TIP PROJECT: U-2524C

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2524C	EC-1	

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

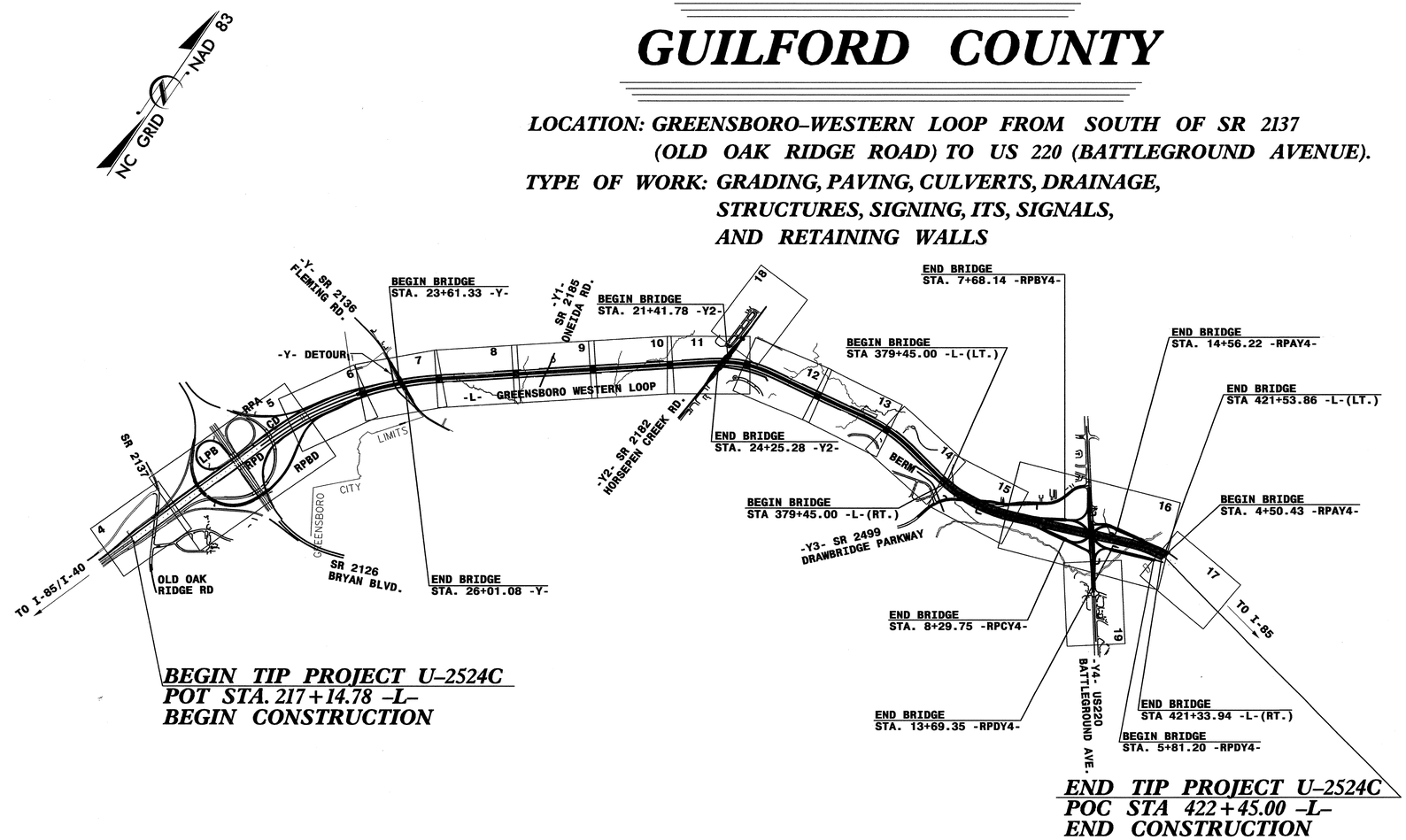
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

GUILFORD COUNTY

LOCATION: GREENSBORO–WESTERN LOOP FROM SOUTH OF SR 2137 (OLD OAK RIDGE ROAD) TO US 220 (BATTLEGROUND AVENUE).

TYPE OF WORK: GRADING, PAVING, CULVERTS, DRAINAGE, STRUCTURES, SIGNING, ITS, SIGNALS, AND RETAINING WALLS



BEGIN TIP PROJECT U–2524C
POT STA. 217+14.78 –L–
BEGIN CONSTRUCTION

END TIP PROJECT U–2524C
POC STA 422+45.00 –L–
END 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	SB
	Tiered Skimmer Basin	SB
	Infiltration Basin	IB

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

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

Refer To E. C. Special Provisions for Special Considerations.

GRAPHIC SCALE

0
PLANS

0
PROFILE (HORIZONTAL)

0
PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG–010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

Prepared In the Office of:

ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611

2012 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 January 2012 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		

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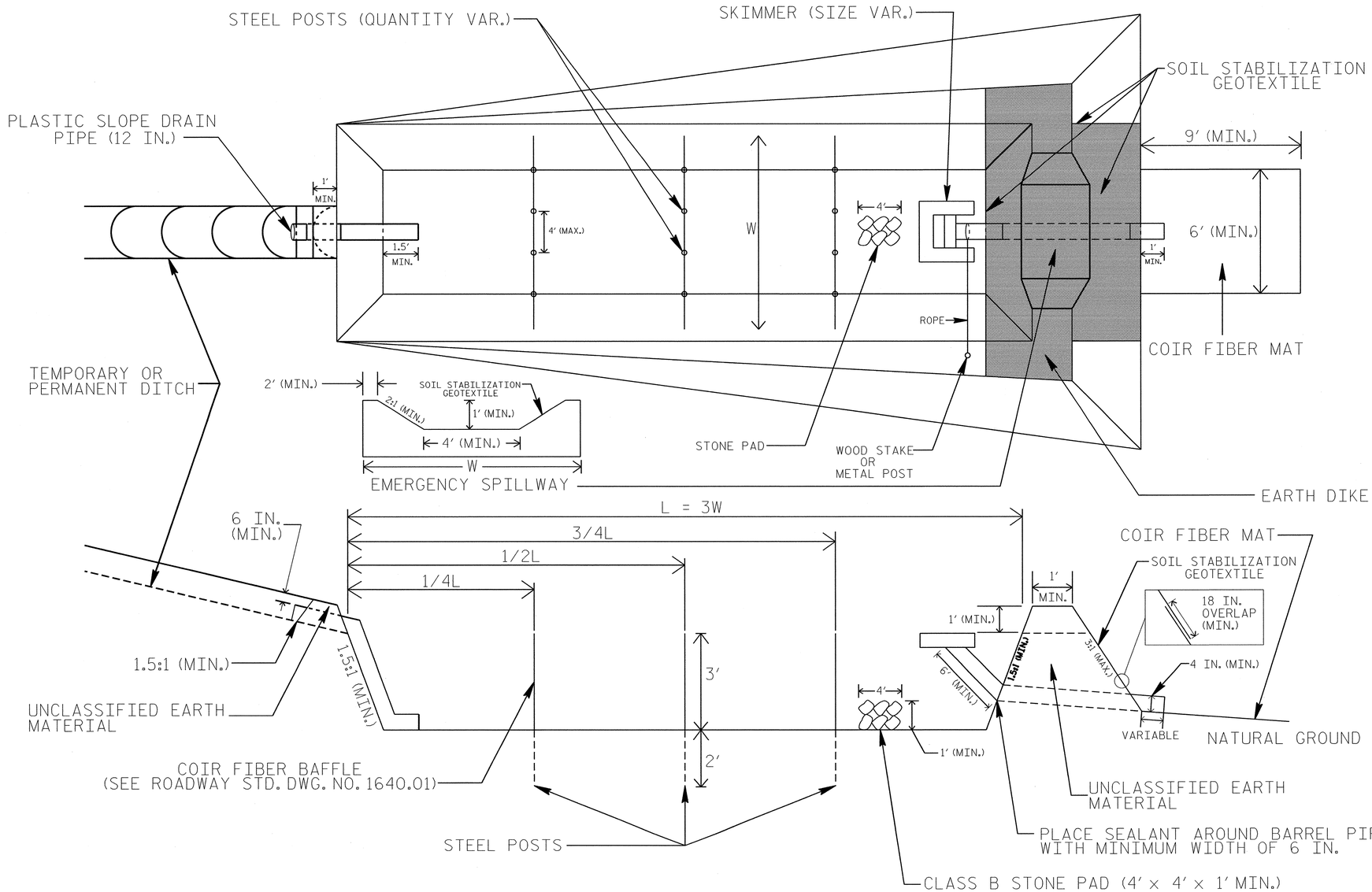
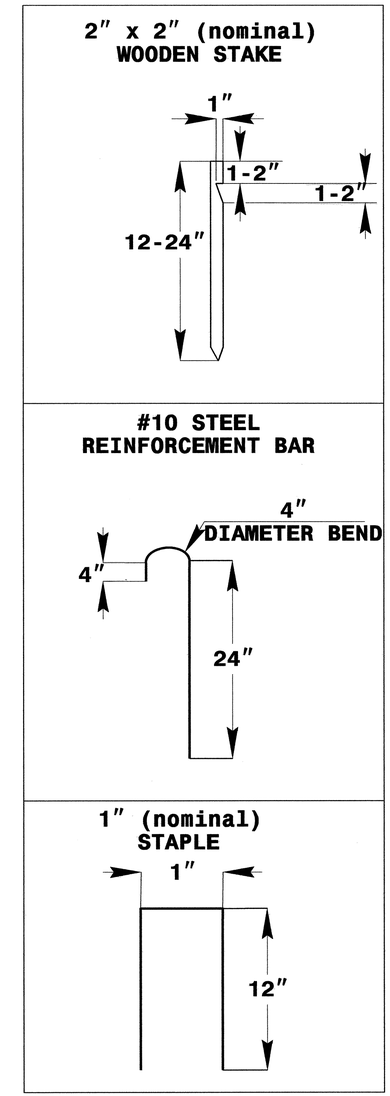
PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SKIMMER BASIN WITH BAFFLES DETAIL





COIR FIBER MAT ANCHOR OPTIONS

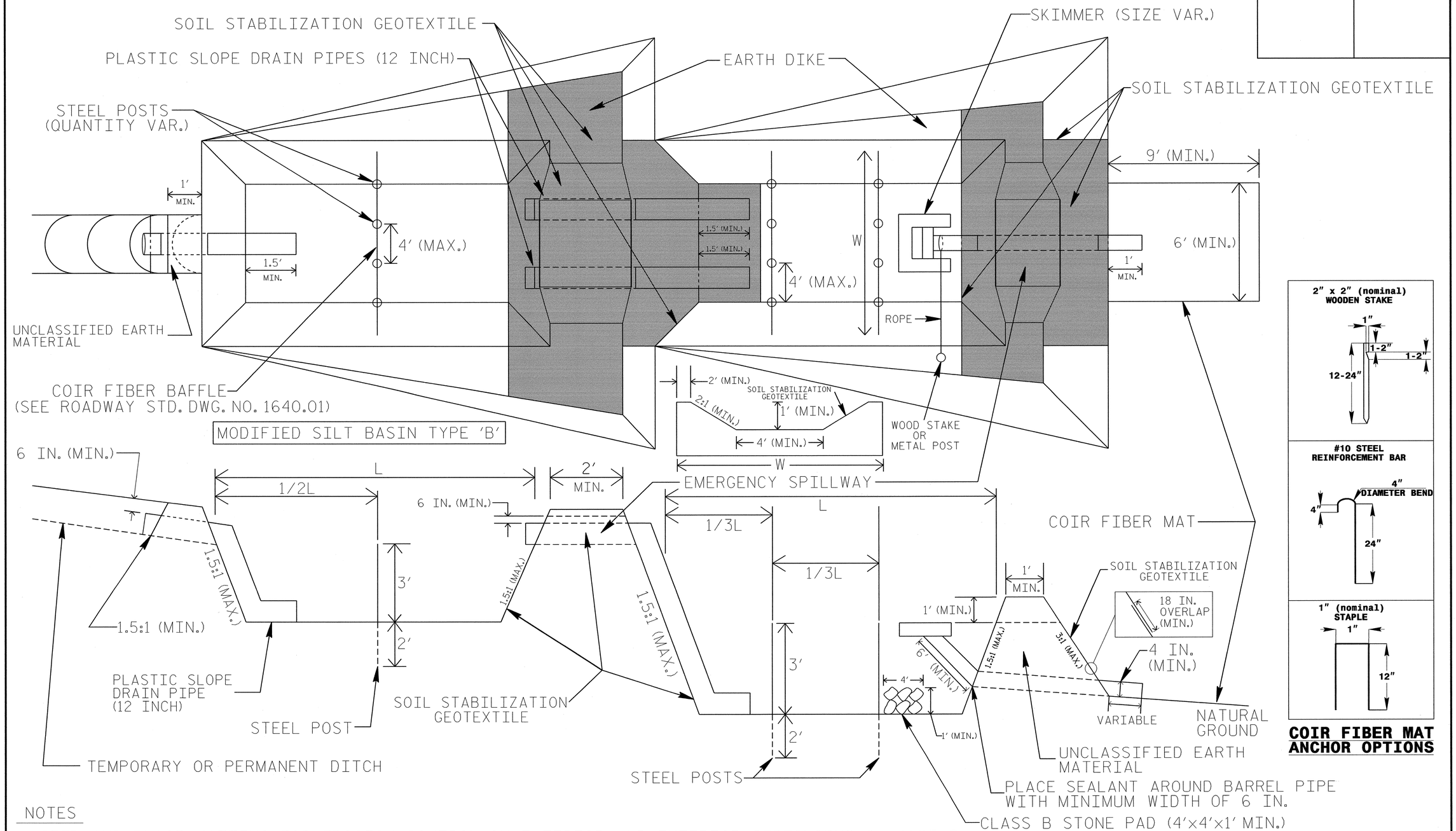
NOTES

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 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. SOIL STABILIZATION GEOTEXTILE FOR EMERGENCY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TIERED SKIMMER BASIN DETAIL



COIR FIBER MAT ANCHOR OPTIONS

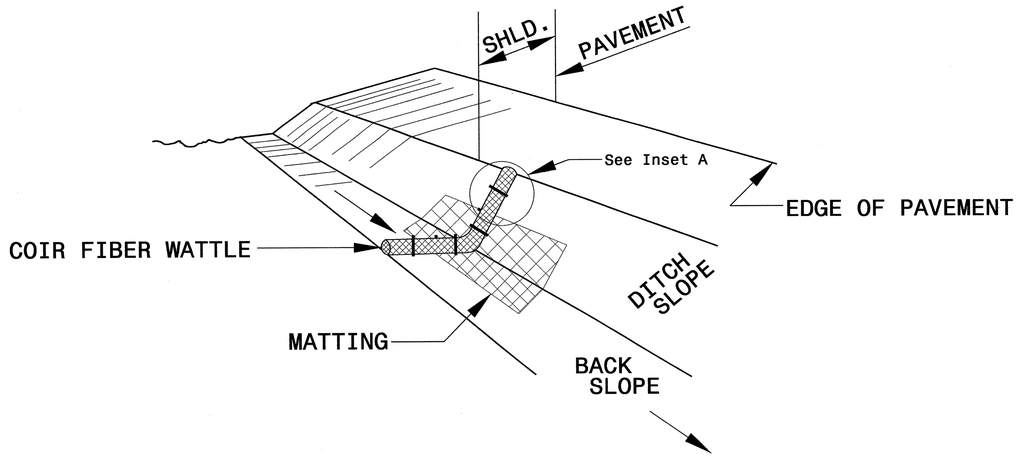
NOTES

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 GEOTEXTILE FOR EMERGENCY SPILLWAYS SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

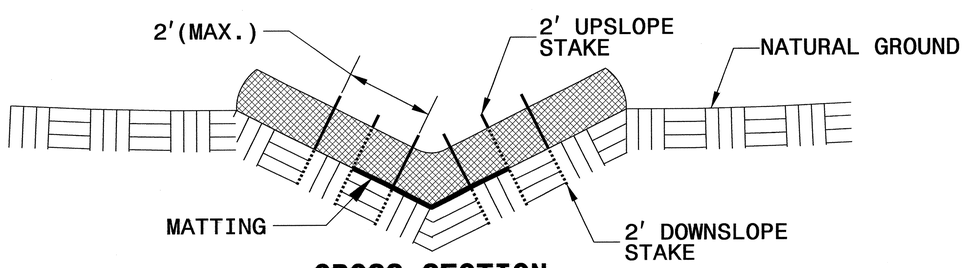
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

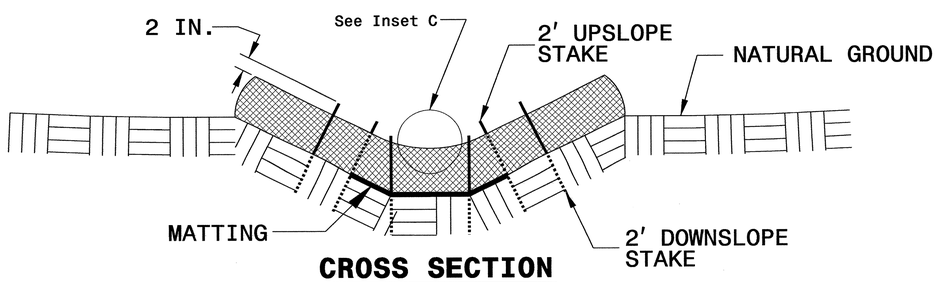
COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



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.

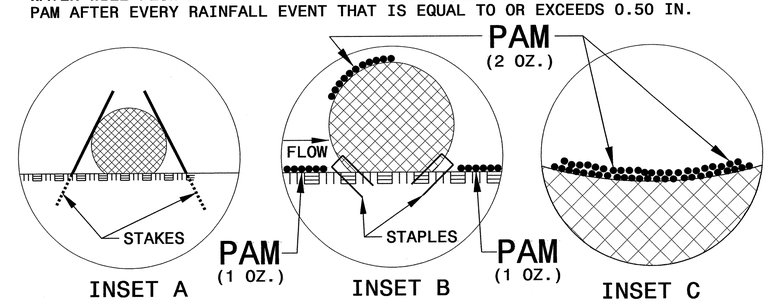
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

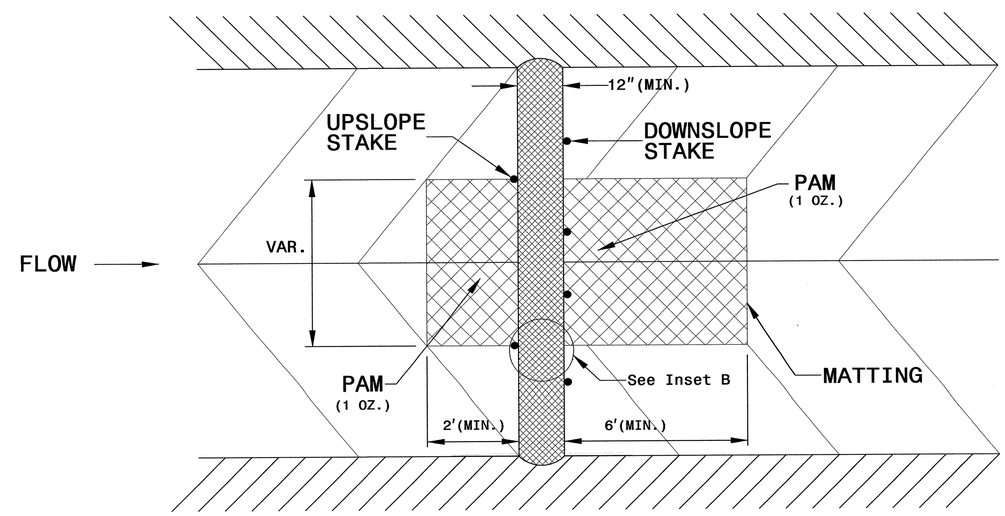
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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.

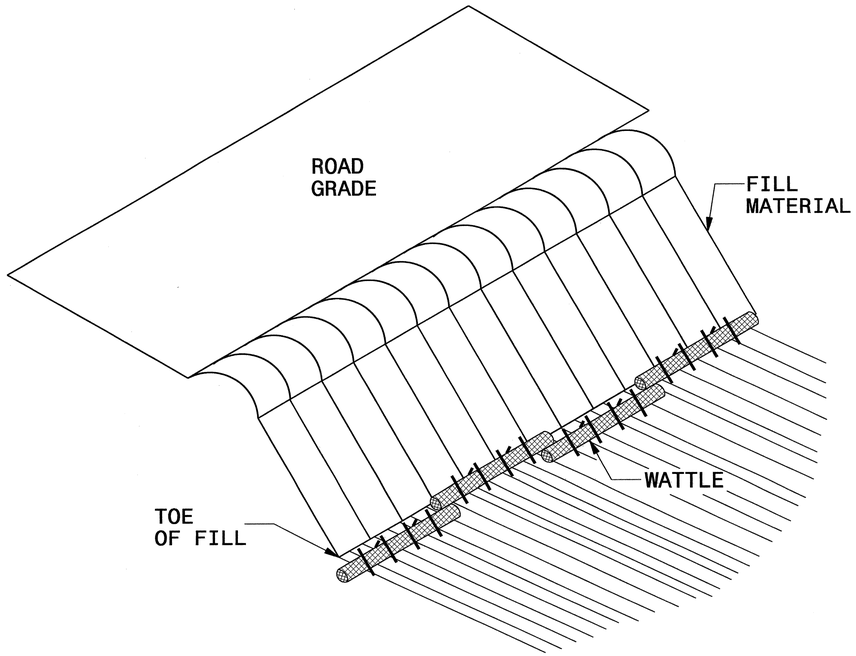




TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-2C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER WATTLE BARRIER DETAIL



ISOMETRIC VIEW

NOTES:

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

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

DO NOT PLACE WATTLES ON TOE OF SLOPE.

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

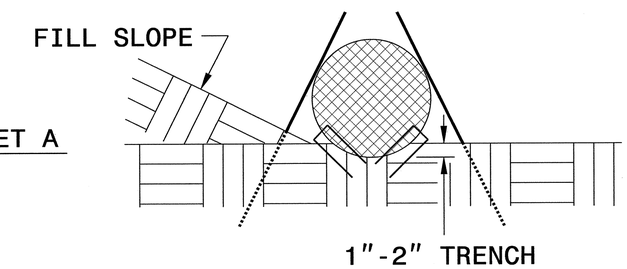
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

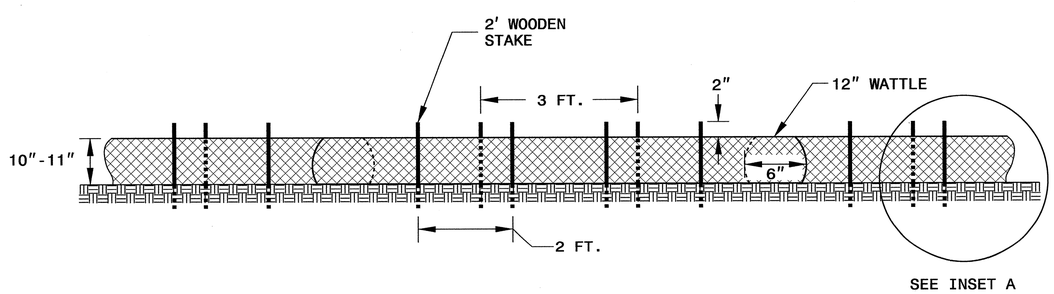
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

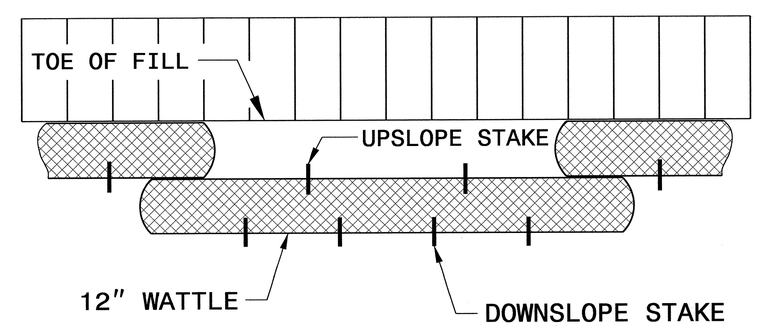
FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 20 FT.

