TIP PROJECT: R-2417AA

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2417AA	EC-1	

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

STATE OF NORTH CAROLINA

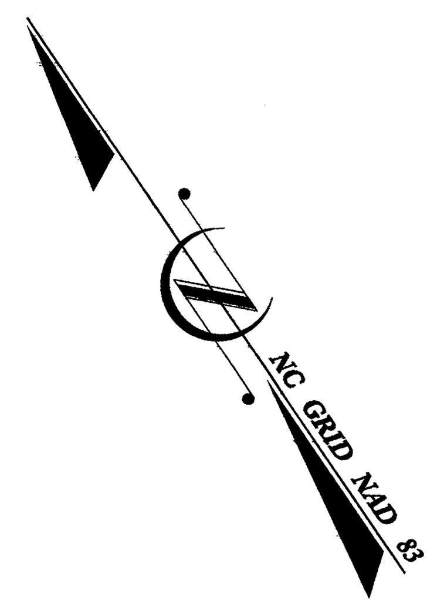
DIVISION OF HIGHWAYS

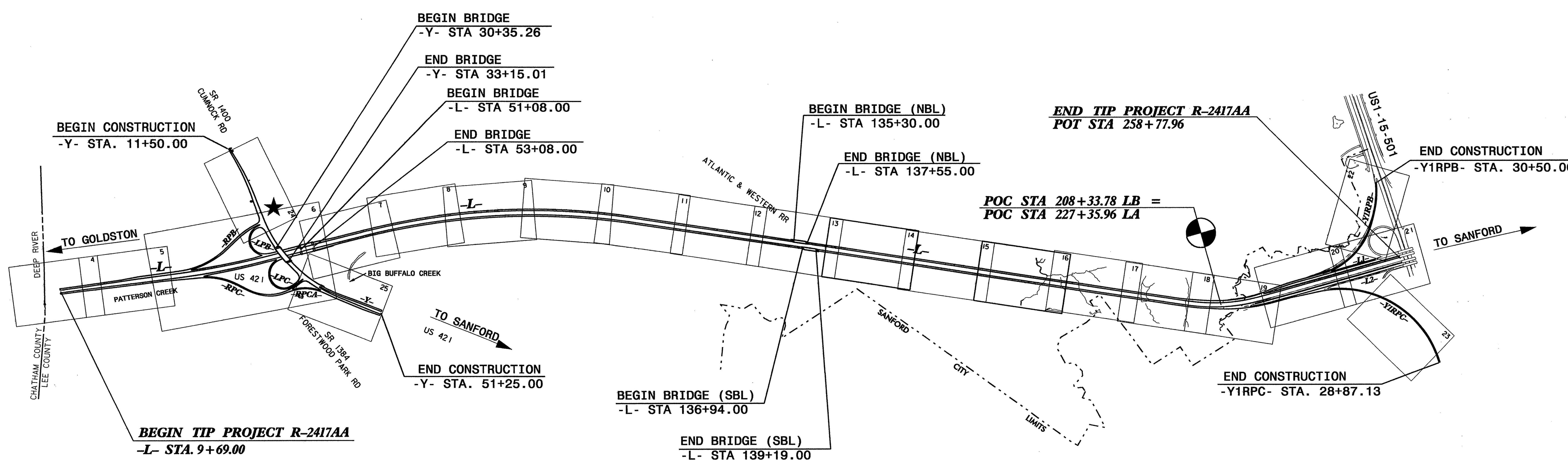
PLAN FOR PROPOSED

HIGHWAY EROSION CONTROL

LEE COUNTY

LOCATION: US 421 – NC 87 SANFORD BYPASS FROM WEST OF SR 1400 TO WEST OF US 1-15-501
TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES AND SIGNAL.





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	
	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	
	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	

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

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

GRAPHIC SCALE

0

PLANS

0

PROFILE (HORIZONTAL)

0

PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

Prepared In the Office of:

ROADSIDE ENVIRONMENTAL UNIT

1 South Wilmington St.
Raleigh, NC 27611

2006 STANDARD SPECIFICATIONS

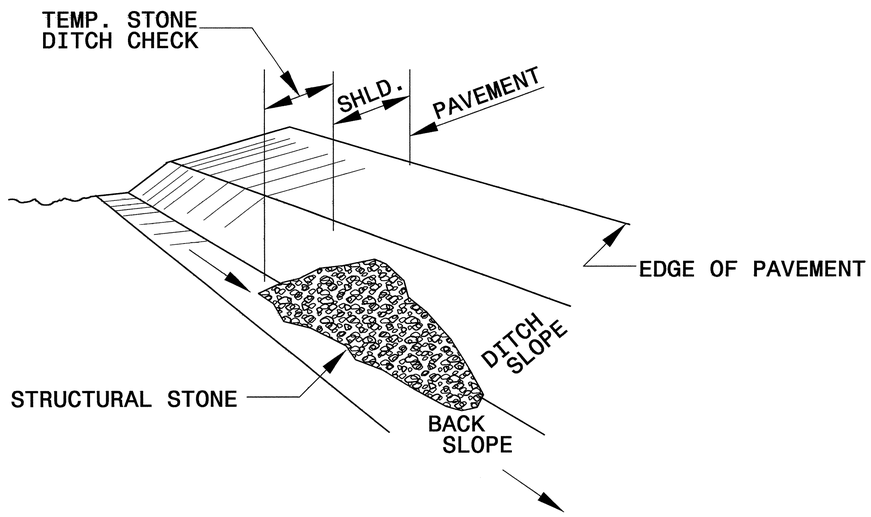
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated July 18, 2006 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1605.01	Temporary Silt Fence	1632.01	Rock Inlet Sediment Trap Type A
1606.01	Special Sediment Control Fence	1632.02	Rock Inlet Sediment Trap Type B
1607.01	Gravel Construction Entrance	1632.03	Rock Inlet Sediment Trap Type C
1622.01	Temporary Berms and Slope Drains	1633.01	Temporary Rock Silt Check Type A
1630.03	Temporary Silt Ditch	1634.02	Temporary Rock Sediment Dam Type B
1630.04	Stilling Basin	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.05	Temporary Diversion	1635.02	Rock Pipe Inlet Sediment Trap Type B

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'B' DETAIL

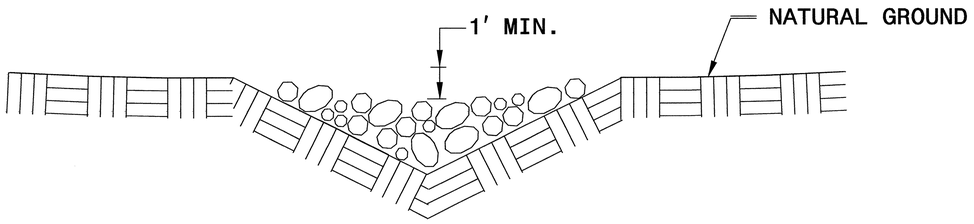


ISOMETRIC VIEW

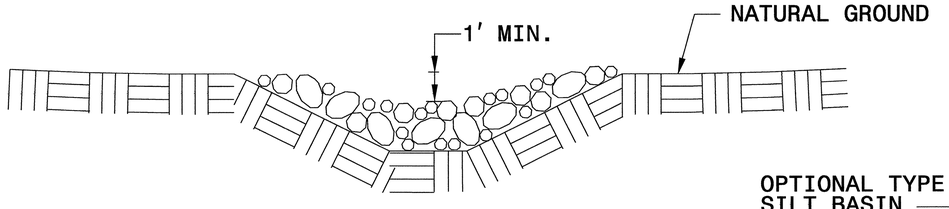
NOTES:

USE CLASS 'B' EROSION CONTROL STONE FOR STRUCTURAL STONE.

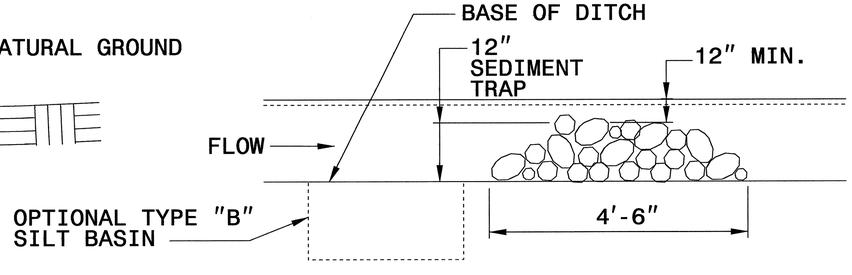
THE ENGINEER MAY DIRECT THE OPTION OF CLASS "A" STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.



CROSS SECTION VEE DITCH



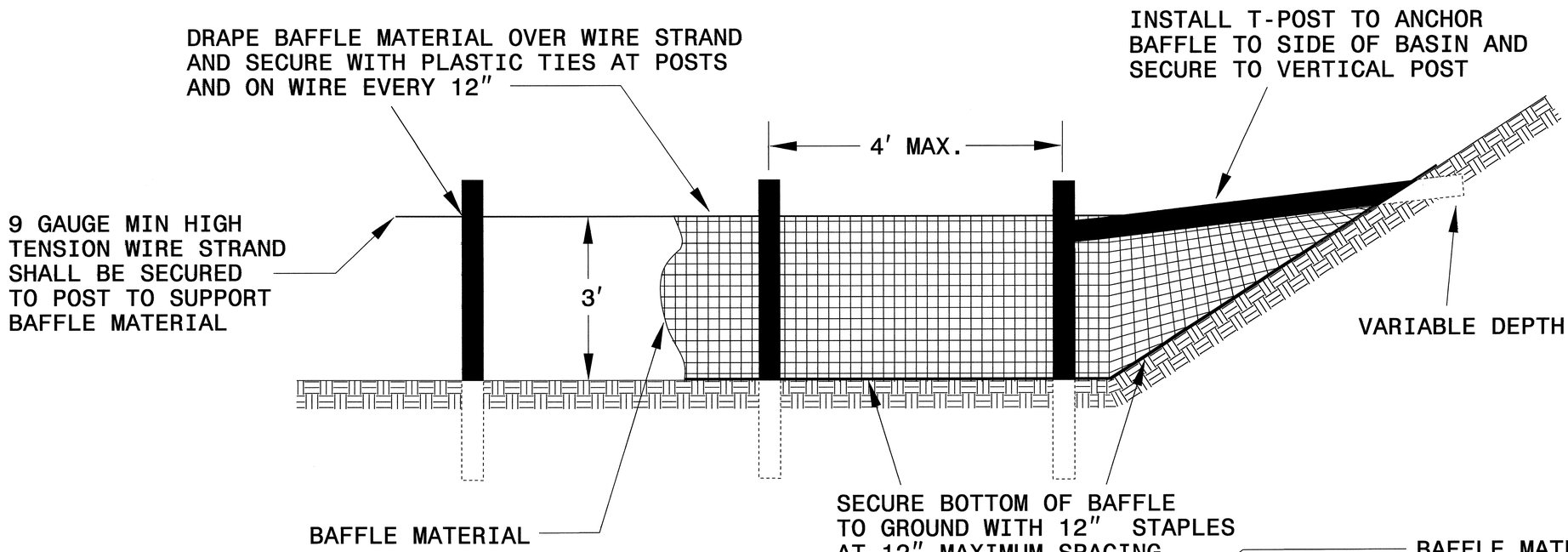
CROSS SECTION TRAPEZOIDAL DITCH

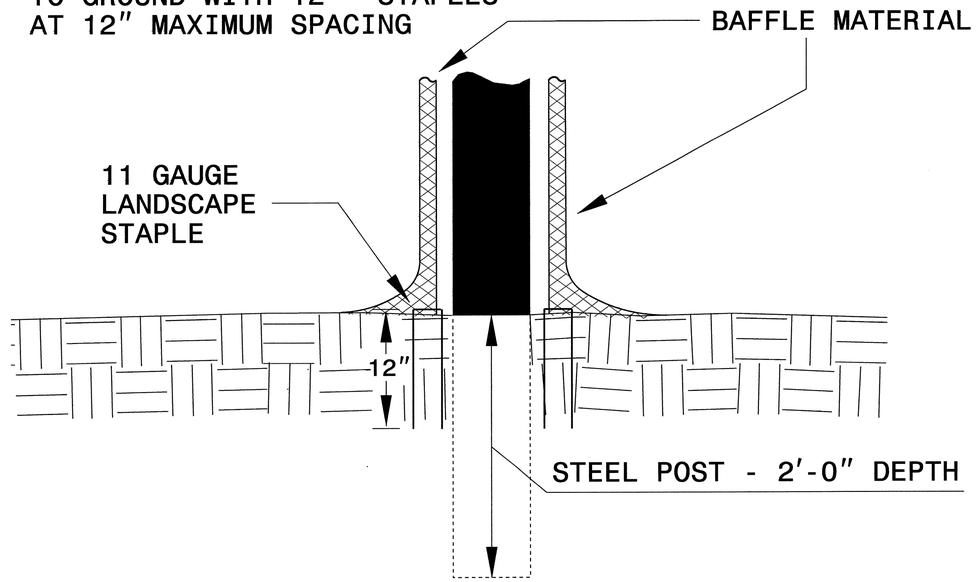


ELEVATION VIEW

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER BAFFLE DETAIL





BAFFLE MATERIAL SHALL BE SECURED TO THE BOTTOM AND SIDES OF BASIN USING 12″ LANDSCAPE STAPLES

NOTES:

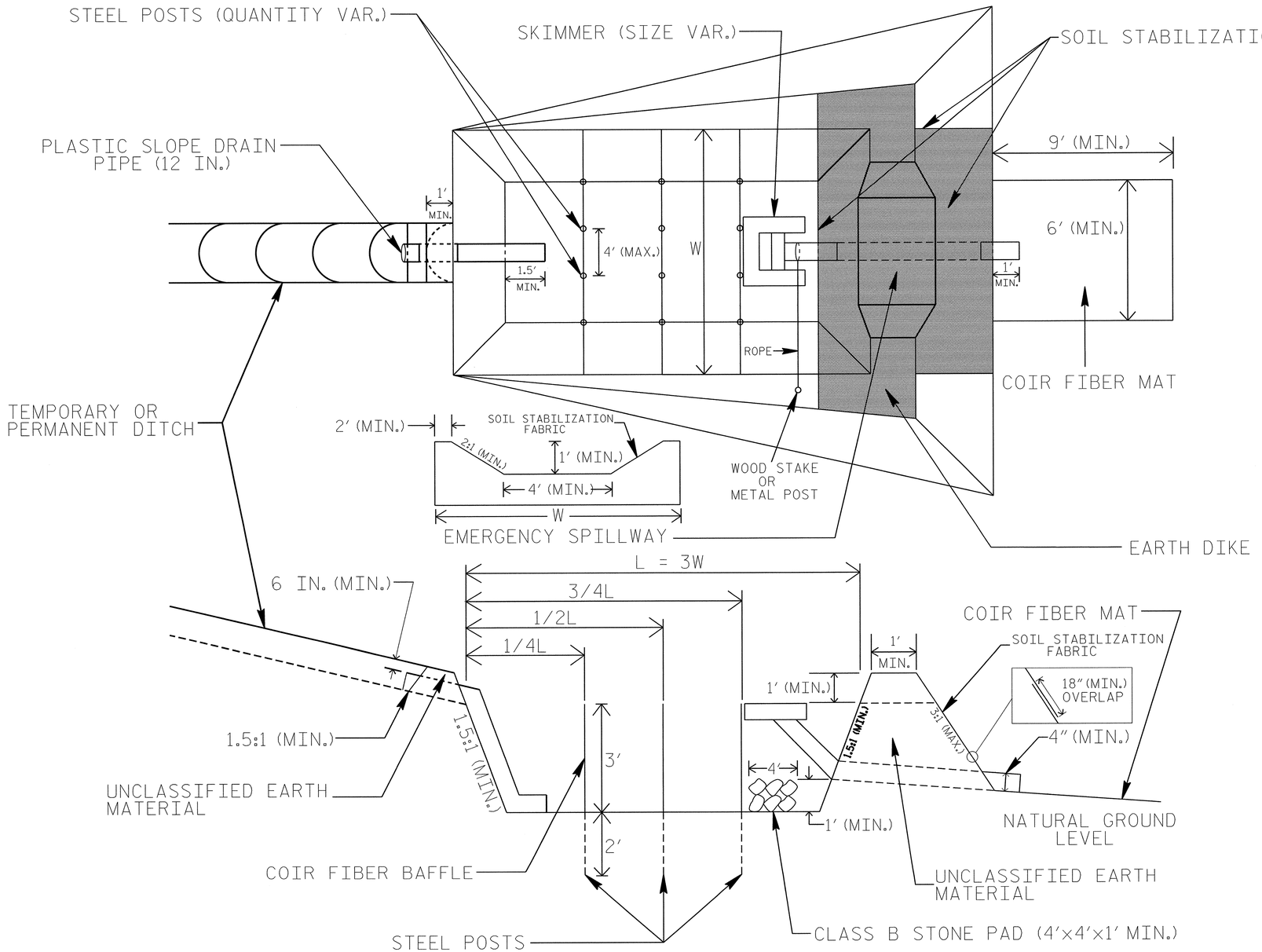
1. INSTALL THREE(3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF ¼ THE BASIN LENGTH.

2. TWO(2) COIR FIBER BAFFLES CAN BE INSTALLED IN SILT BASINS AND DAMS LESS THAN 20 FT. IN LENGTH WITH A SPACING OF 1/3 THE BASIN LENGTH.

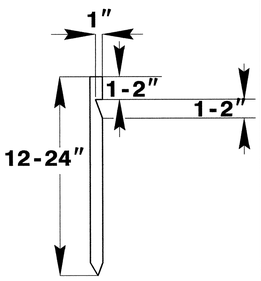
3. TOP HEIGHT OF COIR FIBER BAFFLES SHALL NOT BE BELOW BASE OF EMERGENCY SPILLWAY ELEVATION.

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

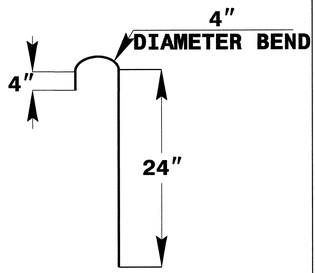
SKIMMER BASIN WITH BAFFLES DETAIL



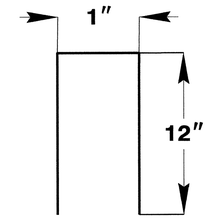
2" x 2" (nominal) WOODEN STAKE



#10 STEEL REINFORCEMENT BAR



1" (nominal) STAPLE



COIR FIBER MAT ANCHOR OPTIONS

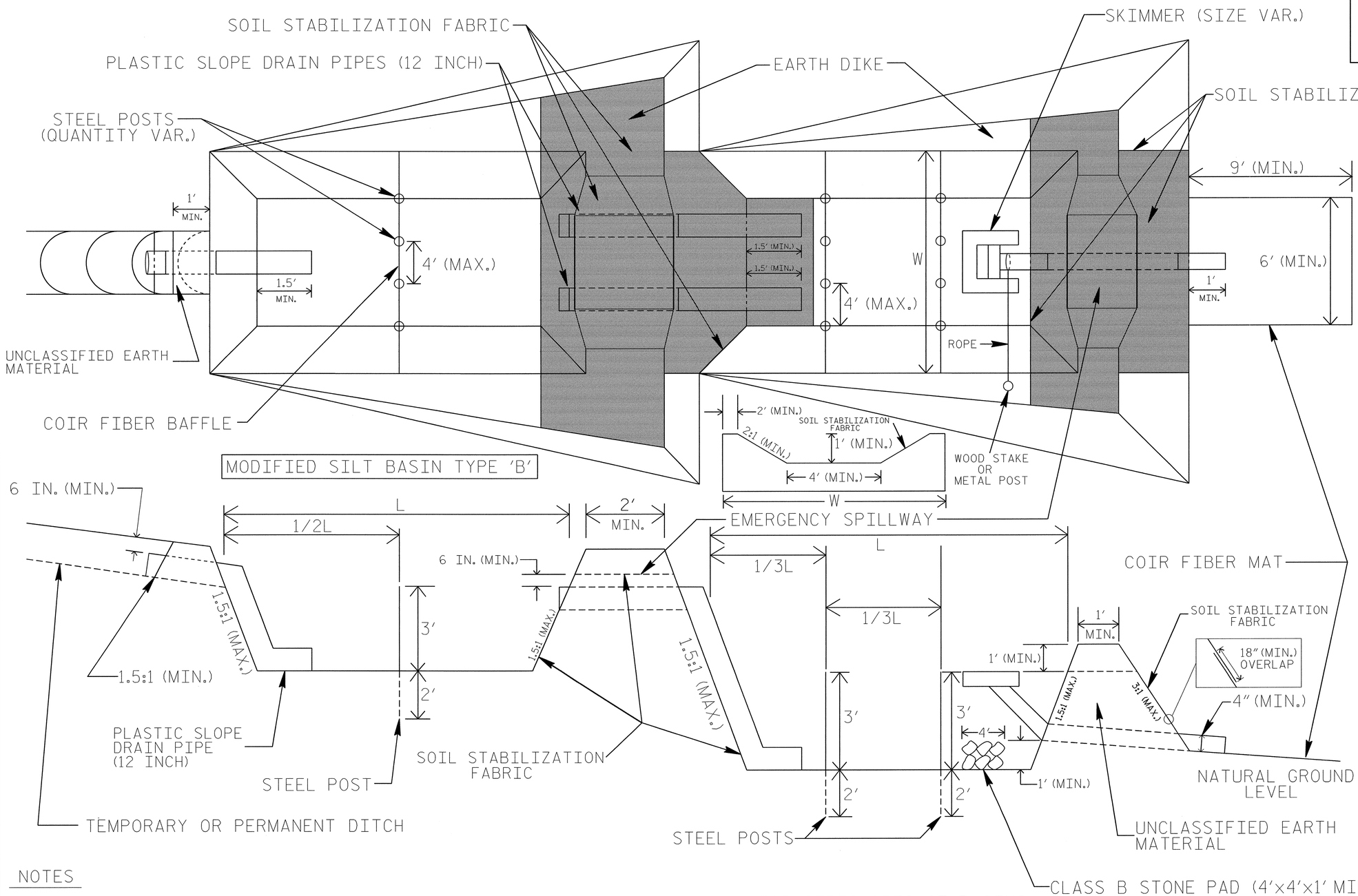
NOTES

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 EMERGENCY SPILLWAY 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 FILTER FABRIC AS DIRECTED.
6. SOIL STABILIZATION FABRIC FOR EMERGENCY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18" AS SHOWN.

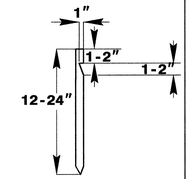
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-2C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

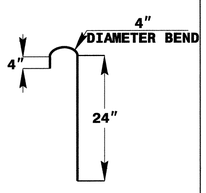
TIERED SKIMMER BASIN DETAIL



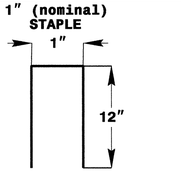
2" x 2" (nominal) WOODEN STAKE



#10 STEEL REINFORCEMENT BAR



1" (nominal) STAPLE



COIR FIBER MAT ANCHOR OPTIONS

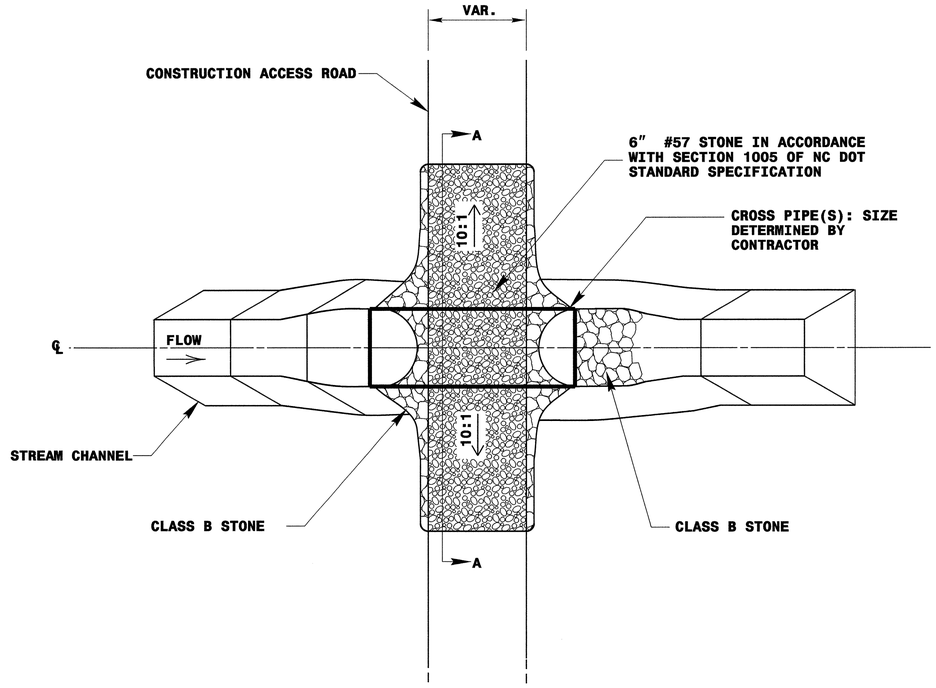
NOTES

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 EMERGENCY SPILLWAY LENGTHS (FT.) USING Q/0.8, WHERE Q IS FLOW RATE (CFS) INTO UPPER BASIN.
6. SOIL STABILIZATION FABRIC FOR EMERGENCY SPILLWAYS SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18" (MIN.) AS SHOWN.

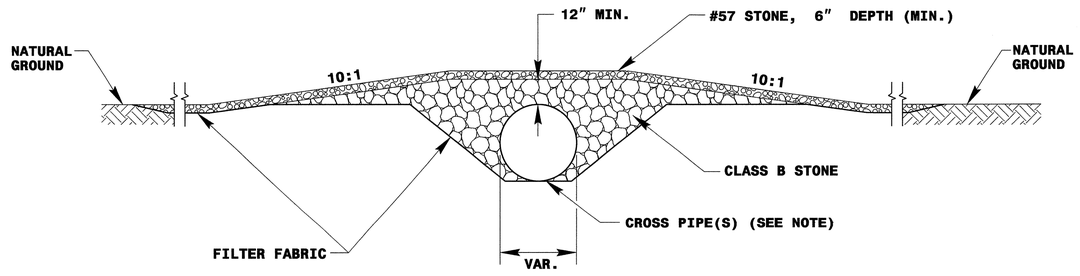
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-2D
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY STREAM CROSSING



PLAN VIEW



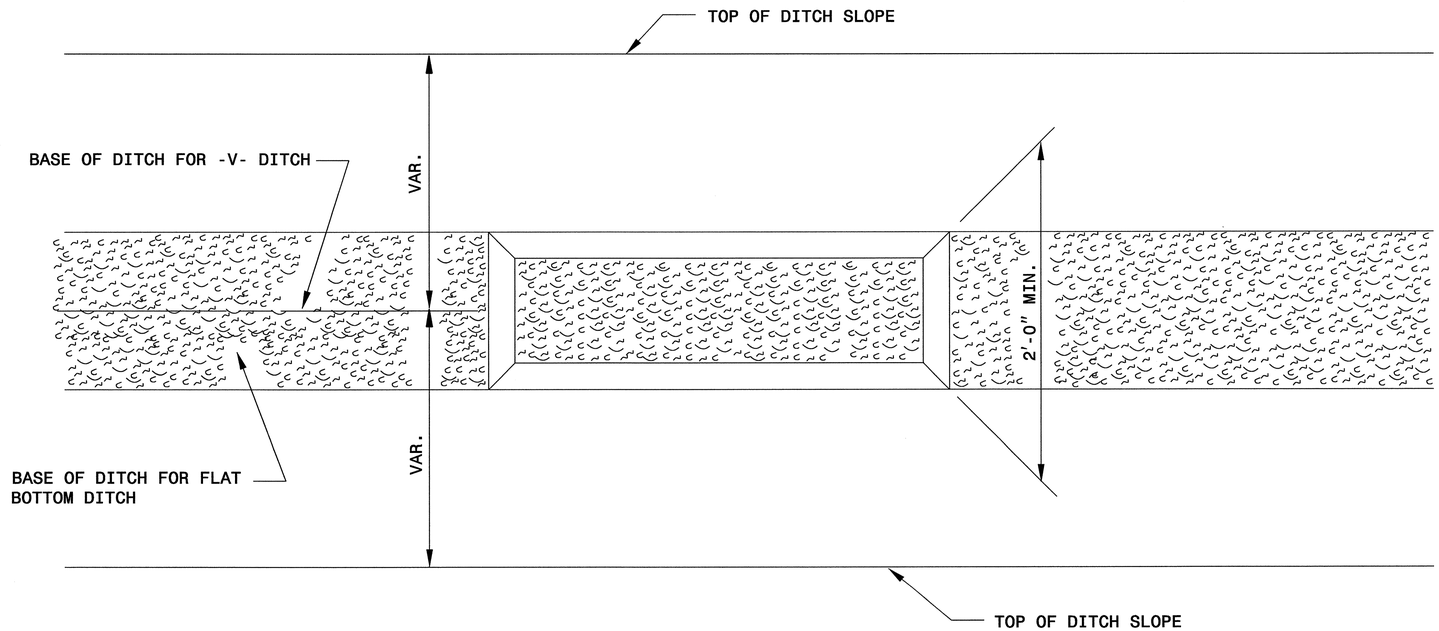
SECTION A-A

NOT TO SCALE

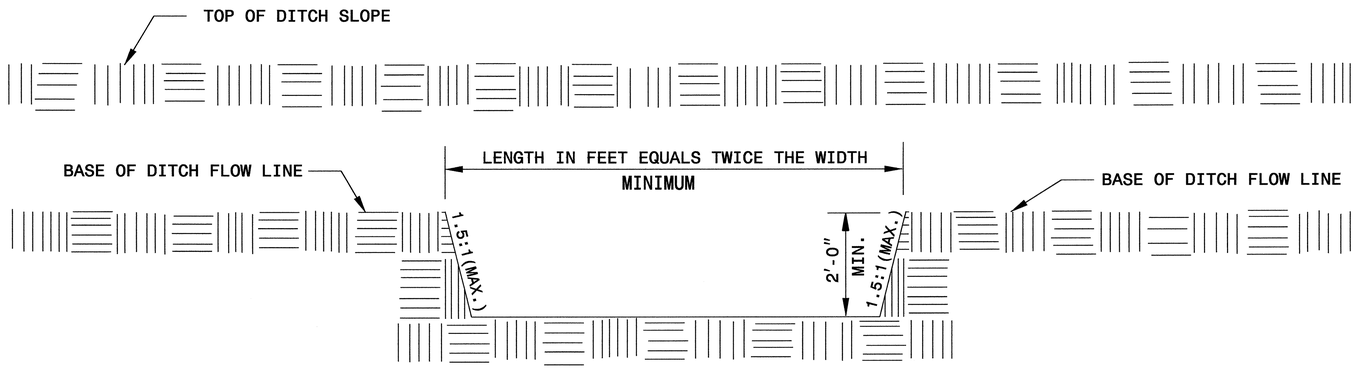
NOTE: PIPE(S) FOR TEMPORARY STREAM CROSSING SHALL BE DESIGNED TO PASS THE PEAK OR BANKFULL FLOW, WHICHEVER IS LESS, FROM A 2-YEAR PEAK STORM, WITHOUT OVER TOPPING.

