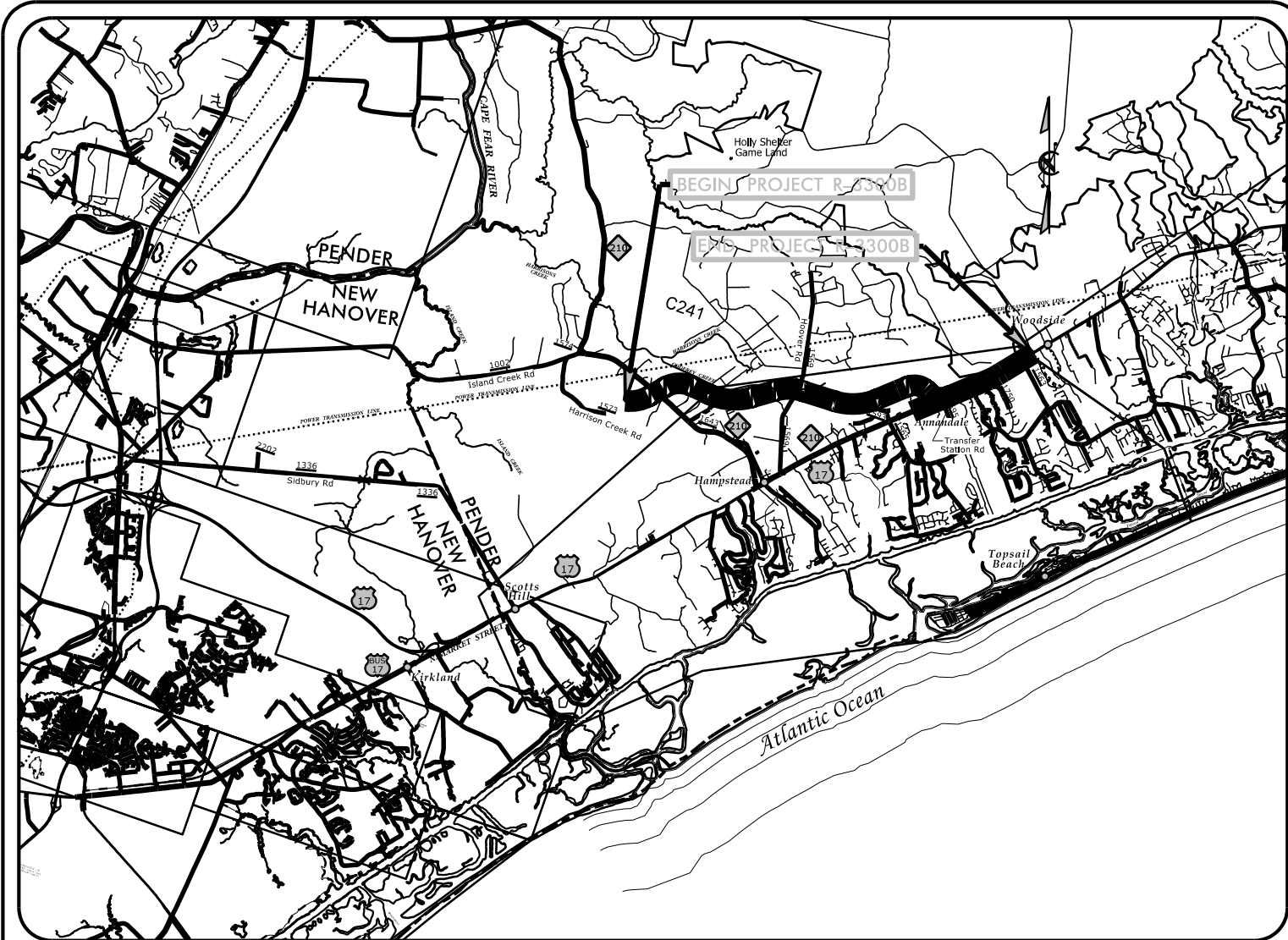


**TIP PROJECT: R-3300B**

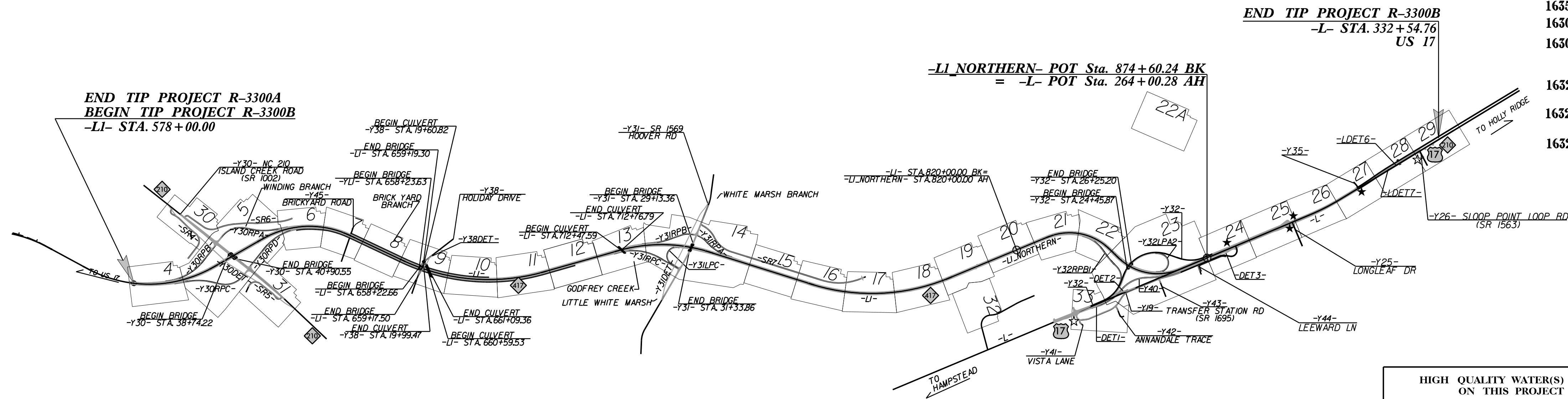


**VICINITY MAP**  
NOT TO SCALE

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
PLAN FOR PROPOSED  
HIGHWAY EROSION CONTROL  
**PENDER COUNTY**

**LOCATION: NC 417 (HAMPSTEAD BYPASS) FROM SOUTH OF NC 210  
TO NORTH OF SR 1563 (SLOOP POINT LOOP ROAD).**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES,  
SIGNALS, AND CULVERTS**



**END TIP PROJECT R-3300B**  
-L- STA. 332+54.76  
US 17

**-LI NORTHERN- POT Sta. 874+60.24 BK**  
= -L- POT Sta. 264+00.28 AH

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

**HIGH QUALITY WATER(S) EXIST  
ON THIS PROJECT**  
High Quality Water Zone(s) Exist  
From Sta. 278+00 -L-  
to Sta. 332+54.76 -L-  
Refer To E. C. Special Provisions  
for Special Considerations.

**NOTE:**  
THE OUTSIDE BUFFER, WETLAND, OR WATER BOUNDARY  
SHALL BE CLEARLY MARKED BY HIGHLY VISIBLE FENCING  
(ORANGE SAFETY FENCE).

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

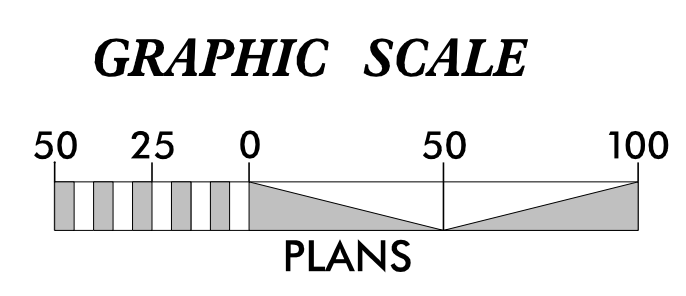
**THIS PROJECT HAS  
BEEN DESIGNED TO  
SENSITIVE WATERSHED  
STANDARDS.**

**ENVIRONMENTALLY  
SENSITIVE AREA(S) EXIST  
ON THIS PROJECT**  
Refer To E. C. Special Provisions  
for Special Considerations.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3300B	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
40237.1.1	N/A	PE	
40237.2.1	N/A	R/W	
40237.2.2	N/A	UTIL	

**EROSION AND SEDIMENT CONTROL MEASURES**

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



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

Prepared in the Office of:  
**SUNGATE DESIGN GROUP, P.A.**

905 JONES FRANKLIN ROAD  
RALEIGH, NORTH CAROLINA 27606  
TEL (919) 859-2243  
ENG FIRM LICENSE NO. C-890

Designed by:  
**MATTHEW EDWARDS, PE** 3992  
**RANA STANSELL, PE, CFM** 3597

NAME LEVEL III CERTIFICATION NO.

**Dewberry**  
2310 WYCLIFF ROAD  
SUITE 410  
RALEIGH, NC 27607  
PHONE: 919 851-9939  
NC CCA No. F0629

Roadway Standard Drawings

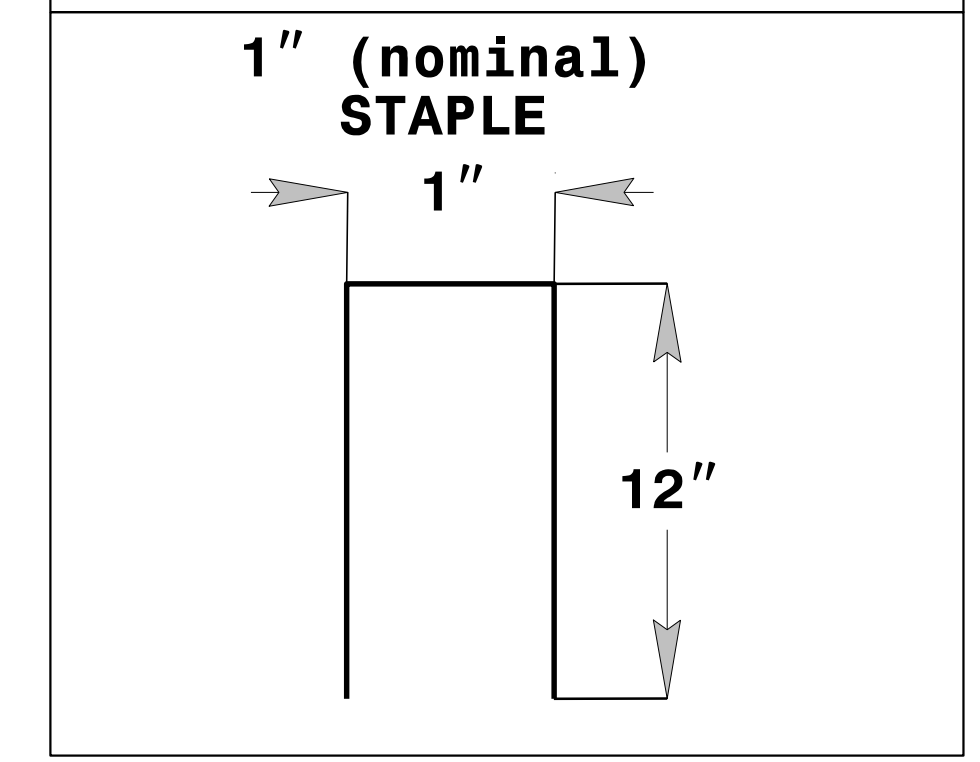
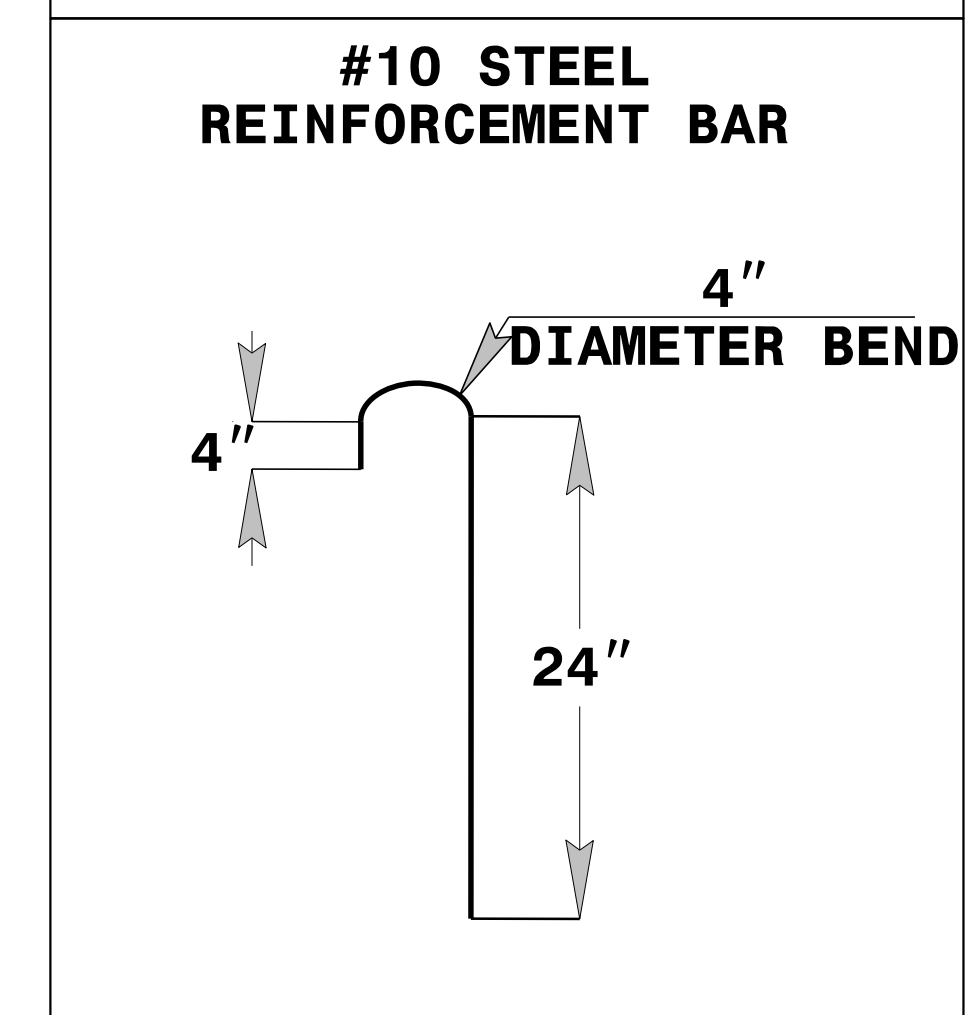
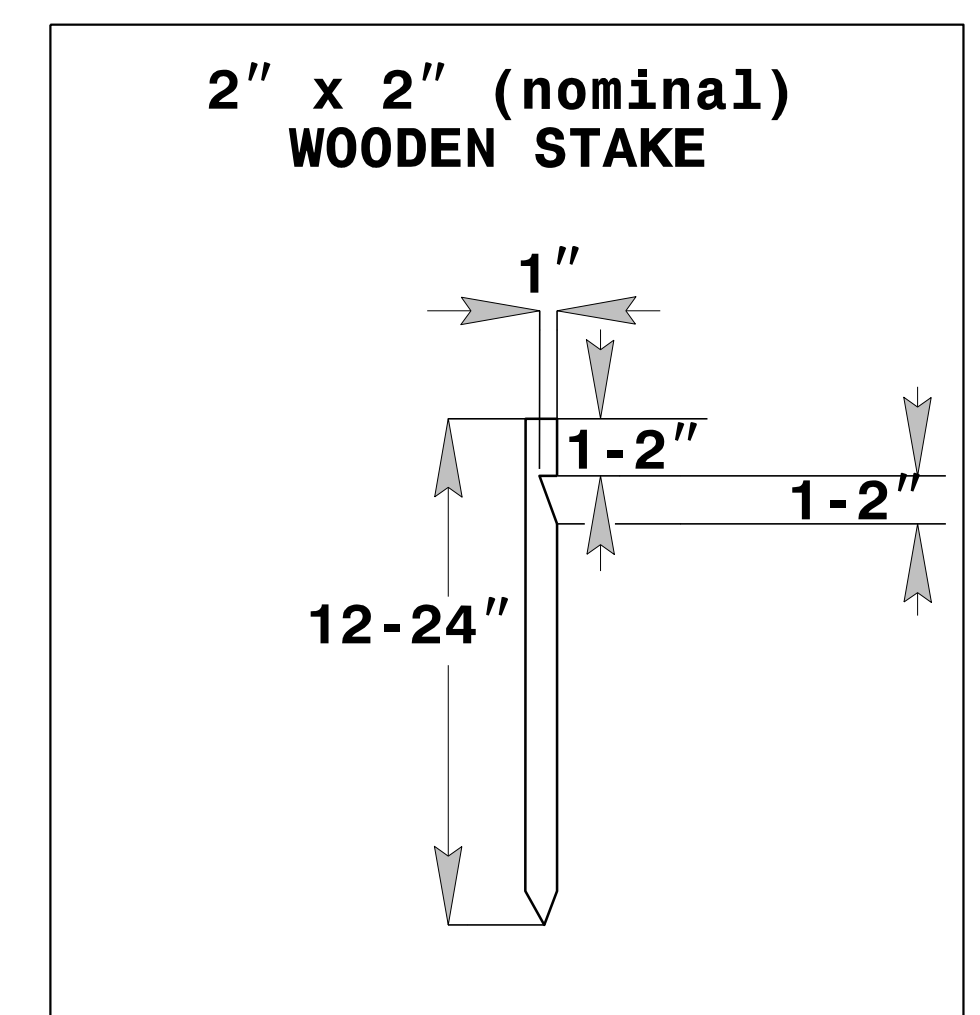
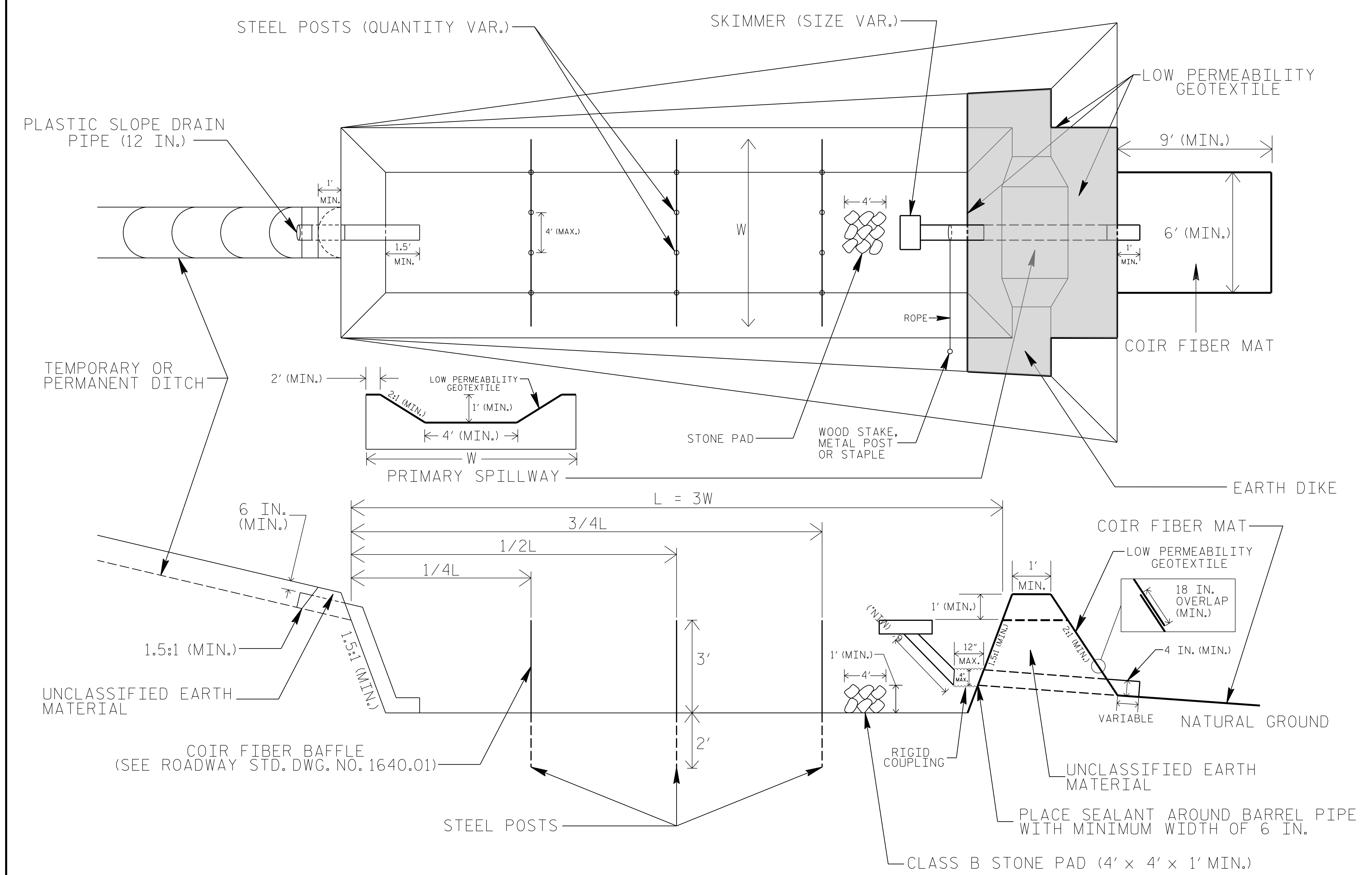
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2018 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

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	

9/19/2023 EC\_dan\_eph\_01.dgn

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-2</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# SKIMMER BASIN WITH BAFFLES DETAIL (EAST)



## COIR FIBER MAT ANCHOR OPTIONS

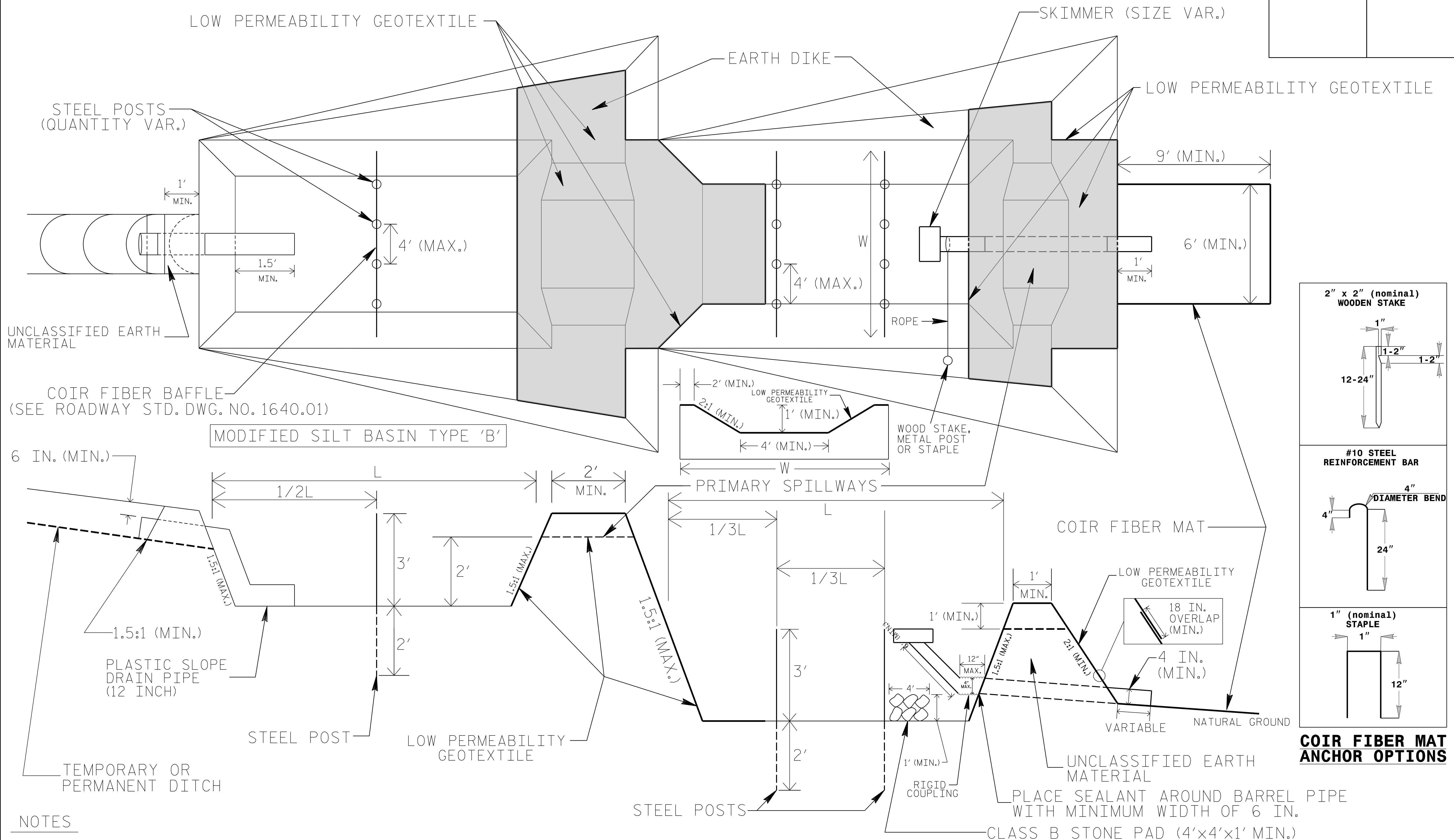
### NOTES

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

NOT TO SCALE

# TIERED SKIMMER BASIN DETAIL (EAST)

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



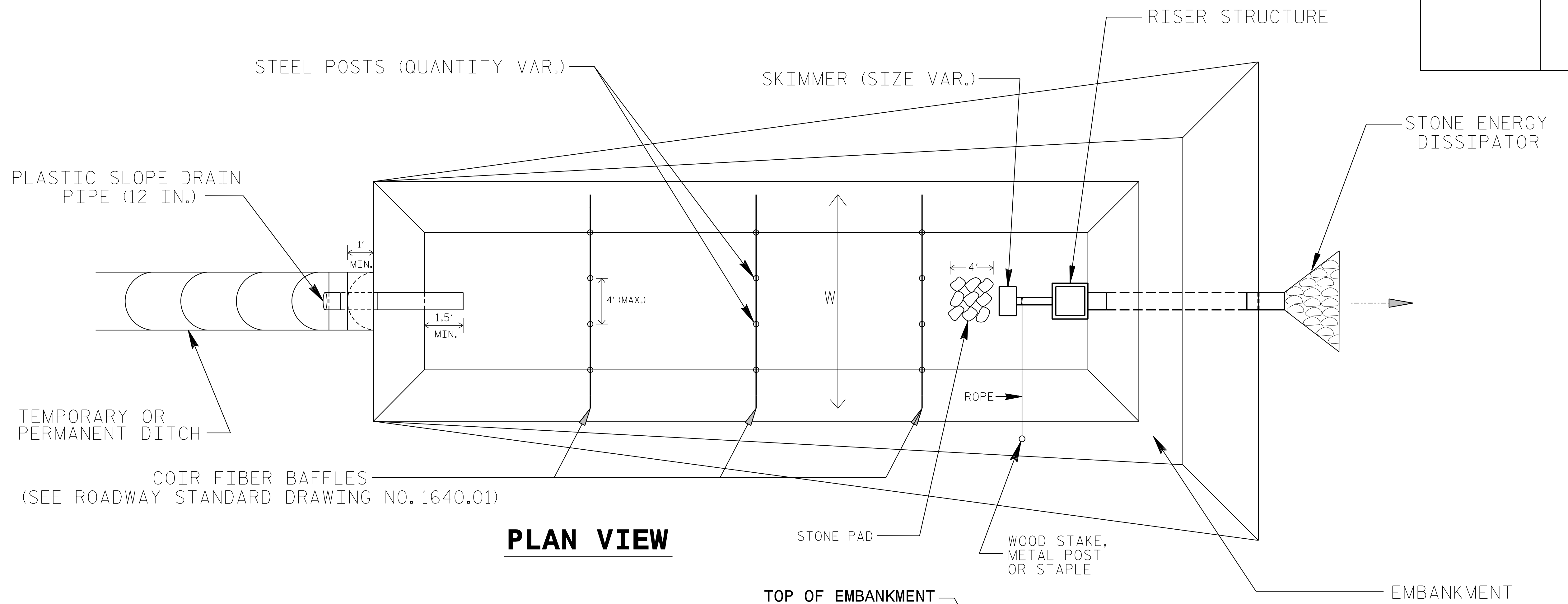
## NOTES

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

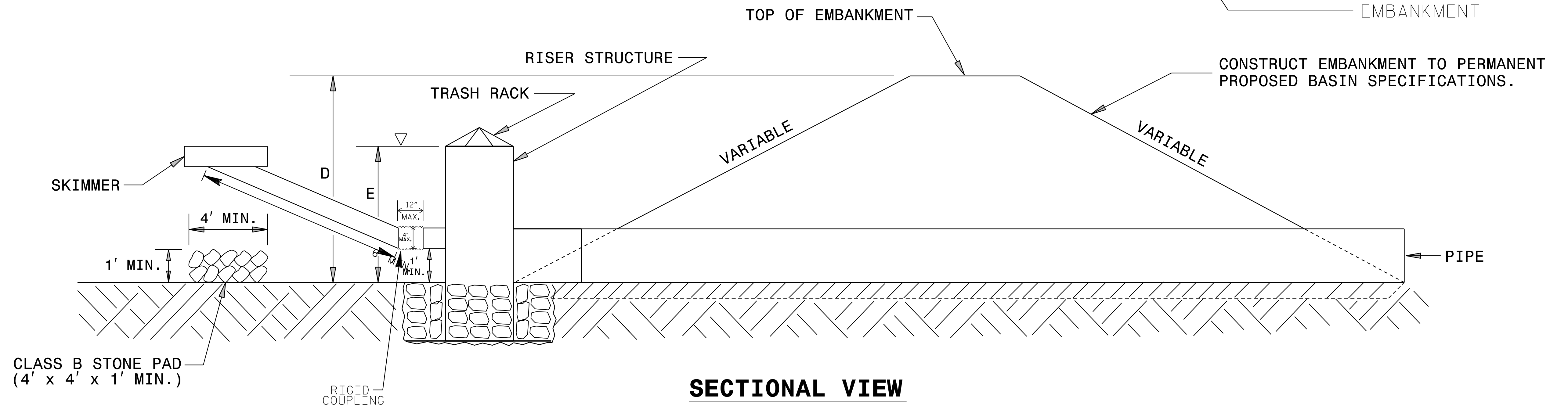
NOT TO SCALE

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-2B</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# STORMWATER BASIN WITH SKIMMER



**PLAN VIEW**



**SECTIONAL VIEW**

**NOTES**

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES.
2. INSTALL A MINIMUM OF 3 COIR FIBER BAFFLES IN ACCORDANCE WITH ROADWAY STD. DRAWING 1640.01.
3. INSTALL SKIMMER AND COUPLING TO RISER STRUCTURE OR DIRECTLY INTO EMBANKMENT 1 FT. FROM BOTTOM OF BASIN.
4. THE ARM PIPE SHALL HAVE A MINIMUM LENGTH OF 6 FT. BETWEEN THE SKIMMER AND COUPLING.
5. PLASTIC SLOPE DRAIN PIPE AT INLET OF BASIN MAY BE REPLACED BY FILTRATION GEOTEXTILE AS DIRECTED.
6. THE DIFFERENCE BETWEEN LENGTHS "D" AND "E" REPRESENT THE FREEBOARD AND SHOULD BE 1 FT. MINIMUM.

