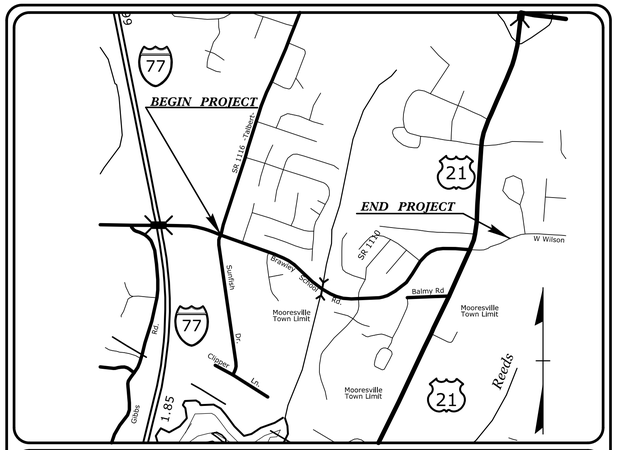
TIP PROJECT: R-3833C



VICINITY MAP
NOT TO SCALE

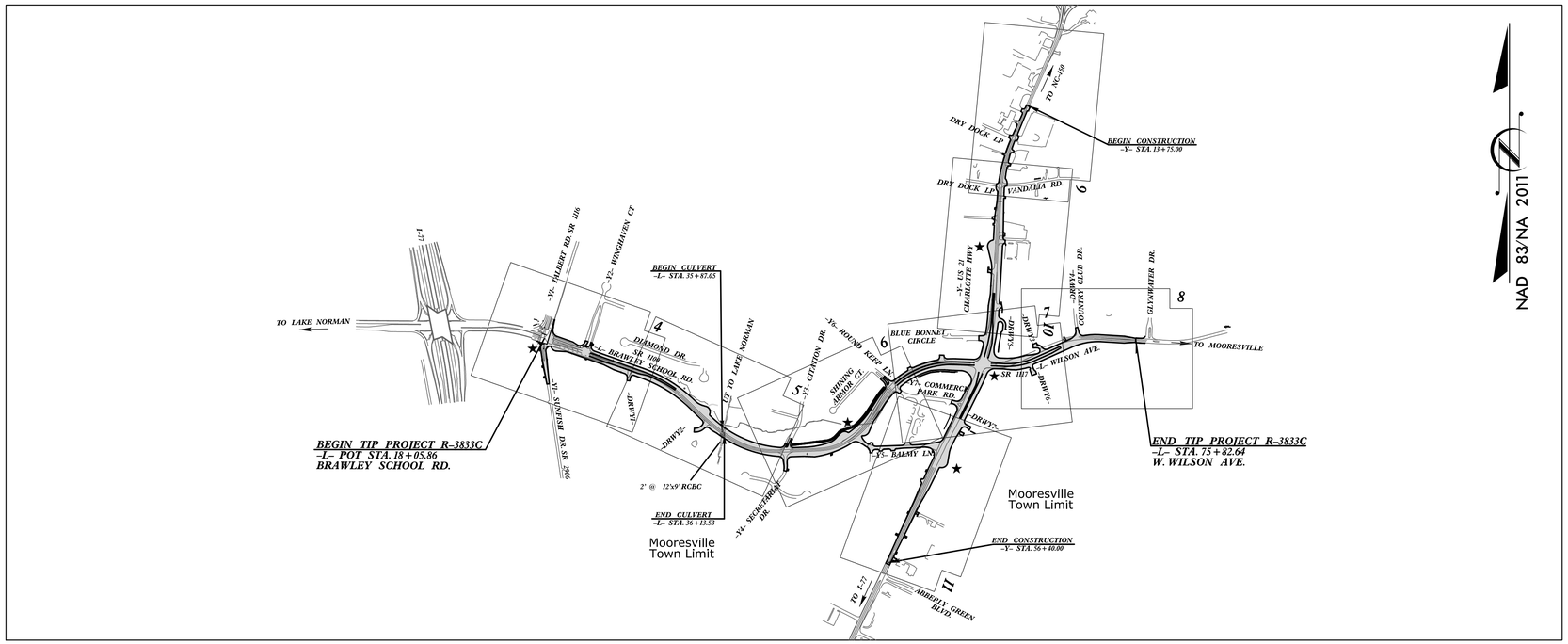
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

IREDELL COUNTY

LOCATION: SR 1100 BRAWLEY SCHOOL ROAD FROM SR 1116 TALBERT ROAD TO 1000' EAST OF US 21

TYPE OF WORK: GRADING, PAVING, DRAINAGE, CULVERT, WALLS, SIGNALS, PAVEMENT MARKINGS, PAVEMENT MARKERS



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3833C	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34554.1.FD1		P.E.
34554.2.4		R/W
34554.2.5		UTIL

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	SW CFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

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

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

Refer To E. C. Special Provisions for Special Considerations.

GRAPHIC SCALE

50 25 0 50 100
PLANS

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE APPLICABLE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES.

TGS ENGINEERS

Prepared In the Office of:

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150

Designed by:

Andrew H. Cochrane, PE *3015*
NAME *LEVEL III CERTIFICATION NO.*

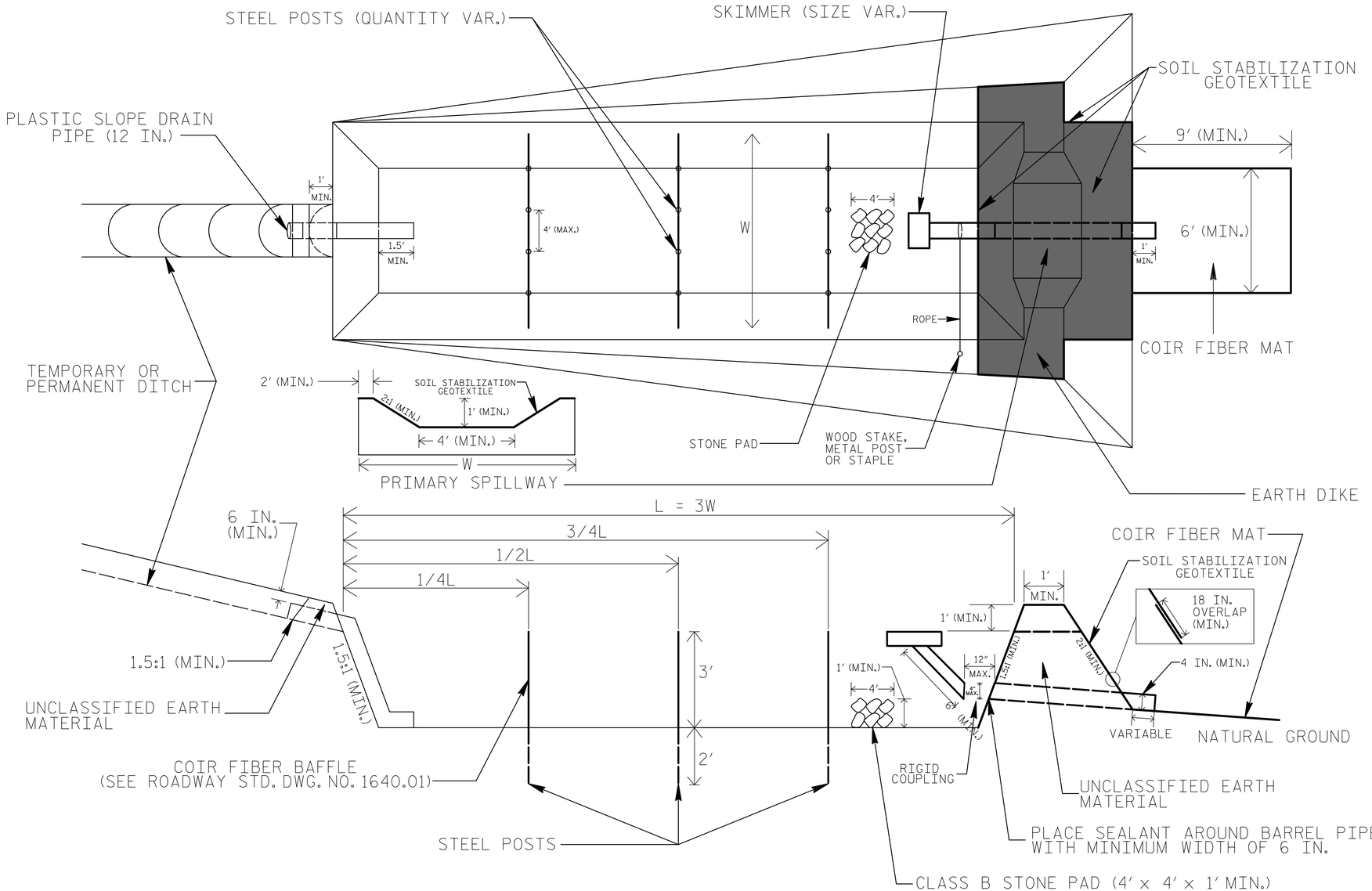
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2018 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

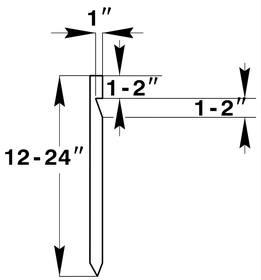
1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

