This electronic collection of documents is provided for the convenience of the user and is Not a Certified Document –

The documents contained herein were originally issued and sealed by the individuals whose names and license numbers appear on each page, on the dates appearing with their signature on that page.
This file or an individual page shall not be considered a certified document.

CONTRACT: C204745   TIP PROJECT: R-5705B

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NAD 83/NA 2011

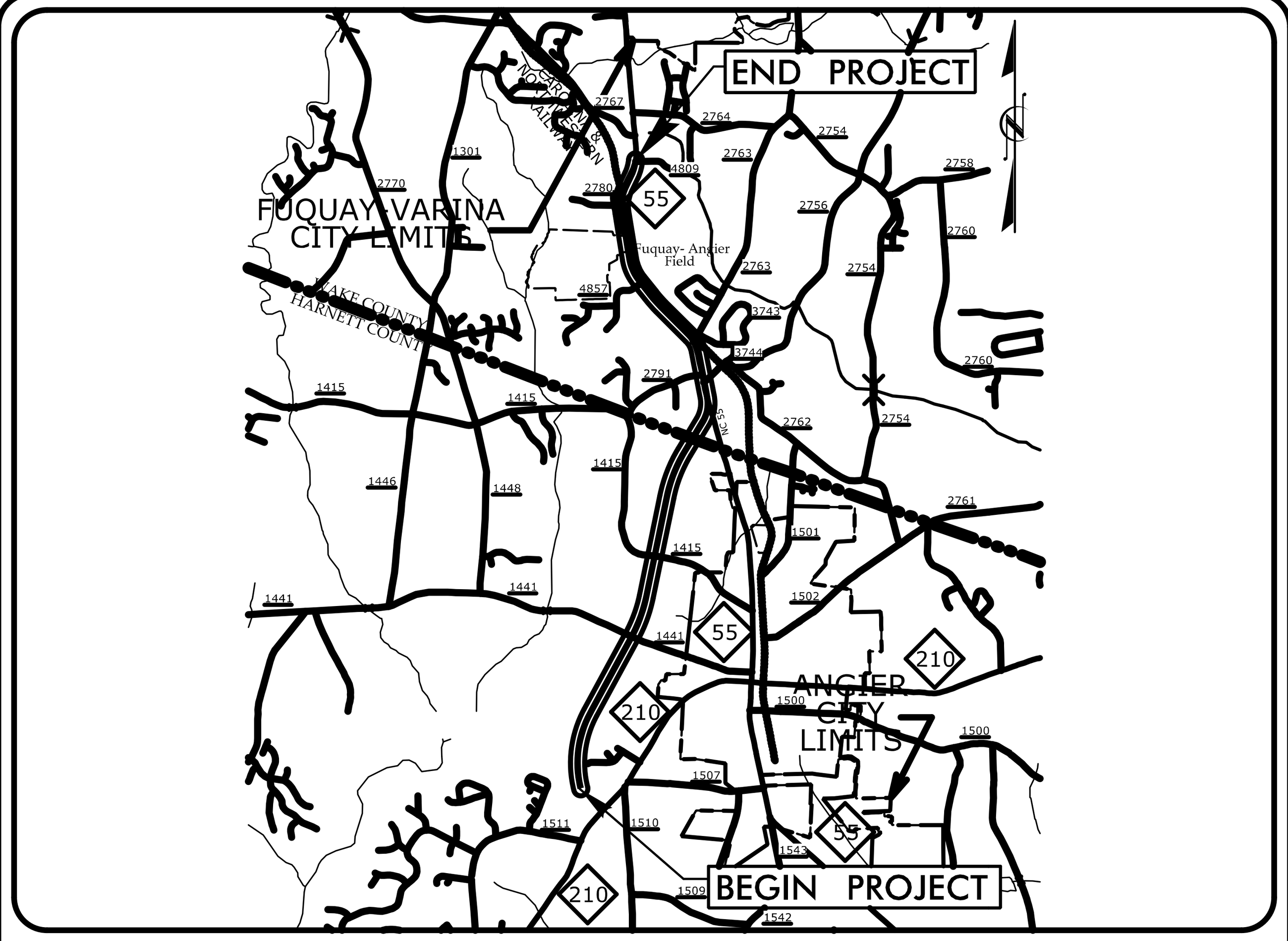
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL
HARNETT & WAKE COUNTY

LOCATION: NC 55 FROM NC 210 TO SR 4809 (JICARILLA LANE)

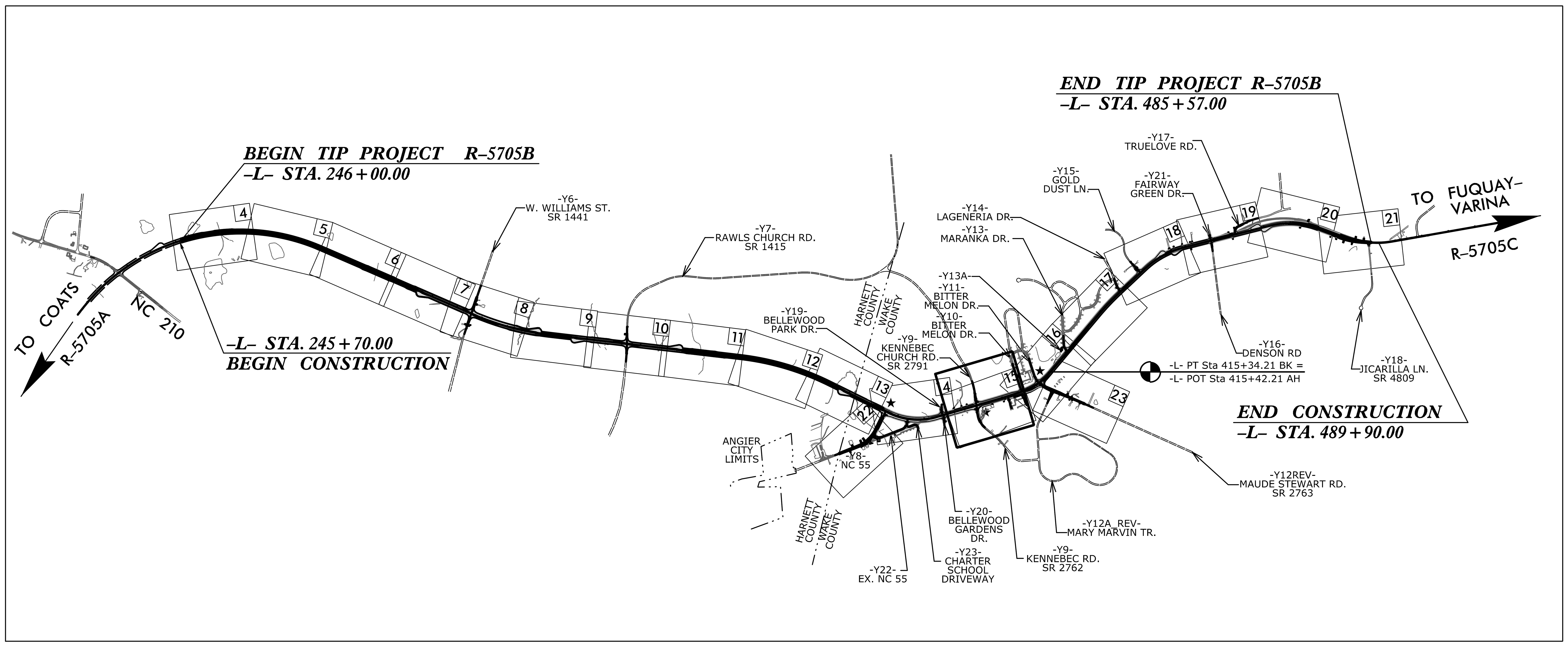
TYPE OF WORK: PAVING, GRADING, DRAINAGE, SIGNALS & CULVERT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5705B	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
46377.1.3		PE
46377.2.2		ROW
46377.2.6		UTILITIES



VICINITY MAP
NOT TO SCALE



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	
	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.

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.*

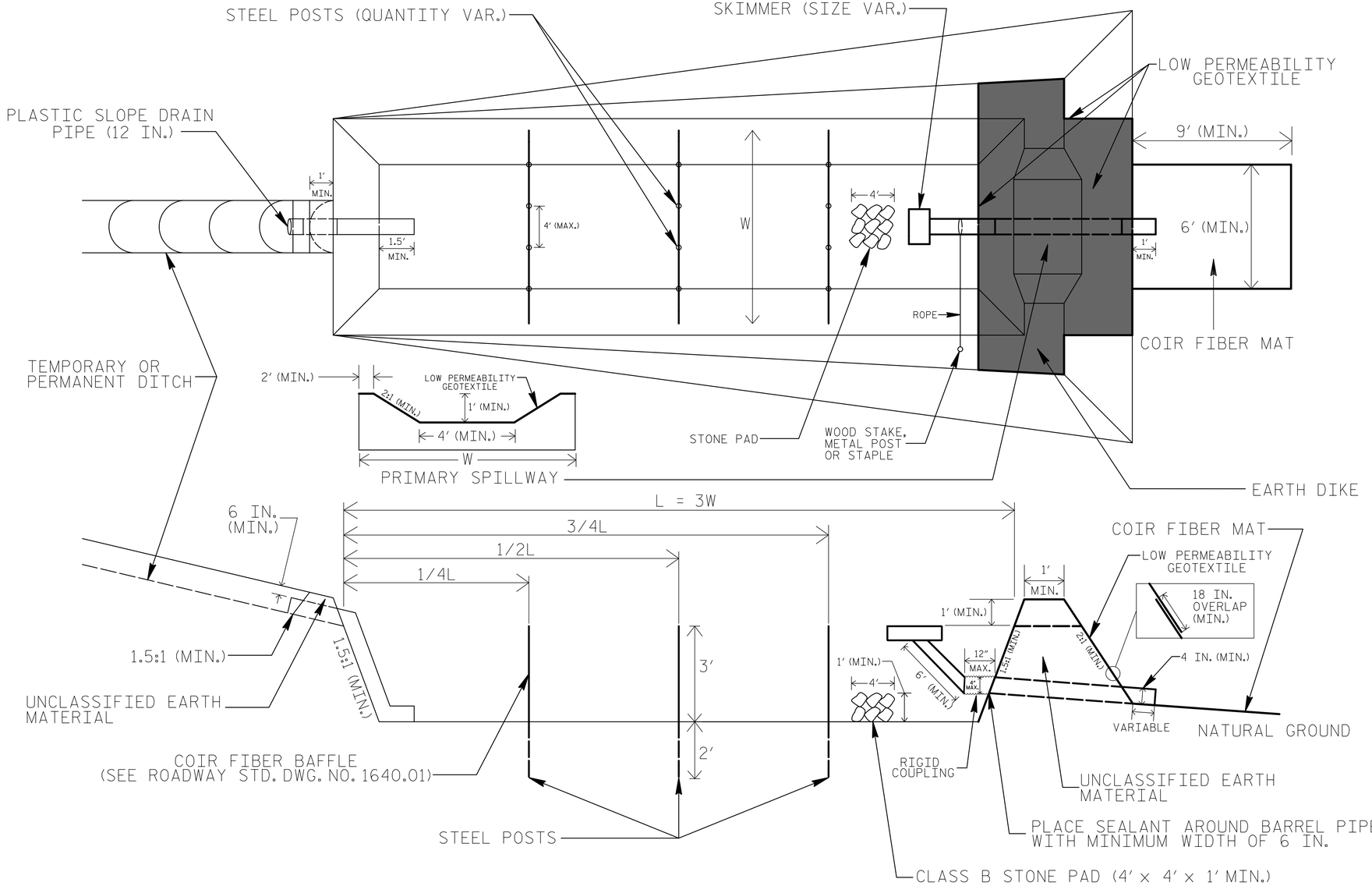
Roadway Standard Drawings

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.