NOT TO SCALE



# BORROW PIT DEWATERING BASIN DETAIL

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-2C</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**GENERAL NOTES:**

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

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

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

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

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

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

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

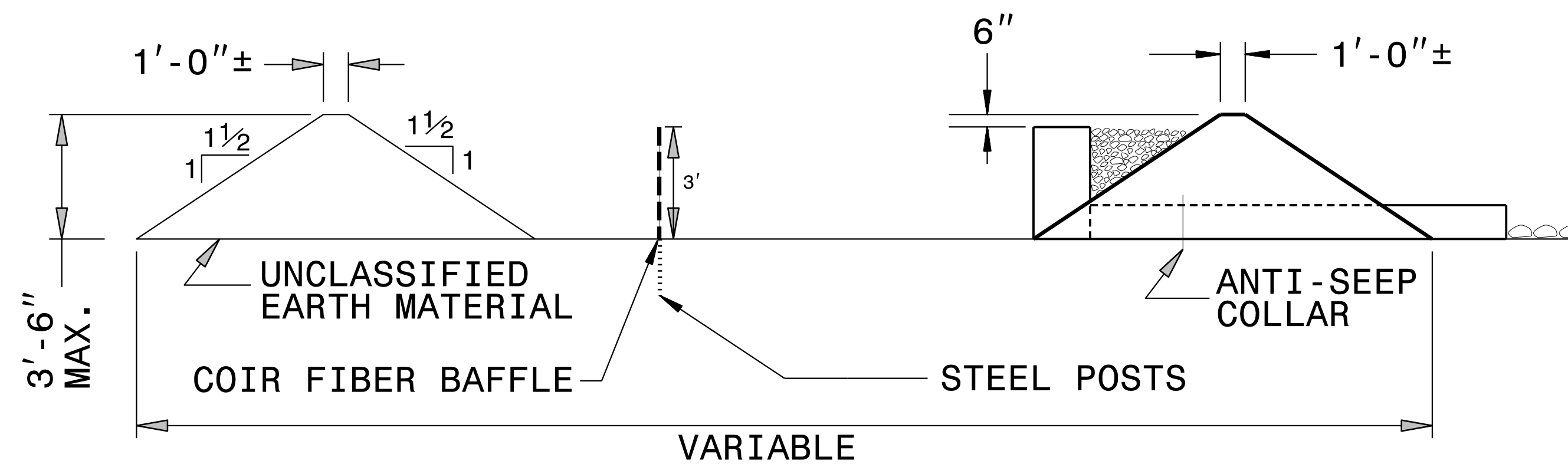
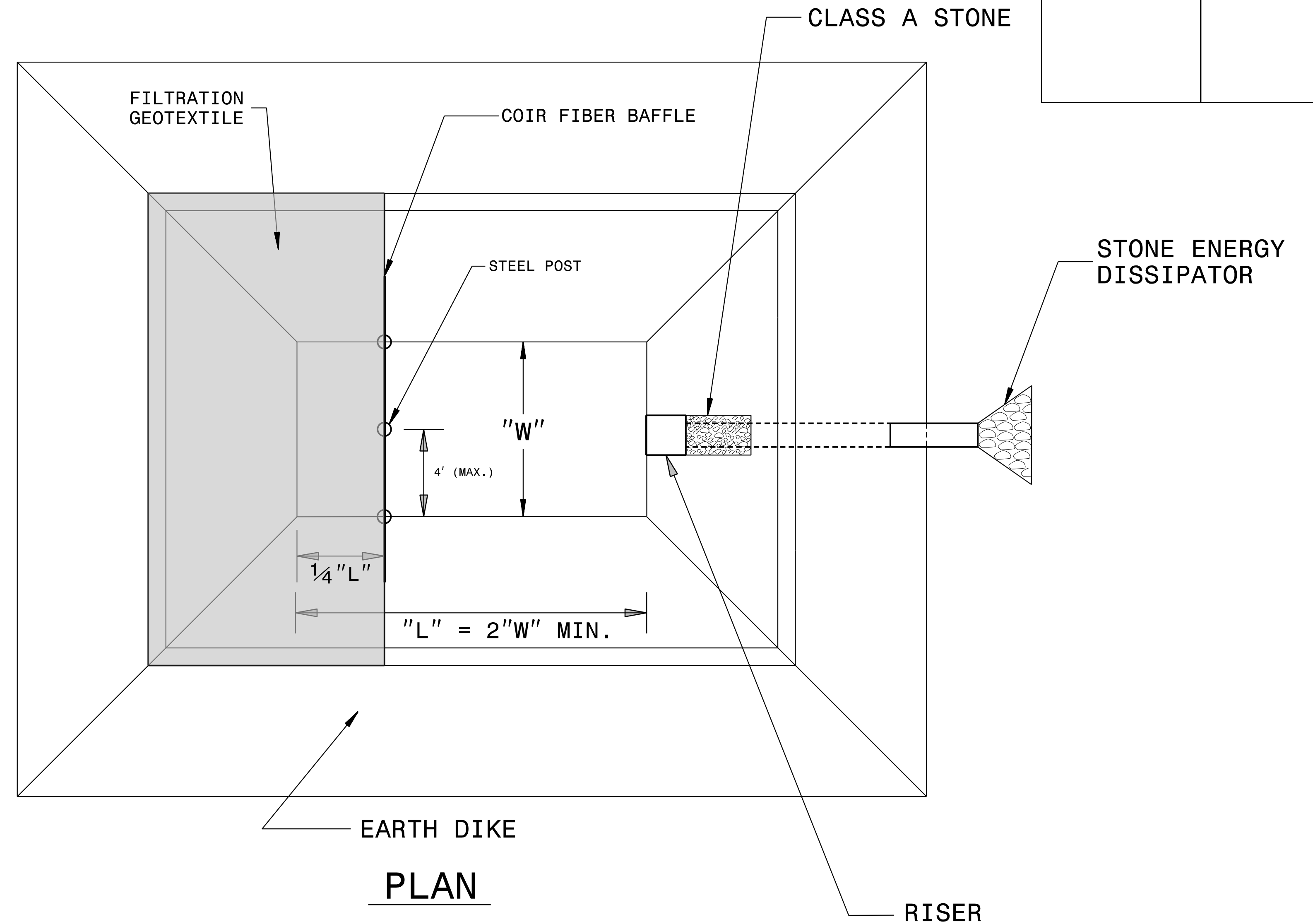
DO NOT EXCEED 3½ FT. IN HEIGHT FOR THE EARTH DIKES REQUIRED FOR BORROW PIT DEWATERING BASIN.

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

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

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

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



**TYPICAL SECTION VIEW**

NOT TO SCALE

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-2D</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

**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.

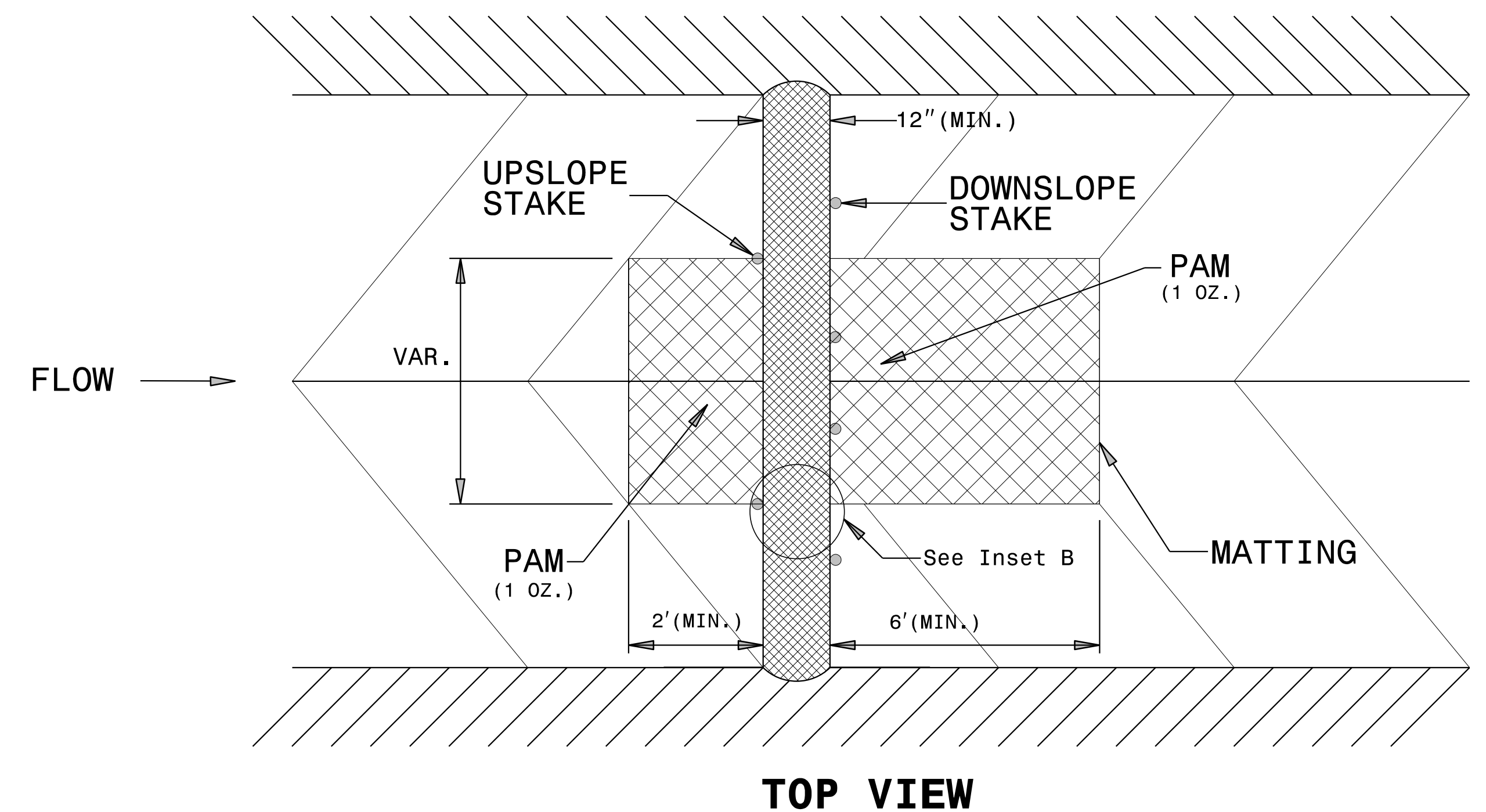
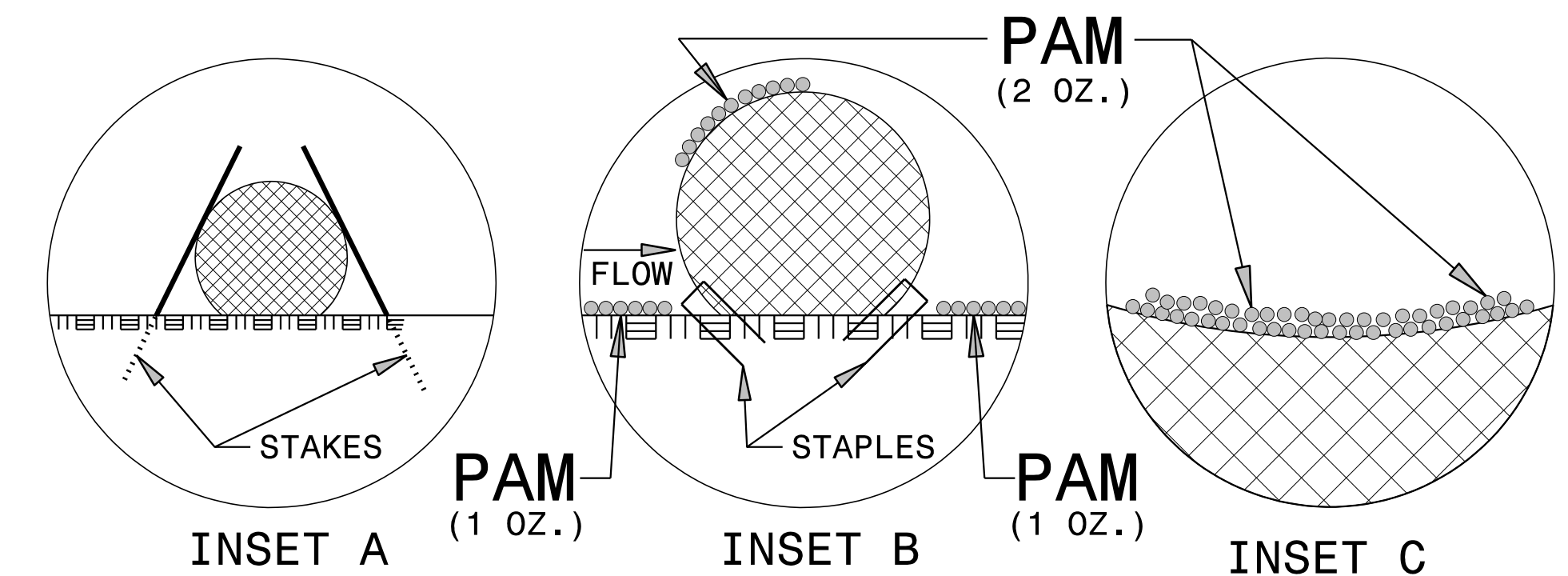
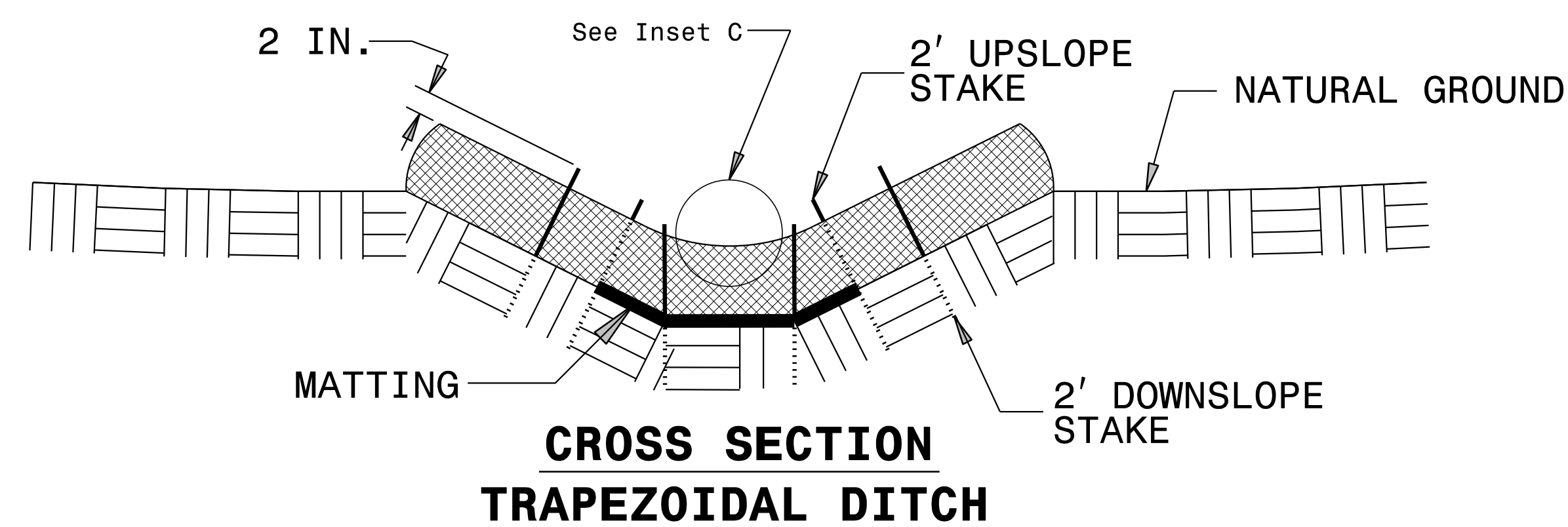
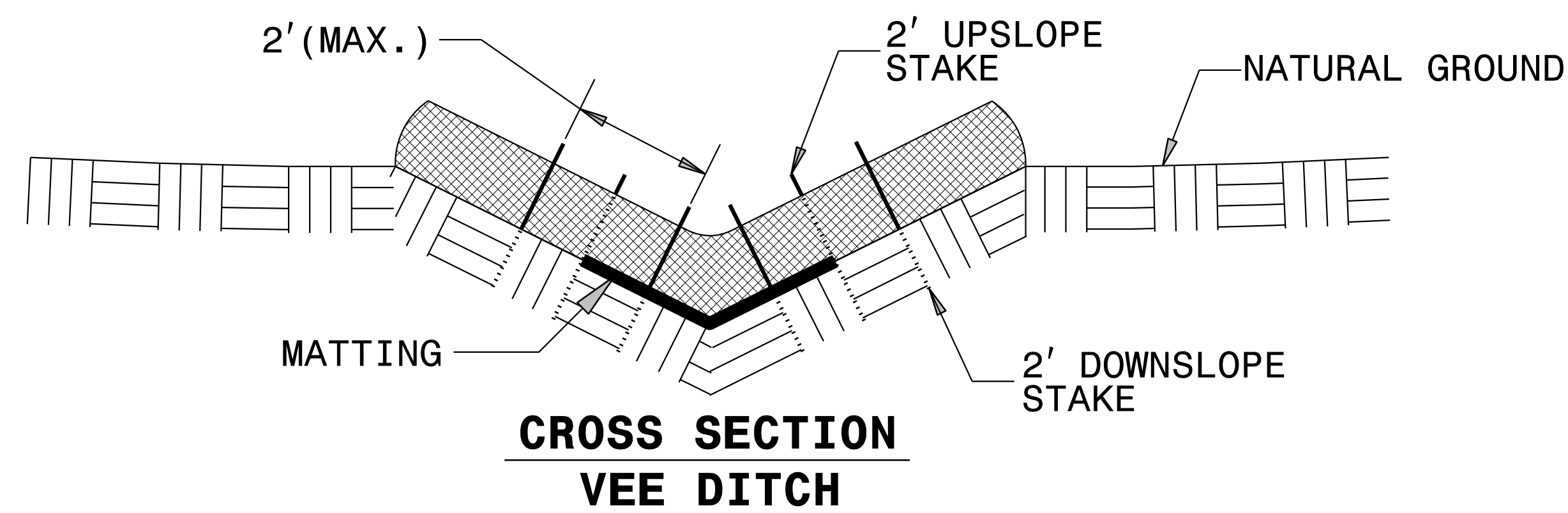
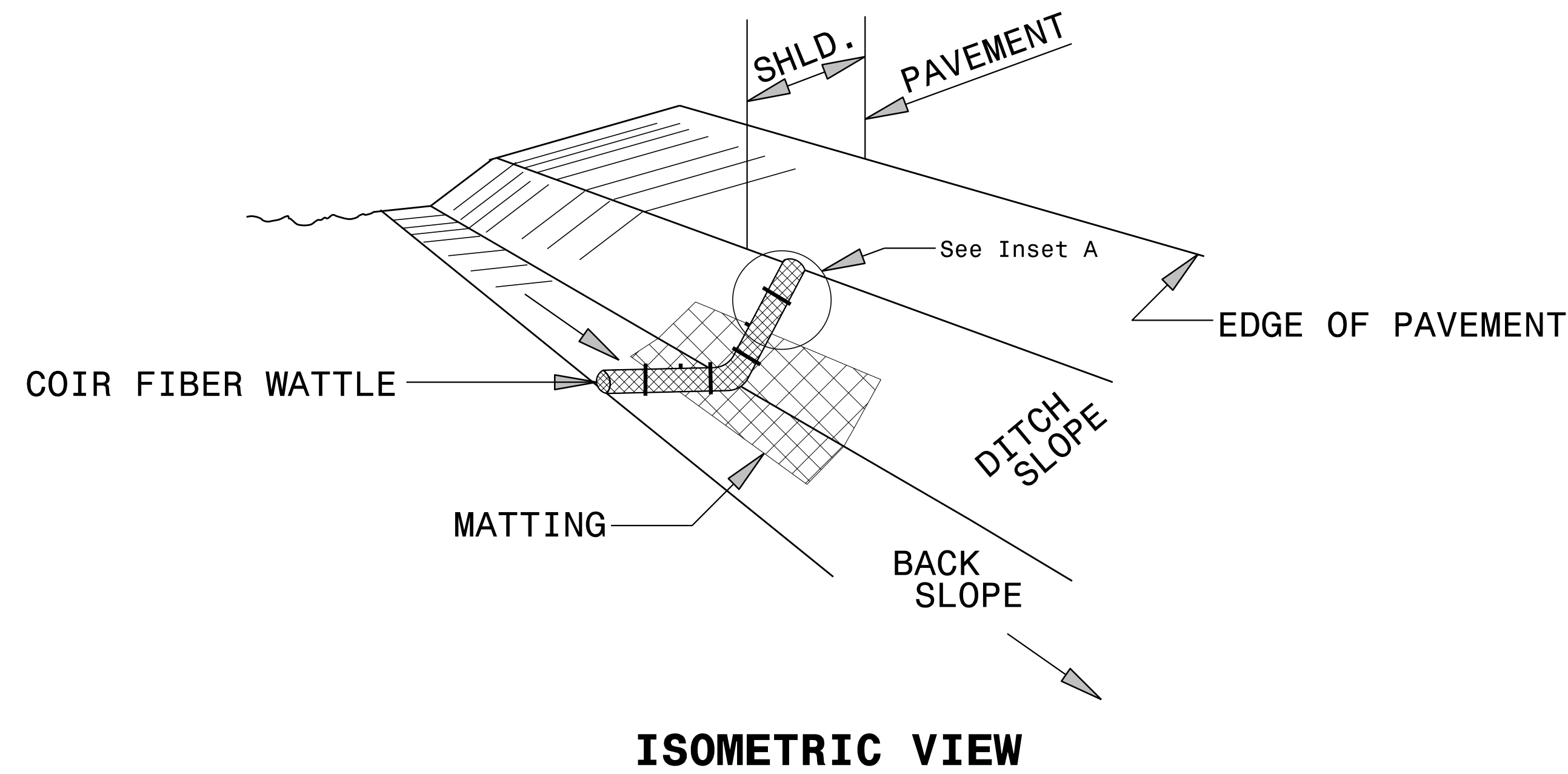
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.

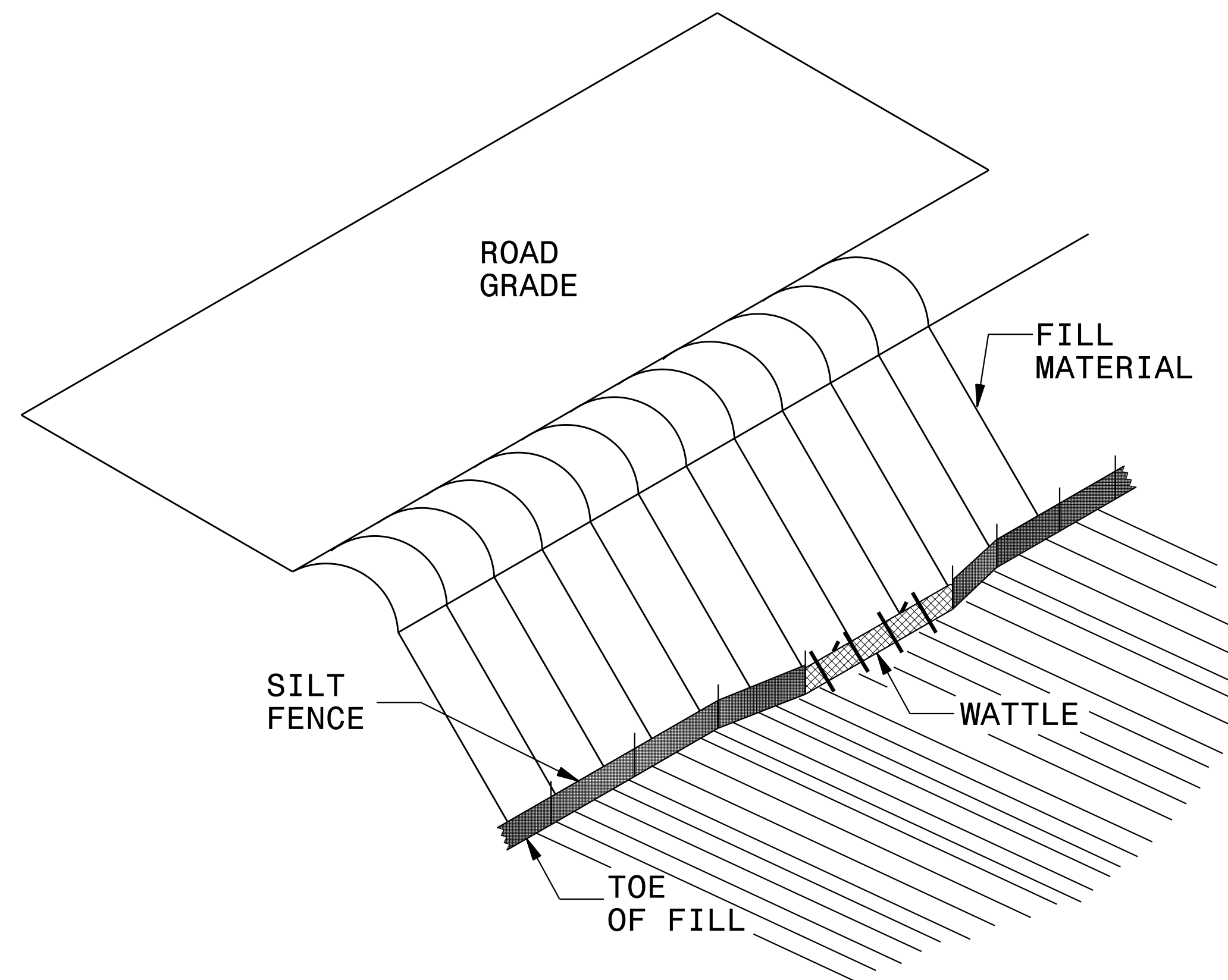
PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

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

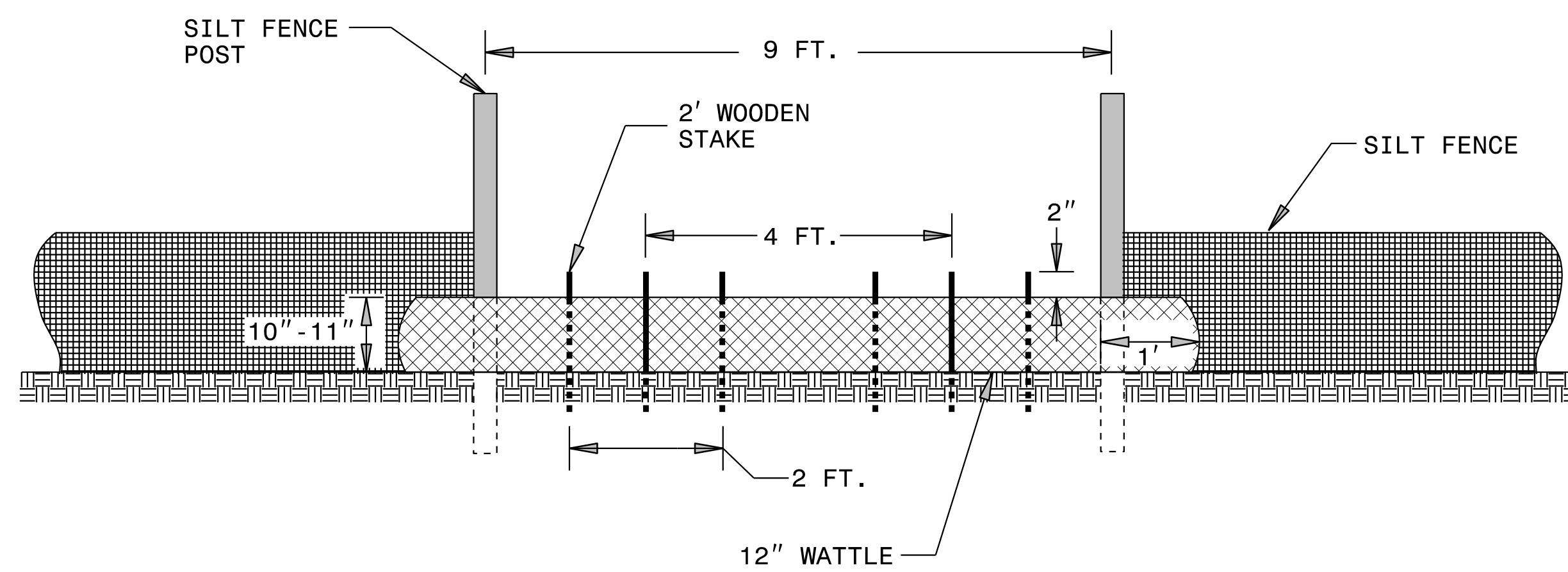


# SILT FENCE COIR FIBER WATTLE BREAK DETAIL

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-2E</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



**ISOMETRIC VIEW**

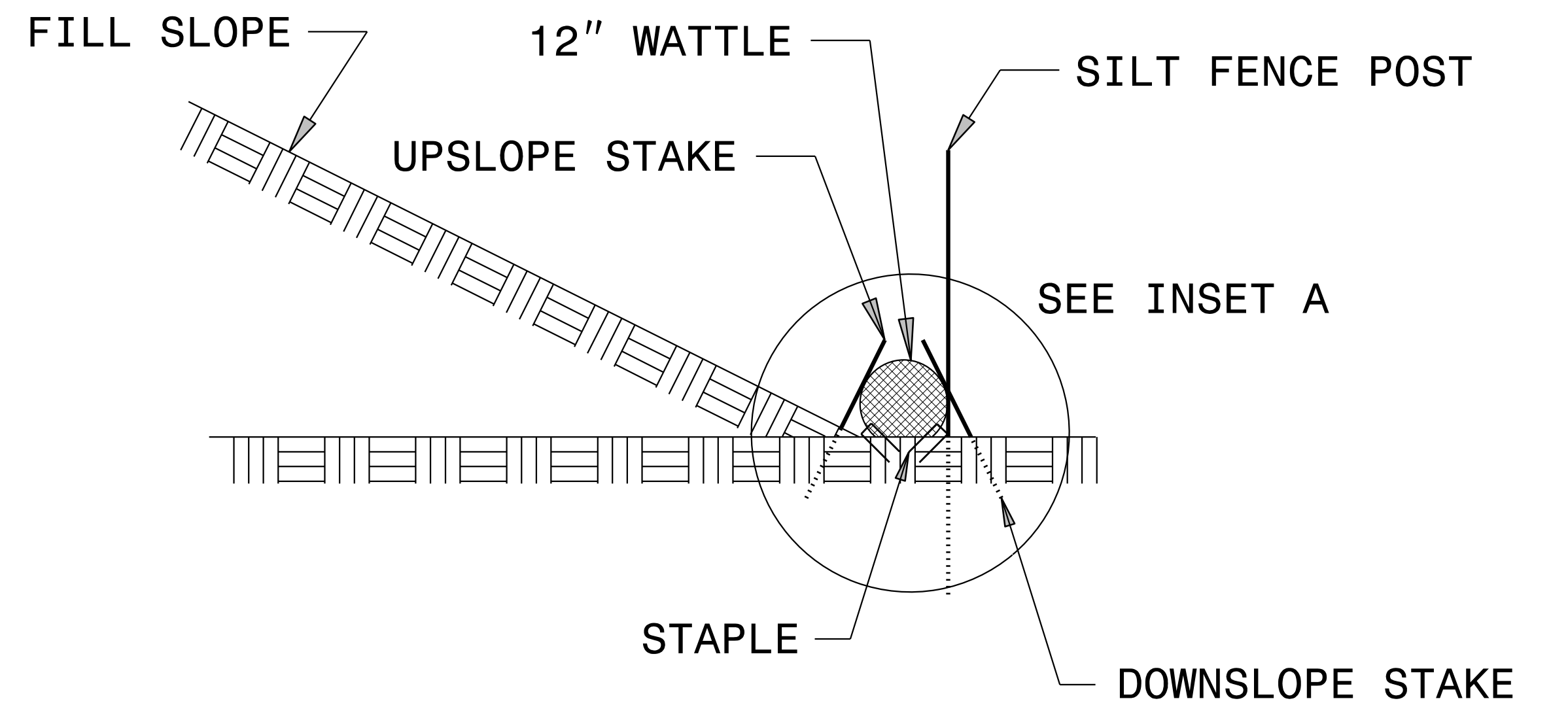
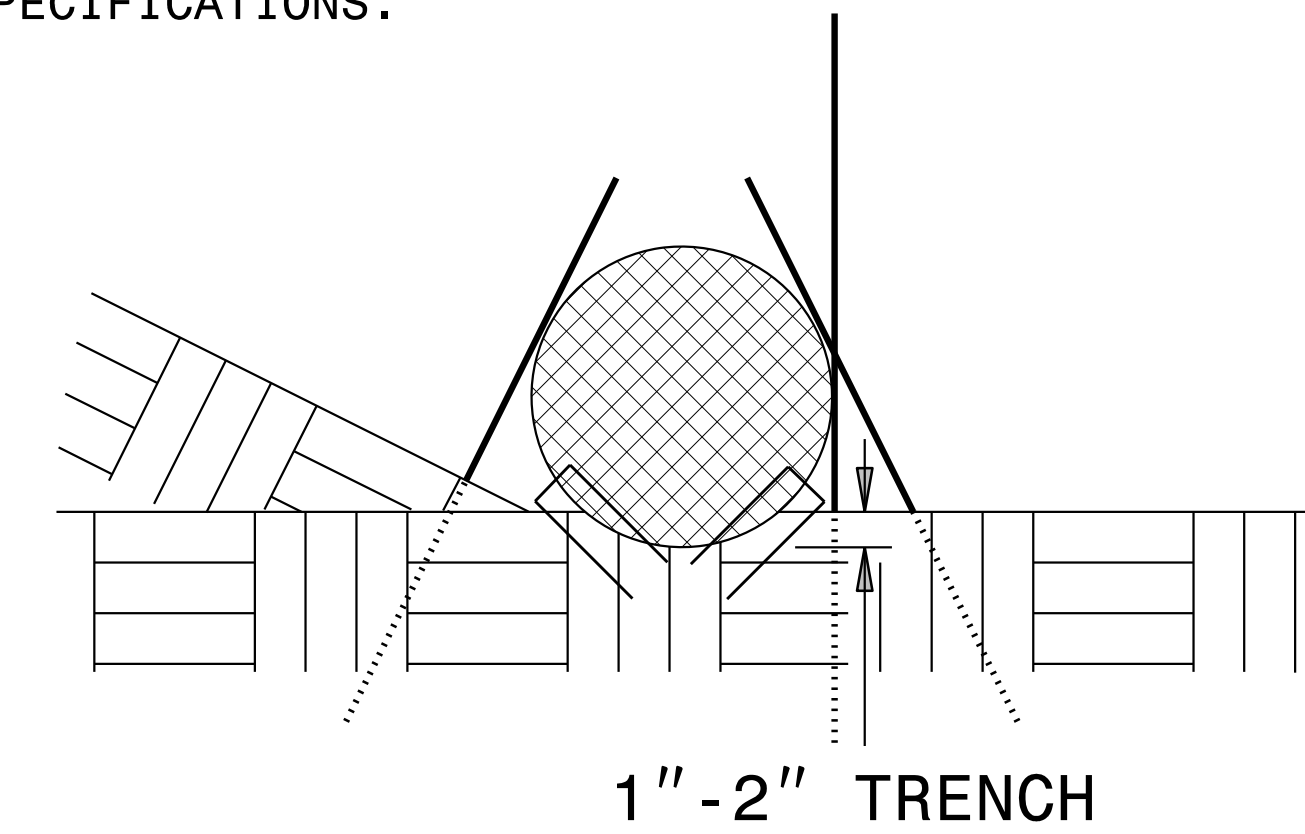


**VIEW FROM SLOPE**

**NOTES:**

- USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.
- EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.
- DO NOT PLACE WATTLE ON TOE OF SLOPE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.
- PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
- INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
- WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.
- INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

