TIP PROJECT: U-4444AA

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4444AA	EC-1	

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

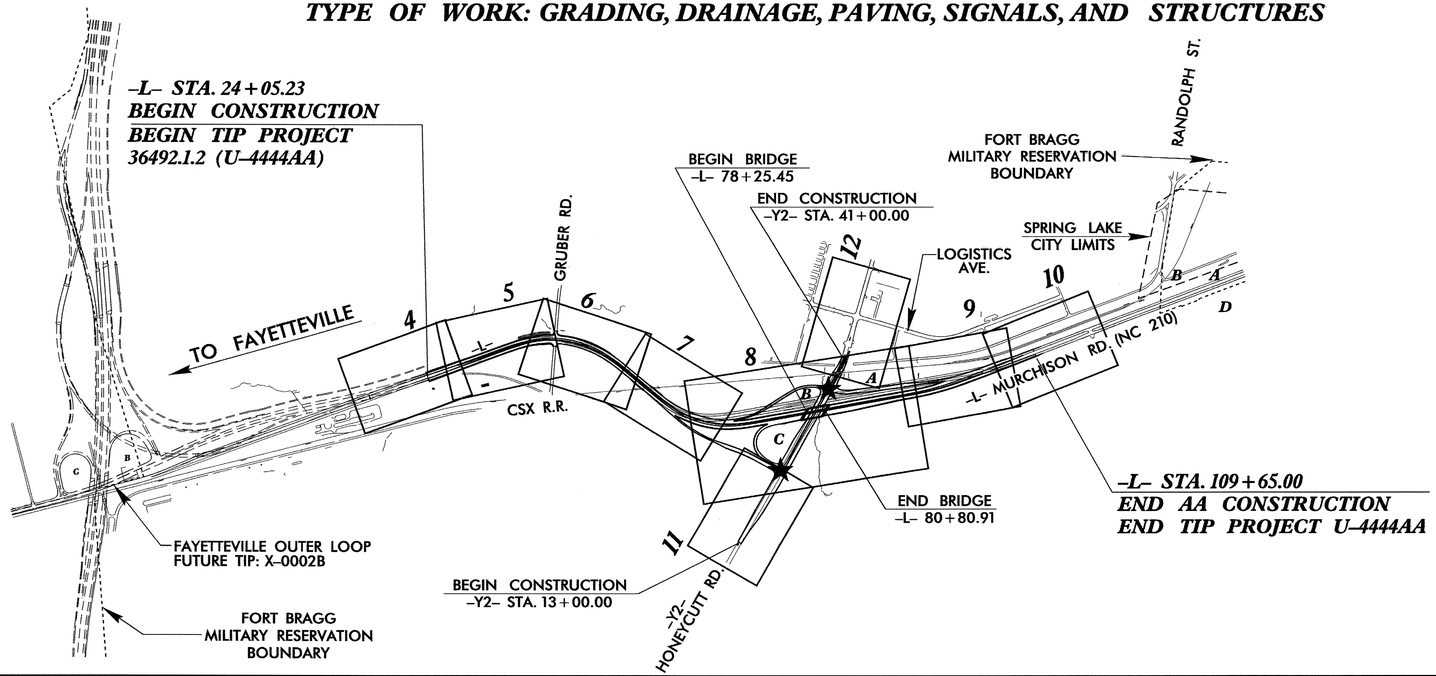
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

CUMBERLAND COUNTY

LOCATION: NC 210 (MURCHISON ROAD) FROM FAYETTEVILLE OUTER LOOP TO JUST NORTH OF HONEYCUTT RD.

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

NAD 83/95 NC GRID



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.

GRAPHIC SCALE

0
PLANS
0
PROFILE (HORIZONTAL)
0
PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

Prepared In the Office of:

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

2006 STANDARD SPECIFICATIONS

Roadway Standard Drawings

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

1605.01	Temporary Silt Fence	1632.01	Rock Inlet Sediment Trap Type A
1606.01	Special Sediment Control Fence	1632.02	Rock Inlet Sediment Trap Type B
1607.01	Gravel Construction Entrance	1632.03	Rock Inlet Sediment Trap Type C
1622.01	Temporary Berms and Slope Drains	1633.01	Temporary Rock Silt Check Type A
1630.03	Temporary Silt Ditch	1634.01	Temporary Rock Sediment Dam Type A
1630.05	Temporary Diversion	1635.01	Rock Pipe Inlet Sediment Trap Type A
		1635.02	Rock Pipe Inlet Sediment Trap Type B

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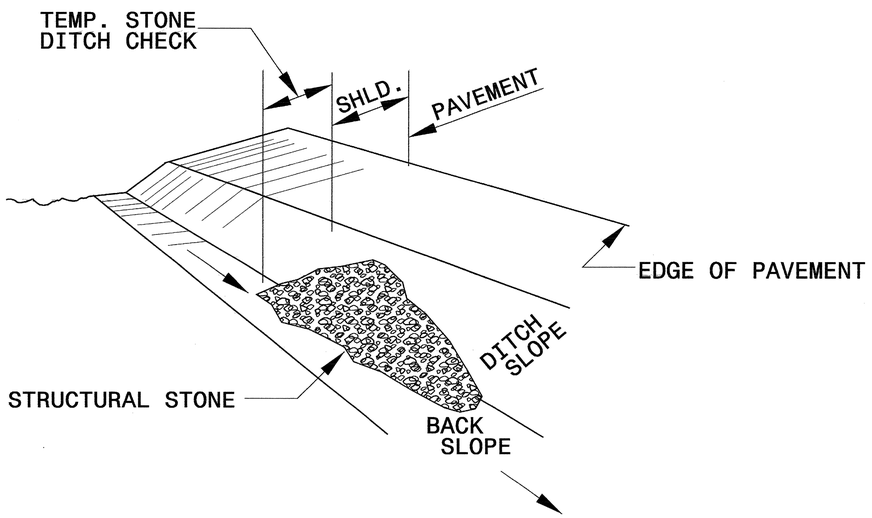
jgpoerin
$$$$ENVIRON

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'B' DETAIL

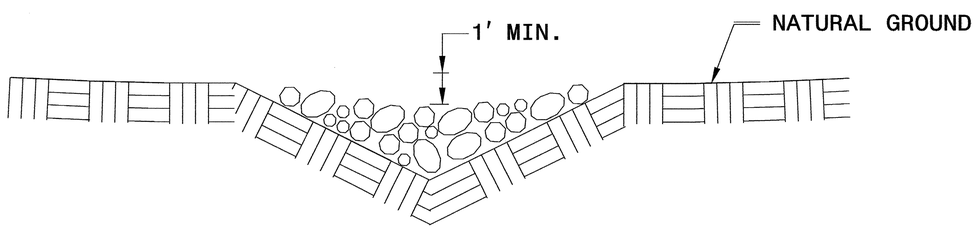


ISOMETRIC VIEW

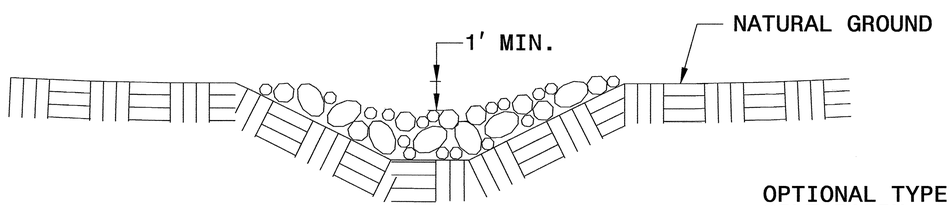
NOTES:

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

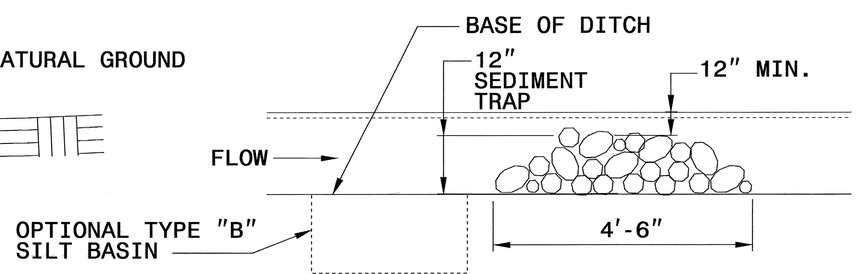
THE ENGINEER MAY DIRECT THE OPTION OF CLASS "A" STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.



CROSS SECTION VEE DITCH



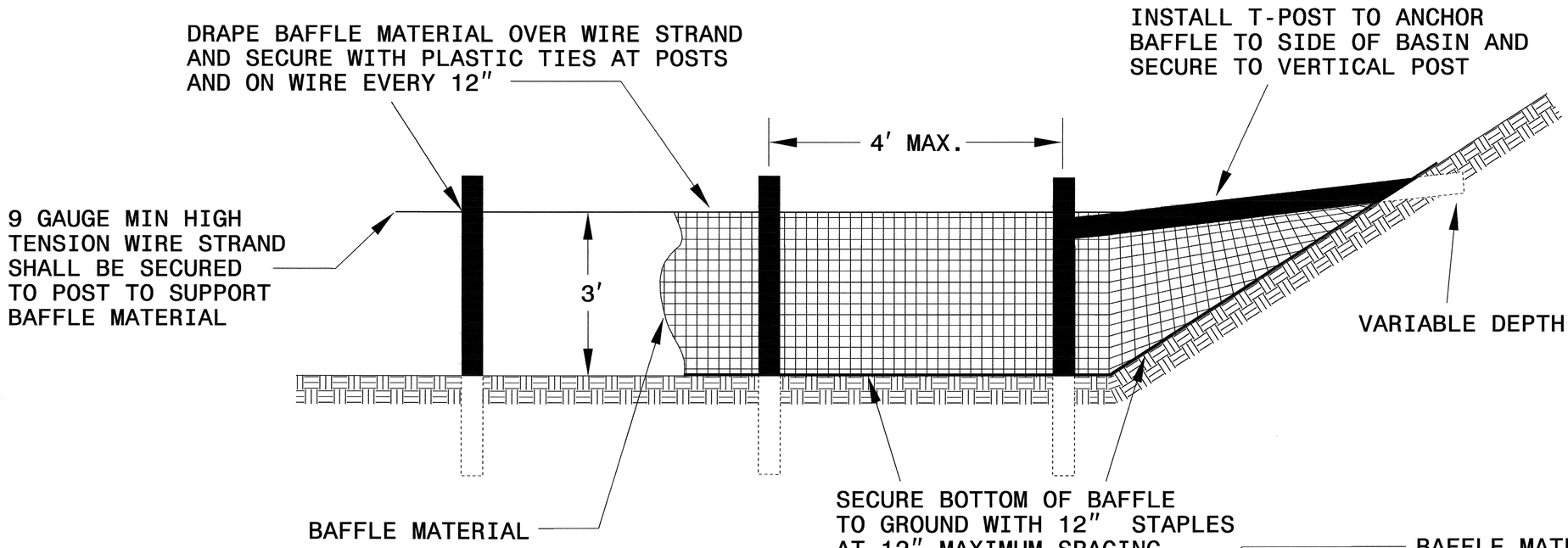
CROSS SECTION TRAPEZOIDAL DITCH

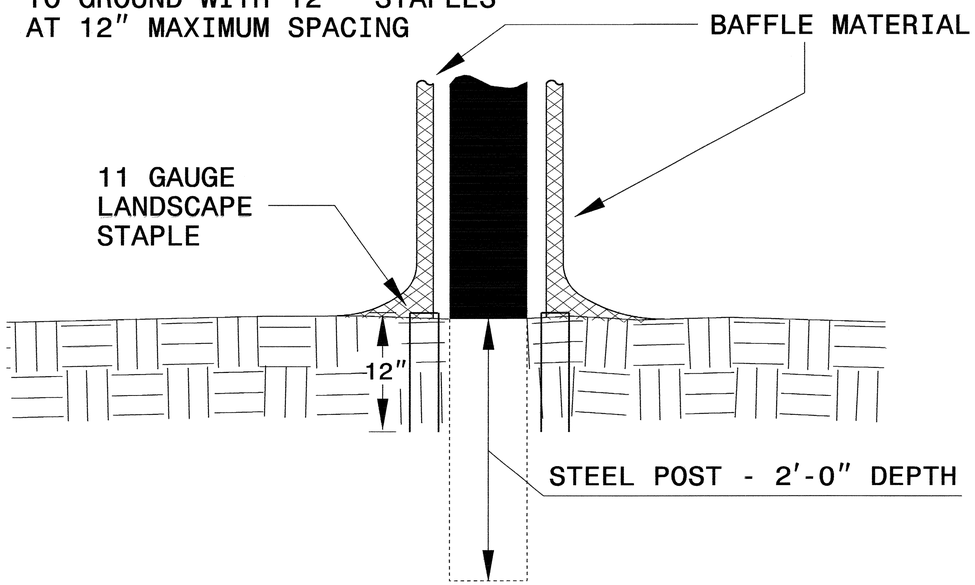


ELEVATION VIEW

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER BAFFLE DETAIL





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

NOTES:

