TIP PROJECT: B-4547

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4547	EC-1	

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

STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

PLAN FOR PROPOSED

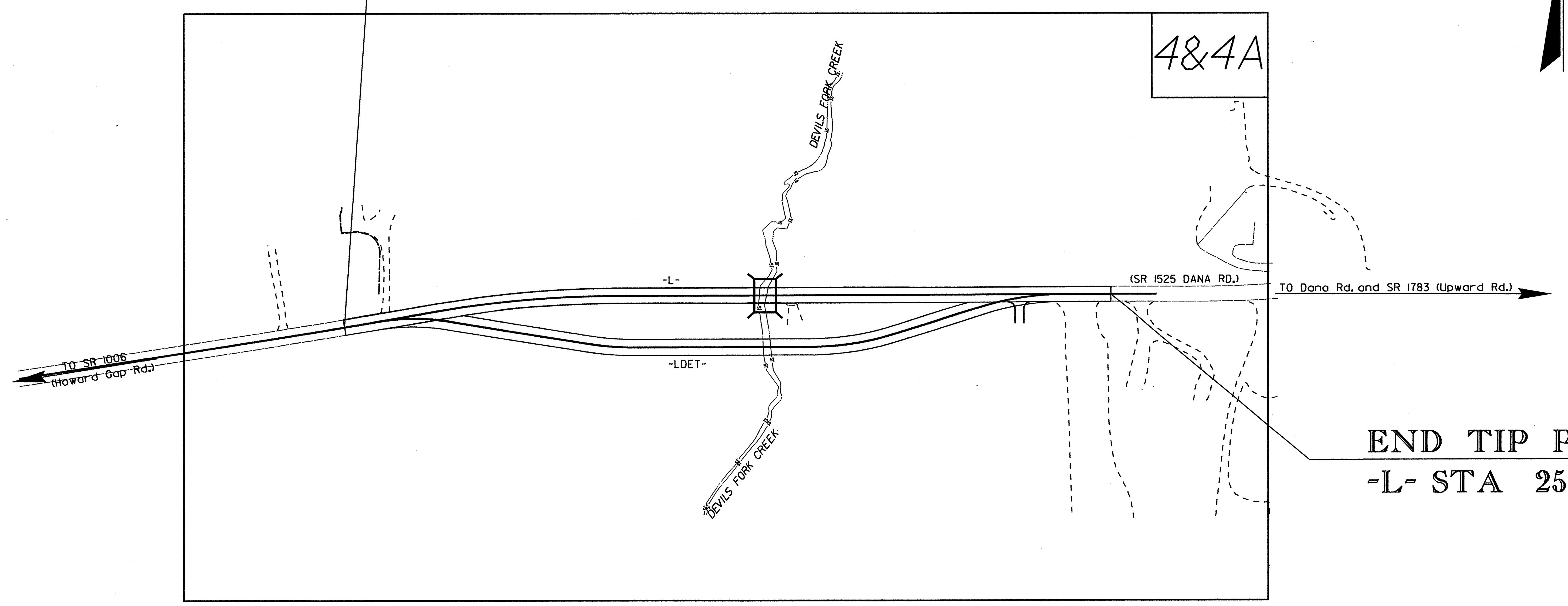
HIGHWAY EROSION CONTROL

HENDERSON COUNTY

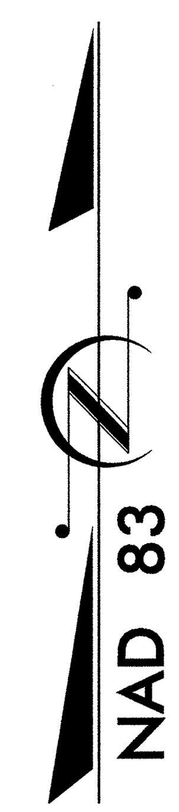
LOCATION: BRIDGE NO. 45 OVER DEVILS FORK CREEK ON SR 1525 (DANA RD.)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND CULVERT

BEGIN TIP PROJECT B-4547
-L- STA 14 + 50.00



END TIP PROJECT B-4547
-L- STA 25 + 00.00



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	
1630.05	Temporary Diversion	
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	
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

