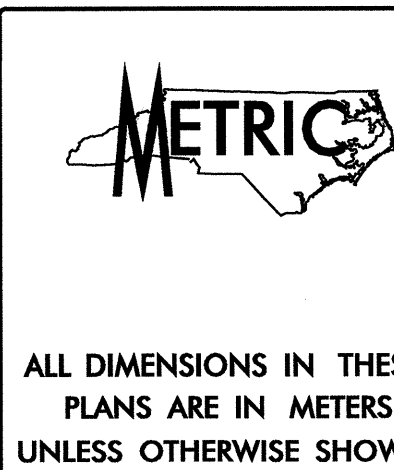


**TIP PROJECT: X-0002CA**

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

**LOCATION: NC 24 EXTENSION (FAYETTEVILLE OUTER LOOP) FROM 1.3 MILES EAST OF NC-87/NC-210 (MURCHISON RD.) TO WEST OF SR 1600 (MCARTHUR RD.)**

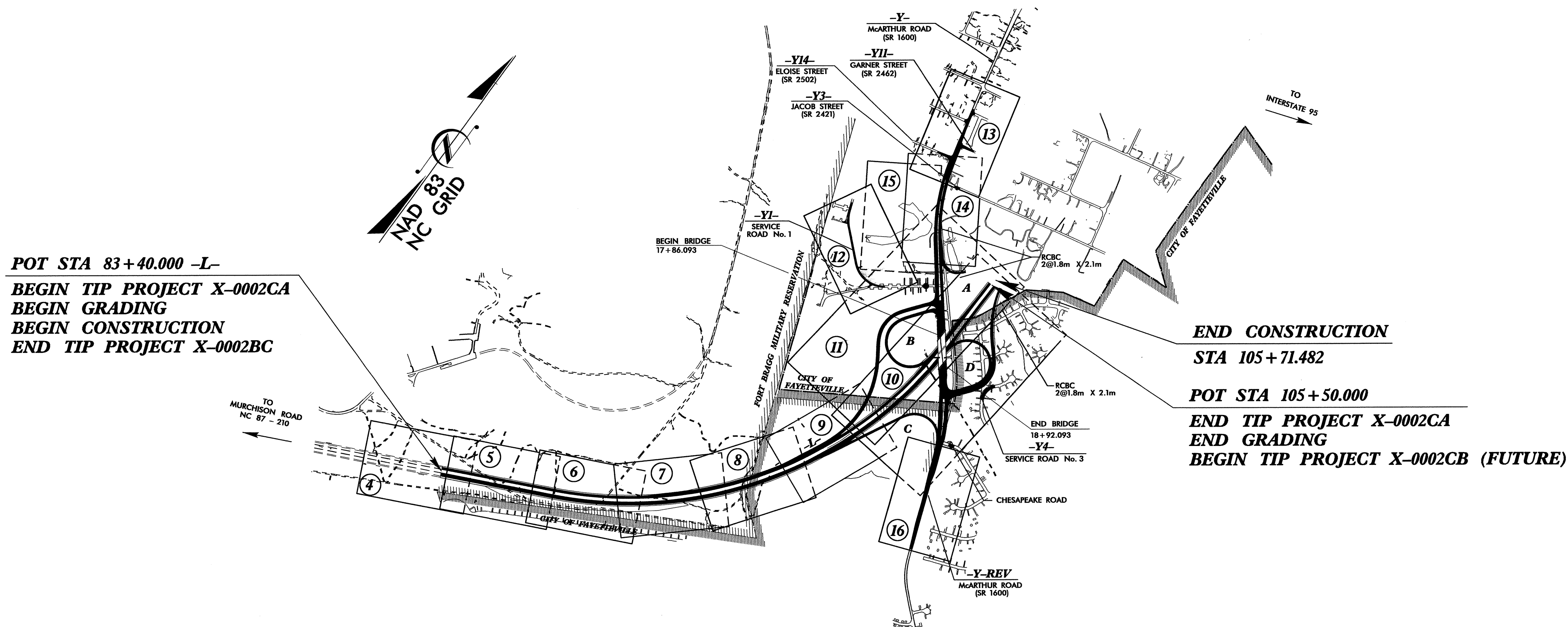
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES AND SIGNING**



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

**EROSION AND SEDIMENT CONTROL MEASURES**

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
	Temporary Silt Fence	TSF
	Special Sediment Control Fence	SSCF
1622.01	Temporary Berms and Slope Drains	TBD
	Silt Basin Type B	SB
1633.01	Temporary Rock Silt Check Type-A	TRSCA
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	TRSCA-PAM
1633.02	Temporary Rock Silt Check Type-B	TRSCB
	Wattle / Coir Fiber Wattle	WF
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	WF-PAM
1634.01	Temporary Rock Sediment Dam Type-A	TRSDA
1634.02	Temporary Rock Sediment Dam Type-B	TRSDA-B
1635.01	Rock Pipe Inlet Sediment Trap Type-A	RPISTRA
1635.02	Rock Pipe Inlet Sediment Trap Type-B	RPISTRB
	Stilling Basin	SB
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
	Type C	C
	Skimmer Basin	SB
	Tiered Skimmer Basin	TSB
	Infiltration Basin	IB



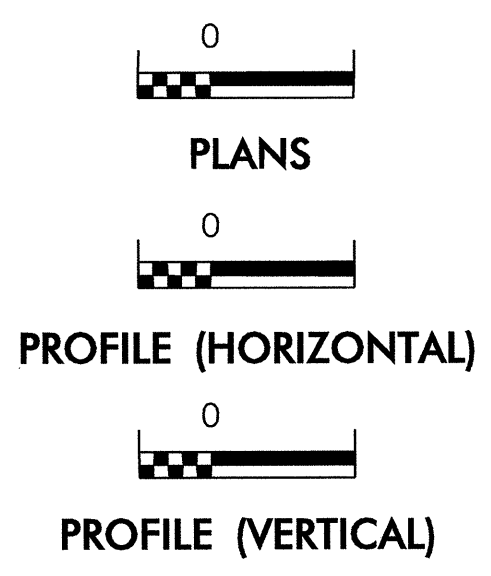
POT STA 83+40.000 -L-  
BEGIN TIP PROJECT X-0002CA  
BEGIN GRADING  
BEGIN CONSTRUCTION  
END TIP PROJECT X-0002BC

END CONSTRUCTION  
STA 105+71.482  
POT STA 105+50.000  
END TIP PROJECT X-0002CA  
END GRADING  
BEGIN TIP PROJECT X-0002CB (FUTURE)

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

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS

**GRAPHIC SCALE**



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.

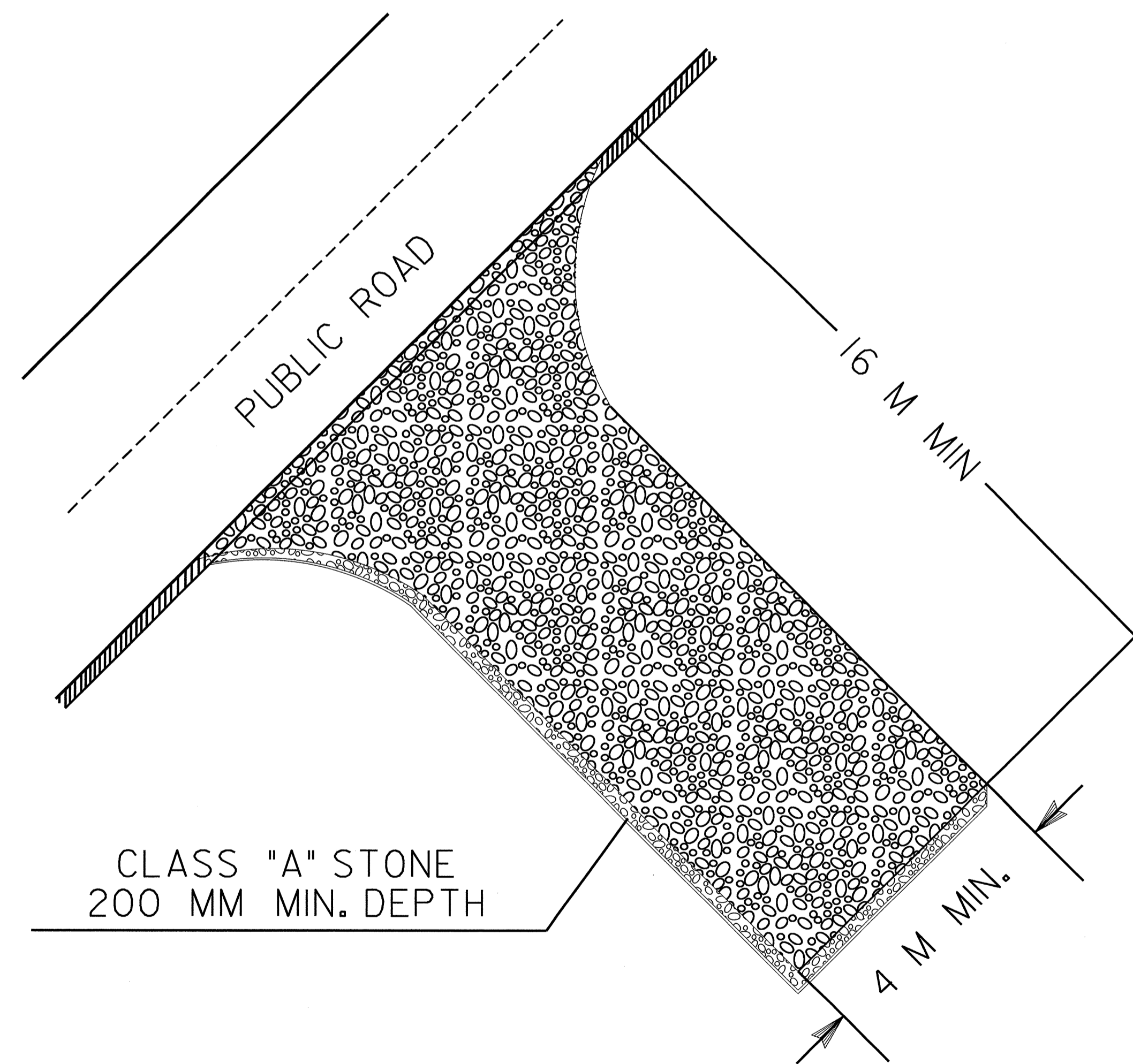
1622.01 Temporary Berms and Slope Drains	1633.01 Temporary Rock Silt Check Type A
1630.03 Temporary Silt Ditch	1633.02 Temporary Rock Silt Check Type B
1630.05 Temporary Diversion	1634.02 Temporary Rock Sediment Dam Type B
1632.02 Rock Inlet Sediment Trap Type B	1635.01 Rock Pipe Inlet Sediment Trap Type A
	1635.02 Rock Pipe Inlet Sediment Trap Type B

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

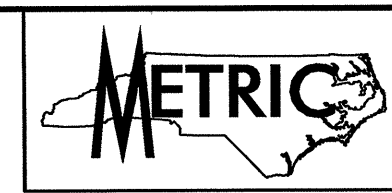
## TEMPORARY GRAVEL CONSTRUCTION ENTRANCE



### NOTES:

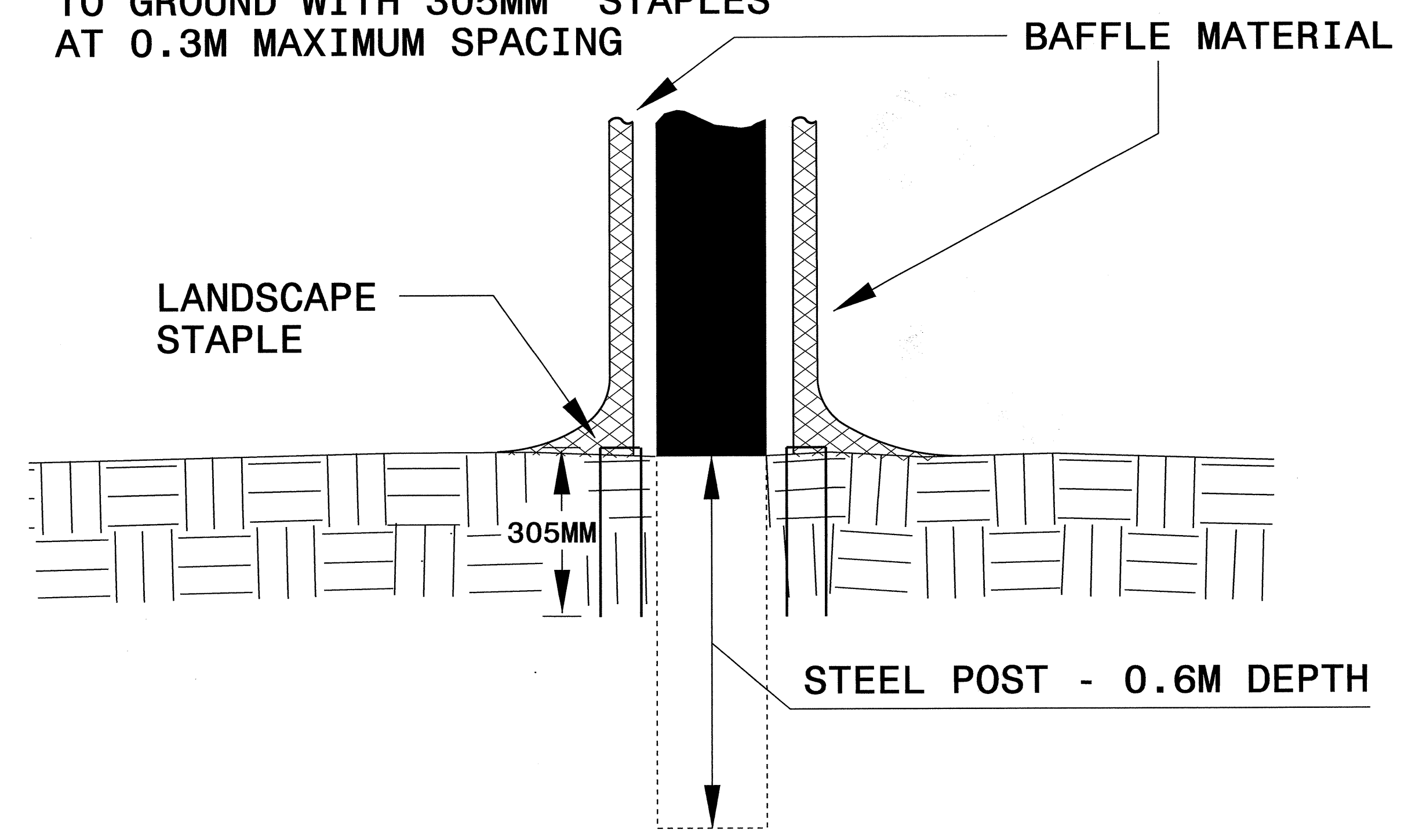
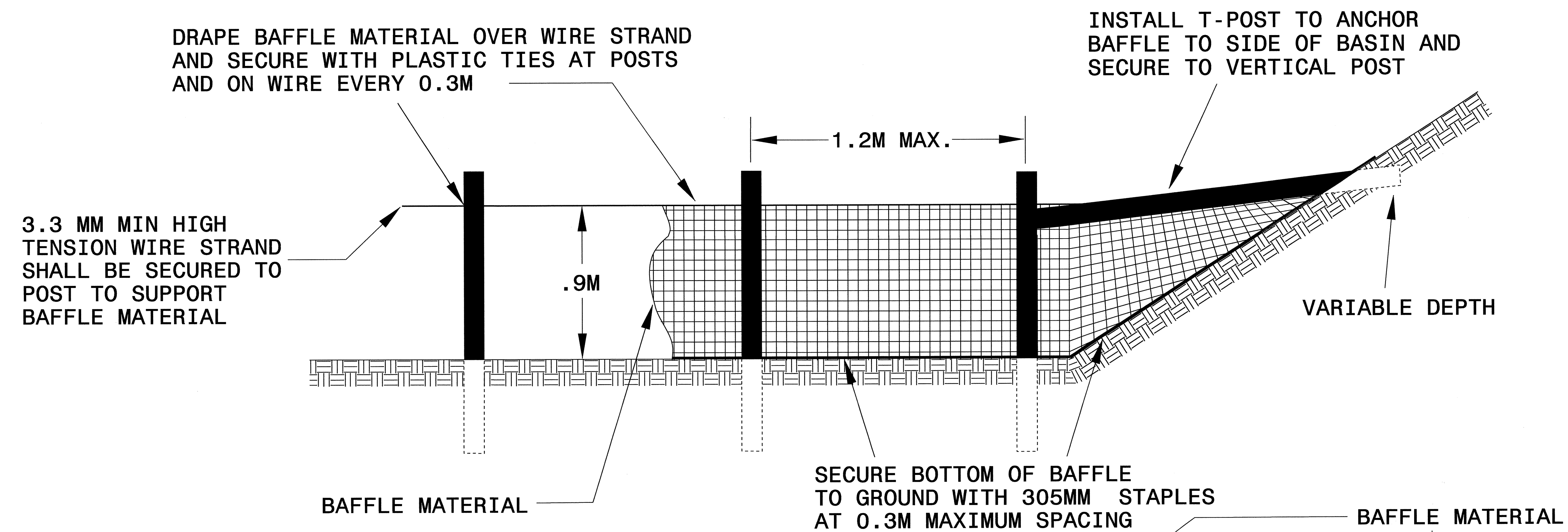
1. TURNING RADIUS SUFFICIENT TO ACCOMODATE LARGE TRUCKS SHALL BE PROVIDED.
2. ENTRANCE(S) SHOULD BE LOCATED TO PROVIDE FOR UTILIZATION BY ALL CONSTRUCTION VEHICLES.
3. MUST BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO STREETS. PERIODIC TOPDRESSING WITH STONE WILL 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-0002CA	SHEET NO. EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# COIR FIBER BAFFLE DETAIL




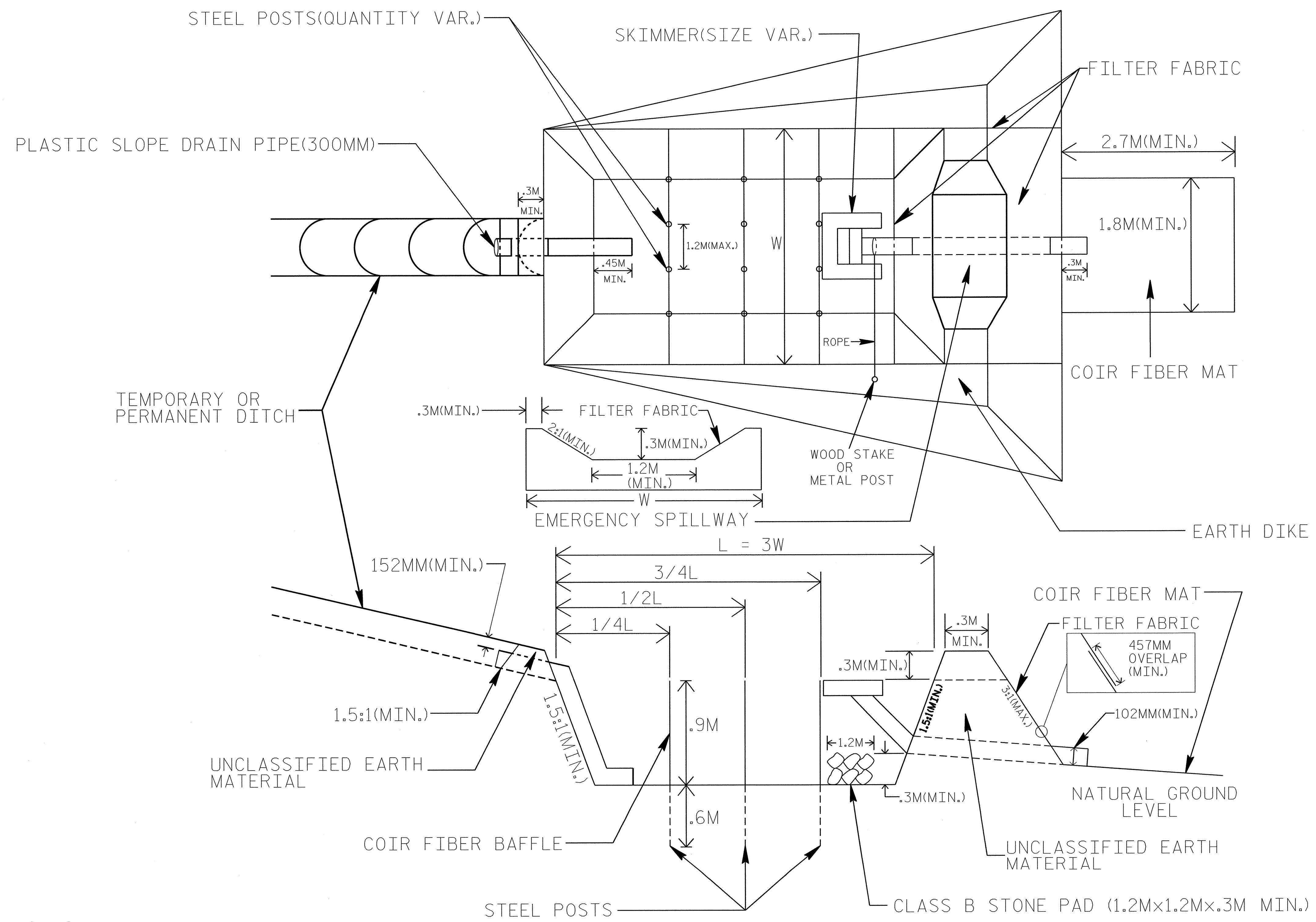
1. INSTALL THREE (3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF  $\frac{1}{4}$  THE BASIN LENGTH.
2. TWO (2) COIR FIBER BAFFLES CAN BE INSTALLED IN SILT BASINS AND DAMS LESS THAN 6 M IN LENGTH WITH A SPACING OF  $\frac{1}{3}$  THE BASIN LENGTH.
3. TOP HEIGHT 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



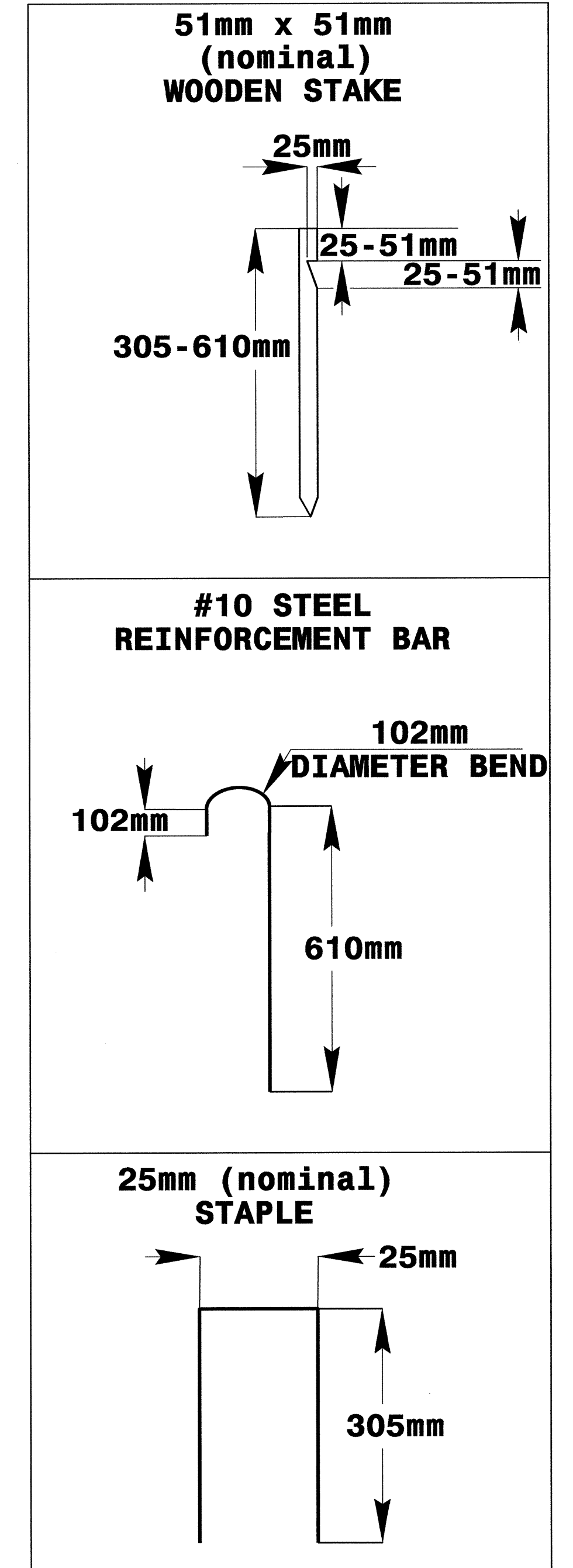
# SKIMMER BASIN WITH BAFFLES DETAIL

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



## 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. FILTER FABRIC FOR EMERGENCY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 457MM (MIN.) AS SHOWN.



## COIR FIBER MAT ANCHOR OPTIONS

NOT TO SCALE



# BORROW PIT DEWATERING BASIN DETAIL



PROJECT REFERENCE NO. X-0002CA	SHEET NO. EC-2C
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 (FT<sup>3</sup>), Q IS PUMP FLOW RATE (GPM), AND T IS DEWATERING TIME (HR). USE MAXIMUM FLOW RATE OF 1000 GPM AND A MINIMUM DEWATERING TIME OF 2 HOURS.

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

CONSTRUCT THE COIR FIBER BAFFLE 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.

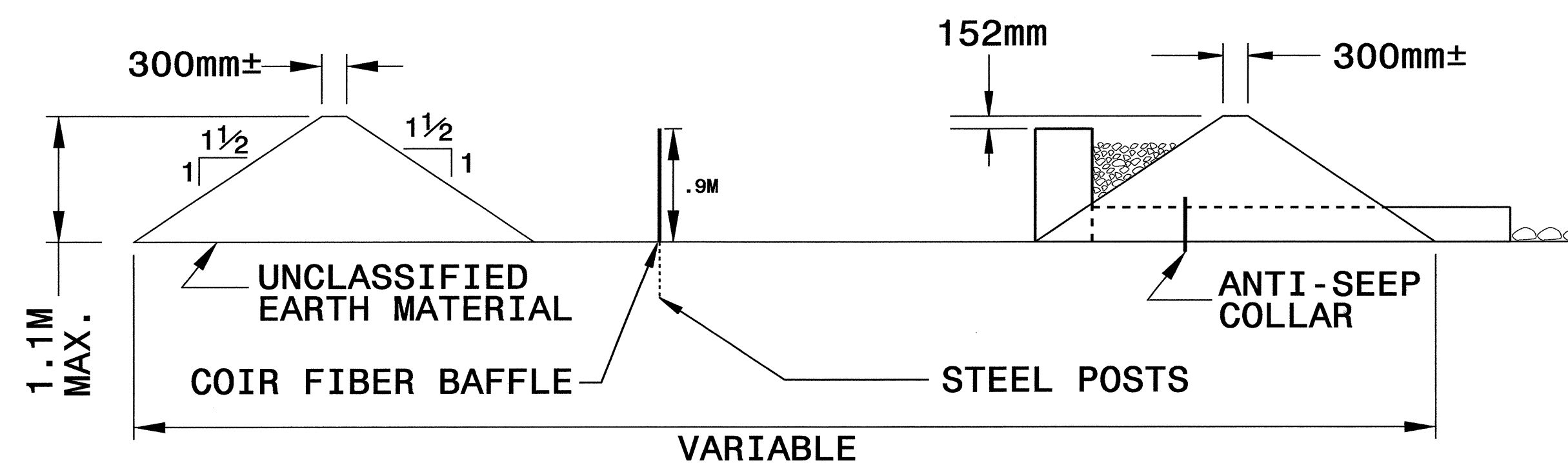
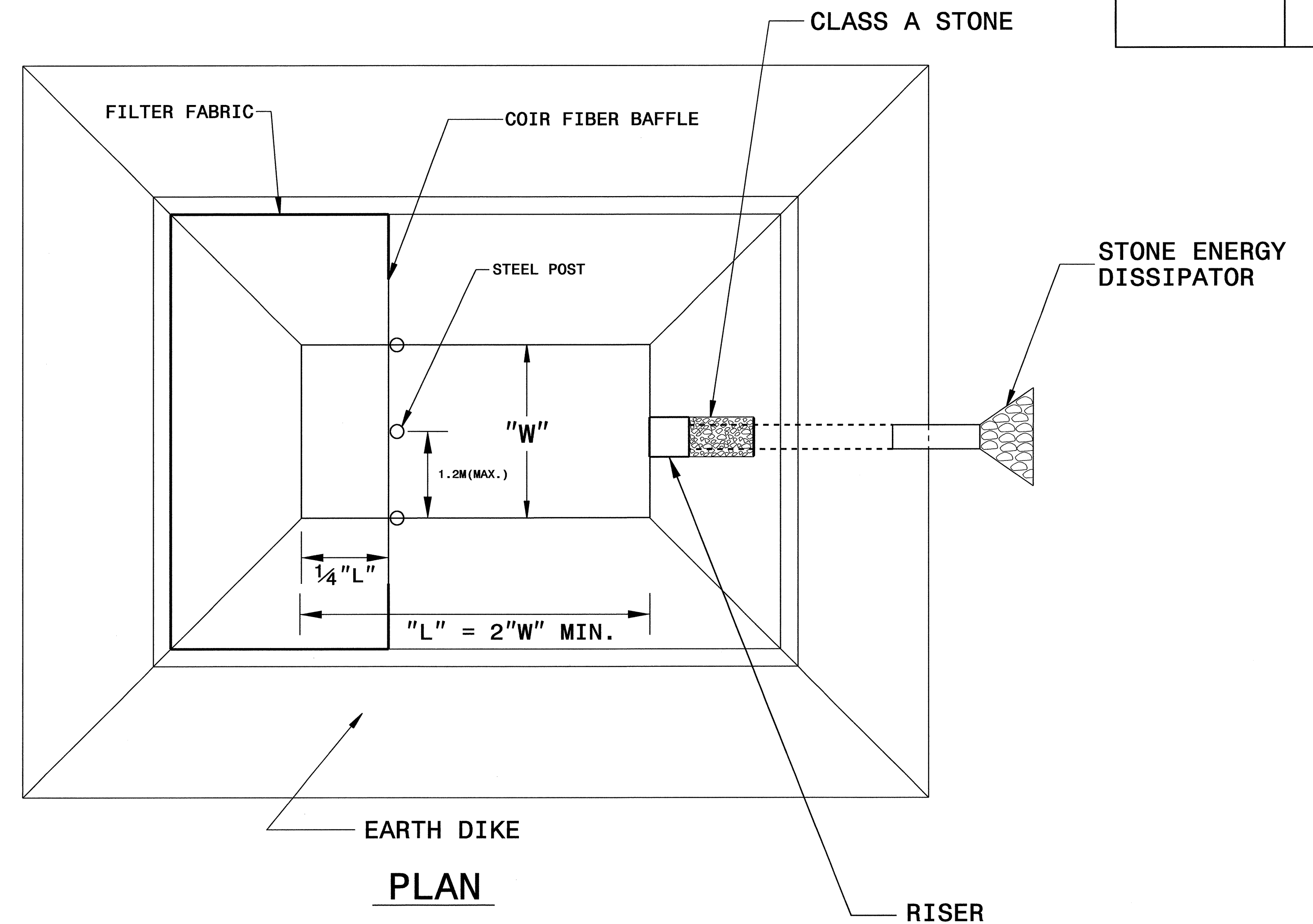
DO NOT EXCEED 1.1M IN HEIGHT FOR THE EARTH DIKES REQUIRED FOR BORROW PIT DEWATERING BASIN.

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.