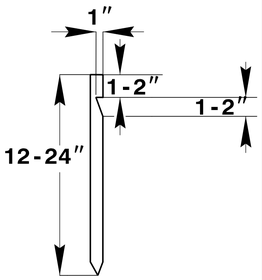
1604.01 Railroad Erosion Control Detail
1605.01 Temporary Silt Fence
1606.01 Special Sediment Control Fence
1607.01 Gravel Construction Entrance
1622.01 Temporary Berms and Slope Drains
1630.01 Riser Basin
1630.02 Silt Basin Type B
1630.03 Temporary Silt Ditch
1630.04 Stilling Basin
1630.05 Temporary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

PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

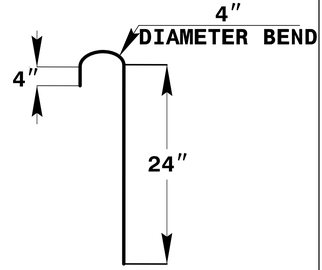
SKIMMER BASIN WITH BAFFLES DETAIL (EAST)



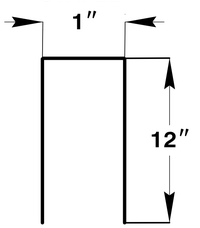
2" x 2" (nominal) WOODEN STAKE



#10 STEEL REINFORCEMENT BAR



1" (nominal) STAPLE



COIR FIBER MAT ANCHOR OPTIONS

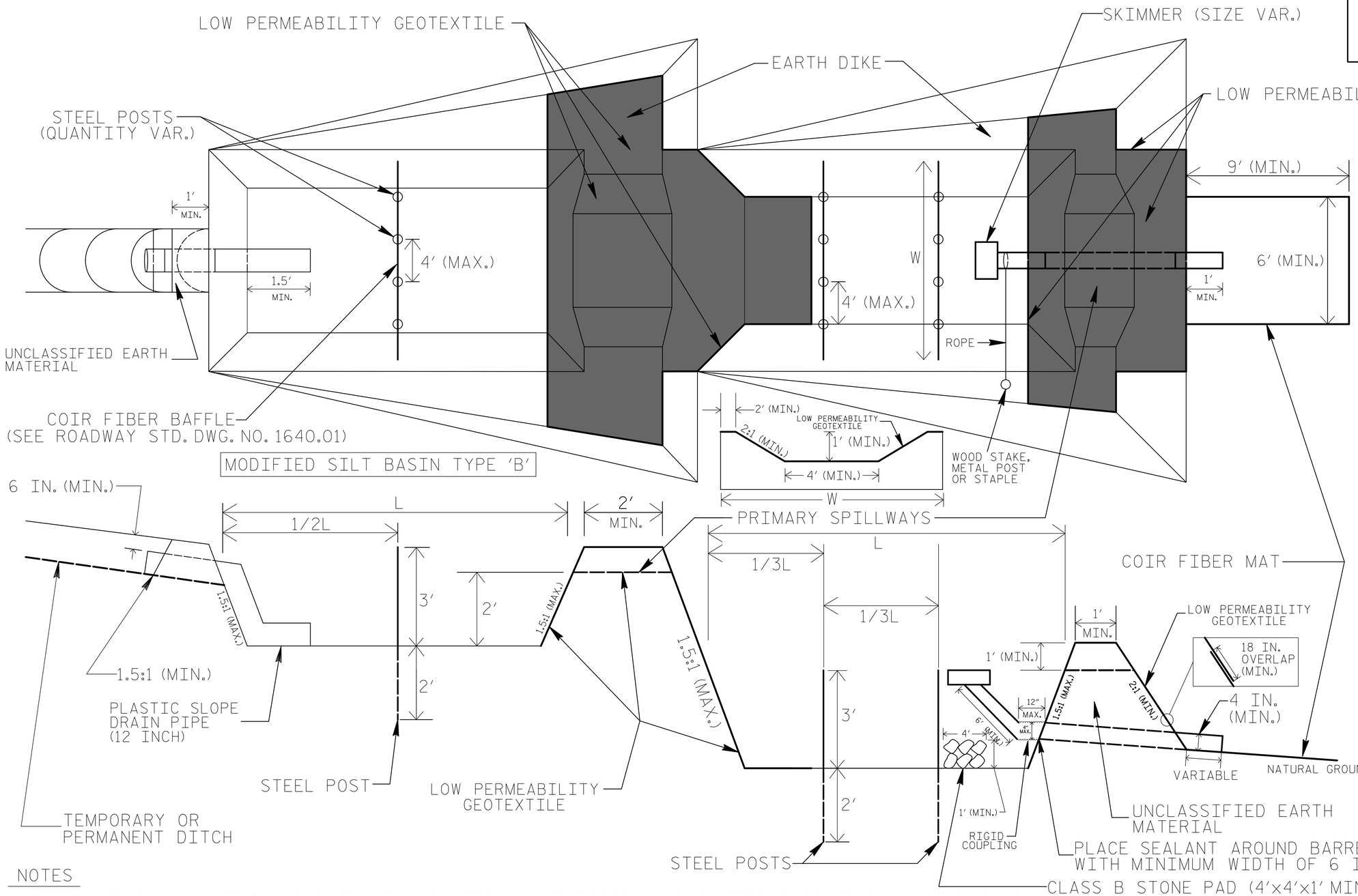
NOTES

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. LOW PERMEABILITY GEOTEXTILE FOR PRIMARY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

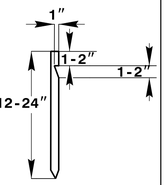
PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TIERED SKIMMER BASIN DETAIL (EAST)

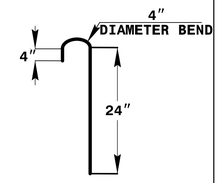


MODIFIED SILT BASIN TYPE 'B'

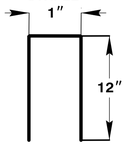
2″ x 2″ (nominal) WOODEN STAKE



#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 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. LOW PERMEABILITY 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-5705B	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

BORROW PIT DEWATERING BASIN DETAIL

GENERAL NOTES:

DETERMINE BORROW PIT DEWATERING BASIN SIZE USING V = 8.0203 * Q * T, WHERE V IS VOLUME (FT^3), Q IS PUMP FLOW RATE (GPM), AND T IS DEWATERING TIME (HR). USE MAXIMUM FLOW RATE OF 1000 GPM AND A MINIMUM DEWATERING TIME OF 2 HOURS.

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

CONSTRUCT THE COIR FIBER BAFFLE IN ACCORDANCE WITH ROADWAY STANDARD DRAWING 1640.01 AND WITH MATERIAL THAT MEETS THE SPECIFICATIONS OF ROADWAY STANDARD 1640-14.

PROVIDE 5′ STEEL POSTS OF THE SELF-FASTENER ANGLE STEEL TYPE. INSTALL STEEL POSTS WITH NO MORE THAN 3′ OF THE POST APPEARING ABOVE THE GROUND.

ATTACH THE COIR FIBER MAT TO THE STEEL POSTS WITH WIRE OR OTHER ACCEPTABLE MEANS AND STAPLED INTO THE BOTTOM AND SIDE SLOPES OF THE BASIN WITH 12″ STAPLES.

INSTALL TYPE 2 GEOTEXTILE ON SIDESLOPES AND BOTTOM OF BASIN AT INLET AS SHOWN IN THE DETAIL.

USE THE TYPICAL SECTION SHOWN FOR THE BORROW PIT DEWATERING BASIN AS A GUIDE. THE BASIN MAY HAVE ANY TYPE CONFIGURATION AS LONG AS SUFFICIENT VOLUME IS PROVIDED AND PROVISIONS ARE MADE FOR A NON-PERFORATED RISER.

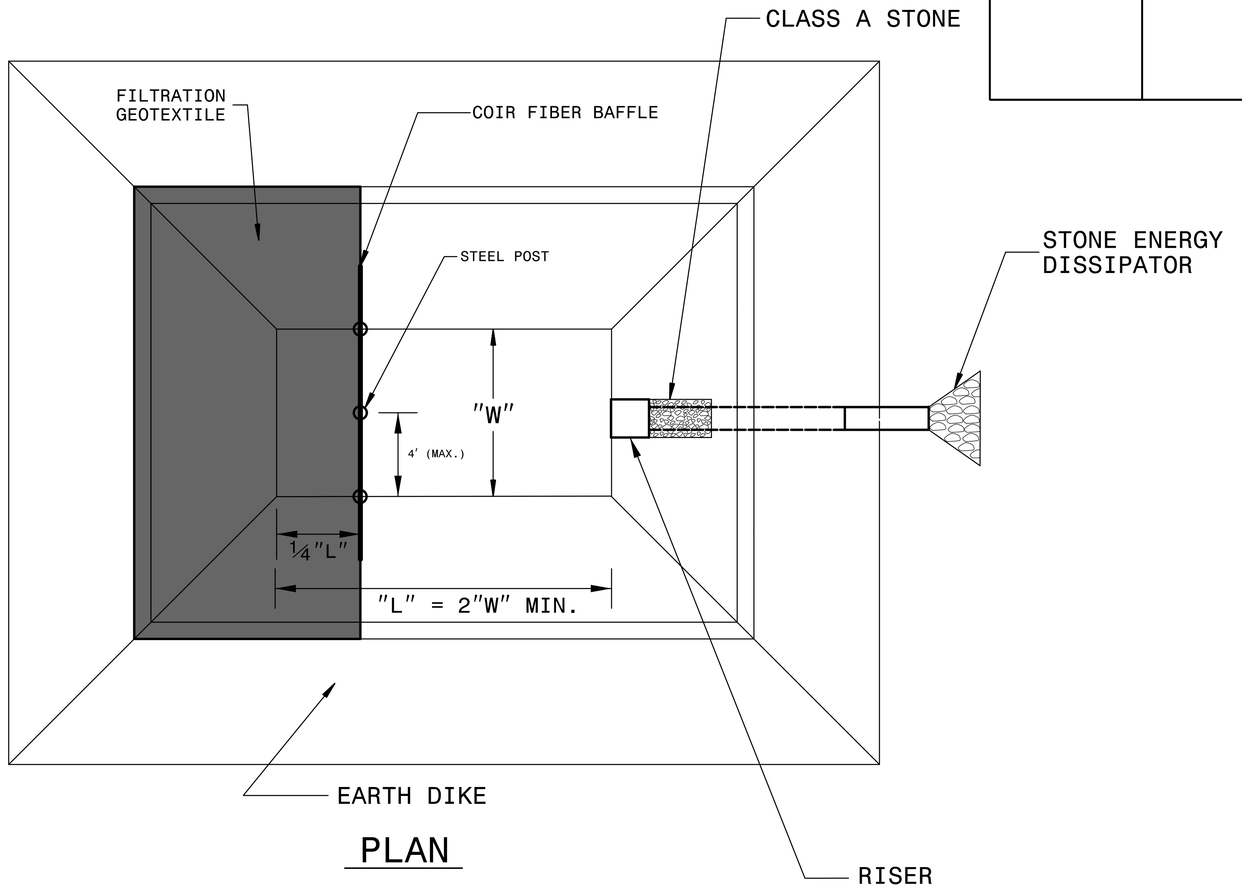
DO NOT EXCEED 3½ FT. IN HEIGHT FOR THE EARTH DIKES REQUIRED FOR BORROW PIT DEWATERING BASIN.

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

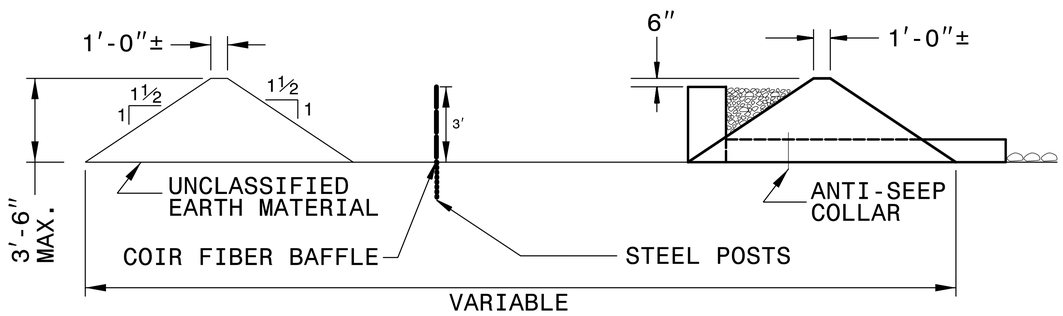
SUBMIT THE SIZE, LOCATION AND RISER PIPE MATERIAL FOR APPROVAL PRIOR TO CONSTRUCTION.

PUMP THE EFFLUENT INTO THE BORROW PIT DEWATERING BASIN TO A MAXIMUM DEPTH OF 6 IN. BELOW TOP OF EARTH DIKE.

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



PLAN

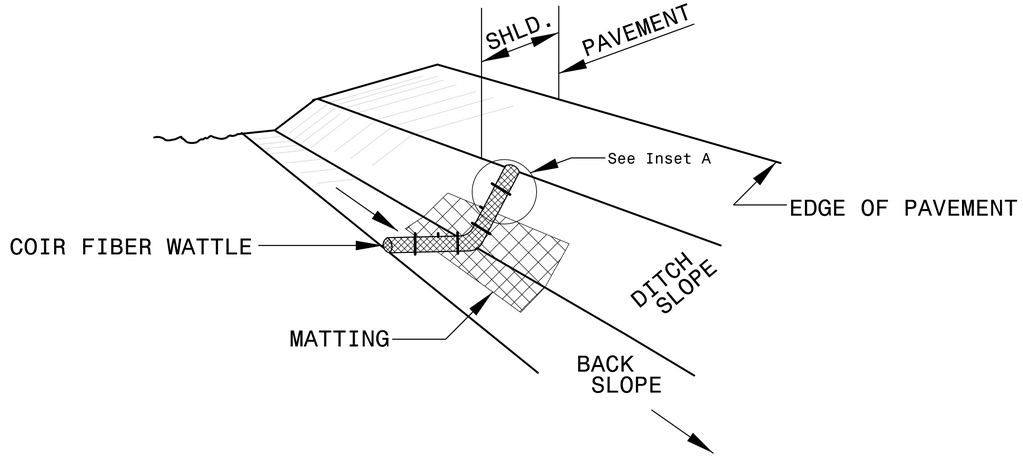


TYPICAL SECTION VIEW

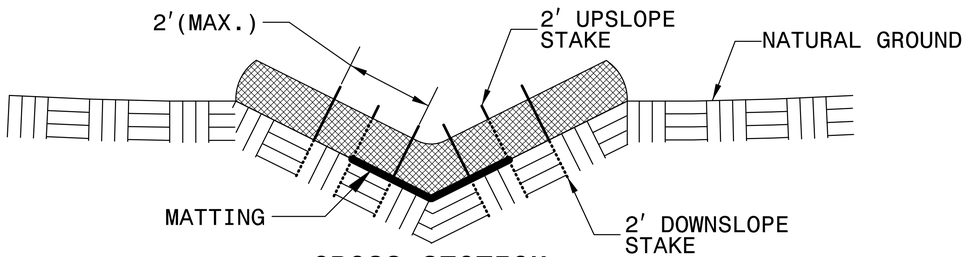
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-2C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

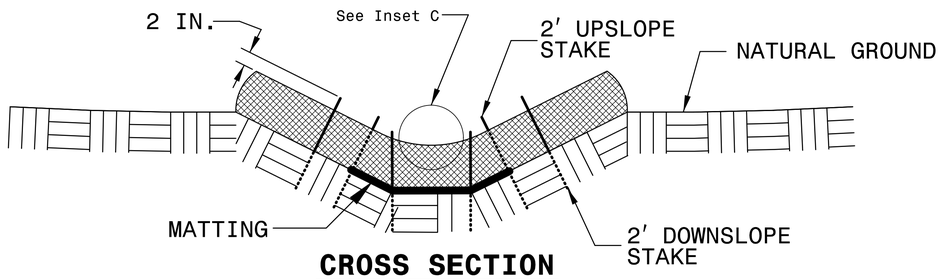
COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



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.