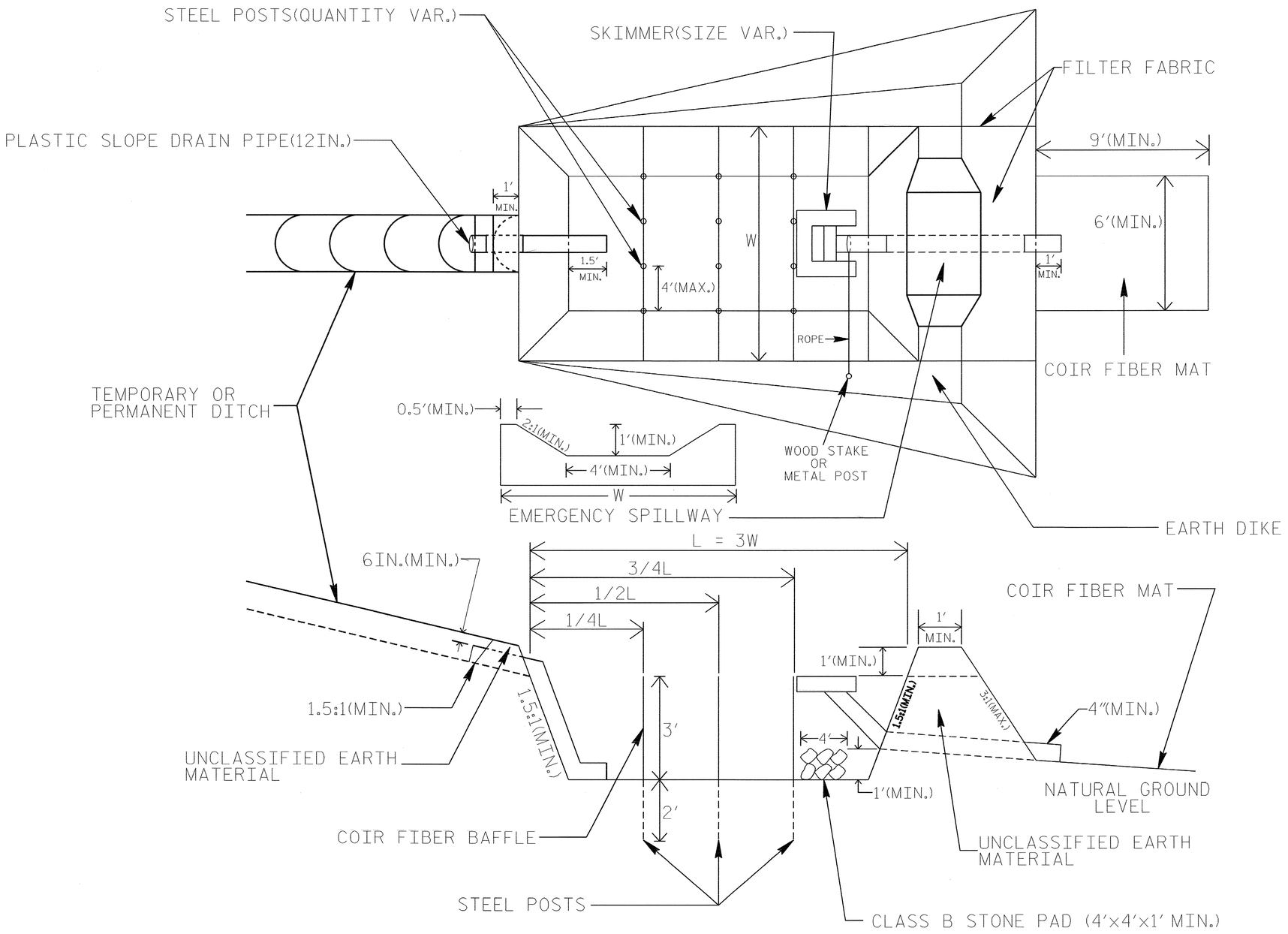
1. INSTALL THREE(3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF ¼ THE BASIN LENGTH.

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

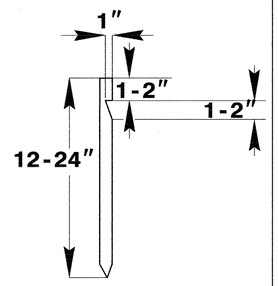
3. TOP HEIGHT OF COIR FIBER BAFFLES SHALL NOT BE BELOW BASE OF EMERGENCY SPILLWAY ELEVATION.

SKIMMER BASIN WITH BAFFLES DETAIL

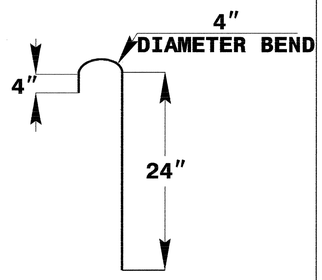
PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



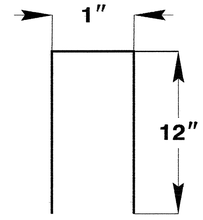
2" x 2" (nominal) WOODEN STAKE



#10 STEEL REINFORCEMENT BAR



1" (nominal) STAPLE



COIR FIBER MAT ANCHOR OPTIONS

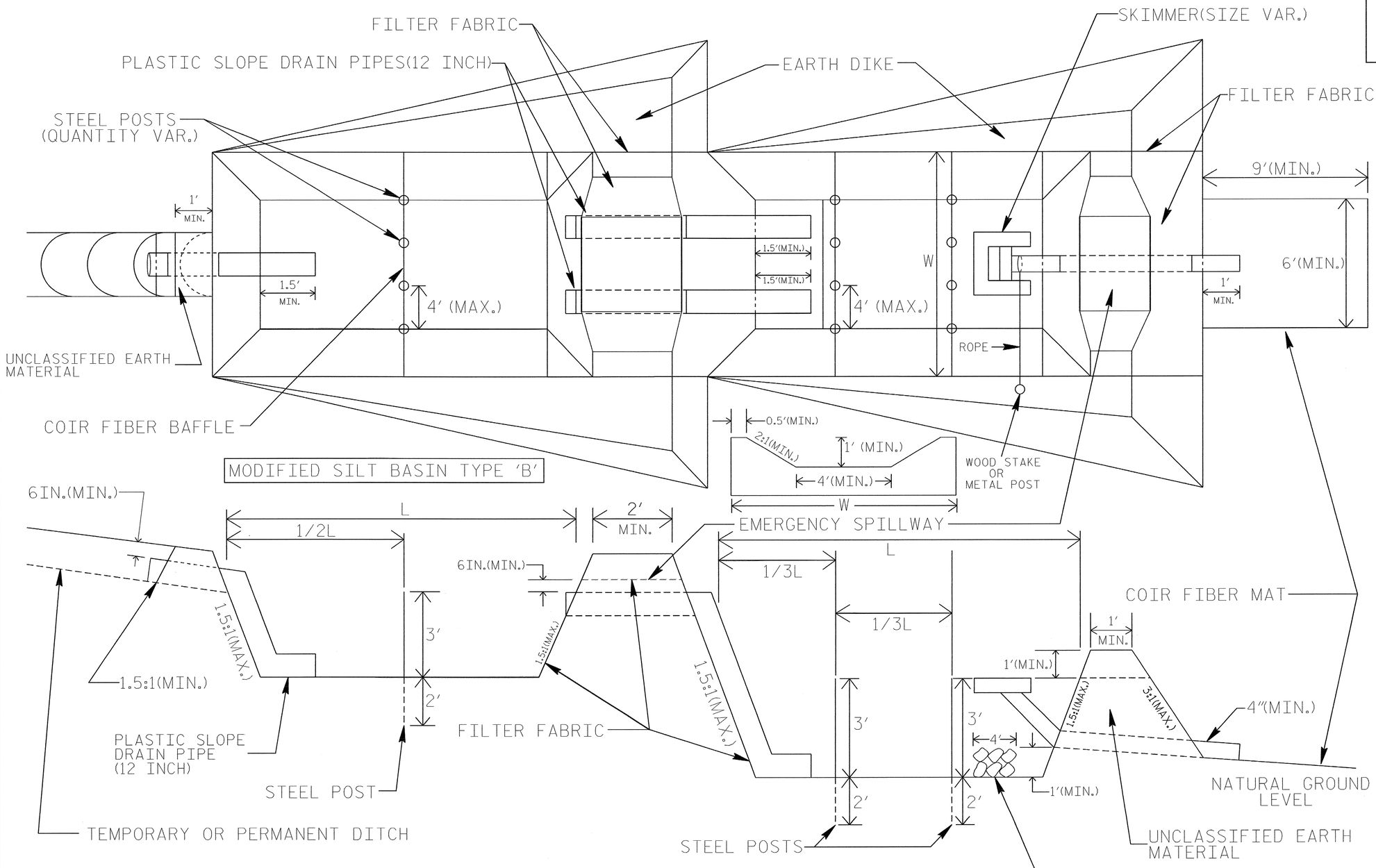
NOTES

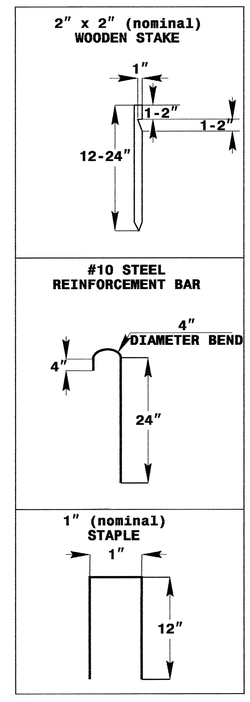
1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR SIDESLOPES.
2. LIMIT EARTH DIKE HEIGHT TO 5 FT.
3. THE MINIMUM BASIN WIDTH SHALL BE 9 FT.
4. DETERMINE EMERGENCY SPILLWAY LENGTH (FT.) USING Q/0.8, WHERE Q IS FLOW RATE (CFS) INTO BASIN.

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-2C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TIERED SKIMMER BASIN DETAIL





COIR FIBER MAT ANCHOR OPTIONS

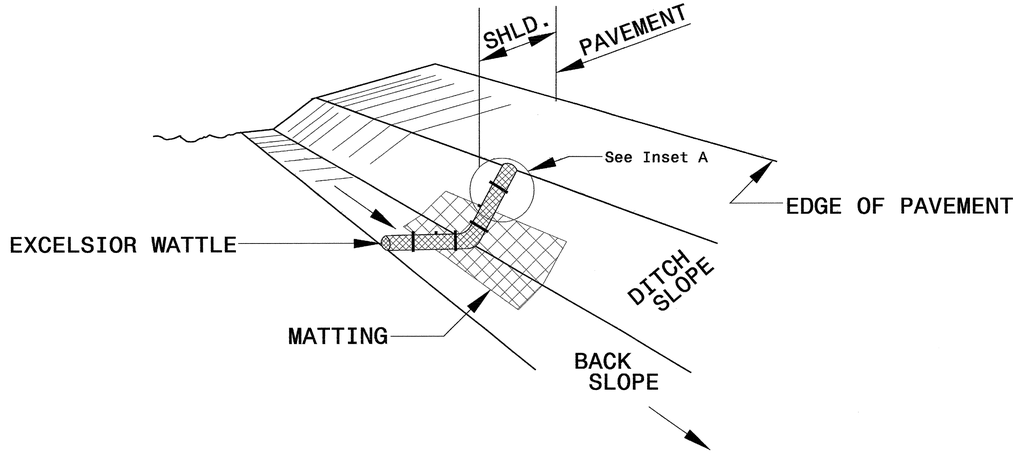
NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR 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. THE MINIMUM BASIN WIDTHS SHALL BE 9 FT.
5. DETERMINE EMERGENCY SPILLWAY LENGTHS (FT.) USING Q/0.8, WHERE Q IS FLOW RATE (CFS) INTO UPPER BASIN.

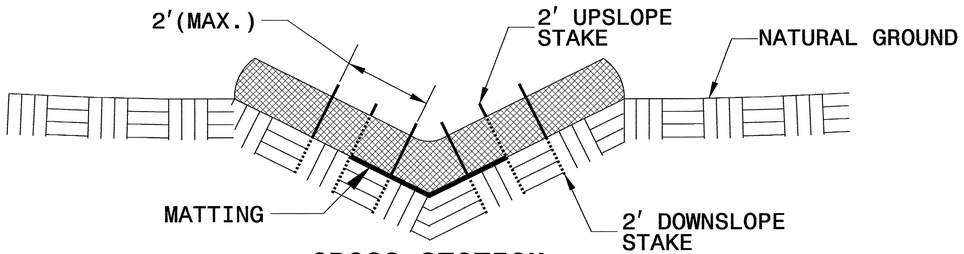
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-2D
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

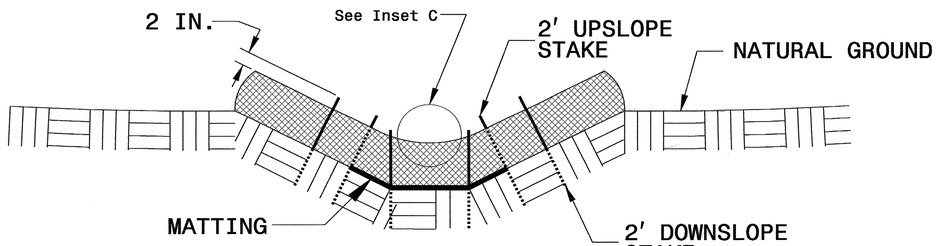
WATTLE WITH POLYACRYLAMIDE DETAIL



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. 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.

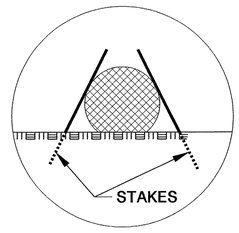
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

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

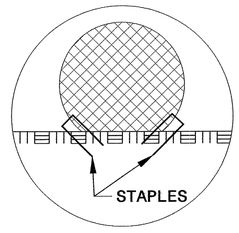
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

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.