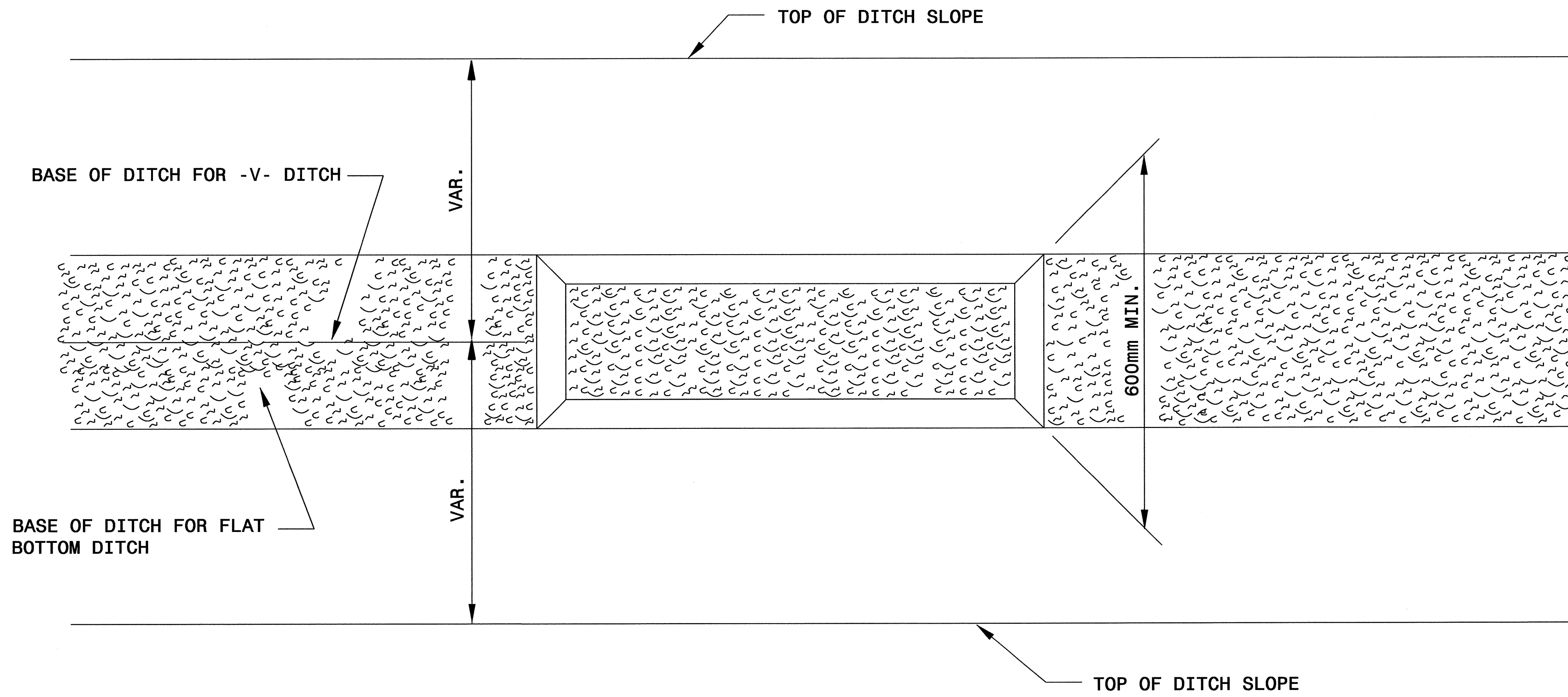
TYPICAL SECTION VIEW

NOT TO SCALE

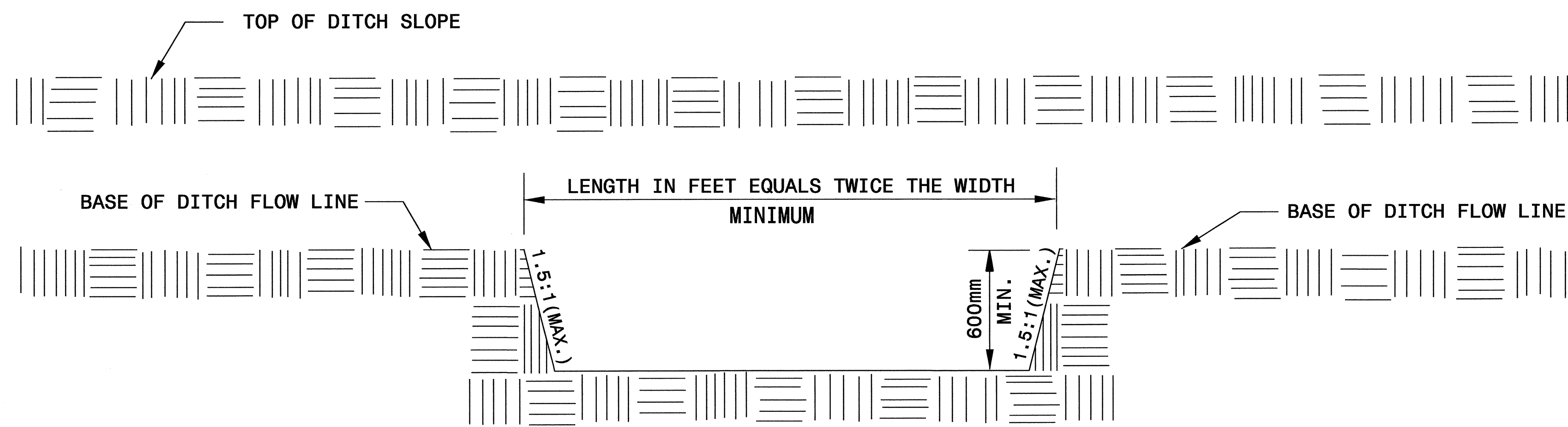


PROJECT REFERENCE NO.	SHEET NO.
X-0002CA	EC-2D
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# SILT BASIN 'B' DETAIL



PLAN

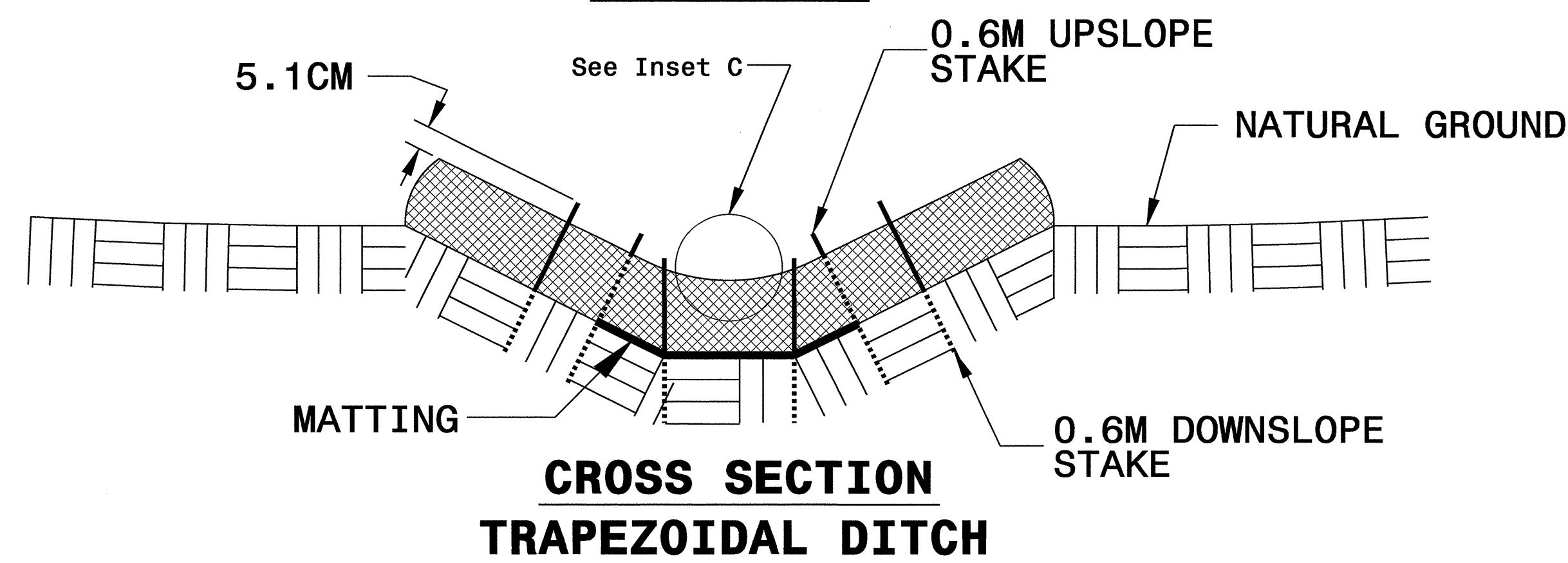
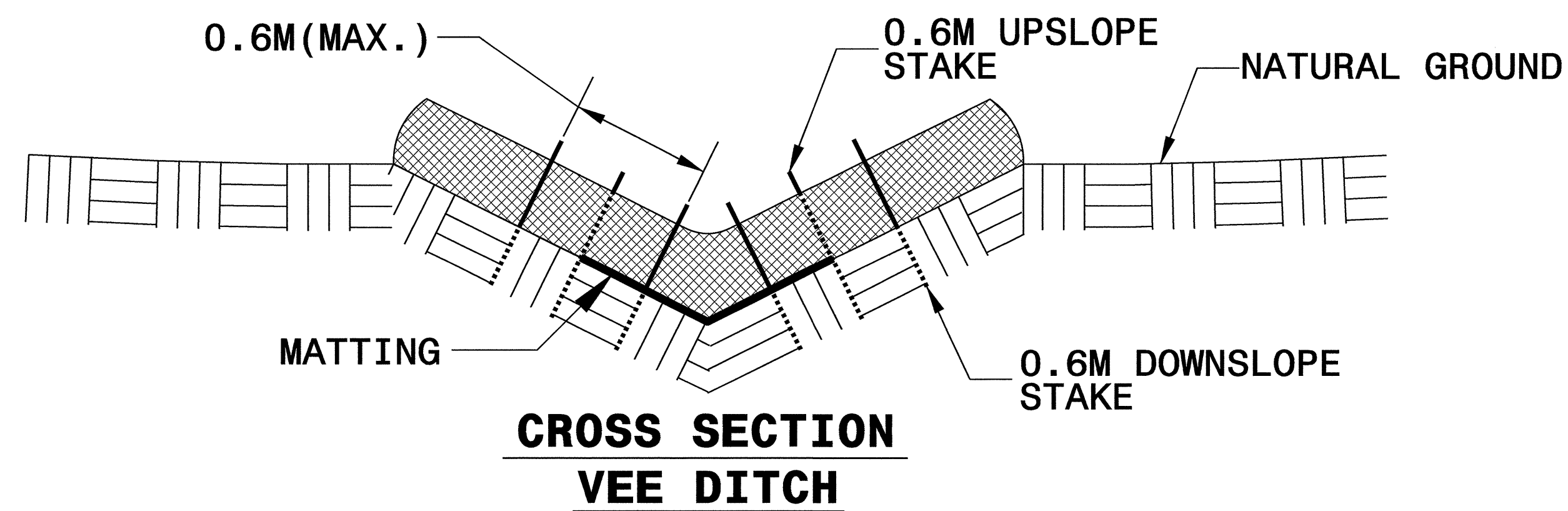
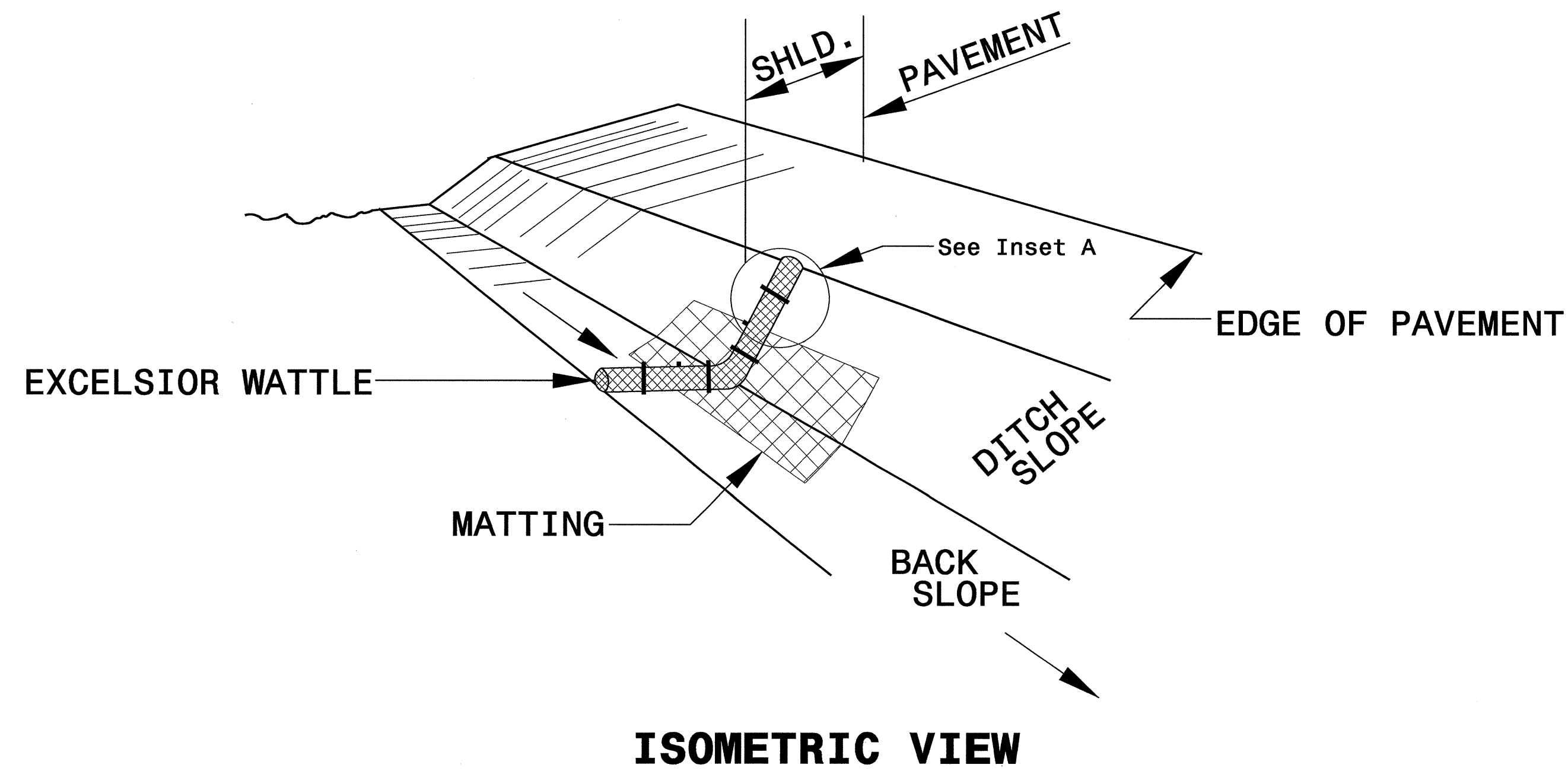


ELEVATION



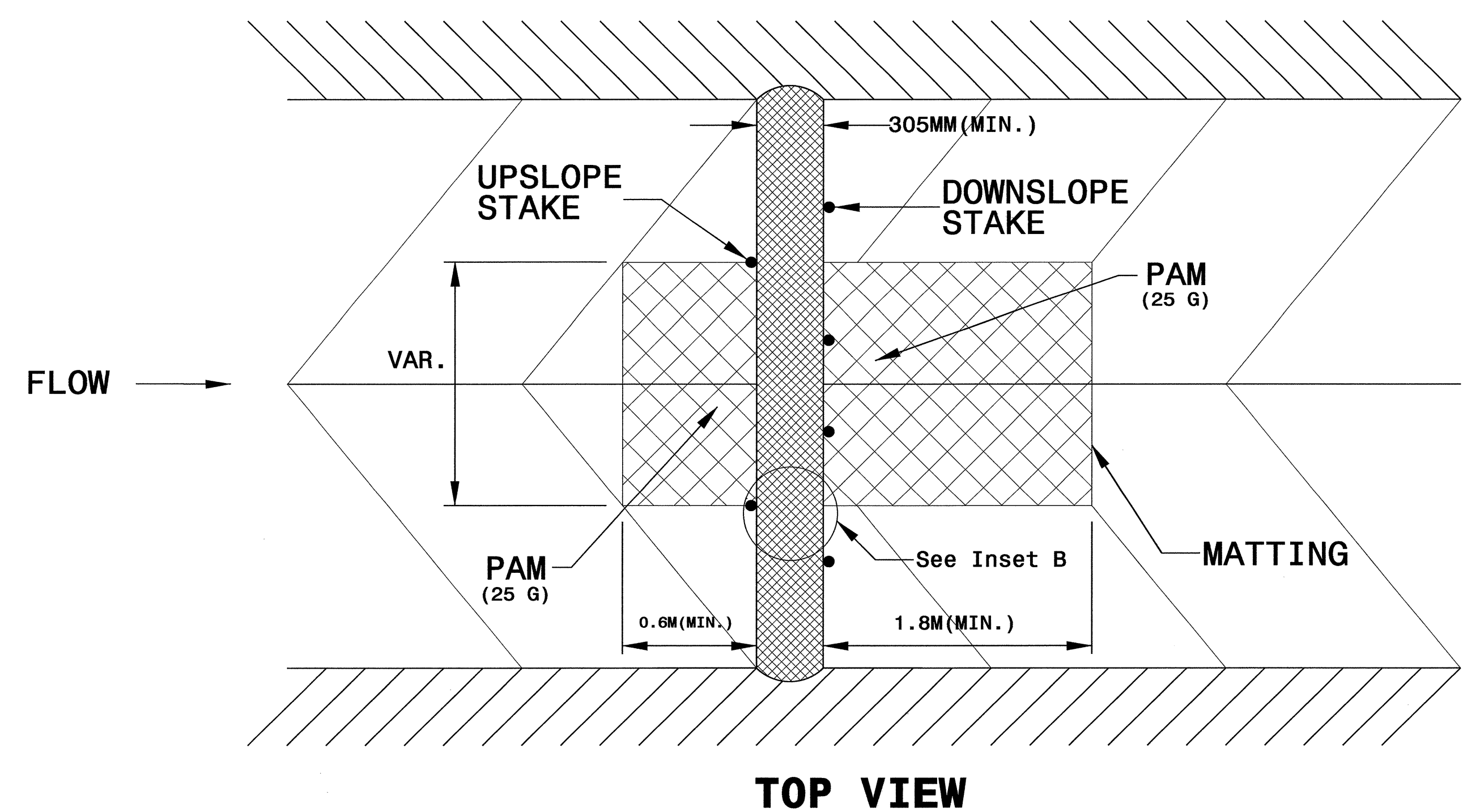
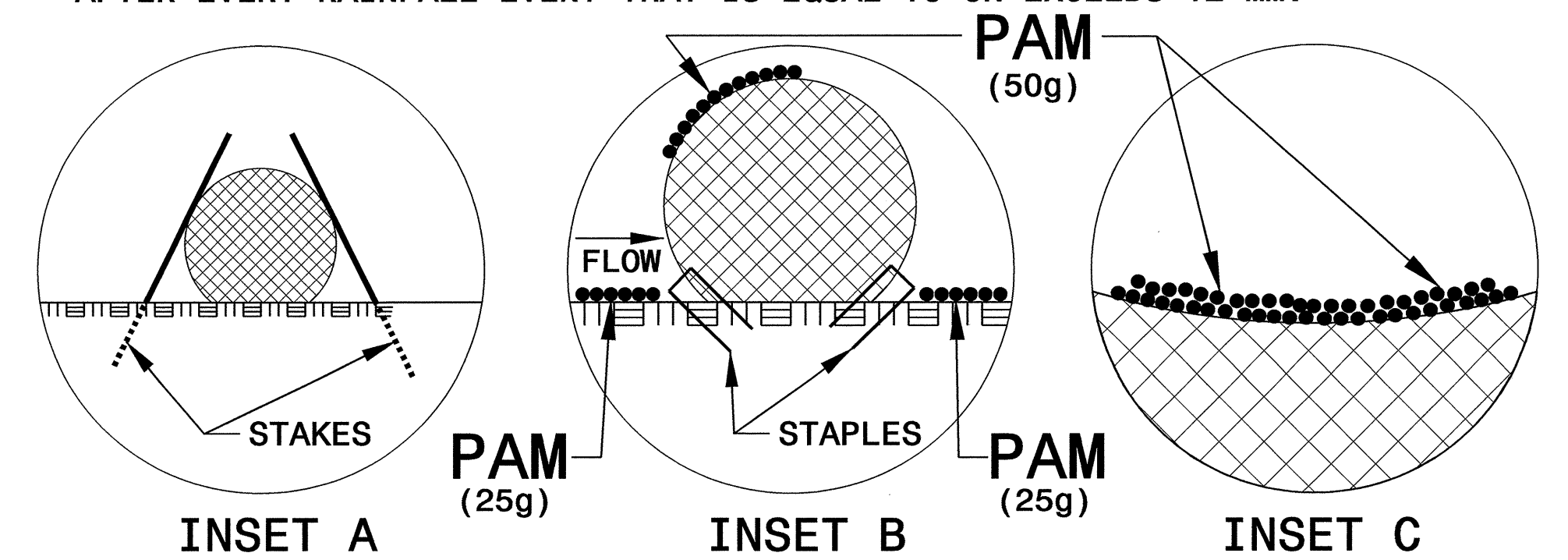
PROJECT REFERENCE NO. X-0002CA	SHEET NO. EC-2E
R / W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



**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.

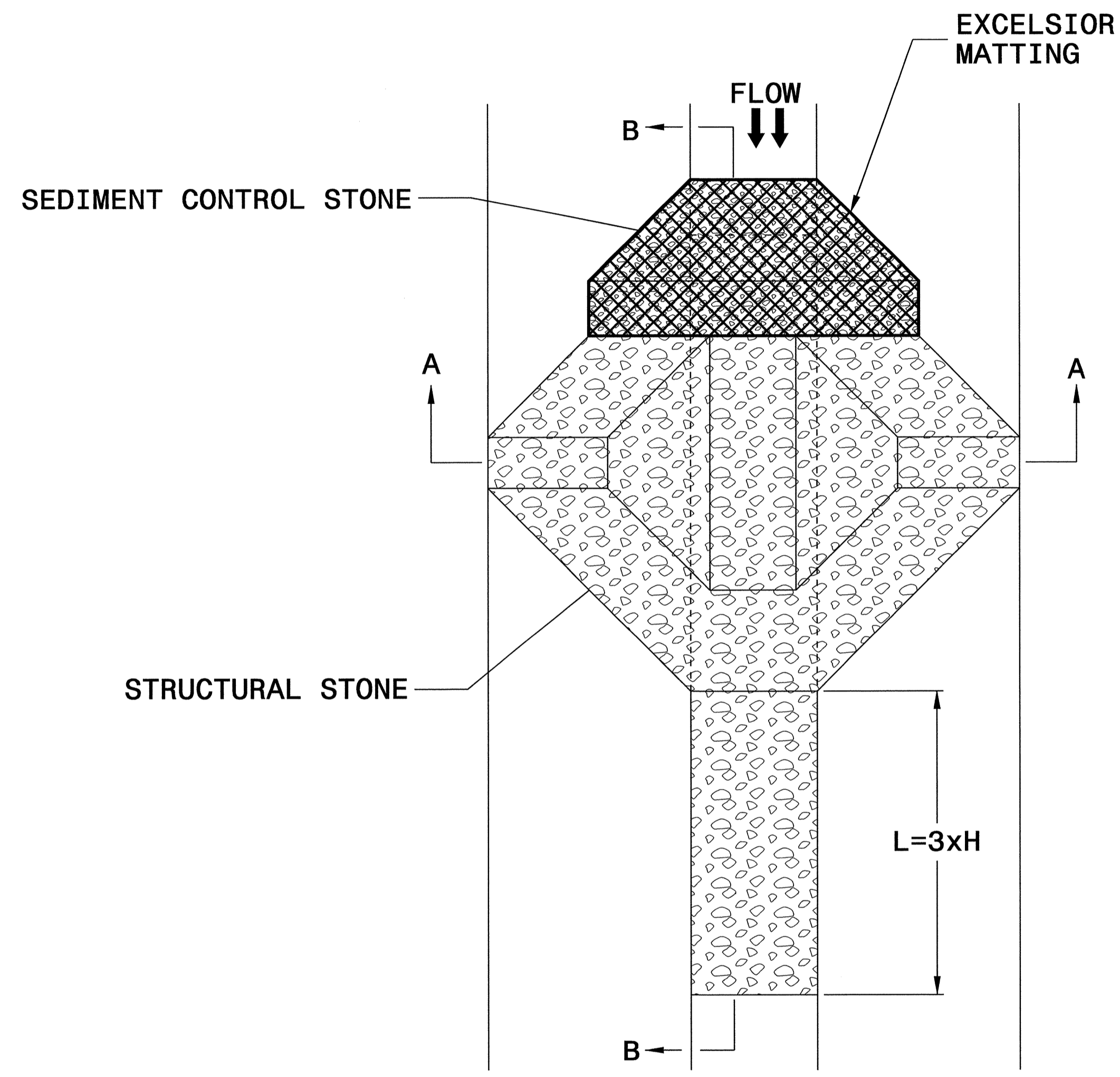






PROJECT REFERENCE NO. X-0002CA	SHEET NO. EC-2F
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



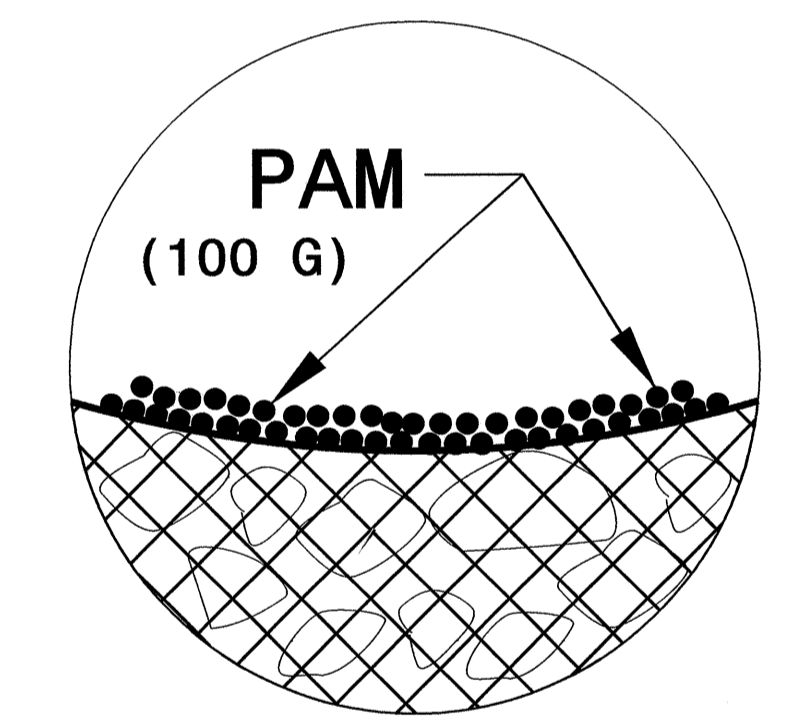
PLAN

## NOTES

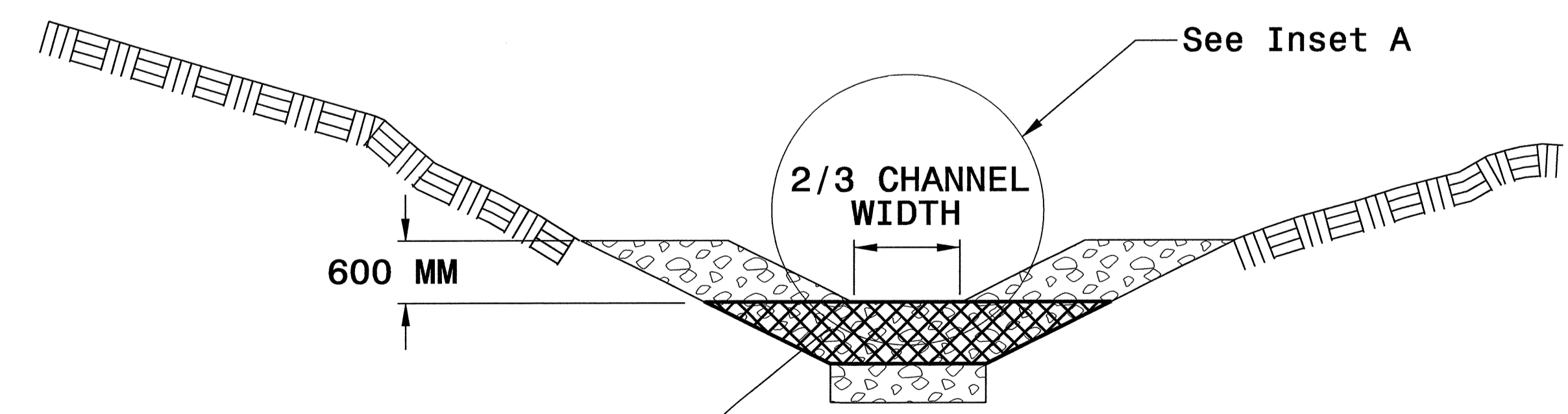
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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.

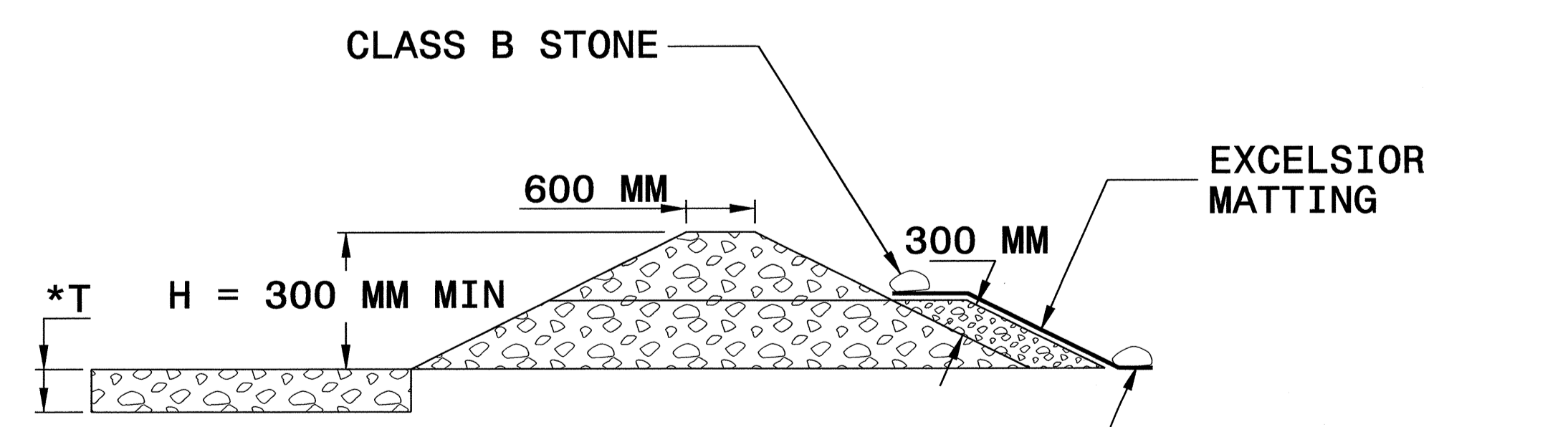
INITIALLY APPLY 100 GRAMS OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 12 MM.



INSET A



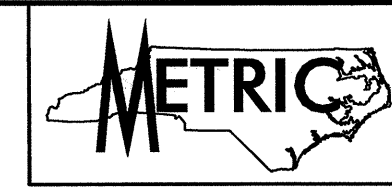
SECTION A-A



SECTION B-B

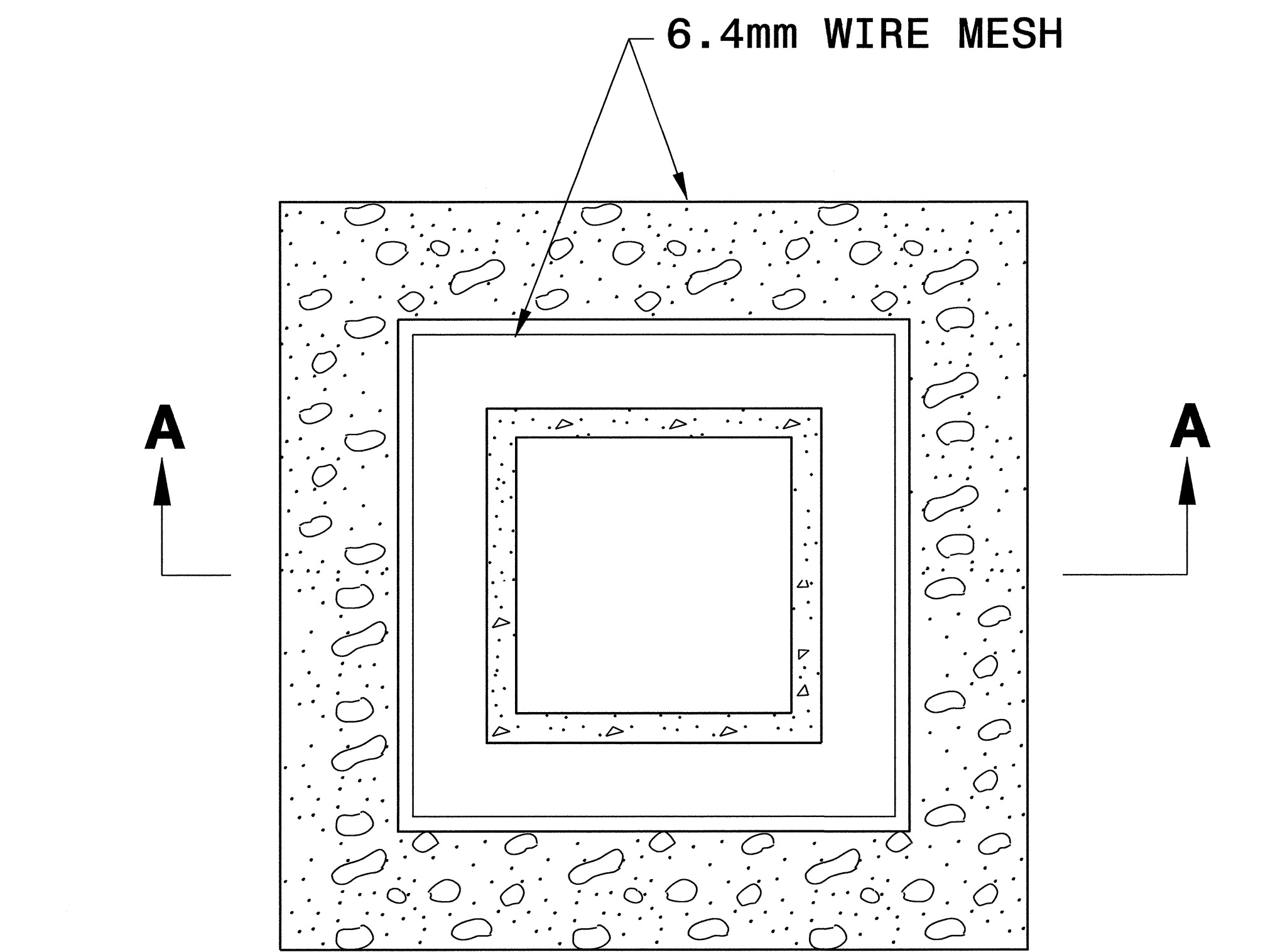
\*T = 300 MM MIN., 450 MM MAX.