INSET A





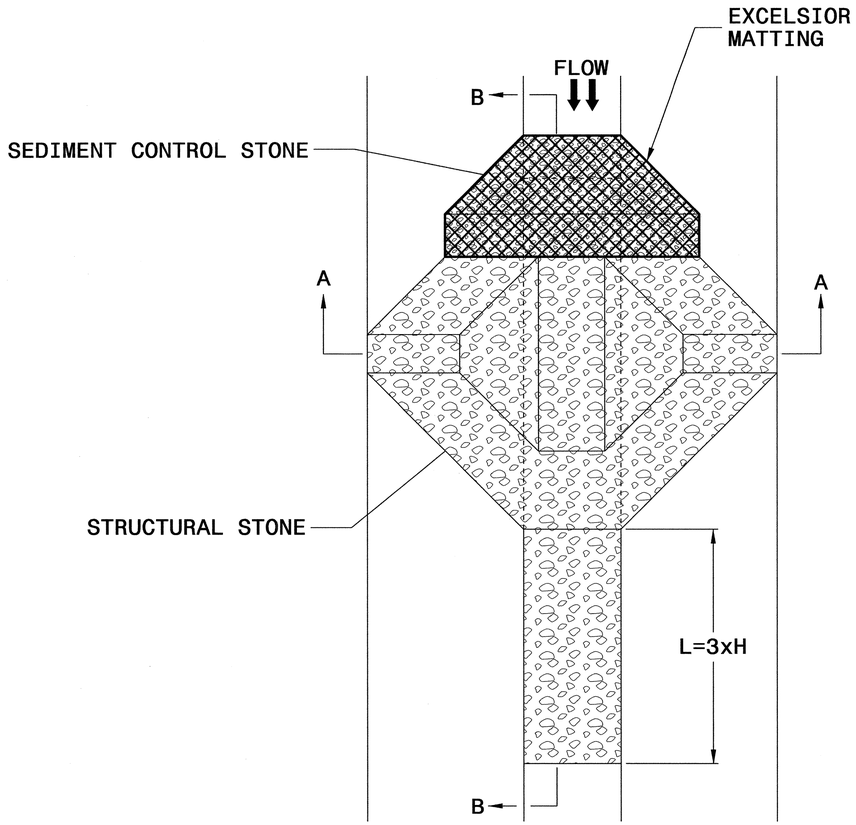
FRONT VIEW



TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-2D
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



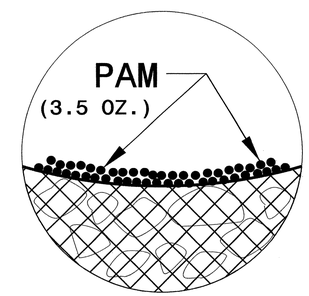
PLAN

NOTES

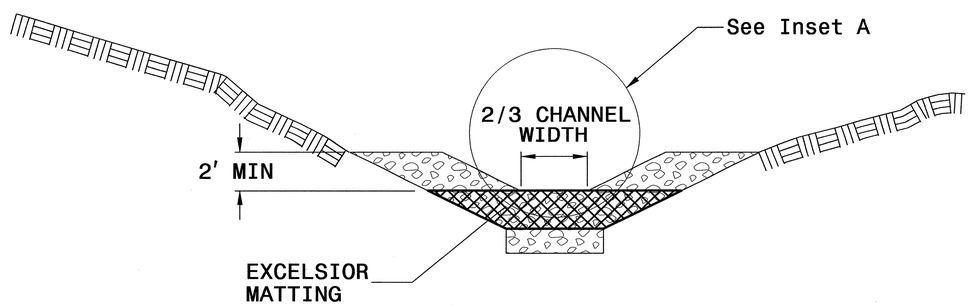
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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.

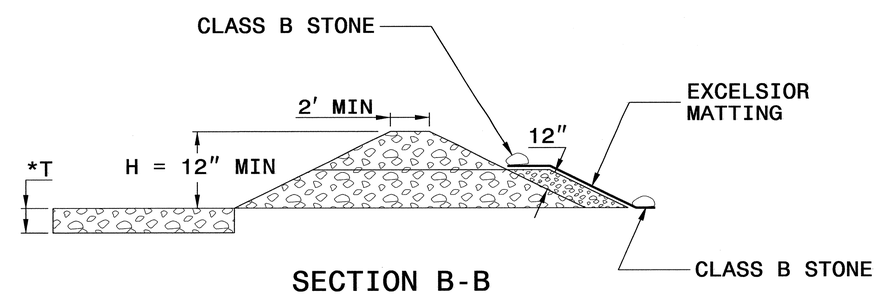
INITIALLY APPLY 3.5 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

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

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	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)
5	-L-	243+50	246+50	RT	405
5	-L-	246+50	247+50	RT	145
5	-L-	243+50	254+50	RT	670
5	-LPØ-	11+00	11+50	LT	45
5	-RPA-	34+11	36+15	RT	315
5	-RPA-	37+17	37+68	RT	105
5	-RPA-	38+69	39+19	RT	65
5	-RPA-	39+19	41+19	LT	190
5	-RPD-	58+02	61+02	LT	200
7	-L-	268+50	269+00	LT	50
7	-L-	268+50	269+00	RT	50
7	-L-	274+50	279+00	LT	440
7	-L-	274+50	279+00	RT	370
7	-Y-	21+50	23+50	LT	120
7	-Y-	21+50	23+50	RT	90
7	-Y-	26+00	28+00	LT	95
7	-Y-	26+00	28+00	RT	320
7-8	-L-	279+00	282+50	LT	325
8	-L-	286+00	287+00	LT	175
8	-L-	287+00	288+00	LT	135
8	-L-	291+50	293+00	LLT	80
8	-L-	291+50	295+00	LT	425
8	-L-	285+50	292+00	MED	590
8-9	-L-	292+00	302+00	MED	1305
9	-L-	298+00	302+00	LT	355
9	-L-	302+00	306+00	LT	590
9	-L-	301+50	302+50	LLT	55
9	-L-	305+50	306+00	LLT	35
9	-L-	302+00	306+00	MED	575
9	-L-	299+50	306+00	RT	920
9-10	-L-	306+00	312+50	LT	860
9-10	-L-	306+00	312+50	MED	840

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
9-10	-L-	306+00	312+50	RT	810
10	-L-	312+50	315+00	MED	335
11	-L-	329+00	330+50	LT	310
11	-L-	331+00	333+00	LLT	105
11	-Y2-	26+50	27+50	LT	135
11-12	-L-	336+00	344+00	LT	755
11-12	-L-	335+50	339+00	MED	390
12	-L-	350+50	351+00	LT	55
12+13	-L-	345+50	353+50	RT	690
12-13	-L-	350+00	353+00	RRT	155
13-14	-L-	364+00	366+00	RRT	95
14	-L-	366+50	367+00	RT	45
14	-L-	367+00	371+50	RRT	220
15	-Y3-	23+50	24+00	LLT	50
15	-Y3-	24+50	25+00	LLT	35
16	-DRV2-	10+69	11+48	LT	25
16	-DRV3-	11+50	11+95	LT	20
16	-Y4-	31+00	31+97	RT	90
16	-DRV3-	11+50	11+95	RT	20
18	-Y2-	15+50	16+00	RT	105
11-18	-Y2-	18+00	19+00	LT	135
11-18	-Y2-	18+00	19+00	RT	135
2-N	-Y DETOUR-	14+00	18+50	LT	415
2-N	-Y DETOUR-	18+50	19+50	LT	45
2-N	-Y DETOUR-	12+00	18+00	RT	535
2-O	-Y2 DTR-	18+00	22+50	RT	355
2-O	-Y2 DTR-	26+00	27+50	RT	140
				SUBTOTAL	17,145
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					131,500
				TOTAL	148,645
				SAY	150,000

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	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)
9	-L-	301+50	302+00	LLT	50
9	-L-	302+50	303+00	LLT	25
10-11	-L-	322+50	323+00	RRT	35
10-11	-L-	323+00	323+50	RRT	30
11	-L-	323+00	329+00	RT	560
11	-Y2-	26+00	27+00	RT	115
13	-L-	353+00	353+50	RRT	30
14	-L-	366+00	367+00	RRT	50
14	-Y3-	24+00	24+50	LLT	30
15	-DRV1-	10+22	13+02	LT	160
15	-DRV1-	10+22	13+02	RT	195
16	-DRV4-	11+00	10+50	LT	20
16	-DRV4-	11+00	10+25	RT	20
16	-SPBY4-	2+55	3+01	RT	35
2-N	-Y DETOUR-	18+00	19+00	RT	40
2-N	-Y DETOUR-	19+00	20+00	RT	110
				SUBTOTAL	1505
	ADDITIONAL PSRM TO BE INSTALLED				330
				TOTAL	1835
				SAY	1900

PERMANENT SOIL REINFORCEMENT MAT

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

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-3B
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.

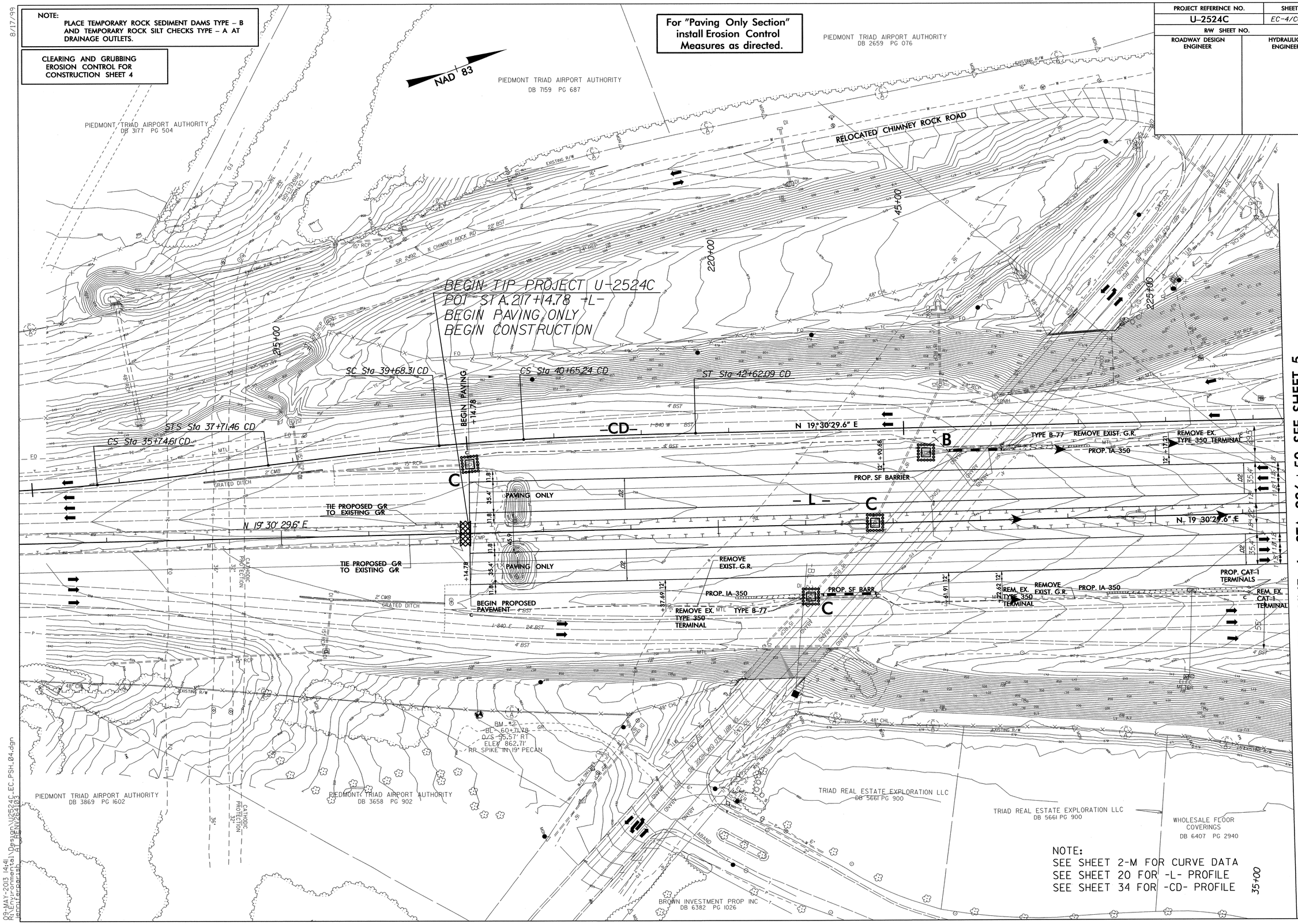
PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-4/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

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 4

For "Paving Only Section" install Erosion Control Measures as directed.



NOTE:
SEE SHEET 2-M FOR CURVE DATA
SEE SHEET 20 FOR -L- PROFILE
SEE SHEET 34 FOR -CD- PROFILE

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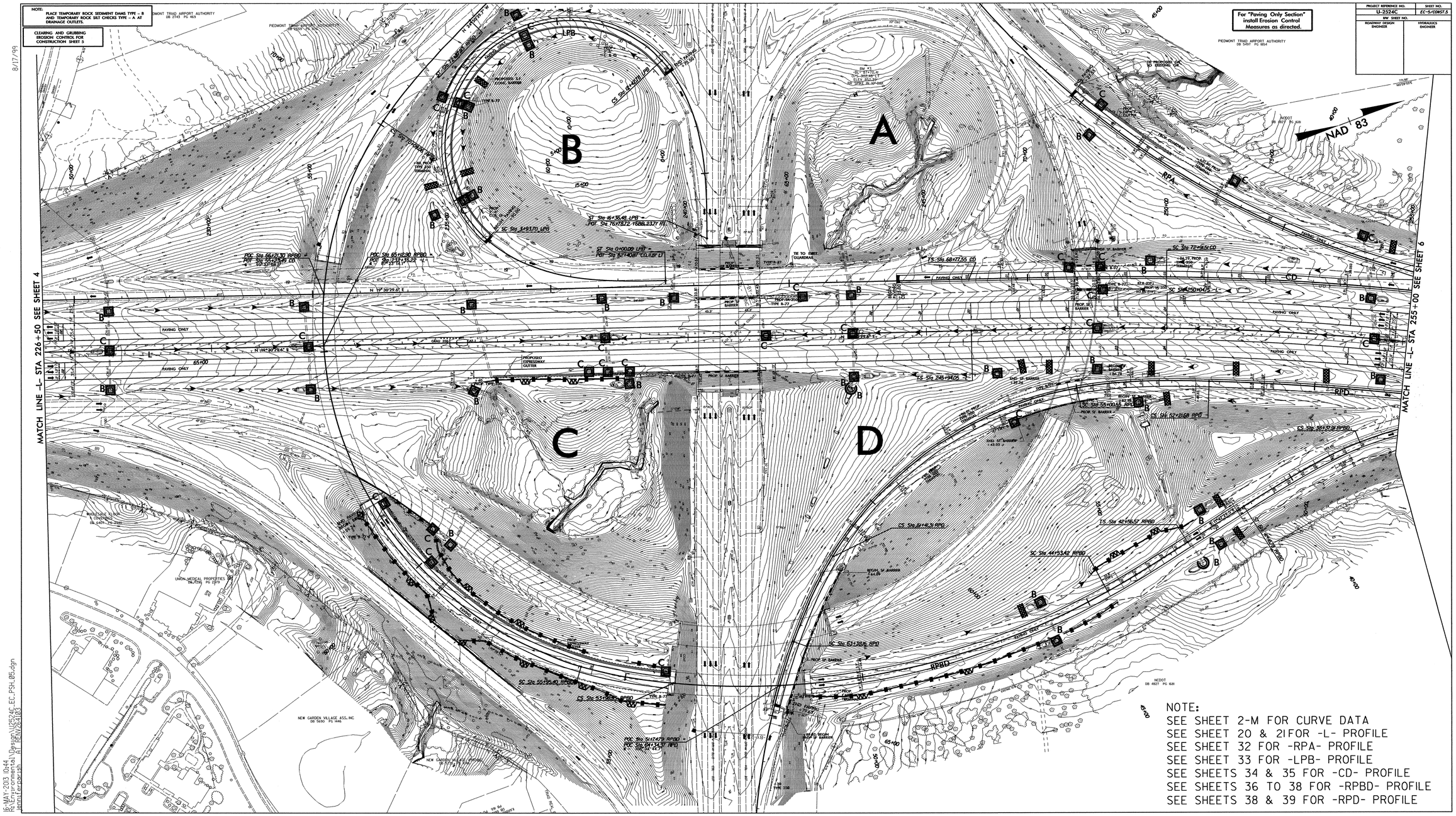

8/17/99

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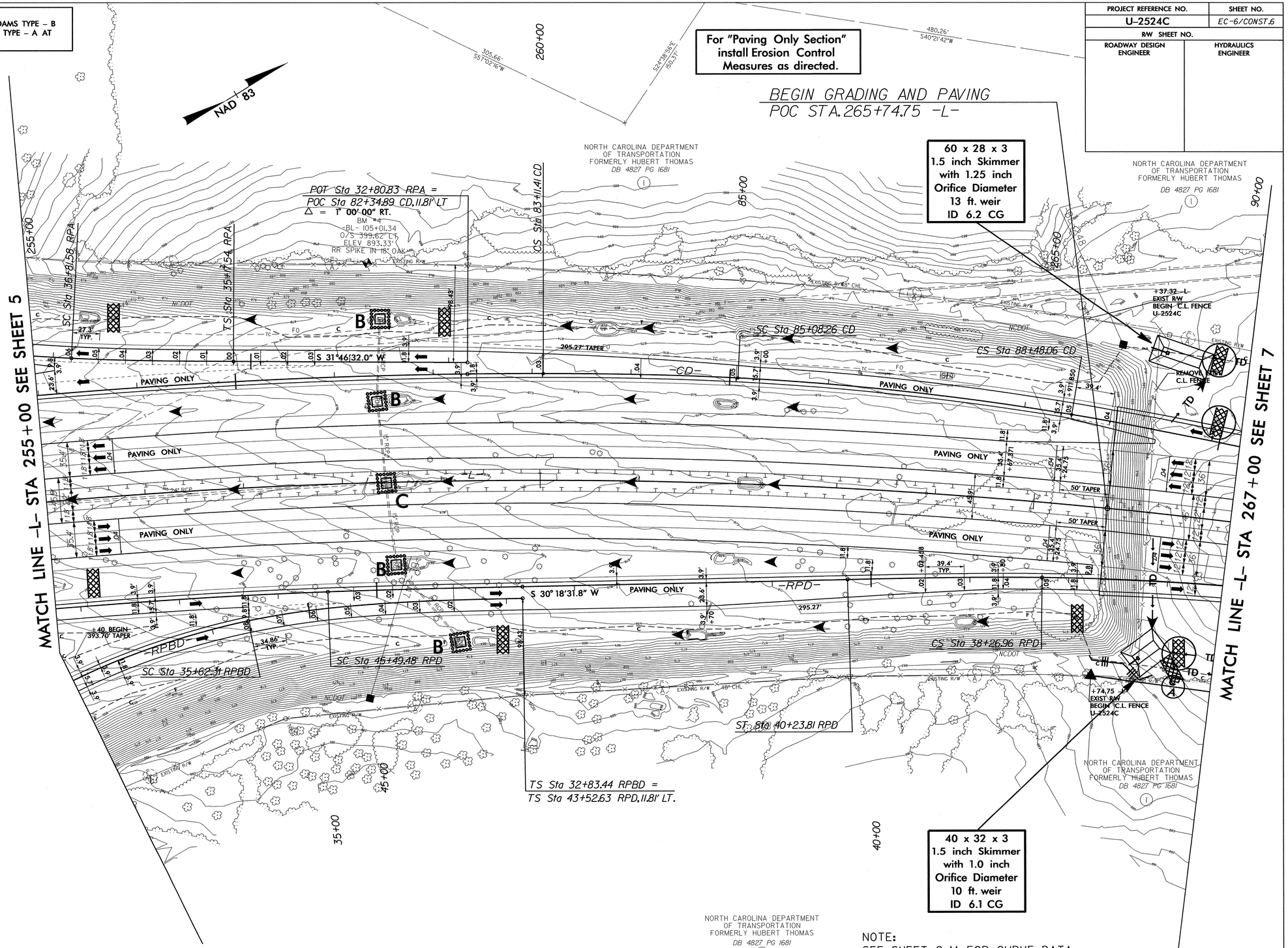
jenniferparish AT RENV264103

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-6/CONST.6
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 6

For "Paving Only Section" install Erosion Control Measures as directed.