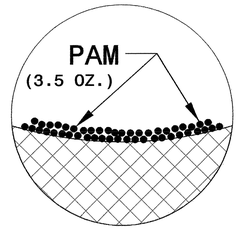
INITIALLY APPLY 3.5 OUNCES OF ANIONIC OR NEUTRALLY CHARGED POLYACRYLAMIDE (PAM) OVER WATTLE WHERE WATER WILL FLOW AND AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



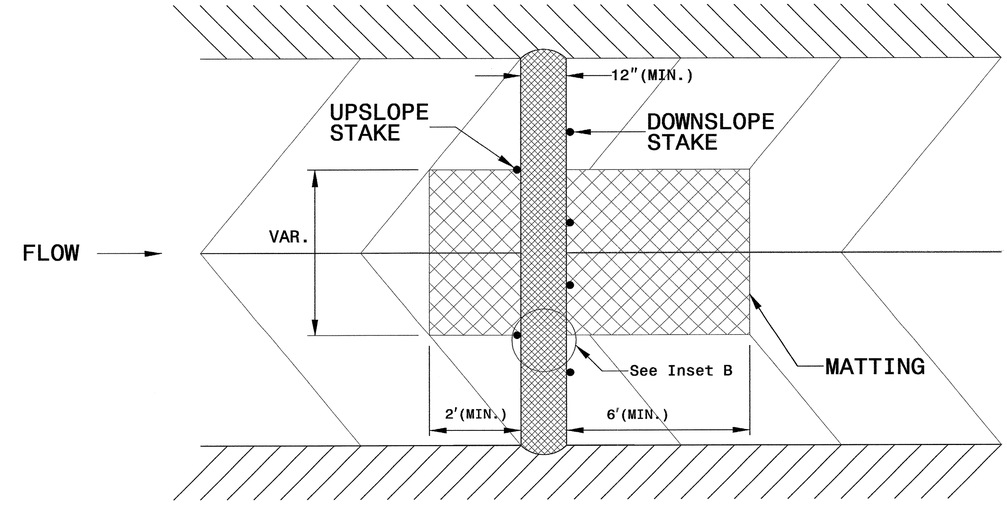
INSET A



INSET B



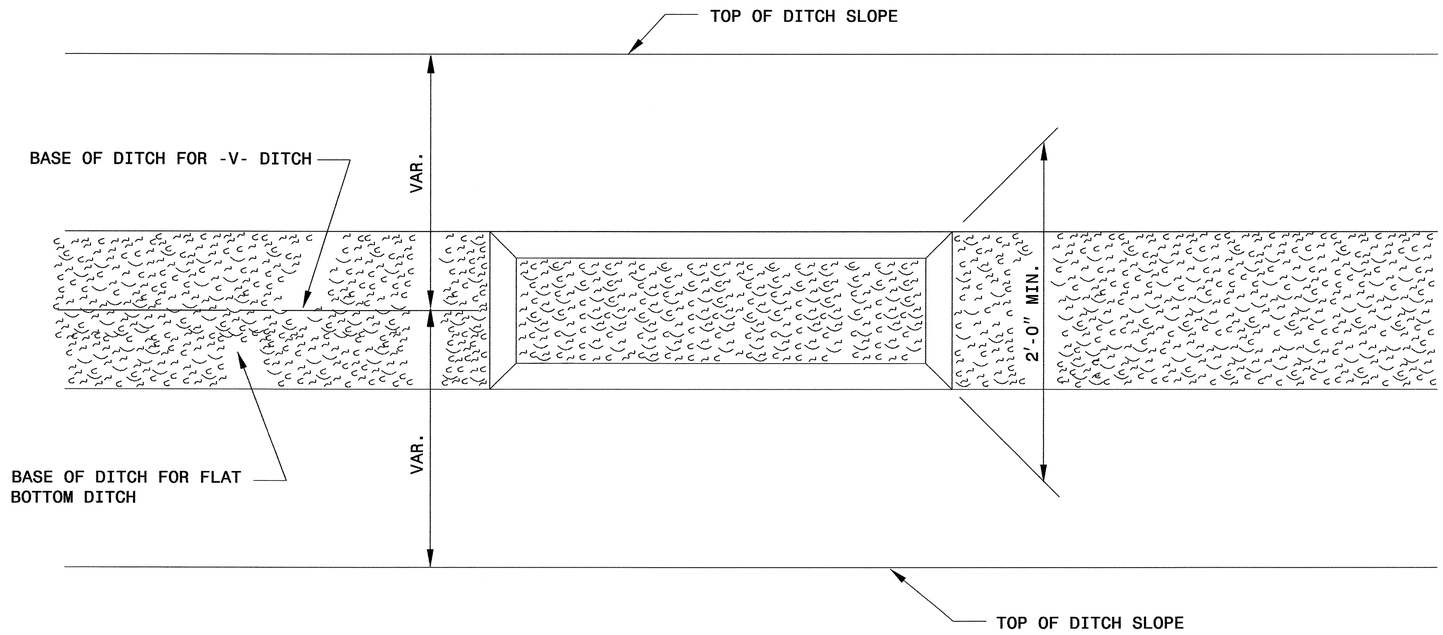
INSET C



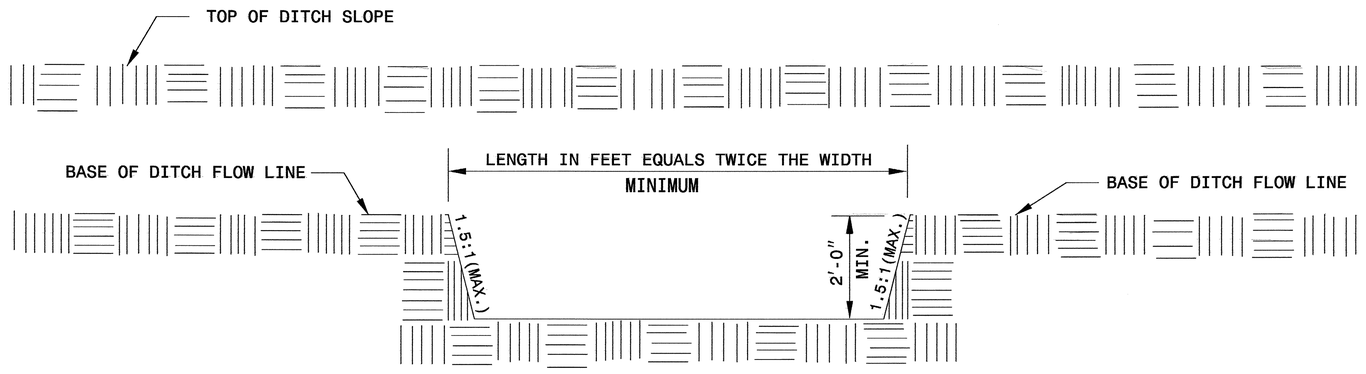
TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-2E
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SILT BASIN 'B' DETAIL



PLAN



ELEVATION

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-2F
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

BORROW PIT DEWATERING BASIN DETAIL

GENERAL NOTES:

DETERMINE BORROW PIT DEWATERING BASIN SIZE USING V = 8.0203 * Q * T, WHERE V IS VOLUME (FT^3), 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 WITH A MATERIAL THAT MEETS THE SPECIFICATIONS OF THE COIR FIBER MAT SPECIAL PROVISION PROVIDED IN THE CONTRACT.

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 FILTER FABRIC 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.

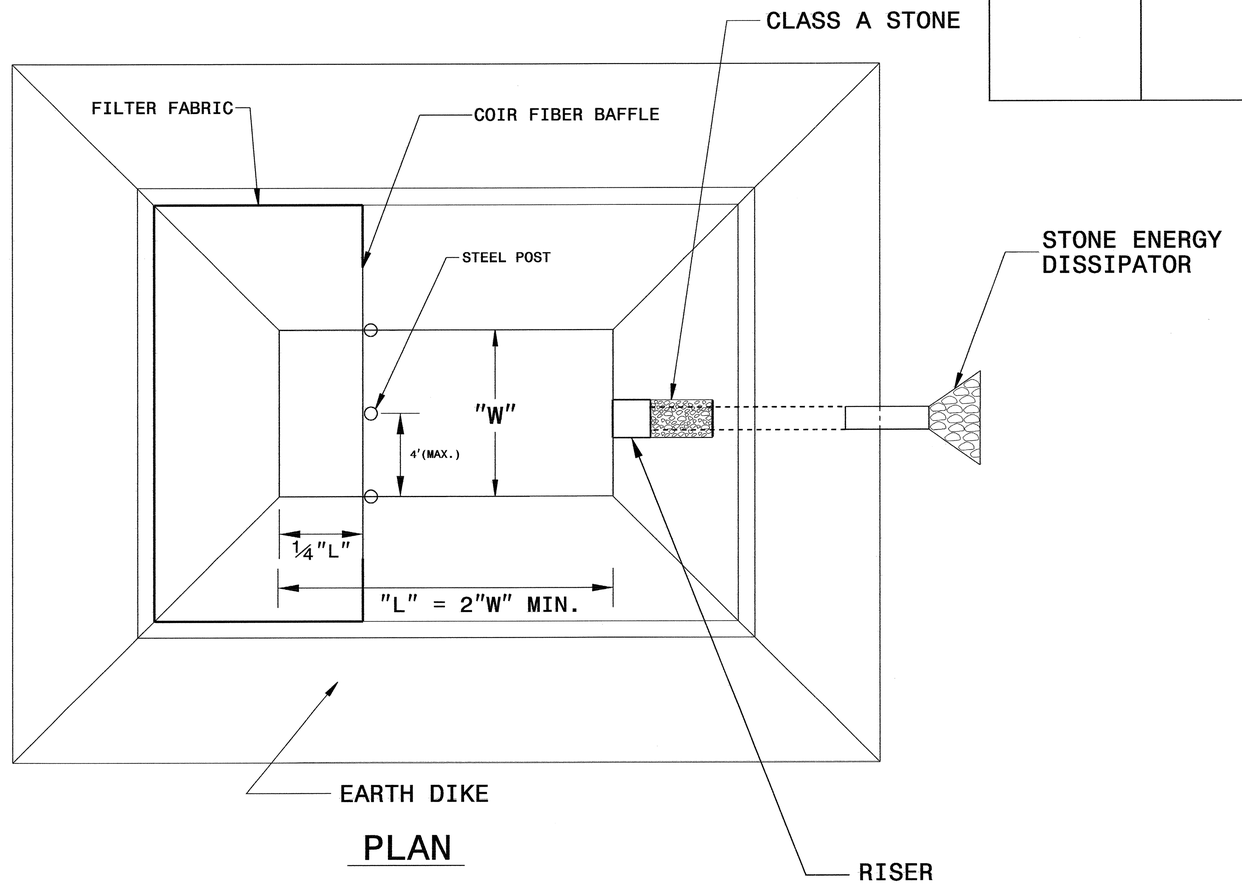
DO NOT EXCEED 3½ FT. IN HEIGHT FOR THE EARTH DIKES REQUIRED FOR BORROW PIT DEWATERING BASIN.

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

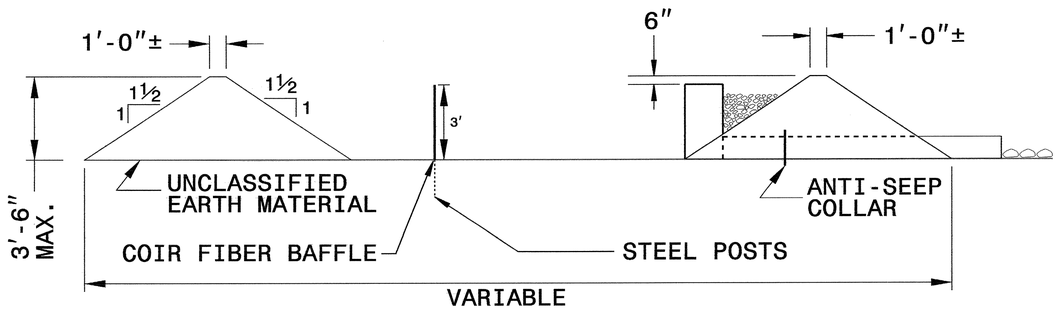
SUBMIT THE SIZE, LOCATION AND RISER PIPE MATERIAL FOR APPROVAL PRIOR TO CONSTRUCTION.

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.



PLAN



TYPICAL SECTION VIEW

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
5	-L-	34+00	38+00	LT	615
5	-L-	40+50	41+00	RT	60
6	-L-	41+00	42+50	RT	105
6	-L-	52+00	54+50	RT	320
7	-L-	54+00	64+00	LT	1375
7	-L-	55+50	58+50	RT	275
7	-Y2RPC-	10+04	12+66	RT	360
7	-Y2RPC-	12+66	14+89	RT	205
7	-L-	62+50	64+50	RT	545
7	-L-	64+50	67+00	RT	765
7	-Y2RPB-	11+52	12+92	LT	260
8	-Y2RPB-	12+92	15+79	LT	295
8	-L-	70+50	71+50	LT	95
8	-L-	71+50	74+00	LT	230
8	-L-	67+00	71+00	RT	1095
8	-L-	70+50	71+50	LT	140
8	-L-	71+50	74+00	LT	345
8	-L-	83+50	84+00	LT	55
8	-Y2RPA-	28+87	29+87	LT	105
8	-Y2-	22+00	23+00	LT	135
8	-Y2-	23+50	28+00	RT	555
8	-Y2-	36+00	37+00	RT	135
8	-Y2RPB-	20+50	22+00	RT	125
8	-Y2RPB-	22+00	23+00	RT	125
8	-Y2RPB-	21+50	24+50	LT	510
8	-Y2RPB-	21+50	26+00	LT	170
8	-Y2RPC-	17+50	22+50	LT	510
8	-Y2RPC-	14+50	15+50	RT	205
9	-L-	92+50	98+75	LT	1055
9	-Y2RPA-	10+00	20+87	RT	1835

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
9	-L-	103+50	104+00	RT	45
9	-L-	104+00	104+50	RT	45
9	-L-	104+50	110+00	RT	445
			SUBTOTAL		13140
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					27690
			TOTAL		40830
			SAY		41000

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
7	-Y2RP8-	10+58	11+05	LT	60
8	-Y2-	31+50	34+50	LT	370
8	-Y2-	34+00	35+00	RT	170
8	-Y2RP8-	21+00	21+50	LT	65
			SUBTOTAL		665
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					240
				TOTAL	905
				SAY	950

PERMANENT SOIL REINFORCEMENT MAT

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

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-4/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

8/17/99

NAD 83/95

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.

FORT BRAGG MILITARY RESERVATION

BUILT UNDER TIP PROJECT X-0002B

-L- 25+00

BEGIN FORT BRAGG SECURITY FENCE
SEE DETAIL SHEET 2-

-L- STA. 24+05.23 BEGIN STATE PROJECT U-4444AA

BEGIN CONSTRUCTION
-L- STA. 22+85.00

SPECIAL DITCH
STA. 22+85 TO 24+50 LT.
TRANSITION FROM TYPICAL
TO EXISTING DITCH.

+05.23'

720' MEDIAN TAPER

+50
114'

BEGIN C/A
N 42°28'28" W
107.19'

N43°10'28"W 166.83' (CHORD)
RADIUS = 5804.6498'

N43°17'58"W 162.67' (CHORD)
RADIUS =5804.6472'

N 43°26'13" W 405.44'

BEGIN MEDIAN BARRIER
+55.10 -L-

+54.10 (EOP OFF 8')

8:1

12'

IAU
N 43° 43' 36.9" W

S 43°56'48" E 1173.28'

ECM

EXISTING R/W

S 43°56'48" E 391.29'

INV=237.28'

NC 87 MURCHISON RD 36' BST

INV=238.57' CONC

NC 87 MURCHISON RD 26' BST

-L- POT Sta. 22+99.47

2904.34'
S 43°56'43" E

S 43°56'43" E
166.36'

24.36'
S 46°03'17" W

65.84'
N 43°52'28" W

RADIUS= 5654.6502'

N 42°28'28" W
135.51'

RADIUS= 5804.0097'
N43°10'28"W 141.83'(CHORD)

353.24'
N 43°55'42" W

SPECIAL DITCH
STA. 22+85 TO 24+50 RT.
TRANSITION FROM TYPICAL
TO EXISTING DITCH.

