCH
SEE DETAIL AO
SPECIAL CUT DITCH
SEE DETAIL A
36 x 14 x 3
ID 19-03
40 TONS CL I
RIPRAP W/75
SY GEOTEXTILE
LATERAL 4'
BASE DITCH
123 CY DDE
SEE DETAIL U
-Y16B- PC Sta. 24+73.36
END NOISE WALL -NW5-
-NW5- Sta.27+84.95 =
-L- Sta.518+54.31 74.50' RT
STACY & ALISA HARRISON
-Y16B- PT Sta. 28+55.82
S 74° 11' 55.9" E
MATCHLINE -Y16B- STA. 29+00
SEE SHEET 30
FLYOD PROPERTIES
W.M. LINDSAY

CLEAN WATER DIVERSION
CWD CWD CWD
(Not to Scale)

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 19

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

FOR -L- PROFILE SEE SHT. 38
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2
FOR -NW5- DETAILS SEE SHT. 2N-4

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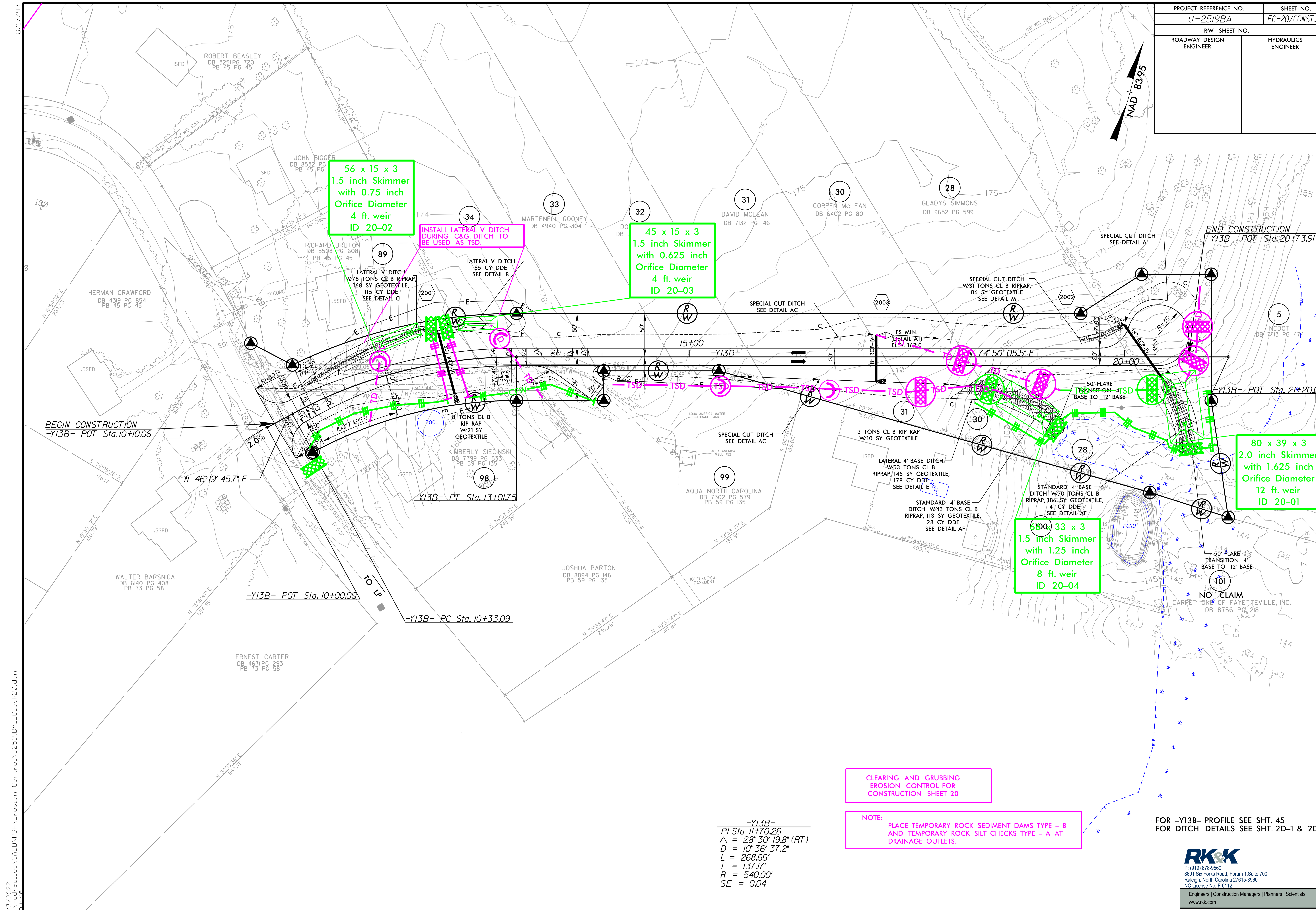