NOTE:
SEE SHEET 2-M FOR CURVE DATA
SEE SHEET 21 & 22 FOR -L- PROFILE
SEE SHEET 32 FOR -RPA- PROFILE
SEE SHEETS 35 & 36 FOR -CD- PROFILE
SEE SHEET 36 FOR -RPBD- PROFILE
SEE SHEETS 38 & 39 FOR -RPD- PROFILE

8/17/99

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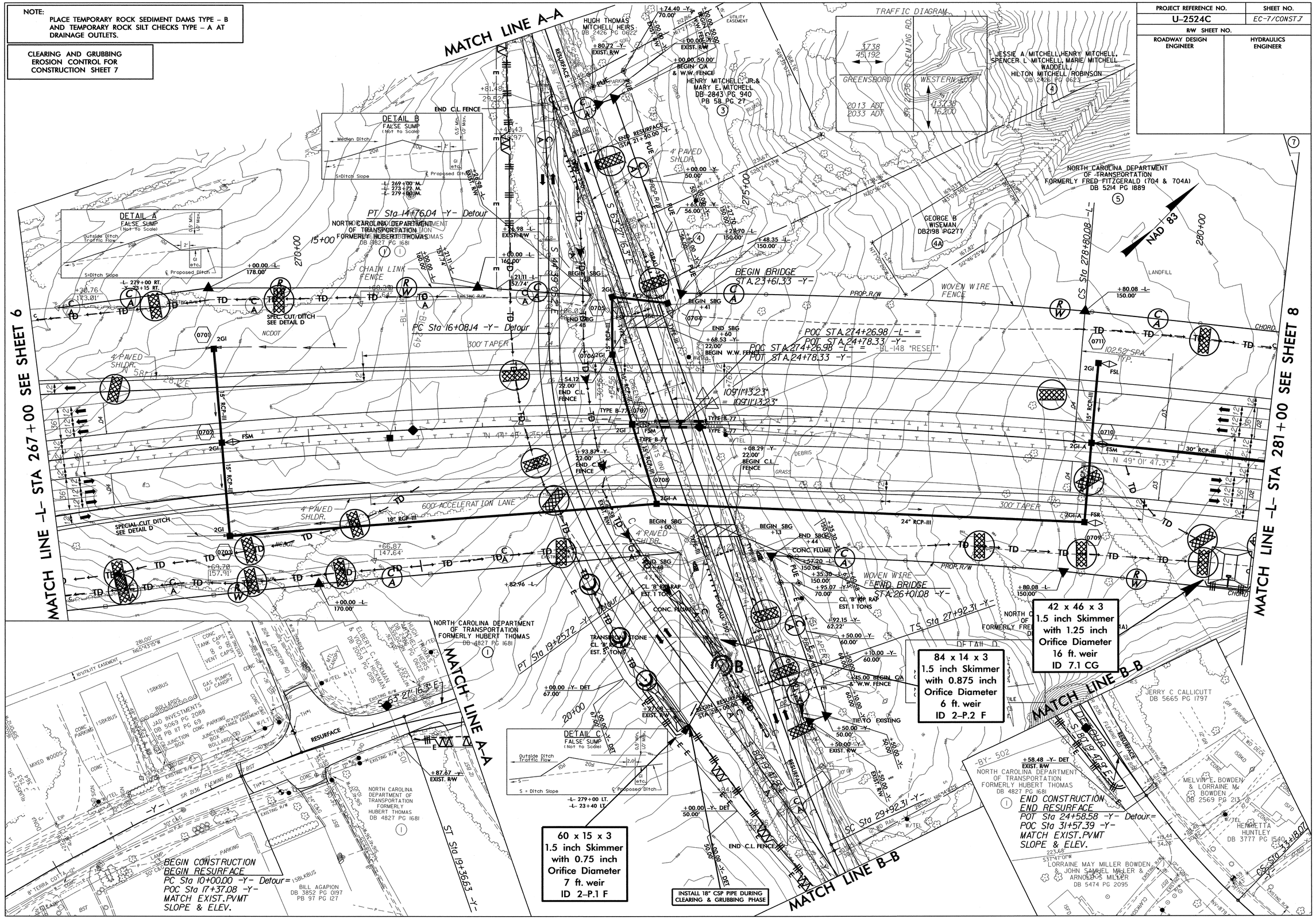
jenniferparish AT RENV264103

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 7

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-7/CONST.7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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

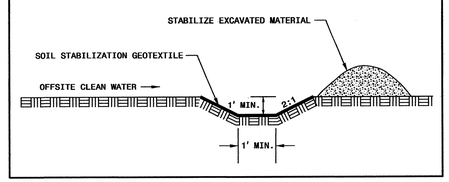
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 8

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-8/CONST.8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEAN WATER DIVERSION

→→ CWD →→ CWD →→ CWD →→ CWD →→

(Not to Scale)



MATCH LINE –L– STA 281+00 SEE SHEET 7

MATCH LINE –L– STA 295+00 SEE SHEET 9

NAD 83

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
FORMERLY FRED FITZGERALD (704 & 704A)
DB 5214 PG 1889

HUGH THOMAS MITCHELL, JR.
DB 2947 PG 676

LONELL MITCHELL
DB 2947 PG 676
LANDFILL

WILLIAM H SMITH
DB 2662 PG 0445

ACCESS EASEMENT WIDTH VARIES

DL MOORE
DB 2908 PG 0548

CLARENCE MILLER
DB 1994 PG 0172

STATESCAPE TURF MANAGEMENT LLC.
DB 5309 PG 1437

JERRY WAYNE RALEIGH, SR.
JOSEPH HOWARD RALEIGH
MARILYN R. RALEIGH
ANNETTE RALEIGH FREEMAN &
CORNELIA ANNA RALEIGH
DB 3486 PG 2155

THELMA S BURRITT
DB 3856 PG 0684

DAVID L. BRAKIN, SR. &
MARY LYNN E. GRIFFIN
DB 4314 PG 966

BL-10 "RESET"

ST STA 282+90.18 -L-

TOE PROTECTION
SEE DETAIL G
CL 'B' RIP RAP
EST. 27 TONS
EST. 80 SYGF

TOE PROTECTION
SEE DETAIL G
CL 'B' RIP RAP
EST. 70 TONS
EST. 210 SYGF

TOE PROTECTION
SEE DETAIL G
CL 'B' RIP RAP
EST. 81 TONS
EST. 243 SYGF

BERM 'V' DITCH
SEE DETAIL I

CL 'I' RIP RAP
EST. 11 TONS
EST. 22 SYGF

CL 'I' RIP RAP
EST. 26 TONS
EST. 50 SYGF

NO RIP RAP TO BE PLACED IN STREAM BED

TOE PROTECTION
SEE DETAIL G
CL 'B' RIP RAP
EST. 100 TONS
EST. 295 SYGF

RIP RAP AT EMBANKMENT
SEE DETAIL J
CL 'I' RIP RAP
EST. 30 TONS
EST. 50 SYGF

PREFORMED SCOUR HOLE
B=5' W=5'
D=2' d=0.5'

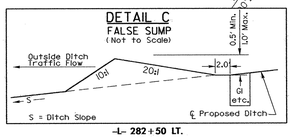
CL 'B' RIP RAP
EST. 1 TONS
EST. 5 SYGF

25 x 45 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
14 ft. weir
ID 8.1 CG

30 x 40 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
11 ft. weir
ID 8.2 CG

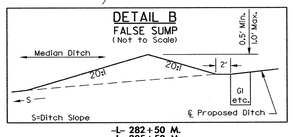
44 x 25 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
9 ft. weir
ID 8.3 CG

DETAIL C
FALSE SUMP
(Not to Scale)



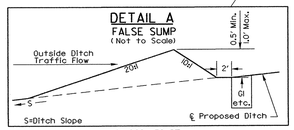
–L– 282+50 LT.
–L– 291+75 LT.

DETAIL B
FALSE SUMP
(Not to Scale)



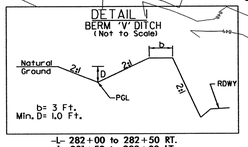
–L– 282+50 M.
–L– 285+50 M.
–L– 287+50 M.
–L– 292+00 M.

DETAIL A
FALSE SUMP
(Not to Scale)



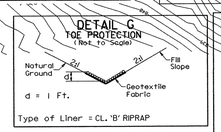
–L– 282+50 RT.

DETAIL I
BERM 'V' DITCH
(Not to Scale)



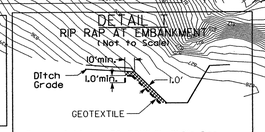
–L– 282+00 to 282+50 RT.
–L– 291+50 to 293+00 LT.

DETAIL G
TOE PROTECTION
(Not to Scale)



–L– 282+75 to 283+75 LT.
–L– 283+95 to 286+25 LT.
–L– 288+00 to 291+00 LT.
–L– 283+00 to 287+15 RT.

DETAIL J
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 30 TONS,CL 'I' Rip-Rap
Geotextile= 50 SY

–L– STA. 287+03 TO 287+30 (RT)

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

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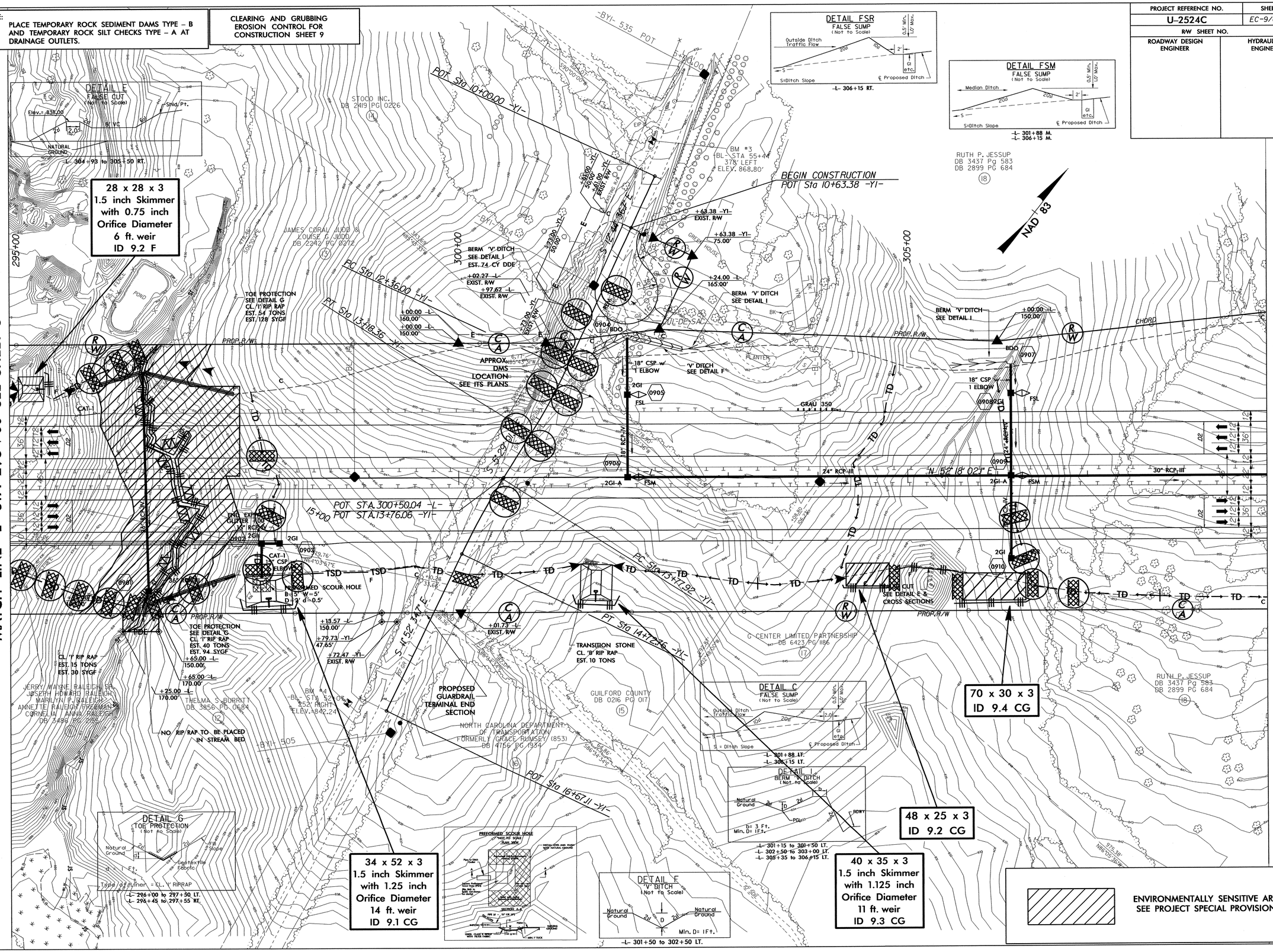
jennifer.parrish
AT REN\V264103

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-9/CONST.9
RW 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 9



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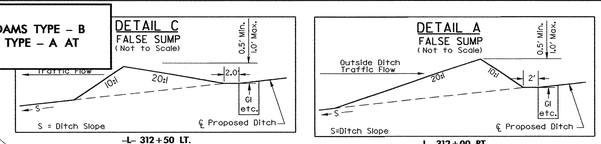
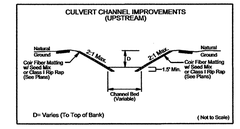
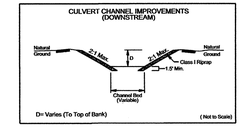
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

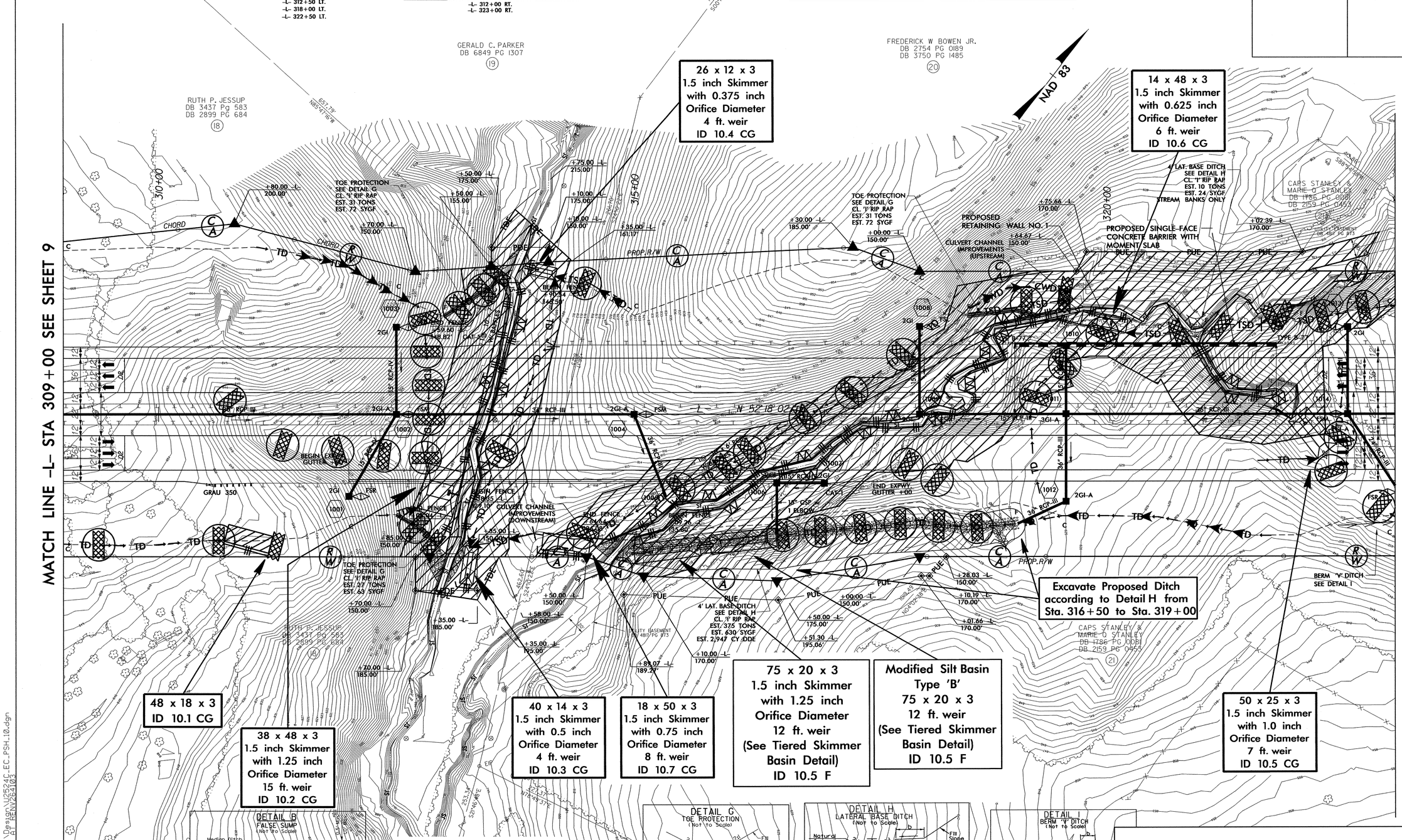
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 10

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-10/CONST.10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER









ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

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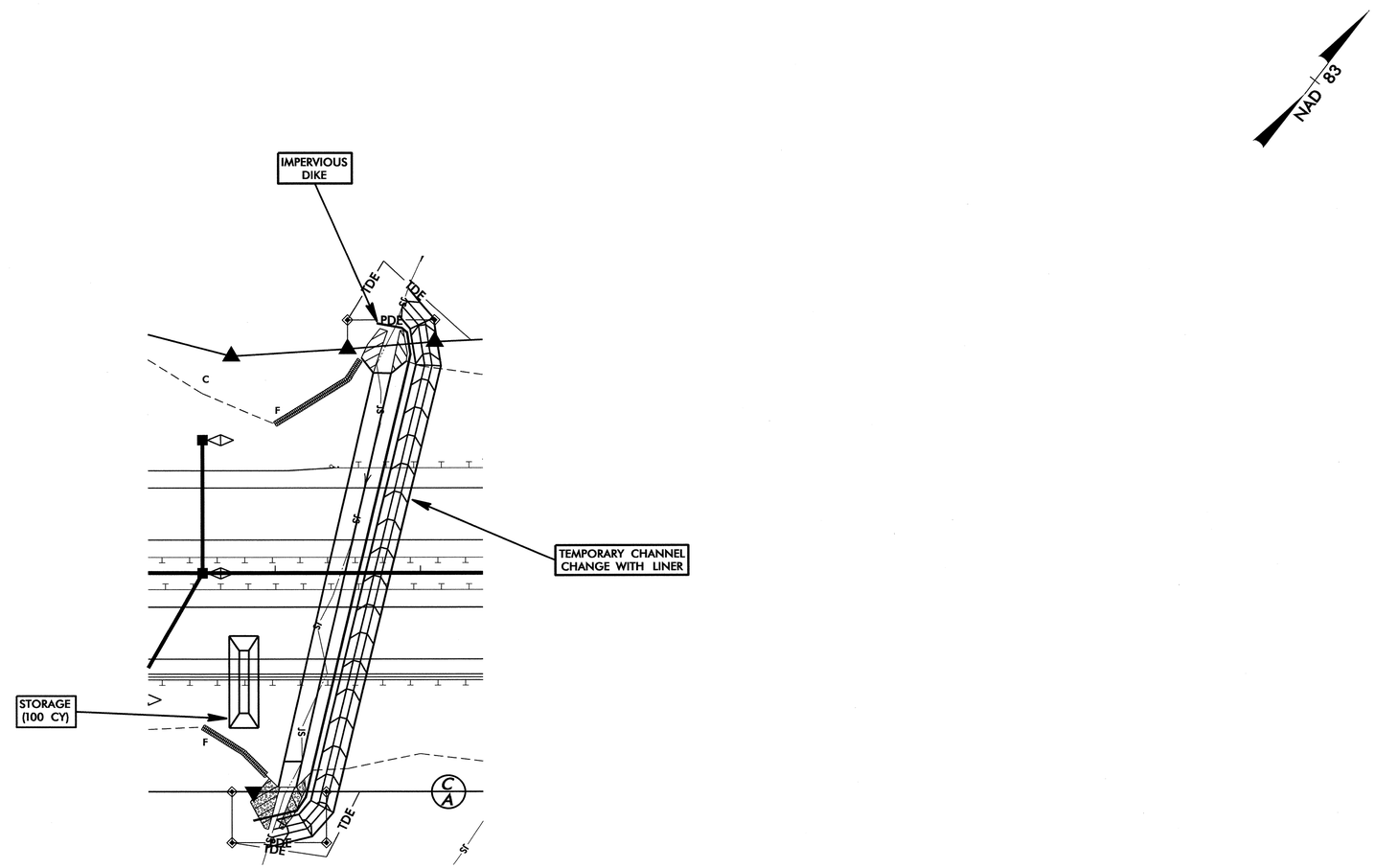
jennifergrubbs AT REN\264103

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-11/CONST.10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CULVERT CONSTRUCTION SEQUENCE STA. 313 + 42 –L–

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

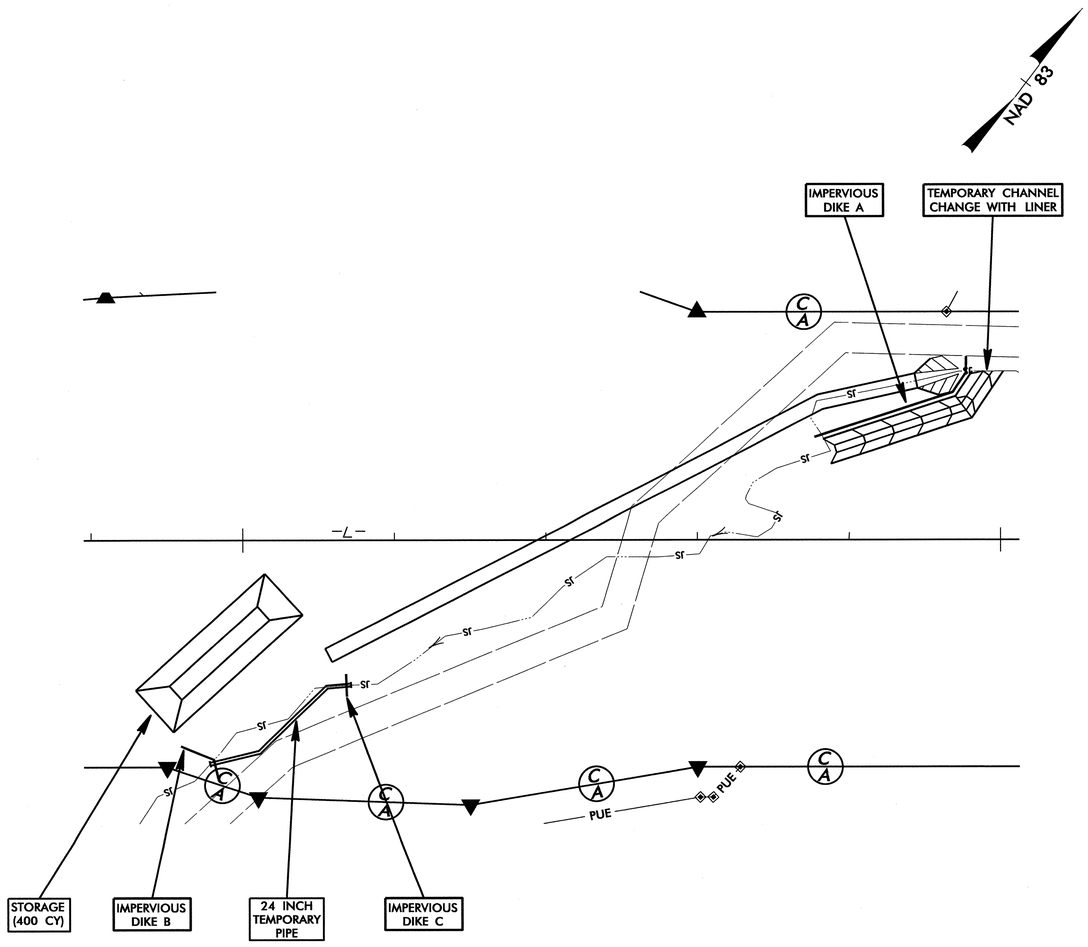


PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-12/CONST.10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CULVERT CONSTRUCTION SEQUENCE STA. 317 + 05 –L–

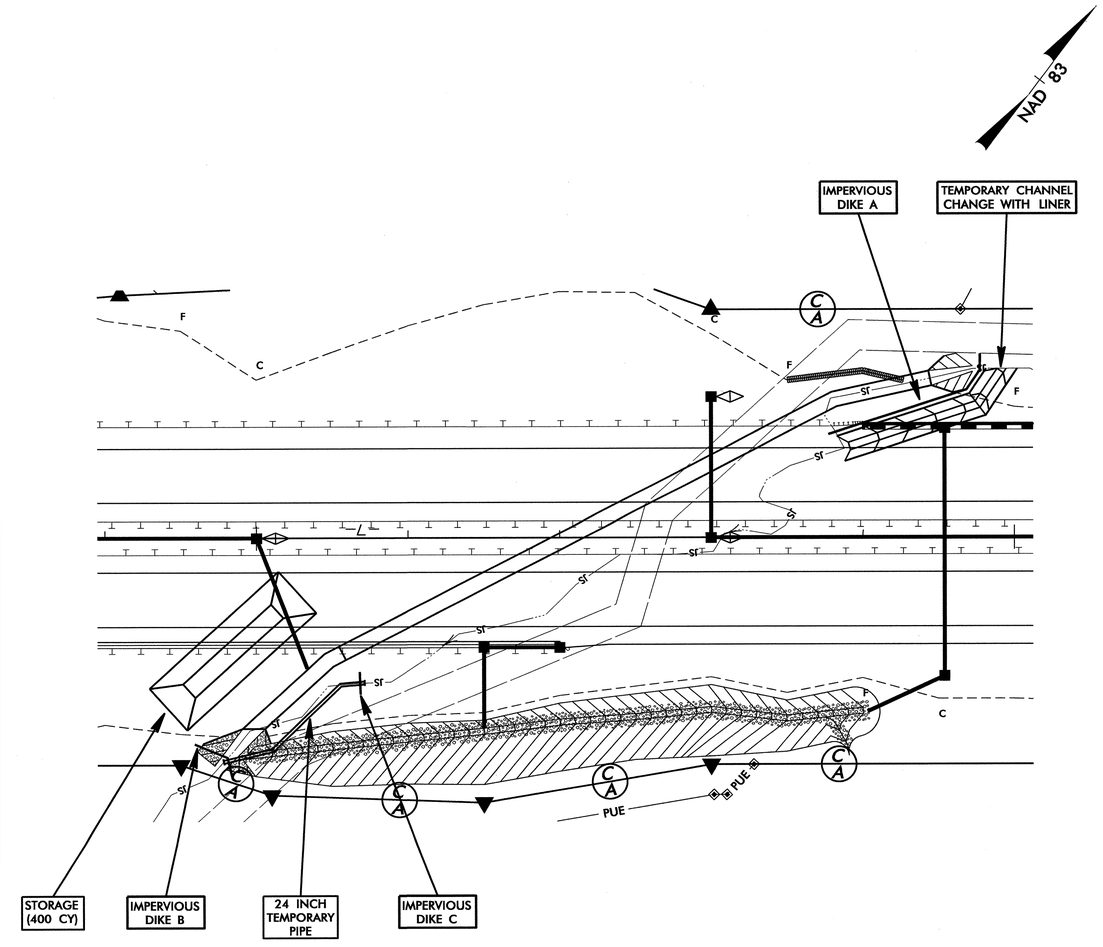
PHASE I

1. CONSTRUCT STILLING BASIN (400 CY).
2. CONSTRUCT IMPERVIOUS DIKE A AND TEMPORARY CHANNEL CHANGE WITH LINER (5 FT. BASE, 3 FT. DEEP, 2:1 SIDE SLOPES), DIVERTING FLOW.
3. CONSTRUCT APPROXIMATELY 430 FT. OF UPSTREAM SECTION OF PROPOSED CULVERT, INCLUDING WINGWALLS AND INLET CHANNEL IMPROVEMENTS.
4. CONSTRUCT IMPERVIOUS DIKES B AND C AND INSTALL 24 INCH TEMPORARY PIPE, DIVERTING FLOW.