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

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

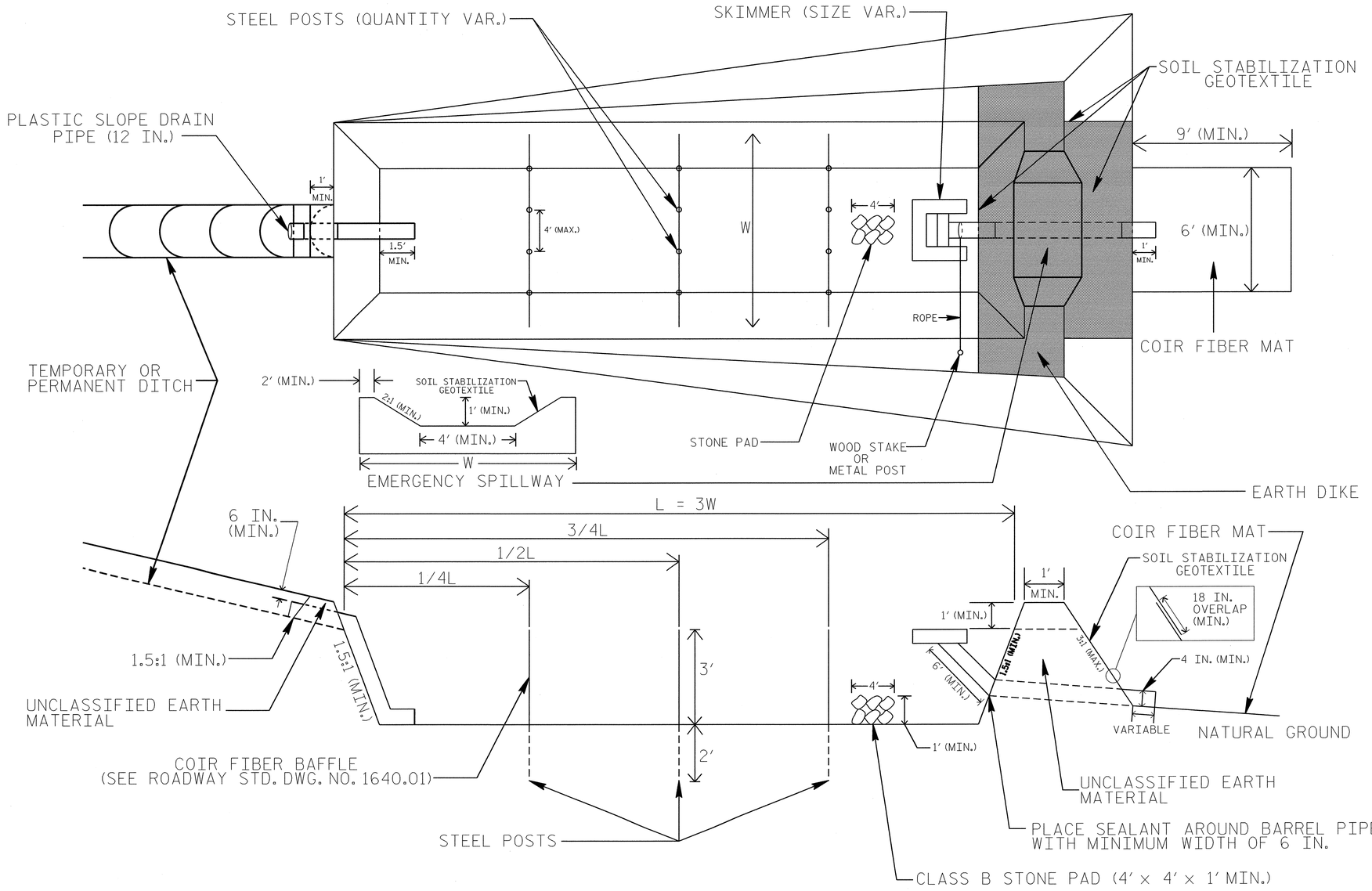
Roadway Standard Drawings

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.

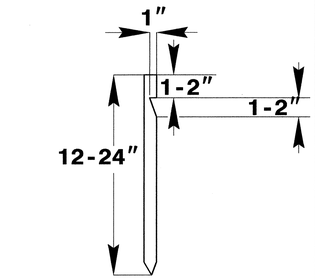
1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type 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		

PROJECT REFERENCE NO.	SHEET NO.
B-4547	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

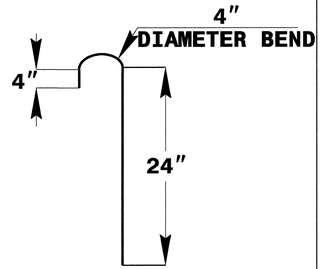
SKIMMER BASIN WITH BAFFLES DETAIL



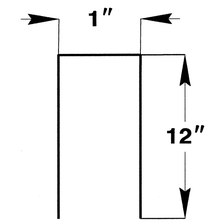
2" x 2" (nominal) WOODEN STAKE



#10 STEEL REINFORCEMENT BAR



1" (nominal) STAPLE



COIR FIBER MAT ANCHOR OPTIONS

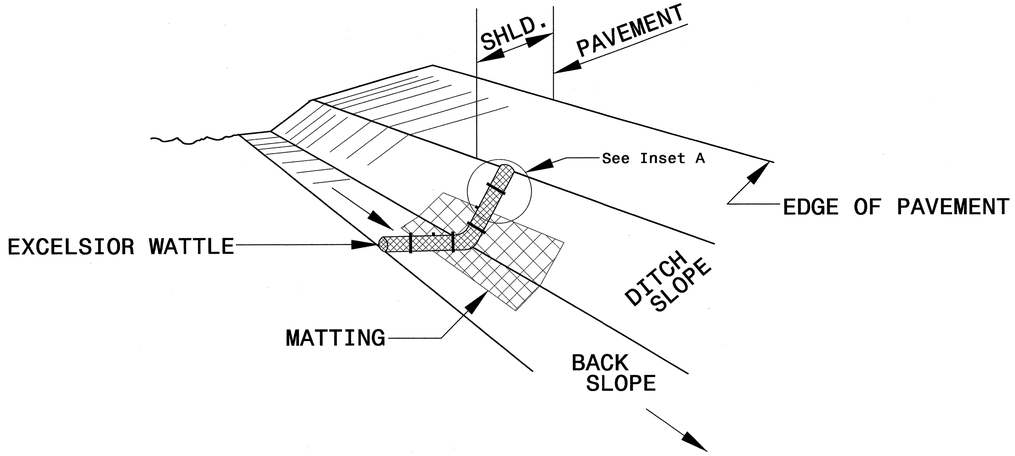
NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES.
2. LIMIT EARTH DIKE HEIGHT TO 5 FT.
3. FOR BASIN DEPTH OF 3 FT., THE MINIMUM BASIN WIDTH SHALL BE 9 FT.
4. DETERMINE EMERGENCY SPILLWAY 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.).

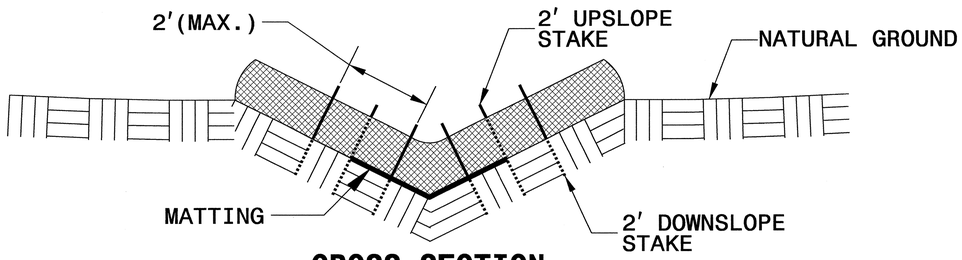
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
B-4547	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

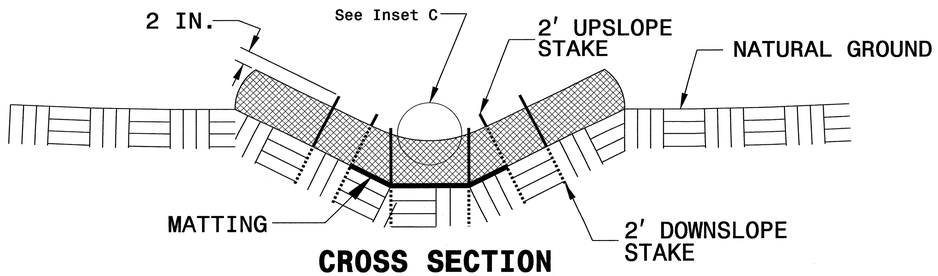
WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR 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.