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-2E
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SILT BASIN 'B' DETAIL



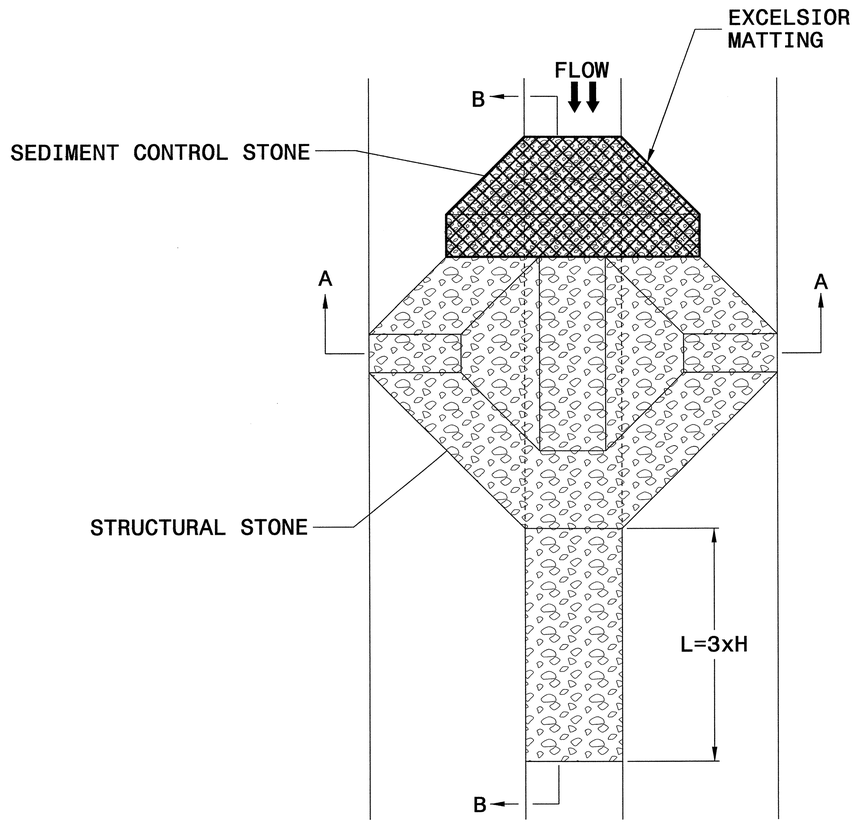
PLAN



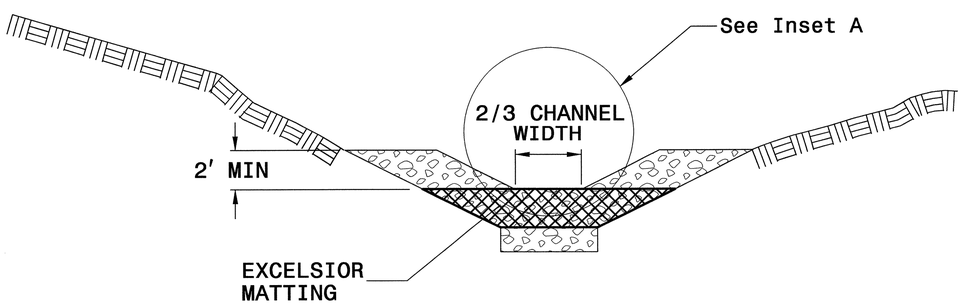
ELEVATION

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-2F
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN



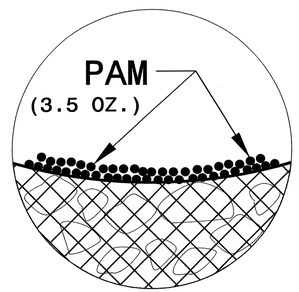
SECTION A-A

NOTES

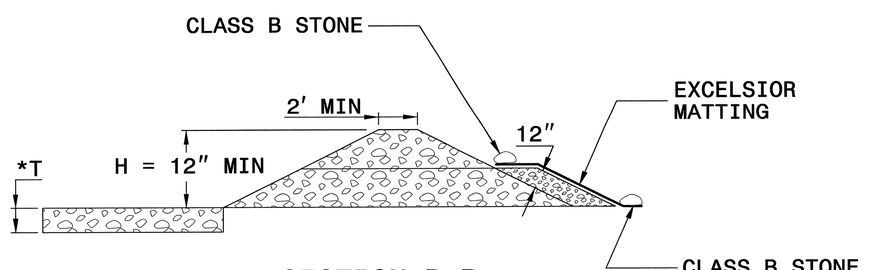
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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



INSET A



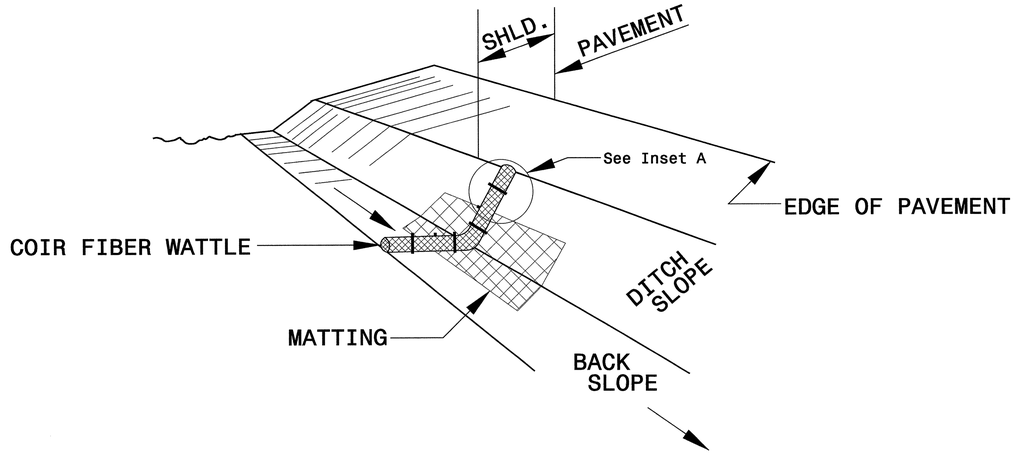
SECTION B-B

*T = 12" MIN., 18" MAX.

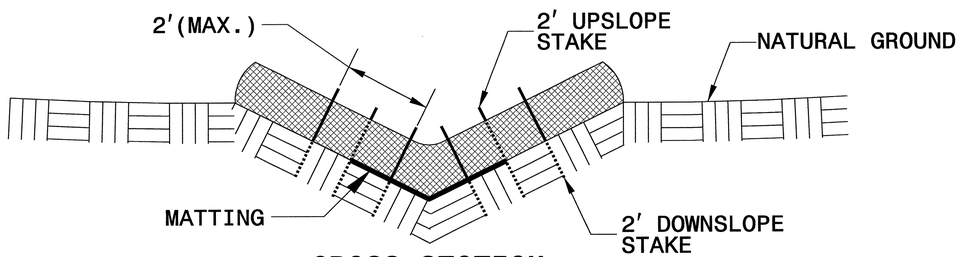
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-26
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

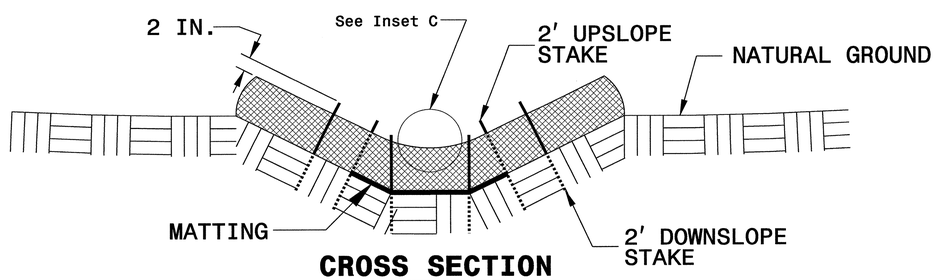
COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



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.

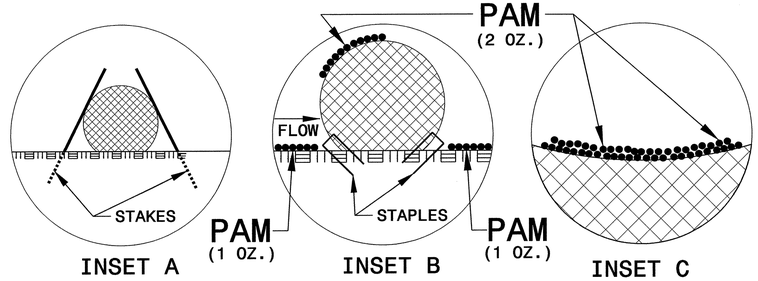
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

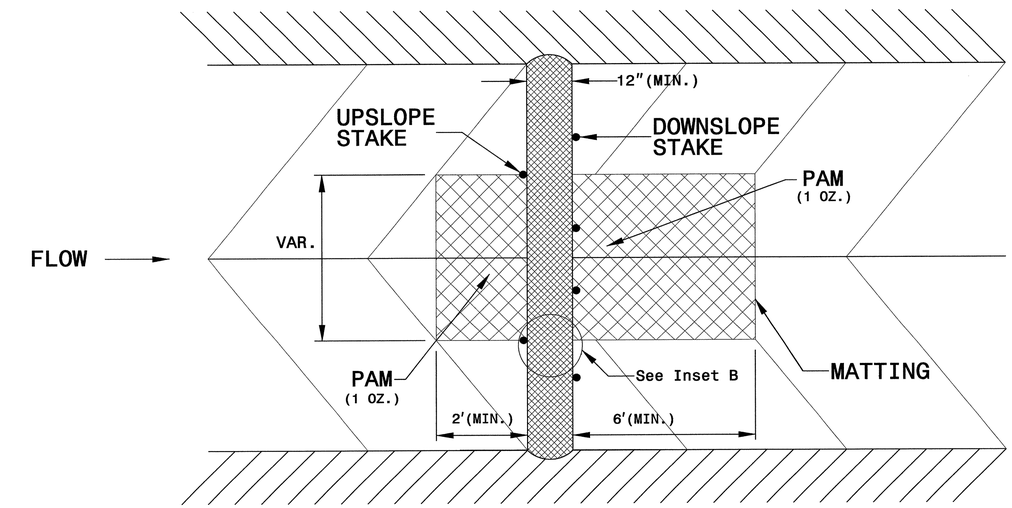
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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.

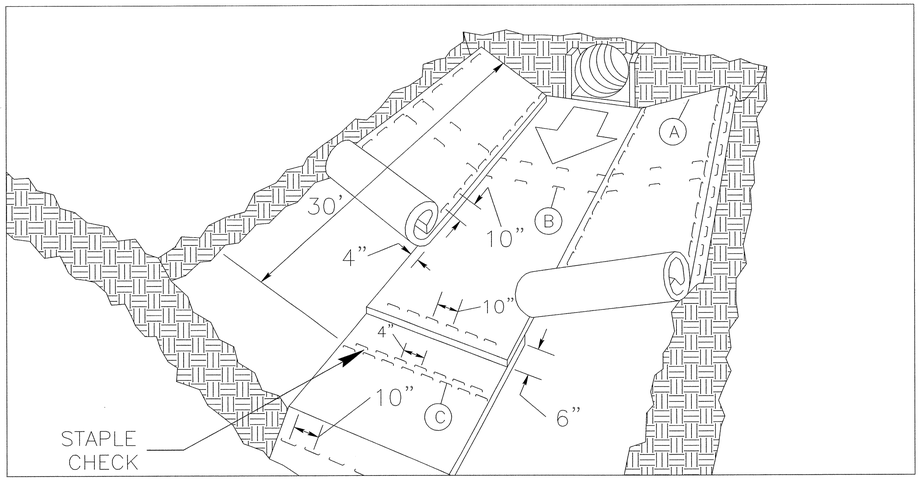




TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-2H
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

MATTING INSTALLATION DETAIL



MATTING IN DITCHES

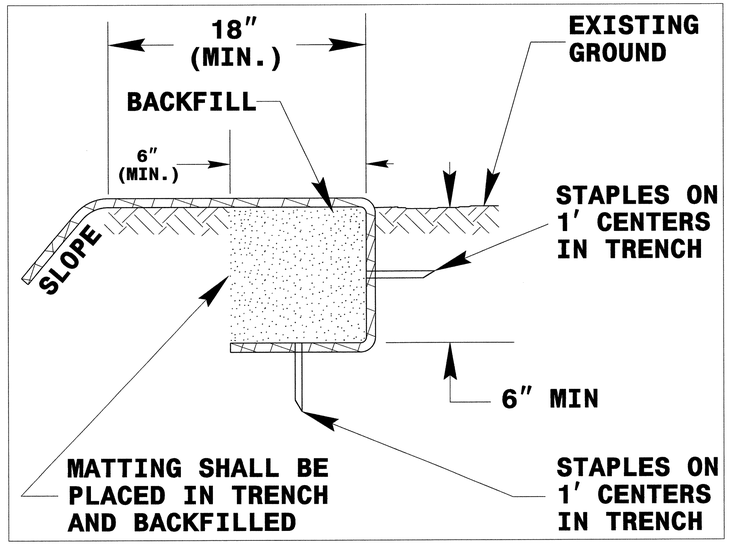
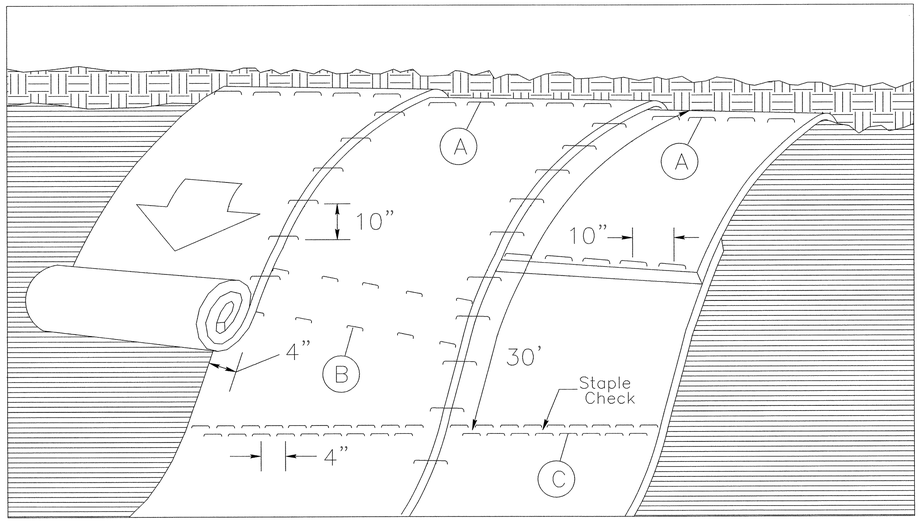


DIAGRAM (A)



MATTING ON SLOPES

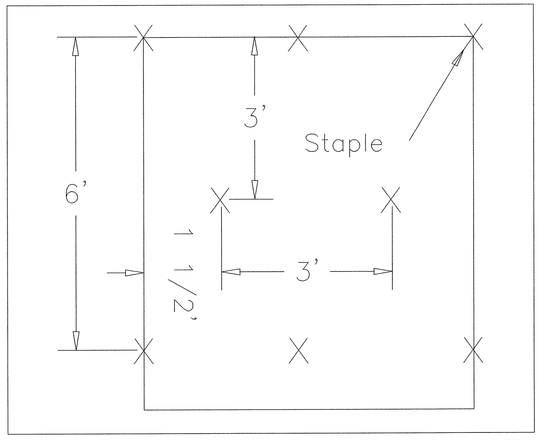


DIAGRAM (B)

Staple Check Pattern

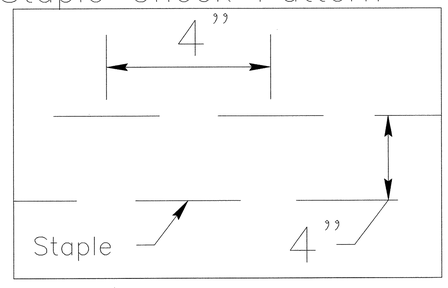


DIAGRAM (C)

NOTES:

THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.

STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	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-	11+00	16+50	RT	445
6	-L-	33+50	37+00	LT	635
6	-L-	42+00	44+00	LT	225
6	-L-	44+50	45+50	RT	70
6	-L-	52+50	54+50	LT	210
6	-RPB-	14+90	15+41	LT	95
6	-LPB-	13+00	16+00	LT	340
6	-Y-	26+00	30+00	LT	410
6	-Y-	28+00	30+00	RT	225
7	-L-	56+50	66+50	LT	1530
7	-L-	56+50	60+50	RT	410
8	-L-	68+00	70+00	LT BERM	100
8	-L-	73+00	76+00	LT	310
8	-L-	69+00	75+50	RT	525
9	-L-	79+50	86+50	RT	665
11	-L-	103+50	109+00	LT	545
11	-L-	105+50	134+50	RT	5145
11	-L-	105+00	134+50	MEDIAN	5235
13	-L-	140+50	191+00	MEDIAN	8960
13	-L-	141+00	145+00	LT	290
16	-L-	169+50	175+50	LT BREM	300
16	-L-	178+50	184+00	RT	560
17	-L-	185+50	187+00	LT	205
17	-L-	191+00	195+00	LT	410
17	-L-	185+00	191+00	RT	615
18	-L-	202+50	207+50	LT	370

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
20	-L-	21+00	22+50	RT	205
24	-Y-	20+00	21+50	LT	205
25	-Y-	42+00	51+00	MEDIAN	1205
25	-Y-	44+50	50+00	RT	560
				SUBTOTAL	31005
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					73355
				TOTAL	104360
				SAY	104500

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

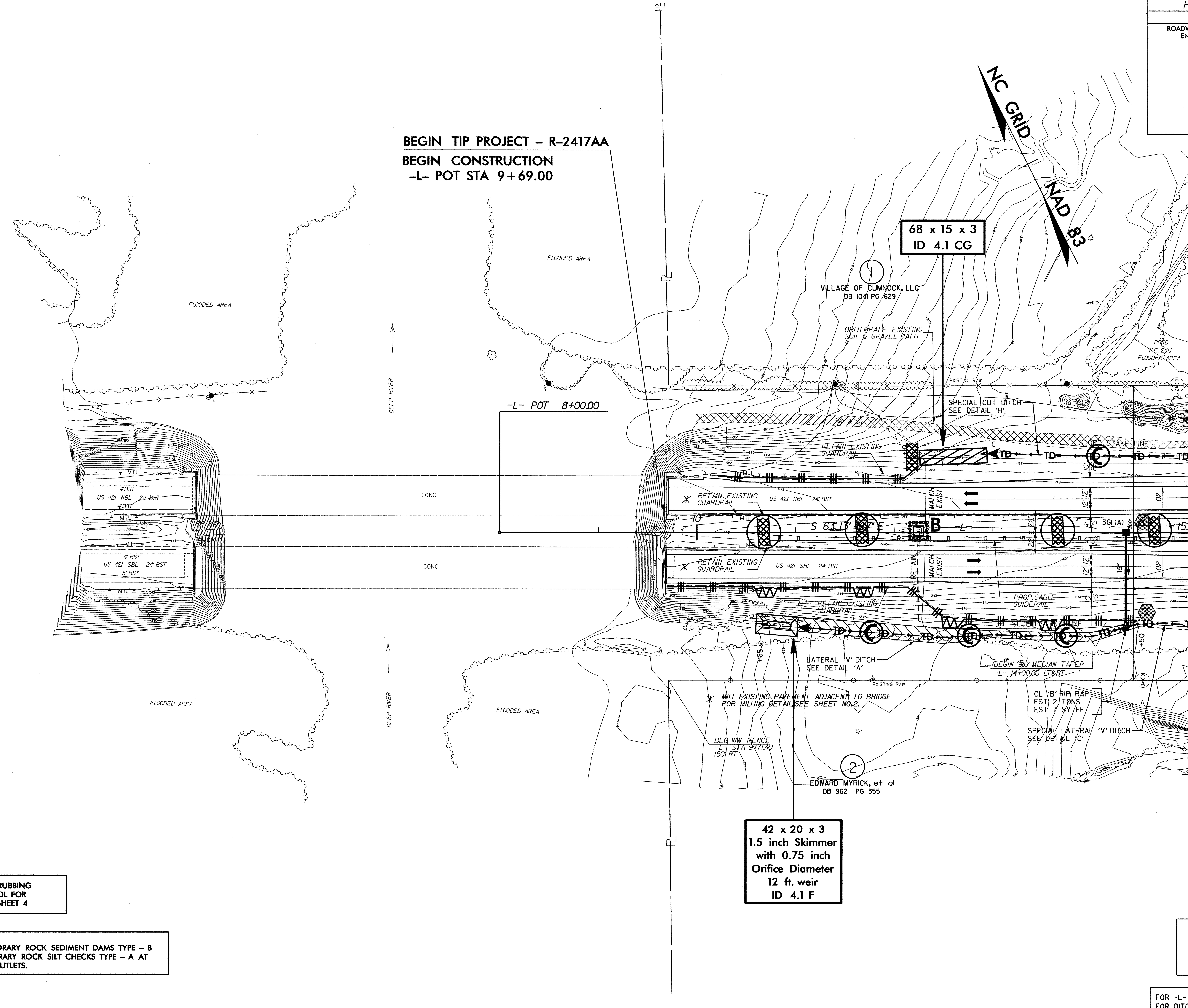
PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
6	-LPC-	13+28	17+69	RT	590
6	-RPB-	23+00	23+50	RT	70
6	-RPC-	20+00	21+00	LT	115
6	-RPC-	25+00	26+00	RT	135
6	-RPC-	25+00	28+50	LT	470
6	-RPC-	28+00	30+00	RT	270
8	-L-	66+50	68+00	LT BERM	75
8	-L-	70+00	72+50	LT BERM	125
9	-L-	86+50	87+00	RT	50
15	-L-	166+00	169+50	LT BERM	175
16	-L-	175+50	177+00	LT	140
18	-L-	195+00	195+50	LT	55
22	-YIRPB-	21+00	22+50	RT	105
				SUBTOTAL	2375
	ADDITIONAL PSRM TO BE INSTALLED				985
				TOTAL	3360
				SAY	3400

PERMANENT SOIL REINFORCEMENT MAT

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

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-4/CONST.4
R/W SHEET NO.	4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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.

LEGEND

- PAVED SHOULDER
- PAVEMENT REMOVAL

FOR -L- PROFILE, SEE SHEET NO. 26
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

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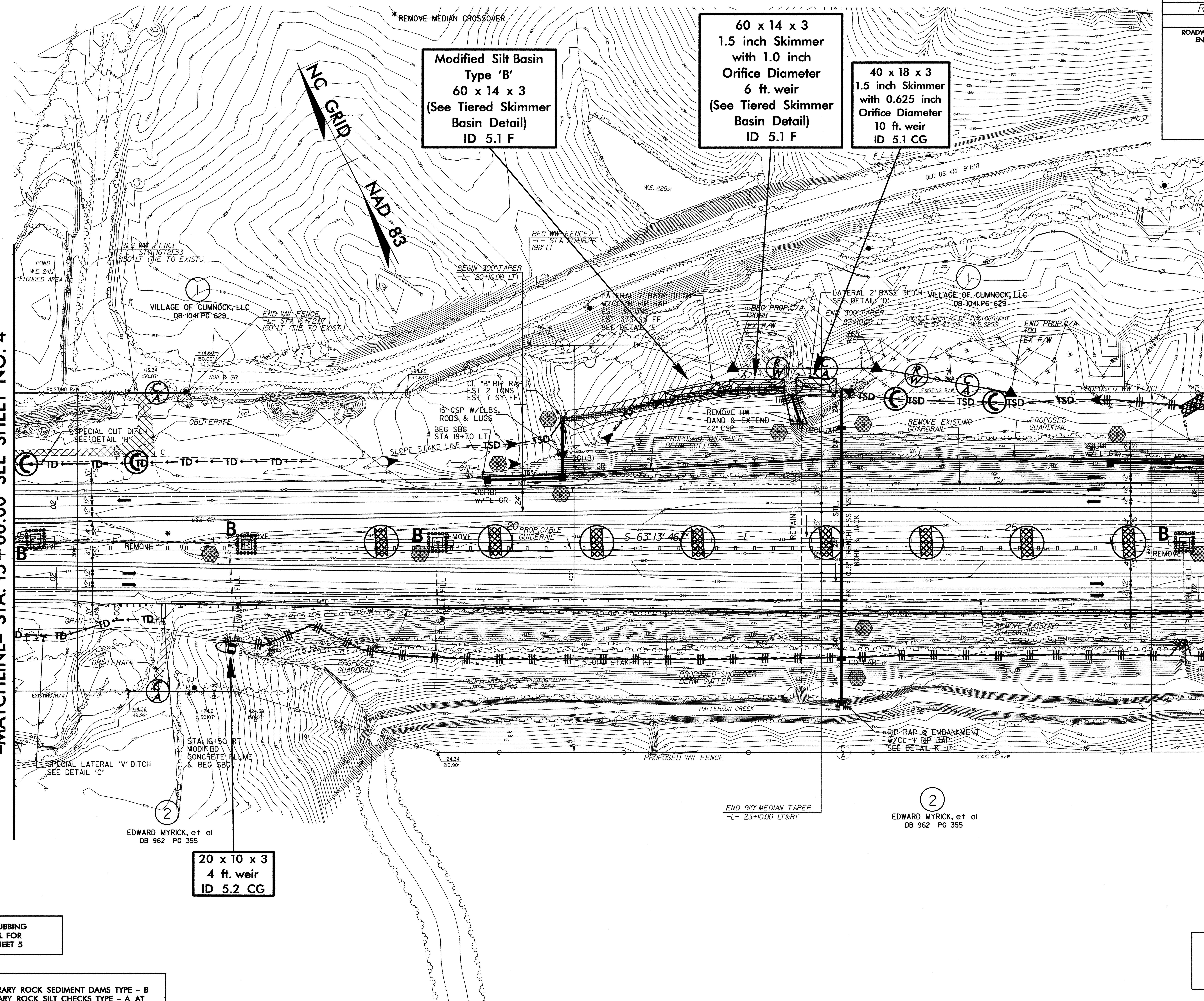
PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-5/CONST.5
R/W SHEET NO.	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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.

LEGEND
- PAVED SHOULDER
- PAVEMENT REMOVAL

FOR -L- PROFILE, SEE SHEET NO. 26
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

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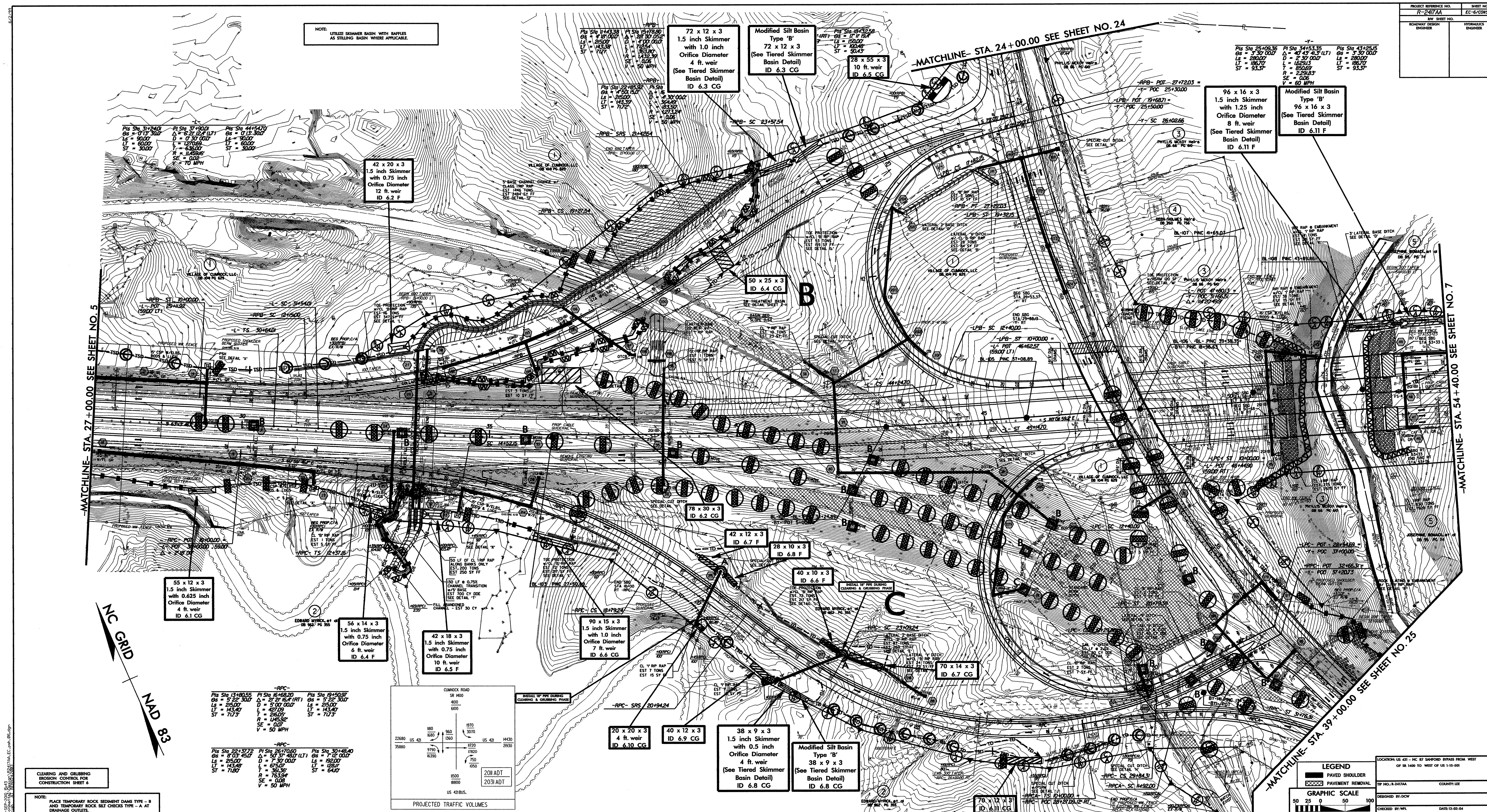
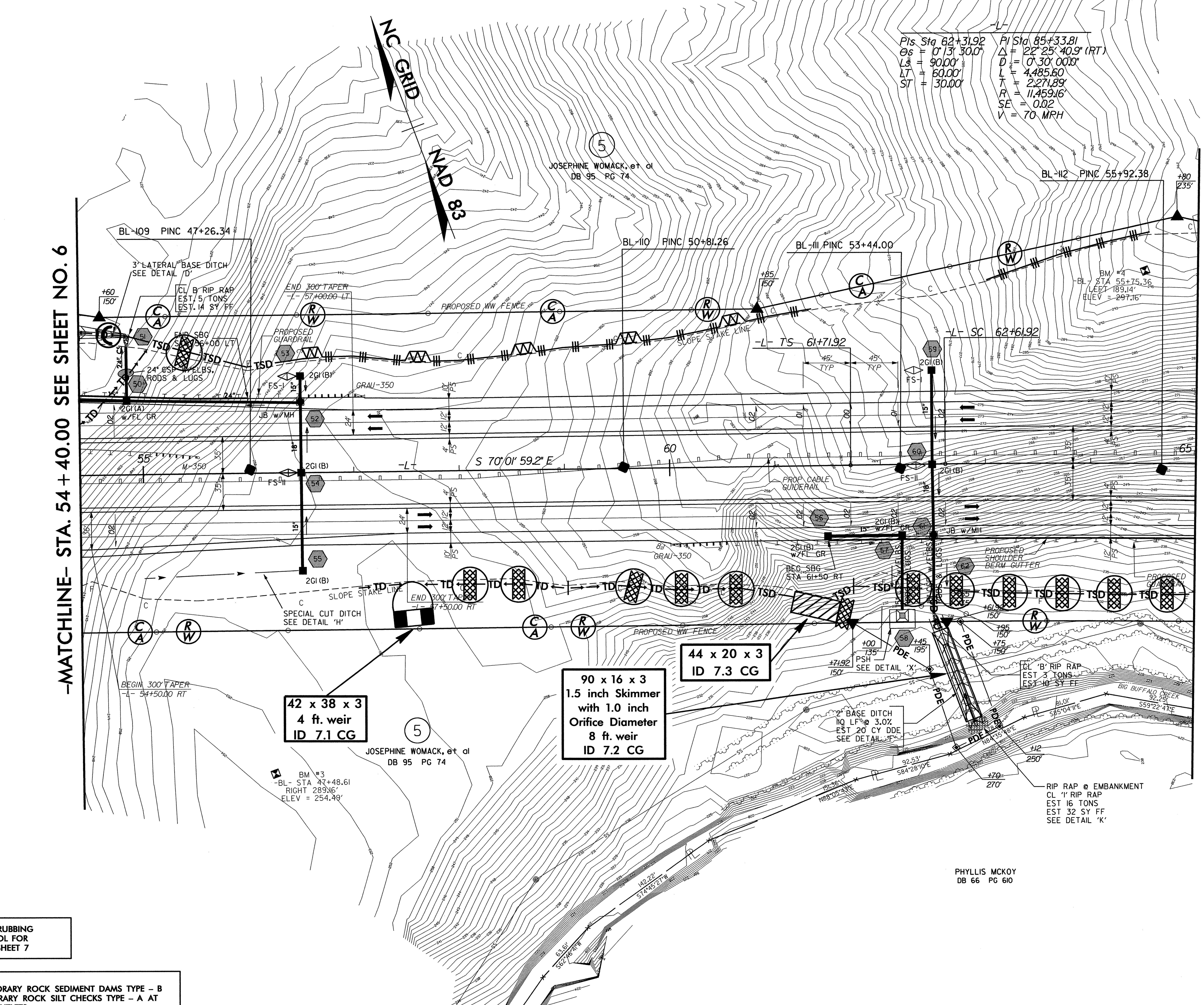

PROJECT REFERENCE NO.
R-2417AA
SHEET NO.
EC-6/CONST.6
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NOTE: UTILIZE SKIMMER BASIN WITH BAFFLES AS STILLING BASIN WHERE APPLICABLE.
-MATCHLINE- STA. 24+00.00 SEE SHEET NO. 24
-MATCHLINE- STA. 27+00.00 SEE SHEET NO. 5
-MATCHLINE- STA. 54+40.00 SEE SHEET NO. 7
-MATCHLINE- STA. 39+00.00 SEE SHEET NO. 25
72 x 12 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
4 ft. weir
(See Tiered Skimmer Basin Detail)
ID 6.3 CG
Modified Silt Basin
Type 'B'
72 x 12 x 3
(See Tiered Skimmer Basin Detail)
ID 6.3 CG
28 x 55 x 3
10 ft. weir
ID 6.5 CG
96 x 16 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
8 ft. weir
(See Tiered Skimmer Basin Detail)
ID 6.11 F
Modified Silt Basin
Type 'B'
96 x 16 x 3
(See Tiered Skimmer Basin Detail)
ID 6.11 F
42 x 20 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
12 ft. weir
ID 6.2 F
50 x 25 x 3
ID 6.4 CG
B
78 x 30 x 3
ID 6.2 CG
42 x 12 x 3
ID 6.7 F
28 x 10 x 3
ID 6.8 F
40 x 10 x 3
ID 6.6 F
C
55 x 12 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
4 ft. weir
ID 6.1 CG
56 x 14 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
6 ft. weir
ID 6.4 F
42 x 18 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
10 ft. weir
ID 6.5 F
90 x 15 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
7 ft. weir
ID 6.6 CG
70 x 14 x 3
ID 6.7 CG
20 x 20 x 3
4 ft. weir
ID 6.10 CG
40 x 12 x 3
ID 6.9 CG
38 x 9 x 3
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
4 ft. weir
(See Tiered Skimmer Basin Detail)
ID 6.8 CG
Modified Silt Basin
Type 'B'
38 x 9 x 3
(See Tiered Skimmer Basin Detail)
ID 6.8 CG
70 x 12 x 3
ID 6.11 CG
INSTALL 18" PIPE DURING CLEARING & GRUBBING PHASE
NC GRID
NAD 83
CUMNOCK ROAD
SR 1400
US 421
US 421BUS.
2011 ADT
2031 ADT
PROJECTED TRAFFIC VOLUMES
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.
LEGEND
PAVED SHOULDER
PAVEMENT REMOVAL
GRAPHIC SCALE
50 25 0 50 100
PLANS
LOCATION: US 421 - NC 87 SANFORD BYPASS FROM WEST OF SR 1400 TO WEST OF US 1-15-501
TIP NO.: R-2417AA
COUNTY: LEE
DESIGNED BY: DCW
CHECKED BY: WFL
DATE: 12-02-04

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-7/CONST.7
RW SHEET NO.	7
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.