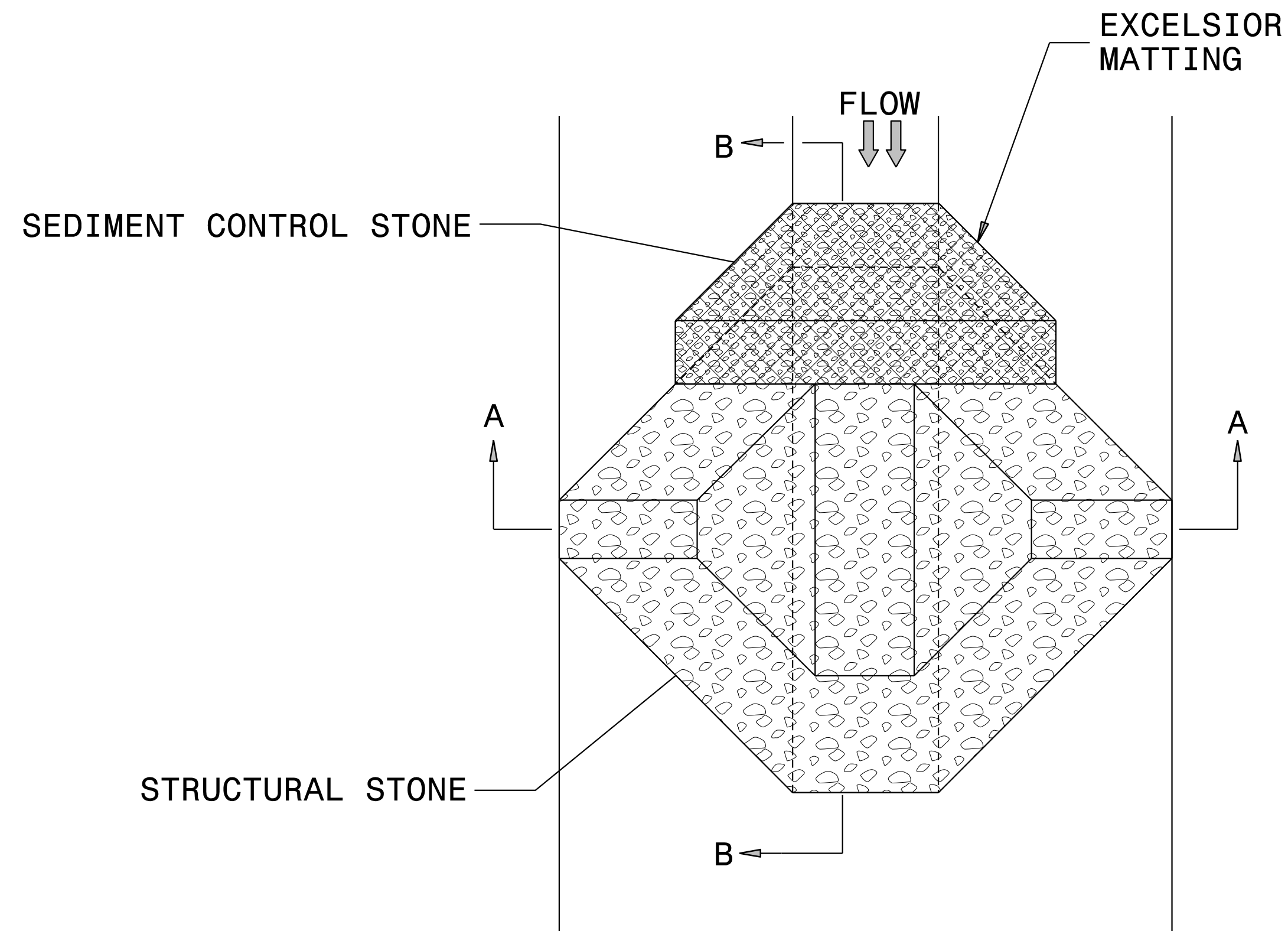
**INSET A**



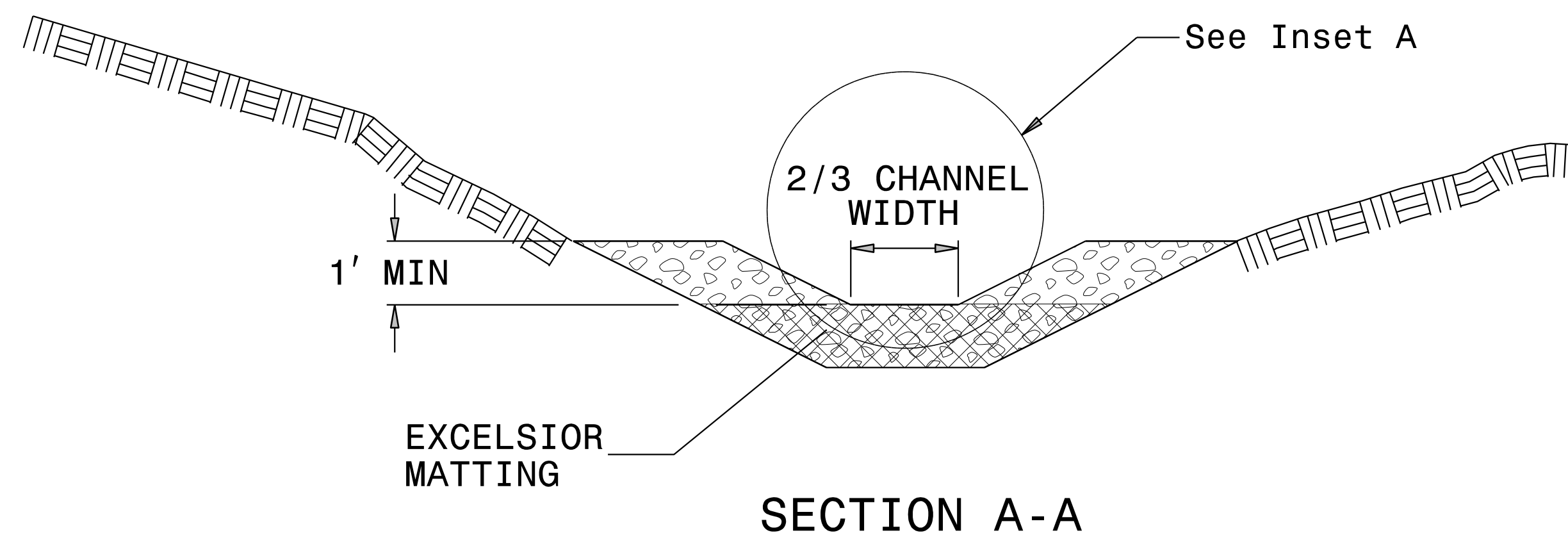
**SIDE VIEW**

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-2F</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN



SECTION A-A

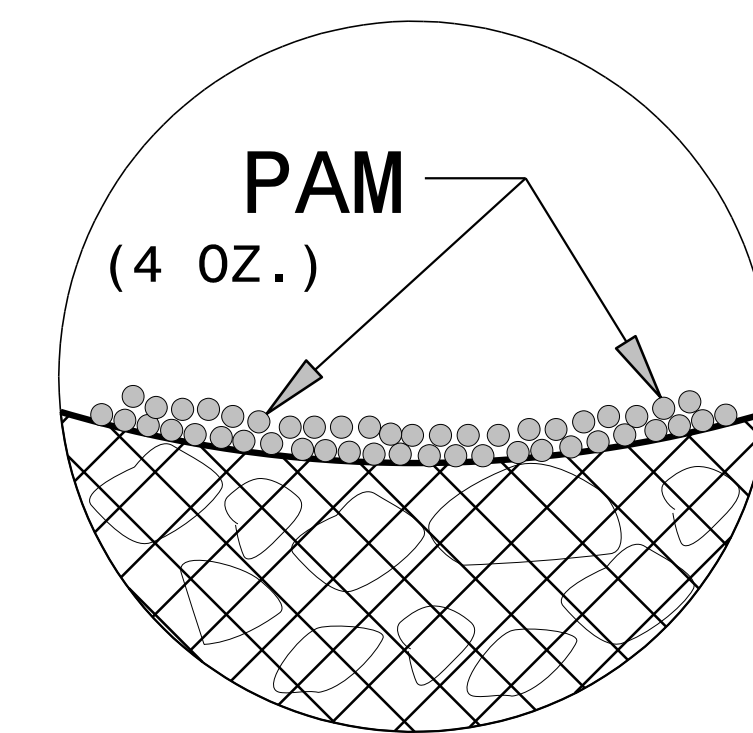
NOTES:

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

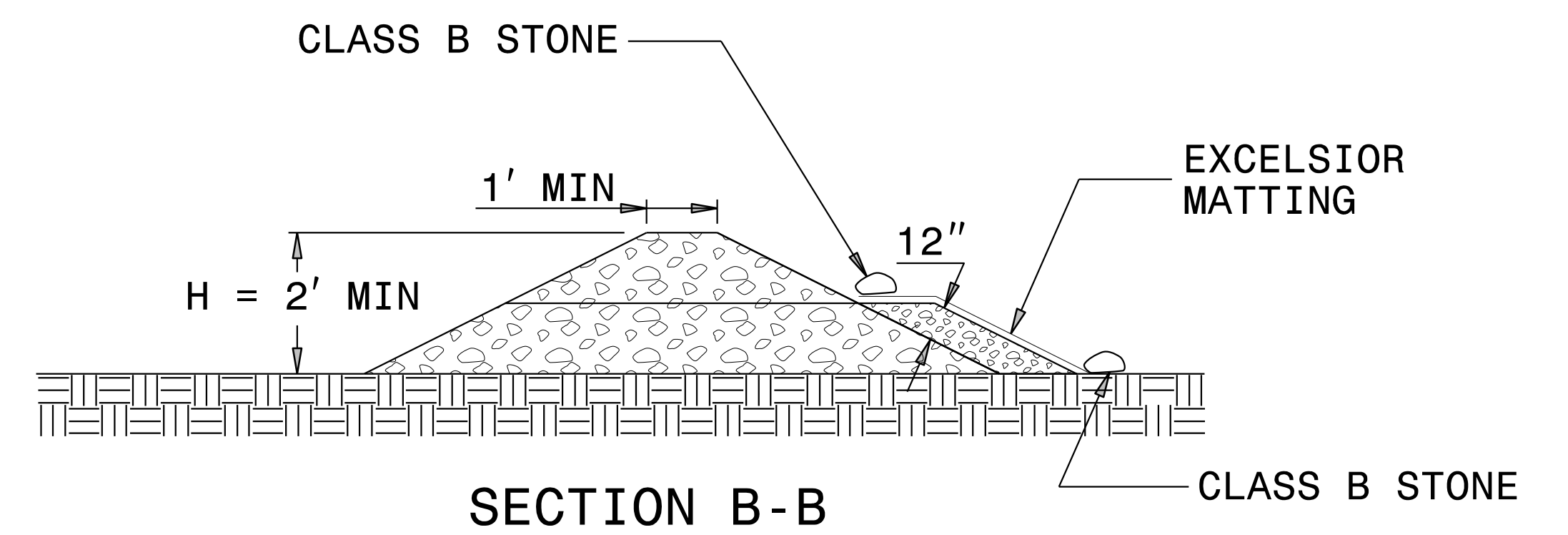
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

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



INSET A



SECTION B-B

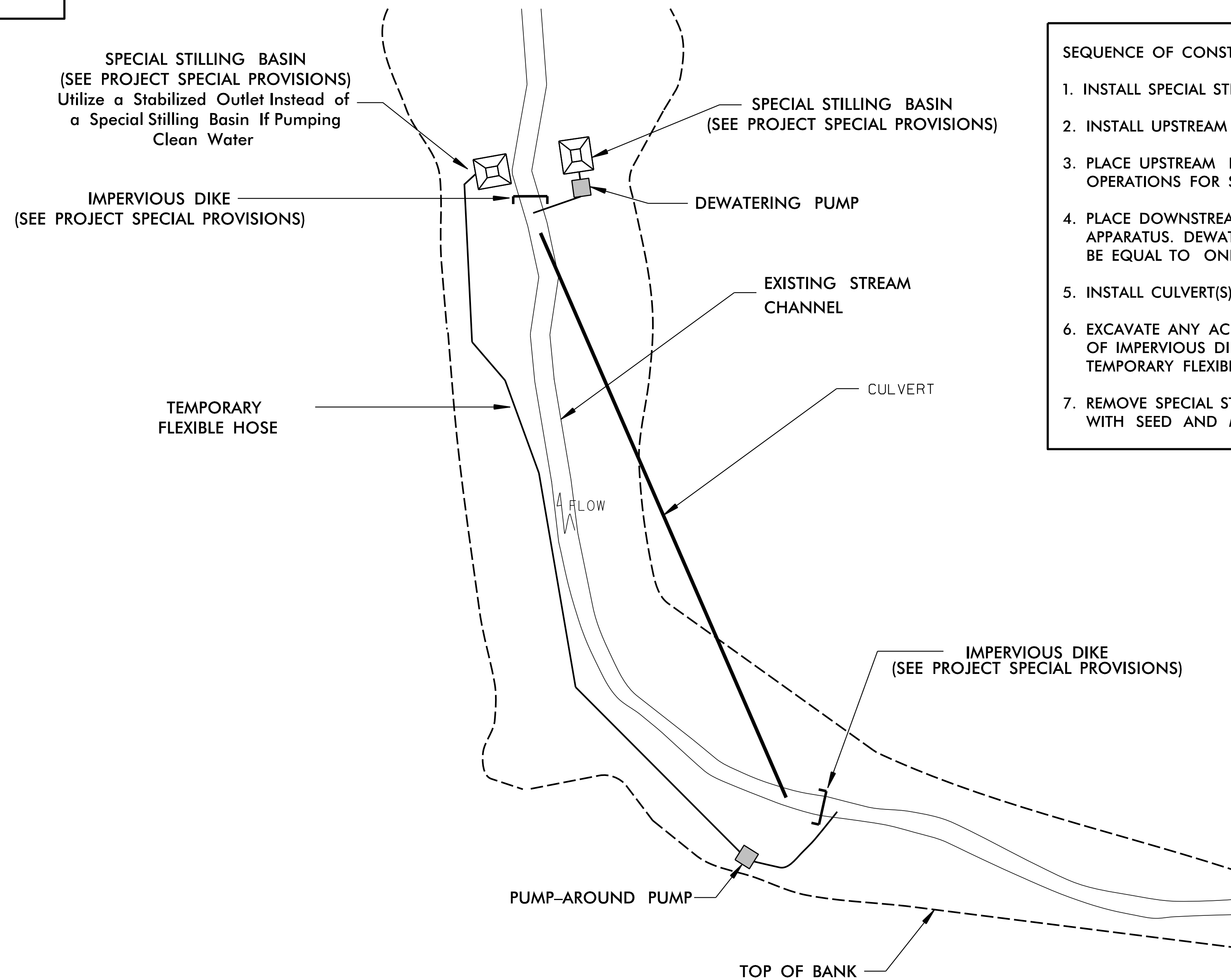
NOT TO SCALE



PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-2G</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# EXAMPLE OF PUMP-AROUND OPERATION

- NOTES:
- 1) All excavation shall be performed in only dry or isolated areas of the work zone.
  - 2) Impervious dikes are to be used to isolate work from stream flow when necessary.
  - 3) Maintenance of stream flow operations shall be incidental to the work. This includes polyethylene sheeting, diversion pipes, pumps and hoses.
  - 4) Pumps and hoses shall be of sufficient size to dewater the work area.



- SEQUENCE OF CONSTRUCTION FOR TYPICAL WORK AREA
1. INSTALL SPECIAL STILLING BASIN(S).
  2. INSTALL UPSTREAM PUMP AND TEMPORARY FLEXIBLE HOSE.
  3. PLACE UPSTREAM IMPERVIOUS DIKE AND BEGIN PUMPING OPERATIONS FOR STREAM DIVERSION.
  4. PLACE DOWNSTREAM IMPERVIOUS DIKE AND PUMPING APPARATUS. DEWATER ENTRAPPED AREA. AREA TO BE DEWATERED SHALL BE EQUAL TO ONE DAY'S WORK.
  5. INSTALL CULVERT(S) IN ACCORDANCE WITH THE PLANS.
  6. EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES. REMOVE IMPERVIOUS DIKES, PUMPS, AND TEMPORARY FLEXIBLE HOSE. (DOWNSTREAM IMPERVIOUS DIKES FIRST).
  7. REMOVE SPECIAL STILLING BASIN(S) AND BACKFILL. STABILIZE DISTURBED AREA WITH SEED AND MULCH.

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-3</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**SOIL STABILIZATION SUMMARY SHEET**

**MATTING FOR EROSION CONTROL (STRAW)**

**MATTING FOR EROSION CONTROL (STRAW)**

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L1-	578+00	591+00	MED	1605
4	-L1-	578+00	583+00	RT	660
5	-L1-	591+50	594+50	LT	275
5	-L1-	601+25	601+90	LT	70
5	-L1-	591+00	620+00	MED	3600
5	-L1-	592+50	595+00	RT	230
5	-L1-	601+40	604+00	RT	375
5	-L1-	618+00	620+50	RT	230
5	-SR4-	24+00	24+75	LT	65
5	-SR4-	25+00	27+65	LT	225
5	-SR4-	24+00	24+75	RT	65
5	-SR4-	25+00	27+65	RT	225
5	-SR6-	20+00	23+75	LT	495
5	-SR6-	26+50	27+50	LT	95
5	-SR6-	28+50	31+00	LT	230
5	-SR6-	20+00	20+50	RT	75
5	-SR6-	22+00	23+50	RT	215
5	-SR6-	21+03	21+50	RT	125
5	-Y30-	32+00	33+00	RT	130
5	-Y30-	40+32	44+35	RT	940
5	-Y3ORPA-	7+00	13+50	RT	660
5	-Y3ORPA-	12+00	13+50	LT	275
5	-Y3ORPA-	14+50	16+00	RT	140
5	-Y3ORPA-	17+00	19+00	LT	415
5	-Y3ORPA-	22+00	24+00	RT	200
5	-Y3ORPC-	17+60	20+15	RT	285
5	-Y3ORPC-	23+00	25+00	RT	200
6	-L1-	620+00	631+00	MED	1325
7	-L1-	631+00	641+50	MED	1315
7	-L1-	639+00	642+00	RT	450

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
8	-L1-	641+50	653+00	MED	1410
8	-L1-	642+00	642+75	RT	130
8	-L1-	646+50	653+00	RT	745
9	-L1-	663+50	666+00	LT	290
9	-L1-	653+00	666+00	MED	1470
9	-L1-	656+50	658+40	RT	190
9	-L1-	659+00	661+90	RT	490
9	-Y38-	23+18	25+00	LT	230
9	-Y38-	18+50	19+75	RT	155
9	-Y38-	23+15	24+50	RT	125
10	-L1-	666+00	671+50	LT	630
10	-L1-	677+50	679+00	LT	245
10	-L1-	666+00	679+00	MED	1655
10	-L1-	677+00		RT	175
11	-L1-	679+00	683+00	LT	510
11	-L1-	680+00		LT	195
11	-L1-	679+00	693+00	MED	1790
12	-L1-	694+65	703+50	LT	1000
12	-L1-	693+00	706+00	MED	1745
12	-L1-	693+75	700+00	RT	1330
12	-L1-	704+00	705+70	RT	200
12	-L1-	693+50		RT	90
13	-L1-	713+50	718+00	LT	520
13	-L1-	706+00	719+00	MED	1655
13	-L1-	715+50	717+50	RT	185
14	-L1-	723+50	725+50	LT	185
14	-L1-	724+00	724+65	LT	130
14	-L1-	726+00	728+70	LT	295
14	-L1-	732+76	733+91	LT	295
14	-L1-	733+00	736+00	LT	330

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-3A</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**SOIL STABILIZATION SUMMARY SHEET**

**MATTING FOR EROSION CONTROL (STRAW)**

**MATTING FOR EROSION CONTROL (STRAW)**

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
14	-L1-	736+00	738+00	LT	185
14	-L1-	719+00	747+00	MED	3335
14	-L1-	715+50	718+00	RT	230
14	-SR7-	10+50	16+50	LT	650
14	-SR7-	25+00	26+50	RT	225
14	-SR7-	16+00		RT	50
14	-Y31-	19+20	22+00	LT	280
14	-Y31-	24+50	25+50	LT	110
14	-Y31-	28+20	28+80	LT	80
14	-Y31-	38+50	46+50	RT	965
14	-Y31-	40+50	47+00	LT	925
14	-Y31LPC-	9+00	12+40	LT	320
14	-Y31RPA-	13+10	15+00	RT	230
14	-Y31RPB-	12+79	18+50	LT	1080
15	-L1-	747+00	760+00	MED	1745
15	-L1-	748+00	760+00	RT	2315
15	-SR7-	26+50	31+00	RT	670
16	-L1-	760+00	773+00	MED	1655
16	-L1-	760+00	760+50	RT	80
17	-L1-	773+00	786+00	MED	1660
18	-L1-	786+00	799+00	MED	1655
18	-L1-	787+50	788+50	RT	135
19	-L1-	799+00	812+00	MED	1600
20	-L1-	812+00	820+00	MED	1075
20	-L1 NORTHERN-	820+00	825+00	MED	670
21	-L1 NORTHERN-	825+00	837+00	MED	1490
22	-L1 NORTHERN-	837+00	847+00	MED	1210
23	-L1 NORTHERN-	847+00	874+50	MED	3660
23	-L1 NORTHERN-	856+00	860+50	RT	445
23	-Y19-	27+50	34+00	LT	770

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
23	-Y19-	36+70	38+50	RT	165
23	-Y32-	12+00	18+30	LT	1570
23	-Y32-	26+00	31+65	LT	1780
23	-Y32-	38+00	39+50	LT	225
23	-Y32-	41+00	48+12	LT	1815
23	-Y32-	18+00	22+50	RT	430
23	-Y32RPB1-	17+00	18+00	RT	220
23	-Y32RPB1-	21+00	21+75	RT	220
23	-Y40-	235+00	237+20	RT	275
23	-Y43-	10+50	11+50	LT	125
23	-Y43-	12+50	14+75	LT	185
24	-L-	268+50	271+50	RT	310
27	-L-	308+50	309+00	LT	55
28, 29	-L-	320+50	325+50	RT	375
28, 29	-L-	324+50	330+00	LT	445
29	-L-	332+00	332+50	MED	70
30	-SR4-	10+30	12+50	LT	145
30	-SR4-	23+50	24+00	LT	45
30	-SR4-	27+65	28+25	LT	45
30	-SR4-	10+50	13+50	RT	245
30	-SR4-	23+50	24+00	RT	45
30	-SR4-	27+65	28+25	RT	45
30	-SR6-	17+00	20+00	RT	440
30	-Y30-	18+30	21+00	RT	300
30	-Y30-	23+00	23+68	RT	80
30	-Y30-	25+00	28+50	LT	395
30	-Y30-	28+50	32+00	RT	445
31	-SR5-	13+00	15+00	LT	205
31	-SR5-	16+00	19+00	LT	290
31	-SR5-	19+50	21+25	LT	130









DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-3E</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

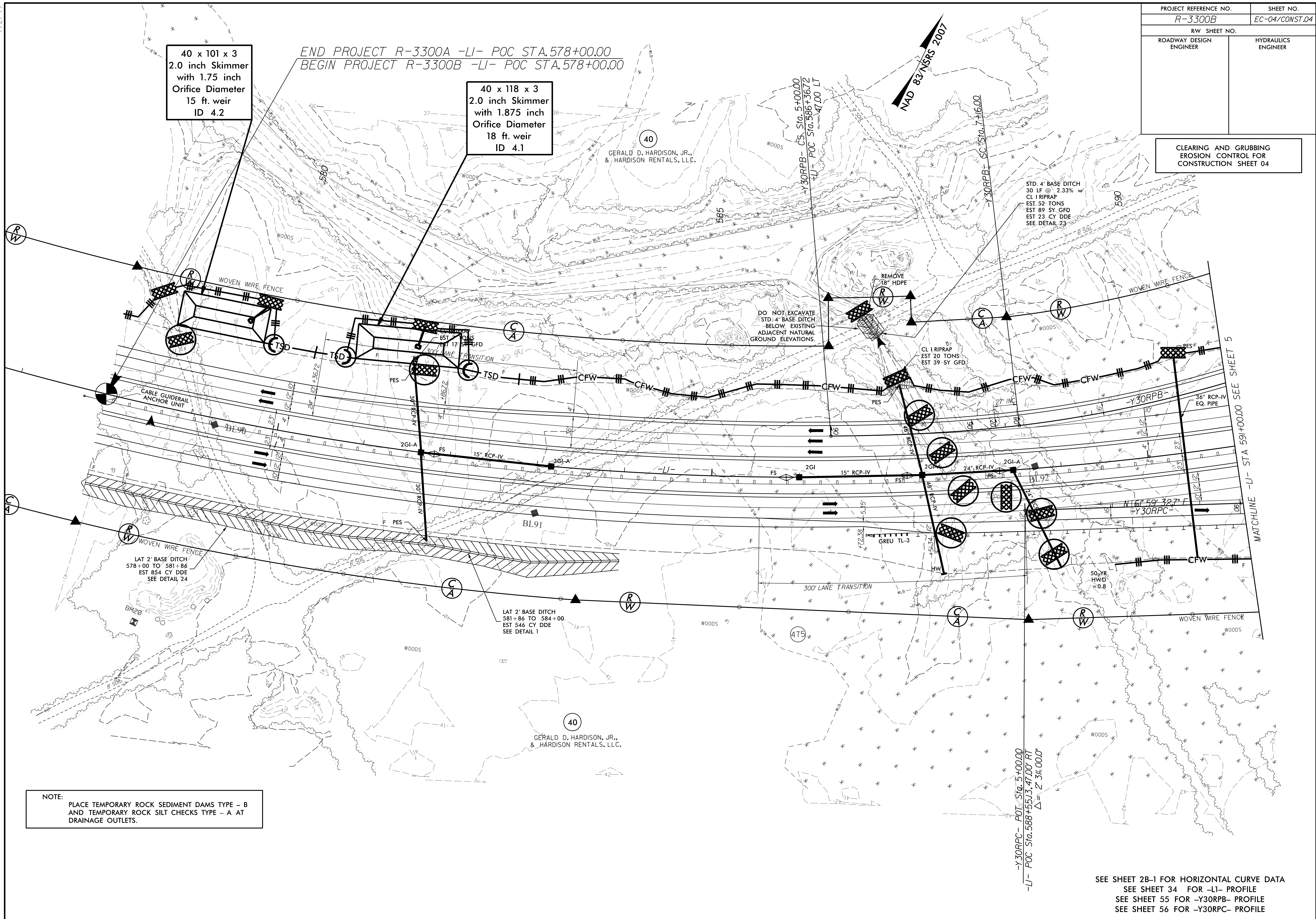
# ***SOIL STABILIZATION TIMEFRAMES***

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
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.

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PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-04/CONST.04</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 04



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

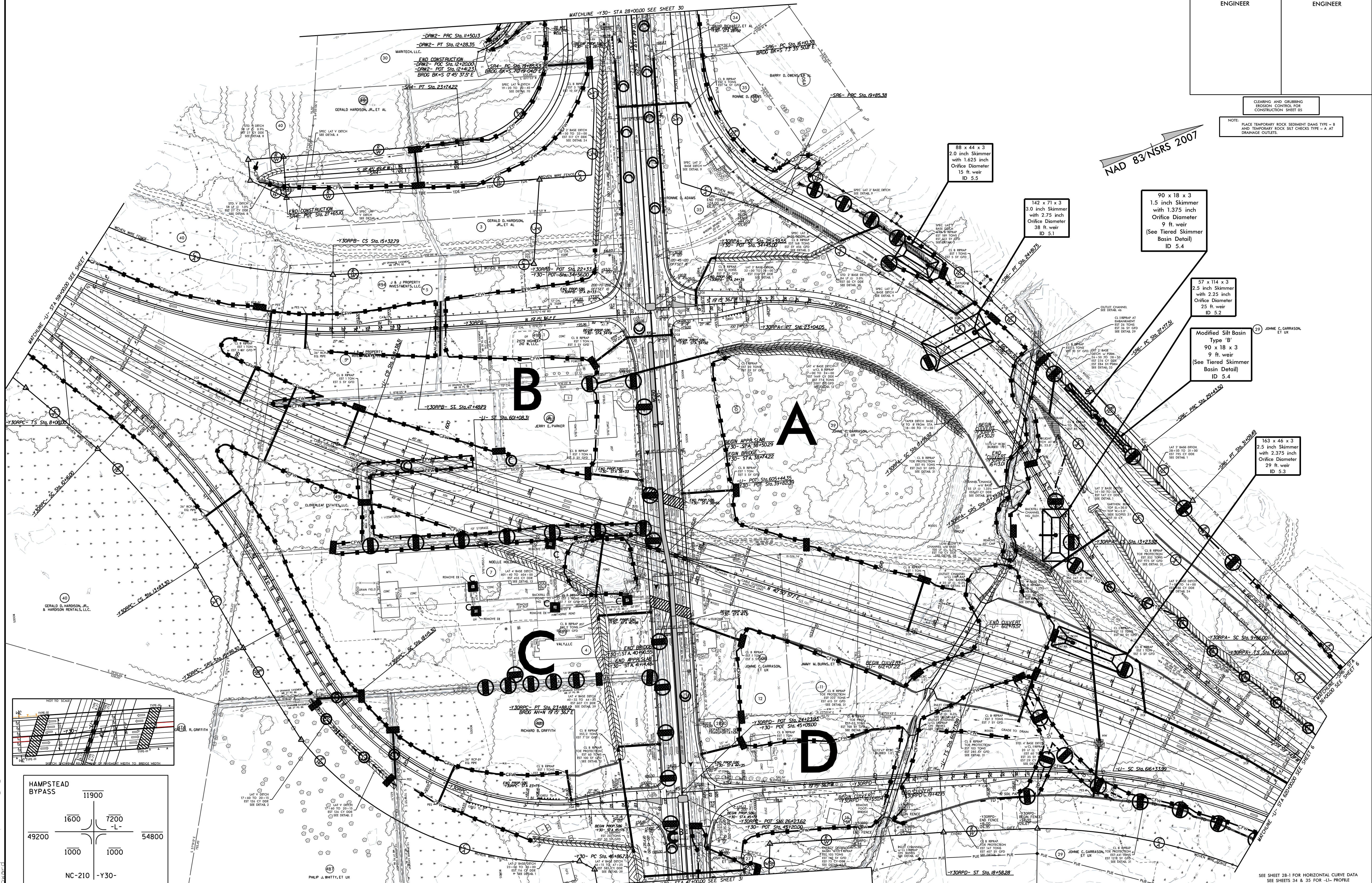
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA  
SEE SHEET 34 FOR -LI- PROFILE  
SEE SHEET 55 FOR -Y30R- PROFILE  
SEE SHEET 56 FOR -Y30R- PROFILE



PROJECT REFERENCE NO.	SHEET NO.
R-3300B	EC-05/CONST.05
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 05  
 NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

NAD 83/NSRS 2007



88 x 44 x 3  
2.0 inch Skimmer  
with 1.625 inch  
Orifice Diameter  
15 ft. weir  
ID 5.5

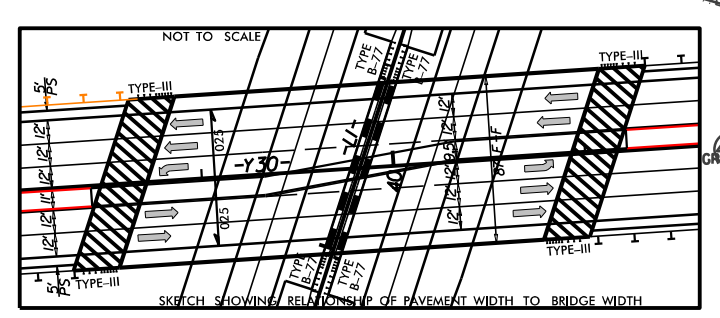
142 x 71 x 3  
3.0 inch Skimmer  
with 2.75 inch  
Orifice Diameter  
38 ft. weir  
ID 5.1

90 x 18 x 3  
1.5 inch Skimmer  
with 1.375 inch  
Orifice Diameter  
9 ft. weir  
(See Tiered Skimmer  
Basin Detail)  
ID 5.4

57 x 114 x 3  
2.5 inch Skimmer  
with 2.25 inch  
Orifice Diameter  
25 ft. weir  
ID 5.2

Modified Silt Basin  
Type 'B'  
90 x 18 x 3  
9 ft. weir  
(See Tiered Skimmer  
Basin Detail)  
ID 5.4

163 x 46 x 3  
2.5 inch Skimmer  
with 2.375 inch  
Orifice Diameter  
29 ft. weir  
ID 5.3



HAMPSTEAD BYPASS		11900	
1600	7200	-L-	
49200	54800		
1000	1000		
NC-210	-Y30-		
5100			
YR 2040			

SEE SHEET 28-1 FOR HORIZONTAL CURVE DATA  
 SEE SHEETS 34 & 35 FOR -L- PROFILE  
 SEE SHEET 53 FOR -Y30- PROFILE  
 SEE SHEETS 54 & 55 FOR -Y30BPA- PROFILE  
 SEE SHEETS 55 & 56 FOR -Y30RFB- PROFILE  
 SEE SHEETS 56 & 57 FOR -Y30RPC- PROFILE  
 SEE SHEETS 57 & 58 FOR -Y30RBD- PROFILE  
 SEE SHEETS 69 & 70 FOR -SR6- PROFILE