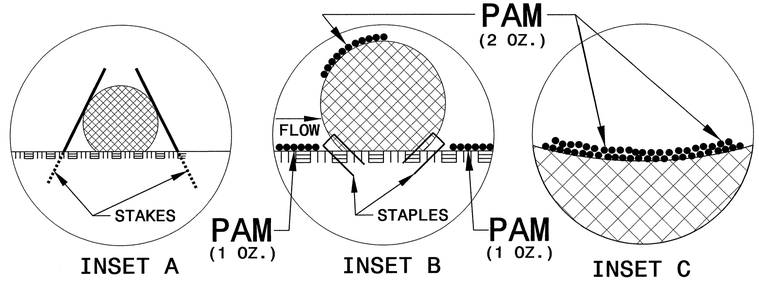
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

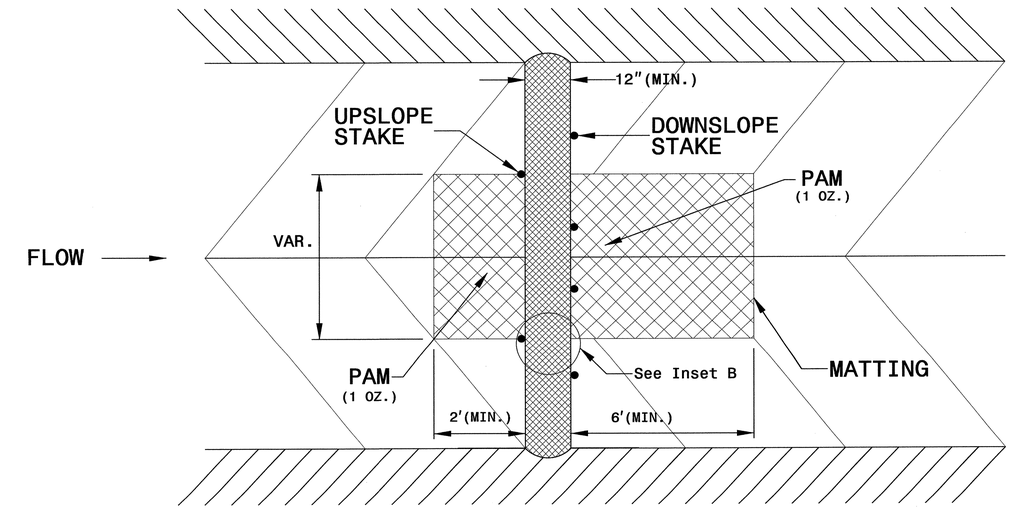
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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.

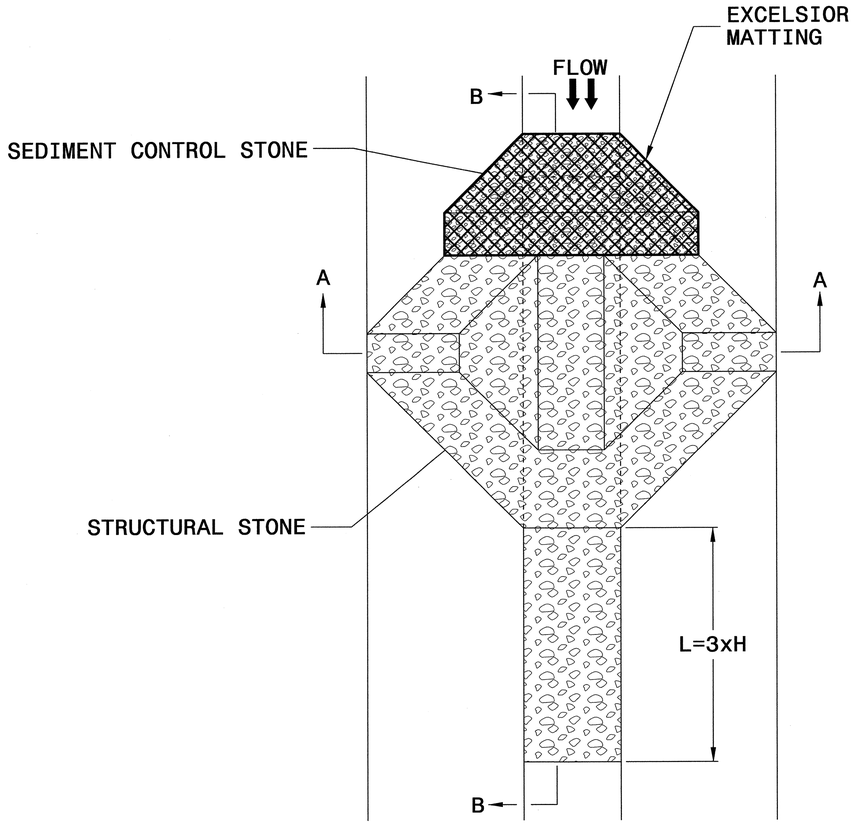




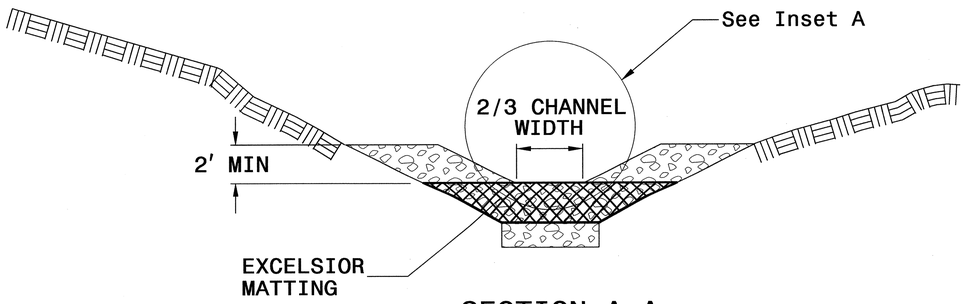
TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
B-4547	EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN



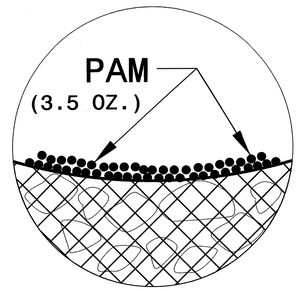
SECTION A-A

NOTES

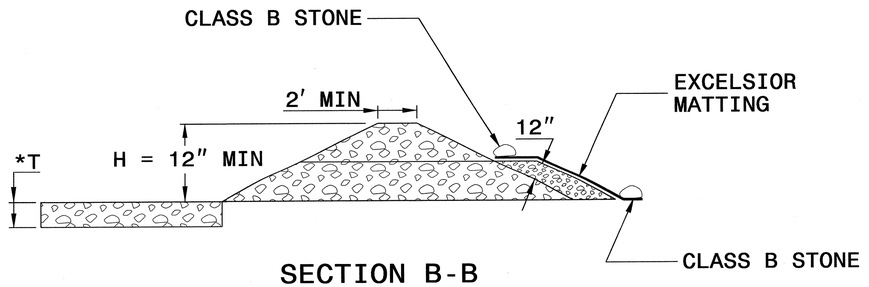
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

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



INSET A



SECTION B-B

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

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
B-4547	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	18+00	18+25	RT	35
4	-L-	18+25	20+00	RT	140
4	-L-	18+25	19+00	LT	95
4	-L-	19+00	20+00	LT	120
			SUBTOTAL		390
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					1875
				TOTAL	2265
				SAY	2300

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4A	-LDET-	14+50	15+27	LT	50
			SUBTOTAL		50
		ADDITIONAL PSRM TO BE INSTALLED			0
				TOTAL	50
				SAY	50

PROJECT REFERENCE NO.	SHEET NO.
B-4547	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

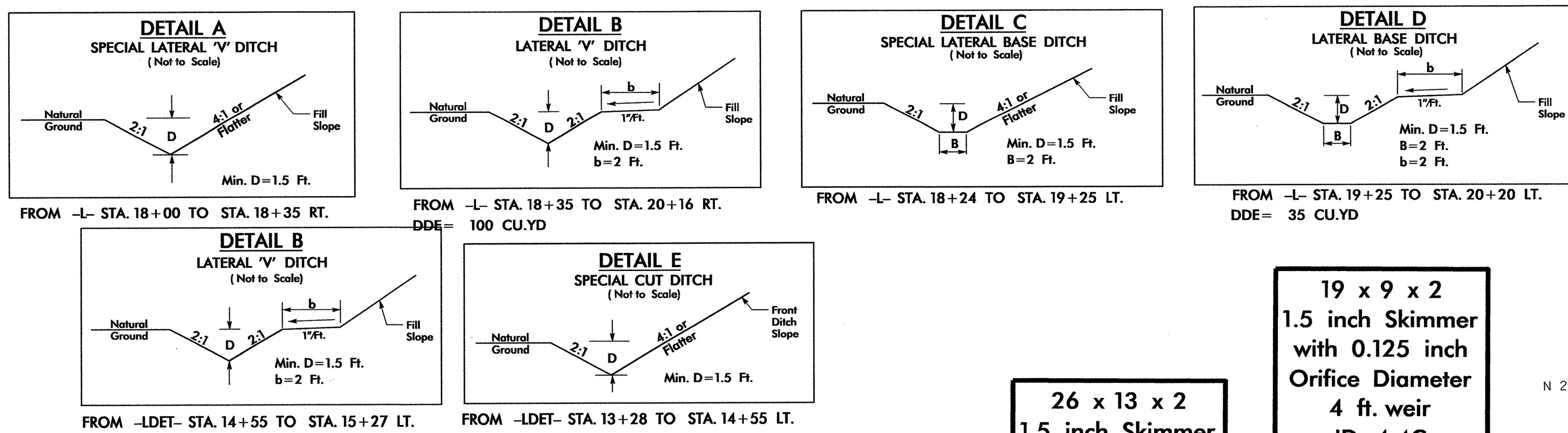
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

