PROJECT: B-4523

TIP P

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

GRANVILLE COUNTY

LOCATION: BRIDGE No. 164 on SR 1307 OVER FOX CREEK

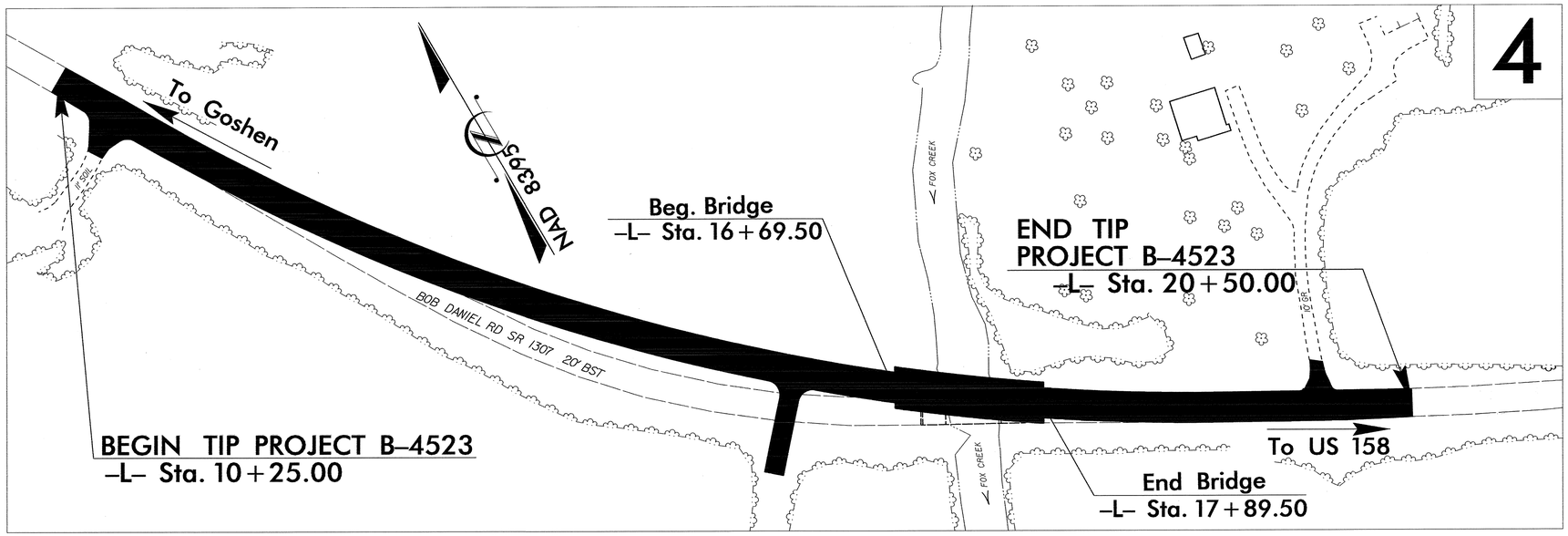
TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4523	EC-1	

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

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	
1630.01	Riser Basin	
	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-B	
	Wattle	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	



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

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

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

Prepared In the Office of:

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

2006 STANDARD SPECIFICATIONS

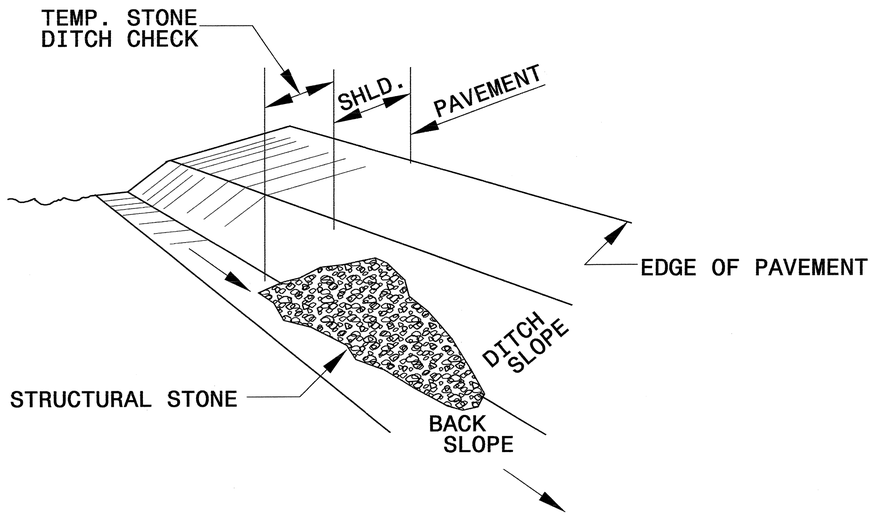
Roadway Standard Drawings

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

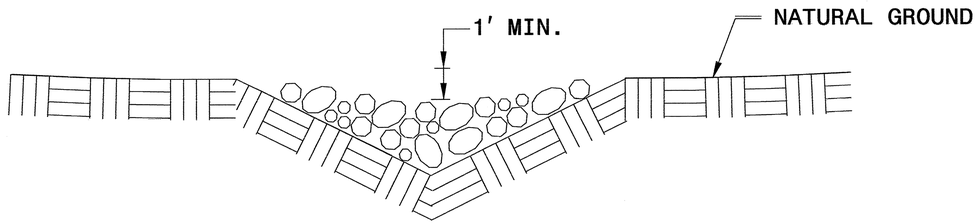
1605.01 Temporary Silt Fence
1606.01 Special Sediment Control Fence
1607.01 Gravel Construction Entrance
1622.01 Temporary Berms and Slope Drains
1630.03 Temporary Silt Ditch
1630.05 Temporary Diversion
1632.03 Rock Inlet Sediment Trap Type C
1633.01 Temporary Rock Silt Check Type A