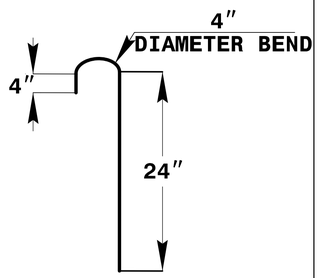
SKIMMER BASIN WITH BAFFLES DETAIL



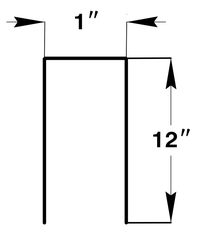
2" x 2" (nominal) WOODEN STAKE



#10 STEEL REINFORCEMENT BAR



1" (nominal) STAPLE



COIR FIBER MAT ANCHOR OPTIONS

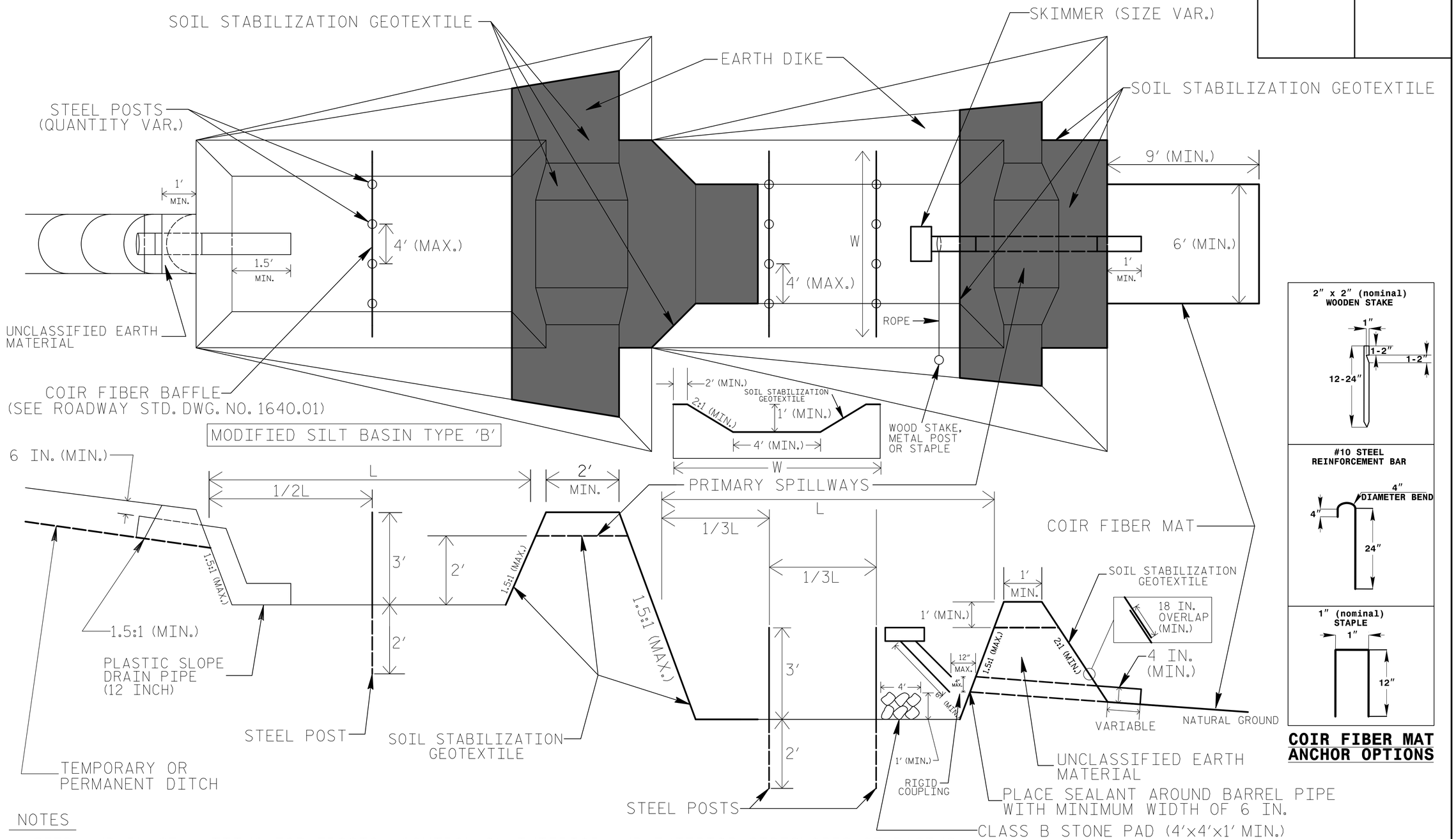
NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES.
2. LIMIT EARTH DIKE HEIGHT TO 5 FT.
3. FOR BASIN DEPTH OF 3 FT., THE MINIMUM BASIN WIDTH SHALL BE 9 FT.
4. DETERMINE PRIMARY SPILLWAY WEIR LENGTH (FT.) USING Q/0.8, WHERE Q IS FLOW RATE (CFS) INTO BASIN.
5. PLASTIC SLOPE DRAIN PIPE AT INLET OF BASIN MAY BE REPLACED BY FILTRATION GEOTEXTILE OR TARP AS DIRECTED.
6. SOIL STABILIZATION GEOTEXTILE FOR PRIMARY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TIERED SKIMMER BASIN DETAIL



COIR FIBER MAT ANCHOR OPTIONS

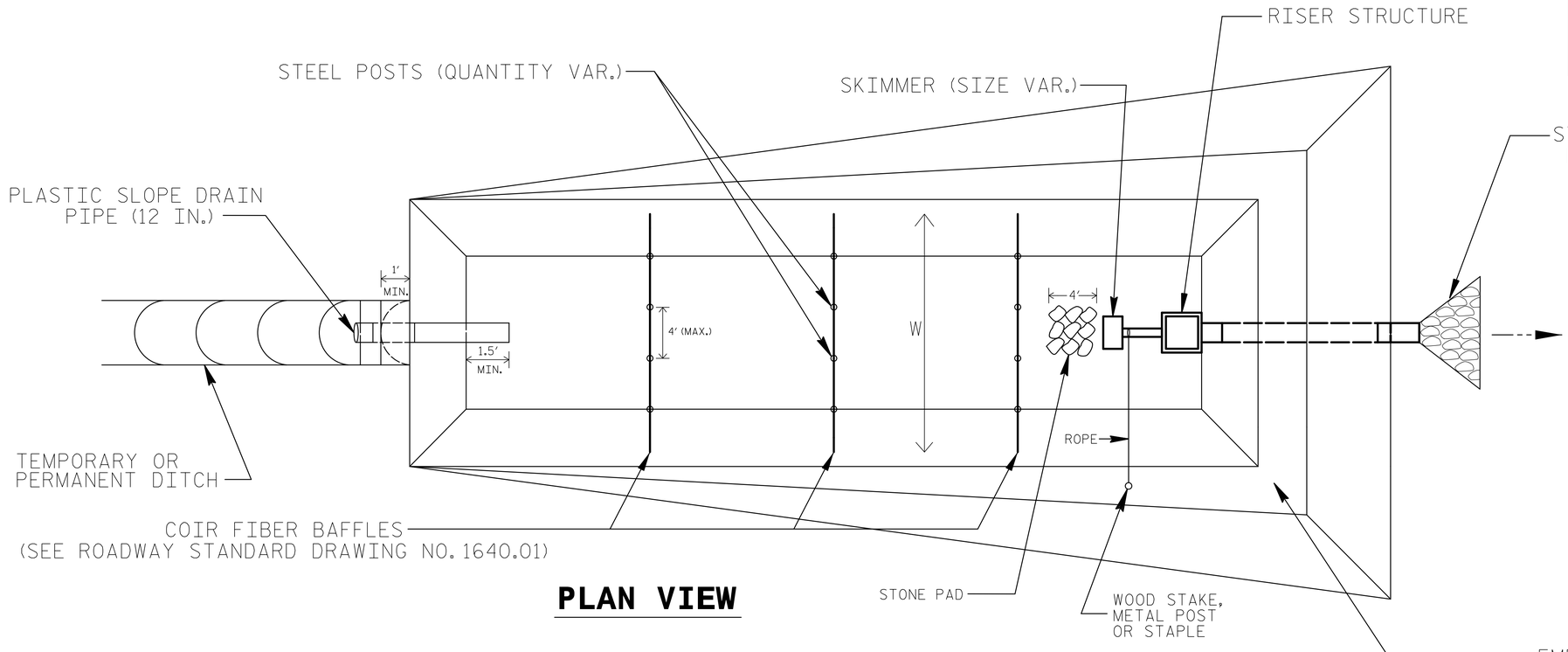
NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES OF BASINS.
2. LIMIT HEIGHT OF EARTH DIKES TO 5 FT.
3. ADDITIONAL MODIFIED SILT BASINS TYPE 'B' MAY BE NEEDED DEPENDING ON SLOPE.
4. FOR BASIN DEPTHS OF 3FT., THE MINIMUM BASIN WIDTHS SHALL BE 9 FT.
5. DETERMINE PRIMARY SPILLWAY WEIR LENGTHS (FT.) USING Q/0.8, WHERE Q IS FLOW RATE (CFS) INTO UPPER BASIN.
6. SOIL STABILIZATION GEOTEXTILE FOR PRIMARY SPILLWAYS SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

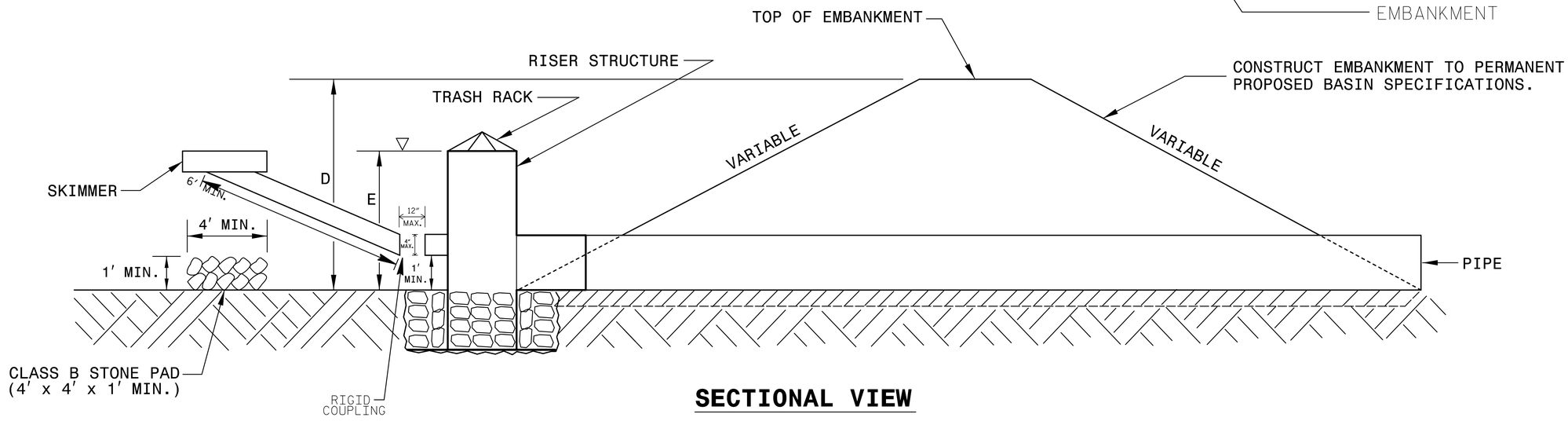
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