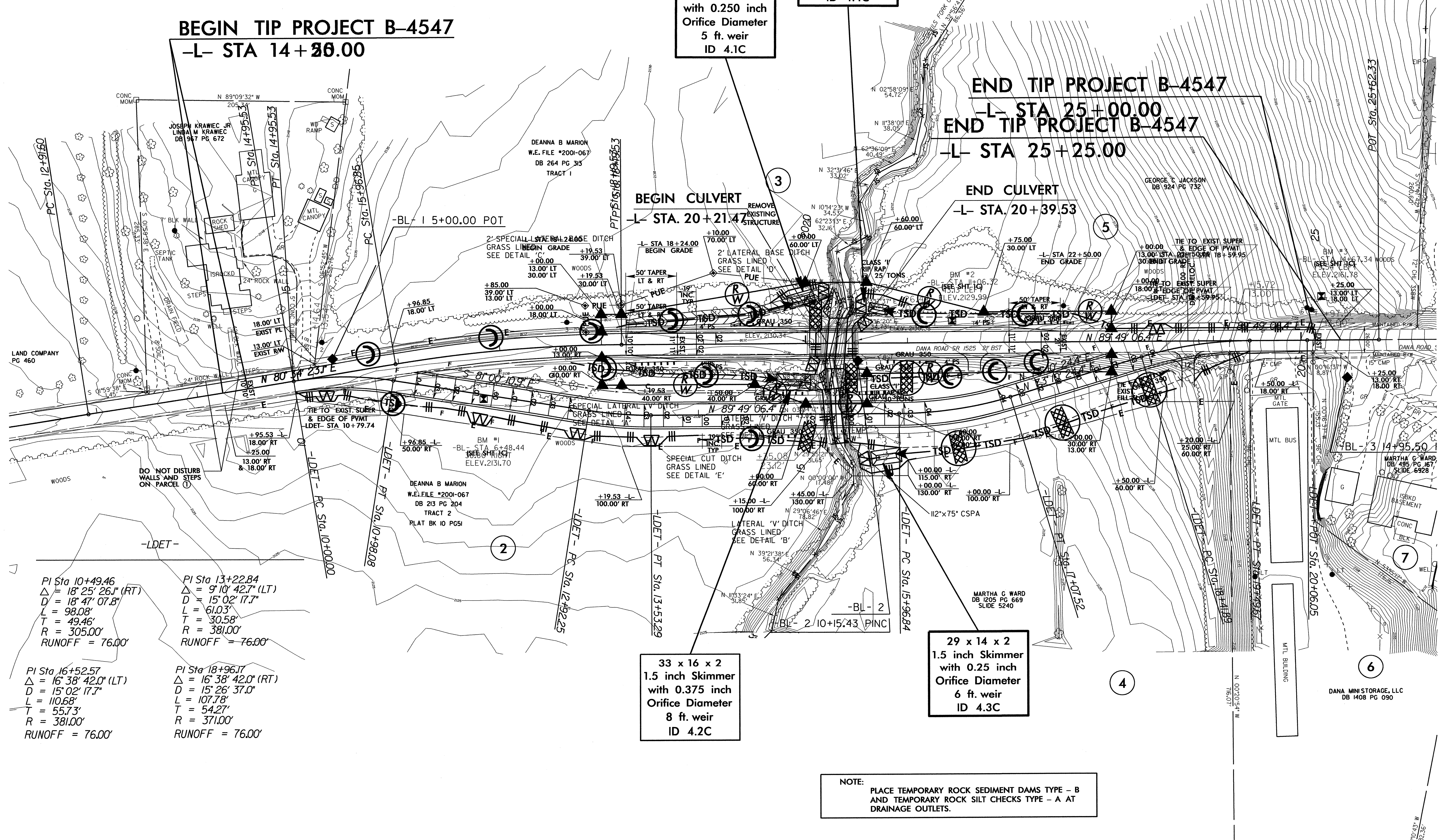
SOIL STABILIZATION TIMEFRAMES

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.
B-4547	EC-4/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4





PI Sta 10+49.46
Δ = 18° 25' 26.1" (RT)
D = 18° 47' 07.8"
L = 98.08'
T = 49.46'
R = 305.00'
RUNOFF = 76.00'

PI Sta 13+22.84
Δ = 9° 10' 42.7" (LT)
D = 15° 02' 17.7"
L = 61.03'
T = 30.58'
R = 381.00'
RUNOFF = 76.00'

PI Sta 16+52.57
Δ = 16° 38' 42.0" (LT)
D = 15° 02' 17.7"
L = 110.68'
T = 55.73'
R = 381.00'
RUNOFF = 76.00'

PI Sta 18+96.17
Δ = 16° 38' 42.0" (RT)
D = 15° 26' 37.0"
L = 107.78'
T = 54.27'
R = 371.00'
RUNOFF = 76.00'

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

8/17/99

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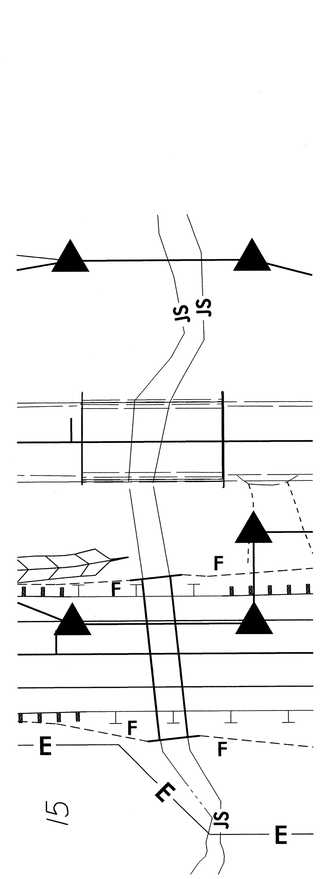
CULVERT CONSTRUCTION SEQUENCE STA. 20+30.5 –L–

PROJECT REFERENCE NO.	SHEET NO.
B-4547	EC-5/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

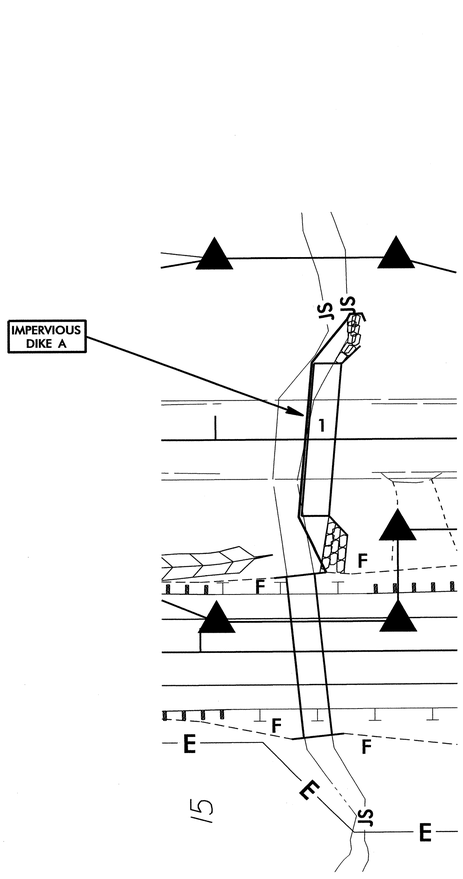
PHASE I

1. UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED THROUGHOUT CULVERT CONSTRUCTION.
2. INSTALL CSPA ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.
3. CONSTRUCT DETOUR ALIGNMENT AND SHIFT TRAFFIC.