NOT TO SCALE

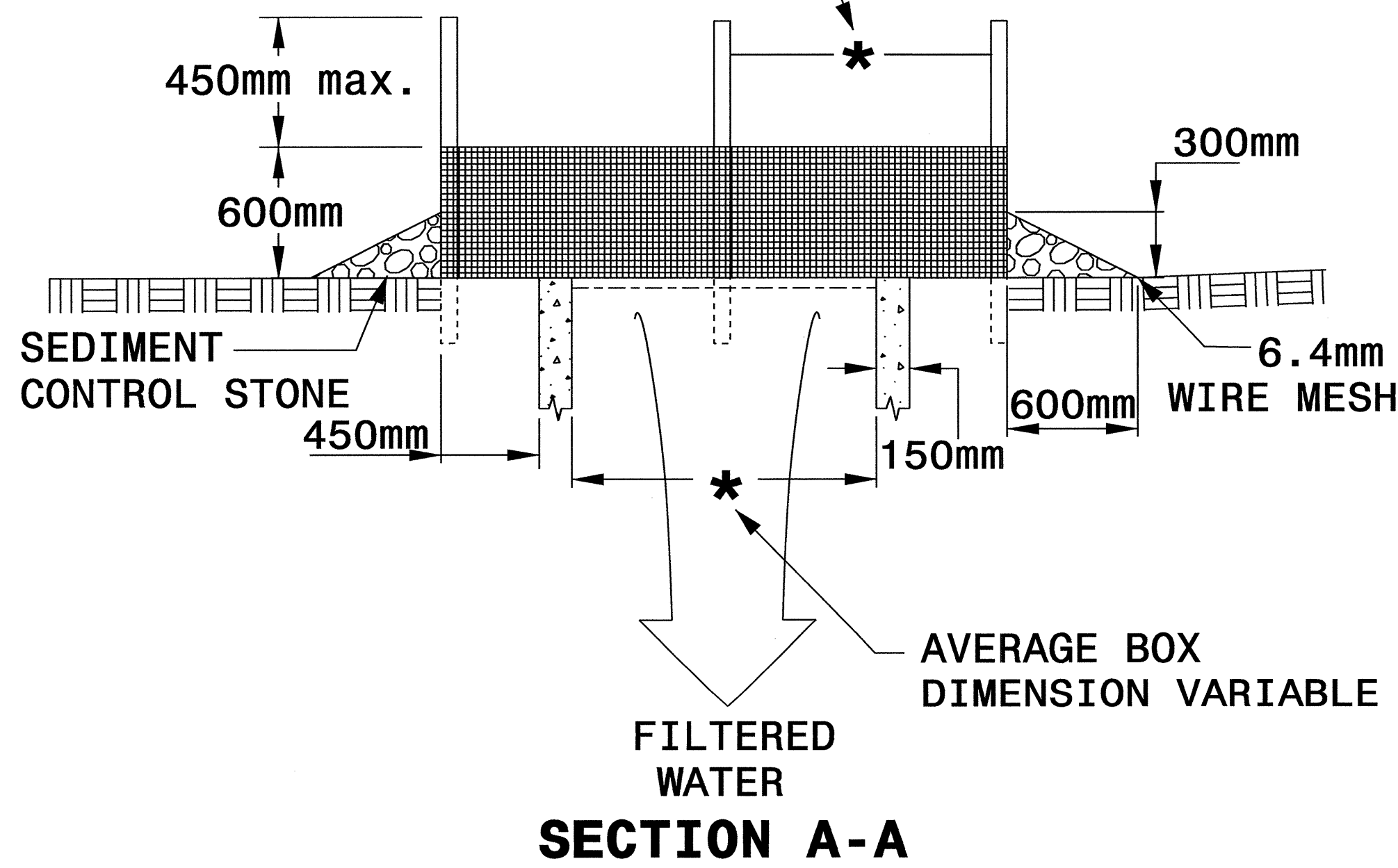


PROJECT REFERENCE NO. X-0002CA	SHEET NO. EC-26
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# ROCK INLET SEDIMENT TRAP TYPE 'C' DETAIL

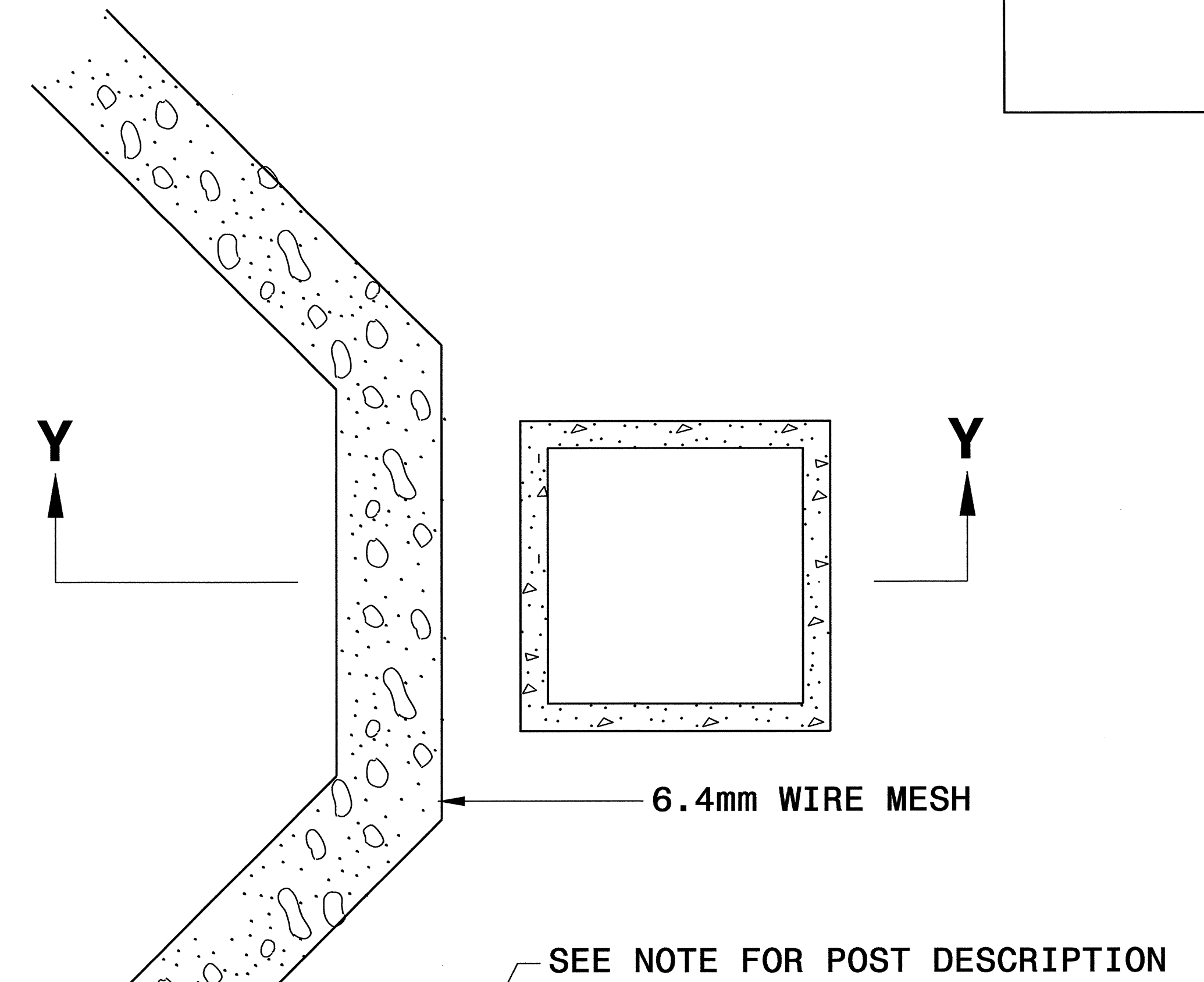


MAXIMUM POST SPACING 1.2m



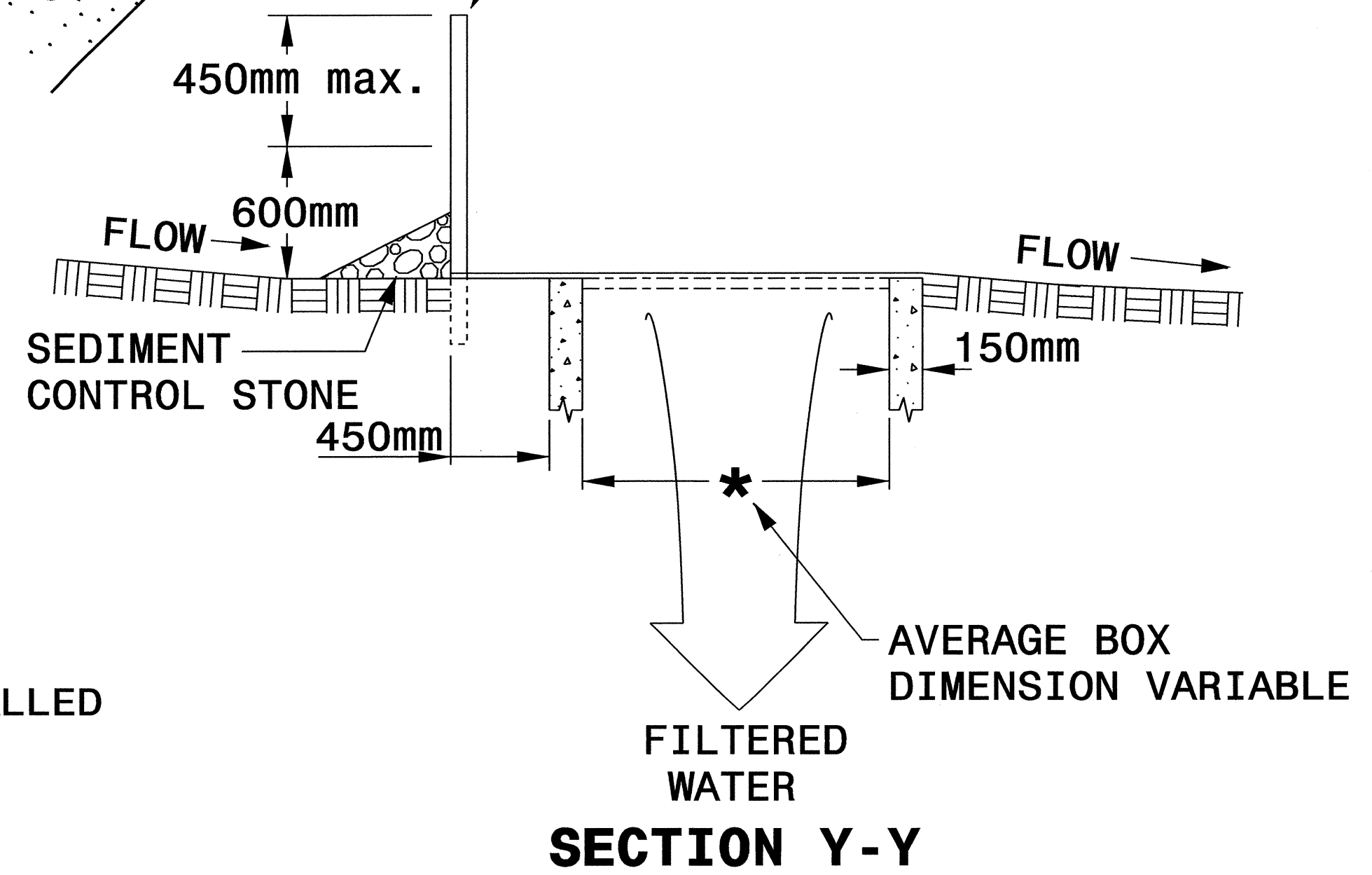
**SECTION A-A**

**MULTI-DIRECTIONAL FLOW**



6.4mm WIRE MESH

SEE NOTE FOR POST DESCRIPTION



**SECTION Y-Y**

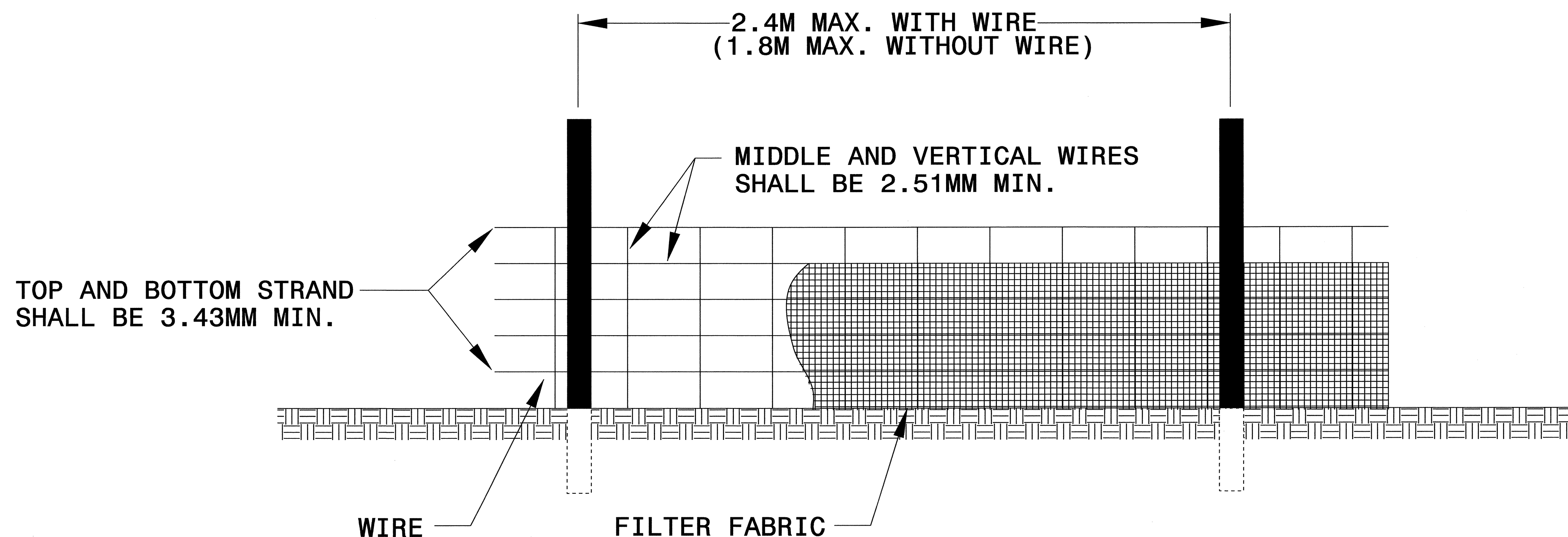
**SINGLE-DIRECTIONAL FLOW**

**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.	SHEET NO.
X-0002CA	EC-2H
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# TEMPORARY SILT FENCE DETAIL

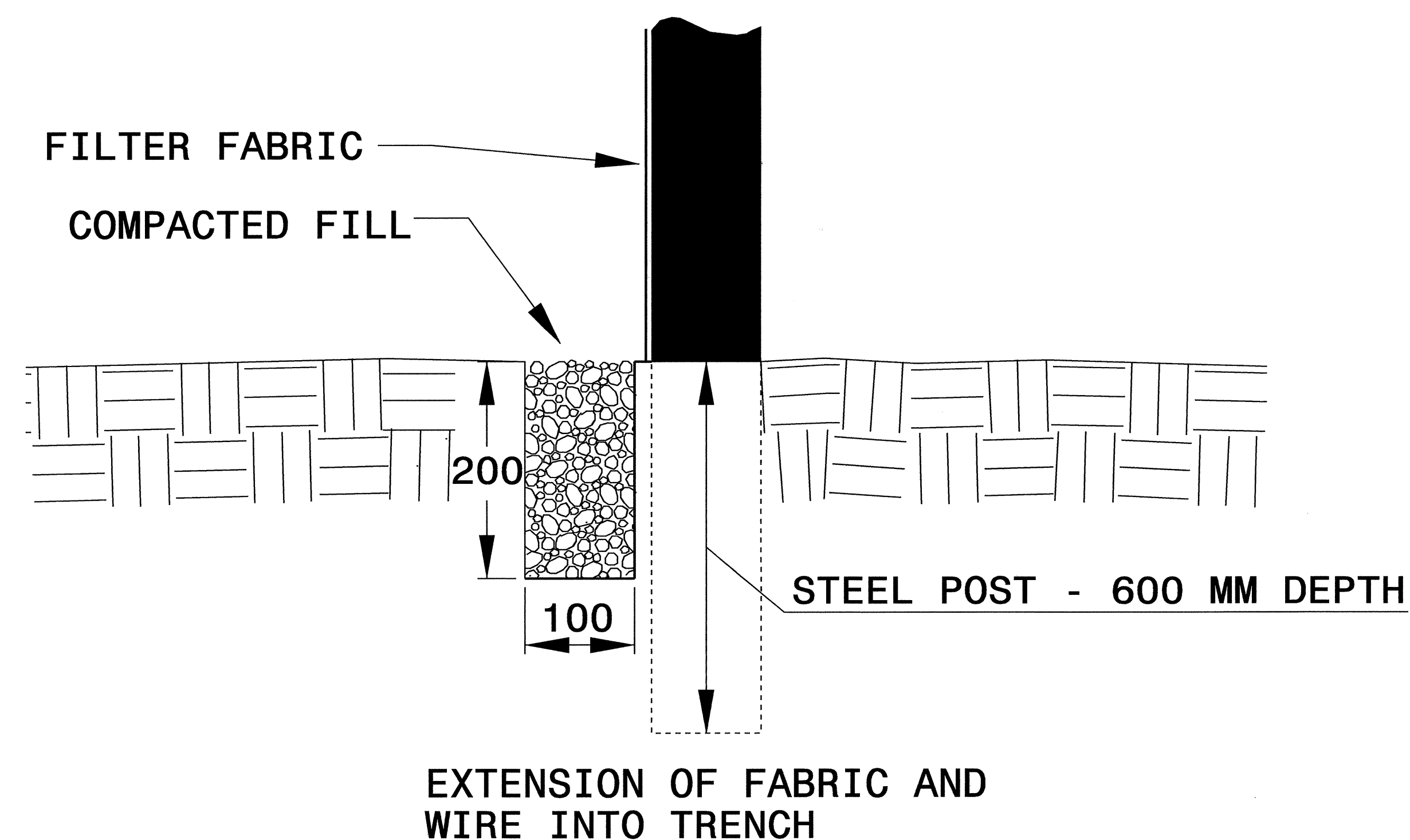


## NOTES

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-0002CA	SHEET NO. EC-21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# SPECIAL SEDIMENT CONTROL FENCE DETAIL

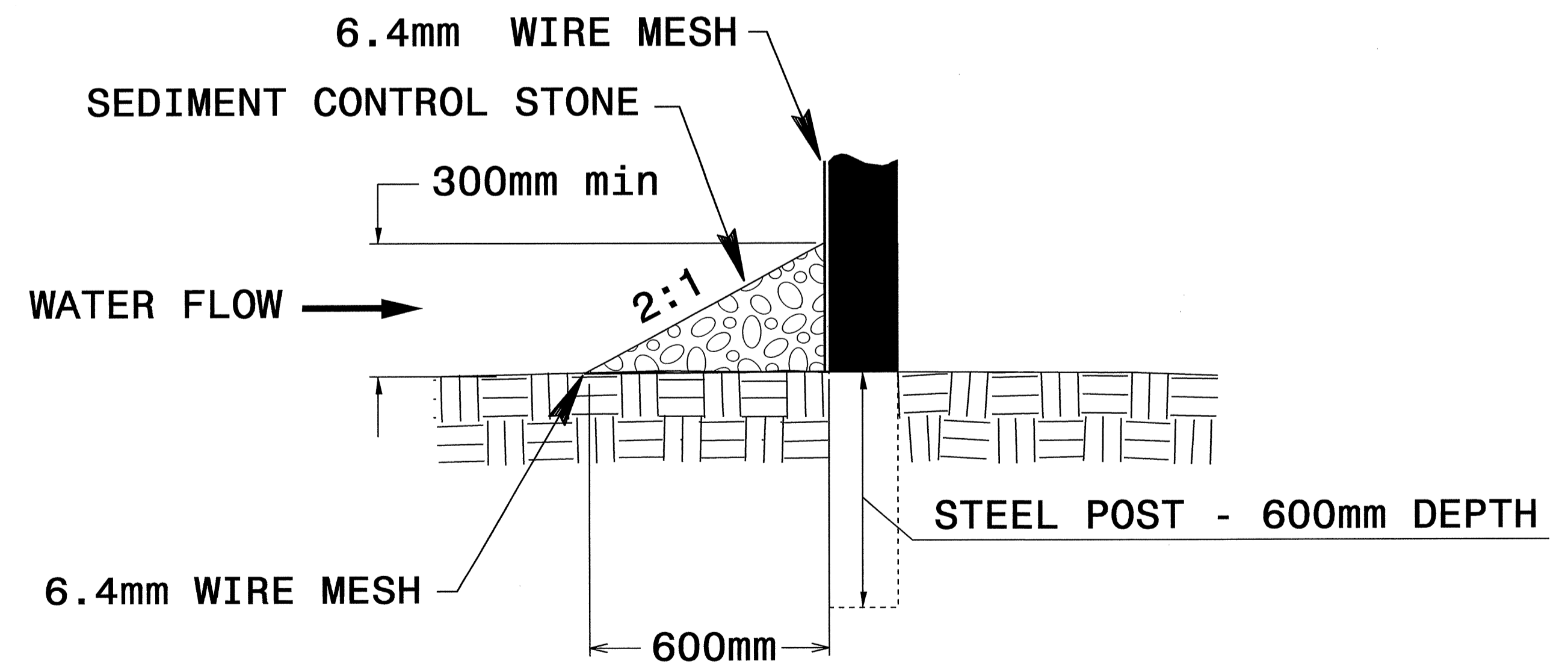
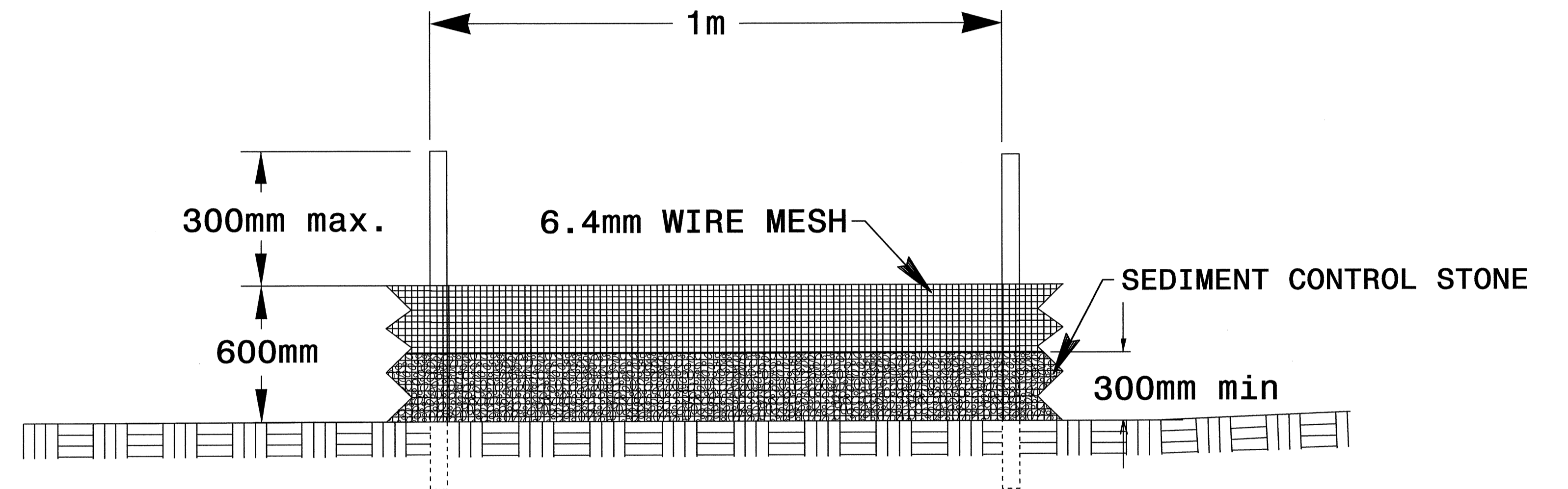
## GENERAL NOTES:

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

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

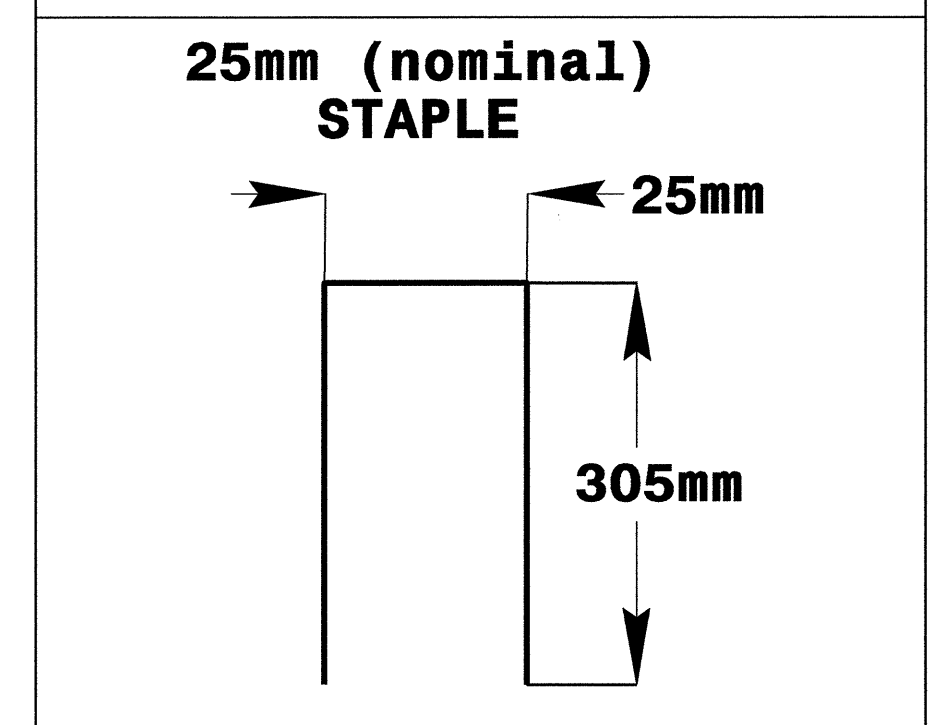
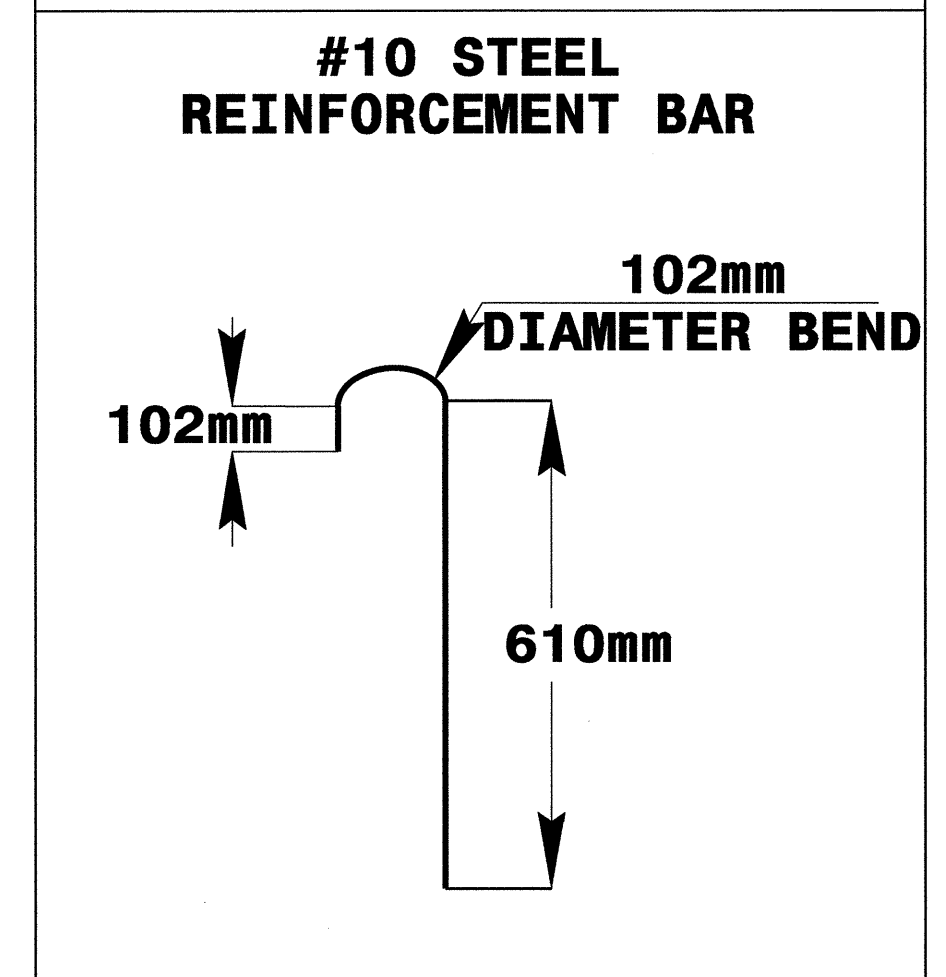
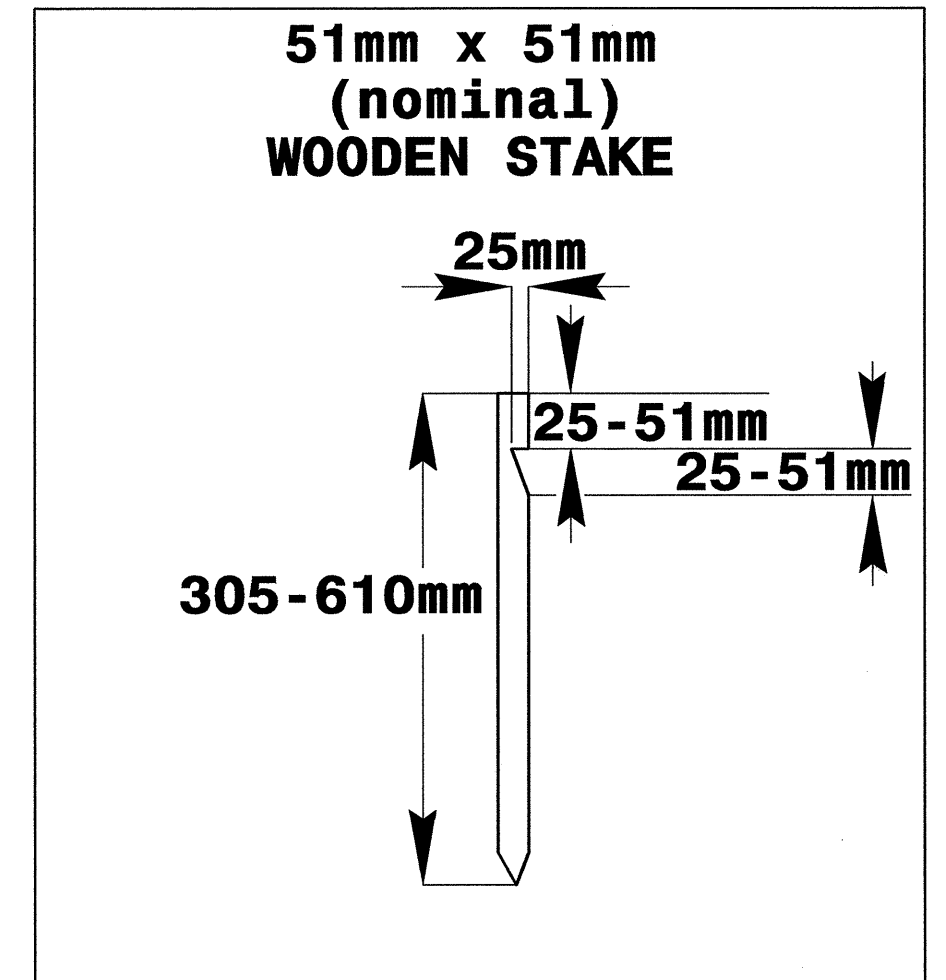
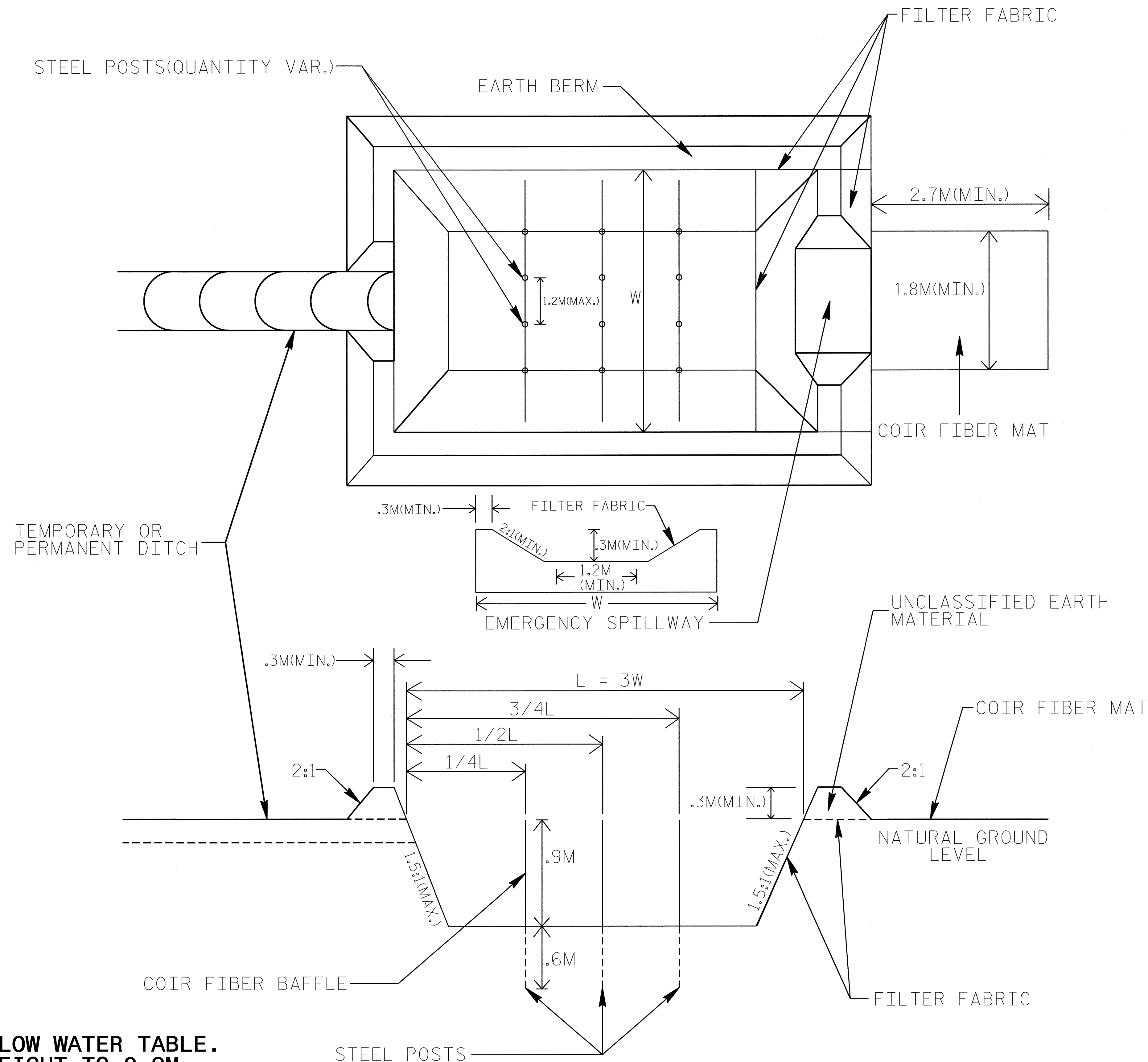
INSTALL 1.5m SELF FASTENER ANGLE STEEL POST 600mm DEEP MINIMUM.

SPACE POST A MAXIMUM OF 1m.