PROJECT REFERENCE NO.	SHEET NO.
B-4523	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

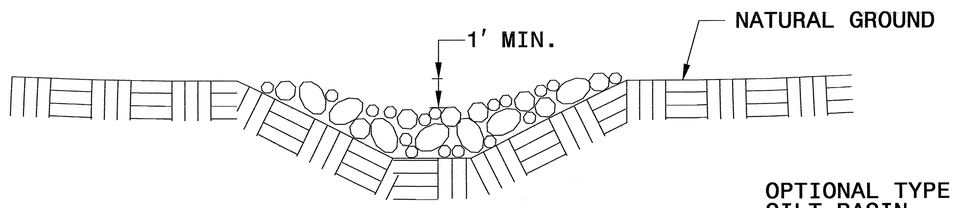
TEMPORARY ROCK SILT CHECK TYPE 'B' DETAIL



ISOMETRIC VIEW



CROSS SECTION
VEE DITCH

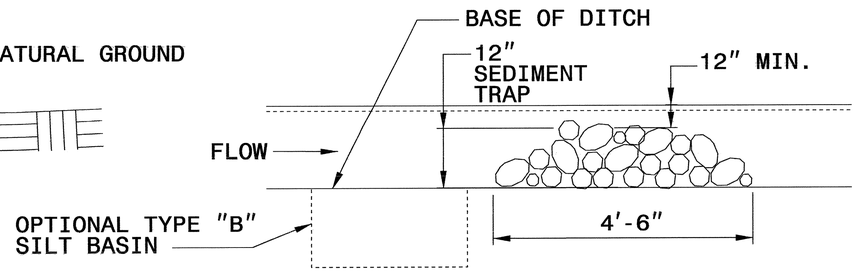


CROSS SECTION
TRAPEZOIDAL DITCH

NOTES:

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

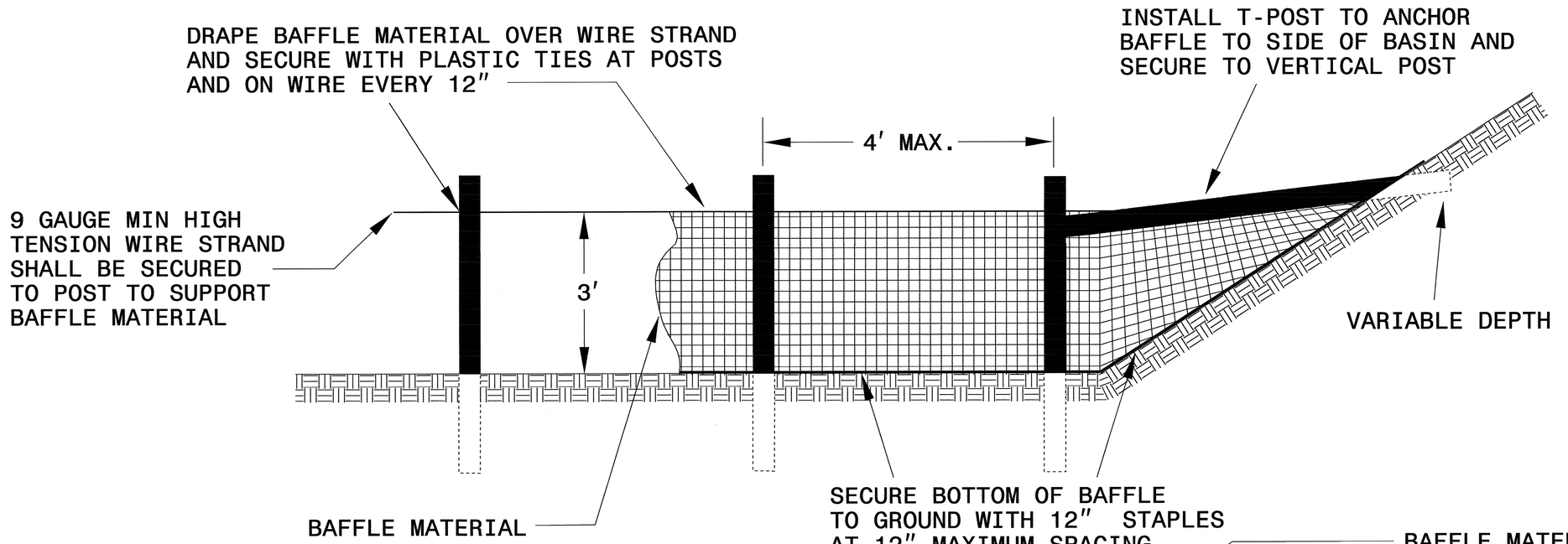
THE ENGINEER MAY DIRECT THE OPTION OF CLASS "A" STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.