STORMWATER BASIN WITH SKIMMER



PLAN VIEW



SECTIONAL VIEW

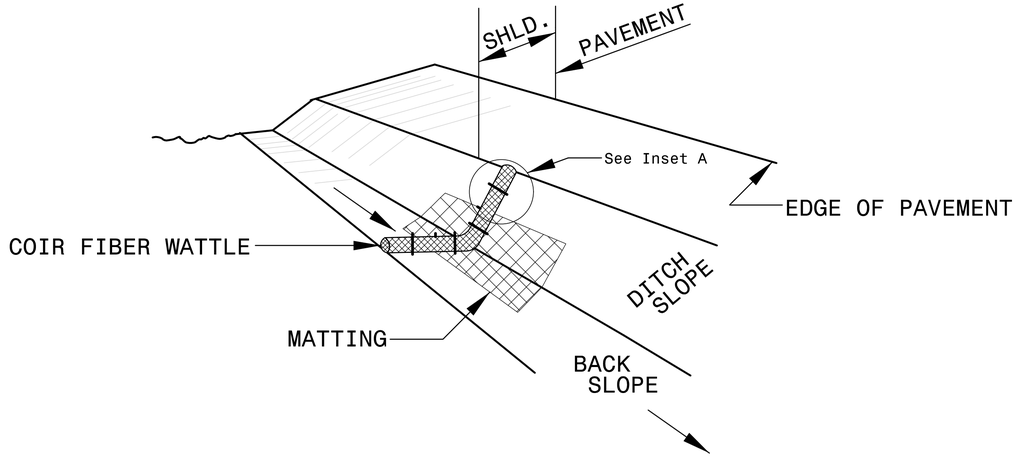
NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES.
2. INSTALL A MINIMUM OF 3 COIR FIBER BAFFLES IN ACCORDANCE WITH ROADWAY STD. DRAWING 1640.01.
3. INSTALL SKIMMER AND COUPLING TO RISER STRUCTURE OR DIRECTLY INTO EMBANKMENT 1 FT. FROM BOTTOM OF BASIN.
4. THE ARM PIPE SHALL HAVE A MINIMUM LENGTH OF 6 FT. BETWEEN THE SKIMMER AND COUPLING.
5. PLASTIC SLOPE DRAIN PIPE AT INLET OF BASIN MAY BE REPLACED BY FILTRATION GEOTEXTILE AS DIRECTED.
6. THE DIFFERENCE BETWEEN LENGTHS "D" AND "E" REPRESENT THE FREEBOARD AND SHOULD BE 1 FT. MINIMUM.

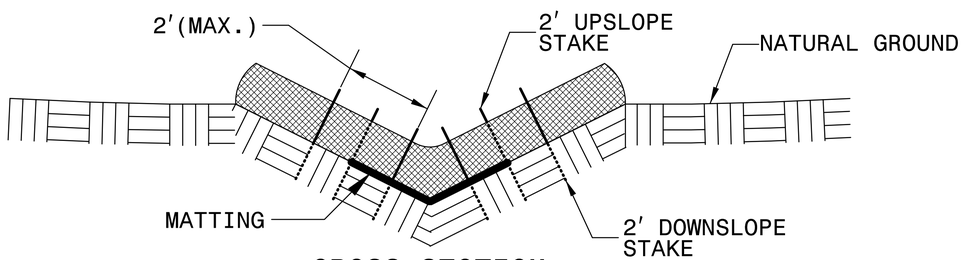
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-2C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

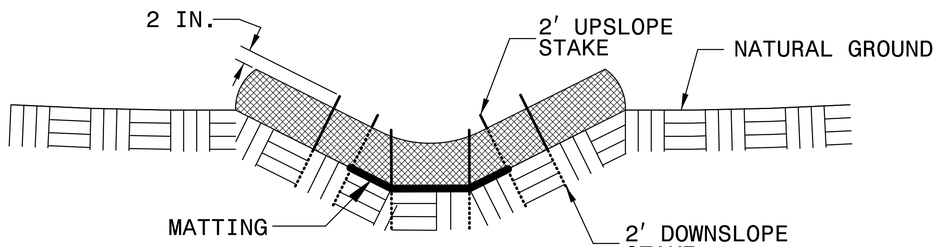
COIR FIBER WATTLE DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

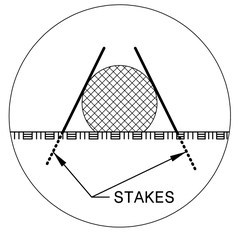
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

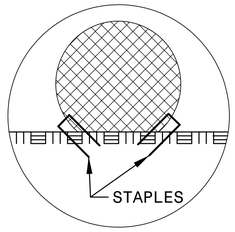
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

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

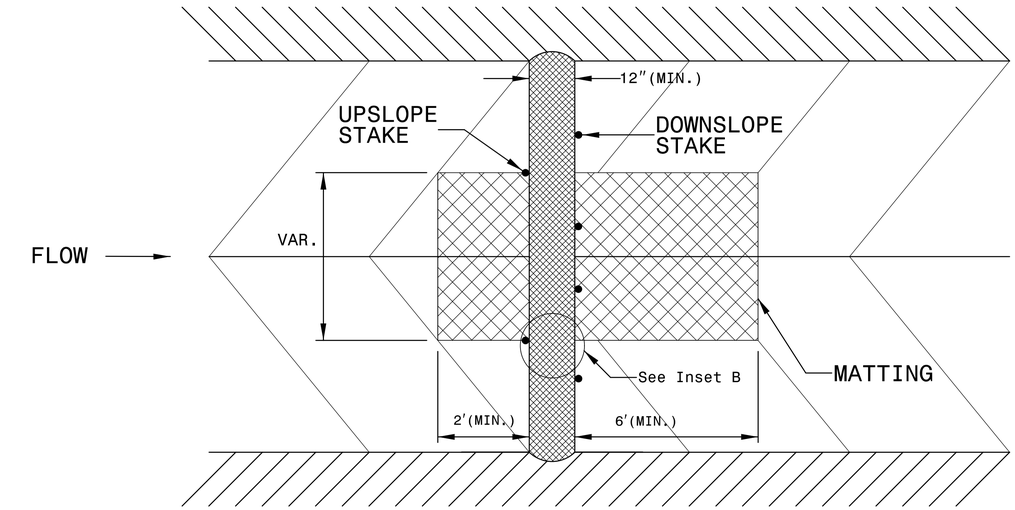
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



INSET A



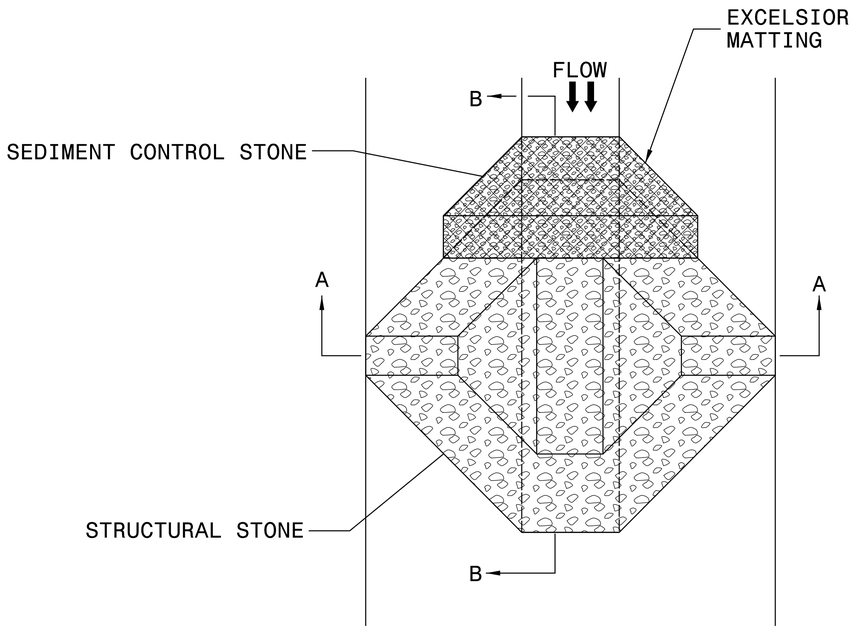
INSET B



TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-2D
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN

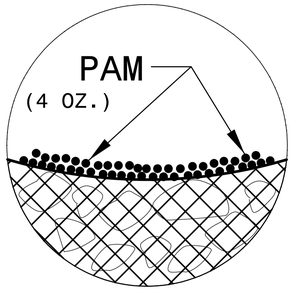
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

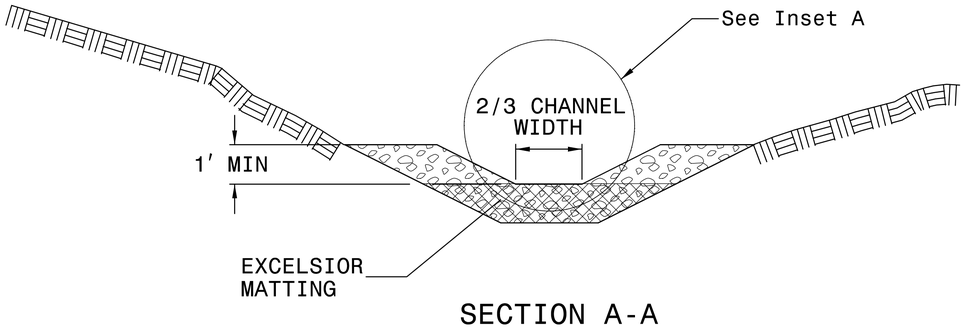
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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.

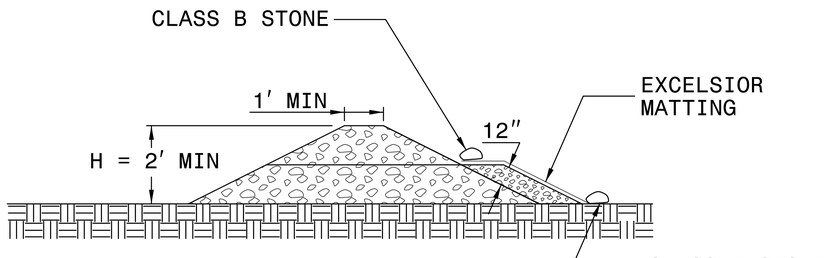
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
6	-L-	46+65	47+90	RT	95
8	-L-	72+25	74+78	LT	245
9	-Y-	13+50	14+00	RT	65
9	-Y-	19+72	20+50	RT	85
11	-Y-	47+50	53+00	LT	665
11	-Y-	53+00	55+50	LT	305
11	-Y-	47+50	49+00	RT	480
11	-Y-	49+00	51+39	RT	290
				SUBTOTAL	2,230
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					19,215
				TOTAL	21,445
				SAY	21,500

MATTING FOR EROSION CONTROL

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

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-04/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

NAD 83/2011

BEGIN PROJECT R-3833C
-L- POT STA. 18+05.86

BEGIN CONSTRUCTION
-Y1- POT STA. 13+00.00
BEGIN CONSTRUCTION
-Y2- POT STA. 13+00.00

-L- POT Sta. 26+03.04
-DRWY1- POT STA. 10+00.00
S 8°03'17.4" W

MATCHLINE -L- STA 27+00.00 SEE SHEET 5

END CONSTRUCTION
-Y1- POT STA. 18+84.36

END CONSTRUCTION
-DRWY1- POC STA. 11+05.00

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.	SHEET NO.
R-3833C	EC-05/CONST.5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

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

IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN AREAS WHERE WATER MAY POND ON ROAD OPEN TO LIVE TRAFFIC.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 5

3 inch Skimmer with 2.75 inch Orifice Diameter ID 5.1

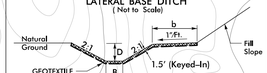
UTILIZE DRY DETENTION / FILTRATION BASIN AS SILT BASIN DURING CONSTRUCTION. ATTACH SKIMMER TO RISER A MINIMUM OF 1 FOOT ABOVE THE BOTTOM OF THE BASIN.