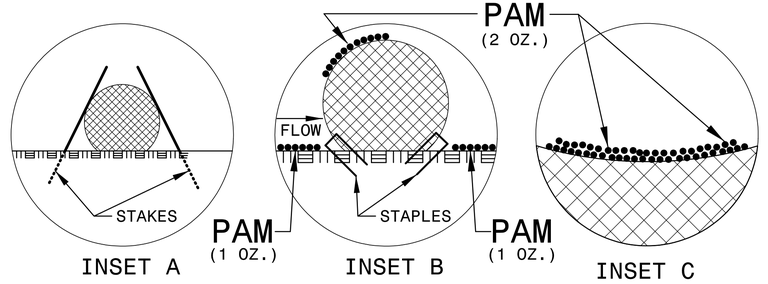
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

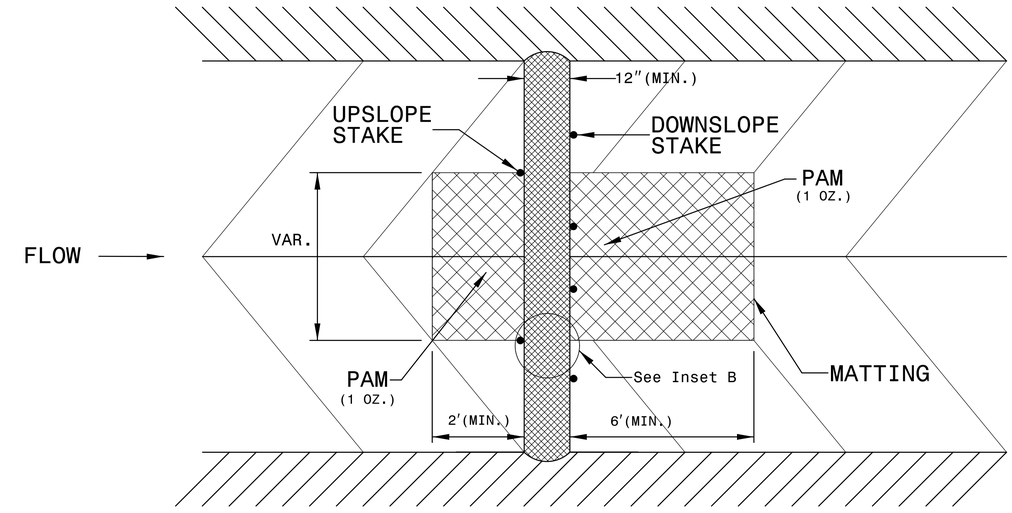
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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

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 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.

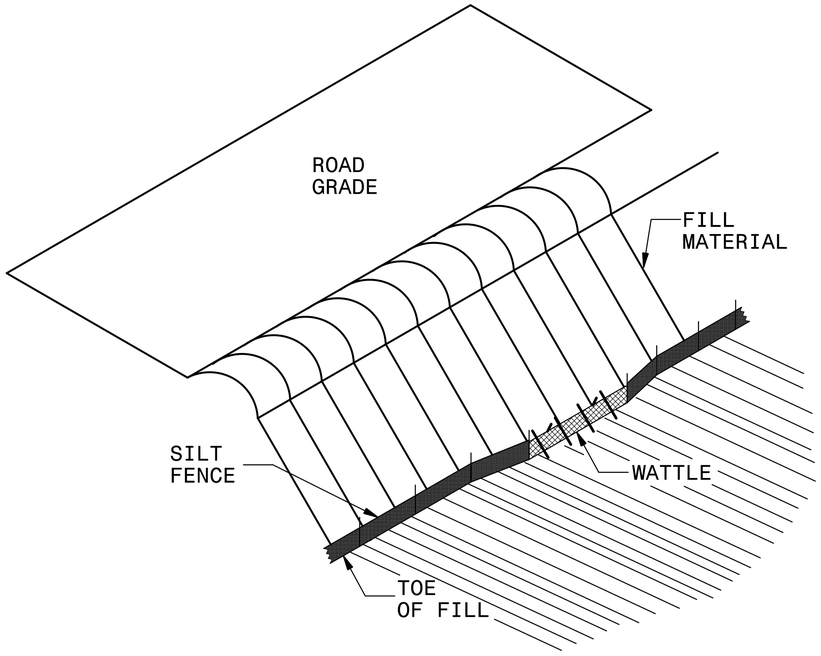




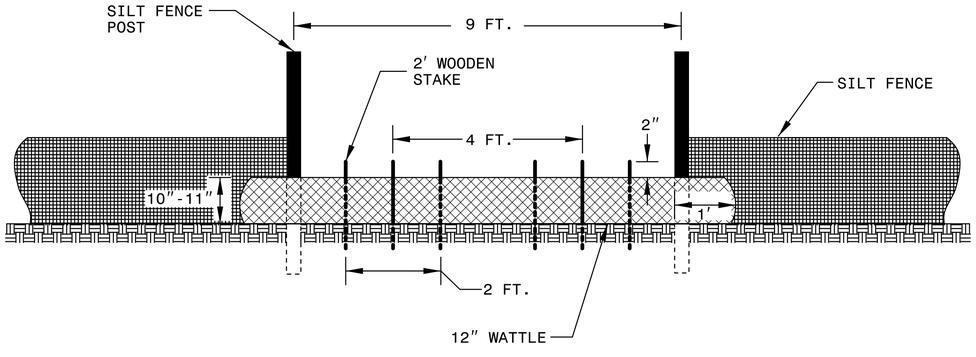
TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-2D
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SILT FENCE COIR FIBER WATTLE BREAK DETAIL



ISOMETRIC VIEW



VIEW FROM SLOPE

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

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

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

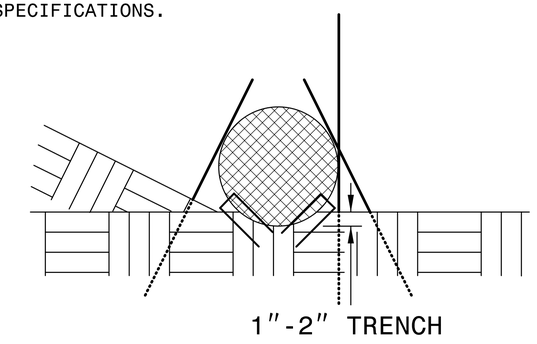
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

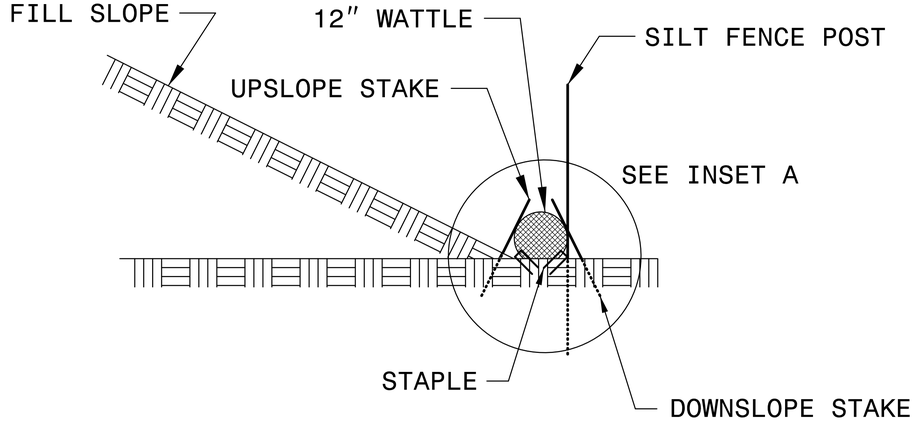
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A

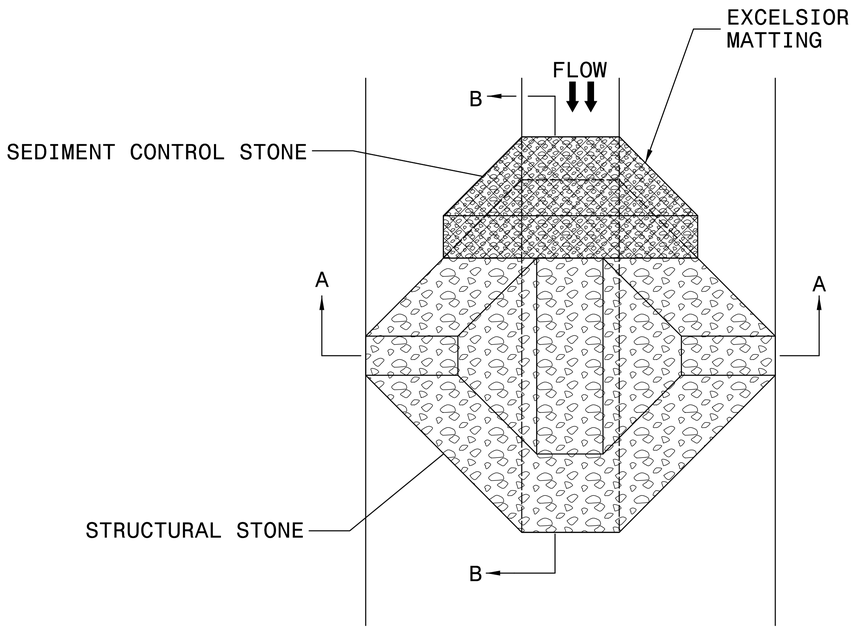




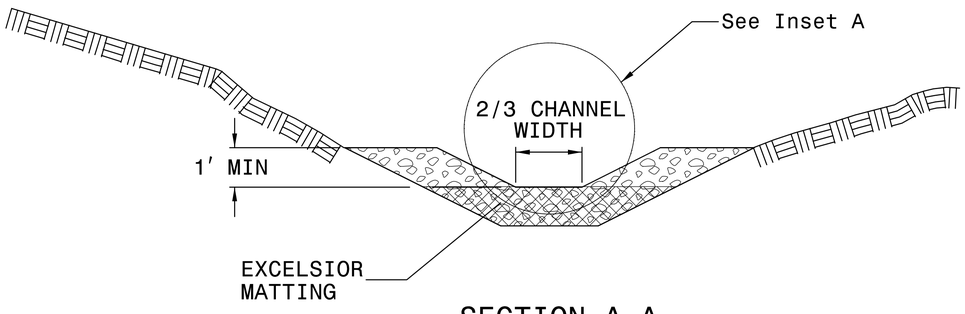
SIDE VIEW

PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-2E
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN



SECTION A-A

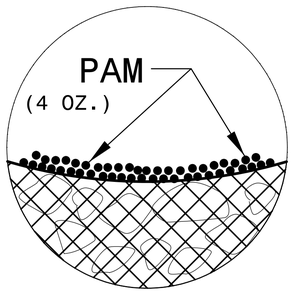
NOTES:

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

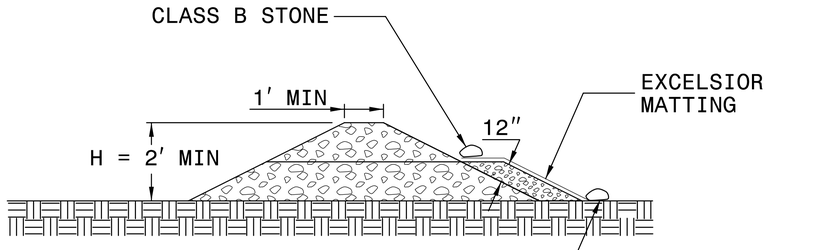
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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