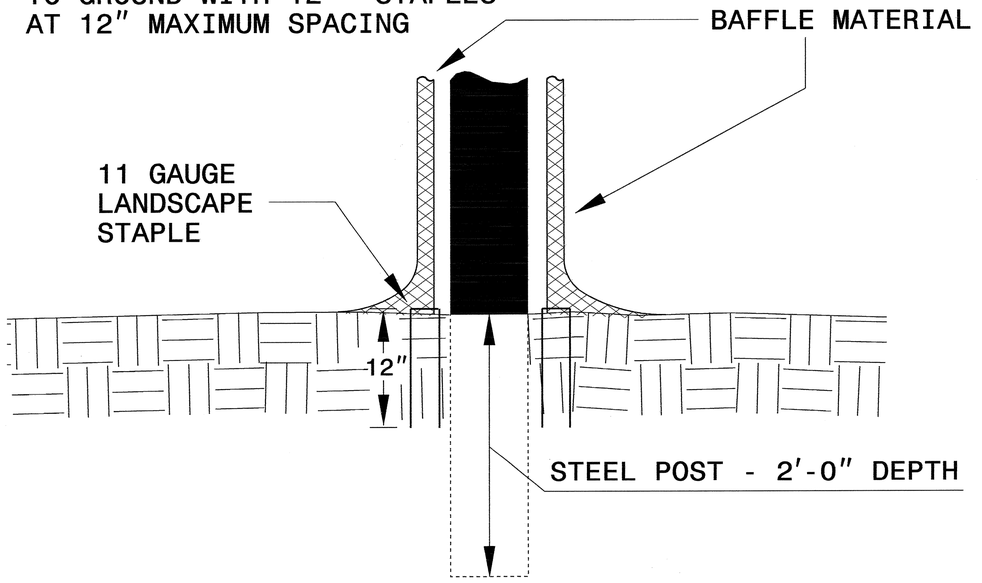


ELEVATION VIEW

PROJECT REFERENCE NO.	SHEET NO.
B-4523	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER BAFFLE DETAIL



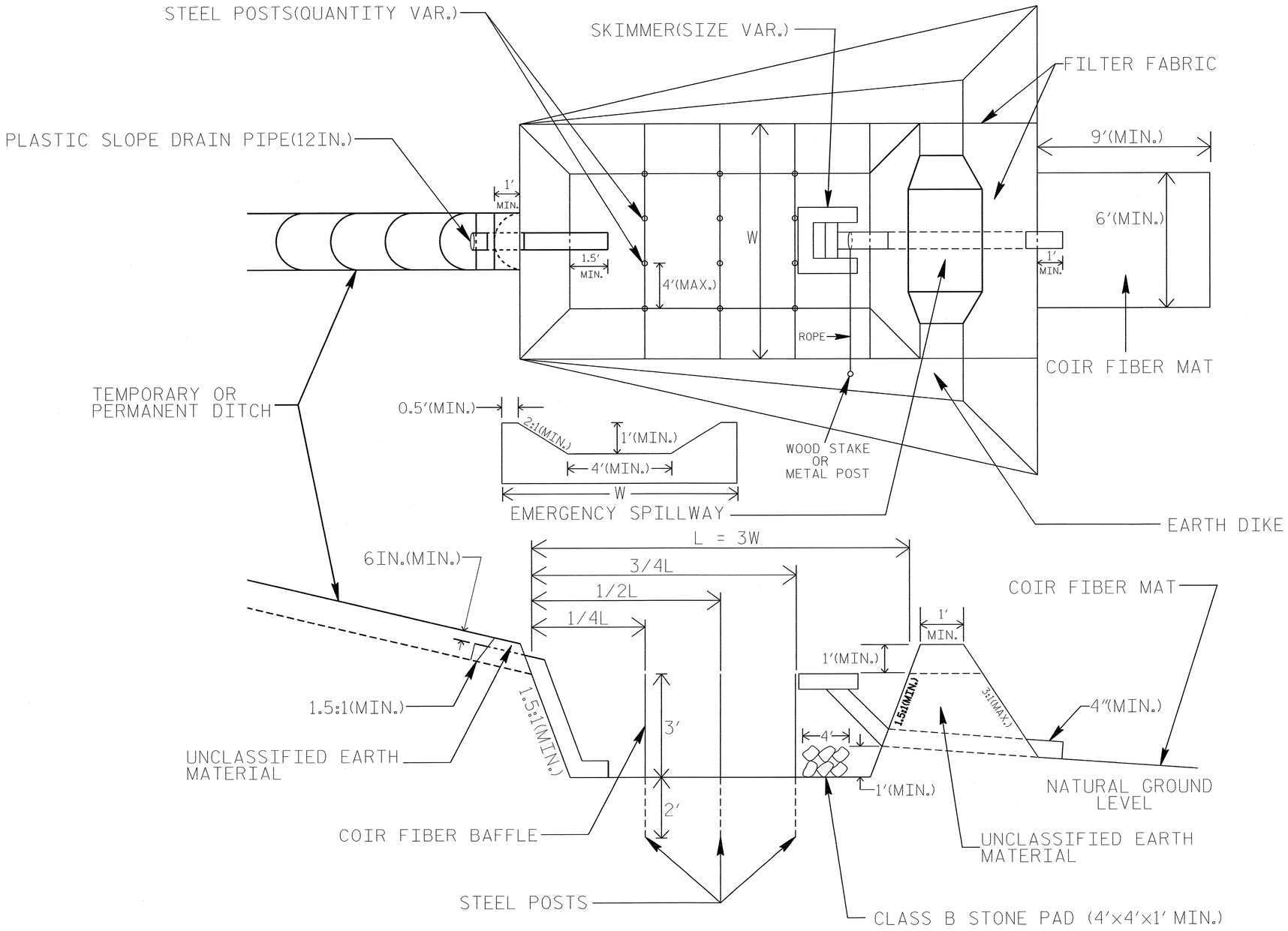


BAFFLE MATERIAL SHALL BE SECURED TO THE BOTTOM AND SIDES OF BASIN USING 12″ LANDSCAPE STAPLES

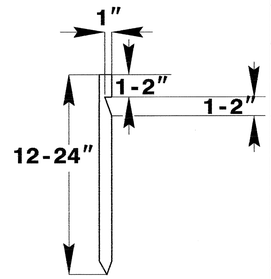
NOTE: INSTALL THREE(3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF ¼ THE BASIN LENGTH. TWO(2) COIR FIBER BAFFLES CAN BE INSTALLED IN SILT BASINS AND DAMS LESS THAN 20 FT. IN LENGTH WITH A SPACING OF 1/3 THE BASIN LENGTH.

PROJECT REFERENCE NO.	SHEET NO.
B-4523	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