BEGIN C/A

BEGIN 48" WW FENCE

FORT BRAGG MILITARY RESERVATION

END PROJECT X-0002B
-L- 24+07.74 X -9.23'
ENGLISH COORDINATE NAD 83
N 502621.3675
E 2015745.8848

BEGIN PROJECT U-4444AA
-L- 24+05.10 / 0.03'
ENGLISH COORDINATE NAD83/95
N 502625.9176
E 2015754.3451

MATCH TO SHEET 5 -L- STA. 29+00

PA

C&G

CANOPY

EXISTING R/W

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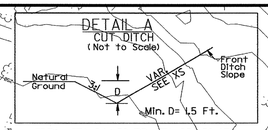
i:\environmental\Design\U-4444AA_RDY_PSH04.dgn
ddaggahan AT RENZ21500

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-5/CONST.5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

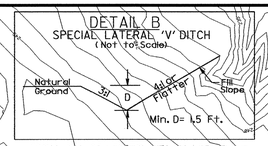
REVISIONS

DETAIL A
CUT DITCH
(Not to Scale)



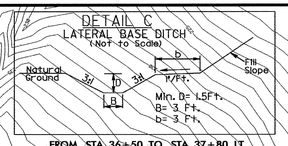
FROM STA. 34+50 TO STA. 35+50 LT
FROM STA. 40+15 TO STA. 41+00 RT

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



FROM STA. 35+50 TO STA. 36+50 LT.

DETAIL C
LATERAL BASE DITCH
(Not to Scale)



FROM STA. 36+50 TO STA. 37+80 LT.
DDE= 107 CY

FORT BRAGG MILITAR

NAD 83/95

Modified Silt Basin Type 'B' 37 x 23 x 3 (See Tiered Skimmer Basin Detail) ID 5.1

37 x 23 x 3 1.5 inch Skimmer with 1.0 inch Orifice Diameter 15 ft. weir (See Tiered Skimmer Basin Detail) ID 5.1

24 x 63 x 3 1.5 inch Skimmer with 1.125 inch Orifice Diameter 16 ft. weir ID 5.2

-L- STA. 29+00

MATCH TO SHEET 4 -L-

MATCH TO SHEET 6 -L- STA. 41+00

-L- 30+00

-L- 40+00

-L- 35+00

-L_SB- 35+00

-L_NB- 35+00

8' SOIL

720' MEDIAN TAPER

+15.15
106.19'

N 46°45'48"E
8.37'

N 43°50' 35" W
246.00'

N 43°43' 36.9" W

22' MED.

MEDIAN BARRIER

GRAU 350

CAT-1

492.21' N 43°35'32" W

ST.CM

185' BST

15' BST

FORT BRAGG SECURITY FENCE
72 CL 3SBW
SEE DETAIL SHEET 2

BEGIN R/W ACQUISITION +62.09
EXIST. R/W

34+60.21
107.53'

L-Z+60.08
39.65'

53.75' INC

REMOVE FENCE
EXISTING R/W

SPECIAL CUT DITCH
STA. 34+50 – 35+50 LT
SEE DETAIL A

SPECIAL LATERAL V DITCH
STA. 35+50 – 36+50 LT
SEE DETAIL B

LATERAL BASE DITCH
STA. 36+50 – 37+80 LT
SEE DETAIL C

2 TONS CL B RIP RAP
7 SY FILTER FABRIC

END R/W ACQUISITION +10.96
EXIST. R/W

37+73.37
736.93'

S 51°03'33" W
33.80'

5 TONS CL B RIP RAP
14 SY FILTER FABRIC

N31°45'18"W 445.21' (CHORD)
RADIUS= 1573.3940'

-L_SB- SC Sta. 39+10.33

-L_SB- PCC Sta. 41+09.49

REMOVE

TSD

15" CSP W/ 2 ELBOWS

JB w/HH

2GI TYPE A FS

COLLAR 2

2GI TYPE A

FLOWABLE FILL

15"

24"

RETAIN EXIST. DITCH

COLLAR AND EXTEND

REMOVE 2GI COLLAR & EXTEND 15" RCP

48" WW FENCE

GEOGRID REINFORCEMENT

ELIMINATE CUT & RETAIN EXIST. DITCH STA. 37+00 TO STA. 40+00 -L- RT. SEE X-SECTIONS

RADIUS= 1327.2683'
N31°0'58"W 210.94' (CHORD)

SPECIAL CUT DITCH
STA. 40+15 – 41+00 RT
SEE DETAIL A

-L_SB- TS Sta. 34+80.33

-L_NB- TS Sta. 34+47.37

-L- TS Sta. 34+15.46 =
-L_SB- POT Sta. 34+15.60
-L_NB- POT Sta. 34+15.59

-L_NB- SC Sta. 38+77.37

-L- SC Sta. 38+45.46

-L- PCC Sta. 40+58.15

-L_NB- PCC Sta. 40+87.66

Pls Sta 37+02.64
Θs = 9° 28' 33.0"
Ls = 430.00'
LT = 287.08'
ST = 143.71'

Pl Sta 39+52.05
Δ = 9° 22' 26.2" (RT)
D = 4° 24' 26.5"
L = 212.69'
T = 106.58'
R = 1,300.00'
e = 8%

Pl Sta 44+73.31
Δ = 31° 44' 48.2" (RT)
D = 3° 55' 27.7"
L = 808.96'
T = 415.16'
R = 1,460.00'
e = 8%

Pls Sta 50+27.53
Θs = 9° 25' 06.5"
Ls = 480.00'
LT = 320.45'
ST = 160.41'

FORT BRAGG MILITARY RESERVATION

-L_SB-

Pls Sta 37+67.48
Θs = 10° 15' 55.8"
Ls = 430.00'
LT = 287.15'
ST = 143.77'

Pl Sta 40+10.14
Δ = 9° 30' 32.9" (RT)
D = 4° 46' 28.7"
L = 199.16'
T = 99.81'
R = 1,200.00'
e = 8%

Pl Sta 44+92.63
Δ = 31° 14' 55.4" (RT)
D = 4° 10' 55.8"
L = 747.19'
T = 383.14'
R = 1,370.00'
e = 8%

Pls Sta 50+00.35
Θs = 8° 59' 30.0"
Ls = 430.00'
LT = 287.04'
ST = 143.67'

-L_NB-

Pls Sta 37+34.49
Θs = 9° 58' 28.4"
Ls = 430.00'
LT = 287.12'
ST = 143.75'

Pl Sta 39+82.77
Δ = 9° 45' 23.2" (RT)
D = 4° 38' 21.6"
L = 210.30'
T = 105.40'
R = 1,235.00'
e = 8%

Pl Sta 44+84.13
Δ = 31° 30' 58.4" (RT)
D = 4° 04' 40.8"
L = 772.84'
T = 396.47'
R = 1,405.00'
e = 8%

Pls Sta 50+04.15
Θs = 8° 46' 03.7"
Ls = 430.00'
LT = 287.02'
ST = 143.65'

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.

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agoodyn AT RENV21500

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-6/CONST.6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 6

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

NAD 83/95

95 x 19 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
11 ft. weir
ID 6.1

2 TONS CL B RIP RAP
7 SY FILTER FABRIC

MATCH TO SHEET 5 -L- STA. 41+00

MATCH TO SHEET 7 -L- STA. 54+00

BEGIN SECURITY FENCE
STA. 42+04.02

END SECURITY FENCE
STA. 41+30.46

MOVEABLE JERSEY
BARRIER FOR
ROAD CLOSURE

FORT BRAGG SECURITY FENCE
72" CL 35BW
SEE DETAIL SHEET 2

FORT BRAGG MILITARY RESERVATION

-L- 48+70.00
Exist R/W
& 130.00' Lt

-L- 49+15.00
Exist. R/W
& 130.00' Lt.

-L- ST Sta. 53+47.11

-L SB- 50+00

-L NB- 50+00

-L SB- 45+00

-L NB- 45+00

-L SB- CS Sta. 48+56.68

-L NB- CS Sta. 48+60.50

-L- CS Sta. 48+67.11

-L SB- ST Sta. 52+86.68

-L NB- ST Sta. 52+90.50

PROP. 48" WW FENCE

BEGIN 48" WW FENCE
STA. 41+99.70

END 48" WW FENCE
STA. 41+30.10

MEDIAN BARRIER

MOVEABLE JERSEY
BARRIER FOR
ROAD CLOSURE

GUARD HOUSE GATE

GRIBER RD

LITTLE CROSS CREEK

MURCHISON RD

SEABOARD COASTLINE RD

EXISTING R/W

-L-

Pls Sta 37+02.54	Pl Sta 39+52.05	Pl Sta 44+73.31	Pls Sta 50+27.53
Os = 9° 28' 33.0"	△ = 9° 22' 26.2" (RT)	△ = 31° 44' 48.2" (RT)	Os = 9° 25' 06.5"
Ls = 430.00'	D = 4° 24' 26.5"	D = 3° 55' 27.7"	Ls = 480.00'
LT = 287.08'	L = 212.69'	L = 808.96'	LT = 320.45'
ST = 143.71'	T = 106.58'	T = 415.16'	ST = 160.41'
	R = 1,300.00'	R = 1,460.00'	
	e = 8%	e = 8%	

-L NB-

Pls Sta 37+34.49	Pl Sta 39+82.77	Pl Sta 44+84.13	Pls Sta 50+04.15
Os = 9° 58' 28.4"	△ = 9° 45' 23.2" (RT)	△ = 31° 30' 58.4" (RT)	Os = 8° 46' 03.7"
Ls = 430.00'	D = 4° 38' 21.6"	D = 4° 04' 40.8"	Ls = 430.00'
LT = 287.12'	L = 210.30'	L = 772.84'	LT = 287.02'
ST = 143.75'	T = 105.40'	T = 396.47'	ST = 143.65'
	R = 1,235.00'	R = 1,405.00'	
	e = 8%		

-L SB-

Pls Sta 37+67.48	Pl Sta 40+10.14	Pl Sta 44+92.63	Pls Sta 50+00.35
Os = 10° 15' 55.8"	△ = 9° 30' 32.9" (RT)	△ = 31° 14' 55.4" (RT)	Os = 8° 59' 30.0"
Ls = 430.00'	D = 4° 46' 28.7"	D = 4° 10' 55.8"	Ls = 430.00'
LT = 287.15'	L = 199.16'	L = 747.19'	LT = 287.04'
ST = 143.77'	T = 99.81'	T = 383.14'	ST = 143.67'
	R = 1,200.00'	R = 1,370.00'	
	e = 8%	e = 8%	

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PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-7/CONST.7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

REVISIONS

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

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 7

NAD 83/95

MATCH TO SHEET 6 –L– STA. 54+00

MATCH TO SHEET 8 –L– STA. 67+00

FORT BRAGG MILITARY RESERVATION

EXERCISE EQUIPMENT

8' SOIL

12' SOIL

SEE DETAIL 2
MEDIAN BARRIER CAP

TIE FORT BRAGG SECURITY FENCE TO RR BRIDGE

FORT BRAGG SECURITY FENCE
12' CL 3SBW
SEE DETAIL SHEET 2

SHOREWOOD COASTLINE DR

EXISTING R/W

–L– 60+00

–L_NB– 60+00

–L_SB– 60+00

–L_SB– 55+00

–L_NB– 55+00

–L_SB– TS Sta. 56+26.83

–L_NB– TS Sta. 56+40.84

–L– TS Sta. 56+62.36

–L– SC Sta. 61+42.36

–L_NB– SC Sta. 60+70.84

–L_SB– SC Sta. 60+56.83

–L_SB– POC Sta. 64+02.76 =
–Y2RPB– ST Sta. 10+00.00
(48' LT)

–Y2RPB– SC Sta. 12+50.00

–L_NB– 65+00
–L_SB– 65+00

–Y2RPB–

PIs Sta 11+30.87	PI Sta 15+18.96	PIs Sta 18+59.40
Θs = 5° 24' 54.2"	Δ = 29° 32' 36.5" (LT)	Θs = 7° 01' 17.5"
Θs = 7° 01' 26.5"	D = 5° 37' 02.0"	Ls = 250.00'
Ls = 250.00'	L = 525.94'	LT = 166.80'
LT = 130.87'	T = 268.96'	ST = 83.45'
ST = 120.11'	R = 1,020.00'	
	e = 8%	

–Y2RPC–

PIs Sta 12+54.33	PI Sta 15+56.92	PIs Sta 18+56.91
Θs = 3° 09' 55.8"	Δ = 14° 51' 14.6" (LT)	Θs = 3° 09' 55.8"
Ls = 200.00'	D = 3° 09' 55.8"	Ls = 200.00'
LT = 133.35'	L = 469.25'	LT = 133.35'
ST = 66.69'	T = 235.95'	ST = 66.69'
	R = 1,810.00'	
	e = 5.5%	

PIs Sta 59+27.92	PI Sta 64+35.11	PIs Sta 69+24.88
Θs = 9° 28' 33.0"	Δ = 31° 18' 25.2" (LT)	Θs = 9° 28' 33.0"
Ls = 430.00'	D = 4° 24' 26.5"	Ls = 430.00'
LT = 287.08'	L = 710.33'	LT = 287.08'
ST = 143.71'	T = 364.28'	ST = 143.71'
	R = 1,300.00'	
	e = 8%	

PIs Sta 59+83.03	PI Sta 64+34.23	PIs Sta 68+75.59
Θs = 11° 27' 33.0"	Δ = 27° 20' 27.1" (LT)	Θs = 11° 27' 33.0"
Ls = 480.00'	D = 4° 46' 28.7"	Ls = 480.00'
LT = 320.67'	L = 572.63'	LT = 320.67'
ST = 160.61'	T = 291.87'	ST = 160.61'
	R = 1,200.00'	
	e = 8%	

PIs Sta 59+13.87	PI Sta 64+53.24	PIs Sta 69+72.24
Θs = 8° 59' 30.0"	Δ = 32° 16' 31.5" (LT)	Θs = 8° 59' 30.0"
Ls = 430.00'	D = 4° 10' 55.8"	Ls = 430.00'
LT = 287.04'	L = 771.74'	LT = 287.04'
ST = 143.67'	T = 396.41'	ST = 143.67'
	R = 1,370.00'	
	e = 8%	

–L_NB– POT 58+90.00 =
–Y2RPC– POT Sta. 10+00.00
(36' RT.)