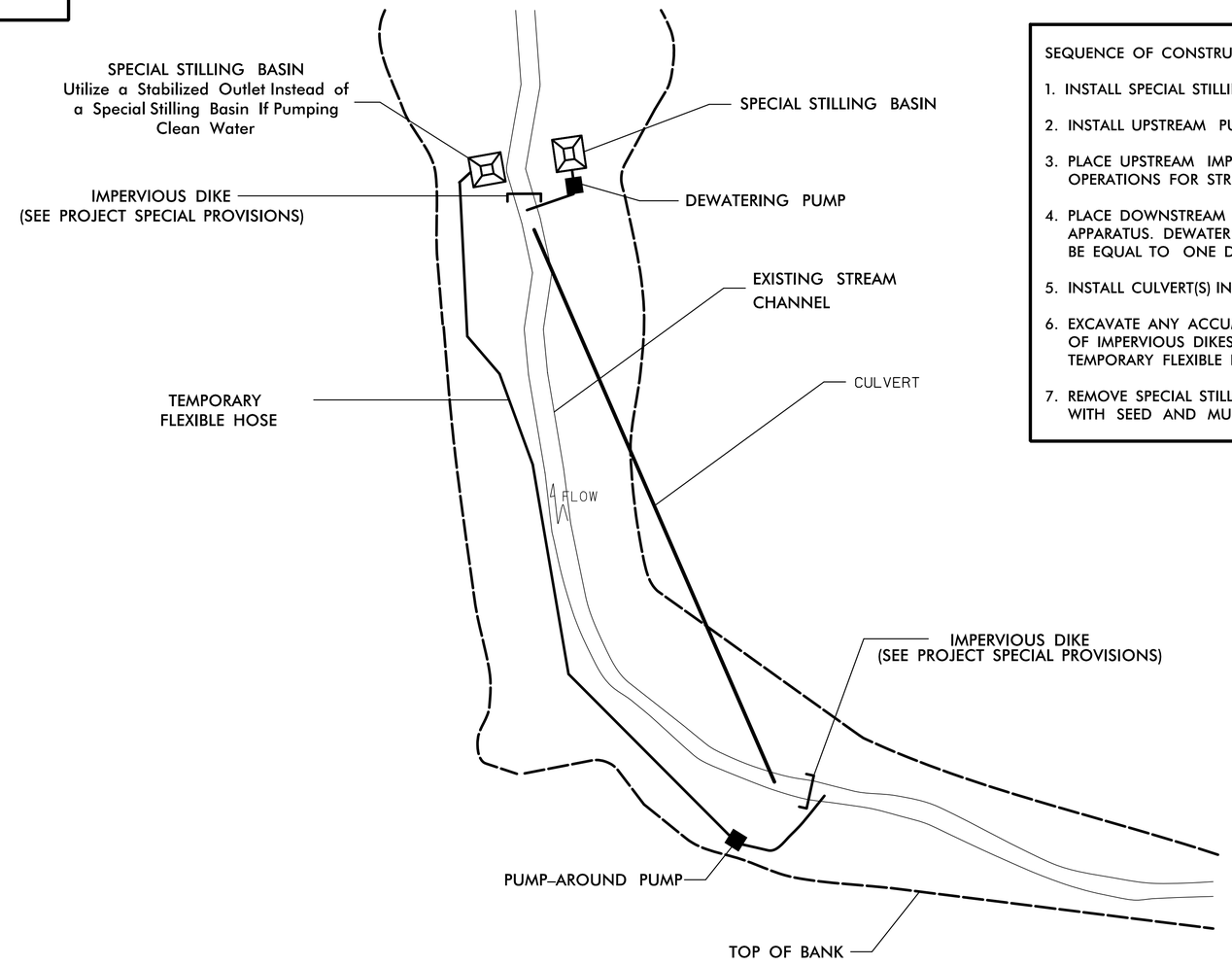
SECTION B-B

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-2F
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

EXAMPLE OF PUMP–AROUND OPERATION

NOTES:
1) All excavation shall be performed in only dry or isolated areas of the work zone.
2) Impervious dikes are to be used to isolate work from stream flow when necessary.
3) Maintenance of stream flow operations shall be incidental to the work. This includes polyethylene sheeting, diversion pipes, pumps and hoses.
4) Pumps and hoses shall be of sufficient size to dewater the work area.



SEQUENCE OF CONSTRUCTION FOR TYPICAL WORK AREA

1. INSTALL SPECIAL STILLING BASIN(S).
2. INSTALL UPSTREAM PUMP AND TEMPORARY FLEXIBLE HOSE.
3. PLACE UPSTREAM IMPERVIOUS DIKE AND BEGIN PUMPING OPERATIONS FOR STREAM DIVERSION.
4. PLACE DOWNSTREAM IMPERVIOUS DIKE AND PUMPING APPARATUS. DEWATER ENTRAPPED AREA. AREA TO BE DEWATERED SHALL BE EQUAL TO ONE DAY'S WORK.
5. INSTALL CULVERT(S) IN ACCORDANCE WITH THE PLANS.
6. EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES. REMOVE IMPERVIOUS DIKES, PUMPS, AND TEMPORARY FLEXIBLE HOSE. (DOWNSTREAM IMPERVIOUS DIKES FIRST).
7. REMOVE SPECIAL STILLING BASIN(S) AND BACKFILL. STABILIZE DISTURBED AREA WITH SEED AND MULCH.

PROJECT REFERENCE NO.	SHEET NO.
R-5705B	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)
SLOPE MATTING					
4	L	247+00	249+00	LT	567
4	L	252+00	255+00	LT	949
4	L	250+00	255+00	RT	767
5	L	263+50	265+50	RT	492
6	L	274+00	274+50	LT	106
6	L	280+50	287+00	LT	2513
6	L	281+50	286+50	RT	1757
7	L	290+50	302+00	RT	4849
8	L	290+50	302+50	LT	7153
9	L	311+50	317+00	LT	2304
9	L	312+00	316+50	RT	2948
10	L	325+50	328+50	LT	1055
10	L	326+50	331+00	RT	1265
10	L	338+00	338+50	RT	138
11	L	337+50	340+00	LT	895
11	L	343+50	348+50	LT	1757
11	L	344+00	353+50	RT	3338
12	L	362+00	365+00	RT	633
13	L	358+00	369+00	LT	4894
13	L	371+00	373+00	LT	767
13	L	375+00	379+50	LT	983
13	L	371+00	372+50	RT	369
13	L	376+00	379+00	RT	1259
14	L	391+50	393+00	RT	344
16	L	402+00	402+50	LT	184
16	L	417+00	419+50	LT	579
16	L	410+00	411+50	RT	336
17	L	433+50	343+00	LT	115
18	L	436+50	438+50	RT	459

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
SLOPE MATTING *CONT.*					
19	L	454+00	454+50	RT	92
19	L	461+00	461+50	RT	115
20	L	464+00	467+00	LT	2688
21	L	480+50	484+00	RT	1389
		SLOPE MATTING SUBTOTAL			48,059
DITCHLINE MATTING					
4	L	247+50	251+50	RT	1740
4	L	249+50	251+50	LT	780
4	L	255+50	259+00	LT	1180
4	L	255+50	259+00	RT	1295
4	L	247+50	249+85	LT	450
5	L	259+50	262+50	RT	1015
5	L	270+50	273+00	LT	670
6	L	272+50	273+00	LT	115
6	L	274+44	276+00	LT	195
6	L	274+00	274+60	RT	70
6	L	275+00	281+00	RT	2025
6	L	276+00	280+00	LT	3595
6	L	282+00	283+58	LT	155
8	L	303+50	306+00	RT	425
8	L	303+50	311+00	LT	8685
8	L	306+00	307+50	RT	460
8	Y6	13+75	14+50	LT	255
8	Y6	16+25	17+50	LT	425
8	Y6	16+25	17+50	RT	505
8	L	300+68	302+50	RT	185
10	L	329+00	331+50	LT	1090
10	L	337+50	339+00	RT	145

PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-3A
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)
DITCHLINE MATTING *CONT.*					
10	Y7	11+25	12+50	LT	205
10	Y7	11+50	12+50	RT	165
11	L	343+00	345+00	LT	310
11	L	349+00	356+00	LT	2585
12	L	353+50	361+50	RT	1970
12	L	362+00	363+50	RT	235
12	L	363+50	363+50	RT	310
12	L	366+00	367+50	RT	510
13	L	368+00	370+50	RT	1340
13	L	373+00	375+50	RT	1405
13	L	375+50	377+17	RT	160
13	L	380+00	381+50	RT	145
13	L	375+00	375+50	RT	70
14	L	380+00	381+00	RT	145
18	L	443+17	443+50	LT	35
21	L	485+00	485+50	RT	185
22	Y8	18+50	19+50	LT	245
22	Y8	20+00	20+00	RT	325
22	Y8	20+50	22+00	LT	185
22	Y22	11+50	12+00	RT	245
	DITCHLINE MATTING SUBTOTAL				43,175

EXCELSIOR MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
DITCHLINE EXCELSIOR MATTING					
4	L	246+83	246+83	RT	55
4	L	247+00	247+50	RT	85
5	L	259+50	261+50	LT	1075
7	L	287+00	287+50	RT	50
8	L	307+50	309+00	RT	230
8	L	309+00	311+00	RT	870
10	L	331+50	332+00	RT	135
13	L	370+50	372+07	RT	155
13	L	372+10	373+00	RT	215
13	L	376+00	376+07	LT	40
18	L	443+50	443+72	LT	25
	DITCHLINE EXCELSIOR MATTING SUBTOTAL				2,935
	SLOPE MATTING SUBTOTAL				48,059
	DITCHLINE MATTING SUBTOTAL				43,175
	DITCHLINE EXCELSIOR MATTING SUBTOTAL				2,935
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					94,169
				TOTAL	192,219
				SAY	192,219

PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-3B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

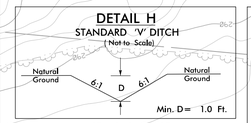
SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	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-5705B	EC-04/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST–STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

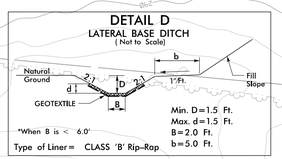
NAD 83/NA 2011

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



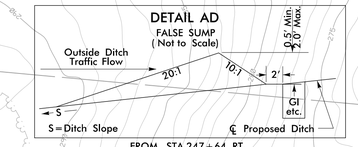
–L– STA. 246+83 RT

DETAIL D
LATERAL BASE DITCH
(Not to Scale)



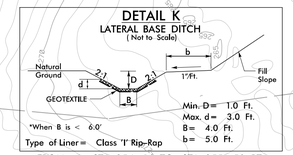
FROM STA.252+00 TO STA.253+11 –L– LT.

DETAIL AD
FALSE SUMP
(Not to Scale)



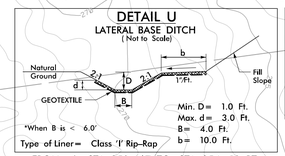
FROM STA.247+64 RT.

DETAIL K
LATERAL BASE DITCH
(Not to Scale)



FROM –L– STA. 254+16 TO STA. 255+50 RT

DETAIL U
LATERAL BASE DITCH
(Not to Scale)

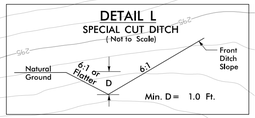


FROM –L– STA. 253+67 TO STA. 254+18 RT

DETAIL 'AE'
STANDARD BASE DITCH
(Not to Scale)

–L– STA. 247+50 TO 249+85 LT

DETAIL L
SPECIAL CUT DITCH
(Not to Scale)

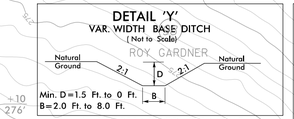


FROM –L– STA. 255+50 TO STA. 256+00 RT

DETAIL 'B'
STANDARD BASE DITCH
(Not to Scale)

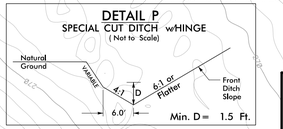
–L– STA. 254+25 RT

DETAIL 'Y'
VAR. WIDTH BASE DITCH
(Not to Scale)



–L– STA. 255+38 TO 255+65 LT

DETAIL P
SPECIAL CUT DITCH wHINGE
(Not to Scale)



FROM –L– STA. 247+00 TO STA. 247+50 RT

DETAIL N
RIP RAP AT EMBANKMENT
(Not to Scale)

FROM STA. 253+15 –L– LT.