# INFILTRATION BASIN WITH BAFFLES DETAIL

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



## COIR FIBER MAT ANCHOR OPTIONS

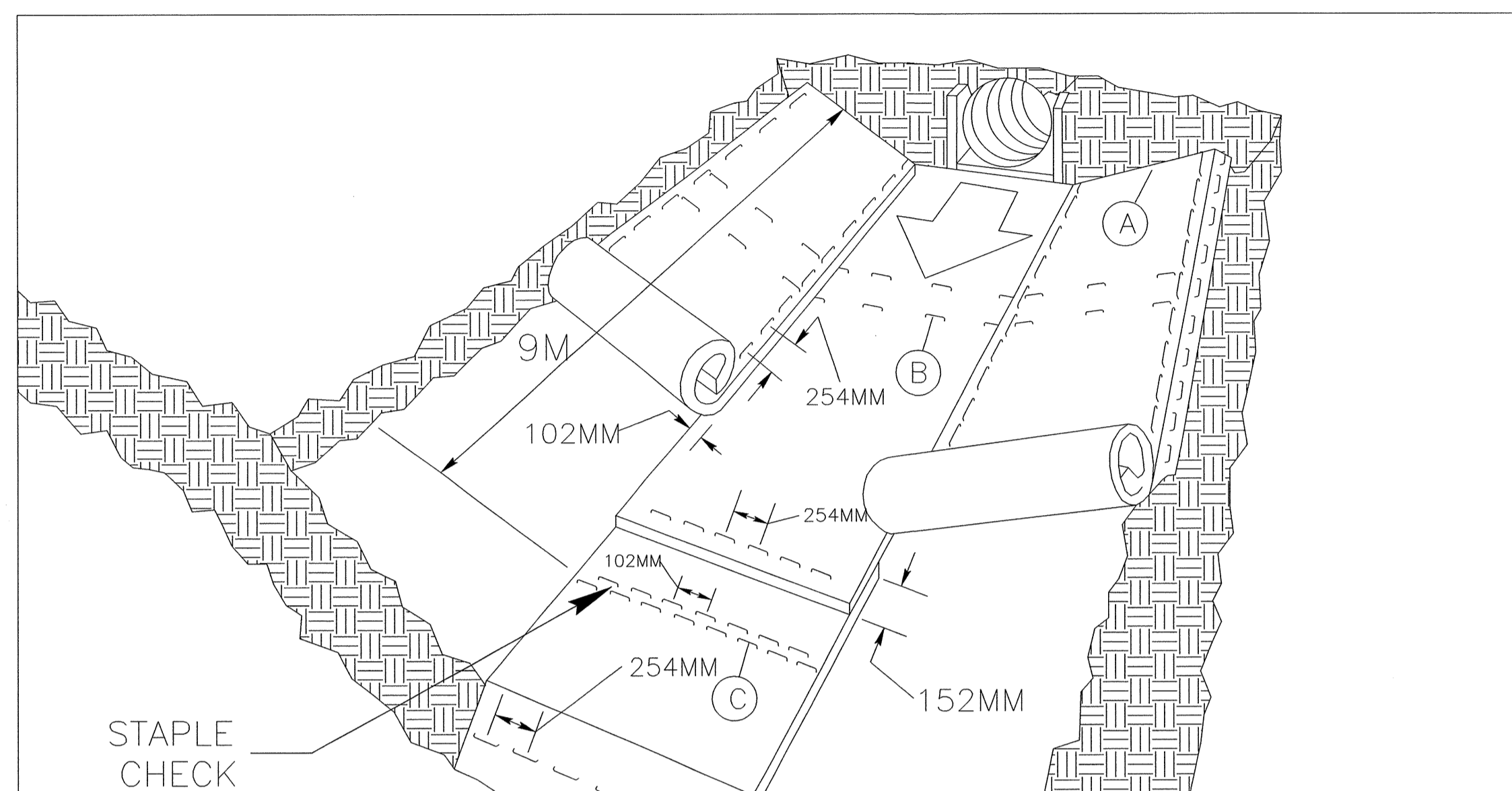
### NOTES

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-0002CA	SHEET NO. EC-2K
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# MATTING INSTALLATION DETAIL



**MATTING IN DITCHES**

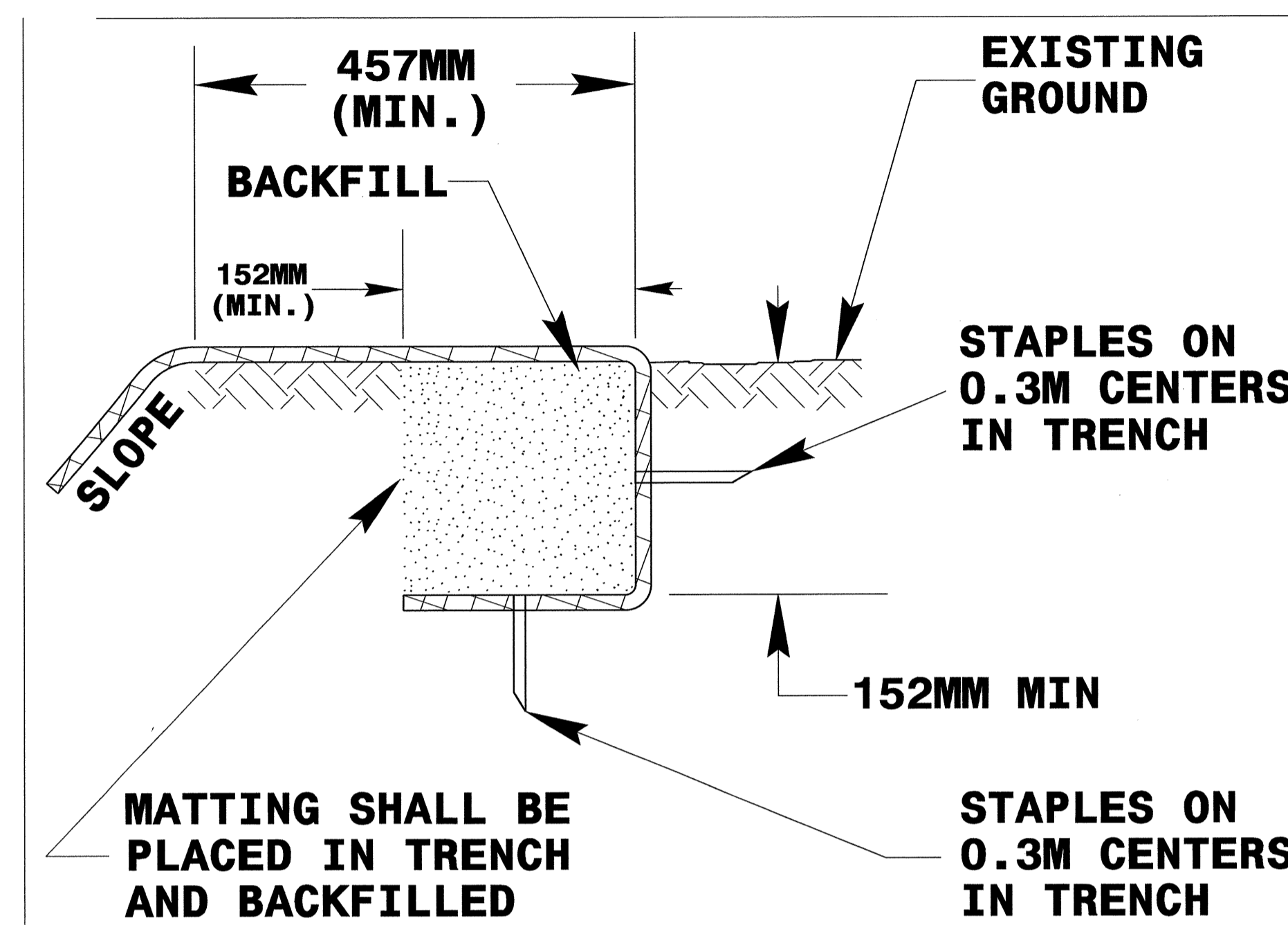
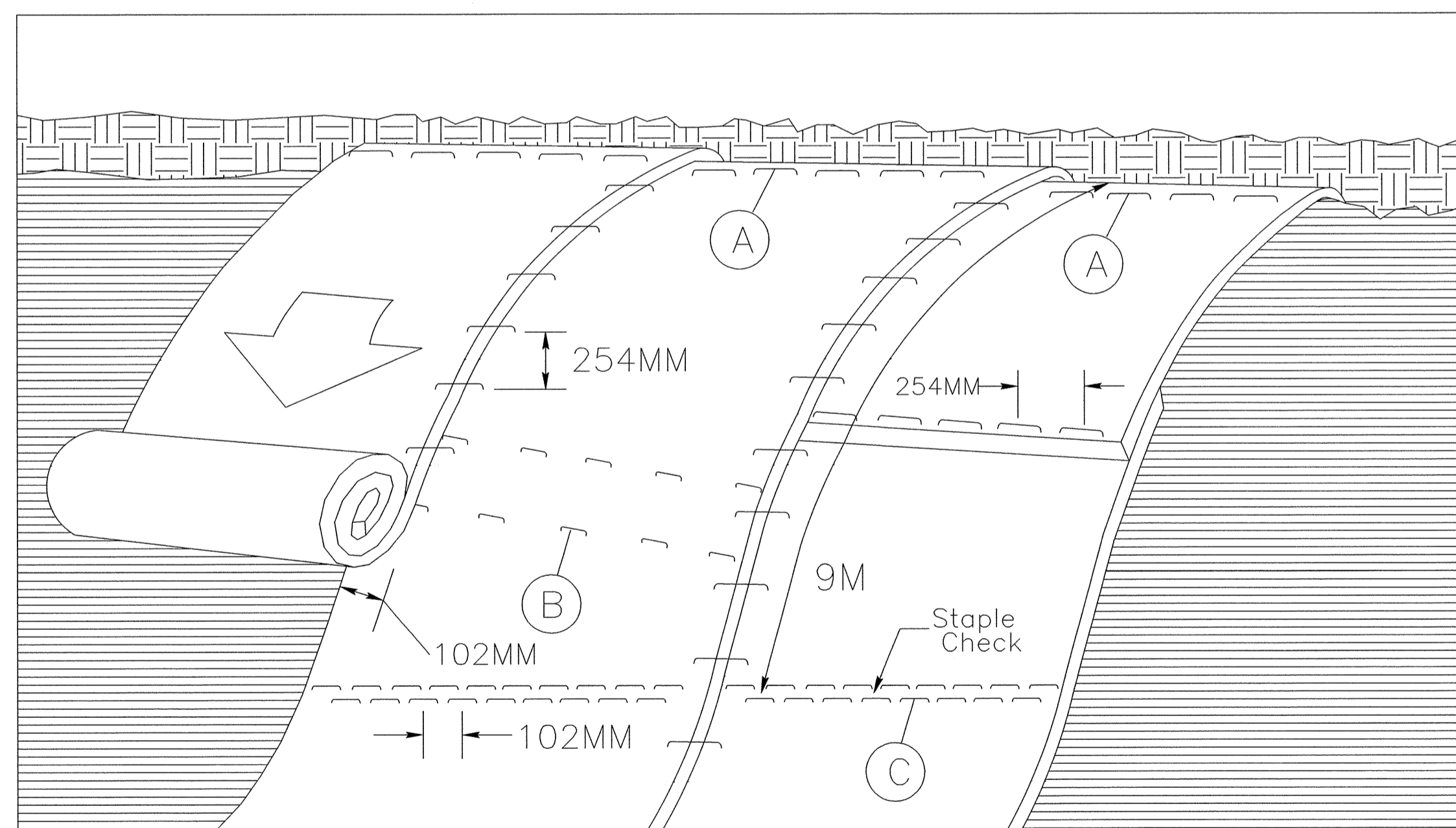


DIAGRAM (A)



**MATTING ON SLOPES**

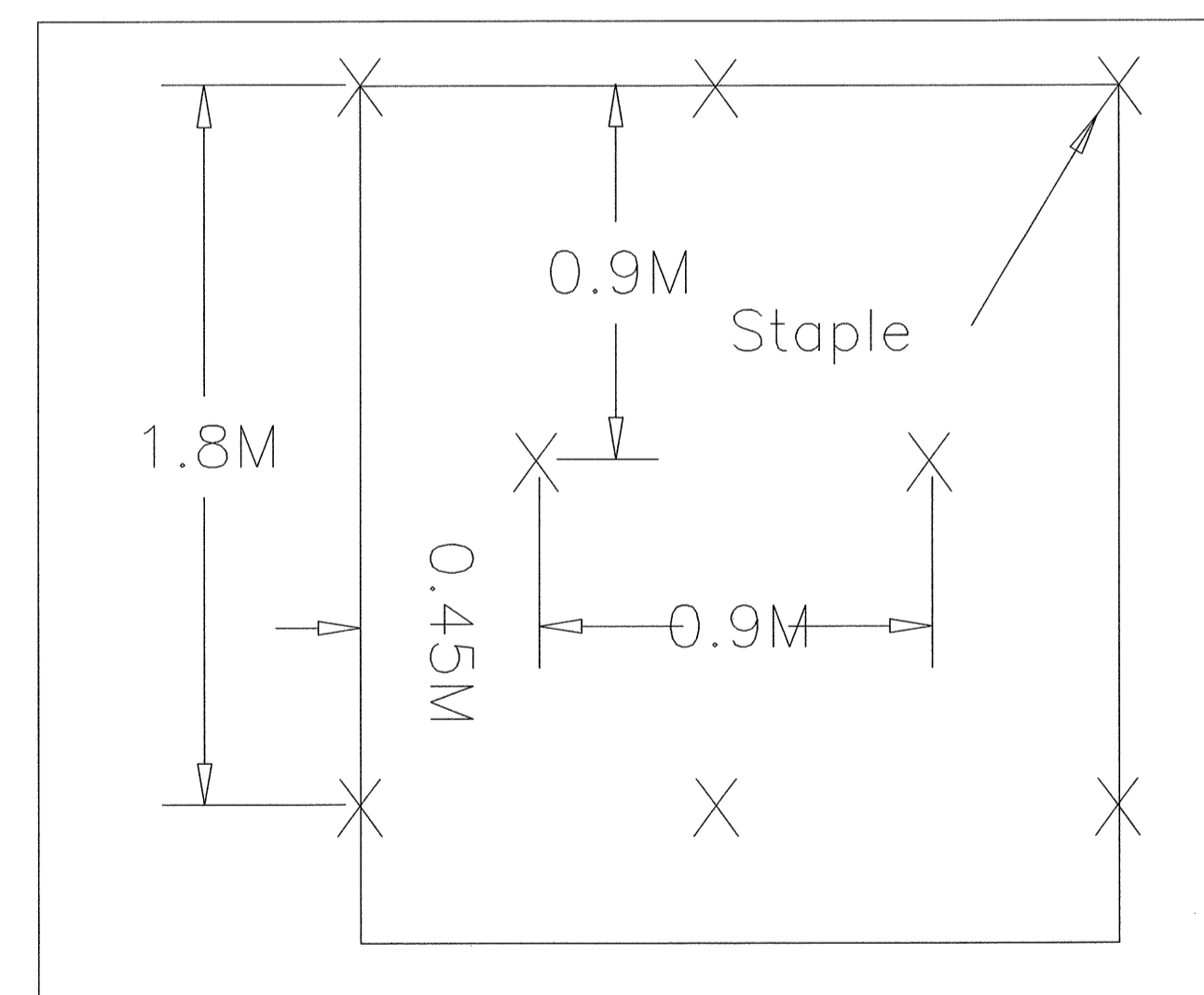


DIAGRAM (B)

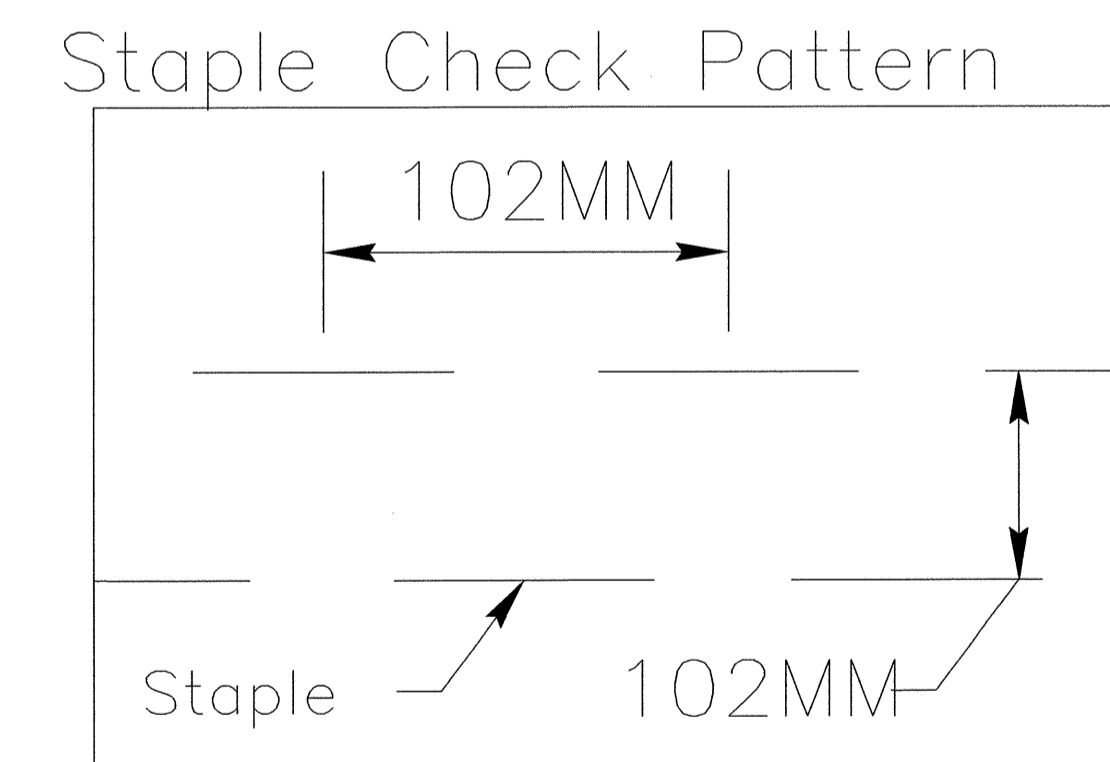


DIAGRAM (C)

**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.

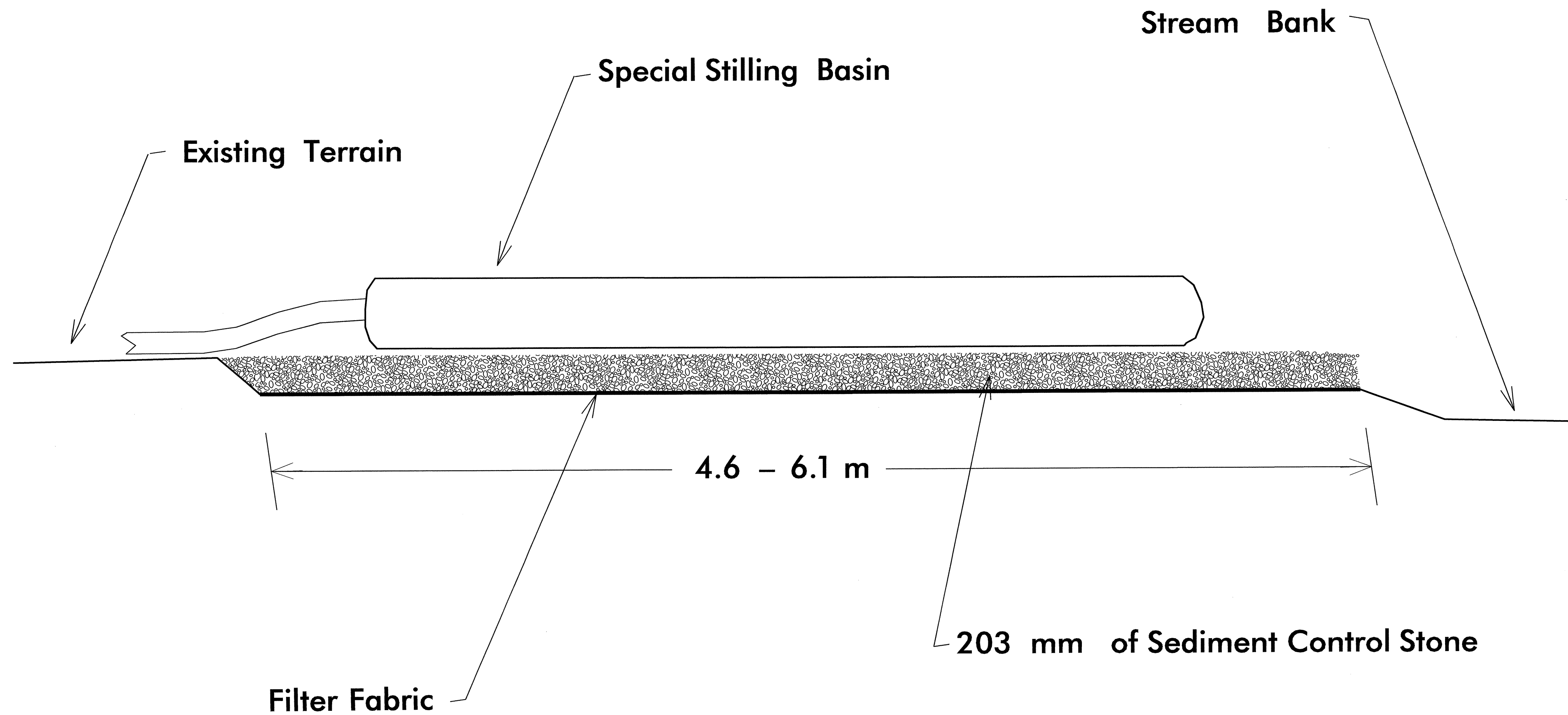
NOT TO SCALE





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

# SPECIAL STILLING BASIN WITH ROCK PAD



Not To Scale

Note: Provide Stabilized Outlet to Streambank



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

# STILLING BASIN

GENERAL NOTES:  
CONSTRUCT THE COIR FIBER BAFFLES 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 STILLING BASIN WITH 12" STAPLES.

INSTALL THE TOP OF THE COIR FIBER BAFFLE A MINIMUM OF 300MM LOWER THAN THE TOP OF THE STILLING BASIN BERMS.

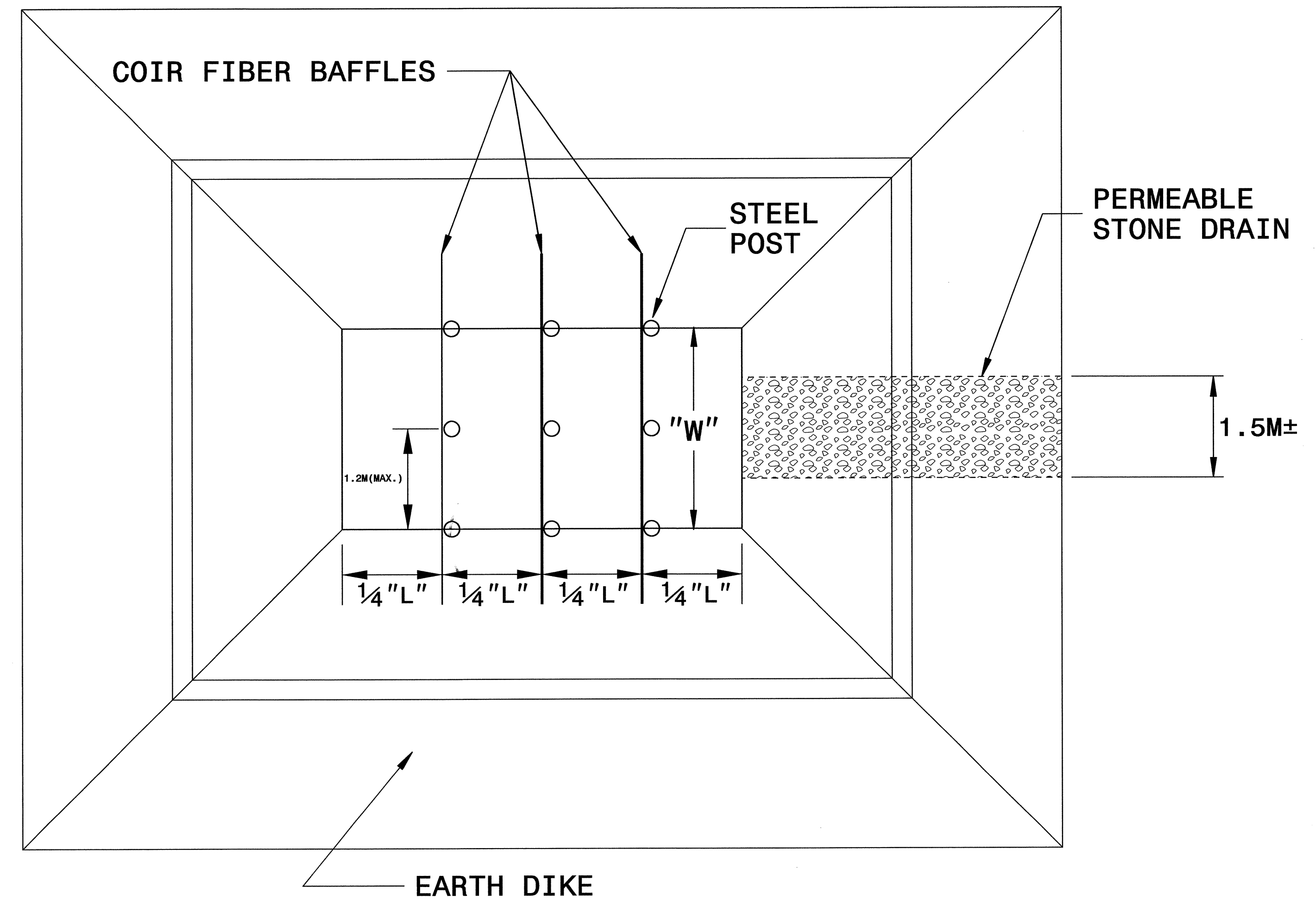
USE THE TYPICAL SECTION SHOWN FOR THE STILLING BASIN AS A GUIDE. THE BASIN MAY HAVE ANY TYPE CONFIGURATION AS LONG AS SUFFICIENT VOLUME IS PROVIDED AND PROVISIONS ARE MADE FOR A PERMEABLE STONE DRAIN.

DO NOT EXCEED 1.5M IN HEIGHT FOR THE EARTH DIKES REQUIRED FOR STILLING BASINS. ADDITIONAL DEPTHS MAY BE ATTAINED BY EXCAVATING BELOW THE NATURAL GROUND LEVEL.

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

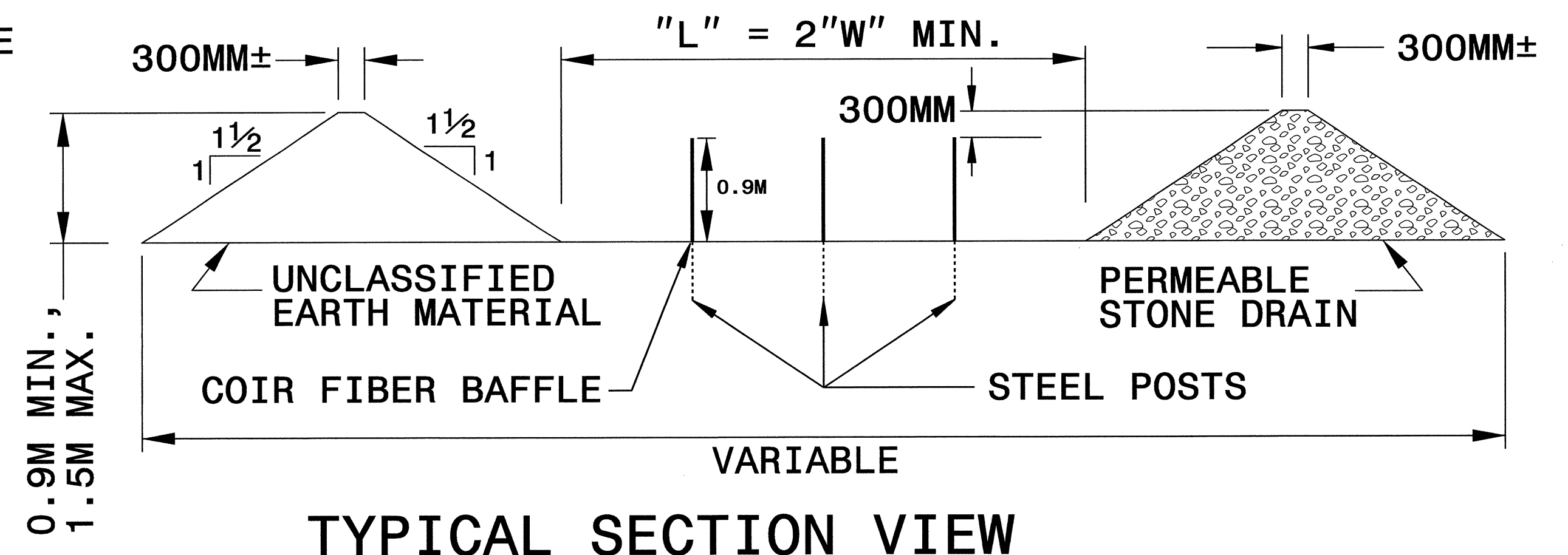
SUBMIT THE SIZE, LOCATION AND PERMEABLE STONE DRAIN MATERIAL FOR APPROVAL PRIOR TO CONSTRUCTION.

PUMP THE EFFLUENT INTO THE STILLING BASIN TO A MAXIMUM DEPTH OF 0.9 METERS.



EARTH DIKE

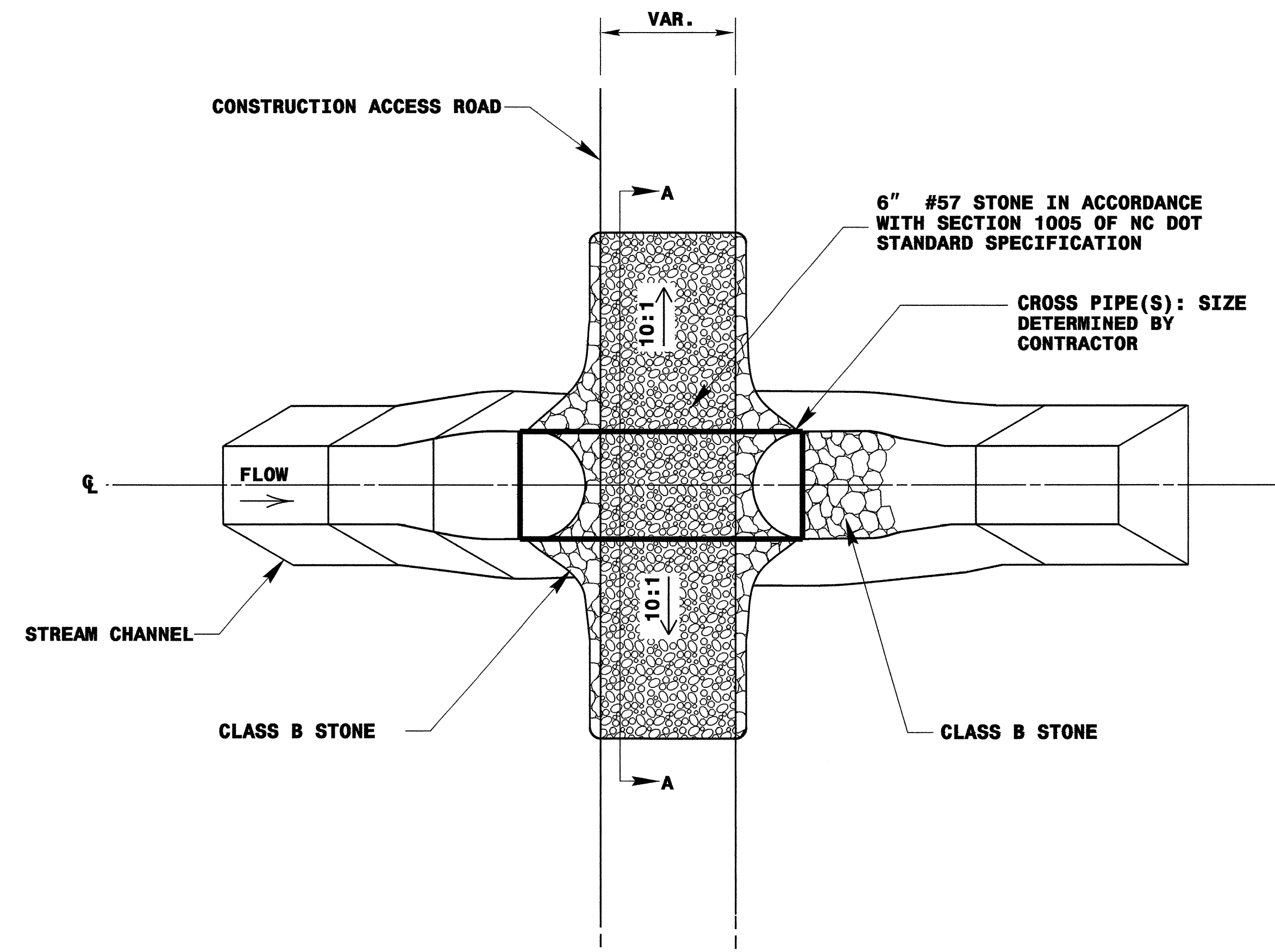
PLAN



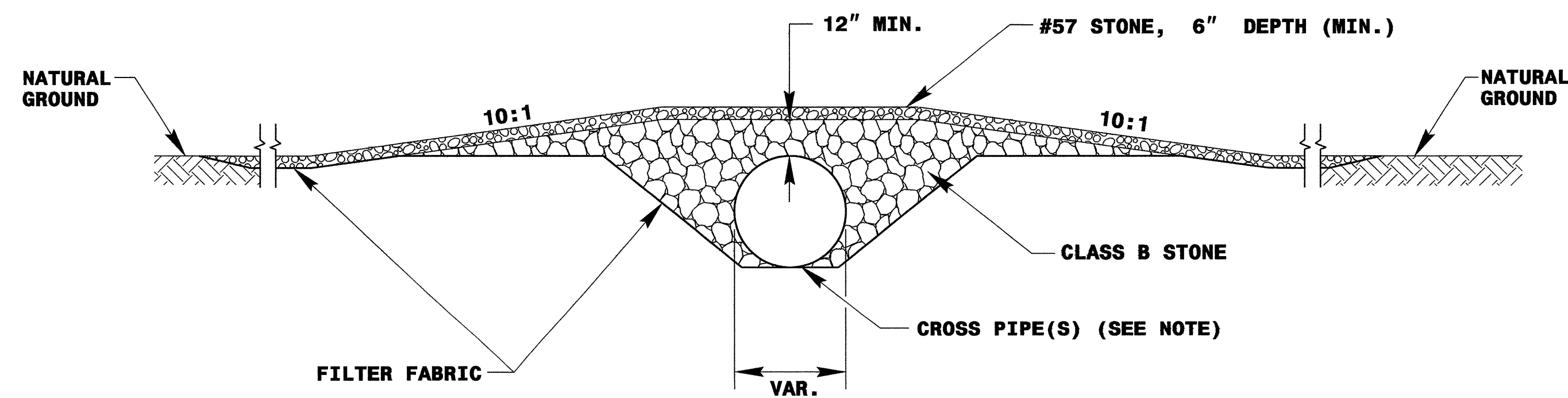
TYPICAL SECTION VIEW

PROJECT REFERENCE NO. X-0002CA	SHEET NO. EC-2N
RW 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.**





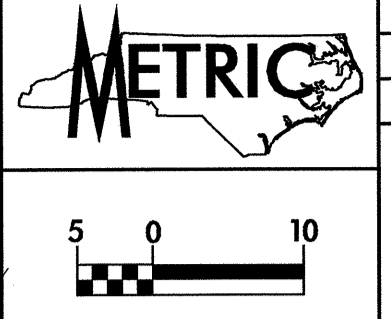




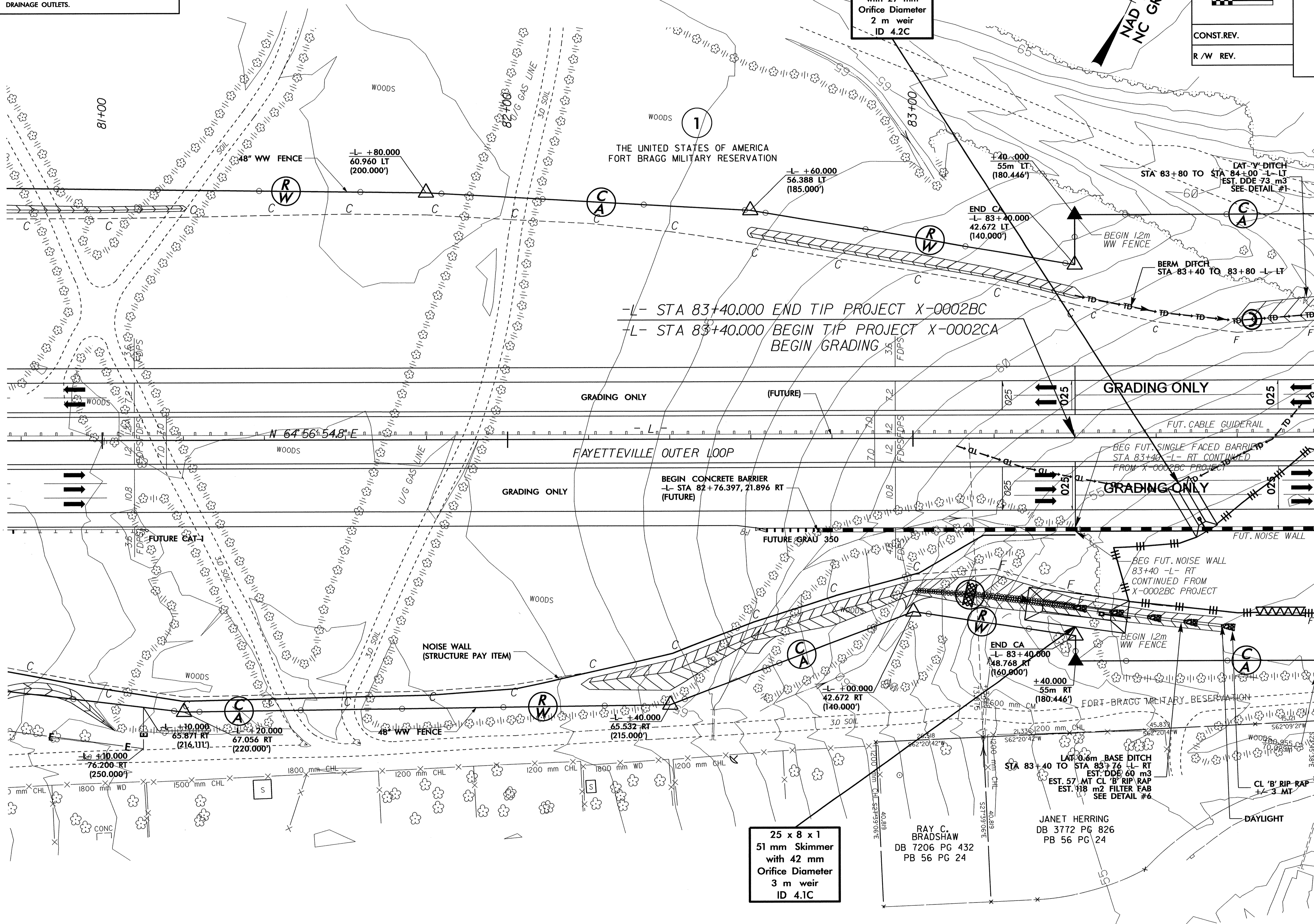
CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 4

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

PROJECT REFERENCE NO. X-0002CA		SHEET NO. EG-4/CONST.4	
R/W SHEET NO. 4 (X-0002C)			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
CONST. REV.		R/W REV.	