LEGEND

PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NOS. 27 & 28
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

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PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-8/CONST.8
R/W SHEET NO.	8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NC GRID
NAD 83

-L-
PI Sta 85+33.81
Δ = 22° 25' 40.9" (RT)
D = 0° 30' 00.0"
L = 4,485.60
T = 2,271.89'
R = 11,459.16'
SE = 0.02
V = 70 MPH

-MATCHLINE- STA. 65+00.00 SEE SHEET NO. 7

-MATCHLINE- STA. 77+00.00 SEE SHEET NO. 9

5 JOSEPHINE WOMACK, et al DB 95 PG 74

6 JULIA GOLDSTON Heirs DB 20 PG 282

RIP RAP BERM DITCH W/ SPECIAL EARTH BERM EST 10 TONS EST 29 SY FF SEE DETAIL 'W'

BERM DITCH W/ CL B RIP RAP EST 126 TONS EST 376 SY FF SEE DETAIL 'P'

RIP RAP BERM DITCH W/ SPECIAL EARTH BERM EST 48 TONS EST 144 SY FF SEE DETAIL 'W'

BERM DITCH W/ CL B RIP RAP EST 97 TONS EST 289 SY FF SEE DETAIL 'P'

RIP RAP BERM DITCH W/ SPECIAL EARTH BERM EST 29 TONS EST 87 SY FF SEE DETAIL 'W'

PROPOSED WW FENCE

SLOPE STAKE LINE

BDO

30" CSP W/ELBS, RODS & LUGS

2CI (A)

2CI(B)

FS-III

FS-II

JB W/MH

BURY INVERT 0.6'

END SBG STA 69+00 RT

PROPOSED GUARDRAIL

PROP CABLE GUIDERAIL

GRAU-350

SPECIAL CUT DITCH SEE DETAIL 'H'

25 LF OF CL 'I' RIP RAP ON BANKS ONLY EST. 15 TONS EST. 30 SY FF SEE DETAIL 'N'

PHYLLIS MCKOY DB 66 PG 610

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 8

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

LEGEND
PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NO. 28
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

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jennifergarrett
ENV2.2.0003

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-9/CONST.9
R/W SHEET NO.	9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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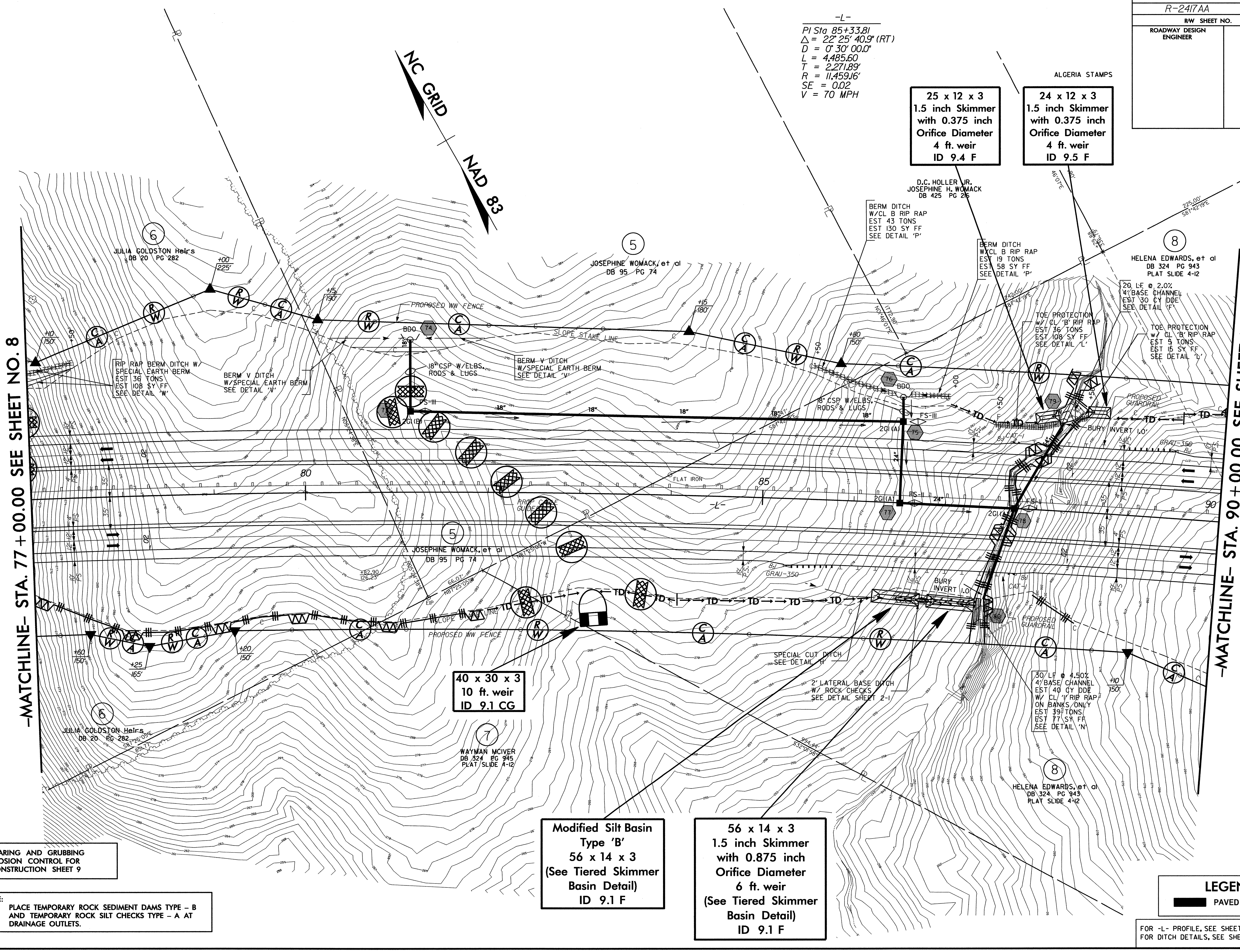

-L-
PI Sta 85+33.81
Δ = 22° 25' 40.9" (RT)
D = 0° 30' 00.0"
L = 4,485.60
T = 2,271.89'
R = 11,459.16'
SE = 0.02
V = 70 MPH
NC GRID NAD 83
ALGERIA STAMPS
25 x 12 x 3
1.5 inch Skimmer
with 0.375 inch
Orifice Diameter
4 ft. weir
ID 9.4 F
24 x 12 x 3
1.5 inch Skimmer
with 0.375 inch
Orifice Diameter
4 ft. weir
ID 9.5 F
D.C. HOLLER JR.
JOSEPHINE H. WOMACK
DB 425 PG 26
BERM DITCH W/CL B RIP RAP EST 43 TONS EST 130 SY FF SEE DETAIL 'P'
BERM DITCH W/CL B RIP RAP EST 19 TONS EST 58 SY FF SEE DETAIL 'P'
HELENA EDWARDS, et al DB 324 PG 943 PLAT SLIDE 4-12
20 LF @ 2.0% 4' BASE CHANNEL EST 30 CY DDE SEE DETAIL 'F'
TOE PROTECTION w/ CL 'B' RIP RAP EST 36 TONS EST 108 SY FF SEE DETAIL 'L'
TOE PROTECTION w/ CL 'B' RIP RAP EST 5 TONS EST 15 SY FF SEE DETAIL 'L'
JULIA GOLDSTON Heirs DB 20 PG 282
JOSEPHINE WOMACK, et al DB 95 PG 74
PROPOSED WW FENCE
SLOPE STAKE LINE
RIP RAP BERM DITCH W/ SPECIAL EARTH BERM EST 36 TONS EST 108 SY FF SEE DETAIL 'W'
BERM V DITCH W/SPECIAL EARTH BERM SEE DETAIL 'V'
BERM V DITCH W/SPECIAL EARTH BERM SEE DETAIL 'V'
18" CSP W/ELBS, RODS & LUGS
18" CSP W/ELBS, RODS & LUGS
PROPOSED GUARDRAIL
BURY INVERT 1.0'
-MATCHLINE- STA. 77+00.00 SEE SHEET NO. 8
-MATCHLINE- STA. 90+00.00 SEE SHEET NO. 10
FLAT IRON
-L-
80
85
90
40 x 30 x 3
10 ft. weir
ID 9.1 CG
SPECIAL CUT DITCH SEE DETAIL 'H'
2' LATERAL BASE DITCH W/ ROCK CHECKS SEE DETAIL SHEET 2-I
30 LF @ 4.50% 4' BASE CHANNEL EST 40 CY DDE W/ CL 'I' RIP RAP ON BANKS ONLY EST 39 TONS EST 77 SY FF SEE DETAIL 'N'
WAYMAN MCIVER DB 324 PG 945 PLAT SLIDE 4-12
PROPOSED GUARDRAIL
Modified Silt Basin
Type 'B'
56 x 14 x 3
(See Tiered Skimmer
Basin Detail)
ID 9.1 F
56 x 14 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
6 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 9.1 F

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.

LEGEND

PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NOS. 28 & 29
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

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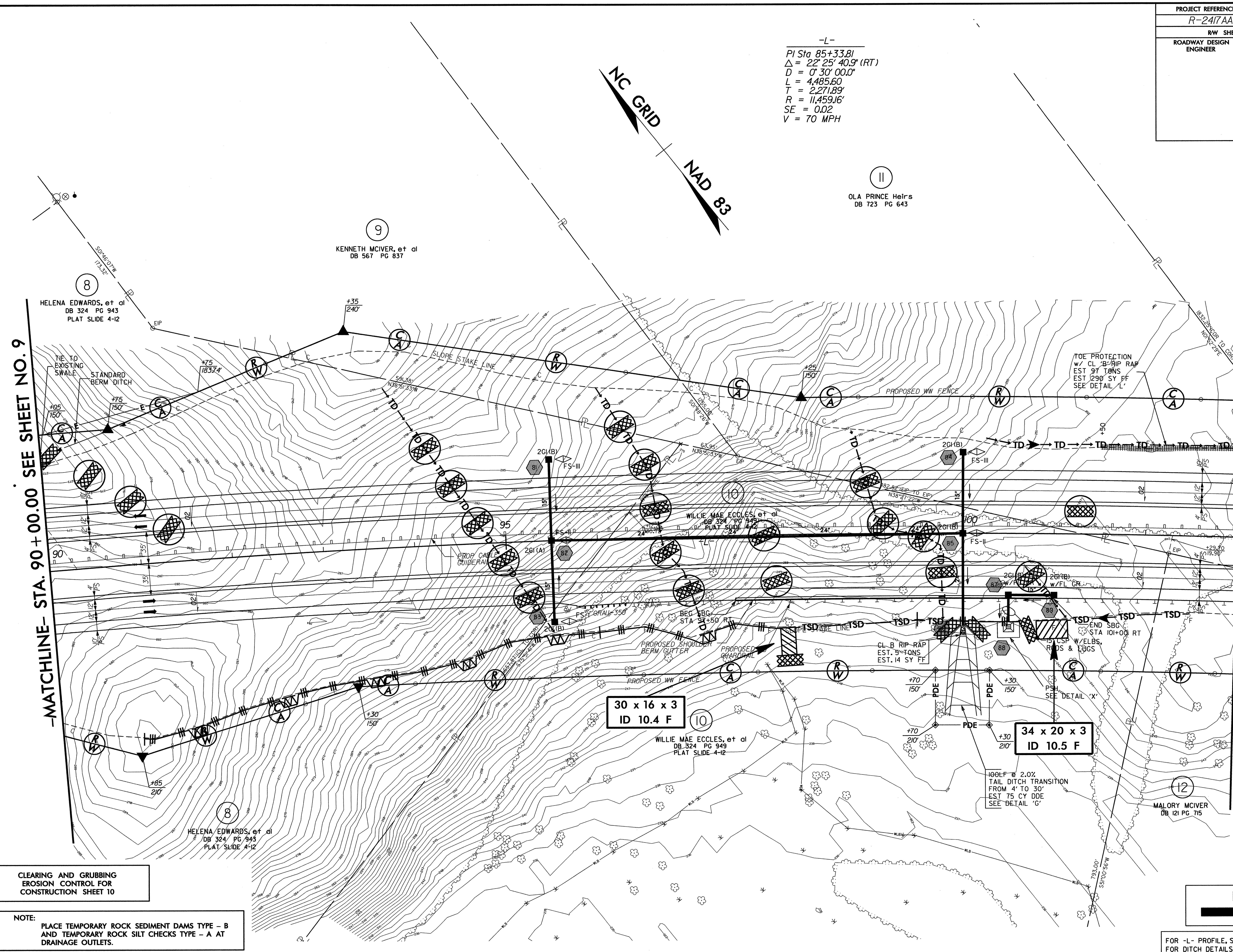
jenniferparish AT RENV2423003

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-10/CONST.10
R/W SHEET NO.	10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 10

NOTE:

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

LEGEND

PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NO. 29
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

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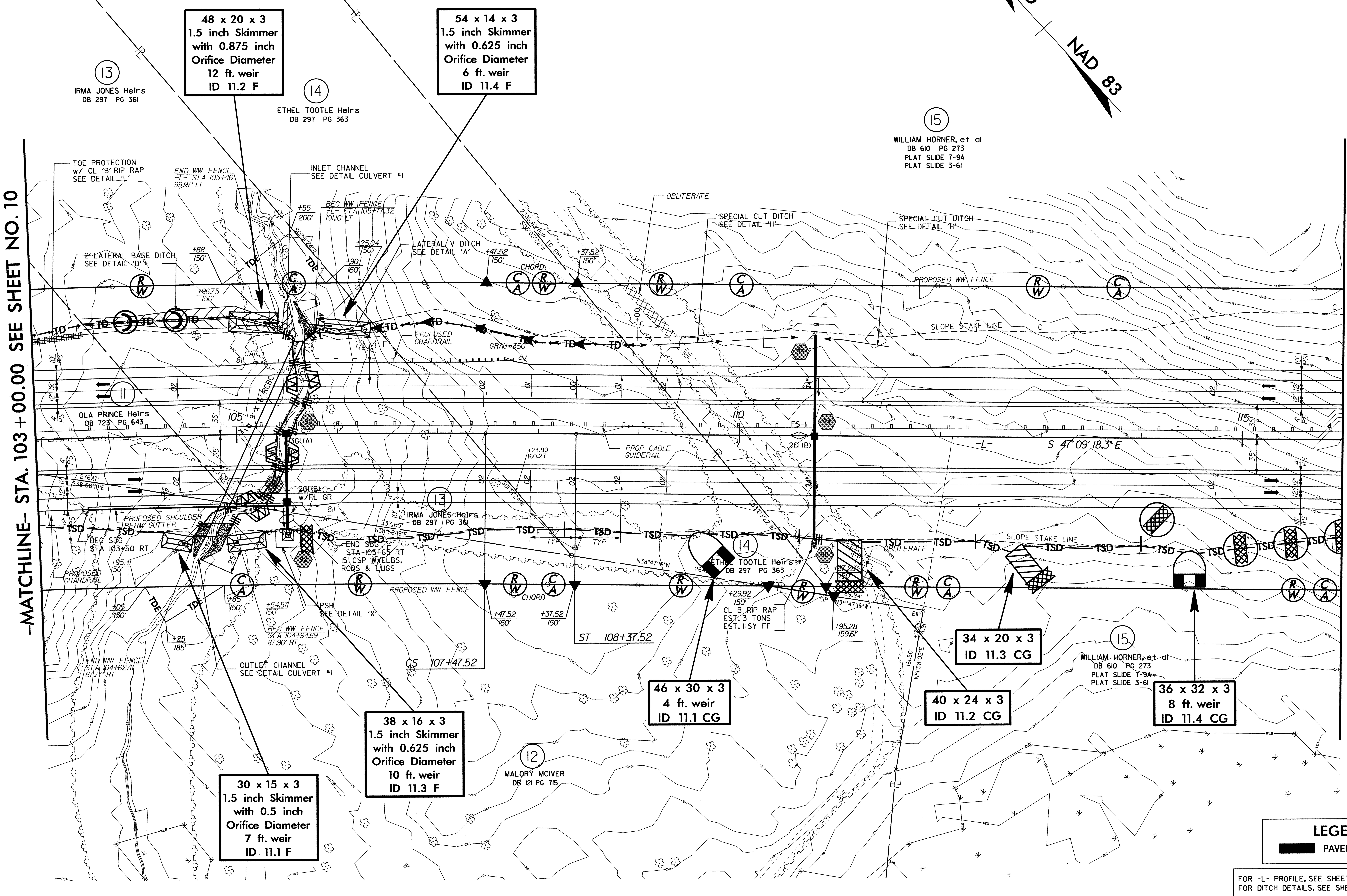
PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-11/CONST.11
RW SHEET NO.	11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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 85+33.81	PIs Sta 107+77.52
△ = 22° 25' 40.9" (RT)	Θs = 0° 13' 30.0"
D = 0° 30' 00.0"	Ls = 90.00'
L = 4,485.60	LT = 60.00'
T = 2,271.89'	ST = 30.00'
R = 11,459.16'	
SE = 0.02	
V = 70 MPH	



NC GRID
NAD 83
-MATCHLINE- STA. 103+00.00 SEE SHEET NO. 10
-MATCHLINE- STA. 116+00.00 SEE SHEET NO. 12
48 x 20 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
12 ft. weir
ID 11.2 F
54 x 14 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
6 ft. weir
ID 11.4 F
38 x 16 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
10 ft. weir
ID 11.3 F
30 x 15 x 3
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
7 ft. weir
ID 11.1 F
46 x 30 x 3
4 ft. weir
ID 11.1 CG
40 x 24 x 3
ID 11.2 CG
34 x 20 x 3
ID 11.3 CG
36 x 32 x 3
8 ft. weir
ID 11.4 CG
IRMA JONES Heirs
DB 297 PG 361
ETHEL TOOTLE Heirs
DB 297 PG 363
WILLIAM HORNER, et al
DB 610 PG 273
PLAT SLIDE 7-9A
PLAT SLIDE 3-61
OLA PRINCE Heirs
DB 723 PG 643
MALORY MCIVER
DB 121 PG 715
TOE PROTECTION
w/ CL 'B' RIP RAP
SEE DETAIL 'L'
INLET CHANNEL
SEE DETAIL CULVERT #1
OUTLET CHANNEL
SEE DETAIL CULVERT #1
2' LATERAL BASE DITCH
SEE DETAIL 'D'
LATERAL V DITCH
SEE DETAIL 'A'
SPECIAL CUT DITCH
SEE DETAIL 'H'
OBLITERATE
PROPOSED WW FENCE
SLOPE STAKE LINE
PROP CABLE GUIDERAIL
PROPOSED GUARDRAIL
PROPOSED SHOULDER BERM GUTTER
PSH
SEE DETAIL 'X'
CL B RIP RAP
EST. 3 TONS
EST. 11 SY FF
-L-
S 47° 09' 18.3" E
CS 107+47.52
ST 108+37.52

LEGEND

PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NOS. 29 & 30
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

8/17/99

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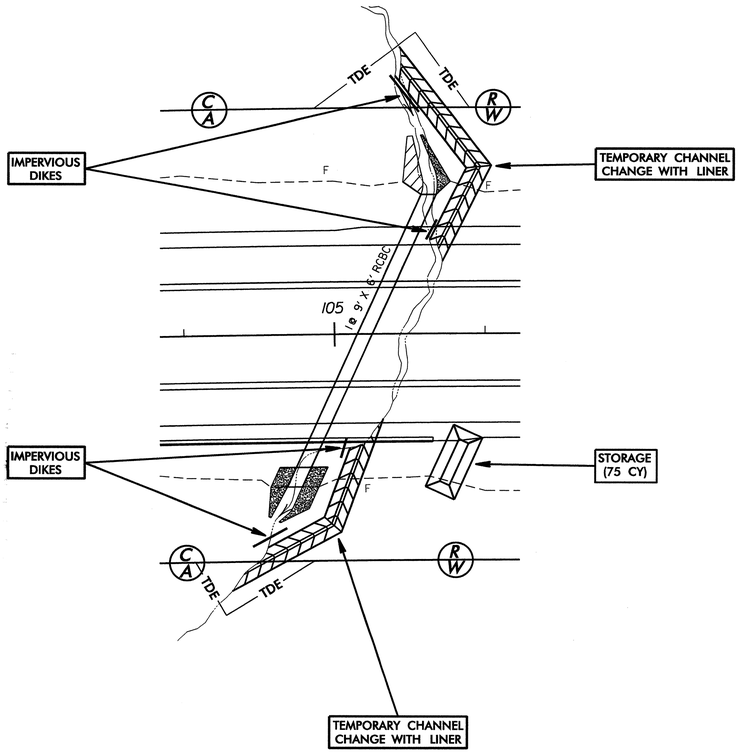
CULVERT CONSTRUCTION SEQUENCE STA. 105 + 20 –L–

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-12/CONST J1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

1. CONSTRUCT STILLING BASIN (75 CY).
2. CONSTRUCT IMPERVIOUS DIKES AND TEMPORARY CHANNEL CHANGES WITH LINER (2 FT. BASE, 3 FT. DEEP, 2:1 SIDE SLOPES), DIVERTING FLOW.
3. CONSTRUCT PROPOSED CULVERT AND INLET/OUTLET CHANNEL IMPROVEMENTS.
4. REMOVE IMPERVIOUS DIKES AND TEMPORARY CHANNEL CHANGES, ALLOWING FLOW THROUGH PROPOSED CULVERT.
5. REMOVE STILLING BASIN.
6. COMPLETE ROADWAY.

NC GRID / NAD 83

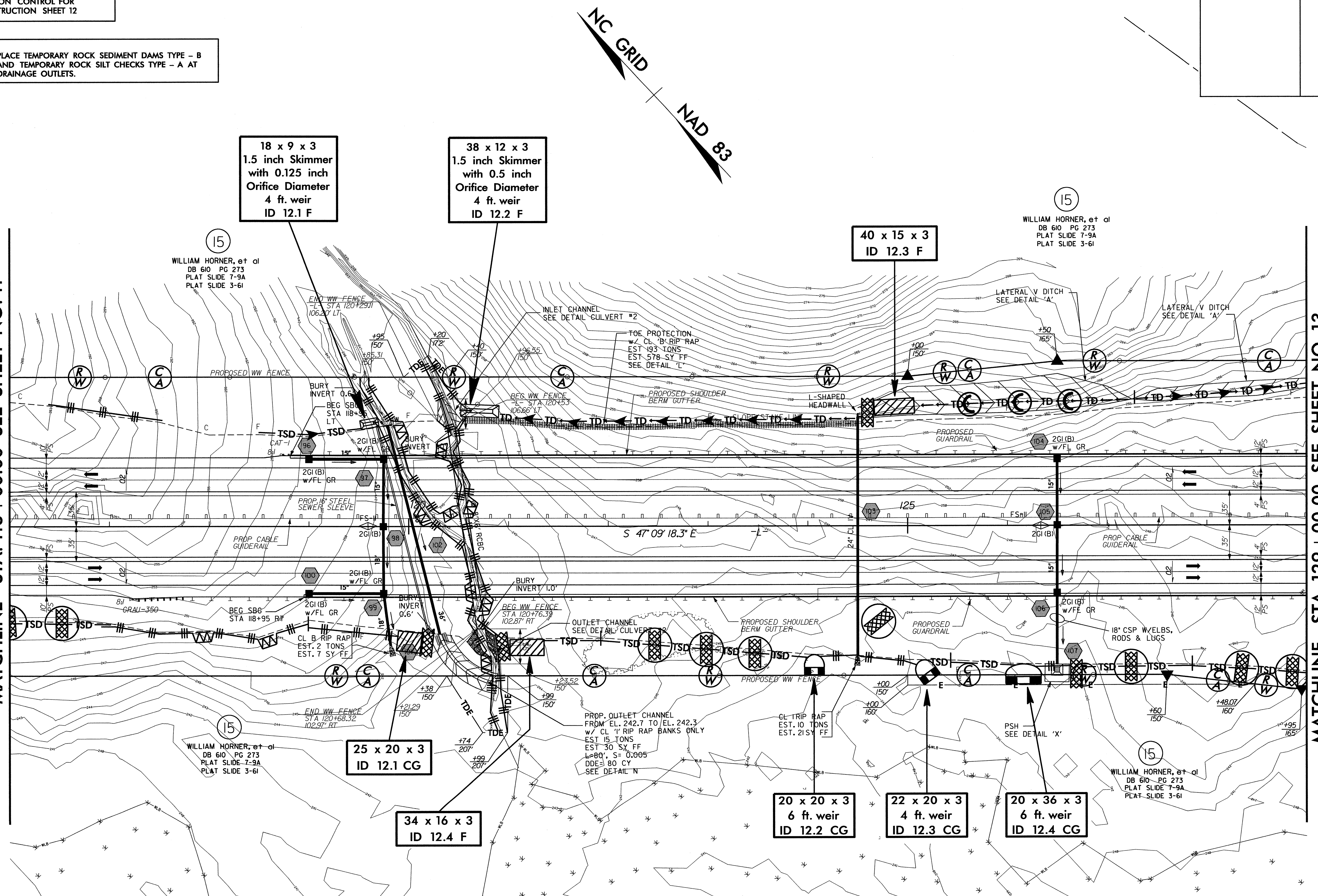


PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-13/CONST.12
RW SHEET NO.	12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

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.



NC GRID NAD 83
18 x 9 x 3
1.5 inch Skimmer
with 0.125 inch
Orifice Diameter
4 ft. weir
ID 12.1 F
38 x 12 x 3
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
4 ft. weir
ID 12.2 F
40 x 15 x 3
ID 12.3 F
WILLIAM HORNER, et al
DB 610 PG 273
PLAT SLIDE 7-9A
PLAT SLIDE 3-61
–MATCHLINE– STA. 116+00.00 SEE SHEET NO. 11
–MATCHLINE– STA. 129+00.00 SEE SHEET NO. 13
INLET CHANNEL
SEE DETAIL CULVERT #2
TOE PROTECTION
w/ CL 'B' RIP RAP
EST 193 TONS
EST 578 SY FF
SEE DETAIL 'L'
LATERAL V DITCH
SEE DETAIL 'A'
PROPOSED WW FENCE
PROPOSED SHOULDER BERM GUTTER
L-SHAPED HEADWALL
PROPOSED GUARDRAIL
PROP CABLE GUIDERAIL
PROP 16" STEEL SEWER SLEEVE
S 47° 09' 18.3" E
BEG SBG STA 118+95 RT
CL B RIP RAP
EST. 2 TONS
EST. 7 SY FF
BURY INVERT 1.0'
BEG WW FENCE STA 120+76.39 102.87' RT
OUTLET CHANNEL
SEE DETAIL CULVERT #2
END WW FENCE STA 120+68.32 102.97' RT
PROP. OUTLET CHANNEL
FROM EL. 242.7 TO EL. 242.3
w/ CL 'I' RIP RAP BANKS ONLY
EST 15 TONS
EST 30 SY FF
L=80', S= 0.005
DDE= 80 CY
SEE DETAIL N
CL I RIP RAP
EST. 10 TONS
EST. 21 SY FF
PSH
SEE DETAIL 'X'
18" CSP W/ELBS, RODS & LUGS
25 x 20 x 3
ID 12.1 CG
34 x 16 x 3
ID 12.4 F
20 x 20 x 3
6 ft. weir
ID 12.2 CG
22 x 20 x 3
4 ft. weir
ID 12.3 CG
20 x 36 x 3
6 ft. weir
ID 12.4 CG

LEGEND

PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NO. 30
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

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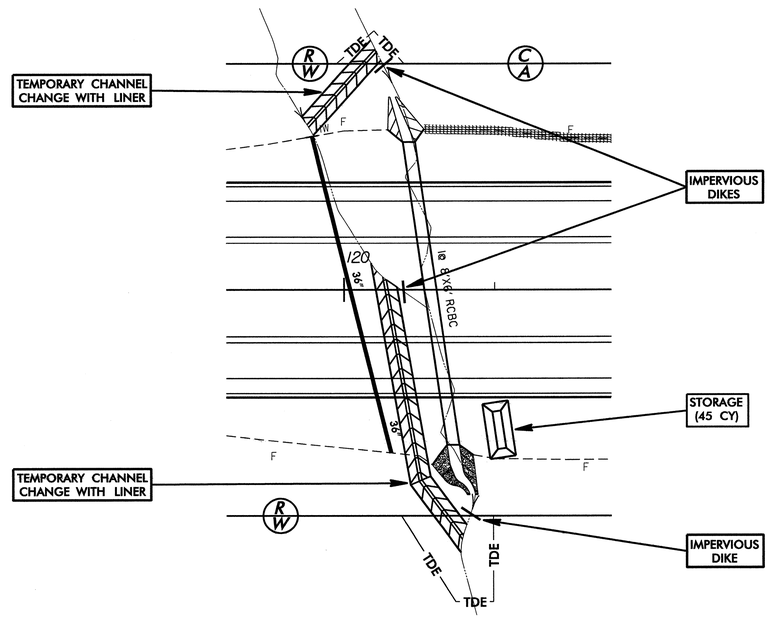
CULVERT CONSTRUCTION SEQUENCE STA. 120+57 –L–

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-14/CONST12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

1. CONSTRUCT STILLING BASIN (45 CY).
2. CONSTRUCT IMPERVIOUS DIKES AND TEMPORARY CHANNEL CHANGES WITH LINER (2 FT. BASE, 3 FT. DEEP, 2:1 SIDE SLOPES), DIVERTING FLOW.
3. CONSTRUCT PROPOSED CULVERT AND INLET/OUTLET CHANNEL IMPROVEMENTS.
4. REMOVE IMPERVIOUS DIKES AND TEMPORARY CHANNEL CHANGES, ALLOWING FLOW THROUGH PROPOSED CULVERT.
5. REMOVE STILLING BASIN.
6. COMPLETE ROADWAY.