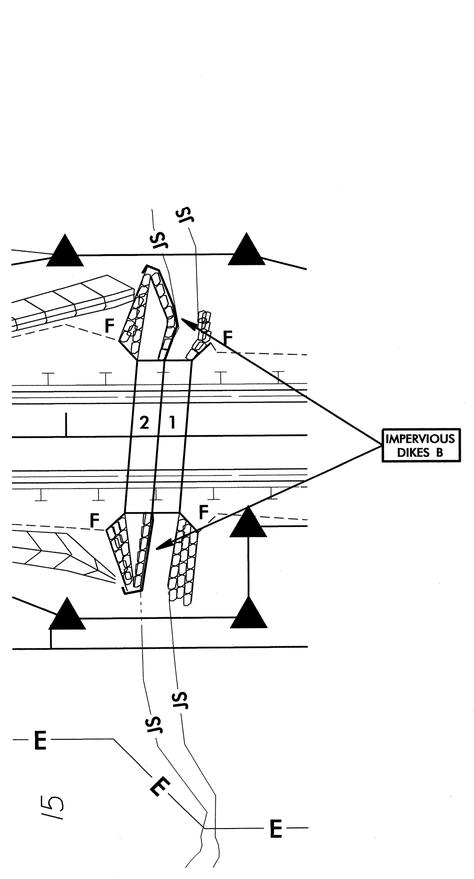
PHASE II

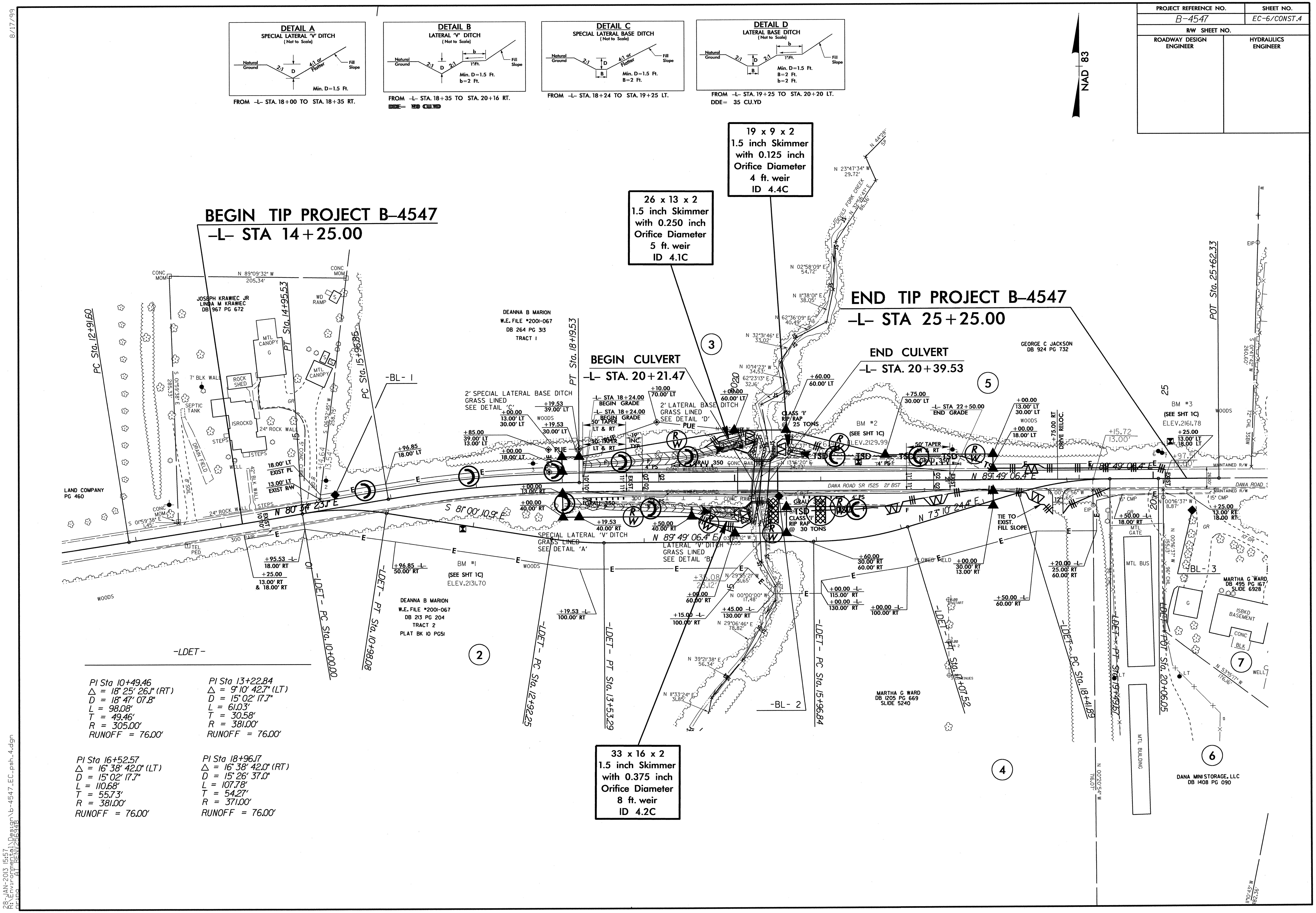
4. REMOVE EXISTING BRIDGE.
5. CONSTRUCT IMPERVIOUS DIKE A, DIVERTING FLOW.
6. CONSTRUCT BARREL 1 OF PROPOSED CULVERT, AND PORTION OF UPSTREAM/DOWNSTREAM CHANNEL IMPROVEMENTS.
7. REMOVE IMPERVIOUS DIKE A.



PHASE III

8. CONSTRUCT IMPERVIOUS DIKES B, DIVERTING FLOW THROUGH COMPLETED BARREL 1 OF PROPOSED CULVERT.
9. CONSTRUCT BARREL 2 OF PROPOSED CULVERT, AND REMAINDER OF UPSTREAM/DOWNSTREAM CHANNEL IMPROVEMENTS.
10. REMOVE IMPERVIOUS DIKES B.
11. COMPLETE FINAL ROADWAY ALIGNMENT AND SHIFT TRAFFIC.
12. REMOVE DETOUR ALIGNMENT AND CSPA.
13. REMOVE ANY REMAINING SPECIAL STILLING BASIN(S).