NAD 83  
NC GRID



-L- STA 83+40.000 END TIP PROJECT X-0002BC  
-L- STA 83+40.000 BEGIN TIP PROJECT X-0002CA  
BEGIN GRADING

GRADING ONLY

(FUTURE)

GRADING ONLY

GRADING ONLY

GRADING ONLY

BEGIN CONCRETE BARRIER  
-L- STA 82+76.397, 21.896 RT  
(FUTURE)

GRADING ONLY

NOISE WALL  
(STRUCTURE PAY ITEM)

END CA  
-L- 83+40.000  
48.768 RT  
(160.000')

+40.000  
55m RT  
(180.444')

25 x 8 x 1  
51 mm Skimmer  
with 42 mm  
Orifice Diameter  
3 m weir  
ID 4.1C

RAY C.  
BRADSHAW  
DB 7206 PG 432  
PB 56 PG 24

JANET HERRING  
DB 3772 PG 826  
PB 56 PG 24

MATCHLINE STA 84 + 00 SEE SHEET 5

FOR DITCH DETAILS SEE SHEET 2-K

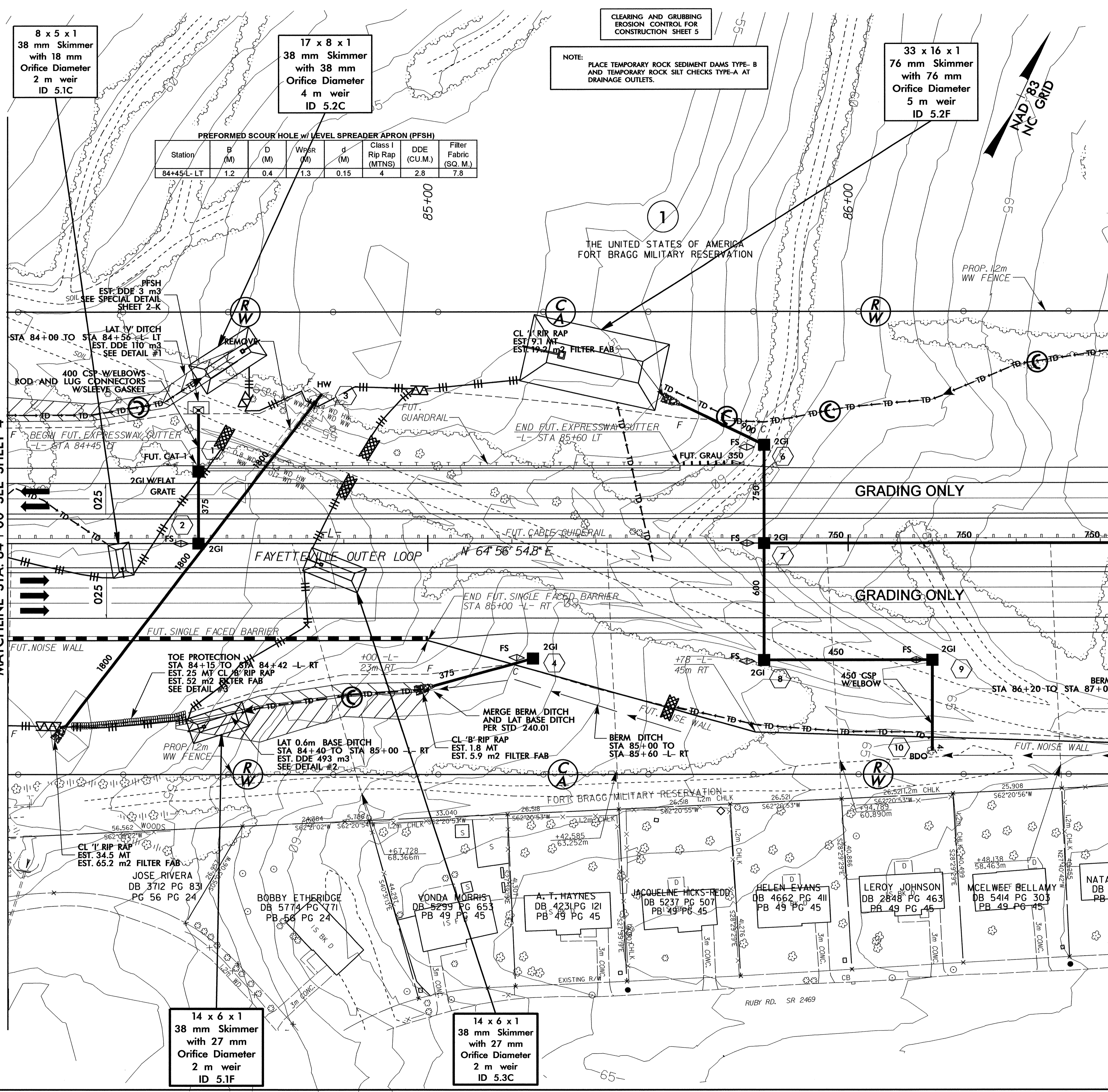
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Jagadevan



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jaggs@darwin.com.au

MATCHLINE STA. 84+00 SEE SHEET 4

MATCHLINE STA. 87+00 SEE SHEET 6



8 x 5 x 1  
38 mm Skimmer  
with 18 mm  
Orifice Diameter  
2 m weir  
ID 5.1C

17 x 8 x 1  
38 mm Skimmer  
with 38 mm  
Orifice Diameter  
4 m weir  
ID 5.2C

33 x 16 x 1  
76 mm Skimmer  
with 76 mm  
Orifice Diameter  
5 m weir  
ID 5.2F

PREFORMED SCOUR HOLE w/ LEVEL SPREADER APRON (PFSH)

Station	B (M)	D (M)	Wp (M)	d (M)	Class I Rip Rap (MTNS)	DDE (CU.M.)	Filter Fabric (SQ. M.)
84+45-LT	1.2	0.4	1.3	0.15	4	2.8	7.8

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

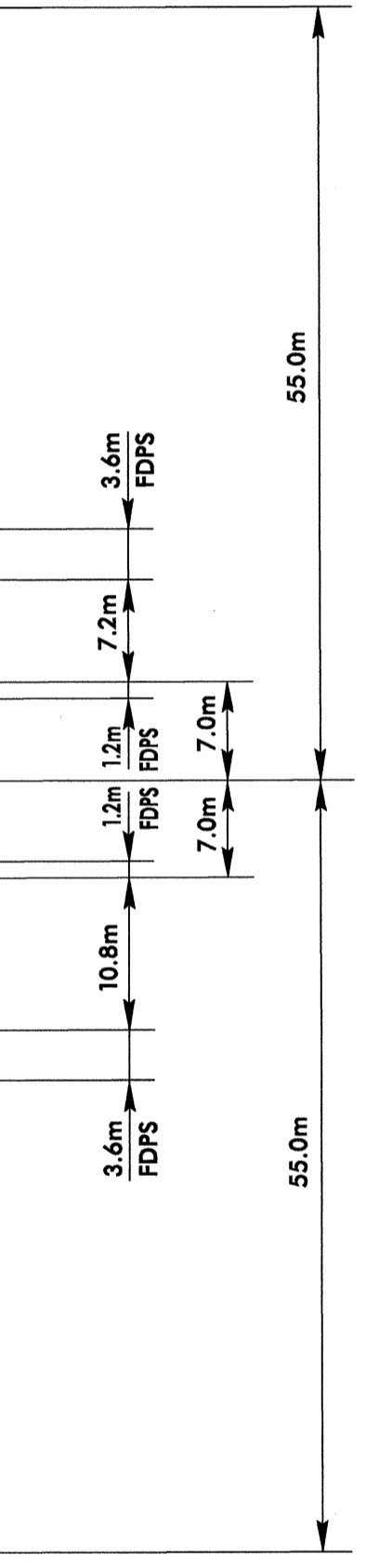
**METRIC**

CONST. REV.  
R /W REV.

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


14 x 6 x 1  
38 mm Skimmer  
with 27 mm  
Orifice Diameter  
2 m weir  
ID 5.1F

14 x 6 x 1  
38 mm Skimmer  
with 27 mm  
Orifice Diameter  
2 m weir  
ID 5.3C



FOR DITCH DETAILS SEE SHEET 2-K





5 0 10

CONST. REV.

R/W REV.

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

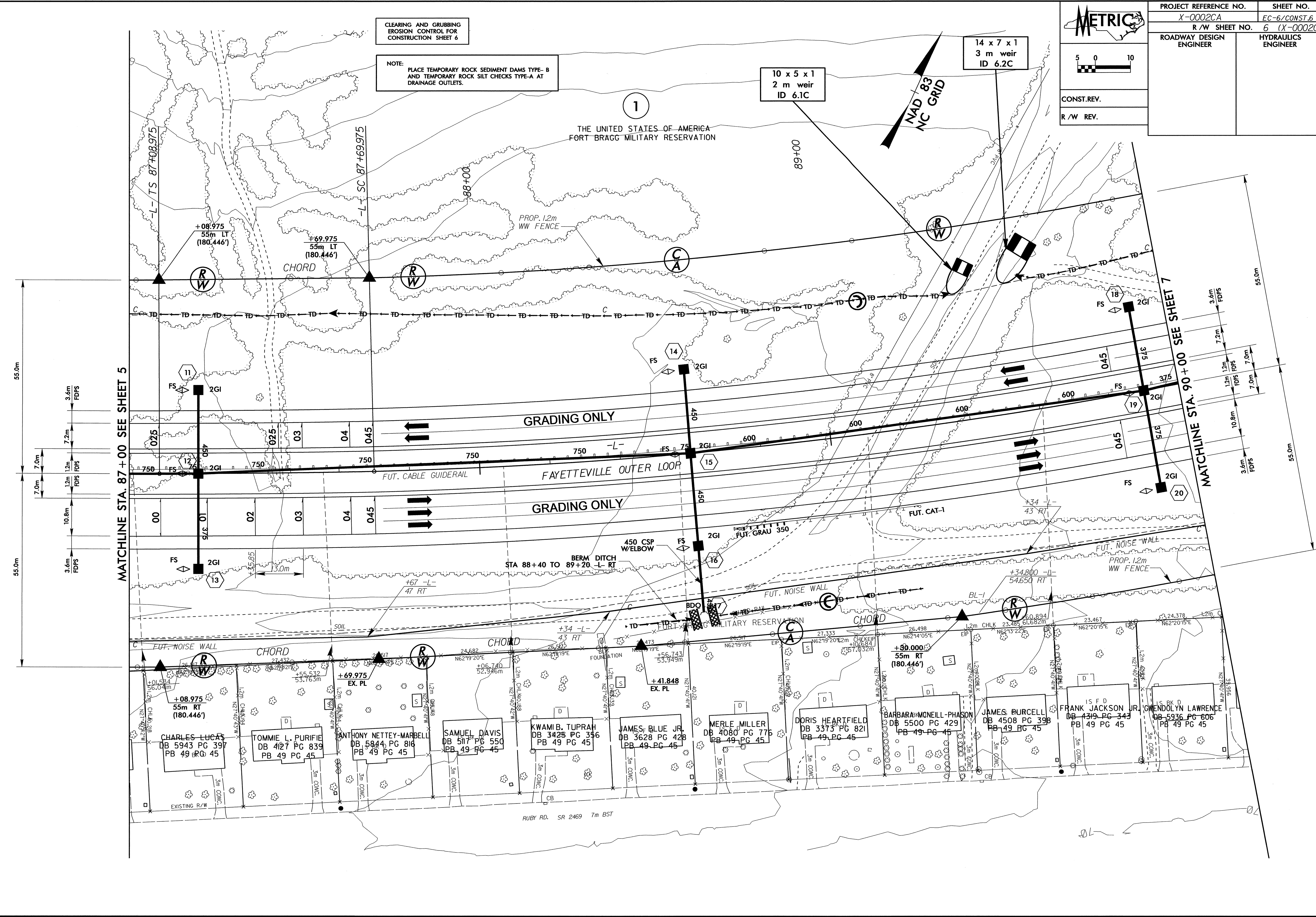
CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 6

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

10 x 5 x 1  
2 m weir  
ID 6.1C

14 x 7 x 1  
3 m weir  
ID 6.2C

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FORT BRAGG MILITARY RESERVATION



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

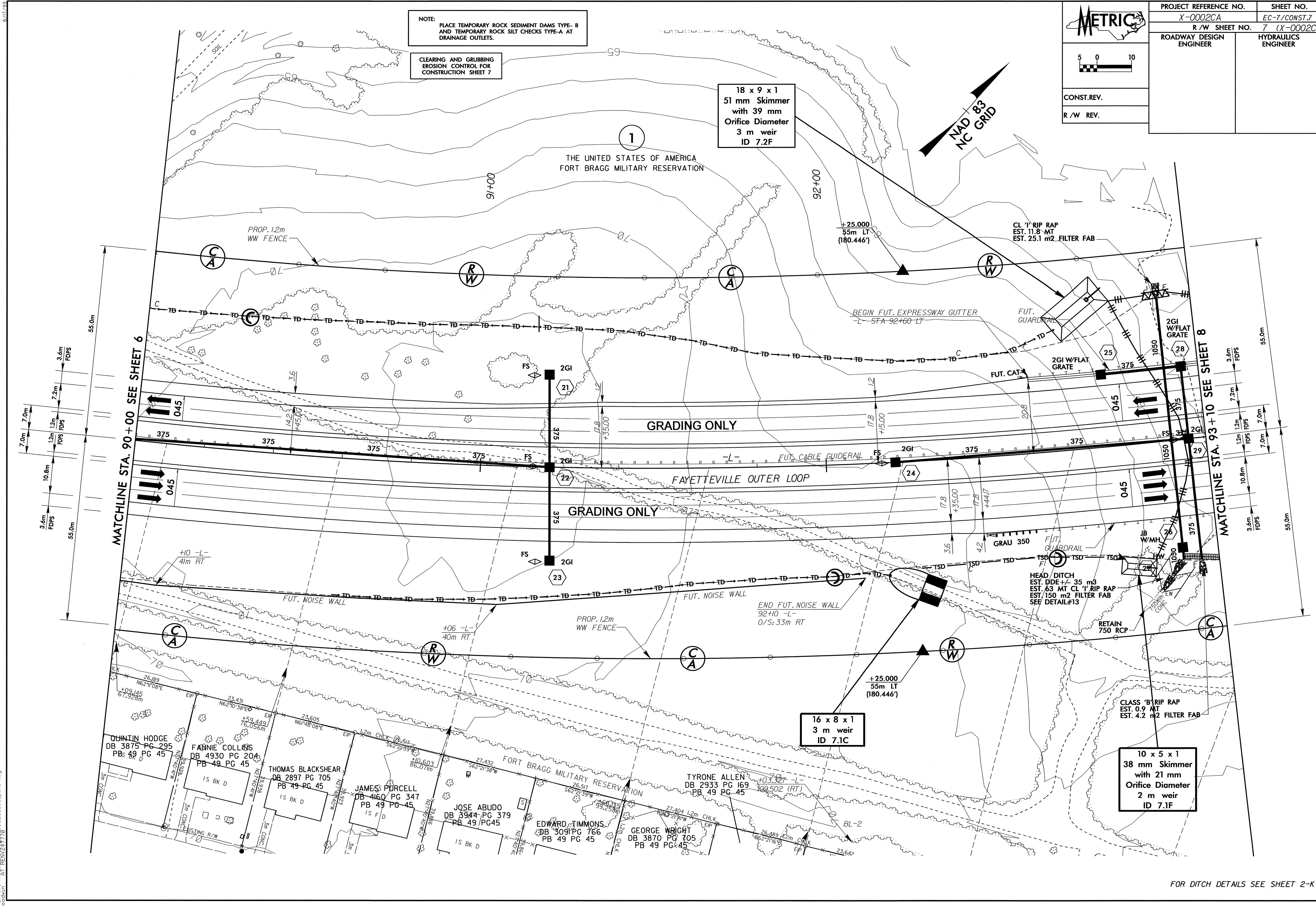
CLEARING AND GRUBBING  
 EROSION CONTROL FOR  
 CONSTRUCTION SHEET 7

18 x 9 x 1  
 51 mm Skimmer  
 with 39 mm  
 Orifice Diameter  
 3 m weir  
 ID 7.2F

16 x 8 x 1  
 3 m weir  
 ID 7.1C

10 x 5 x 1  
 38 mm Skimmer  
 with 21 mm  
 Orifice Diameter  
 2 m weir  
 ID 7.1F

 5 0 10 CONST. REV. R/W REV.	PROJECT REFERENCE NO. X-0002CA	SHEET NO. EC-7/CONST.7
	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R/W SHEET NO. 7 (X-0002C)		



FOR DITCH DETAILS SEE SHEET 2-K



8.17.08

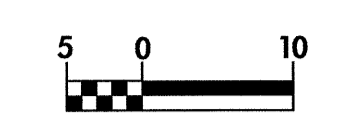
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REV: 01 21/04/2010

10 x 5 x 1  
38 mm Skimmer  
with 21 mm  
Orifice Diameter  
2 m weir  
ID 8.1C

12 x 6 x 1  
38 mm Skimmer  
with 24 mm  
Orifice Diameter  
2 m weir  
ID 8.2C

20 x 15 x 1  
51 mm Skimmer  
with 51 mm  
Orifice Diameter  
5 m weir  
ID 8.2F

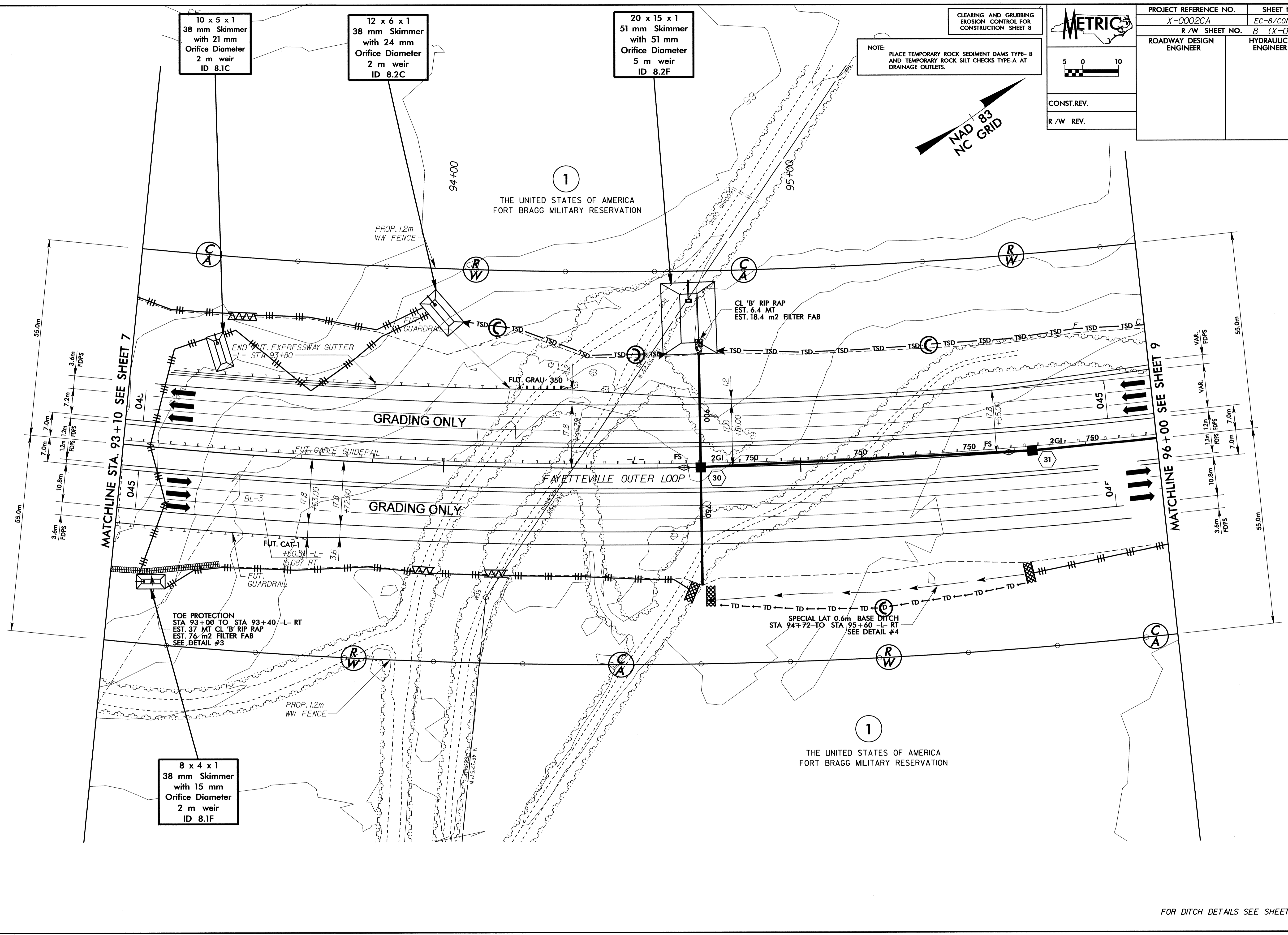
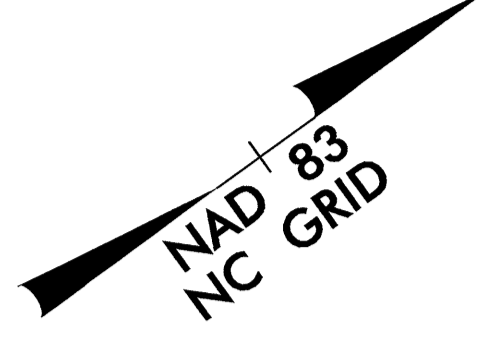
CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 8



CONST. REV.  
R/W REV.


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

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



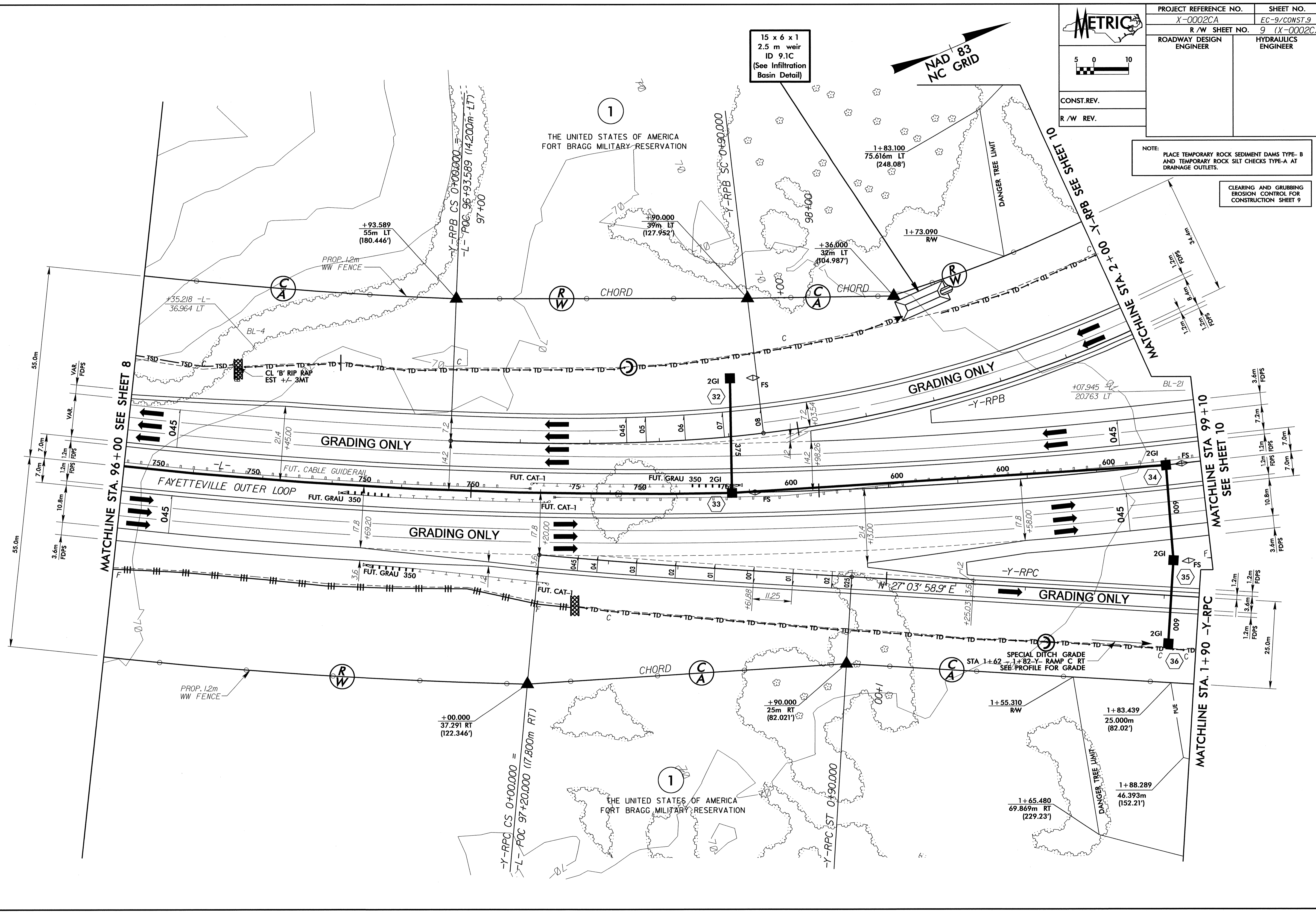
FOR DITCH DETAILS SEE SHEET 2-K

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ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
R/W SHEET NO. 9 (X-0002C)		

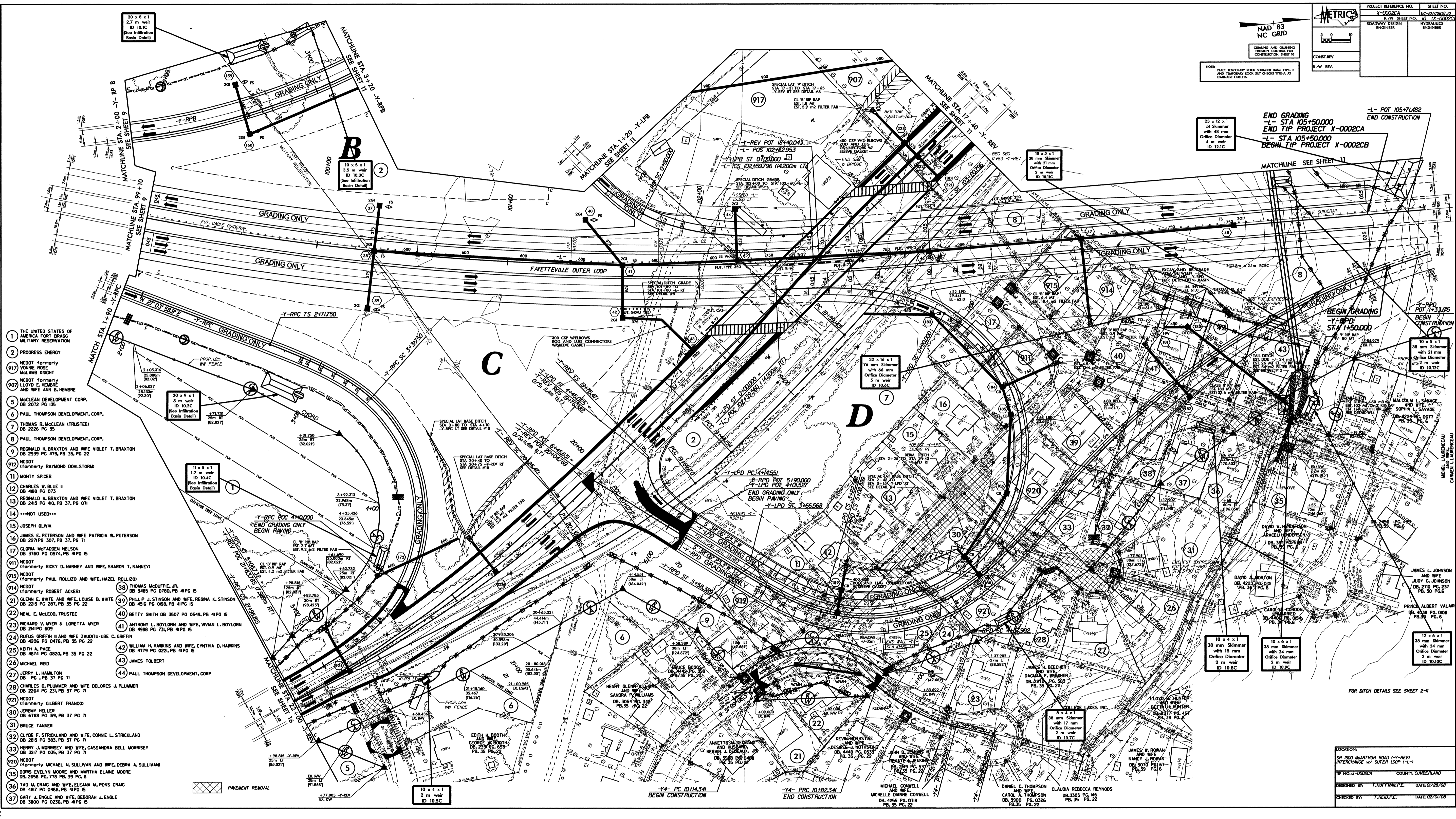
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE-B AND TEMPORARY ROCK SILT CHECKS TYPE-A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 9



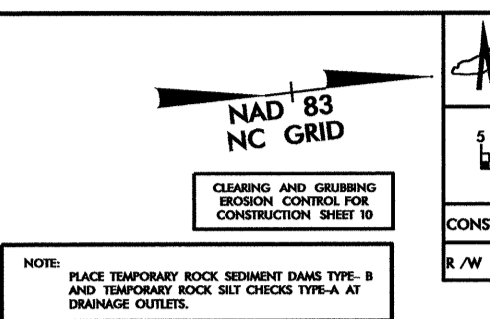


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- 1 THE UNITED STATES OF AMERICA FORT BRAGG MILITARY RESERVATION
- 2 PROGRESS ENERGY
- 917 WCDOT formerly MONIE ROSE McCLAMB KINGHIT
- 900 WCDOT formerly LLOYD E. HEMRE AND WIFE ANN B. HEMRE
- 5 McCLEAN DEVELOPMENT CORP. DB 2072 PG 35
- 6 PAUL THOMPSON DEVELOPMENT, CORP. DB 2226 PG 35
- 7 THOMAS R. McCLEAN (TRUSTEE)
- 8 PAUL THOMPSON DEVELOPMENT, CORP.
- 9 RONALD H. BRAXTON AND WIFE VIOLET T. BRAXTON DB 2333 PG 478, PB 35, PG 22
- 10 WCDOT (Formerly RAYMOND DOHLSTORNI)
- 11 MONTY SPICER
- 12 CHARLES W. BLIE II DB 488 PG 073
- 13 RONALD H. BRAXTON AND WIFE VIOLET T. BRAXTON DB 243 PG 40, PB 37, PG 071
- 14 --NOT USED--
- 15 JOSEPH OLIVA
- 16 JAMES E. PETERSON AND WIFE PATRICIA W. PETERSON DB 2270 PG 307, PB 37, PG 71
- 17 CLORA McFADDEN NELSON DB 3760 PG 0574, PB 4 PG 15
- 18 WCDOT (Formerly RICKY D. HANNEY AND WIFE, SHARON T. HANNEY)
- 19 WCDOT (Formerly PAUL ROLLIZO AND WIFE, HAZEL ROLLIZO)
- 20 WCDOT (Formerly ROBERT ACKER)
- 21 GLENN E. WHITE AND WIFE LOUISE B. WHITE DB 2203 PG 287, PB 35 PG 22
- 22 NEAL E. McLEOD, TRUSTEE
- 23 RICHARD V. MYER & LORETTA MYER DB 241 PG 609
- 24 RUFUS GRIFFIN AND WIFE ZALDITU-UBE C. GRIFFIN DB 4006 PG 0476, PB 35 PG 22
- 25 KEITH A. PACE DB 4874 PG 0820, PB 35 PG 22
- 26 MICHAEL RED
- 27 JERRY L. HAMILTON DB PG 37 PG 71
- 28 CHARLES O. PLUMMER AND WIFE DELORES J. PLUMMER DB 2264 PG 23, PB 37 PG 71
- 29 WCDOT (Formerly GILBERT FRANCO)
- 30 JEREMY HELLER DB 6768 PG 059, PB 37 PG 71
- 31 BRUCE TANNER
- 32 CLYDE F. STRICKLAND AND WIFE, CONNIE L. STRICKLAND DB 283 PG 383, PB 37 PG 71
- 33 JERRY J. MORRISSEY AND WIFE, CASSANDRA BELL MORRISSEY DB 3507 PG 035, PB 37 PG 71
- 34 WCDOT (Formerly MICHAEL N. SULLIVAN AND WIFE, DEBRA A. SULLIVAN DB 2658 PG 178, PB 39 PG 6
- 35 TAD M. CRAIG AND WIFE, ELEANA M. PONS CRAIG DB 4607 PG 0465, PB 4 PG 15
- 37 GARY J. ENGLE AND WIFE, DEBORAH J. ENGLE DB 3800 PG 0236, PB 4 PG 15
- 38 THOMAS McGUIRE, JR. DB 3485 PG 0780, PB 4 PG 15
- 39 PHILIP J. STINSON AND WIFE, REGINA K. STINSON DB 4516 PG 098, PB 4 PG 15
- 40 BETTY SMITH DB 3507 PG 0549, PB 4 PG 15
- 41 ANTHONY L. BOYLORN AND WIFE, VIVIAN L. BOYLORN DB 4988 PG 73, PB 4 PG 15
- 42 WILLIAM H. HAWKINS AND WIFE, CYNTHIA D. HAWKINS DB 4718 PG 0020, PB 4 PG 15
- 43 JAMES TOLBERT
- 44 PAUL THOMPSON DEVELOPMENT, CORP.
- 45 HENRY CLEWLEY AND WIFE, SANDRA M. WELLS DB 3054 PG 348, PB 35 PG 22
- 46 PRINCE BOGGS DB 3054 PG 348, PB 35 PG 22
- 47 NERVEN AL-SAYRAFI DB 3054 PG 348, PB 35 PG 22
- 48 JAMES H. BEECHER AND WIFE, DACHNA F. BEECHER DB 2218 PG 583, PB 35 PG 27
- 49 JAMES W. ROWAN AND WIFE, NANCY J. ROWAN DB 3010 PG 67, PB 39 PG 18
- 50 MICHAEL CONNELL AND WIFE, MICHELLE DIANNE CONNELL DB 3900 PG 079, PB 39 PG 29
- 51 DANIEL C. THOMPSON AND WIFE, CAROL A. THOMPSON DB 4255 PG 079, PB 39 PG 22
- 52 CLAUDIA REBECCA RYNDOS DB 3305 PG 146, PB 35 PG 22