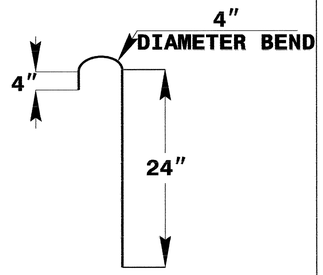
SKIMMER BASIN WITH BAFFLES DETAIL



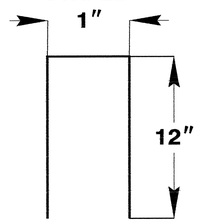
2" x 2" (nominal) WOODEN STAKE



#10 STEEL REINFORCEMENT BAR



1" (nominal) STAPLE



COIR FIBER MAT ANCHOR OPTIONS

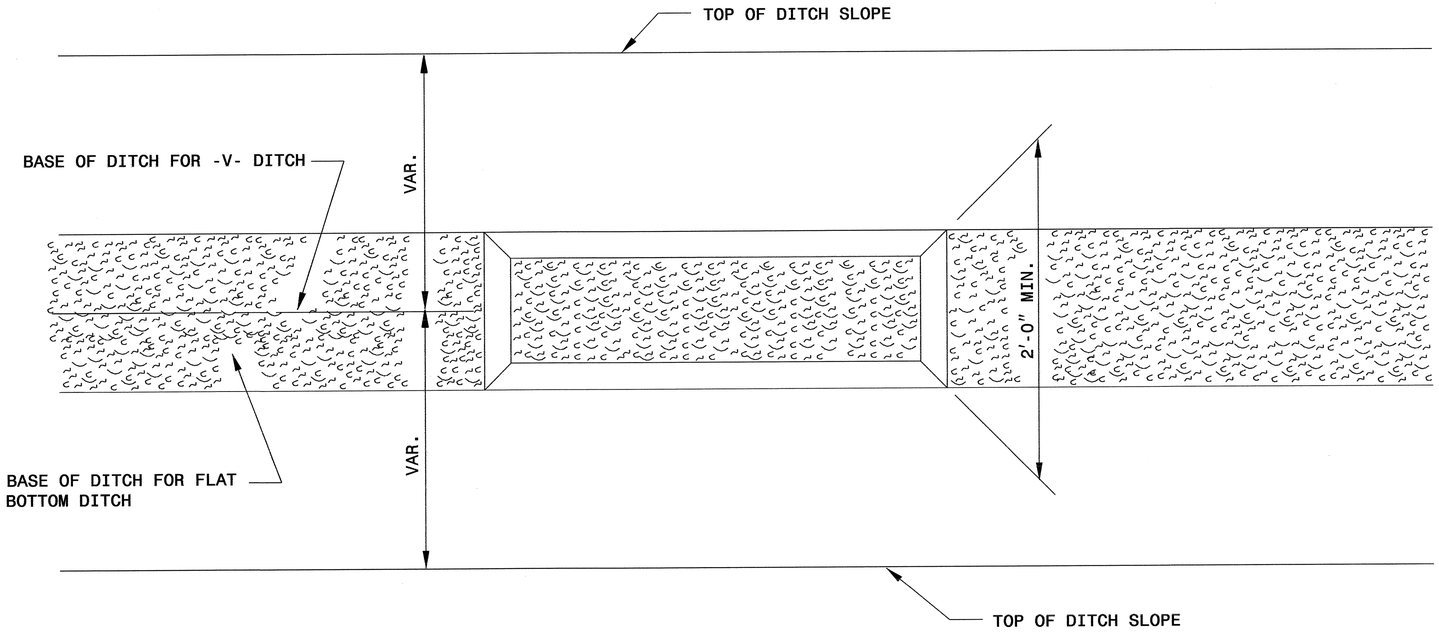
NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR SIDESLOPES.
2. LIMIT EARTH DIKE HEIGHT TO 5 FT.
3. THE MINIMUM BASIN WIDTH SHALL BE 9 FT.
4. DETERMINE EMERGENCY SPILLWAY LENGTH (FT.) USING Q/0.8, WHERE Q IS FLOW RATE (CFS) INTO BASIN.

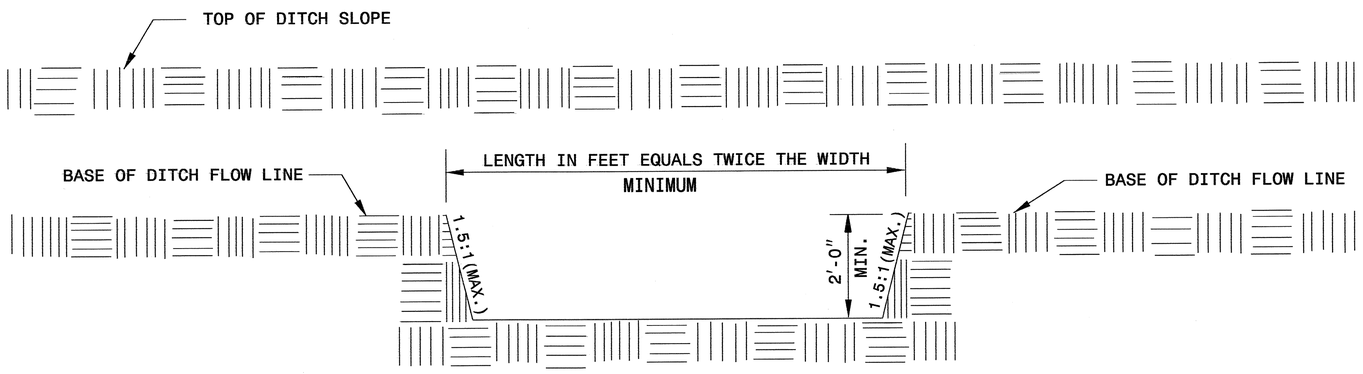
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
B-4523	EC-2C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SILT BASIN 'B' DETAIL



PLAN



ELEVATION

PROJECT REFERENCE NO.	SHEET NO.
B-4523	EC-3

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)
4	L	10+50	15+50	LT	525
4	L	13+75	15+75	RT	140
4	L	19+25	19+75	RT	35
4	L	19+00	19+75	LT	55
				SUBTOTAL	755
	ADDITIONAL PSRM TO BE INSTALLED				0
				TOTAL	755
				SAY	760