NAD 83/2001

MATCHLINE –L– STA 27+00.00 SEE SHEET 4

MATCHLINE –L– STA 41+00.00 SEE SHEET 9

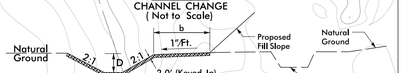
DETAIL 5
LATERAL BASE DITCH
(Not to Scale)



*When B is < 6.0'
Type of Liner = Class "I" Rip-Rap
D = 2.0 Ft.
B = 4.0 Ft.
b = 5.0 Ft.

FROM –L– STA. 29+00 TO STA. 33+00 LT

DETAIL 6
CHANNEL CHANGE
(Not to Scale)



Type of Liner = Class "II" Rip-Rap*
D = 2.0 Ft.
B = 5.0 Ft.
b = 5.0 Ft.
*Rip-Rap to be keyed-in and embedded below stream bed.

FROM –L– STA. 33+00 TO STA. 35+55 LT

RIP-RAP TO EXTEND TO WALL FACE
–L– 31+00 TO 32+00 RT

4' LATERAL BASE DITCH
SEE DETAIL 5
CLASS 'I' RIP-RAP
EST. 700 TONS
GEOTEXTILE
EST. 1150 SY

CHANNEL CHANGE
SEE DETAIL 6
CLASS 'II' RIP-RAP
EST. 640 TONS

FLOODPLAIN BENCH (UPSTREAM)
SEE DETAIL 1

5' STD. BASE DITCH
SEE DETAIL 4
CLASS "II" RIP-RAP
EST. 35 TONS
L=35 FT
S=2.8%

DRY DETENTION BASIN
SEE SHEET 2D-10

END CULVERT
–L– STA. 36+14.76

ENERGY DISSIPATOR BASIN & CHANNEL CHANGE
SEE SHEET 2D-8
CLASS "II" RIP-RAP
EST. 300 TONS
EST. 320 CY. OF EXCAVATION

CLASS "I" RIP-RAP
EST. 80 TONS
GEOTEXILE
EST. 110 SY

18" DIP W/ ROD & LUG GASKETS & 2 ELBOWS

CONNECTION TO BOX CULVERT

BEGIN CULVERT
–L– STA. 35+85.80

FLOODPLAIN BENCH (DOWNSTREAM)
SEE DETAIL 2

2 @ 12'x9' RCBC

END CONSTRUCTION
–DRWY2– POC STA. 11+60.00

PT Sta. 12+27.40
N 45° 34' 10.8" W

–DRWY2– POC Sta. 10+00.00
S 43° 36' 12.4" W

–L– POC Sta. 34+42.00

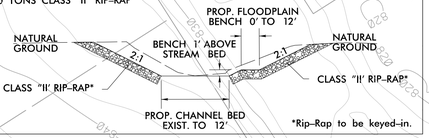
PC Sta. 34+25.51

PC Sta. 27+15.01

DETAIL 1
FLOODPLAIN BENCH
(UPSTREAM)

LENGTH = 50' (FROM CULVERT FACE)
EST. 95 CY EXCAVATION
EST. 100 TONS CLASS "II" RIP-RAP

(NOT TO SCALE)
(LOOKING DOWNSTREAM)

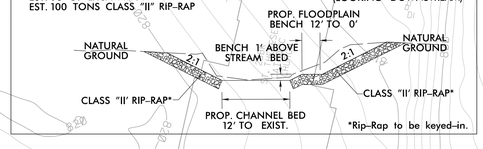


*Rip-Rap to be keyed-in.

DETAIL 2
FLOODPLAIN BENCH
(DOWNSTREAM)

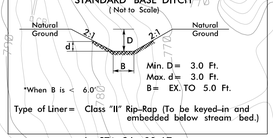
LENGTH = 50' (FROM CULVERT FACE)
EST. 95 CY EXCAVATION
EST. 100 TONS CLASS "II" RIP-RAP

(NOT TO SCALE)
(LOOKING DOWNSTREAM)



*Rip-Rap to be keyed-in.

DETAIL 4
STANDARD BASE DITCH
(Not to Scale)



*When B is < 6.0'
Min. D = 3.0 Ft.
Max. d = 3.0 Ft.
B = EX. TO 5.0 Ft.
Type of Liner = Class "II" Rip-Rap (To be keyed-in and embedded below stream bed.)

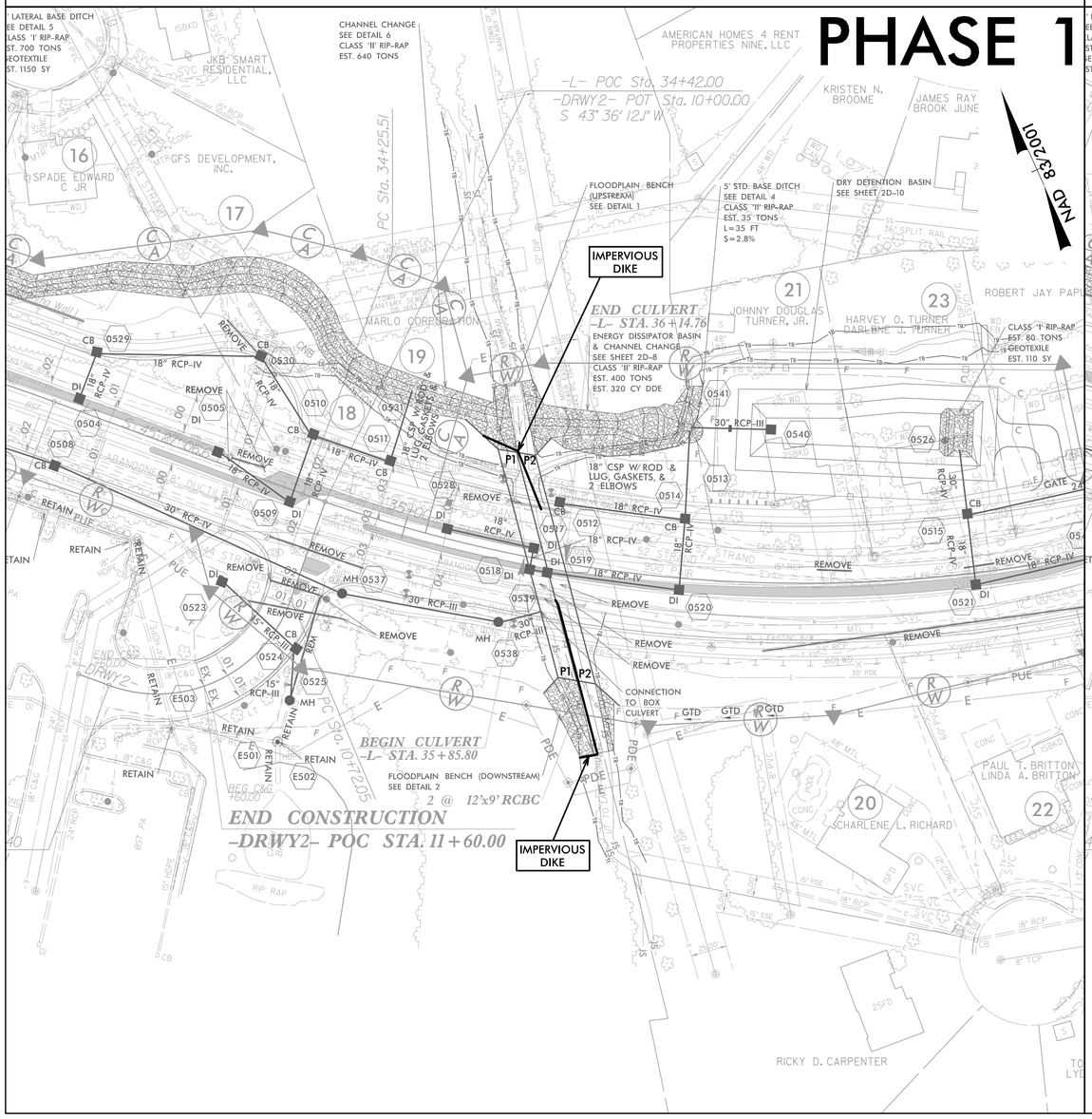
–L– STA. 36+90 LT

CULVERT CONSTRUCTION SEQUENCE STA. 36+00 –L–

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-06/CONST.5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