5/14/99

R3300B EC-dsn-psh\_05.cgd.gdn  
 R. GRIFFITH



7/27/99

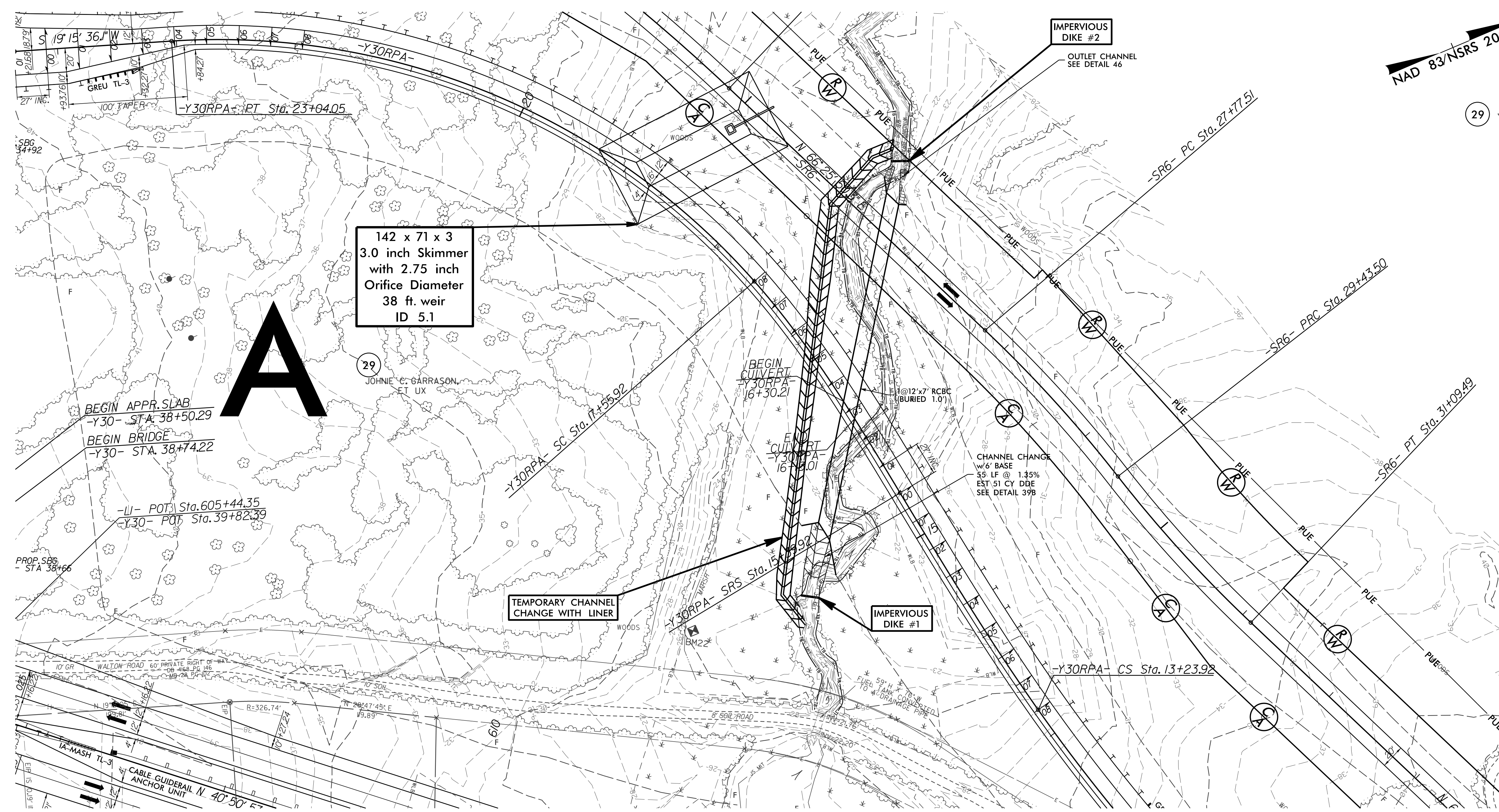
PROJECT REFERENCE NO.	SHEET NO.
R-3300B	EC-05A/CONST.05
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# 1@12'X7' RCBC CONSTRUCTION SEQUENCE

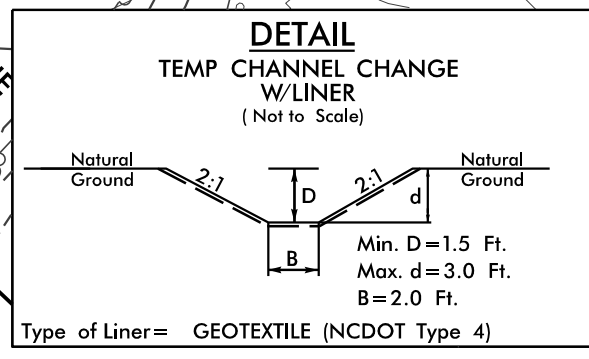
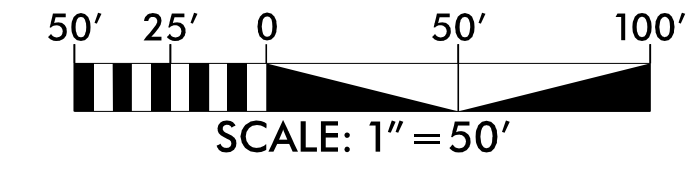
## STA. 16+22 -Y30RPA- UT TO HARRISONS CREEK

### PHASE I

- 1.) UTILIZE SKIMMER BASIN 5.1 AS STILLING BASIN DURING CULVERT CONSTRUCTION.
- 2.) CONSTRUCT TEMPORARY CHANNEL WITH LINER (SEE DETAIL).
- 3.) INSTALL IMPERVIOUS DIKES #1 AND #2 AND DIVERT FLOW INTO TEMPORARY CHANNEL.
- 4.) DEWATER CONSTRUCTION AREA, UTILIZING SKIMMER BASIN 5.1 FOR PUMPED EFFLUENT.
- 5.) CONSTRUCT 1@12'X7' RCBC (BURIED 1.0').
- 6.) EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES.
- 7.) REMOVE IMPERVIOUS DIKES #1, #2, AND TEMPORARY CHANNEL CHANGE W/LINER.
- 8.) DIRECT FLOW THROUGH 1@12'X7' RCBC (BURIED 1.0).
- 9.) COMPLETE ROADWAY.



29 JOHNIE C. GARRASON, ET UX





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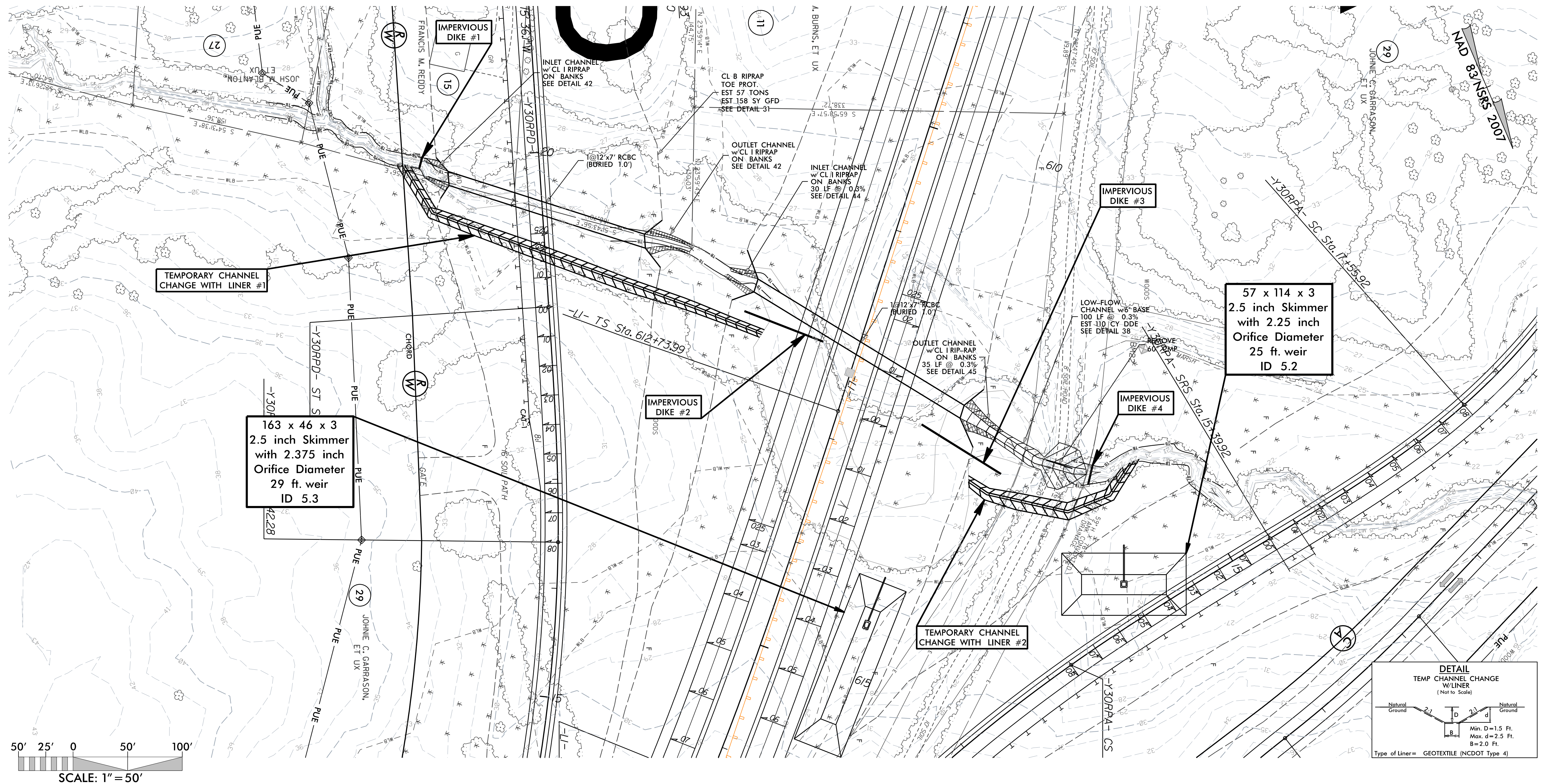
# 1@12'X7' RCBC AT STA. 612+13 -L1- AND 1@12'X7' RCBC AT STA. 19+49 -Y30RPD- CONSTRUCTION SEQUENCE UT TO HARRISONS CREEK

PROJECT REFERENCE NO. R-3300B	SHEET NO. EC-05B/CONST.05
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

## PHASE I

- 1.) UTILIZE SKIMMER BASINS 5.2 AND 5.3 AS STILLING BASINS DURING CULVERT CONSTRUCTION.
- 2.) CONSTRUCT TEMPORARY CHANNEL CHANGES WITH LINER #1 AND #2 (SEE DETAIL).
- 3.) INSTALL IMPERVIOUS DIKES #1, #2, #3, AND #4 AND DIVERT FLOW INTO TEMPORARY CHANNELS.
- 4.) DEWATER CONSTRUCTION AREA, UTILIZING SKIMMER BASIN 5.2 AND SKIMMER BASIN 5.3 FOR PUMPED EFFLUENT.
- 5.) CONSTRUCT 1@12'X7' RCBC (BURIED 1.0') UNDERNEATH -L1- WITH RESPECTIVE INLET AND OUTLET CHANNELS W/CLASS '1' RIP RAP.

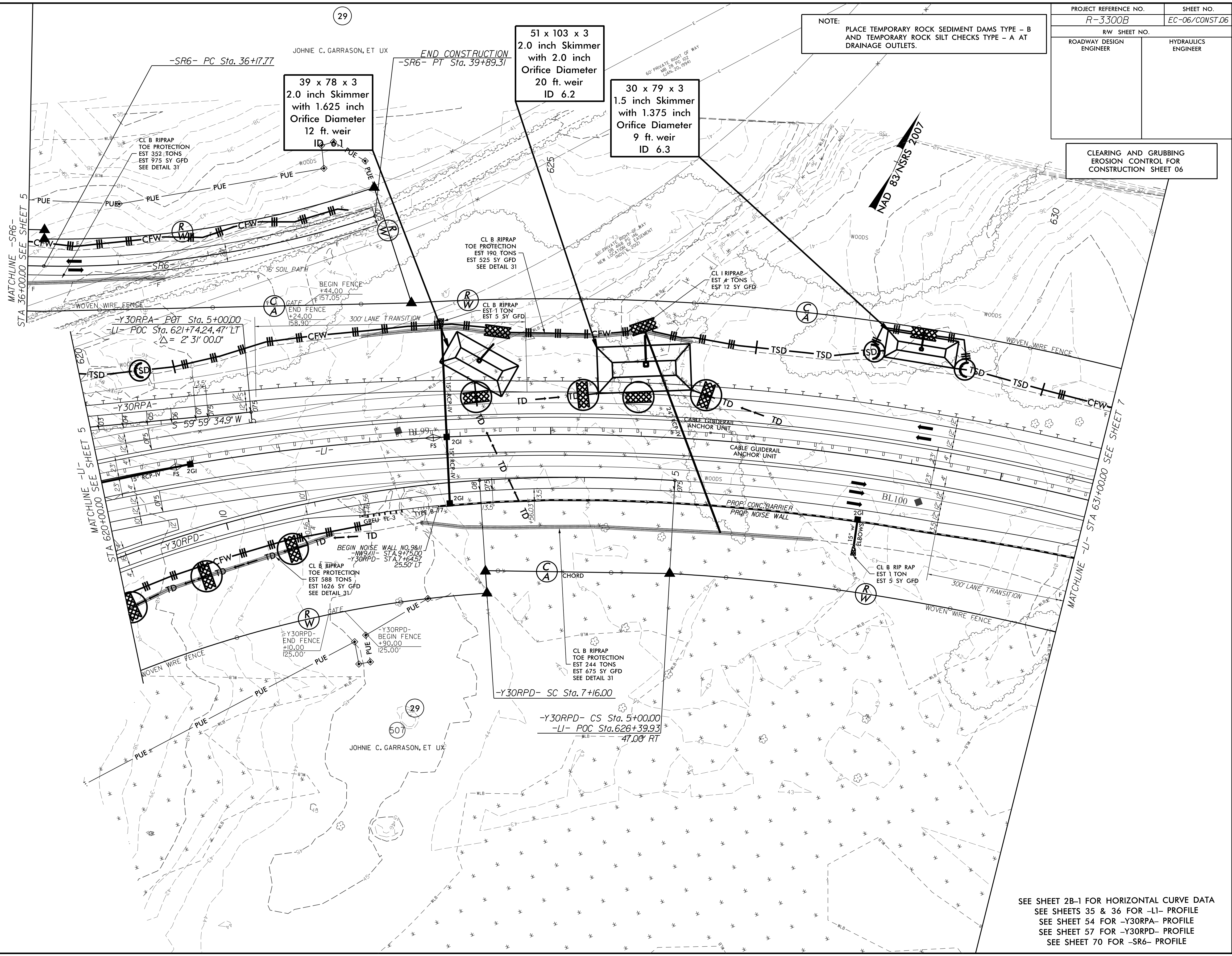
- 6.) CONSTRUCT 1@12'X7' RCBC (BURIED 1.0') UNDERNEATH -Y30RPD- WITH RESPECTIVE INLET AND OUTLET CHANNELS W/CLASS '1' RIP RAP.
- 7.) EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES.
- 8.) REMOVE IMPERVIOUS DIKES #1, #2, AND TEMPORARY CHANNEL CHANGES W/LINER #1 AND #2.
- 9.) DIRECT FLOW THROUGH 1@12'X7' RCBC (BURIED 1.0').
- 10.) COMPLETE ROADWAY.





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PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-06/CONST.06</i>
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 06

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA  
 SEE SHEETS 35 & 36 FOR -L1- PROFILE  
 SEE SHEET 54 FOR -Y30RPA- PROFILE  
 SEE SHEET 57 FOR -Y30RPD- PROFILE  
 SEE SHEET 70 FOR -SR6- PROFILE



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PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-07/CONST.07</i>
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 07

109 x 50 x 3  
2.0 inch Skimmer  
with 2.0 inch  
Orifice Diameter  
21 ft. weir  
ID 7.1

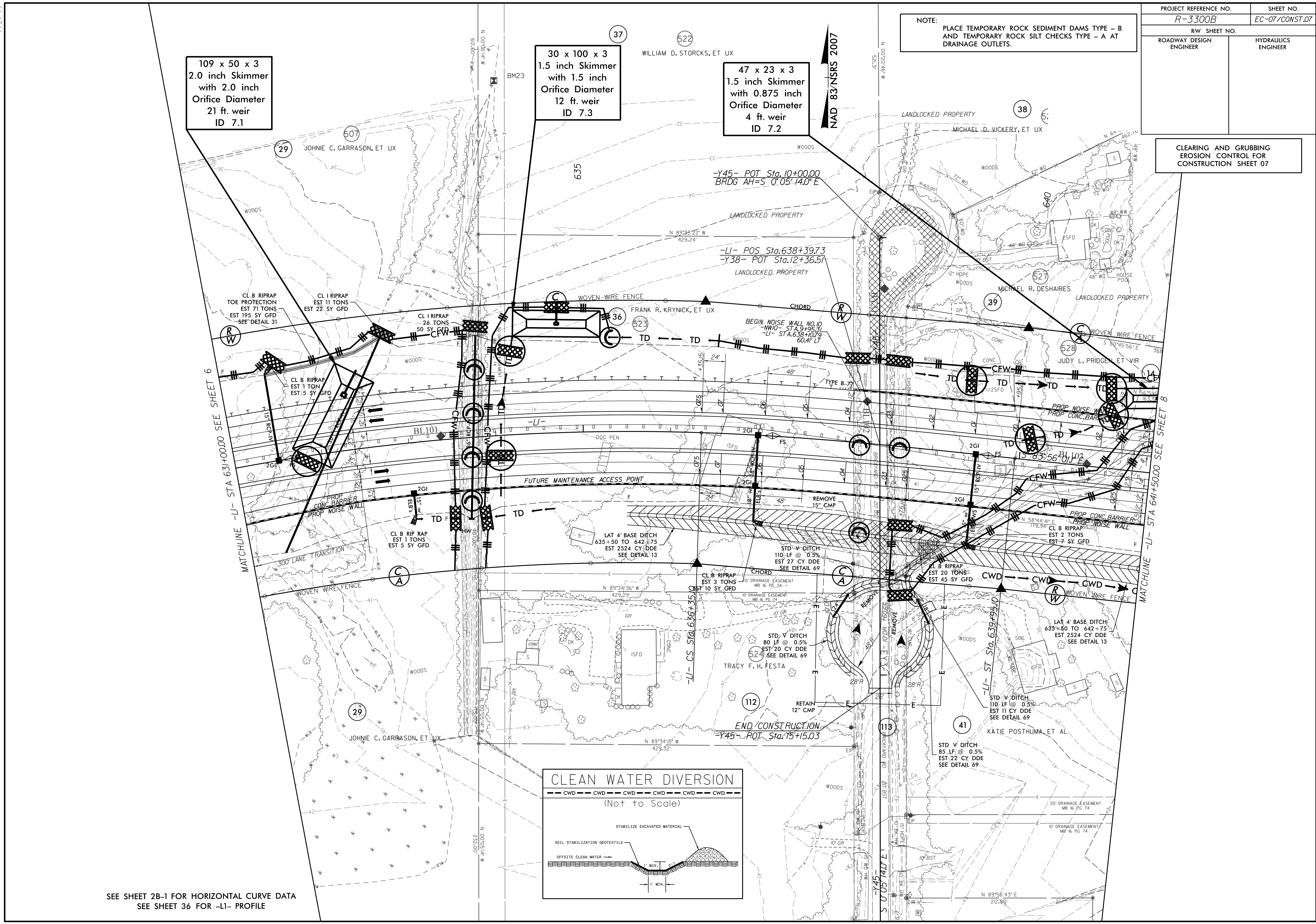
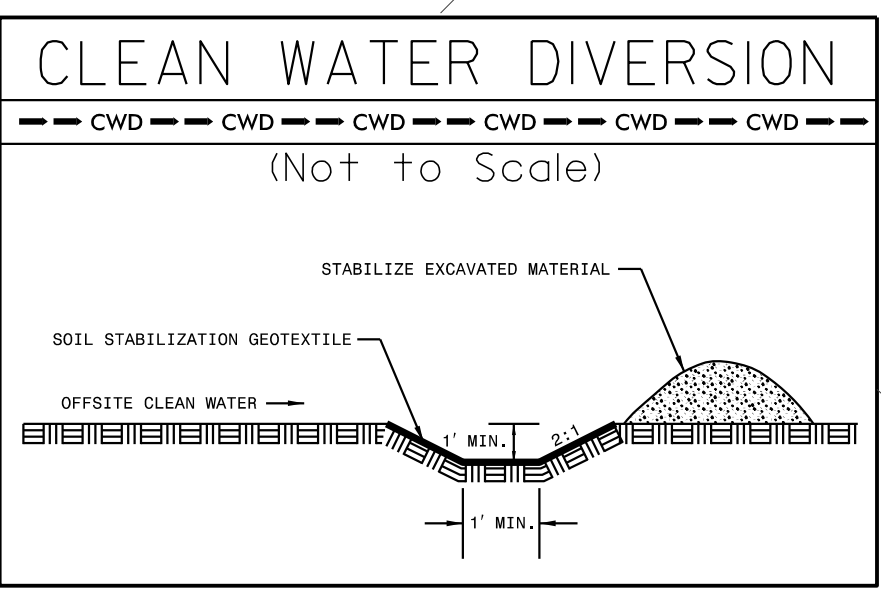
30 x 100 x 3  
1.5 inch Skimmer  
with 1.5 inch  
Orifice Diameter  
12 ft. weir  
ID 7.3

47 x 23 x 3  
1.5 inch Skimmer  
with 0.875 inch  
Orifice Diameter  
4 ft. weir  
ID 7.2

MATCHLINE -LI- STA 631+00.00 SEE SHEET 6

MATCHLINE -LI- STA 641+50.00 SEE SHEET 8

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA  
SEE SHEET 36 FOR -LI- PROFILE

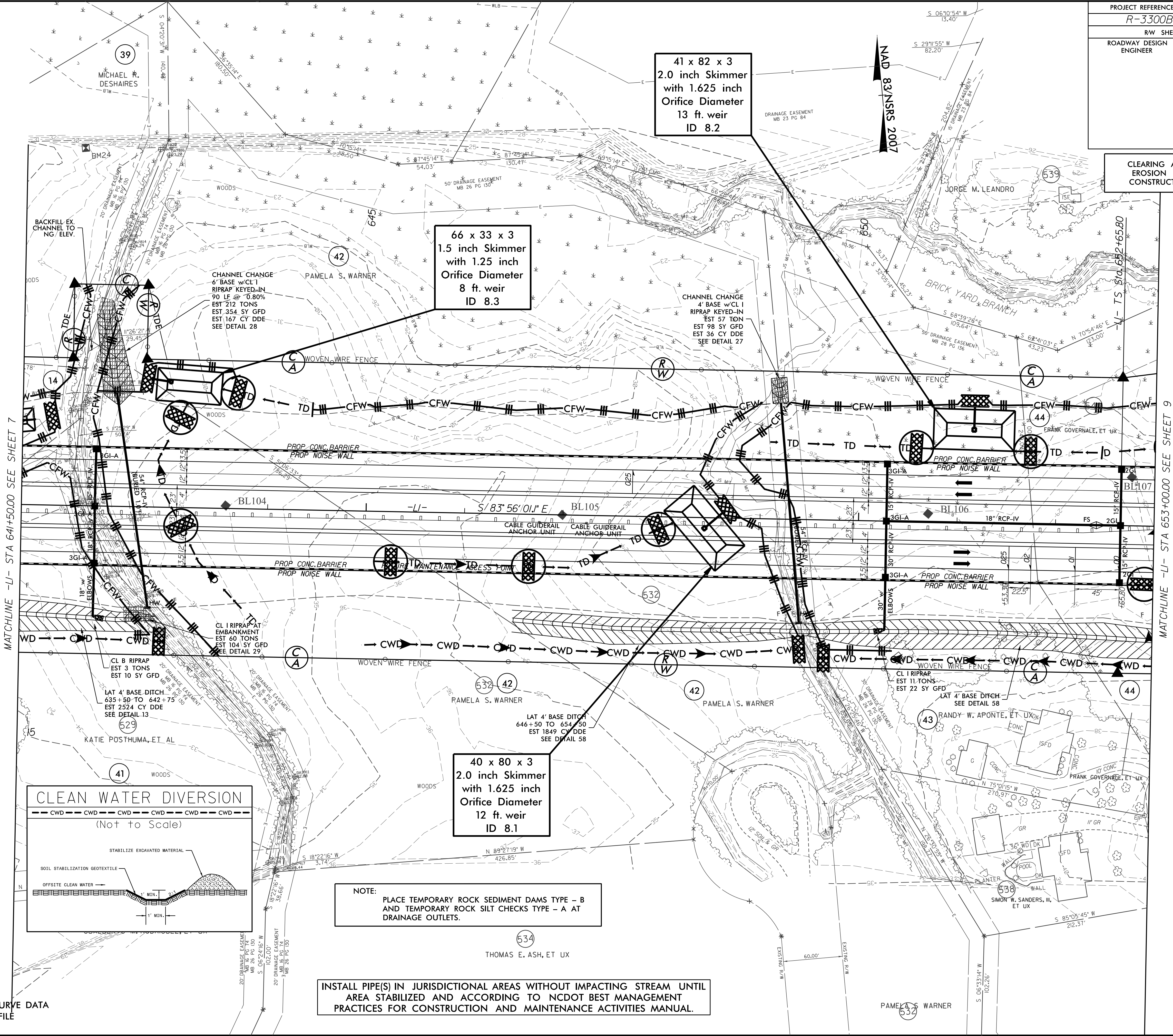




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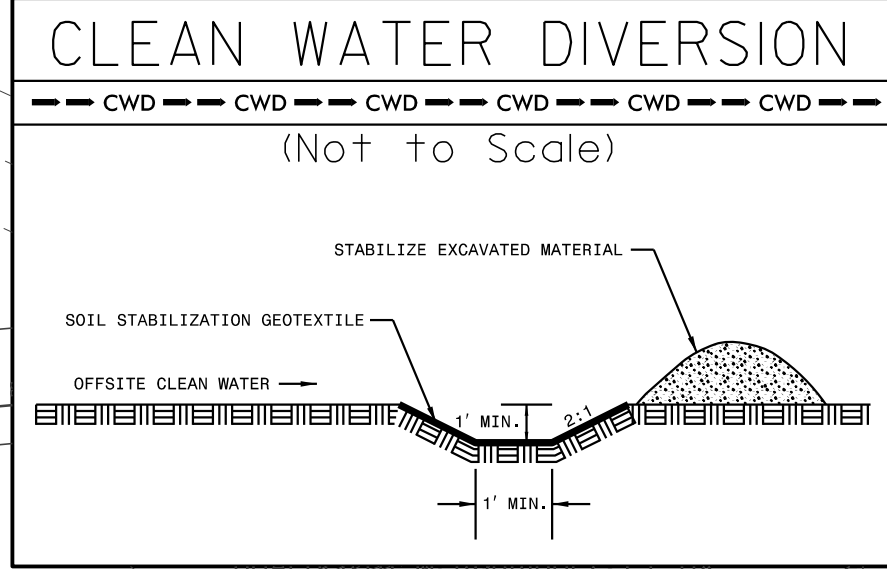
PROJECT REFERENCE NO.	SHEET NO.
R-3300B	EC-08/CONST.08
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 08



MATCHLINE -L1- STA 641+50.00 SEE SHEET 7

MATCHLINE -L1- STA 653+00.00 SEE SHEET 9



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

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

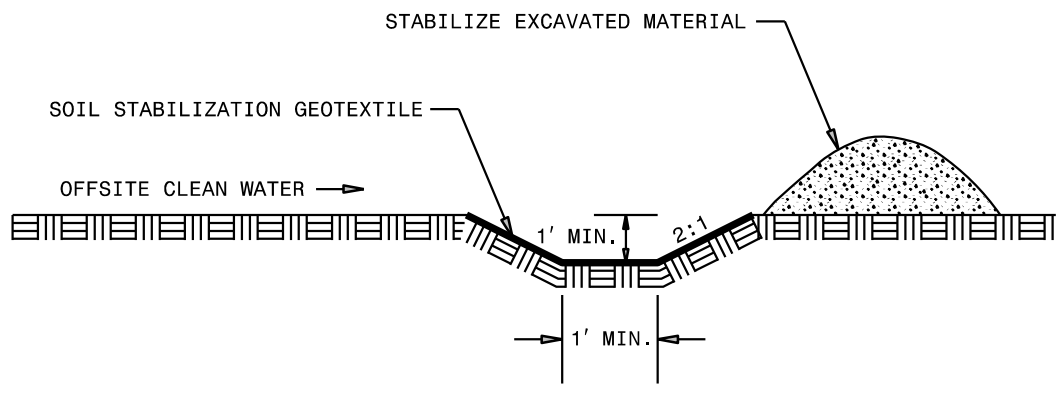
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA  
SEE SHEET 36 FOR -L1- PROFILE



7/27/99

# CLEAN WATER DIVERSION

(Not to Scale)



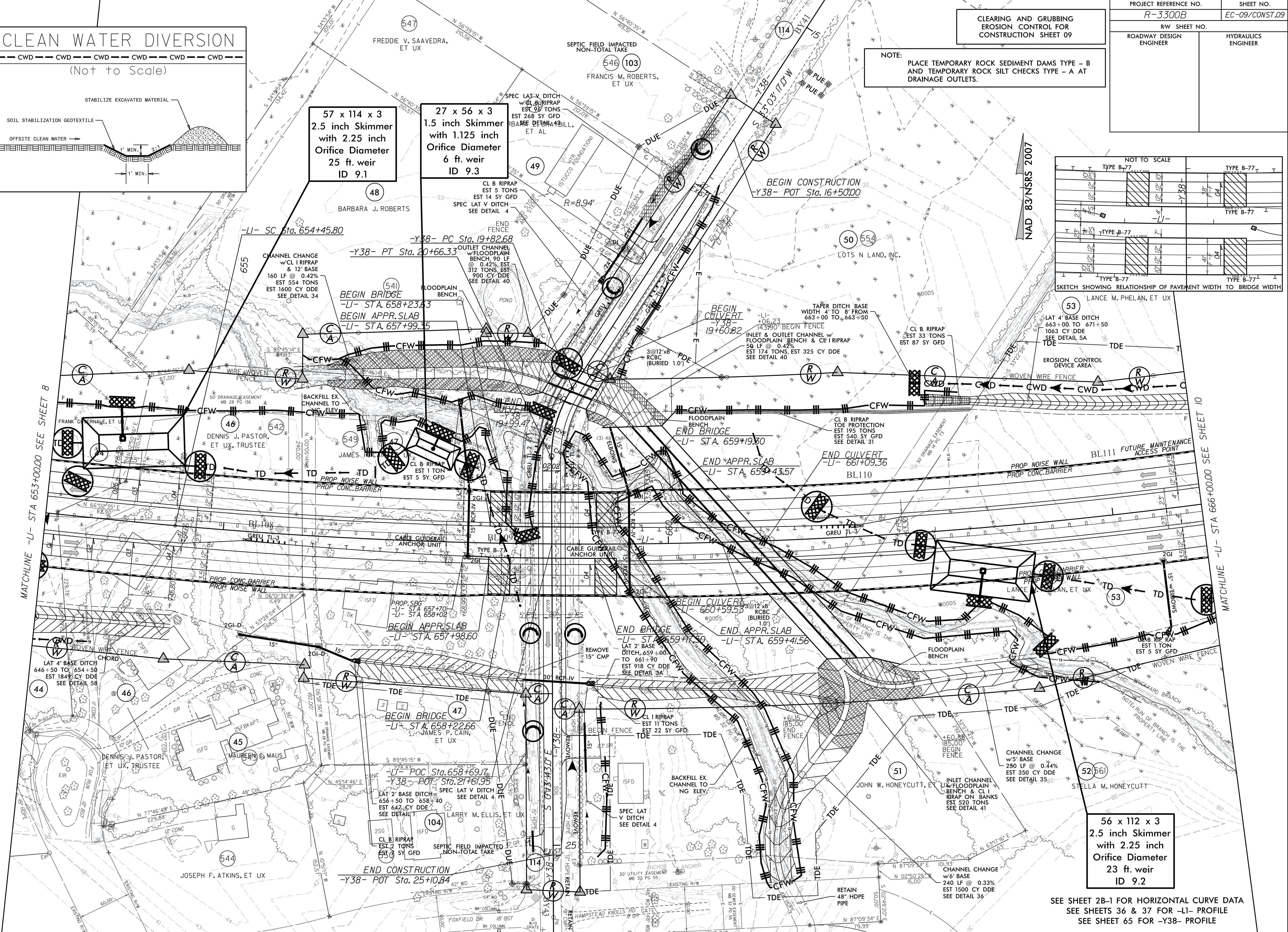
PROJECT REFERENCE NO. <b>R-3300B</b>	SHEET NO. <b>EC-09/CONST.09</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 09