PHASE II

5. CONSTRUCT REMAINDER OF PROPOSED CULVERT, OUTLET WINGWALLS, AND PORTION OF OUTLET CHANNEL IMPROVEMENTS.
6. REMOVE IMPERVIOUS DIKES, TEMPORARY CHANNEL CHANGE, AND 24 INCH TEMPORARY PIPE, ALLOWING FLOW THROUGH PROPOSED CULVERT.
7. CONSTRUCT REMAINDER OF OUTLET CHANNEL IMPROVEMENTS.
8. REMOVE STILLING BASIN, AND COMPLETE ROADWAY.



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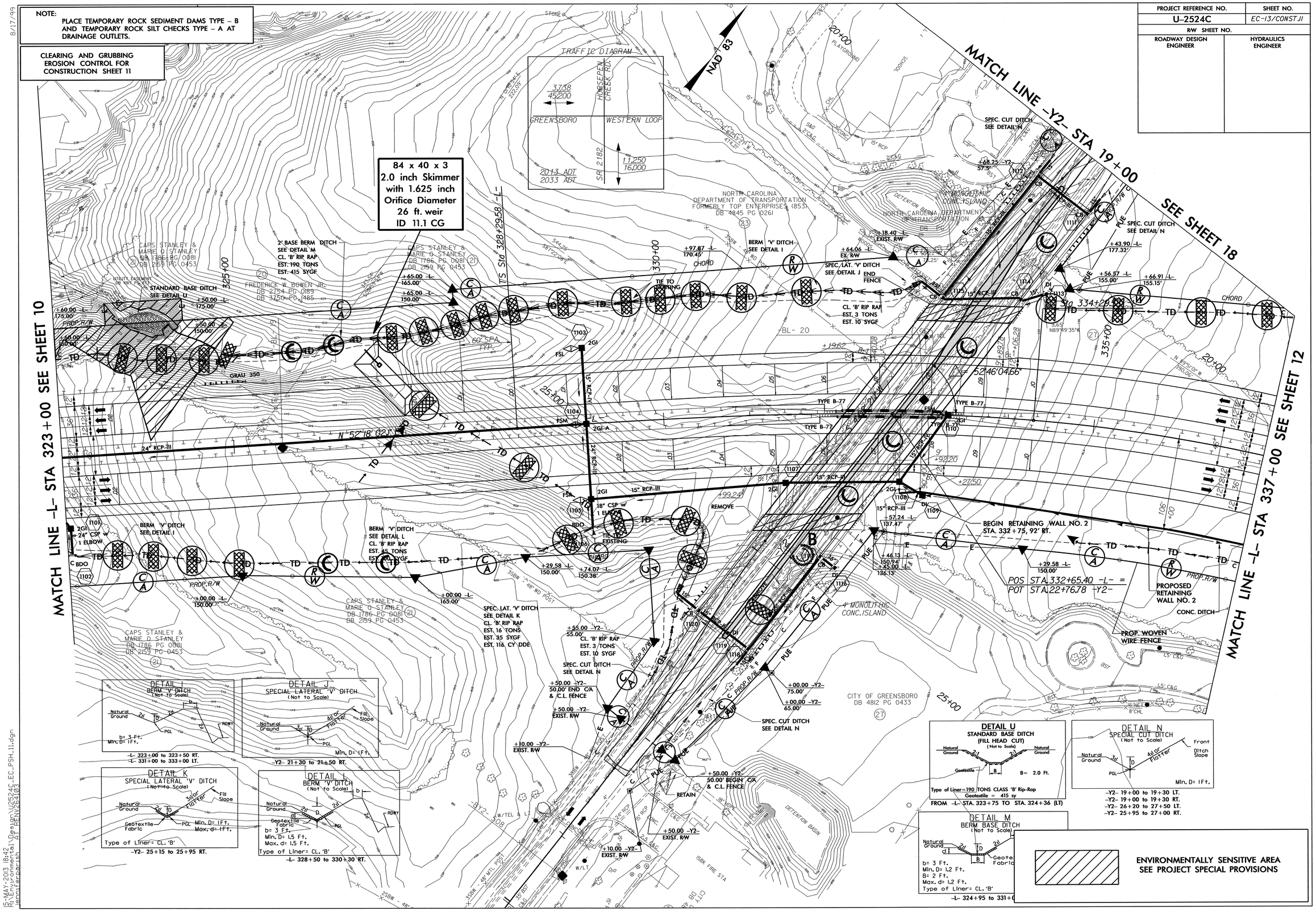
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 11

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-13/CONST JI
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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jenkinscomesh ATRENV264103

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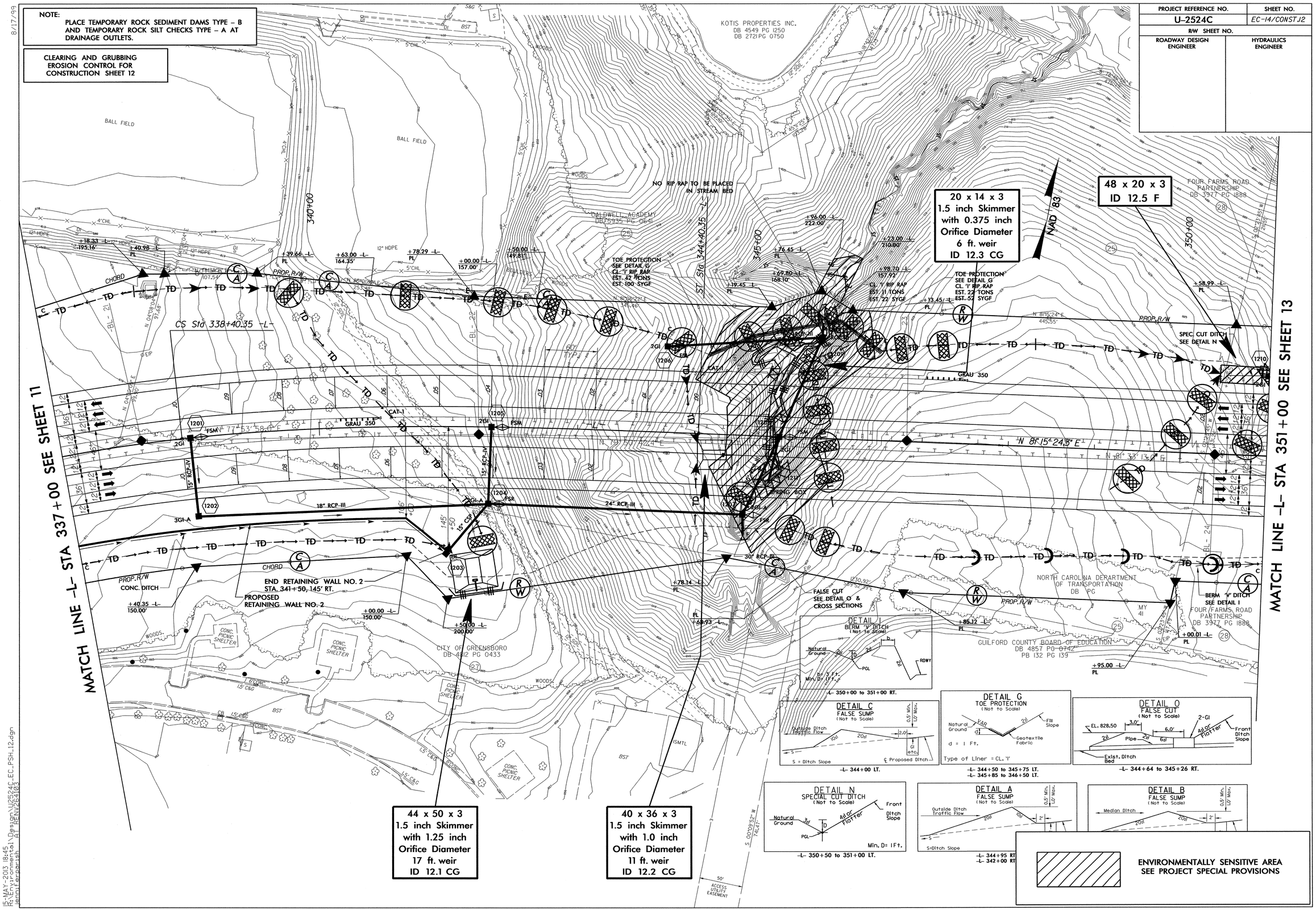
PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-14/CONSTJ2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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 12



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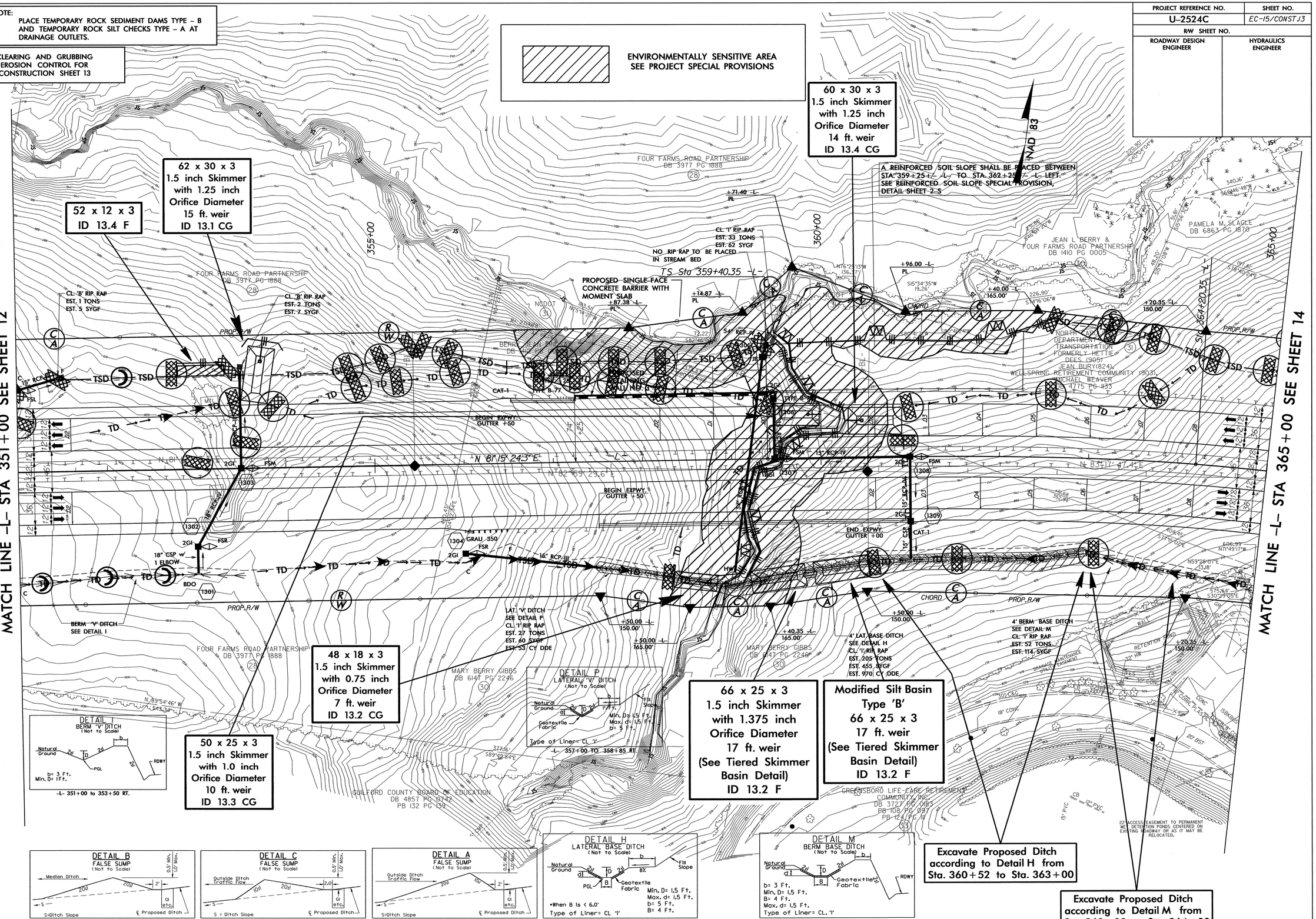
Hendrix, Jeffrey A. (RENV264103)

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-15/CONST.13
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 13

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS



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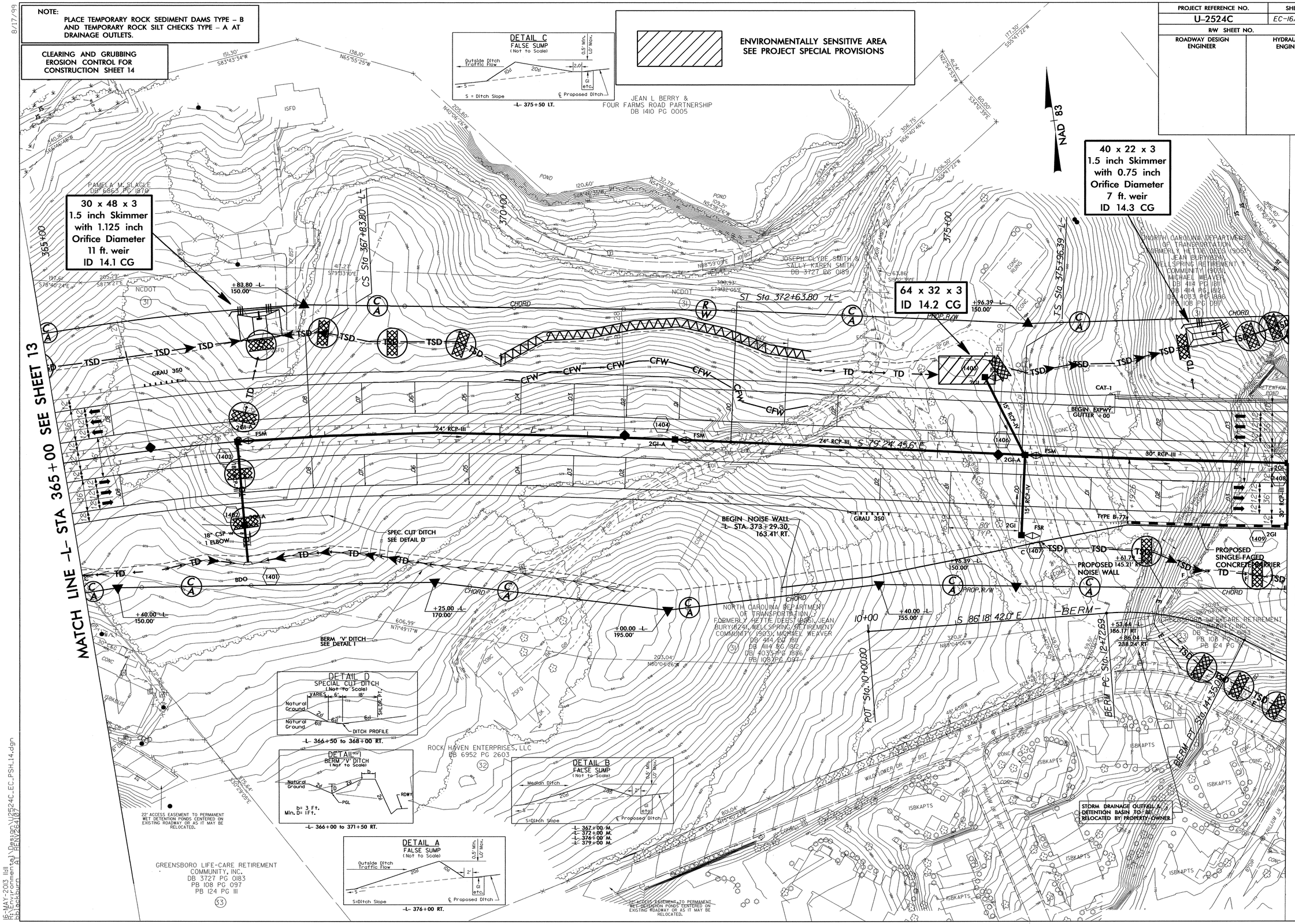
jennifer.parris@ncdot.gov
AT REN\V8.1\Design\U2524C_EC_PSH_13.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-16/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

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS



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PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-17/CONST.J5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

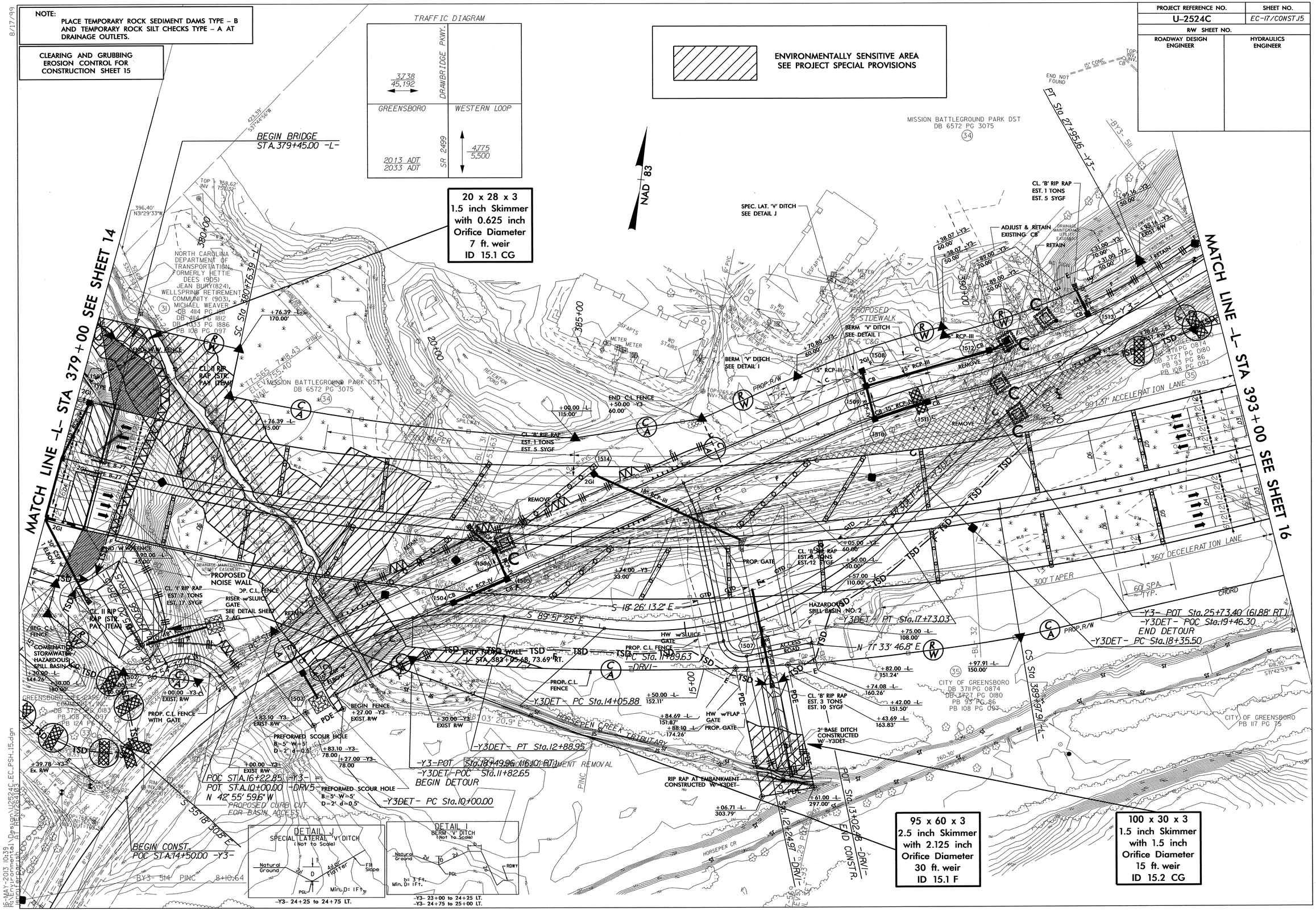
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 15

