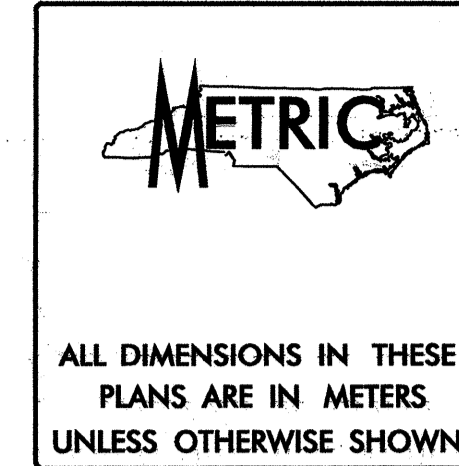
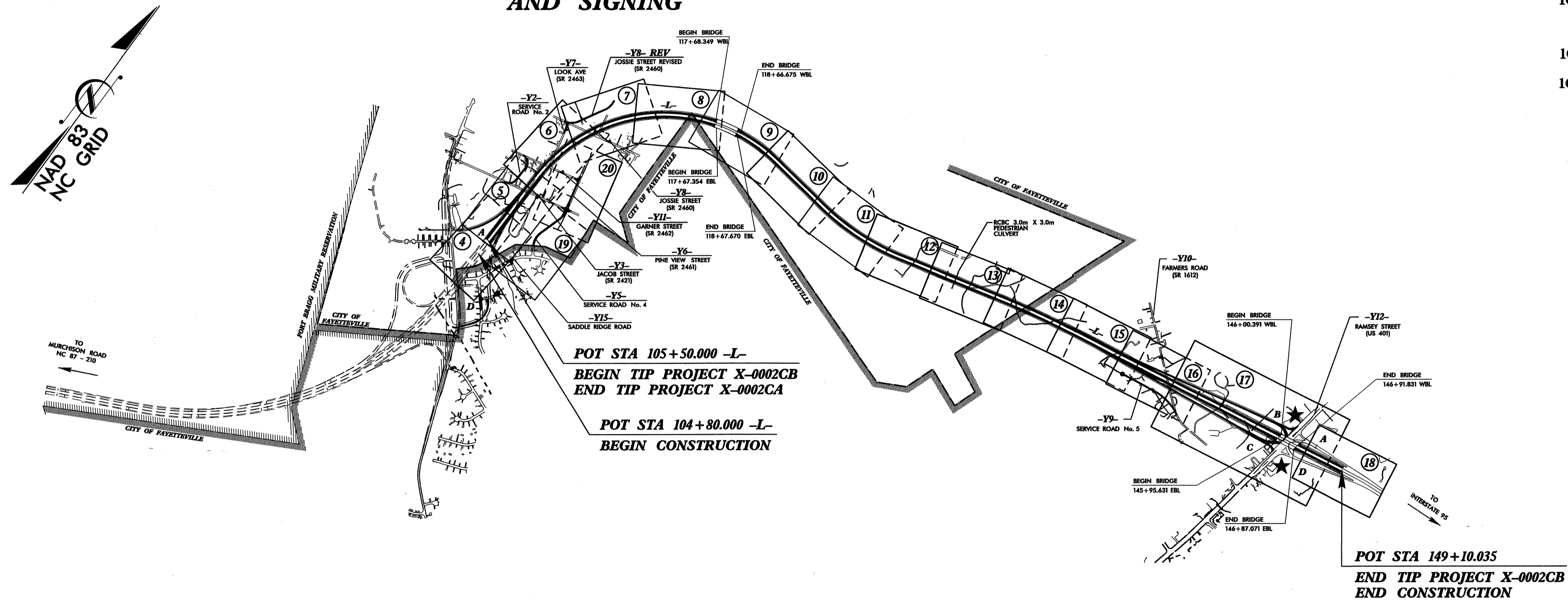


TIP PROJECT: X-0002CB

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

**LOCATION: NC 24 EXTENSION (FAYETTEVILLE OUTER LOOP) FROM EAST OF
 SR1600 (MCARTHUR RD.) TO WEST OF US 401 (RAMSEY ST.)
 TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES, RETAINING WALLS
 AND SIGNING**



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	X-0002CB	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.05	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
	Temporary Silt Fence	III III III
	Special Sediment Control Fence	III III III
1622.01	Temporary Berms and Slope Drains	
	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)	
1654.01	Temporary Rock Sediment Dam Type-A	
1654.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
	Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
	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

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 metric standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated July 2006 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

- 1622.01 Temporary Berms and Slope Drains
- 1630.03 Temporary Silt Ditch
- 1630.05 Temporary Diversion
- 1632.01 Rock Inlet Sediment Trap Type A
- 1632.02 Rock Inlet Sediment Trap Type B
- 1633.01 Temporary Rock Silt Check Type A
- 1633.02 Temporary Rock Silt Check Type B
- 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

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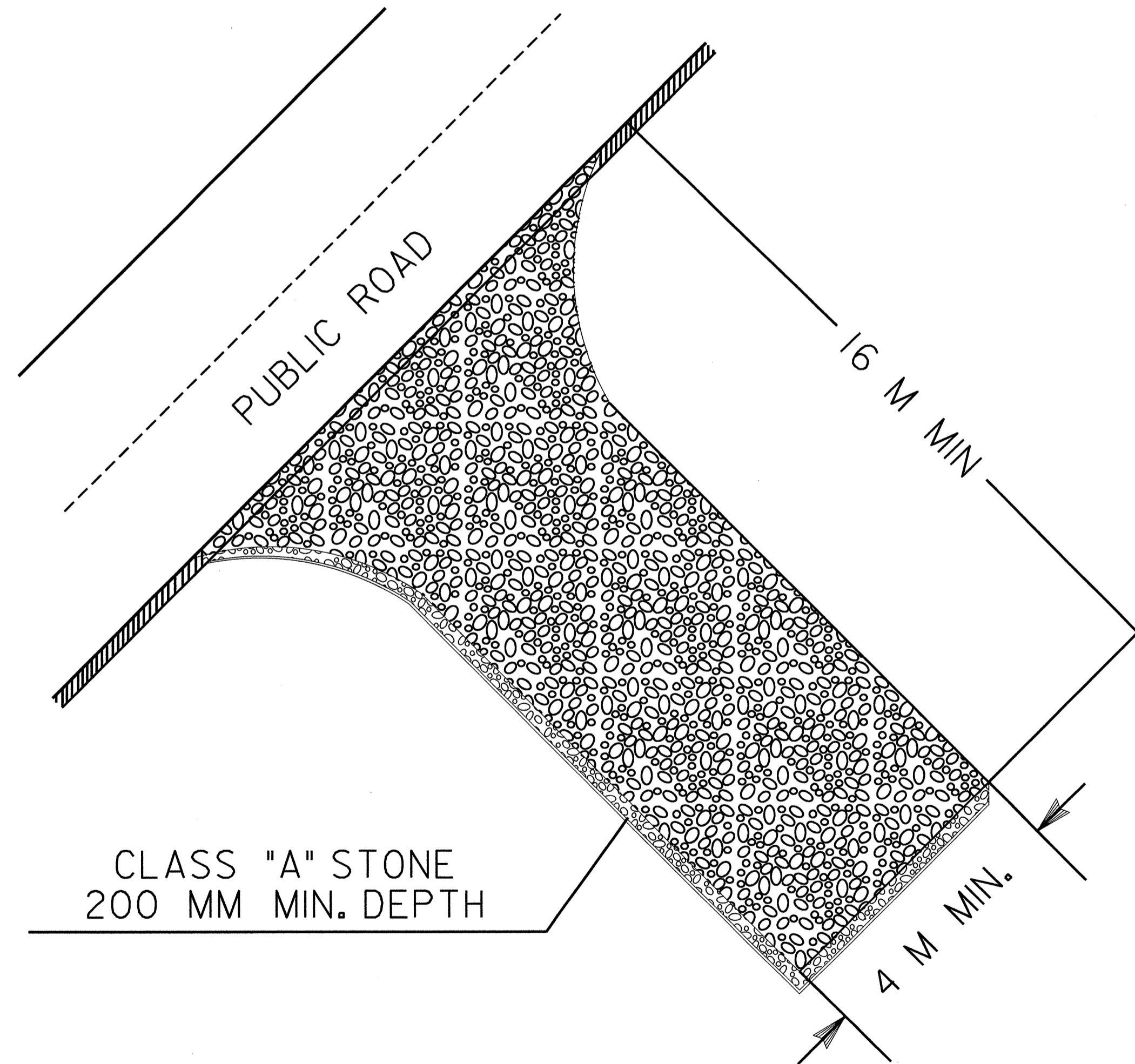


PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE

NOTES:

1. TURNING RADIUS SUFFICIENT TO ACCOMODATE LARGE TRUCKS SHALL BE PROVIDED.
2. ENTRANCE(S) SHOULD BE LOCATED TO PROVIDE FOR UTILIZATION BY ALL CONSTRUCTION VEHICLES.
3. MUST BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO STREETS. PERIODIC TOPDRESSING WITH STONE WILL BE NECESSARY.
4. ANY MATERIAL TRACKED ONTO THE ROADWAY MUST BE CLEANED UP IMMEDIATELY.
5. GRAVEL CONSTRUCTION ENTRANCE SHALL BE LOCATED AT ALL POINTS OF INGRESS AND EGRESS UNTIL SITE IS STABILIZED. FREQUENT CHECKS OF THE DEVICE AND TIMELY MAINTENANCE MUST BE PROVIDED.
6. NUMBER AND LOCATION OF CONSTRUCTION ENTRANCES TO BE DETERMINED BY THE ENGINEER

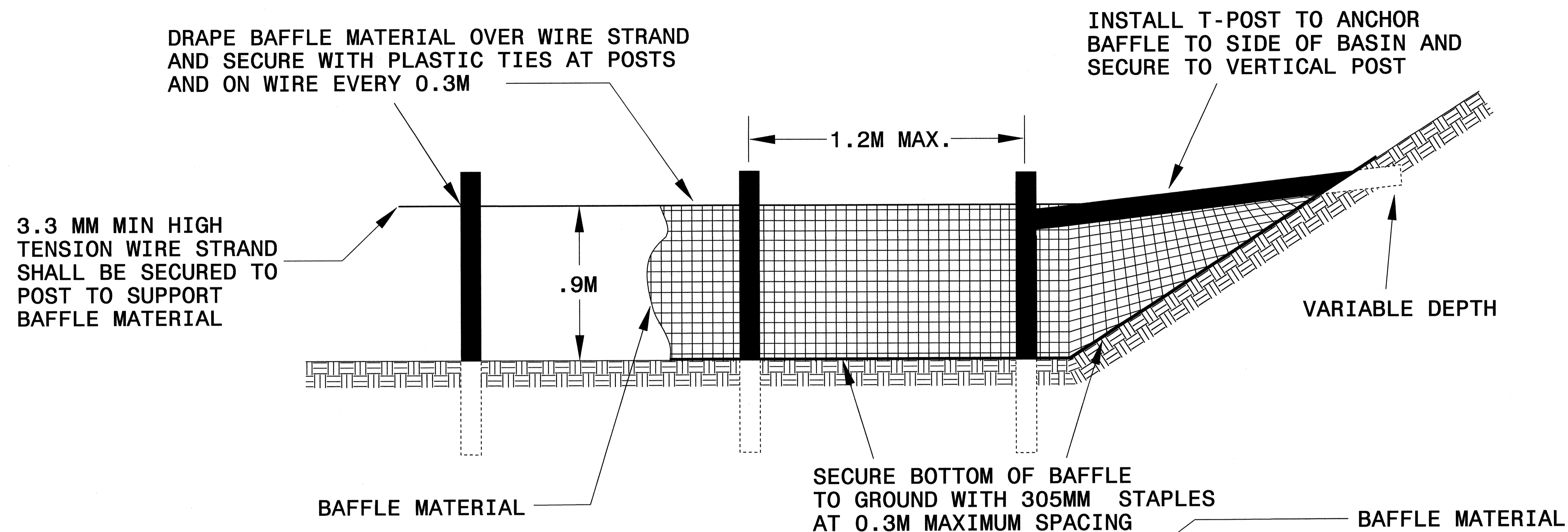


NOTE: FILTER FABRIC TO BE PLACED BENEATH STONE



PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

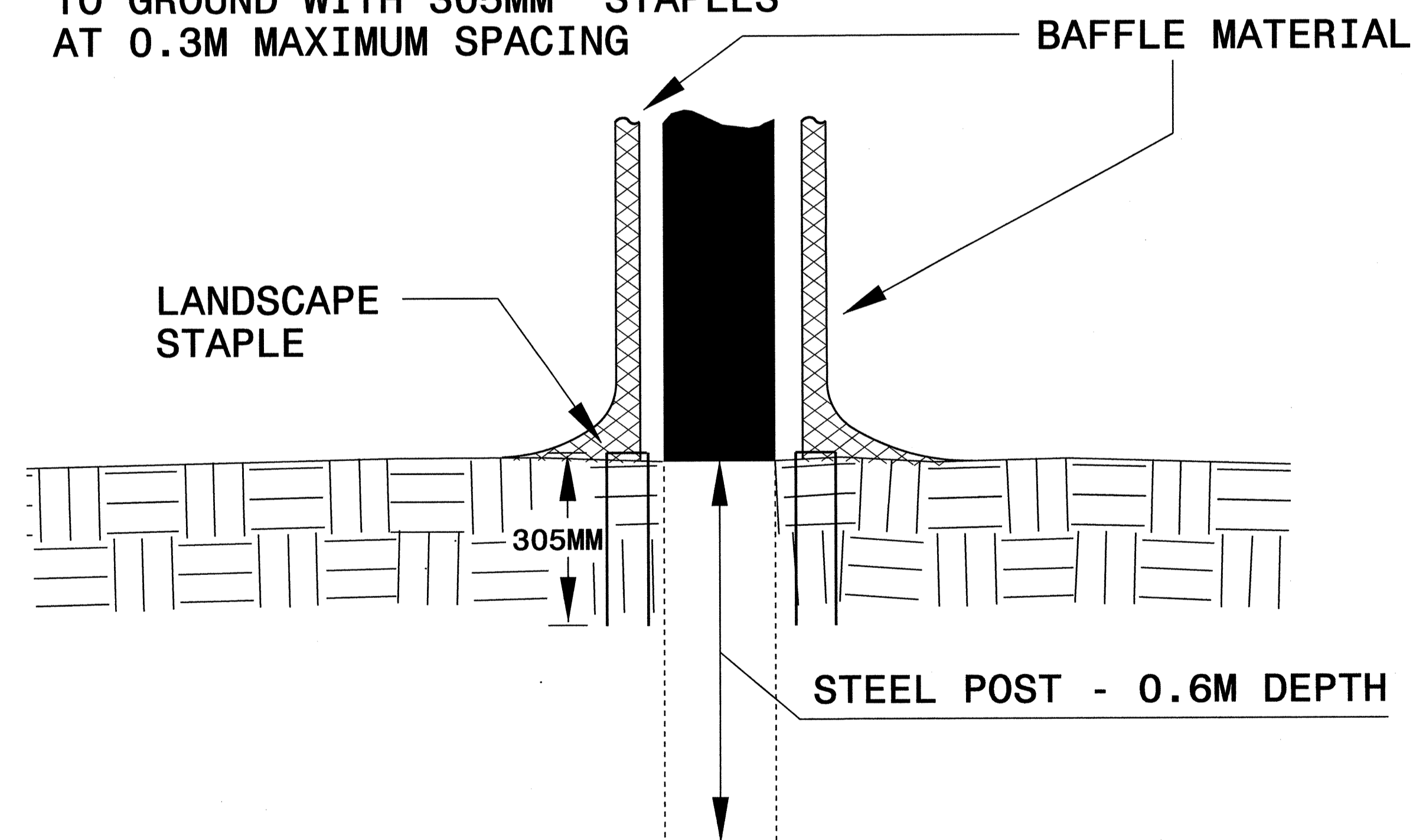
COIR FIBER BAFFLE DETAIL



1. INSTALL THREE(3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF $\frac{1}{4}$ THE BASIN LENGTH.

2. TWO(2) COIR FIBER BAFFLES CAN BE INSTALLED IN SILT BASINS AND DAMS LESS THAN 6 M IN LENGTH WITH A SPACING OF $\frac{1}{3}$ THE BASIN LENGTH.

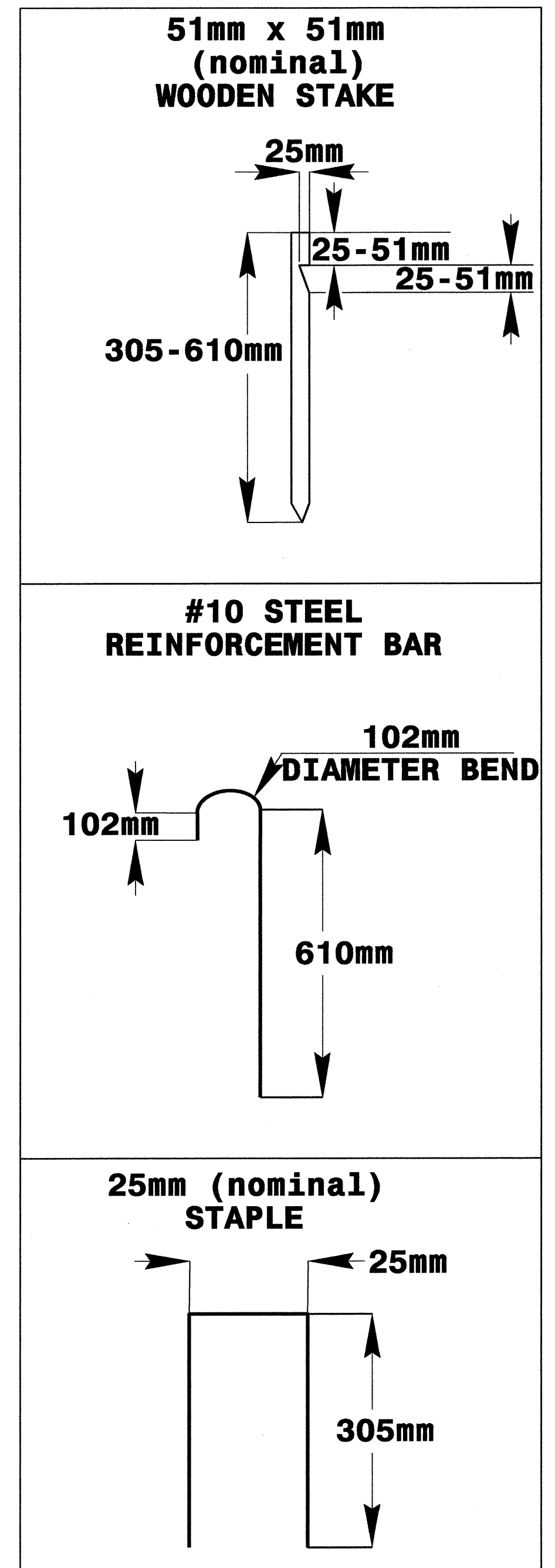
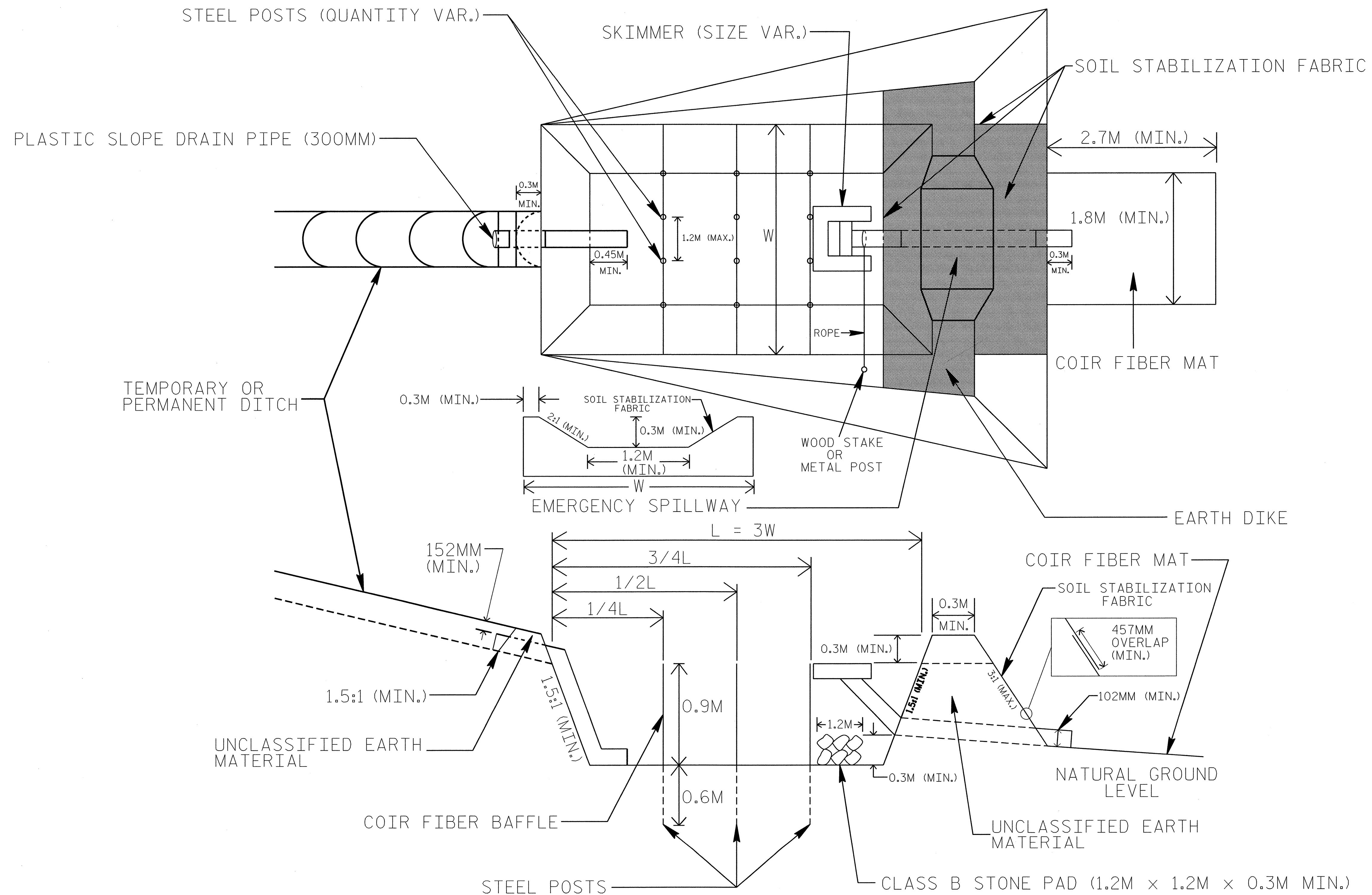
3. TOP HEIGHT OF COIR FIBER BAFFLES SHALL NOT BE BELOW BASE OF EMERGENCY SPILLWAY ELEVATION.



BAFFLE MATERIAL SHALL BE SECURED TO THE BOTTOM AND SIDES OF BASIN USING 305MM LANDSCAPE STAPLES

SKIMMER BASIN WITH BAFFLES DETAIL

PROJECT REFERENCE NO. X-0002CB		SHEET NO. EC-2B
R/W SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	



COIR FIBER MAT ANCHOR OPTIONS

NOTES

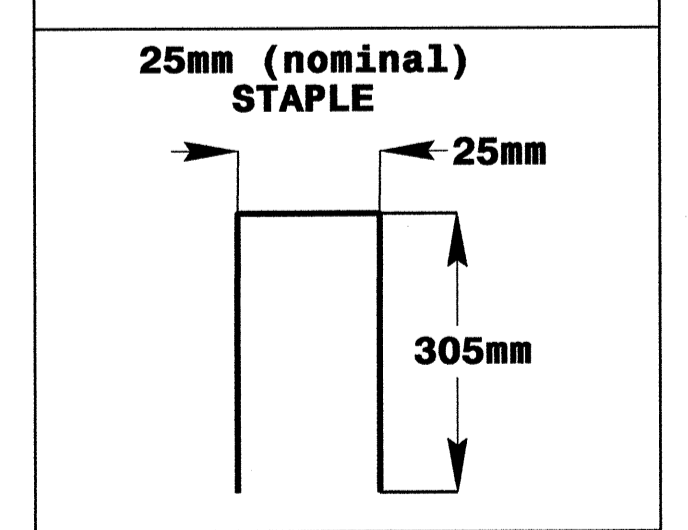
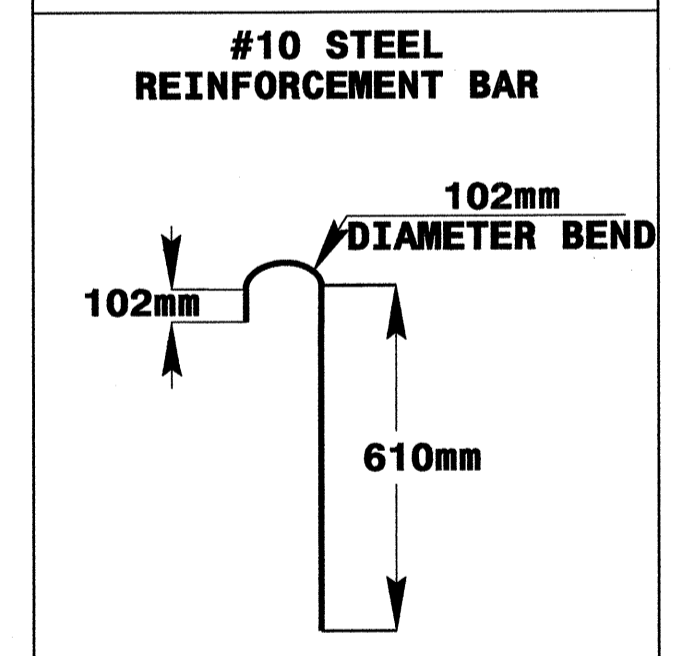
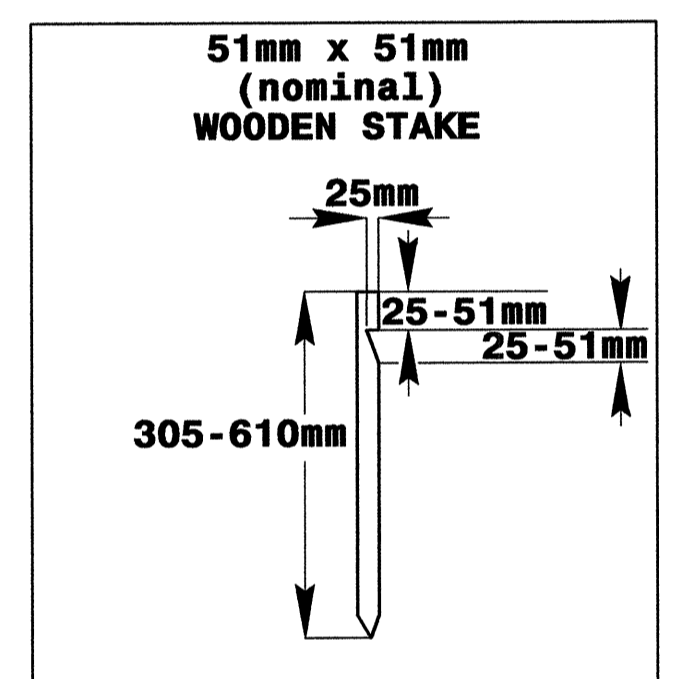
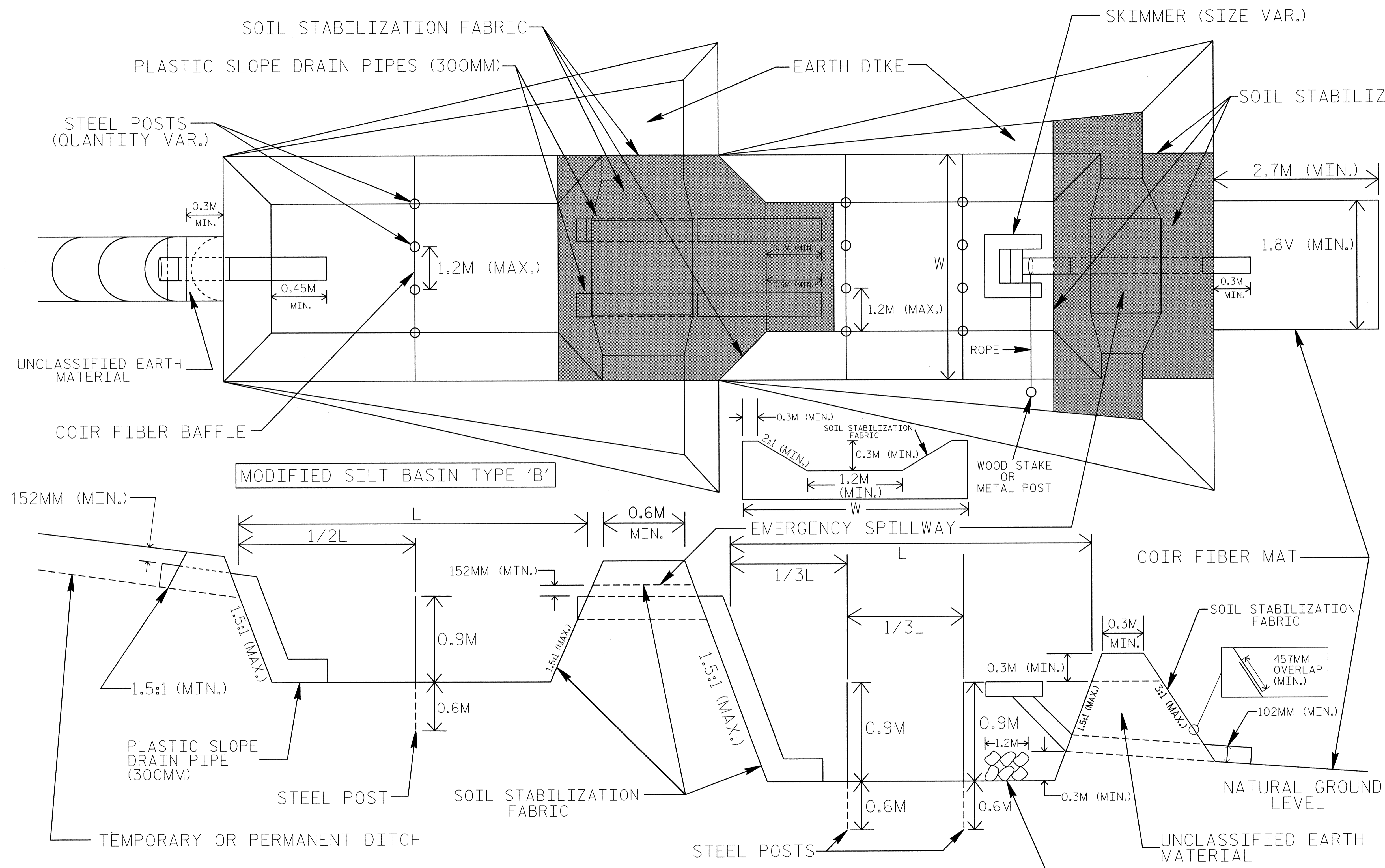
1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES.
2. LIMIT EARTH DIKE HEIGHT TO 1.5M.
3. FOR BASIN DEPTH OF 1M, MINIMUM BASIN WIDTH SHALL BE 3M.
4. DETERMINE EMERGENCY SPILLWAY LENGTH (M) USING $Q/0.074$, WHERE Q IS FLOW RATE (CMS) INTO BASIN.
5. PLASTIC SLOPE DRAIN PIPE AT INLET OF BASIN MAY BE REPLACED BY FILTER FABRIC AS DIRECTED.
6. SOIL STABILIZATION FABRIC FOR EMERGENCY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 457MM AS SHOWN.

NOT TO SCALE

TIERED SKIMMER BASIN DETAIL



PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-2C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



COIR FIBER MAT ANCHOR OPTIONS

NOTES

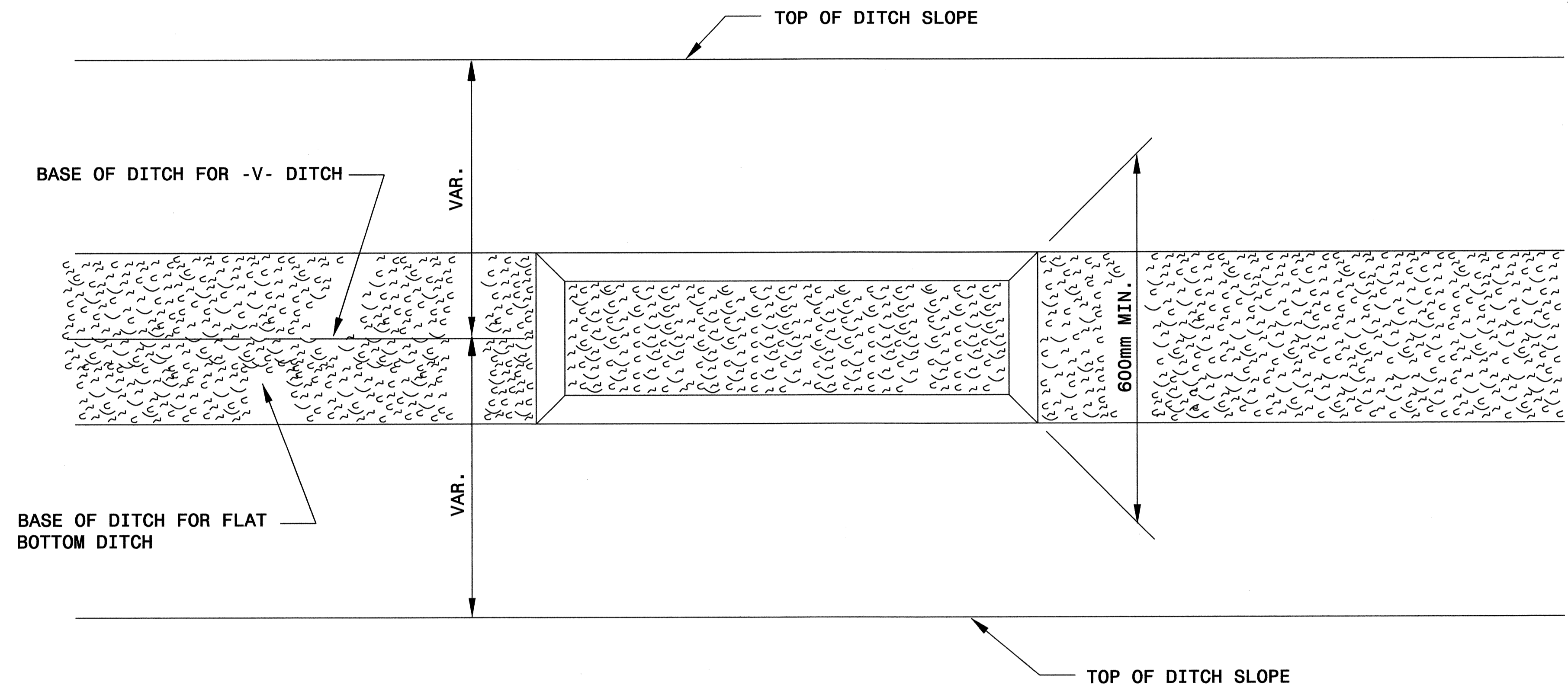
1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES OF BASINS.
2. LIMIT HEIGHT OF EARTH DIKES TO 1.5M.
3. ADDITIONAL MODIFIED SILT BASINS TYPE 'B' MAY BE NEEDED DEPENDING ON SLOPE.
4. FOR BASIN DEPTHS OF 1M, THE MINIMUM BASIN WIDTHS SHALL BE 3M.
5. DETERMINE EMERGENCY SPILLWAY LENGTHS (M) USING $Q/0.074$, WHERE Q IS FLOW RATE (CMS) INTO UPPER BASIN.
6. SOIL STABILIZATION FABRIC FOR EMERGENCY SPILLWAYS SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 457MM AS SHOWN.