PROJECT REFERENCE NO.	X-0002CA	SHEET NO.	105-00000-01
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	



END GRADING  
-L- STA 105+50.000  
END TIP PROJECT X-0002CA  
-L- STA 105+50.000  
BEGIN TIP PROJECT X-0002CB

LOCATION:  
SR 1600 MARYHUR ROAD (-Y-REV)  
INTERCHANGE W/ OUTER LOOP (-L-)

TIP NO. X-0002CA COUNTY: CUMBERLAND

DESIGNED BY: T. HUFFMAN, P.E. DATE: 07/28/08

CHECKED BY: T. HUFFMAN, P.E. DATE: 07/28/08

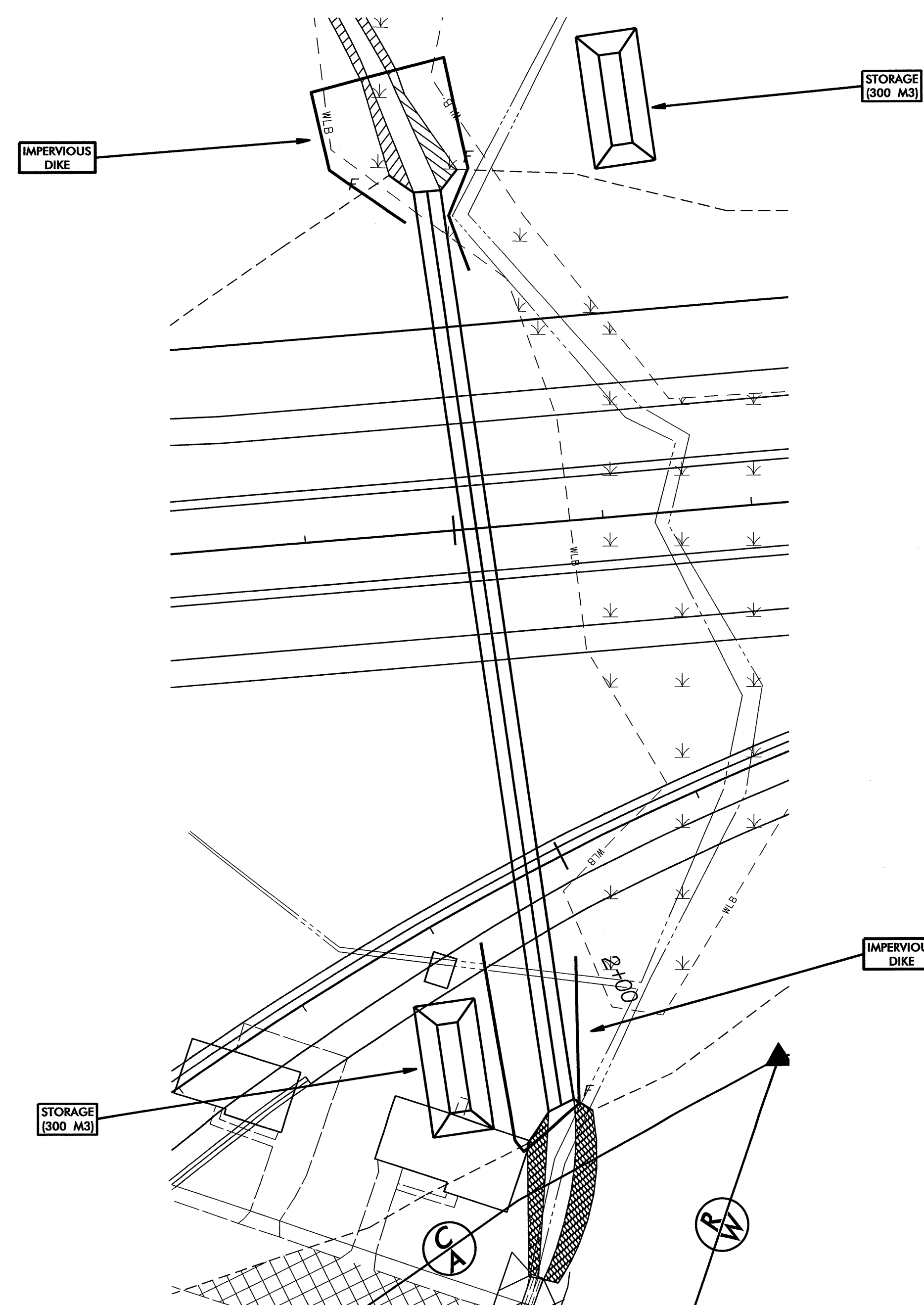




PROJECT REFERENCE NO. X-0002C	SHEET NO. EC-11/CONST.10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# CULVERT CONSTRUCTION SEQUENCE STA. 105+03 -L-

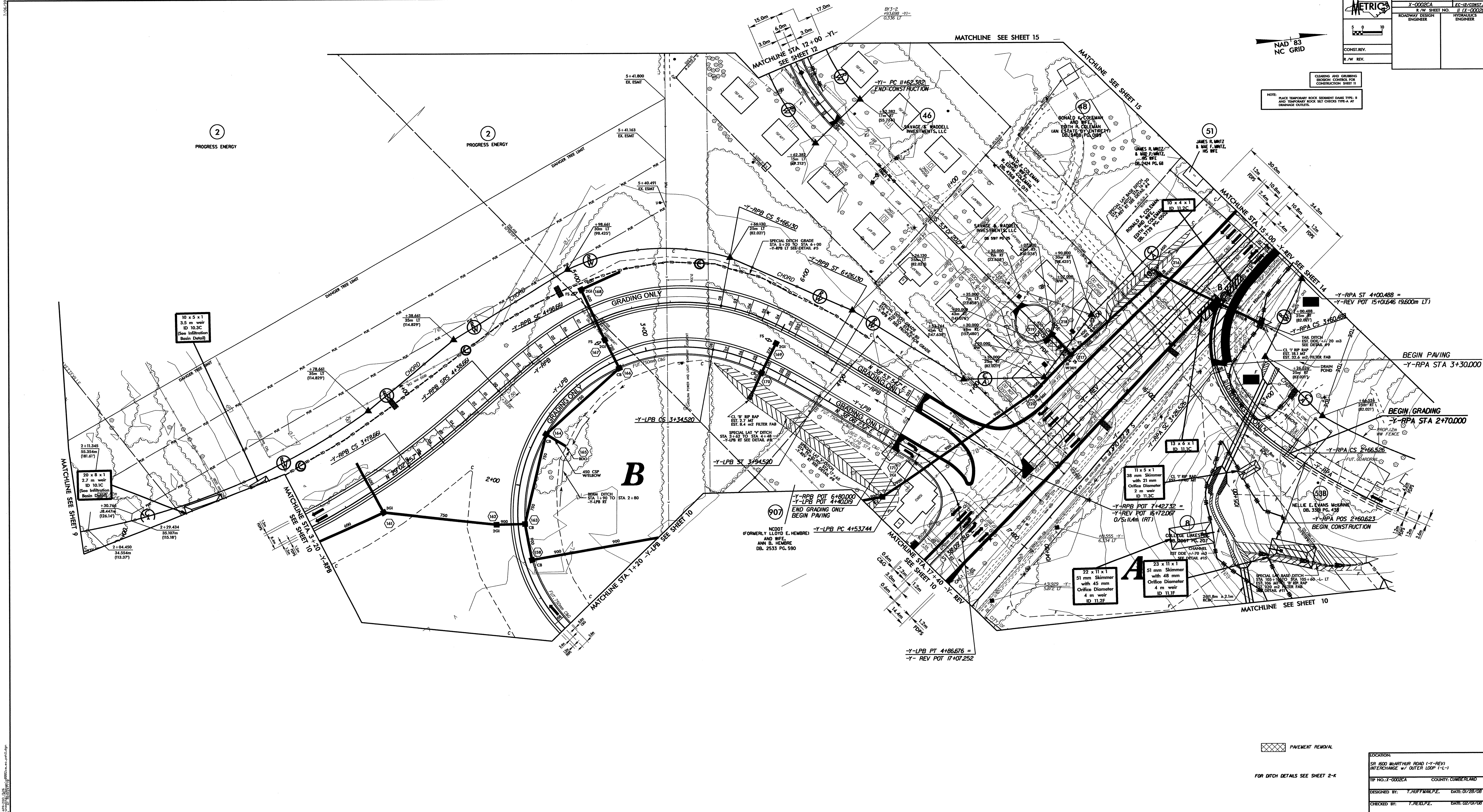
1. CONSTRUCT STILLING BASINS (300 M3 EACH).
2. CONSTRUCT IMPERVIOUS DIKES.
3. CONSTRUCT CULVERT AND AS MUCH OF WING WALLS AS POSSIBLE.
4. CONSTRUCT PORTION OF UPSTREAM/DOWNSTREAM CHANNEL IMPROVEMENTS.
5. REMOVE IMPERVIOUS DIKES.
6. COMPLETE CONSTRUCTION OF WING WALLS.
7. ONCE CULVERT AT STA. 2+98 -YRAMPA- HAS BEEN CONSTRUCTED, COMPLETE CHANNEL IMPROVEMENTS BETWEEN THAT CULVERT AND THIS ONE, AND ANY REMAINING DOWNSTREAM CHANNEL IMPROVEMENTS.
8. REMOVE STILLING BASINS, AND COMPLETE ROADWAY.



	PROJECT REFERENCE NO.	SHEET NO.
	X-0002A	EC-10-CONSTR-11
	8 W/ SHEET NO. 11 (1-0002)	HYDRAULICS ENGINEER
		ROADWAY DESIGN ENGINEER



NOTE: PLACE TEMPORARY ROCK BERMENIT DUNE TYPE B AND TEMPORARY ROCK SET CHECKS TYPE-A AT DRAINAGE OUTLETS.



20 x 8 x 1  
2.7 m weir  
ID 10.3C  
Flow Information  
Basin (Detail)

20 x 8 x 1  
2.7 m weir  
ID 10.3C  
Flow Information  
Basin (Detail)

22 x 11 x 1  
51 mm Skimmer  
with 45 mm  
Orifice Diameter  
4 m weir  
ID 11.2F

11 x 5 x 1  
38 mm Skimmer  
with 21 mm  
Orifice Diameter  
2 m weir  
ID 11.3C

18 x 6 x 1  
ID 11.1C

PAVEMENT REMOVAL

FOR DITCH DETAILS SEE SHEET 2-X

LOCATION:	SR 800 MCARTHUR ROAD (Y-REV) INTERCHANGE W/ OUTER LOOP (1-1)
PROJECT NO.:	X-0002A COUNTY: CUMBERLAND
DESIGNED BY:	T. HUFFMAN, P.E. DATE: 07/22/09
CHECKED BY:	J. KELLY, P.E. DATE: 02/07/08



PROJECT REFERENCE NO. SHEET NO.

X-0002C EC-13/CONST.II

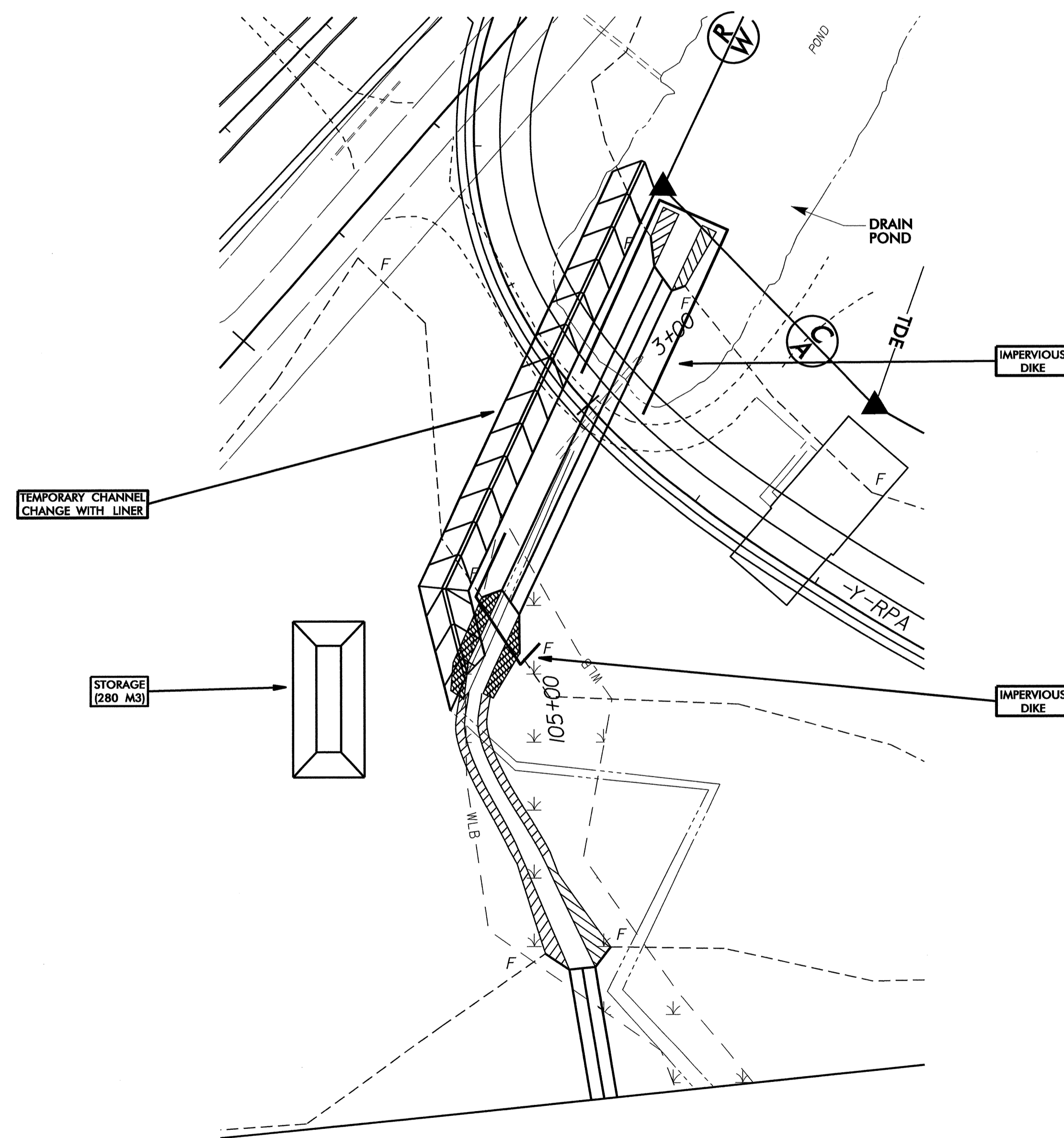
R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

# CULVERT CONSTRUCTION SEQUENCE STA. 2+98 -YRAMPA-


1. CONSTRUCT STILLING BASIN (280 M3).
2. BREACH DAM AND CONSTRUCT TEMPORARY CHANNEL CHANGE WITH LINER (0.5M BASE, 1.0M DEEP, 3:1 SIDE SLOPES), ALLOWING POND TO DRAIN.
3. CONSTRUCT IMPERVIOUS DIKES.
4. CONSTRUCT CULVERT, INLET CHANNEL IMPROVEMENTS, AND PORTION OF OUTLET CHANNEL IMPROVEMENTS.
5. REMOVE IMPERVIOUS DIKES.
6. ONCE CULVERT AT STA. 105+03 -L- HAS BEEN CONSTRUCTED, COMPLETE CHANNEL IMPROVEMENTS BETWEEN THAT CULVERT AND THIS ONE.
7. REMOVE TEMPORARY CHANNEL CHANGE.
8. REMOVE STILLING BASIN, AND COMPLETE ROADWAY.

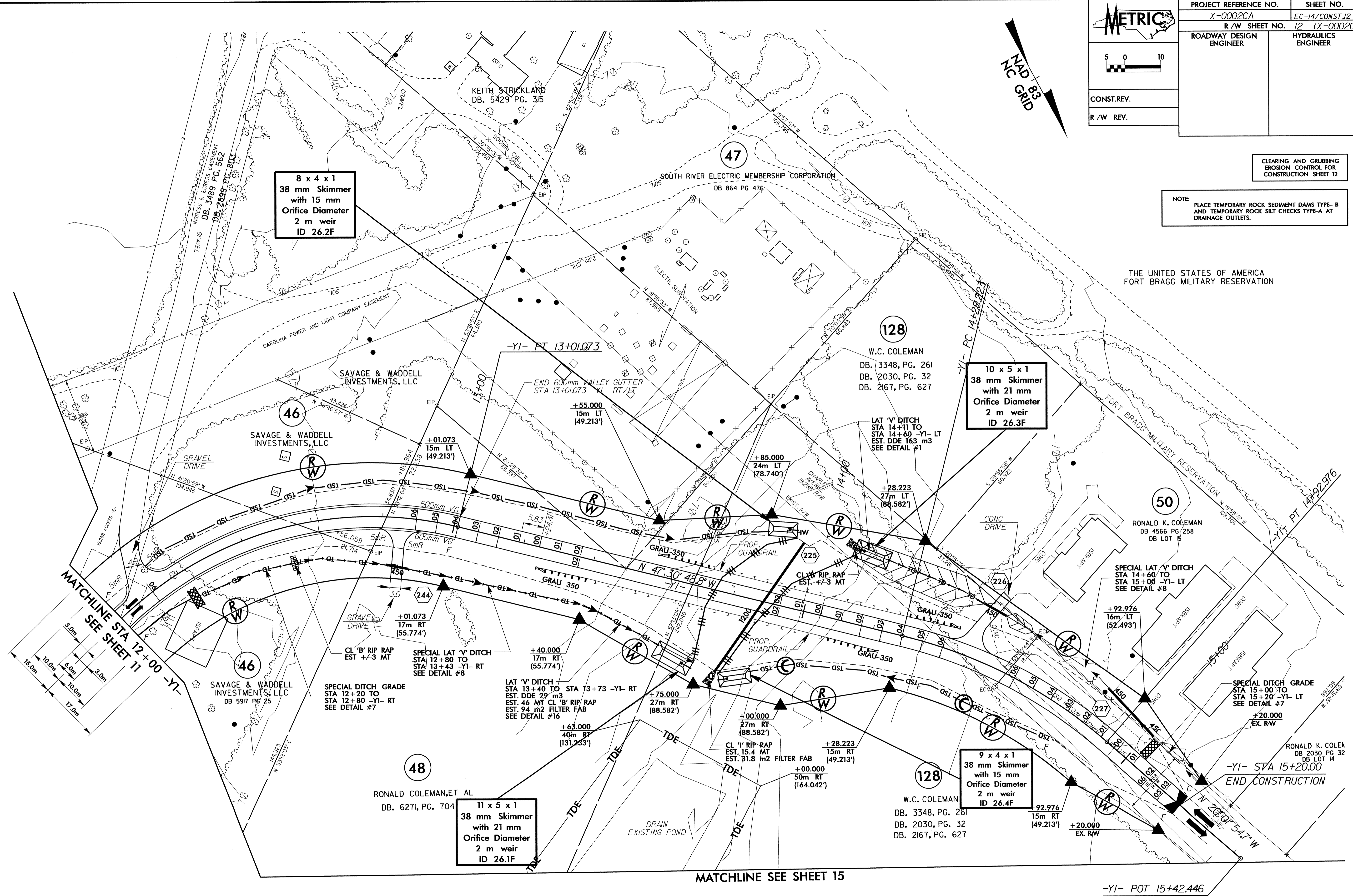
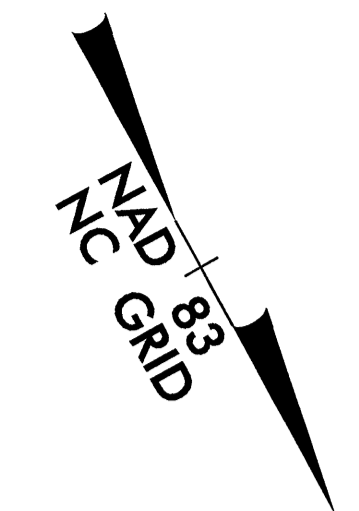


NAD 83  
NC GRID



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 5 0 10 CONST. REV. R / W REV.	PROJECT REFERENCE NO. X-0002CA	SHEET NO. EC-14/CONST.12
	R / W SHEET NO. 12 (X-0002C)	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER		



CLEARING AND GRUBBING  
 EROSION CONTROL FOR  
 CONSTRUCTION SHEET 12

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

THE UNITED STATES OF AMERICA  
 FORT BRAGG MILITARY RESERVATION

MATCHLINE SEE SHEET 11  
 SEE STA 12+00 -Y1-

MATCHLINE SEE SHEET 15

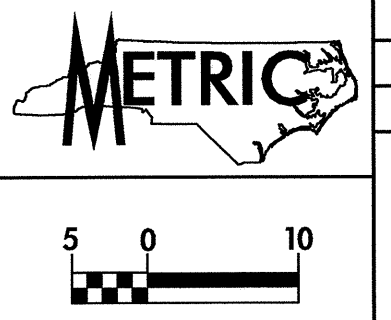
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-Y1- STA 15+20.00  
 END CONSTRUCTION

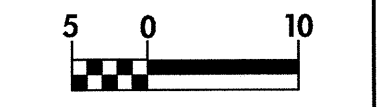
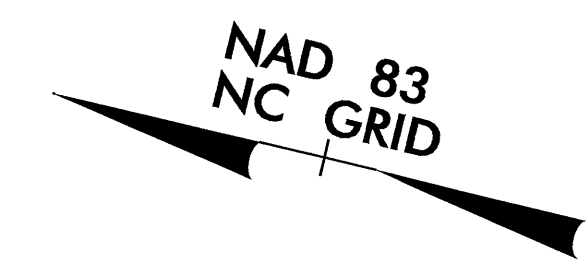
FOR DITCH DETAILS SEE SHEET 2-K



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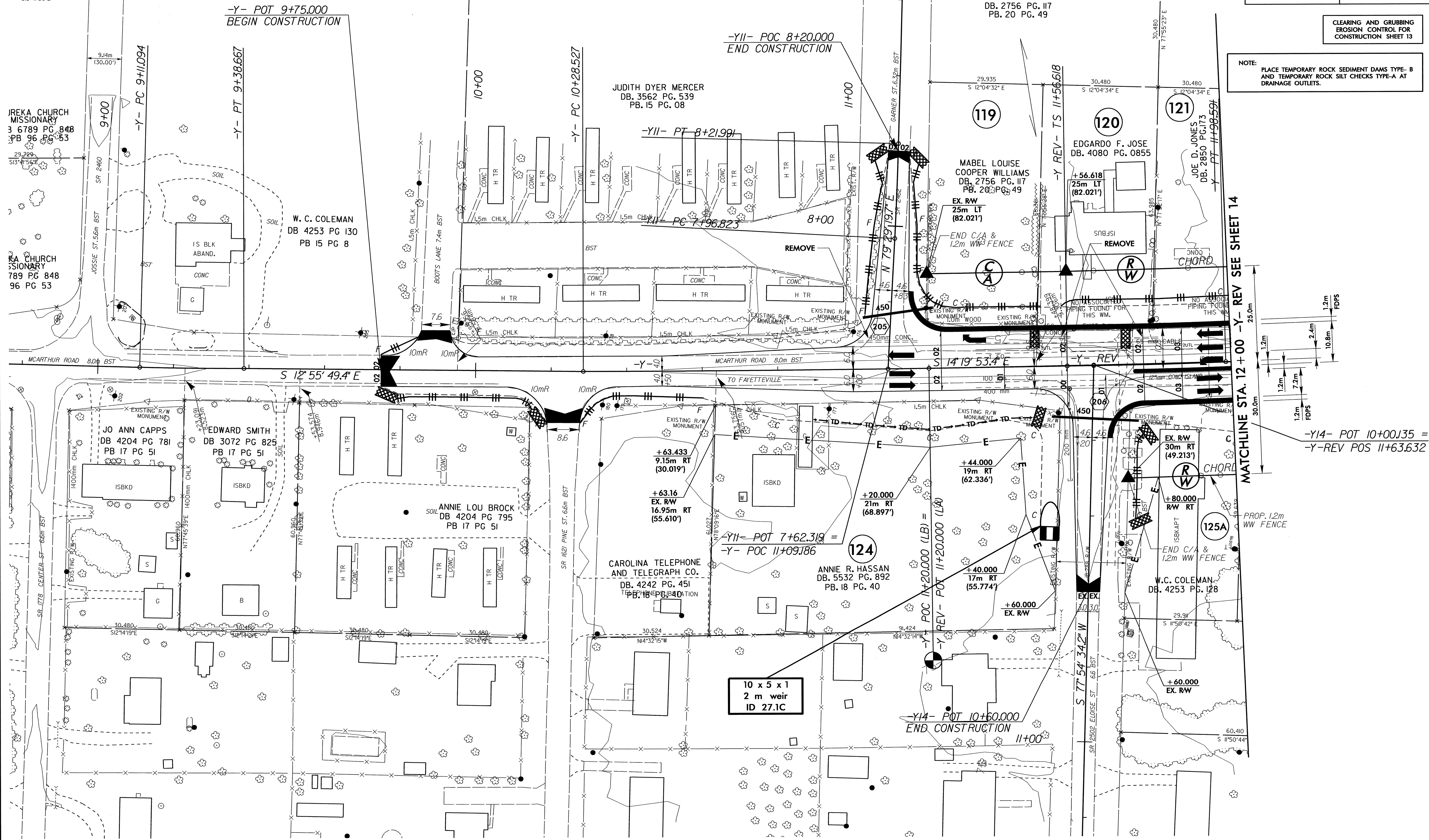


PROJECT REFERENCE NO. X-0002CA	SHEET NO. EC-15/CONST.13
R/W SHEET NO. 13 (X-0002C)	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	
R/W REV.	



CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 13

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



IREKA CHURCH  
MISSIONARY  
3 6789 PG. 848  
PB 96 PG. 53

KA CHURCH  
SSIONARY  
789 PG 848  
96 PG 53

-Y- POT 9+75.000  
BEGIN CONSTRUCTION

-YII- POC 8+20.000  
END CONSTRUCTION

DB. 2756 PG. 117  
PB. 20 PG. 49

JUDITH DYER MERCER  
DB. 3562 PG. 539  
PB. 15 PG. 08

W. C. COLEMAN  
DB 4253 PG 130  
PB 15 PG 8

MABEL LOUISE  
COOPER WILLIAMS  
DB. 2756 PG. 117  
PB. 20 PG. 49

EDGARDO F. JOSE  
DB. 4080 PG. 0855

JOE D. JONES  
DB. 2850 PG. 173

JO ANN CAPPS  
DB 4204 PG 781  
PB 17 PG 51

EDWARD SMITH  
DB 3072 PG 825  
PB 17 PG 51

ANNIE LOU BROCK  
DB 4204 PG 795  
PB 17 PG 51

CAROLINA TELEPHONE  
AND TELEGRAPH CO.  
DB. 4242 PG. 451

ANNIE R. HASSAN  
DB. 5532 PG. 892  
PB. 18 PG. 40

W.C. COLEMAN  
DB. 4253 PG. 128

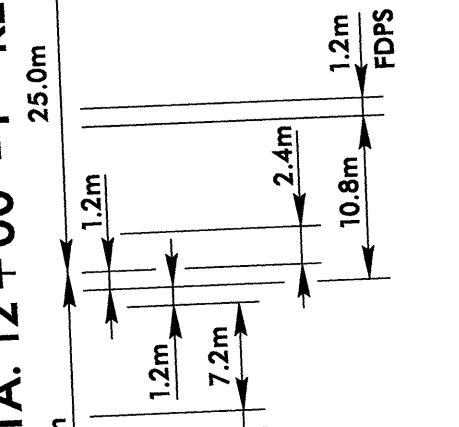
10 x 5 x 1  
2 m weir  
ID 27.1C

-YII- POT 10+60.000  
END CONSTRUCTION

-YII- POT 10+00.135 =  
-Y-REV POS 11+63.632

MATCHLINE STA. 12+00 -Y- REV SEE SHEET 14

PROP. 1.2m  
WW FENCE









PROJECT REFERENCE NO. X-0002CA	SHEET NO. EC-16A/CONST.14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

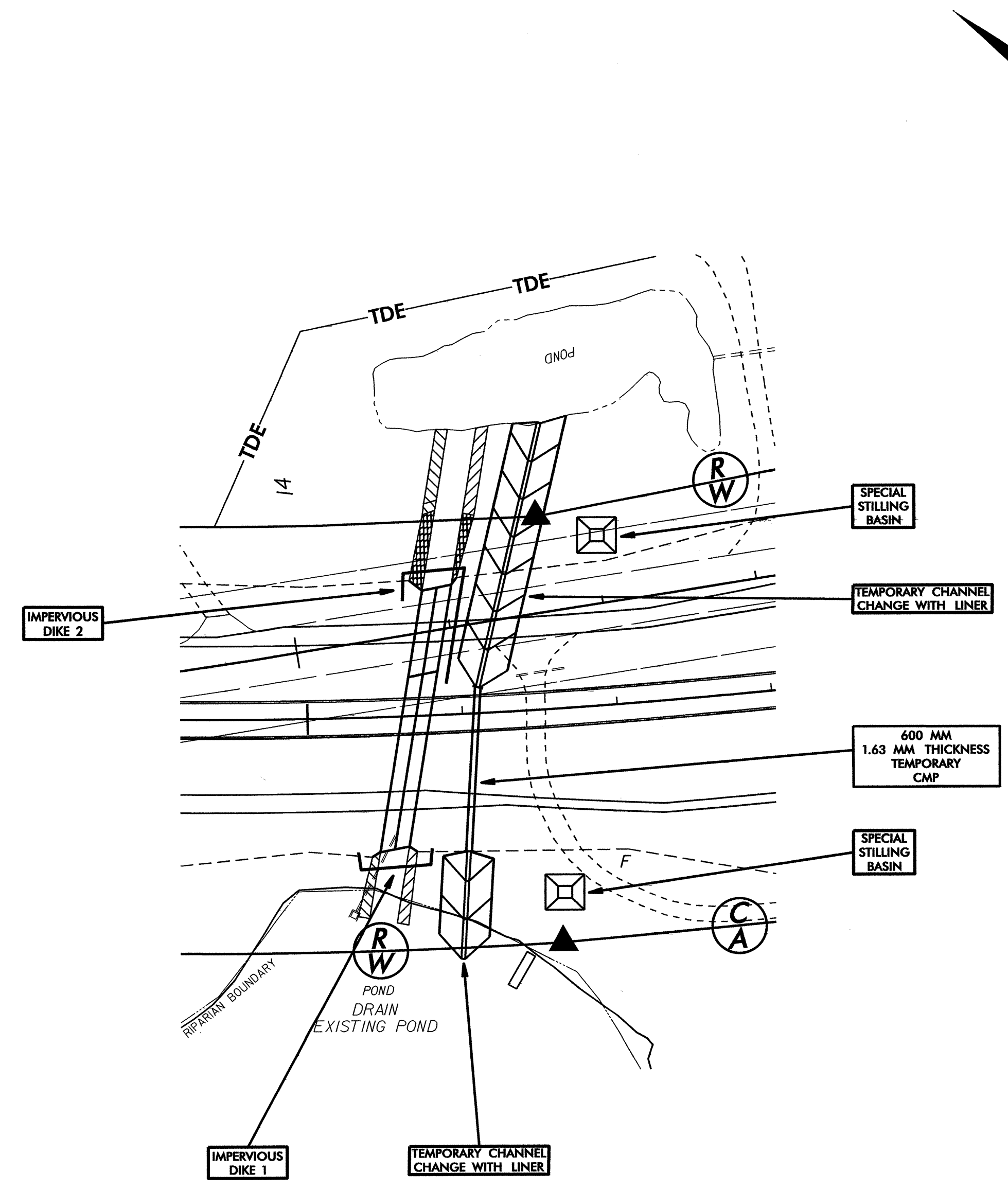
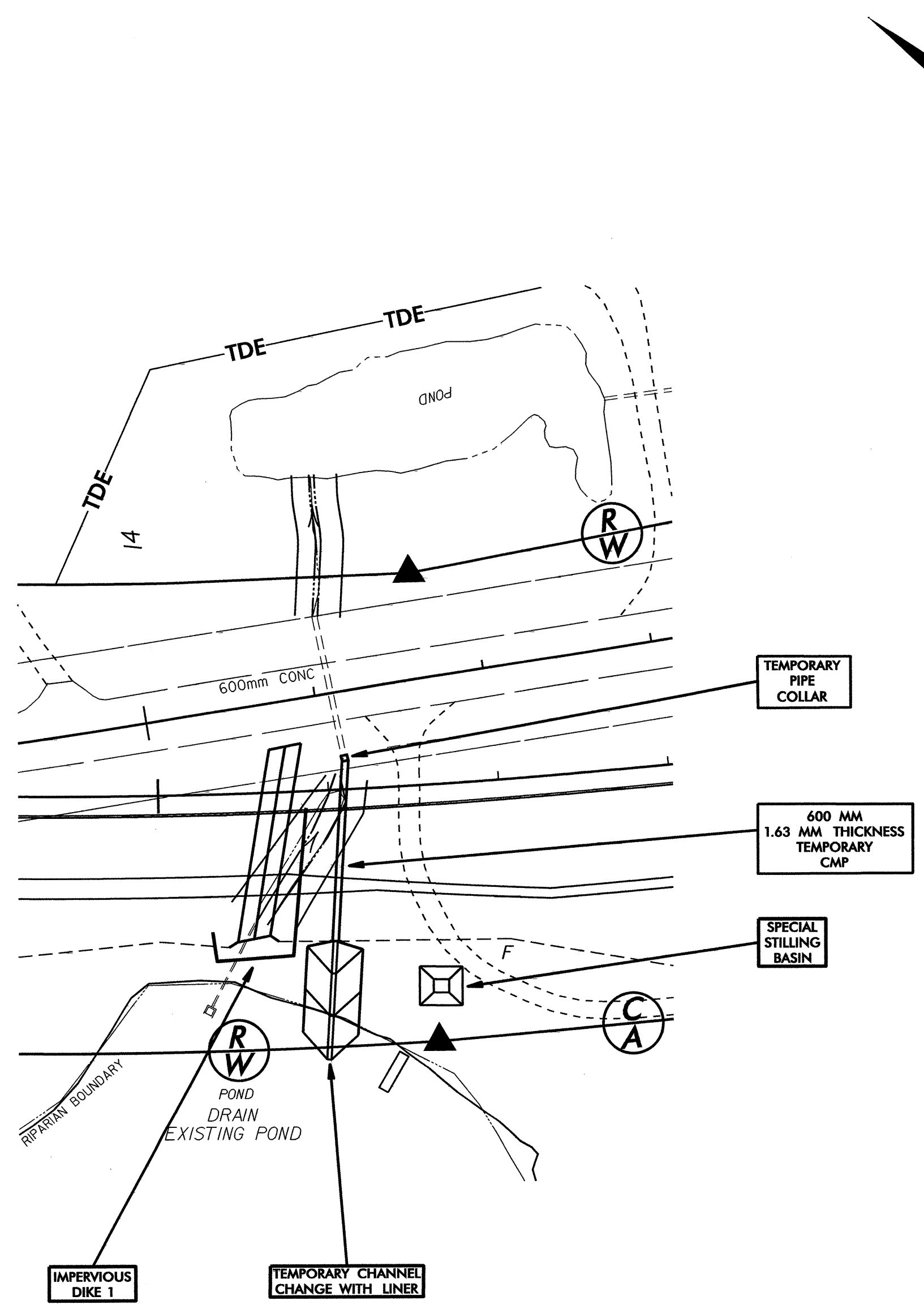
# CULVERT CONSTRUCTION SEQUENCE STA. 14+14 -YREV-

## PHASE I

1. UTILIZE SPECIAL STILLING BASINS AS NEEDED THROUGHOUT CULVERT CONSTRUCTION.
2. INSTALL 600MM TEMPORARY CMP (MINIMUM 1.63MM THICKNESS) AND PIPE COLLAR CONNECTING TO EXISTING 600MM CONCRETE PIPE.
3. CONSTRUCT TEMPORARY CHANNEL CHANGE WITH LINER (0.5M BASE, 1.0M DEEP, 3:1 SIDE SLOPES) AND BREECH DAM, DIVERTING FLOW THROUGH TEMPORARY 600MM CMP.
4. CONSTRUCT IMPERVIOUS DIKE 1.
5. CONSTRUCT UPSTREAM PORTION OF THE PROPOSED CULVERT, INCLUDING HEADWALL AND WING WALLS.
6. CONSTRUCT PROPOSED ROADWAY OVER PORTION OF CULVERT JUST BUILT, REMOVING PORTION OF IMPERVIOUS DIKE 1 AS NEEDED, AND SHIFT TRAFFIC.