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

MATCHLINE -LI- STA 653+00.00 SEE SHEET 8

MATCHLINE -LI- STA 666+00.00 SEE SHEET 10

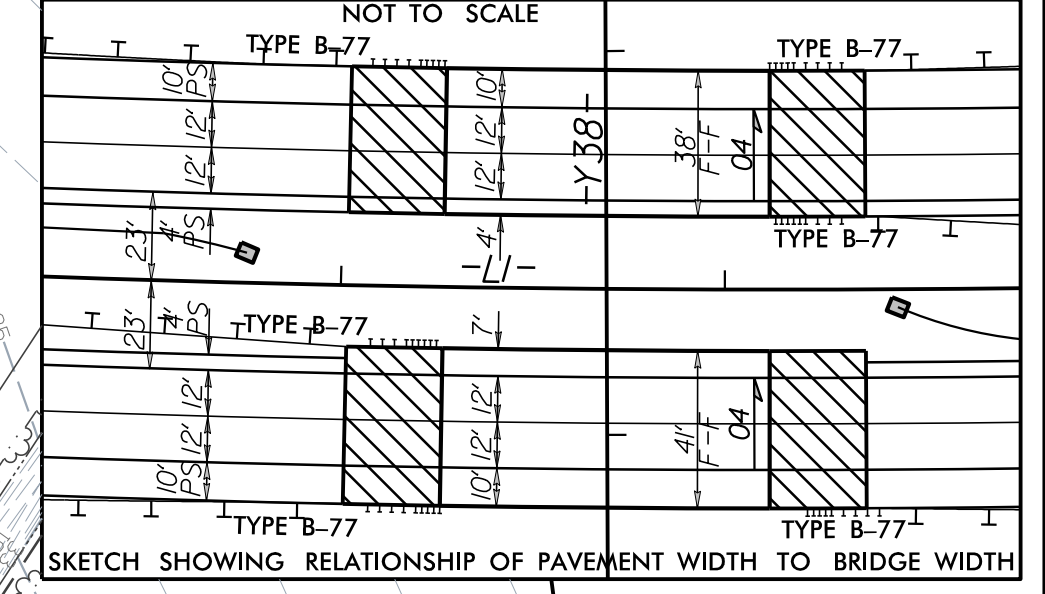


**57 x 114 x 3**  
2.5 inch Skimmer  
with 2.25 inch  
Orifice Diameter  
25 ft. weir  
ID 9.1

**27 x 56 x 3**  
1.5 inch Skimmer  
with 1.125 inch  
Orifice Diameter  
6 ft. weir  
ID 9.3

**56 x 112 x 3**  
2.5 inch Skimmer  
with 2.25 inch  
Orifice Diameter  
23 ft. weir  
ID 9.2

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA  
SEE SHEETS 36 & 37 FOR -LI- PROFILE  
SEE SHEET 65 FOR -Y38- PROFILE





7/2/99

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	EC-09A/CONST.09
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# 3@12'X8' RCBC CONSTRUCTION SEQUENCE

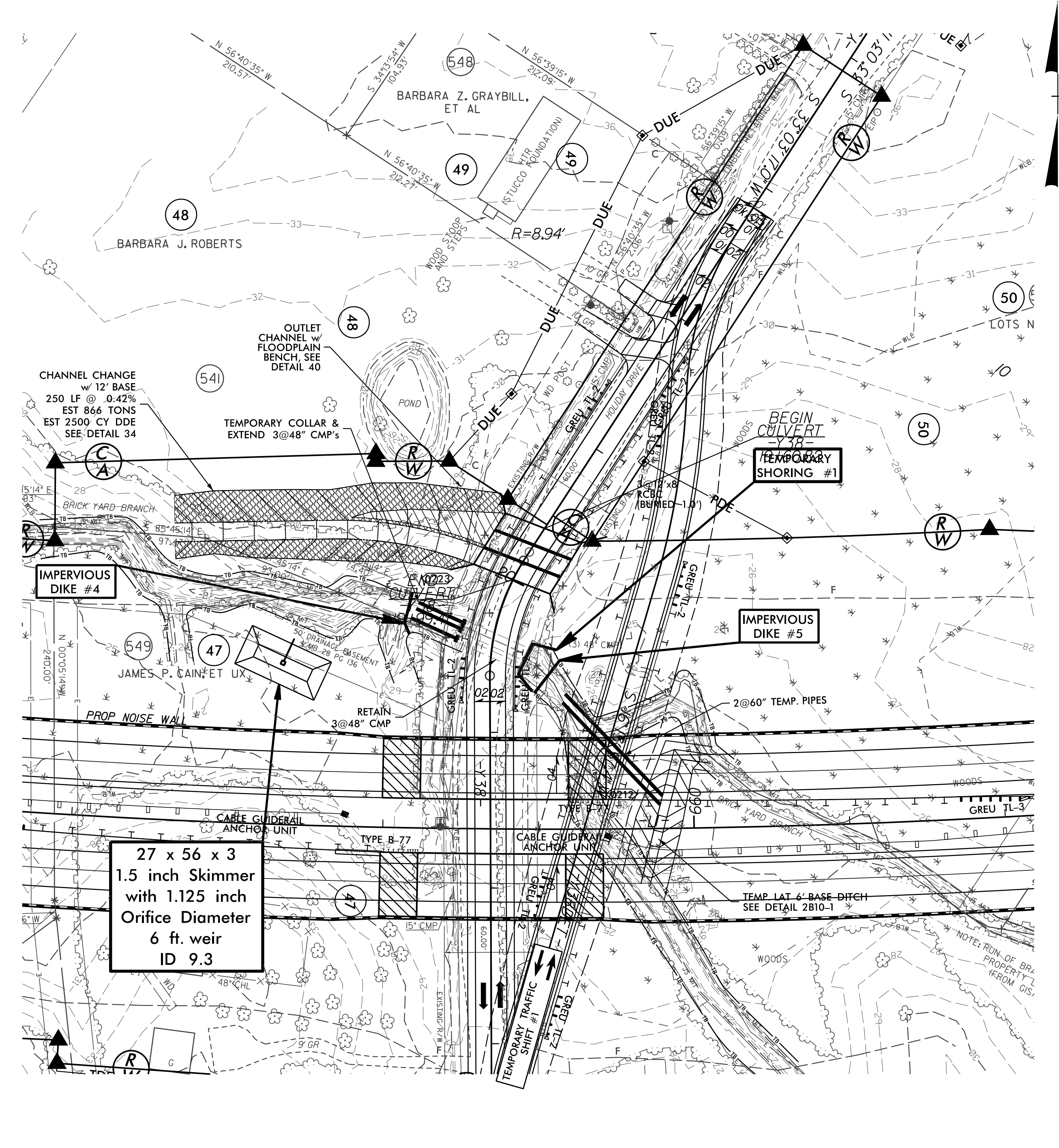
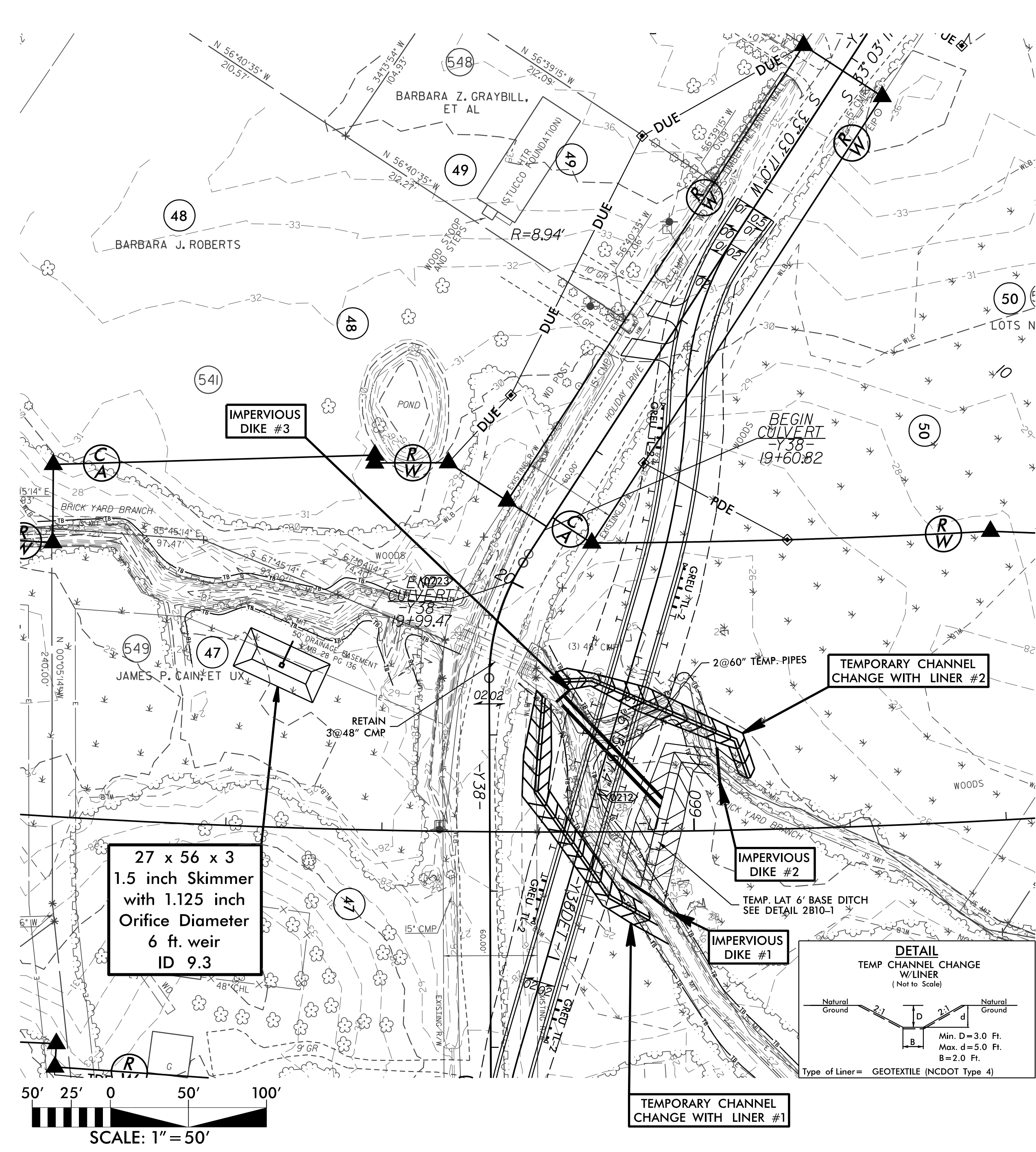
## STA. 19 + 80 -Y38- HARRISONS CREEK

### PHASE I

- 1.) UTILIZE SKIMMER BASIN 9.3 AS STILLING BASIN DURING PHASE I, PHASE II, PHASE IV, AND PHASE V OF CULVERT CONSTRUCTION SEQUENCE.
- 2.) CONSTRUCT TEMPORARY CHANNEL CHANGES WITH LINER #1 AND #2 (SEE DETAIL).
- 3.) INSTALL IMPERVIOUS DIKES #1, #2, AND #3 AND DIVERT FLOW THROUGH CHANNEL CHANGES #1 AND #2.
- 4.) DEWATER CONSTRUCTION AREA, UTILIZING SKIMMER BASIN 9.3 FOR PUMPED EFFLUENT.
- 5.) CONSTRUCT TEMPORARY 6' BASE DITCH AND INSTALL 2@60" TEMPORARY PIPES.
- 6.) EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES.
- 7.) REMOVE IMPERVIOUS DIKES AND TEMPORARY CHANNEL CHANGES WITH LINER.
- 8.) DIVERT FLOW THROUGH 2@60" TEMPORARY PIPES.
- 9.) CONSTRUCT -Y38DET-.

### PHASE II

- 1.) IMPLEMENT TEMPORARY TRAFFIC SHIFT #1.
- 2.) INSTALL DOWNSTREAM PUMP AND TEMPORARY FLEXIBLE HOSE.
- 3.) INSTALL IMPERVIOUS DIKES #4 AND #5 AND BEGIN PUMPING OPERATIONS FOR STREAM DIVERSION.
- 4.) INSTALL TEMPORARY 48" PIPE EXTENSIONS WITH COLLARS.
- 5.) CONSTRUCT CHANNEL CHANGE W/12' BASE, OUTLET CHANNEL W/FLOODPLAIN BENCH, AND 3@12'X8' RCBC (BURIED 1.0').
- 6.) INSTALL TEMPORARY SHORING #1.
- 7.) CONSTRUCT -Y38--.



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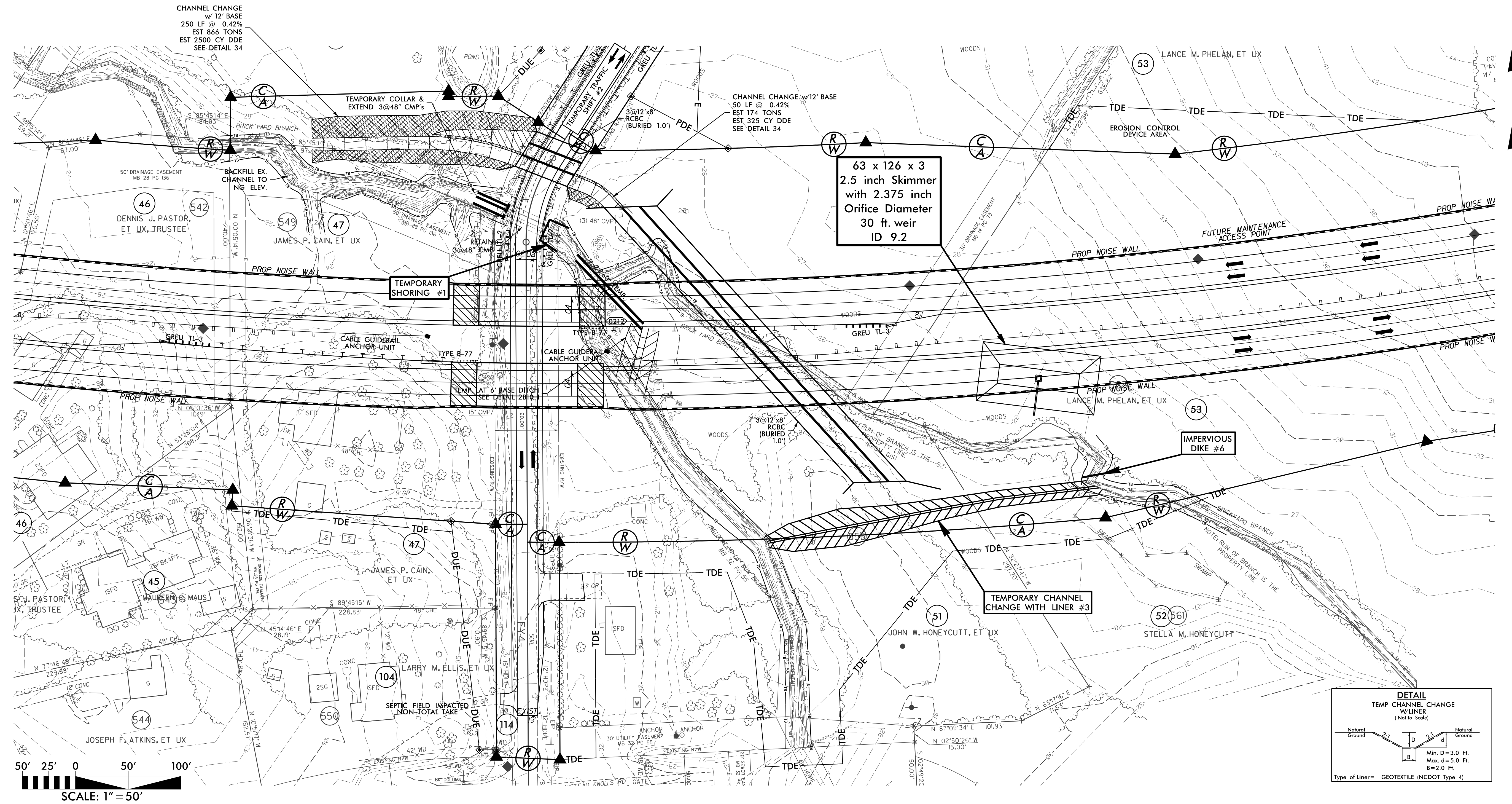
PROJECT REFERENCE NO.	SHEET NO.
R-3300B	EC-09B/CONST.09
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# 3@12'X8' RCBC CONSTRUCTION SEQUENCE

## STA. 660+84 -L1- HARRISONS CREEK

### PHASE III

- 1.) IMPLEMENT TRAFFIC SHIFT #2 AND REMOVE -Y38DET-
- 2.) UTILIZE SKIMMER BASIN 9.2 AS STILLING BASIN DURING PHASE III OF CULVERT CONSTRUCTION.
- 3.) REMOVE +/- 52' OF TEMPORARY LATERAL 6' BASE DITCH.
- 4.) CONSTRUCT TEMPORARY CHANNEL CHANGE WITH LINER #3 (SEE DETAIL).
- 5.) INSTALL IMPERVIOUS DIKE #6 AND DIVERT FLOW INTO TEMPORARY CHANNEL CHANGE #3.
- 6.) DEWATER CONSTRUCTION AREA, UTILIZING SKIMMER BASIN 9.2 FOR PUMPED EFFLUENT.
- 7.) CONSTRUCT 3@12'X8' RCBC (BURIED 1.0').





7/2/99

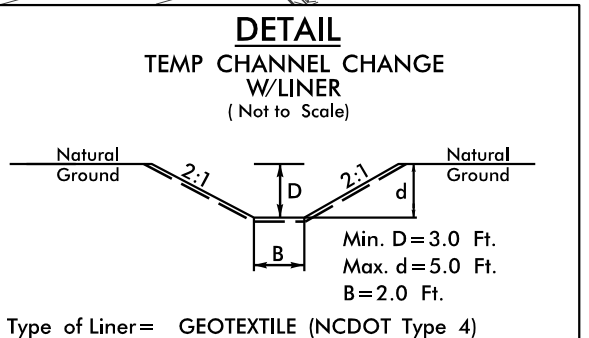
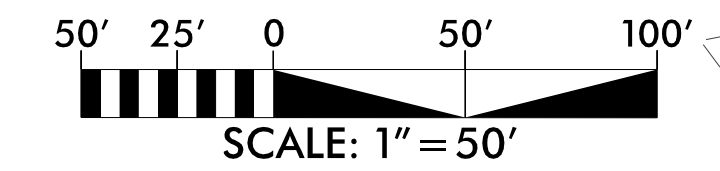
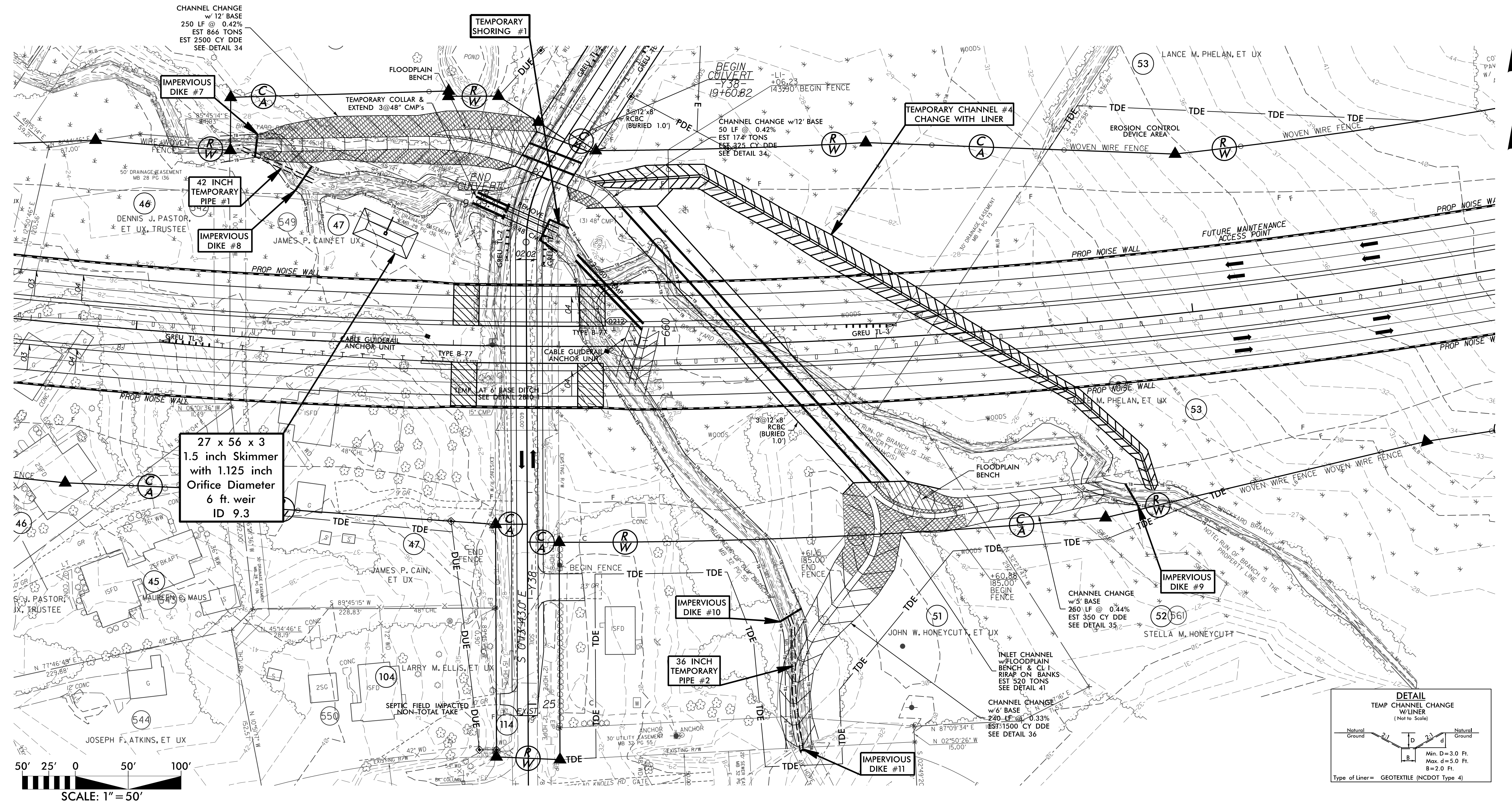
# 3@12'X8' RCBC AT STA. 19+80 -Y38- AND 3@12'X8' RCBC STA. 660+84 -L1- CONSTRUCTION SEQUENCE HARRISONS CREEK

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-09C/CONST.09</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

## PHASE IV

- 1.) INSTALL IMPERVIOUS DIKES #7 AND #8 AND TEMPORARY 42" PIPE #1.
- 2.) DEWATER CONSTRUCTION AREA, UTILIZING SKIMMER BASIN 9.3 FOR PUMPED EFFLUENT.
- 3.) CONSTRUCT REMAINDER OF CHANNEL CHANGE W/12' BASE.
- 4.) EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES.
- 5.) REMOVE IMPERVIOUS DIKES #7 AND #8 AND TEMPORARY 42" PIPE #1.
- 6.) CONSTRUCT TEMPORARY CHANNEL CHANGE WITH LINER #4.
- 7.) INSTALL IMPERVIOUS DIKE #9 AND DIVERT FLOW INTO TEMPORARY CHANNEL.
- 8.) REMOVE IMPERVIOUS DIKE #6 AND TEMPORARY CHANNEL CHANGE #3 (SEE PHASE III).
- 9.) INSTALL IMPERVIOUS DIKES #10 AND #11 AND TEMPORARY 36" PIPE #2.
- 10.) DEWATER CONSTRUCTION AREAS, UTILIZING SPECIAL STILLING BASIN(S) FOR PUMPED EFFLUENT.

- 11.) CONSTRUCT INLET CHANNEL W/FLOODPLAIN BENCH AND CL I RIPRAP ON BANKS, CHANNEL CHANGE W/5' BASE, AND CHANNEL CHANGE W/6' BASE.
- 12.) EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES.
- 13.) REMOVE ANY REMAINING SPECIAL STILLING BASIN(S), IMPERVIOUS DIKES, TEMPORARY 36" PIPE #2, AND TEMPORARY CHANNEL CHANGE #4.
- 14.) DIRECT FLOW THROUGH NEW UPSTREAM CHANNEL CHANGES AND 3@12'X8' RCBC (BURIED 1.0').
- 15.) REMOVE 2@60" TEMPORARY PIPES, EXISTING 3@48" CMPs, 3@48" CMP PIPE EXTENSIONS, AND TEMPORARY SHORING #1.



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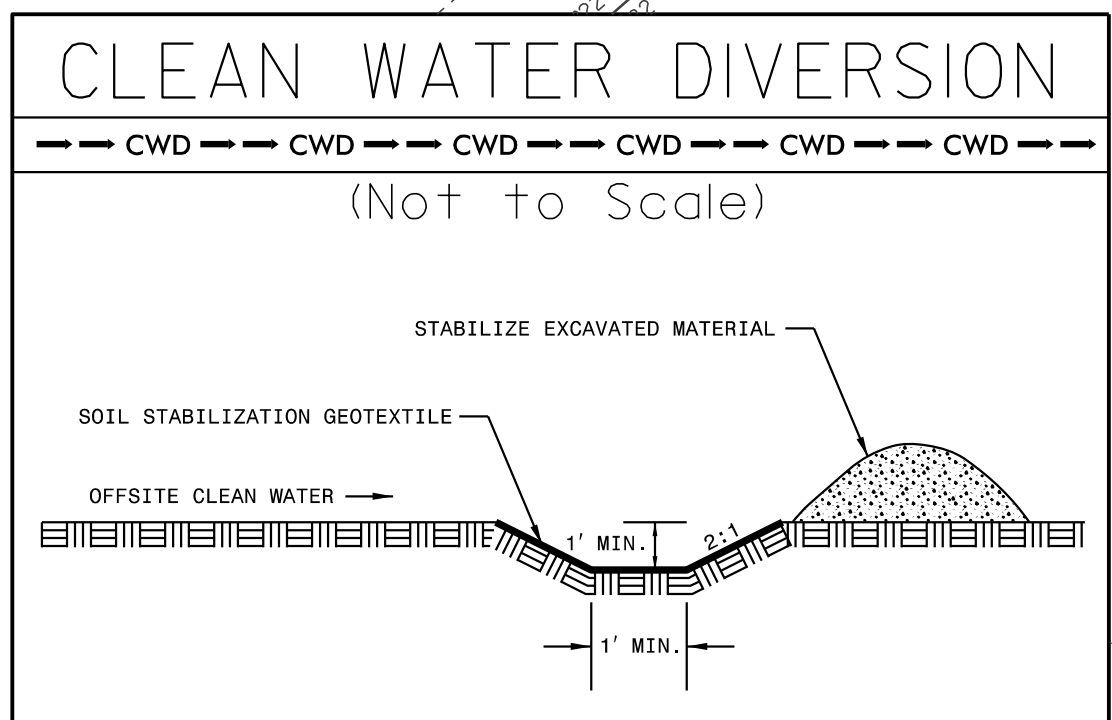






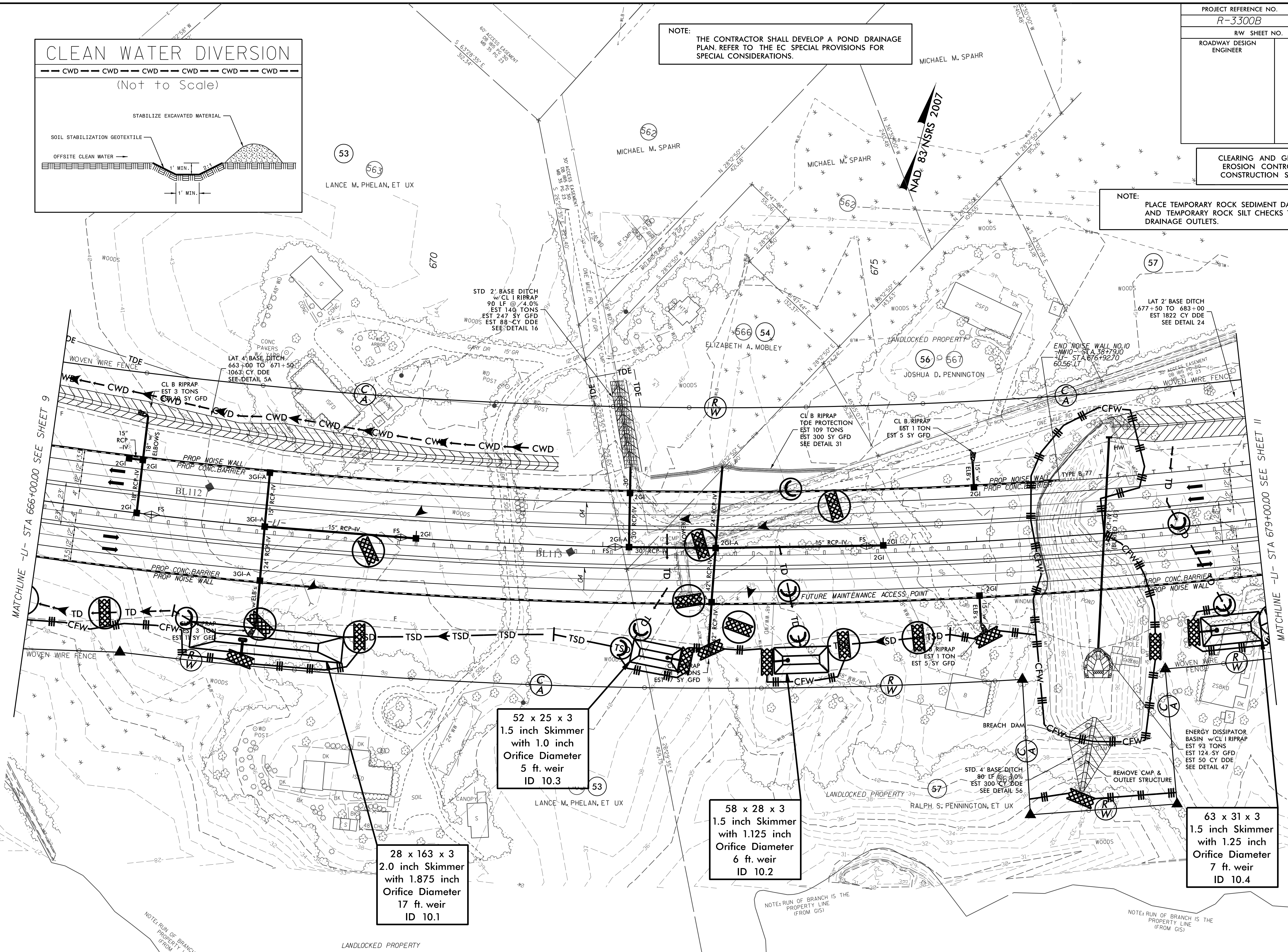
7/27/99

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	EC-10/CONST.10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTE: THE CONTRACTOR SHALL DEVELOP A POND DRAINAGE PLAN. REFER TO THE EC SPECIAL PROVISIONS FOR SPECIAL CONSIDERATIONS.

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



52 x 25 x 3  
1.5 inch Skimmer  
with 1.0 inch  
Orifice Diameter  
5 ft. weir  
ID 10.3

58 x 28 x 3  
1.5 inch Skimmer  
with 1.125 inch  
Orifice Diameter  
6 ft. weir  
ID 10.2

28 x 163 x 3  
2.0 inch Skimmer  
with 1.875 inch  
Orifice Diameter  
17 ft. weir  
ID 10.1

63 x 31 x 3  
1.5 inch Skimmer  
with 1.25 inch  
Orifice Diameter  
7 ft. weir  
ID 10.4

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA  
SEE SHEETS 37 FOR -L1- PROFILE

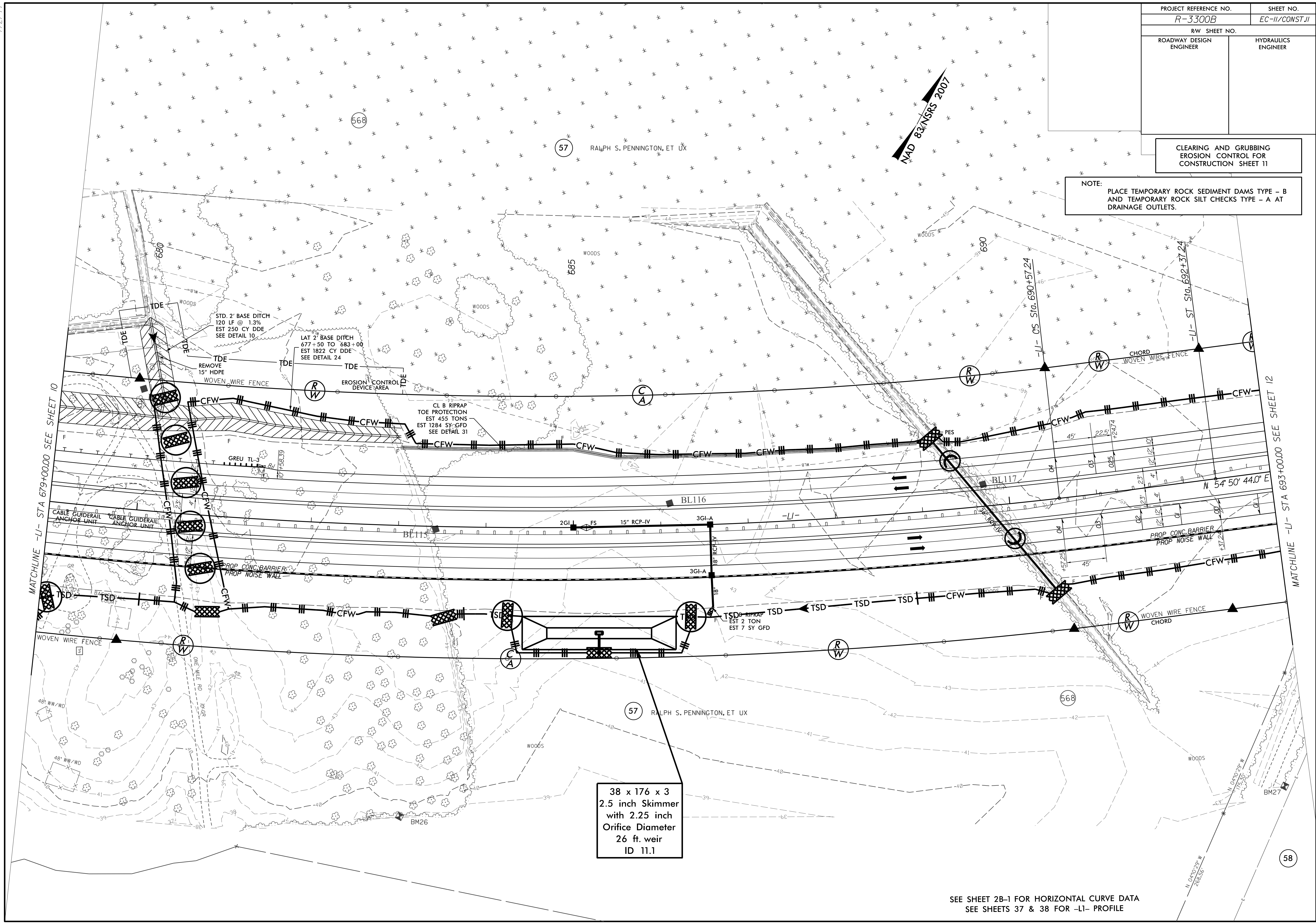


7/27/99

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-II/CONST.II</i>
RW SHEET NO.	
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.