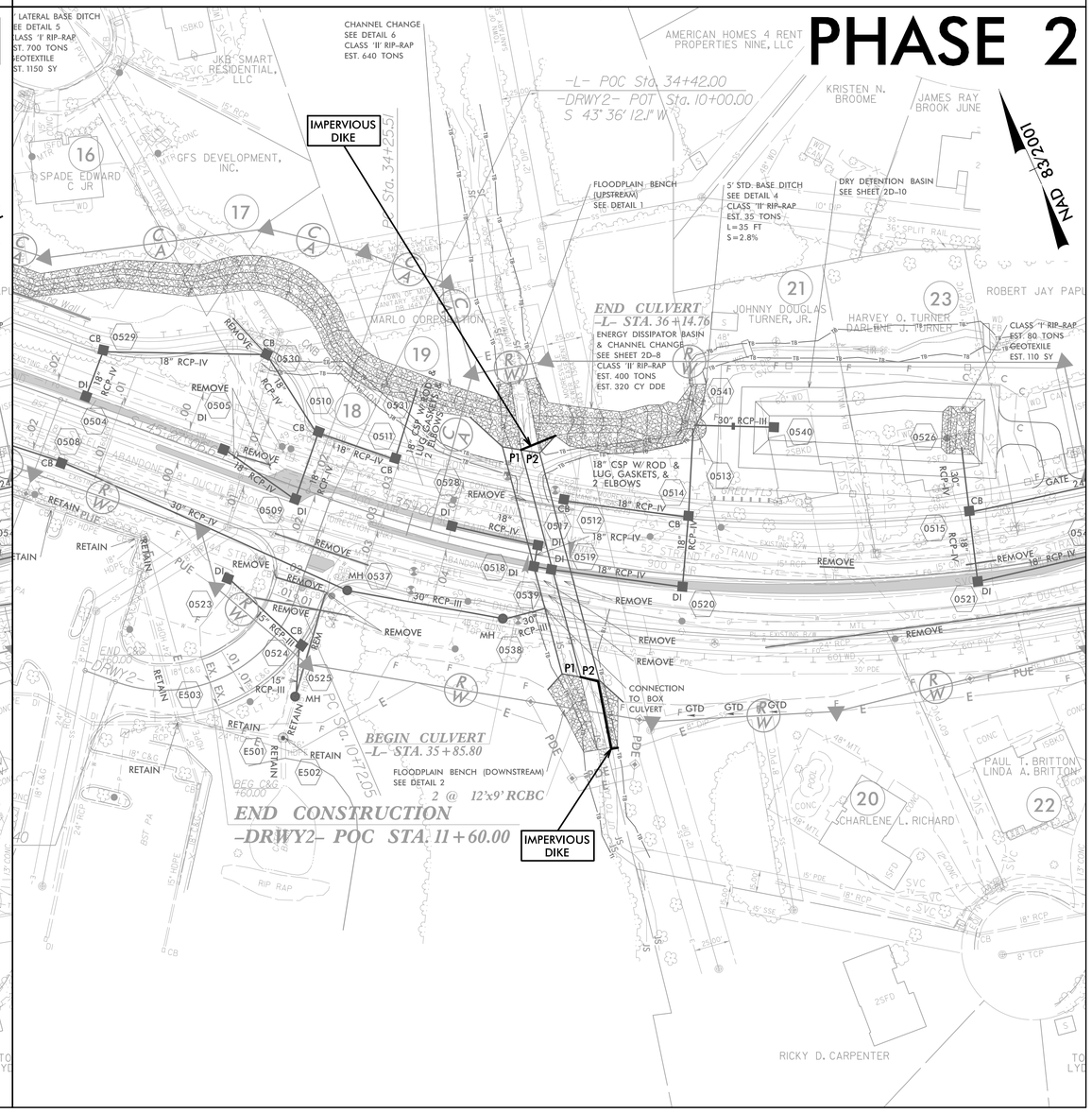
1. UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED THROUGHOUT CULVERT CONSTRUCTION.
2. CONSTRUCT BOTH CHANNEL CHANGES AS SHOWN ON PLANS.
3. INSTALL PHASE 1 IMPERVIOUS DIKES AND DIVERT FLOW THROUGH EXISTING 142" X 91" CMAP.
4. REMOVE EXISTING WESTERNMOST 142" X 91" CMAP.
5. CONSTRUCT 12' X 9' RCBC P1 AND WESTERN OUTLET CHANNEL IMPROVEMENTS ACCORDING TO PLANS.
6. REMOVE PHASE 1 IMPERVIOUS DIKES.

PHASE 1



1. INSTALL PHASE 2 IMPERVIOUS DIKES AS SHOWN TO DIVERT WATER INTO COMPLETED RCBC P1.
2. REMOVE REMAINING EXISTING 142" X 91" CMAP.
3. CONSTRUCT 12' X 9' RCBC P2 AND EASTERN OUTLET CHANNEL IMPROVEMENTS ACCORDING TO PLANS.
4. REMOVE PHASE 2 IMPERVIOUS DIKES.
5. CONSTRUCT ANY REMAINING INLET CHANNEL IMPROVEMENTS.
6. REMOVE ANY REMAINING SPECIAL STILLING BASIN(S) AND COMPLETE ROADWAY.

PHASE 2

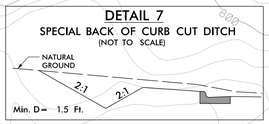


PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-07/CONST.6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

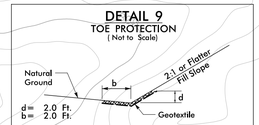
NAD 83/2011

DETAIL 7
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)



FROM –L– STA. 46+85 TO STA. 47+90 RT

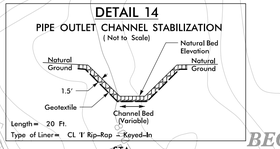
DETAIL 9
TOE PROTECTION
(Not to Scale)



Type of Liner= Class 'B' Rip-Rap

FROM –L– STA. 48+00 TO STA. 52+00 LT

DETAIL 14
PIPE OUTLET CHANNEL STABILIZATION
(Not to Scale)



STA.

PIPE OUTLET CHANNEL
SEE DETAIL 14
CLASS 'I' RIP-RAP
EST. 40 TONS
GEOTEXTILE
EST. 75 SY

SPC DSN ENDWALL

TOE PROTECTION
SEE DETAIL 9
CLASS 'B' RIP-RAP
EST. 85 TONS
GEOTEXTILE
EST. 270 SY

SPECIAL BACK OF CURB CUT DITCH
SEE DETAIL

BEGIN CONSTRUCTION –Y3– POC STA. 12+22.00

BEGIN CONSTRUCTION –Y6– POT STA. 11+70.00

END CONSTRUCTION –Y4– POC STA. 11+65.00

END CONSTRUCTION –Y7– POT STA. 10+78.94

MATCHLINE –L– STA 41+00.00 SEE SHEET 5

MATCHLINE –L– STA 55+00.00 SEE SHEET 7

MATCHLINE –Y5– STA 14+00.00 SEE SHEET 11

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 6

IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN AREAS WHERE WATER MAY POND ON ROAD OPEN TO LIVE TRAFFIC.

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

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-08/CONST.7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

NAD 83/2011

MATCHLINE -Y- STA 34+00.00 SEE SHEET 10

MATCHLINE -L- STA 68+00.00 SEE SHEET 8

MATCHLINE -L- STA 55+00.00 SEE SHEET 9

MATCHLINE -Y- STA 43+00.00 SEE SHEET 11

BEGIN CONSTRUCTION -Y7- POC STA. 15+35.00

BEGIN CONSTRUCTION -DRWY3- POT STA. 10+05.00

END CONSTRUCTION -DRWY6- POT STA. 11+24.06

END CONSTRUCTION -DRWY7- POT STA. 10+84.67

-Y- POT Sta. 4+03.25
-Y7- POT Sta. 16+56.38
S 68° 17' 27.3" E
-Y- POT Sta. 42+49.74
-DRWY7- POT Sta. 12+14.86

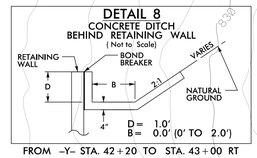
-L- POT Sta. 62+08.79
-Y- POT Sta. 36+96.02

-L- POC Sta. 66+12.33
-DRWY6- POT Sta. 10+00.00

-L- POT Sta. 67+75.00
-DRWY3- POT Sta. 11+50.00

80 x 20 x 3
1.5 inch Skimmer
with 1.125 inch
Orifice Diameter
6 ft. weir
ID 7.1

DETAIL 8
CONCRETE DITCH
BEHIND RETAINING WALL
(Not to Scale)



D = 1.0'
B = 0.0' (0' TO 2.0')

FROM -Y- STA. 42+20 TO STA. 43+00 RT

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 7

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

IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN AREAS WHERE WATER MAY POND ON ROAD OPEN TO LIVE TRAFFIC.

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-09/CONST.8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

NAD 83/2011

END PROJECT R-3833C
-L- POT STA. 75+82.64
TIE TO TOWN OF MOORESVILLE
WILSON AVENUE WIDENING PROJECT

BEGIN CONSTRUCTION
-DRWY4- POT STA. 10+35.00

-L- STA 68+00.00 SEE SHEET 7

MATCHLINE -L- STA 80+00.00 SEE SHEET 9

TOE PROTECTION
SEE DETAIL 9
CLASS 'B' RIP-RAP
EST. 35 TONS
GEOTEXTILE
EST. 100 SY

SPECIAL BACK OF CURB CUT DITCH
SEE DETAIL 7

TIE TO SYSTEM BUILT ON WILSON AVE. PROJECT

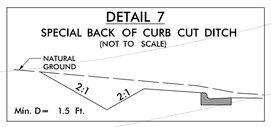
99 x 22 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
8 ft. weir
ID 8.1

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.

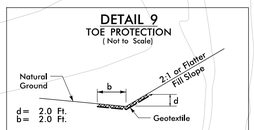
IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN AREAS WHERE WATER MAY POND ON ROAD OPEN TO LIVE TRAFFIC.

DETAIL 7
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)



FROM -L- STA. 72+25 TO STA. 74+78 LT

DETAIL 9
TOE PROTECTION
(Not to Scale)



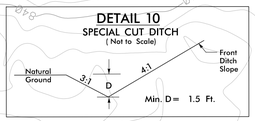
Type of Liner= Class 'B' Rip-Rap

FROM -L- STA. 68+00 TO STA. 69+45 LT

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-10/CONST.9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

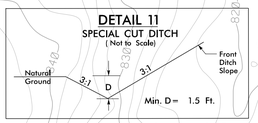
TGS ENGINEERS
201 W MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

DETAIL 10
SPECIAL CUT DITCH
(Not to Scale)



FROM –Y– STA. 13+50 TO STA. 19+00 RT

DETAIL 11
SPECIAL CUT DITCH
(Not to Scale)



FROM –Y– STA. 19+00 TO STA. 20+50 RT

NAD 83/NA 2011

BEGIN CONSTRUCTION
–Y– POT STA. 13+75.00

POT Sta. 10+00.00

PC Sta. 13+68.59

PT Sta. 14+64.38

PC Sta. 15+77.37

PC Sta. 16+83.11

S 23° 38' 48" W

M 165.00'

JAMES F RITCHIE

MT CLONINGER PROPERTIES LLC

SPIFFY LUBE PROPERTIES LLC

EDEN ENTERPRISES INC

BSL SALES & RENTALS LLC

TRIPLE SSS INC

BSL SALES+RENTALS LLC

M+M OF MOORESVILLE INC

MILLER VICKIE A

MORTON HILDA L

MORTON HILDA L ETAL

COFFEY PROPERTIES LLC

BRETT MERCIER

CHARLES LANE MILLER

MARK C FOLEY
KRISTIE L FOLEY

SANDRA M JAMES

JAMES D CABE
FRANCES B CABE

NANCY L ERDESON
DON VAINWRIGHT

REMOVE 15" RCP

REMOVE 18" RCP-IV

RETAIN (0910)

CLASS 'I' RIP-RAP
EST. 10 TONS
GEOTEXTILE
EST. 25 SY

CLASS 'I' RIP-RAP
EST. 15 TONS
GEOTEXTILE
EST. 30 SY

24" RCP-III

18" RCP-III

2GI-A (0909)

RETAIN (0908)

2GI (0907)

2GI (0915)

PLUG 18" RCP III (0906)

2GI (0905)

COLLAR AND EXTEND W/18" RCP-III

2GI (0904)

DI (0903)

DI (0902)

COLLAR AND EXTEND W/18" RCP-III

(0901)

SPECIAL CUT DITCH
SEE DETAIL 10 (0911)

SPECIAL CUT DITCH
SEE DETAIL 11

MATCHLINE –Y– STA 21+00.00 SEE SHEET 10

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 9

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

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-11/CONST.10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

NAD 83/NA 2011

MATCHLINE –Y– STA 21+00.00 SEE SHEET 9

MATCHLINE –Y– STA 34+00.00 SEE SHEET 7

BEGIN CONSTRUCTION –DRWY5– POT STA. 10+14.00

–Y– POC Sta. 21+09.23
–Y8– POT Sta. 19+33.14

PT Sta. 21+75.89
N 8° 54' 32" W

PT Sta. 18+72.75
N 8° 54' 32" W

PC Sta. 10+71.45

PT Sta. 11+50.72
N 85° 08' 18.5" W

–DRWY5– POT Sta. 12+00.00
–Y– POC Sta. 32+90.00

PC Sta. 32+44.71

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 10

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

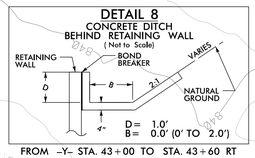
IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN AREAS WHERE WATER MAY POND ON ROAD OPEN TO LIVE TRAFFIC.