–Y2RPC– TS Sta. 11+20.98

–Y2RPC– SC Sta. 13+20.98

–Y2RPC– CS Sta. 17+90.22

–Y2RPC–

+79.00 EXIST. R/W

+97.00 14'

+04.00 EXIST. R/W

+90 145.89' 124.82'

+20.98 100.00'

+82.38 END R/W EXIST. R/W ACQUISITION

+02.76

+90.22 100.00'

BEGIN R/W ACQUISITION +52.45 EXIST. R/W

BEGIN R/W ACQUISITION

TIE TO EXIST. BERM DITCH

BERM DITCH

COLLAR & EXTEND W/18"

REMOVE

RETAIN

200' ACCEL. LANE

300' TAPER

200' TAPER 4 TO 12

VAR. MED.

53.75' INC.

33.33' INC.

N 16°16'28" E 148.18'

N 14°20'37" E 219.83'

N 17°06'23.4" E

TIE PROP. 48" WW FENCE TO RR BRIDGE

PROP. 48" WW FENCE

2 TONS CL B RIP RAP
7 SY FILTER FABRIC

15 TONS CL I RIP-RAP
30 SY FILTER FABRIC

SPECIAL DITCH
64+00 –L– RT. TO 64+50 –L– RT.
64+50 –L– RT. TO 67+00 –L– RT.
SEE DETAIL E

SPECIAL DITCH
13+21.40 –Y2RPC– RT.
TO 15+46.68 –Y2RPC– RT.
SEE DETAIL D

FORT BRAGG
MILITARY RESERVATION

31 x 100 x 3
2 inch Skimmer with 1.625 inch Orifice Diameter
23 ft. weir
ID 7.1

DETAIL D
SPECIAL LATERAL "V" DITCH
(Not to Scale)

Natural Ground — 3H — D — 4:1 or Flatter — Fill Slope — Min. D= 1Ft.

FROM STA. 13+21.40 –Y2RPC– RT.
TO STA. 15+46.68 –Y2RPC– RT.

DETAIL E
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground — SEE DETAIL D — 4:1 or Flatter — Front Ditch Slope — Min. D= 1.5 Ft.

FROM STA. 64+00 TO STA. 64+50 RT
FROM STA. 64+50 TO STA. 67+00 RT

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ppeaden AT RENY21600

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PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-8/CONST.8

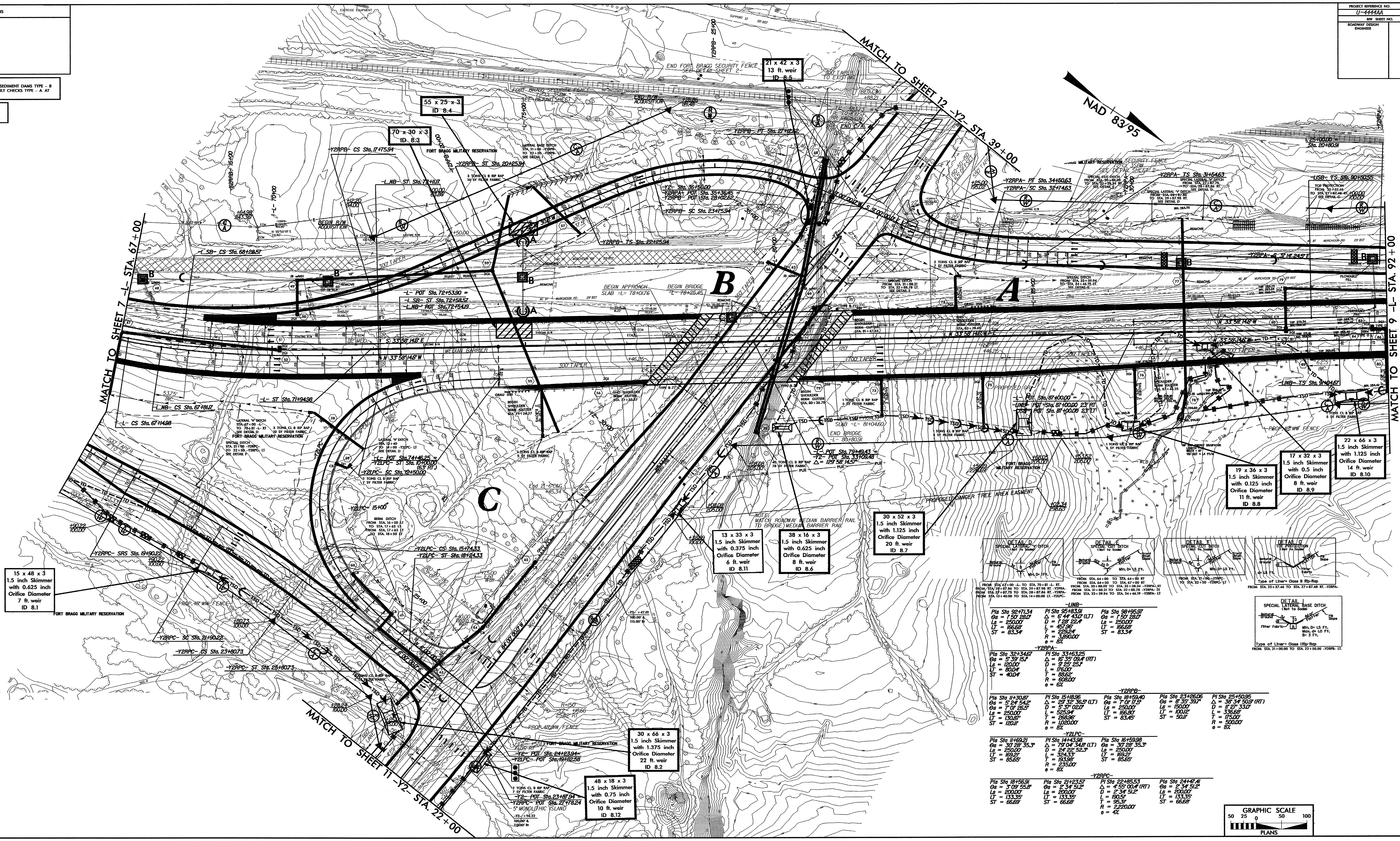
R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

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

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 8



FROM STA. 67+00 -L- TO STA. 70+81 -L- RT.
FROM STA. 28+87.86 TO STA. 29+87.98 RT. -Y2PRA-
FROM STA. 27+87.75 TO STA. 28+87.86 RT. -Y2RPA-
FROM STA. 13+40.00 TO STA. 14+00.00 LT. -Y2LPC-

FROM STA. 64+00 TO STA. 64+50 RT
FROM STA. 64+50 TO STA. 67+00 RT
FROM STA. 30+88.09 TO STA. 32+38.34 -Y2RPA- RT
FROM STA. 31+88.21 TO STA. 32+88.78 -Y2RPA- LT
FROM STA. 33+39.94 TO STA. 34+46.19 -Y2RPA- LT

FROM STA. 21+00 -Y2RPC-
TO STA. 22+50 -Y2RPC- LT

FROM STA. 25+37.46 TO STA. 27+87.48 RT. -Y2RPA-

FROM STA. 21+00.00 TO STA. 22+50.00 -Y2RPB- LT.

-LINB-

Pls Sta 92+71.34	PI Sta 95+83.91	Pls Sta 98+95.97
Θs = 1° 50' 28.0"	Δ = 6° 44' 43.0" (LT)	Θs = 1° 50' 28.0"
Ls = 250.00'	D = 1° 28' 22.4"	Ls = 250.00'
LT = 166.68'	L = 457.96'	LT = 166.68'
ST = 83.34'	T = 229.24'	ST = 83.34'
	R = 3,890.00'	
	e = 8%	

-Y2RPA-

Pls Sta 32+34.67	PI Sta 33+63.25
Θs = 5° 39' 15.1"	Δ = 16° 35' 09.4" (RT)
Ls = 120.00'	D = 9° 25' 25.1"
LT = 80.04'	L = 176.00'
ST = 40.04'	T = 88.62'
	R = 608.00'
	e = 6%

-Y2RPB-

Pls Sta 11+30.87	PI Sta 15+18.96	Pls Sta 18+59.40	Pls Sta 23+26.06	PI Sta 25+50.95
Θs = 5° 24' 54.2"	Δ = 29° 32' 36.5" (LT)	Θs = 7° 01' 17.5"	Θs = 8° 35' 39.7"	Δ = 38° 34' 50.9" (RT)
Θs = 7° 01' 26.5"	D = 5° 37' 02.0"	Ls = 250.00'	Ls = 150.00'	D = 11° 27' 33.0"
Ls = 250.00'	L = 525.94'	LT = 166.80'	LT = 100.12'	L = 336.68'
LT = 130.87'	T = 268.96'	ST = 83.45'	ST = 50.11'	T = 175.00'
ST = 120.11'	R = 1,020.00'			R = 500.00'
	e = 8%			e = 8%

-Y2LPC-

Pls Sta 11+69.21	PI Sta 14+43.98	Pls Sta 16+59.98
Θs = 30° 28' 35.3"	Δ = 79° 04' 34.8" (LT)	Θs = 30° 28' 35.3"
Ls = 250.00'	D = 24° 22' 52.3"	Ls = 250.00'
LT = 169.21'	L = 324.33'	LT = 169.21'
ST = 85.65'	T = 193.98'	ST = 85.65'
	R = 235.00'	
	e = 8%	

-Y2RPC-

Pls Sta 18+56.91	Pls Sta 21+23.57	PI Sta 22+85.53	Pls Sta 24+47.41
Θs = 3° 09' 55.8"	Θs = 2° 34' 51.2"	Δ = 4° 55' 00.4" (RT)	Θs = 2° 34' 51.2"
Ls = 200.00'	Ls = 200.00'	D = 2° 34' 51.2"	Ls = 200.00'
LT = 133.35'	LT = 133.35'	L = 190.51'	LT = 133.35'
ST = 66.69'	ST = 66.68'	T = 95.31'	ST = 66.68'
		R = 2,220.00'	
		e = 4%	

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-9/CONST.9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

8/17/99

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pgoodwin AT REN22600

-Y2RPA-TT-
Pls Sta 17+08.01
Θs = 2° 37' 59.1"
Ls = 250.00'
LT = 166.69'
ST = 83.35'

-Y2RPA-TT-
PI Sta 14+37.62
Δ = 1° 53' 31.1" (RT)
D = 2° 06' 23.3"
L = 374.65'
T = 187.62'
R = 2,720.00'
e = 4%

-Y2RPA-TT-
Pls Sta 11+66.69
Θs = 2° 37' 59.1"
Ls = 250.00'
LT = 166.69'
ST = 83.35'

-LISB-
Pls Sta 92+17.22
Θs = 1° 50' 28.0"
Ls = 250.00'
LT = 166.68'
ST = 83.34'

-LISB-
PI Sta 95+29.79
Δ = 6° 44' 43.0" (LT)
D = 1° 28' 22.4"
L = 457.96'
T = 229.24'
R = 3,890.00'
e = 4%

-LISB-
Pls Sta 98+41.85
Θs = 1° 50' 28.0"
Ls = 250.00'
LT = 166.68'
ST = 83.34'

NAD 83/95

32 x 14 x 3
1.5 inch Skimmer
with .5 inch
Orifice Diameter
6 ft. weir
ID 9.1F

51 x 20 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
12 ft. weir
ID 9.2F

CROSS COUNTRY POWER LINE

FORT BRAGG MILITARY RESERVATION

SEABOARD COASTLINE RR

RANDOLF ST 24' BST

FORT BRAGG SECURITY FENCE 72" CL 3SBW SEEL DET AHL SHEET 2

-Y2RPA-TT- CS Sta. 16+24.65

-LISB- ST Sta. 100+08.51

-Y2AA-TT- SC Sta. 12+50.00

-LISB- ST Sta. 102+77.96 =
-Y2RPA-TT- ST Sta. 10+00.00
24.00' LT.

LATERAL 'V' DITCH
W/BERM STA. 19+22.63
20+69.58 RT -Y2RPA-TT-
SEE DETAIL H

-LISB- SC Sta. 93+00.55

-Y2RPA-TT- ST Sta. 18+74.65

LATERAL BASE DITCH
W/BERM STA. 16+76.39
18+76.19 RT -Y2RPA-TT-
SEE DETAIL J

-LISB- CS Sta. 97+58.51

+50.00
120.00'
+50.00
98.76'
END R/W
ACQUISITION

SPECIAL CUT DITCH
STA. 10+27.96 - 11+77.97 RT
-Y2RPA-TT-
SEE DETAIL E

RADIUS = 3769.7190'
N39°15'58"W 700.18' (CHORD)

MATCH TO SHEET 8 -L- STA. 92+00

MATCH TO SHEET 10 -L- STA. 105+00

-Y2RPA-
S 31° 14' 24.5" E

N 33° 58' 14.6" W

N 44° 23' 53.7" W

62.5' INC.

NC 87 MURCHISON RD 29 BST

REMOVE

-LINB- SC Sta. 93+54.67

LATERAL BASE DITCH
W/BERM
STA. 93+50 - 96+50 RT
SEE DETAIL K

40 TONS CL I RIP RAP
15 SY FILTER FABRIC

PROP. GR

PROP. 48" WW FENCE +55.83 150.00

+40.00
150.00'
-L- +80.00
+62.00
160.00'

3 TONS CL B RIP RAP
11 SY FILTER FABRIC

2 TONS CL B RIP RAP
7 SY FILTER FABRIC

+75.83
125.00'

-LINB- ST Sta. 100+62.63

-LINB- CS Sta. 98+12.63

FORT BRAGG MILITARY RESERVATION

+35.00
125.00'
162.00'

+90.00
162.00'

+66.64
125.00'

-LINB-
Pls Sta 92+71.34
Θs = 1° 50' 28.0"
Ls = 250.00'
LT = 166.68'
ST = 83.34'

-LINB-
PI Sta 95+83.91
Δ = 6° 44' 43.0" (LT)
D = 1° 28' 22.4"
L = 457.96'
T = 229.24'
R = 3,890.00'
e = 4%

-LINB-
Pls Sta 98+95.97
Θs = 1° 50' 28.0"
Ls = 250.00'
LT = 166.68'
ST = 83.34'

Temporary Rock
Sediment
Dam Type A
2.5 ft. weir height

102 x 25 x 3
1.5 inch Skimmer
with 0.375 inch
Orifice Diameter
17 ft. weir
ID 9.1

DETAIL H
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
3:1
b
Fill Slope
D
3:1
F/Ft.
Min. D= 1.5 Ft.
b= 5 Ft.