NC GRID
NAD 83



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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.
PROJECT REFERENCE NO.
R-2417AA
SHEET NO.
EC-15/CONST.13
RW SHEET NO.
13
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NC GRID NAD 83
60 x 14 x 3
1.5 inch Skimmer
with 0.7 inch
Orifice Diameter
6 ft. weir
ID 14.2 F
TIM KNOWLES
DB 762 PG 612
PLAT SLIDE I-214
BEGIN APPROACH SLAB (NBL)
-L- STA 135+06.41, 35.0' LT
BEGIN BRIDGE (NBL)
-L- STA 135+30.00, 35.0' LT
END BRIDGE (NBL)
-L- STA 137+55.00, 35.0' LT
END APPROACH SLAB (NBL)
-L- STA 137+78.59, 35.0' LT
-Y3- POT 9+00.00
END WW FENCE
-L- STA 132+84.91
180' LT
ROBERT TOWNSEND
DB 565 PG 108
PLAT SLIDE I-214
WILLIAM HORNER, et al
DB 610 PG 273
PLAT SLIDE 7-9A
PLAT SLIDE 3-61
2' LATERAL BASE DITCH
SEE DETAIL 'D'
LATERAL V DITCH
SEE DETAIL 'A'
ATLANTIC AND WESTERN RAILWAY
BEG WW FENCE
-L- STA 135+30.94
170' LT
-L- POT STA 137+42.98 =
-Y3- POT 13+40.88
Δ =27°19'53.5"
TOE PROTECTION
W/ CL 'B' RIP RAP
EST 181 TONS
EST 542 SY FF
SEE DETAIL 'L'
CL B RIP RAP
EST. 2 TONS
EST. 7 SY FF
PROPOSED WW FENCE
SLOPE STAKE LINE
PROPOSED SHOULDER BERM GUTTER
PROPOSED GUARDRAIL
BEGIN M.S.E. WALL
-Y3- 9+37.23, 42' RT
END SBG LT
STA 134+46.5
BEG SBG LT
STA 138+40
15" CSP W/ELBS, RODS & LUGS
2GI (B) w/FL GR
NO DECK DRAINS REQUIRED
S 47° 09' 18.3" E
PROP CABLE GUIDERAIL
END SBG RT
STA 136+37
BEGIN APPROACH SLAB (SBL)
-L- STA 136+70.41, 35.0' RT
BEGIN BRIDGE (SBL)
END M.S.E. WALL
-Y3- 14+18.03, 42' RT
BEG SBG RT
STA 140+55
PSH
SEE DETAIL 'X'
18" CSP W/ELBS, RODS & LUGS
RIP RAP ENERGY DISSIPATOR BASIN
W/ CL II RIP RAP
EST 95 TONS
EST 115 SY FF
SEE DETAIL 'Y'
90 LF @ 0.56%
18' BASE TAIL DITCH
EST 36 CY DDE
SEE DETAIL 'F'
PDE
END PROPOSED WW FENCE
-L- STA 139+23.41
150' RT
END APPROACH SLAB (SBL)
-L- STA 139+42.59, 35.0' RT
END BRIDGE (SBL)
-L- STA 139+19.00, 35.0' RT
-Y3- POT 17+69.60
BEG PROPOSED WW FENCE
-L- STA 141+60.56
160' RT
PAVEMENT-BRIDGE RELATIONSHIP SKETCH
12 x 60 x 3
6 ft. weir
ID 13.2 CG
75 x 25 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
17 ft. weir
ID 13.1 CG
50:1 TAPER
B-77
M-350
-MATCHLINE- STA. 129+00.00 SEE SHEET NO. 12
-MATCHLINE- STA. 142+00.00 SEE SHEET NO. 14
LEGEND
PAVED SHOULDER
FOR -L- PROFILE, SEE SHEET NOS. 30 & 31
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G
24-SEP-2010 16:04
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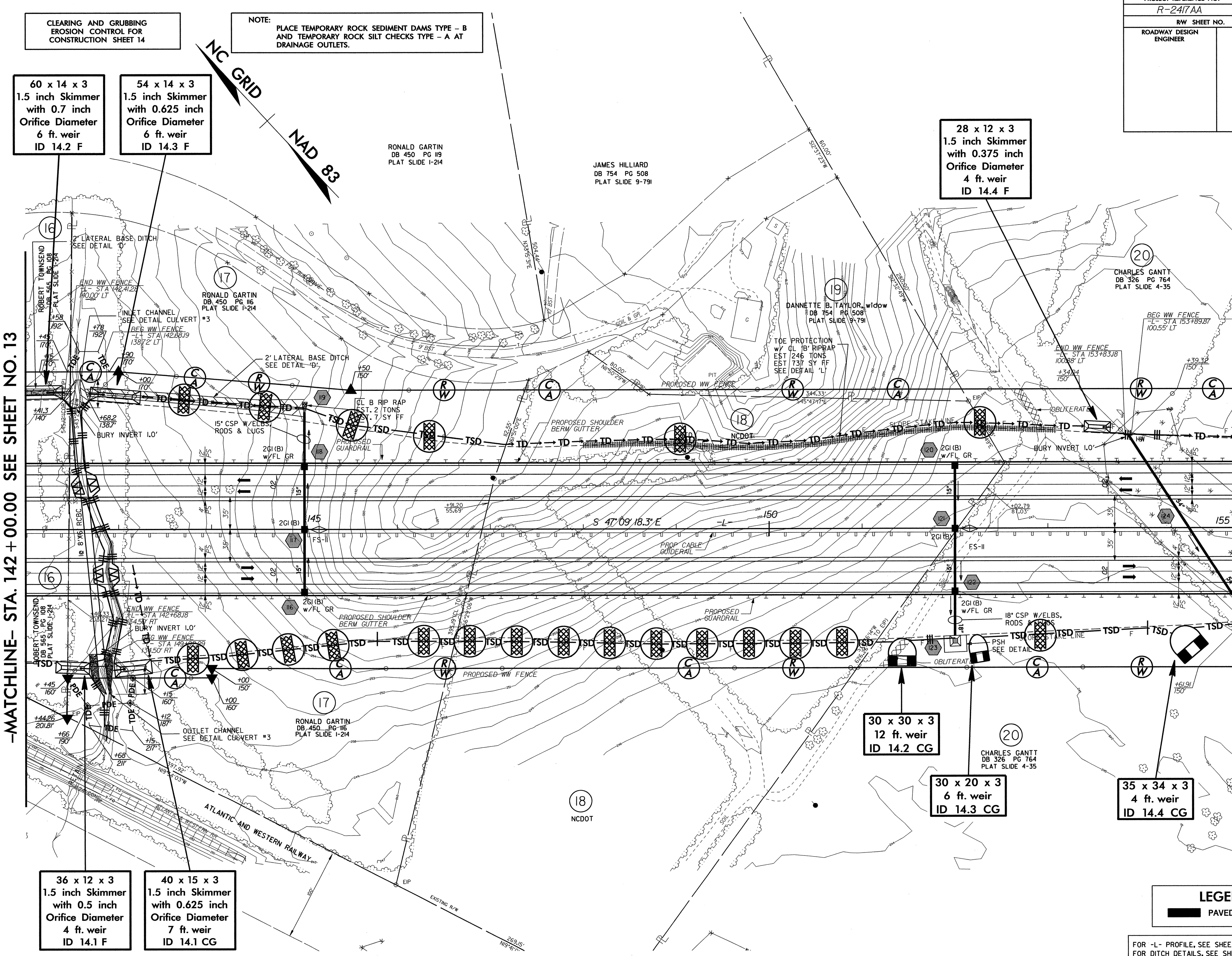
PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-16/CONST.14
R/W SHEET NO.	14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 14

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



NC GRID NAD 83
60 x 14 x 3
1.5 inch Skimmer
with 0.7 inch
Orifice Diameter
6 ft. weir
ID 14.2 F
54 x 14 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
6 ft. weir
ID 14.3 F
28 x 12 x 3
1.5 inch Skimmer
with 0.375 inch
Orifice Diameter
4 ft. weir
ID 14.4 F
RONALD GARTIN
DB 450 PG 119
PLAT SLIDE 1-214
JAMES HILLIARD
DB 754 PG 508
PLAT SLIDE 9-791
DANNETTE B. TAYLOR, widow
DB 754 PG 508
PLAT SLIDE 9-791
CHARLES GANTT
DB 326 PG 764
PLAT SLIDE 4-35
ROBERT TOWNSEND
DB 565 PG 108
PLAT SLIDE 1-214
RONALD GARTIN
DB 450 PG 116
PLAT SLIDE 1-214
NCDOT
ATLANTIC AND WESTERN RAILWAY
30 x 30 x 3
12 ft. weir
ID 14.2 CG
30 x 20 x 3
6 ft. weir
ID 14.3 CG
35 x 34 x 3
4 ft. weir
ID 14.4 CG
36 x 12 x 3
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
4 ft. weir
ID 14.1 F
40 x 15 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
7 ft. weir
ID 14.1 CG

-MATCHLINE- STA. 142+00.00 SEE SHEET NO. 13

-MATCHLINE- STA. 155+00.00 SEE SHEET NO. 15

LEGEND

PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NO. 31
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

8/17/99

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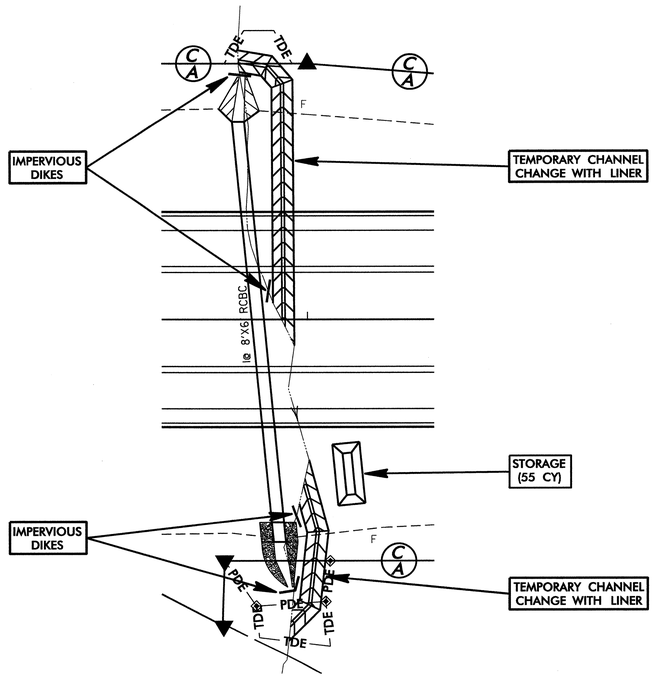
CULVERT CONSTRUCTION SEQUENCE STA. 142 + 67 –L–

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-17/CONST14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

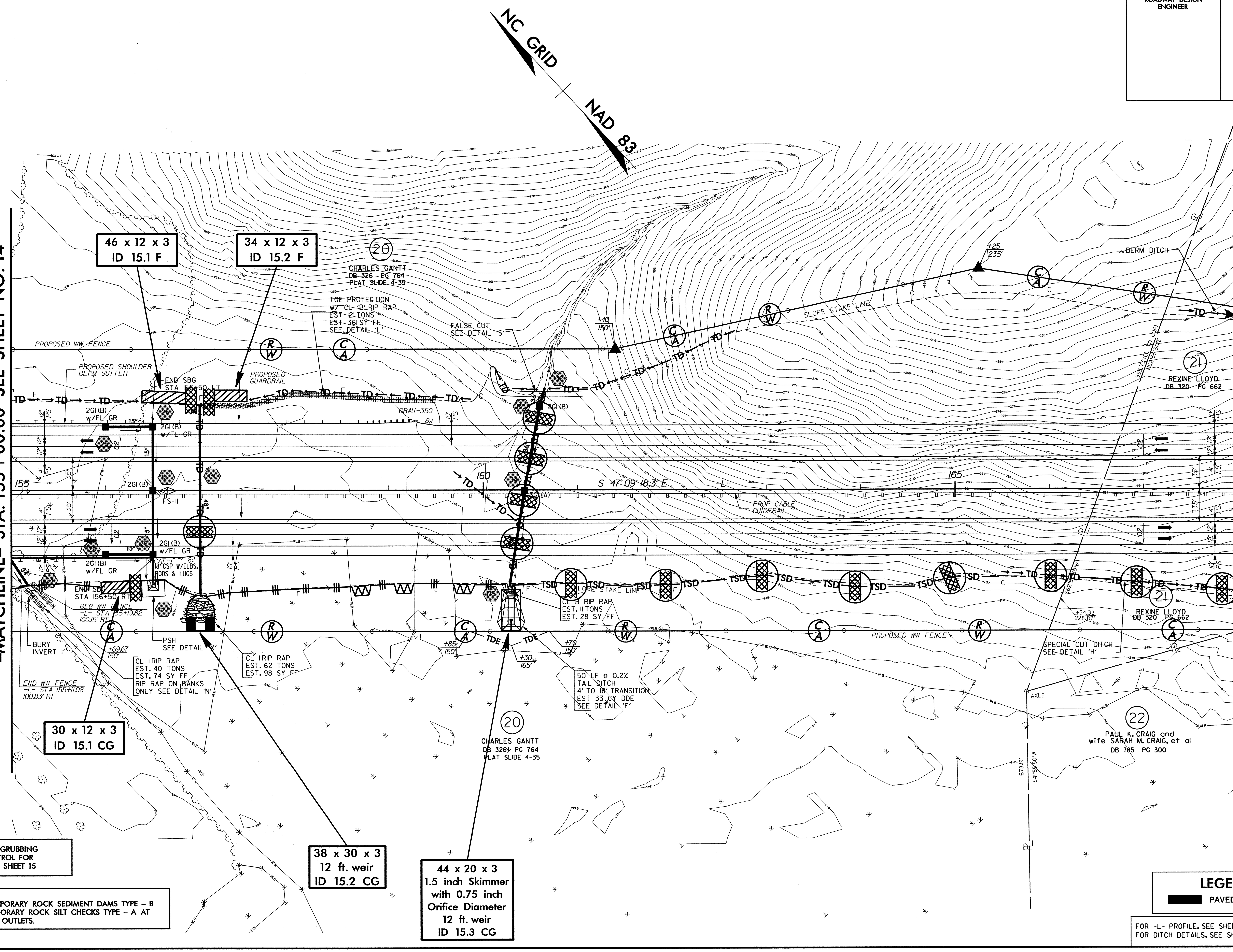
1. CONSTRUCT STILLING BASIN (55 CY).
2. CONSTRUCT IMPERVIOUS DIKES AND TEMPORARY CHANNEL CHANGES WITH LINER (2 FT. BASE, 3 FT. DEEP, 2:1 SIDE SLOPES), DIVERTING FLOW.
3. CONSTRUCT PROPOSED CULVERT AND INLET/OUTLET CHANNEL IMPROVEMENTS.
4. REMOVE IMPERVIOUS DIKES AND TEMPORARY CHANNEL CHANGES, ALLOWING FLOW THROUGH PROPOSED CULVERT.
5. REMOVE STILLING BASIN.
6. COMPLETE ROADWAY.

NC GRID / NAD 83



8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-18/CONST.15
R/W SHEET NO.	15
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.

LEGEND

PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NOS. 31 & 32
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

24-SEP-2010 16:18
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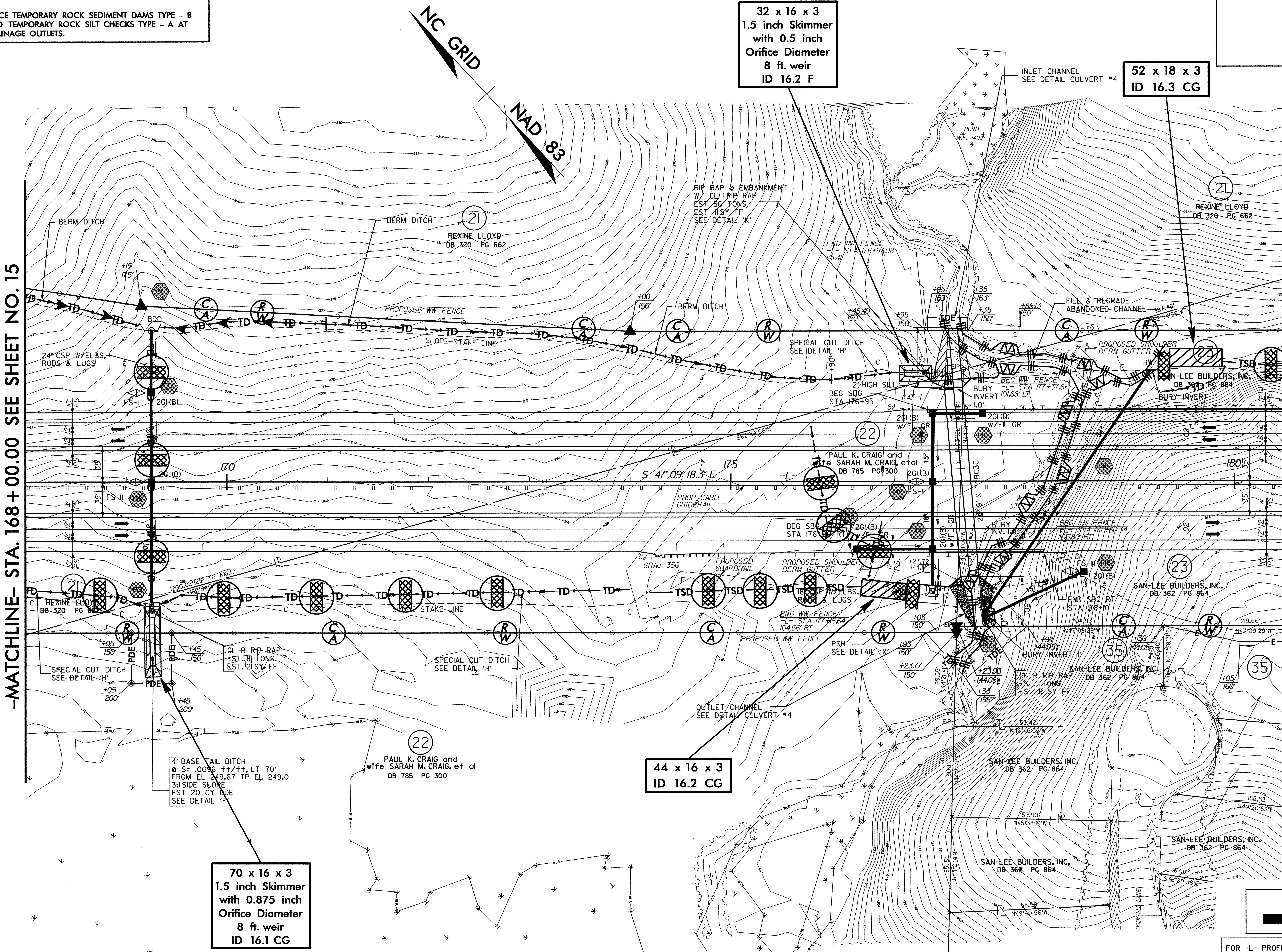
jennifer.parish AT RENY24203

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-19/CONST.16
R/W SHEET NO.	16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

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.



LEGEND

PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NO. 32
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

24-SEP-2010 16:20
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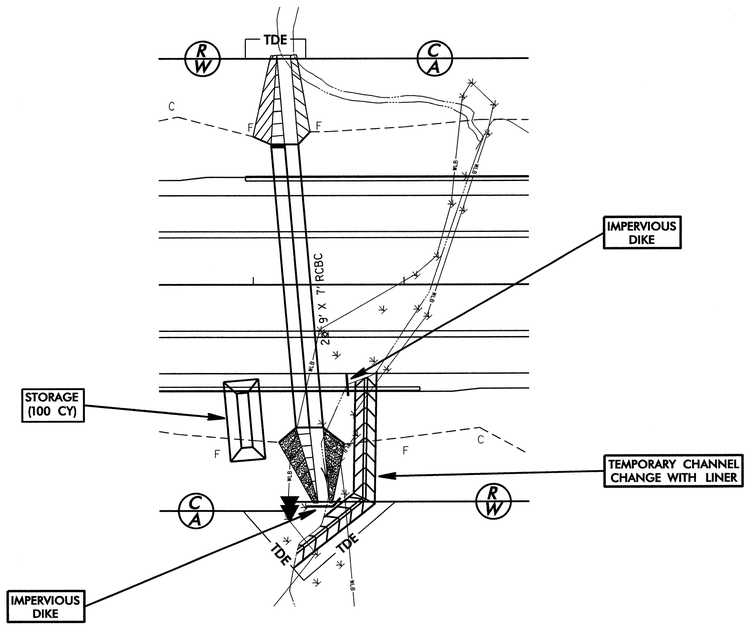
jenniferparish AT RENV242003

CULVERT CONSTRUCTION SEQUENCE STA. 177+29 –L–

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-20/CONSTJ6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

1. CONSTRUCT STILLING BASIN (100 CY).
2. CONSTRUCT IMPERVIOUS DIKES AND TEMPORARY CHANNEL CHANGE WITH LINER (2 FT. BASE, 3 FT. DEEP, 2:1 SIDE SLOPES), DIVERTING FLOW.
3. CONSTRUCT PROPOSED CULVERT AND INLET/OUTLET CHANNEL IMPROVEMENTS.
4. REMOVE IMPERVIOUS DIKES AND TEMPORARY CHANNEL CHANGE, ALLOWING FLOW THROUGH PROPOSED CULVERT.
5. REMOVE STILLING BASIN.
6. COMPLETE ROADWAY.

NC GRID / NAD 83

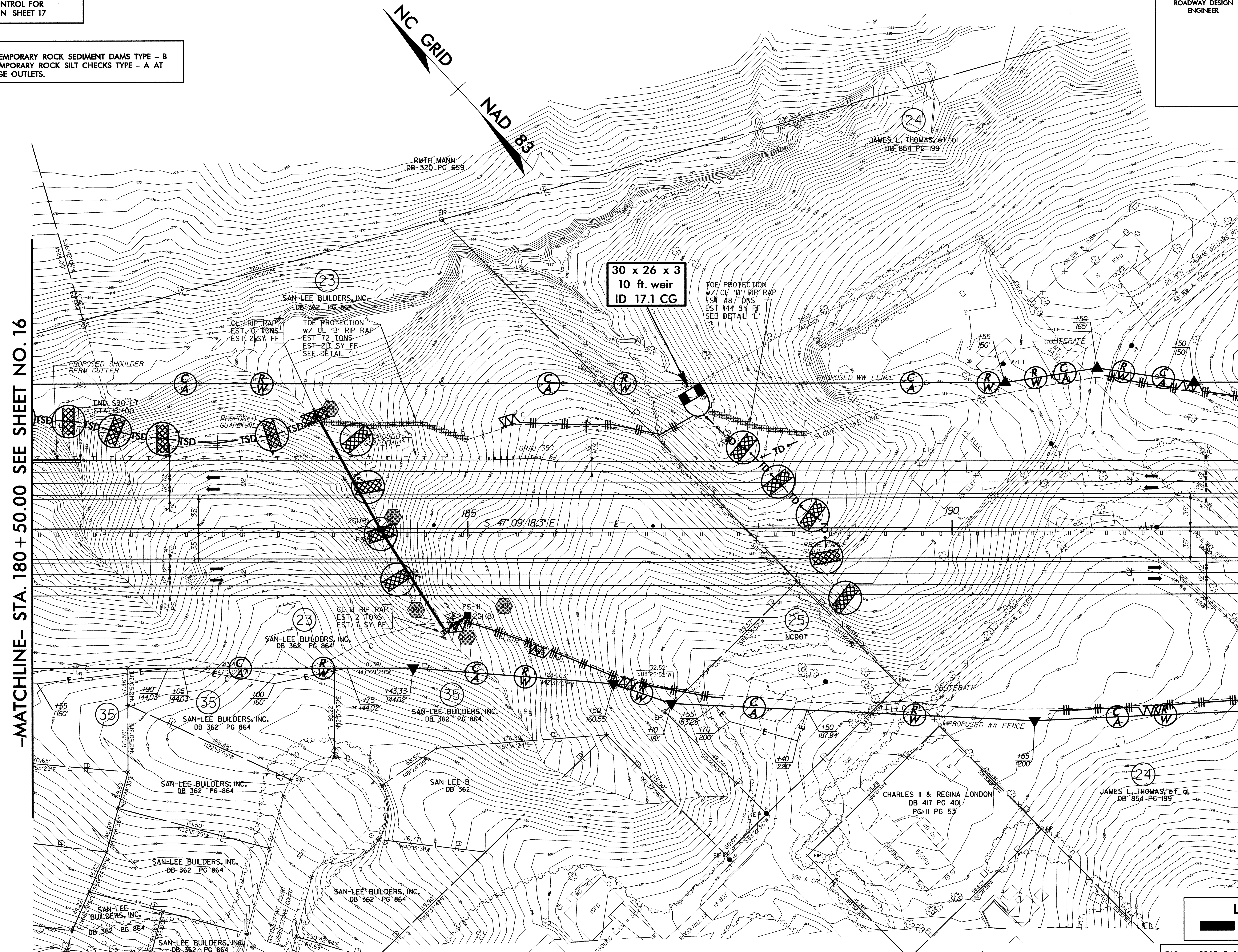


8/17/99

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.

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-21/CONST 17
R/W SHEET NO.	17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



LEGEND
PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NO. 33
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

24-SEP-2010 16:22
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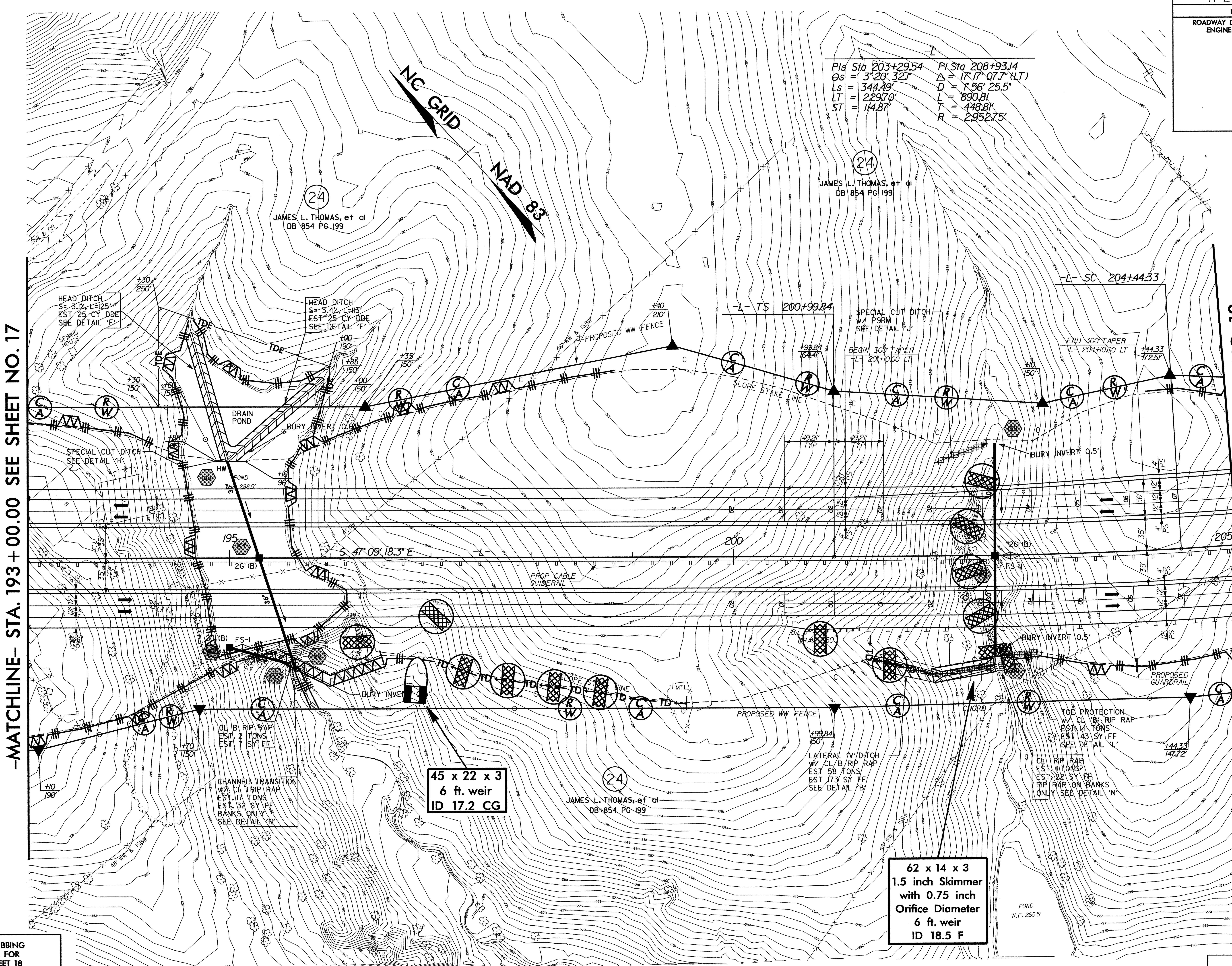
PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-22/CONST 18
R/W SHEET NO.	18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99



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.

LEGEND

PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NOS. 33 & 34
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-23/CONST.19
R/W SHEET NO.	19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NC GRID / NAD 83

-MATCHLINE- STA. 205+00.00 SEE SHEET NO. 18

-MATCHLINE- STA. 235+00.00 SEE SHEET NO. 20

-L-
PI Sta 208+93.14 L.B.=
PI Sta 227+95.32 L.A.
△= 17° 17' 07.7" (LT)
D = 1° 56' 25.5"
L = 890.81'
T = 448.81'
R = 2,952.75'

PIs Sta 233+52.19
Θs = 3° 20' 32.1"
Ls = 344.49'
LT = 229.70'
ST = 114.87'

-L- POC 208+33.78 L.B. (R-2417AA) =
-L- POC 227+35.96 L.A. (R-2417AB)

-L1- SC 62+65.62=
-L- STA 229+12.72, 58.07' LT.

-L1- SC 58+27.95

-L- CS 232+37.32

-L1- CS 60+03.16
REPAIR WW WHICH ARE SEPARATING FROM CULVERT

PAUL KELLY
EMILY KELLY
FRANK PAYNE
BRENDA PAYNE
DB 445 PG 906

END PROP.C/A
TIE PROPOSED WW FENCE TO EXISTING WW FENCE
-L- 206+74.24
147.34' LT

TOE PROTECTION
w/ CL 'B' RIP RAP
EST 43 TONS
EST 130 SY FF
SEE DETAIL 'L'

LATERAL 'V' DITCH
SEE DETAIL 'A'

24
JAMES THOMAS, et ux
DB 91 PG 283

PROPOSED WW FENCE

SLOPE STAKE LINE

PROP CABLE GUIDERAIL

43' PAVED RDWY

48' PAVED RDWY

PROPOSED GUARDRAIL

CL 'B' RIP RAP @ EMBANKMENT
EST 25 TONS
EST 55 SY FF
SEE DETAIL 'K'

CL 'I' RIP RAP
EST 10 TONS
EST 21 SY FF

END PROP.C/A
TIE PROPOSED WW FENCE TO EXISTING WW FENCE
-L- 207+88.90
53.51' RT

-L2- PC 0+00.00=
-L- STA 227+35.96, 58.07' RT.

18 x 18 x 3
4 ft. weir
ID 19.2 F

15 x 14 x 3
4 ft. weir
ID 19.3 F

REPAIR WW WHICH ARE SEPARATING FROM CULVERT

R.W. JR. & RUTH CRAIG
DB 361 PG 315
PC 3 PG 25

JOHN DAVENPORT III
DB 495 PG 39
DB 495 PG 447
PC 3 PG 25

-L2- CS 7+69.08

-L1-
PIs Sta 57+40.50
Θs = 3° 31' 33.2"
Ls = 262.47'
LT = 175.01'
ST = 87.52'

PI Sta 59+15.61
△ = 4° 42' 26.1" (RT.)
D = 2° 41' 12.3"
L = 175.20'
T = 87.65'
R = 2,132.54'

PIs Sta 61+27.88
Θs = 2° 35' 50.9"
Θs = 3° 31' 33.5"
Ls = 262.47'
LT = 137.99'
ST = 124.72'

-L2-
PI Sta 3+86.65
△ = 14° 38' 08.2" (LT)
D = 1° 54' 10.8"
L = 769.08'
T = 386.65'
R = 3,010.82'

PIs Sta 8+45.65
Θs = 2° 11' 06.7"
Ls = 229.66'
LT = 153.12'
ST = 76.56'

R-2417AB WAS DESIGNED AND CONSTRUCTED USING METRIC UNITS. ALL DIMENSIONS FOR THE R-2417AB SECTION HAVE BEEN CONVERTED TO THE ENGLISH EQUIVALENT.

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.