NAD 83/NA 2011

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-12/CONST.JI
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

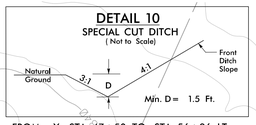
TGS ENGINEERS
201 W MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

DETAIL 8
CONCRETE DITCH BEHIND RETAINING WALL
(Not to Scale)



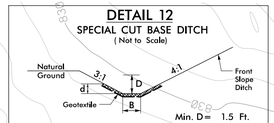
D= 1.0'
B= 0.0' (0' TO 2.0')
FROM –Y– STA. 43+00 TO STA. 43+60 RT

DETAIL 10
SPECIAL CUT DITCH
(Not to Scale)



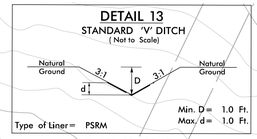
Min. D= 1.5 Ft.
FROM –Y– STA. 47+50 TO STA. 56+86 LT
FROM –Y– STA. 49+00 TO STA. 51+39 RT

DETAIL 12
SPECIAL CUT BASE DITCH
(Not to Scale)



Min. D= 1.5 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
Type of Liner= Class 'B' Rip-Rap
FROM –Y– STA. 51+72 TO STA. 57+40 RT

DETAIL 13
STANDARD 'V' DITCH
(Not to Scale)



Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
Type of Liner= PSRM
–Y– STA. 50+95 LT
–Y– STA. 54+95 LT

MATCHLINE –Y– STA 43+00.00 SEE SHEET 7

–Y– POT Sta. 45+30.00
–Y5– POT Sta. 18+22.77

MATCHLINE –Y5– STA 14+00.00 SEE SHEET 6

CONCRETE DITCH BEHIND RETAINING WALL SEE DETAIL 8

ADD WHEELSTOP FOR END SPACE

DO NOT DISTURB SIGN

BRAWLEY COMMERCE PARK CONDOMINIUM OWNERS' ASSOCIATION, INC.

COUNTRY ROADS OF THE CAROLINAS, LLC

TOWN OF MOORESVILLE

GEORGE HOWARD HOLSHOUSER LORRA LEE HOLSHOUSER

HOLSHOUSER LORRA LEE

DAVID T. BEST JACALYN K. BEST

KAZAKOS BROTHERS PROPERTIES LLC

NELSON GAREN A+TONYA E

DINGLER PAUL L+GLENDA S

KOONTZ KENNETH A+SUSAN B

RHONDA H DISIBBIO

ABBERLY GREEN – MORRESVILLE – PHASE II, LIMITED PARTNERSHIP

ATIRAM LLC

PC Sta. 16+84.00
PT Sta. 16+28.39
PC Sta. 15+22.37
PT Sta. 17+66.16
PC Sta. 48+40.60
PT Sta. 49+76.68
PC Sta. 50+79.00
PT Sta. 52+23.00
PC Sta. 54+00.00
PT Sta. 55+44.00

S 26°27'59.9" W
N 85°53'58.2" E
S 63°32'00.1" E

18" RCP-IV
18" RCP-III
15" RCP-III
24" RCP-III
CB
DI
OFFSET DI W/ CB LID
REMOVE
B
C
A
RETAIN
TD

1101 1103 1104 1105 1106 1107 1108 1109 1110 1111 1112 1114 1115 1116 1117 1118 1119 1120 1121 1122 1124 1125 1126 1127 1128 1129

CLASS 'B' RIP-RAP EST. 3 TON GEOTEXTILE EST. 10 SY

SPECIAL CUT DITCH SEE DETAIL 10

STD. 'V' DITCH SEE DETAIL 13 S=7.0% EST. 10 CY DDE EST. 15 SY PSRM

SPECIAL CUT DITCH SEE DETAIL 12 CLASS 'B' RIP-RAP EST. 250 TONS GEOTEXTILE EST. 660 SY

100 x 25 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
8 ft. weir
ID 11.1

Modified Silt Basin
Type 'B'
90 x 30 x 3
13 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 11.2

90 x 30 x 3
2 inch Skimmer
with 1.75 inch
Orifice Diameter
13 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 11.2

END CONSTRUCTION –Y– POT STA. 56+40.00

INSTALL DRIVEWAY PIPE DURING CLEARING & GRUBBING PHASE

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 11

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

IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN AREAS WHERE WATER MAY POND ON ROAD OPEN TO LIVE TRAFFIC.

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-13/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

NAD 83/2011

BEGIN PROJECT R-3833C
-L- POT STA. 18+05.86

BEGIN CONSTRUCTION
-Y1- POT STA. 13+00.00
BEGIN CONSTRUCTION
-Y2- POT STA. 13+00.00

Place Matting for Erosion Control on Slope as Work Allows.
-L- Sta. 24+00 to 25+50 LT

-L- POT Sta. 26+03.04
-DRWY1- POT STA. 10+00.00
S 8° 03' 17.4" W

POT Sta. 10+00.00

JOSE CHALITA BRUZUAL
CARMEN MORENO DE CHALITA
EDWARD R. PRICE, JR.
BONNIE S. PRICE
BARRY KEITH DEEL
REBECCA R. DEEL
DAVID L. HARDING
DEBORAH L. HARDING
INAE PARRISH
MICHAEL PARRISH
BRAWLEY BOBBY P & BETTY M
CAROL M. WELCH
EDWARD T. MARZANO
JIMMY G. CALDWELL
DOYLE A. TILLIS
FANNETTA R. TILLIS
DARREN B. JOLLY
JOHN J. MAHONEY
REGINA M. MAHONEY
BETHANY S. HOWARD
PAUL H. MORGAN
VANDA J. MORGAN
CARL M. KORCZYKOWSKI
LORI L. KORCZYKOWSKI
GFS DEVELOPMENT, INC.
MICHAEL N. SCAGLIONE
REYES W. GARCIA
MARTHA A. MARQUEZ-CARDENAS
ROBERT J. BERTUCCI
MARIA BERTUCCI
WELLS S. KERRY & ELLEN
WILLIAM L. PETTIT
VERNIE B. PETTIT
JEREMY E. KLINGEL
TERRY A. BOYLES
TERESA S. BOYLES
DONALD L. BLACKWELDER
SHARON P. BLACKWELDER
ST. THERESE CATHOLIC CHURCH
C/O MICHAEL J. BEGLEY
BISHOP OF THE ROMAN CATHOLIC
DIOCESE OF CHARLOTTE

PT Sta. 17+39.18
PC Sta. 15+29.03
PI Sta. 15+62.88
Δ = 26° 05' 59.1" (LT)
D = 39° 14' 37.3"
L = 66.51'
T = 33.84'
R = 146.00'
SE = ??
PI Sta. 15+95.54
-L- POT Sta. 18+17.35
-Y1- POT Sta. 14+84.94
-L- POT Sta. 21+86.27
-Y2- POT STA.14+03.25
PC Sta. 10+82.43
END CONSTRUCTION
-DRWY1- POC STA. 11+05.00
PT Sta. 11+49.85
S 1° 36' 10.5" E
POT Sta. 12+00.00
POT Sta. 20+17.38
S 8°19' 59" E 20.00
END CONSTRUCTION
-Y1- POT STA. 18+84.36

-L-
PI Sta. 14+92.44
Δ = 18° 53' 52.5" (RT)
D = 3° 47' 39.9"
L = 498.04'
T = 251.30'
R = 1,510.00'
SE = .04
INC = EXIST./49'

PI Sta. 29+82.38
Δ = 25° 07' 19.4" (RT)
D = 4° 46' 28.7"
L = 526.16'
T = 267.37'
R = 1,200.00'
SE = .04
INC = 49'

-DRWY1-
PI Sta. 11+16.22
Δ = 9° 39' 27.8" (LT)
D = 14° 19' 26.2"
L = 67.42'
T = 33.79'
R = 400.00'
SE = SEE PLANS

-Y1-
PI Sta. 15+62.88
Δ = 26° 05' 59.1" (LT)
D = 39° 14' 37.3"
L = 66.51'
T = 33.84'
R = 146.00'
SE = ??

REMOVE
RETAIN
PLUG
FILL FLOWABLE
18" RCP-IV
24" RCP-IV
18" RCP-III
TBJB W/MH
CB
0400 0401 0402 0403 0404 0405 0406 0407 0408 0409 0410 0411 0412 0413 0414 0415 0416 0417 0418 0419 0420 0421 0422 0423

MATCHLINE -L- STA 27+00.00 SEE SHEET 5

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-14/CONST.5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

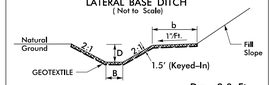
TGS ENGINEERS
201 W MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

-L-
PI Sta 29+82.38
△ = 25° 07' 19.4" (RT)
D = 4° 46' 28.7"
L = 526.16'
T = 267.37'
R = 1,200.00'
SE = .04
INC = 49'

PI Sta 38+56.09
△ = 46° 35' 27.8" (LT)
D = 5° 43' 46.5"
L = 813.17'
T = 430.58'
R = 1,000.00'
SE = .04
INC = 49'

-DRWY2-
PI Sta 11+71.47
△ = 90° 49' 37.1" (RT)
D = 58° 27' 54.3"
L = 155.35'
T = 99.42'
R = 98.00'
SE = SEE PLANS
INC = 18'

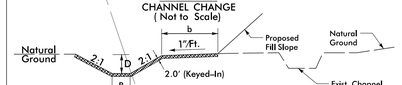
DETAIL 5
LATERAL BASE DITCH
(Not to Scale)



*When B is < 6.0'
Type of Liner = Class "I" Rip-Rap
D = 2.0 Ft.
B = 4.0 Ft.
b = 5.0 Ft.