## PHASE II


7. REMOVE EXISTING 600MM CONCRETE PIPE AND TEMPORARY PIPE COLLAR.
8. CONSTRUCT IMPERVIOUS DIKE 2.
9. CONSTRUCT TEMPORARY CHANNEL CHANGE WITH LINER (0.5M BASE, 1.0M DEEP, 3:1 SIDE SLOPES) AT OUTLET OF TEMPORARY CMP, DIVERTING FLOW.
10. CONSTRUCT REMAINDER OF THE PROPOSED CULVERT.
11. REMOVE IMPERVIOUS DIKE 2, THEN REMAINDER OF IMPERVIOUS DIKE 1.
12. CONSTRUCT OUTLET CHANNEL, THEN THE INLET CHANNEL, AND DIVERT FLOW THROUGH CULVERT.
13. FILL 600MM TEMPORARY CMP WITH FLOWABLE FILL AND REMOVE TEMPORARY CHANNEL CHANGES.
14. REMOVE ANY REMAINING SPECIAL STILLING BASINS, AND COMPLETE ROADWAY.

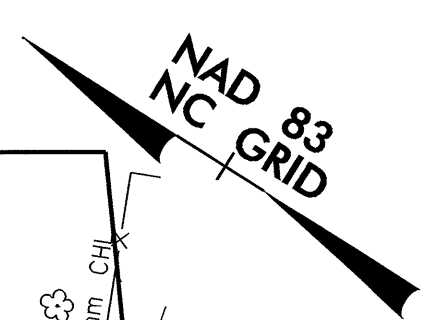
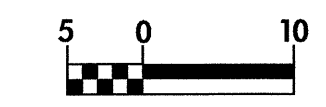




8/17/98

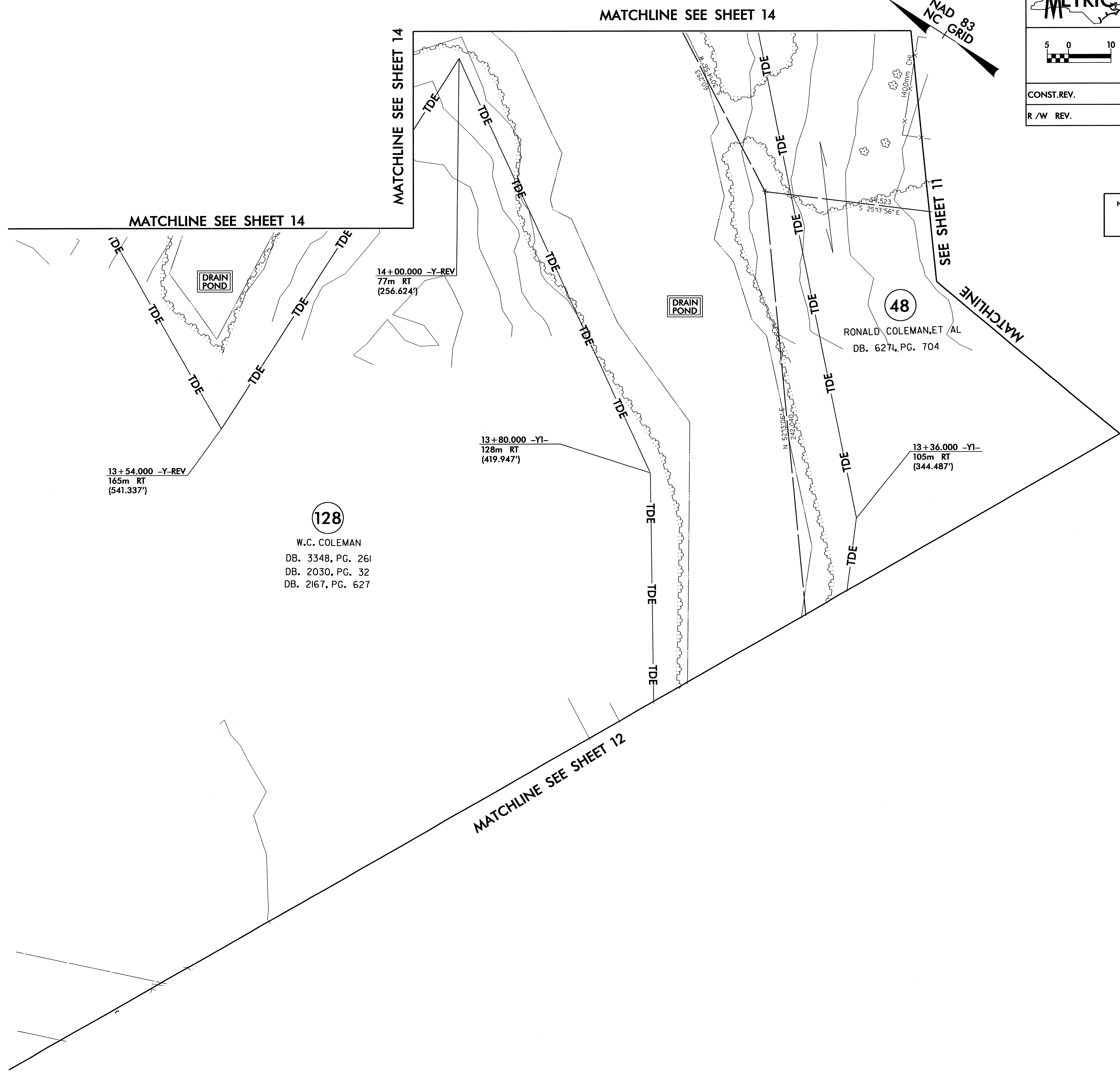
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jagoodwin

	PROJECT REFERENCE NO.	SHEET NO.
	X-0002CA	EC-17/CONST.15
	R/W SHEET NO.	15 (X-0002C)
	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.		
R/W REV.		



CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 15

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



**128**  
W.C. COLEMAN  
DB. 3348, PG. 261  
DB. 2030, PG. 32  
DB. 2167, PG. 627

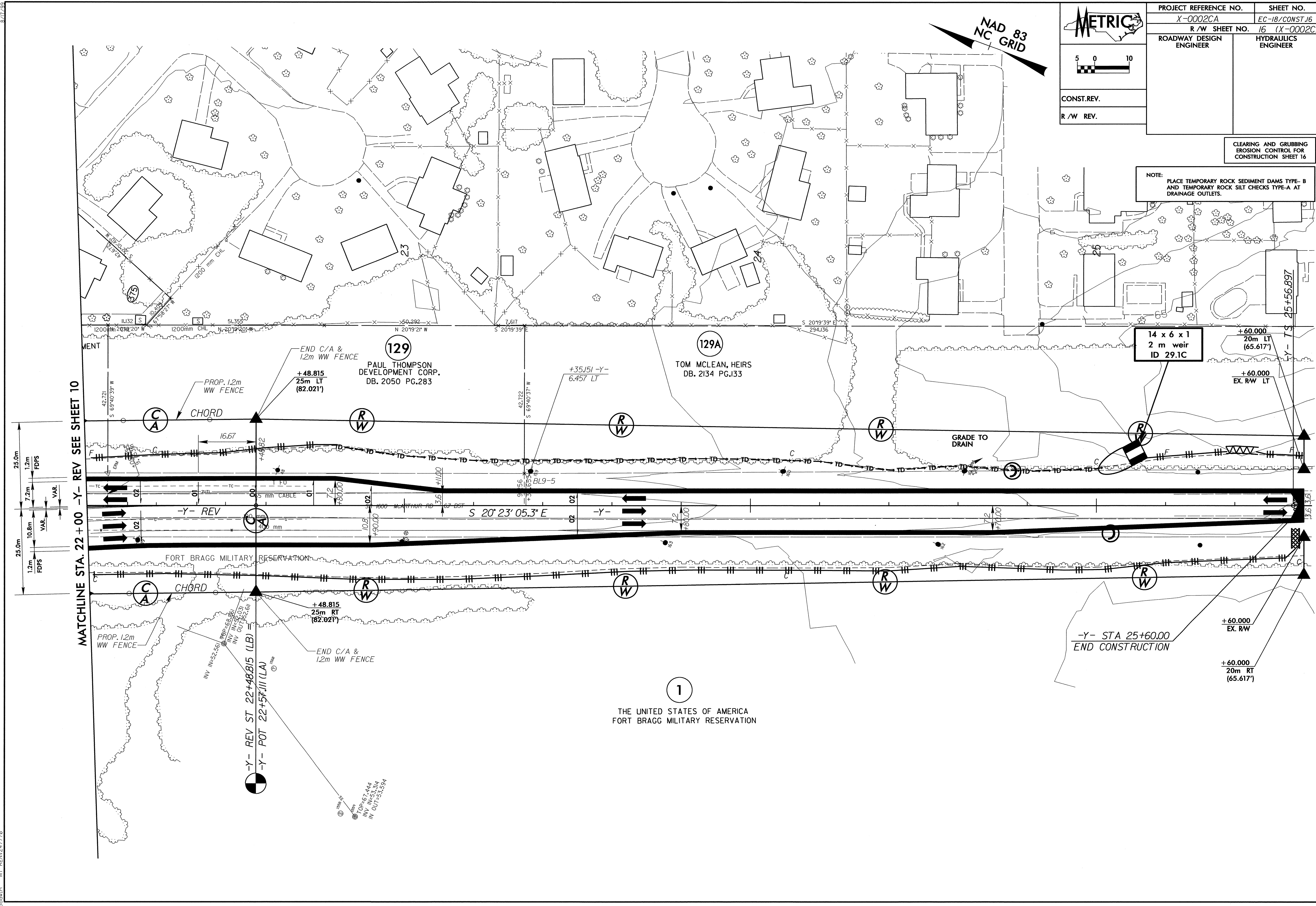
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RAE\_20-Apr-2010\_1458  
Jegocadin



	PROJECT REFERENCE NO.	SHEET NO.
	X-0002CA	EC-18/CONST.16
ROADWAY DESIGN ENGINEER	R/W SHEET NO.	16 (X-0002C)
	HYDRAULICS ENGINEER	
CONST. REV.		
R/W REV.		

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 16

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



MATCHLINE STA. 22+00 -Y- REV SEE SHEET 10

25.0m  
1.2m  
7.2m  
10.8m  
1.2m  
25.0m  
FDPS  
VAR.

FORT BRAGG MILITARY RESERVATION

1  
THE UNITED STATES OF AMERICA  
FORT BRAGG MILITARY RESERVATION

+48.815  
25m RT  
(82.021)  
END C/A & 1.2m WW FENCE  
-Y- REV ST. 22+48.815 (LB)  
-Y- POT 22+57.111 (LA)  
INV. IN=52.561  
INV. IN=53.037  
INV. OUT=52.261  
TOP=67.414  
INV. IN=53.114  
INV. OUT=53.534

14 x 6 x 1  
2 m weir  
ID 29.1C

+60.000  
20m LT  
(65.617)

+60.000  
EX. RW LT

+60.000  
EX. RW

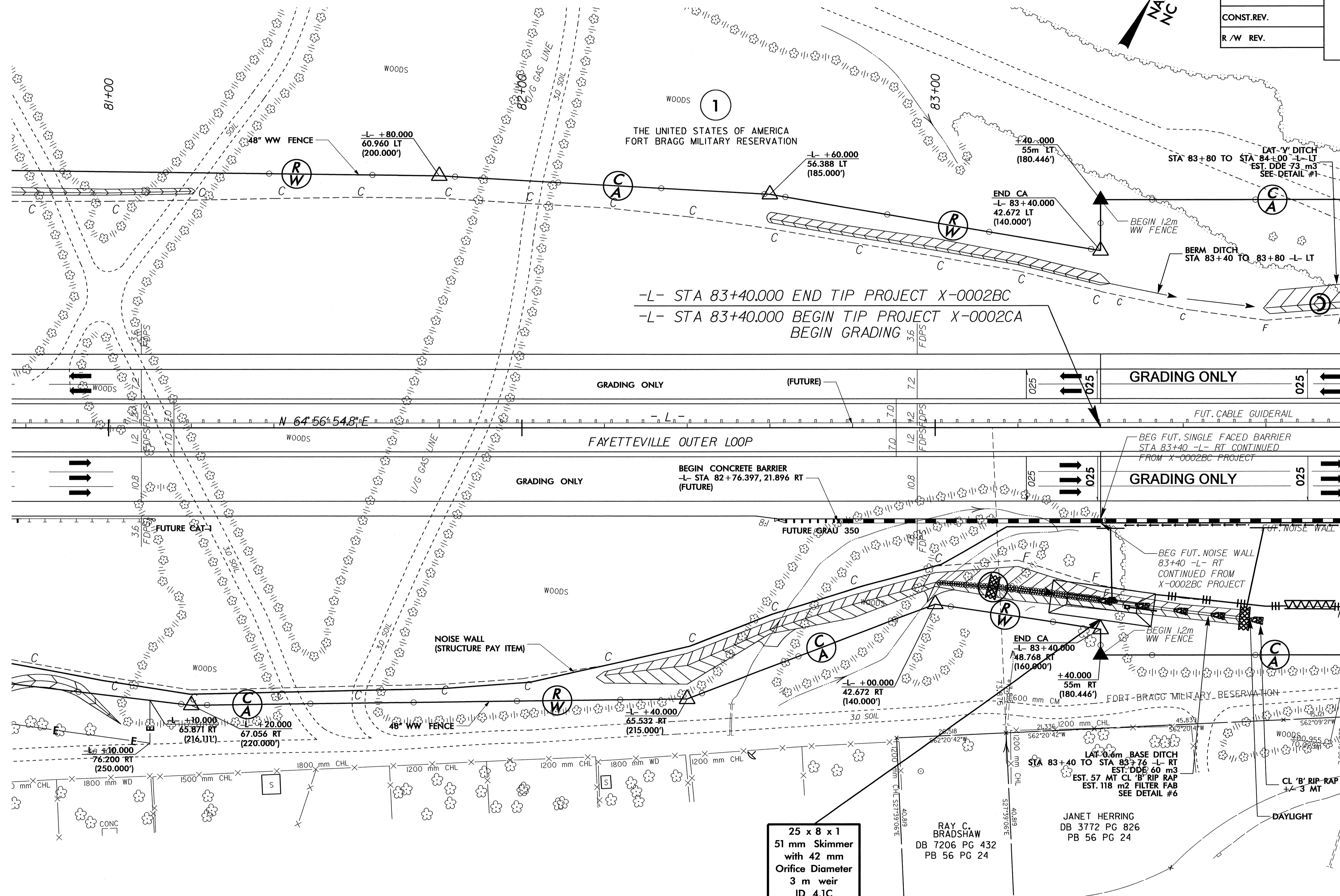
+60.000  
20m RT  
(65.617)

-Y- STA 25+60.00  
END CONSTRUCTION

**METRIC**

CONST. REV.  
R/W REV.

PROJECT REFERENCE NO. X-0002CA	SHEET NO. EC-19/CONST.4
R/W SHEET NO. 4 (X-0002C)	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	



-L- STA 83+40.000 END TIP PROJECT X-0002BC  
 -L- STA 83+40.000 BEGIN TIP PROJECT X-0002CA  
 BEGIN GRADING

25 x 8 x 1  
 51 mm Skimmer  
 with 42 mm  
 Orifice Diameter  
 3 m weir  
 ID 4.1C

RAY C. BRADSHAW  
 DB 7206 PG 432  
 PB 56 PG 24

JANET HERRING  
 DB 3772 PG 826  
 PB 56 PG 24

MATCHLINE STA 84+00 SEE SHEET 5

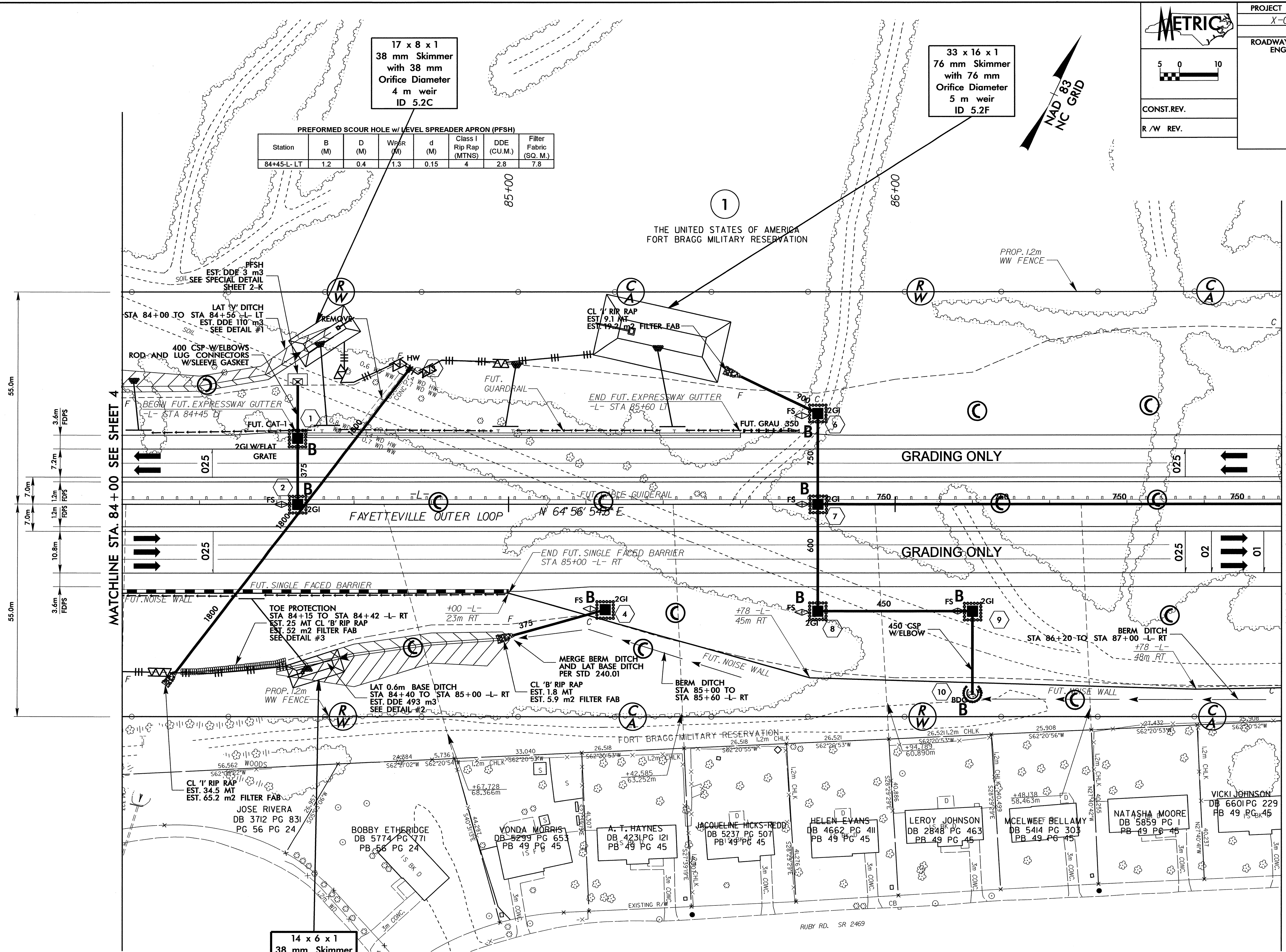
FOR DITCH DETAILS SEE SHEET 2-K

RAVE: 20-APR-2006 10:41:00 J:\p0002ca.ec-pah04.dgn



PREFORMED SCOUR HOLE w/ LEVEL SPREADER APRON (PFSH)

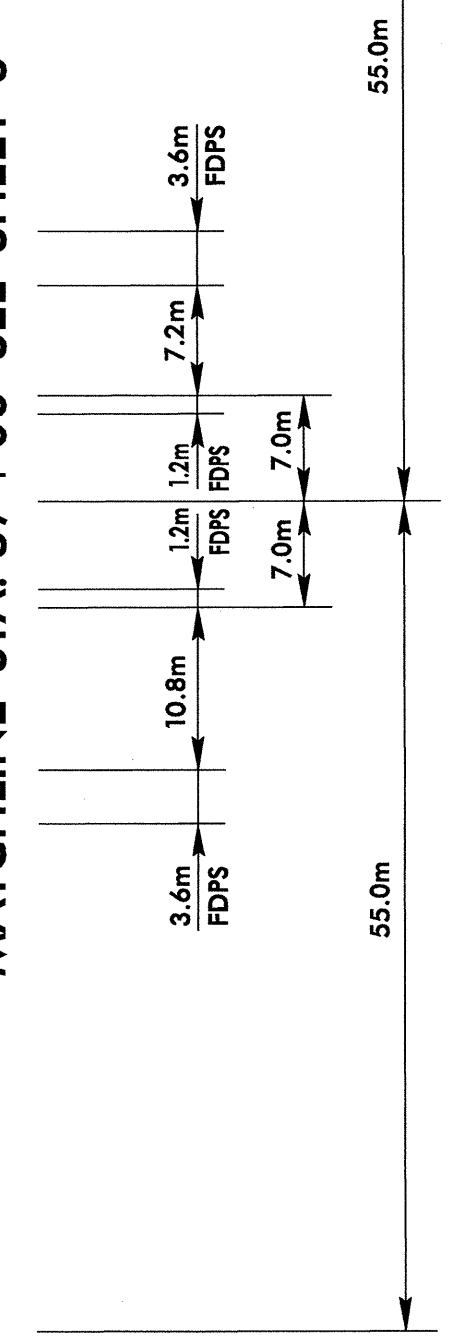
Station	B (M)	D (M)	WFSR (M)	d (M)	Class I Rip Rap (MTNS)	DDE (CU.M.)	Filter Fabric (SQ.M.)
84+45-LT	1.2	0.4	1.3	0.15	4	2.8	7.8



17 x 8 x 1  
38 mm Skimmer  
with 38 mm  
Orifice Diameter  
4 m weir  
ID 5.2C

33 x 16 x 1  
76 mm Skimmer  
with 76 mm  
Orifice Diameter  
5 m weir  
ID 5.2F


14 x 6 x 1  
38 mm Skimmer  
with 27 mm  
Orifice Diameter  
2 m weir  
ID 5.1F



MATCHLINE STA. 84 + 00 SEE SHEET 4

MATCHLINE STA. 87 + 00 SEE SHEET 6

20-185-200 (5/5)  
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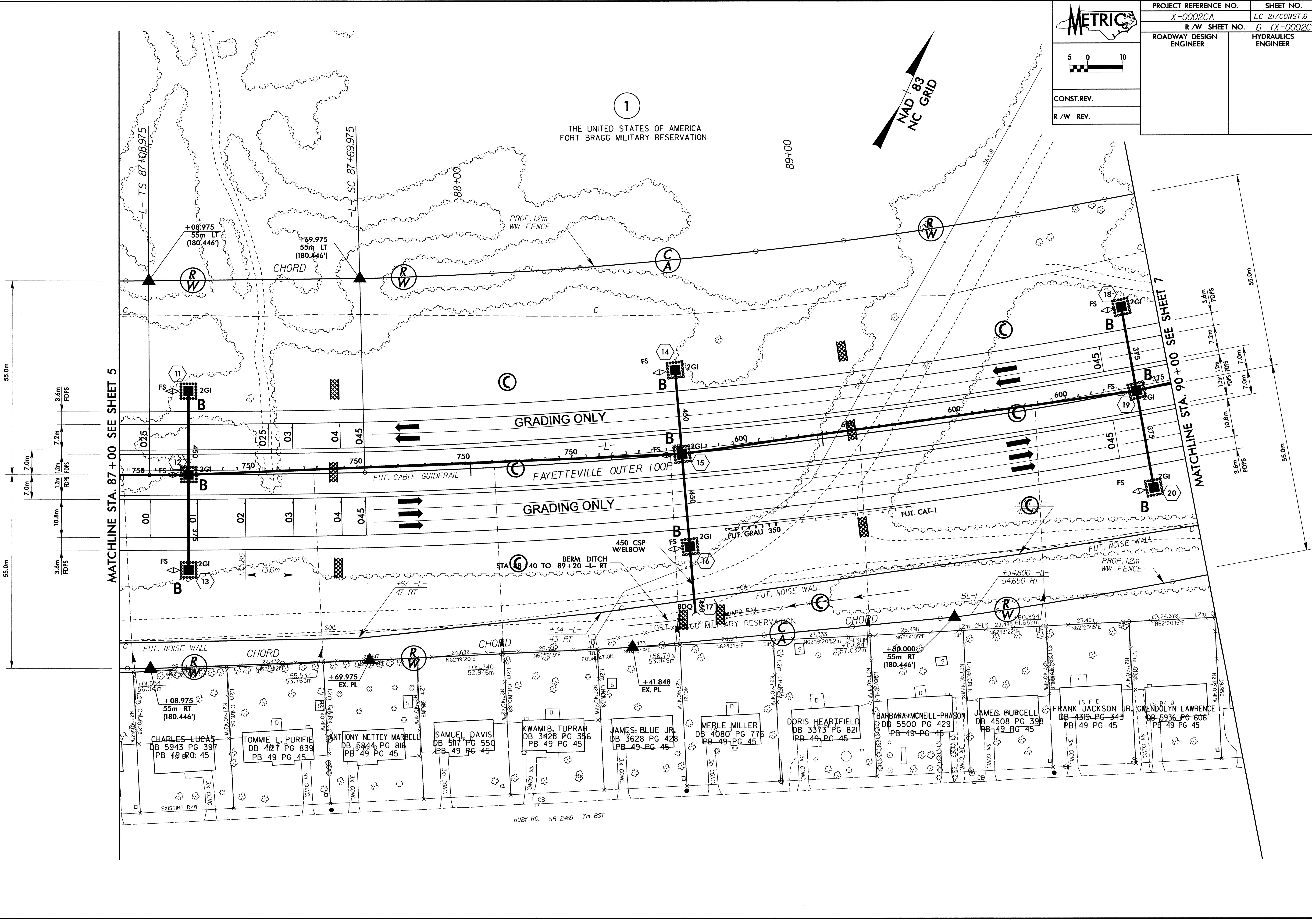
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CONST. REV.


R/W REV.

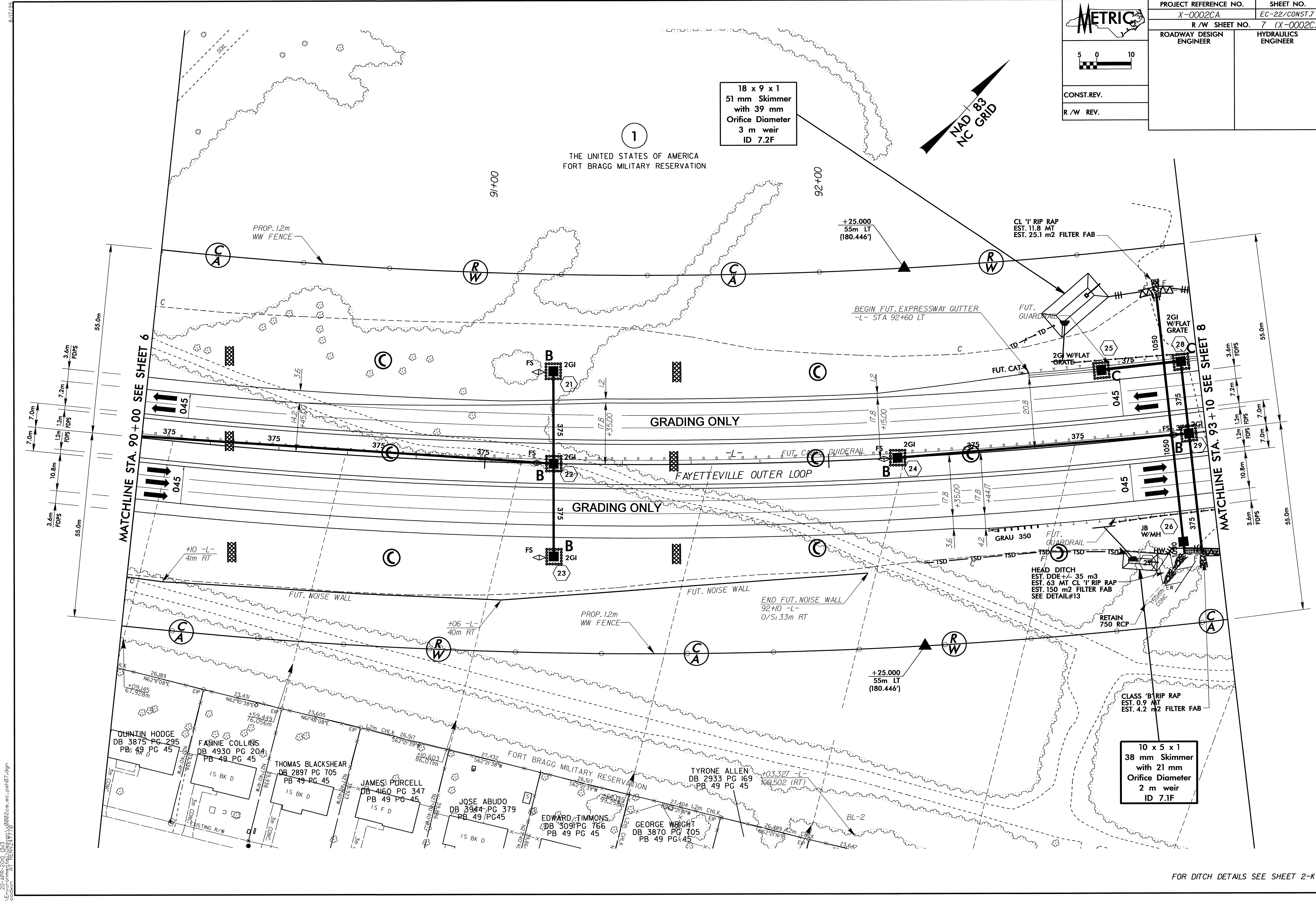
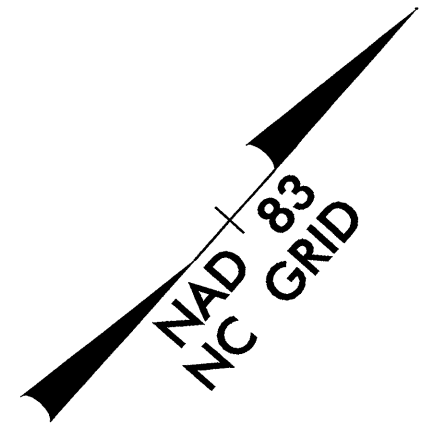
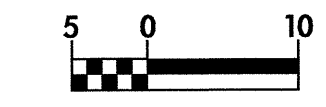
PROJECT REFERENCE NO.	SHEET NO.
X-0002CA	EC-21/CONST.6
R/W SHEET NO.	6 (X-0002C)
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

20-APR-2010 12:11  
 jgocoburn:AT:REV(2/17/09)0002co.ec.psh06.dgn





	PROJECT REFERENCE NO.	SHEET NO.
	X-0002CA	EC-22/CONST.7
	R/W SHEET NO.	7 (X-0002C)
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
CONST. REV.		
R/W REV.		