TRAFFIC DIAGRAM

3,738 / 45,192 DRAWBRIDGE PKWY.	
GREENSBORO	WESTERN LOOP
2013 ADT / 2033 ADT SR 2499	4,775 / 5,500

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS



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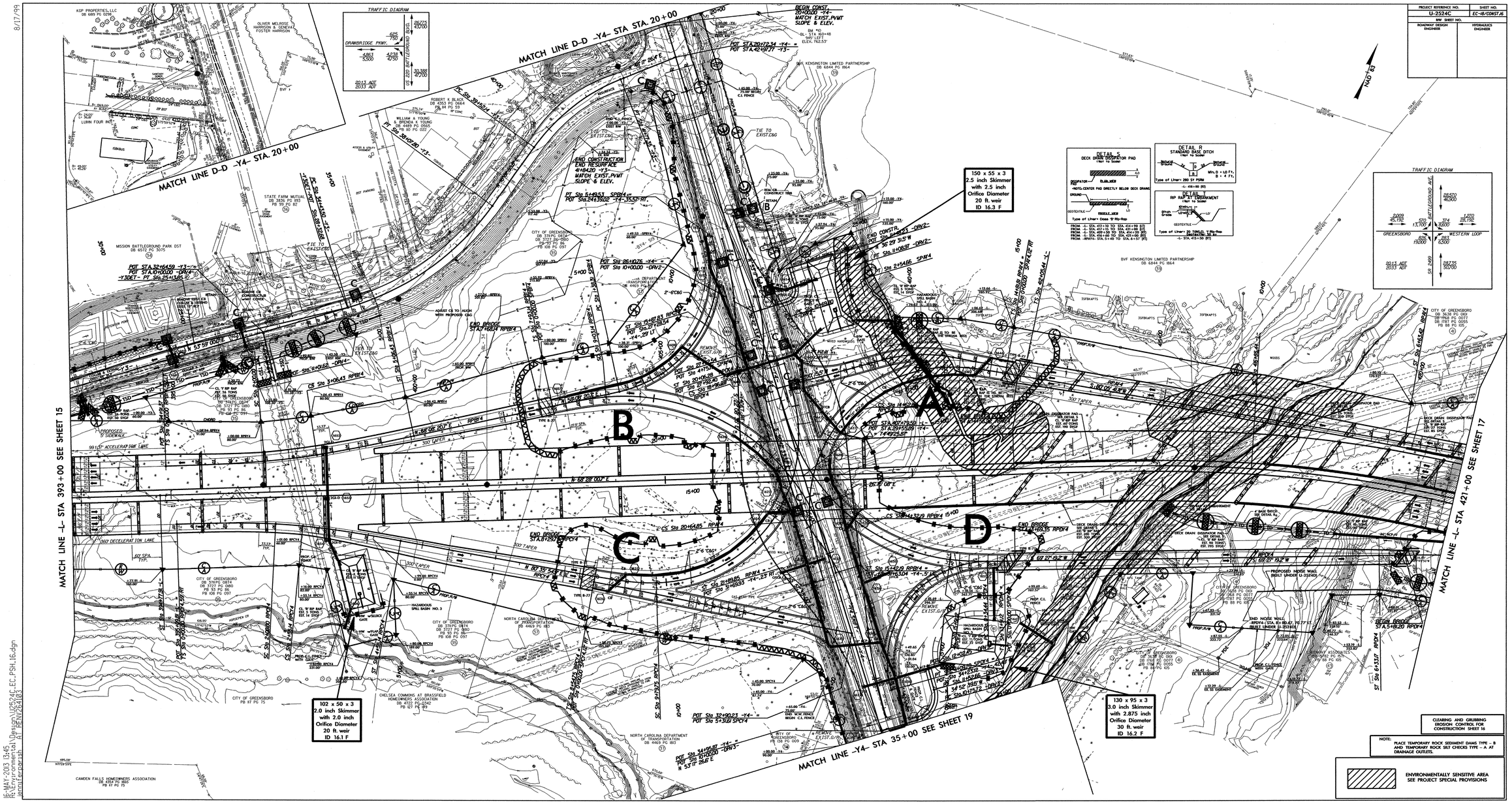
AT PENV264103



PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-18/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.

ENVIRONMENTALLY SENSITIVE AREA SEE PROJECT SPECIAL PROVISIONS

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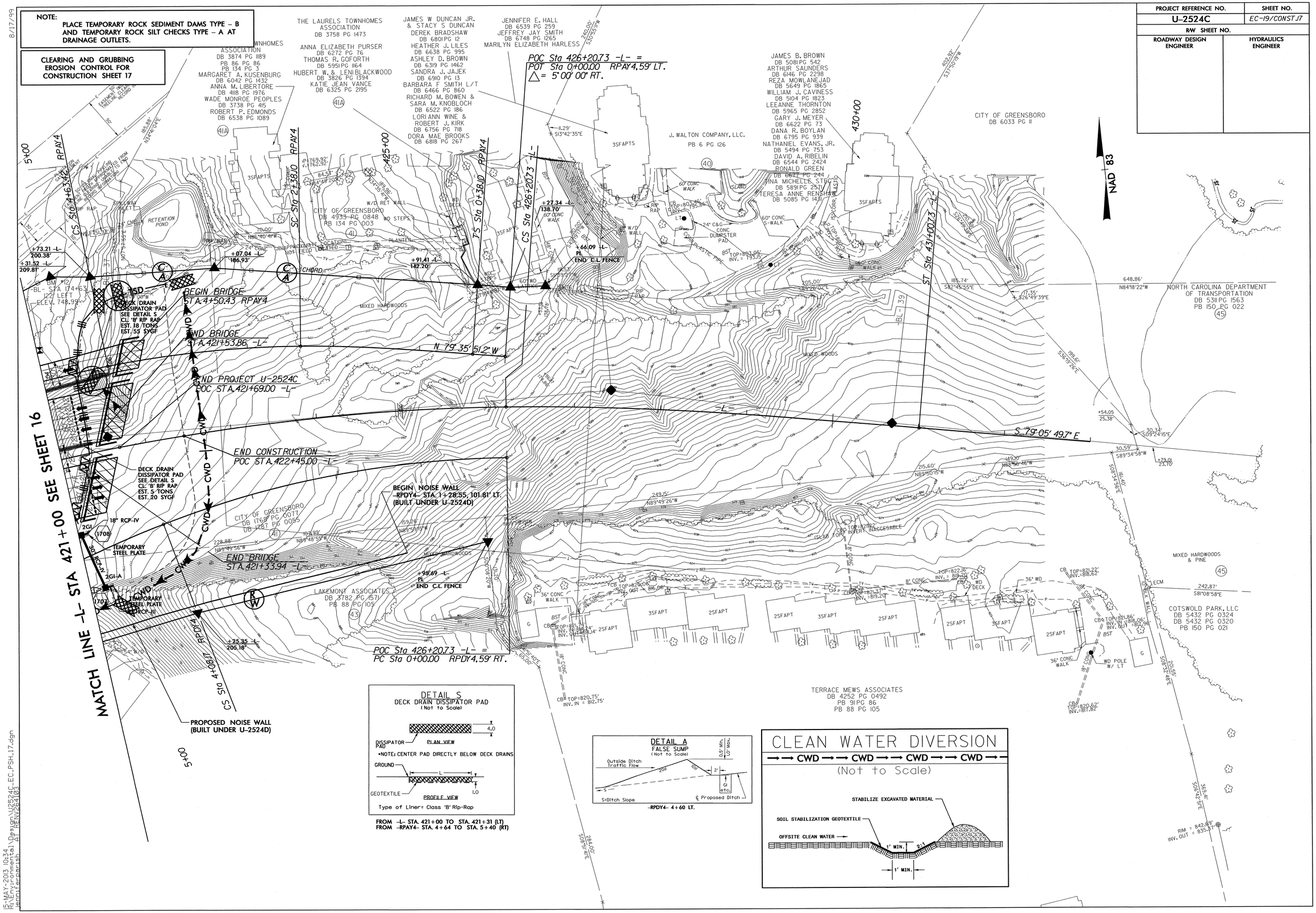
jennifer.parish AT RENV264103

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-19/CONST.17
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 17



DETAIL S
DECK DRAIN DISSIPATOR PAD
(Not to Scale)

Type of Liner= Class 'B' Rip-Rap

FROM -L- STA. 421+00 TO STA. 421+31 (LT)
FROM -RPAY4- STA. 4+64 TO STA. 5+40 (RT)

DETAIL A
FALSE SUMP
(Not to Scale)

-RPDY4- 4+60 LT.

CLEAN WATER DIVERSION
(Not to Scale)

8/17/99

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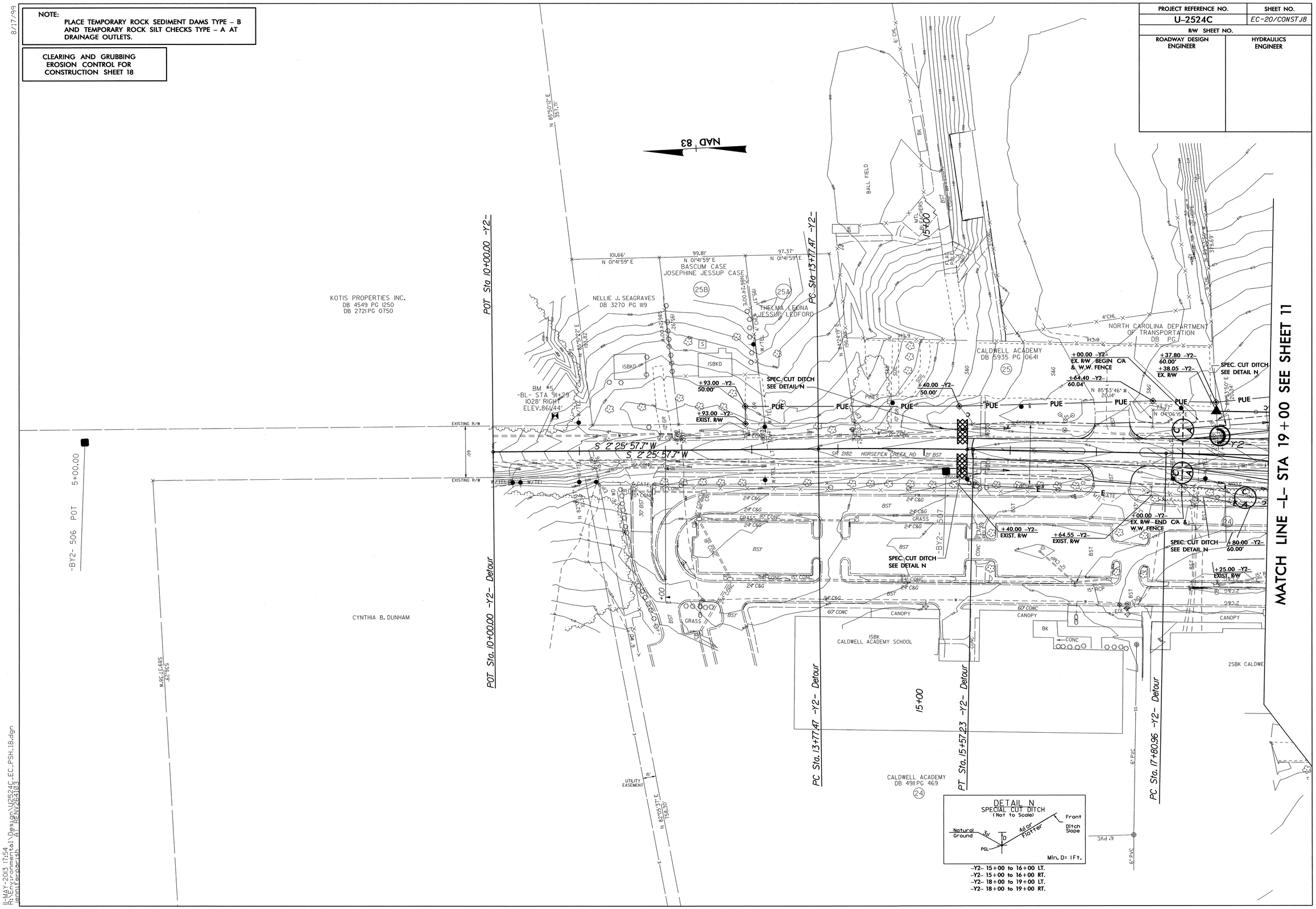
jennifer.parish AT REN224103

8/17/99

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 18

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-20/CONST18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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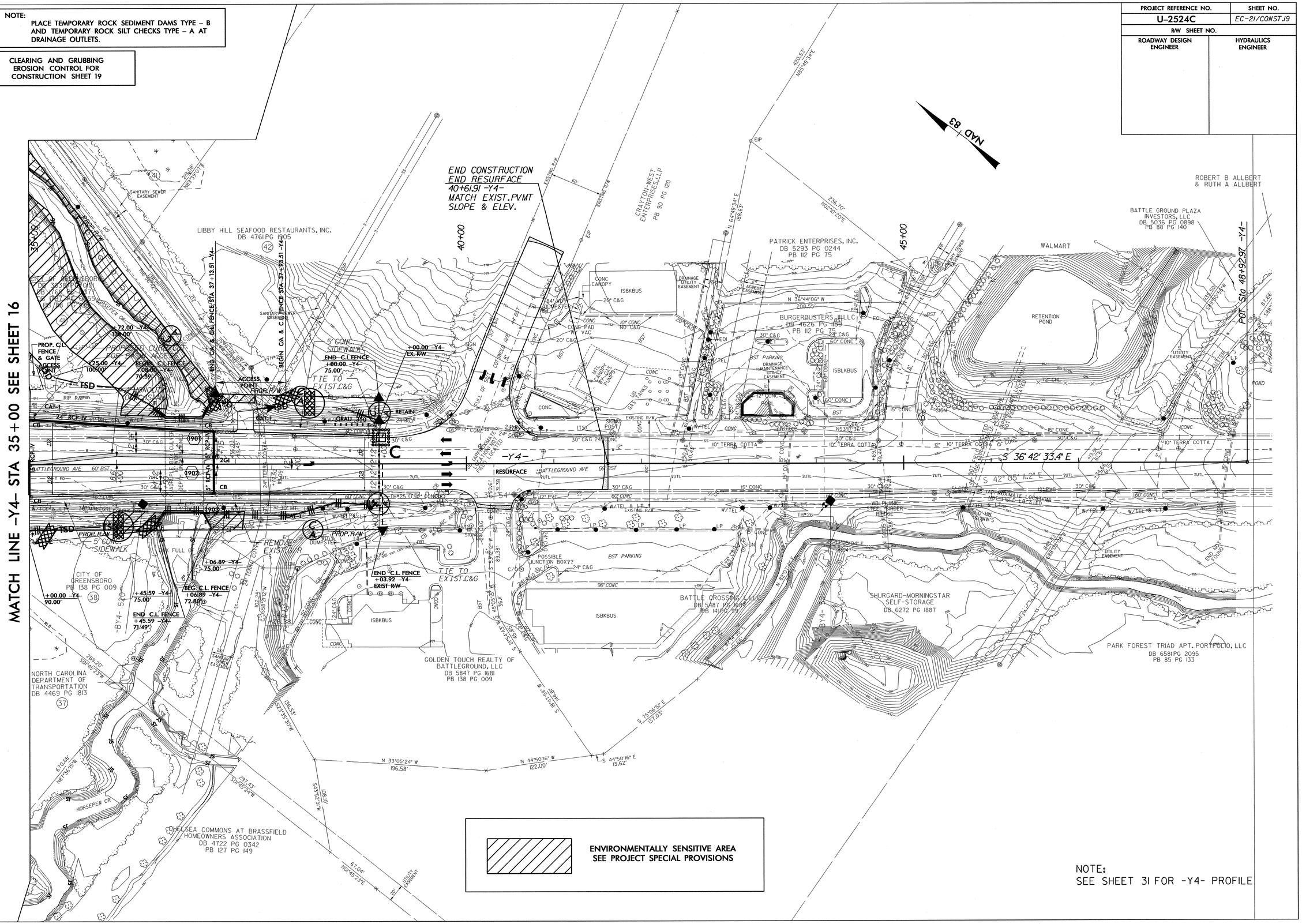
(smitterparish) AT REN\26403

8/17/99

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 19

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-21/CONST.19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTE:
SEE SHEET 31 FOR -Y4- PROFILE

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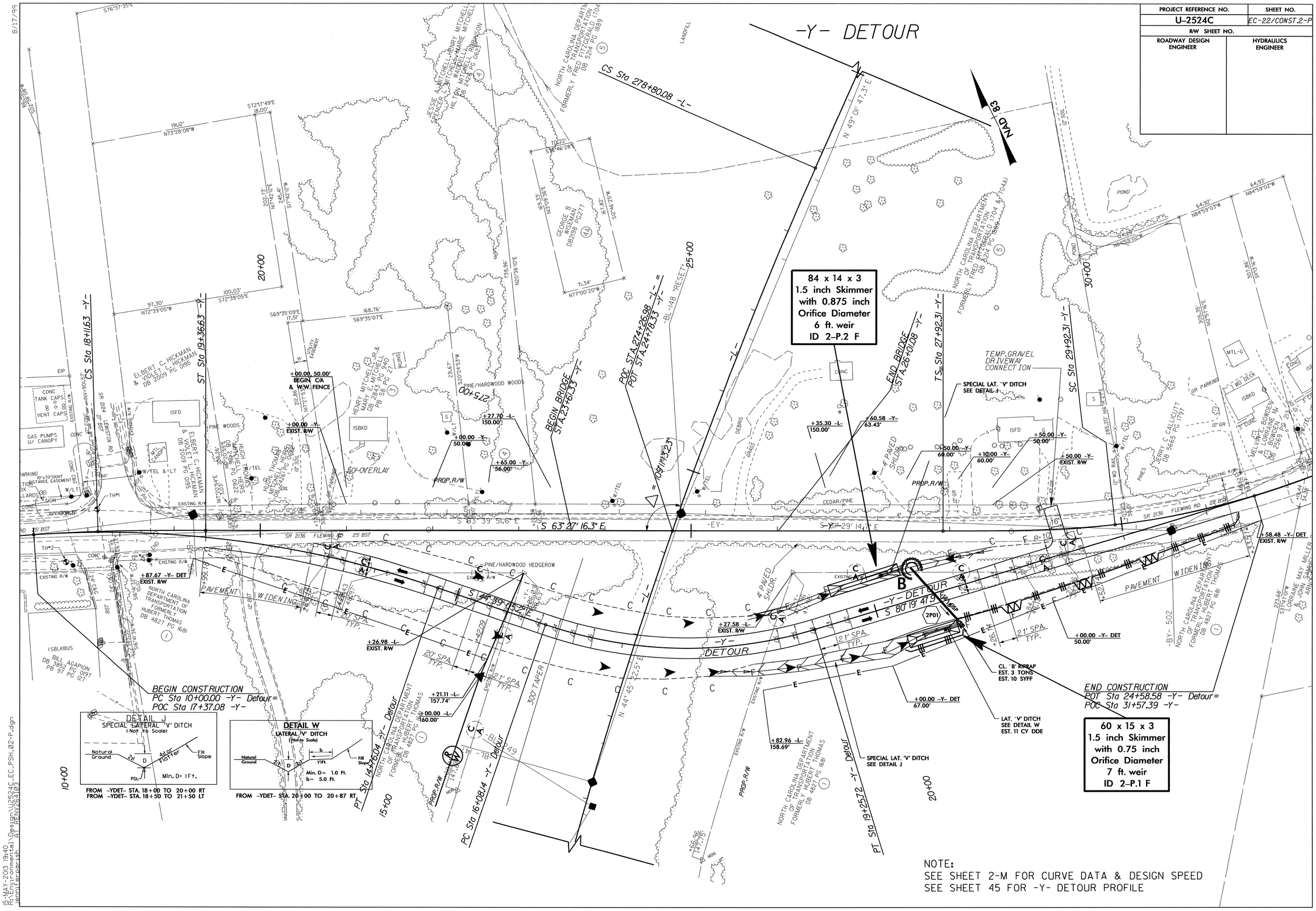
kenwrpowell AT RENV264103

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-22/CONST.2-P
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTE:
SEE SHEET 2-M FOR CURVE DATA & DESIGN SPEED
SEE SHEET 45 FOR -Y- DETOUR PROFILE

8/17/99

15-MAY-2013 19:40
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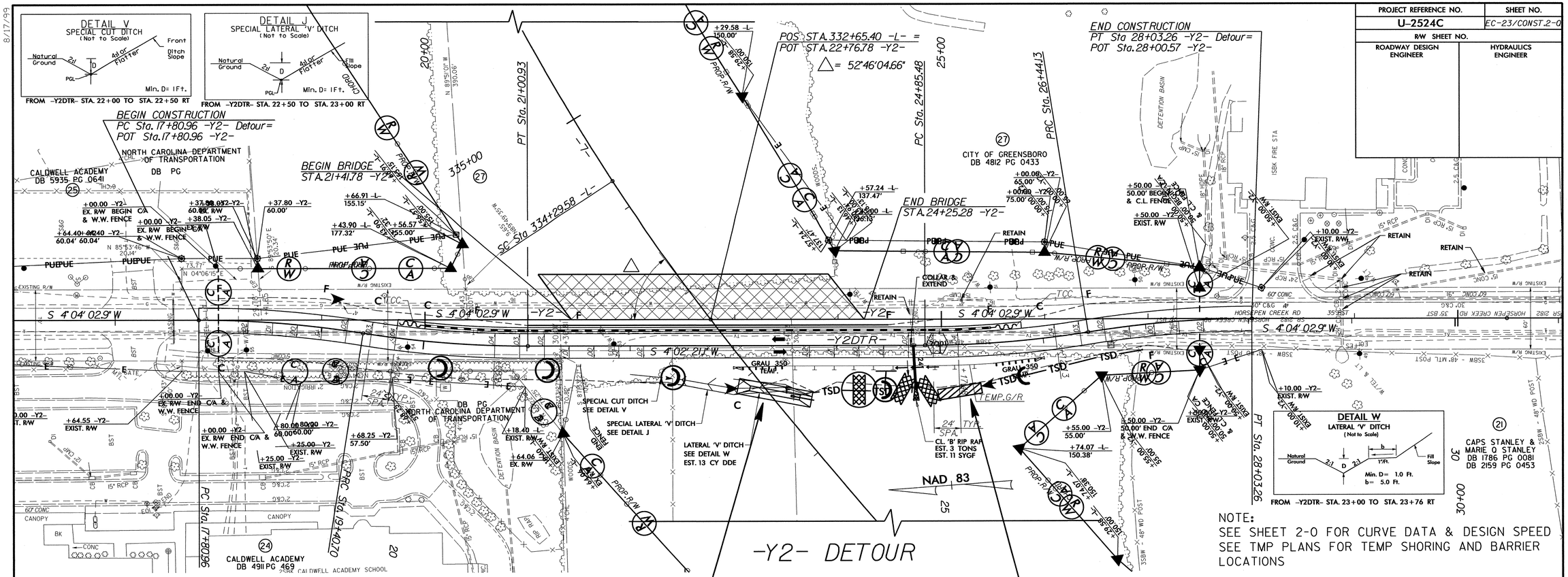
jennifersparish AT REN\264103