PERMANENT SOIL REINFORCEMENT MAT

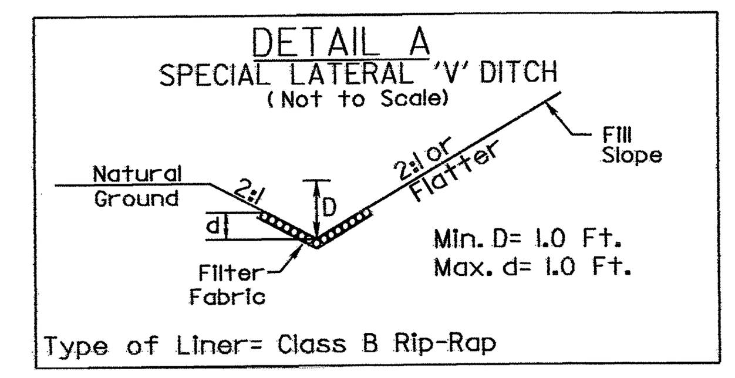
CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)

PROJECT REFERENCE NO.	SHEET NO.
B-4523	EC-4/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

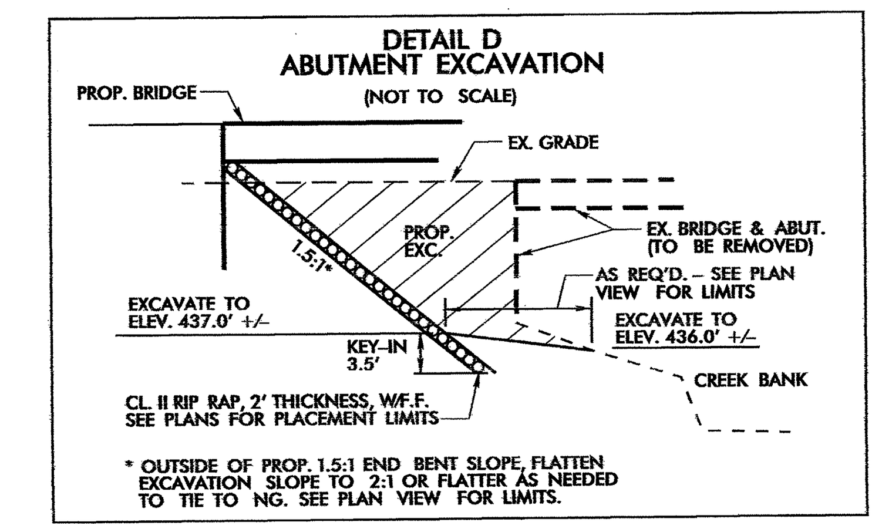
**CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4**

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

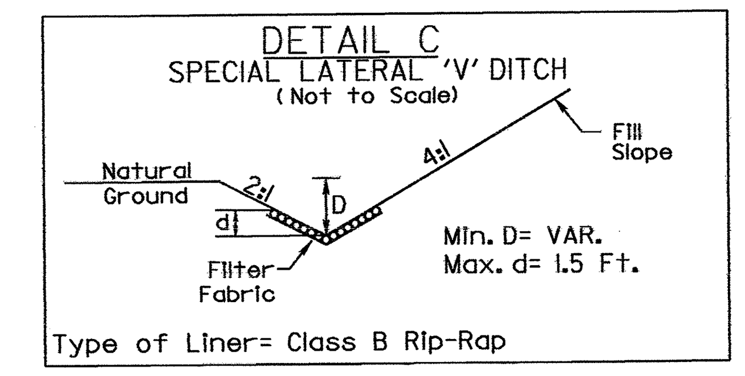
NOTE:
UTILIZE TEMPORARY ROCK SILT CHECK TYPE – A AND SKIMMER BASIN AS STILLING BASIN WHERE APPLICABLE.



STA. 15+00 TO STA. 15+75 -L- RT.