NOT TO SCALE

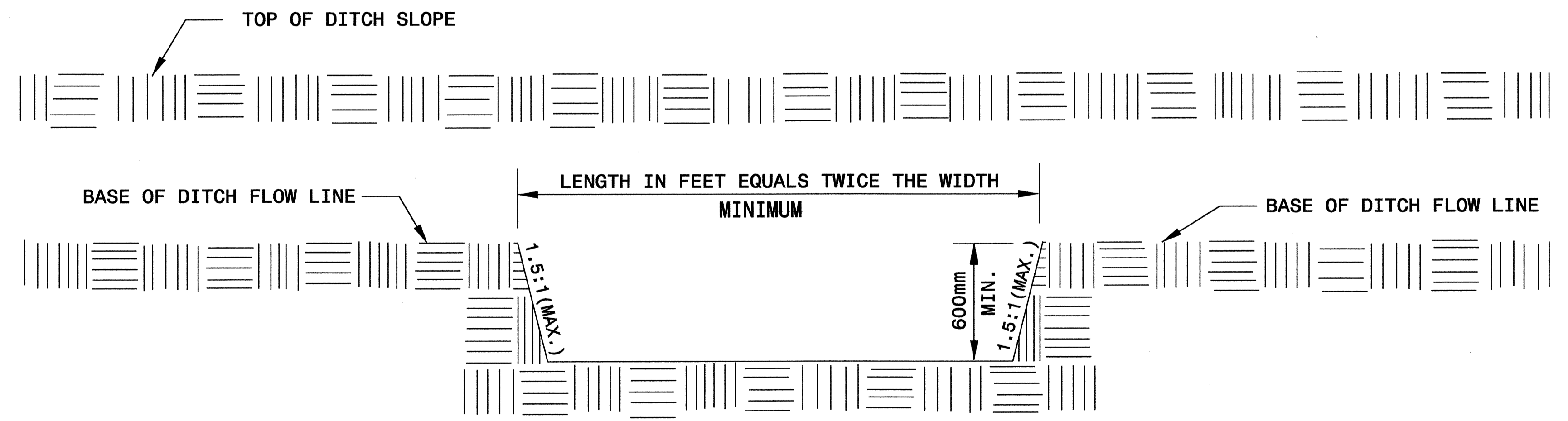


PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-2D
R / W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SILT BASIN 'B' DETAIL



PLAN

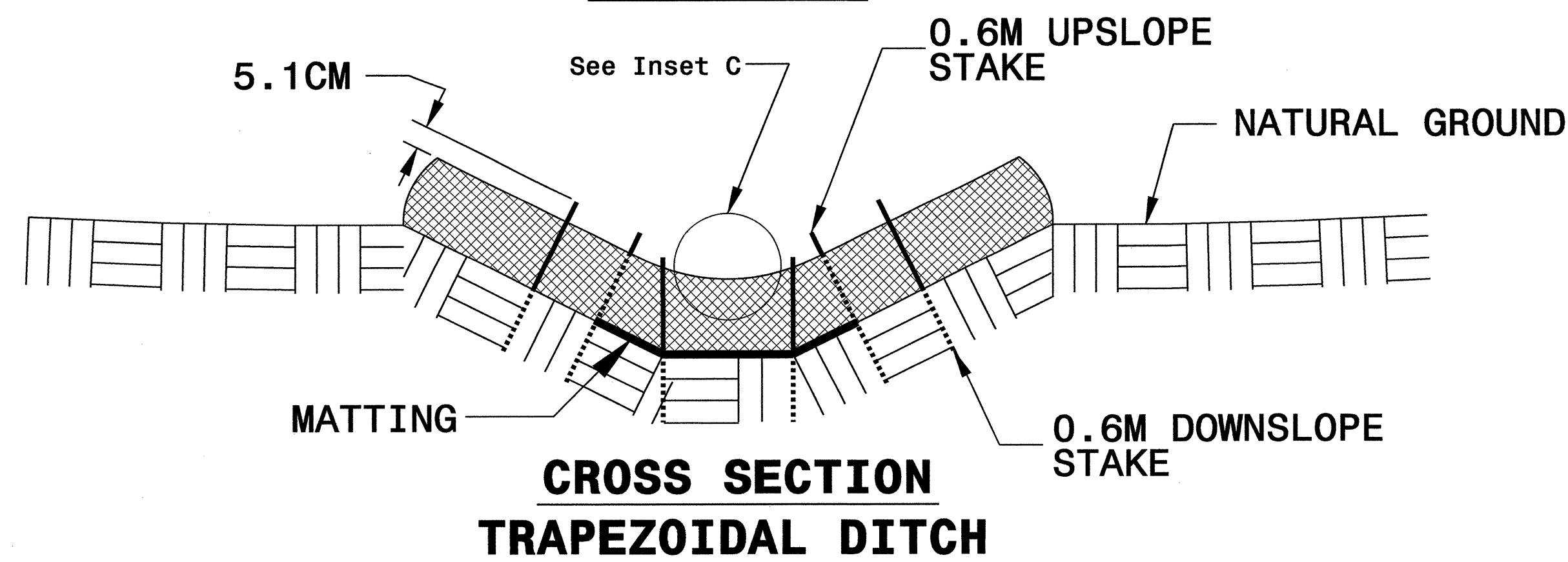
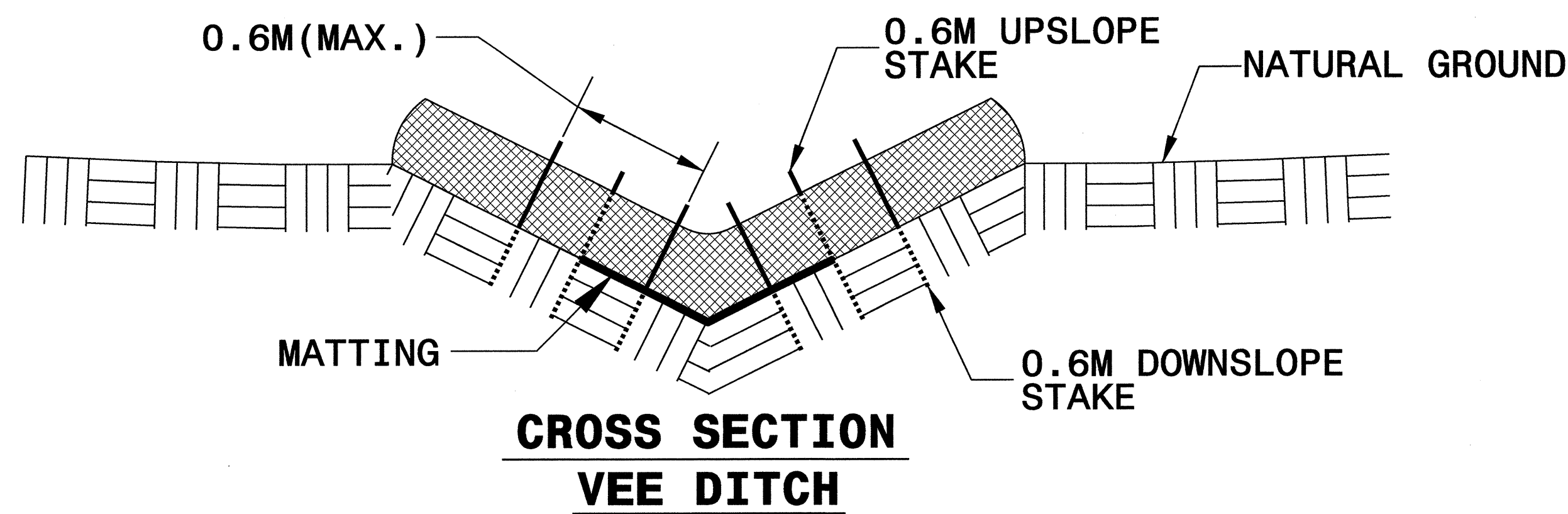
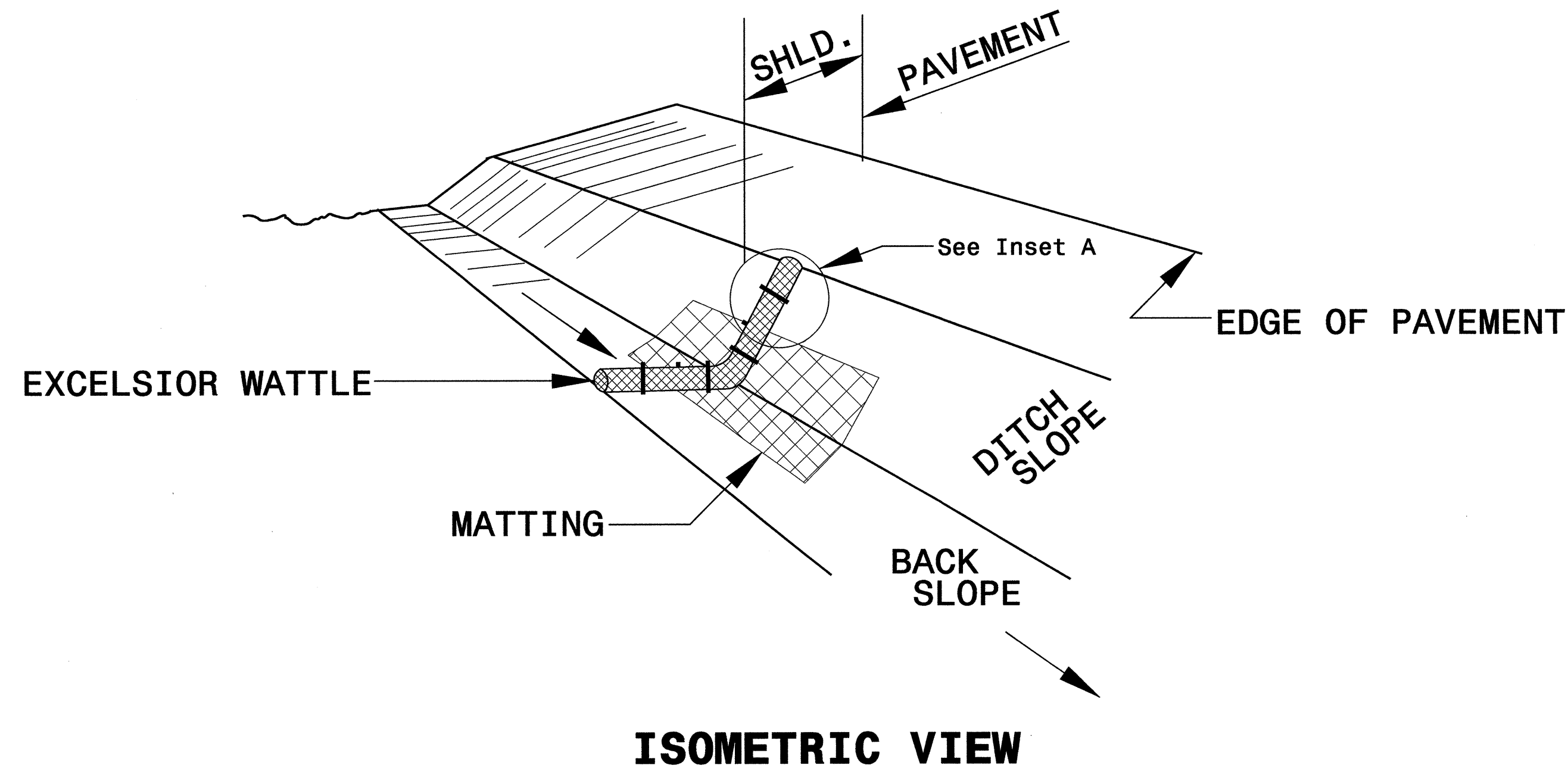


ELEVATION

WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-2E
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTES:

USE MINIMUM 305 MM DIAMETER EXCELSIOR WATTLE.

USE 0.6 M WOODEN STAKES WITH A 5.1 CM BY 5.1 CM 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.

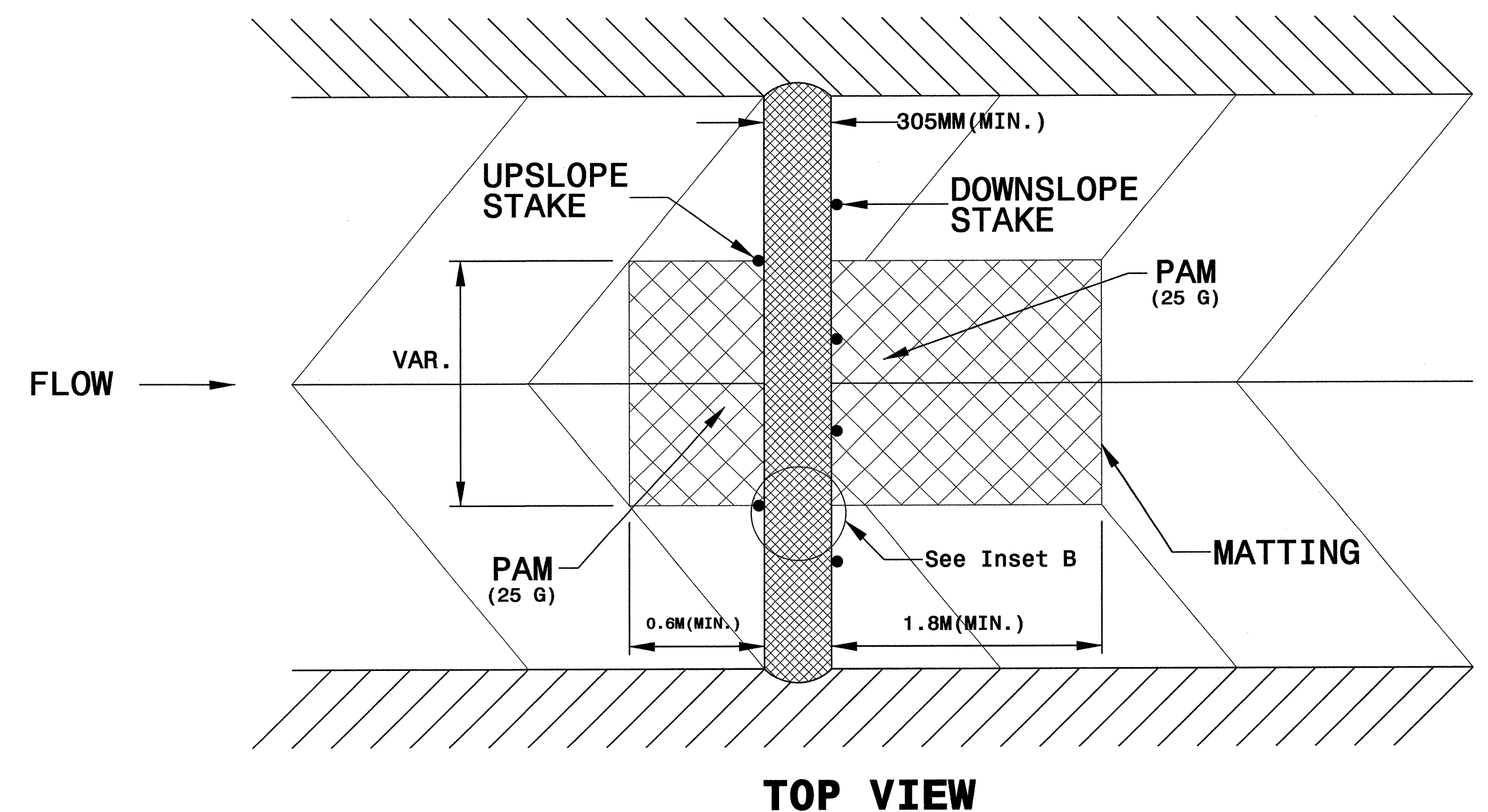
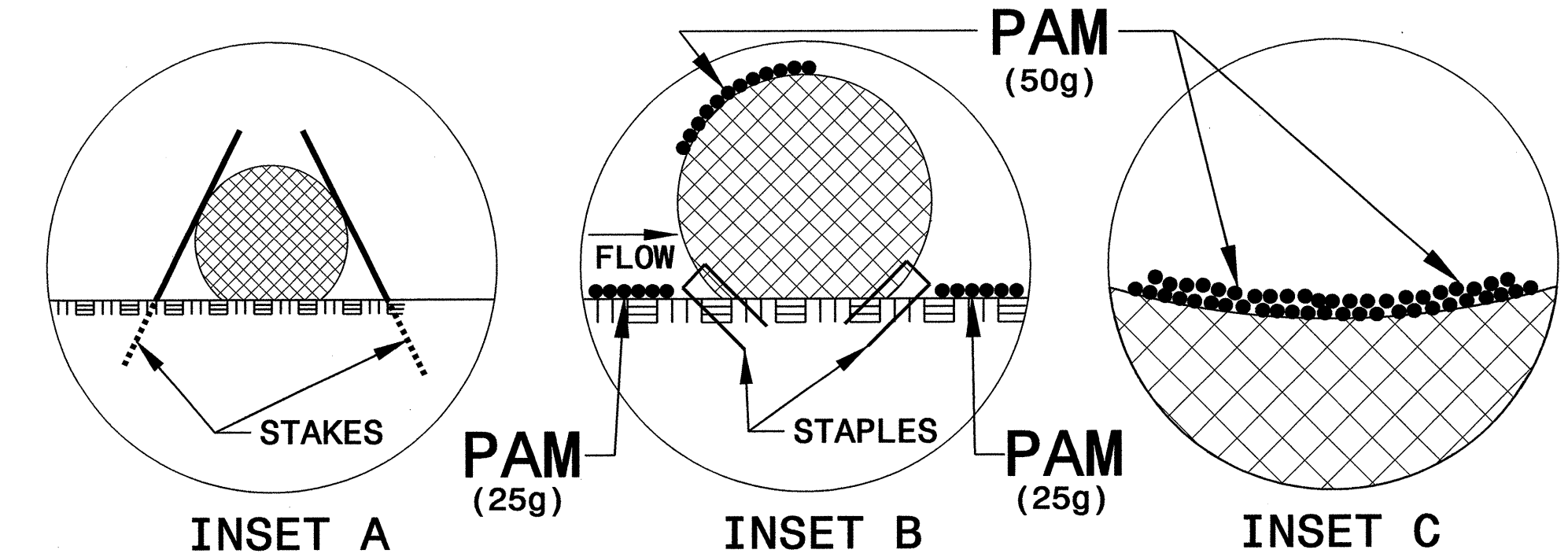
PROVIDE STAPLES MADE OF 3 MM DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 305 MM IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 0.3 LINEAR METER 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.

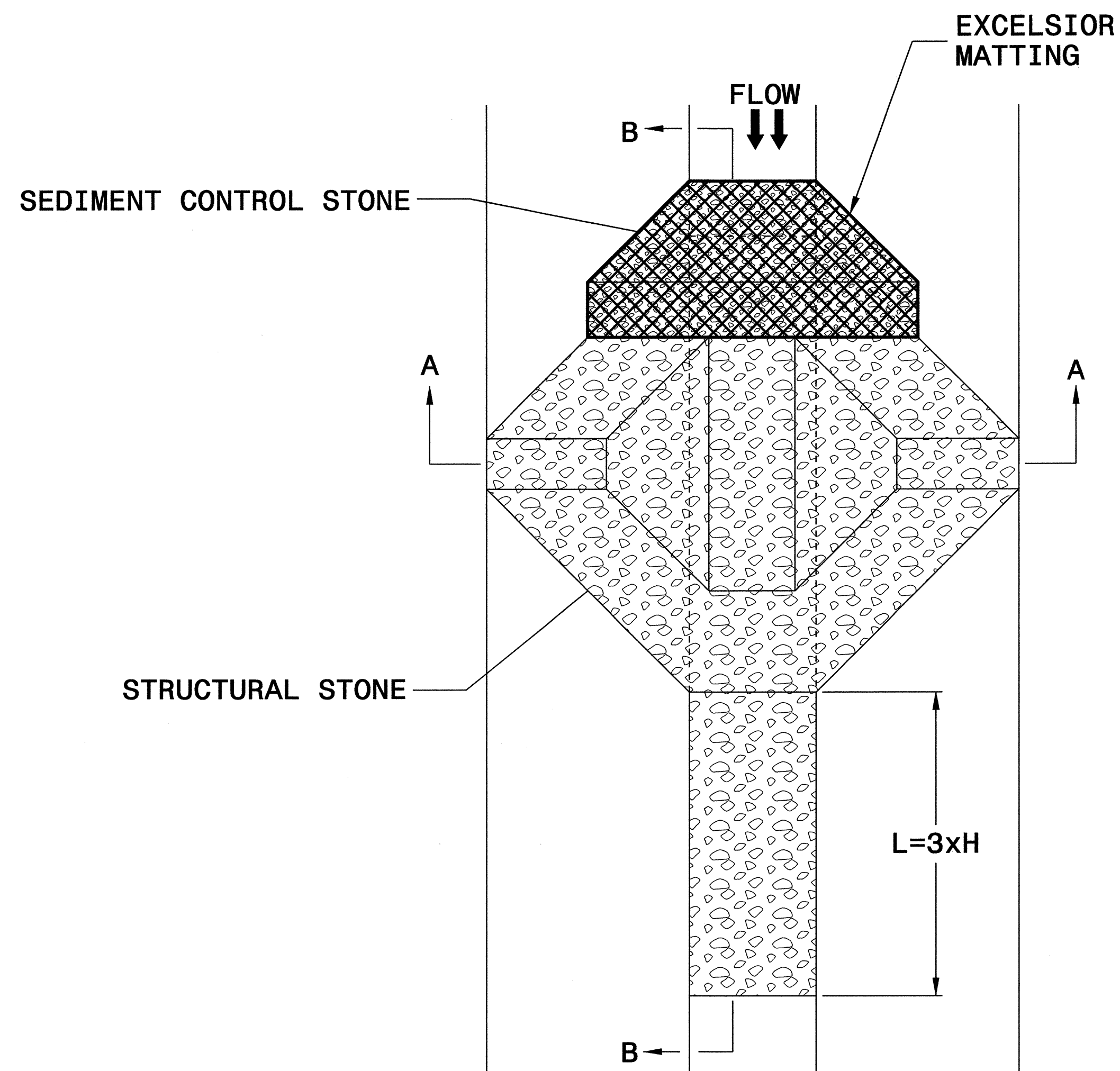
INITIALLY APPLY 50 GRAMS OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 25 GRAMS ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 12 MM.





PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-2F
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



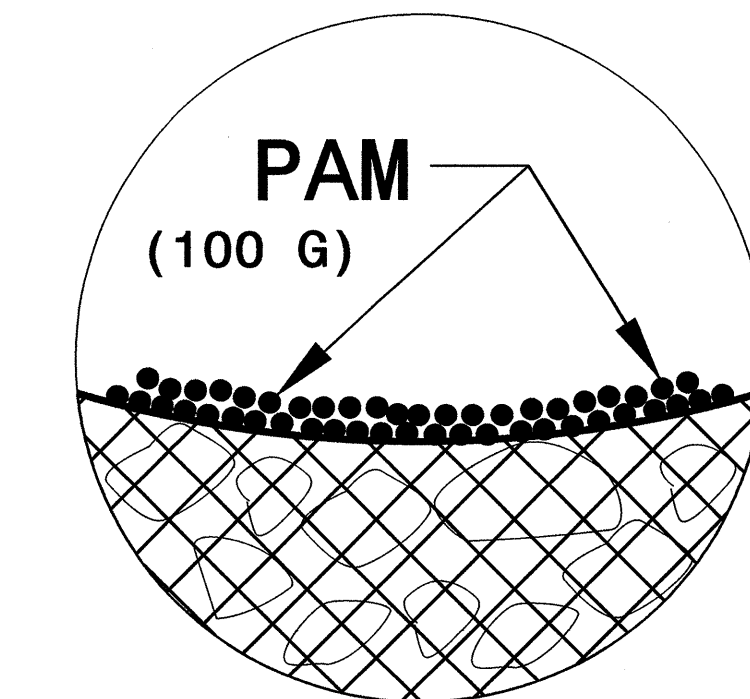
PLAN

NOTES

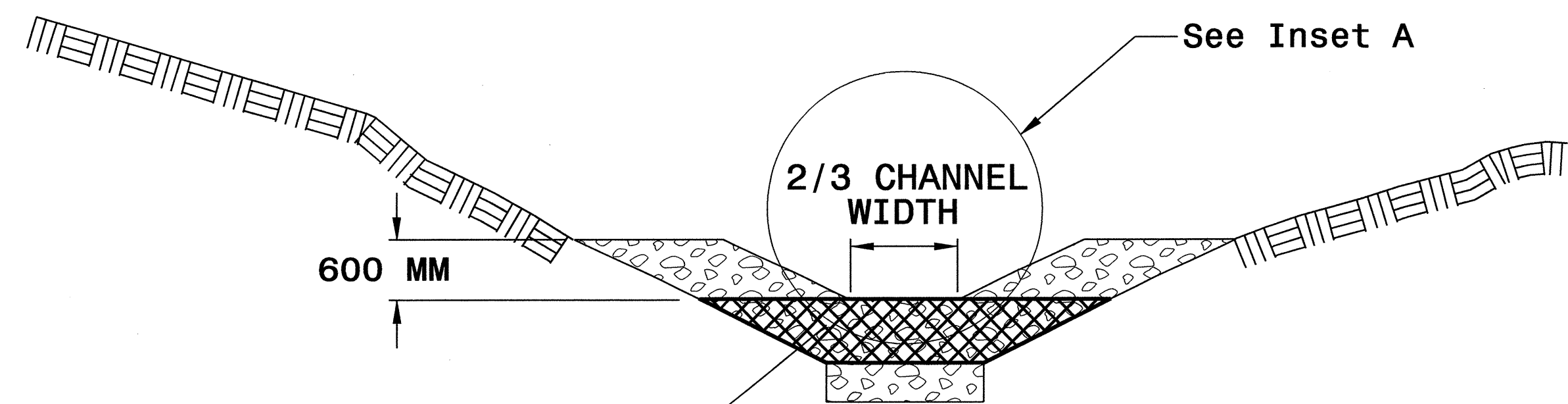
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

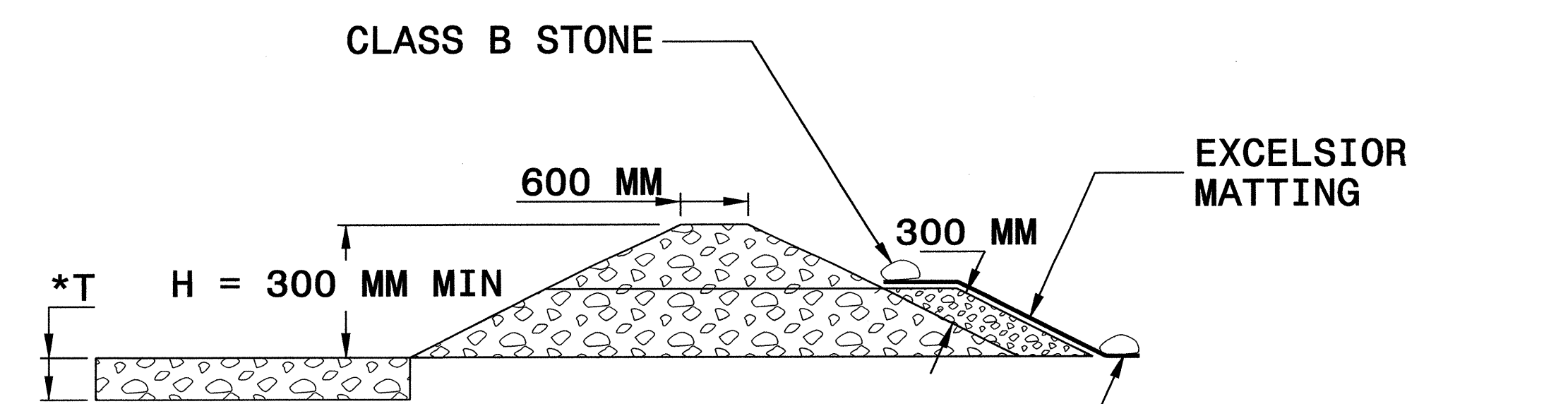
INITIALLY APPLY 100 GRAMS OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 12 MM.



INSET A



SECTION A-A



SECTION B-B

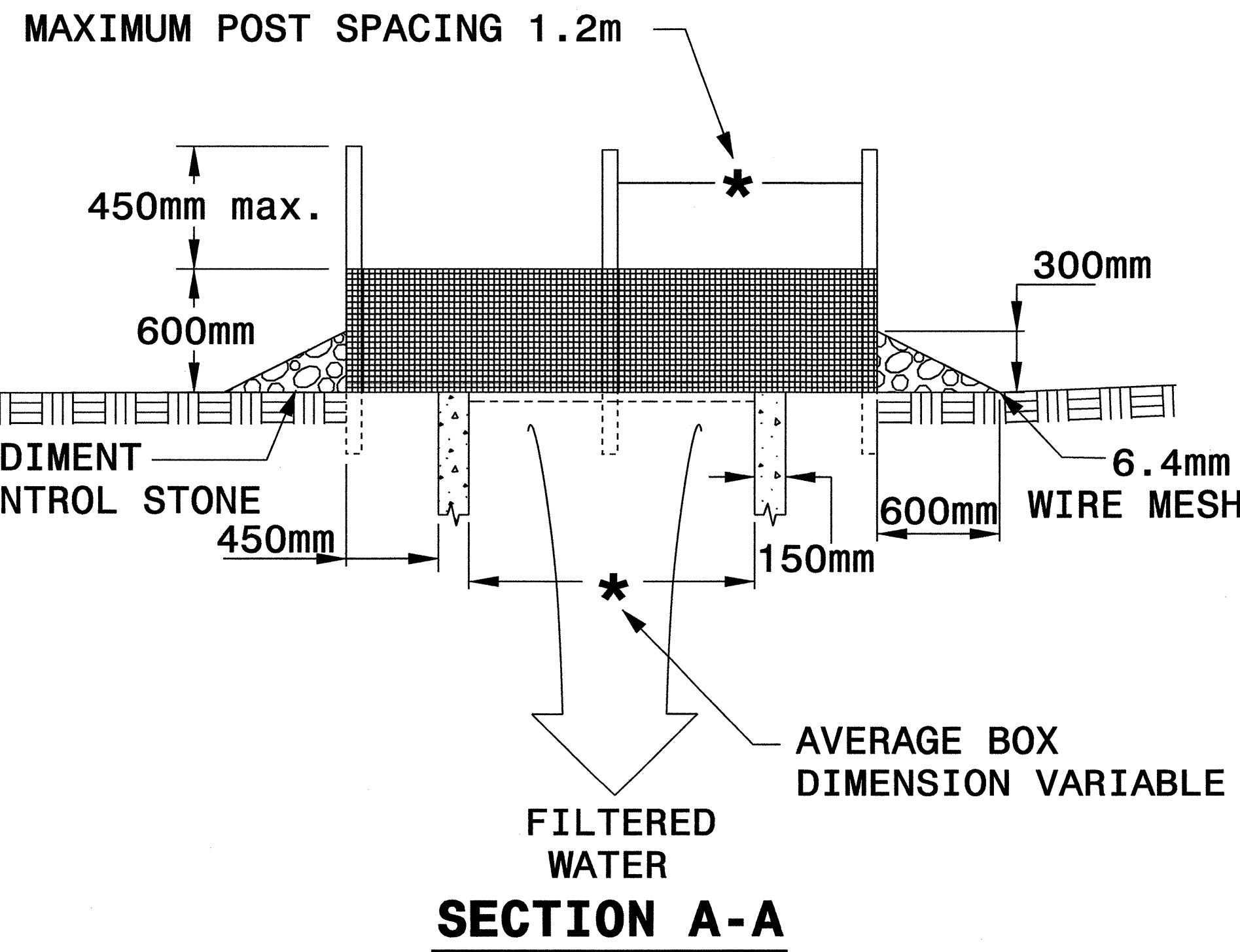
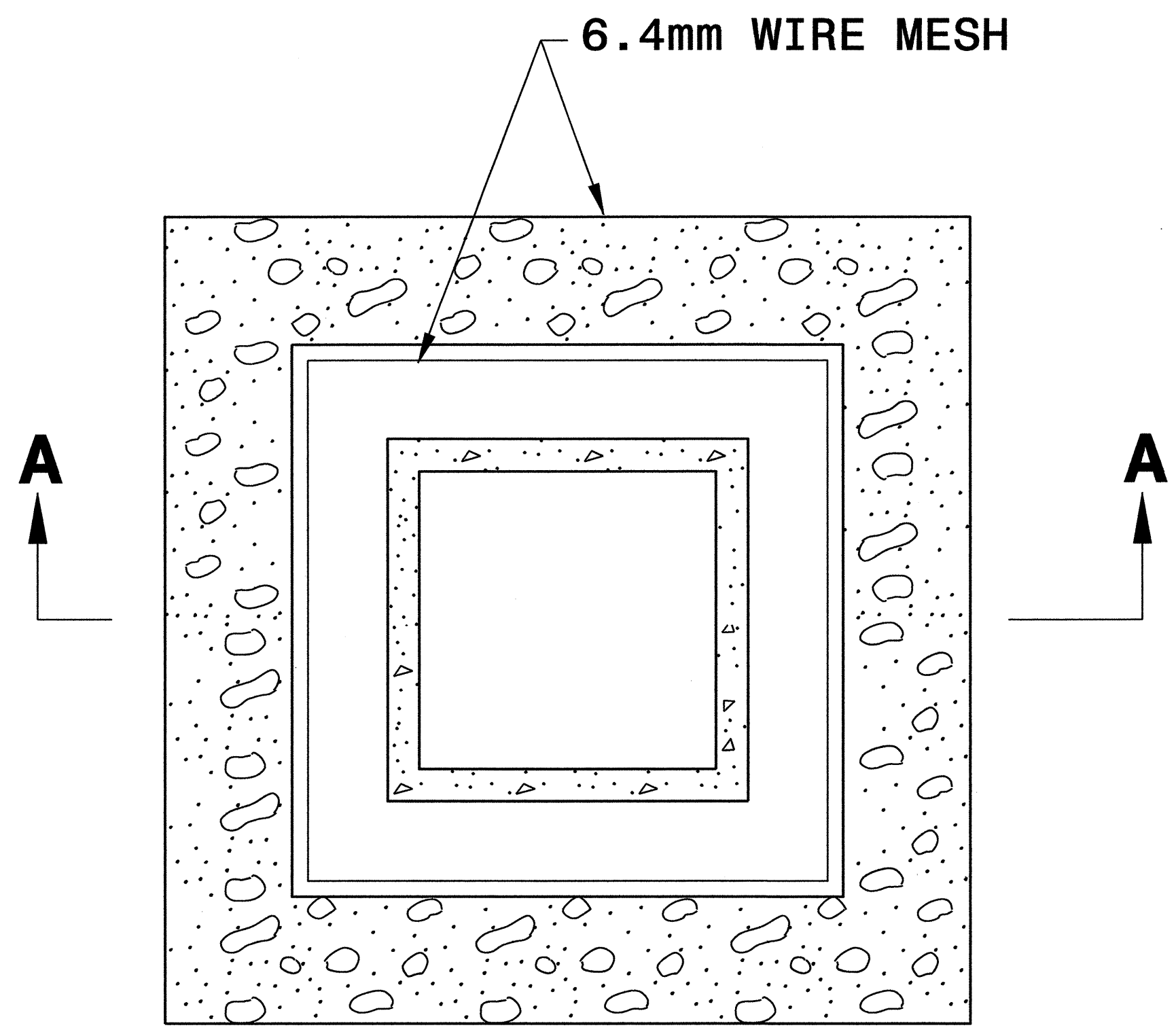
*T = 300 MM MIN., 450 MM MAX.