LEGEND
PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NO. 34
FOR -L1- PROFILE, SEE SHEET NO. 36
FOR -L2- PROFILE, SEE SHEET NO. 37
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

24-SEP-2010 16:28
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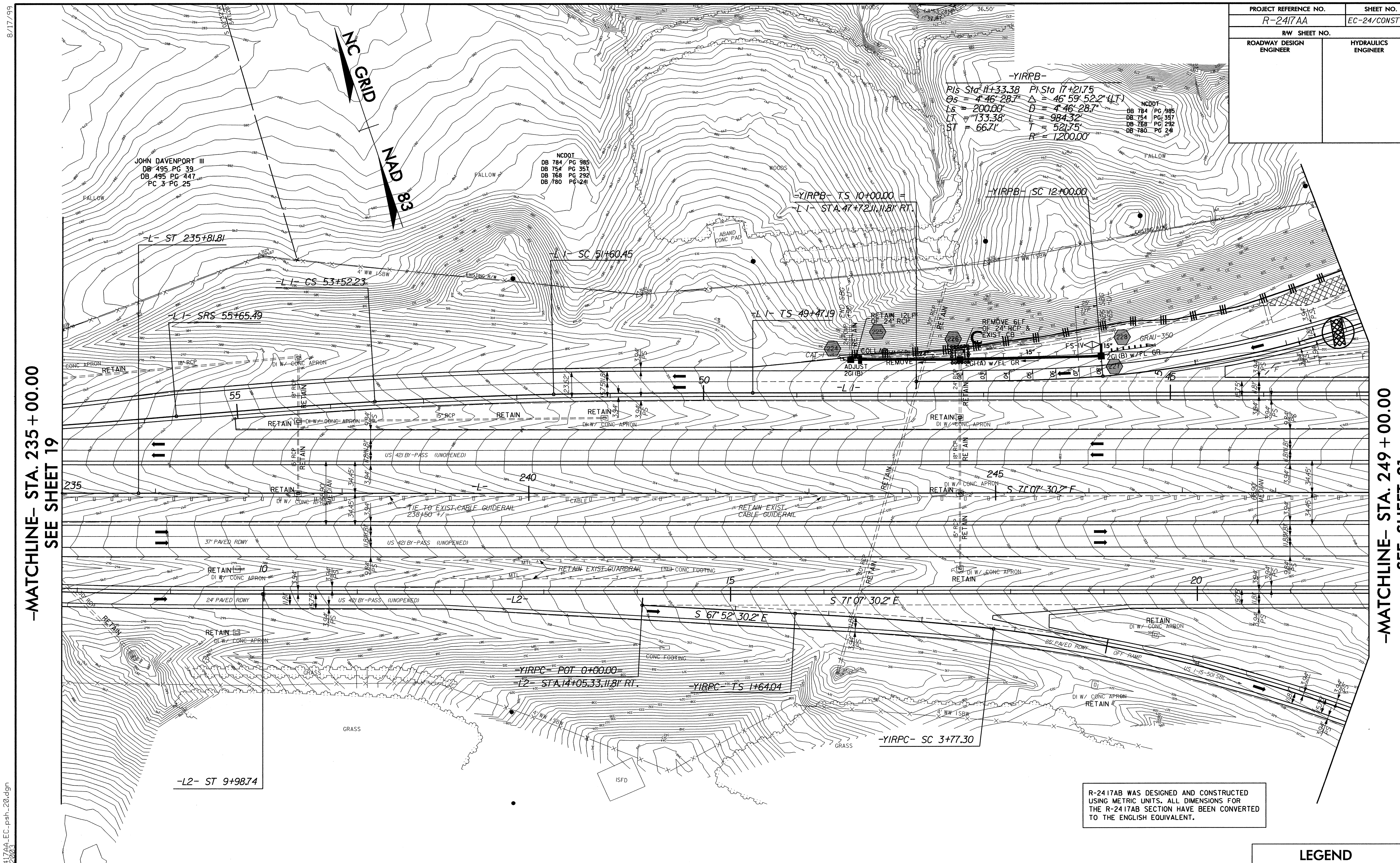
jennifergparish AT RENVZ2003

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-24/CONST.20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



R-2417AB WAS DESIGNED AND CONSTRUCTED USING METRIC UNITS. ALL DIMENSIONS FOR THE R-2417AB SECTION HAVE BEEN CONVERTED TO THE ENGLISH EQUIVALENT.

LEGEND

- PAVED SHOULDER
- PAVEMENT REMOVAL

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.

-L2-

PIs Sta 8+45.65
Θs = 2° 11' 06.7"
Ls = 229.66'
LT = 153.12'
ST = 76.56'

-YIRPC-

PIs Sta 3+06.24	PI Sta 17+62.70
Θs = 3° 28' 50.1"	Δ = 76° 34' 03.8" (RT)
Ls = 213.25'	D = 3° 15' 51.3"
LT = 142.20'	L = 2,345.64'
ST = 71.11'	T = 1,385.41'
	R = 1,755.25'

-L1-

PIs Sta 50+89.37	PI Sta 52+56.35	PIs Sta 54+23.32	PIs Sta 57+40.50
Θs = 1° 14' 29.1"	Δ = 2° 13' 58.4" (LT)	Θs = 1° 14' 29.1"	Θs = 3° 31' 33.2"
Ls = 213.25'	D = 1° 09' 51.3"	Ls = 213.25'	Ls = 262.47'
LT = 142.17'	L = 191.79'	LT = 142.17'	LT = 175.01'
ST = 71.09'	T = 95.91'	ST = 71.09'	ST = 87.52'
	R = 4,921.25'		

FOR -L- PROFILE, SEE SHEET NO. 34 & 35
FOR -L1- PROFILE, SEE SHEET NO. 36
FOR -L2- PROFILE, SEE SHEET NO. 37
FOR -YIRPB- PROFILE, SEE SHEET NO. 44
FOR -YIRPC- PROFILE, SEE SHEET NO. 45
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

8/17/99

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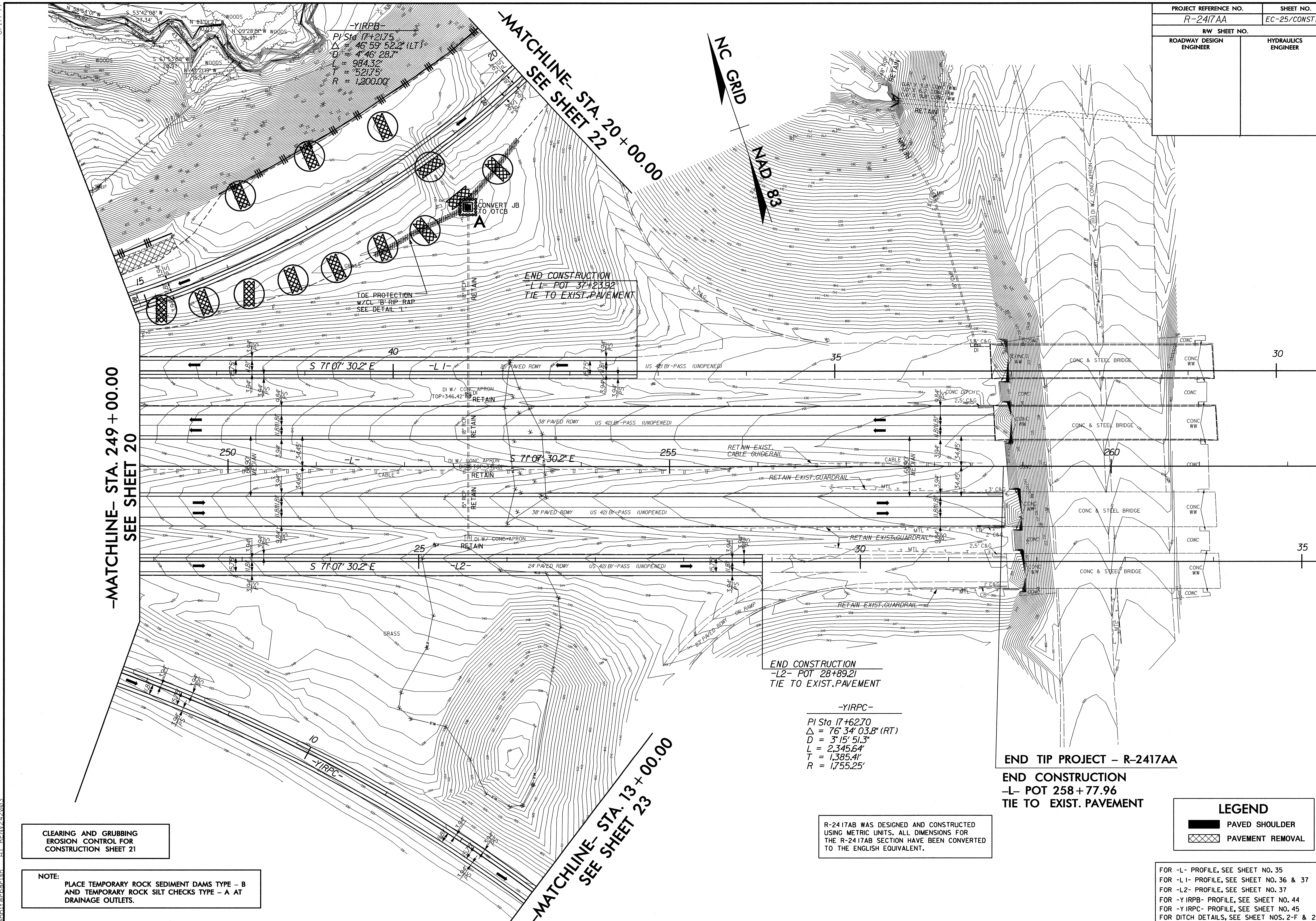
PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-25/CONST.21
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99



CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 21

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

R-2417AB WAS DESIGNED AND CONSTRUCTED USING METRIC UNITS. ALL DIMENSIONS FOR THE R-2417AB SECTION HAVE BEEN CONVERTED TO THE ENGLISH EQUIVALENT.

LEGEND

- PAVED SHOULDER
- PAVEMENT REMOVAL

FOR -L- PROFILE, SEE SHEET NO. 35
FOR -L1- PROFILE, SEE SHEET NO. 36 & 37
FOR -L2- PROFILE, SEE SHEET NO. 37
FOR -YIRPB- PROFILE, SEE SHEET NO. 44
FOR -YIRPC- PROFILE, SEE SHEET NO. 45
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

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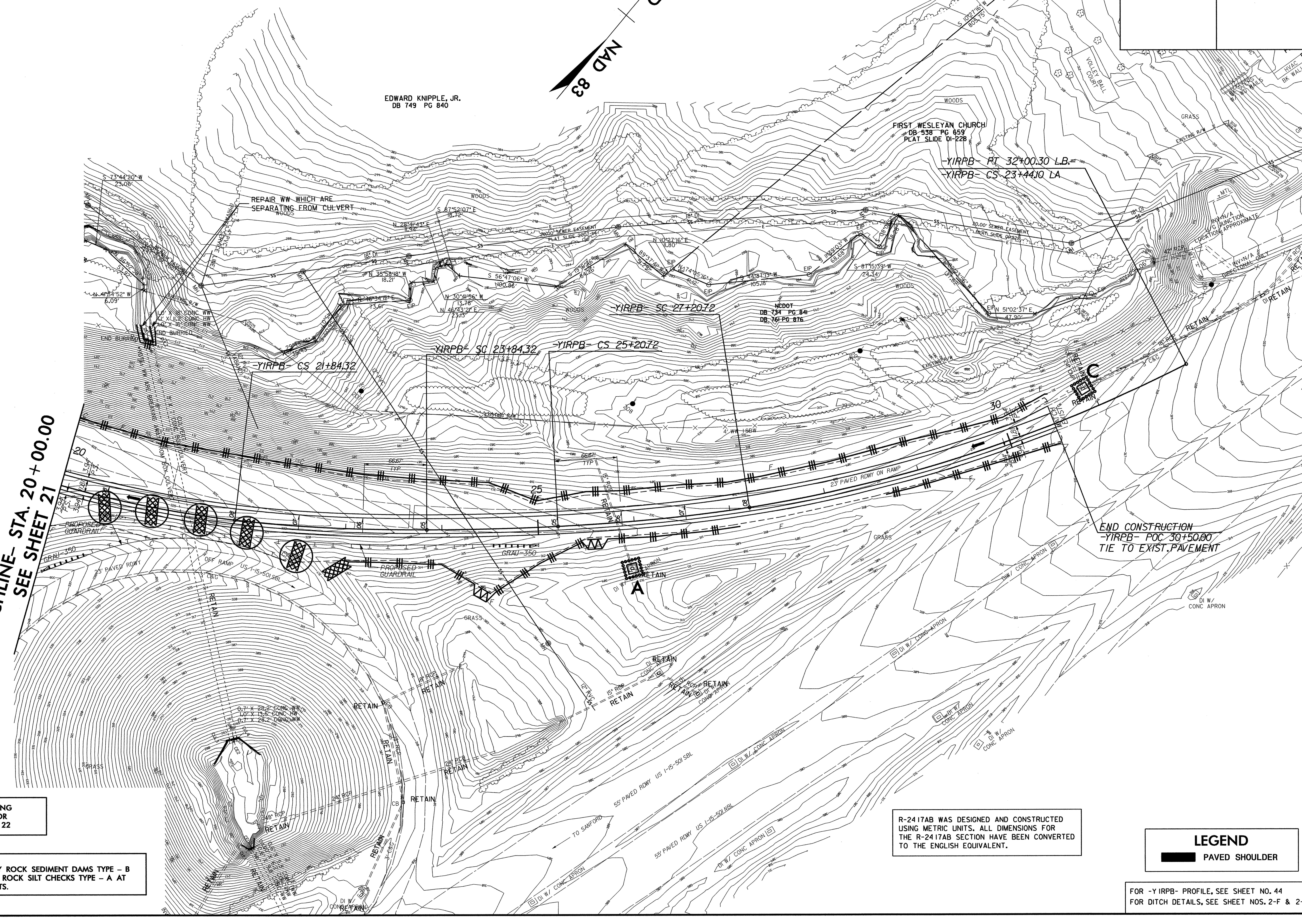
PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-26/CONST.22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

-YIRPB-

PI Sta 17+21.75	PIs Sta 22+71.51	PI Sta 24+52.53	PIs Sta 26+30.52	PI Sta 29+62.59
Δ = 46° 59' 52.2" (LT)	Θs = 2° 06' 18.4"	Δ = 2° 52' 23.5" (LT)	Θs = 2° 06' 20.7"	Δ = 18° 24' 25.6" (LT)
D = 4° 46' 28.7"	Θs = 4° 46' 33.6"	D = 2° 06' 23.3"	Θs = 3° 50' 20.1"	D = 3° 50' 17.5"
L = 984.32'	Ls = 200.00'	L = 136.40'	Ls = 200.00'	L = 479.58'
T = 521.75'	LT = 113.04'	T = 68.21'	LT = 109.80'	T = 241.87'
R = 1,200.00'	ST = 87.19'	R = 2,720.00'	ST = 90.38'	R = 1,492.78'



CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 22

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

R-2417AB WAS DESIGNED AND CONSTRUCTED USING METRIC UNITS. ALL DIMENSIONS FOR THE R-2417AB SECTION HAVE BEEN CONVERTED TO THE ENGLISH EQUIVALENT.

LEGEND

PAVED SHOULDER

FOR -YIRPB- PROFILE, SEE SHEET NO. 44
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

24-SEP-2010 16:39
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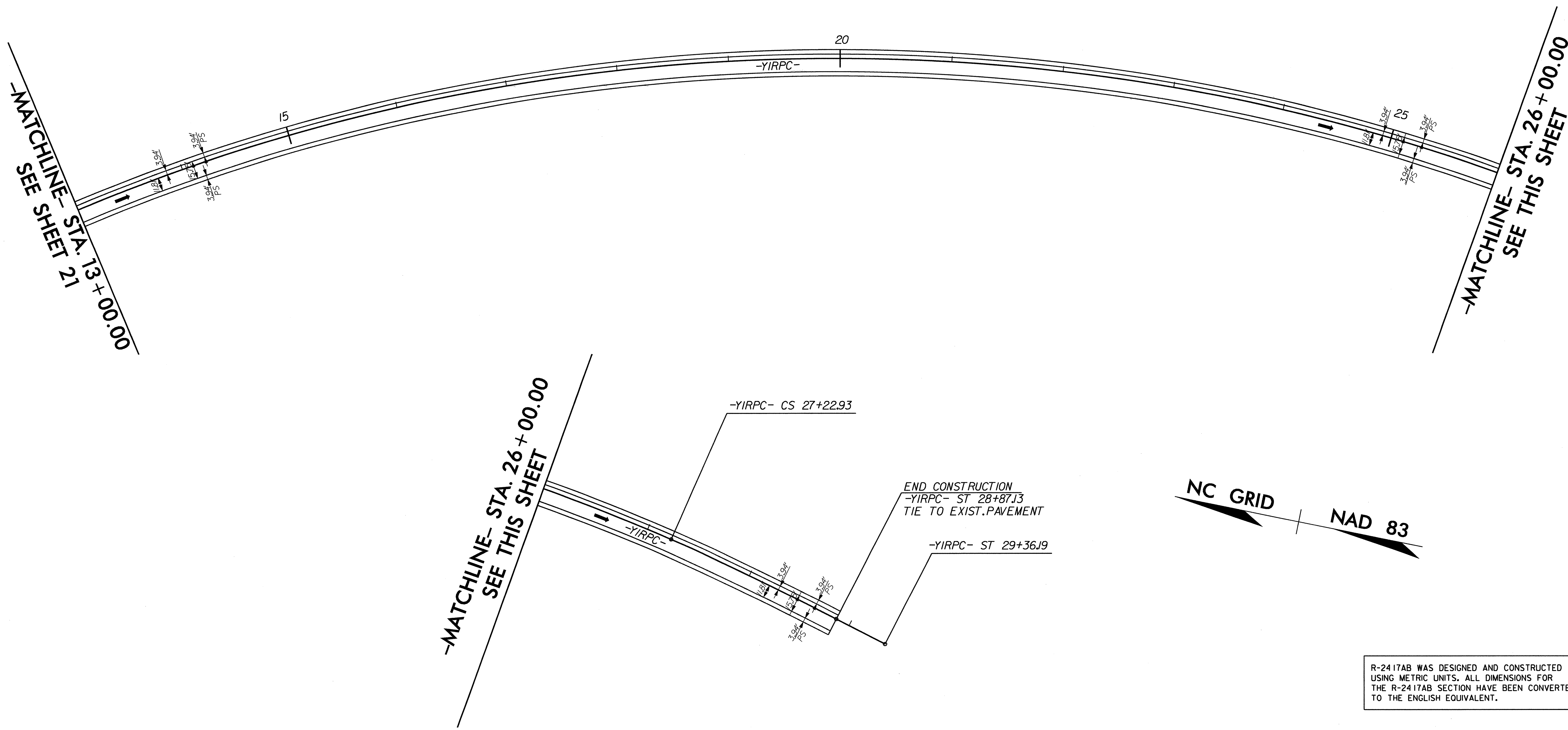
PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-27/CONST.23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

-YIRPC-

PI Sta 17+62.70
△ = 76° 34′ 03.8″ (RT)
D = 3° 15′ 51.3″
L = 2,345.64′
T = 1,385.41′
R = 1,755.25′

NC GRID NAD 83



R-2417AB WAS DESIGNED AND CONSTRUCTED USING METRIC UNITS. ALL DIMENSIONS FOR THE R-2417AB SECTION HAVE BEEN CONVERTED TO THE ENGLISH EQUIVALENT.

-YIRPC-

PI Sta 17+62.70	PIs Sta 27+94.04
△ = 76° 34′ 03.8″ (RT)	Θs = 3° 28′ 50.1″
D = 3° 15′ 51.3″	Ls = 213.25′
L = 2,345.64′	LT = 142.20′
T = 1,385.41′	ST = 71.11′
R = 1,755.25′	

NOTE: NO EROSION CONTROL MEASURES ON THIS SHEET

LEGEND

■ PAVED SHOULDER

FOR -YIRPC- PROFILE, SEE SHEET NO. 45 & 46
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

24-SEP-2010 16:41
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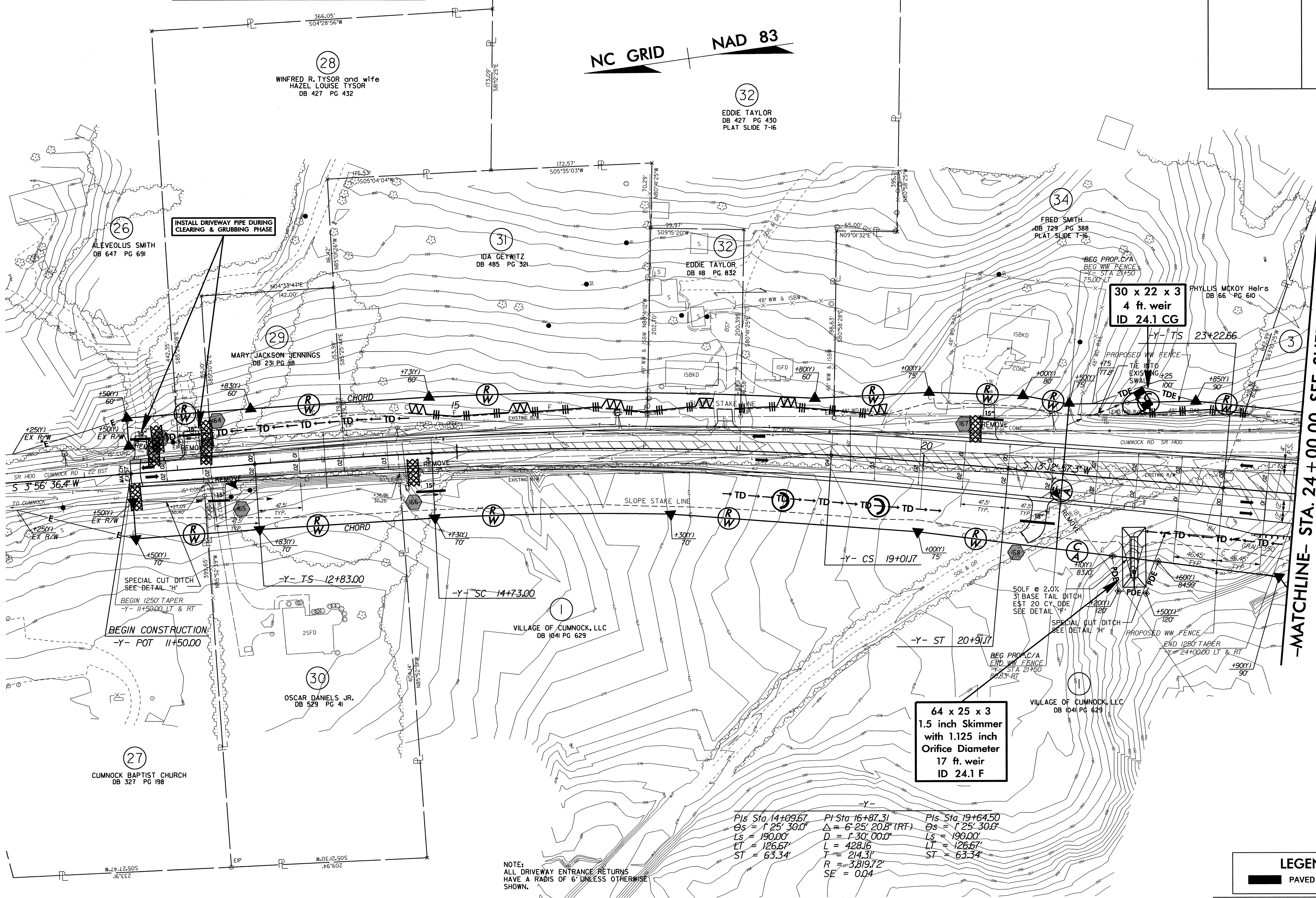
jenniferparish AT BENV242003

8/17/99

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 24

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

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-28/CONST.24
RW SHEET NO.	20
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTE:
ALL DRIVEWAY ENTRANCE RETURNS HAVE A RADIS OF 6' UNLESS OTHERWISE SHOWN.

LEGEND

PAVED SHOULDER

FOR -Y- PROFILE, SEE SHEET NO. 42
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

24-SEP-2010 16:45
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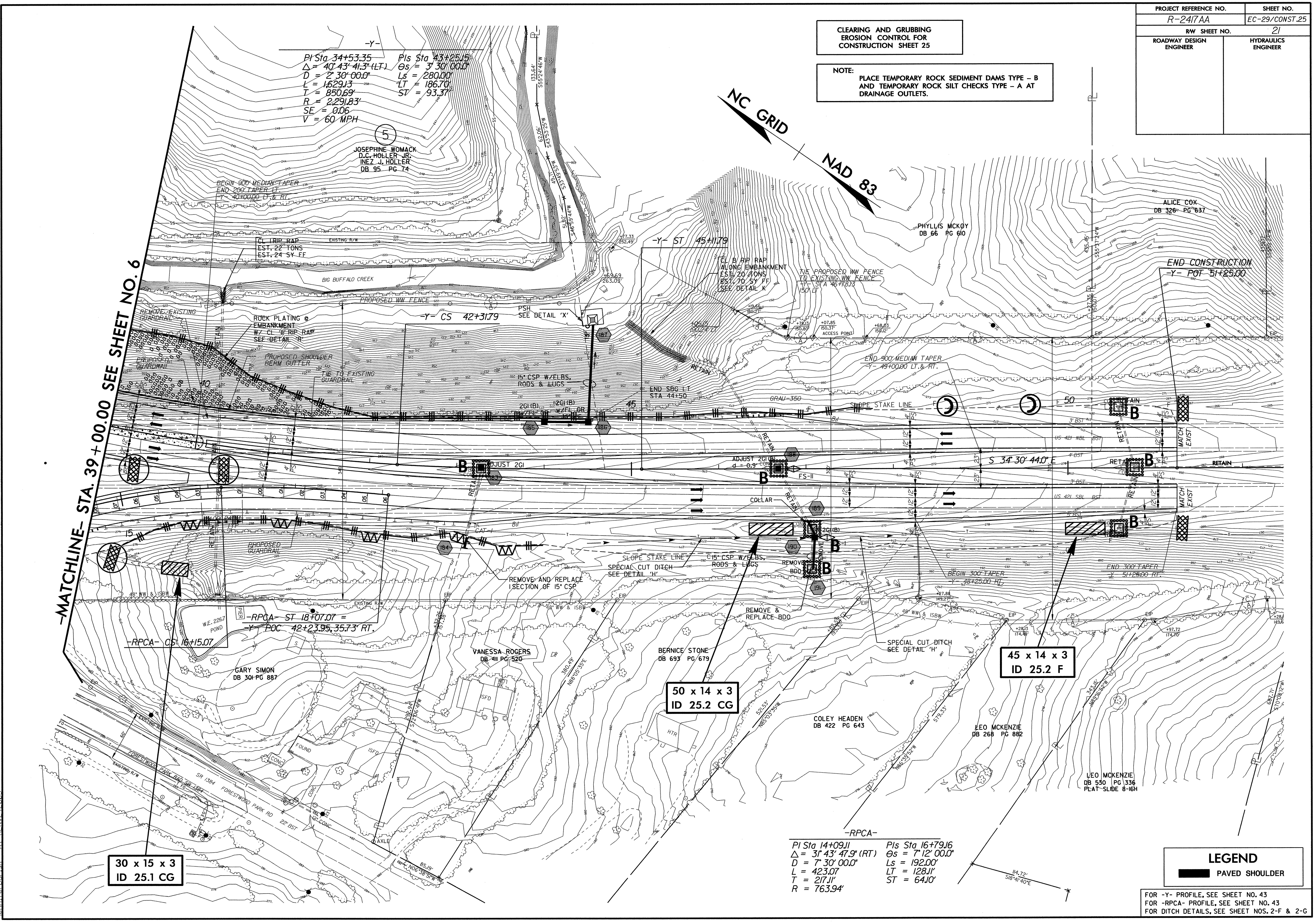
PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-29/CONST.25
R/W SHEET NO.	21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 25

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



-Y-
PI Sta 34+53.35
Δ = 40° 43' 41.3" (LT)
D = 2° 30' 00.0"
L = 1,629.13
T = 850.69'
R = 2,291.83'
SE = 0.06
V = 60 MPH
PIs Sta 43+25.15
Θs = 3° 30' 00.0"
Ls = 280.00'
LT = 186.70'
ST = 93.37'
NC GRID
NAD 83
JOSEPHINE WOMACK
D.C. HOLLER JR.
INEZ J. HOLLER
DB 95 PG 74
PHYLLIS MCKOY
DB 66 PG 610
ALICE COX
DB 326 PG 637
BIG BUFFALO CREEK
PROPOSED WW FENCE
-Y- CS 42+31.79
-Y- ST 45+11.79
END CONSTRUCTION
-Y- POT 51+25.00
END 900' MEDIAN TAPER
-Y- 49+00.00 LT. & RT.
S 34° 30' 44.0" E
SLOPE STAKE LINE
-MATCHLINE- STA. 39+00.00 SEE SHEET NO. 6
REMOVE AND REPLACE 1 SECTION OF 15" CSP
SPECIAL CUT DITCH SEE DETAIL 'H'
REMOVE & REPLACE BDO
BEGIN 300' TAPER
END 300' TAPER
-RPCA- ST 18+07.07 =
-Y- POC 42+23.95, 35.73' RT.
-RPCA- CS 16+15.07
VANESSA ROGERS
DB 411 PG 520
BERNICE STONE
DB 693 PG 679
GARY SIMON
DB 301 PG 887
COLEY HEADEN
DB 422 PG 643
LEO MCKENZIE
DB 268 PG 882
LEO MCKENZIE
DB 550 PG 336
PLAT SLIDE 8-16H
SR 1384 FORESTWOOD PARK RD
30 x 15 x 3
ID 25.1 CG
50 x 14 x 3
ID 25.2 CG
45 x 14 x 3
ID 25.2 F
-RPCA-
PI Sta 14+09.11
Δ = 31° 43' 47.9" (RT)
D = 7° 30' 00.0"
L = 423.07
T = 217.11'
R = 763.94'
PIs Sta 16+79.16
Θs = 7° 12' 00.0"
Ls = 192.00'
LT = 128.11'
ST = 64.10'

LEGEND

PAVED SHOULDER

FOR -Y- PROFILE, SEE SHEET NO. 43
FOR -RPCA- PROFILE, SEE SHEET NO. 43
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

8/17/99

24-SEP-2010 16:47
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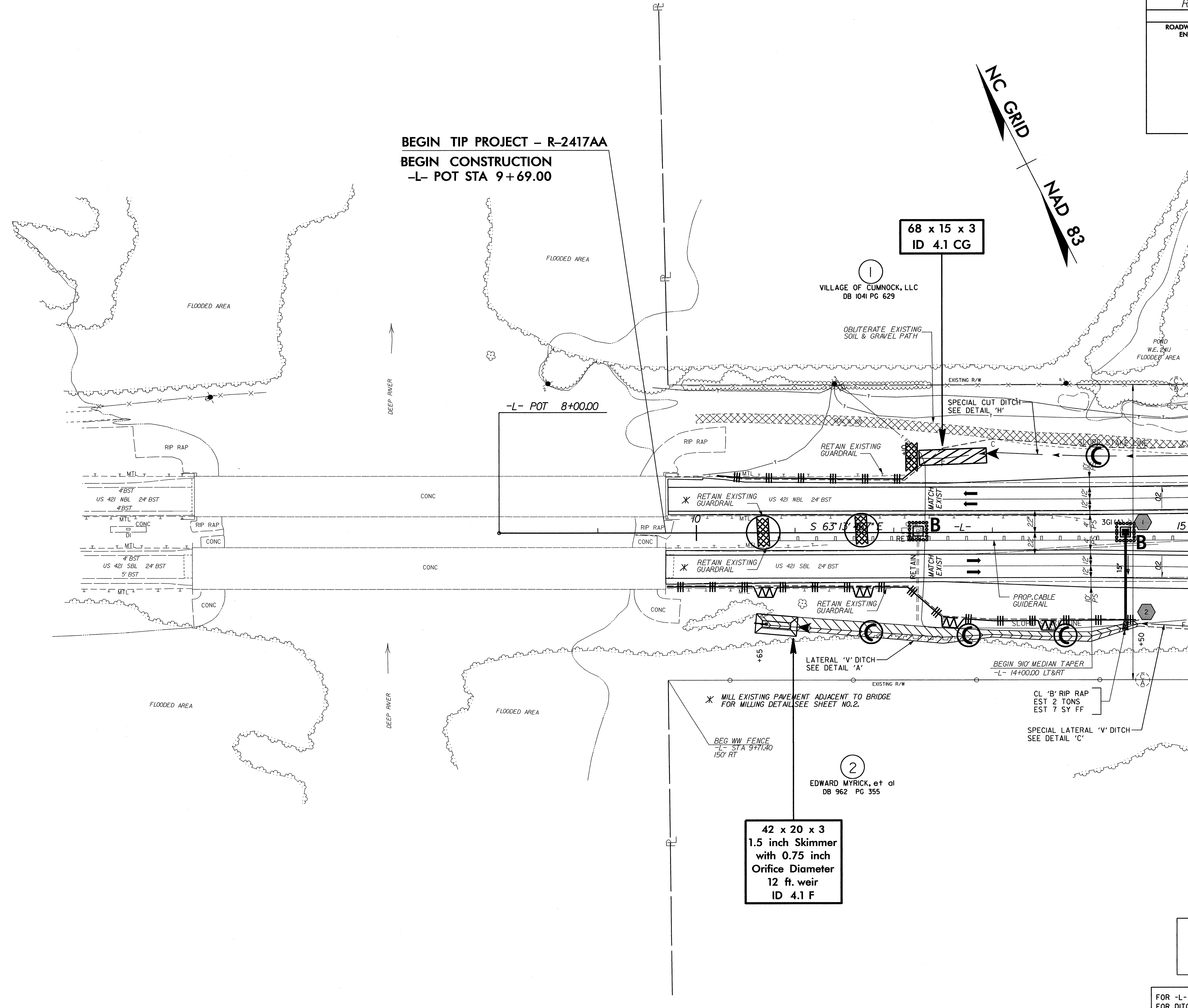
PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-30/CONST.4
R/W SHEET NO.	4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



LEGEND

- PAVED SHOULDER
- PAVEMENT REMOVAL

FOR -L- PROFILE, SEE SHEET NO. 26
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