PROJECT REFERENCE NO. B-4547
SHEET NO. EC-6/CONST.4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NAD 83
DETAIL A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
4:1 or Flatter
Fill Slope
Min. D=1.5 Ft.
FROM -L- STA. 18+00 TO STA. 18+35 RT.
DETAIL B
LATERAL 'V' DITCH
(Not to Scale)
Min. D=1.5 Ft.
b=2 Ft.
FROM -L- STA. 18+35 TO STA. 20+16 RT.
DETAIL C
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Min. D=1.5 Ft.
B=2 Ft.
FROM -L- STA. 18+24 TO STA. 19+25 LT.
DETAIL D
LATERAL BASE DITCH
(Not to Scale)
Min. D=1.5 Ft.
B=2 Ft.
b=2 Ft.
FROM -L- STA. 19+25 TO STA. 20+20 LT.
DDE= 35 CU.YD
BEGIN TIP PROJECT B-4547
-L- STA 14+25.00
END TIP PROJECT B-4547
-L- STA 25+25.00
BEGIN CULVERT
-L- STA. 20+21.47
END CULVERT
-L- STA. 20+39.53
19 x 9 x 2
1.5 inch Skimmer
with 0.125 inch
Orifice Diameter
4 ft. weir
ID 4.4C
26 x 13 x 2
1.5 inch Skimmer
with 0.250 inch
Orifice Diameter
5 ft. weir
ID 4.1C
33 x 16 x 2
1.5 inch Skimmer
with 0.375 inch
Orifice Diameter
8 ft. weir
ID 4.2C
JOSEPH KRAWIEC JR
LINDA M KRAWIEC
DB 967 PG 672
DEANNA B MARION
W.E. FILE #2001-067
DB 264 PG 313
TRACT 1
DEANNA B MARION
W.E. FILE #2001-067
DB 213 PG 204
TRACT 2
PLAT BK 10 PG51
GEORGE C JACKSON
DB 924 PG 732
MARTHA G WARD
DB 1205 PG 669
SLIDE 5240
MARTHA G WARD
DB 495 PG 167
SLIDE 6928
DANA MINI STORAGE, LLC
DB 1408 PG 090
LAND COMPANY
PG 460
BM #1
(SEE SHT 1C)
ELEV.2131.70
BM #2
(SEE SHT 1C)
ELEV.2129.99
BM #3
(SEE SHT 1C)
ELEV.2161.78
DANA ROAD SR 1525
2' SPECIAL LATERAL BASE DITCH
GRASS LINED
SEE DETAIL 'C'
2' LATERAL BASE DITCH
GRASS LINED
SEE DETAIL 'D'
SPECIAL LATERAL 'V' DITCH
GRASS LINED
SEE DETAIL 'A'
LATERAL 'V' DITCH
GRASS LINED
SEE DETAIL 'B'
-L- STA 18+24.00 BEGIN GRADE
-L- STA 22+50.00 END GRADE
CLASS 'I' RIP RAP @ 25 TONS
CLASS 'I' RIP RAP @ 30 TONS
TIE TO EXIST. FILL SLOPE
N 80°54'23" E
S 81°00'10.9" E
N 89°49'06.4" E
N 73°10'24" E
PC Sta. 12+91.60
PT Sta. 14+95.53
PC Sta. 15+96.85
PT Sta. 18+19.53
POT Sta. 25+62.33
-BL- 1
-BL- 2
-BL- 3
-LDET-
-LDET- PC Sta. 10+00.00
-LDET- PT Sta. 10+98.08
-LDET- PC Sta. 12+92.25
-LDET- PT Sta. 13+53.29
-LDET- PC Sta. 15+96.84
-LDET- PT Sta. 17+07.52
-LDET- PC Sta. 18+41.89
-LDET- PT Sta. 19+49.67
-LDET- POT Sta. 20+06.05
PI Sta 10+49.46
Δ = 18° 25' 26.1" (RT)
D = 18° 47' 07.8"
L = 98.08'
T = 49.46'
R = 305.00'
RUNOFF = 76.00'
PI Sta 13+22.84
Δ = 9° 10' 42.7" (LT)
D = 15° 02' 17.7"
L = 61.03'
T = 30.58'
R = 381.00'
RUNOFF = 76.00'
PI Sta 16+52.57
Δ = 16° 38' 42.0" (LT)
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Δ = 16° 38' 42.0" (RT)
D = 15° 26' 37.0"
L = 107.78'
T = 54.27'
R = 371.00'
RUNOFF = 76.00'
8/17/99
28-JAN-2013 15:57
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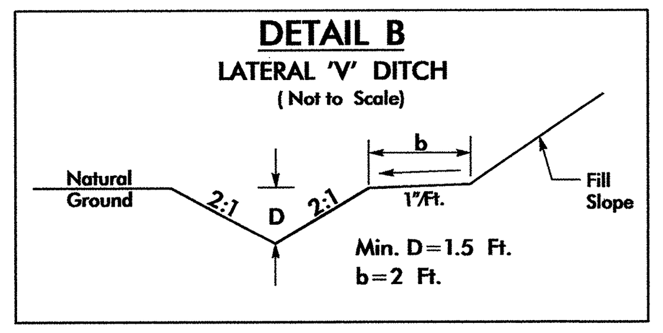
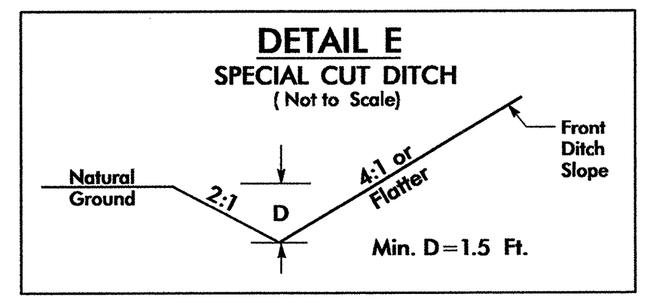
PROJECT REFERENCE NO.	SHEET NO.
B-4547	EC-7/CONST.4A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DETOUR