FROM STA. 19+22.63 TO STA. 20+69.58 RT. -Y2RPA-TT-
DDE= 117 CY

DETAIL J
LATERAL BASE DITCH
(Not to Scale)
Natural Ground
3:1
b
Fill Slope
D
3:1
F/Ft.
Filter Fabric
R
Min. D= 1.5 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft. &Variable
*When B Is < 6.0'

Type of Liner= Class B Rip-Rap

FROM STA. 16+76.39 TO STA. 18+76.19 RT. -Y2RPA-TT-
DDE= 39 CY

DETAIL K
LATERAL BASE DITCH
(Not to Scale)
Natural Ground
3:1
b
Fill Slope
D
3:1
F/Ft.
R
Min. D= 1.5 Ft.
Min. d= 1.0 Ft.
B= 3.0 Ft.
b= 5.0 Ft. &Variable

Type of Liner= PSRM

FROM STA. 93+60 TO STA. 96+37 RT. -LISB-
DDE= 265 CY

DETAIL E
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground
See XS D
Min. D= 1 Ft.

FROM STA. 10+27.96 TO STA. 11+77.97 RT. -Y2RPA-TT-

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 9

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

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-10/CONST 10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

8/17/99

MATCH TO SHEET 9 -L- STA. 105+00

-L- STA. 105+00

-L- STA. 110+62.53

-L- N 45° 54' 47.7" W

-L- N 44° 23' 53.7" W

N 44° 23' 53.7" W

-LISB- POT Sta. 109+48.54

-LINB- POT Sta. 109+57.76

END FORT BRAGG SECURITY FENCE
STA -LISB- 109+48.54
SEE DETAIL SHEET 2-

END CONSTRUCTION
-L- STA.110+62.53

END TIP PROJECT U-4444AA
POT -L- STA 109+65.00

END 48" WW FENCE
STA -L- 109+65.00

FORT BRAGG MILITARY RESERVATION

SPECIAL LATERAL "V" DITCH
STA. 106+50 – 106+79 -LT
SEE DETAIL D

SPECIAL LATERAL "V" DITCH
STA. 106+79 – 108+50 -LT
SEE DETAIL D

150' TAPER

300' TAPER

720' TAPER

100' TAPER BOTH SIDES

REMOVE

FLOWABLE FILL

TOP 288.81
INV. 282.87 IB wMH
INV. 283.62

2GI
TOP 288.81
INV. 286.03

3 TONS CL B RIP RAP
11 SY FILTER FABRIC

27 x 54 x 3
1.5 inch Skimmer
with 1.125 inch
Orifice Diameter
17 ft. weir
ID 10.1

+86.64
125.00

+50.00
150.00
125.00

INV. 270.06'

INV=266.87'

DETAIL D
SPECIAL LATERAL "V" DITCH
(Not to Scale)

Natural Ground
TAR SEE X-S
D
Min. D= 1Ft.
Fill Slope
Min. of Fighter

FROM STA. 106+50 TO STA. 106+79 -LISB- LT.
FROM STA. 106+79 TO STA. 108+50 -LISB- LT.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 10

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

NAD 83/95

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-11/CONST.11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/95

-Y2- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y2- STA 13+00.00

END C/A
END R/W
ACQUISITION
+00.00
75.00

END 48" WW FENCE
+00.00

480' TAPER TO EXISTING
(LEFT SIDE)

CROSS COUNTRY POWER

-Y2- 15+00

-Y2WBL- 15+00

-Y2- 20+00

660' LANE

PROP. 48" WW FENCE

22.9'
-Y2-

HONEYCUTT RD 48' BSL

24.8'

BEGIN C/A
BEGIN R/W
ACQUISITION
+00.00
30.38

+00.00
100.00

BEGIN 48" WW FENCE

5" MONOLITHIC ISLAND

N 84° 00' 00.0" W

360' TAPER

150' LEFT
TURN TAPER

PROP. 48" WW FENCE

-Y2WBL- PRC Sta. 16+00.48

-Y2- Sta. 18+99.25 =
-Y2WBL- PT Sta. 19+00.96 52' RT

-Y2- Sta. 13+00.00 =
-Y2WBL- PC Sta. 13+00.00 12.8' RT

-Y2WBL-

PI Sta 14+50.45	PI Sta 17+50.93
△ = 7° 29' 07.2" (RT)	△ = 7° 29' 07.2" (LT)
D = 2° 29' 28.0"	D = 2° 29' 28.0"
L = 300.48'	L = 300.48'
T = 150.45'	T = 150.45'
R = 2,300.00'	R = 2,300.00'
e = nc	e = nc

MATCH TO SHEET 8 -Y2- STA. 22+00

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.

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Jacobson AT RENVZ1500

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-12/CONST.12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 12

REVISIONS

8/17/99

MATCH TO SHEET 8 -Y2- STA. 39+00

2 TONS CL B RIP RAP
7 SY FILTER FABRIC

-Y2- 40+00

-Y2- PC Sta. 39+50.80

-Y2-
PI Sta 40+42.00
Δ = 13° 52' 00.0" (LT)
D = 7° 38' 22.0"
L = 181.51'
T = 91.20'
R = 750.00'
e = VARIES

-Y2- 45+00

-Y2- 50+00

-Y2- POT Sta. 50+71.11

NAD 83/95

FORT BRAGG SECURITY FENCE SEE DETAIL SHEET 2-

-Y2- PT Sta. 41+32.31

END CONSTRUCTION
-Y2- STA. 41+40.00

FORT BRAGG MILITARY RESERVATION

REMOVE 72'-15" RCP

PLUG

300' TAPER TO EXISTING

TIE TO EXIST. FENCE

REMOVE FENCE

-Y2- +05.00
63.00

-Y2- +16.91
48.66

-Y2- +52.00
61.00

-Y2- +17.53
48.66

-Y2- +65.43
EXIST. R/W

-Y2- +12.93
TIE TO EXIST. RR CROSSING

-Y2- +81.92
END C&G TIE TO EXIST

550' LANE TAPER (TO MATCH EXISTING ASP ALIGNMENT)

BEG. C&G
+70.00

+18.24
100.00

BEGIN C/A
BEGIN R/W ACQUISITION

BEGIN FORT BRAGG SECURITY FENCE SEE DETAIL SHEET 2-

-Y2- S 82° 08' 00.0" W

HONEYCUTT RD

45' BST

22' BST

44' BST

24' BST

LOGISTICS AVE

RANDOLF ST

EXISTING R/W

PROPOSED R/W

UNABLE TO DETERMINE EOP FROM SOIL

ISMTL

ISM

CONC

RAMP

CANOPY

GUARD HOUSE

HOUSE GUARD

WATER TOWER

STEAM PLANT 2SBK

STACK

A/C

A/C TANK

HTR

SOIL

PA

GR

G

S

CB 95

CB 96

CB 97

CB 98

CB 99

JB w/MH

15" RCP

18" RCP

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jpeaden AT ENV21500

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-13/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

8/17/99

NAD 83/95

FORT BRAGG MILITARY RESERVATION

BUILT UNDER TIP PROJECT X-0002B

-L- STA. 25+00

BEGIN FORT BRAGG SECURITY FENCE
SEE DETAIL SHEET 2-

-L- STA. 24+05.23 BEGIN STATE PROJECT U-4444AA

BEGIN CONSTRUCTION
-L- STA. 22+85.00

SPECIAL DITCH
STA. 22+85 TO 24+50 LT.
TRANSITION FROM TYPICAL
TO EXISTING DITCH.

+05.23

720' MEDIAN TAPER

+50
114'

BEGIN C/A
N 42°28'28" W
107.19'

N43°10'28"W 166.83' (CHORD)
RADIUS = 5804.6498'

C/A
N43°17'58"W 162.54' (CHORD)
RADIUS =5804.6472'

R/W
N 43°26'13" W 405.44'

BEGIN MEDIAN BARRIER
+55.10 -L-

+54.10 (EOP OFF 8')

8:1

12'

IAU
N 43° 43' 36.9" W

36'

10'

23'

-L-

-L- POT Sta. 22+99.47

BEGIN C/A
N 42°28'28" W
107.19'

SPECIAL DITCH
STA. 22+85 TO 24+50 RT.
TRANSITION FROM TYPICAL
TO EXISTING DITCH.

C/A
RADIUS= 5804.0097'
N43°10'28"W 141.83' (CHORD)

R/W
N 43°55'42" W 353.24'

BEGIN 48" WW FENCE

END PROJECT X-0002B
-L- 24+07.74/-9.23'
ENGLISH COORDINATE NAD 83
N 502621.3675
E 2015745.8848

BEGIN PROJECT U-4444AA
-L- 24+05.10/0.03'
ENGLISH COORDINATE NAD83/95
N 502625.9176
E 2015754.3451

MATCH TO SHEET 5 -L- STA. 29+00

S 43°56'48" E 1173.26'
ECM
EXISTING R/W
S 43°56'48" E 391.29'
INV=237.28'
NC 87 MURCHISON RD 36' BST
INV=238.57' CONC
NC 87 MURCHISON RD 26' BST
2904.34'
S 43°56'43" E
ECM
S 43°56'43" E 166.36'
24.36'
S 46°03'17" W
65.04'
N 43°52'28" W
RADIUS= 5654.6502'
N 42°28'28" W
C&G
PA
CANOPY
EXISTING R/W

FORT BRAGG MILITARY RESERVATION

15' SOIL
10' SOIL
8' SOIL
SOIL
1105.4'
1105.8'
1105

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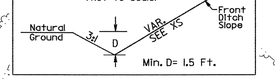
Design AT RENZ1500

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-14/CONST.5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

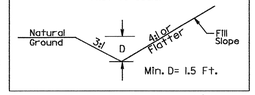
REVISIONS 8/17/99

DETAIL A
CUT DITCH
(Not to Scale)



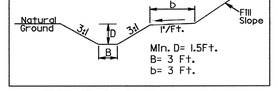
FROM STA. 34+50 TO STA. 35+50 LT
FROM STA. 40+15 TO STA. 41+00 RT

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



FROM STA. 35+50 TO STA. 36+50 LT.

DETAIL C
LATERAL BASE DITCH
(Not to Scale)



FROM STA. 36+50 TO STA. 37+80 LT.
DDE= 107 CY

NAD 83/95

FORT BRAGG MILITAR

Modified Silt Basin Type 'B' 37 x 23 x 3 (See Tiered Skimmer Basin Detail) ID 5.1

37 x 23 x 3 1.5 inch Skimmer with 1.0 inch Orifice Diameter 15 ft. weir (See Tiered Skimmer Basin Detail) ID 5.1

24 x 63 x 3 1.5 inch Skimmer with 1.125 inch Orifice Diameter 16 ft. weir ID 5.2

-L-

PIs Sta 37+02.54
Θs = 9° 28' 33.0"
Ls = 430.00'
LT = 287.08'
ST = 143.71'

PI Sta 39+52.05
Δ = 9° 22' 26.2" (RT)
D = 4° 24' 26.5"
L = 212.69'
T = 106.58'
R = 1,300.00'
e = 8%

PI Sta 44+73.31
Δ = 31° 44' 48.2" (RT)
D = 3° 55' 27.7"
L = 808.96'
T = 415.16'
R = 1,460.00'
e = 8%

PIs Sta 50+27.53
Θs = 9° 25' 06.5"
Ls = 480.00'
LT = 320.45'
ST = 160.41'

-L- 30+00

-L- 40+00

-L_SB- 35+00

-L_NB- 35+00

FORT BRAGG SECURITY FENCE
72" CL 3SBW
SEE DETAIL SHEET 2-

SPECIAL CUT DITCH
STA. 34+50 – 35+50 LT
SEE DETAIL A

SPECIAL LATERAL V DITCH
STA. 35+50 – 36+50 LT
SEE DETAIL B

LATERAL BASE DITCH
STA. 36+50 – 37+80 LT
SEE DETAIL C

2 TONS
CL B RIP RAP
7 SY FILTER FABRIC

5 TONS
CL B RIP RAP
14 SY FILTER FABRIC

BEGIN R/W ACQUISITION +62.09
EXIST.R/W

END R/W ACQUISITION +16.46
EXIST.R/W

-L_SB- SC Sta. 39+10.33

-L_SB- PCC Sta. 41+09.49

-L- STA. 41+00

MATCH TO SHEET 4 -L- STA. 29+00

MATCH TO SHEET 6 -L- STA. 41+00

720' MEDIAN TAPER

REMOVE FENCE

53.75' INC.

REMOVE

15" CSP W/ 2 ELBOWS

JB w/HH

TSD

22' MED.