38 x 176 x 3  
2.5 inch Skimmer  
with 2.25 inch  
Orifice Diameter  
26 ft. weir  
ID 11.1

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA  
SEE SHEETS 37 & 38 FOR -L1- PROFILE

58



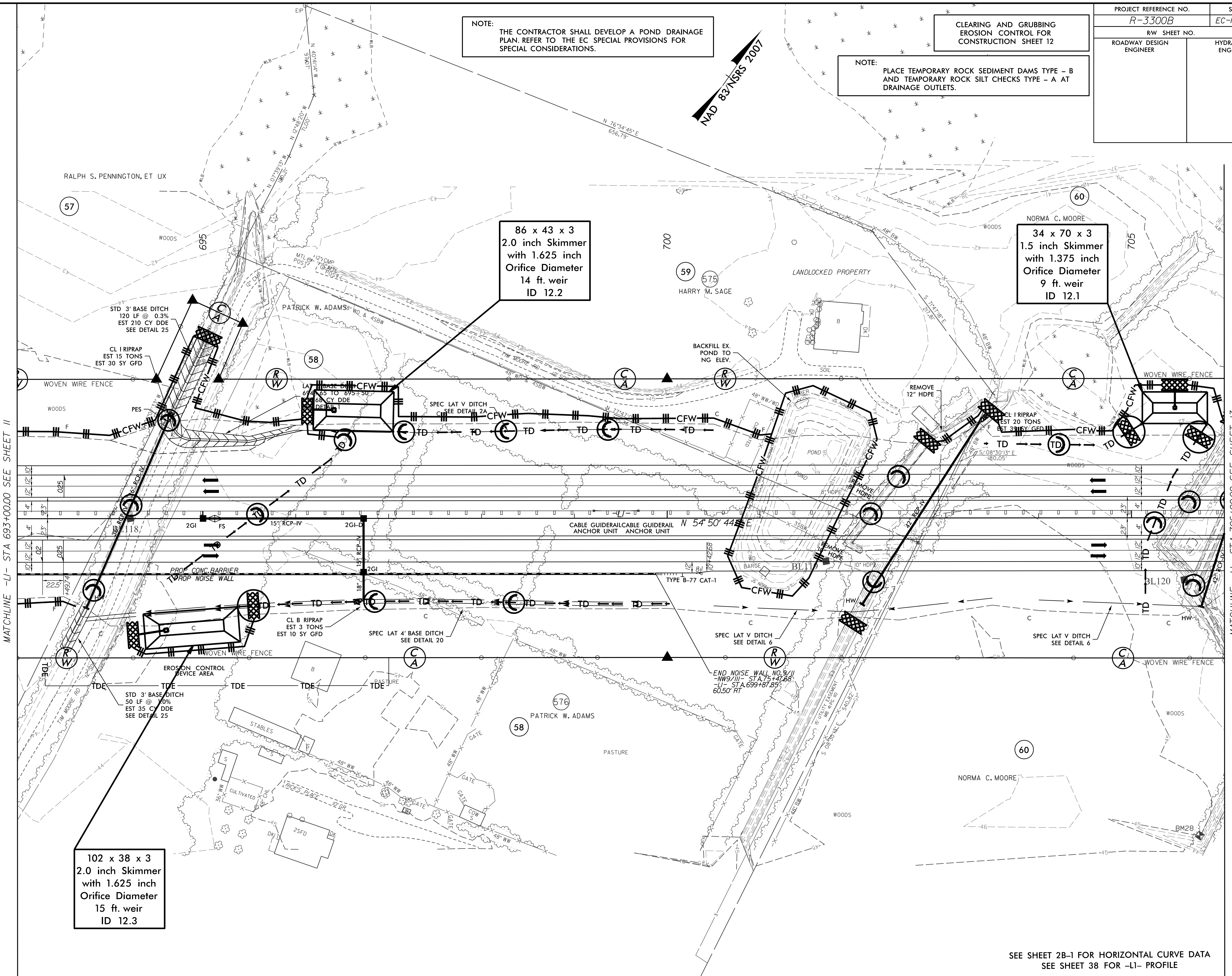
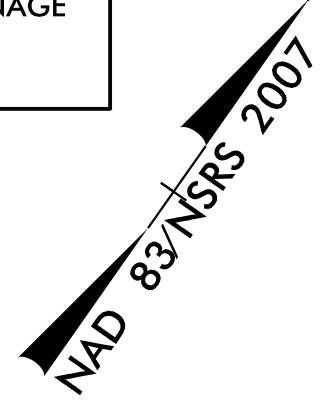
7/2/99

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-12/CONST.12</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTE: THE CONTRACTOR SHALL DEVELOP A POND DRAINAGE PLAN. REFER TO THE EC SPECIAL PROVISIONS FOR SPECIAL CONSIDERATIONS.

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



86 x 43 x 3  
2.0 inch Skimmer  
with 1.625 inch  
Orifice Diameter  
14 ft. weir  
ID 12.2

34 x 70 x 3  
1.5 inch Skimmer  
with 1.375 inch  
Orifice Diameter  
9 ft. weir  
ID 12.1

102 x 38 x 3  
2.0 inch Skimmer  
with 1.625 inch  
Orifice Diameter  
15 ft. weir  
ID 12.3

MATCHLINE -LI- STA 693+00.00 SEE SHEET 11

MATCHLINE -LI- STA 706+00.00 SEE SHEET 13

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA  
SEE SHEET 38 FOR -LI- PROFILE

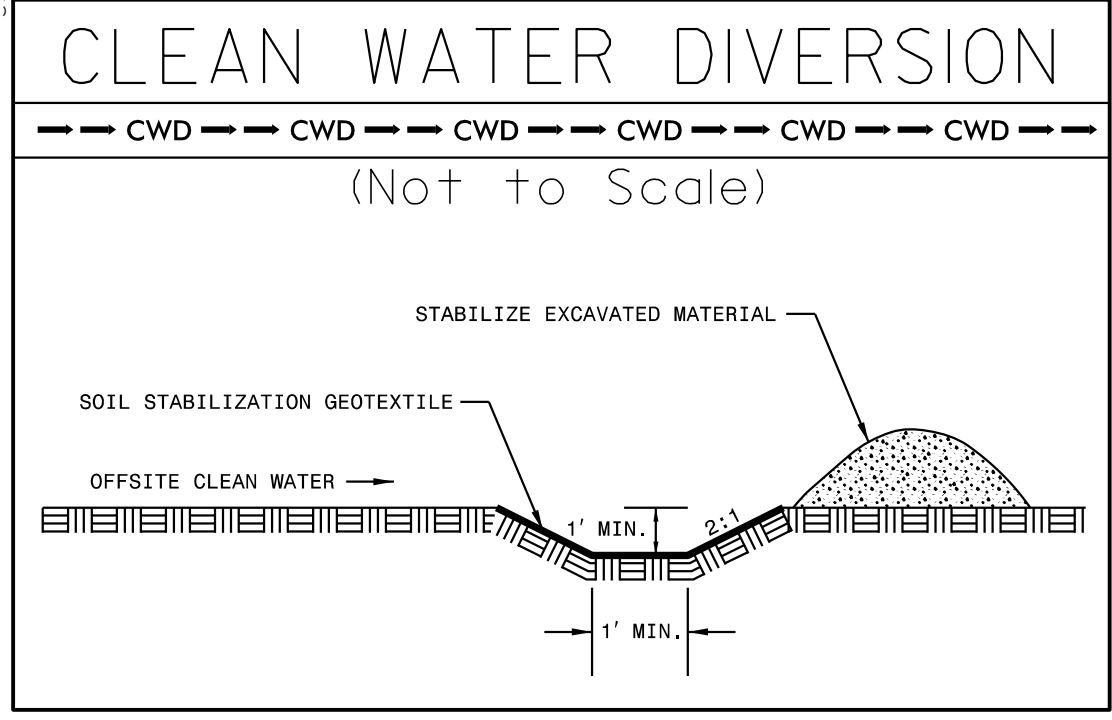
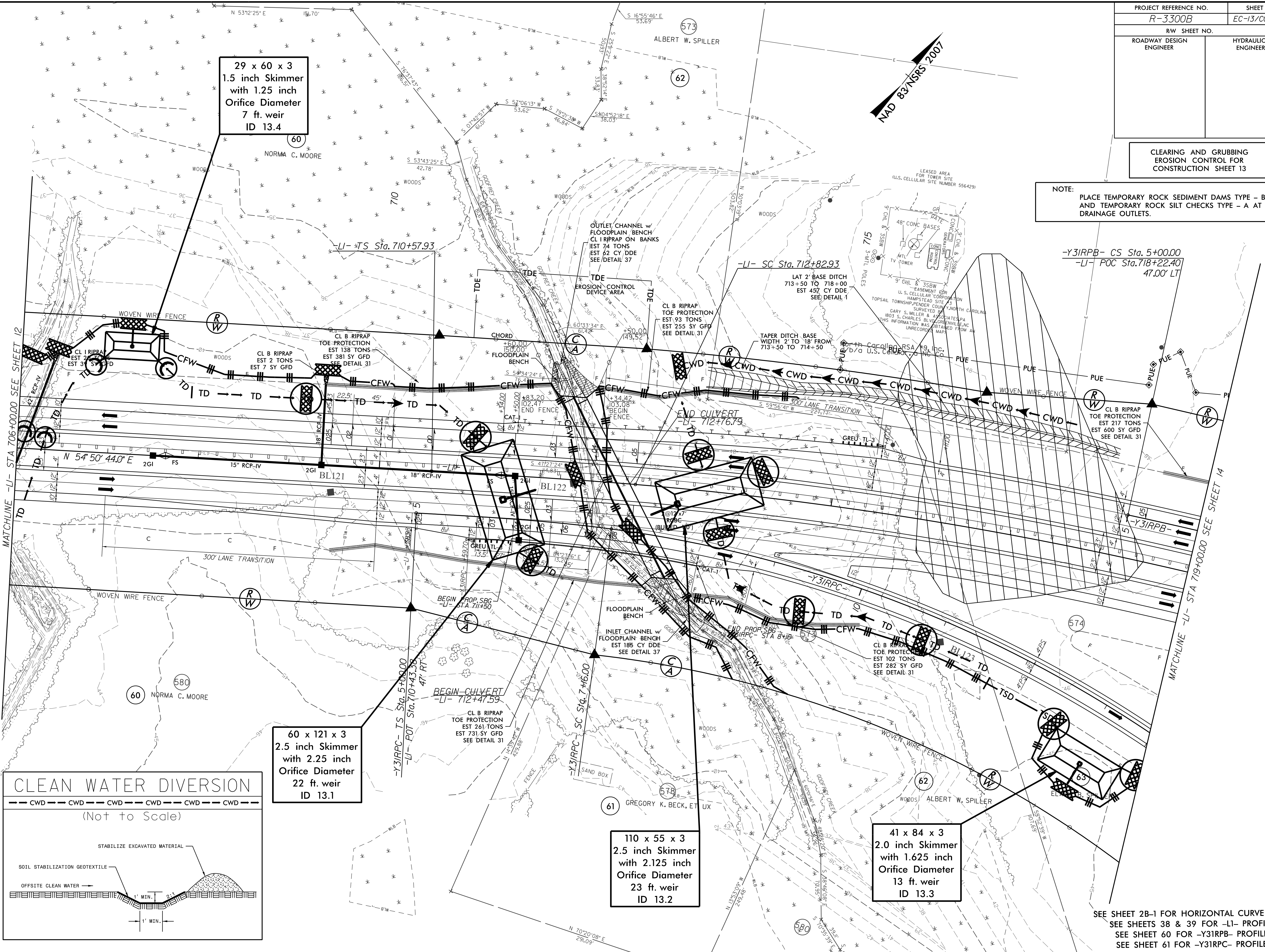


7/27/99

PROJECT REFERENCE NO. <b>R-3300B</b>	SHEET NO. <b>EC-13/CONST J3</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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.



SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA  
SEE SHEETS 38 & 39 FOR -L1- PROFILE  
SEE SHEET 60 FOR -Y3IRPB- PROFILE  
SEE SHEET 61 FOR -Y3IRPC- PROFILE



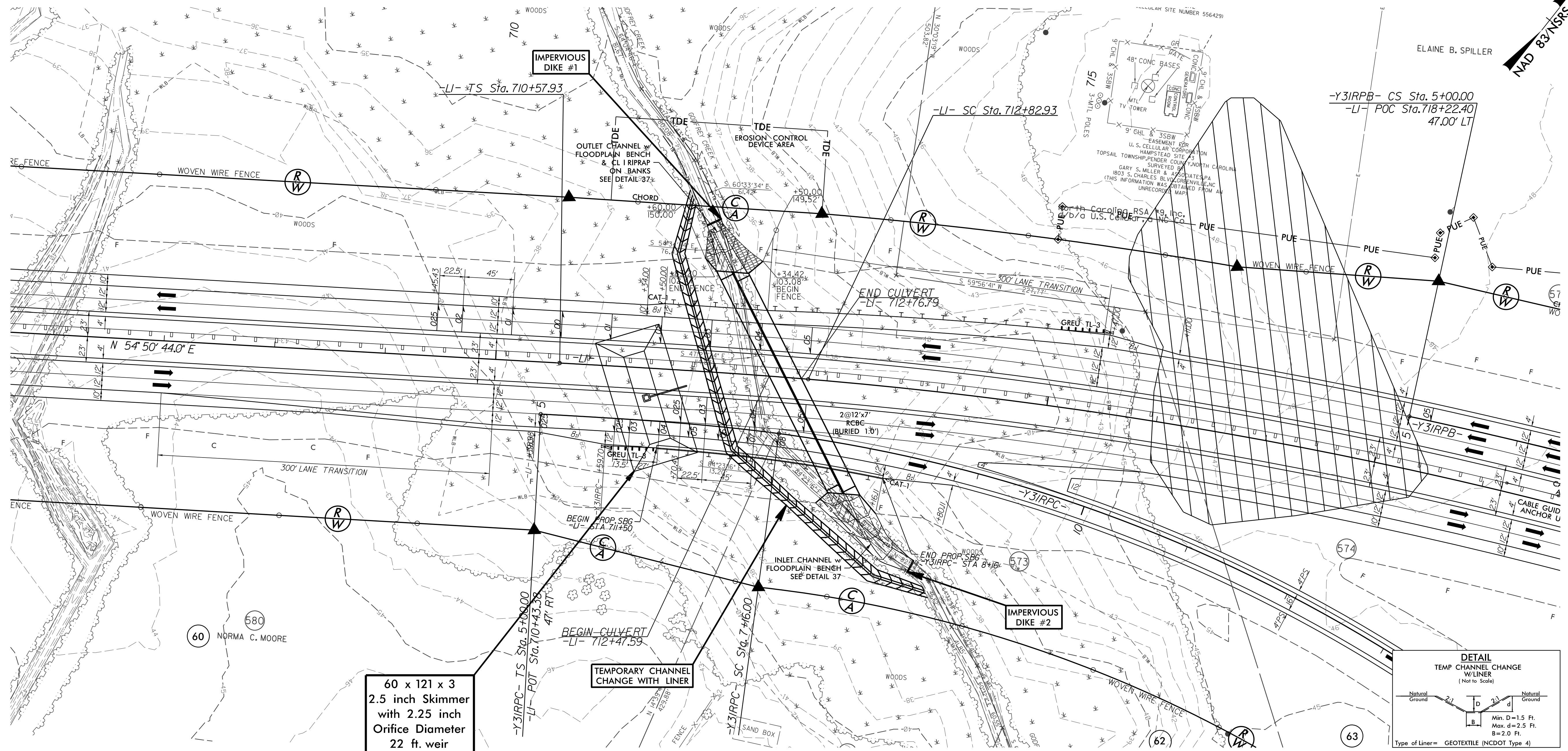
7/2/99

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

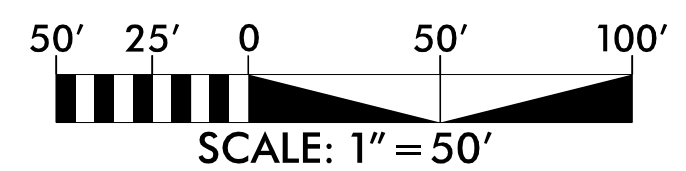
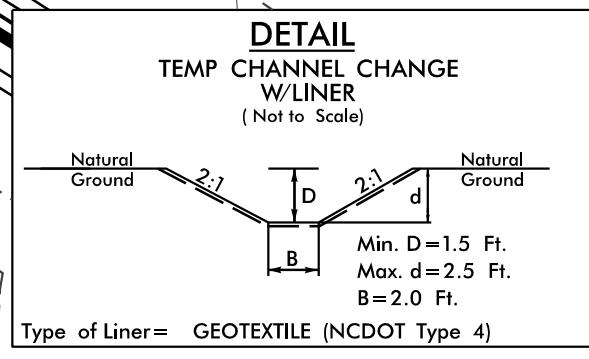
# 2@12'X7' RCBC CONSTRUCTION SEQUENCE STA. 712 + 62 -L1- UT TO GODFREY CREEK

## PHASE I

- 1.) UTILIZE SKIMMER BASIN 13.1 AS STILLING BASIN DURING CULVERT CONSTRUCTION.
- 2.) CONSTRUCT TEMPORARY CHANNEL CHANGE WITH LINER.
- 3.) INSTALL IMPERVIOUS DIKES #1 AND #2 AND DIVERT FLOW INTO TEMPORARY CHANNEL.
- 4.) DEWATER CONSTRUCTION AREA, UTILIZING SKIMMER BASIN 13.1 FOR PUMPED EFFLUENT.
- 5.) CONSTRUCT 2@12'X7' RCBC (BURIED 1.0'), INLET CHANNEL W/FLOODPLAIN BENCH, AND OUTLET CHANNEL W/FLOODPLAIN BENCH & CL RIPRAP ON BANKS.
- 6.) EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES.
- 7.) REMOVE IMPERVIOUS DIKES #1, #2, AND #3 AND TEMPORARY CHANNEL CHANGE W/LINER.
- 8.) DIRECT FLOW THROUGH 1@12'X7' RCBC (BURIED 1.0').
- 9.) COMPLETE ROADWAY.



60 x 121 x 3  
2.5 inch Skimmer  
with 2.25 inch  
Orifice Diameter  
22 ft. weir  
ID 13.1



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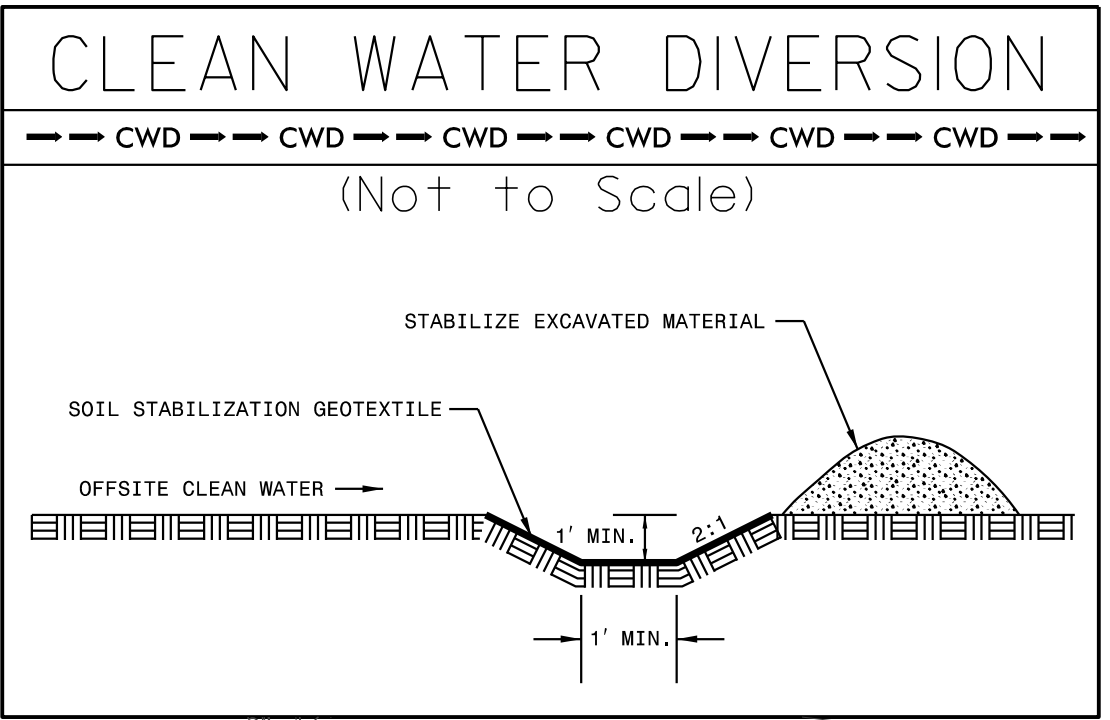






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PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-15/CONST15</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

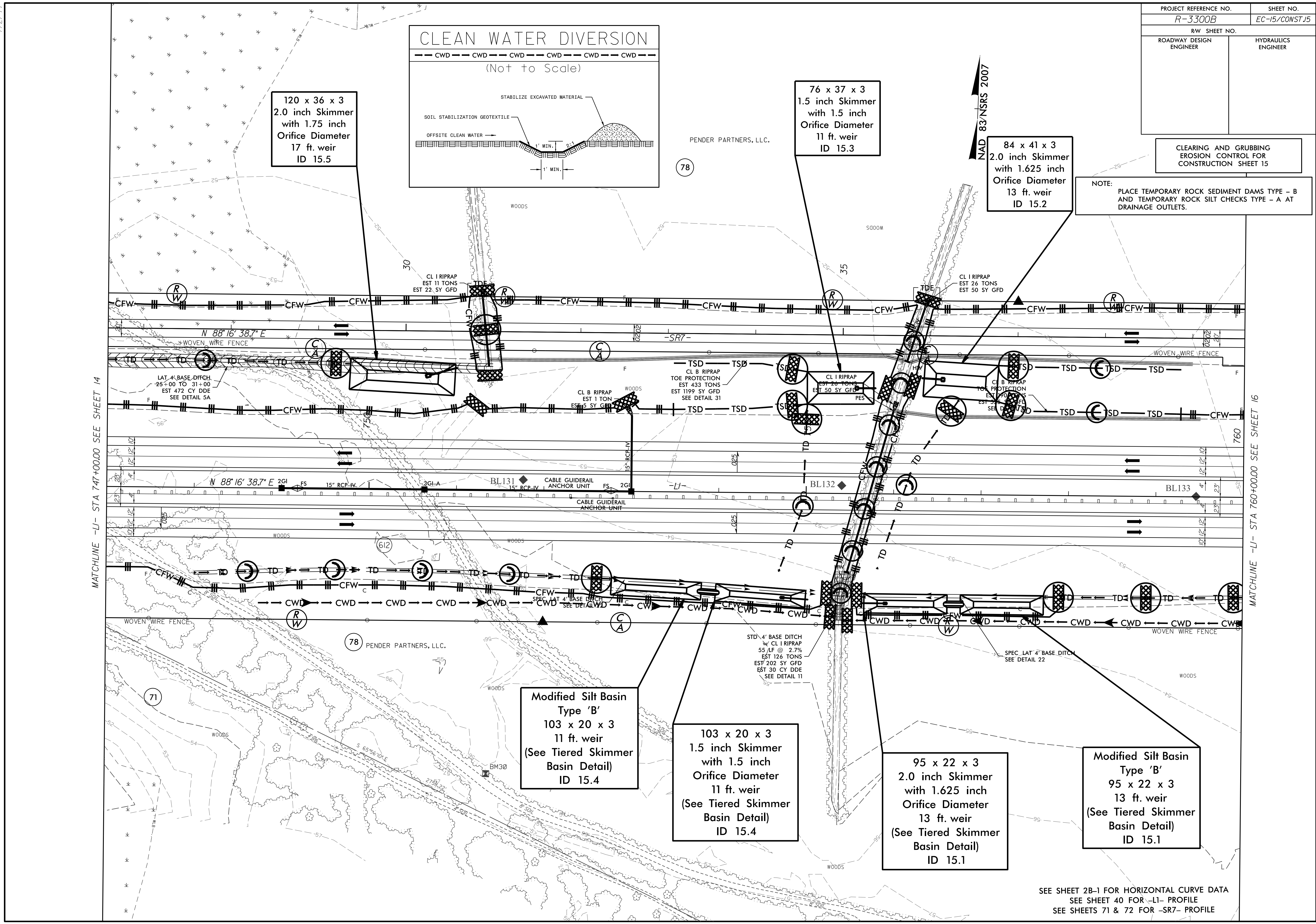


PENDER PARTNERS, LLC.

NAD 83/NSRS 2007

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.



MATCHLINE -L1- STA 747+00.00 SEE SHEET 14

MATCHLINE -L1- STA 760+00.00 SEE SHEET 16

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA  
SEE SHEET 40 FOR -L1- PROFILE  
SEE SHEETS 71 & 72 FOR -SR7- PROFILE

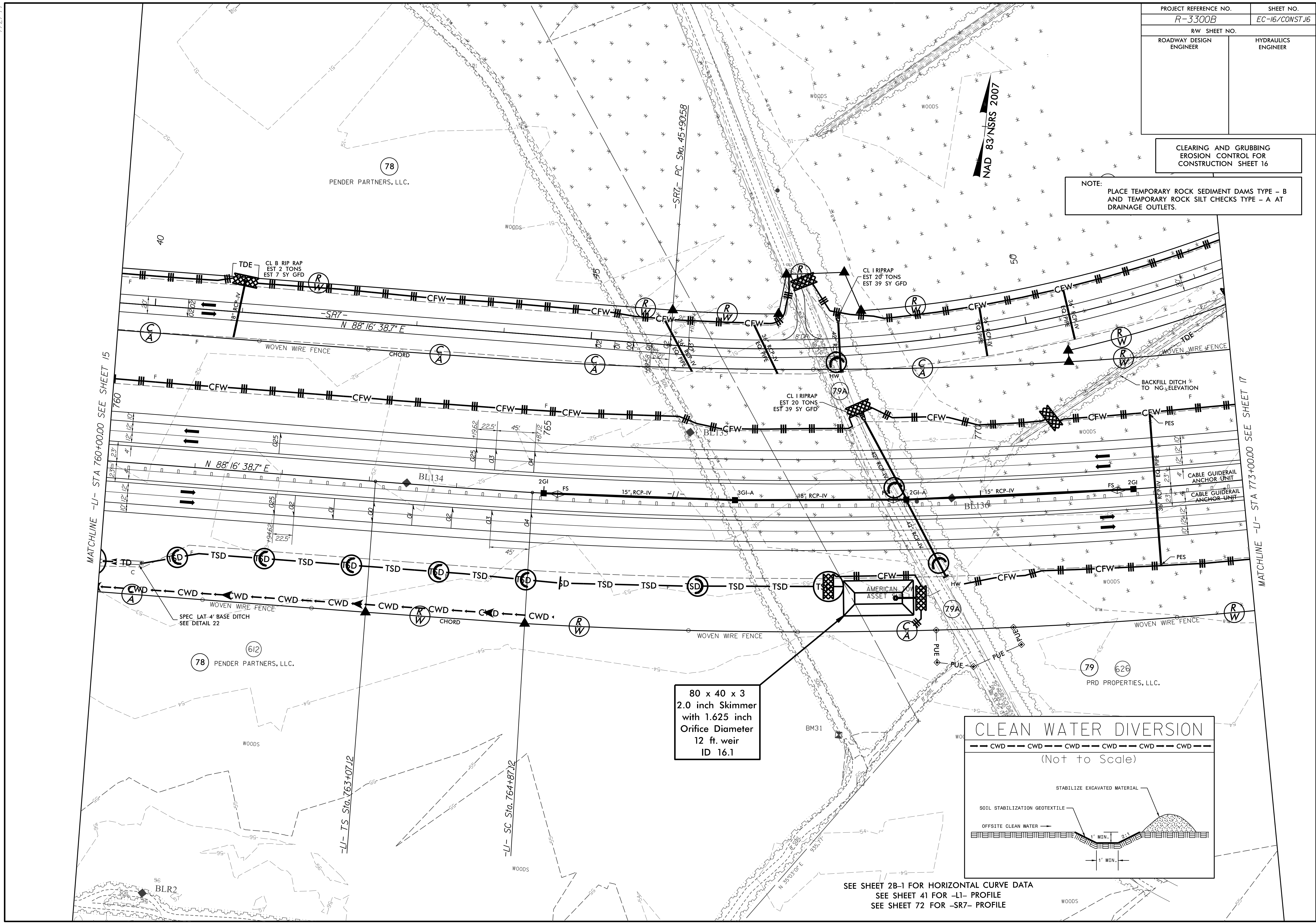


7/27/99

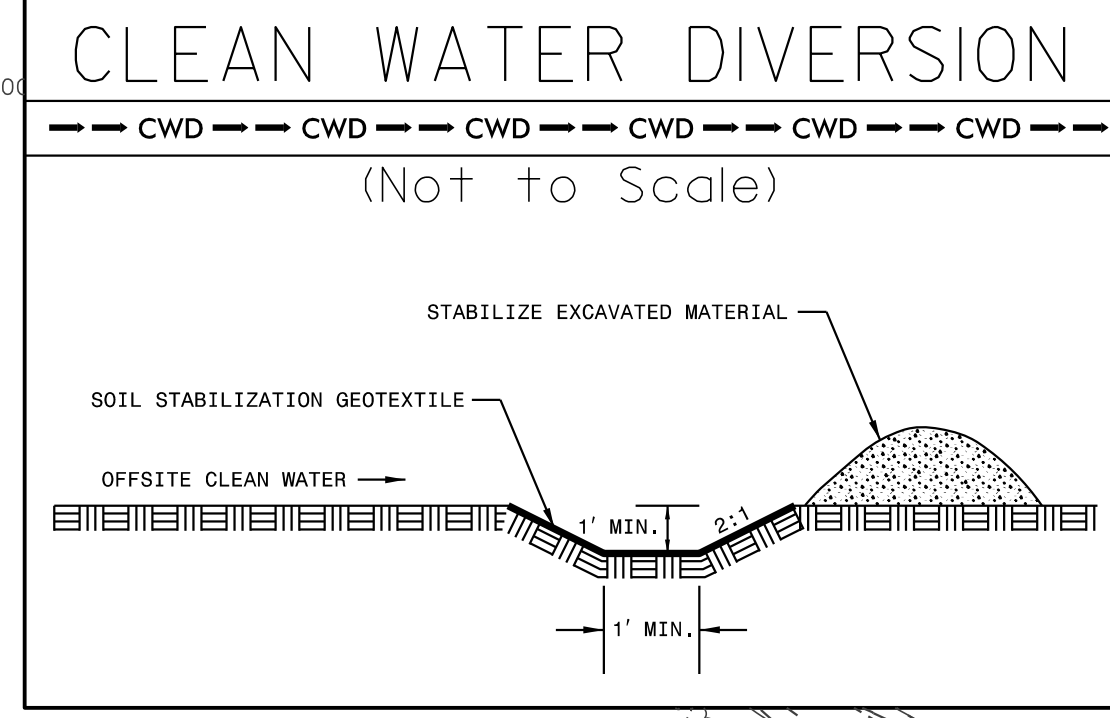
PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-16/CONST.16</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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.