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-23/CONST.2-0
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTE:
SEE SHEET 2-0 FOR CURVE DATA & DESIGN SPEED
SEE TMP PLANS FOR TEMP SHORING AND BARRIER LOCATIONS

8/17/99

15-MAY-2013 10:44
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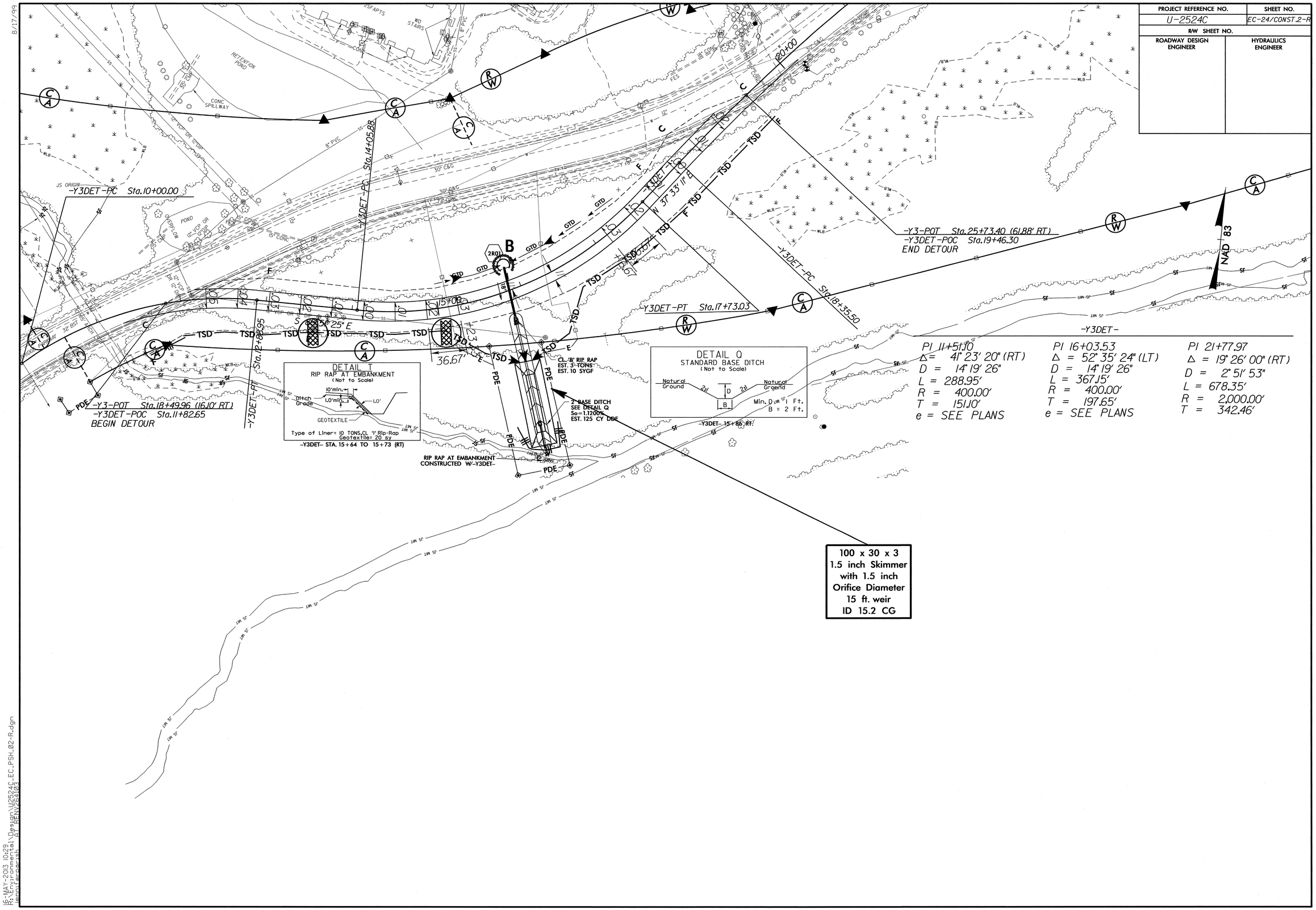
jennifergarish AT REN\264103

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-24/CONST.2-R
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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15-MAY-2013 10:29
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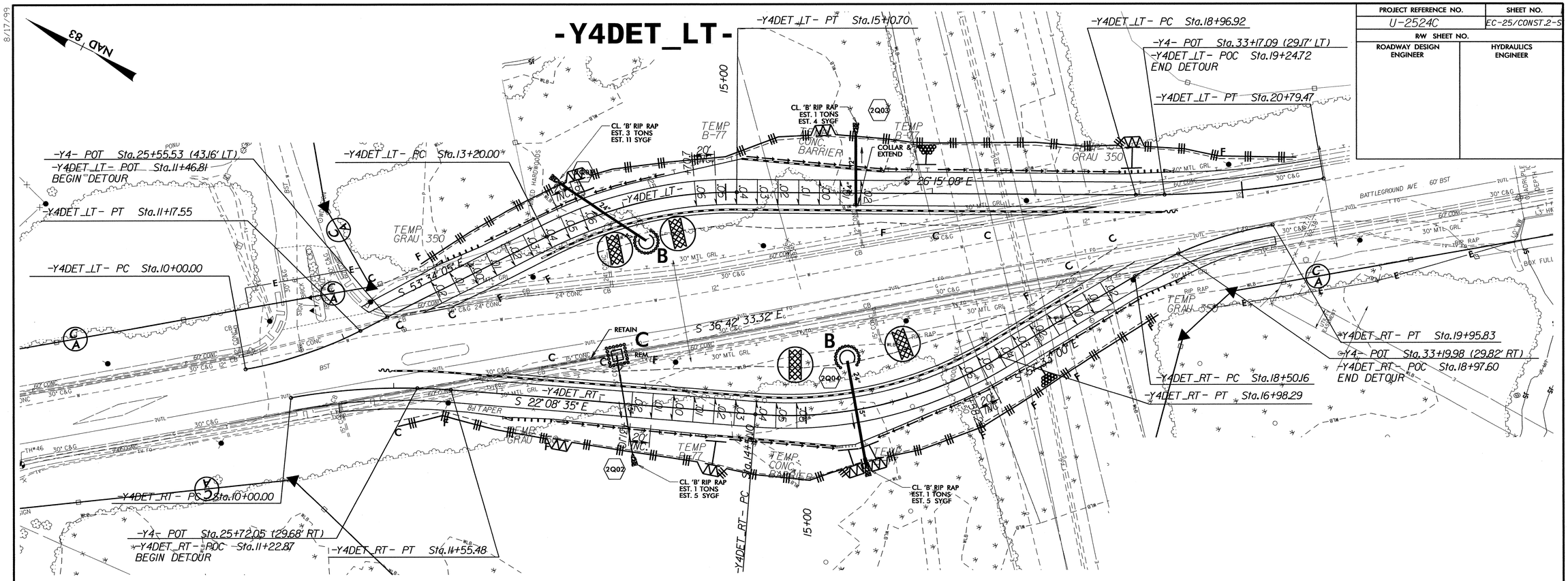
jennifer.parish AT RENV264103

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-25/CONST.2-S
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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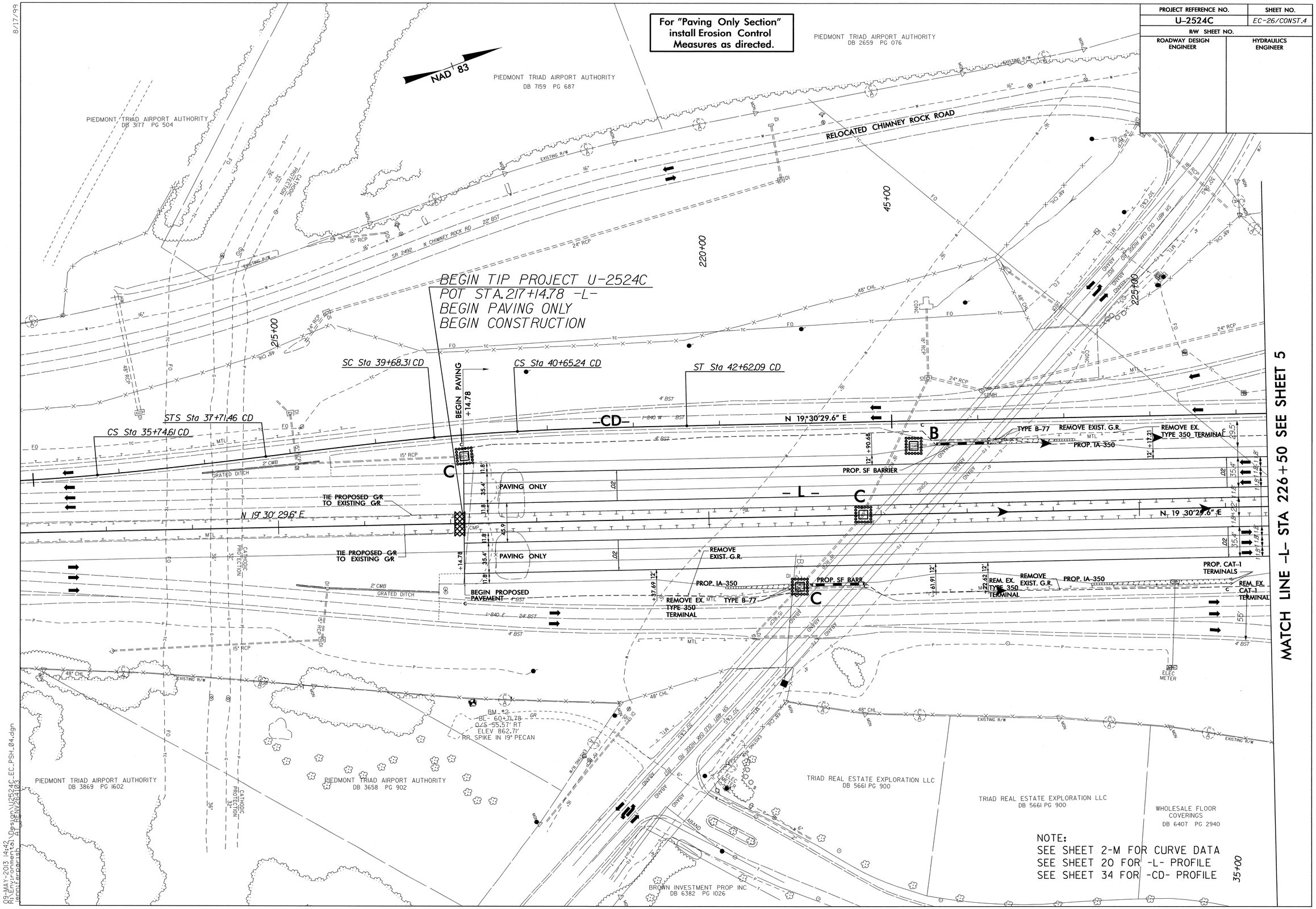
jacobsmith, ALFRENV264103

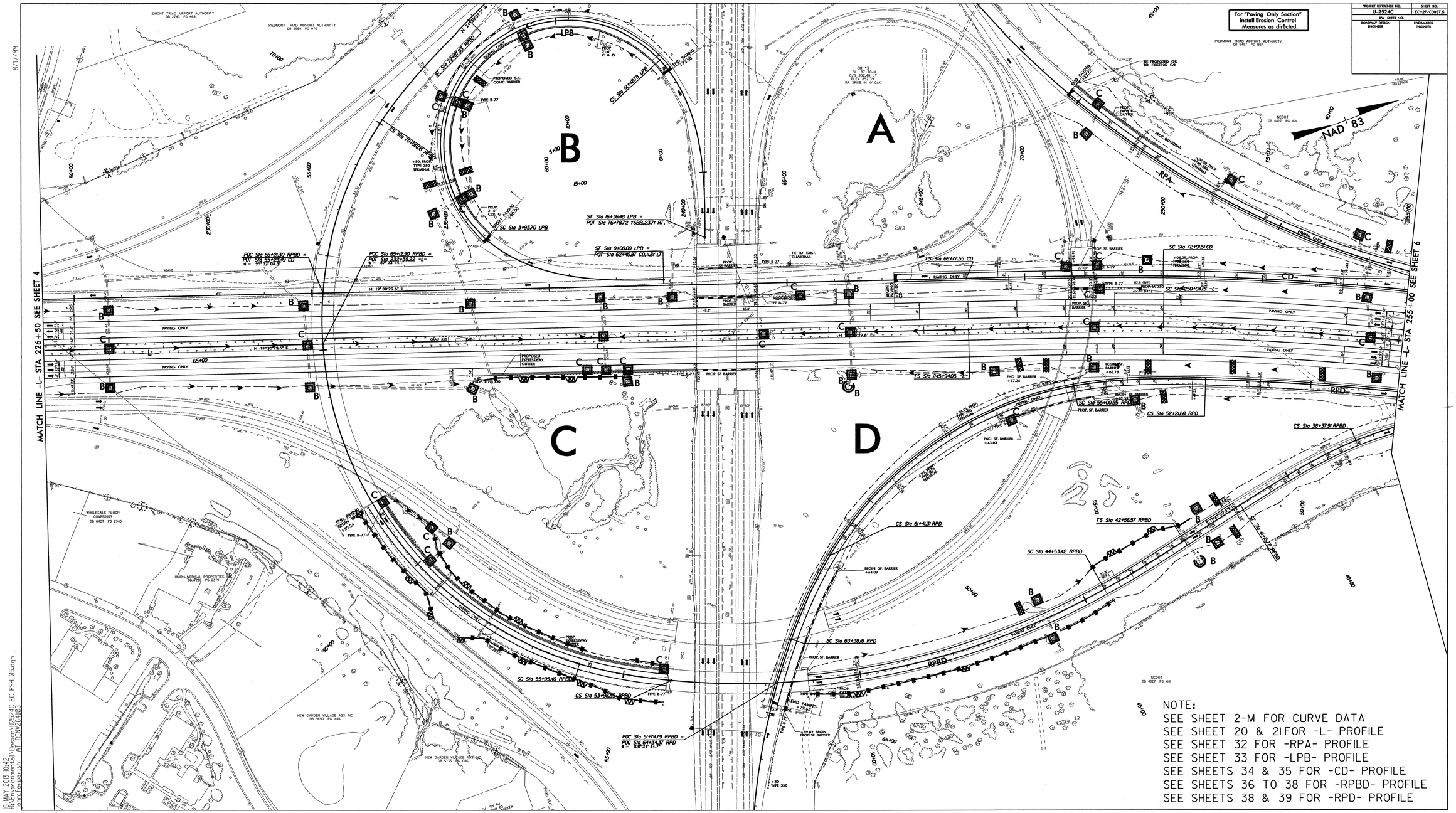
PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-26/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTE:
SEE SHEET 2-M FOR CURVE DATA
SEE SHEET 20 FOR -L- PROFILE
SEE SHEET 34 FOR -CD- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-27/CONST.5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

For "Paving Only Section" install Erosion Control Measures as directed.



NOTE:
SEE SHEET 2-M FOR CURVE DATA
SEE SHEET 20 & 21 FOR -L- PROFILE
SEE SHEET 32 FOR -RPA- PROFILE
SEE SHEET 33 FOR -LPB- PROFILE
SEE SHEETS 34 & 35 FOR -CD- PROFILE
SEE SHEETS 36 TO 38 FOR -RPBD- PROFILE
SEE SHEETS 38 & 39 FOR -RPD- PROFILE

8/17/99

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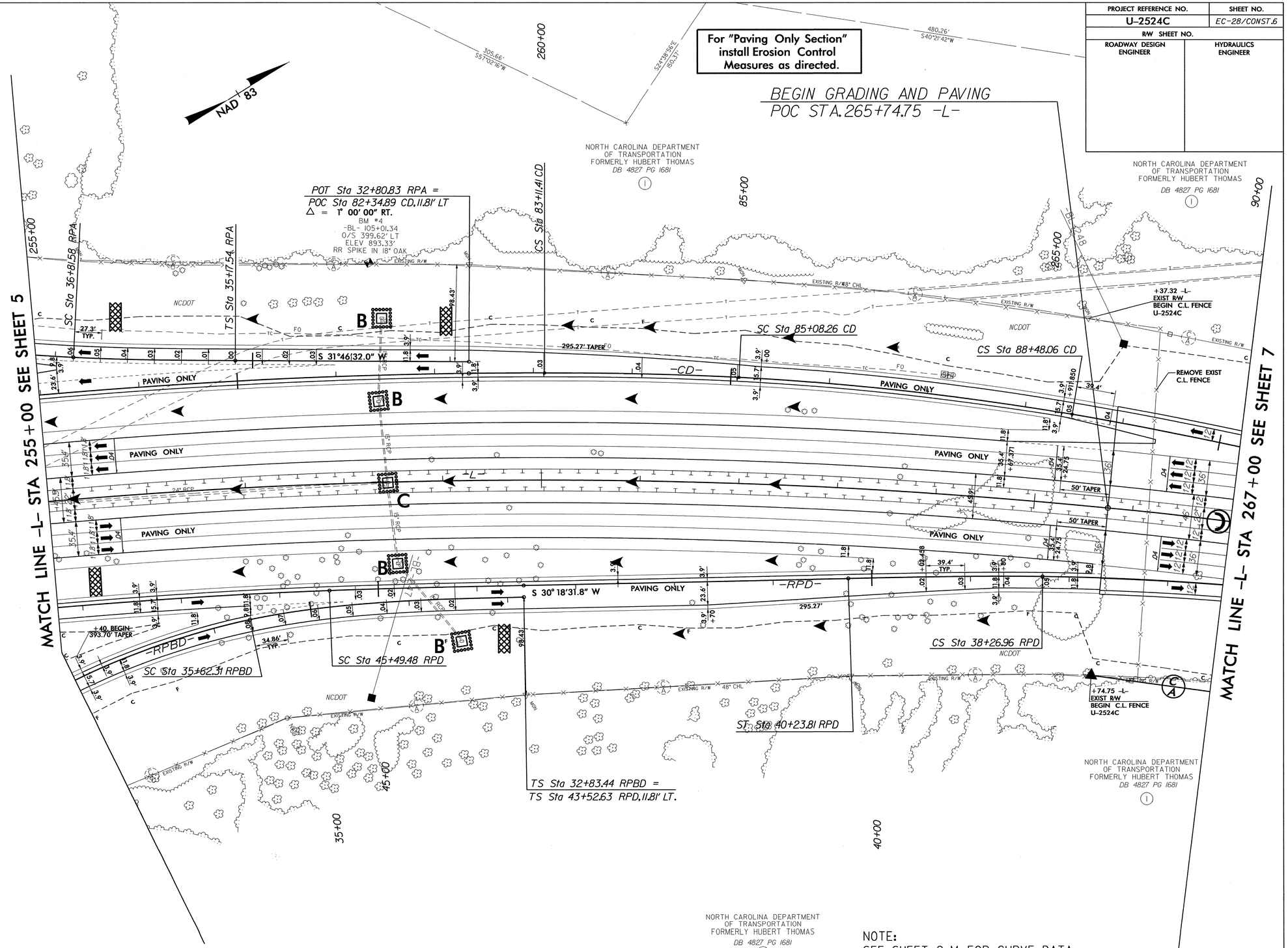
jenniferparish AT RENV264103

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-28/CONST.6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

For "Paving Only Section" install Erosion Control Measures as directed.



NOTE:
SEE SHEET 2-M FOR CURVE DATA
SEE SHEET 21 & 22 FOR -L- PROFILE
SEE SHEET 32 FOR -RPA- PROFILE
SEE SHEETS 35 & 36 FOR -CD- PROFILE
SEE SHEET 36 FOR -RPBD- PROFILE
SEE SHEETS 38 & 39 FOR -RPD- PROFILE