FROM -L- STA. 29+00 TO STA. 33+00 LT

DETAIL 6
CHANNEL CHANGE
(Not to Scale)



Type of Liner = Class "II" Rip-Rap*
D = 2.0 Ft.
B = 5.0 Ft.
b = 5.0 Ft.
*Rip-Rap to be keyed-in and embedded below stream bed.

FROM -L- STA. 33+00 TO STA. 35+55 LT

Place Matting for Erosion Control on Slope as Work Allows.
-L- Sta. 32+50 to 38+00 LT

3 inch Skimmer with 2.75 inch Orifice Diameter ID 5.1

UTILIZE DRY DETENTION / FILTRATION BASIN AS SILT BASIN DURING CONSTRUCTION. ATTACH SKIMMER TO RISER A MINIMUM OF 1 FOOT ABOVE THE BOTTOM OF THE BASIN.

NAD 83/2001

MATCHLINE -L- STA 27+00.00 SEE SHEET 4

MATCHLINE -L- STA 41+00.00 SEE SHEET 6

10 WELLS KERRY ELLEN

11 GARDNER CHRISTIAN A

12 DIRTY MO ACRES LLC

13 DARREN B. JOLLY

LAURA L. GRIFFIN

JKB SMART RESIDENTIAL LLC

14

15 SCHAUMBURG PAUL E.

16 SPADE EDWARD C JR

GFS DEVELOPMENT, INC.

17

MARLO CORPORATION

18

19

7 ST. THERESE CATHOLIC CHURCH C/O MICHAEL J. BEGLEY BISHOP OF THE ROMAN CATHOLIC DIOCESE OF CHARLOTTE

PC Sta. 27+15.01

PT Sta. 12+27.40
N 45° 34' 10.8" W

PC Sta. 34+25.51

-L- POC Sta. 34+42.00
-DRWY2- POT Sta. 10+00.00
S 43° 36' 12.4" W

AMERICAN HOMES 4 RENT PROPERTIES NINE, LLC

DAVID KEITH WOOD, JR.

KRISTEN N.

NEAL B. SHUE
JENNIFER GREEN SHUE

21 JOHNNY DOUGLAS TURNER, JR.

23 HARVEY O. TURNER DARLENE J. TURNER

ROBERT JAY PAPUGA

26

24 ZORENTAN DIMITRIJ & LIDIA

25 DANIELLE & BRENT A. MORTON

OSTOC REALTY LLC

27

PAUL T. BRITTON
LINDA A. BRITTON

22

20 CHARLENE L. RICHARD

RICKY D. CARPENTER

TOMAS RIVERA
LYDIA E. RIVERA

REMOVE FES

RETAIN

JB w/MH (0534)

JB w/MH (0535)

36" E RCP-III

36" RCP-III

(0536)

(0501)

TB2

(0502)

GI

18" RCP-IV

24" RCP-IV

(0527)

CB

(0506)

(0503)

DI

SLAB LID

(0507)

30" RCP-IV

(0508)

(0509)

(0529)

(0530)

(0505)

(0504)

(0510)

(0511)

(0528)

(0517)

(0512)

(0518)

(0519)

(0539)

(0537)

MH

(0538)

30" RCP-III

15" RCP-III

(0524)

(0525)

(0522)

(0523)

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PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-15/CONST.6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

NAD 83/2011

-L-
PI Sta 38+56.09
△ = 46° 35' 27.8" (LT)
D = 5° 43' 46.5"
L = 813.17'
T = 430.58'
R = 1,000.00'
SE = .04
INC = 49'

PI Sta 47+51.10
△ = 55° 20' 14.2" (LT)
D = 7° 38' 22.0"
L = 724.36'
T = 393.24'
R = 750.00'
SE = .04
INC = 49'

PI Sta 56+10.32
△ = 59° 26' 02.5" (RT)
D = 7° 38' 22.0"
L = 777.99'
T = 428.09'
R = 750.00'
SE = .04
INC = 49'

PI Sta 10+70.41
△ = 27° 38' 58.0" (RT)
D = 24° 45' 47.2"
L = 111.66'
T = 56.94'
R = 231.38'
SE = SEE PLANS
INC = 10'

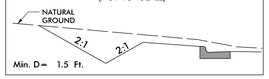
PI Sta 12+80.38
△ = 29° 20' 09.7" (LT)
D = 25° 27' 53.2"
L = 115.20'
T = 58.89'
R = 225.00'
SE = SEE PLANS
INC = 10'

△
D = 3°
L = 137.03'
T = 72.00'
R = 180.61'
SE = SEE PLANS
INC = 18'

-Y5-
PI Sta 11+71.17
△ = 53° 12' 03.0" (LT)
D = 37° 12' 18.2"
L = 142.99'
T = 77.12'
R = 154.00'
SE = SEE PLANS
INC = 18'

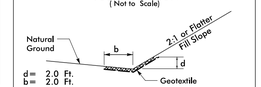
-Y7-
PI Sta 11+15.22
△ = 33° 58' 21.8" (LT)
D = 19° 26' 48.7"
L = 174.70'
T = 90.00'
R = 294.63'
SE = .04
INC = N/A

DETAIL 7
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)



FROM -L- STA. 46+85 TO STA. 47+90 RT

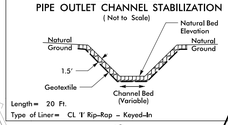
DETAIL 9
TOE PROTECTION
(Not to Scale)



Type of Liner= Class 'B' Rip-Rap

FROM -L- STA. 48+00 TO STA. 52+00 LT

DETAIL 14
PIPE OUTLET CHANNEL STABILIZATION
(Not to Scale)



Length= 20 Ft.
Type of Liner= CL 1' Rip-Rap - Keyed-In

STA.

IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION DEVICE IN DRIVEWAY DROP INLET.

Place Matting for Erosion Control on Slope as Work Allows.
-L- Sta. 44+50 to 51+50 LT

BEGIN CONSTRUCTION
-Y6- POT STA. 11+70.00

-L- POC Sta. 53+62.11
-Y6- POT Sta. 13+00.00
S 49° 17' 00.9" E

POT Sta. 10+00.00
S 49° 17' 00.9" E

SNH SE MOORESVILLI

MATCHLINE -L- STA 41+00.00 SEE SHEET 5

MATCHLINE -L- STA 55+00.00 SEE SHEET 7

MATCHLINE -Y5- STA 14+00.00 SEE SHEET 11

BEGIN CONSTRUCTION
-Y3- POC STA. 12+22.00

PIPE OUTLET CHANNEL
SEE DETAIL 14
CLASS 'I' RIP-RAP
EST. 40 TONS
GEOTEXTILE
EST. 75 SY

SPC DSN ENDWALL

TOE PROTECTION
SEE DETAIL 9
CLASS 'B' RIP-RAP
EST. 85 TONS
GEOTEXTILE
EST. 270 SY

SPECIAL BACK OF CURB CUT DITCH
SEE DETAIL 7

Place Matting for Erosion Control on Slope as Work Allows.
-L- Sta. 42+50 to 44+50 RT

END CONSTRUCTION
-Y4- POC STA. 11+65.00

-L- POC Sta. 41+94.06
-Y4- POT Sta. 13+50.00
S 4°13' 08.8" E

-L- POC Sta. 41+79.47
-Y4- POT Sta. 10+00.00
S 4°13' 08.8" E

-L- POC Sta. 48+40.00
-Y5- POT Sta. 10+60.00
S 38°52' 30.2" E

-L- POC Sta. 53+62.11
-Y6- POT Sta. 10+00.00
S 49° 17' 00.9" E

END CONSTRUCTION
-Y7- POT STA. 10+78.94

KELLY A. PENNARIO JANSON J. GAWORECKI
ZDRENTAN DUMITRU & LIDIA
MICHAEL NORMAN WAGNER
WEBB A. BEULAH VENUS R. BEULAH
RWS REAL ESTATE INVESTMENTS, LLC
JERRY W. PARTIN
DONALD JAMES RANDAZZO, II ANGELA RANDAZZO
TAMMY L. BURNS
P. JEAN NESTER
DAVID M. MCGINNIS ELIZABETH A. MCGINNIS
CHARLES L. MCCURDY
CURTIS BARTEAU BARBARA BARTEAU
DAVID F. HACKETT MARIANNA A. HACKETT
THELSEN FAMILY TRUS
DIANNE A. ROBINSON
WILLIAM A. HUTCHISON FAYE A. HUTCHISON
STATE EMPLOYEES CREDIT UNION DB 1370 DB 859 PB 40 PG 42
DANIELLE L. MORTON BRENT A. MORTON
KATHY BOGGS
MICHAEL CAPPUCCETTI, III ELIZABETH CAPPUCCETTI
CHARLES B. ALEXANDER REVOCABLE LIVING TRUST
WARREN GREENLEE ROGER WAY, JR. MICHAEL SHEA
TERRY WAYNE BROWN BARBARA J. BROWN
VICKI M. BRAWLEY THOMAS A. BRAWLEY
TUTOR TIME MOORESVILLE, LLC
BANK OF NORTH CAROLINA
TOWN OF MOORESVILLE
BK FIRE STATION

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-16/CONST.7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

NAD 83/2011

Place Matting for Erosion Control on Slope as Work Allows.
–L– Sta. 63+50 to 67+00 LT
–L– Sta. 63+50 to 73+50 RT

Place Matting for Erosion Control on Slope as Work Allows.
–Y– Sta. 33+50 to 35+50 LT
–Y– Sta. 38+00 to 39+00 LT
–Y– Sta. 39+50 to 40+00 RT
–Y– Sta. 42+00 to 43+50 RT

MATCHLINE –Y– STA 34+00.00 SEE SHEET 10

MATCHLINE –L– STA 55+00.00 SEE SHEET 9

MATCHLINE –L– STA 68+00.00 SEE SHEET 8

MATCHLINE –Y– STA 43+00.00 SEE SHEET 11

BEGIN CONSTRUCTION –Y7– POC STA. 15+35.00

BEGIN CONSTRUCTION –DRWY3– POT STA. 10+05.00

END CONSTRUCTION –DRWY6– POT STA. 11+24.06

END CONSTRUCTION –DRWY7– POT STA. 10+84.67
POT Sta. 10+00.00

–Y– POT Sta. 41+03.25
–Y7– POT Sta. 16+56.38
S 68° 17' 27.3" E
–Y– POT Sta. 42+49.74
–DRWY7– POT Sta. 12+14.86

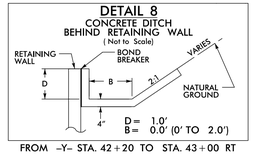
–L– POT Sta. 62+08.79
–Y– POC Sta. 36+96.02
–L– POC Sta. 66+12.33
–DRWY6– POT Sta. 10+00.00

–L– POT Sta. 67+75.00
–DRWY3– POT Sta. 11+50.00

80 x 20 x 3
1.5 inch Skimmer
with 1.125 inch
Orifice Diameter
6 ft. weir
ID 7.1

IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN AREAS WHERE WATER MAY POND ON ROAD OPEN TO LIVE TRAFFIC.