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PROJECT REFERENCE NO.
U-2519BA
SHEET NO.
EC-20/CONST.20
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NAD 83
ROBERT BEASLEY
DB 3251 PG 720
PB 45 PG 45
JOHN BIGGER
DB 8532 PG
PB 45 PG
HERMAN CRAWFORD
DB 4319 PG 854
PB 45 PG 45
RICHARD BRUTON
DB 5508 PG 608
PB 45 PG 45
MARTENELL GOONEY
DB 4940 PG 304
DAVID MCLEAN
DB 7132 PG 146
COREEN McLEAN
DB 6402 PG 80
GLADYS SIMMONS
DB 9652 PG 599
NCDOT
DB 7413 PG 474
56 x 15 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
4 ft. weir
ID 20-02
INSTALL LATERAL V DITCH DURING C&G. DITCH TO BE USED AS TSD.
45 x 15 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
4 ft. weir
ID 20-03
LATERAL V DITCH
65 CY DDE
SEE DETAIL B
LATERAL V DITCH
W/78 TONS CL B RIPRAP,
168 SY GEOTEXTILE,
115 CY DDE
SEE DETAIL C
SPECIAL CUT DITCH
SEE DETAIL AC
SPECIAL CUT DITCH
W/31 TONS CL B RIPRAP,
86 SY GEOTEXTILE
SEE DETAIL M
SPECIAL CUT DITCH
SEE DETAIL A
END CONSTRUCTION
-Y13B- POT Sta. 20+73.91
FS MIN. (DETAIL A1) ELEV. 167.0
15+00
-Y13B-
N 74° 50' 05.5" E
20+00
-Y13B- POT Sta. 21+20.00
BEGIN CONSTRUCTION
-Y13B- POT Sta. 10+10.06
N 46° 19' 45.7" E
2.0%
100' TAPER
8 TONS CL B RIP RAP W/21 SY GEOTEXTILE
KIMBERLY SIECINSKI
DB 7799 PG 533
PB 59 PG 135
-Y13B- PT Sta. 13+01.75
3 TONS CL B RIP RAP W/10 SY GEOTEXTILE
SPECIAL CUT DITCH
SEE DETAIL AC
AQUA NORTH CAROLINA
DB 7302 PG 579
PB 59 PG 135
LATERAL 4' BASE DITCH
W/53 TONS CL B
RIPRAP, 145 SY GEOTEXTILE,
178 CY DDE
SEE DETAIL E
STANDARD 4' BASE DITCH W/43 TONS CL B RIPRAP, 113 SY GEOTEXTILE, 28 CY DDE SEE DETAIL AF
STANDARD 4' BASE DITCH W/70 TONS CL B RIPRAP, 186 SY GEOTEXTILE, 41 CY DDE SEE DETAIL AF
50' FLARE TRANSITION 4' BASE TO 12' BASE
80 x 39 x 3
2.0 inch Skimmer
with 1.625 inch
Orifice Diameter
12 ft. weir
ID 20-01
51 x 33 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
8 ft. weir
ID 20-04
POND
50' FLARE TRANSITION 4' BASE TO 12' BASE
NO CLAIM
CARPET ONE OF FAYETTEVILLE, INC.
DB 8756 PG 218
JOSHUA PARTON
DB 8894 PG 146
PB 59 PG 135
WALTER BARSNICA
DB 6140 PG 408
PB 73 PG 58
-Y13B- POT Sta. 10+00.00
TO LP
-Y13B- PC Sta. 10+33.09
ERNEST CARTER
DB 4671 PG 293
PB 73 PG 58
-Y13B-
PI Sta 11+70.26
Δ = 28° 30' 19.8" (RT)
D = 10° 36' 37.2"
L = 268.66'
T = 137.17'
R = 540.00'
SE = 0.04
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 20
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.
FOR -Y13B- PROFILE SEE SHT. 45
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2
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