8/17/99

24-SEP-2010 15:34
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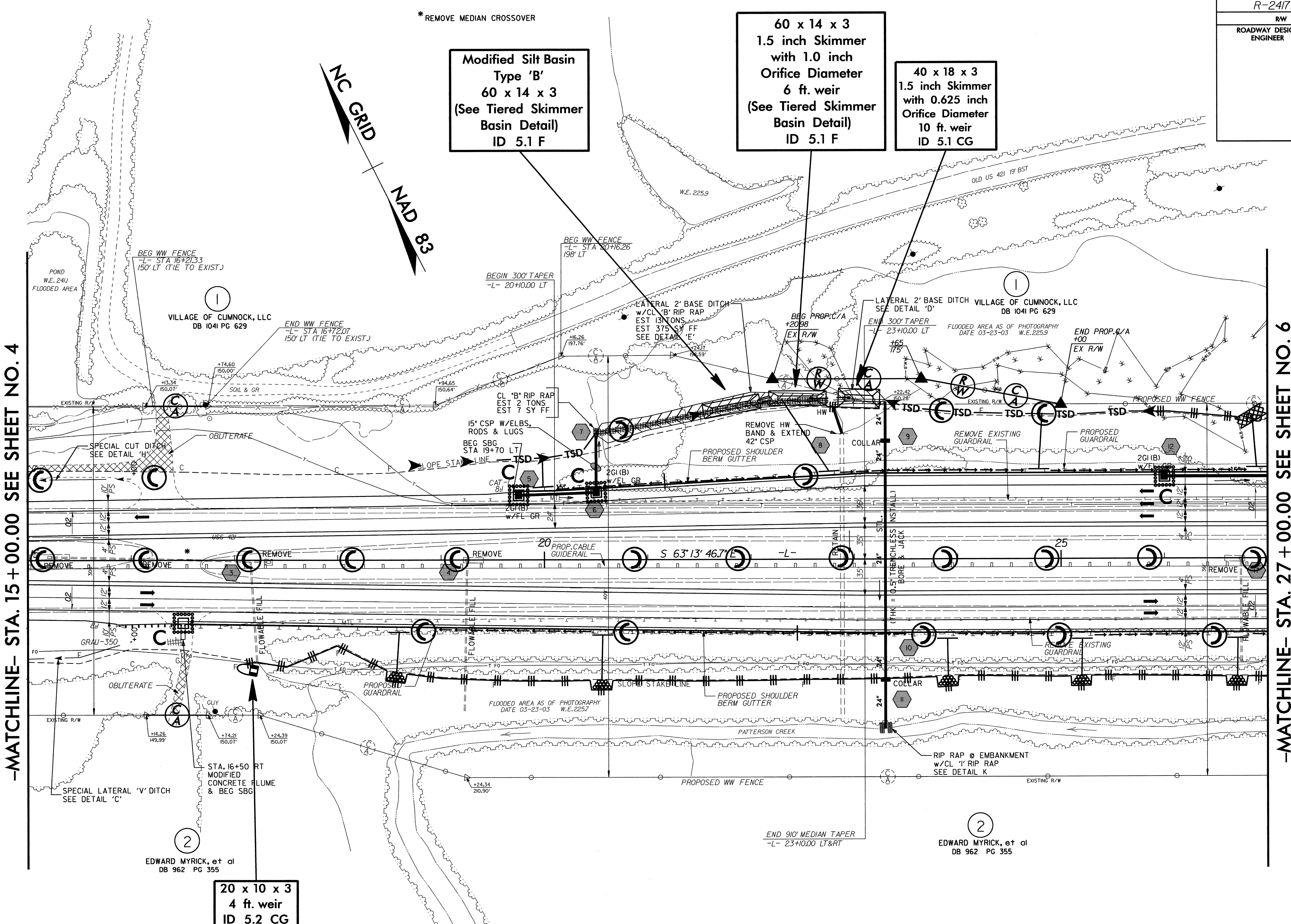
PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-31/CONST.5
R/W SHEET NO.	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99



*REMOVE MEDIAN CROSSOVER
NC GRID
NAD 83
Modified Silt Basin Type 'B' 60 x 14 x 3 (See Tiered Skimmer Basin Detail) ID 5.1 F
60 x 14 x 3 1.5 inch Skimmer with 1.0 inch Orifice Diameter 6 ft. weir (See Tiered Skimmer Basin Detail) ID 5.1 F
40 x 18 x 3 1.5 inch Skimmer with 0.625 inch Orifice Diameter 10 ft. weir ID 5.1 CG
20 x 10 x 3 4 ft. weir ID 5.2 CG
-MATCHLINE- STA. 15+00.00 SEE SHEET NO. 4
-MATCHLINE- STA. 27+00.00 SEE SHEET NO. 6
VILLAGE OF CUMNOCK, LLC DB 1041 PG 629
EDWARD MYRICK, et al DB 962 PG 355
OLD US 421 19' BST
POND W.E. 241J FLOODED AREA
BEG WW FENCE -L- STA 16+21.33 150' LT (TIE TO EXIST.)
END WW FENCE -L- STA 16+72.07 150' LT (TIE TO EXIST.)
BEG WW FENCE -L- STA 20+16.26 198' LT
BEGIN 300' TAPER -L- 20+10.00 LT
END 300' TAPER -L- 23+10.00 LT
LATERAL 2' BASE DITCH w/CL 'B' RIP RAP EST 13 TONS EST 375 SY FF SEE DETAIL 'E'
LATERAL 2' BASE DITCH SEE DETAIL 'D'
FLOODED AREA AS OF PHOTOGRAPHY DATE 03-23-03 W.E.225.9
FLOODED AREA AS OF PHOTOGRAPHY DATE 03-23-03 W.E.225J
BEG PROP.C/A
END PROP.C/A
EX R/W
CL 'B' RIP RAP EST 2 TONS EST 7 SY FF
15" CSP W/ELBS, RODS & LUGS
BEG SBG STA 19+70 LT
2GI (B) w/FL GR
REMOVE HW BAND & EXTEND 42" CSP
PROPOSED SHOULDER BERM GUTTER
REMOVE EXISTING GUARDRAIL
PROPOSED GUARDRAIL
PROPOSED WW FENCE
SPECIAL CUT DITCH SEE DETAIL 'H'
OBLITERATE
SLOPE STAKE LINE
S 63° 13' 46.7" E
-L-
PROP. CABLE GUIDERAIL
REMOVE
FLOWABLE FILL
COLLAR
RETAIN
(THK = 0.5") TRENCHLESS INSTALL BORE & JACK
GRAU-350
STA. 16+50 RT MODIFIED CONCRETE FLUME & BEG SBG
SPECIAL LATERAL 'V' DITCH SEE DETAIL 'C'
PATTERSON CREEK
RIP RAP @ EMBANKMENT w/CL 'I' RIP RAP SEE DETAIL K
END 910' MEDIAN TAPER -L- 23+10.00 LT&RT
EXISTING R/W

LEGEND

- PAVED SHOULDER
- PAVEMENT REMOVAL

FOR -L- PROFILE, SEE SHEET NO. 26
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

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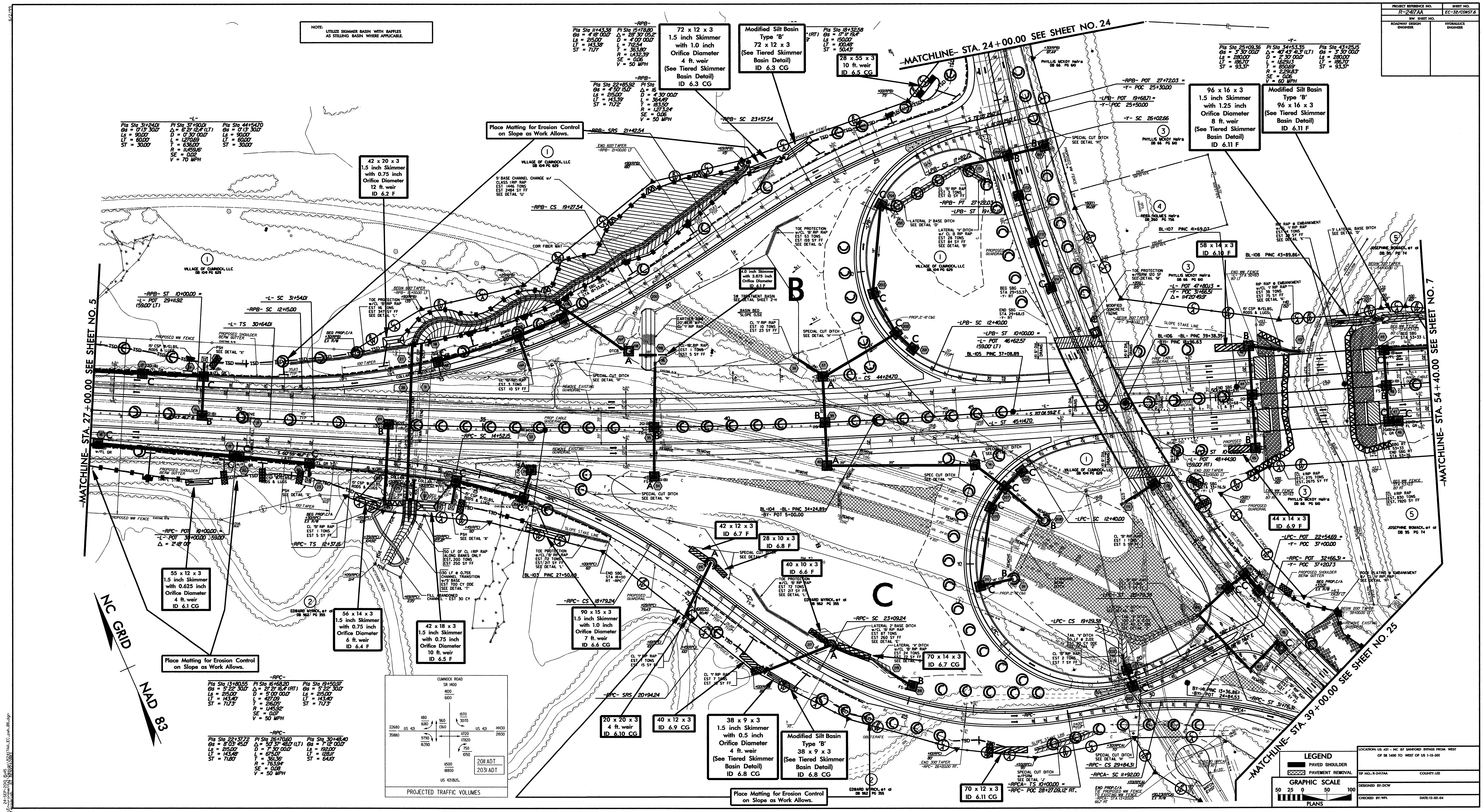
jemilerparish AT HENY242003


PROJECT REFERENCE NO.
R-2417AA
SHEET NO.
EC-32/CONST.6
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NOTE: UTILIZE SKIMMER BASIN WITH BAFFLES AS STILLING BASIN WHERE APPLICABLE.
-MATCHLINE- STA. 24+00.00 SEE SHEET NO. 24
-MATCHLINE- STA. 27+00.00 SEE SHEET NO. 5
-MATCHLINE- STA. 54+40.00 SEE SHEET NO. 7
-MATCHLINE- STA. 39+00.00 SEE SHEET NO. 25
-L-
-RPB-
-RPC-
-Y-
Place Matting for Erosion Control on Slope as Work Allows.
42 x 20 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
12 ft. weir
ID 6.2 F
72 x 12 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
4 ft. weir
(See Tiered Skimmer Basin Detail)
ID 6.3 CG
Modified Silt Basin
Type 'B'
72 x 12 x 3
(See Tiered Skimmer Basin Detail)
ID 6.3 CG
28 x 55 x 3
10 ft. weir
ID 6.5 CG
96 x 16 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
8 ft. weir
(See Tiered Skimmer Basin Detail)
ID 6.11 F
Modified Silt Basin
Type 'B'
96 x 16 x 3
(See Tiered Skimmer Basin Detail)
ID 6.11 F
58 x 14 x 3
ID 6.10 F
44 x 14 x 3
ID 6.9 F
55 x 12 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
4 ft. weir
ID 6.1 CG
56 x 14 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
6 ft. weir
ID 6.4 F
42 x 18 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
10 ft. weir
ID 6.5 F
90 x 15 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
7 ft. weir
ID 6.6 CG
42 x 12 x 3
ID 6.7 F
28 x 10 x 3
ID 6.8 F
40 x 10 x 3
ID 6.6 F
70 x 14 x 3
ID 6.7 CG
20 x 20 x 3
4 ft. weir
ID 6.10 CG
40 x 12 x 3
ID 6.9 CG
38 x 9 x 3
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
4 ft. weir
(See Tiered Skimmer Basin Detail)
ID 6.8 CG
Modified Silt Basin
Type 'B'
38 x 9 x 3
(See Tiered Skimmer Basin Detail)
ID 6.8 CG
70 x 12 x 3
ID 6.11 CG
VILLAGE OF CUMNOCK, LLC
PHYLLIS MCKOY Heirs
REBA HOLMES Heirs
JOSEPHINE BOWACK, et al
EDWARD MYRICK, et al
B
C
NC GRID
NAD 83
PROJECTED TRAFFIC VOLUMES
CUMNOCK ROAD SR 1400
US 421
US 421 BUS.
2011 ADT
2031 ADT
LEGEND
PAVED SHOULDER
PAVEMENT REMOVAL
GRAPHIC SCALE
50 25 0 50 100
PLANS
LOCATION: US 421 – NC 87 SANFORD BYPASS FROM WEST OF SR 1400 TO WEST OF US 1-15-501
TIP NO.: R-2417AA
COUNTY: LEE
DESIGNED BY: DCW
CHECKED BY: WFL
DATE: 12-02-04

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-33/CONST.7
R/W SHEET NO.	7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NC GRID / NAD 83

-L-
PIs Sta 62+31.92
θs = 0°13' 30.0"
Ls = 90.00'
LT = 60.00'
ST = 30.00'

PI Sta 85+33.81
Δ = 22° 25' 40.9" (RT)
D = 0° 30' 00.0"
L = 4,485.60'
T = 2,271.89'
R = 11,459.16'
SE = 0.02
V = 70 MPH

5
JOSEPHINE WOMACK, et al
DB 95 PG 74

-MATCHLINE- STA. 54+40.00 SEE SHEET NO. 6

-MATCHLINE- STA. 65+00.00 SEE SHEET NO. 8

BL-109 PINC 47+26.34
BL-110 PINC 50+81.26
BL-111 PINC 53+44.00
BL-112 PINC 55+92.38

3' LATERAL BASE DITCH SEE DETAIL 'D'
CL B RIP RAP EST. 5 TONS EST. 14 SY FF
END SBG STA 56+00 LT
24" CSP W/ ELBS, RODS & LUGS
END 300' TAPER -L- 57+00.00 LT
PROPOSED GUARDRAIL
PROPOSED WW FENCE
SLOPE STAKE LINE
-L- TS 61+71.92
-L- SC 62+61.92
45' TYP
BM #4 -BL- STA 55+75.36 LEFT 189.14' ELEV = 297.16'
JB w/MH
w/FL GR
S 70° 01' 53.2" E
PROP CABLE GUIDERAIL
2GI(B) w/FL GR
BEG SBG STA 61+50 RT
PROPOSED SHOULDER BERM GUTTER
PROPOSED GUARDRAIL
SPECIAL CUT DITCH SEE DETAIL 'H'
END 300' TAPER -L- 57+50.00 RT
BEGIN 300' TAPER -L- 54+50.00 RT
PROPOSED WW FENCE
44 x 20 x 3 ID 7.3 CG
90 x 16 x 3 1.5 inch Skimmer with 1.0 inch Orifice Diameter 8 ft. weir ID 7.2 CG
PSH SEE DETAIL 'X'
CL 'B' RIP RAP EST 3 TONS EST 10 SY FF
2' BASE DITCH 110 LF @ 3.0% EST 20 CY DDE SEE DETAIL 'F'
RIP RAP @ EMBANKMENT CL 'I' RIP RAP EST 16 TONS EST 32 SY FF SEE DETAIL 'K'
BIG BUFFALO CREEK
PHYLLIS MCKOY DB 66 PG 610
BM #3 -BL- STA 47+48.61 RIGHT 289.16' ELEV = 254.49'

LEGEND
PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NOS. 27 & 28
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

24-SEP-2010 15:48
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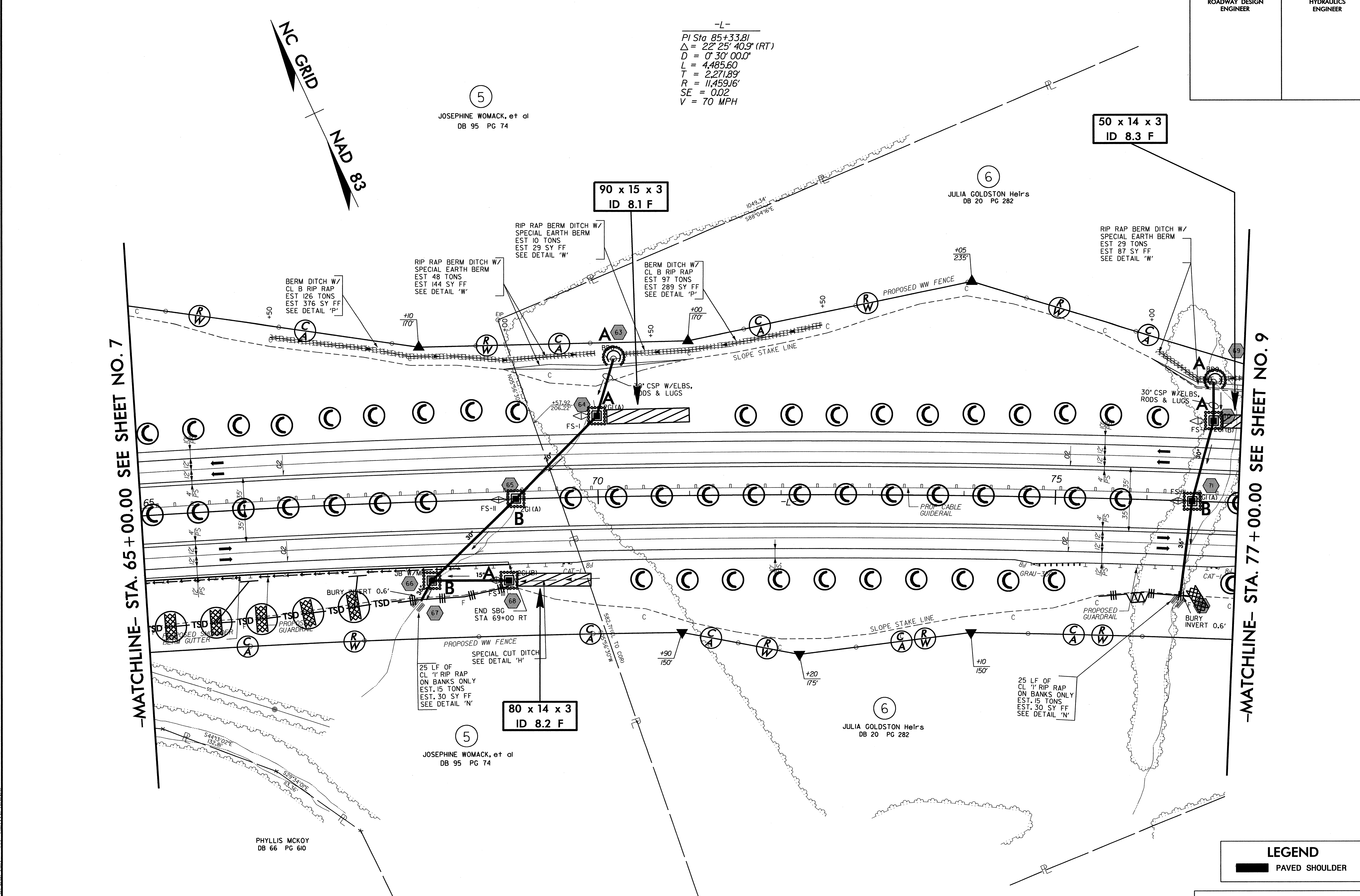
jennifer.parrish AT RENV2422003

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-34/CONST.8
R/W SHEET NO.	8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



LEGEND

PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NO. 28
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

8/17/99

24-SEP-2010 15:51
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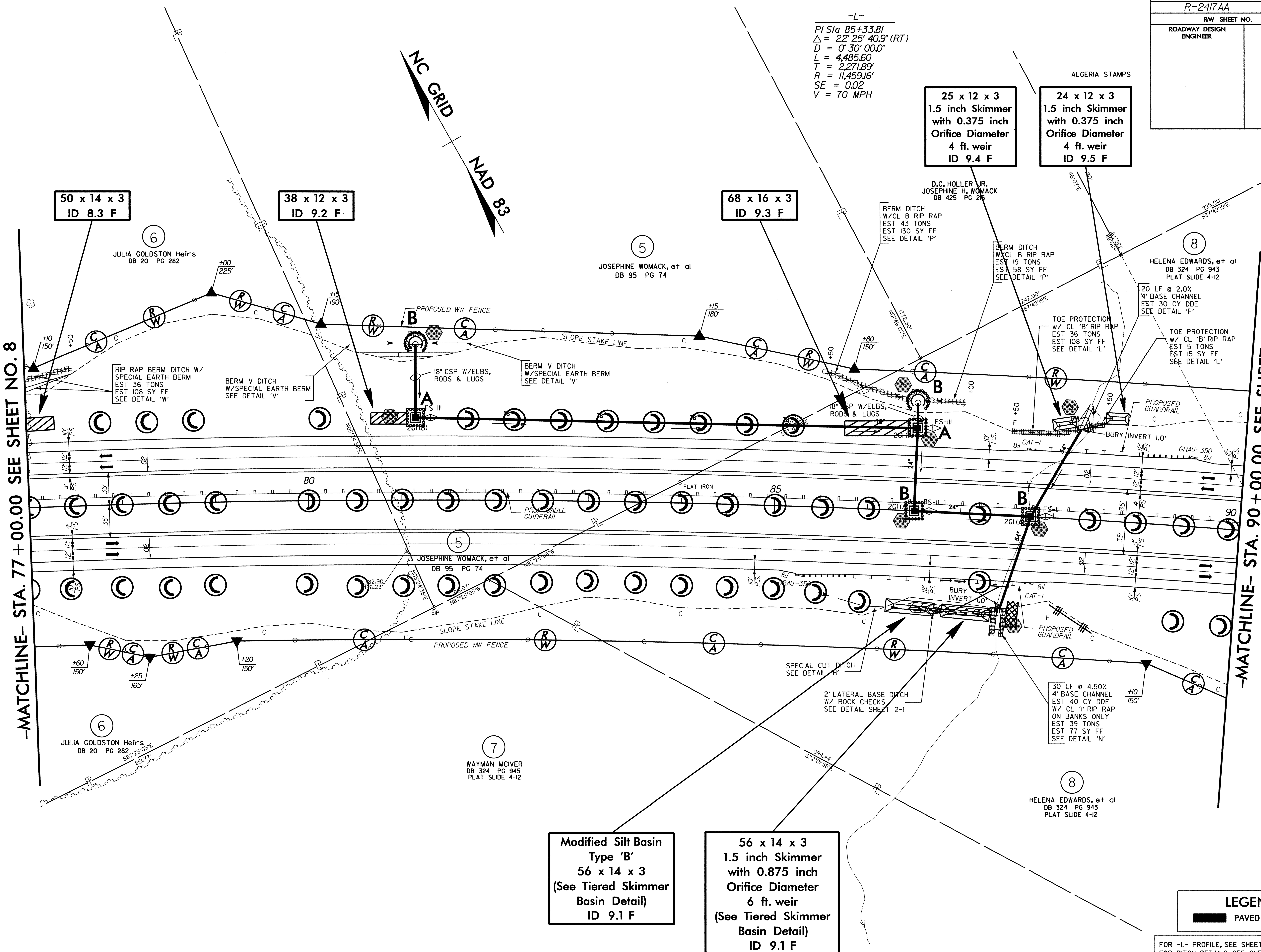
PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-35/CONST.9
RW SHEET NO.	9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ALGERIA STAMPS



-L-
PI Sta 85+33.81
△ = 22° 25' 40.9" (RT)
D = 0° 30' 00.0"
L = 4,485.60
T = 2,271.89'
R = 11,459.16'
SE = 0.02
V = 70 MPH
NC GRID NAD 83
50 x 14 x 3
ID 8.3 F
38 x 12 x 3
ID 9.2 F
68 x 16 x 3
ID 9.3 F
25 x 12 x 3
1.5 inch Skimmer
with 0.375 inch
Orifice Diameter
4 ft. weir
ID 9.4 F
24 x 12 x 3
1.5 inch Skimmer
with 0.375 inch
Orifice Diameter
4 ft. weir
ID 9.5 F
JULIA GOLDSTON Heirs
DB 20 PG 282
JOSEPHINE WOMACK, et al
DB 95 PG 74
D.C. HOLLER JR.
JOSEPHINE H. WOMACK
DB 425 PG 216
HELENA EDWARDS, et al
DB 324 PG 943
PLAT SLIDE 4-12
WAYMAN MCIVER
DB 324 PG 945
PLAT SLIDE 4-12
RIP RAP BERM DITCH W/
SPECIAL EARTH BERM
EST 36 TONS
EST 108 SY FF
SEE DETAIL 'W'
BERM V DITCH
W/SPECIAL EARTH BERM
SEE DETAIL 'V'
PROPOSED WW FENCE
18" CSP W/ELBS,
RODS & LUGS
SLOPE STAKE LINE
BERM DITCH
W/CL B RIP RAP
EST 43 TONS
EST 130 SY FF
SEE DETAIL 'P'
BERM DITCH
W/CL B RIP RAP
EST 19 TONS
EST 58 SY FF
SEE DETAIL 'P'
20 LF @ 2.0%
4' BASE CHANNEL
EST 30 CY DDE
SEE DETAIL 'F'
TOE PROTECTION
w/ CL 'B' RIP RAP
EST 36 TONS
EST 108 SY FF
SEE DETAIL 'L'
TOE PROTECTION
w/ CL 'B' RIP RAP
EST 5 TONS
EST 15 SY FF
SEE DETAIL 'L'
PROPOSED GUARDRAIL
BURY INVERT 1.0'
GRAU-350
FLAT IRON
PROPOSED CABLE GUIDERAIL
SPECIAL CUT DITCH
SEE DETAIL 'H'
2' LATERAL BASE DITCH
W/ ROCK CHECKS
SEE DETAIL SHEET 2-I
30 LF @ 4.50%
4' BASE CHANNEL
EST 40 CY DDE
W/ CL 'I' RIP RAP
ON BANKS ONLY
EST 39 TONS
EST 77 SY FF
SEE DETAIL 'N'
-MATCHLINE- STA. 77+00.00 SEE SHEET NO. 8
-MATCHLINE- STA. 90+00.00 SEE SHEET NO. 10
Modified Silt Basin
Type 'B'
56 x 14 x 3
(See Tiered Skimmer
Basin Detail)
ID 9.1 F
56 x 14 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
6 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 9.1 F

LEGEND

PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NOS. 28 & 29
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

8/17/99

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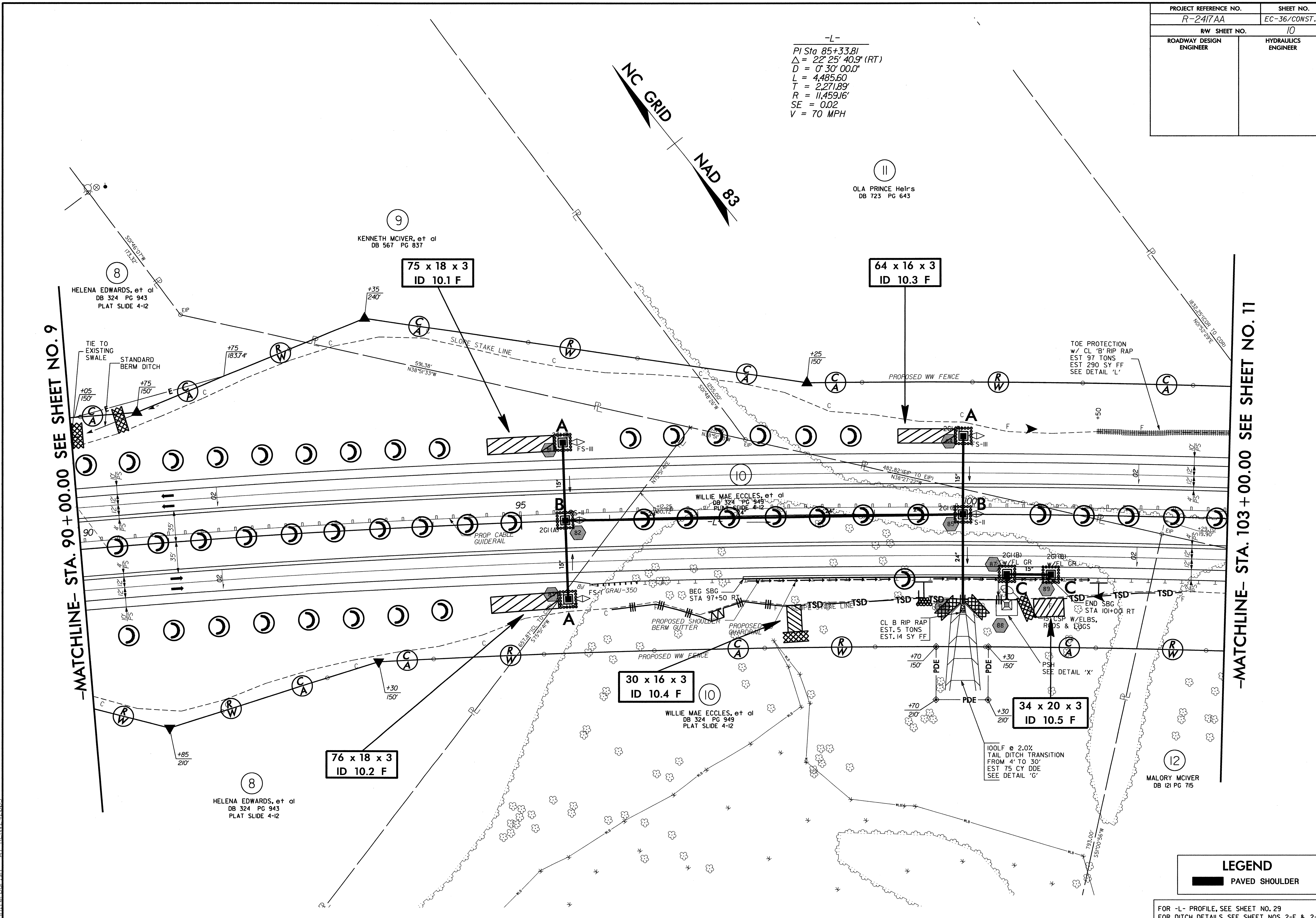
PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-36/CONST10
RW SHEET NO.	10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



LEGEND
PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NO. 29
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

8/17/99
24-SEP-2010 15:56

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-37/CONST.11
R/W SHEET NO.	11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-L-

PI Sta 85+33.81
Δ = 22° 25' 40.9" (RT)
D = 0° 30' 00.0"
L = 4,485.60
T = 2,271.89'
R = 11,459.16'
SE = 0.02
V = 70 MPH

PIs Sta 107+77.52
θs = 0° 13' 30.0"
Ls = 90.00'
LT = 60.00'
ST = 30.00'

NC GRID / NAD 83

-MATCHLINE- STA. 103+00.00 SEE SHEET NO. 10

-MATCHLINE- STA. 116+00.00 SEE SHEET NO. 12

48 x 20 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
12 ft. weir
ID 11.2 F

54 x 14 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
6 ft. weir
ID 11.4 F

46 x 10 x 3
ID 11.5 F

66 x 14 x 3
ID 11.6 F

30 x 15 x 3
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
7 ft. weir
ID 11.1 F

38 x 16 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
10 ft. weir
ID 11.3 F

46 x 30 x 3
4 ft. weir
ID 11.1 CG

40 x 24 x 3
ID 11.2 CG

34 x 20 x 3
ID 11.3 CG

36 x 32 x 3
8 ft. weir
ID 11.4 CG

(11) OLA PRINCE Heirs
DB 723 PG 643

(12) MALORY MCIVER
DB 121 PG 715

(13) IRMA JONES Heirs
DB 297 PG 361

(14) ETHEL TOOTLE Heirs
DB 297 PG 363

(15) WILLIAM HORNER, et al
DB 610 PG 273
PLAT SLIDE 7-9A
PLAT SLIDE 3-6I

TOE PROTECTION w/ CL 'B' RIP RAP SEE DETAIL 'L'

END WW FENCE -L- STA 105+46 99.97' LT

INLET CHANNEL SEE DETAIL CULVERT #1

BEG WW FENCE -L- STA 105+77.32 101.0' LT

2' LATERAL BASE DITCH SEE DETAIL 'D'

LATERAL V DITCH SEE DETAIL 'A'

OBLITERATE

SPECIAL CUT DITCH SEE DETAIL 'H'