NOT TO SCALE

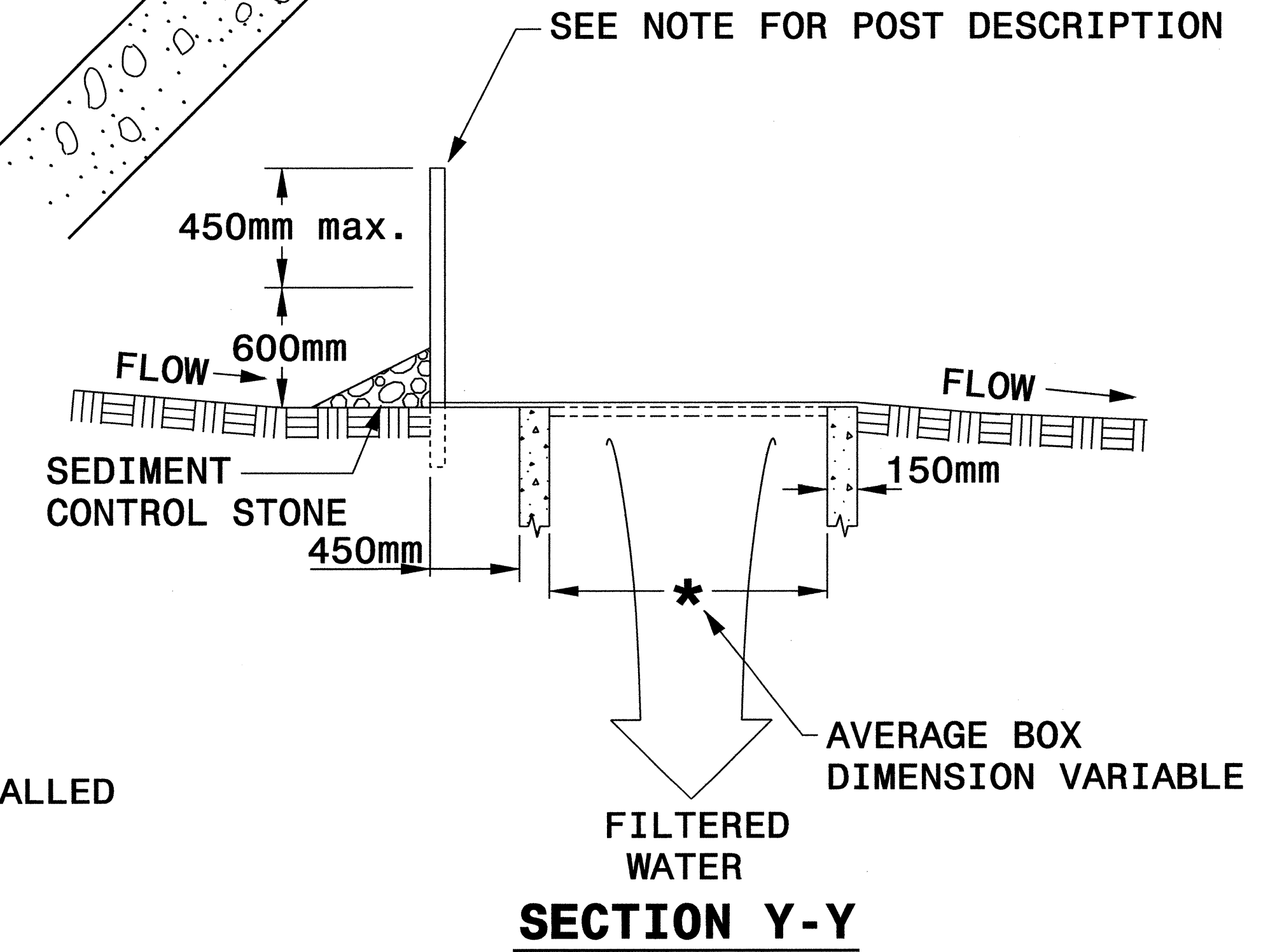
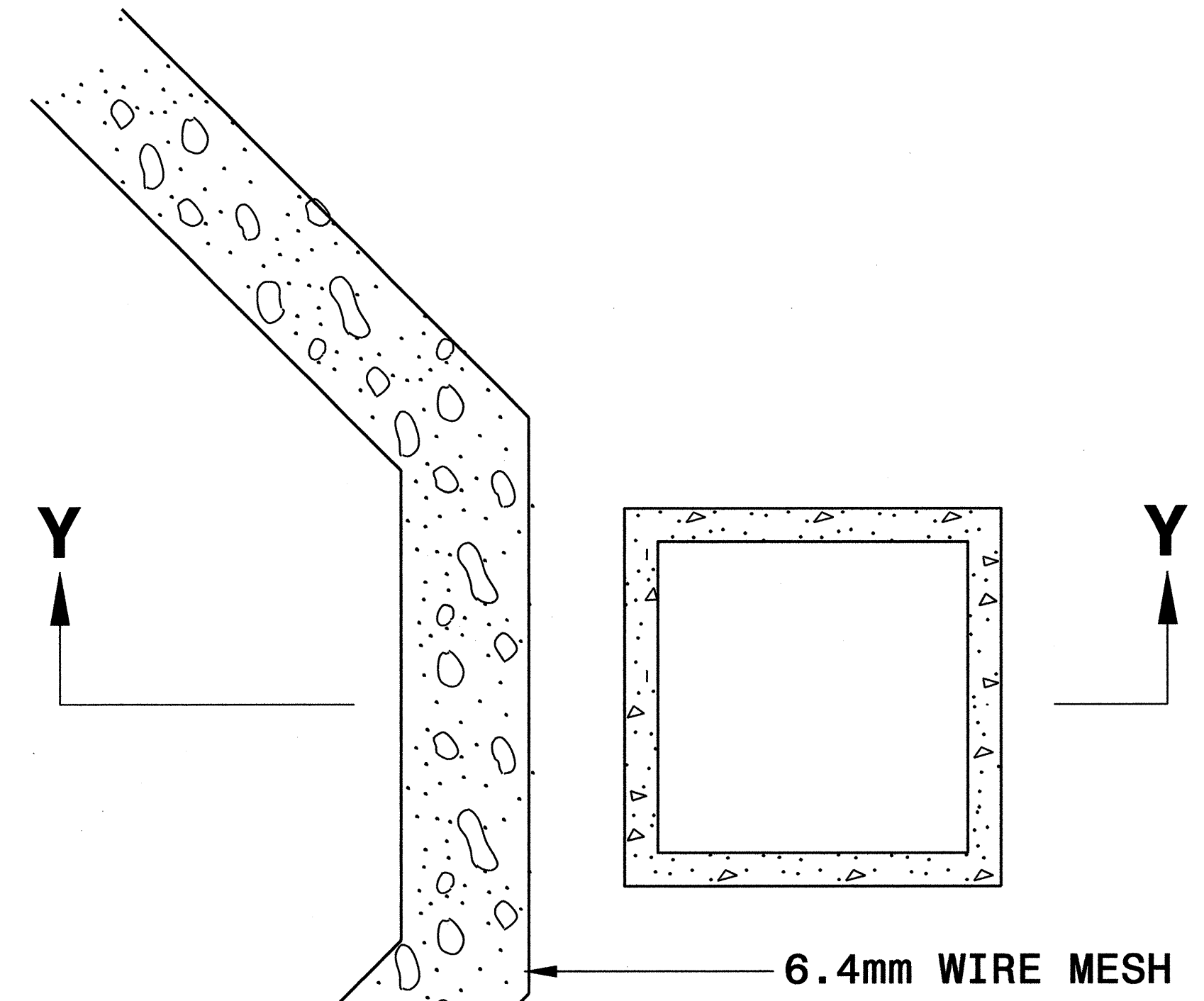


PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-26
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ROCK INLET SEDIMENT TRAP TYPE 'C' DETAIL



MULTI-DIRECTIONAL FLOW



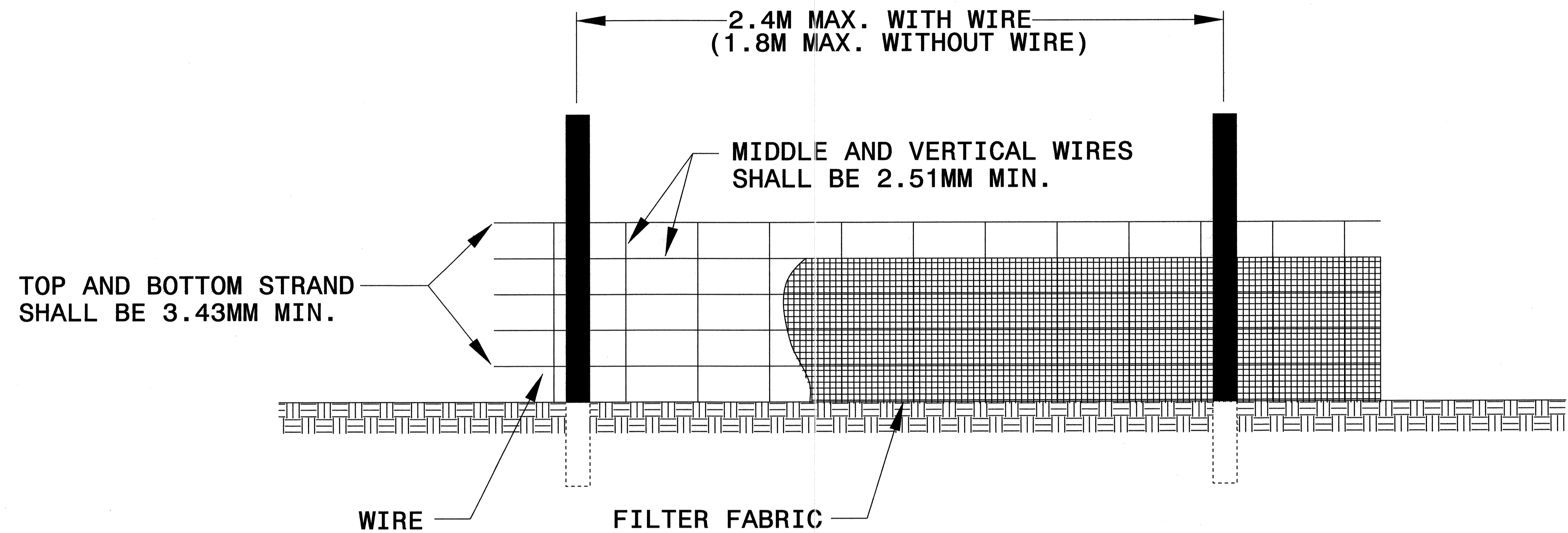
SINGLE-DIRECTIONAL FLOW

NOTE
 USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL.
 USE HARDWARE CLOTH 0.65mm WIRE MESH WITH 6.4mm MESH OPENINGS.
 PLACE TOP OF WIRE MESH A MINIMUM OF 300mm BELOW THE SHOULDER OR ANY DIVERSION POINT.
 INSTALL WIRE MESH UNDER SEDIMENT CONTROL STONE.
 USE 1.5m STEEL POST, INSTALLED 450mm DEEP MINIMUM, AND OF THE SELF-FASTENER ANGLE STEEL TYPE.
 SPACE POST A MAXIMUM OF 1.2m.



PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-2H
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY SILT FENCE DETAIL

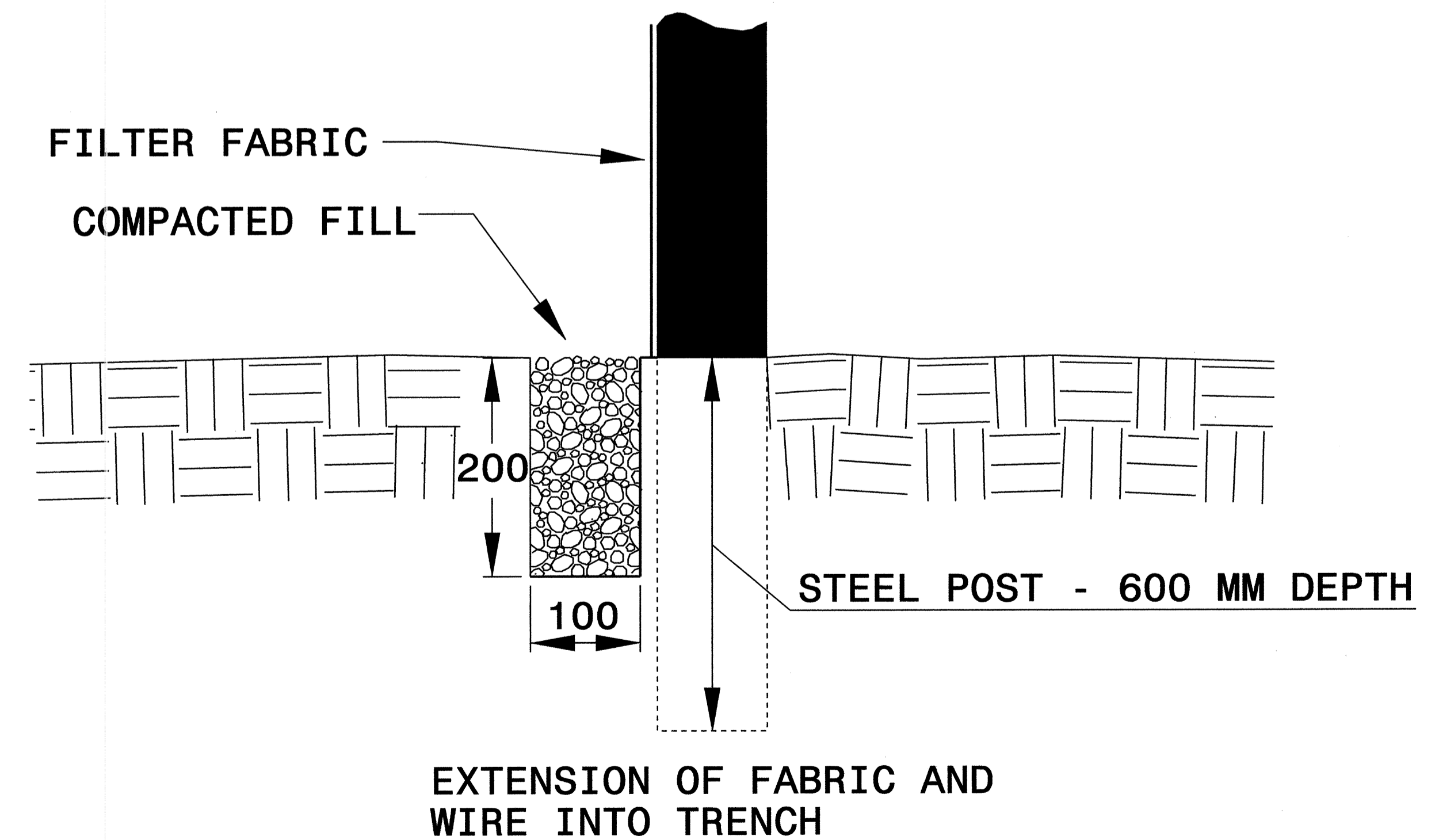


NOTES

USE WIRE A MINIMUM OF 800MM IN WIDTH AND WITH A MINIMUM OF 6 LINE WIRES WITH 300MM STAY SPACING.

USE FILTER FABRIC A MINIMUM OF 900MM IN WIDTH AND FASTEN ADEQUATELY TO THE WIRE AS DIRECTED BY THE ENGINEER.

PROVIDE 1.5M STEEL POST OF THE SELF-FASTENER ANGLE STEEL TYPE. ANGLE STEEL TYPE.





PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SPECIAL SEDIMENT CONTROL FENCE DETAIL

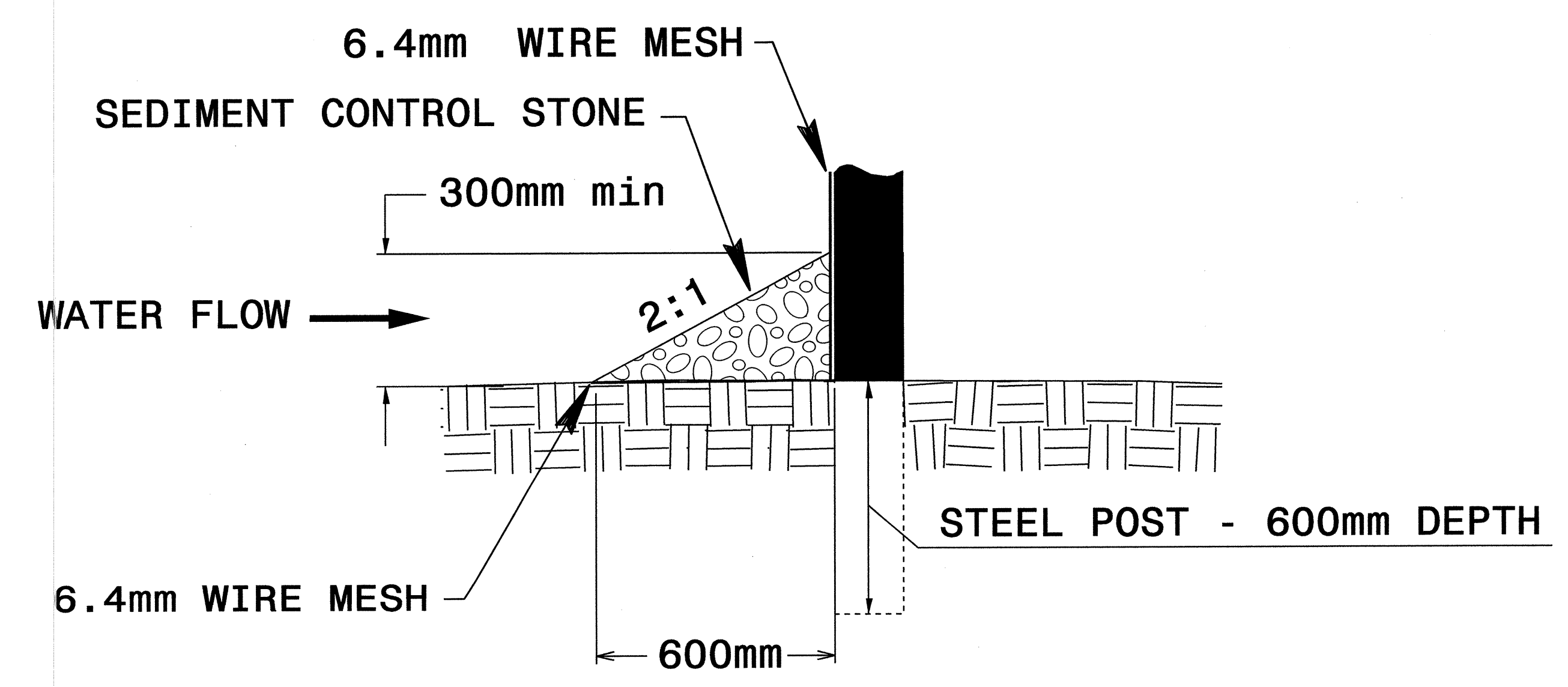
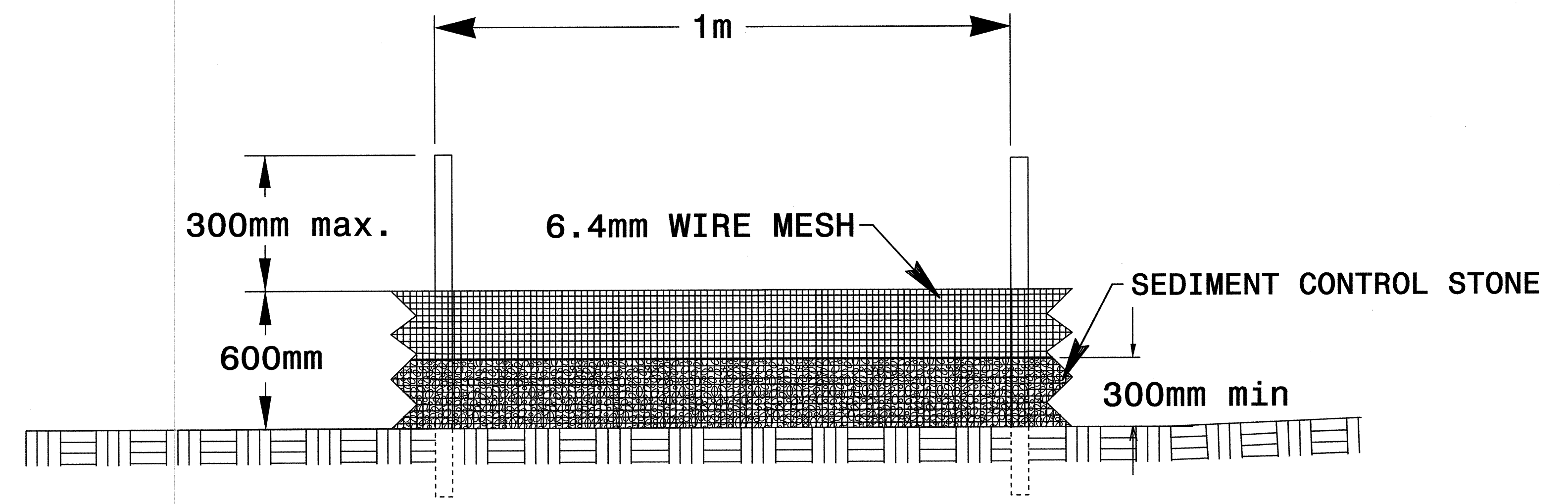
GENERAL NOTES:

USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL.

USE 0.65mm HARDWARE CLOTH WIRE MESH WITH 6.4 mm MESH OPENINGS.

INSTALL 1.5m SELF FASTENER ANGLE STEEL POST 600mm DEEP MINIMUM.

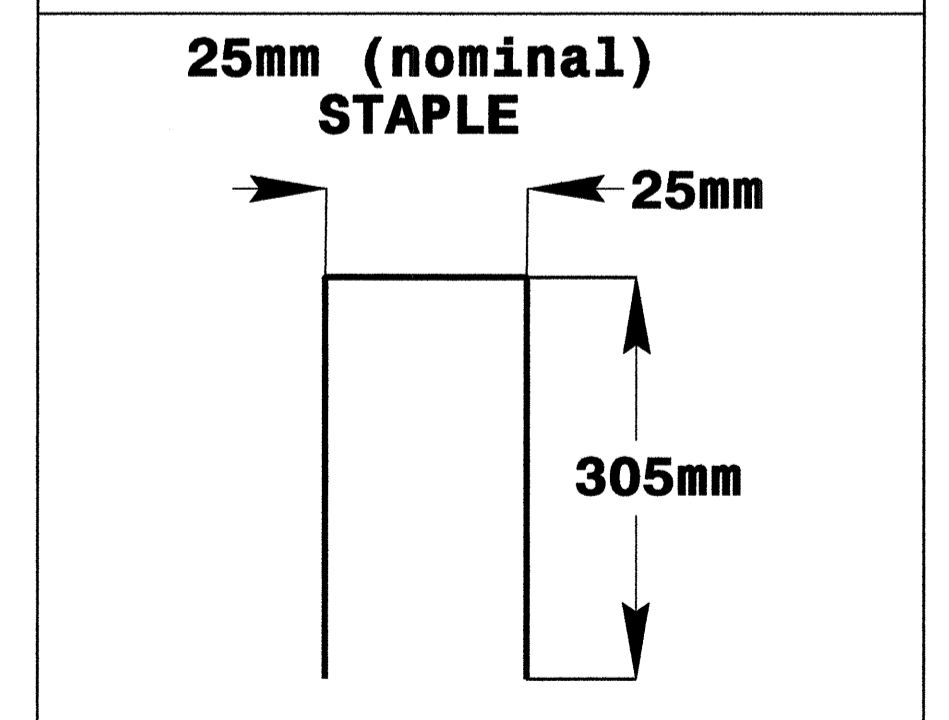
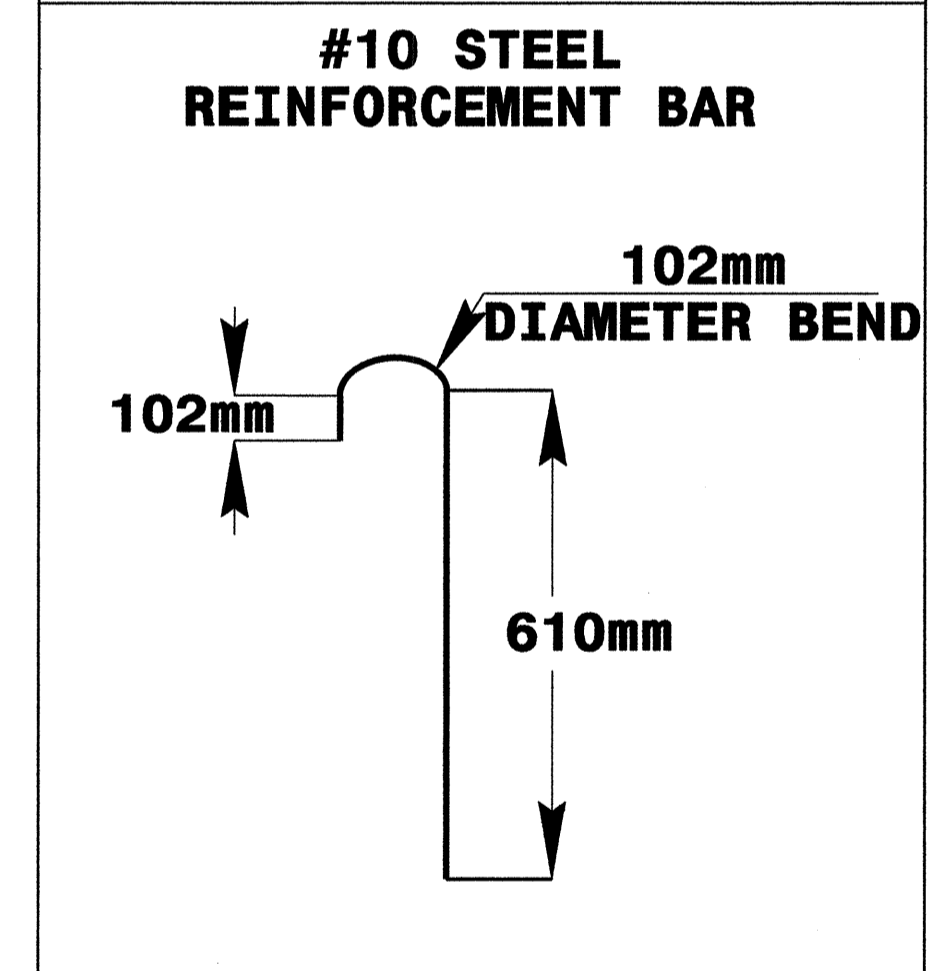
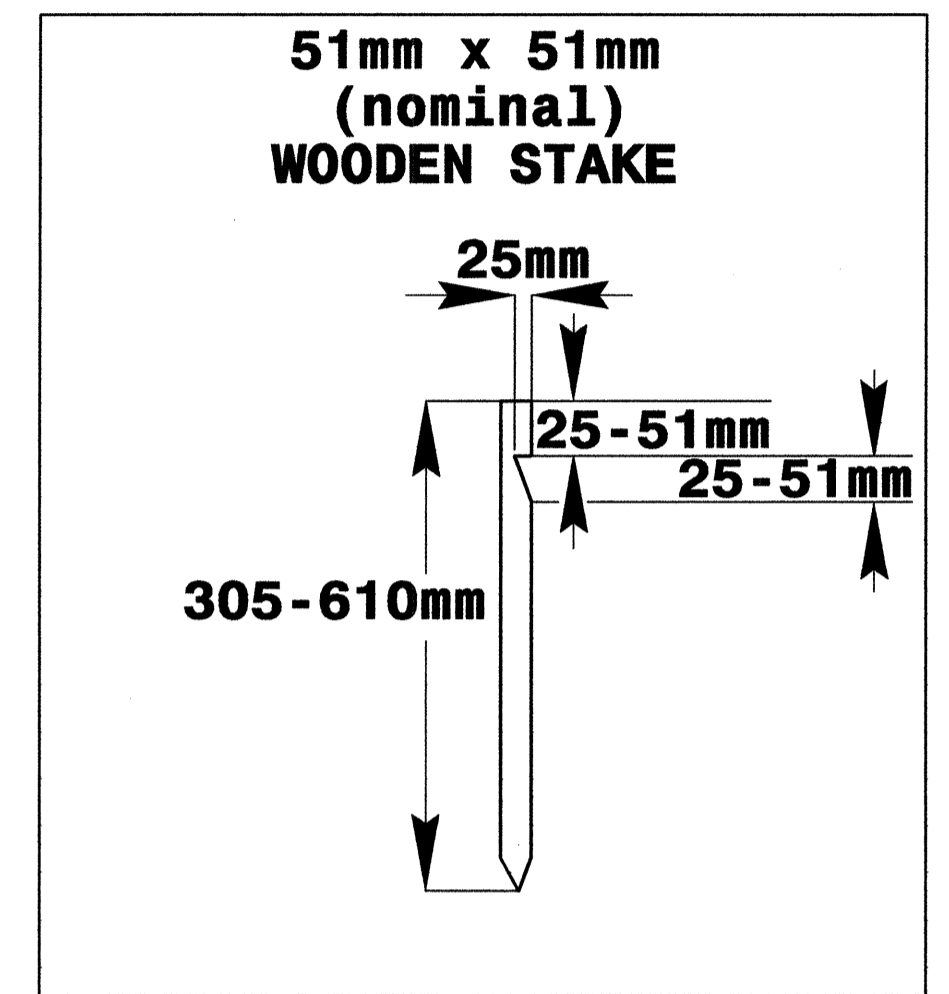
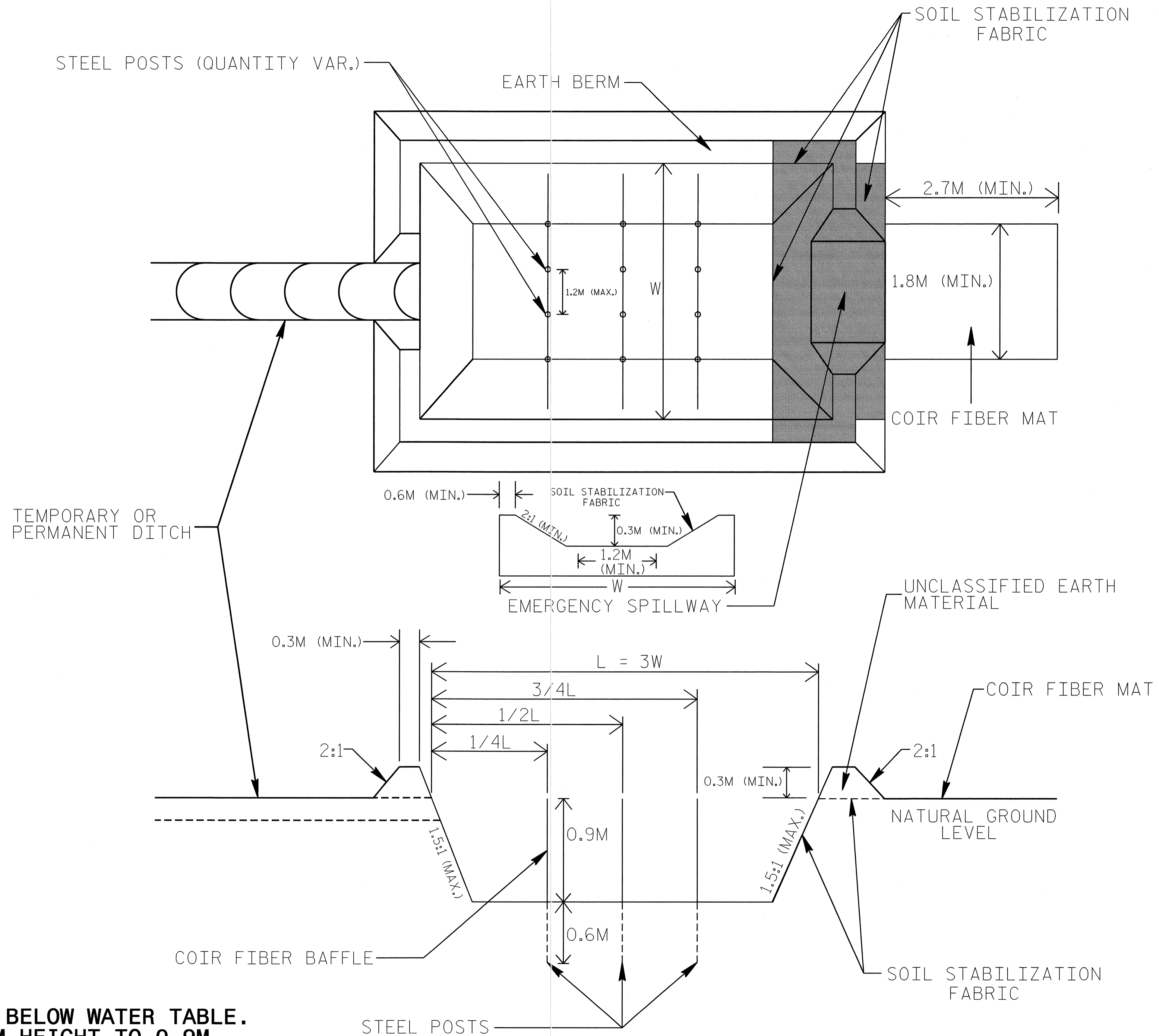
SPACE POST A MAXIMUM OF 1m.



INFILTRATION BASIN WITH BAFFLES DETAIL



PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-2J
R / W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



COIR FIBER MAT ANCHOR OPTIONS

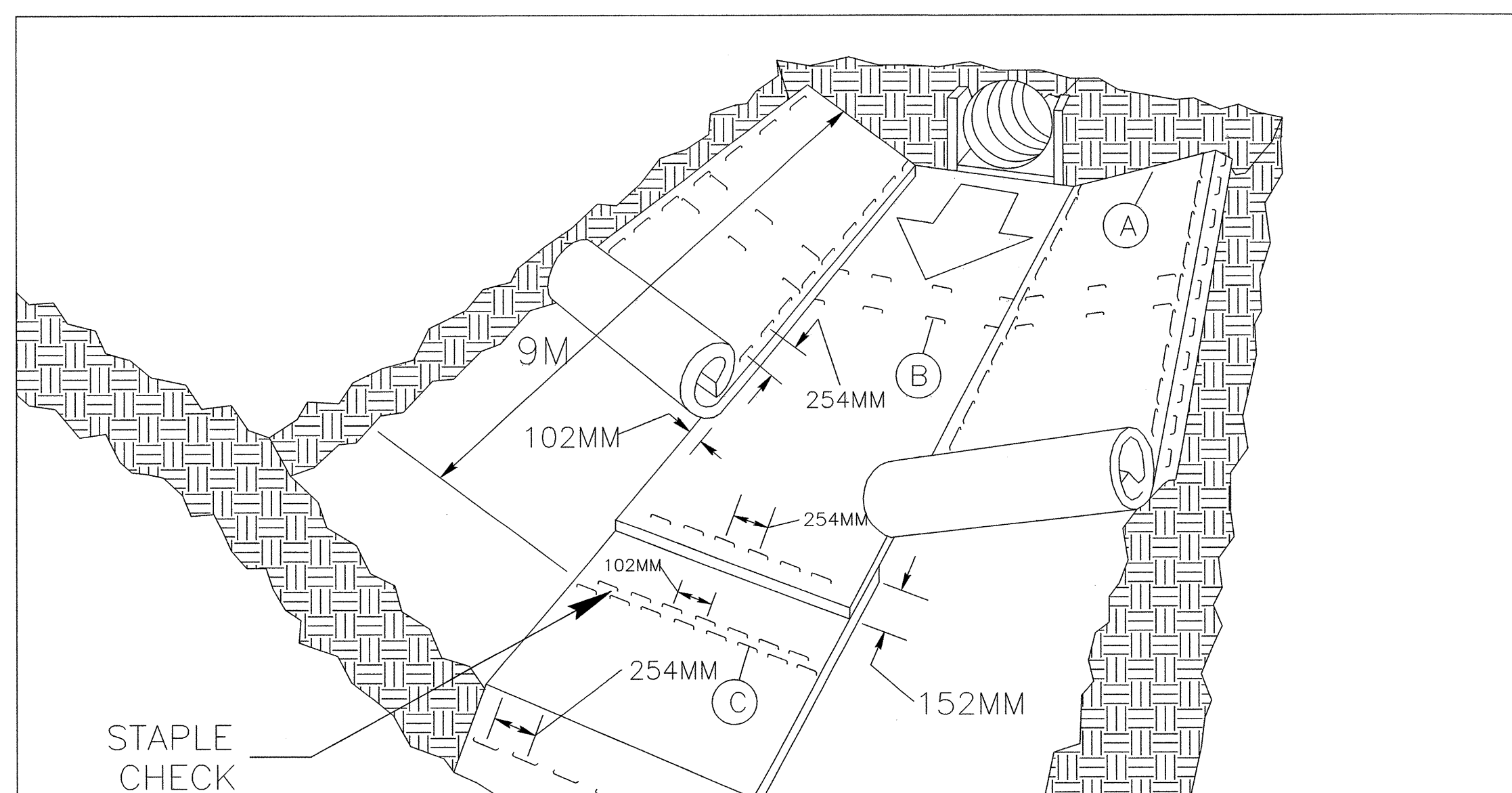
NOTES

1. DO NOT EXCAVATE BELOW WATER TABLE.
2. LIMIT EARTH BERM HEIGHT TO 0.9M.
3. AVOID COMPACTING BOTTOM OF BASIN.
4. FOR BASIN DEPTH OF 1M, MINIMUM BASIN WIDTH SHALL BE 3M.
5. DETERMINE EMERGENCY SPILLWAY LENGTH (M) USING $Q/0.074$, WHERE Q IS FLOW RATE (CMS) INTO BASIN.