106 x 53 x 3
2.5 inch Skimmer
with 2.125 inch
Orifice Diameter
20 ft. weir
ID 4.1

3' STANDARD BASE DITCH
SEE DETAIL 'AE'
S=1.3%
L=325'
EST. 475 CY DDE

END TIP PROJECT R–5705A
BEGIN TIP PROJECT R–5705B
–L– STA. 246+00.00

SEE NCDOT TIP PROJECT R–5705A FOR RIGHT OF WAY PURCHASED UNDER NCDOT TIP PROJECT R–5705A

END PROPOSED R/W TIP PROJECT R–5705A
BEGIN PROPOSED R/W TIP PROJECT R–5705B
100' LT

46 x 23 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
4 ft. weir
ID 4.5

RIP RAP AT EMBANKMENT
SEE DETAIL 'N'

2.0' LATERAL BASE DITCH
SEE DETAIL 'D'
CLASS 'B' RIP RAP
EST. 31 CY DDE

45 x 15 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
4 ft. weir
ID 4.4

CLASS 'I' RIP RAP
EST. 48 TONS
GEOTEXTILE
EST. 87 SY

70 x 30 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
8 ft. weir
ID 4.2

VAR. WIDTH BASE DITCH
SEE DETAIL 'Y'
L=36'
S=1.4%
EST. 16 CY DDE

CLASS 'B' RIP RAP
EST. 2 TONS
GEOTEXTILE
EST. 7 SY

CLASS 'B' RIP RAP
EST. 5 TONS
GEOTEXTILE
EST. 14 SY

PROPOSED 15" RCP COMING FROM CB#2104 (R–5705A) BY OTHERS

SPECIAL CUT DITCH w/HINGE
SEE DETAIL P

STANDARD 'V' DITCH
SEE DETAIL H
EST. DDE 5 CY
L= 63'
S= 5.9%

SEE NCDOT TIP PROJECT R–5705A FOR RIGHT OF WAY PURCHASED UNDER NCDOT TIP PROJECT R–5705A

TRANSITION STONE
CLASS 'B' RIP RAP
EST. 5 TONS
GEOTEXTILE
EST. 15 SY

4.0' LATERAL BASE DITCH
SEE DETAIL U
CLASS 'I' RIP RAP
(54' STREAM RELOCATION)

STANDARD BASE DITCH
SEE DETAIL B

4.0' LAT. BASE DITCH
SEE DETAIL K
CLASS 'I' RIP RAP
EST. 350 TONS
GEOTEXTILE
EST. 410 SY
EST. 152 CY DDE

SPECIAL CUT DITCH
SEE DETAIL L

78 x 26 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
7 ft. weir
ID 4.3

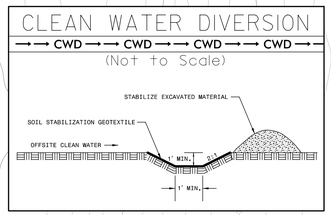
FALSE SUMP
SEE DETAIL 'AD'

–L–
PI Sta 251+52.68
Δ = 72°05'05.6" (RT)
D = 1°32'24.8"
L = 4,680.20'
T = 2,706.95'
R = 3,720.00'
SE = 0.04
RO = 240°

–L– STA. 245+70.00
BEGIN CONSTRUCTION

MATCHLINE SHEET 5
–L– STA. 259+00.00

CLEAN WATER DIVERSION
(Not to Scale)



CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

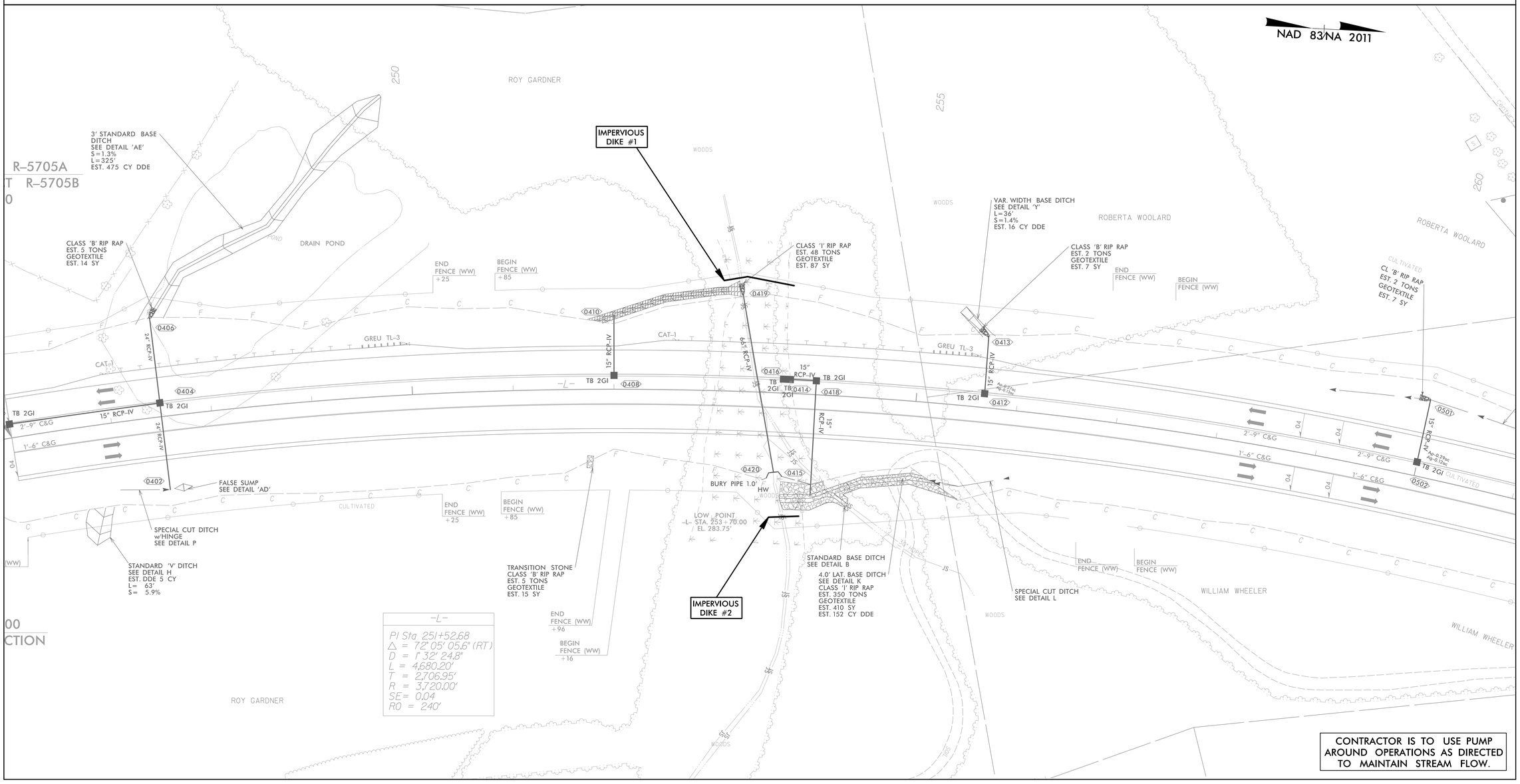
INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

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

PIPE CONSTRUCTION SEQUENCE STA. 253+45 –L–

PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-04A/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

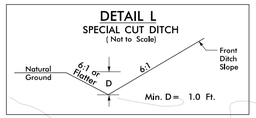
1. INSTALL IMPERVIOUS DIKES #1 & #2.
2. BEGIN PUMP AROUND OPERATION.
3. DEWATER WORK SITE AS NEEDED INTO SPECIAL STILLING BASIN(S).
4. CONSTRUCT 66" RCP–IV.
6. STOP PUMP AROUND OPERATION.
7. REMOVE IMPERVIOUS DIKES #1 & #2 AND REESTABLISH STREAM.



PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-05/CONST.5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

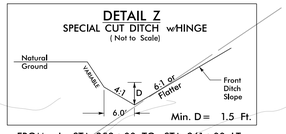
TGS ENGINEERS
201 W. MARION ST–STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

DETAIL L
SPECIAL CUT DITCH
(Not to Scale)



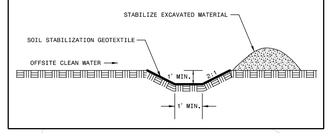
FROM –L– STA. 272+50 TO STA. 273+50 LT

DETAIL Z
SPECIAL CUT DITCH wHINGE
(Not to Scale)



FROM –L– STA. 259+00 TO STA. 261+00 LT

CLEAN WATER DIVERSION
→→ CWD →→ CWD →→ CWD →→ CWD →→
(Not to Scale)



NAD 83/NA 2011

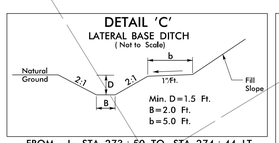
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 5

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

PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-06/CONST.6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

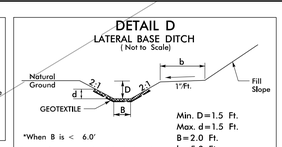
TGS ENGINEERS
201 W. MARION ST–STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

DETAIL 'C'
LATERAL BASE DITCH
(Not to Scale)



FROM –L– STA. 273+50 TO STA. 274+44 LT.
FROM –L– STA. 282+00 TO STA. 283+58 LT.

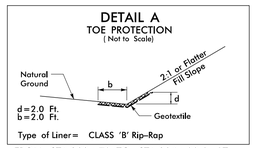
DETAIL D
LATERAL BASE DITCH
(Not to Scale)



Type of Liner= CLASS 'B' Rip–Rap

FROM –L– STA. 281+72 TO STA. 283+81 RT
FROM –L– STA. 283+89 TO STA. 287+00 RT

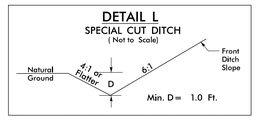
DETAIL A
TOE PROTECTION
(Not to Scale)



Type of Liner= CLASS 'B' Rip–Rap

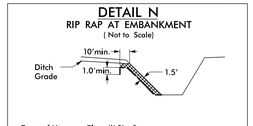
FROM STA.283+70 TO STA.284+00–L– LT.

DETAIL L
SPECIAL CUT DITCH
(Not to Scale)



FROM –L– STA. 272+50 TO STA. 273+50 LT
FROM –L– STA. 274+44 TO STA. 276+00 LT
FROM –L– STA. 274+00 TO STA. 274+60 RT
FROM –L– STA. 274+79 TO STA. 275+50 RT

DETAIL N
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= Class 'I' Rip–Rap

FROM –L– STA. 274+40 TO STA. 274+60 RT
FROM –L– STA. 275+00 TO STA. 275+50 RT

NAD 83/NA 2011

MATCHLINE SHEET 5
–L– STA. 273+00.00

MATCHLINE SHEET 7
–L– STA. 287+00.00

44 x 22 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
4 ft. weir
ID 6.5

50 x 25 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
4 ft. weir
ID 6.3

78 x 13 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
4 ft. weir
ID 6.6

64 x 16 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
4 ft. weir
ID 6.7

65 x 30 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
7 ft. weir
ID 6.2

100 x 25 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
9 ft. weir
ID 6.1

76 x 19 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
5 ft. weir
ID 6.4

48 x 16 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
4 ft. weir
ID 6.8

BEGIN SBG 281+96 LT. AND 281+70 RT.
END SBG 286+60 LT. AND 286+33 RT.

LATERAL BASE DITCH
SEE DETAIL C
EST. 24 CY DDE

CLASS 'B' RIP RAP
EST. 2 TONS
GEOTEXTILE –L– STA. 274+45.04
EST. 7 SY ELEV. = 306.82'
LOW POINT

SPECIAL CUT DITCH
SEE DETAIL L

CLASS 'I' RIP RAP

SPECIAL CUT DITCH
SEE DETAIL L

RIP RAP AT EMBANKMENT
SEE DETAIL N

SPECIAL CUT DITCH
SEE DETAIL L

2.0' LATERAL BASE DITCH
SEE DETAIL 'C'
EST. 33 CY' DDE
CLASS 'B' RIP RAP
EST. 2 TONS
GEOTEXTILE
EST. 7 SY

CLASS 'I' RIP RAP

TOE PROTECTION
SEE DETAIL 'A'

ROD AND LUG CONNECTORS W/ELBOWS

15" RCP–IV

2GI

TB 2GI

2.0' LATERAL BASE DITCH
SEE DETAIL 'D'
CLASS 'B' RIP RAP
EST. 144 CY DDE

2.0' LATERAL BASE DITCH
SEE DETAIL 'D'
CLASS 'B' RIP RAP
EST. 187 CY DDE

BURY PIPE 0.8'

-L- ST Sta. 273+65.93

-L-
N 28° 27' 20.3" E

RONALD E WHEELER (TIC) & REDDIN ADAMS WHEELER (TIC)

LEOTERRA HONEYCUTT LLC

LEOTERRA HONEYCUTT OAKS LLC

BARBARA ENNIS

JERRY SMITH

CULTIVATED

POND

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 6

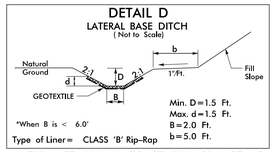
INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

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

PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-07/CONST.7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST–STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

DETAIL D
LATERAL BASE DITCH
(Not to Scale)



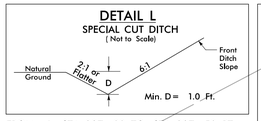
Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=2.0 Ft.
b=5.0 Ft.

*When B is < 6.0'

Type of Liner= CLASS 'B' Rip–Rap

FROM STA.290+00 TO STA.295+63–L– RT.
FROM STA.290+00 TO STA.293+50–L– LT.
FROM STA.299+50 TO STA.301+17–L– LT.

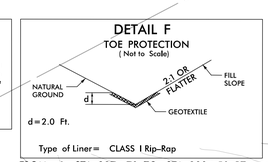
DETAIL L
SPECIAL CUT DITCH
(Not to Scale)



Min. D= 1.0 Ft.

FROM –L– STA. 287+00 TO STA. 287+50 RT

DETAIL F
TOE PROTECTION
(Not to Scale)



d=2.0 Ft.

Type of Liner= CLASS I Rip–Rap

FROM –L– STA. 297+70 TO STA. 299+50 RT

75 x 15 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
4 ft. weir
ID 7.2

NAD 83/NA 2011

MATCHLINE SHEET 6
–L– STA. 287+00.00

MATCHLINE SHEET 8
–L– STA. 300+00.00

BEGIN SBG 291+57 LT. AND 290+70 RT.
END SBG 301+19 LT. AND 301+03 RT.