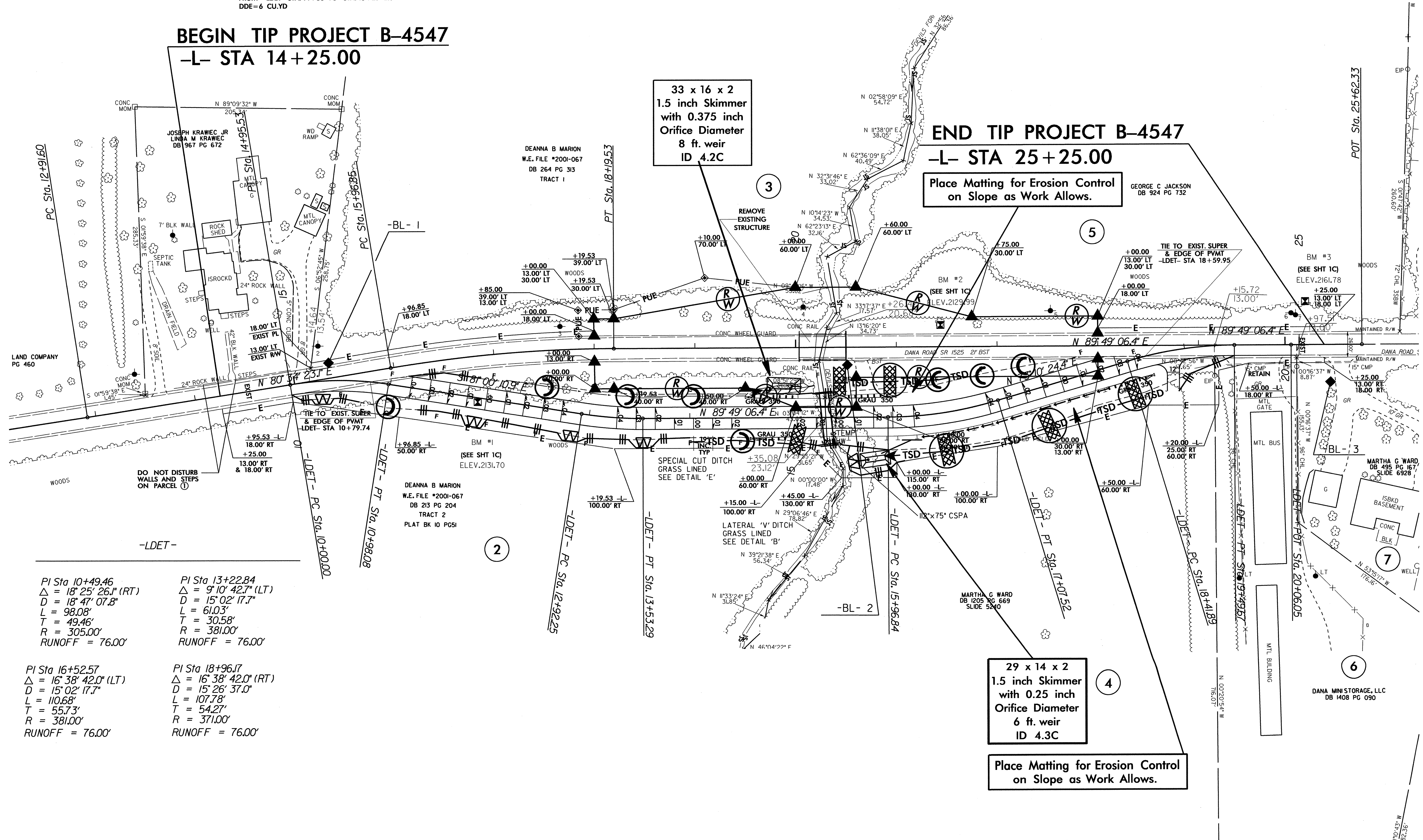
NAD 83



FROM -LDET- STA. 14+55 TO STA. 15+27 LT.
DDE=6 CU.YD



FROM -LDET- STA. 13+28 TO STA. 14+55 LT.



BEGIN TIP PROJECT B-4547
-L- STA 14+25.00
END TIP PROJECT B-4547
-L- STA 25+25.00
33 x 16 x 2
1.5 inch Skimmer
with 0.375 inch
Orifice Diameter
8 ft. weir
ID 4.2C
29 x 14 x 2
1.5 inch Skimmer
with 0.25 inch
Orifice Diameter
6 ft. weir
ID 4.3C
Place Matting for Erosion Control
on Slope as Work Allows.
Place Matting for Erosion Control
on Slope as Work Allows.
JOSEPH KRAWIEC JR
LINDA M KRAWIEC
DB 967 PG 672
DEANNA B MARION
W.E. FILE #2001-067
DB 264 PG 313
TRACT 1
DEANNA B MARION
W.E. FILE #2001-067
DB 213 PG 204
TRACT 2
PLAT BK 10 PG51
GEORGE C JACKSON
DB 924 PG 732
MARTHA G WARD
DB 1205 PG 669
SLIDE 5240
MARTHA G WARD
DB 495 PG 167
SLIDE 6928
DANA MINI STORAGE, LLC
DB 1408 PG 090
LAND COMPANY
PG 460
REMOVE EXISTING STRUCTURE
DO NOT DISTURB WALLS AND STEPS ON PARCEL ①
SPECIAL CUT DITCH GRASS LINED SEE DETAIL 'E'
LATERAL 'V' DITCH GRASS LINED SEE DETAIL 'B'
TIE TO EXIST. SUPER & EDGE OF PVMT -LDET- STA 10+79.74
TIE TO EXIST. SUPER & EDGE OF PVMT -LDET- STA 18+59.95
BM #1 (SEE SHT 1C) ELEV.2131.70
BM #2 (SEE SHT 1C) ELEV.2129.99
BM #3 (SEE SHT 1C) ELEV.2161.78
DANA ROAD SR 1525 21' BST
N 89°49' 06.4" E
N 80°34' 23.1" E
N 81°00' 10.9" E
112"x75" CSPA
PC Sta. 12+91.60
PT Sta. 14+95.52
PC Sta. 15+96.85
PT Sta. 18+19.53
POT Sta. 25+62.33
-LDET- PC Sta. 10+00.00
-LDET- PT Sta. 10+98.08
-LDET- PC Sta. 12+92.25
-LDET- PT Sta. 13+53.29
-LDET- PC Sta. 15+96.84
-LDET- PT Sta. 17+07.52
-LDET- PC Sta. 18+41.89
-LDET- PT Sta. 19+49.67
-LDET- POT Sta. 20+06.05
-BL- 1
-BL- 2
-BL- 3
-LDET-
WOODS
MTL BUS
MTL BUILDING

PI Sta 10+49.46
Δ = 18° 25' 26.1" (RT)
D = 18° 47' 07.8"
L = 98.08'
T = 49.46'
R = 305.00'
RUNOFF = 76.00'

PI Sta 13+22.84
Δ = 9° 10' 42.7" (LT)
D = 15° 02' 17.7"
L = 61.03'
T = 30.58'
R = 381.00'
RUNOFF = 76.00'

PI Sta 16+52.57
Δ = 16° 38' 42.0" (LT)
D = 15° 02' 17.7"
L = 110.68'
T = 55.73'
R = 381.00'
RUNOFF = 76.00'

PI Sta 18+96.17
Δ = 16° 38' 42.0" (RT)
D = 15° 26' 37.0"
L = 107.78'
T = 54.27'
R = 371.00'
RUNOFF = 76.00'

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8/17/99