MEDIAN BARRIER

NC 87 MURCHISON RD 24' BST

N 43° 43' 36.9" W

COLLAR

COLLAR AND EXTEND

FLOWABLE FILL

VOID

CAT-1

GRAU 350

REMOVE 2GI COLLAR & EXTEND 15" RCP

48" WW FENCE

ELIMINATE CUT & RETAIN EXIST. DITCH
STA. 37+00 TO STA. 40+00 -L- RT.
SEE X-SECTIONS

SPECIAL CUT DITCH
STA. 40+15 – 41+00 RT
SEE DETAIL A

-L_SB- TS Sta. 34+80.33

-L_NB- TS Sta. 34+47.37

-L- TS Sta. 34+15.46 =
-L_SB- POT Sta. 34+15.60
-L_NB- POT Sta. 34+15.59

-L_NB- SC Sta. 38+77.37

-L- SC Sta. 38+45.46

-L- PCC Sta. 40+58.15

-L_NB- PCC Sta. 40+87.66

GEOGRID REINFORCEMENT

FORT BRAGG MILITARY RESERVATION

-L_SB-

PIs Sta 37+67.48
Θs = 10° 15' 55.8"
Ls = 430.00'
LT = 287.15'
ST = 143.77'

PI Sta 40+10.14
Δ = 9° 30' 32.9" (RT)
D = 4° 46' 28.7"
L = 199.16'
T = 99.81'
R = 1,200.00'
e = 8%

PI Sta 44+92.63
Δ = 31° 14' 55.4" (RT)
D = 4° 10' 55.8"
L = 747.19'
T = 383.14'
R = 1,370.00'
e = 8%

PIs Sta 50+00.35
Θs = 8° 59' 30.0"
Ls = 430.00'
LT = 287.04'
ST = 143.67'

-L_NB-

PIs Sta 37+34.49
Θs = 9° 58' 28.4"
Ls = 430.00'
LT = 287.12'
ST = 143.75'

PI Sta 39+82.77
Δ = 9° 45' 23.2" (RT)
D = 4° 38' 21.6"
L = 210.30'
T = 105.40'
R = 1,235.00'
e = 8%

PI Sta 44+84.13
Δ = 31° 30' 58.4" (RT)
D = 4° 04' 40.8"
L = 772.84'
T = 396.47'
R = 1,405.00'
e = 8%

PIs Sta 50+04.15
Θs = 8° 46' 03.7"
Ls = 430.00'
LT = 287.02'
ST = 143.65'

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jpeaden RENV 22500

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-15/CONST.6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

8/17/99

NAD 83/95

BEGIN SECURITY FENCE STA. 42+04.02

MOVEABLE JERSEY BARRIER FOR ROAD CLOSURE

END SECURITY FENCE STA. 41+30.46

-L_SB- 45+00

-L_NB- 45+00

-L_SB- 50+00

-L_NB- 50+00

95 x 19 x 3 1.5 inch Skimmer with 1.25 inch Orifice Diameter 11 ft. weir ID 6.1

FORT BRAGG SECURITY FENCE 72" CL 3SBW SEE DETAIL SHEET 2-

2 TONS CL B RIP RAP
7 SY FILTER FABRIC

FORT BRAGG MILITARY RESERVATION

-L- 48+70.00 Exist R/W & 130.00' Lt

-L- 49+15.00 Exist. R/W & 130.00' Lt.

PDE
PSH
PSD
TSD
TD

MATCH TO SHEET 5 -L- STA. 41+00

MATCH TO SHEET 7 -L- STA. 54+00

-L- ST Sta. 53+47.11

-L_SB- CS Sta. 48+56.68

-L_NB- CS Sta. 48+60.50

-L- CS Sta. 48+67.11

-L_SB- ST Sta. 52+86.68

-L_NB- ST Sta. 52+90.50

PROP. 48" WW FENCE

BEGIN 48" WW FENCE STA. 41+99.70

END 48" WW FENCE STA. 41+30.10

MOVEABLE JERSEY BARRIER FOR ROAD CLOSURE

MOVEABLE FILL

GRUBER RD

MURCHISON RD

LITTLE CROSS CREEK

SEABOARD COASTLINE RR

EXISTING R/W

RADIUS = 1548.00'
N 80°52'48" E 469.22' (CHORD)

RADIUS = 1539.3940'
N 09°21'41" W 469.22' (CHORD)

RADIUS = 1325.3940
N 03°36'37" W 550.59' (CHORD)

N 13°41'53" E 166.58' (CHORD)

N 15°38'42" E 365.08'

N 16°17'17.0" E 1,141.58'

N 16°17'16.7" E

N 73°35'15" W 13.00'

S 78°00'23" E 22.38'

-L-			
PIs Sta 37+02.54 Θs = 9° 28' 33.0" Ls = 430.00' LT = 287.08' ST = 143.71'	PI Sta 39+52.05 Δ = 9° 22' 26.2" (RT) D = 4° 24' 26.5" L = 212.69' T = 106.58' R = 1,300.00' e = 8%	PI Sta 44+73.31 Δ = 31° 44' 48.2" (RT) D = 3° 55' 27.7" L = 808.96' T = 415.16' R = 1,460.00' e = 8%	PIs Sta 50+27.53 Θs = 9° 25' 06.5" Ls = 480.00' LT = 320.45' ST = 160.41'
-L_NB-			
PIs Sta 37+34.49 Θs = 9° 58' 28.4" Ls = 430.00' LT = 287.12' ST = 143.75'	PI Sta 39+82.77 Δ = 9° 45' 23.2" (RT) D = 4° 38' 21.6" L = 210.30' T = 105.40' R = 1,235.00' e = 8%	PI Sta 44+84.13 Δ = 31° 30' 58.4" (RT) D = 4° 04' 40.8" L = 772.84' T = 396.47' R = 1,405.00'	PIs Sta 50+04.15 Θs = 8° 46' 03.7" Ls = 430.00' LT = 287.02' ST = 143.65'
-L_SB-			
PIs Sta 37+67.48 Θs = 10° 15' 55.8" Ls = 430.00' LT = 287.15' ST = 143.77'	PI Sta 40+10.14 Δ = 9° 30' 32.9" (RT) D = 4° 46' 28.7" L = 199.16' T = 99.81' R = 1,200.00' e = 8%	PI Sta 44+92.63 Δ = 31° 14' 55.4" (RT) D = 4° 10' 55.8" L = 747.19' T = 383.14' R = 1,370.00' e = 8%	PIs Sta 50+00.35 Θs = 8° 59' 30.0" Ls = 430.00' LT = 287.04' ST = 143.67'

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PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-16/CONST.7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

8/17/99

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FORT BRAGG MILITARY RESERVATION

-L-
PIs Sta 59+83.03
Θs = 11° 27' 33.0"
Ls = 480.00'
LT = 320.67'
ST = 160.61'

PI Sta 64+34.23
Δ = 27° 20' 27.1" (LT)
D = 4° 46' 28.7"
L = 572.63'
T = 291.87'
R = 1,200.00'
e = 8%

PIs Sta 68+75.59
Θs = 11° 27' 33.0"
Ls = 480.00'
LT = 320.67'
ST = 160.61'

-L_SB-
PIs Sta 59+13.87
Θs = 8° 59' 30.0"
Ls = 430.00'
LT = 287.04'
ST = 143.67'

PI Sta 64+53.24
Δ = 32° 16' 31.5" (LT)
D = 4° 10' 55.8"
L = 771.74'
T = 396.41'
R = 1,370.00'
e = 8%

PIs Sta 69+72.24
Θs = 8° 59' 30.0"
Ls = 430.00'
LT = 287.04'
ST = 143.67'

46 x 28 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
20 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 7.3F

Modified Silt Basin
Type 'B'
46 x 28 x 3
(See Tiered Skimmer
Basin Detail)
ID 7.3F

NAD 83/95

MATCH TO SHEET 6 -L- STA. 54+00

MATCH TO SHEET 8 -L- STA. 67+00

SEE DETAIL 2-
MEDIAN BARRIER CAP

-L_SB- TS Sta. 56+26.83

TIE FORT BRAGG
SECURITY FENCE
TO RR BRIDGE

BEGIN R/W
ACQUISITION
+52.45
EXIST.R/W

-L_NB- SC Sta. 60+70.84

-L_SB- SC Sta. 60+56.83

-L- SC Sta. 61+42.36

+82.38 END R/W
EXIST. R/W ACQUISITION

TIE TO EXIST.
BERM DITCH

BERM DITCH

102.76

200' ACCEL
LANE

300' TAPER

53.75'
INC.

22' MED.

-Y2RPB- SC Sta. 12+50.00

FORT BRAGG SECURITY FENCE
72" CL 3SBW
SEE DETAIL SHEET 2-

-L_SB- POC Sta. 64+02.76 =
-Y2RPB- ST Sta. 10+00.00
(48' LT)

-Y2RPC- CS Sta. 17+90.22

-Y2RPC-

-VAR. MED.

200' TAPER
4' TO 12'

-L- 65+47.61
19.76'

2 TONS CL B RIP RAP
7 SY FILTER FABRIC

-L- 60+00
-L_NB- 60+00

-L_NB- 65+00
-L_SB- 65+00

-L_SB- 55+00
-L_NB- 55+00

-L- 55+00

SEABOARD COASTLINE RR

EXISTING R/W

-L_NB- POT 58+90.00 =
-Y2RPC- POT Sta. 10+00.00
(36' RT.)

-L_NB-
PIs Sta 59+27.92
Θs = 9° 28' 33.0"
Ls = 430.00'
LT = 287.08'
ST = 143.71'

PI Sta 64+35.11
Δ = 31° 18' 25.2" (LT)
D = 4° 24' 26.5"
L = 710.33'
T = 364.28'
R = 1,300.00'
e = 8%

PIs Sta 69+24.88
Θs = 9° 28' 33.0"
Ls = 430.00'
LT = 287.08'
ST = 143.71'

-Y2RPB-
PIs Sta 11+30.87
Θs = 5° 24' 54.2"
Θs = 7° 01' 26.5"
Ls = 250.00'
LT = 130.87'
ST = 120.11'

PI Sta 15+18.96
Δ = 29° 32' 36.5" (LT)
D = 5° 37' 02.0"
L = 525.94'
T = 268.96'
R = 1,020.00'
e = 8%

PIs Sta 18+59.40
Θs = 7° 01' 17.5"
Ls = 250.00'
LT = 166.80'
ST = 83.45'

-Y2RPC-
PIs Sta 12+54.33
Θs = 3° 09' 55.8"
Ls = 200.00'
LT = 133.35'
ST = 66.69'

PI Sta 15+56.92
Δ = 14° 51' 14.6" (LT)
D = 3° 09' 55.8"
L = 469.25'
T = 235.95'
R = 1,810.00'
e = 5.5%

PIs Sta 18+56.91
Θs = 3° 09' 55.8"
Ls = 200.00'
LT = 133.35'
ST = 66.69'

-L- TS Sta. 56+62.36

-L_NB- TS Sta. 56+40.84

TIE PROP. 48" WW
FENCE TO RR BRIDGE

+79.00
EXIST.R/W

+97.00
141'

+04.00
EXIST.R/W

BEGIN R/W
ACQUISITION

+90
145.89'
124.82'

+20.98
100.00'

-Y2RPC- TS Sta. 11+20.98

-Y2RPC- SC Sta. 13+20.98

+20.98
100.00'

PROP. 48" WW FENCE

+90.22
100.00'

Temporary Rock
Sediment
Dam Type A
X ft. weir height

65 x 23 x 3
1.5 inch Skimmer
with 1.125 inch
Orifice Diameter
15 ft. weir
ID 7.2F

35 x 15 x 3
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
7 ft. weir
ID 7.1F

2 TONS CL B RIP RAP
7 SY FILTER FABRIC

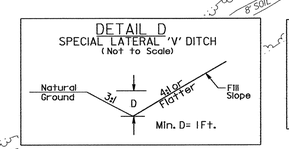
15 TONS CL I RIP RAP
30 SY FILTER FABRIC

SPECIAL DITCH
64+00 -L- RT. TO 64+50 -L- RT.
64+50 -L- RT. TO 67+00 -L- RT.
SEE DETAIL E

SPECIAL DITCH
13+21.40 -Y2RPC- RT.
TO 15+46.68 -Y2RPC- RT.
SEE DETAIL D

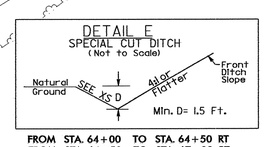
FORT BRAGG
MILITARY RESERVATION

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



FROM STA. 13+21.40 -Y2RPC-
TO STA. 15+46.48 -Y2RPC- RT.

DETAIL E
SPECIAL CUT DITCH
(Not to Scale)



FROM STA. 64+00 TO STA. 64+50 RT
FROM STA. 64+50 TO STA. 67+00 RT

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-17/CONST.2
SW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

MATCH TO SHEET 7 -L- STA. 67+00

MATCH TO SHEET 9 -L- STA. 92+00

MATCH TO SHEET 11 -Y2- STA. 22+00

MATCH TO SHEET 12 -Y2- STA. 39+00

NAD 83/95

45 x 16 x 3
ID 8.1F

29 x 13 x 3
5 ft. weir
ID 8.2F

52 x 18 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
10 ft. weir
ID 8.5F

38 x 15 x 3
1.5 inch Skimmer
with 0.50 inch
Orifice Diameter
7 ft. weir
ID 8.6F

54 x 24 x 3
ID 8.3F

Modified Silt Basin
Type 'B'
36 x 14 x 3
(See Tiered Skimmer
Basin Detail)
ID 8.4F

15 x 48 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
7 ft. weir
ID 8.1

30 x 66 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
22 ft. weir
ID 8.2

48 x 18 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
10 ft. weir
ID 8.12

13 x 33 x 3
1.5 inch Skimmer
with 0.375 inch
Orifice Diameter
6 ft. weir
ID 8.11

38 x 16 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
8 ft. weir
ID 8.6

36 x 14 x 3
1.5 inch Skimmer
with 1.125 inch
Orifice Diameter
6 ft. weir
ID 8.4F

22 x 66 x 3
1.5 inch Skimmer
with 1.125 inch
Orifice Diameter
14 ft. weir
ID 8.10

19 x 36 x 3
1.5 inch Skimmer
with 0.125 inch
Orifice Diameter
11 ft. weir
ID 8.8

Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.