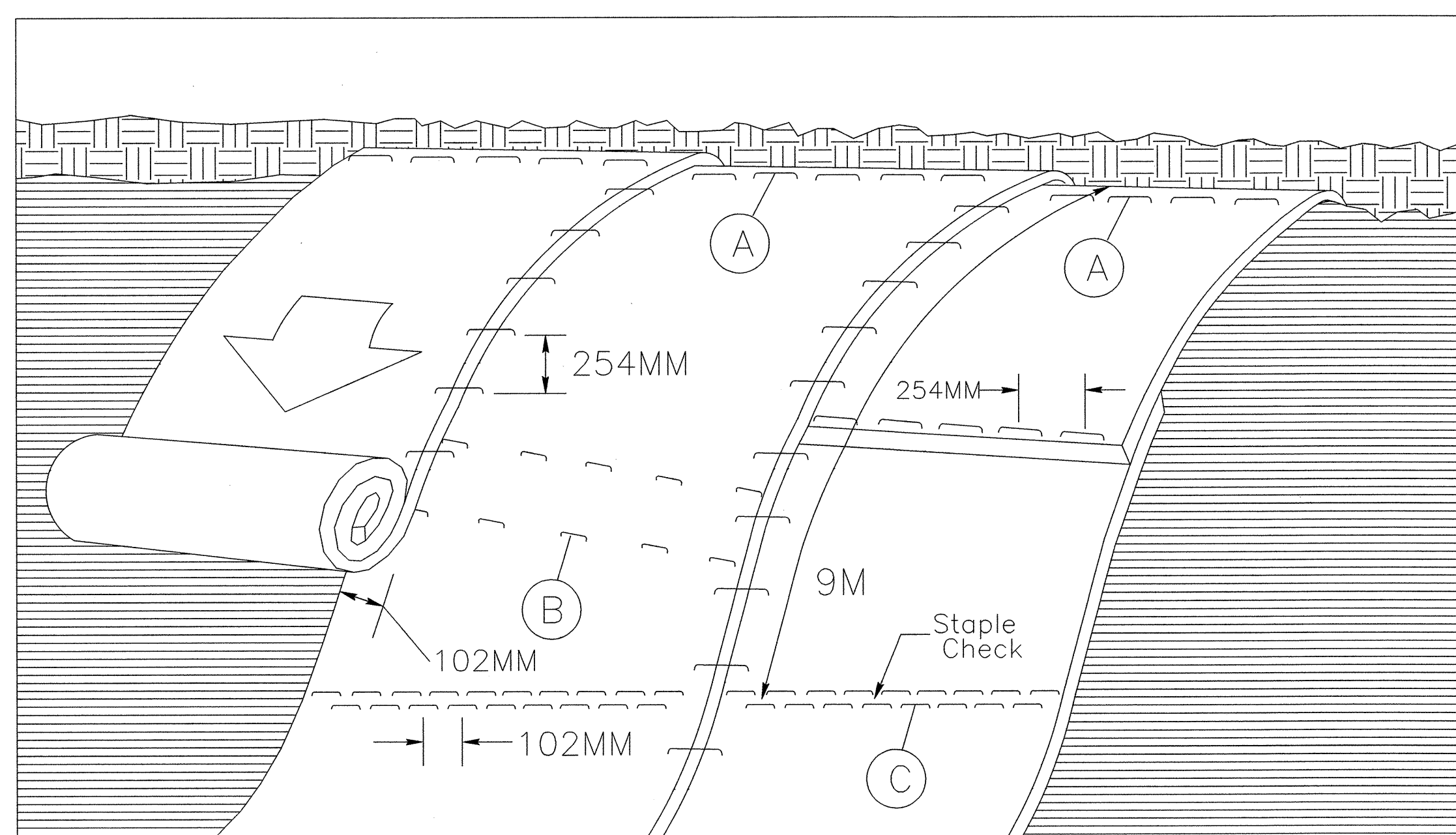


PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-2K
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

MATTING INSTALLATION DETAIL



MATTING IN DITCHES



MATTING ON SLOPES

NOTES:

THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.

STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 25MM AND NOT LESS THAN 152MM IN LENGTH.

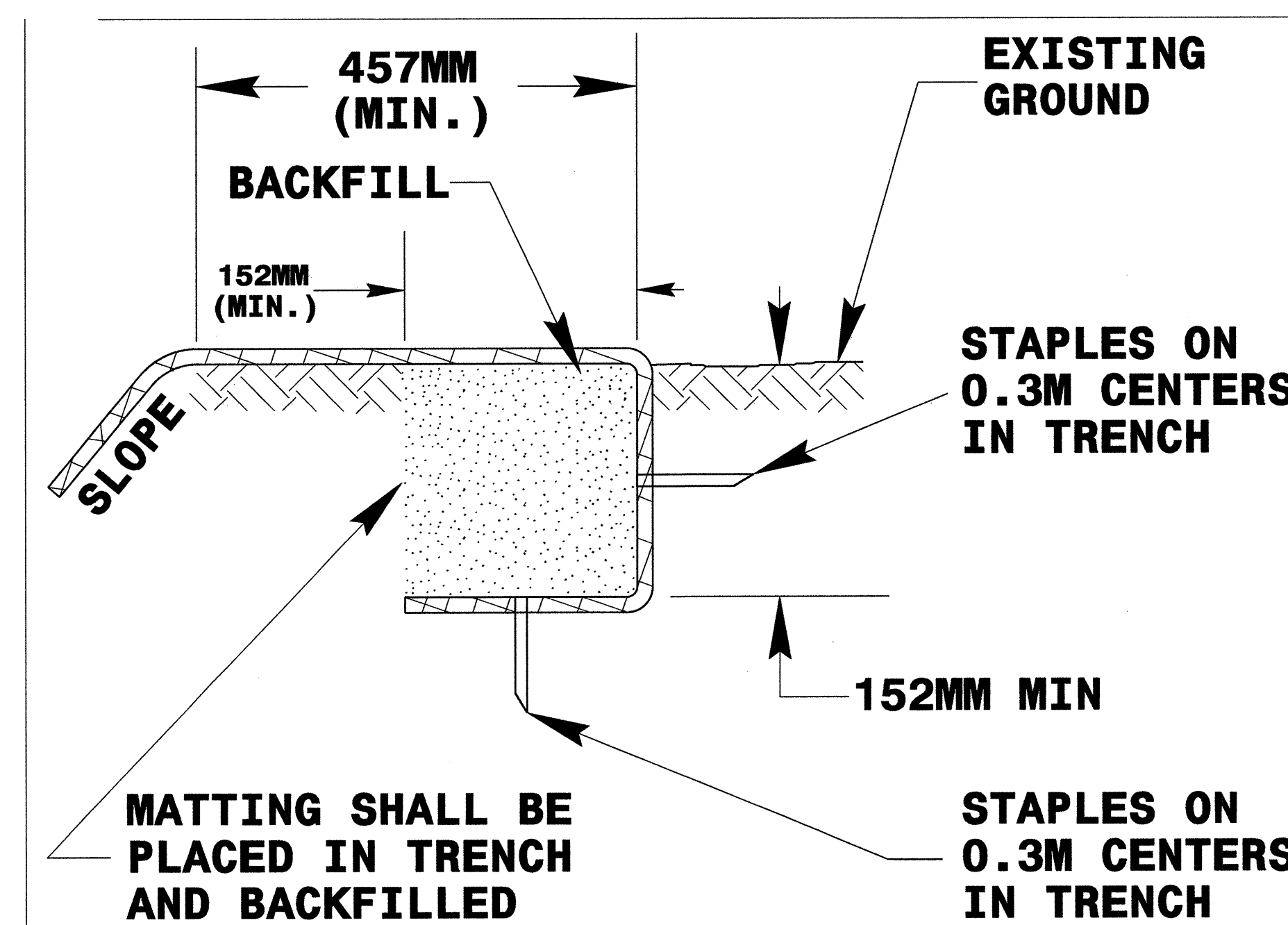


DIAGRAM (A)

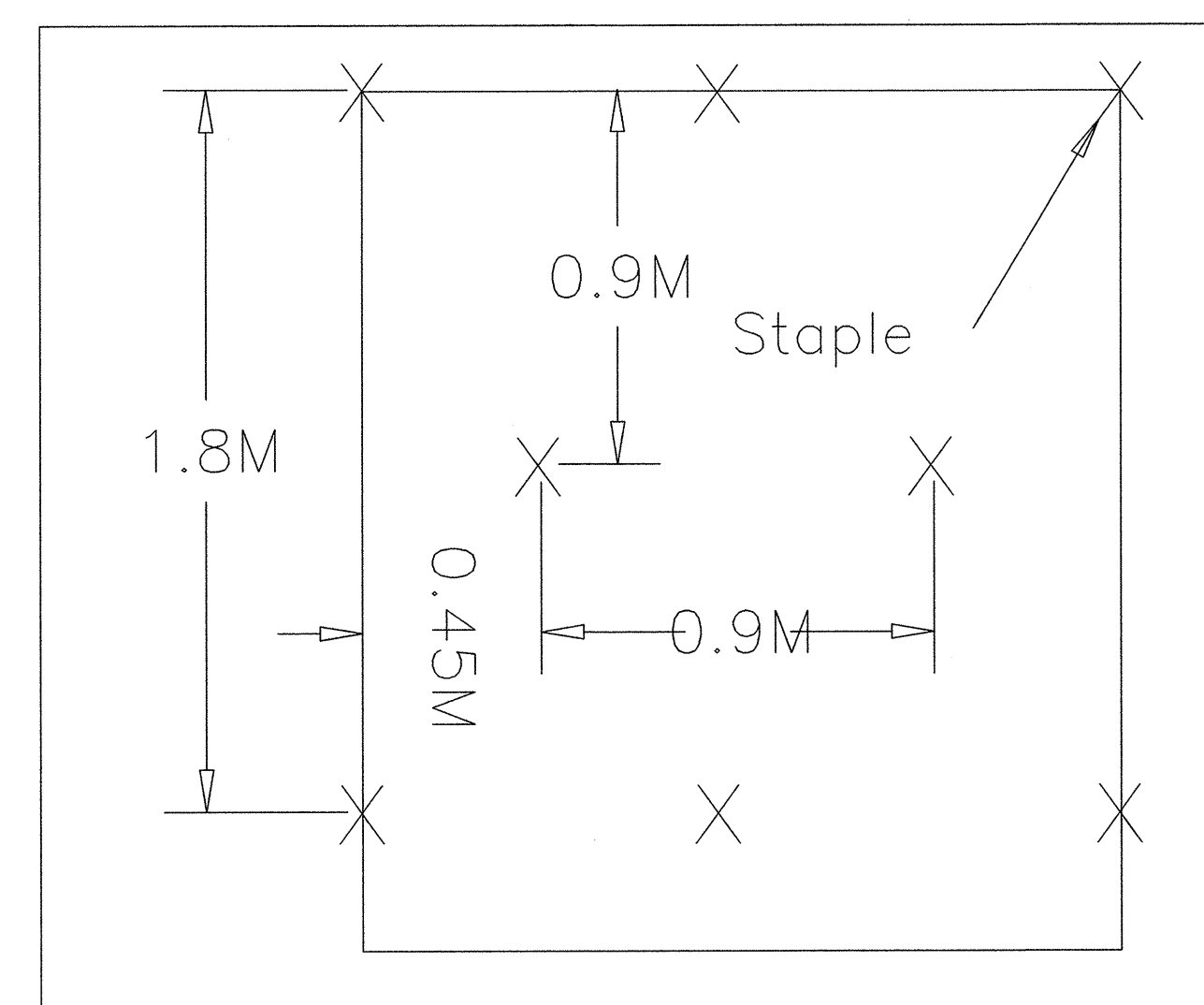


DIAGRAM (B)

Staple Check Pattern

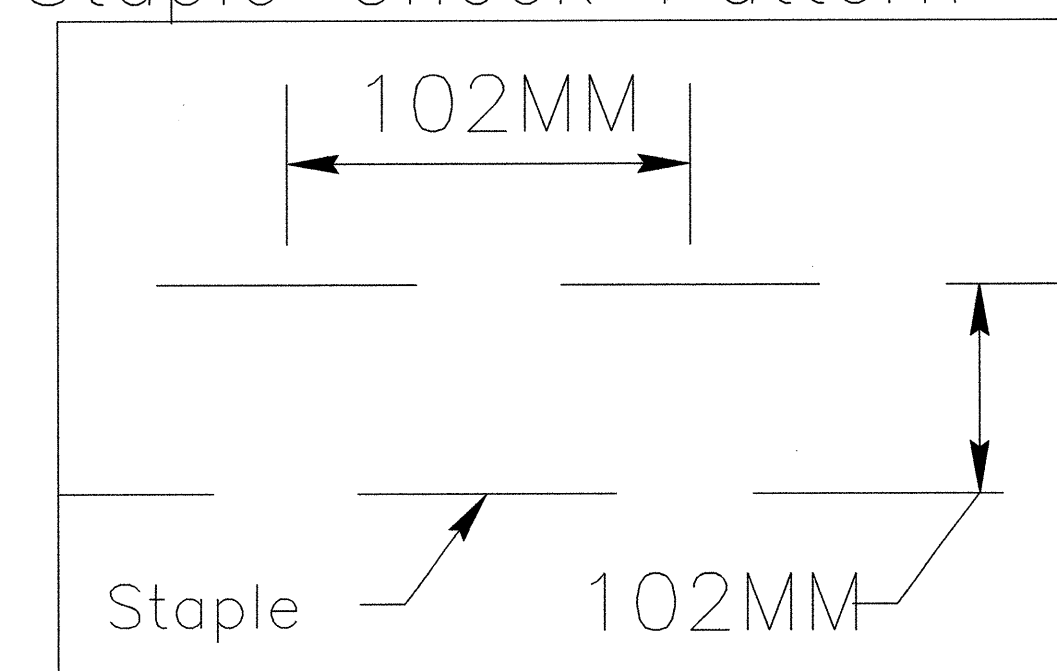


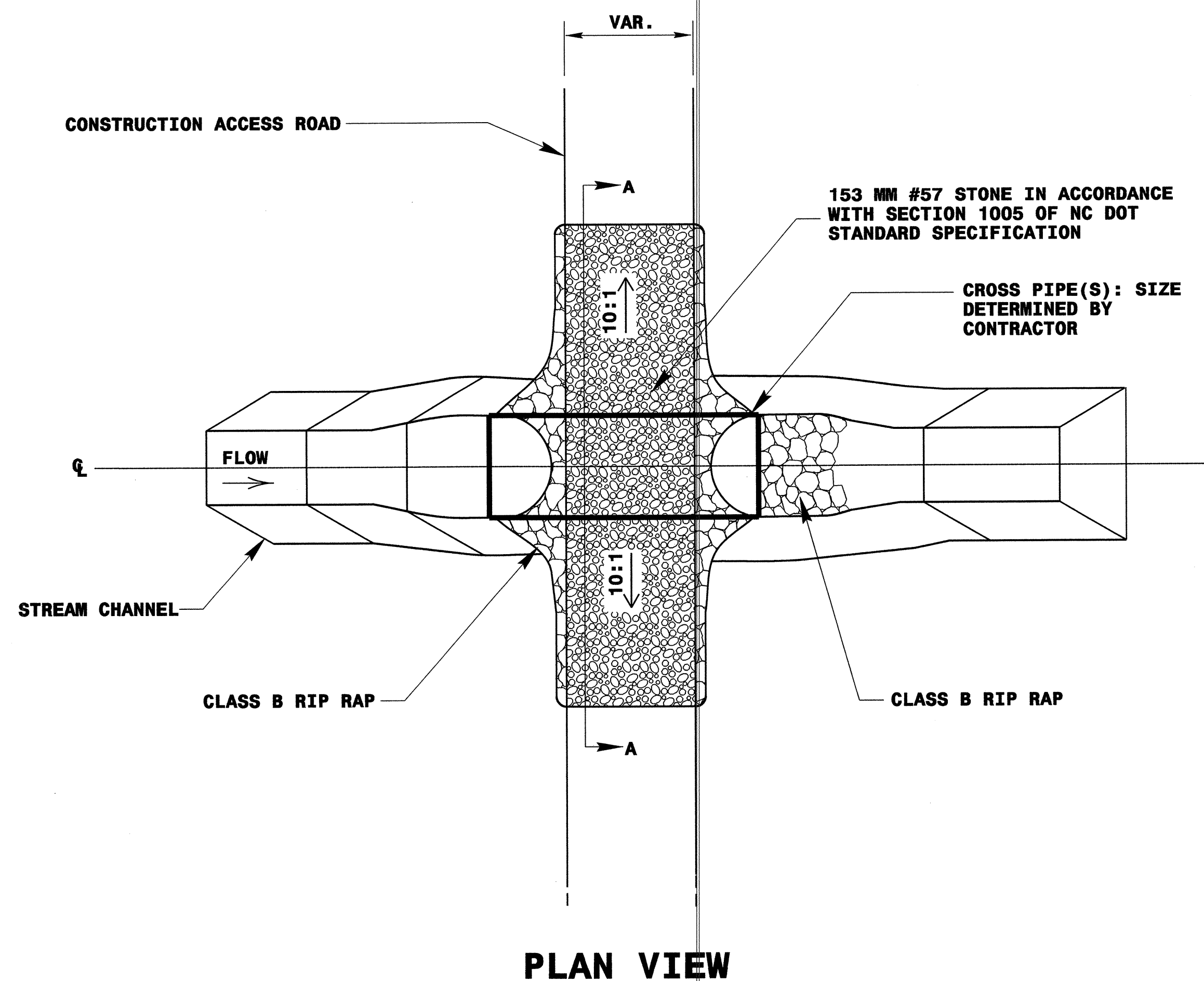
DIAGRAM (C)

NOT TO SCALE

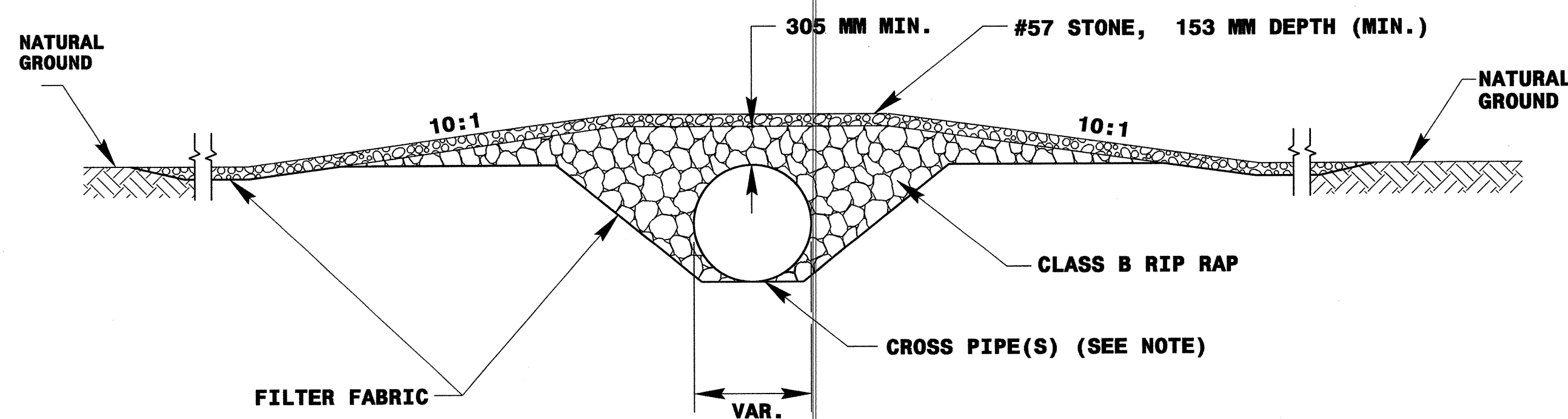


PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-2L
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY STREAM CROSSING



PLAN VIEW



SECTION A-A
NOT TO SCALE

NOTE: PIPE(S) FOR TEMPORARY STREAM CROSSING SHALL BE DESIGNED TO PASS THE PEAK OR BANKFULL FLOW, WHICHEVER IS LESS, FROM A 2-YEAR PEAK STORM, WITHOUT OVER TOPPING.

BORROW PIT DEWATERING BASIN DETAIL



PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-2M
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

GENERAL NOTES:

DETERMINE BORROW PIT DEWATERING BASIN SIZE USING $V = 8.0203 * Q * T$, WHERE V IS VOLUME (FT³), 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 1.5M STEEL POSTS OF THE SELF-FASTENER ANGLE STEEL TYPE. INSTALL STEEL POSTS WITH NO MORE THAN 0.9M 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 300mm 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.

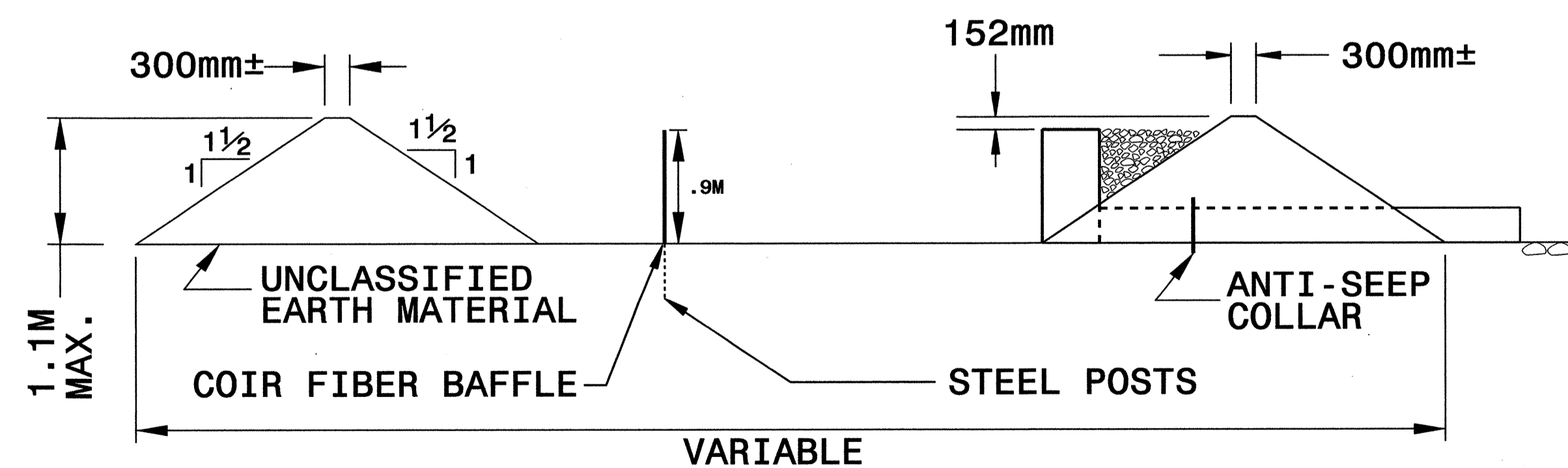
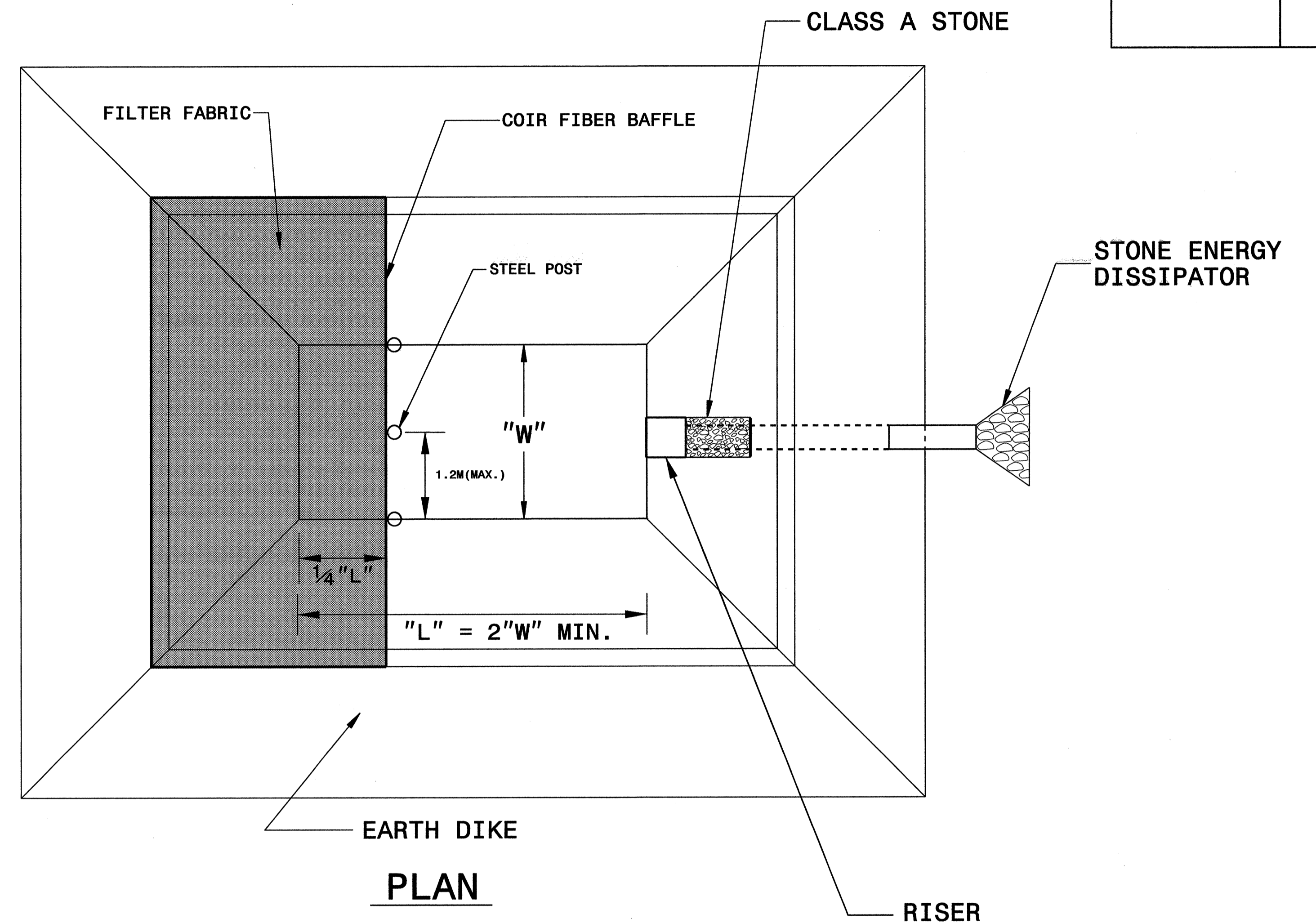
DO NOT EXCEED 1.1M IN HEIGHT FOR THE EARTH DIKES REQUIRED FOR BORROW PIT DEWATERING BASIN.

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.

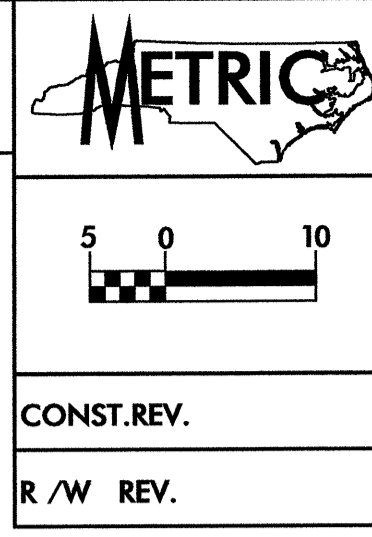
PUMP THE EFFLUENT INTO THE BORROW PIT DEWATERING BASIN TO A MAXIMUM DEPTH OF 152mm BELOW TOP OF EARTH DIKE.

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



TYPICAL SECTION VIEW

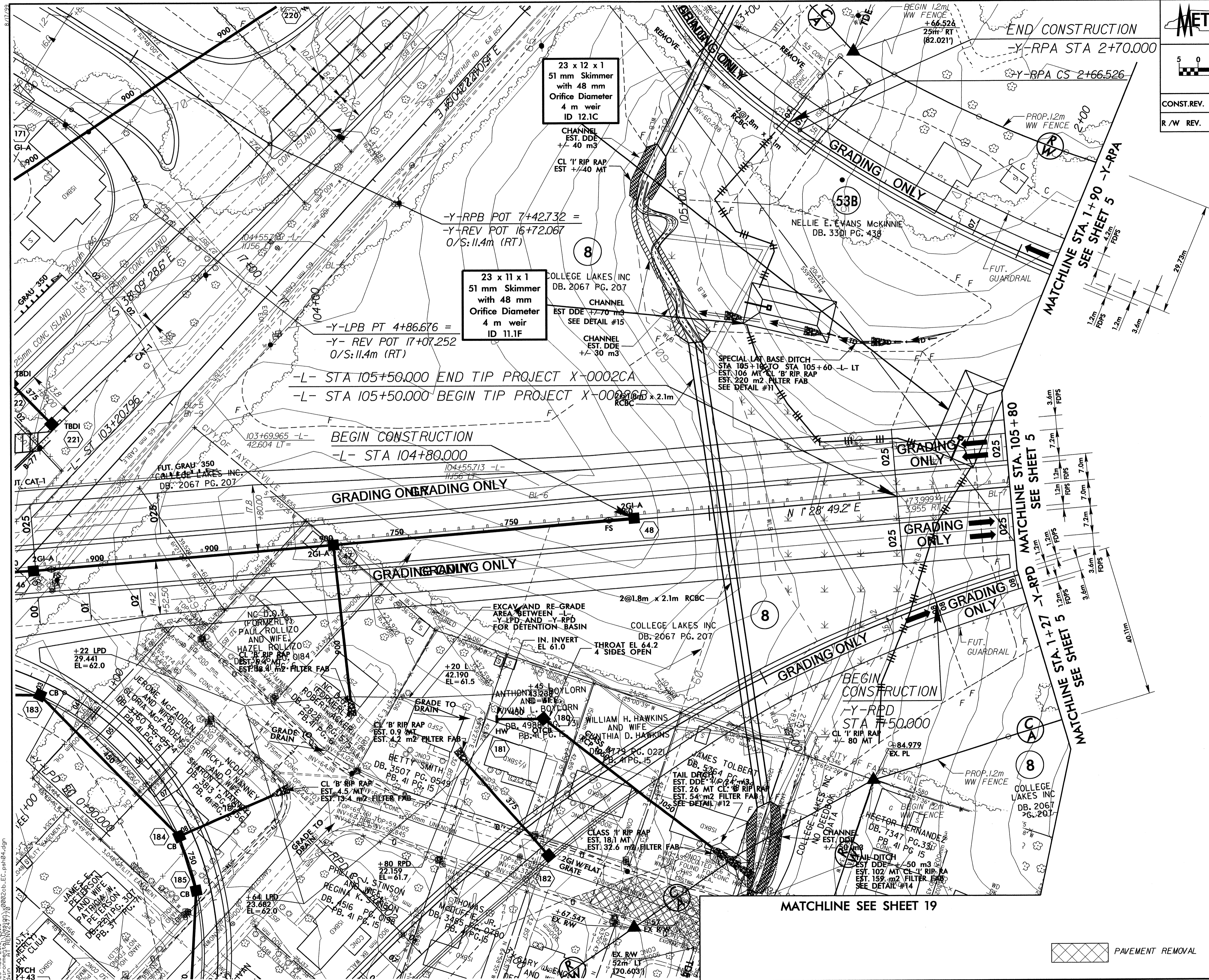
NOT TO SCALE



PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-04/CONST.04
R/W SHEET NO. 10&11 (X-0002C)	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST. REV.	R/W REV.

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 04



FOR DITCH DETAILS SEE SHEET 2-L

PAVEMENT REMOVAL

25 AUG 2010 09:45
 RA:EC:mc:mcc@hntb.com
 AT:REN249770
 J:jeff@hntb.com

8/17/08
RAE-23-AUG-2010_0824
jagocadwin

-Y-RPA
 PIs Sta 0+60.049 PI Sta 1+80.075
 $\Delta = 7^{\circ}09'43.1''$ $\Delta = 28^{\circ}05'42.2''$ (RT)
 $L_s = 90.000$ $L = 176.526$
 $LT = 60.049$ $T = 90.075$
 $ST = 30.045$ $R = 360.000$
 $SE = 0.07$
 $RO = 90.000$
 $DS = 80$ kph

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 5

-Y2-
 PIs Sta 12+92.849
 $\Delta = 75^{\circ}46'56.7''$ (LT)
 $L = 46.293$
 $T = 27.238$
 $R = 35.000$
 $SE = 0.02$
 $RO = 6.5$ m
 $DS = 30$ kph

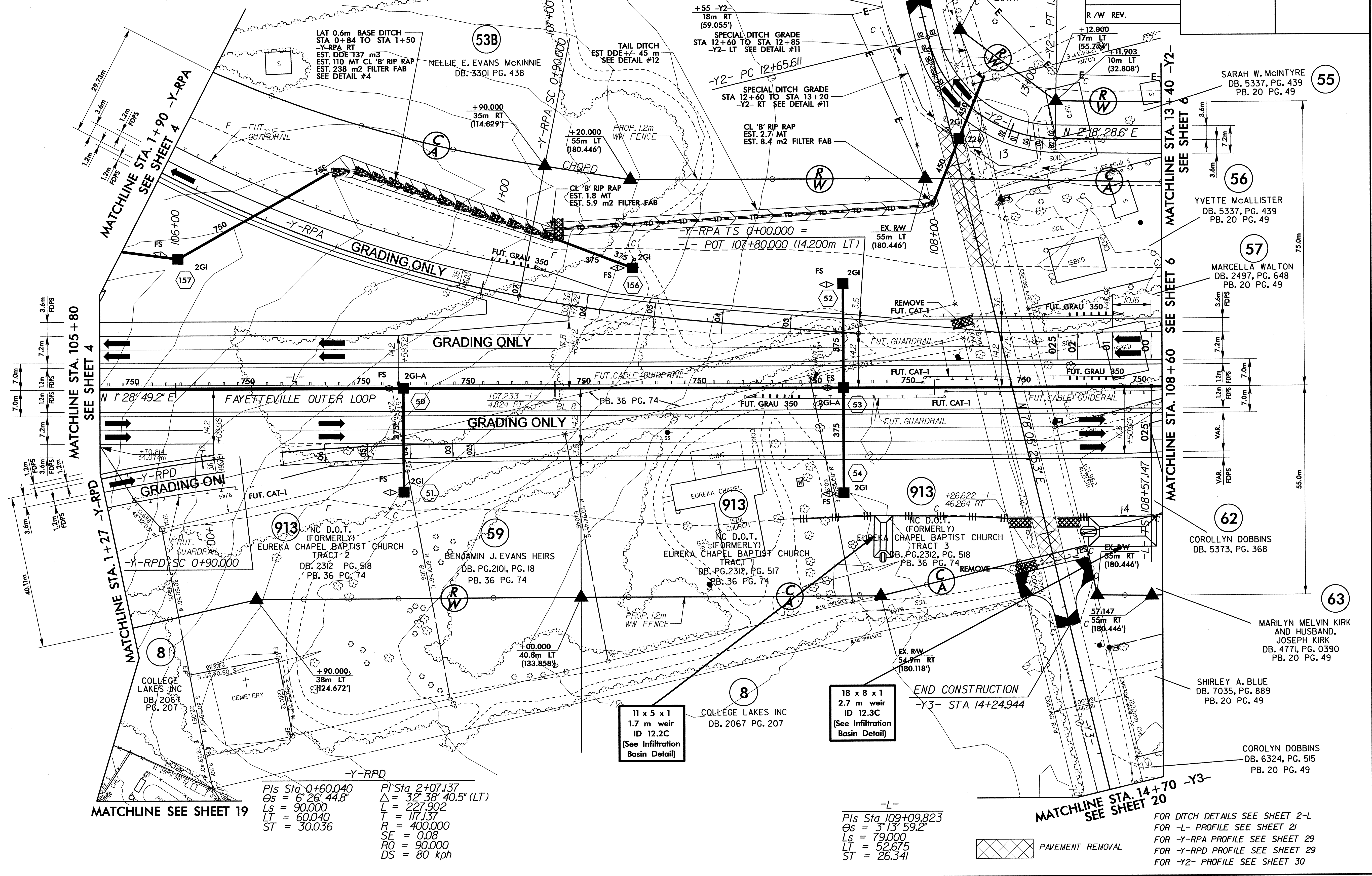
-Y3- POT 12+50.000 =
-Y2- POT 12+50.00
-Y2- STA 12+55.00
 BEGIN CONSTRUCTION
 N 78°05'25.3" E

JAMES EDWARD WILLIAMS
 AND WIFE,
 GERALDINE J. WILLIAMS
 DB. 2631, PG. 558
 PB. 20 PG. 49

PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-5/CONST.5
ROADWAY DESIGN ENGINEER R/W SHEET NO. 12 (X-0002C)	HYDRAULICS ENGINEER

CONST. REV.
R/W REV.