8/17/99

15-MAY-2013 17:28
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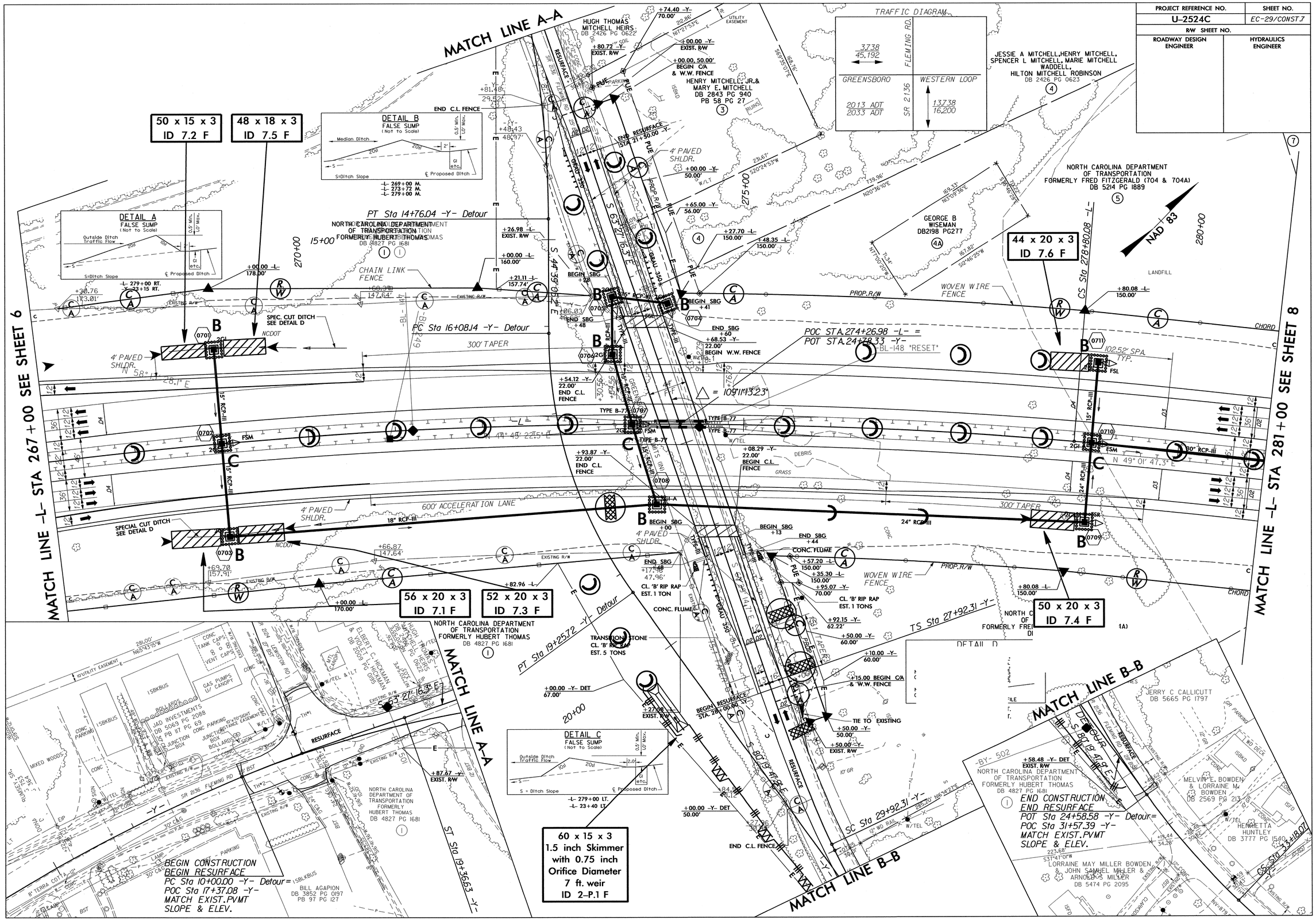
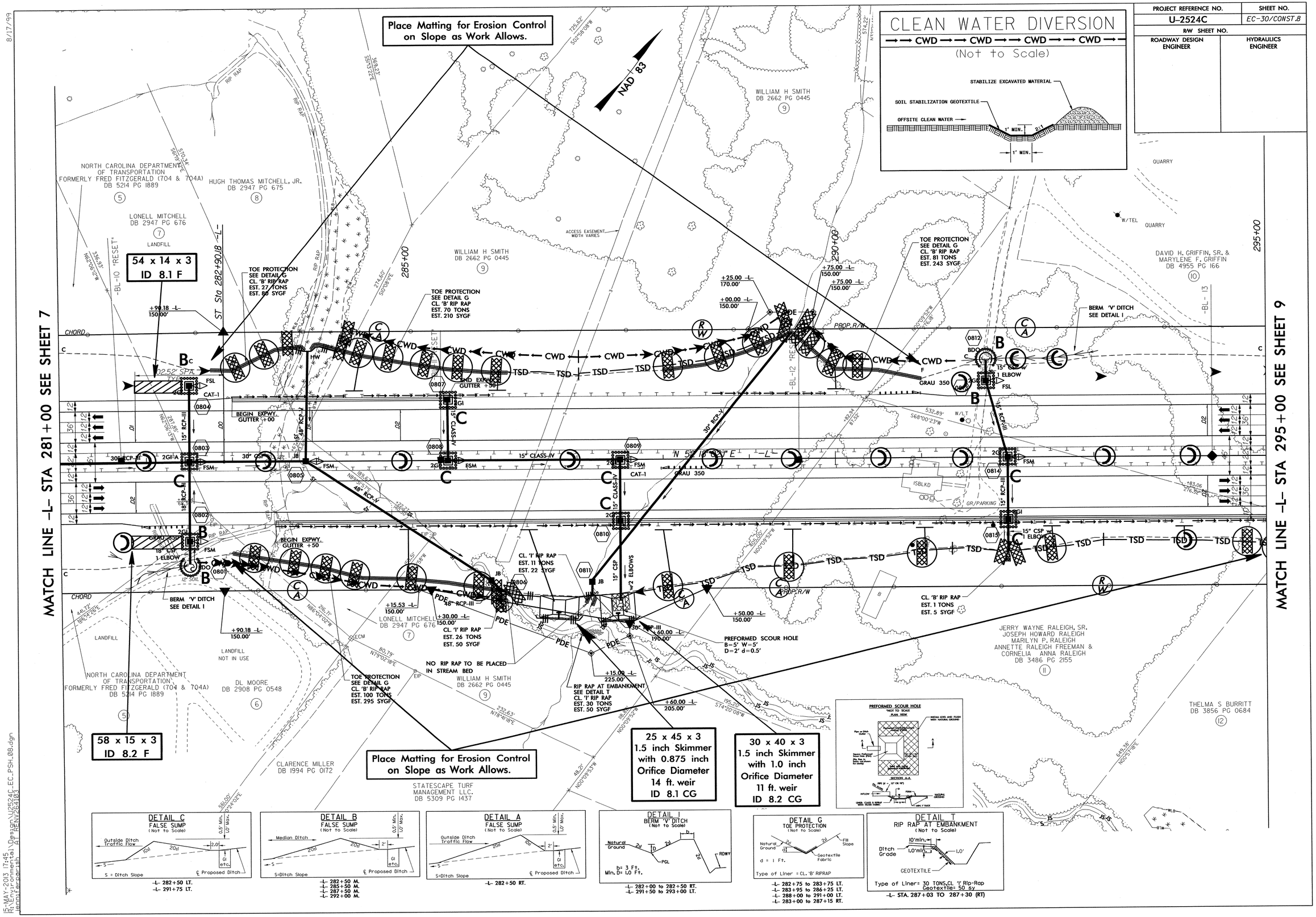
jenniferparish AT RENV264103

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-29/CONST.7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-30/CONST.8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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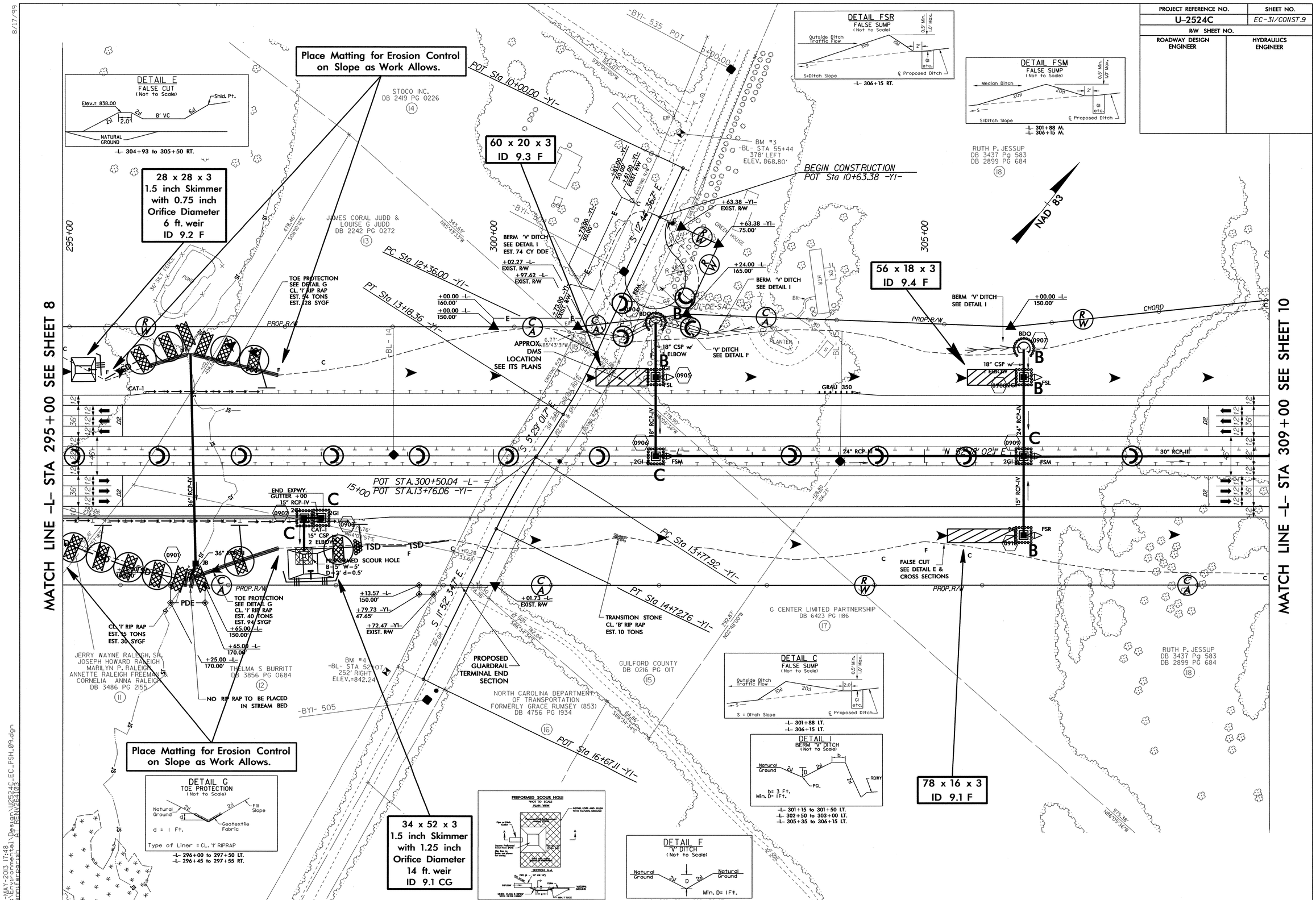
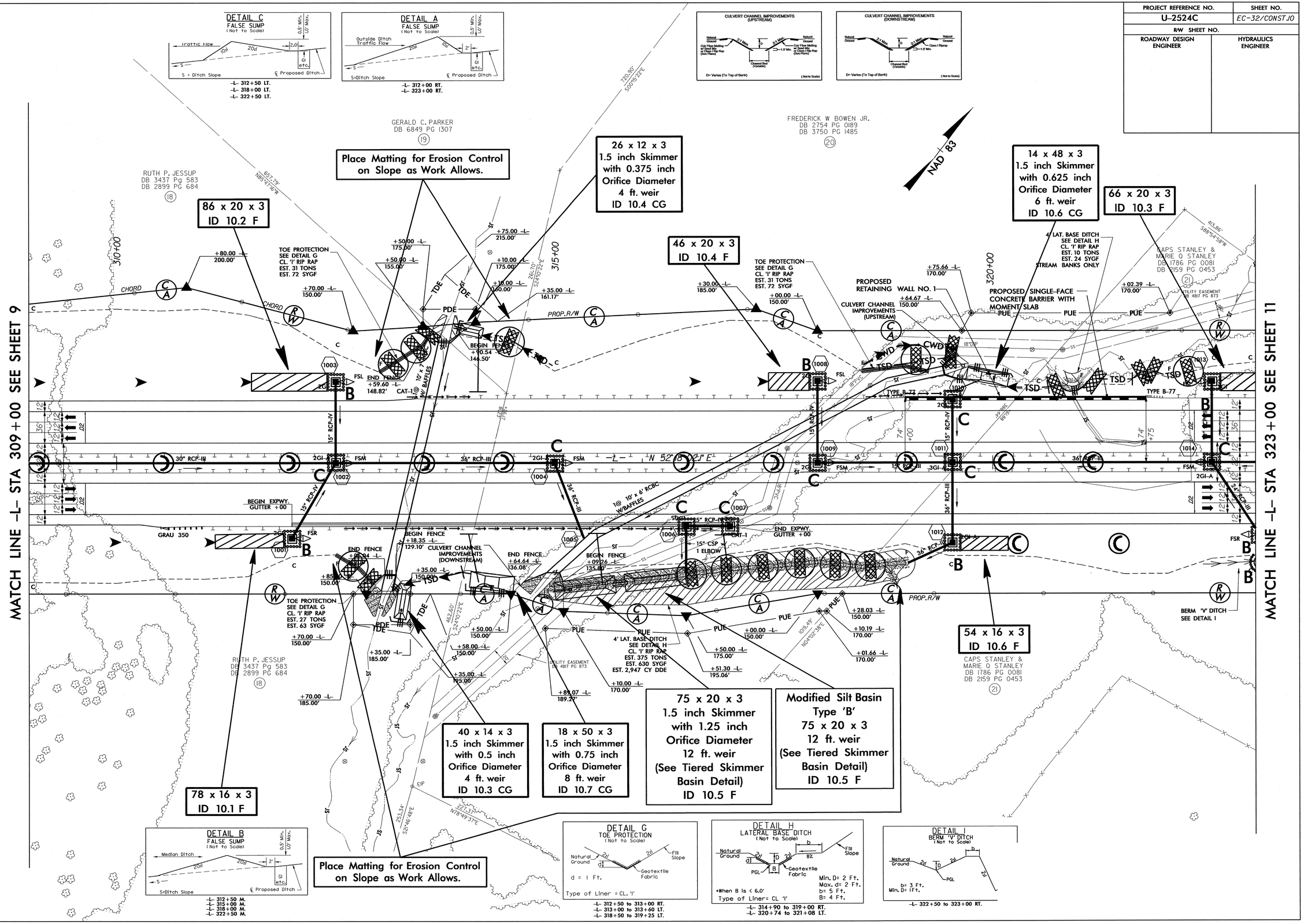
smitherson AT TEN\U2524C

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-31/CONST.9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-32/CONST.10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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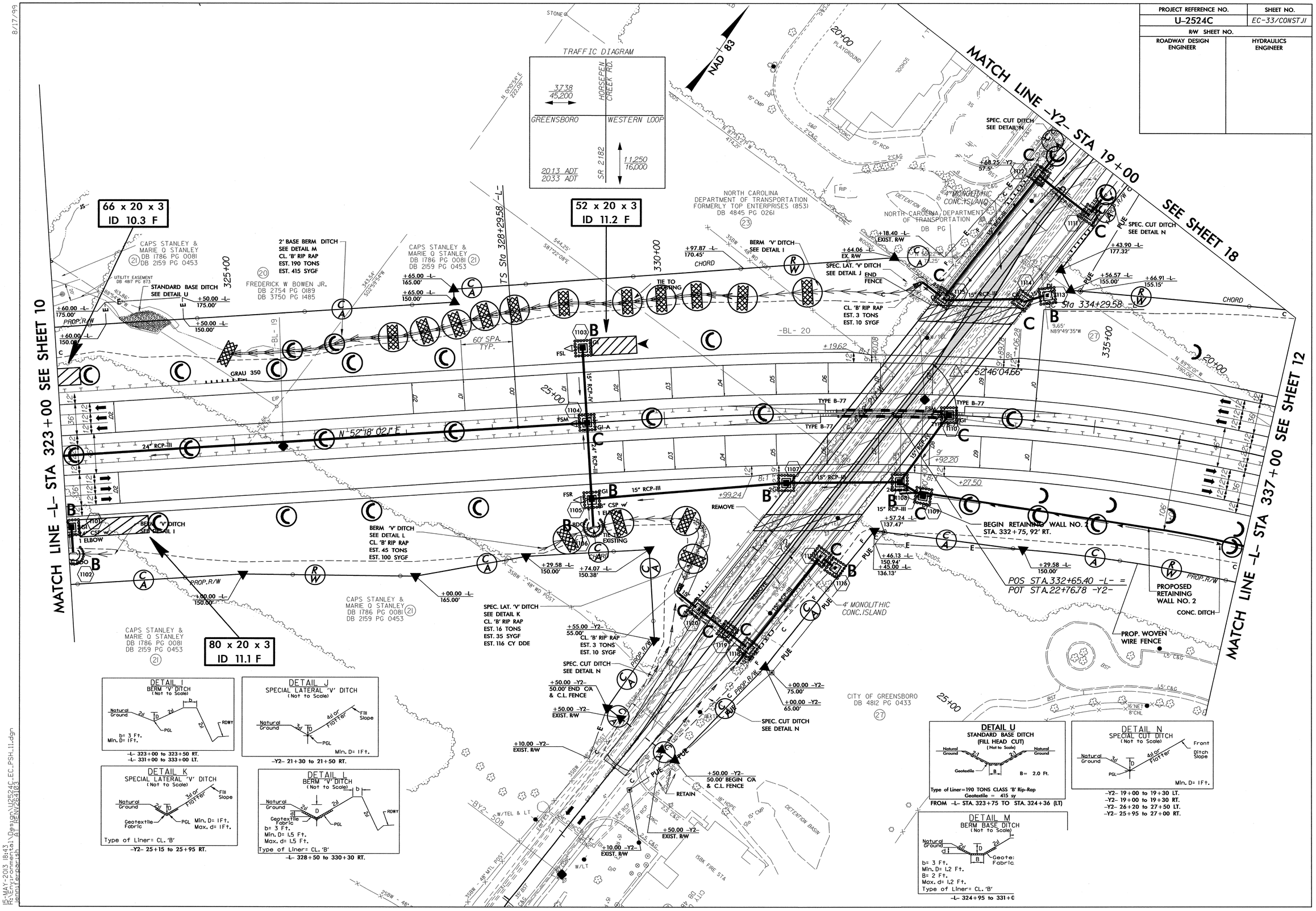
$$ $$ IF REV\26103

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-33/CONST.JI
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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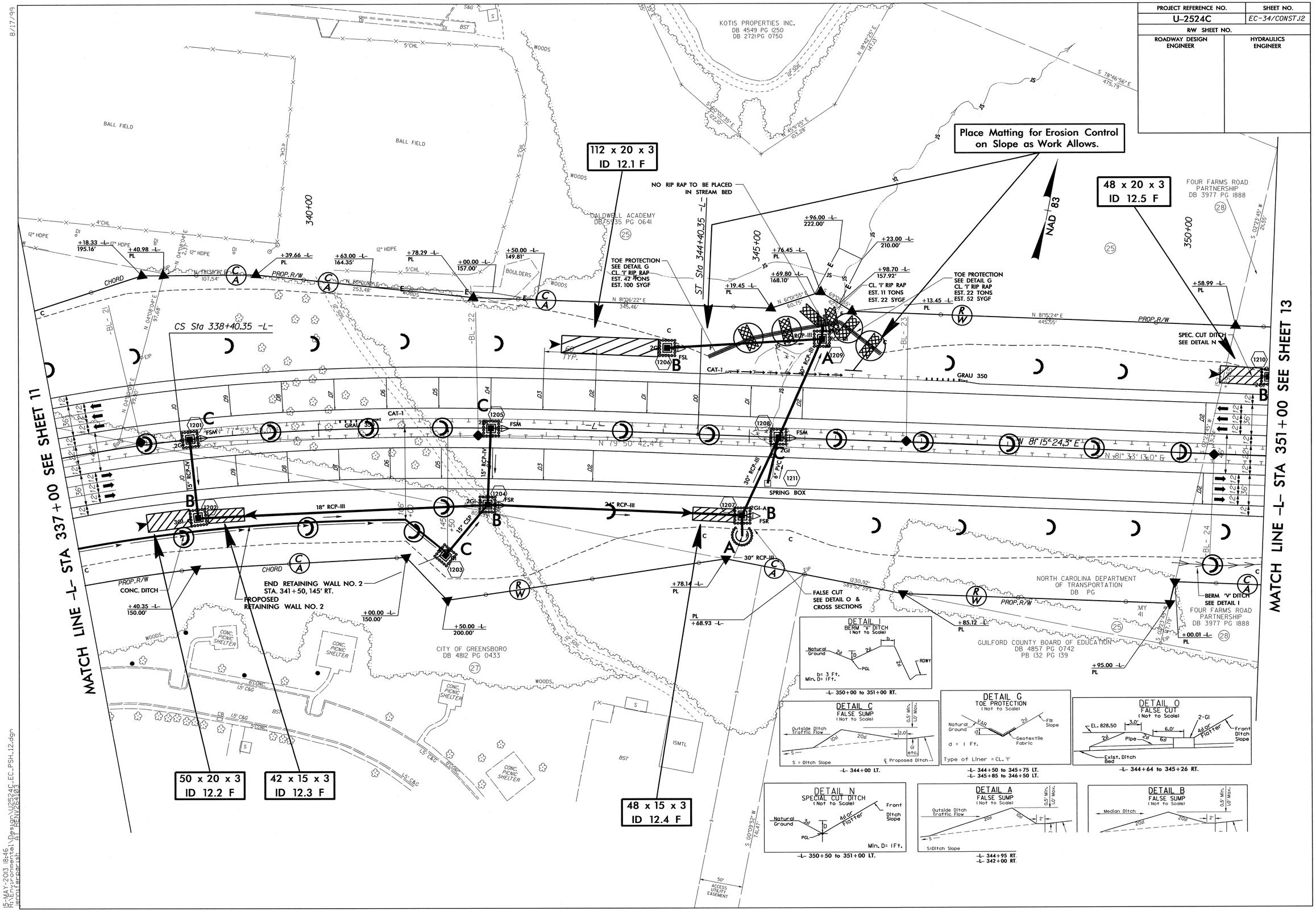
jennifergarrish AT REN\V264103

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-34/CONST.J2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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15-MAY-2013 18:46
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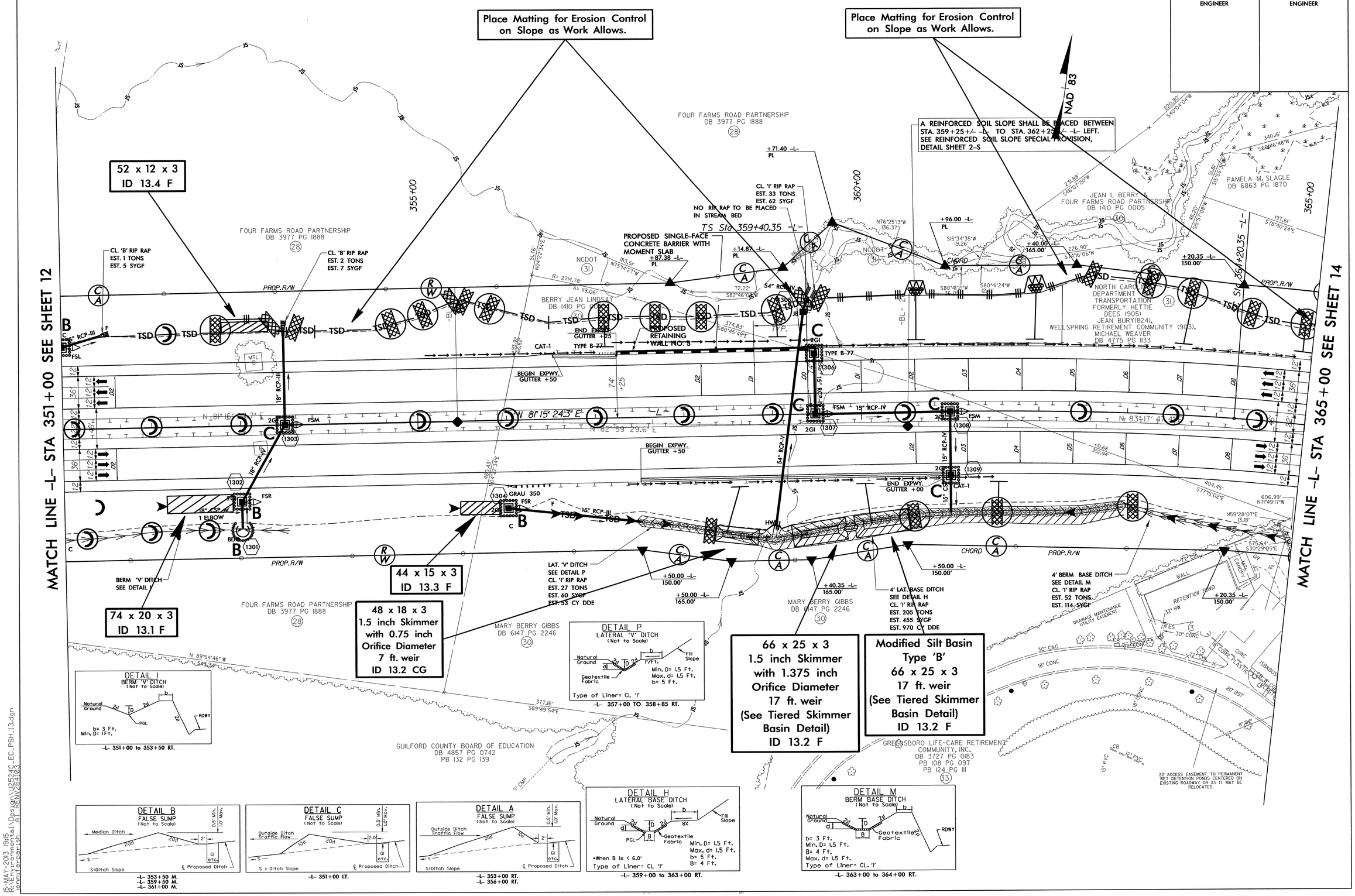
bengleason
ATP RENV264103