DETAIL 8
CONCRETE DITCH BEHIND RETAINING WALL
(Not to Scale)



D= 1.0'
B= 0.0' (0' TO 2.0')

FROM –Y– STA. 42+20 TO STA. 43+00 RT

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-17/CONST.8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

Place Matting for Erosion Control on Slope as Work Allows. –L– Sta. 68+50 to 69+50 LT

–L–
PI Sta 71+36.42
Δ = 27° 26' 06.9" (RT)
D = 9° 32' 57.5"
L = 287.30'
T = 146.46'
R = 600.00'
SE = .04
INC = 42'

PI Sta 79+88.35
Δ = 17° 58' 41.5" (LT)
D = 6° 21' 58.3"
L = 282.40'
T = 142.37'
R = 900.00'
SE = EXIST
INC = EXIST

90 x 15 x 3
ID 8.2 F

END PROJECT R-3833C
–L– POT STA. 75+82.64
TIE TO TOWN OF MOORESVILLE
WILSON AVENUE WIDENING PROJECT

BEGIN CONSTRUCTION
–DRWY4– POT STA. 10+35.00

NAD 83/2011

MATCHLINE –L– STA 68+00.00 SEE SHEET 1

HC 2000, INC. (48)
DAVID PERRO
SARAH PERRO (49)
LHNH-COUNTRY CLUB APARTMENTS LLC (50)
BRIAN K WALLACH (52)
JOE B GIBBS JR. (53)
PETER A MASCOLO (54)
YOKO MIURA (55)
PALANISAMY AMMASAI
THOMAS P ROGERS
THOMAS E BRIDGES (94)
VINCE GANGEMI
TOWN OF MOORESVILLE (47)
TOWN OF MOORESVILLE (51)

TOE PROTECTION
SEE DETAIL 9
CLASS 'B' RIP-RAP
EST. 35 TONS
GEOTEXTILE
EST. 100 SY

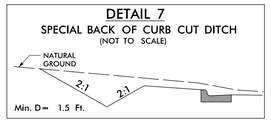
SPECIAL BACK OF CURB CUT DITCH
SEE DETAIL 7

TIE TO SYSTEM BUILT ON WILSON AVE. PROJECT

99 x 22 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
8 ft. weir
ID 8.1

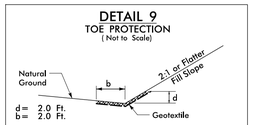
Place Matting for Erosion Control on Slope as Work Allows. –L– Sta. 63+50 to 73+50 RT

DETAIL 7
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)



FROM –L– STA. 72+25 TO STA. 74+78 LT

DETAIL 9
TOE PROTECTION
(Not to Scale)



Type of Liner= Class 'B' Rip-Rap

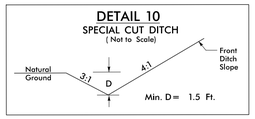
FROM –L– STA. 68+00 TO STA. 69+45 LT

IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN AREAS WHERE WATER MAY POND ON ROAD OPEN TO LIVE TRAFFIC.

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-18/CONST.9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

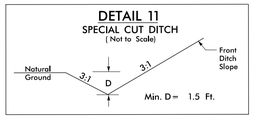
TGS ENGINEERS
201 W MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

DETAIL 10
SPECIAL CUT DITCH
(Not to Scale)



FROM –Y– STA. 13+50 TO STA. 19+00 RT

DETAIL 11
SPECIAL CUT DITCH
(Not to Scale)



FROM –Y– STA. 19+00 TO STA. 20+50 RT

–Y–
PI Sta 19+29.27
Δ = 20° 24' 17.5" (LT)
D = 4° 05' 33.2"
L = 498.58'
T = 251.96'
R = 1,400.00'
SE = .04
INC = 49'

–Y8–
PI Sta 14+16.69
Δ = 12° 45' 47.8" (LT)
D = 13° 19' 28.6"
L = 95.79'
T = 48.09'
R = 430.00'
SE = N/A
INC = N/A

PI Sta 17+78.28
Δ = 12° 04' 22.2" (RT)
D = 6° 21' 58.3"
L = 189.64'
T = 95.17'
R = 900.00'
SE = N/A
INC = N/A

NAD 83/NA 2011

Place Matting for Erosion Control on Slope as Work Allows.
–Y– Sta. 20+00 to 20+90 LT

BEGIN CONSTRUCTION
–Y– POT STA. 13+75.00

POT Sta. 10+00.00

PC Sta. 13+68.59

PT Sta. 14+64.38

PC Sta. 16+83.11

S 23° 38' 48" W

M 165.00

BRETT MERCIER
CHARLES LANE MILLER
MARK C FOLEY
KRISTIE L FOLEY
JAMES D CABE
FRANCES B CABE
NANCY L EDMISTON
DON VAINWORTWICK
SANDRA M JAMES
JAMES F RITCHIE
MT CLONINGER PROPERTIES LLC
SPIFFY LUBE PROPERTIES LLC
EDEN ENTERPRISES INC
BSL SALES & RENTALS LLC
TRIPLE SSS INC
BSL SALES+RENTALS LLC
MILLER VICKIE A
MORTON HILDA L
COFFEY PROPERTIES LLC
M+M OF MOORESVILLE INC
MORTON HILDA L ETAL

RETAIN
CLASS 'I' RIP-RAP EST. 10 TONS GEOTEXTILE EST. 25 SY
CLASS 'I' RIP-RAP EST. 15 TONS GEOTEXTILE EST. 30 SY
24" RCP-III
18" RCP-III
18" RCP-IV
REMOVE 15"
REMOVE 18" RCP-IV
REMOVE 18"
PLUG 18" RCP-III
COLLAR AND EXTEND W/18" RCP-III
SPECIAL CUT DITCH SEE DETAIL 10
SPECIAL CUT DITCH SEE DETAIL 11

MATCHLINE –Y– STA 21+00.00 SEE SHEET 10

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-19/CONST.JO
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

NAD 83/NA 2011

-Y8-
PI Sta 17+78.28
△ = 12° 04' 22.2" (RT)
D = 6° 21' 58.3"
L = 189.64'
T = 95.17'
R = 900.00'
SE = N/A
INC = N/A

-Y-
PI Sta 19+31.22
△ = 20° 21' 13.5" (LT)
D = 4° 05' 33.2"
L = 497.34'
T = 251.32'
R = 1,400.00'
SE = .04
INC = 49'

-Y-
PI Sta 35+73.50
△ = 23° 13' 29.2" (RT)
D = 3° 34' 51.6"
L = 648.56'
T = 328.79'
R = 1,600.00'
SE = .04
INC = 49'

-DRWY5-
PI Sta 11+22.18
△ = 90° 49' 57.1" (LT)
D = 114° 35' 29.6"
L = 79.27'
T = 50.73'
R = 50.00'
SE = SEE PLANS
INC = 10'

Place Matting for Erosion Control on Slope as Work Allows.
-Y- Sta. 23+50 to 24+50 LT

Place Matting for Erosion Control on Slope as Work Allows.
-DRW5- Sta. 11+00 to 11+50 RT

BEGIN CONSTRUCTION
-DRWY5- POT STA. 10+14.00

Place Matting for Erosion Control on Slope as Work Allows.
-Y- Sta. 33+50 to 35+50 LT

-DRWY5- POT Sta. 12+00.00
-Y- POC Sta. 32+90.00

MATCHLINE -Y- STA 21+00.00 SEE SHEET 9

MATCHLINE -Y- STA 34+00.00 SEE SHEET 7

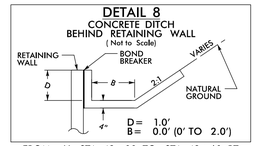
IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN AREAS WHERE WATER MAY POND ON ROAD OPEN TO LIVE TRAFFIC.

NAD 83/NA 2011

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	EC-20/CONST.II
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

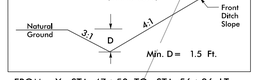
TGS ENGINEERS
201 W MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

DETAIL 8
CONCRETE DITCH BEHIND RETAINING WALL
(Not to Scale)



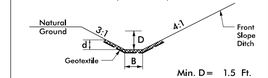
D= 1.0'
B= 0.0' (0' TO 2.0')
FROM –Y– STA. 43+00 TO STA. 43+60 RT

DETAIL 10
SPECIAL CUT DITCH
(Not to Scale)



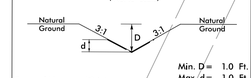
Min. D= 1.5 Ft.
FROM –Y– STA. 47+50 TO STA. 56+86 LT
FROM –Y– STA. 49+00 TO STA. 51+39 RT

DETAIL 12
SPECIAL CUT BASE DITCH
(Not to Scale)



Min. D= 1.5 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
Type of Liner= Class 'B' Rip-Rap
FROM –Y– STA. 51+72 TO STA. 57+40 RT

DETAIL 13
STANDARD 'V' DITCH
(Not to Scale)



Type of Liner= PSRM
Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
–Y– STA. 50+95 LT
–Y– STA. 54+95 LT

MATCHLINE –Y– STA 43+00.00 SEE SHEET 7

MATCHLINE –Y5– STA 14+00.00 SEE SHEET 6

–Y– POT Sta. 45+30.00
–Y5– POT Sta. 18+22.77

PC Sta. 16+84.00
PT Sta. 16+28.39
PC Sta. 15+22.37
PT Sta. 17+66.39
PC Sta. 48+40.60
PT Sta. 49+76.68
END CONSTRUCTION –Y– POT STA. 56+40.00

CONCRETE DITCH BEHIND RETAINING WALL SEE DETAIL 8

ADD WHEELSTOP FOR END SPACE

DO NOT DISTURB SIGN

CLASS 'B' RIP-RAP EST. 3 TON GEOTEXTILE EST. 10 SY

SPECIAL CUT DITCH SEE DETAIL 10

STD. 'V' DITCH SEE DETAIL 13 S=7.0% EST. 10 CY DDE EST. 15 SY PSRM

100 x 25 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
8 ft. weir
ID 11.1

Modified Silt Basin
Type 'B'
90 x 30 x 3
13 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 11.2

90 x 30 x 3
2 inch Skimmer
with 1.75 inch
Orifice Diameter
13 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 11.2

SPECIAL CUT DITCH SEE DETAIL 12
CLASS 'B' RIP-RAP EST. 250 TONS GEOTEXTILE EST. 660 SY

CLASS 'I' RIP-RAP EST. 11 TON GEOTEXTILE EST. 22 SY

Place Matting for Erosion Control on Slope as Work Allows.
–Y– Sta. 42+00 to 43+50 RT

IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN AREAS WHERE WATER MAY POND ON ROAD OPEN TO LIVE TRAFFIC.