80 x 40 x 3  
2.0 inch Skimmer  
with 1.625 inch  
Orifice Diameter  
12 ft. weir  
ID 16.1



SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA  
SEE SHEET 41 FOR -L1- PROFILE  
SEE SHEET 72 FOR -SR7- PROFILE

MATCHLINE -L1- STA 760+00.00 SEE SHEET 15

MATCHLINE -L1- STA 773+00.00 SEE SHEET 17

-L1- TS Sta. 763+07.12

-L1- SC Sta. 764+87.12

78 PENDER PARTNERS, LLC.

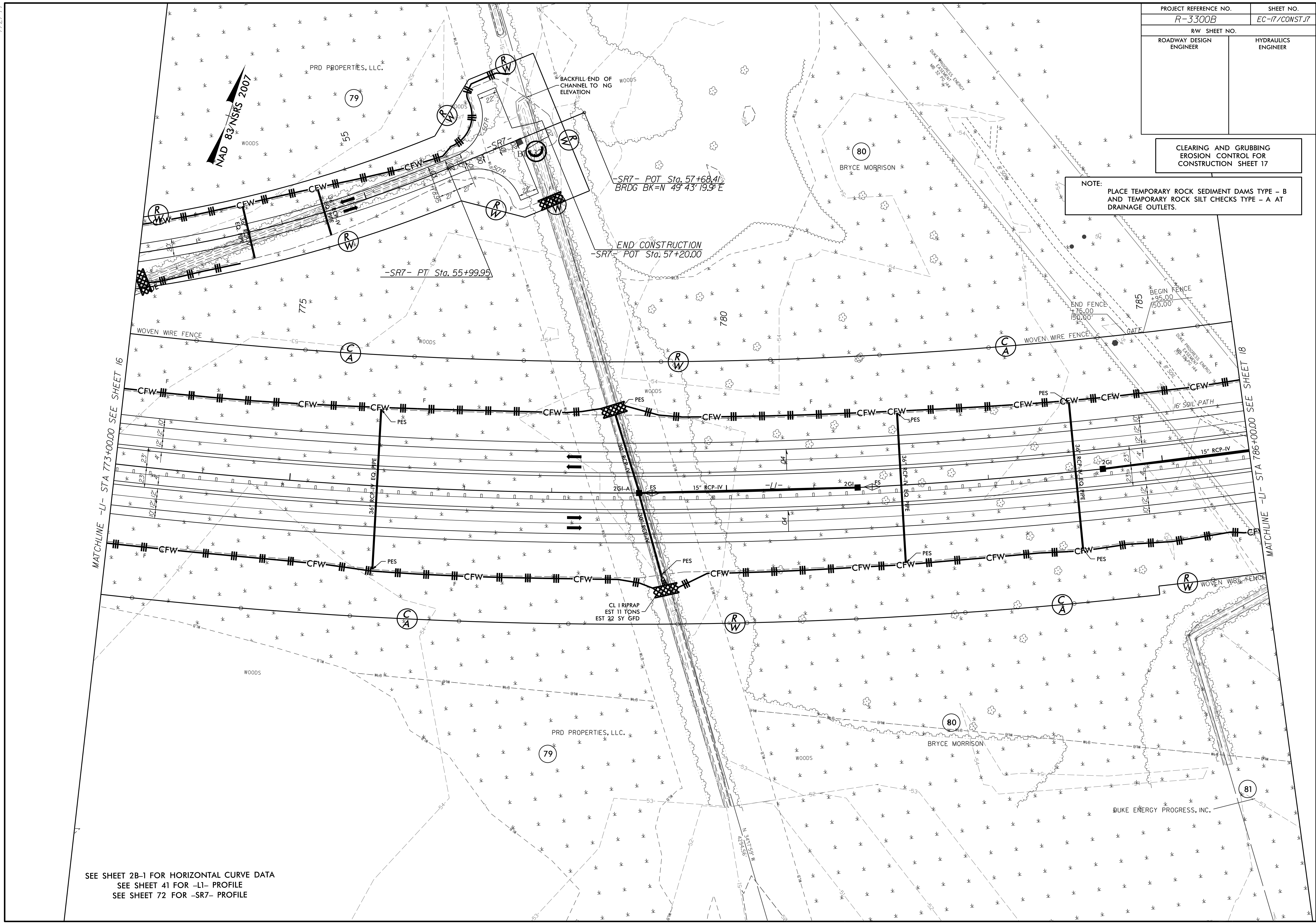
79 PRD PROPERTIES, LLC.

7/27/99

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-17/CONST.17</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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.



SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA  
SEE SHEET 41 FOR -L1- PROFILE  
SEE SHEET 72 FOR -SR7- PROFILE

MATCHLINE -L1- STA 773+00.00 SEE SHEET 16

MATCHLINE -L1- STA 786+00.00 SEE SHEET 18

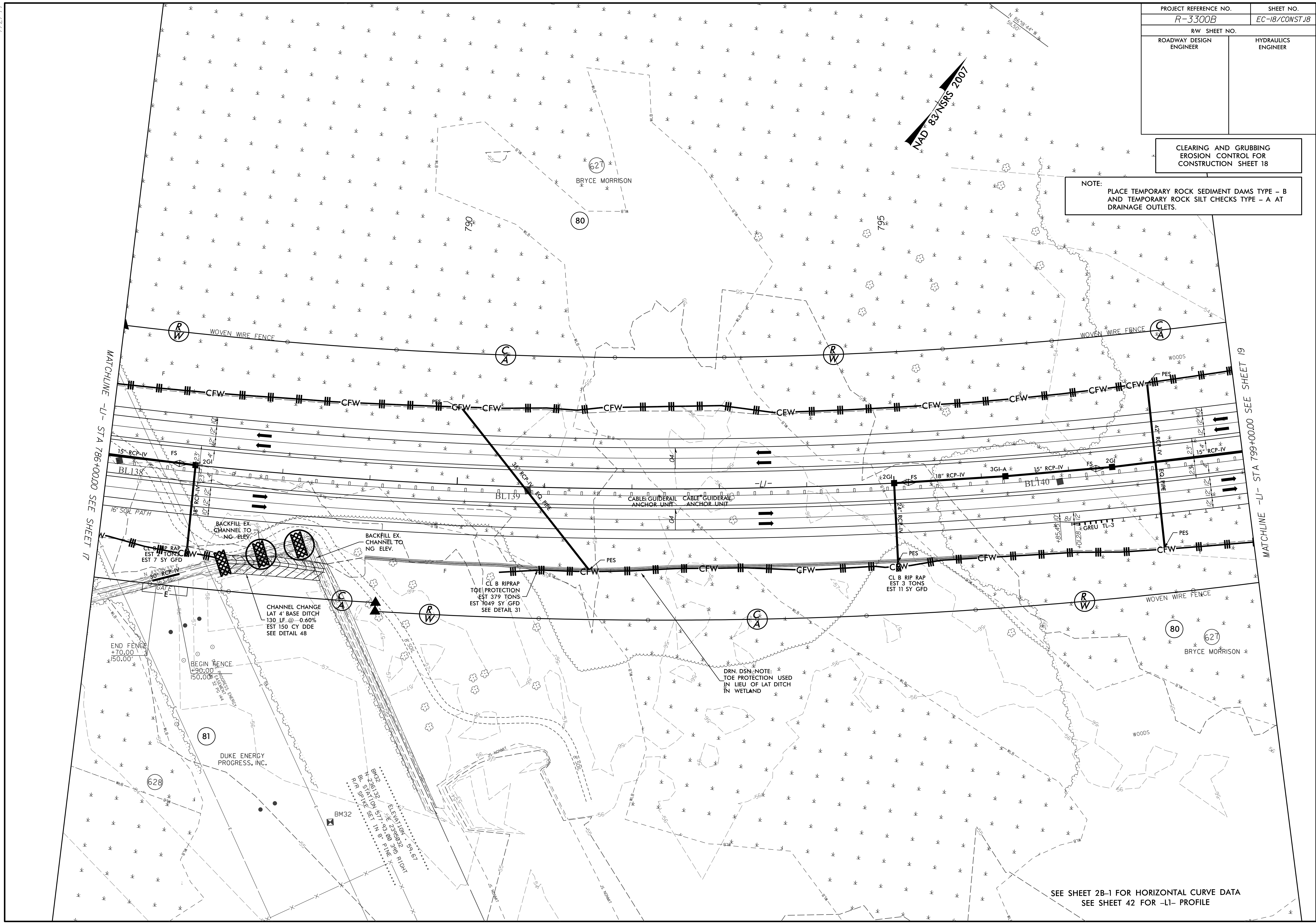


7/22/99

PROJECT REFERENCE NO. <b>R-3300B</b>	SHEET NO. <b>EC-18/CONST JB</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 18

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



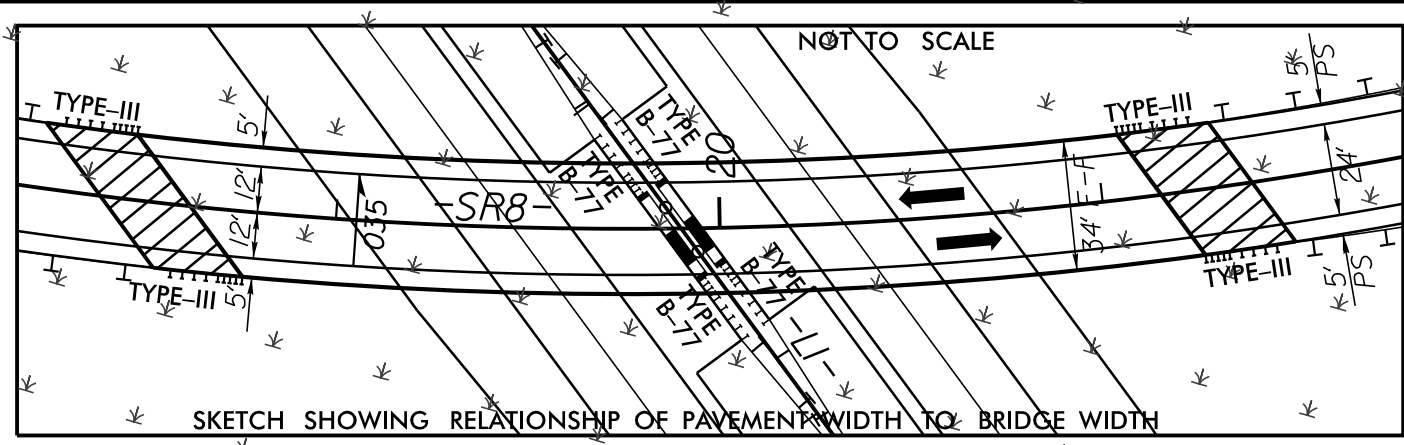
MATCHLINE -L- STA 786+00.00 SEE SHEET 17

MATCHLINE -L- STA 799+00.00 SEE SHEET 19

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



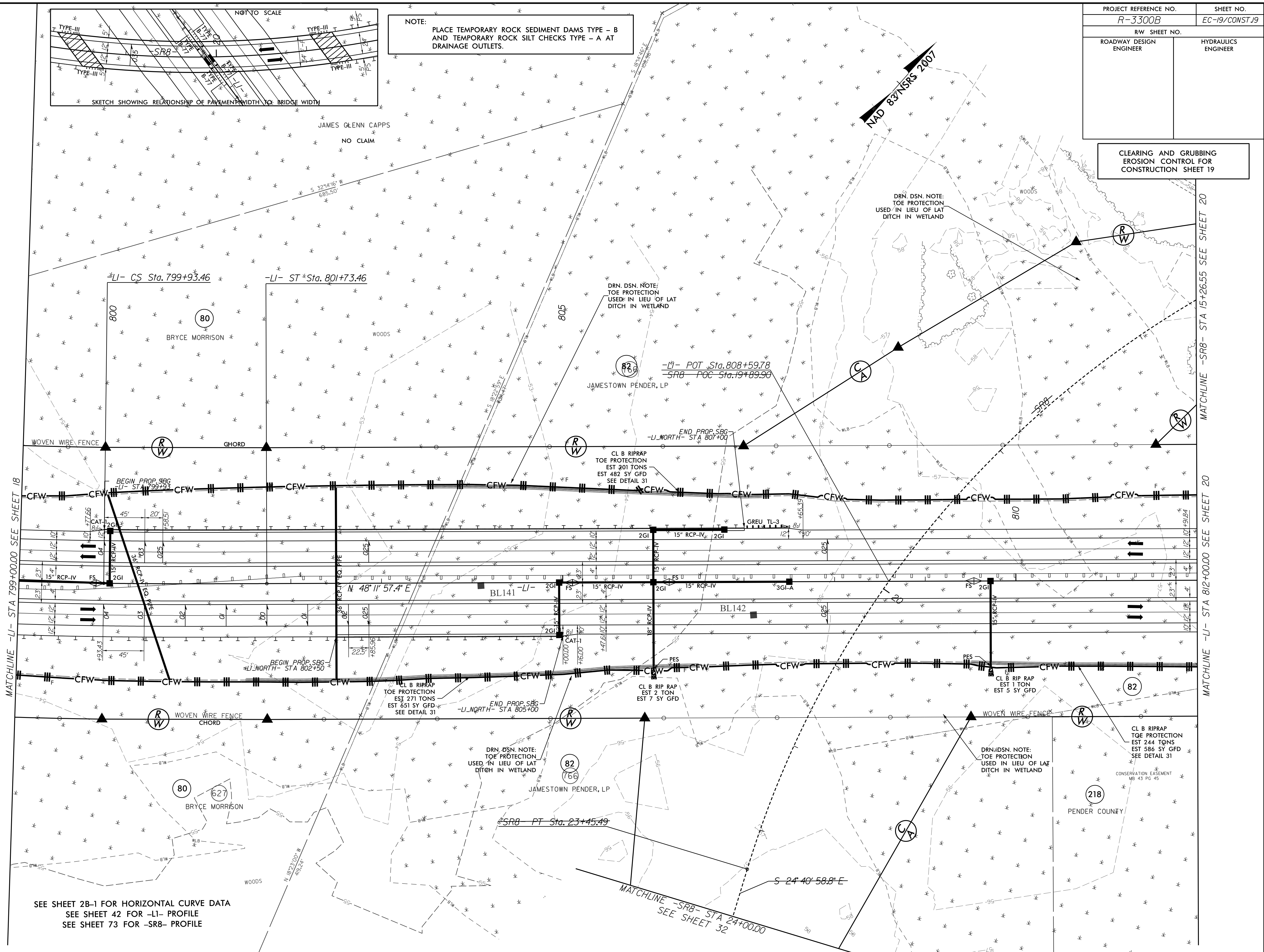
7/27/99



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

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. EC-19/CONST.19
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 19



MATCHLINE -LI- STA 799+00.00 SEE SHEET 18

MATCHLINE -SR8- STA 15+26.55 SEE SHEET 20

MATCHLINE -LI- STA 812+00.00 SEE SHEET 20

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA  
SEE SHEET 42 FOR -LI- PROFILE  
SEE SHEET 73 FOR -SR8- PROFILE

MATCHLINE -SR8- STA 24+00.00  
SEE SHEET 32



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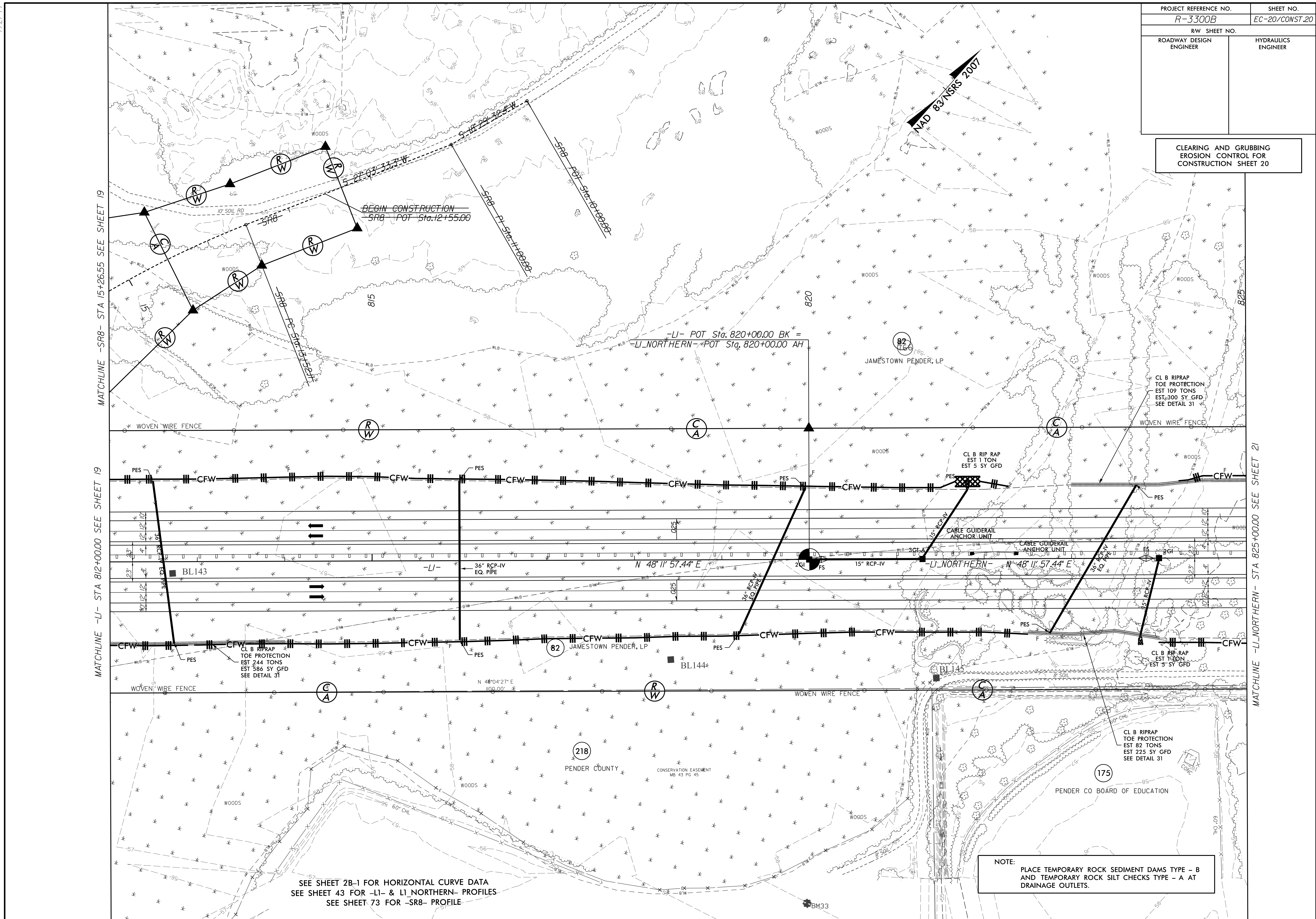
PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-20/CONST.20</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 20

MATCHLINE -SR8- STA 15+26.55 SEE SHEET 19

MATCHLINE -LI- STA 812+00.00 SEE SHEET 19

MATCHLINE -LI-NORTHERN- STA 825+00.00 SEE SHEET 21



SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA  
SEE SHEET 43 FOR -LI- & LI NORTHERN- PROFILES  
SEE SHEET 73 FOR -SR8- PROFILE

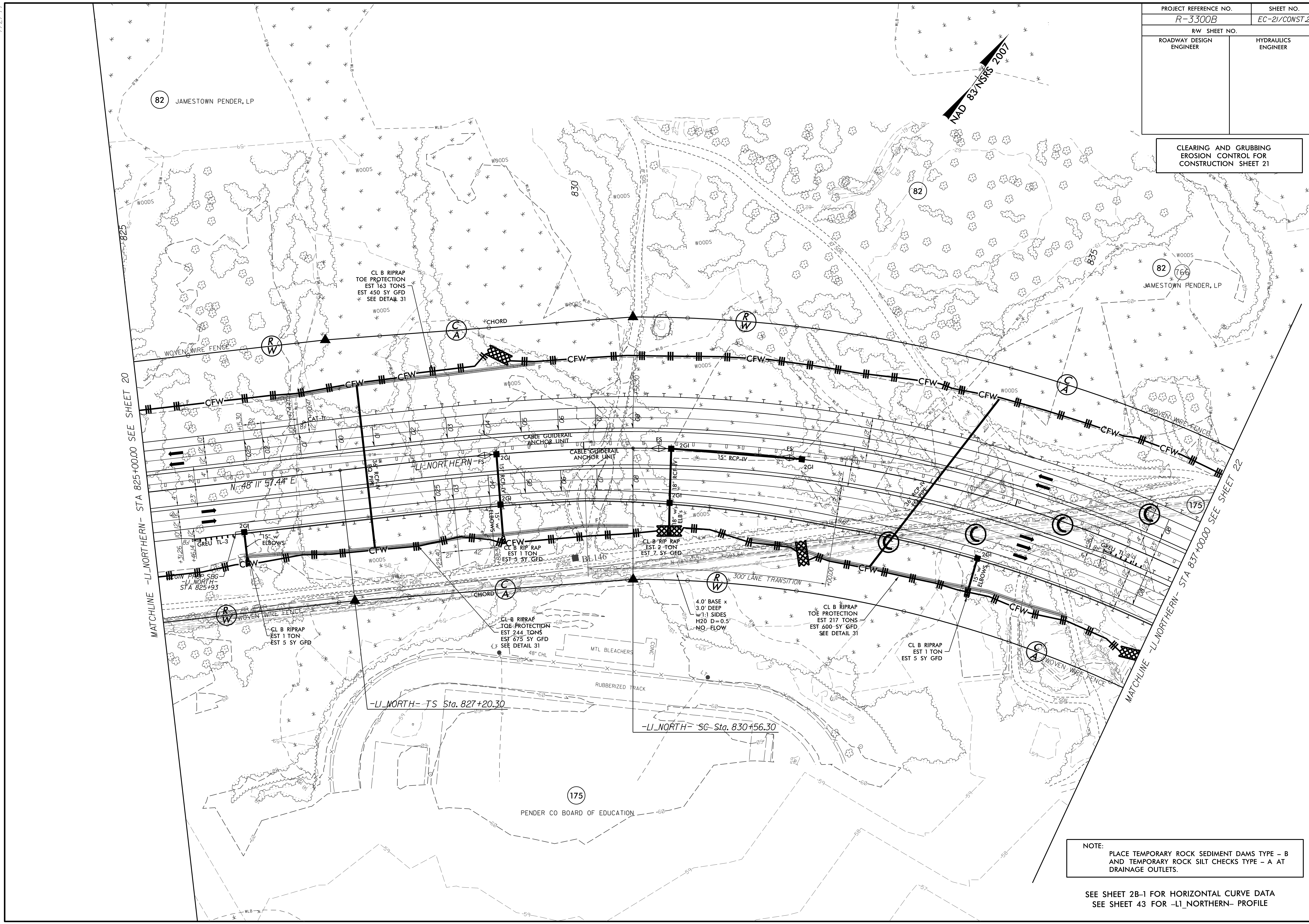
NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B  
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT  
DRAINAGE OUTLETS.



7/27/99

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-21/CONST.21</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 21**



MATCHLINE -L1\_NORTHERN- STA 825+00.00 SEE SHEET 20

MATCHLINE -L1\_NORTHERN- STA 837+00.00 SEE SHEET 22

82 JAMESTOWN PENDER, LP

82 JAMESTOWN PENDER, LP

175 PENDER CO BOARD OF EDUCATION

NAD 83 NSRS 2007

CL B RIPRAP  
TOE PROTECTION  
EST 163 TONS  
EST 450 SY GFD  
SEE DETAIL 31

CL B RIPRAP  
TOE PROTECTION  
EST 1 TON  
EST 5 SY GFD  
SEE DETAIL 31

CL B RIPRAP  
TOE PROTECTION  
EST 2 TON  
EST 7 SY GFD  
SEE DETAIL 31

CL B RIPRAP  
TOE PROTECTION  
EST 217 TONS  
EST 600 SY GFD  
SEE DETAIL 31

CL B RIPRAP  
EST 1 TON  
EST 5 SY GFD

CL B RIPRAP  
EST 1 TON  
EST 5 SY GFD

CL B RIPRAP  
TOE PROTECTION  
EST 244 TONS  
EST 675 SY GFD  
SEE DETAIL 31

-L1\_NORTH- SG- Sta. 830+56.30

-L1\_NORTH- TS Sta. 827+20.30

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

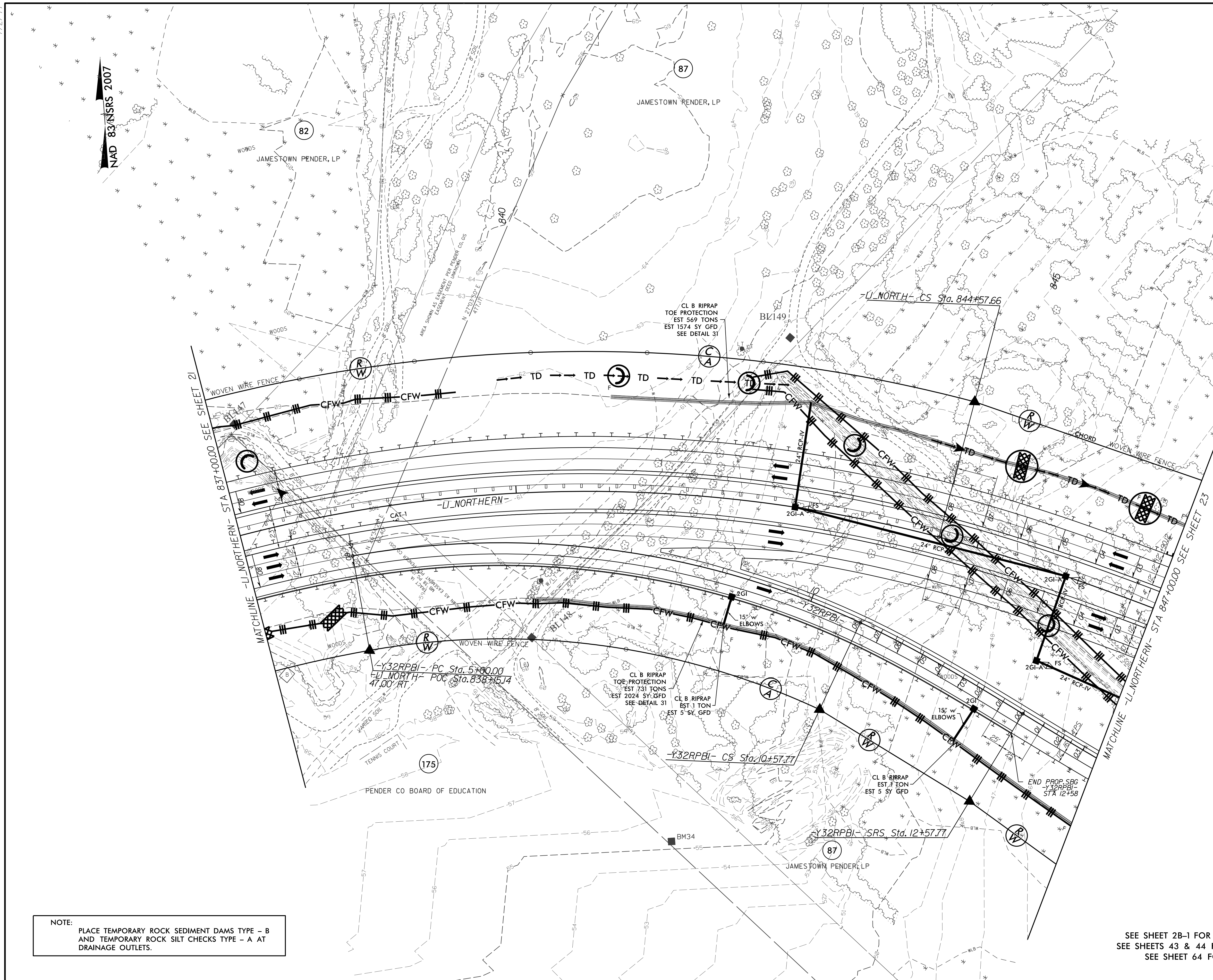
SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA  
SEE SHEET 43 FOR -L1\_NORTHERN- PROFILE



7/22/99

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-22/CONST.22</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 22

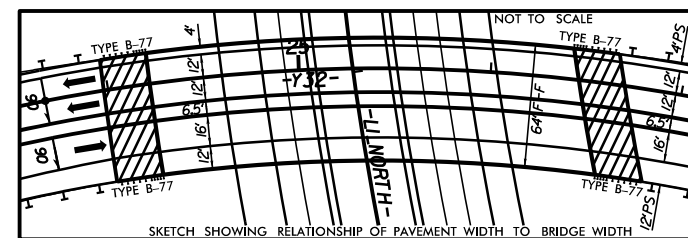
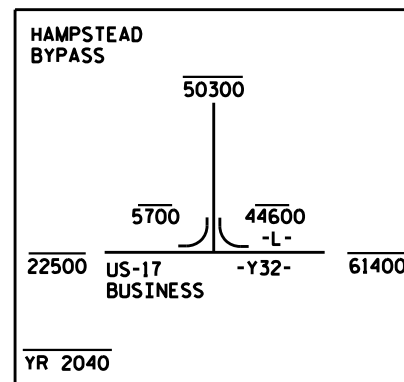


NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B  
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT  
DRAINAGE OUTLETS.

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA  
SEE SHEETS 43 & 44 FOR -LJ NORTHERN- PROFILE  
SEE SHEET 64 FOR -Y32RPBI- PROFILE

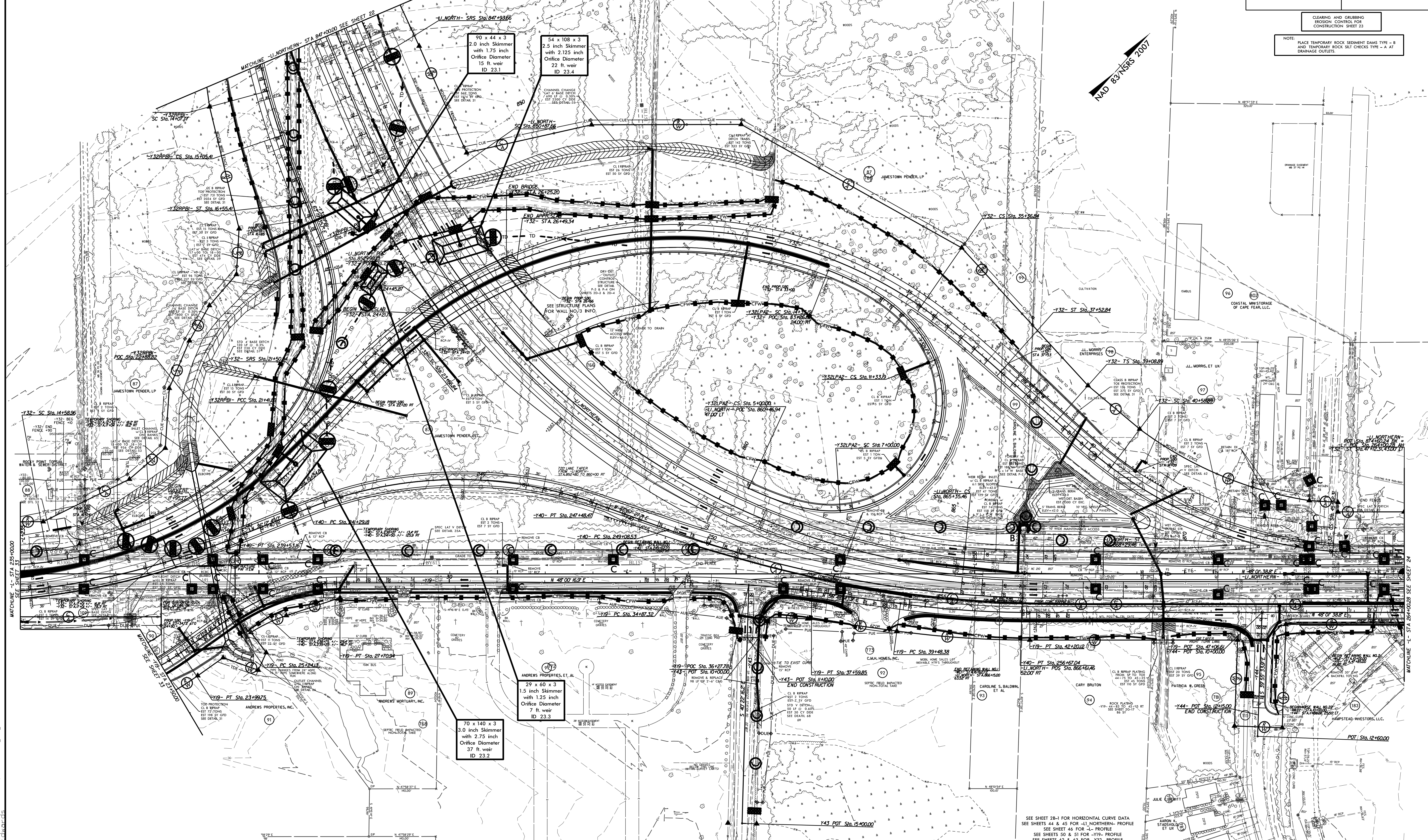
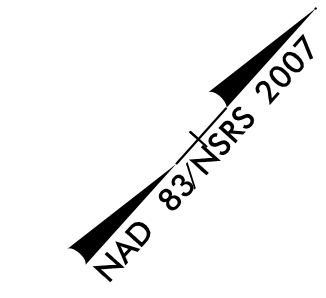


5/14/99



PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>EC-23/CONST.23</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTE: CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 23  
 PLACE TEMPORARY ROCK SEEDMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.