PROPOSED WW FENCE

SLOPE STAKE LINE

PROPOSED GUARDRAIL

PROP CABLE GUIDERAIL

PROPOSED SHOULDER BERM GUTTER

BEG SBG STA 103+50 RT

END SBG STA 105+65 RT
15" CSP W/ELBS, RODS & LUGS

PSH SEE DETAIL 'X'

BEG WW FENCE STA 104+94.69 87.90' RT

END WW FENCE STA 104+62.41 87.77' RT

OUTLET CHANNEL SEE DETAIL CULVERT #1

CL B RIP RAP EST. 3 TONS EST. 11 SY FF

CS 107+47.52

ST 108+37.52

LEGEND
PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NOS. 29 & 30
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

24-SEP-2010 15:58
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(epolfer)parrish AT RENV242003

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-38/CONST12
R/W SHEET NO.	12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NC GRID / NAD 83

18 x 9 x 3
1.5 inch Skimmer
with 0.125 inch
Orifice Diameter
4 ft. weir
ID 12.1 F

38 x 12 x 3
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
4 ft. weir
ID 12.2 F

40 x 15 x 3
ID 12.3 F

(15) WILLIAM HORNER, et al
DB 610 PG 273
PLAT SLIDE 7-9A
PLAT SLIDE 3-6I

-MATCHLINE- STA. 116 + 00.00 SEE SHEET NO. 11

-MATCHLINE- STA. 129 + 00.00 SEE SHEET NO. 13

END WW FENCE -L- STA 120+29.11 106.20' LT

INLET CHANNEL SEE DETAIL CULVERT #2

TOE PROTECTION w/ CL 'B' RIP RAP EST 193 TONS EST 578 SY FF SEE DETAIL 'L'

LATERAL V DITCH SEE DETAIL 'A'

PROPOSED WW FENCE

BURY INVERT 0.6'

BEG SBG STA 118+56 LT

BEG SBG STA 118+95 RT

PROPOSED SHOULDER BERM GUTTER

L-SHAPED HEADWALL

SLOPE STAKE LINE

PROPOSED GUARDRAIL

2GI(B) w/FL GR

PROP. 16" STEEL SEWER SLEEVE

PROP. CABLE GUIDERAIL

BURY INVERT 1.0'

BEG WW FENCE -L- STA 120+53 106.66' LT

BEG WW FENCE STA 120+76.39 102.87' RT

OUTLET CHANNEL SEE DETAIL CULVERT #2

CL B RIP RAP EST. 2 TONS EST. 7 SY FF

8:1 GRAU-350

END WW FENCE STA 120+68.32 102.97' RT

PROP. OUTLET CHANNEL FROM EL. 242.7 TO EL. 242.3 w/ CL 'I' RIP RAP BANKS ONLY EST 15 TONS EST 30 SY FF L=80', S= 0.005 DDE= 80 CY SEE DETAIL N

CL I RIP RAP EST. 10 TONS EST. 21 SY FF

18 CSP W/ELBS, RODS & LUGS

PSH SEE DETAIL 'X'

(15) WILLIAM HORNER, et al
DB 610 PG 273
PLAT SLIDE 7-9A
PLAT SLIDE 3-6I

25 x 20 x 3
ID 12.1 CG

34 x 16 x 3
ID 12.4 F

20 x 20 x 3
6 ft. weir
ID 12.2 CG

22 x 20 x 3
4 ft. weir
ID 12.3 CG

20 x 36 x 3
6 ft. weir
ID 12.4 CG

LEGEND

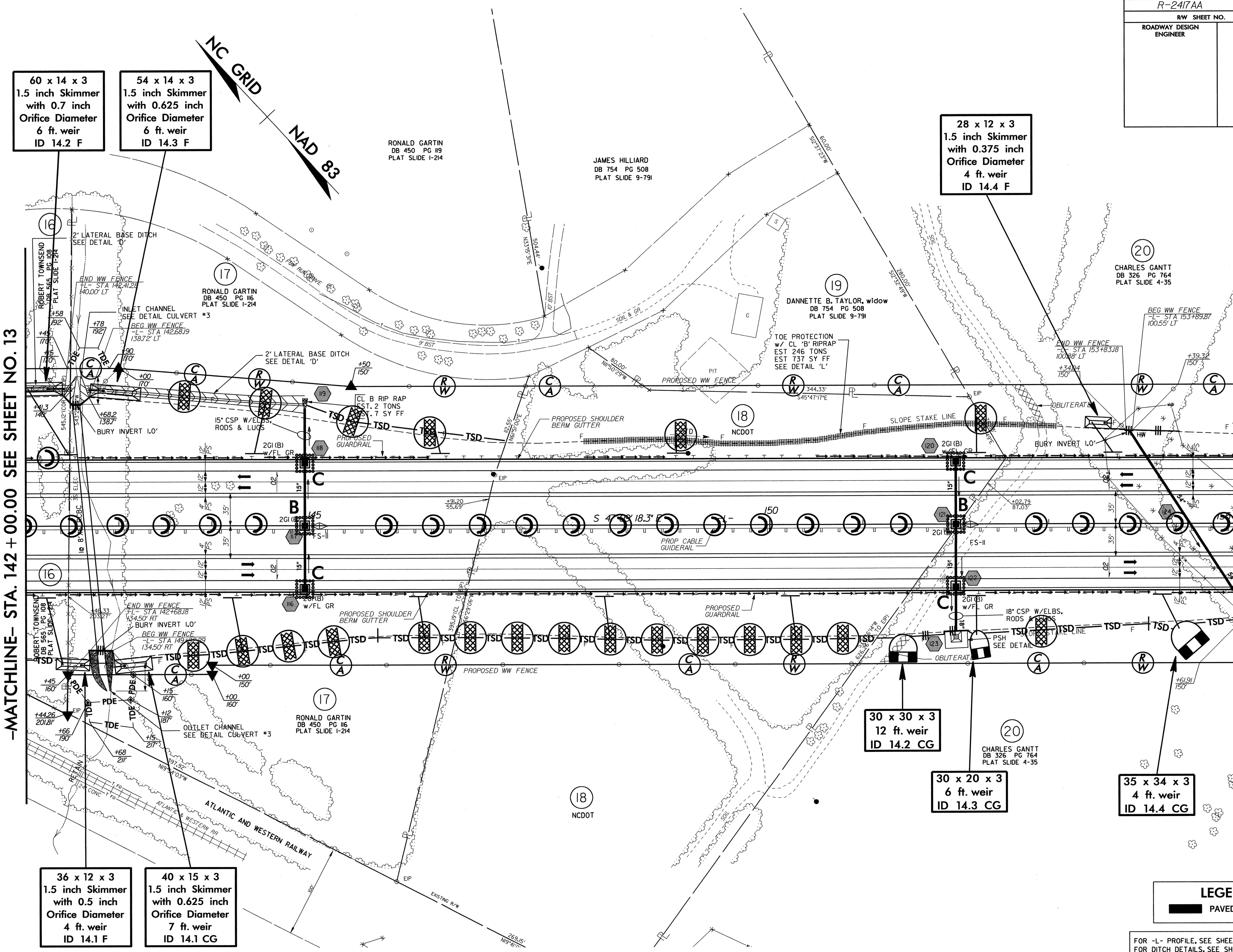
PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NO. 30
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

24-SEP-2010 16:00
R:\Environmental\Design\R2417AA_EC_psh_12.dgn
jennifer.parish AT RFNV2432003

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-39/CONSTJ3
R/W SHEET NO.	13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-40/CONST.14
RW SHEET NO.	14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NC GRID NAD 83
60 x 14 x 3
1.5 inch Skimmer
with 0.7 inch
Orifice Diameter
6 ft. weir
ID 14.2 F
54 x 14 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
6 ft. weir
ID 14.3 F
28 x 12 x 3
1.5 inch Skimmer
with 0.375 inch
Orifice Diameter
4 ft. weir
ID 14.4 F
RONALD GARTIN
DB 450 PG 119
PLAT SLIDE 1-214
JAMES HILLIARD
DB 754 PG 508
PLAT SLIDE 9-791
RONALD GARTIN
DB 450 PG 116
PLAT SLIDE 1-214
DANNETTE B. TAYLOR, widow
DB 754 PG 508
PLAT SLIDE 9-791
CHARLES GANTT
DB 326 PG 764
PLAT SLIDE 4-35
ROBERT TOWNSEND
DB 565 PG 108
PLAT SLIDE 1-214
2' LATERAL BASE DITCH
SEE DETAIL 'D'
INLET CHANNEL
SEE DETAIL CULVERT #3
END WW FENCE
BEG WW FENCE
CL B RIP RAP
EST. 2 TONS
EST. 7 SY FF
15" CSP W/ELBS, RODS & LUGS
BURY INVERT 1.0'
PROPOSED GUARDRAIL
PROPOSED SHOULDER BERM GUTTER
TOE PROTECTION
w/ CL 'B' RIPRAP
EST 246 TONS
EST 737 SY FF
SEE DETAIL 'L'
PROPOSED WW FENCE
SLOPE STAKE LINE
NCDOT
PROP CABLE GUIDERAIL
S 47°09' 18.3" E
-MATCHLINE- STA. 142+00.00 SEE SHEET NO. 13
-MATCHLINE- STA. 155+00.00 SEE SHEET NO. 15
OUTLET CHANNEL
SEE DETAIL CULVERT #3
18" CSP W/ELBS, RODS & LUGS
PSH
SEE DETAIL
OBLITERATE
ATLANTIC AND WESTERN RAILWAY
EXISTING R/W
30 x 30 x 3
12 ft. weir
ID 14.2 CG
30 x 20 x 3
6 ft. weir
ID 14.3 CG
35 x 34 x 3
4 ft. weir
ID 14.4 CG
36 x 12 x 3
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
4 ft. weir
ID 14.1 F
40 x 15 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
7 ft. weir
ID 14.1 CG

LEGEND

PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NO. 31
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

8/17/99

24-SEP-2010 16:15
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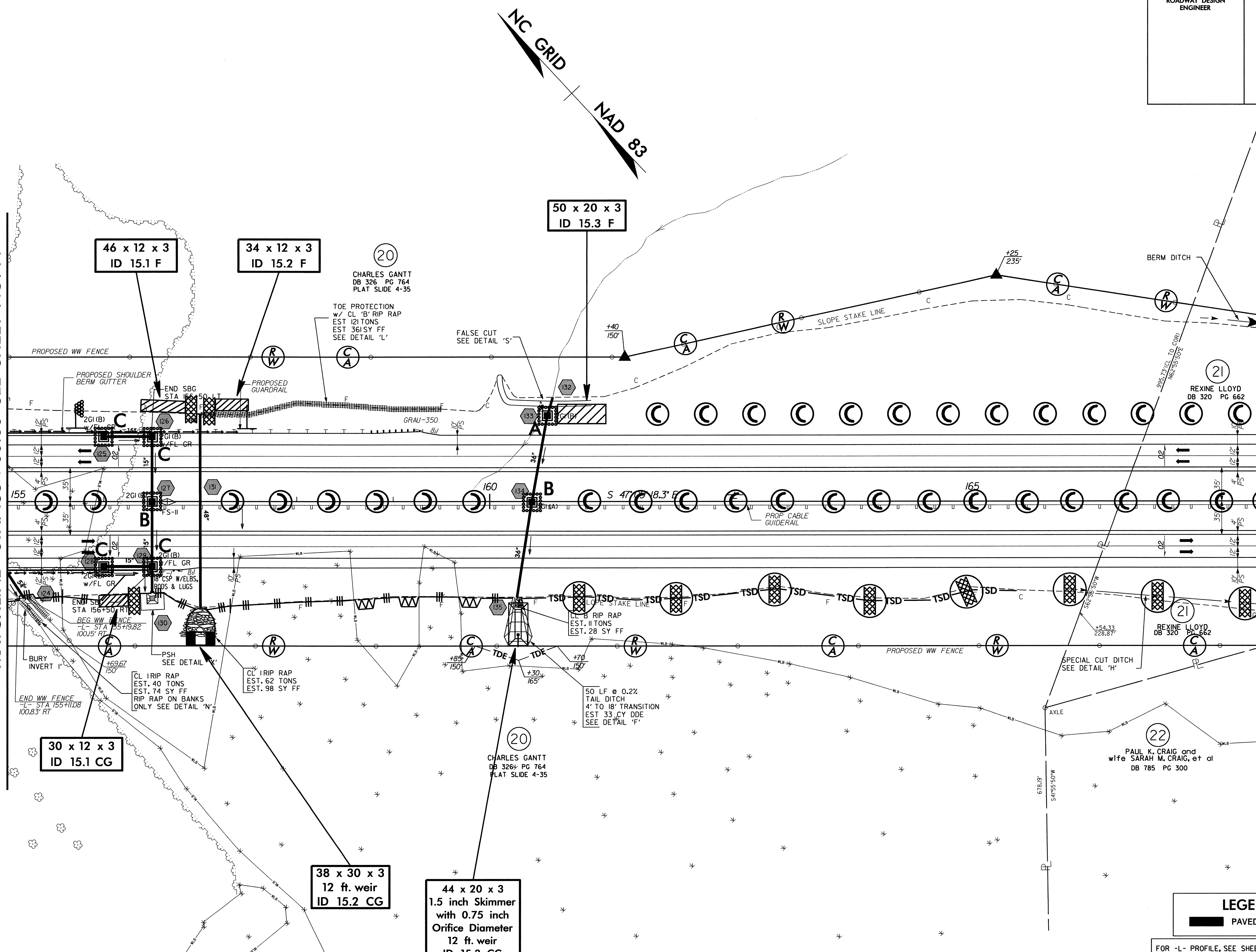
PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-41/CONST 15
R/W SHEET NO.	15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



LEGEND

PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NOS. 31 & 32
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

8/17/99

24-SEP-2010 16:18
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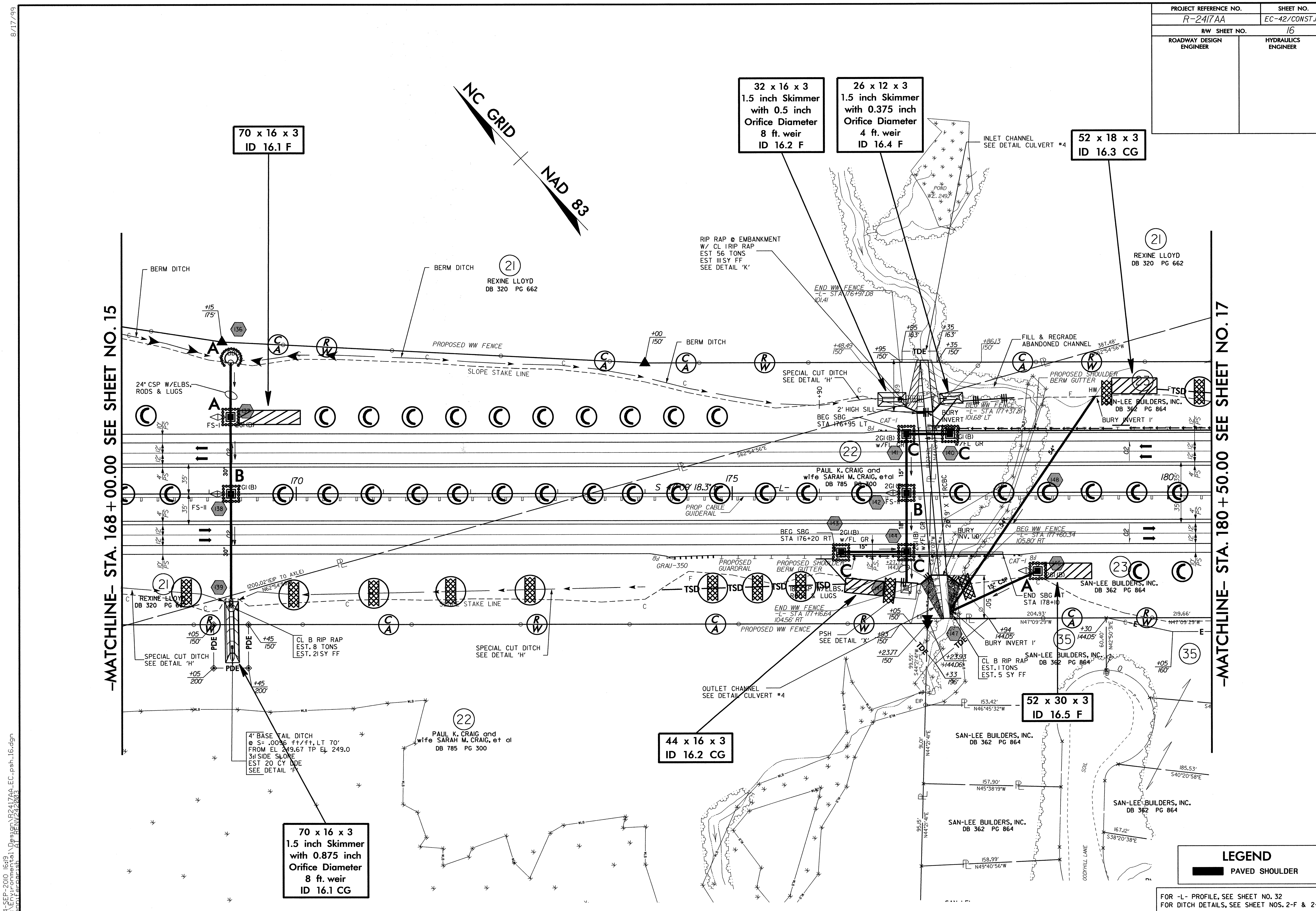
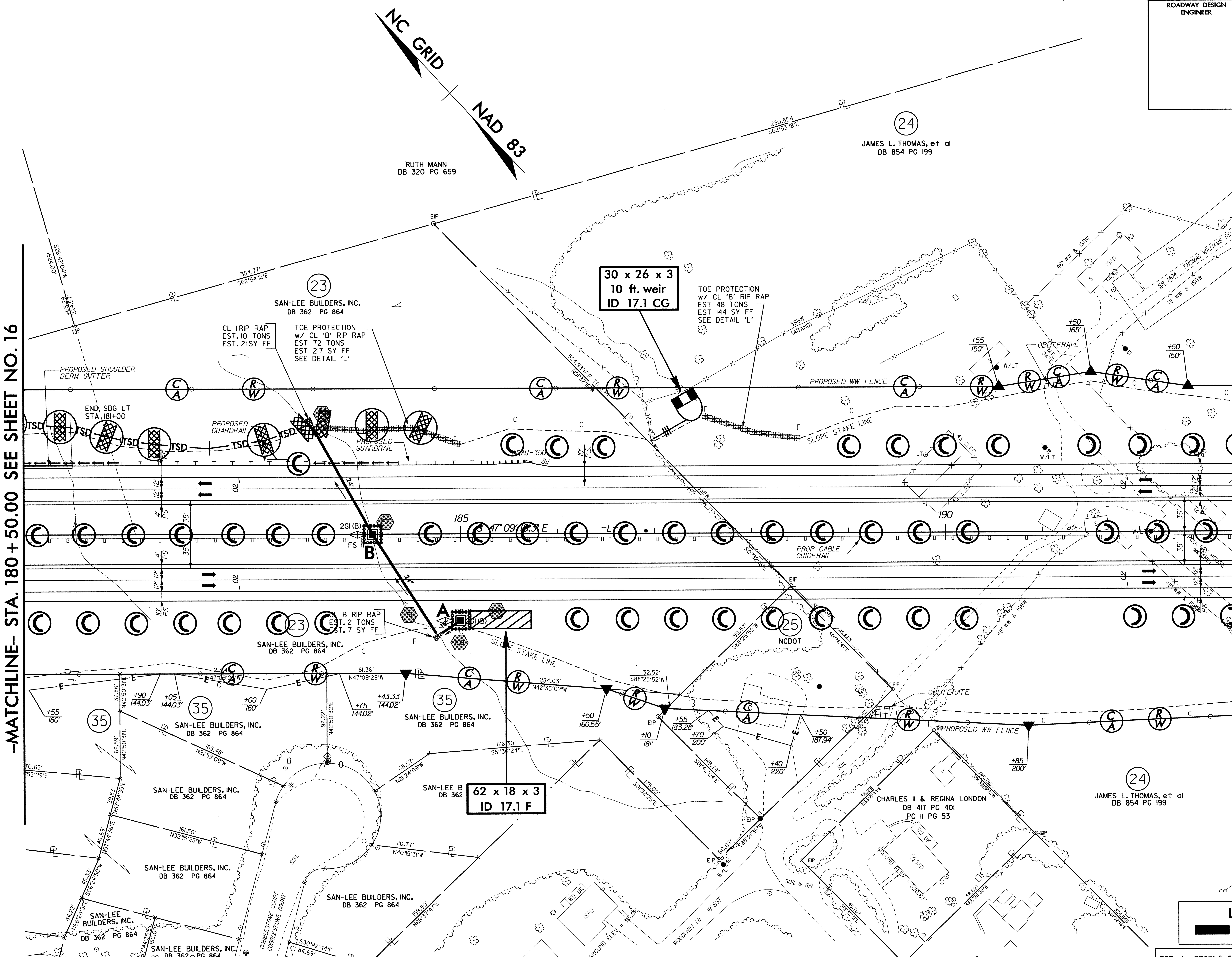

PROJECT REFERENCE NO.
R-2417AA
SHEET NO.
EC-42/CONSTJ6
R/W SHEET NO.
16
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NC GRID
NAD 83
70 x 16 x 3
ID 16.1 F
32 x 16 x 3
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
8 ft. weir
ID 16.2 F
26 x 12 x 3
1.5 inch Skimmer
with 0.375 inch
Orifice Diameter
4 ft. weir
ID 16.4 F
52 x 18 x 3
ID 16.3 CG
INLET CHANNEL
SEE DETAIL CULVERT #4
RIP RAP @ EMBANKMENT
W/ CL I RIP RAP
EST 56 TONS
EST 111 SY FF
SEE DETAIL 'K'
BERM DITCH
REXINE LLOYD
DB 320 PG 662
PROPOSED WW FENCE
SLOPE STAKE LINE
SPECIAL CUT DITCH
SEE DETAIL 'H'
FILL & REGRADE
ABANDONED CHANNEL
PROPOSED SHOULDER
BERM GUTTER
24" CSP W/ELBS,
RODS & LUGS
2' HIGH SILL
BEG SBG
STA 176+95 LT
BURY INVERT
PAUL K. CRAIG and
wife SARAH M. CRAIG, et al
DB 785 PG 300
SAN-LEE BUILDERS, INC.
DB 362 PG 864
BURY INVERT 1'
PROP CABLE GUIDERAIL
BEG SBG
STA 176+20 RT
BEG WW FENCE
END WW FENCE
PROPOSED GUARDRAIL
PROPOSED SHOULDER BERM GUTTER
END SBG RT
STA 178+10
CL B RIP RAP
EST. 8 TONS
EST. 21 SY FF
CL B RIP RAP
EST. 1 TONS
EST. 5 SY FF
PSH
SEE DETAIL 'X'
OUTLET CHANNEL
SEE DETAIL CULVERT #4
52 x 30 x 3
ID 16.5 F
44 x 16 x 3
ID 16.2 CG
4' BASE TAIL DITCH
@ S= .0096 ft/ft, LT 70'
FROM EL 249.67 TP EL 249.0
3:1 SIDE SLOPE
EST 20 CY DDE
SEE DETAIL 'F'
70 x 16 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
8 ft. weir
ID 16.1 CG
-MATCHLINE- STA. 168+00.00 SEE SHEET NO. 15
-MATCHLINE- STA. 180+50.00 SEE SHEET NO. 17
LEGEND
PAVED SHOULDER
FOR -L- PROFILE, SEE SHEET NO. 32
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G
8/17/99
24-SEP-2010 16:19

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-43/CONST.17
R/W SHEET NO.	17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



LEGEND

PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NO. 33
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

8/17/99

24-SEP-2010 16:21
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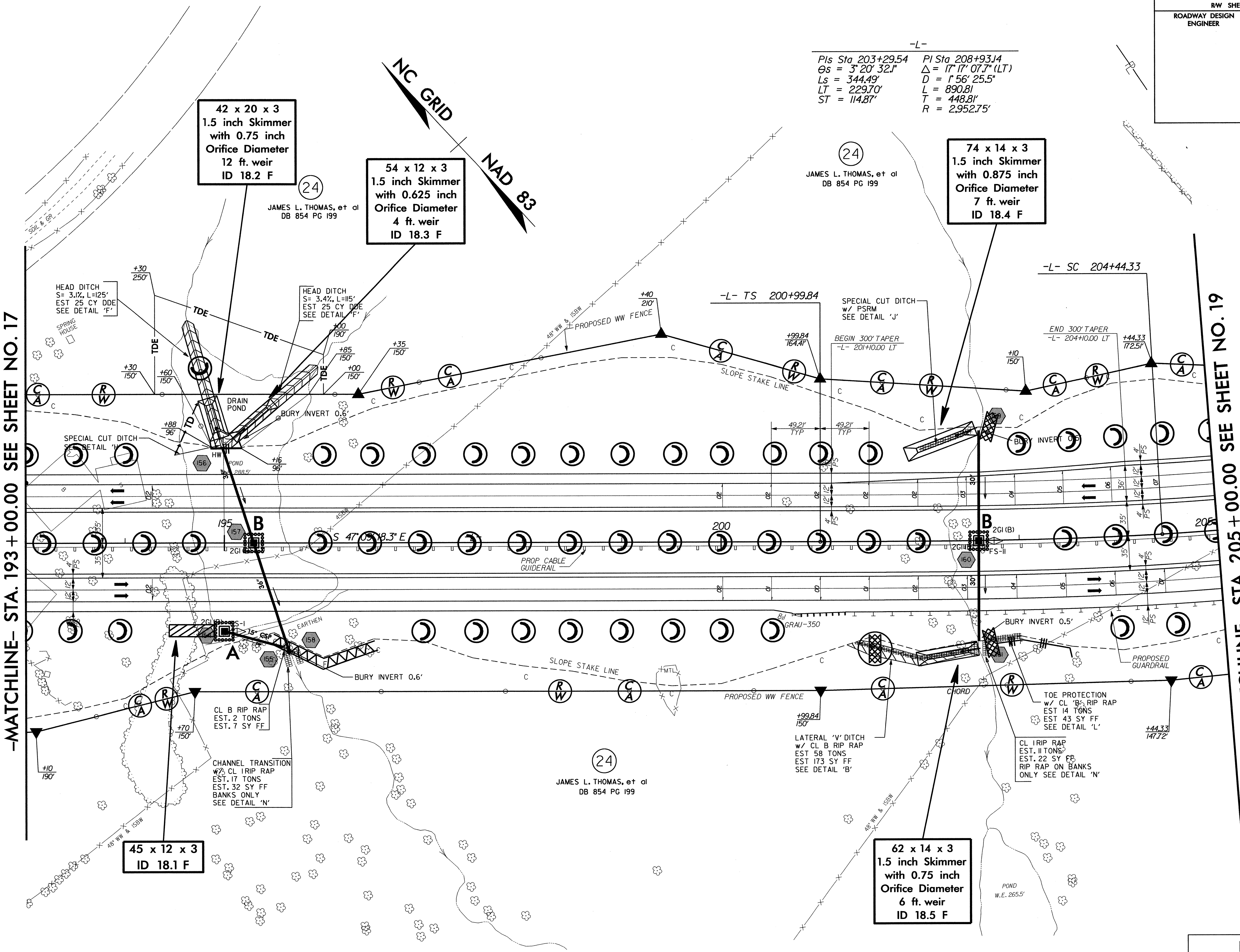
PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-44/CONSTJ8
R/W SHEET NO.	18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



-L-
PIs Sta 203+29.54
Θs = 3° 20' 32.1"
Ls = 344.49'
LT = 229.70'
ST = 114.87'
PI Sta 208+93.14
Δ = 17° 17' 07.7" (LT)
D = 1° 56' 25.5"
L = 890.81
T = 448.81'
R = 2,952.75'
NC GRID NAD 83
42 x 20 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
12 ft. weir
ID 18.2 F
54 x 12 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
4 ft. weir
ID 18.3 F
74 x 14 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
7 ft. weir
ID 18.4 F
45 x 12 x 3
ID 18.1 F
62 x 14 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
6 ft. weir
ID 18.5 F
JAMES L. THOMAS, et al
DB 854 PG 199
HEAD DITCH
S= 3.1%, L=125'
EST 25 CY DDE
SEE DETAIL 'F'
HEAD DITCH
S= 3.4%, L=115'
EST 25 CY DDE
SEE DETAIL 'F'
SPECIAL CUT DITCH
SEE DETAIL 'H'
DRAIN POND
BURY INVERT 0.6'
-L- TS 200+99.84
SPECIAL CUT DITCH
w/ PSRM
SEE DETAIL 'J'
BEGIN 300' TAPER
-L- 201+10.00 LT
END 300' TAPER
-L- 204+10.00 LT
-L- SC 204+44.33
PROPOSED WW FENCE
SLOPE STAKE LINE
BURY INVERT 0.5'
S 47° 09' 18.3" E
PROP CABLE GUIDERAIL
GRAU-350
PROPOSED GUARDRAIL
BURY INVERT 0.5'
BURY INVERT 0.6'
CL B RIP RAP
EST. 2 TONS
EST. 7 SY FF
CHANNEL TRANSITION
w/ CL I RIP RAP
EST. 17 TONS
EST. 32 SY FF
BANKS ONLY
SEE DETAIL 'N'
LATERAL 'V' DITCH
w/ CL B RIP RAP
EST 58 TONS
EST 173 SY FF
SEE DETAIL 'B'
TOE PROTECTION
w/ CL 'B' RIP RAP
EST 14 TONS
EST 43 SY FF
SEE DETAIL 'L'
CL I RIP RAP
EST. 11 TONS
EST. 22 SY FF
RIP RAP ON BANKS
ONLY SEE DETAIL 'N'
-MATCHLINE- STA. 193+00.00 SEE SHEET NO. 17
-MATCHLINE- STA. 205+00.00 SEE SHEET NO. 19

LEGEND

PAVED SHOULDER

FOR -L- PROFILE, SEE SHEET NOS. 33 & 34
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

8/17/99

24-SEP-2010 16:24
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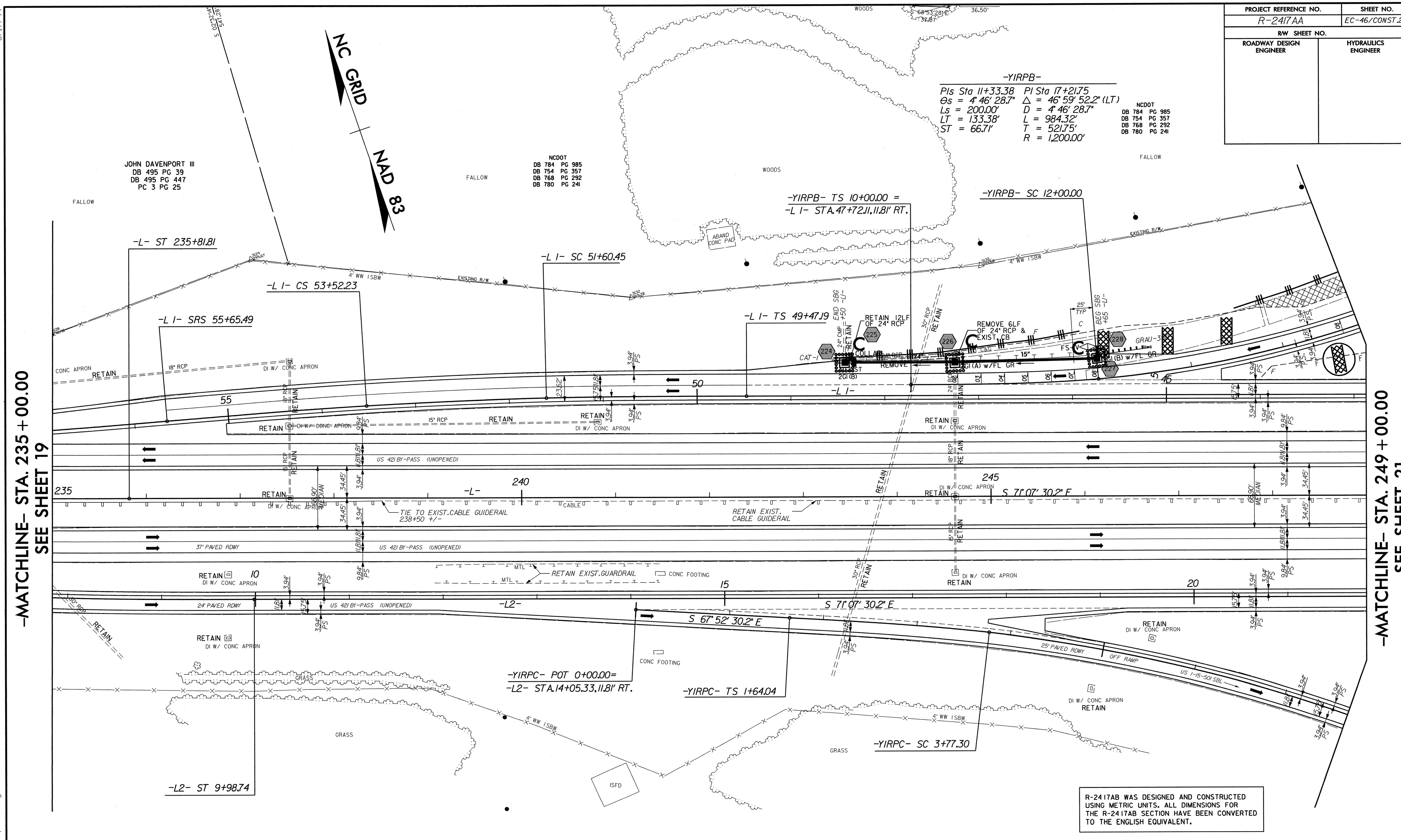
jenniferparish AT RENV24203