TRANSITION STONE
CLASS 'B' RIP RAP
EST. 5 TONS
GEOTEXTILE
EST. 15 SY

2.0' LATERAL BASE DITCH
SEE DETAIL 'D'
CLASS 'B' RIP RAP
EST. 93 CY DDE

CLASS 'B' RIP RAP
EST. 1 TON
GEOTEXTILE
EST. 5 SY

2' LATERAL BASE DITCH
SEE DETAIL D
CLASS 'B' RIP RAP
EST. 39 CY DDE

CLASS 'I' RIP RAP
EST. 26 TONS
GEOTEXTILE
50 SY

15" CSP

ROD AND LUG CONNECTORS W/ELBOWS

ROD AND LUG CONNECTORS W/ELBOWS

2.0' LATERAL BASE DITCH
SEE DETAIL 'D'
CLASS 'B' RIP RAP
EST. 200 CY DDE

SPECIAL CUT DITCH
SEE DETAIL L

TOE PROTECTION
SEE DETAIL 'F'

BURY PIPE 0.5'

90 x 30 x 3
1.5 inch Skimmer
with 1.5 inch
Orifice Diameter
10 ft. weir
ID 7.1

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 7

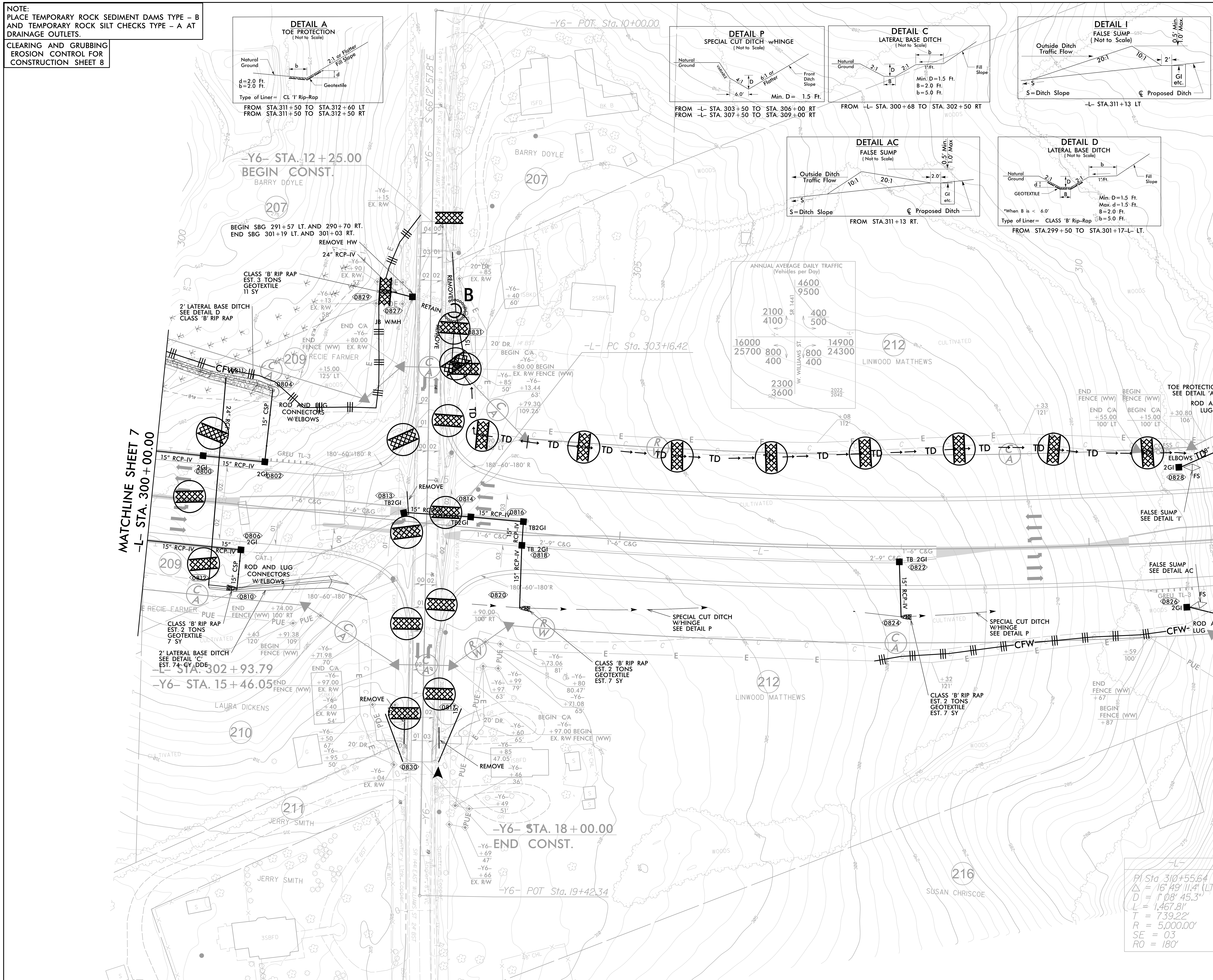
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

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

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 8

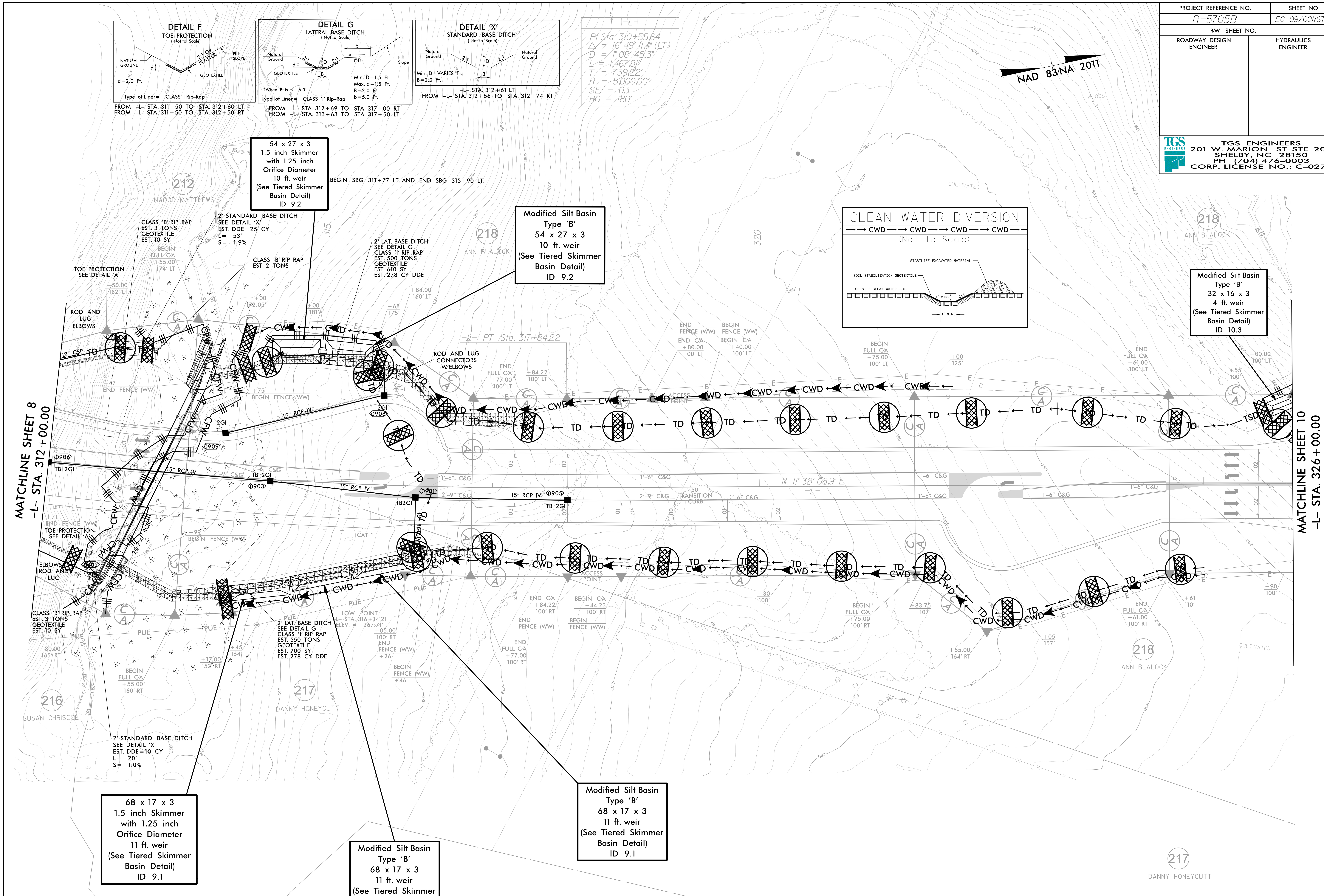
PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-08/CONST.8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275



PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-09/CONST.9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275



CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 9

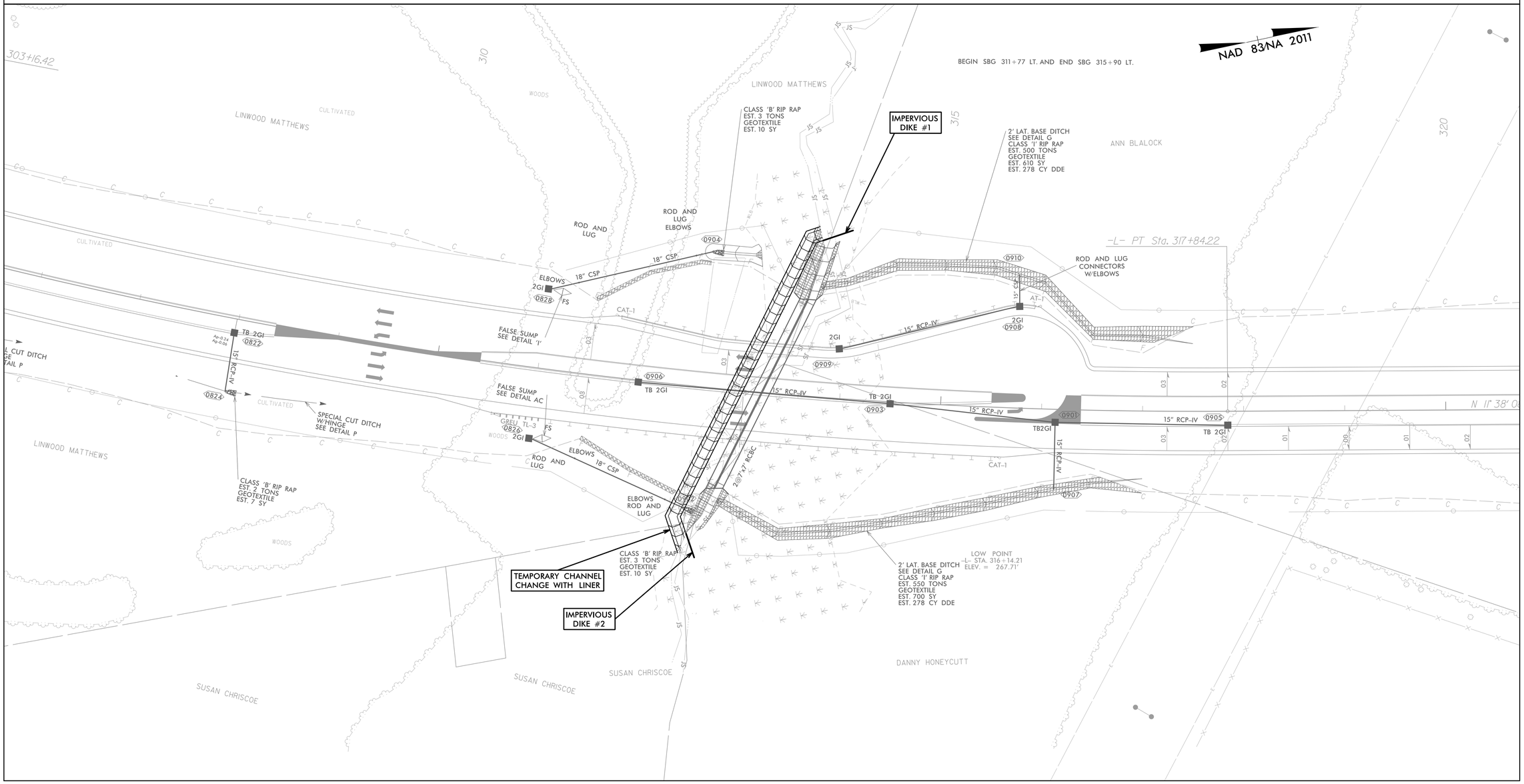
INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

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

CULVERT CONSTRUCTION SEQUENCE STA. 313+23 –L–

PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-09A/CONST.9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

1. UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED THROUGHOUT CULVERT CONSTRUCTION.
2. INSTALL IMPERVIOUS DIKE #1 AND #2 AND TEMPORARY CHANNEL CHANGE WITH LINER (8 FT. BASE, 2. FT DEEP, 1.5:1 SIDE SLOPES), DIVERTING FLOW.
3. CONSTRUCT PROPOSED 2@7'X7' RCBC AND ANY NECESSARY INLET/OUTLET CHANNEL IMPROVEMENTS.
4. REMOVE IMPERVIOUS DIKES AND TEMPORARY CHANNEL CHANGE WITH LINER, ALLOWING FLOW THROUGH NEW RCBC.
5. REMOVE ANY REMAINING SPECIAL STILLING BASIN(S) AND COMPLETE ROADWAY.