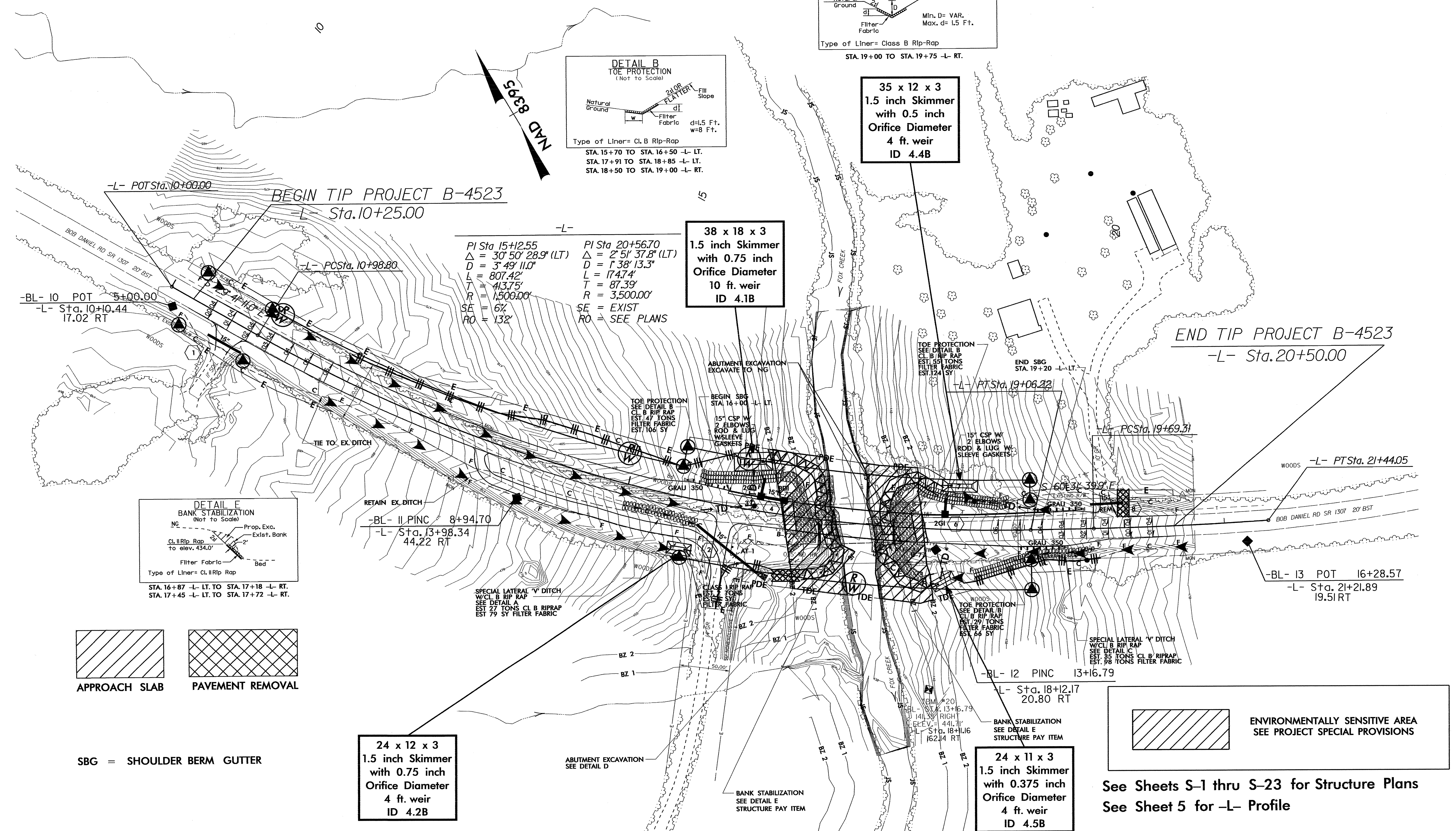
STA. 16+75 TO STA. 17+10 -L-



STA. 19+00 TO STA. 19+75 -L- RT.

DETAIL B
TOE PROTECTION
(Not to Scale)
Natural Ground
2:1 OR FLATTER
Fill Slope
d
w
Filter Fabric
d=1.5 Ft.
w=8 Ft.
Type of Liner= Cl. B Rip-Rap

STA. 15+70 TO STA. 16+50 -L- LT.
STA. 17+91 TO STA. 18+85 -L- LT.
STA. 18+50 TO STA. 19+00 -L- RT.



DETAIL E
BANK STABILIZATION
(Not to Scale)
NG
Prop. Exc.
Exist. Bank
2:1
2'
Cl. II Rip Rap to elev. 434.0'
Filter Fabric
Bed
Type of Liner= Cl. II Rip Rap

STA. 16+87 -L- LT. TO STA. 17+18 -L- RT.
STA. 17+45 -L- LT. TO STA. 17+72 -L- RT.

▨ APPROACH SLAB

▩ PAVEMENT REMOVAL

SBG = SHOULDER BERM GUTTER

▨ ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

See Sheets S-1 thru S-23 for Structure Plans

See Sheet 5 for -L- Profile

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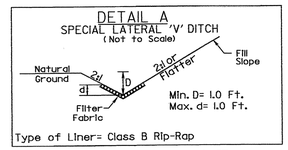
r:\hydraulics\erosion_control\design\b4523_ec_psh.dgn
nchan AT RENW231812

PROJECT REFERENCE NO.	SHEET NO.
B-4523	EC-5/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/8/2019

NOTE:
UTILIZE TEMPORARY ROCK SILT CHECK TYPE – A AND SKIMMER BASIN AS STILLING BASIN WHERE APPLICABLE.

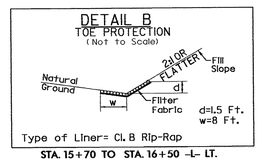
DETAIL A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= Class B Rip-Rap

STA. 15+00 TO STA. 15+75 –L– RT.