FORT BRAGG MILITARY RESERVATION

PROPOSED DANGER TREE AREA EASEMENT

PROP. 48" WW FENCE

DETAIL D
SPECIAL "A" DITCH
1 Ref To Scale

DETAIL E
SPECIAL CUT DITCH
1 Ref To Scale

DETAIL F
SPECIAL CUT DITCH
1 Ref To Scale

DETAIL G
TOE PROTECTION
1 Ref To Scale

DETAIL
SPECIAL LATERAL BASE DITCH
1 Ref To Scale

-L- Pls Sta 92+71.34
Ge = 1°52' 28.0"
Le = 250.00'
LT = 166.68'
ST = 83.34'

-L- Pl Sta 55+63.01
Δ = 6°44' 43.0" (LT)
D = 7°39' 22.4"
L = 457.96'
T = 229.24'
R = 748.00'
e = 8%

-L- Pls Sta 98+95.81
Ge = 1°52' 28.0"
Le = 250.00'
LT = 166.68'
ST = 83.34'

-Y2RPA-
Pls Sta 32+34.67
Ge = 5° 39' 15.4"
Le = 120.00'
LT = 80.04'
ST = 40.04'

-Y2RPA-
Pl Sta 33+63.25
Δ = 16° 35' 09.4" (RT)
D = 9° 25' 25.1"
L = 176.01'
T = 89.02'
R = 608.00'
e = 6%

-Y2RPB-
Pls Sta 11+30.87
Ge = 5° 24' 04.9"
Ge = 1° 01' 26.5"
Le = 250.00'
LT = 130.67'
ST = 120.11'

-Y2RPB-
Pl Sta 15+18.96
Δ = 22° 32' 36.5" (LT)
D = 5° 37' 02.1"
L = 533.34'
T = 268.96'
R = 1020.00'
e = 6%

-Y2RPB-
Pls Sta 18+59.40
Ge = 1° 01' 01.5"
Le = 250.00'
LT = 166.80'
ST = 83.40'

-Y2RPB-
Pls Sta 23+05.06
Ge = 8° 35' 39.7"
Le = 150.00'
LT = 100.02'
ST = 50.01'

-Y2RPB-
Pl Sta 25+50.95
Δ = 35° 14' 50.9" (RT)
D = 11° 27' 33.0"
L = 376.60'
T = 194.00'
R = 500.00'
e = 6%

-Y1LPC-
Pls Sta 8+69.21
Ge = 30° 28' 35.3"
Le = 250.00'
LT = 168.21'
ST = 85.65'

-Y1LPC-
Pl Sta 14+45.09
Δ = 119° 04' 34.8" (LT)
D = 24° 59' 52.3"
L = 324.33'
T = 193.98'
R = 235.00'
e = 6%

-Y1LPC-
Pls Sta 16+59.98
Ge = 30° 28' 35.3"
Le = 250.00'
LT = 168.21'
ST = 85.65'

-Y2RPC-
Pls Sta 18+56.91
Ge = 3° 29' 55.8"
Le = 200.00'
LT = 133.35'
ST = 66.68'

-Y2RPC-
Pl Sta 21+23.57
Ge = 2° 34' 19.2"
Le = 200.00'
LT = 133.35'
ST = 66.68'

-Y2RPC-
Pl Sta 22+85.53
Δ = 4° 55' 00.4" (RT)
D = 2° 34' 51.2"
L = 190.51'
T = 95.31'
R = 2220.00'
e = 4%

-Y2RPC-
Pls Sta 24+47.41
Ge = 2° 34' 51.2"
Le = 200.00'
LT = 133.35'
ST = 66.68'

GRAPHIC SCALE
50 25 0 50 100
PLANS

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-18/CONST.9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS 8/17/99

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-Y2RPA-TT-
PIs Sta 17+08.01
Θs = 2° 37' 59.1"
Ls = 250.00'
LT = 166.69'
ST = 83.35'

PI Sta 14+37.62
Δ = 1° 53' 31.1" (RT)
D = 2° 06' 23.3"
L = 374.65'
T = 187.62'
R = 2,720.00'
e = 4%

PIs Sta 11+66.69
Θs = 2° 37' 59.1"
Ls = 250.00'
LT = 166.69'
ST = 83.35'

-LISB-
PIs Sta 92+17.22
Θs = 1° 50' 28.0"
Ls = 250.00'
LT = 166.68'
ST = 83.34'

PI Sta 95+29.79
Δ = 6° 44' 43.0" (LT)
D = 1° 28' 22.4"
L = 457.96'
T = 229.24'
R = 3,890.00'
e = 4%

PIs Sta 98+41.85
Θs = 1° 50' 28.0"
Ls = 250.00'
LT = 166.68'
ST = 83.34'

32 x 14 x 3
1.5 inch Skimmer
with .5 inch
Orifice Diameter
6 ft. weir
ID 9.1F

51 x 20 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
12 ft. weir
ID 9.2F

NAD 83/95

CROSS COUNTRY POWER LINE

FORT BRAGG MILITARY RESERVATION

RANDOLF ST 24' BST

SEABOARD COASTLINE RR

FORT BRAGG SECURITY FENCE 72" CL 3SBW SEE DETAIL SHEET 2-

-Y2RPA-TT- CS Sta. 16+24.65

-LISB-SC Sta. 93+00.55

-Y2RPA-TT-ST Sta. 18+74.65

-LISB-CS Sta. 97+58.51

-LISB- ST Sta. 100+08.51

-Y2AA-TT- SC Sta. 12+50.00

-LISB- ST Sta. 102+77.96 =
-Y2RPA-TT- ST Sta. 10+00.00
24.00' LT.

LATERAL 'V' DITCH W/BERM STA. 19+22.63 – 20+69.58 RT -Y2RPA-TT- SEE DETAIL H

LATERAL BASE DITCH W/BERM STA. 16+76.39 – 18+76.19 RT -Y2RPA-TT- SEE DETAIL J

+50.00 120.00'
+50.00 98.76'
END R/W ACQUISITION

EXISTING R/W

SPECIAL CUT DITCH STA. 10+27.96 – 11+77.97 RT -Y2RPA-TT- SEE DETAIL E

RADIUS = 3769.7190'
N39°15'58"W 700.18' (CHORD)

NC 87 MURCHISON RD 29' BST

62.5' INC.

N 44° 23' 53.7" W

-Y2RPA- S 31° 14' 24.5" E

N 33° 58' 46" W

MATCH TO SHEET 8 -L- STA. 92+00

MATCH TO SHEET 10 -L- STA. 105+00

PROP. GR

-LINB- SC Sta. 93+54.67

LATERAL BASE DITCH W/BERM STA. 93+50 – 96+50 RT SEE DETAIL K

10 TONS CL I RIP RAP
15 SY FILTER FABRIC

PROP. 48" WW FENCE

+55.83 150.00'

+75.83 125.00'

-LINB-ST Sta. 100+62.63

-LINB- CS Sta. 98+12.63

2 TONS CL B RIP RAP
7 SY FILTER FABRIC

3 TONS CL B RIP RAP
11 SY FILTER FABRIC

-L- +40.00 150.00'

-L- +62.00 160.00'

-L- +80.00

-LINB-
PIs Sta 92+71.34
Θs = 1° 50' 28.0"
Ls = 250.00'
LT = 166.68'
ST = 83.34'

PI Sta 95+83.91
Δ = 6° 44' 43.0" (LT)
D = 1° 28' 22.4"
L = 457.96'
T = 229.24'
R = 3,890.00'
e = 4%

PIs Sta 98+95.97
Θs = 1° 50' 28.0"
Ls = 250.00'
LT = 166.68'
ST = 83.34'

102 x 25 x 3
1.5 inch Skimmer
with 0.375 inch
Orifice Diameter
17 ft. weir
ID 9.1

+35.00 125.00' 162.00'

+90.00 162.00'

+66.64 125.00' SOIL

-L- 100+20.89 17.38'

-L- 100+20.18 4.06'

-LINB- +37.76

PDE

REMOVE 48" RCP

CANOPY

GR

FORT BRAGG MILITARY RESERVATION

DETAIL H
LATERAL 'V' DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1, b, F/Ft., Fill Slope

Min. D= 1.5 Ft.
b= 5 Ft.

FROM STA. 19+22.63 TO STA. 20+69.58 RT. -Y2RPA-TT-
DDE= 117 CY

DETAIL J
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, d1, D, 3:1, b, F/Ft., Fill Slope, Filter Fabric, B

Min. D= 1.5 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft. &Variable
*When B Is < 6.0'
Type of Liner= Class B Rip-Rap

FROM STA. 16+76.39 TO STA. 18+76.19 RT. -Y2RPA-TT-
DDE= 39 CY

DETAIL K
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, d1, D, 3:1, b, F/Ft., Fill Slope, B

Min. D= 1.5 Ft.
Min. d= 1.0 Ft.
B= 3.0 Ft.
b= 5.0 Ft. &Variable
Type of Liner= PSRM

FROM STA. 93+50 TO STA. 96+37 RT. -LISB-
DDE= 265 CY

DETAIL E
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground, See ESD, D, 4:1 or Flatter, Front Ditch Slope

Min. D= 1Ft.

FROM STA. 10+27.96 TO STA. 11+77.97 RT. -Y2RPA-TT-

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-19/CONST.10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

8/17/99

MATCH TO SHEET 9 -L- STA. 105+00

ISMTL ISMTL ISMTL

PA CANOPY BROKEN BST GR BST END UNKNOWN 22' BST

FORT BRAGG MILITARY RESERVATION

GR BLACK JACK ST

105 105

24' BST RANDOLF ST 24' BST

GATE

SPECIAL LATERAL 'V' DITCH
STA. 106+50 – 106+79 LT
SEE DETAIL D

SPECIAL LATERAL 'V' DITCH
STA. 106+79 – 108+50 LT
SEE DETAIL D

-LISB- POT Sta. 109+48.54
-LINB- POT Sta. 109+57.76

END FORT BRAGG SECURITY FENCE
STA -LISB- 109+48.54
SEE DETAIL SHEET 2-

EXISTING R/W

SEABOARD COASTLINE RR

150' TAPER

36'

N 44° 23' 53.7" W

300' TAPER

12'

24'

1000.00'

REMOVE

TOP 288.81
INV. 282.87 JB w/MH
INV. 283.62

15" FLOWABLE FILL

TOP 288.81
INV. 286.03

INV. 285.15

1753.14' N 44°35'42" W

NC 87 MURCHISON RD 28' BST

END CONSTRUCTION
-L- STA.110+62.53

720' TAPER

100' TAPER BOTH SIDES

-L- N 45° 54' 47.7" W

DUCT

EXISTING R/W

TSD ECM

INV. 284.35

3 TONS CL B RIP RAP
11 SY FILTER FABRIC

105+39.37
10.24'

106+93.18
15.44'

-L- 106+92.87
24.12'

END TIP PROJECT U-4444AA
POT -L- STA 109+65.00

+86.64
125.00'

27 x 54 x 3
1.5 inch Skimmer
with 1.125 inch
Orifice Diameter
17 ft. weir
ID 10.1

END 48" WW FENCE
STA -L- 109+65.00

FORT BRAGG MILITARY RESERVATION

INV=270.06'

15" RCP DI

15" RCP CONC

INV=266.87'

116+77.52
38.53'

117+29.71
84.25'

117+82.38
85.77'

+50.00
150.00'
125.00'

17' SOIL

8' SOIL 8' SOIL

NAD 83/95

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

Natural Ground VAR. SEE XS D 4:1 or Flatter Fill Slope

Min. D= 1Ft.

FROM STA. 106+50 TO STA. 106+79 -L1SB- LT.
FROM STA. 106+79 TO STA. 108+50 -L1SB- LT.

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-20/CONST.11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/95

-Y2- 15+00

-Y2_WBL- 15+00

-Y2- 20+00

-Y2- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y2- STA. 13+00.00

END C/A
END R/W
ACQUISITION
+00.00
75.00

END 48" WW FENCE

+00.00

480' TAPER TO EXISTING
(LEFT SIDE)

CROSS COUNTRY POWER

660' LANE

PROP. 48" WW FENCE

SOIL

+00.00
29.62

22.9'

-Y2-

HONEYCUTT RD 48' BST

24.8'

BEGIN C/A
BEGIN R/W
ACQUISITION

+00.00
30.38

+00.00
100.00

BEGIN 48" WW FENCE

5" MONOLITHIC ISLAND

N 84° 00' 00.0" W

+30.00

150' LEFT
TURN TAPER

-Y2WBL- PRC Sta. 16+00.48

+40.00

360' TAPER

PROP. 48" WW FENCE

-Y2- Sta. 18+99.25 =
-Y2WBL- PT Sta. 19+00.96 52' RT

-Y2- Sta. 13+00.00 =
-Y2WBL- PC Sta. 13+00.00 12.8' RT

-Y2WBL-	
PI Sta 14+50.45	PI Sta 17+50.93
△ = 7° 29' 07.2" (RT)	△ = 7° 29' 07.2" (LT)
D = 2° 29' 28.0"	D = 2° 29' 28.0"
L = 300.48'	L = 300.48'
T = 150.45'	T = 150.45'
R = 2,300.00'	R = 2,300.00'
e = nc	e = nc

18' SOIL

5' SOIL

7' SOIL

10' SOIL

MATCH TO SHEET 8 -Y2- STA. 22+00

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Design AT RENV21500

PROJECT REFERENCE NO.	SHEET NO.
U-4444AA	EC-21/CONST12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

8/17/99

MATCH TO SHEET 1

-Y2- PI Sta 40+42.00
Δ = 13° 52' 00.0" (LT)
D = 7° 38' 22.0"
L = 181.51'
T = 91.20'
R = 750.00'
e = VARIES

-Y2- PC Sta. 39+50.80

-Y2- 40+00

-Y2- 45+00

-Y2- 50+00

-Y2- POT Sta. 50+71.11

-Y2- STA. 39+00

2 TONS CL B RIP RAP
7 SY FILTER FABRIC

REMOVE 72'-15" RCP

PLUG

FORT BRAGG SECURITY FENCE
SEE DETAIL SHEET 2-

-Y2- PT Sta. 41+32.31

END CONSTRUCTION
-Y2- STA. 41+40.00

300' TAPER TO EXISTING

TIE TO EXIST. FENCE

REMOVE FENCE

-Y2- +05.00
63.00

-Y2- +16.91
48.66

RETAIN

REMOVE

EXIST 0'12" RCP

15" RCP

36" RCP

CB 96

CB 97

TB JB w/MH

CB 98

CB 99

-Y2- +52.00
61.00

-Y2- +17.53
48.66

-Y2- +12.93
RR CROSSING

-Y2- +81.92
TIE TO EXIST

END C&G

-Y2- +85.43
EXIST. R/W

+18.24
100.00

BEG. C&G
+79.00

BEGIN C/A
BEGIN R/W
ACQUISITION

BEGIN FORT BRAGG SECURITY FENCE SEE DETAIL SHEET 2-

(TO MATCH EXISTING ASP ALIGNMENT)

650' LANE TAPER

-Y2- S 82° 08' 00.0" W

HONEYCUTT RD 45' BST

FORT BRAGG MILITARY RESERVATION

UNABLE TO DETERMINE EOP FROM SOIL

ISMTL

ISM

CONC

GR

PA

RAMP

CANOPY

LOGISTICS AVE 44' BST

RANDOLF ST 24' BST

EXISTING R/W

HOUSE GUARD

STEAM PLANT 2SBK

STACK

WATER TOWER

A/C

A/G TANK

HTR

SOIL

22' BST

NAD 83/95

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Microstation V8 2004 Edition