SEE SHEET 28-1 FOR HORIZONTAL CURVE DATA  
 SEE SHEETS 44 & 45 FOR -L1 NORTHERN- PROFILE  
 SEE SHEET 46 FOR -L- PROFILE  
 SEE SHEETS 50 & 51 FOR -Y19- PROFILE  
 SEE SHEETS 62 & 63 FOR -Y32- PROFILE  
 SEE SHEET 64 FOR -Y32PA2- PROFILE  
 SEE SHEETS 64 & 65 FOR -Y32BRI- PROFILE  
 SEE SHEET 66 FOR -Y40- PROFILE  
 SEE SHEET 67 FOR -Y44- & -Y43- PROFILES

R:\50002\EC-dsn-psh-23.cg.dgn  
 M:\cwork\ec



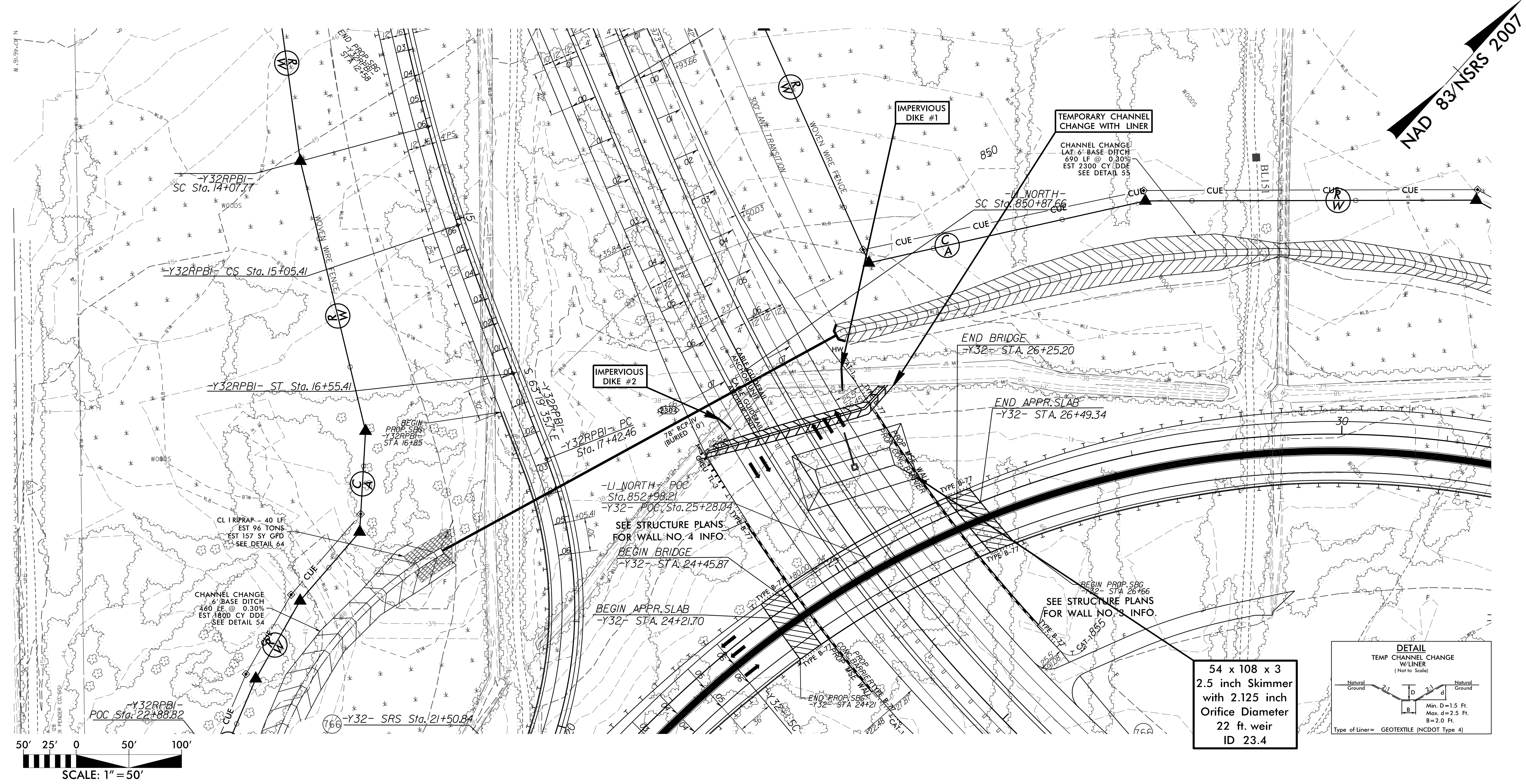
7/2/99

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	EC-23A/CONST.23
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# 78" RCP-IV CONSTRUCTION SEQUENCE STA. 851+00 -LI\_NORTHERN- UT TO OLD TOPSAIL CREEK

## PHASE I

- 1.) UTILIZE SKIMMER BASIN 23.4 AS STILLING BASIN DURING CULVERT CONSTRUCTION.
- 2.) CONSTRUCT TEMPORARY CHANNEL CHANGE WITH LINER.
- 3.) INSTALL IMPERVIOUS DIKES #1 AND #2 AND DIVERT FLOW INTO TEMPORARY CHANNEL.
- 4.) DEWATER CONSTRUCTION AREA, UTILIZING SKIMMER BASIN 23.4 FOR PUMPED EFFLUENT.
- 5.) INSTALL 78" RCP-IV (BURIED 1.0') UPSTREAM LATERAL CHANNEL CHANGE 6' BASE DITCH, AND DOWNSTREAM CHANNEL CHANGE 6' BASE DITCH.
- 6.) EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES.
- 7.) REMOVE IMPERVIOUS DIKES #1, #2, AND TEMPORARY CHANNEL CHANGE W/LINER.
- 8.) DIRECT FLOW THROUGH 78" RCP-IV.
- 9.) COMPLETE ROADWAY.





7/2/99

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	EC-23B/CONST.23
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# 1@8'X6' RCBC CONSTRUCTION SEQUENCE

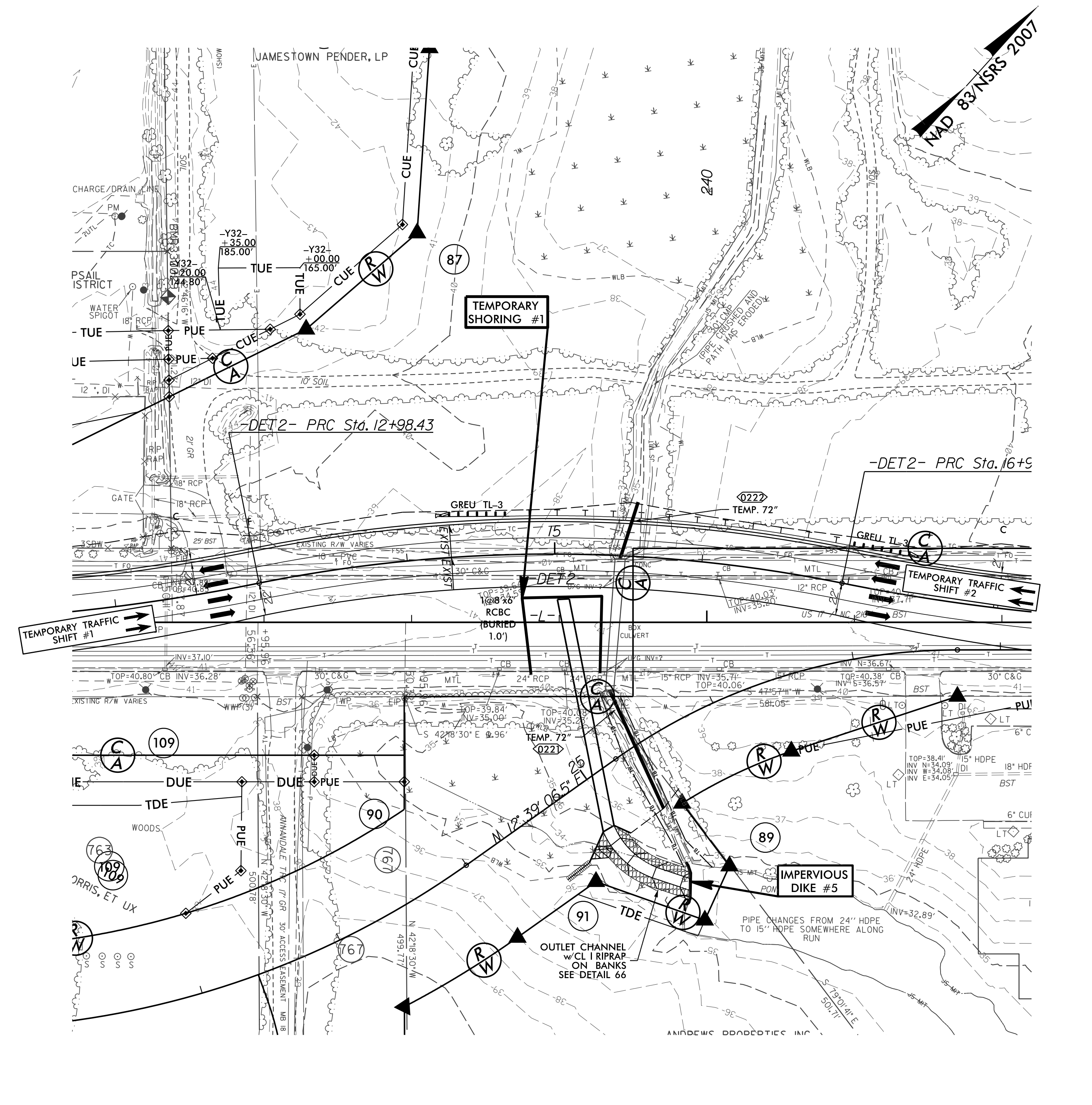
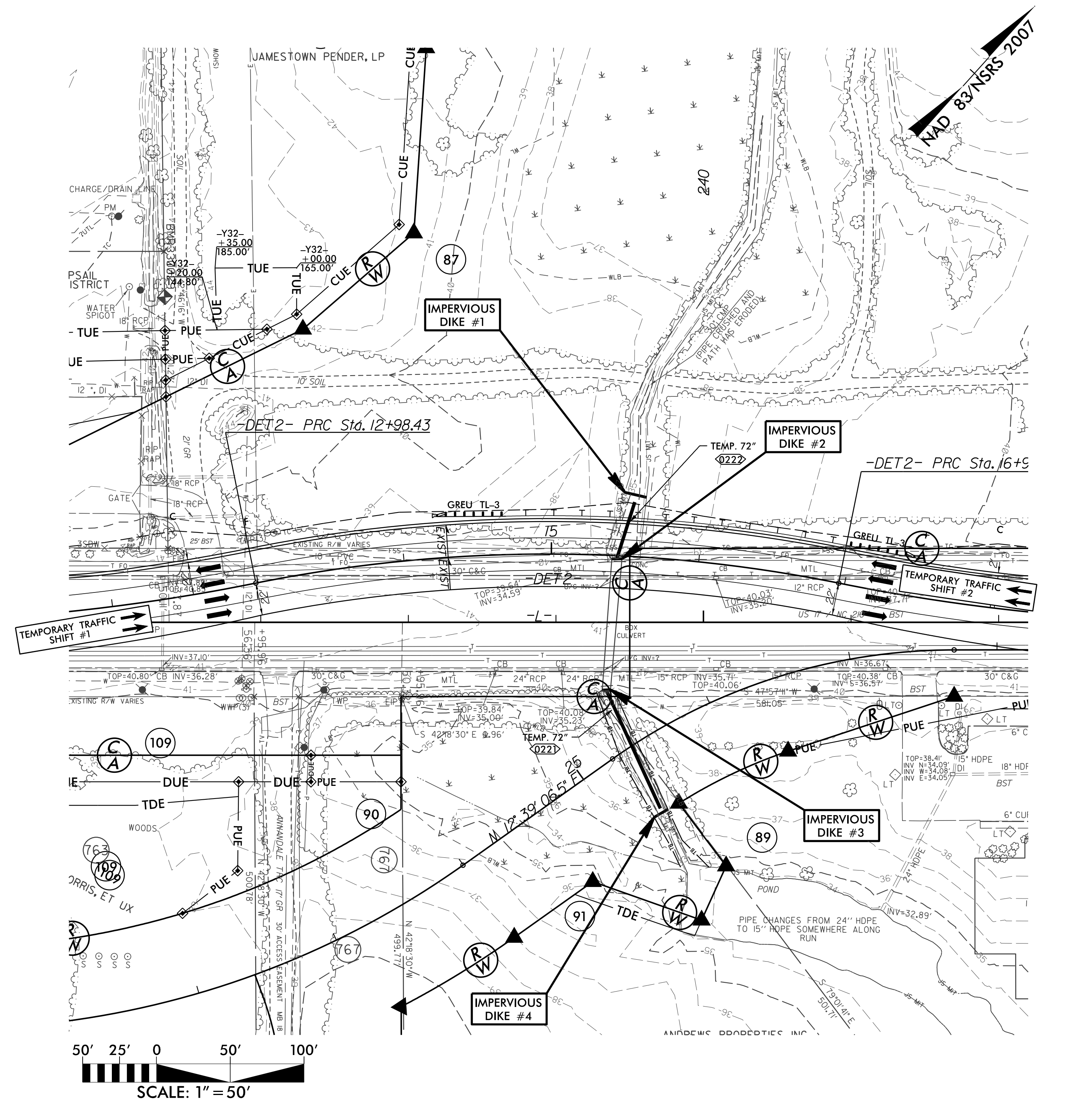
## STA. 18+00 -Y32- UT TO OLD TOPSAIL CREEK

### PHASE I

- 1.) UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED THROUGHOUT CULVERT CONSTRUCTION.
- 2.) INSTALL UPSTREAM AND DOWNSTREAM PUMPS AND TEMPORARY FLEXIBLE HOSES.
- 3.) INSTALL IMPERVIOUS DIKES #1, #2, #3, AND #4 AND BEGIN PUMPING OPERATIONS FOR STREAM DIVERSION.
- 4.) DEWATER CONSTRUCTION AREA, UTILIZING SPECIAL STILLING BASIN(S) FOR PUMPED EFFLUENT.
- 5.) INSTALL TEMPORARY 72" PIPE EXTENSIONS.
- 6.) EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES.
- 7.) REMOVE IMPERVIOUS DIKES, PUMPS, AND TEMPORARY FLEXIBLE HOSES.
- 8.) CONSTRUCT TEMPORARY TRAFFIC SHIFTS #1 AND #2 (-DET2-).
- 9.) SHIFT TRAFFIC ONTO TEMPORARY TRAFFIC SHIFTS #1 AND #2.

### PHASE II

- 1.) INSTALL IMPERVIOUS DIKE #5.
- 2.) DEWATER CONSTRUCTION AREA, UTILIZING SPECIAL STILLING BASIN(S) FOR PUMPED EFFLUENT.
- 3.) CONSTRUCT TEMPORARY SHORING #1.
- 4.) CONSTRUCT OUTLET CHANNEL W/CL RIPRAP ON BANKS AND +/- 158' OF 1@8'X6' RCBC.
- 5.) EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES.
- 6.) REMOVE TEMPORARY SHORING #1 AND IMPERVIOUS DIKE #5.





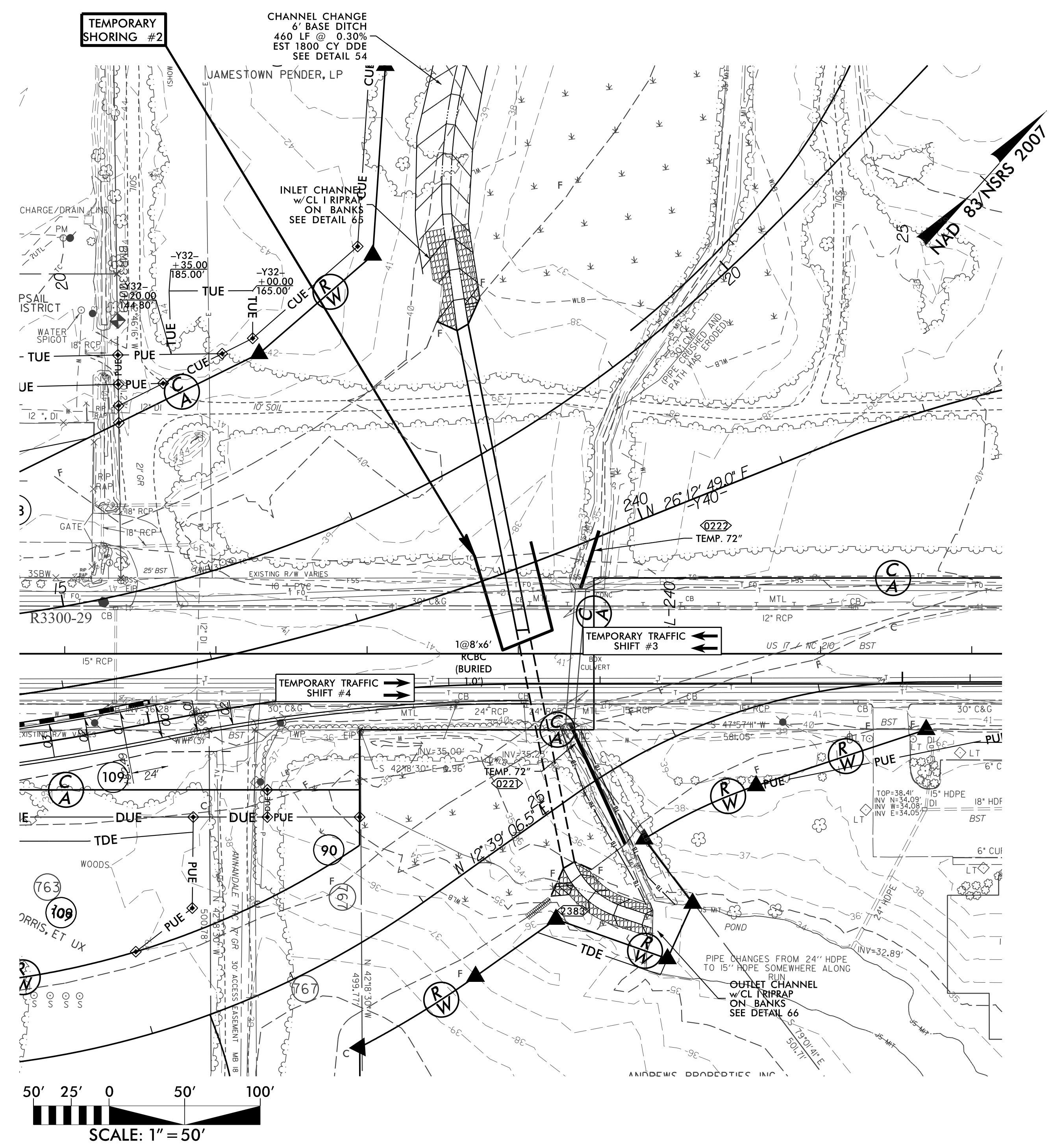
7/2/99

# 1@8'X6' RCBC CONSTRUCTION SEQUENCE STA. 18+00 -Y32- UT TO OLD TOPSAIL CREEK

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	EC-23C/CONST.23
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

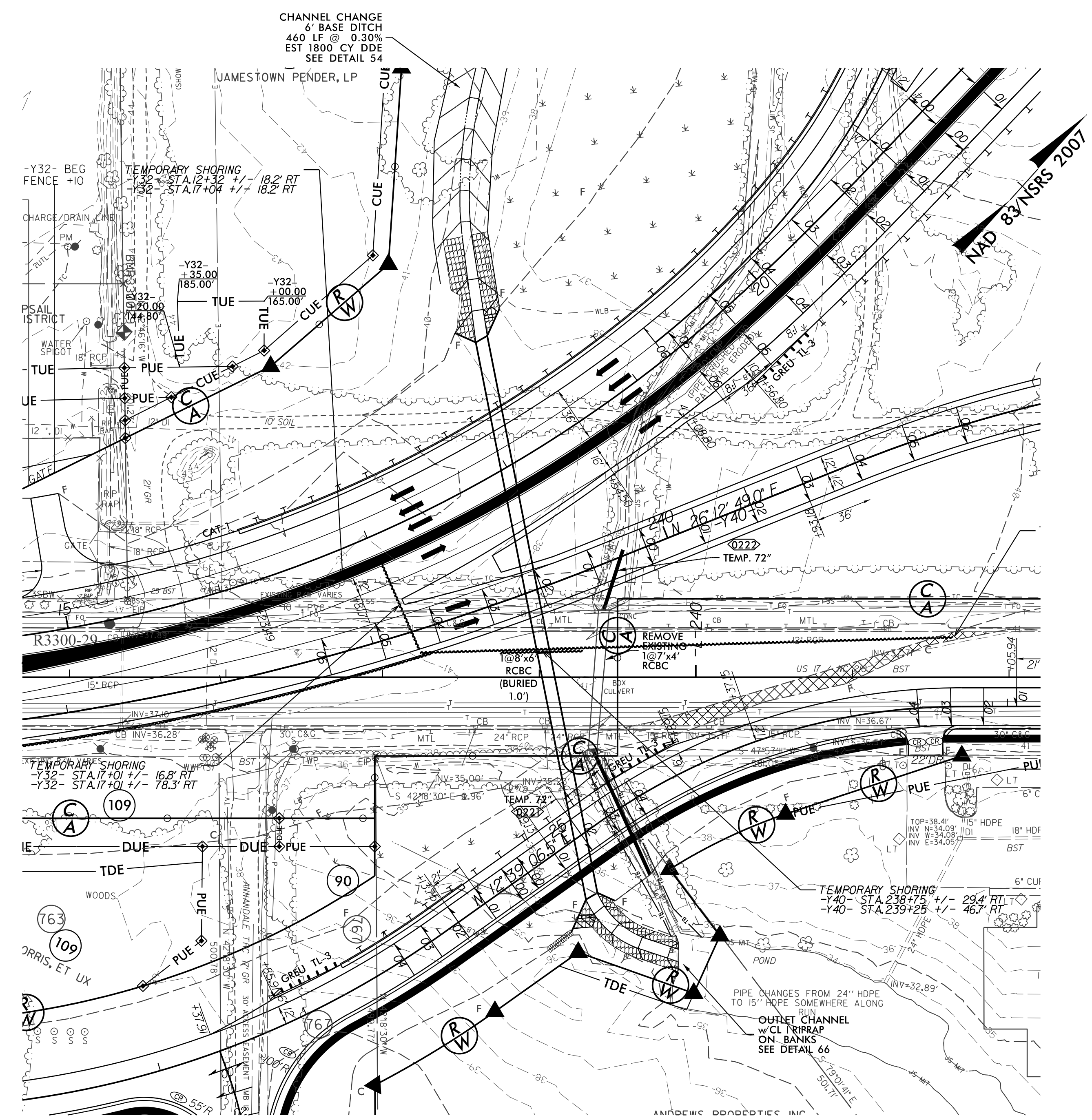
## PHASE III

- 1.) CONSTRUCT TEMPORARY SHORING #2 AND TEMPORARY TRAFFIC SHIFTS #3 AND #4.
- 2.) SHIFT TRAFFIC FROM TEMPORARY TRAFFIC SHIFTS #1 AND #2 TO TEMPORARY TRAFFIC SHIFTS #3 AND #4.
- 3.) CONSTRUCT REMAINDER OF 1@8'X6' RCBC AND INLET CHANNEL W/CL RIPRAP ON BANKS.
- 4.) CONSTRUCT CHANNEL CHANGE 6' BASE DITCH AND REMAINDER OF UPSTREAM DRAINAGE STRUCTURES, IN ACCORDANCE WITH THE PLANS.
- 5.) REMOVE TEMPORARY SHORING #2, TEMPORARY TRAFFIC SHIFTS #2 AND #4, AND ANY REMAINING SPECIAL STILLING BASIN(S).
- 6.) DIVERT FLOW THROUGH 1@8'X6' RCBC.



## PHASE IV

- 1.) REMOVE EXISTING 1@7'X4' RCBC AND TEMPORARY 72" PIPES.
- 2.) COMPLETE ROADWAY.





5/14/99

REVISIONS  
03/15/2019 - RW REVISION: ADDED ROW, DUE, PUE & TDE ON PARCEL 183, ADDED ROW & PUE ON PARCEL 184. - STANTEC

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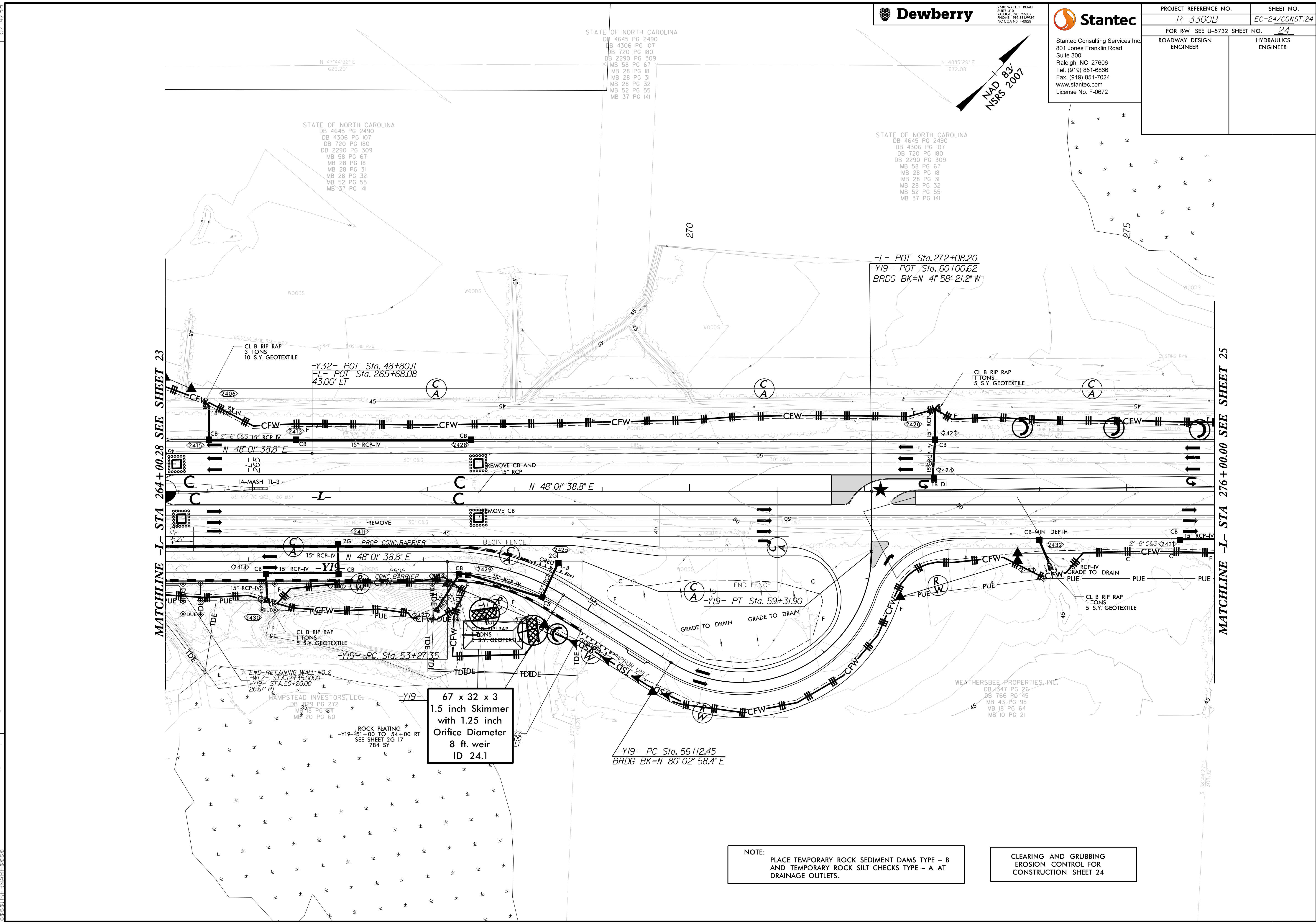


2610 WILLOW ROAD  
SUITE 400  
RALEIGH, NC 27607  
PHONE: 919.883.9329  
NC CCA No. F-0929



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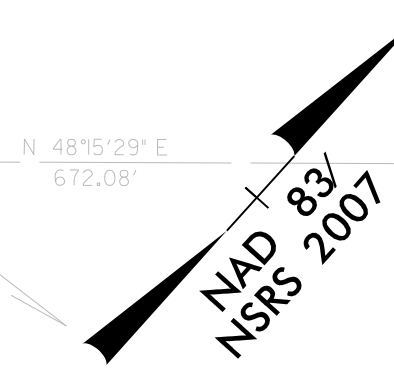
PROJECT REFERENCE NO.	SHEET NO.
R-3300B	EC-24/CONST.24
FOR RW SEE U-5732 SHEET NO.	24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



STATE OF NORTH CAROLINA  
DB 4645 PG 2490  
DB 4306 PG 107  
DB 720 PG 180  
DB 2290 PG 309  
MB 58 PG 67  
MB 28 PG 18  
MB 28 PG 31  
MB 28 PG 32  
MB 52 PG 55  
MB 37 PG 141

STATE OF NORTH CAROLINA  
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DB 4306 PG 107  
DB 720 PG 180  
DB 2290 PG 309  
MB 58 PG 67  
MB 28 PG 18  
MB 28 PG 31  
MB 28 PG 32  
MB 52 PG 55  
MB 37 PG 141

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DB 720 PG 180  
DB 2290 PG 309  
MB 58 PG 67  
MB 28 PG 18  
MB 28 PG 31  
MB 28 PG 32  
MB 52 PG 55  
MB 37 PG 141



MATCHLINE -L- STA 264+00.28 SEE SHEET 23

MATCHLINE -L- STA 276+00.00 SEE SHEET 25

67 x 32 x 3  
1.5 inch Skimmer  
with 1.25 inch  
Orifice Diameter  
8 ft. weir  
ID 24.1

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 24



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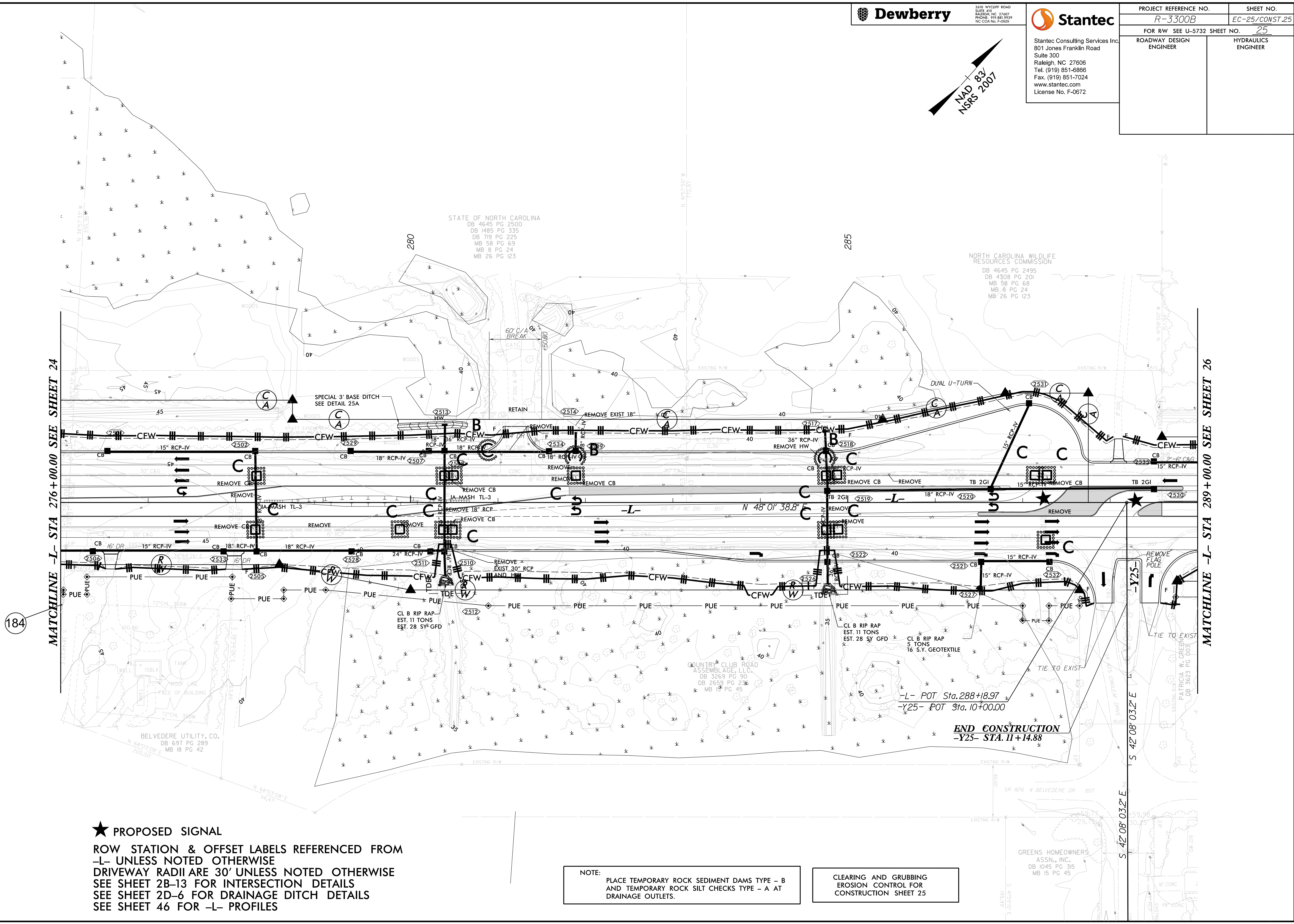
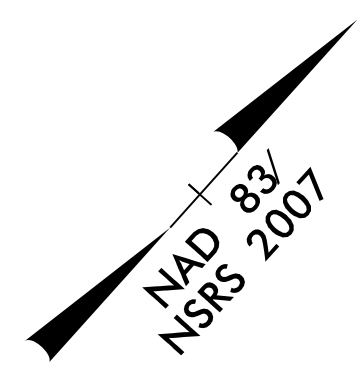


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PROJECT REFERENCE NO.	SHEET NO.
R-3300B	EC-25/CONST.25
FOR RW SEE U-5732 SHEET NO.	25
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



★ PROPOSED SIGNAL

ROW STATION & OFFSET LABELS REFERENCED FROM  
-L- UNLESS NOTED OTHERWISE  
DRIVEWAY RADII ARE 30' UNLESS NOTED OTHERWISE  
SEE SHEET 2B-13 FOR INTERSECTION DETAILS  
SEE SHEET 2D-6 FOR DRAINAGE DITCH DETAILS  
SEE SHEET 46 FOR -L- PROFILES

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 25

END CONSTRUCTION  
-Y25- STA. 11+14.88

184

S 42° 08' 03.2" E

S 42° 08' 03.2" E

-Y25-

-L- POT Sta. 288+18.97  
-Y25- POT Sta. 10+00.00

BELVEDERE UTILITY CO.  
DB 697 PG 289  
MB 18 PG 42

STATE OF NORTH CAROLINA  
DB 4645 PG 2500  
DB 1485 PG 335  
DB 719 PG 225  
MB 58 PG 69  
MB 8 PG 24  
MB 26 PG 123

NORTH CAROLINA WILDLIFE  
RESOURCES COMMISSION  
DB 4645 PG 2495  
DB 4308 PG 201  
MB 58 PG 68  
MB 8 PG 24  
MB 26 PG 123

CL B RIP RAP  
EST. 11 TONS  
EST. 28 SY GFD

CL B RIP RAP  
EST. 11 TONS  
EST. 28 SY GFD

CL B RIP RAP  
EST. 11 TONS  
EST. 28 SY GFD

GREENS HOMEOWNERS  
ASSN., INC.  
DB 1045 PG 315  
MB 15 PG 45

PATRICIA W. GREEN  
DB 3623 PG 001