5 0 10



MATCHLINE STA. 105+80
 SEE SHEET 4

MATCHLINE STA. 1+90 -Y-RPA
 SEE SHEET 4

MATCHLINE STA. 1+27 -Y-RPD
 SEE SHEET 4

MATCHLINE STA. 13+40 -Y2-
 SEE SHEET 6

MATCHLINE STA. 108+60
 SEE SHEET 6

MATCHLINE STA. 108+57.147
 SEE SHEET 6

MATCHLINE STA. 14+70 -Y3-
 SEE SHEET 20

55 SARAH W. McINTYRE
 DB. 5337, PG. 439
 PB. 20 PG. 49

56 YVETTE McALLISTER
 DB. 5337, PG. 439
 PB. 20 PG. 49

57 MARCELLA WALTON
 DB. 2497, PG. 648
 PB. 20 PG. 49

62 COROLLYN DOBBINS
 DB. 5373, PG. 368

63 MARILYN MELVIN KIRK
 AND HUSBAND,
 JOSEPH KIRK
 DB. 4771, PG. 0390
 PB. 20 PG. 49

SHIRLEY A. BLUE
 DB. 7035, PG. 889
 PB. 20 PG. 49

COROLLYN DOBBINS
 DB. 6324, PG. 515
 PB. 20 PG. 49

-Y-RPD
 PIs Sta 0+60.040 PI Sta 2+07.137
 $\Delta = 6^{\circ}26'44.8''$ $\Delta = 32^{\circ}38'40.5''$ (LT)
 $L_s = 90.000$ $L = 227.902$
 $LT = 60.040$ $T = 117.137$
 $ST = 30.036$ $R = 400.000$
 $SE = 0.08$
 $RO = 90.000$
 $DS = 80$ kph

-L-
 PIs Sta 109+09.823
 $\Delta = 3^{\circ}13'59.2''$
 $L_s = 79.000$
 $LT = 52.675$
 $ST = 26.341$

11 x 5 x 1
 1.7 m weir
 ID 12.2C
 (See Infiltration
 Basin Detail)

18 x 8 x 1
 2.7 m weir
 ID 12.3C
 (See Infiltration
 Basin Detail)

PAVEMENT REMOVAL

FOR DITCH DETAILS SEE SHEET 2-L
 FOR -L- PROFILE SEE SHEET 2I
 FOR -Y-RPA PROFILE SEE SHEET 29
 FOR -Y-RPD PROFILE SEE SHEET 29
 FOR -Y2- PROFILE SEE SHEET 30

-Y8- REV
 PI Sta 10+80.579
 $\Delta = 48^\circ 46' 10.0''$ (LT)
 L = 68.095
 T = 36.264
 R = 80.000
 SE = 0.04
 DO = 20.000
 DS = 50 kph

PI Sta 12+65.351
 $\Delta = 40^\circ 48' 45.6''$ (LT)
 L = 56.985
 T = 29.762
 R = 80.000
 SE = 0.04
 DO = 20.000
 DS = 50 kph

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

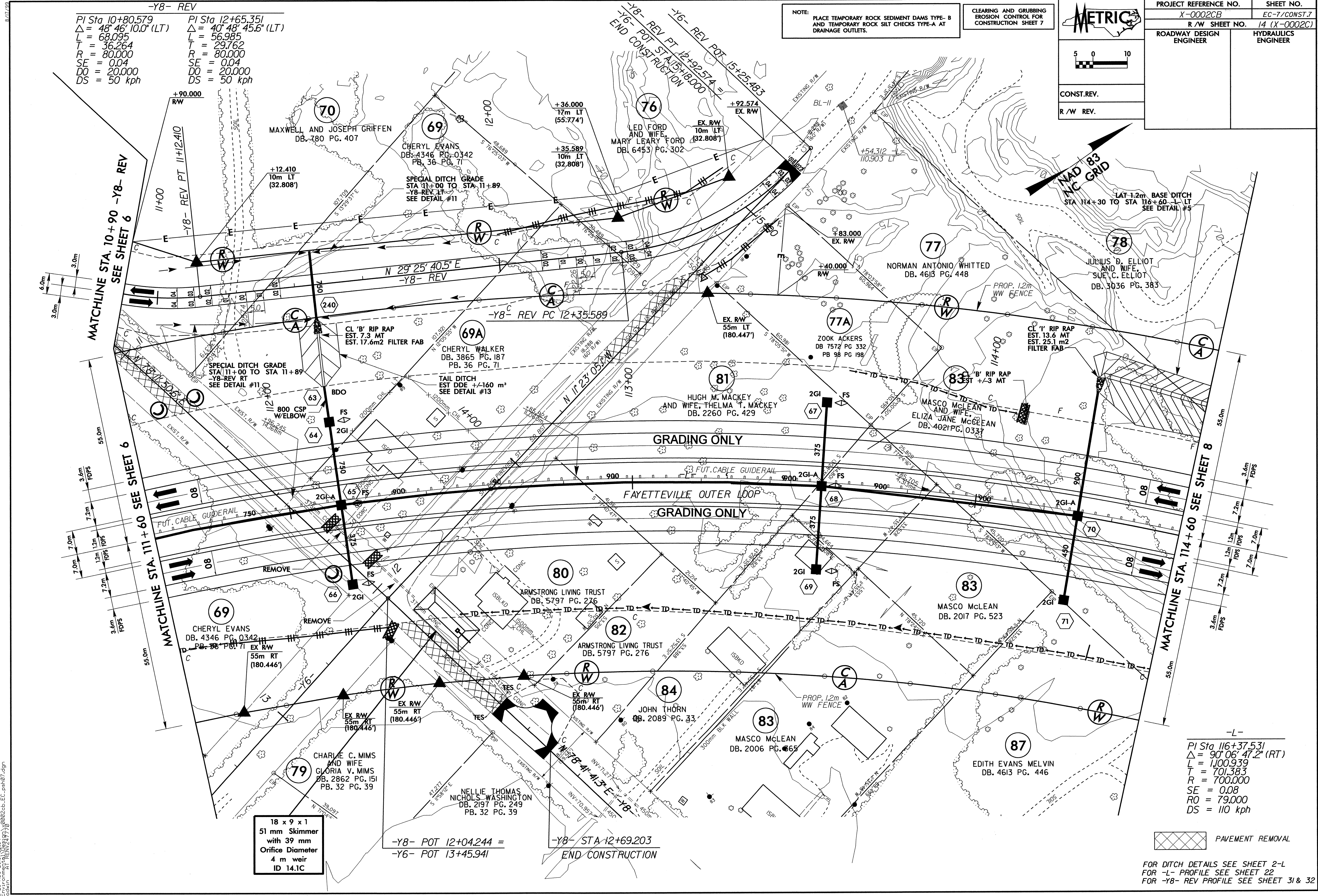
METRIC

5 0 10

CONST.REV.

R/W REV.

PROJECT REFERENCE NO.	SHEET NO.
X-0002CB	EC-7/CONST.7
R/W SHEET NO.	14 (X-0002C)
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



-L-
 PI Sta 116+37.531
 $\Delta = 90^\circ 06' 47.2''$ (RT)
 L = 1100.939
 T = 701.383
 R = 700.000
 SE = 0.08
 RO = 79.000
 DS = 110 kph

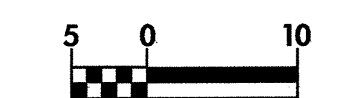
PAVEMENT REMOVAL

FOR DITCH DETAILS SEE SHEET 2-L
 FOR -L- PROFILE SEE SHEET 22
 FOR -Y8- REV PROFILE SEE SHEET 31 & 32

23-AUG-2010 08:54
 R:\Projects\114\114-0002CB\114-0002CB-EC-PSH07.dgn
 jago@mhfi.com

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 8

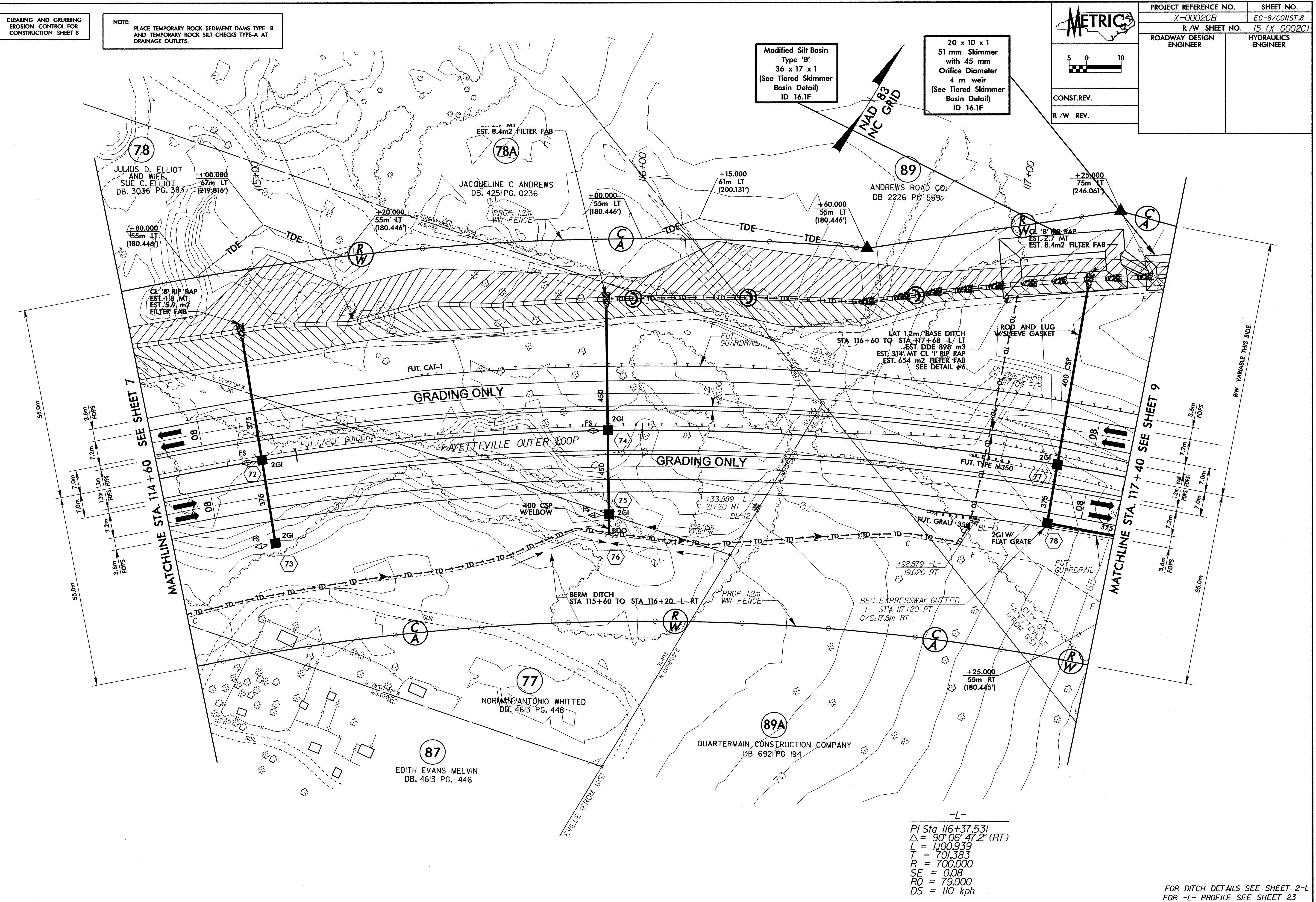
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE-B
AND TEMPORARY ROCK SILT CHECKS TYPE-A AT
DRAINAGE OUTLETS.



CONST.REV.

R/W REV.

PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-8/CONST.8
R/W SHEET NO. 15 (X-0002C)	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



Modified Silt Basin
Type 'B'
36 x 17 x 1
(See Tiered Skimmer
Basin Detail)
ID 16.1F

20 x 10 x 1
51 mm Skimmer
with 45 mm
Orifice Diameter
4 m weir
(See Tiered Skimmer
Basin Detail)
ID 16.1F

-L-
PI Sta 116+37.531
 $\Delta = 90^{\circ} 06' 47.2''$ (RT)
L = 1,100.939
T = 701.383
R = 700.000
SE = 0.08
RO = 79.000
DS = 110 kph

FOR DITCH DETAILS SEE SHEET 2-L
FOR -L- PROFILE SEE SHEET 23

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 jggsdun AT 16:24:17

METRIC

CONST. REV.
R/W REV.

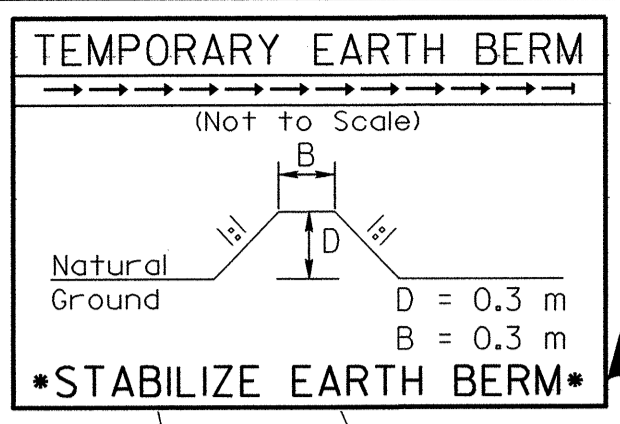
PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-9/CONST.9
R/W SHEET NO. 16 (X-0002C)	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PI Sta 116+37.531
 $\Delta = 90^\circ 06' 47.2" (RT)$
 $L = 100.939$
 $T = 701.383$
 $R = 700.000$
 $SE = 0.08$
 $RO = 79.000$
 $DS = 110 \text{ kph}$

PIs Sta 120+63.428
 $G_s = 3^\circ 13' 59.2"$
 $L_s = 79.000$
 $LT = 52.675$
 $ST = 26.341$

20 x 10 x 1
 51 mm Skimmer
 with 45 mm
 Orifice Diameter
 4 m weir
 (See Tiered Skimmer
 Basin Detail)
 ID 16.1F

15 x 6 x 1
 38 mm Skimmer
 with 30 mm
 Orifice Diameter
 3 m weir
 ID 16.3F



ENERGY DISSIPATOR

STATION	L _p (M)	W _p (M)	L _s (M)	T (M)	D (M)	CLASS I RIP RAP (M)	DDE (M ²)	FILTER FABRIC (M ²)
118+75-L-LT	9.0	6.0	1.5	0.60	1.10	165	150	160

PREFORMED SCOUR HOLE (PFSH)

STATION	B (M)	D (M)	W _{PER} (M)	d (M)	CLASS I RIP RAP (MTONS)	DDE (M ²)	FILTER FABRIC (M ²)
118+10-L-RT	1.2	0.4	±.3	0.15	4.0	2.8	7.8


8 x 4 x 1
 38 mm Skimmer
 with 15 mm
 Orifice Diameter
 2 m weir
 ID 16.2F

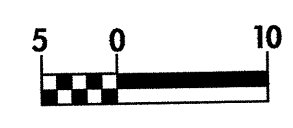
40 x 10 x 1
 64 mm Skimmer
 with 60 mm
 Orifice Diameter
 3 m weir
 ID 16.4F

- NOTE: UTILIZE SKIMMER BASIN AS STILLING BASIN WHERE APPLICABLE.
- 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.

FOR DITCH DETAILS SEE SHEET 2-L
 FOR ENERGY DISSIPATOR DETAILS AND LEVEL SPREADER DETAILS SEE SHEET 2-M
 FOR -L- PROFILE SEE SHEET 23
 SEE S-I THRU S- FOR STRUCTURE PLANS

23-AUG-2010 10:21 R:\ENR\12\comm\ec\021903\0002cb.ec.pst\08.dgn jgopstein

	PROJECT REFERENCE NO.	SHEET NO.
	X-0002CB	EC-II/CONST.II
	R/W SHEET NO.	18 (X-0002C)
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
CONST. REV.		
R/W REV.		

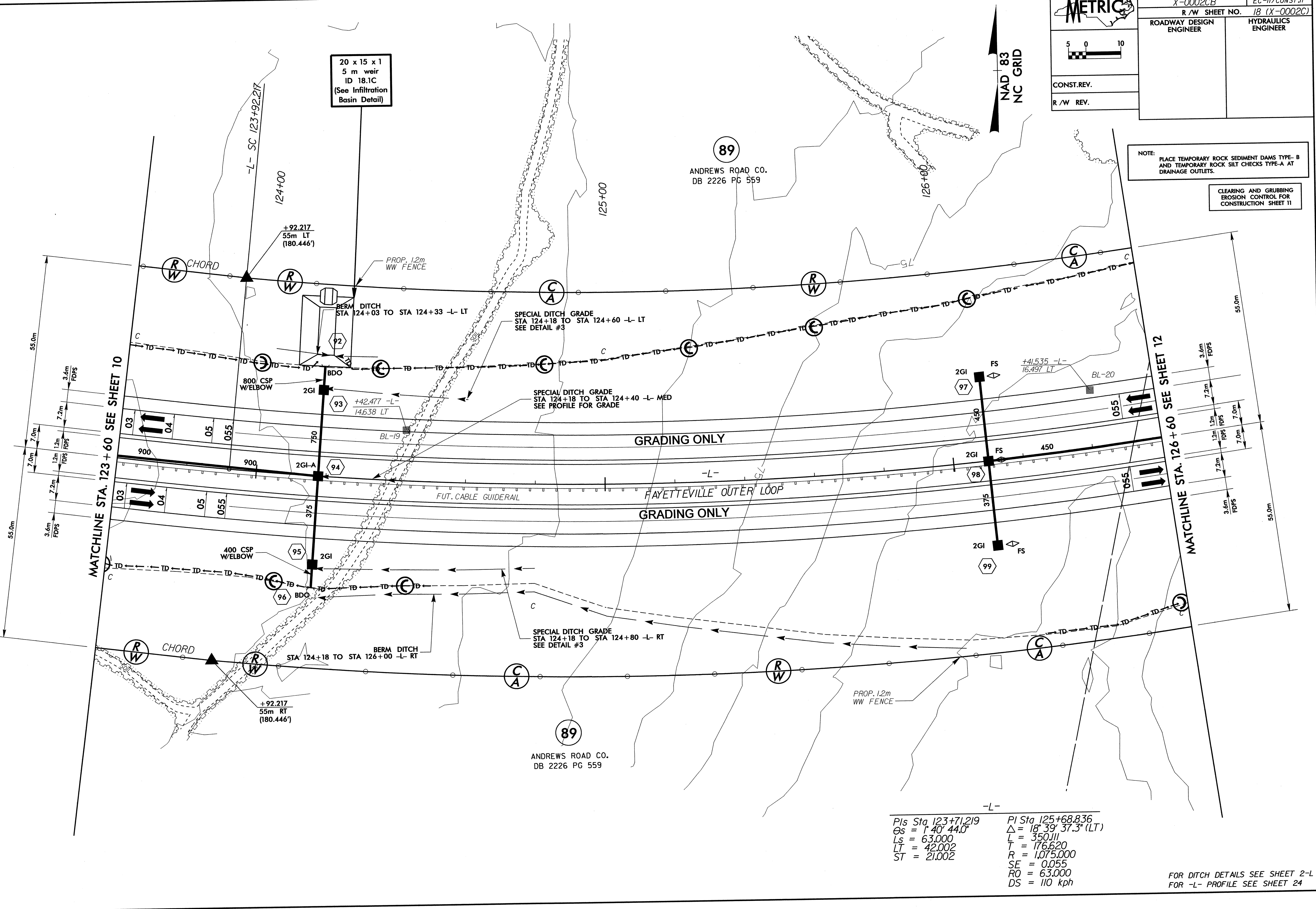


NAD 83
NC GRID

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

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 11

8/17/99
 RAE: 23-AUG-2000 09:30
 jsgoodkin

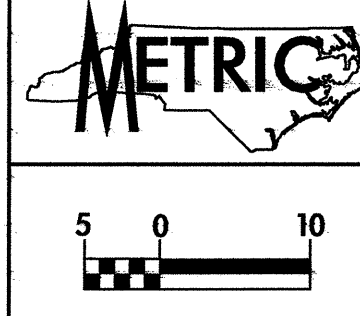


-L-

PIs Sta 123+71.219	PI Sta 125+68.836
Gs = 1° 40' 44.0"	Δ = 18° 39' 37.3" (LT)
Ls = 63.000	L = 350.111
LT = 42.002	T = 176.620
ST = 21.002	R = 1,075.000
	SE = 0.055
	RO = 63.000
	DS = 110 kph

FOR DITCH DETAILS SEE SHEET 2-L
FOR -L- PROFILE SEE SHEET 24

PROJECT REFERENCE NO.		SHEET NO.	
X-0002CB		EC-13/CONST.J3	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
CONST.REV.		R/W REV.	
R/W REV.		20 (X-0002C)	



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

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 13

24 x 10 x 1
51 mm Skimmer
with 45 mm
Orifice Diameter
3 m weir
ID 20.1F

16 x 7 x 1
38 mm Skimmer
with 33 mm
Orifice Diameter
3 m weir
ID 20.2C

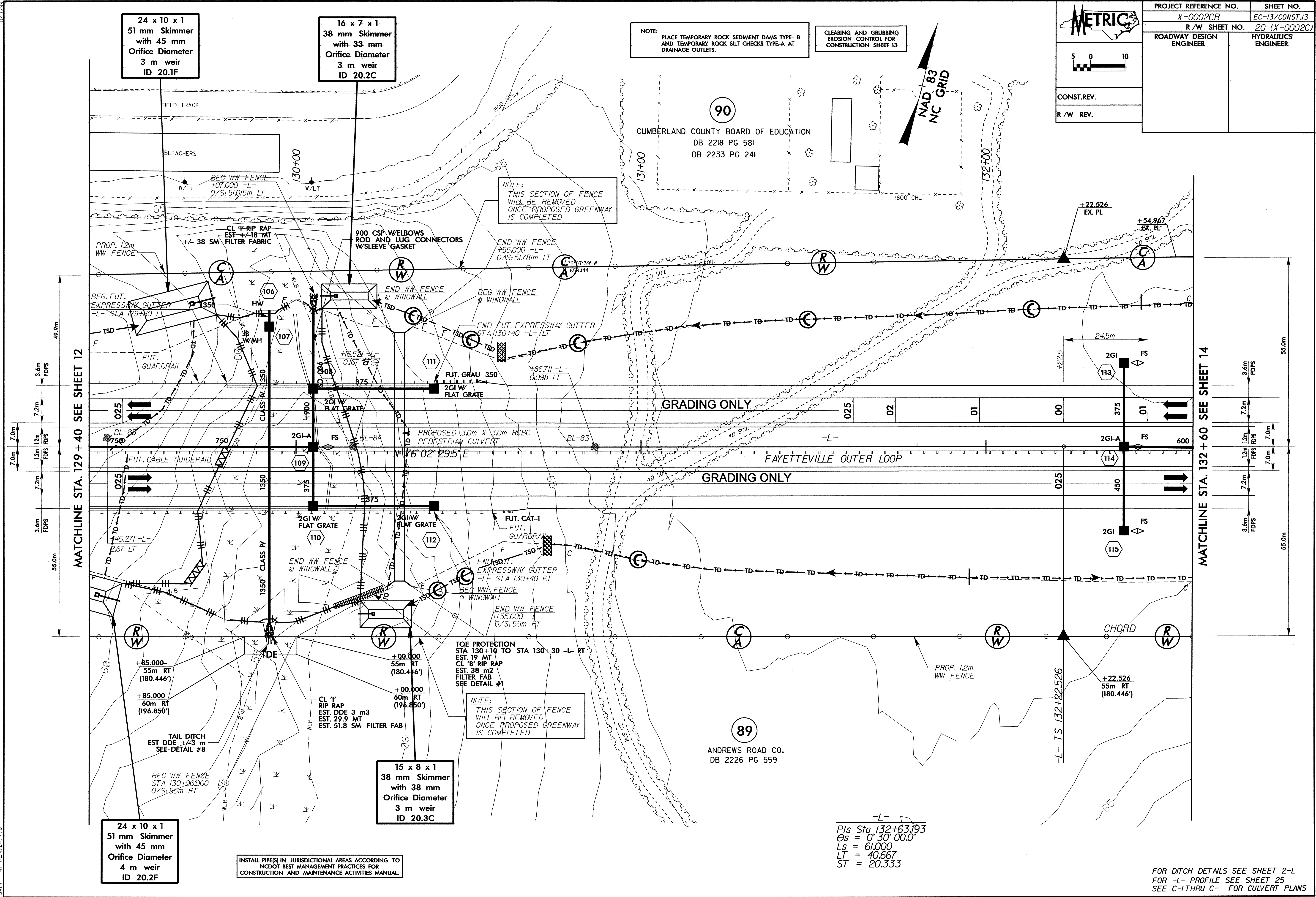
NOTE:
THIS SECTION OF FENCE
WILL BE REMOVED
ONCE PROPOSED GREENWAY
IS COMPLETED

NOTE:
THIS SECTION OF FENCE
WILL BE REMOVED
ONCE PROPOSED GREENWAY
IS COMPLETED

15 x 8 x 1
38 mm Skimmer
with 38 mm
Orifice Diameter
3 m weir
ID 20.3C

24 x 10 x 1
51 mm Skimmer
with 45 mm
Orifice Diameter
4 m weir
ID 20.2F

INSTALL PIPES IN JURISDICTIONAL AREAS ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.



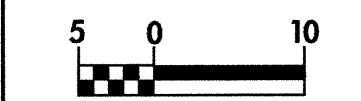
-L-
Pls Sta 132+63.193
Gs = 0° 30' 00.0"
Ls = 61.000
LT = 40.667
ST = 20.333

FOR DITCH DETAILS SEE SHEET 2-L
FOR -L- PROFILE SEE SHEET 25
SEE C-I THRU C- FOR CULVERT PLANS

25-AUG-2010 10:45
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 jaggobdm

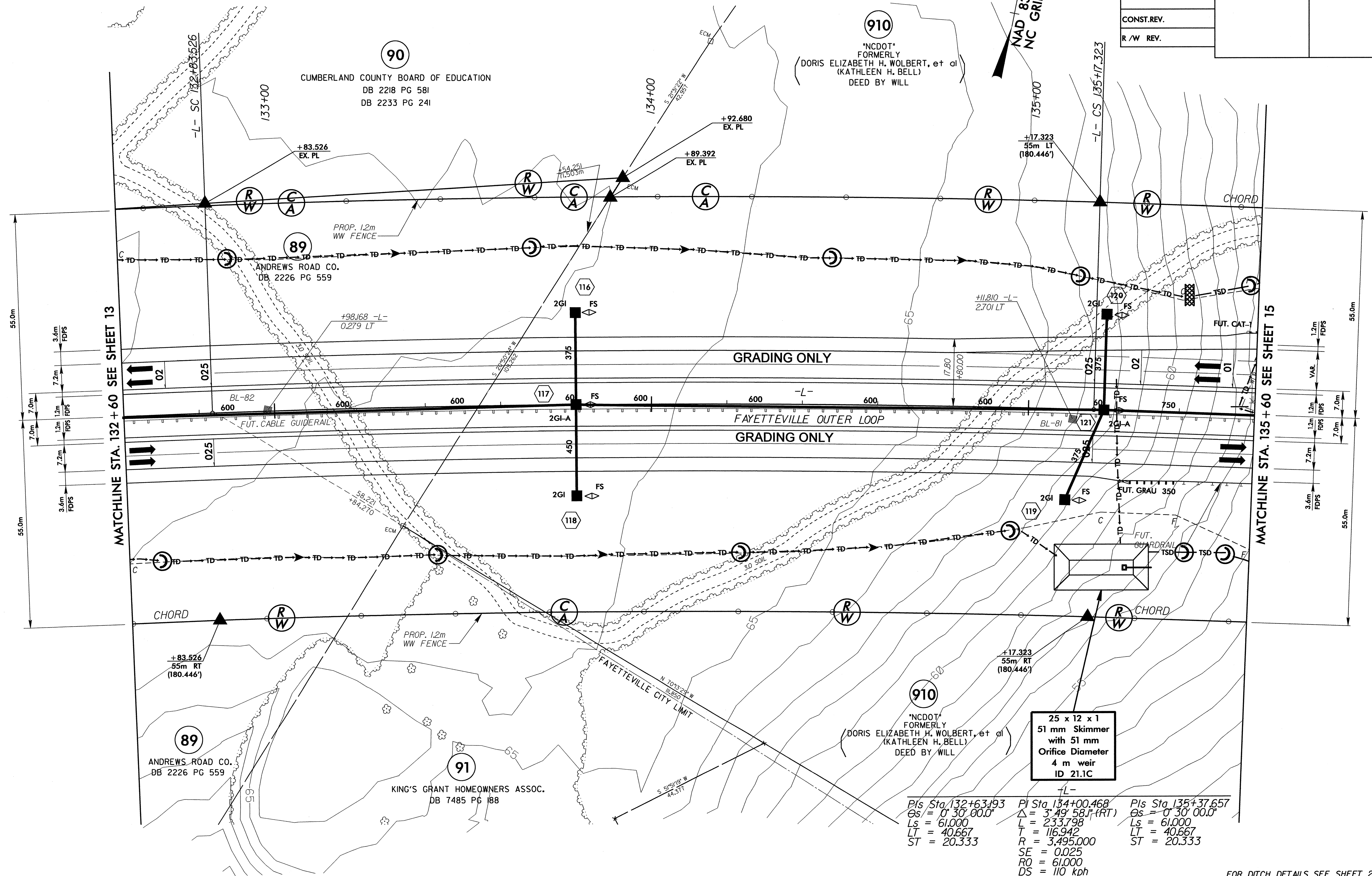
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 14

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



CONST. REV.
R/W REV.

PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-14/CONST.14
R/W SHEET NO. 21 (X-0002C)	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	



$PI Sta 132+63.193$ $Os = 0' 30.00.0"$ $Ls = 61.000$ $T = 40.667$ $ST = 20.333$	$PI Sta 134+00.468$ $\Delta = 3' 49' 58.1" (RT)$ $L = 233.798$ $T = 116.942$ $R = 3,495.000$ $SE = 0.025$ $RO = 61.000$ $DS = 110 kph$	$PI Sta 135+37.657$ $Os = 0' 30.00.0"$ $Ls = 61.000$ $T = 40.667$ $ST = 20.333$
---	---	---

FOR DITCH DETAILS SEE SHEET 2-L
FOR -L- PROFILE SEE SHEET 26

23-AUG-2010 10:47
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 jago@dmv.com

-Y9-
 PI Sta 12+80.154
 $\Delta = 2' 15'' 00.0''$ (RT)
 $L = 137.248$
 $R = 68.633$
 $R = 3,495,000$
 $SE = 0.02$
 $RO = 35,000$
 $DS = 100$ kph

-Y12-RPB
 PI Sta 14+34.395
 $\Delta = 35' 47'' 03.8''$ (RT)
 $L = 143.648$
 $R = 74.253$
 $R = 230,000$
 $SE = 0.05$
 $RO = 35,000$
 $DS = 60$ kph

-Y12-RPB
 PIs Sta 0+40.001
 $Es = 0' 58'' 56.0''$
 $Ls = 60,000$
 $LT = 40,001$
 $ST = 20,001$

-Y12-RPB
 PI Sta 0+76.454
 $Es = 1' 04'' 38.5''$ (LT)
 $Ls = 32,906$
 $R = 16,454$
 $R = 1,750,000$
 $SE = 0.03$
 $RO = 60,000$
 $DS = 110$ kph

-Y12-RPB
 PIs Sta 1+12.907
 $Es = 0' 58'' 56.0''$
 $Ls = 60,000$
 $LT = 40,001$
 $ST = 20,001$

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

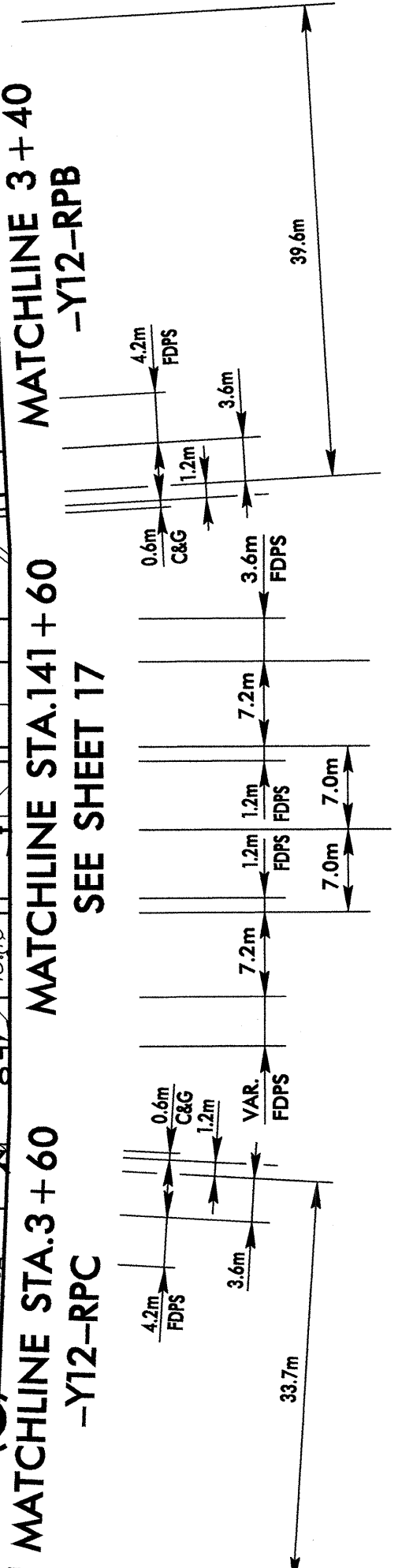
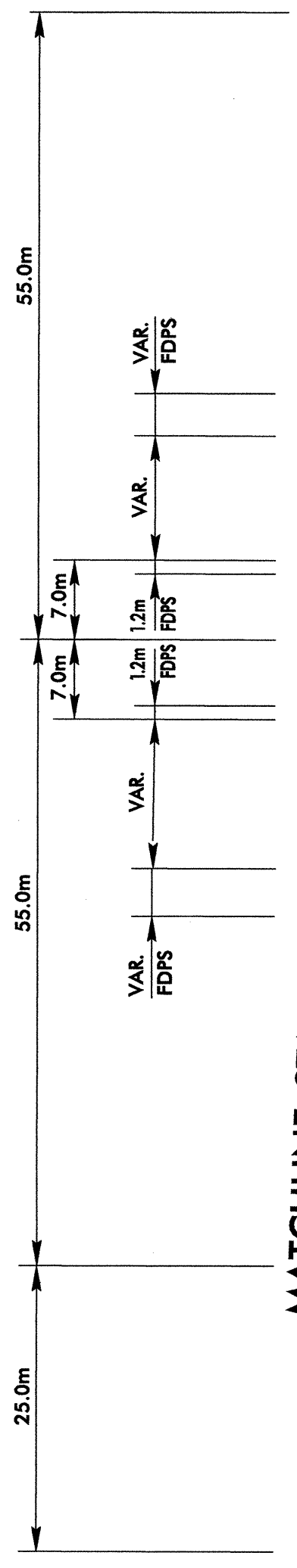
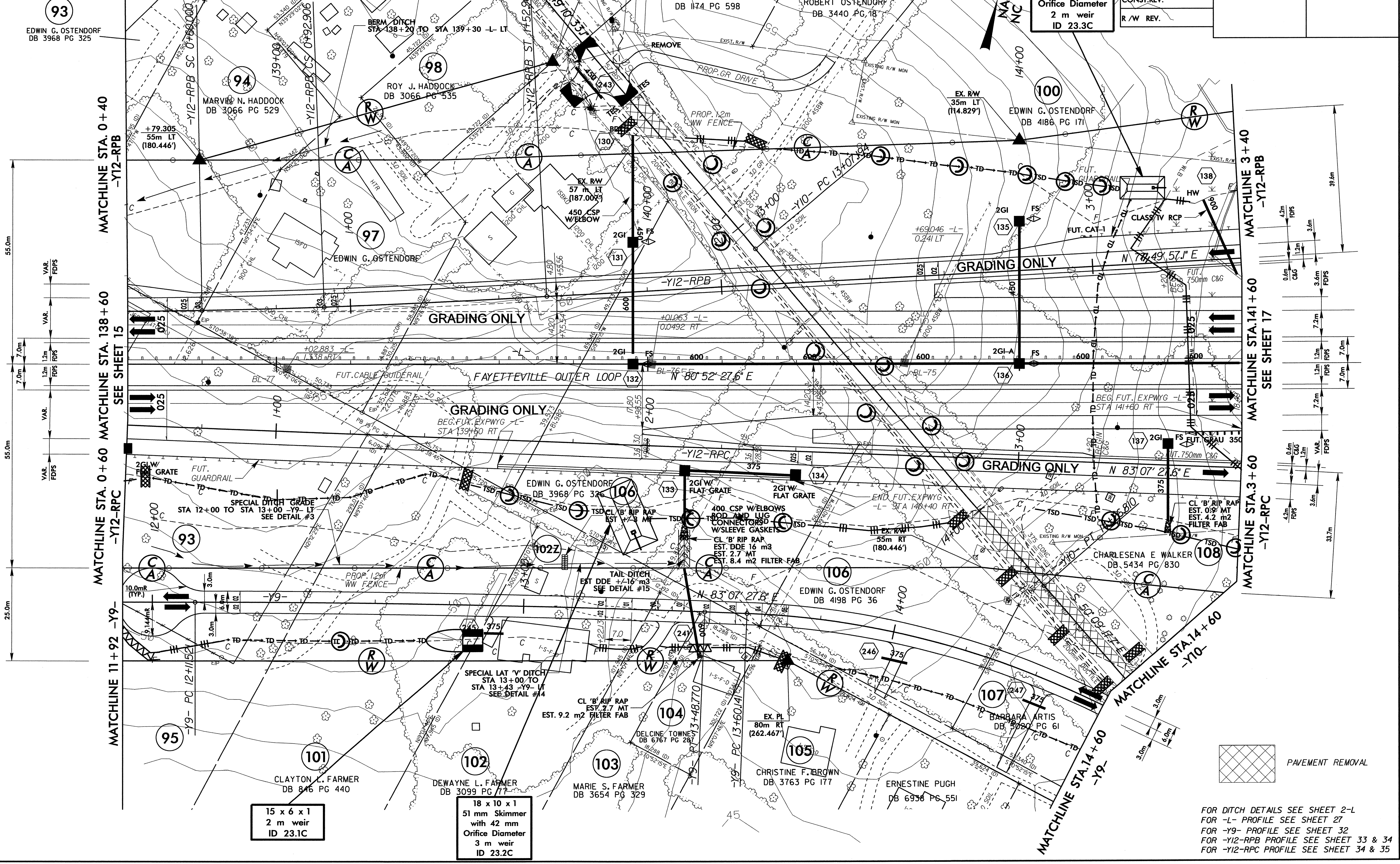
CLEARING AND GRUBBING
 EROSION CONTROL FOR
 CONSTRUCTION SHEET 16

METRIC

5 0 10

CONST. REV.
 R/W REV.

PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-16/CONST.16
R/W SHEET NO. 23 (X-0002C)	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



MATCHLINE STA. 0+40
 -Y12-RPB

MATCHLINE STA. 138+60
 -Y12-RPB
 SEE SHEET 15

MATCHLINE STA. 0+60
 -Y12-RPC
 SEE SHEET 15

MATCHLINE STA. 11+92
 -Y9-

MATCHLINE STA. 141+60
 -Y12-RPB
 SEE SHEET 17

MATCHLINE STA. 3+40
 -Y12-RPB

MATCHLINE STA. 3+60
 -Y12-RPC

MATCHLINE STA. 14+60
 -Y10-

15 x 6 x 1
 51 mm Skimmer
 with 2 m weir
 ID 23.1C

18 x 10 x 1
 51 mm Skimmer
 with 42 mm
 Orifice Diameter
 3 m weir
 ID 23.2C

FOR DITCH DETAILS SEE SHEET 2-L
 FOR -L- PROFILE SEE SHEET 27
 FOR -Y9- PROFILE SEE SHEET 32
 FOR -Y12-RPB PROFILE SEE SHEET 33 & 34
 FOR -Y12-RPC PROFILE SEE SHEET 34 & 35

23-AUG-2010 14:04
 R:\ENR\2009\23\230002CB\EC-16\p16.dgn
 jsp@bentley.com

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

INSTALL PIPE(S) IN JURISDICTIONAL AREAS ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 17

-Y9-
 PI Sta 14+34.395
 Δ = 36.47 03.8° (RT)
 L = 153.843
 R = 230.000
 SE = 0.05
 RO = 30.000
 DS = 60 kph

-Y10-
 PI Sta 15+03.789
 Δ = 30.00 15.3° (LT)
 L = 104.984
 R = 165.000

-Y12-RPA
 PI Sta 3+21.554
 Δ = 19.15 56.5°
 L = 60.000
 LT = 40.004
 ST = 20.585

-Y12-RPA1
 PI Sta 4+24.352
 Δ = 63.08 26.8° (LT)
 L = 180.613
 R = 135.000

-Y12-RPA2
 PI Sta 3+76.918
 Δ = 34.72 15.5° (RT)
 L = 21.234
 LT = 13.939
 R = 45.000

-Y12-RPB
 PI Sta 7+167.949
 Δ = 91.58 08.7°
 L = 17.336
 LT = 40.004
 ST = 20.585

-Y12-RPB1
 PI Sta 8+33.922
 Δ = 87.58 58.8° (RT)
 L = 17.336
 LT = 30.450
 ST = 20.585

-Y12-RPB2
 PI Sta 8+26.428
 Δ = 85.17 53.7° (LT)
 L = 17.336
 LT = 30.450
 ST = 20.585

-Y12-RPC
 PI Sta 7+141.750
 Δ = 15.13 56.5°
 L = 60.000
 LT = 40.004
 ST = 20.585

-Y12-RPC1
 PI Sta 8+40.756
 Δ = 67.47 26.9° (LT)
 L = 180.613
 R = 135.000

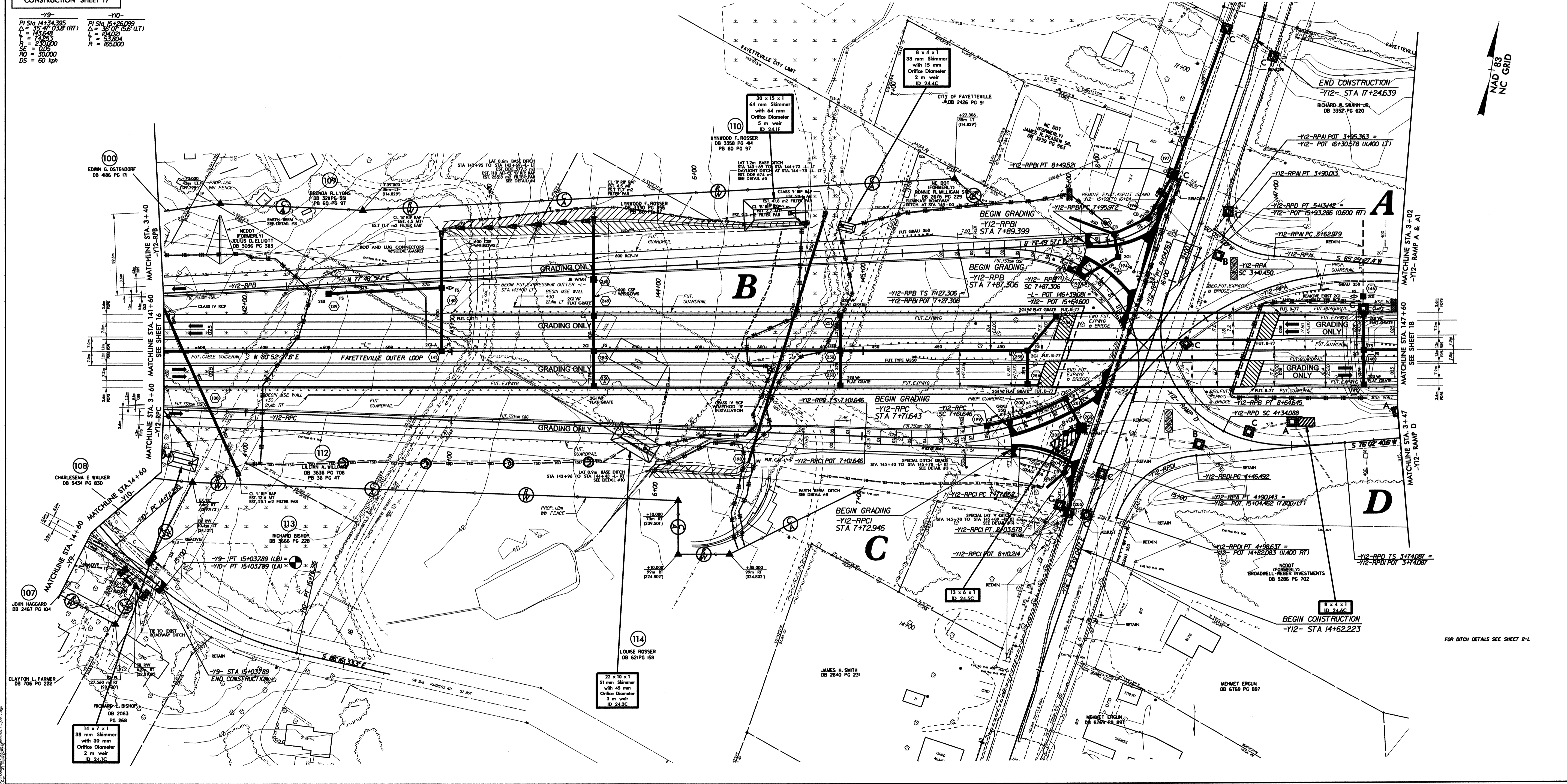
-Y12-RPC2
 PI Sta 7+90.713
 Δ = 34.72 15.5° (RT)
 L = 21.234
 LT = 13.939
 R = 45.000

-Y12-RPD
 PI Sta 4+182.198
 Δ = 96.07 15.3° (RT)
 L = 202.616
 R = 55.000

-Y12-RPD1
 PI Sta 4+175.935
 Δ = 86.57 36.7° (LT)
 L = 202.616
 R = 55.000

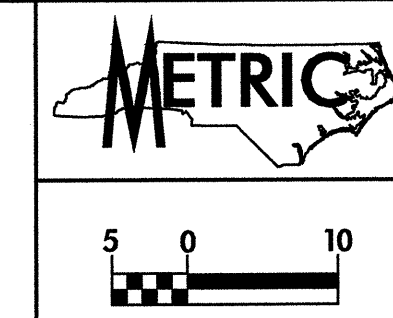
PROJECT REFERENCE NO. X-000024
 SHEET NO. 24 (X-000024)
 ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER

CONST. REV.
 R/W REV.



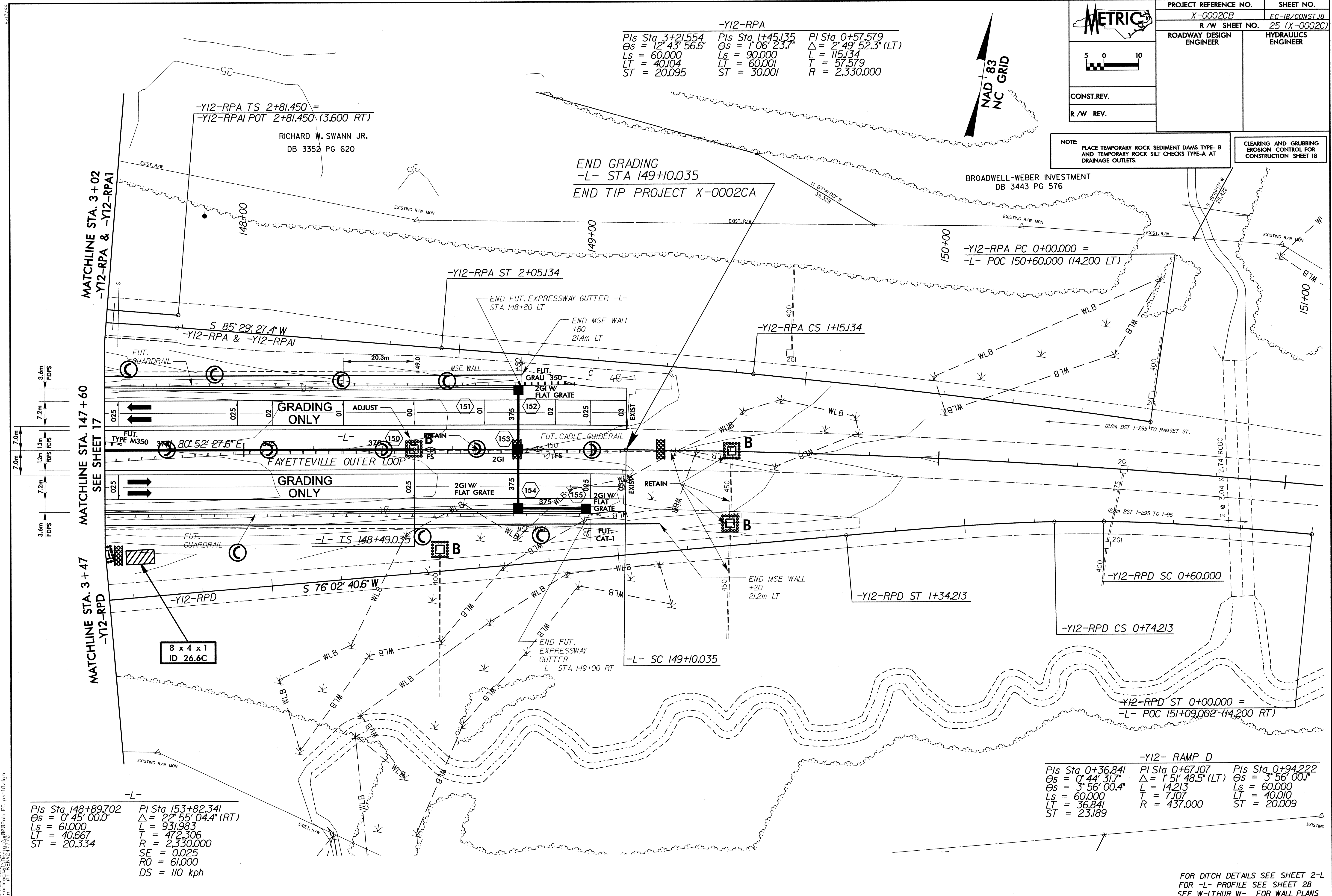
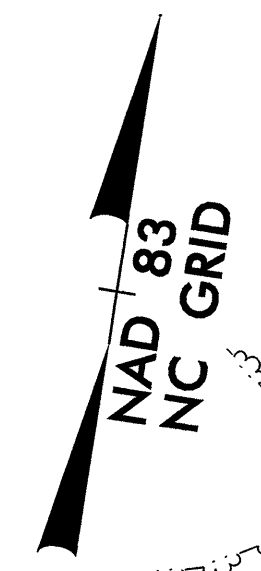
NAD 83
 NC GRID

FOR DITCH DETAILS SEE SHEET 2-L



PROJECT REFERENCE NO.	SHEET NO.
X-0002CB	EC-18/CONST.18
R/W SHEET NO.	25 (X-0002C)
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST. REV.	
R/W REV.	

-Y12-RPA
 Pls Sta 3+21.554 $\Delta s = 12^\circ 43' 56.6"$ $L_s = 60.000$ $LT = 40.104$ $ST = 20.095$
 Pls Sta 1+45.135 $\Delta s = 1^\circ 06' 23.7"$ $L_s = 90.000$ $LT = 60.001$ $ST = 30.001$
 Pls Sta 0+57.579 $\Delta = 2^\circ 49' 52.3" (LT)$ $L = 115.134$ $T = 57.579$ $R = 2,330.000$



-L-
 Pls Sta 148+89.702 $\Delta s = 0^\circ 45' 00.0"$ $L_s = 61.000$ $LT = 40.667$ $ST = 20.334$
 Pls Sta 153+82.341 $\Delta = 22^\circ 55' 04.4" (RT)$ $L = 931.983$ $T = 472.306$ $R = 2,330.000$
 $SE = 0.025$
 $RO = 61.000$
 $DS = 110 \text{ kph}$

-Y12- RAMP D
 Pls Sta 0+36.841 $\Delta s = 0^\circ 44' 31.7"$ $L_s = 60.000$ $LT = 36.841$ $ST = 23.189$
 Pls Sta 0+67.107 $\Delta = 1^\circ 51' 48.5" (LT)$ $L = 14.213$ $T = 7.107$ $R = 437.000$
 Pls Sta 0+94.222 $\Delta s = 3^\circ 56' 00.1"$ $L_s = 60.000$ $LT = 40.010$ $ST = 20.009$

FOR DITCH DETAILS SEE SHEET 2-L
 FOR -L- PROFILE SEE SHEET 2B
 SEE W-1THUR W- FOR WALL PLANS

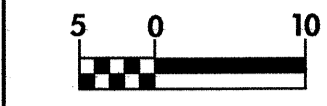
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NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE-B AND TEMPORARY ROCK SILT CHECKS TYPE-A AT DRAINAGE OUTLETS.

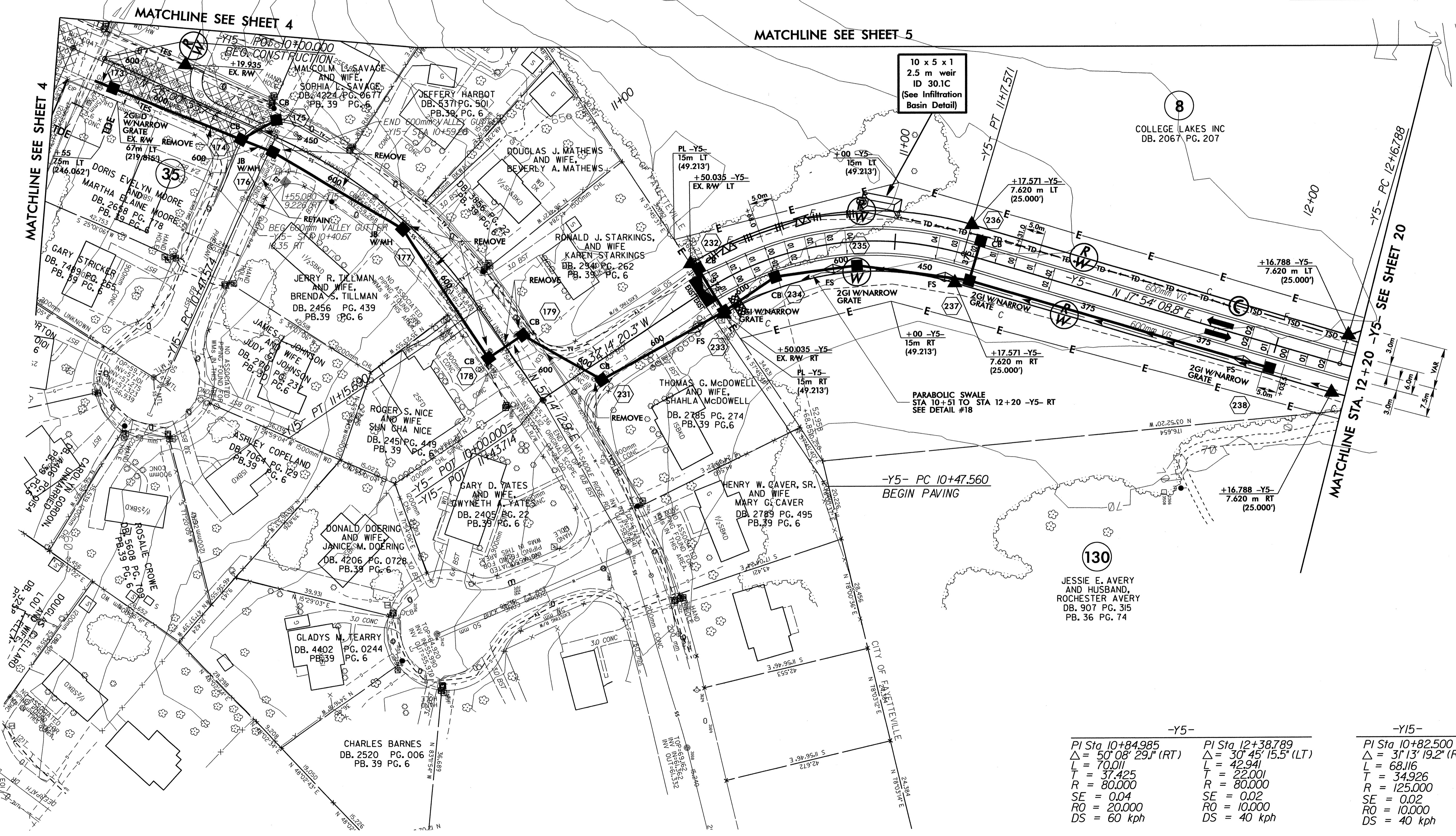
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 19



PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-19/CONST.19
R/W SHEET NO. 30 (X-0002C)	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST. REV.	
R/W REV.	




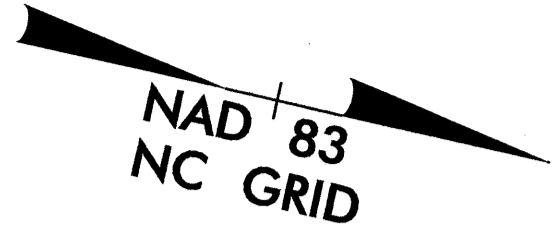
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 jsp@dwgwin



-Y5-		-Y15-	
PI Sta 10+84.985	PI Sta 12+38.789	PI Sta 10+82.500	
$\Delta = 50^{\circ}08'29.1''$ (RT)	$\Delta = 30^{\circ}45'15.5''$ (LT)	$\Delta = 31^{\circ}13'19.2''$ (RT)	
L = 70.011	L = 42.941	L = 68.116	
T = 37.425	T = 22.001	T = 34.926	
R = 80.000	R = 80.000	R = 125.000	
SE = 0.04	SE = 0.02	SE = 0.02	
RO = 20.000	RO = 10.000	RO = 10.000	
DS = 60 kph	DS = 40 kph	DS = 40 kph	

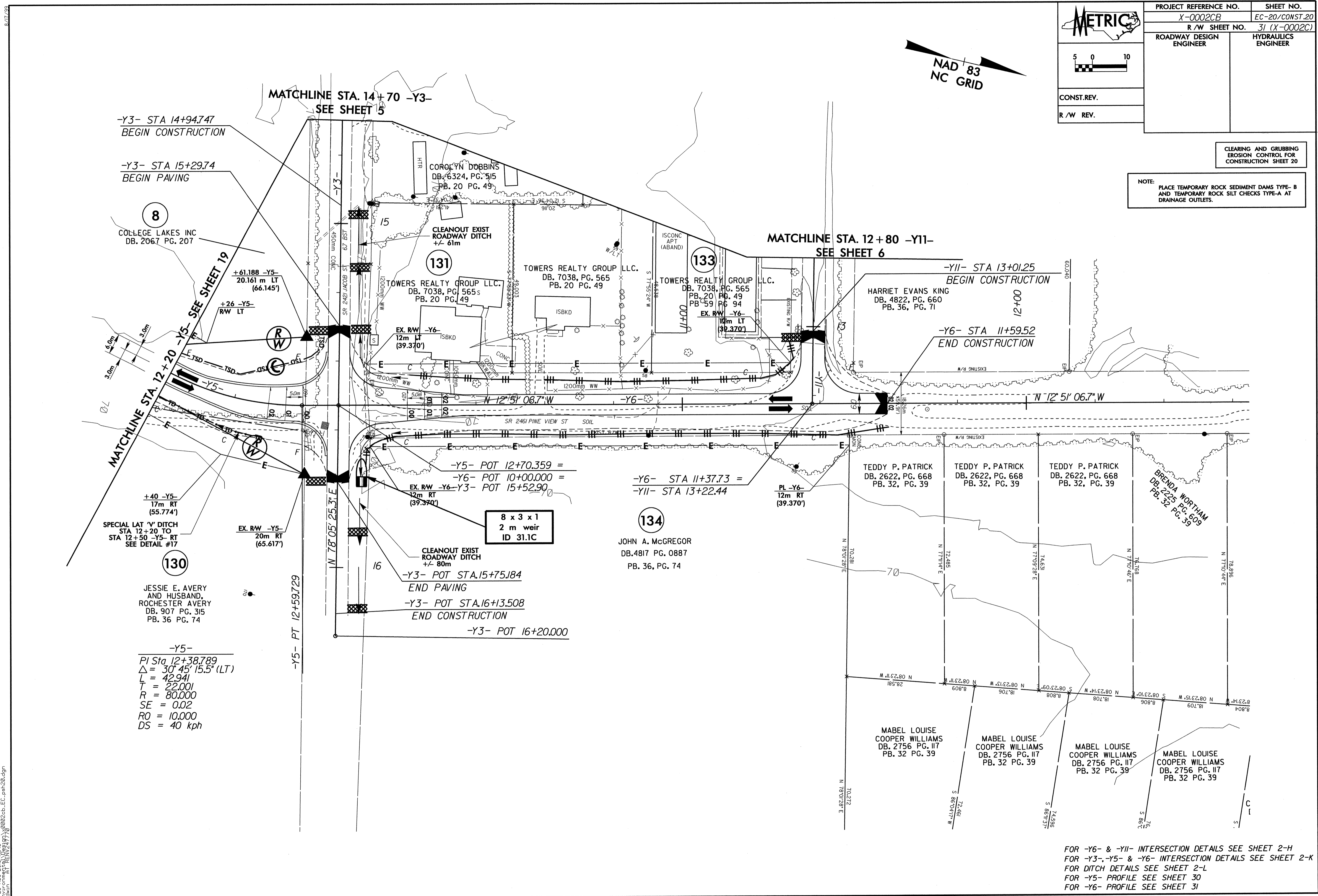
FOR DITCH DETAILS SEE SHEET 2-L
 FOR INTERSECTION DETAIL SEE SHEET 2-K
 FOR -Y5- PROFILE SEE SHEET 30

 5 0 10 CONST. REV. R / W REV.	PROJECT REFERENCE NO.	SHEET NO.
	X-0002CB	EC-20/CONST.20
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
R / W SHEET NO. 31 (X-0002C)		



CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 20

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



-Y3- STA 14+94.747
BEGIN CONSTRUCTION

-Y3- STA 15+29.74
BEGIN PAVING

8

COLLEGE LAKES INC
DB. 2067 PG. 207

+61.188 -Y5-
20.161 m LT
(66.145')

+26 -Y5-
RW LT

MATCHLINE STA. 12+20 -Y5-
SEE SHEET 19

+40 -Y5-
17m RT
(55.774')

SPECIAL LAT 'V' DITCH
STA 12+20 TO
STA 12+50 -Y5- RT
SEE DETAIL #17

130

JESSIE E. AVERY
AND HUSBAND.
ROCHESTER AVERY
DB. 907 PG. 315
PB. 36 PG. 74

-Y5-
PI Sta. 12+38.789
 $\Delta = 30^\circ 45' 15.5'' (LT)$
L = 42.941
T = 22.001
R = 80.000
SE = 0.02
RO = 10.000
DS = 40 kph

-Y5- PT 12+59.729

MATCHLINE STA. 14+70 -Y3-
SEE SHEET 5

COROLYN DOBBINS
DB. 6324, PG. 515
PB. 20 PG. 49

131

CLEANOUT EXIST
ROADWAY DITCH
+/- 61m

TOWERS REALTY GROUP LLC.
DB. 7038, PG. 565
PB. 20 PG. 49

TOWERS REALTY GROUP LLC.
DB. 7038, PG. 565
PB. 20 PG. 49

TOWERS REALTY GROUP L.C.
DB. 7038, PG. 565
PB. 20 PG. 49
PB. 59 PG. 94

MATCHLINE STA. 12+80 -Y11-
SEE SHEET 6

-Y11- STA 13+01.25
BEGIN CONSTRUCTION

12+00

-Y6- STA 11+59.52
END CONSTRUCTION

HARRIET EVANS KING
DB. 4822, PG. 660
PB. 36, PG. 71

-Y5- POT 12+70.359 =

-Y6- POT 10+00.000 =

EX. RW -Y6- Y3- POT 15+52.90

8 x 3 x 1
2 m weir
ID 31.1C

-Y6- STA 11+37.73 =

-Y11- STA 13+22.44

134

JOHN A. MCGREGOR
DB. 4817 PG. 0887
PB. 36, PG. 74

TEDDY P. PATRICK
DB. 2622, PG. 668
PB. 32, PG. 39

TEDDY P. PATRICK
DB. 2622, PG. 668
PB. 32, PG. 39

TEDDY P. PATRICK
DB. 2622, PG. 668
PB. 32, PG. 39

BRENDA WORTHAM
DB. 2225 PG. 609
PB. 32 PG. 39

MABEL LOUISE
COOPER WILLIAMS
DB. 2756 PG. 117
PB. 32 PG. 39

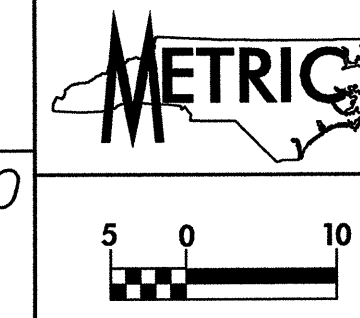
MABEL LOUISE
COOPER WILLIAMS
DB. 2756 PG. 117
PB. 32 PG. 39

MABEL LOUISE
COOPER WILLIAMS
DB. 2756 PG. 117
PB. 32 PG. 39

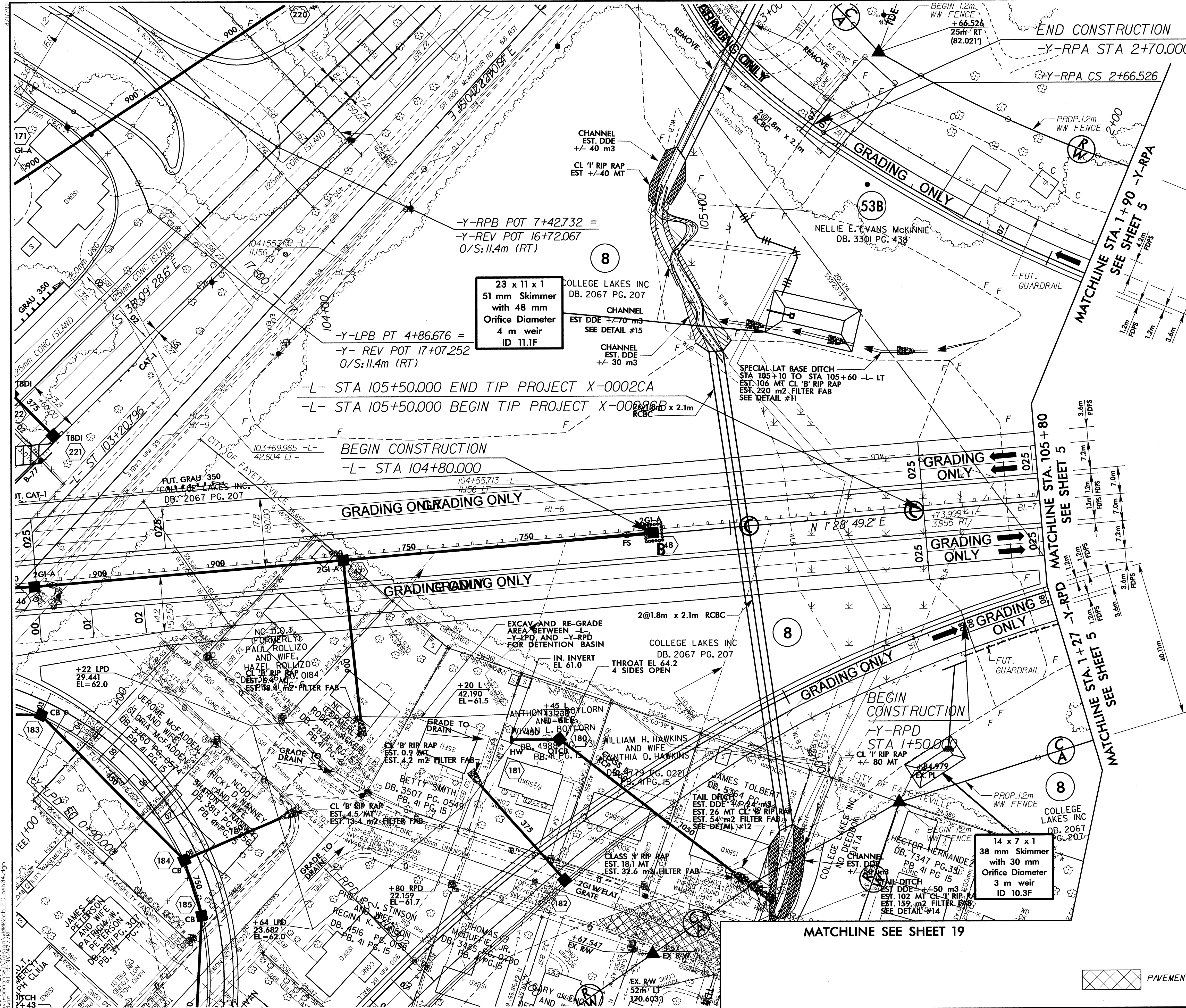
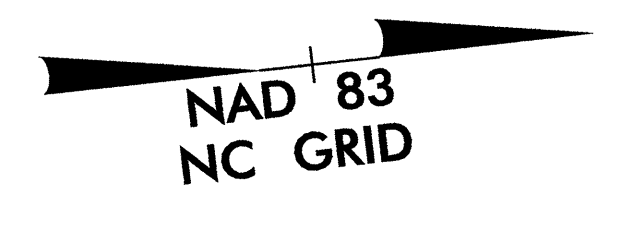
MABEL LOUISE
COOPER WILLIAMS
DB. 2756 PG. 117
PB. 32 PG. 39

FOR -Y6- & -Y11- INTERSECTION DETAILS SEE SHEET 2-H
FOR -Y3-, -Y5- & -Y6- INTERSECTION DETAILS SEE SHEET 2-K
FOR DITCH DETAILS SEE SHEET 2-L
FOR -Y5- PROFILE SEE SHEET 30
FOR -Y6- PROFILE SEE SHEET 31

21 AUG 2010 16:55
 R:\ENVI\1\CONSTR\11\REN2477\0002cb_EC_psh20.dgn
 jago@dmv.nc.gov



PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-21/CONST.04
R/W SHEET NO. 10&11 (X-0002C)	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
CONST. REV.	
R/W REV.	



14 x 7 x 1
38 mm Skimmer
with 30 mm
Orifice Diameter
3 m weir
ID 10.3F



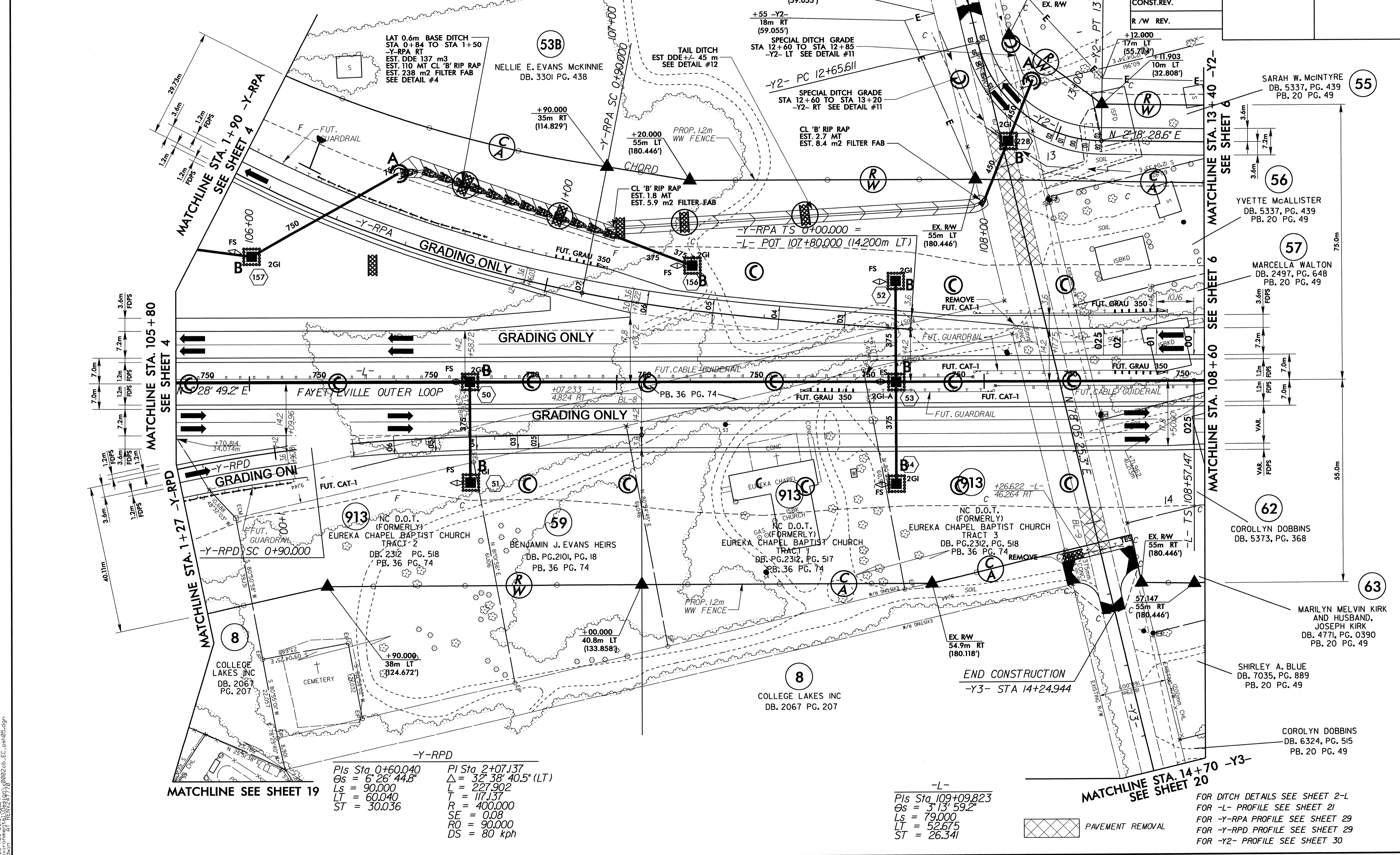
FOR DITCH DETAILS SEE SHEET 2-L

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 jehodun

-Y-RPA
 Pls Sta 0+60.049 PI Sta 1+80.075
 $\Delta = 7^{\circ} 09' 43.1''$ $\Delta = 28^{\circ} 05' 42.2''$ (RT)
 $L_s = 90.000$ $L = 176.526$
 $LT = 60.049$ $T = 90.075$
 $ST = 30.045$ $R = 360.000$
 $SE = 0.07$
 $RO = 90.000$
 $DS = 80$ kph

-Y2-
 PI Sta 12+92.849 $\Delta = 75^{\circ} 46' 56.7''$ (LT)
 $L = 46.293$
 $T = 27.238$
 $R = 35.000$
 $SE = 0.02$
 $RO = 6.5$ m
 $DS = 30$ kph

PROJECT REFERENCE NO.	SHEET NO.
X-0002CB	EC-22/CONST.5
R/W SHEET NO.	12 (X-0002C)
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST. REV.	
R/W REV.	