PROJECT REFERENCE NO. | SHEET NO.
R-2417AA | EC-45/CONST.19
R/W SHEET NO. 19
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
8/17/99
-L-
PI Sta 208+93.14 L.B.=
PI Sta 227+95.32 L.A.
Δ = 17° 17' 07.7" (LT)
D = 1° 56' 25.5"
L = 890.81
T = 448.81'
R = 2,952.75'
PIs Sta 233+52.19
Θs = 3° 20' 32.1"
Ls = 344.49'
LT = 229.70'
ST = 114.87'
-L- POC 208+33.78 L.B. (R-2417AA) =
-L- POC 227+35.96 L.A. (R-2417AB)
-L1- SC 62+65.62=
-L- STA.229+12.72, 58.07' LT.
64 x 14 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
6 ft. weir
ID 19.1 F
PAUL KELLY
EMILY KELLY
FRANK PAYNE
BRENDA PAYNE
DB 445 PG 906
END PROP.C/A
TIE PROPOSED WW FENCE
TO EXISTING WW FENCE
-L- 206+42.24
147.34' LT
TOE PROTECTION
w/ CL 'B' RIP RAP
EST 43 TONS
EST 130 SY FF
SEE DETAIL 'L'
LATERAL 'V' DITCH
SEE DETAIL 'A'
JAMES THOMAS, et al
DB 91 PG 283
PROPOSED WW FENCE
SLOPE STAKE LINE
-MATCHLINE- STA. 205+00.00 SEE SHEET NO. 18
-MATCHLINE- STA. 235+00.00 SEE SHEET NO. 20
NC GRID NAD 83
WOODS
JOHN DAVENPORT III
DB 495 PG 39
DB 495 PG 447
PC 3 PG 25
-L1- SC 58+27.95
-L- CS 232+37.32
-L1- CS 60+03.16
REPAIR WW WHICH ARE
SEPARATING FROM CULVERT
RETAIN EXIST. GUARDRAIL
PROP CABLE GUIDERAIL
43' PAVED RDWY
48' PAVED RDWY
DI W/ CONC APRON
PROPOSED GUARDRAIL
-L2- CS 7+69.08
CL B RIP RAP @
EMBANKMENT
EST 25 TONS
EST 55 SY FF
SEE DETAIL K
CL "I" RIP RAP
EST 10 TONS
EST 21 SY FF
END PROP.C/A
TIE PROPOSED WW FENCE
TO EXISTING WW FENCE
-L- 201+86.90
53.57' RT
18 x 18 x 3
4 ft. weir
ID 19.2 F
15 x 14 x 3
4 ft. weir
ID 19.3 F
-L2- PC 0+00.00=
-L- STA.227+35.96, 58.07' RT.
R.W. JR. & RUTH CRAIG
DB 361 PG 315
PC 3 PG 25
R-2417AB WAS DESIGNED AND CONSTRUCTED
USING METRIC UNITS. ALL DIMENSIONS FOR
THE R-2417AB SECTION HAVE BEEN CONVERTED
TO THE ENGLISH EQUIVALENT.
-L1-
PIs Sta 57+40.50
Θs = 3° 31' 33.2"
Ls = 262.47'
LT = 175.01'
ST = 87.52'
PI Sta 59+15.61
Δ = 4° 42' 26.1" (RT)
D = 2° 41' 12.3"
L = 175.20'
T = 87.65'
R = 2,132.54'
PIs Sta 61+27.88
Θs = 2° 35' 50.9"
Θs = 3° 31' 33.5"
Ls = 262.47'
LT = 137.99'
ST = 124.72'
-L2-
PI Sta 3+86.65
Δ = 14° 38' 08.2" (LT)
D = 1° 54' 10.8"
L = 769.08'
T = 386.65'
R = 3,010.82'
PIs Sta 8+45.65
Θs = 2° 11' 06.7"
Ls = 229.66'
LT = 153.12'
ST = 76.56'
LEGEND
PAVED SHOULDER
FOR -L- PROFILE, SEE SHEET NO. 34
FOR -L1- PROFILE, SEE SHEET NO. 36
FOR -L2- PROFILE, SEE SHEET NO. 37
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G
24-SEP-2010 16:27
R:\Environmental\Design\R2417AA_EC_psh_19.dgn
pmtfergerish AT RENV242003

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-46/CONST.20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



-YIRPB-

PIs Sta 11+33.38	PI Sta 17+21.75
Θs = 4° 46' 28.7"	Δ = 46° 59' 52.2" (LT)
Ls = 200.00'	D = 4° 46' 28.7"
LT = 133.38'	L = 984.32'
ST = 66.71'	T = 521.75'
	R = 1,200.00'

NCDOT
DB 784 PG 985
DB 754 PG 357
DB 768 PG 292
DB 780 PG 241

R-2417AB WAS DESIGNED AND CONSTRUCTED USING METRIC UNITS. ALL DIMENSIONS FOR THE R-2417AB SECTION HAVE BEEN CONVERTED TO THE ENGLISH EQUIVALENT.

LEGEND

- PAVED SHOULDER
- PAVEMENT REMOVAL

-L2-

PIs Sta 8+45.65
Θs = 2° 11' 06.7"
Ls = 229.66'
LT = 153.12'
ST = 76.56'

-YIRPC-

PIs Sta 3+06.24	PI Sta 17+62.70
Θs = 3° 28' 50.1"	Δ = 76° 34' 03.8" (RT)
Ls = 213.25'	D = 3° 15' 51.3"
LT = 142.20'	L = 2,345.64'
ST = 71.11'	T = 1,385.41'
	R = 1,755.25'

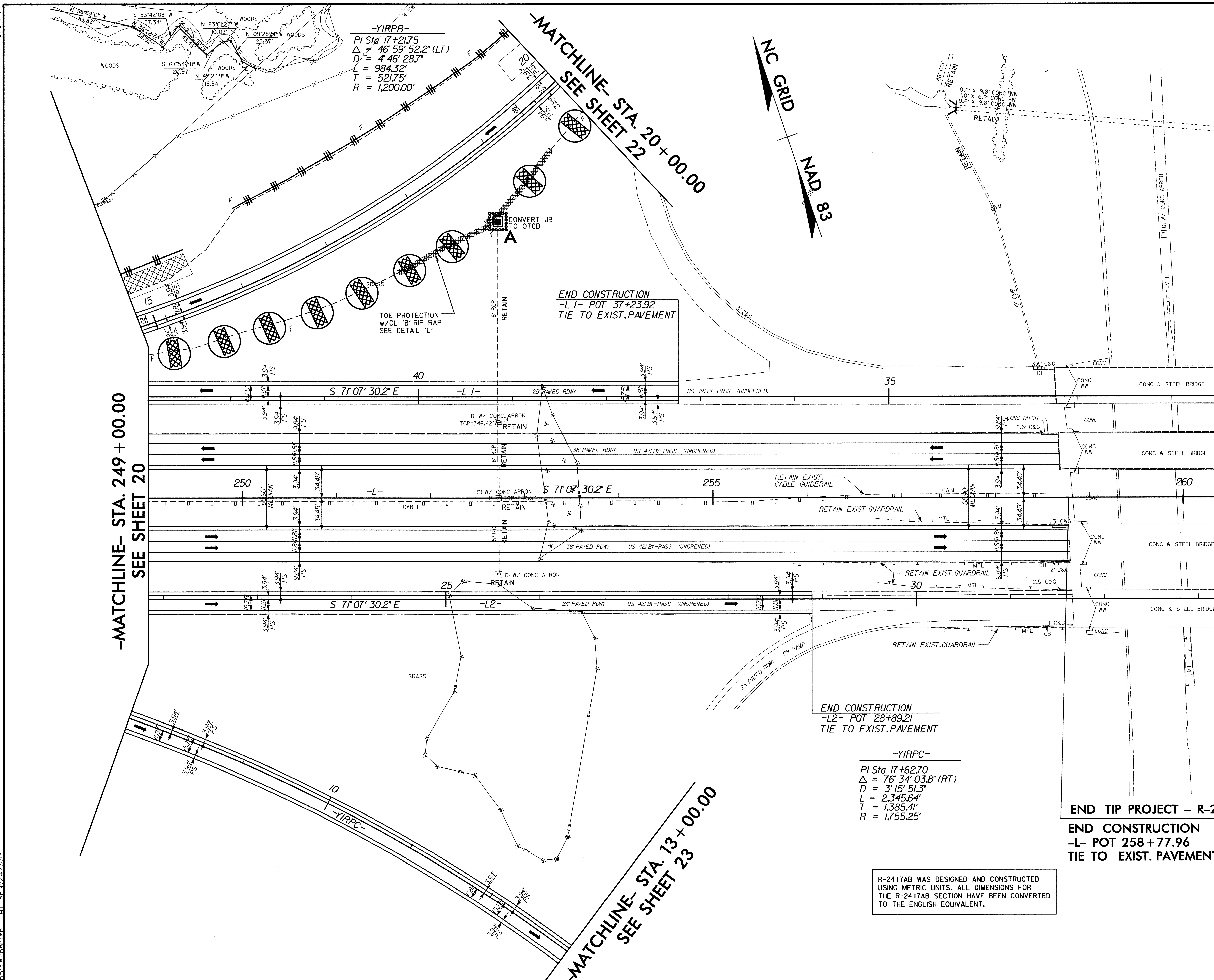
-L I-

PIs Sta 50+89.37	PI Sta 52+56.35	PIs Sta 54+23.32	PIs Sta 57+40.50
Θs = 1° 14' 29.1"	Δ = 2° 13' 58.4" (LT)	Θs = 1° 14' 29.1"	Θs = 3° 31' 33.2"
Ls = 213.25'	D = 1° 09' 51.3"	Ls = 213.25'	Ls = 262.47'
LT = 142.17'	L = 191.79'	LT = 142.17'	LT = 175.01'
ST = 71.09'	T = 95.91'	ST = 71.09'	ST = 87.52'
	R = 4,921.25'		

FOR -L- PROFILE, SEE SHEET NO. 34 & 35
FOR -L I- PROFILE, SEE SHEET NO. 36
FOR -L2- PROFILE, SEE SHEET NO. 37
FOR -Y IRPB- PROFILE, SEE SHEET NO. 44
FOR -Y IRPC- PROFILE, SEE SHEET NO. 45
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

24-SEP-2010 16:31
R:\Environmental\Design\R2417AA_EC_psh_20.dgn
jenniferparish AT RENV242003

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-47/CONST.21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



R-2417AB WAS DESIGNED AND CONSTRUCTED USING METRIC UNITS. ALL DIMENSIONS FOR THE R-2417AB SECTION HAVE BEEN CONVERTED TO THE ENGLISH EQUIVALENT.

LEGEND

- PAVED SHOULDER
- PAVEMENT REMOVAL

FOR -L- PROFILE, SEE SHEET NO. 35
FOR -L1- PROFILE, SEE SHEET NO. 36 & 37
FOR -L2- PROFILE, SEE SHEET NO. 37
FOR -YIRPB- PROFILE, SEE SHEET NO. 44
FOR -YIRPC- PROFILE, SEE SHEET NO. 45
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

8/17/99

24-SEP-2010 16:35
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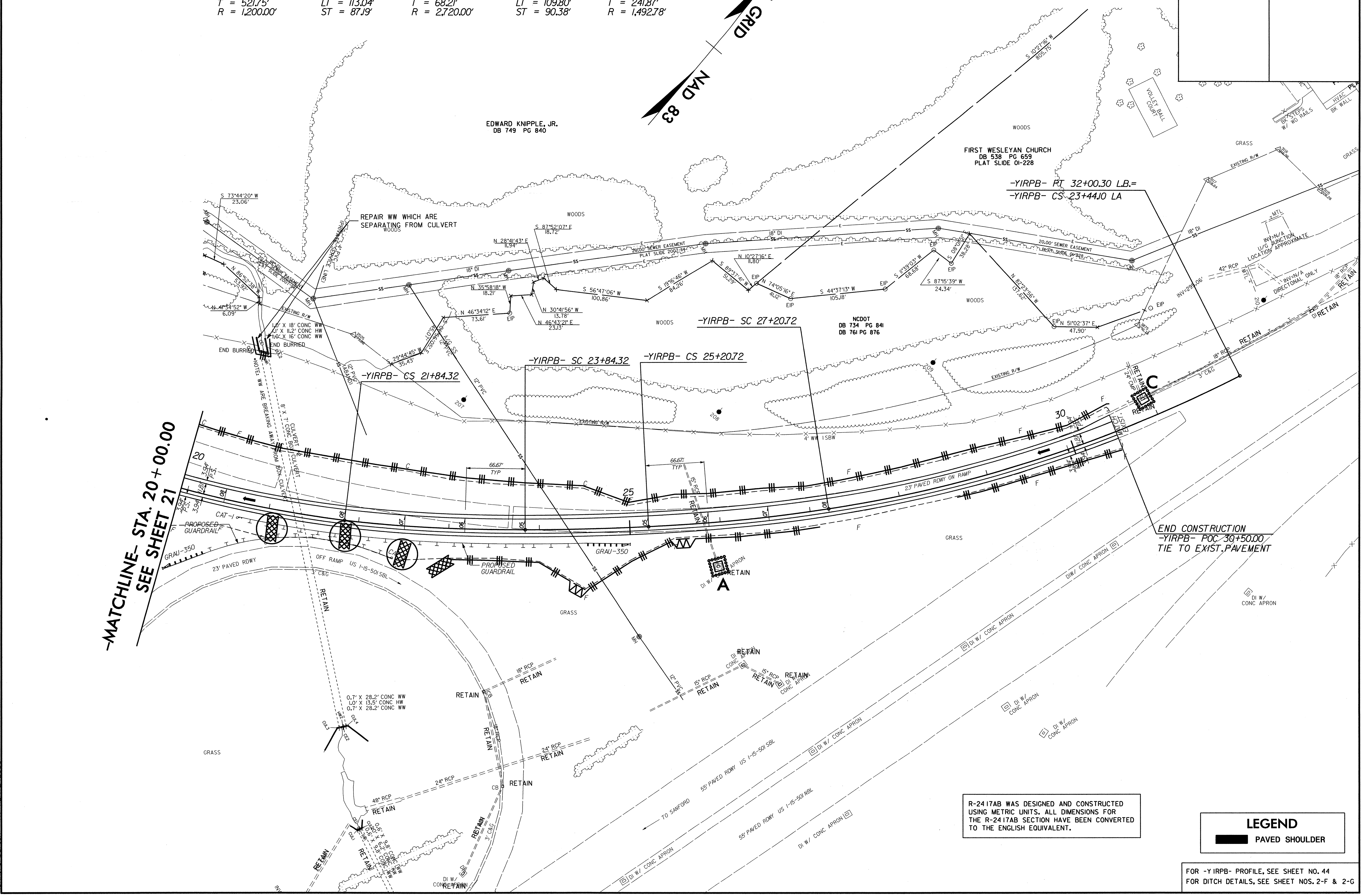
PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-48/CONST.22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-YIRPB-

PI Sta 17+21.75	PIs Sta 22+71.51	PI Sta 24+52.53	PIs Sta 26+30.52	PI Sta 29+62.59
△ = 46° 59' 52.2" (LT)	Θs = 2° 06' 18.4"	△ = 2° 52' 23.5" (LT)	Θs = 2° 06' 20.7"	△ = 18° 24' 25.6" (LT)
D = 4° 46' 28.7"	Θs = 4° 46' 33.6"	D = 2° 06' 23.3"	Θs = 3° 50' 20.1"	D = 3° 50' 17.5"
L = 984.32'	Ls = 200.00'	L = 136.40'	Ls = 200.00'	L = 479.58'
T = 521.75'	LT = 113.04'	T = 68.21'	LT = 109.80'	T = 241.87'
R = 1,200.00'	ST = 87.19'	R = 2,720.00'	ST = 90.38'	R = 1,492.78'



R-2417AB WAS DESIGNED AND CONSTRUCTED USING METRIC UNITS. ALL DIMENSIONS FOR THE R-2417AB SECTION HAVE BEEN CONVERTED TO THE ENGLISH EQUIVALENT.

LEGEND

PAVED SHOULDER

FOR -YIRPB- PROFILE, SEE SHEET NO. 44
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

8/17/99

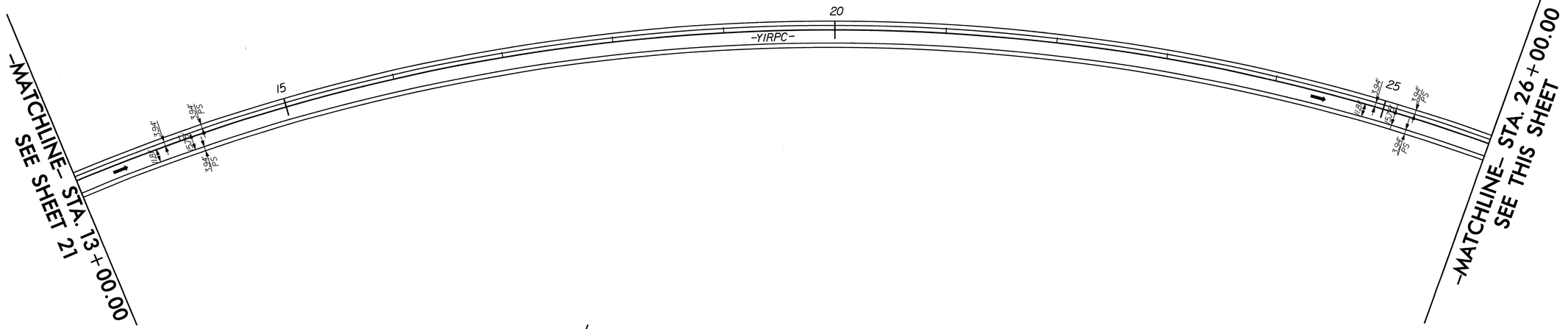
24-SEP-2010 16:39
R:\Environmental_Design\R2417AA_EC_psh_22.dgn

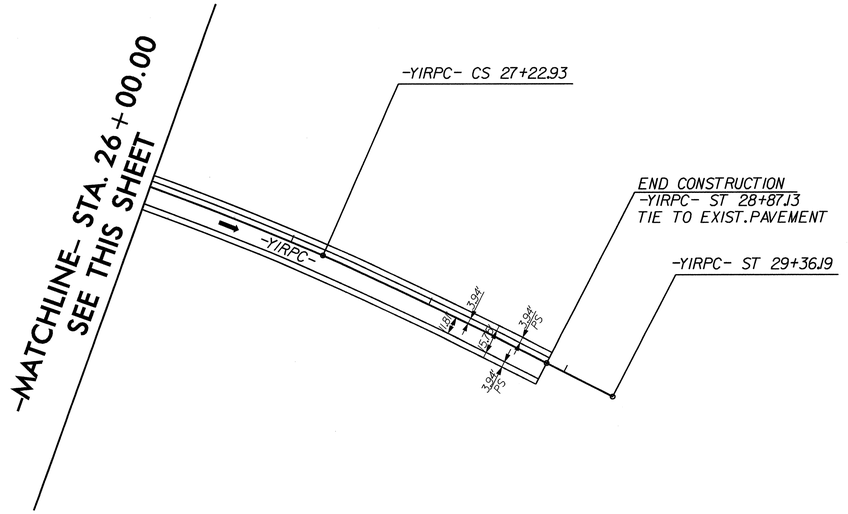
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-49/CONST.23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-YIRPC-
PI Sta 17+62.70
△ = 76° 34' 03.8" (RT)
D = 3° 15' 51.3"
L = 2,345.64'
T = 1,385.41'
R = 1,755.25'

NC GRID | NAD 83





NC GRID | NAD 83

R-2417AB WAS DESIGNED AND CONSTRUCTED USING METRIC UNITS. ALL DIMENSIONS FOR THE R-2417AB SECTION HAVE BEEN CONVERTED TO THE ENGLISH EQUIVALENT.

-YIRPC-

PI Sta 17+62.70	PIs Sta 27+94.04
△ = 76° 34' 03.8" (RT)	Θs = 3° 28' 50.1"
D = 3° 15' 51.3"	Ls = 213.25'
L = 2,345.64'	LT = 142.20'
T = 1,385.41'	ST = 71.11'
R = 1,755.25'	

NOTE: NO EROSION CONTROL MEASURES ON THIS SHEET

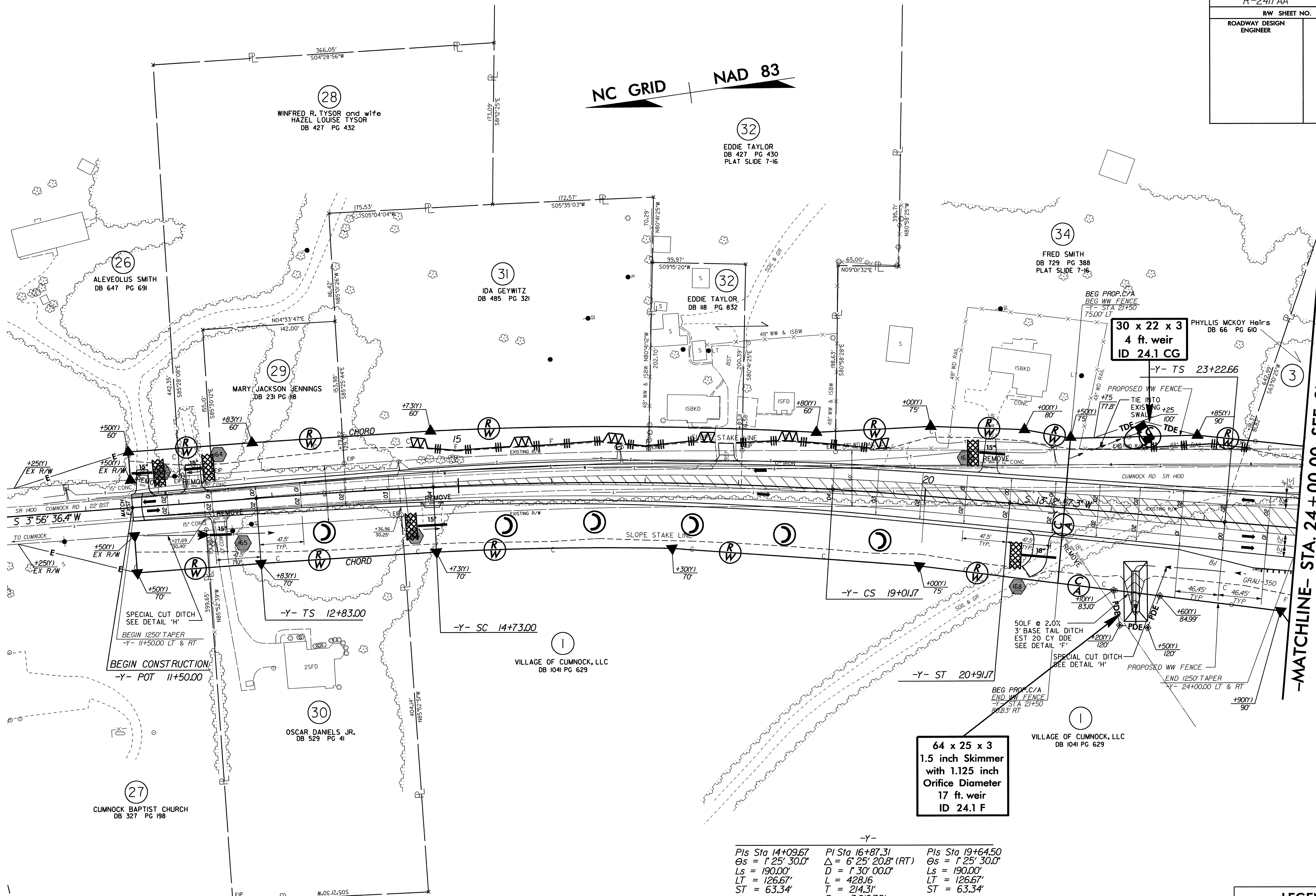
LEGEND
PAVED SHOULDER

FOR -YIRPC- PROFILE, SEE SHEET NO. 45 & 46
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

24-SEP-2010 16:42
R:\Environmental\Design\R2417AA_EC_psh_23.dgn
jenniferparish AT RENV2420003

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-50/CONST.24
R/W SHEET NO.	20
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99



-Y-

PIs Sta 14+09.67	PI Sta 16+87.31	PIs Sta 19+64.50
Θs = 1° 25' 30.0"	Δ = 6° 25' 20.8" (RT)	Θs = 1° 25' 30.0"
Ls = 190.00'	D = 1° 30' 00.0"	Ls = 190.00'
LT = 126.67'	L = 428.16	LT = 126.67'
ST = 63.34'	T = 214.31'	ST = 63.34'
	R = 3,819.72'	
	SE = 0.04	

NOTE:
ALL DRIVEWAY ENTRANCE RETURNS HAVE A RADIS OF 6' UNLESS OTHERWISE SHOWN.

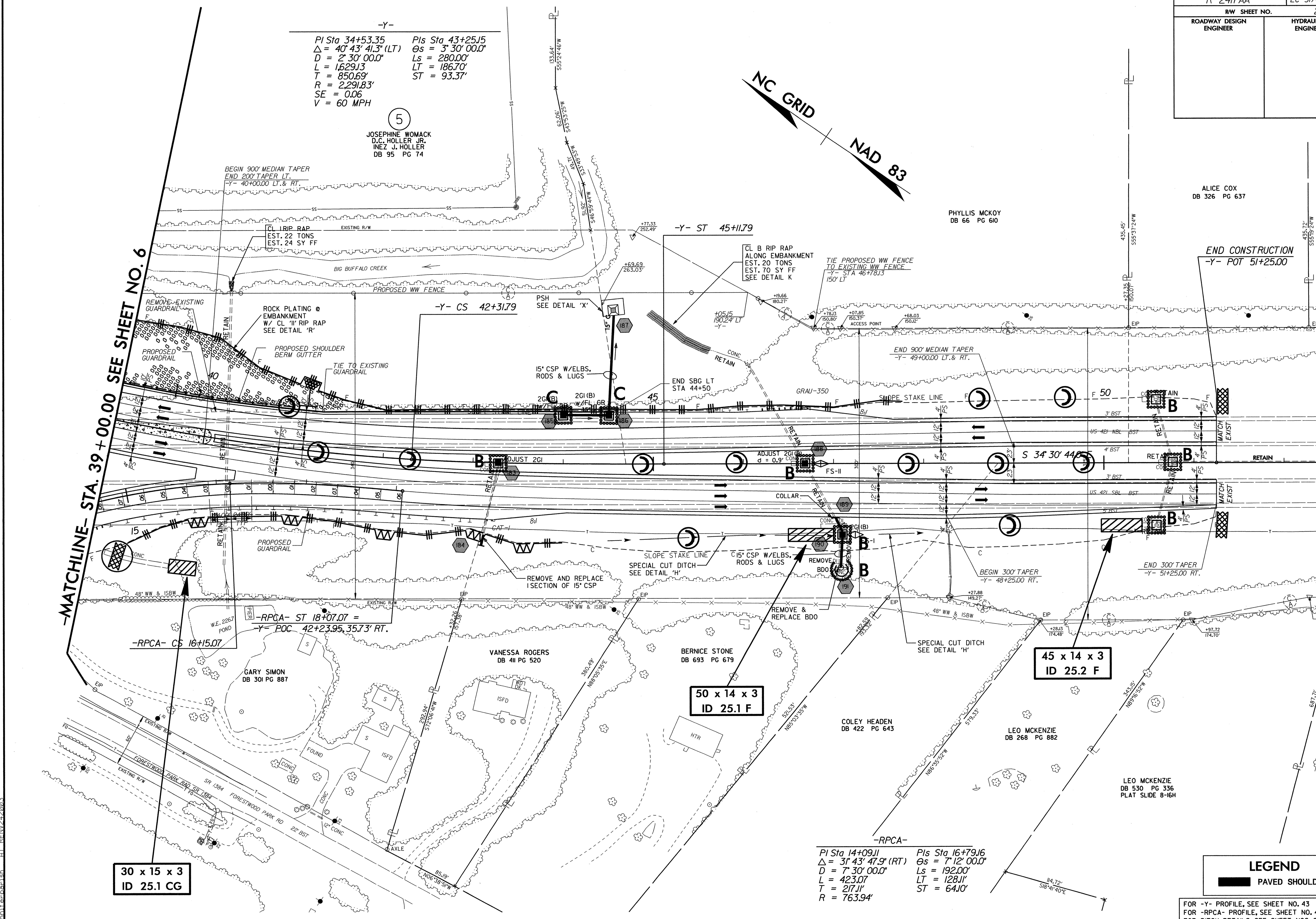
LEGEND

PAVED SHOULDER

FOR -Y- PROFILE, SEE SHEET NO. 42
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

24-SEP-2010 16:44
R:\Environmental\Design\R2417AA_EC_psh_24.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2417AA	EC-51/CONST.25
R/W SHEET NO.	21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



-Y-
PI Sta 34+53.35
△ = 40° 43' 41.3" (LT)
D = 2° 30' 00.0"
L = 1,629.13
T = 850.69'
R = 2,291.83'
SE = 0.06
V = 60 MPH
PIs Sta 43+25.15
Θs = 3° 30' 00.0"
Ls = 280.00'
LT = 186.70'
ST = 93.37'
JOSEPHINE WOMACK
D.C. HOLLER JR.
INEZ J. HOLLER
DB 95 PG 74
NC GRID NAD 83
PHYLLIS MCKOY
DB 66 PG 610
ALICE COX
DB 326 PG 637
-MATCHLINE- STA. 39+00.00 SEE SHEET NO. 6
BEGIN 900' MEDIAN TAPER
END 200' TAPER LT.
-Y- 40+00.00 LT.& RT.
CL I RIP RAP
EST. 22 TONS
EST. 24 SY FF
BIG BUFFALO CREEK
PROPOSED WW FENCE
REMOVE EXISTING GUARDRAIL
ROCK PLATING @ EMBANKMENT W/ CL 'II' RIP RAP SEE DETAIL 'R'
PROPOSED GUARDRAIL
PROPOSED SHOULDER BERM GUTTER
TIE TO EXISTING GUARDRAIL
-Y- CS 42+31.79
PSH SEE DETAIL 'X'
15" CSP W/ELBS, RODS & LUGS
END SBG LT STA 44+50
-Y- ST 45+11.79
CL B RIP RAP ALONG EMBANKMENT
EST. 20 TONS
EST. 70 SY FF
SEE DETAIL K
TIE PROPOSED WW FENCE TO EXISTING WW FENCE
-Y- STA 46+78.13
150' LT
END CONSTRUCTION
-Y- POT 51+25.00
END 900' MEDIAN TAPER
-Y- 49+00.00 LT.& RT.
SLOPE STAKE LINE
S 34° 30' 44.0" E
US 421 NBL
US 421 SBL
ADJUST 2GI
ADJUST 2GI (B) d = 0.9'
MATCH EXIST
COLLAR
SPECIAL CUT DITCH SEE DETAIL 'H'
15" CSP W/ELBS, RODS & LUGS
REMOVE AND REPLACE 1 SECTION OF 15" CSP
REMOVE & REPLACE BDO
BEGIN 300' TAPER
-Y- 48+25.00 RT.
END 300' TAPER
-Y- 51+25.00 RT.
-RPCA- ST 18+07.07 =
-Y- POC 42+23.95, 35.73' RT.
-RPCA- CS 16+15.07
30 x 15 x 3
ID 25.1 CG
50 x 14 x 3
ID 25.1 F
45 x 14 x 3
ID 25.2 F
VANESSA ROGERS
DB 411 PG 520
GARY SIMON
DB 301 PG 887
BERNICE STONE
DB 693 PG 679
COLEY HEADEN
DB 422 PG 643
LEO MCKENZIE
DB 268 PG 882
LEO MCKENZIE
DB 530 PG 336
PLAT SLIDE 8-16H
FORESTWOOD PARK RD SR 1384
-RPCA-
PI Sta 14+09.11
△ = 31° 43' 47.9" (RT)
D = 7° 30' 00.0"
L = 423.07
T = 217.11'
R = 763.94'
PIs Sta 16+79.16
Θs = 7° 12' 00.0"
Ls = 192.00'
LT = 128.11'
ST = 64.10'

LEGEND

PAVED SHOULDER

FOR -Y- PROFILE, SEE SHEET NO. 43
FOR -RPCA- PROFILE, SEE SHEET NO. 43
FOR DITCH DETAILS, SEE SHEET NOS. 2-F & 2-G

8/17/99

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