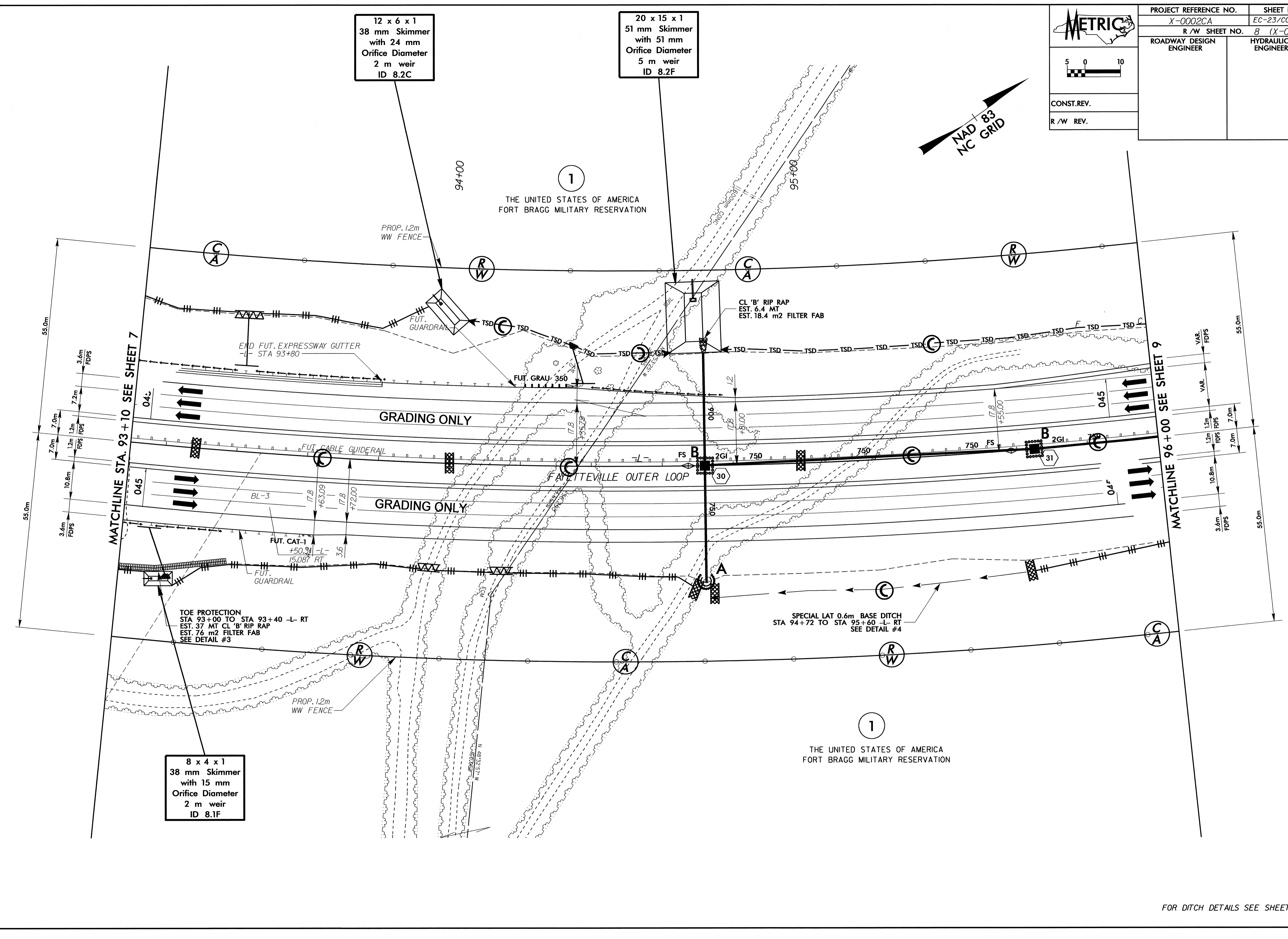
FOR DITCH DETAILS SEE SHEET 2-K

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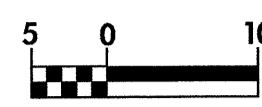


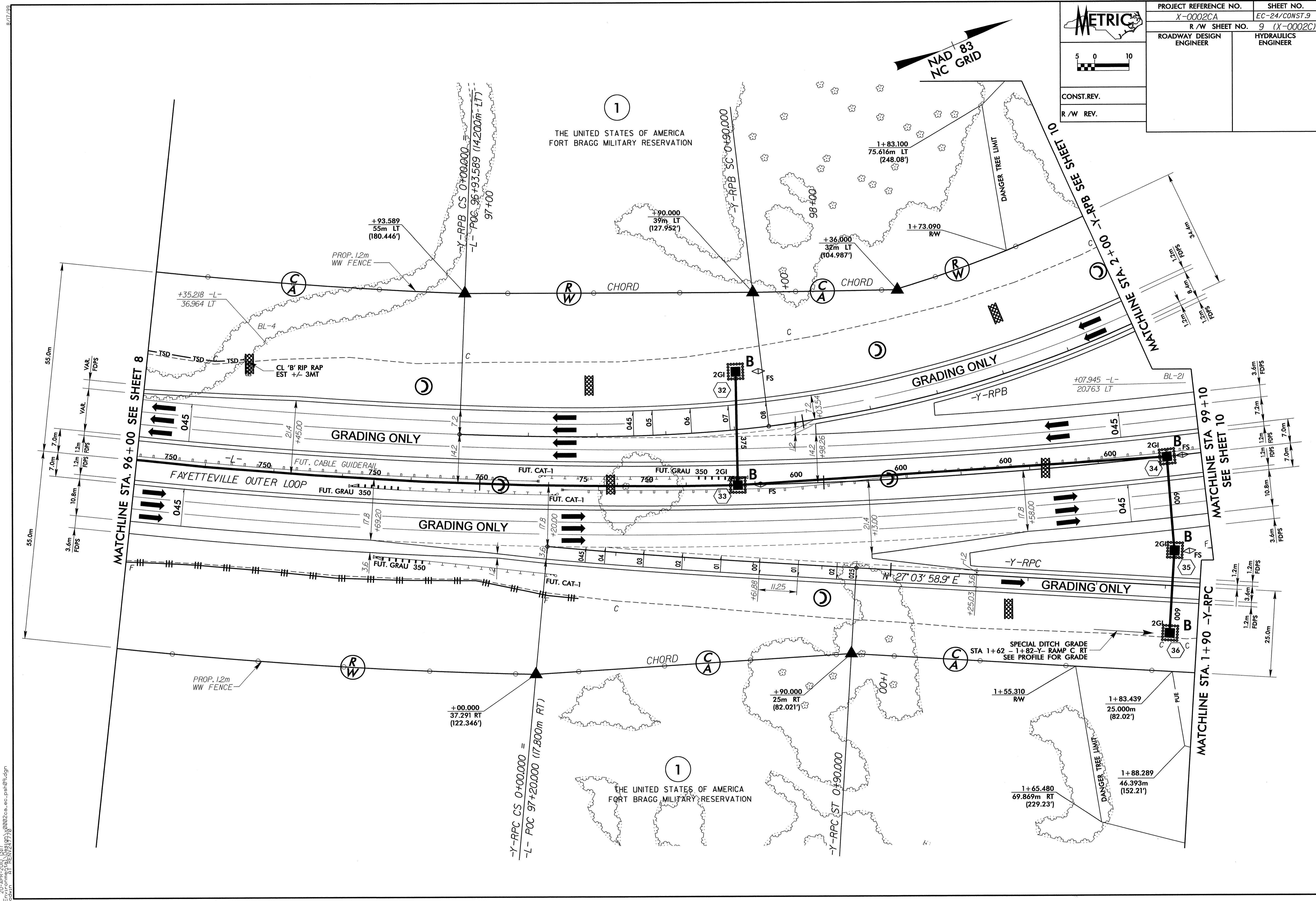
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 jgocadun AT TEL: (717) 802-2377  
 jgocadun.ec.psh06.dgn

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	R/W SHEET NO. 8 (X-0002C)	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER		



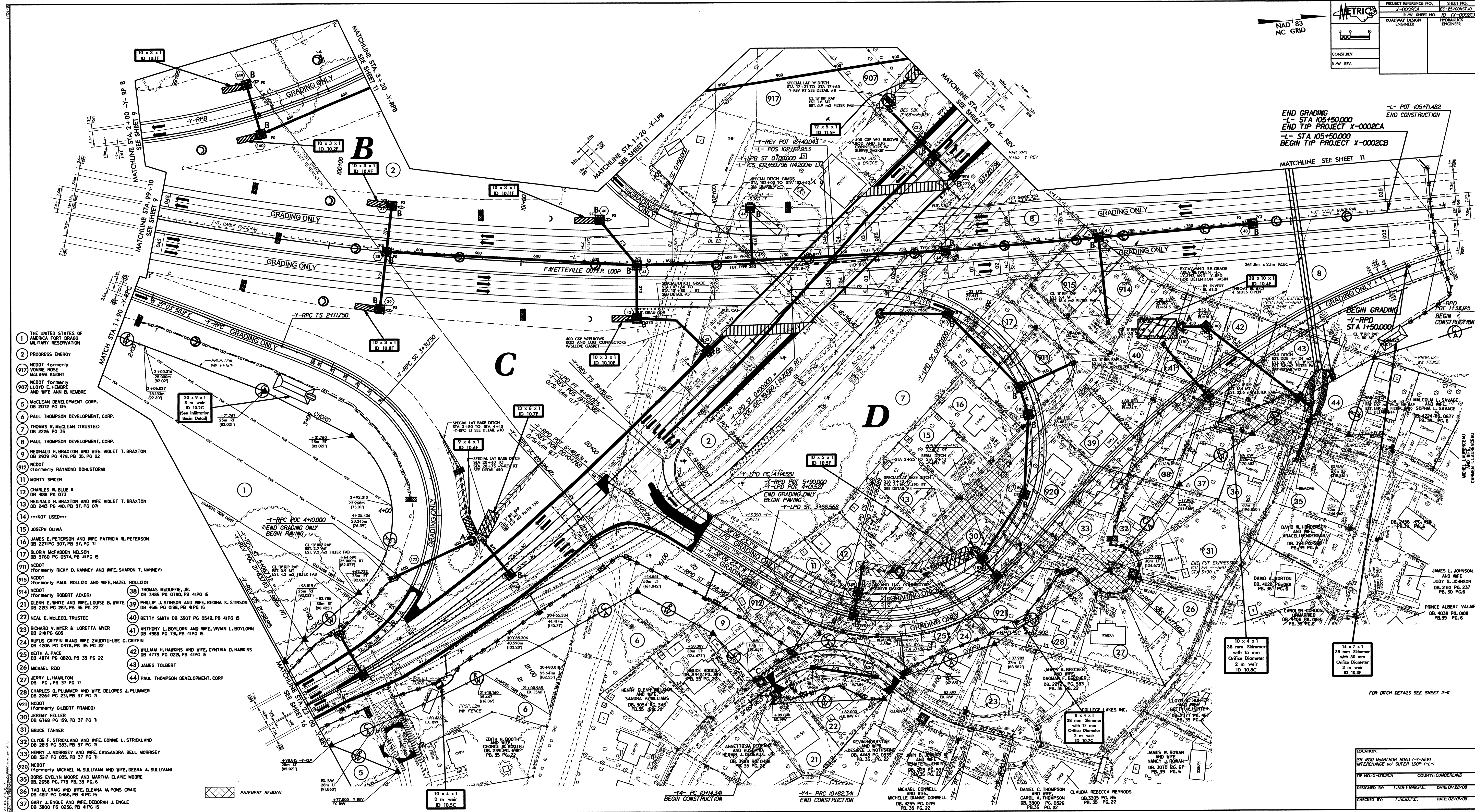
FOR DITCH DETAILS SEE SHEET 2-K

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



8/17/93  
 20-APR-2000  
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- 1 THE UNITED STATES OF AMERICA FORT BRAGG MILITARY RESERVATION
- 2 PROGRESS ENERGY
- 917 NCDOT formerly YONNE ROSE MCLAMB KINGHT
- 900 NCDOT formerly LLOYD E. HEMRE AND WIFE ANN B. HEMRE
- 5 MCLEAN DEVELOPMENT CORP. DB 2072 PG 135
- 6 PAUL THOMPSON DEVELOPMENT, CORP. DB 2226 PG 35
- 7 THOMAS R. MCLEAN (TRUSTEE) DB 2226 PG 35
- 8 PAUL THOMPSON DEVELOPMENT, CORP.
- 9 REGINALD H. BRAXTON AND WIFE VIOLET T. BRAXTON DB 2939 PG 479, PB 35, PG 22
- 10 NCDOT (Formerly RAYMOND DOHLSTORM)
- 11 MONTY SPICER
- 12 CHARLES W. BLUE II DB 488 PG 073
- 13 REGINALD H. BRAXTON AND WIFE VIOLET T. BRAXTON DB 2943 PG 460, PB 31, PG 071
- 14 \*\*\*NOT USED\*\*\*
- 15 JOSEPH OLIVA
- 16 JAMES E. PETERSON AND WIFE PATRICIA W. PETERSON DB 2271 PG 307, PB 37, PG 71
- 17 GLORIA W. GADSDEN NELSON DB 3160 PG 0274, PB 41 PG 15
- 911 NCDOT (Formerly RICKY D. HANNEY AND WIFE, SHARON T. HANNEY)
- 913 NCDOT (Formerly PAUL ROLLIZO AND WIFE, HAZEL ROLLIZO)
- 914 NCDOT (Formerly ROBERT ACKER)
- 38 THOMAS MCDUFFIE, JR. DB 3485 PG 0780, PB 41 PG 15
- 39 YVONNE E. WHITE AND WIFE LOUISE B. WHITE DB 2203 PG 287, PB 35 PG 22
- 40 BETTY SMITH DB 3507 PG 0549, PB 41 PG 15
- 21 RICHARD V. MYER & LORETTA MYER DB 241 PG 609
- 41 ANTHONY L. BOYLORN AND WIFE, VIVIAN L. BOYLORN DB 4388 PG 731, PB 41 PG 15
- 24 RUFUS GRIFFIN AND WIFE ZALDITU-LIBRE C. GRIFFIN DB 4206 PG 0476, PB 35 PG 22
- 42 KEITH A. PACE DB 4874 PG 0820, PB 35 PG 22
- 26 MICHAEL REO
- 27 JERRY L. HAMILTON DB PG 37 PG 71
- 28 CHARLES D. PLUMMER AND WIFE DELORES J. PLUMMER DB 2284 PG 273, PB 37 PG 71
- 921 NCDOT (Formerly GILBERT FRANCO)
- 30 GENEVY HELLER DB 6768 PG 155, PB 37 PG 71
- 31 BRUCE TANNER
- 32 ELYSE F. STRICKLAND AND WIFE, CONNIE L. STRICKLAND DB 2803 PG 383, PB 37 PG 71
- 33 HENRY J. MORRISSEY AND WIFE, CASSANDRA BELL MORRISSEY DB 307 PG 035, PB 37 PG 71
- 920 NCDOT (Formerly MICHAEL N. SULLIVAN AND WIFE, DEBRA A. SULLIVAN)
- 34 DORIS EVELYN MOORE AND MARTHA ELANE MOORE DB 2658 PG 178, PB 39 PG 5
- 35 TAO M. CRAIG AND WIFE, ELEANA M. PONS CRAIG DB 467 PG 0466, PB 41 PG 15
- 37 LARRY L. ENGLE AND WIFE, DEBORAH J. ENGLE DB 3800 PG 0256, PB 41 PG 5

NAD 83  
NC GRID

PROJECT REFERENCE NO. X-0002CA  
SHEET NO. EC-25 CONST 10

ROADWAY DESIGN ENGINEER  
HYDRAULICS ENGINEER

CONST. REV.  
P/W REV.

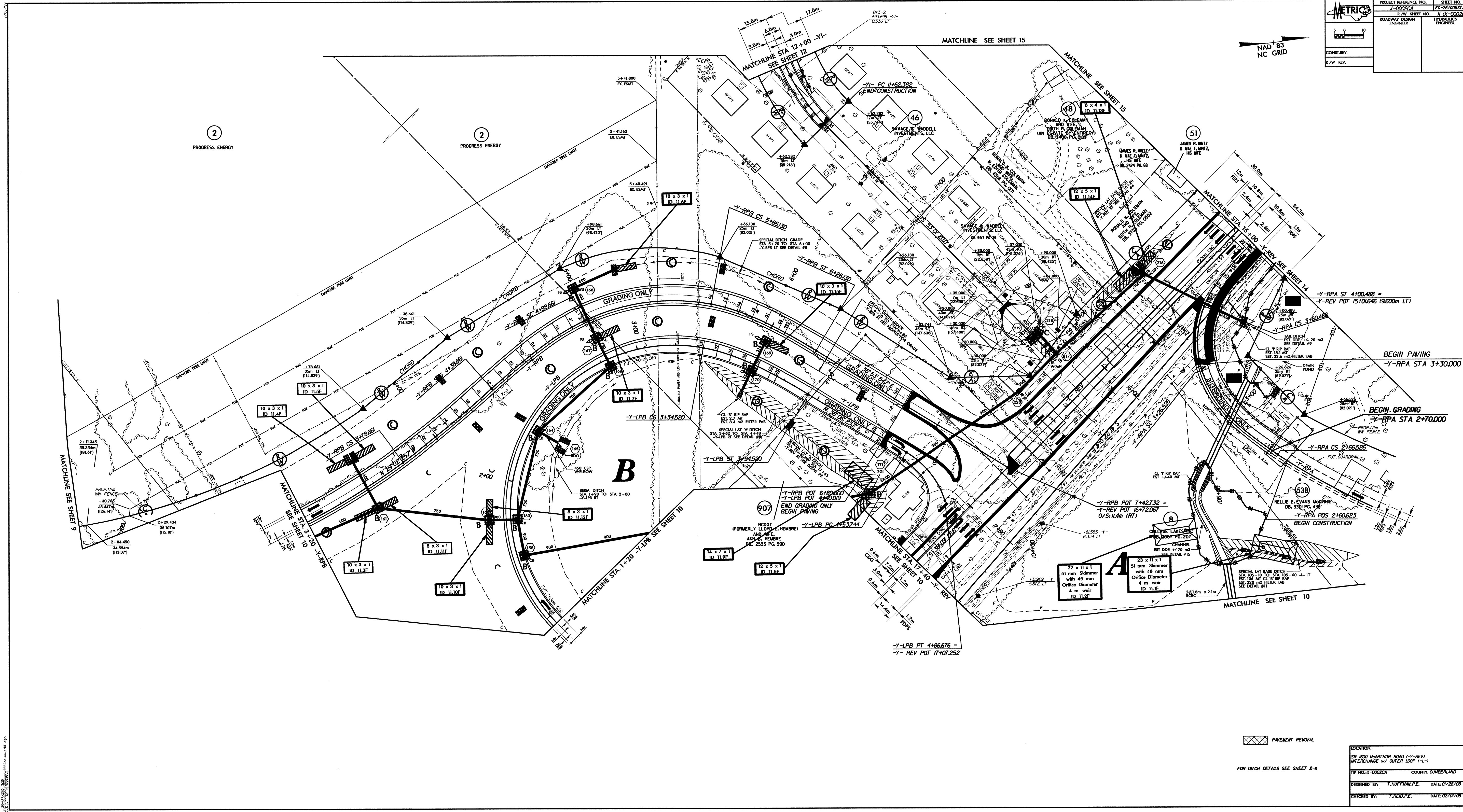
END GRADING  
-L- STA 105+50.000  
END TIP PROJECT X-0002CA  
-L- STA 105+50.000  
BEGIN TIP PROJECT X-0002CB

LOCATION:  
SR 800 MORTON ROAD (Y-REV)  
INTERCHANGE W/ OUTER LOOP (L-L)

DESIGNED BY: T. JEFF MANLEY DATE: 07/28/08  
CHECKED BY: J. TAYLOR DATE: 02/07/09




	PROJECT REFERENCE NO.	SHEET NO.
	Y-0002CA	EC-26/CONSTR II
	R/W SHEET NO. // (1)-(100267)	
	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	CONSTR. REV.	
	R/W REV.	

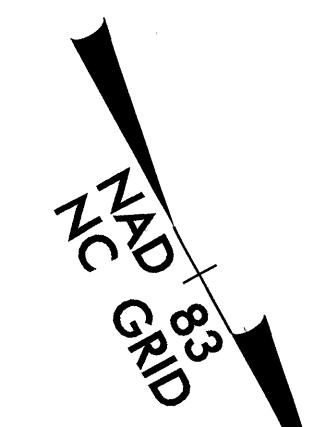
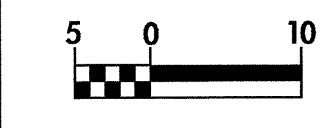


PAVEMENT REMOVAL

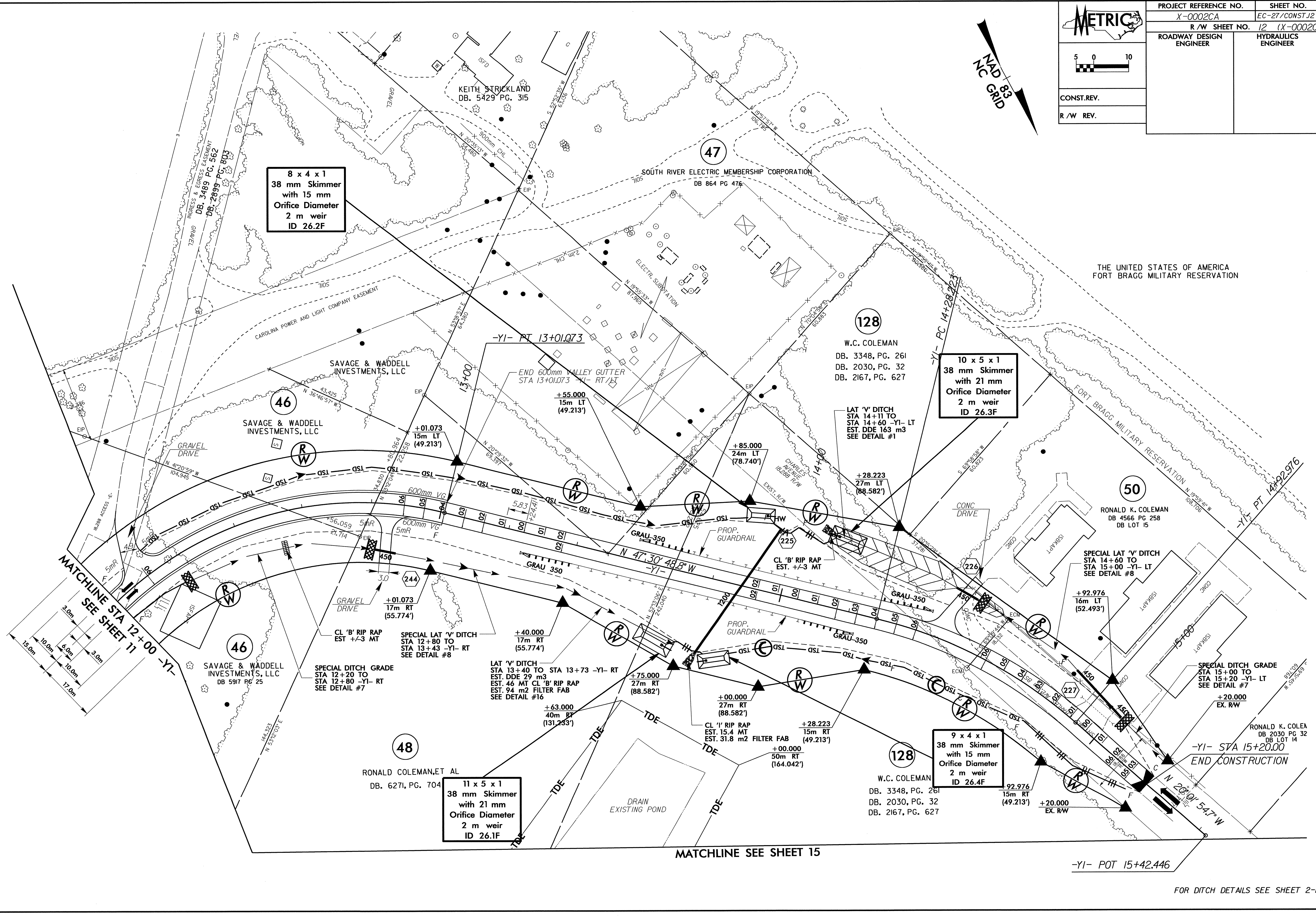
FOR DITCH DETAILS SEE SHEET 2-K

LOCATION:	
SR 800 MARTIN ROAD (Y-REV) INTERCHANGE w/ OUTER LOOP (1-L)	
PROJECT NO. Y-0002CA	COUNTY: CUMBERLAND
DESIGNED BY: T. RUFFMAN, P.E.	DATE: 01/28/08
CHECKED BY: T. RUFFMAN, P.E.	DATE: 02/07/08

	PROJECT REFERENCE NO.	SHEET NO.
	X-0002CA	EC-27/CONST.12
	R/W SHEET NO. 12 (X-0002C)	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
CONST. REV.		
R/W REV.		



20-APR-2010 13:30  
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 jps@metric.com



THE UNITED STATES OF AMERICA  
FORT BRAGG MILITARY RESERVATION

MATCHLINE SEE SHEET 15


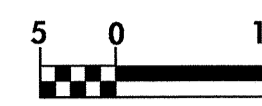
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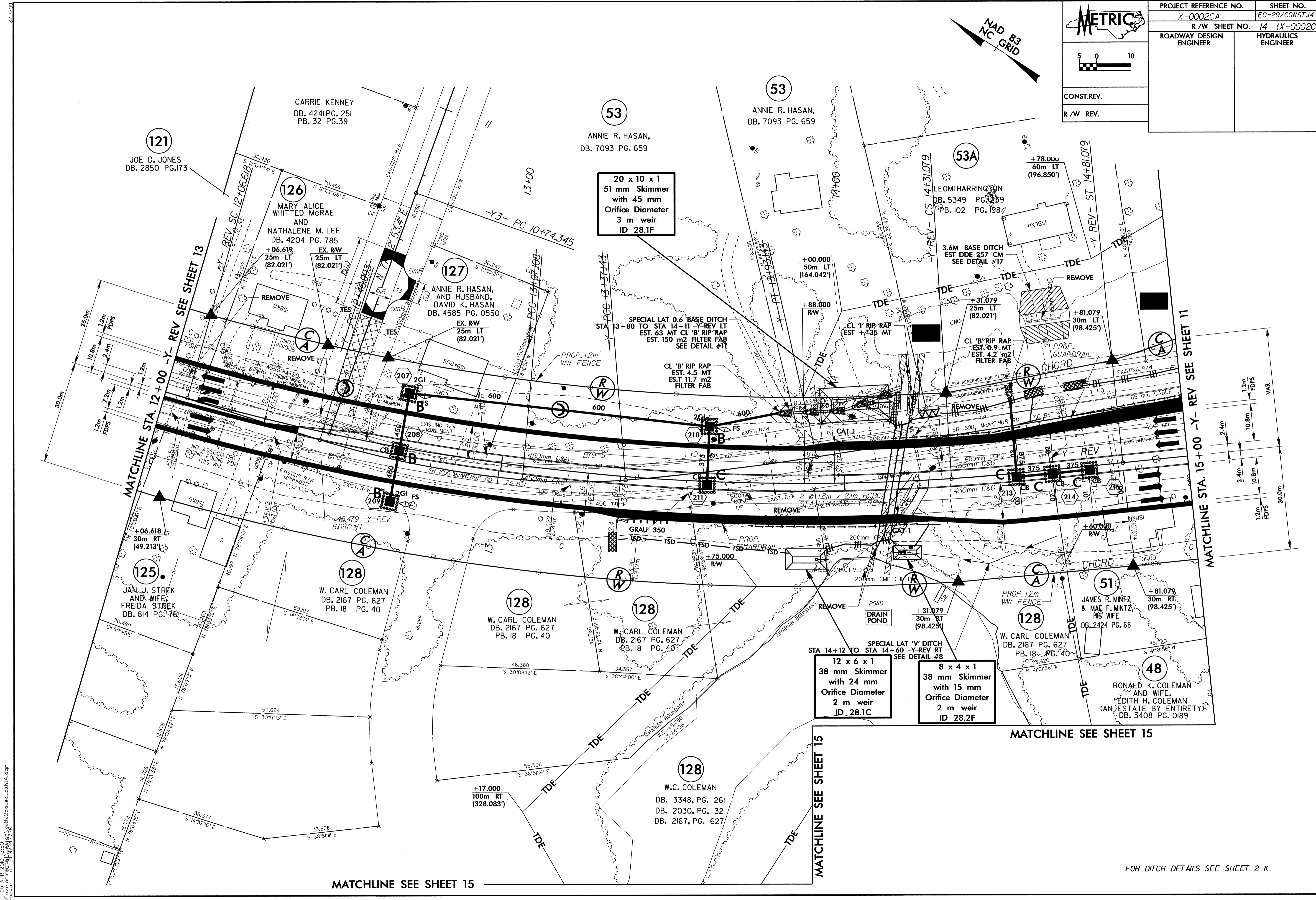
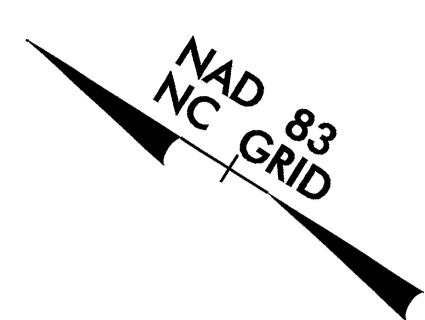
FOR DITCH DETAILS SEE SHEET 2-K







	PROJECT REFERENCE NO.	SHEET NO.
	X-0002CA	EC-29/CONST.14
	R/W SHEET NO.	14 (X-0002C)
	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST. REV.		
R/W REV.		




14.E.20-APR-2010 13:50  
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FOR DITCH DETAILS SEE SHEET 2-K



8/17/98

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jagorovan AT REV 2/17/00

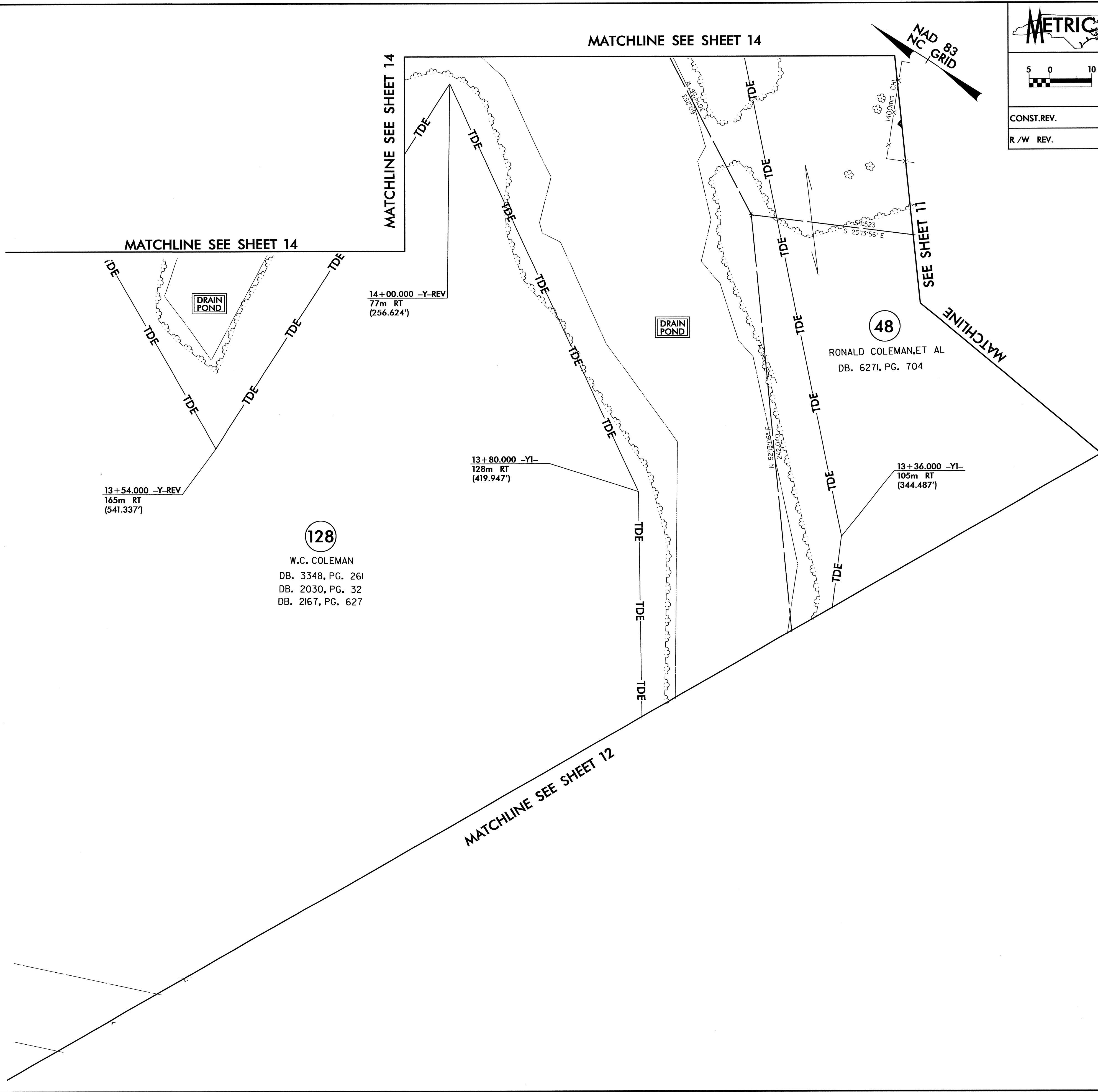


5 0 10


CONST. REV.

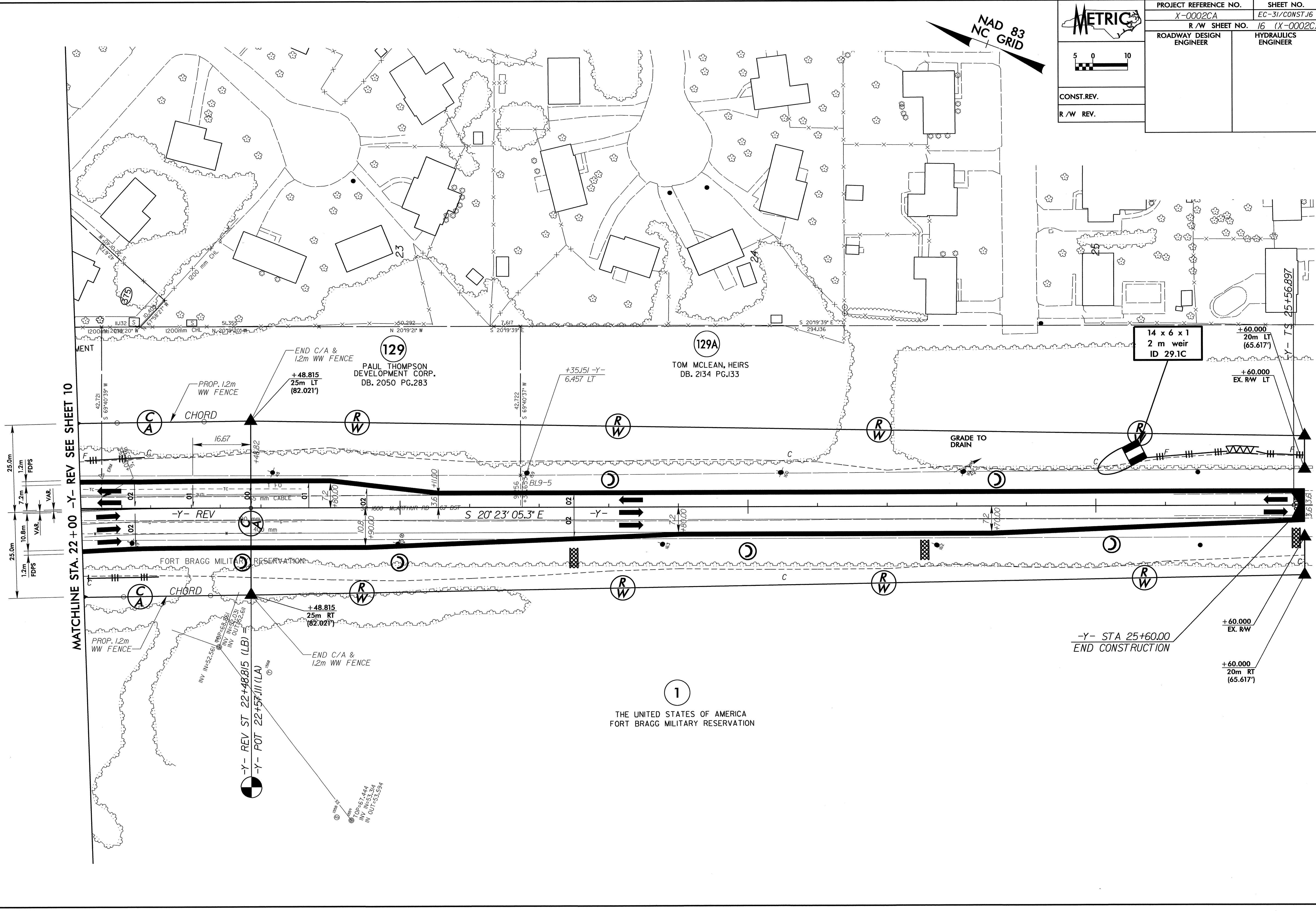
R/W REV.

PROJECT REFERENCE NO. X-0002CA	SHEET NO. EC-30/CONST.15
R/W SHEET NO. 15 (X-0002C)	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	



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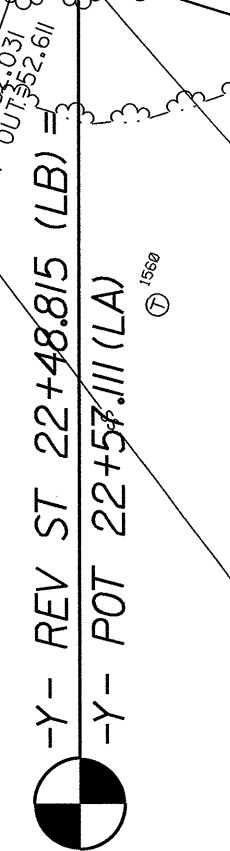
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	X-0002CA	EC-31/CONST.16
	R / W SHEET NO. 16 (X-0002C)	HYDRAULICS ENGINEER
	ROADWAY DESIGN ENGINEER	



MATCHLINE STA. 22 + 00 -Y- REV SEE SHEET 10

-Y- STA 25+60.00  
END CONSTRUCTION

1  
THE UNITED STATES OF AMERICA  
FORT BRAGG MILITARY RESERVATION



100-51-444  
 INV. IN-53-314  
 INV. 001-53-394