-Y-RPD
 Pls Sta 0+60.040 PI Sta 2+07.137
 $\Delta = 6^{\circ} 26' 44.8''$ $\Delta = 32^{\circ} 38' 40.5''$ (LT)
 $L_s = 90.000$ $L = 227.902$
 $LT = 60.040$ $T = 117.137$
 $ST = 30.036$ $R = 400.000$
 $SE = 0.08$
 $RO = 90.000$
 $DS = 80$ kph

-L-
 Pls Sta 109+09.823
 $\Delta = 3^{\circ} 13' 59.2''$
 $L_s = 79.000$
 $LT = 52.675$
 $ST = 26.341$

FOR DITCH DETAILS SEE SHEET 2-L
 FOR -L- PROFILE SEE SHEET 2I
 FOR -Y-RPA PROFILE SEE SHEET 29
 FOR -Y-RPD PROFILE SEE SHEET 29
 FOR -Y2- PROFILE SEE SHEET 30



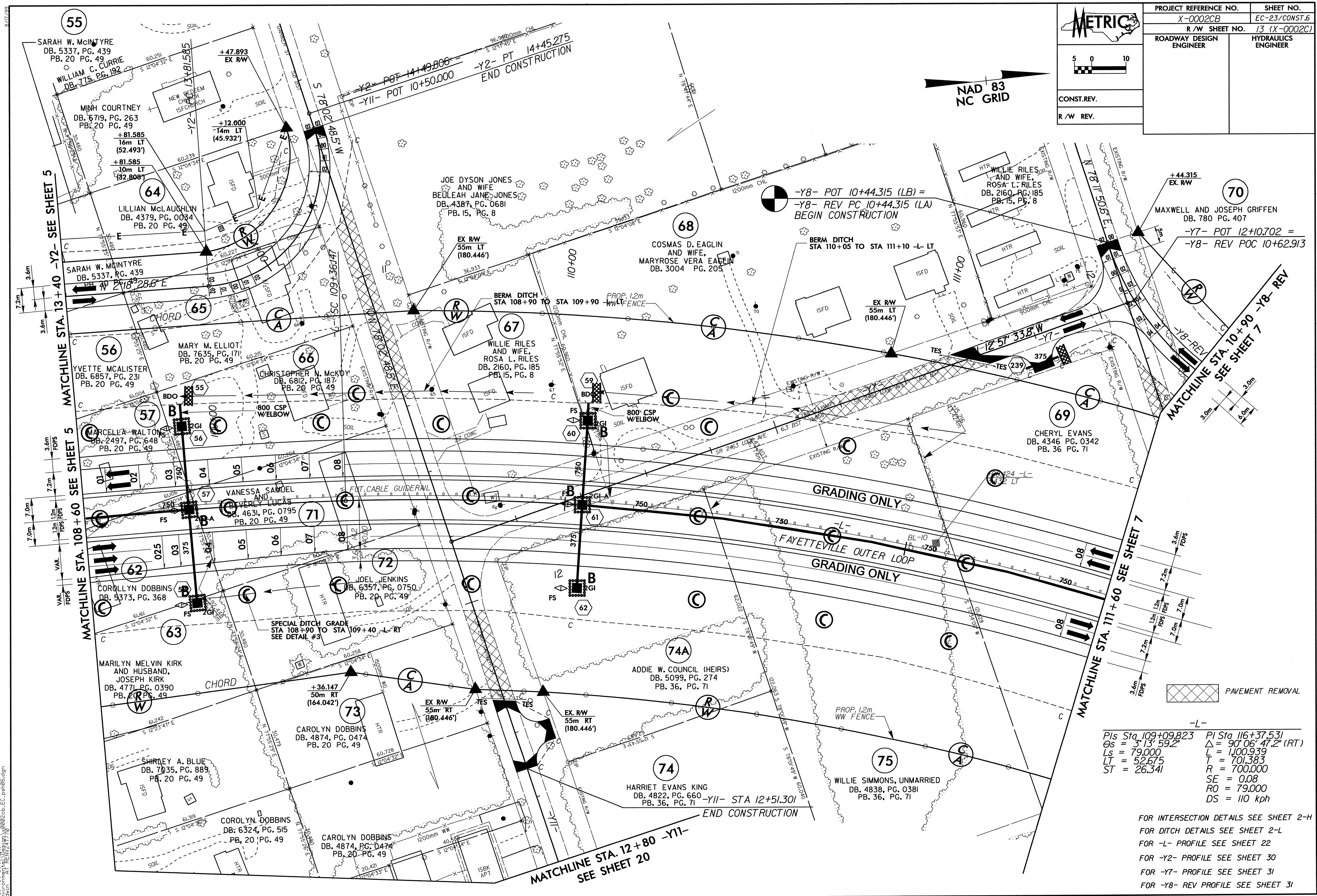
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5 0 10

CONSTR. REV.

R/W REV.

PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-23/CONST.6
R/W SHEET NO. 13 (X-0002C)	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



-L-

Pls Sta 109+09.823	Pl Sta 116+37.531
$\Theta_s = 3^{\circ}13'59.2''$	$\Delta = 90^{\circ}06'47.2''$ (RT)
$L_s = 79.000$	$L = 1,100.939$
$LT = 52.675$	$T = 701.383$
$ST = 26.341$	$R = 700.000$
	$SE = 0.08$
	$RO = 79.000$
	$DS = 110$ kph

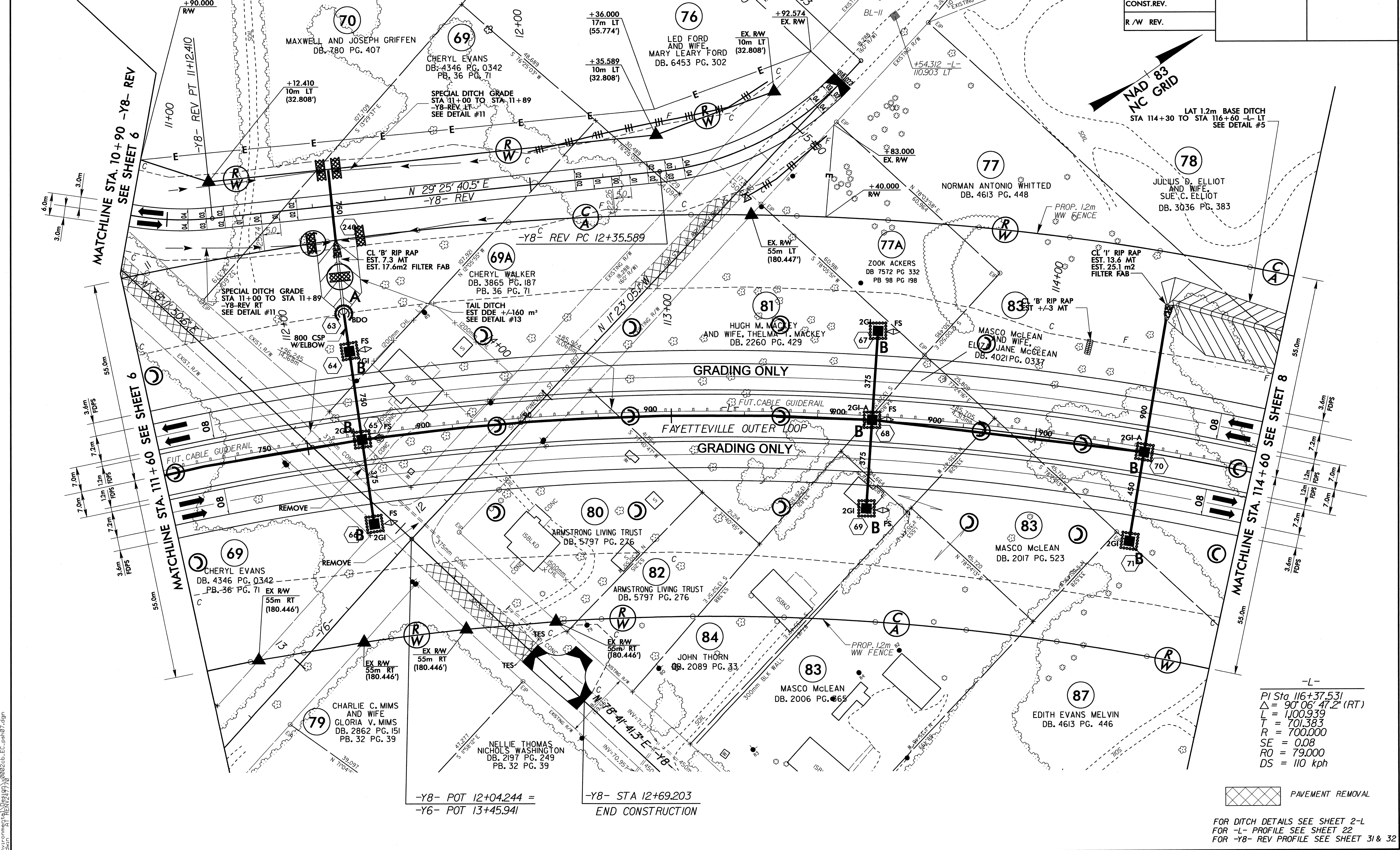
FOR INTERSECTION DETAILS SEE SHEET 2-H
 FOR DITCH DETAILS SEE SHEET 2-L
 FOR -L- PROFILE SEE SHEET 22
 FOR -Y2- PROFILE SEE SHEET 30
 FOR -Y7- PROFILE SEE SHEET 31
 FOR -Y8- REV PROFILE SEE SHEET 31

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 jago@metric.com

-Y8- REV
 PI Sta 10+80.579 Δ = 48° 46' 10.0" (LT)
 L = 68.095 T = 36.264 R = 80.000
 SE = 0.04 DO = 20.000 DS = 50 kph

PI Sta 12+65.351 Δ = 40° 48' 45.6" (LT)
 L = 56.985 T = 29.762 R = 80.000
 SE = 0.04 DO = 20.000 DS = 50 kph

	PROJECT REFERENCE NO.	SHEET NO.
	X-0002CB	EC-24/CONST.7
	R/W SHEET NO.	14 (X-0002C)
	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST. REV.		
R/W REV.		



MATCHLINE STA. 10+90 -Y8- REV
 SEE SHEET 6

MATCHLINE STA. 111+60 SEE SHEET 6

MATCHLINE STA. 114+60 SEE SHEET 8

-L-
 PI Sta 116+37.531 Δ = 90° 06' 47.2" (RT)
 L = 1100.939 T = 701.383 R = 700.000
 SE = 0.08 RO = 79.000 DS = 110 kph

PAVEMENT REMOVAL

FOR DITCH DETAILS SEE SHEET 2-L
 FOR -L- PROFILE SEE SHEET 22
 FOR -Y8- REV PROFILE SEE SHEET 31 & 32

25-AUG-2010 09:54
 RA:EVAN@metricon.com
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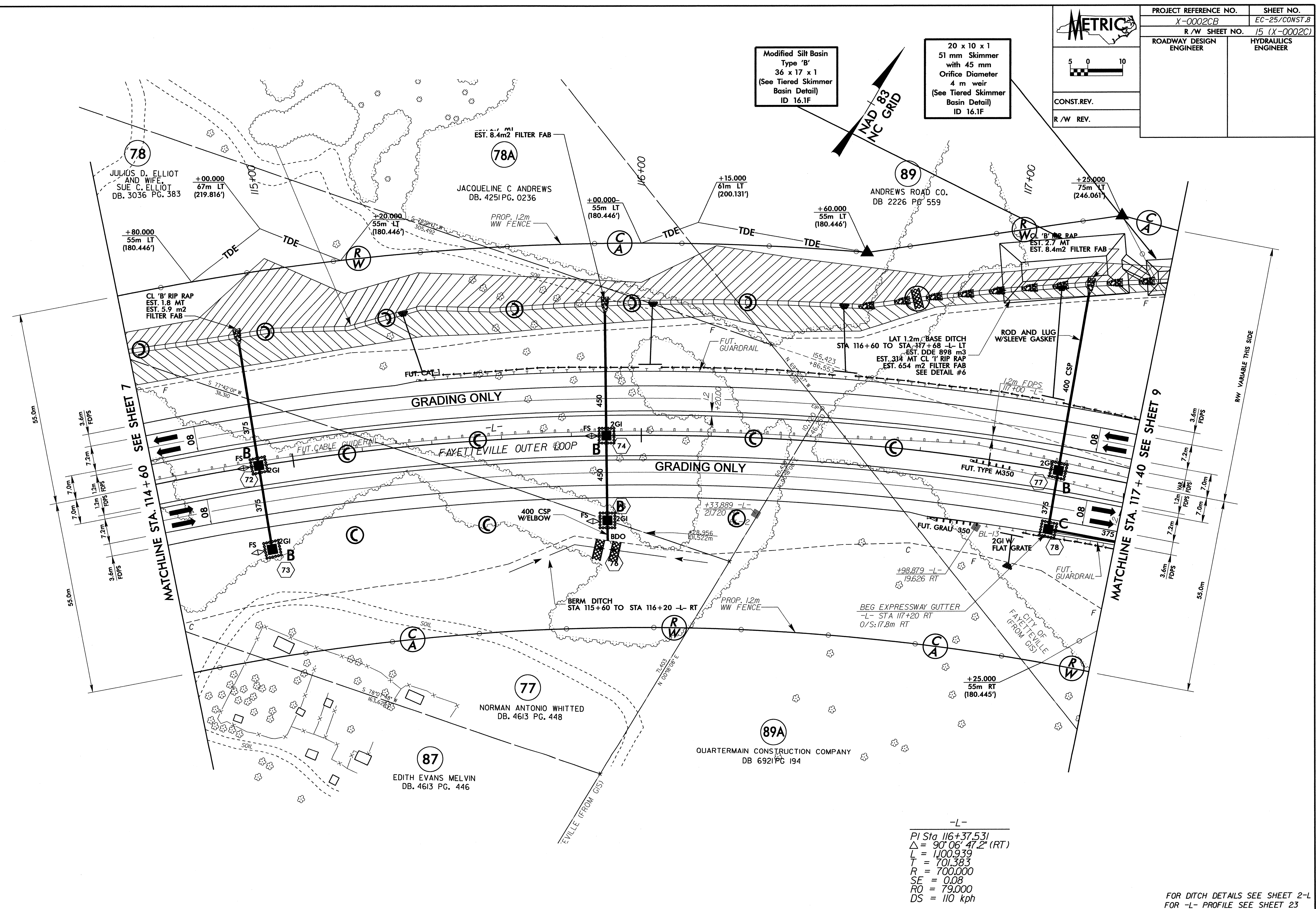
METRIC

CONST. REV.
R/W REV.

PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-25/CONST.B
R/W SHEET NO. 15 (X-0002C)	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

Modified Silt Basin
Type 'B'
36 x 17 x 1
(See Tiered Skimmer
Basin Detail)
ID 16.1F

20 x 10 x 1
51 mm Skimmer
with 45 mm
Orifice Diameter
4 m weir
(See Tiered Skimmer
Basin Detail)
ID 16.1F



-L-
PI Sta 116+37.531
Δ = 90° 06' 47.2" (RT)
L = 1100.939
T = 701.383
R = 700.000
SE = 0.08
RO = 79.000
DS = 110 kph

FOR DITCH DETAILS SEE SHEET 2-L
FOR -L- PROFILE SEE SHEET 23

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 jsp@metric.com
 8/17/2008

METRIC

PROJECT REFERENCE NO. X-0002CB SHEET NO. EC-26/CONST.9
R/W SHEET NO. 16 (X-0002C) ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

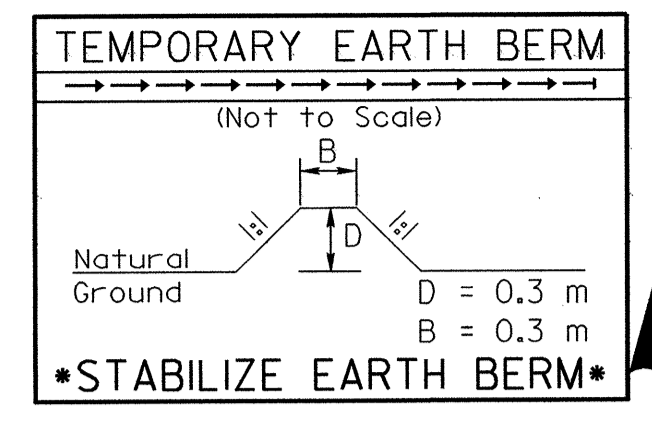
CONST. REV.
R/W REV.

-L-
PI Sta 116+37.531
 $\Delta = 90^{\circ} 06' 47.2" (RT)$
L = 1,000.939
T = 701.383
R = 700.000
SE = 0.08
RO = 79,000
DS = 110 kph

PIs Sta 120+63.428
Es = 3' 13" 59.2"
Ls = 79,000
LT = 52,675
ST = 26,341

20 x 10 x 1
51 mm Skimmer
with 45 mm
Orifice Diameter
4 m weir
(See Tiered Skimmer
Basin Detail)
ID 16.1F

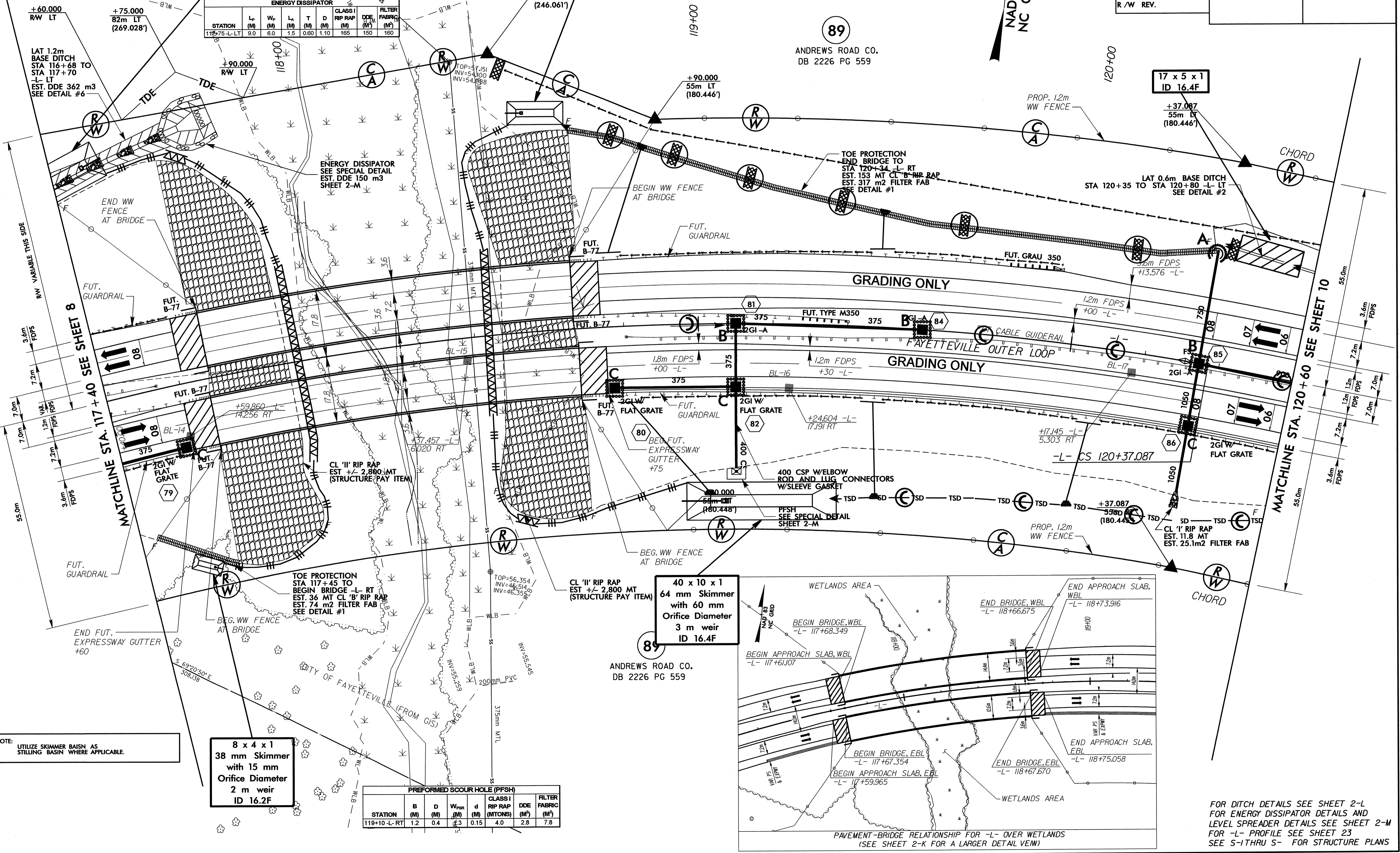
15 x 6 x 1
38 mm Skimmer
with 30 mm
Orifice Diameter
3 m weir
ID 16.3F



STATION	L _p (M)	W _p (M)	L _a (M)	T (M)	D (M)	CLASS I RIP RAP (MTONS)	DDE (M ²)	FILTER FABRIC (M ²)
117+75-L-LT	9.0	6.0	1.5	0.80	1.10	165	150	160

89
ANDREWS ROAD CO.
DB 2226 PG 559

17 x 5 x 1
ID 16.4F
+37.087
55m LT
(180.446')



8 x 4 x 1
38 mm Skimmer
with 15 mm
Orifice Diameter
2 m weir
ID 16.2F

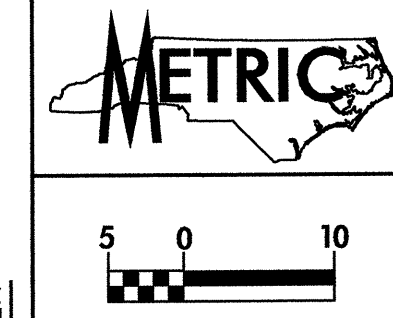
STATION	B (M)	D (M)	W _{per} (M)	d (M)	CLASS I RIP RAP (MTONS)	DDE (M ²)	FILTER FABRIC (M ²)
119+10-L-RT	1.2	0.4	±3	0.15	4.0	2.8	7.8

40 x 10 x 1
64 mm Skimmer
with 60 mm
Orifice Diameter
3 m weir
ID 16.4F

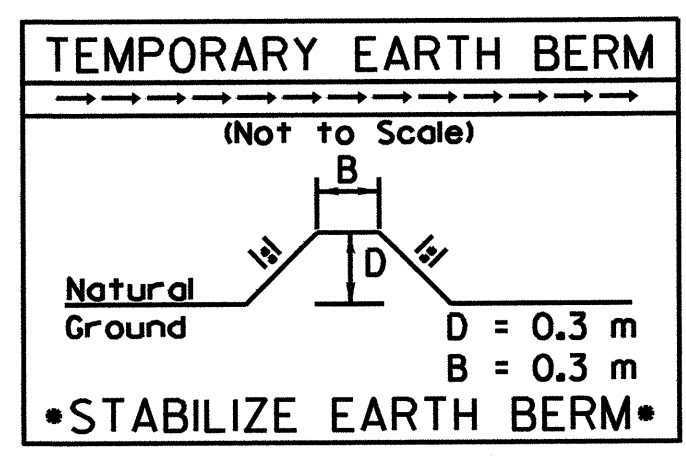
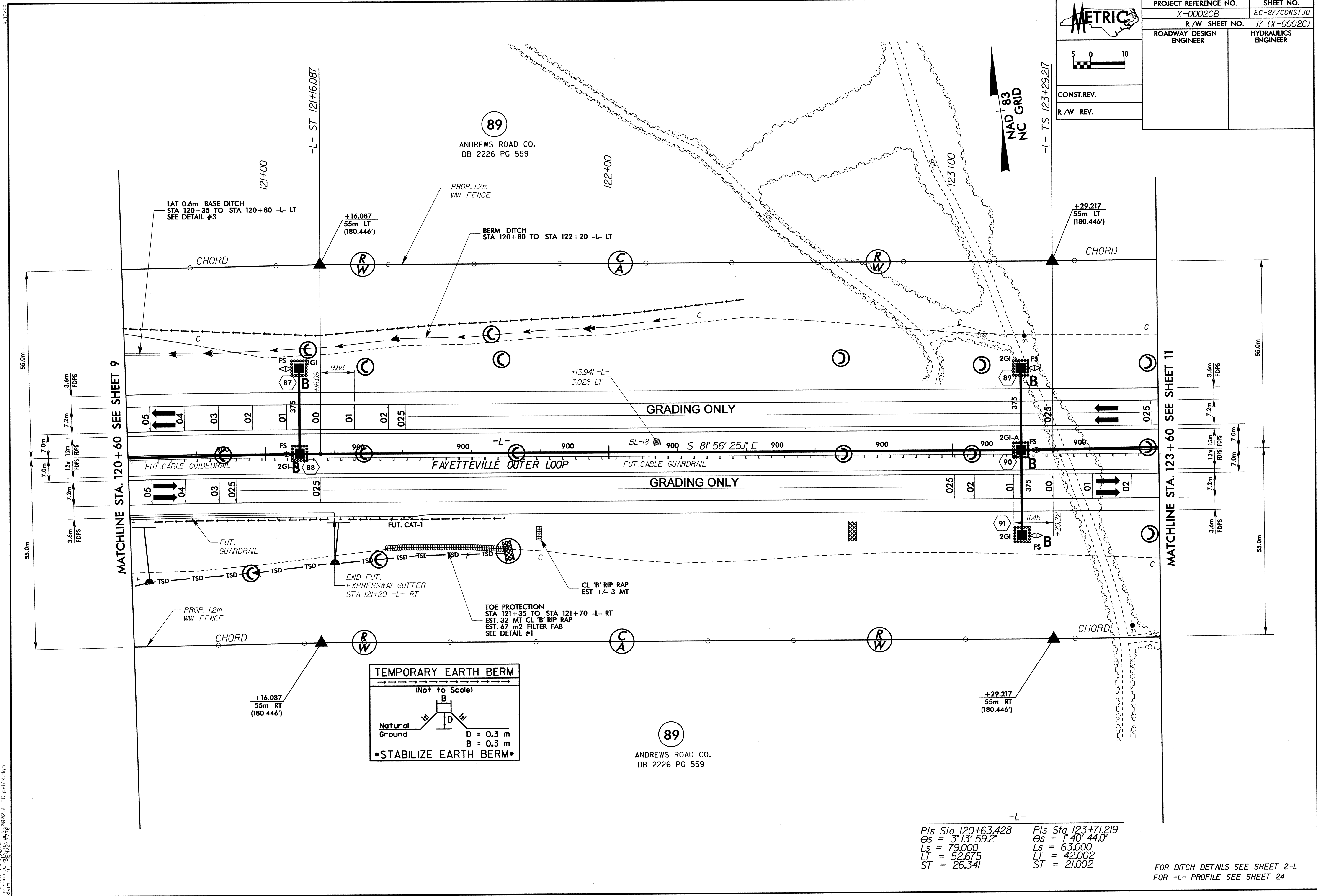
89
ANDREWS ROAD CO.
DB 2226 PG 559

FOR DITCH DETAILS SEE SHEET 2-L
FOR ENERGY DISSIPATOR DETAILS AND
LEVEL SPREADER DETAILS SEE SHEET 2-M
FOR -L- PROFILE SEE SHEET 23
SEE S-I THRU S- FOR STRUCTURE PLANS

23-AUG-2010 10:51
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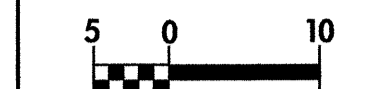
PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-27/CONST.10
R/W SHEET NO. 17 (X-0002C)	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST. REV.	
R/W REV.	



Pls Sta 120+63.428 Pls Sta 123+71.219
 Os = 3° 13' 59.2" Os = 1° 40' 44.0"
 Ls = 79.000 Ls = 63.000
 LT = 52.675 LT = 42.002
 ST = 26.341 ST = 21.002

FOR DITCH DETAILS SEE SHEET 2-L
 FOR -L- PROFILE SEE SHEET 24

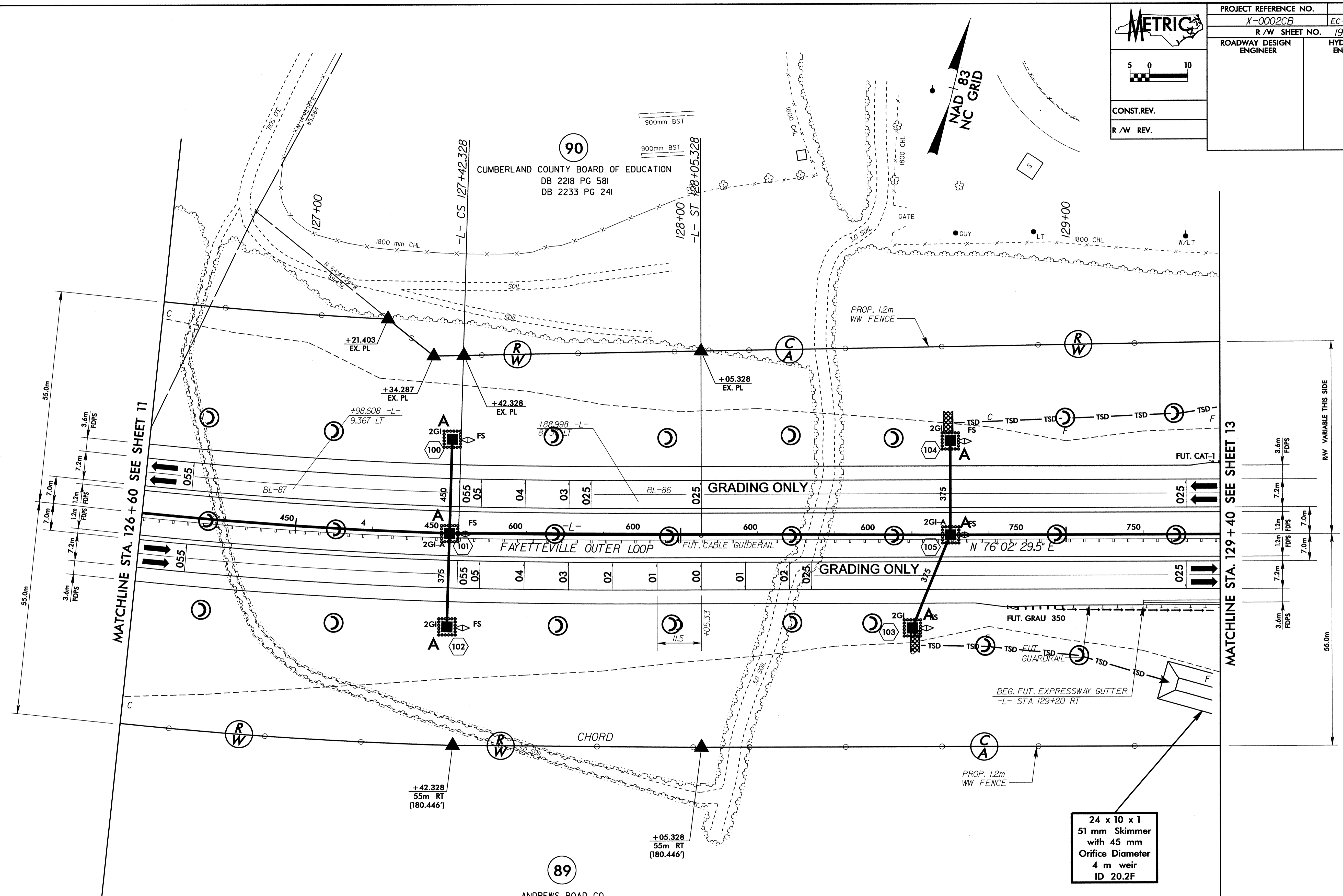
8/17/2008
 25 AUG 2010 10:23
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 Jsgoodkin



CONST. REV.
R/W REV.

PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-29/CONST12
R/W SHEET NO. 19 (X-0002C)	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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Jagobadwin - AT REN247778



-L-

PI Sta 125+68.836	PIs Sta 127+63.330
$\Delta = 18^{\circ} 39' 37.3"$ (LT)	$\Theta_s = 1^{\circ} 40' 44.0"$
L = 350.111	Ls = 63.000
R = 176.620	LT = 42.002
R = 1,075.000	ST = 21.002
SE = 0.055	
RO = 63.000	
DS = 110 kph	

24 x 10 x 1
51 mm Skimmer
with 45 mm
Orifice Diameter
4 m weir
ID 20.2F

FOR DITCH DETAILS SEE SHEET 2-L
FOR -L- PROFILE SEE SHEET 25

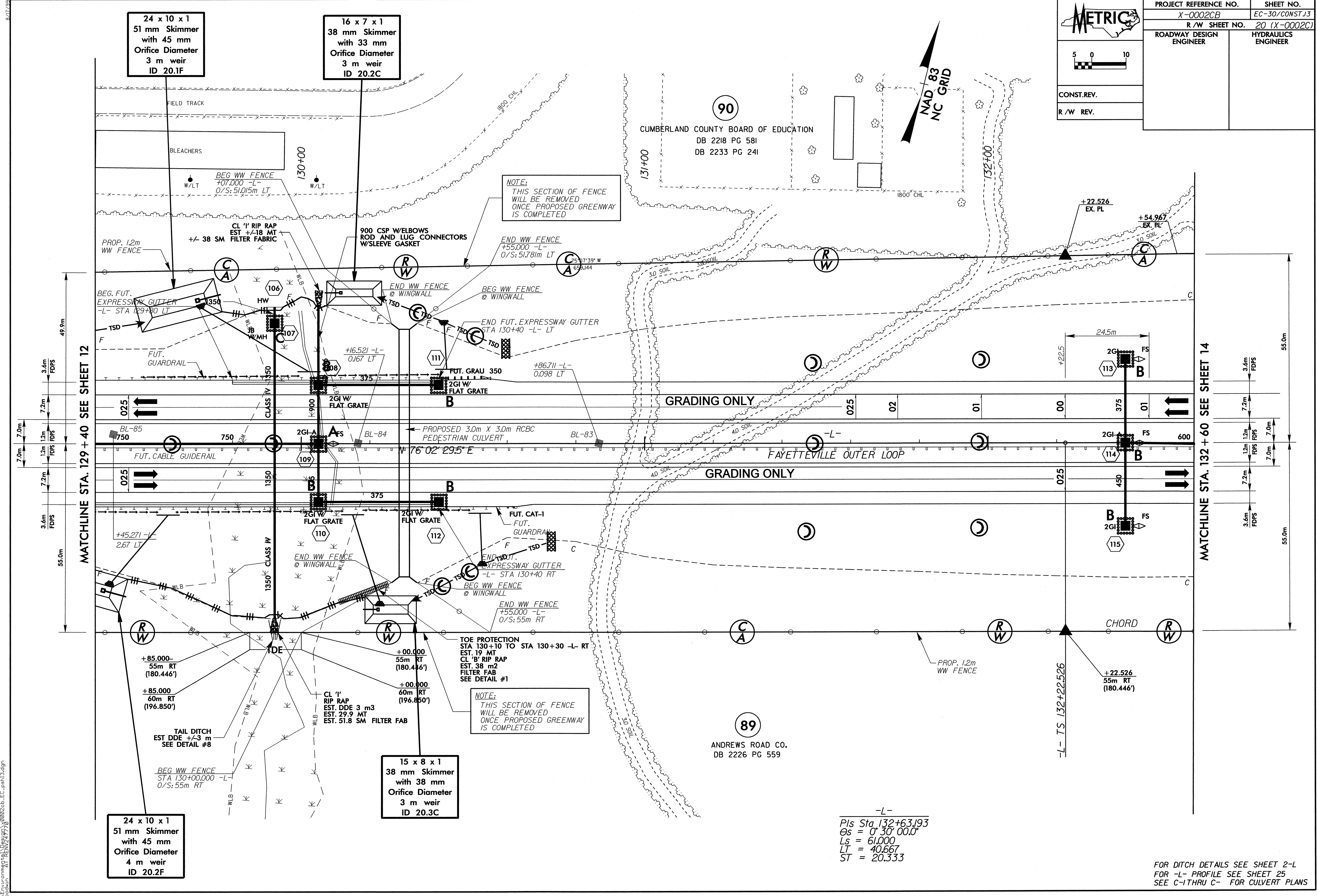
METRIC

PROJECT REFERENCE NO. X-0002CB SHEET NO. EC-30/CONST.13
 R/W SHEET NO. 20 (X-0002C)

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

CONST. REV.
 R/W REV.