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-35/CONST J3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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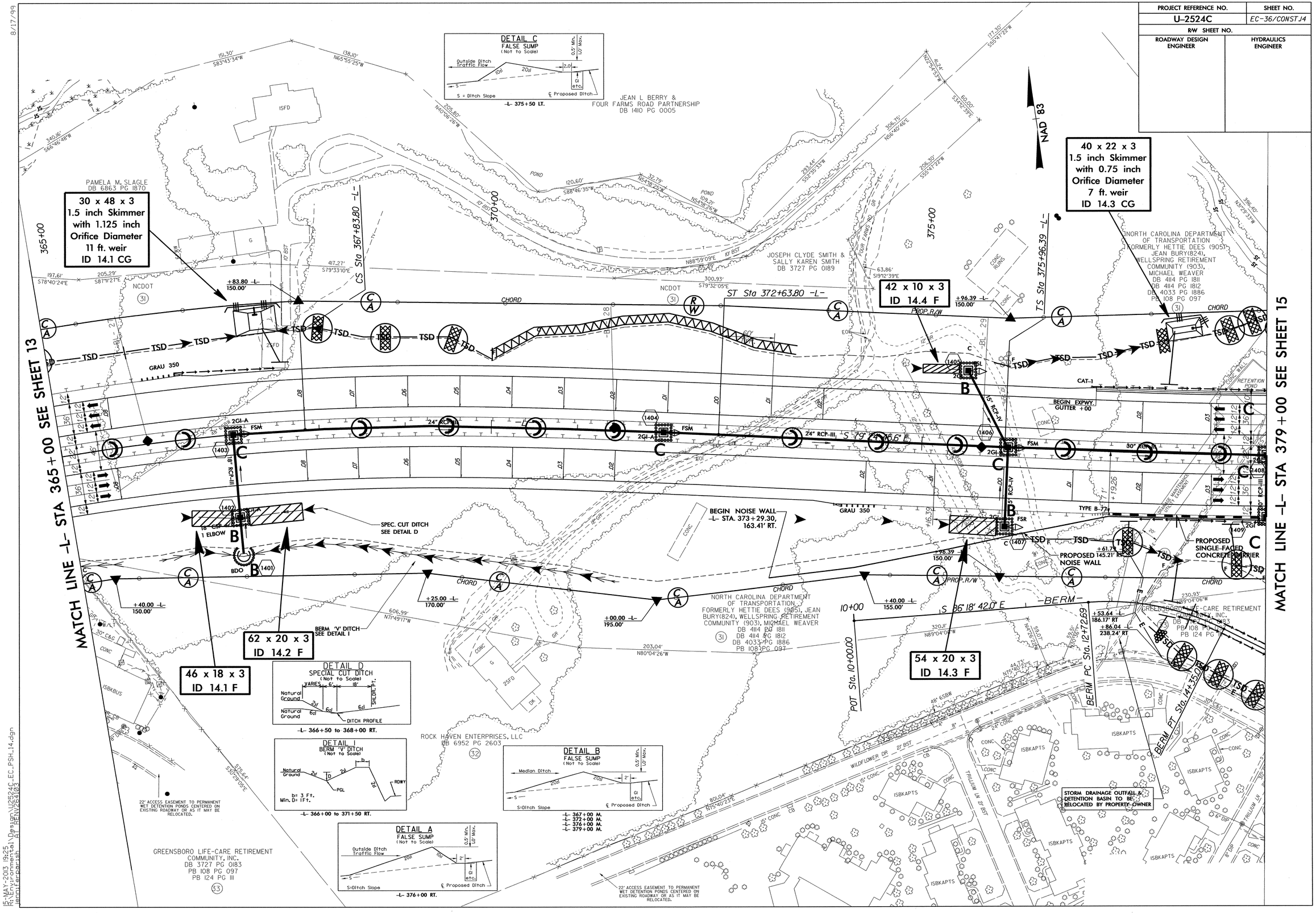
jennifer.parish AT RENV264103

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-36/CONST J4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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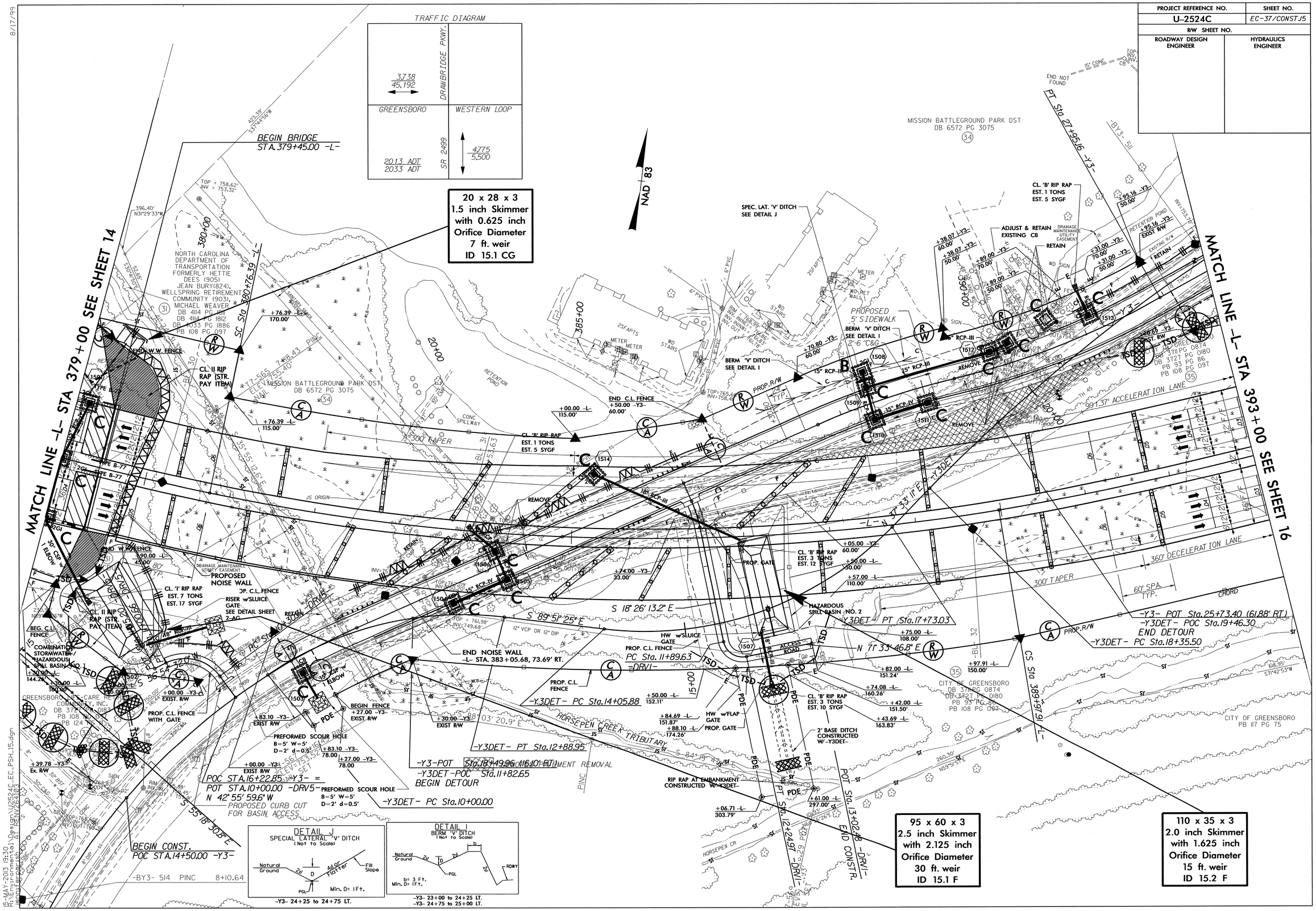
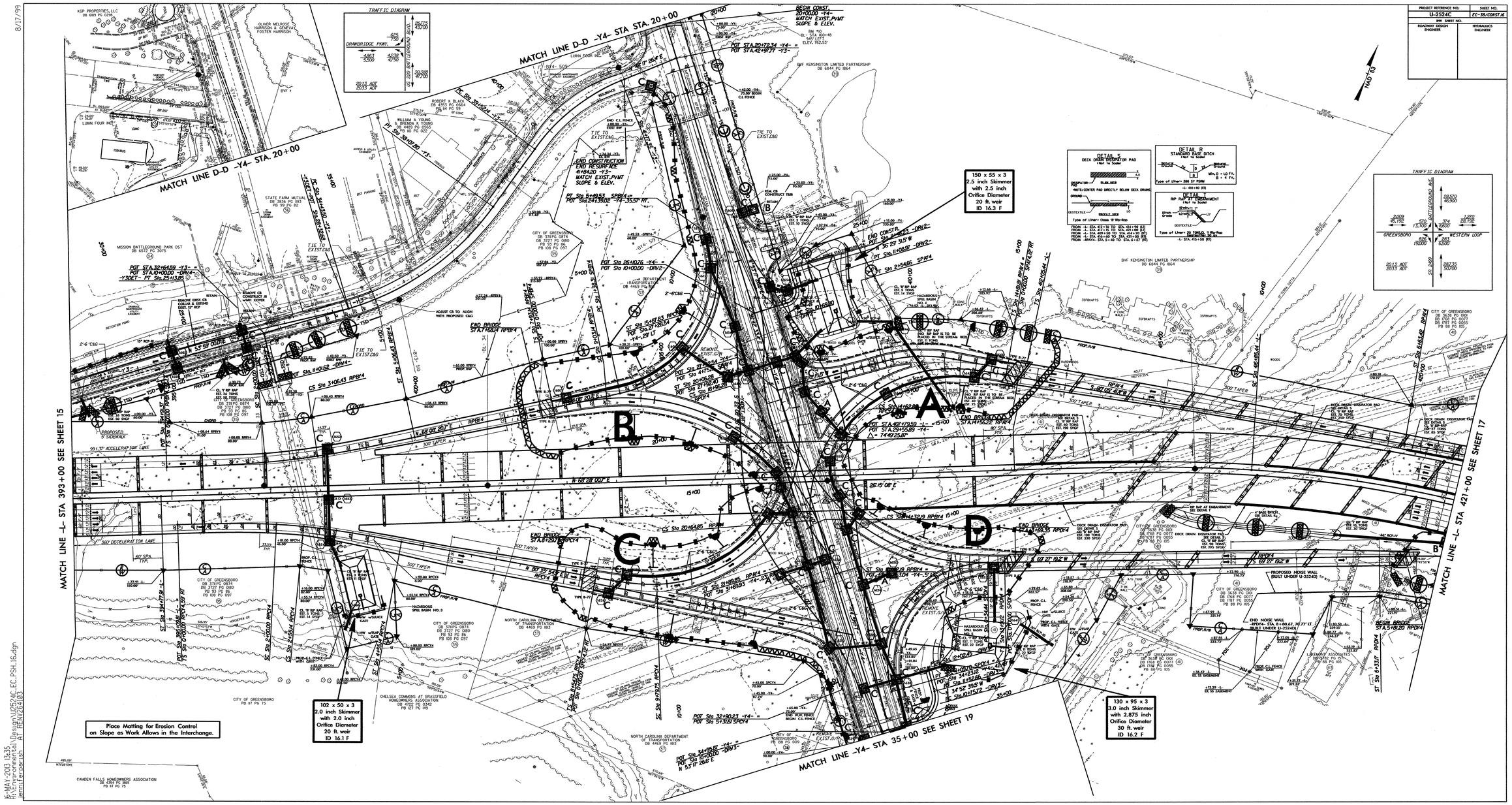
jennifergarrish
AT PENV\264103

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-37/CONST.J5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER





PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-38/CONST.16
BW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

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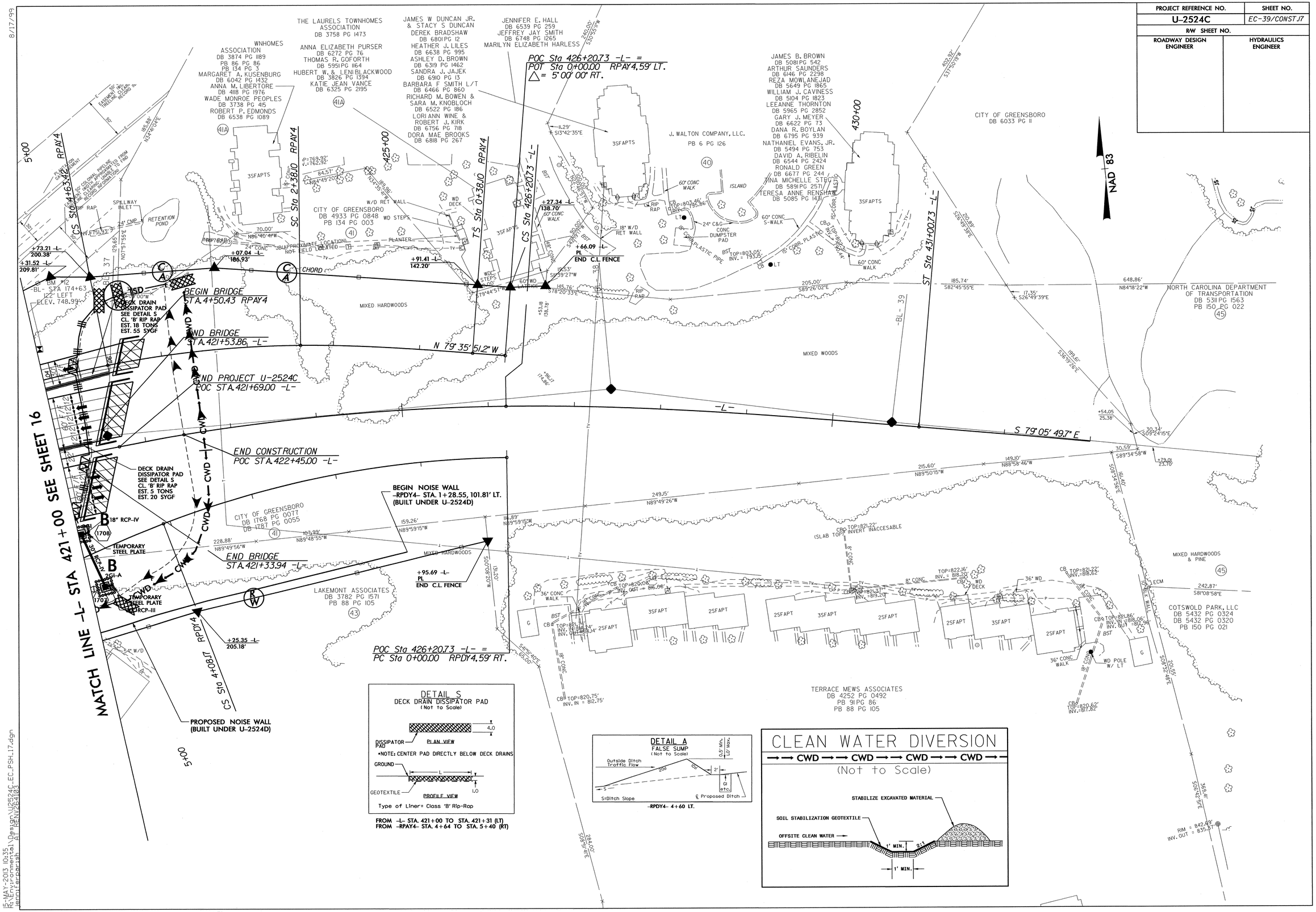
jenniferparish AT RENV264103

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-39/CONST.17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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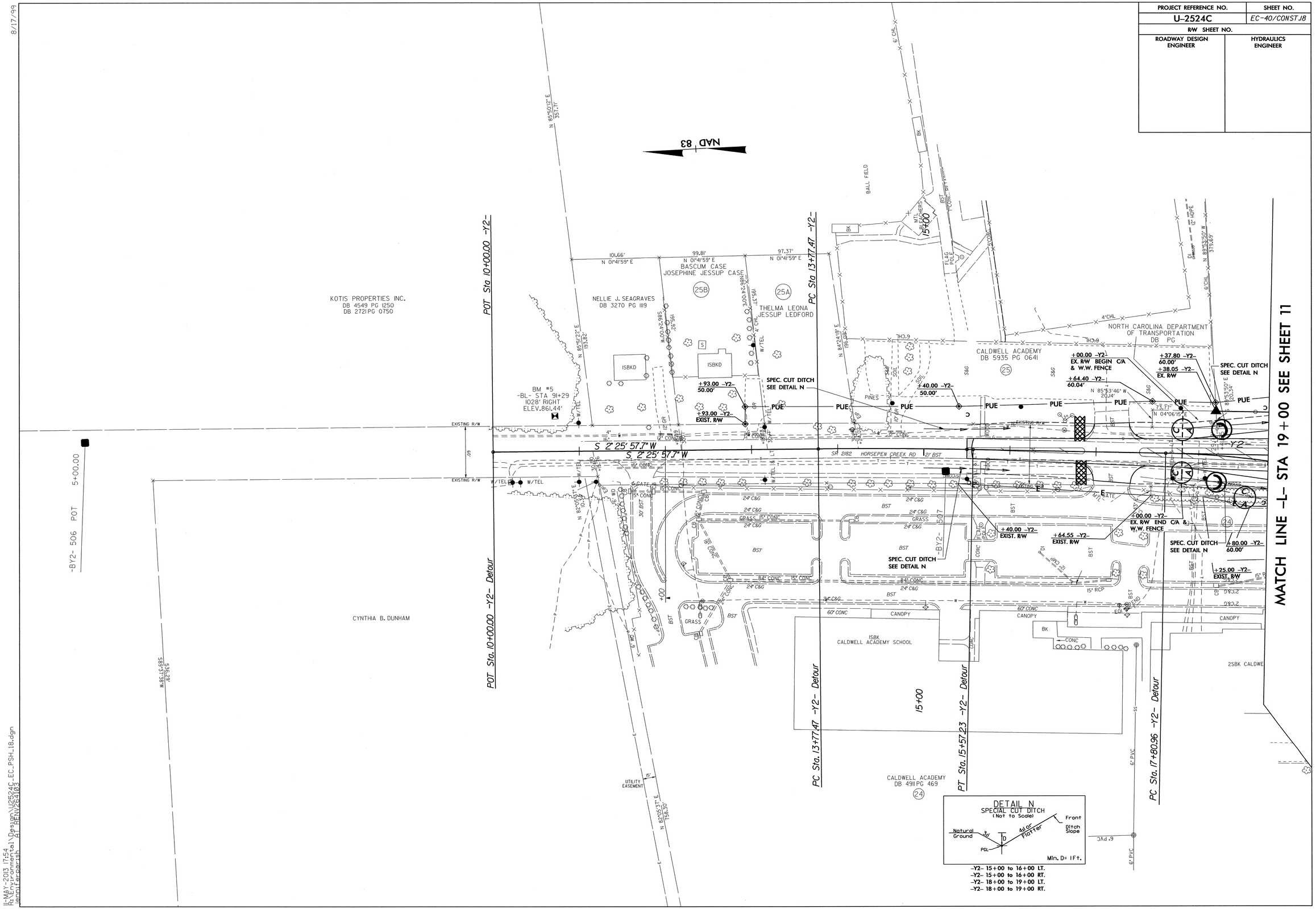
bmilfordparish AT REINV2641103

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-40/CONST.18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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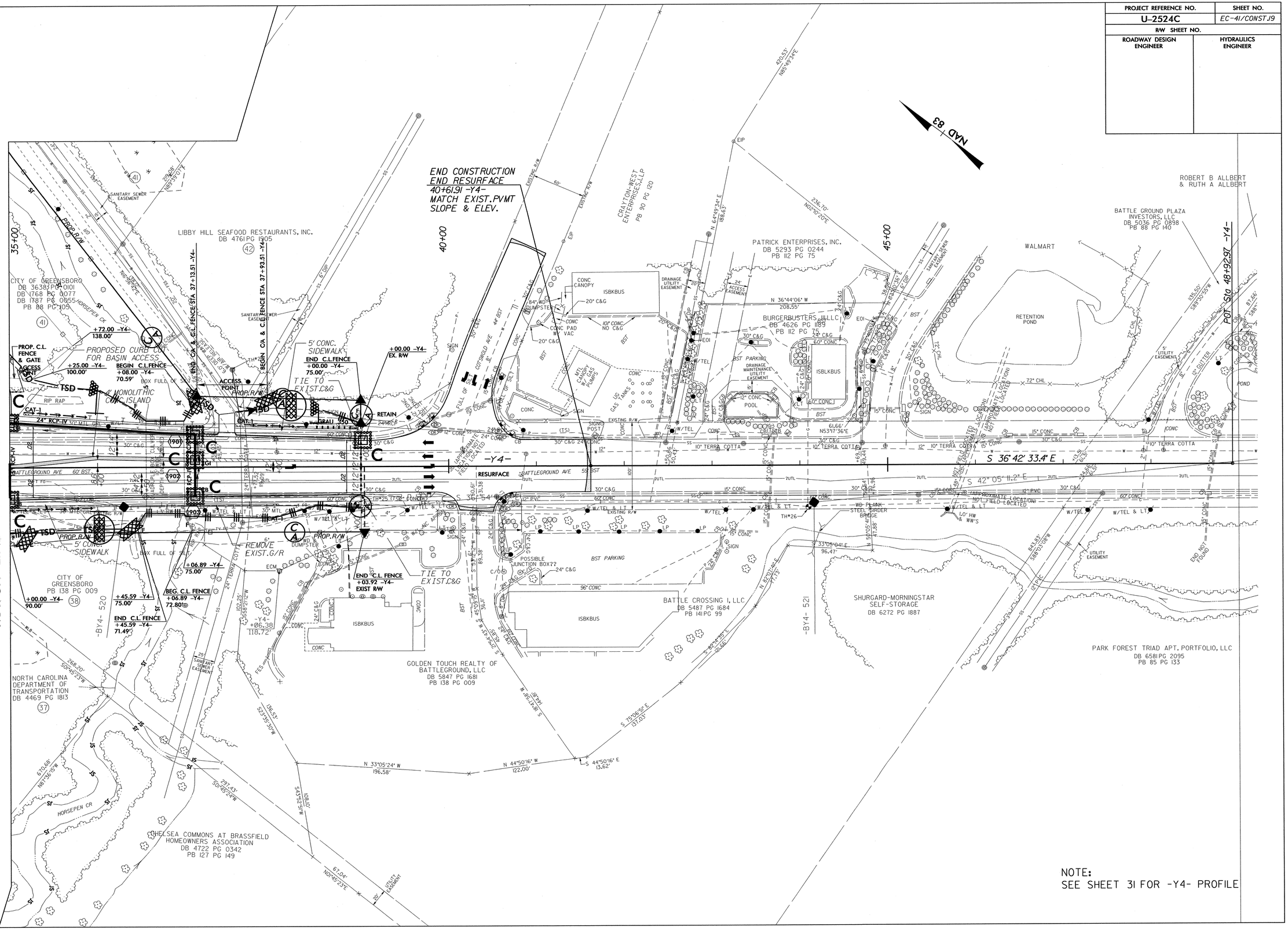
jennifersparks AT TSN\26-103

PROJECT REFERENCE NO.	SHEET NO.
U-2524C	EC-41/CONST.19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTE:
SEE SHEET 31 FOR -Y4- PROFILE

8/17/99

15-MAY-2013 19:37
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jennifer.parish AT RENV264103