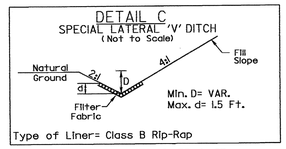
DETAIL B
TOE PROTECTION
(Not to Scale)



Type of Liner= Cl. B Rip-Rap

STA. 15+70 TO STA. 16+50 –L– LT.
STA. 17+91 TO STA. 18+85 –L– LT.
STA. 18+50 TO STA. 19+00 –L– RT.

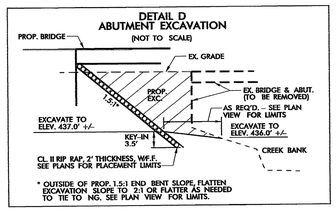
DETAIL C
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= Class B Rip-Rap

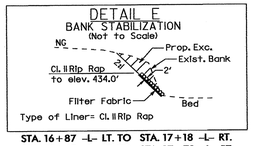
STA. 19+00 TO STA. 19+75 –L– RT.

DETAIL D
ABUTMENT EXCAVATION
(NOT TO SCALE)



STA. 16+75 TO STA. 17+10 –L–

DETAIL E
BANK STABILIZATION
(Not to Scale)



Type of Liner= Cl. II Rip Rap

STA. 16+87 –L– LT. TO STA. 17+18 –L– RT.
STA. 17+45 –L– LT. TO STA. 17+72 –L– RT.

APPROACH SLAB

PAVEMENT REMOVAL

SBG = SHOULDER BERM GUTTER

BEGIN TIP PROJECT B-4523
–L– Sta. 10+25.00

–L– POT Sta. 10+00.00

–L– PCSta. 10+98.80

–BL– 10 POT 5+00.00
–L– Sta. 10+10.44
17.02 RT

–L–

PI Sta 15+12.55
Δ = 30° 50' 28.9" (LT)
D = 3° 49' 11.0"
L = 807.42'
T = 413.75'
R = 1,500.00'
SE = 6%
RO = 132'

PI Sta 20+56.70
Δ = 2° 51' 37.8" (LT)
D = 1° 38' 13.3"
L = 174.74'
T = 87.39'
R = 3,500.00'
SE = EXIST
RO = SEE PLANS

38 x 18 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
10 ft. weir
ID 4.1B

35 x 12 x 3
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
4 ft. weir
ID 4.4B

END TIP PROJECT B-4523
–L– Sta. 20+50.00

–L– PTSta. 19+06.22

–L– PCSta. 19+69.31

–L– PTSta. 21+44.05

–BL– 13 POT 16+28.57
–L– Sta. 21+21.89
19.51 RT

–BL– 12 PINC 13+16.79
–L– Sta. 18+12.17
20.80 RT

–BL– 11 PINC 8+94.70
–L– Sta. 13+98.34
44.22 RT

TBM #20
–BL– STA. 13+16.79
141.35' RIGHT
ELEV. = 441.71'
–L– Sta. 18+11.16
162.14 RT

42 x 13 x 3
ID 4.3F

24 x 12 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
4 ft. weir
ID 4.2B

24 x 11 x 3
1.5 inch Skimmer
with 0.375 inch
Orifice Diameter
4 ft. weir
ID 4.5B

TIE TO EX. DITCH

RETAIN EX. DITCH

SPECIAL LATERAL 'V' DITCH W/CL B RIP RAP SEE DETAIL A EST 27 TONS CL B RIPRAP EST 79 SY FILTER FABRIC

ABUTMENT EXCAVATION EXCAVATE TO NG

ABUTMENT EXCAVATION SEE DETAIL D

TOE PROTECTION SEE DETAIL B CL B RIP RAP EST. 47 TONS FILTER FABRIC EST. 106 SY

BEGIN SBG STA. 16+00 –L– LT.

END SBG STA. 19+20 –L– LT.

TOE PROTECTION SEE DETAIL B CL B RIP RAP EST. 55 TONS FILTER FABRIC EST.124 SY

15" CSP W/ 2 ELBOWS ROD & LUG W/SLEEVE GASKETS

CLASS I RIP RAP EST. 7 TONS EST. 5 SYE FILTER FABRIC

TOE PROTECTION SEE DETAIL B CL B RIP RAP EST. 29 TONS FILTER FABRIC EST. 66 SY

SPECIAL LATERAL 'V' DITCH W/CL B RIP RAP SEE DETAIL C EST. 35 TONS CL B RIPRAP EST. 98 TONS FILTER FABRIC

BANK STABILIZATION SEE DETAIL E STRUCTURE PAY ITEM

BANK STABILIZATION SEE DETAIL E STRUCTURE PAY ITEM

S 60° 31' 39.9" E

See Sheets S–1 thru S–23 for Structure Plans
See Sheet 5 for –L– Profile