5 0 10



24 x 10 x 1
 51 mm Skimmer
 with 45 mm
 Orifice Diameter
 3 m weir
 ID 20.1F

16 x 7 x 1
 38 mm Skimmer
 with 33 mm
 Orifice Diameter
 3 m weir
 ID 20.2C

24 x 10 x 1
 51 mm Skimmer
 with 45 mm
 Orifice Diameter
 4 m weir
 ID 20.2F

15 x 8 x 1
 38 mm Skimmer
 with 38 mm
 Orifice Diameter
 3 m weir
 ID 20.3C


NOTE:
 THIS SECTION OF FENCE
 WILL BE REMOVED
 ONCE PROPOSED GREENWAY
 IS COMPLETED

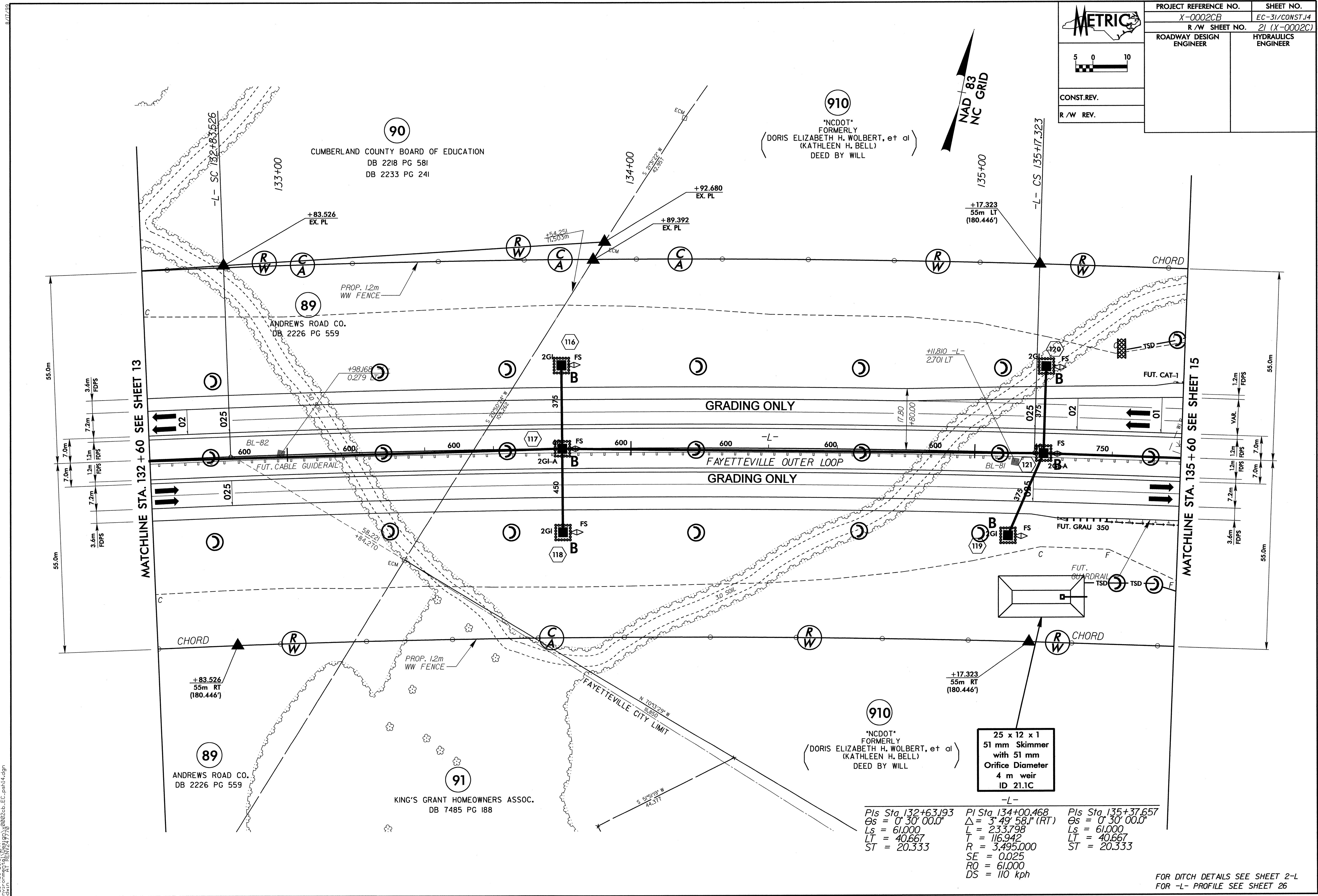
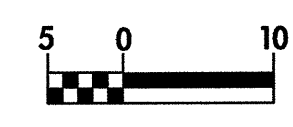
NOTE:
 THIS SECTION OF FENCE
 WILL BE REMOVED
 ONCE PROPOSED GREENWAY
 IS COMPLETED

-L-
 PIs Sta 132+63.193
 Gs = 0' 30" 00.0"
 Ls = 61.000
 LT = 40.667
 ST = 20.333

8/17/2016
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 jsgoodwin AT RENW247778

FOR DITCH DETAILS SEE SHEET 2-L
 FOR -L- PROFILE SEE SHEET 25
 SEE C-I THRU C- FOR CULVERT PLANS

	PROJECT REFERENCE NO.	SHEET NO.
	X-0002CB	EC-31/CONST.14
	R/W SHEET NO.	21 (X-0002C)
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
CONST. REV.		
R/W REV.		



MATCHLINE STA. 132 + 60 SEE SHEET 13

MATCHLINE STA. 135 + 60 SEE SHEET 15

90
CUMBERLAND COUNTY BOARD OF EDUCATION
DB 2218 PG 581
DB 2233 PG 241

89
ANDREWS ROAD CO.
DB 2226 PG 559

89
ANDREWS ROAD CO.
DB 2226 PG 559

91
KING'S GRANT HOMEOWNERS ASSOC.
DB 7485 PG 188

910
"NCDOT" FORMERLY
(DORIS ELIZABETH H. WOLBERT, et al
(KATHLEEN H. BELL)
DEED BY WILL

910
"NCDOT" FORMERLY
(DORIS ELIZABETH H. WOLBERT, et al
(KATHLEEN H. BELL)
DEED BY WILL

25 x 12 x 1
51 mm Skimmer
with 51 mm
Orifice Diameter
4 m weir
ID 21.1C

Pls Sta. 132+63.193 Gs = 0' 30" 00.0" Ls = 61.000 LT = 40.667 ST = 20.333	-L- Pl Sta. 134+00.468 $\Delta = 3' 49" 58.1"$ (RT) L = 233.798 T = 116.942 R = 3,495.000 SE = 0.025 RO = 61.000 DS = 110 kph	Pls Sta. 135+37.657 Gs = 0' 30" 00.0" Ls = 61.000 LT = 40.667 ST = 20.333
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FOR DITCH DETAILS SEE SHEET 2-L
FOR -L- PROFILE SEE SHEET 26

8/17/2018
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METRIC

PROJECT REFERENCE NO. X-0002CB
SHEET NO. EC-32/CONST.15
R/W SHEET NO. 22 (X-0002C)
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER

CONST. REV.
R/W REV.

5 0 10

ENERGY DISSIPATOR							
STATION	L _p (M)	W _p (M)	L _a (M)	T (M)	D (M)	CLASS I RIP RAP (M)	FILTER FABRIC (M ²)
136+80 -L- LT	7.5	5.0	1.5	0.60	0.90	130	105
136+90 -L- RT	9.5	6.0	3.5	0.75	1.10	235	200

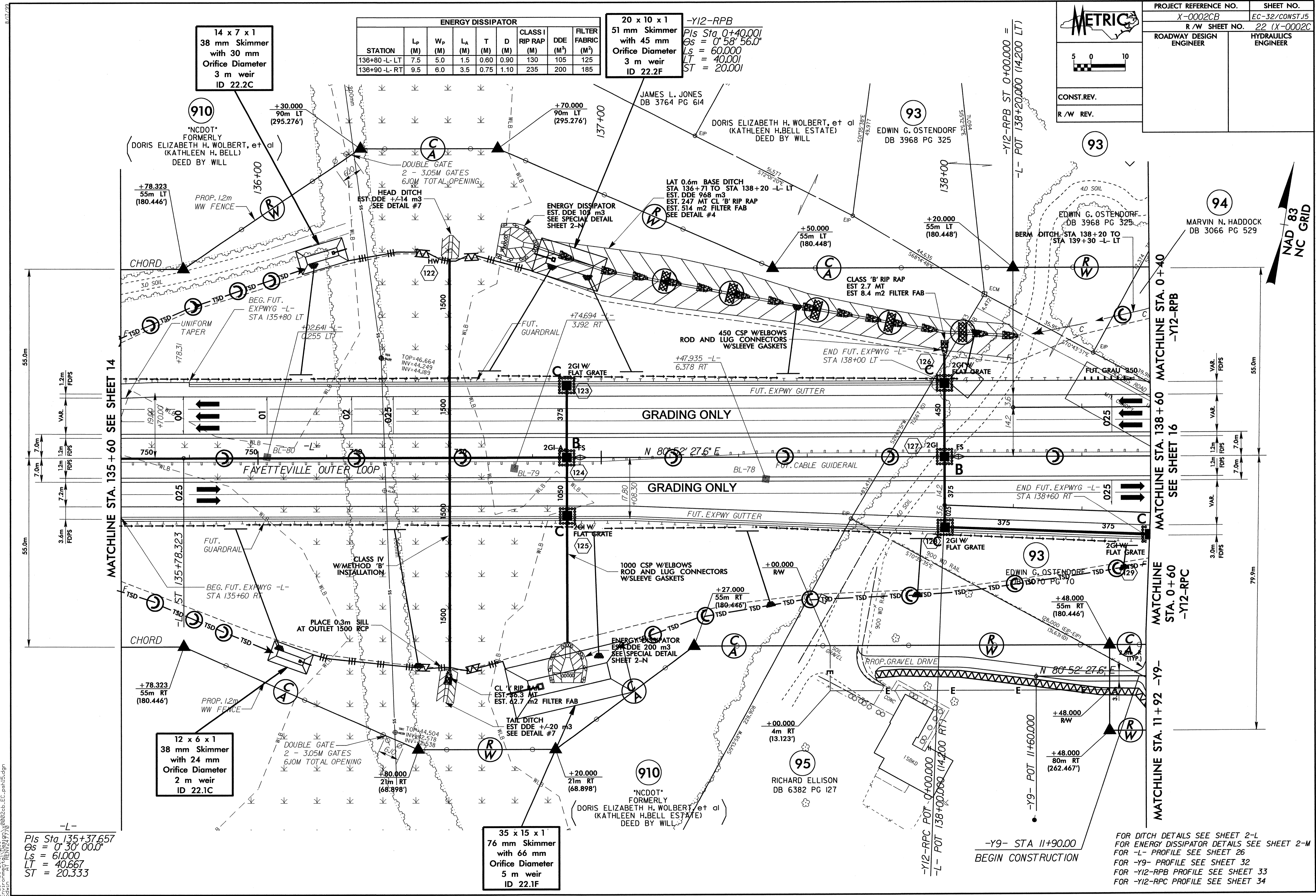
20 x 10 x 1
51 mm Skimmer
with 45 mm
Orifice Diameter
3 m weir
ID 22.2F

-Y12-RPB
Pls Sta. 0+40.00
G_s = 0° 58' 56.0"
L_s = 60.000
LT = 40.001
ST = 20.001

14 x 7 x 1
38 mm Skimmer
with 30 mm
Orifice Diameter
3 m weir
ID 22.2C

12 x 6 x 1
38 mm Skimmer
with 24 mm
Orifice Diameter
2 m weir
ID 22.1C

35 x 15 x 1
76 mm Skimmer
with 66 mm
Orifice Diameter
5 m weir
ID 22.1F

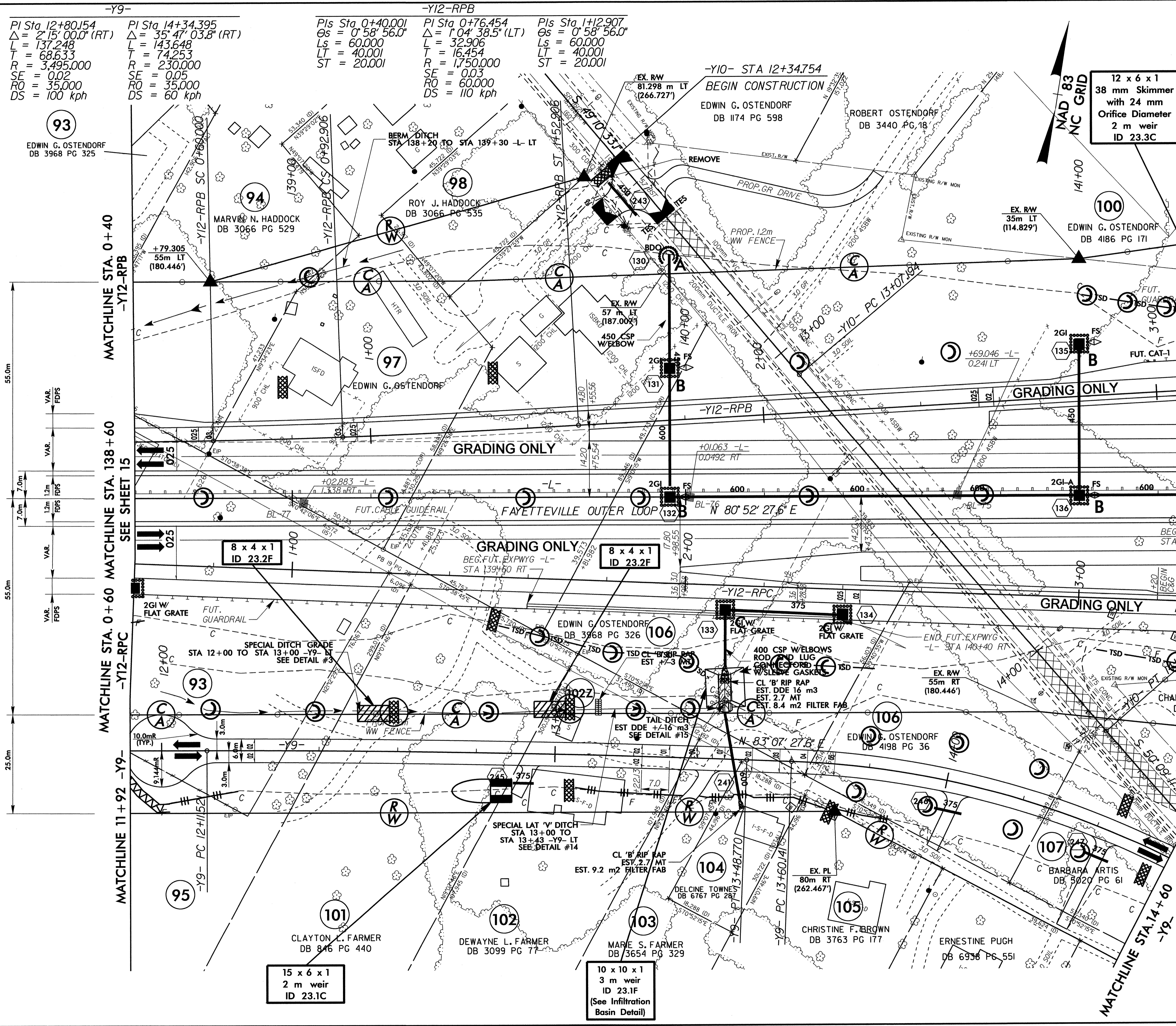


-L-
Pls Sta. 135+37.657
G_s = 0° 30' 00.0"
L_s = 61.000
LT = 40.667
ST = 20.333

FOR DITCH DETAILS SEE SHEET 2-L
FOR ENERGY DISSIPATOR DETAILS SEE SHEET 2-M
FOR -L- PROFILE SEE SHEET 26
FOR -Y9- PROFILE SEE SHEET 32
FOR -Y12-RPB PROFILE SEE SHEET 33
FOR -Y12-RPC PROFILE SEE SHEET 34

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8/17/23
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		PROJECT REFERENCE NO. X-0002CB	SHEET NO. EC-33/CONST.16
		R/W SHEET NO. 23 (X-0002C)	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
CONST. REV.		R/W REV.	

-Y9-
PI Sta 12+80.154
 $\Delta = 2' 15'' 00.0''$ (RT)
L = 137.248
T = 68.633
R = 3,495,000
SE = 0.02
RO = 35,000
DS = 100 kph

-Y12-RPB
PI Sta 14+34.395
 $\Delta = 35' 47'' 03.8''$ (RT)
L = 143.648
T = 74.253
R = 230,000
SE = 0.05
RO = 35,000
DS = 60 kph

-Y12-RPB
PIs Sta 0+40.001
Os = 0' 58'' 56.0''
L = 60,000
LT = 40,001
ST = 20,001

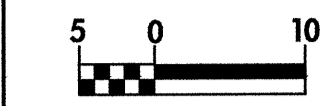
-Y12-RPB
PI Sta 0+76.454
 $\Delta = 1' 04'' 38.5''$ (LT)
L = 32,906
T = 16,454
R = 1,750,000
SE = 0.03
RO = 60,000
DS = 110 kph

-Y12-RPB
PIs Sta 1+12.907
Os = 0' 58'' 56.0''
L = 60,000
LT = 40,001
ST = 20,001

-Y10- STA 12+34.754
BEGIN CONSTRUCTION
EDWIN G. OSTENDORF
DB 1174 PG 598

ROBERT OSTENDORF
DB 3440 PG 18

12 x 6 x 1
38 mm Skimmer
with 24 mm
Orifice Diameter
2 m weir
ID 23.3C



MATCHLINE STA. 0+60
MATCHLINE STA. 138+60
MATCHLINE STA. 11+92
MATCHLINE STA. 14+60
MATCHLINE STA. 14+60
MATCHLINE STA. 14+60
MATCHLINE STA. 14+60
MATCHLINE STA. 14+60

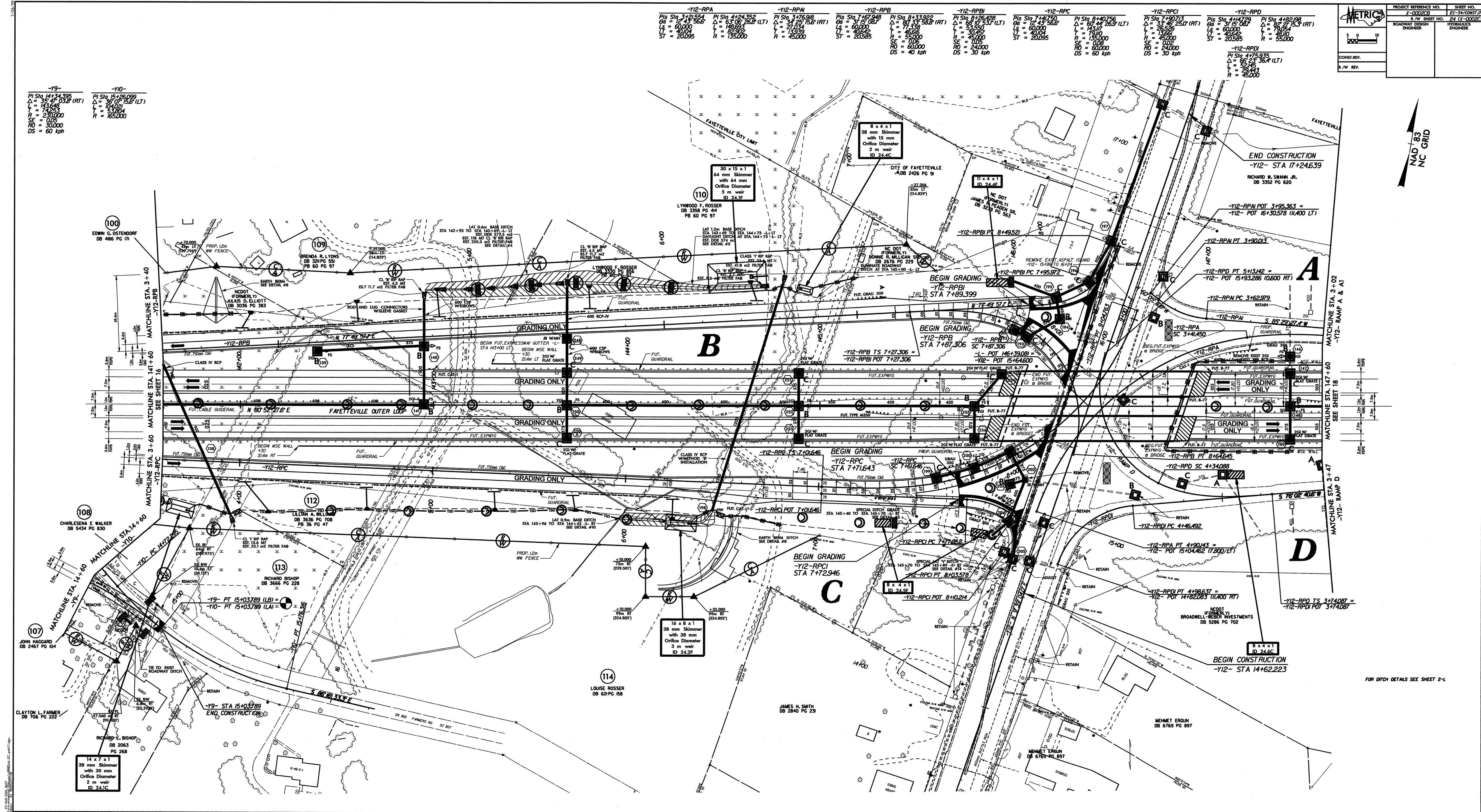
MATCHLINE STA. 0+40
MATCHLINE STA. 3+40
MATCHLINE STA. 141+60
MATCHLINE STA. 3+60
MATCHLINE STA. 14+60
MATCHLINE STA. 14+60
MATCHLINE STA. 14+60
MATCHLINE STA. 14+60

15 x 6 x 1
2 m weir
ID 23.1C

10 x 10 x 1
3 m weir
ID 23.1F
(See Infiltration
Basin Detail)

FOR DITCH DETAILS SEE SHEET 2-L
FOR -L- PROFILE SEE SHEET 27
FOR -Y9- PROFILE SEE SHEET 32
FOR -Y12-RPB PROFILE SEE SHEET 33 & 34
FOR -Y12-RPC PROFILE SEE SHEET 34 & 35





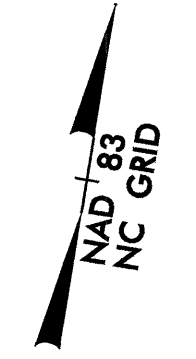
-Y9-	-Y10-
PI Sta 14+31.396 GS = 143.648 LS = 60.000 ST = 20.095	PI Sta 15+26.029 GS = 143.648 LS = 60.000 ST = 20.095
$\Delta = 35.013$ (RT)	$\Delta = 35.013$ (LT)
$R = 230.000$	$R = 65.000$
$DS = 60$ kph	

-Y12-RPA	-Y12-RPB	-Y12-RPC	-Y12-RPD
PI Sta 4+24.359 GS = 143.648 LS = 60.000 ST = 20.095	PI Sta 3+78.308 GS = 143.648 LS = 60.000 ST = 20.095	PI Sta 8+13.992 GS = 143.648 LS = 60.000 ST = 20.095	PI Sta 4+82.998 GS = 143.648 LS = 60.000 ST = 20.095
$\Delta = 63.08$ (LT)	$\Delta = 27.07$ (RT)	$\Delta = 88.01$ (LT)	$\Delta = 92.07$ (RT)
$R = 135.000$	$R = 45.000$	$R = 45.000$	$R = 55.000$
		$DS = 40$ kph	$DS = 30$ kph

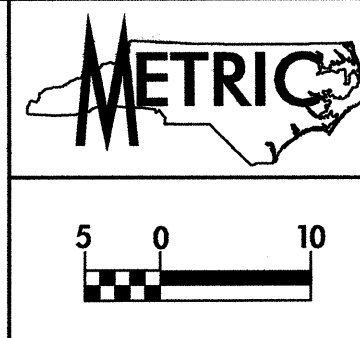
PROJECT REFERENCE NO. X-000282
SHEET NO. EC-34/CONST. 21 (X-000282)

ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER

CONST. REV.
R/W REV.

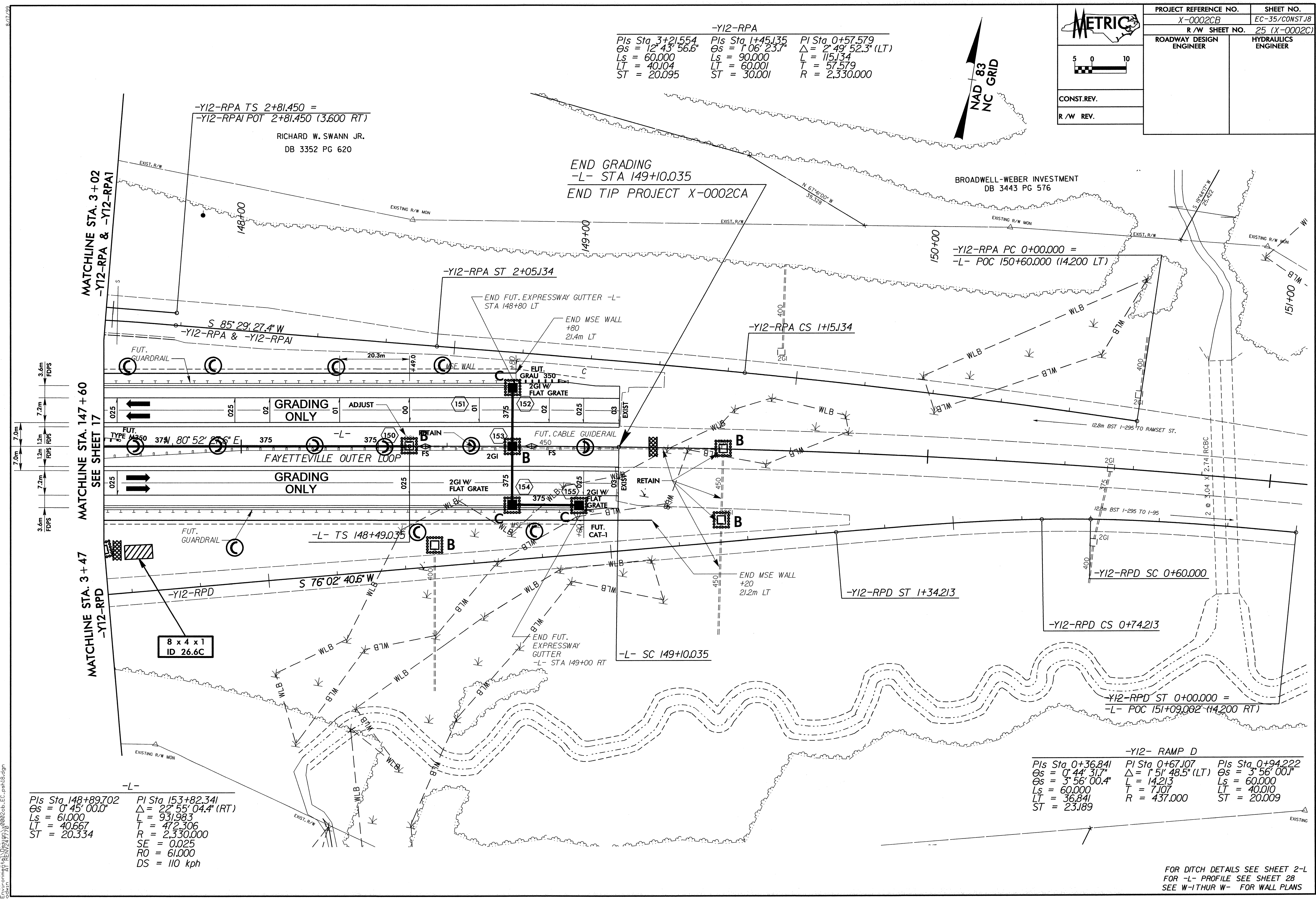
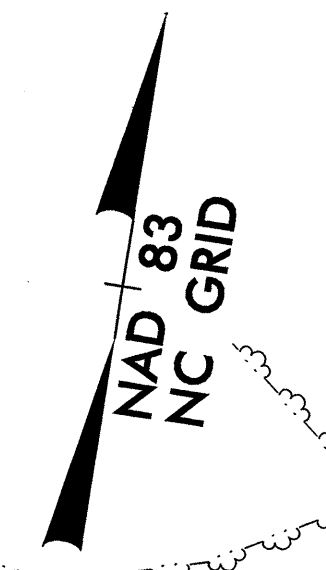


FOR DITCH DETAILS SEE SHEET 2-1



PROJECT REFERENCE NO.	SHEET NO.
X-0002CB	EC-35/CONST.B
R/W SHEET NO.	25 (X-0002C)
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST. REV.	
R/W REV.	

-Y12-RPA
 Pls Sta 3+21.554 $\Delta = 12^\circ 43' 56.6"$ $L_s = 60.000$ $LT = 40.104$ $ST = 20.095$
 Pls Sta 1+45.135 $\Delta = 1^\circ 06' 23.7"$ $L_s = 90.000$ $LT = 60.001$ $ST = 30.001$
 Pls Sta 0+57.579 $\Delta = 2^\circ 49' 52.3"$ (LT) $L = 115.134$ $T = 57.579$ $R = 2,330.000$



-L-
 Pls Sta 148+89.702 $\Delta = 0^\circ 45' 00.0"$ $L_s = 61.000$ $LT = 40.667$ $ST = 20.334$
 Pls Sta 153+82.341 $\Delta = 22^\circ 55' 04.4"$ (RT) $L = 931.983$ $T = 472.306$ $R = 2,330.000$ $SE = 0.025$ $RO = 61.000$ $DS = 110$ kph

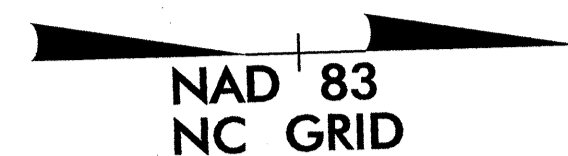
-Y12- RAMP D
 Pls Sta 0+36.841 $\Delta = 0^\circ 44' 31.7"$ $L_s = 60.000$ $LT = 36.841$ $ST = 23.189$
 Pls Sta 0+67.107 $\Delta = 1^\circ 51' 48.5"$ (LT) $L = 14.213$ $T = 7.107$ $R = 437.000$
 Pls Sta 0+94.222 $\Delta = 3^\circ 56' 00.0"$ $L_s = 60.000$ $LT = 40.010$ $ST = 20.009$

FOR DITCH DETAILS SEE SHEET 2-L
 FOR -L- PROFILE SEE SHEET 28
 SEE W-1THUR W- FOR WALL PLANS

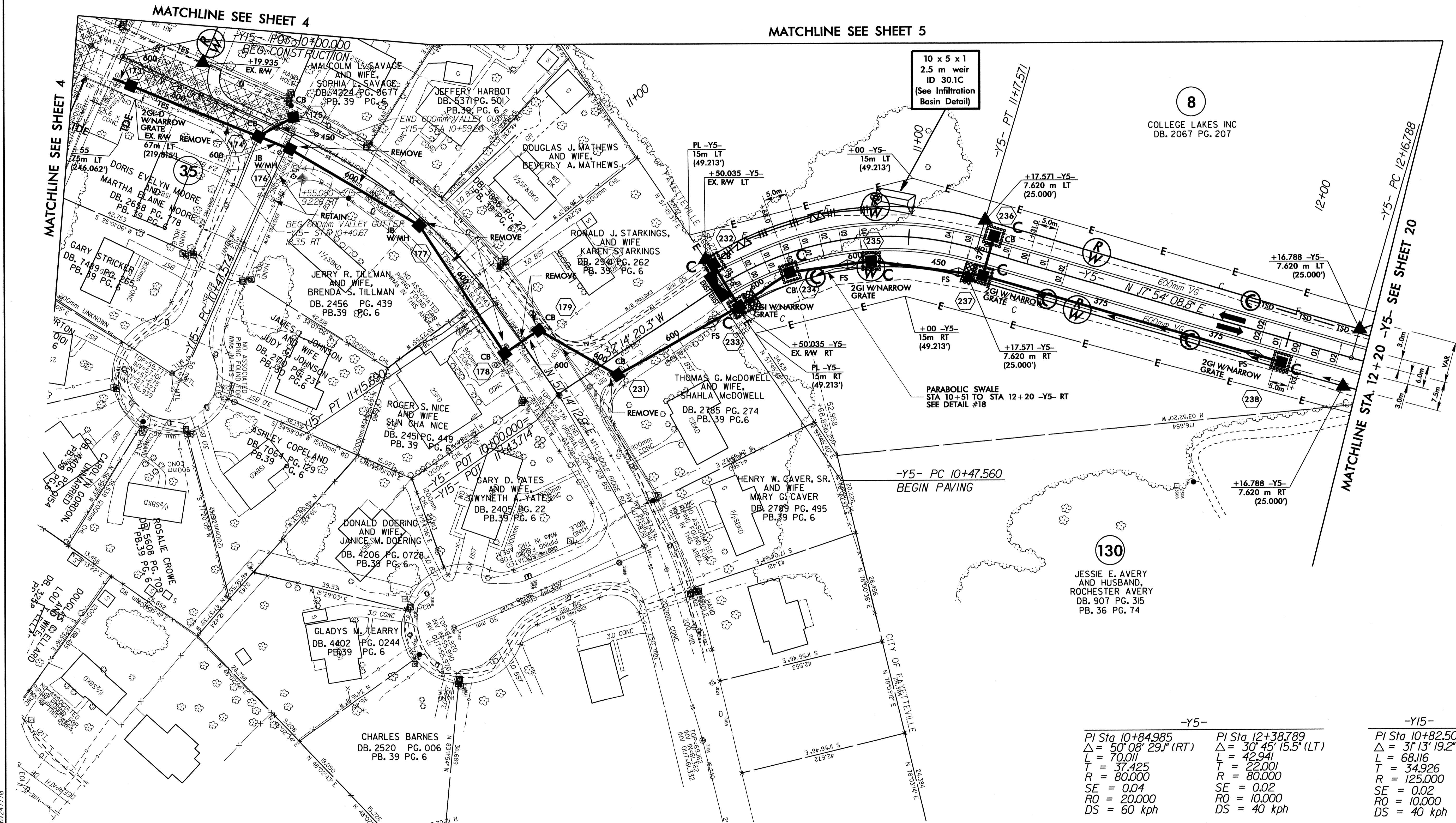
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PROJECT REFERENCE NO. X-0002CB		SHEET NO. EC-36/CONST.19	
R/W SHEET NO. 30 (X-0002C)		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
CONST. REV.			
R/W REV.			



MATCHLINE SEE SHEET 5



-Y5-	-Y5-	-Y15-
PI Sta 10+84.985	PI Sta 12+38.789	PI Sta 10+82.500
$\Delta = 50^{\circ} 08' 29.1''$ (RT)	$\Delta = 30^{\circ} 45' 15.5''$ (LT)	$\Delta = 31^{\circ} 13' 19.2''$ (RT)
L = 70.011	L = 42.941	L = 68.116
T = 37.425	T = 22.001	T = 34.926
R = 80.000	R = 80.000	R = 125.000
SE = 0.04	SE = 0.02	SE = 0.02
RO = 20.000	RO = 10.000	RO = 10.000
DS = 60 kph	DS = 40 kph	DS = 40 kph

FOR DITCH DETAILS SEE SHEET 2-L
FOR INTERSECTION DETAIL SEE SHEET 2-K
FOR -Y5- PROFILE SEE SHEET 30

8/17/19
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