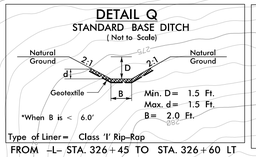


PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-10/CONST JO
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST–STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

NAD 83/NA 2011

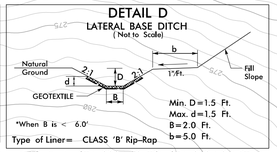
DETAIL Q
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= Class 'I' Rip–Rap

FROM –L– STA. 326+45 TO STA. 326+60 LT

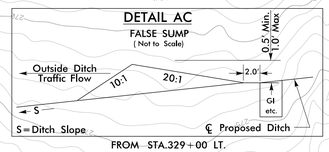
DETAIL D
LATERAL BASE DITCH
(Not to Scale)



Type of Liner= CLASS 'B' Rip–Rap

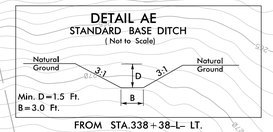
FROM –L– STA. 328+00 TO STA. 332+00 RT

DETAIL AC
FALSE SUMP
(Not to Scale)



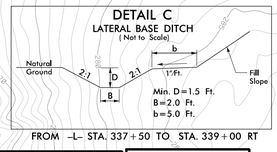
FROM STA.329+00 LT.

DETAIL AE
STANDARD BASE DITCH
(Not to Scale)



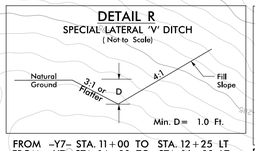
FROM STA.338+38–L– LT.

DETAIL C
LATERAL BASE DITCH
(Not to Scale)



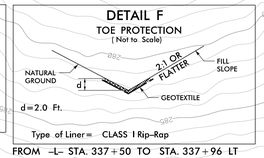
FROM –L– STA. 337+50 TO STA. 339+00 RT

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



FROM –Y7– STA. 11+00 TO STA. 12+25 LT
FROM –Y7– STA. 14+00 TO STA. 16+00 LT
FROM –Y7– STA. 11+00 TO STA. 11+75 RT
FROM –Y7– STA. 14+00 TO STA. 16+00 RT

DETAIL F
TOE PROTECTION
(Not to Scale)



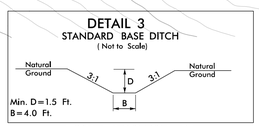
Type of Liner= CLASS I Rip–Rap

FROM –L– STA. 337+50 TO STA. 337+96 LT

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

FROM –L– STA. 339+00 TO STA. 339+50 RT
FROM –L– STA. 331+50 TO STA. 332+00 RT

DETAIL 3
STANDARD BASE DITCH
(Not to Scale)



FROM STA.328+00–L– RT.

Modified Silt Basin
Type 'B'
32 x 16 x 3
4 ft. weir
(See Tiered Skimmer Basin Detail)
ID 10.3

32 x 16 x 3
1.5 inch Skimmer with 0.75 inch Orifice Diameter
4 ft. weir
(See Tiered Skimmer Basin Detail)
ID 10.3

130 x 26 x 3
2.0 inch Skimmer with 1.625 inch Orifice Diameter
12 ft. weir
ID 10.4

64 x 16 x 3
1.5 inch Skimmer with 0.875 inch Orifice Diameter
4 ft. weir
ID 10.2

46 x 23 x 2
1.5 inch Skimmer with 0.625 inch Orifice Diameter
4 ft. weir
ID 10.5

32 x 16 x 2
1.5 inch Skimmer with 0.375 inch Orifice Diameter
4 ft. weir
ID 10.6

2' STANDARD BASE DITCH
SEE DETAIL Q
CLASS I RIP RAP
EST. 5 CY DDE

CL 'I' RIP RAP

CLASS 'B' RIP RAP
EST. 2 TONS
GEOTEXTILE
EST. 7 SY

FALSE SUMP
SEE DETAIL AC

SPECIAL LAT. 'V' DITCH
SEE DETAIL R

SPECIAL LAT. 'V' DITCH
SEE DETAIL J

2' LATERAL BASE DITCH
SEE DETAIL 'D'
CLASS 'B' RIP RAP
EST. 220 TONS
GEOTEXTILE
EST. 575 SY
EST. 147 CY DDE

STANDARD 4.0' BASE DITCH
SEE DETAIL 3
EST.60 CY DDE

3.0' STANDARD BASE DITCH
SEE DETAIL AE
EST.215 CY. DDE

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

TOE PROTECTION
SEE DETAIL F

2' LATERAL BASE DITCH
SEE DETAIL C
EST. 131 CY DDE

SPECIAL LAT. 'V' DITCH
SEE DETAIL J

ROD AND LUG CONNECTORS W/ELBOWS

BEGIN SBG 326+06 LT. AND 326+45 RT.
END SBG 328+50 LT. AND 328+82 RT.

–Y7– PI Sta 148+0.22
Δ = 4°05'16.8" (RT)
D = 1°15'00.7"
L = 326.99'
T = 163.57'
R = 4,583.00'

–Y7– POT Sta. 10+00.00

–Y7– STA. 10+80.00
BEGIN CONST.

–L– STA. 332+45.75
–Y7– STA. 13+16.00

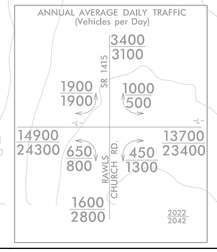
–Y7– STA. 15+00.00
END GRADE

–Y7– PT Sta. 16+43.65

MATCHLINE SHEET 9
–L– STA. 326+00.00

MATCHLINE SHEET 11
–L– STA. 339+50.00

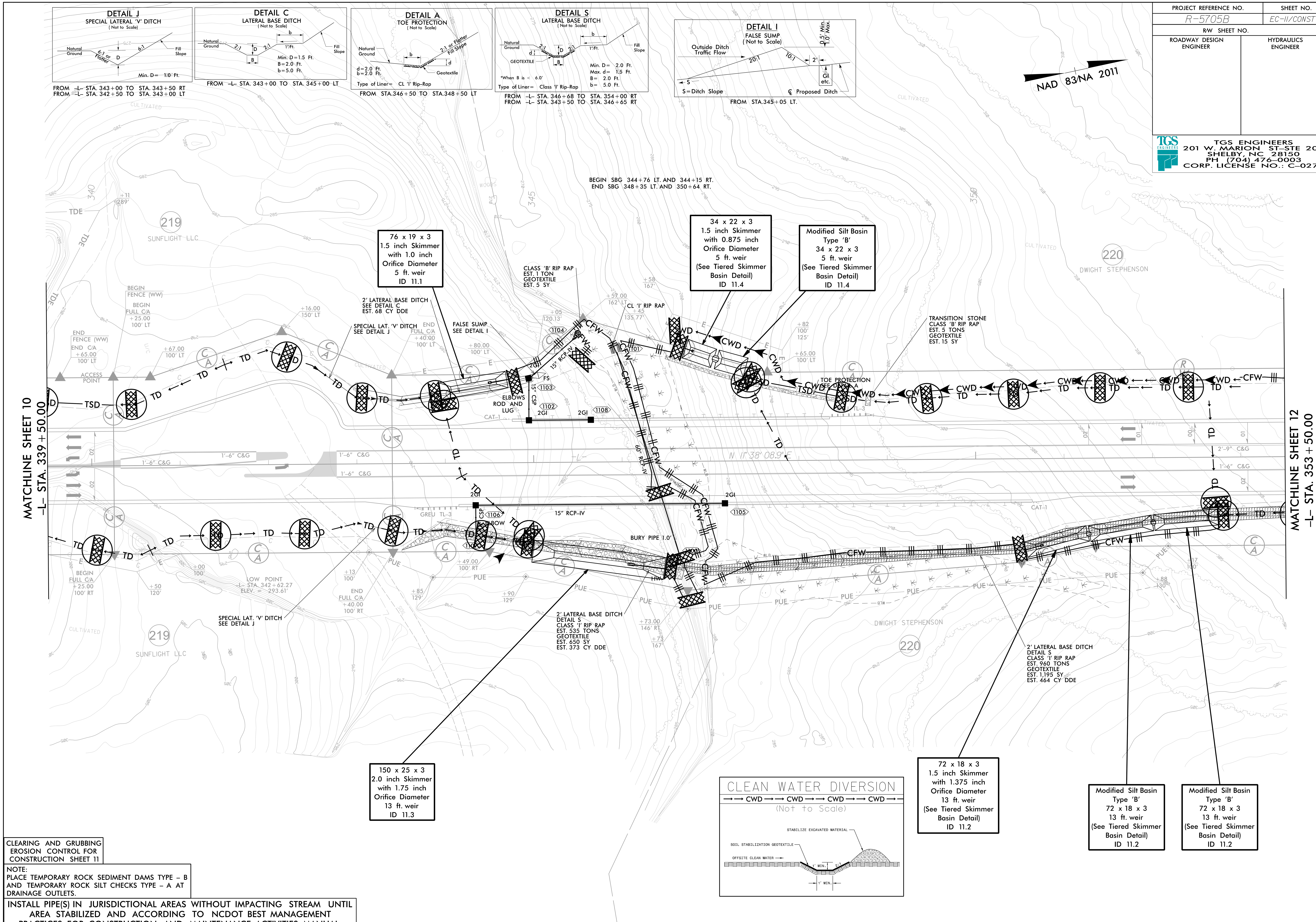
ANNUAL AVERAGE DAILY TRAFFIC
(Vehicles per Day)



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.

INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

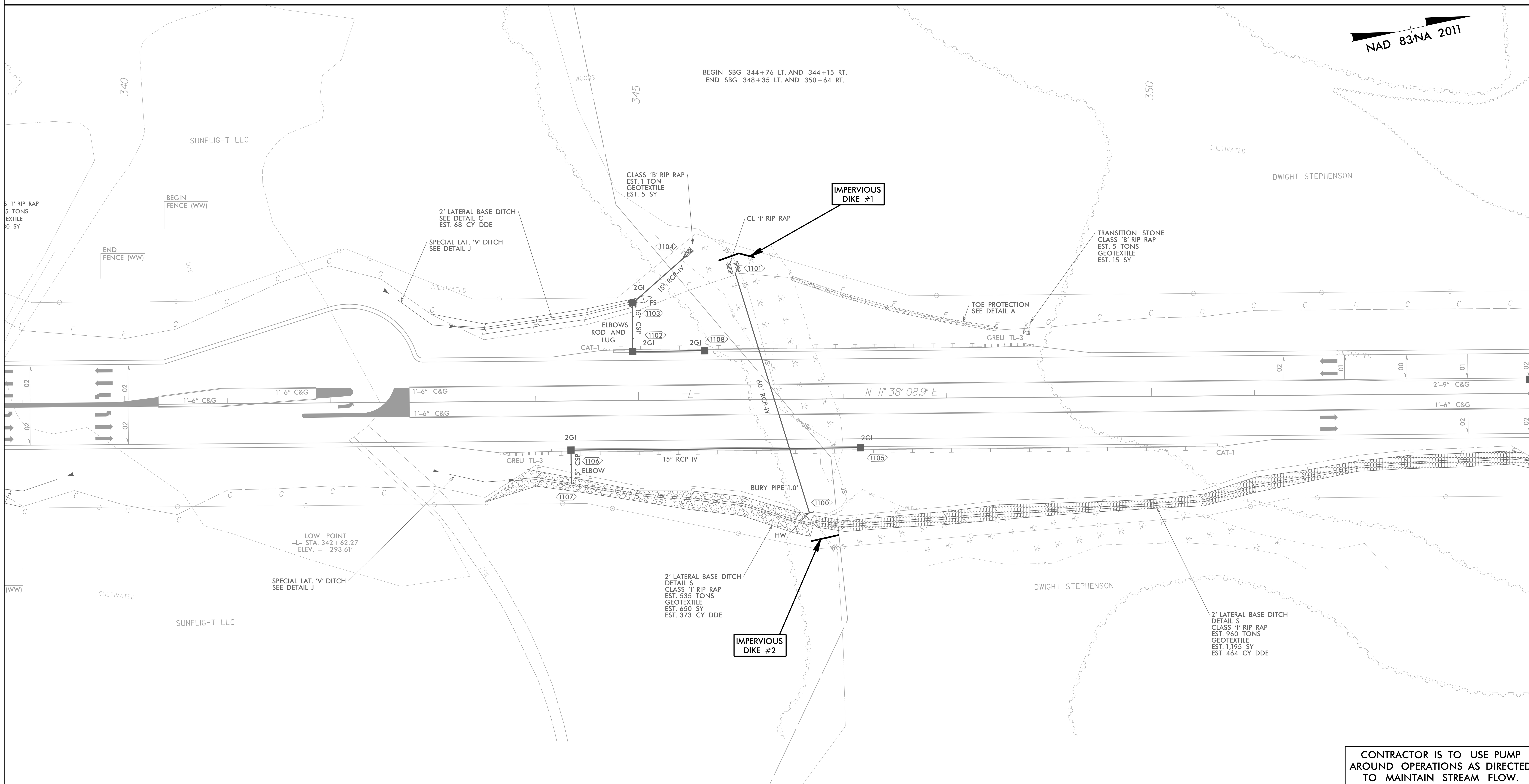


PROJECT REFERENCE NO.
SHEET NO.
R-5705B
EC-11/CONST11
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275
NAD 83/NA 2011
DETAIL J
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
6:1 or Flatter
Fill Slope
Min. D= 1.0 Ft.
FROM -L- STA. 343+00 TO STA. 343+50 RT
FROM -L- STA. 342+50 TO STA. 343+00 LT
DETAIL C
LATERAL BASE DITCH
(Not to Scale)
Min. D=1.5 Ft.
B=2.0 Ft.
b=5.0 Ft.
FROM -L- STA. 343+00 TO STA. 345+00 LT
DETAIL A
TOE PROTECTION
(Not to Scale)
2:1 or Flatter Fill Slope
Geotextile
d=2.0 Ft.
b=2.0 Ft.
Type of Liner= CL 'I' Rip-Rap
FROM STA.346+50 TO STA.348+50 LT
DETAIL S
LATERAL BASE DITCH
(Not to Scale)
GEOTEXTILE
Min. D= 2.0 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.
b= 5.0 Ft.
*When B is < 6.0'
Type of Liner= Class 'I' Rip-Rap
FROM -L- STA. 346+68 TO STA. 354+00 RT
FROM -L- STA. 343+50 TO STA. 346+65 RT
DETAIL I
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
20:1
10:1
0.5' Min. 1.0' Max.
S=Ditch Slope
Proposed Ditch
FROM STA.345+05 LT.
BEGIN SBG 344+76 LT. AND 344+15 RT.
END SBG 348+35 LT. AND 350+64 RT.
76 x 19 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
5 ft. weir
ID 11.1
34 x 22 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
5 ft. weir
(See Tiered Skimmer Basin Detail)
ID 11.4
Modified Silt Basin
Type 'B'
34 x 22 x 3
5 ft. weir
(See Tiered Skimmer Basin Detail)
ID 11.4
2' LATERAL BASE DITCH
SEE DETAIL C
EST. 68 CY DDE
SPECIAL LAT. 'V' DITCH
SEE DETAIL J
FALSE SUMP
SEE DETAIL I
CLASS 'B' RIP RAP
EST. 1 TON
GEOTEXTILE
EST. 5 SY
CL 'I' RIP RAP
TRANSITION STONE
CLASS 'B' RIP RAP
EST. 5 TONS
GEOTEXTILE
EST. 15 SY
TOE PROTECTION
SEE DETAIL A
219
SUNFLIGHT LLC
220
DWIGHT STEPHENSON
MATCHLINE SHEET 10
-L- STA. 339+50.00
MATCHLINE SHEET 12
-L- STA. 353+50.00
N 11°38'08.9" E
LOW POINT
-L- STA. 342+62.27
ELEV. = 293.61'
SPECIAL LAT. 'V' DITCH
SEE DETAIL J
2' LATERAL BASE DITCH
DETAIL S
CLASS 'I' RIP RAP
EST. 535 TONS
GEOTEXTILE
EST. 650 SY
EST. 373 CY DDE
2' LATERAL BASE DITCH
DETAIL S
CLASS 'I' RIP RAP
EST. 960 TONS
GEOTEXTILE
EST. 1,195 SY
EST. 464 CY DDE
BURY PIPE 1.0'
15" RCP-IV
60" RCP-IV
150 x 25 x 3
2.0 inch Skimmer
with 1.75 inch
Orifice Diameter
13 ft. weir
ID 11.3
72 x 18 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
13 ft. weir
(See Tiered Skimmer Basin Detail)
ID 11.2
Modified Silt Basin
Type 'B'
72 x 18 x 3
13 ft. weir
(See Tiered Skimmer Basin Detail)
ID 11.2
Modified Silt Basin
Type 'B'
72 x 18 x 3
13 ft. weir
(See Tiered Skimmer Basin Detail)
ID 11.2
CLEAN WATER DIVERSION
(Not to Scale)
STABILIZE EXCAVATED MATERIAL
SOIL STABILIZATION GEOTEXTILE
OFFSITE CLEAN WATER
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.
INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL
AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT
PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

PIPE CONSTRUCTION SEQUENCE STA. 346 + 32 –L–

PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-IIA/CONST.II
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

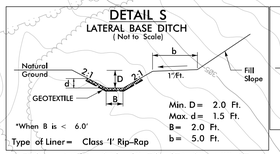
1. INSTALL IMPERVIOUS DIKES #1 & #2.
2. BEGIN PUMP AROUND OPERATION.
3. DEWATER WORK SITE AS NEEDED INTO SPECIAL STILLING BASIN(S).
4. CONSTRUCT 60" RCP–IV.
5. STOP PUMP AROUND OPERATION.
6. REMOVE IMPERVIOUS DIKES #1 & #2 AND REESTABLISH STREAM.



PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-12/CONSTJ2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST–STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

DETAIL S
LATERAL BASE DITCH
(Not to Scale)

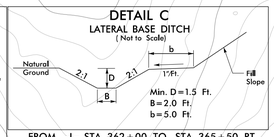


Min. D= 2.0 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.
b= 5.0 Ft.

*When B is < 6.0'
Type of Liner= Class 'I' Rip-Rap

FROM –L– STA. 346+68 TO STA. 354+00 RT

DETAIL C
LATERAL BASE DITCH
(Not to Scale)



Min. D=1.5 Ft.
B=2.0 Ft.
b=5.0 Ft.

FROM –L– STA. 362+00 TO STA. 365+50 RT

NAD 83/NA 2011

MATCHLINE SHEET 11
–L– STA. 353+50.00

MATCHLINE SHEET 13
–L– STA. 367+50.00

–L– PC Sta. 353+67.90

PI Sta 362+25.78
△ = 19° 28' 17.8" (RT)
D = 1° 08' 45.3"
L = 1,699.22'
T = 857.88'
R = 5,000.00'
SE = 03
RO = 180'

76 x 19 x 2
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
5 ft. weir
ID 12.1

100 x 20 x 2
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
7 ft. weir
ID 12.2

2' LATERAL BASE DITCH
SEE DETAIL C
EST. 250 CY DDE

CLASS 'B' RIP RAP
EST. 5 TONS
GEOTEXTILE
EST. 14 SY

HIGH POINT
–L– STA. 363+43.33
ELEV. = 329.17'

ROBERTA WOOLARD
DWIGHT STEPHENSON
CULTIVATED

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

INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 12

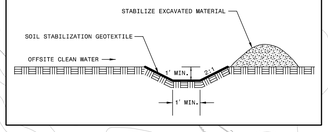
PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-13/CONSTJ3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST–STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

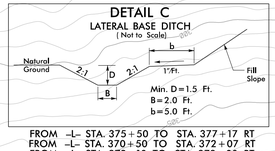
CLEAN WATER DIVERSION

→→ CWD →→ CWD →→ CWD →→ CWD →→

(Not to Scale)



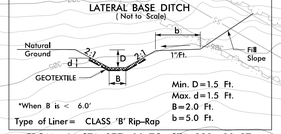
DETAIL C
LATERAL BASE DITCH
(Not to Scale)



Min. D=1.5 Ft.
B=2.0 Ft.
b=5.0 Ft.

FROM –L– STA. 375+50 TO STA. 377+17 RT
FROM –L– STA. 370+50 TO STA. 372+07 RT
FROM –L– STA. 372+10 TO STA. 373+00 RT
FROM –L– STA. 380+00 TO STA. 381+50 RT

DETAIL D
LATERAL BASE DITCH
(Not to Scale)



*When B is < 6.0'
Type of Liner= CLASS 'B' Rip–Rap

Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=2.0 Ft.
b=5.0 Ft.

FROM –L– STA. 377+16 TO STA. 380+00 RT
FROM –L– STA. 370+00 TO STA. 372+39 LT.

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

Min. D= 1.0 Ft.

FROM –L– STA. 375+00 TO STA. 375+50 RT

DETAIL AB
STANDARD BASE DITCH
(Not to Scale)

Min. D= 2.0 Ft.
B= 5.0 Ft.

–L– STA. 376+07 LT

NAD 83/NA 2011

MATCHLINE SHEET 12
–L– STA. 367+50.00

MATCHLINE SHEET 14
–L– STA. 381+50.00

48 x 24 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
4 ft. weir
ID 13.1

100 x 20 x 2
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
7 ft. weir
ID 13.2

30 x 10 x 3
1.5 inch Skimmer
with 0.375 inch
Orifice Diameter
4 ft. weir
ID 13.5

48 x 16 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
4 ft. weir
ID 13.3

132 x 22 x 3
1.5 inch Skimmer
with 1.5 inch
Orifice Diameter
9 ft. weir
ID 13.4

2' LATERAL BASE DITCH
SEE DETAIL D
CLASS 'B' RIP RAP
EST. 164 CY DDE

CLASS 'I' RIP RAP
EST. 26 TONS
GEOTEXTILE
EST. 50 SY

STANDARD BASE DITCH
SEE DETAIL AB
EST. 18 CY DDE

CLASS 'I' RIP RAP
EST. 40 TONS
GEOTEXTILE
EST. 75 SY

2' LATERAL BASE DITCH
SEE DETAIL C
EST. 71 CY DDE

2' LATERAL BASE DITCH
SEE DETAIL C
EST. 37 CY DDE

2' LATERAL BASE DITCH
SEE DETAIL C
EST. 95 CY DDE

2' LATERAL
BASE DITCH
SEE DETAIL C
EST. 144 CY DDE

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

2' LATERAL BASE DITCH
SEE DETAIL D
CLASS 'B' RIP RAP
EST. 215 TONS
GEOTEXTILE
EST. 530 SY
EST. 320 CY DDE

SPECIAL LAT. 'V' DITCH
SEE DETAIL J

ROD AND LUG CONNECTORS W/ELBOWS

BURY PIPE 0.8' HW

BURY PIPE 1.0' HW

-L- PT Sta. 370+67.12

N 31° 06' 26.7" E

ROBERTA WOOLARD

RUTH PETREA

RICHARD BULLOCK

HARNETT COUNTY
WAKE COUNTY

CULTIVATED

POND

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 13

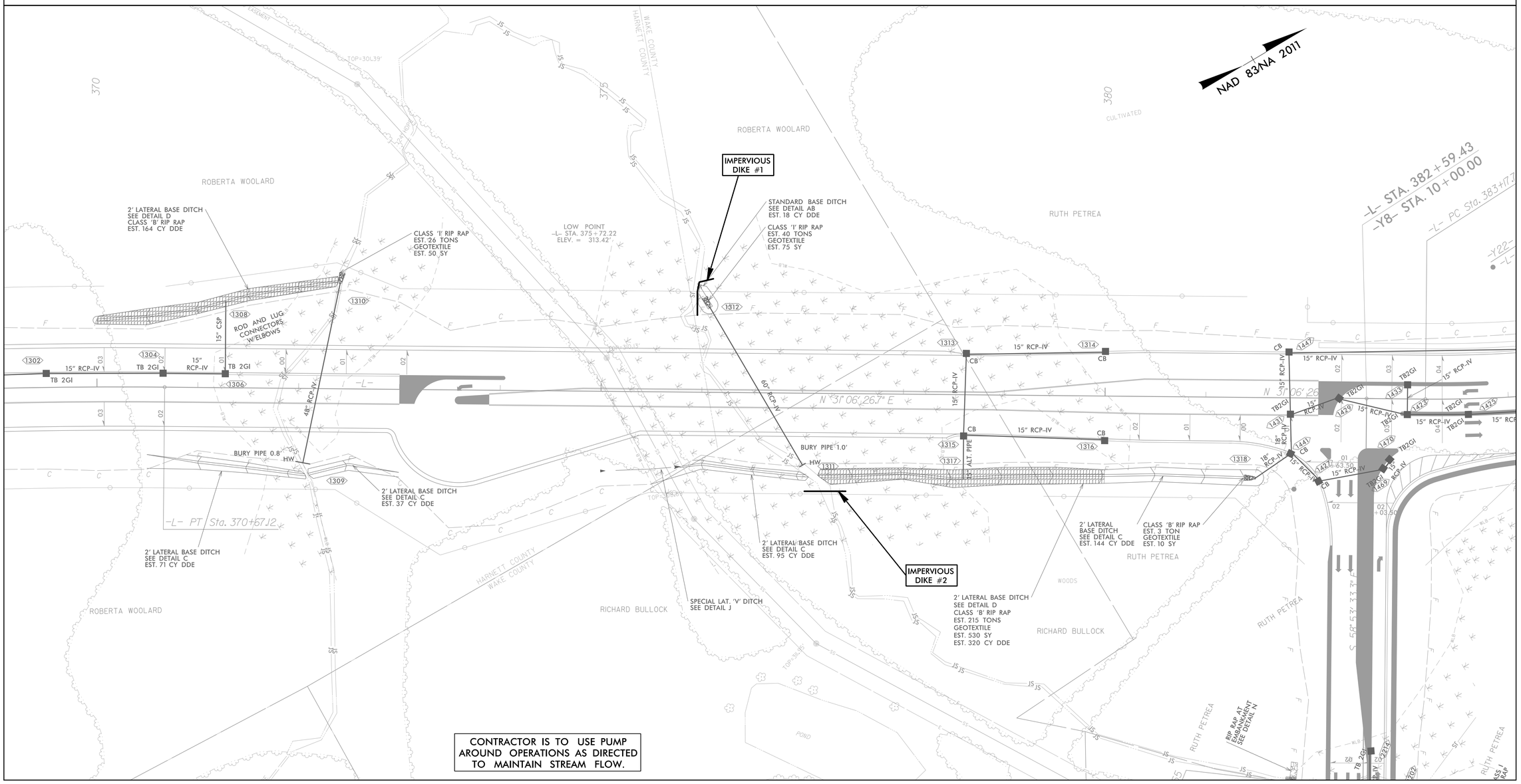
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-13A/CONST.13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PIPE CONSTRUCTION SEQUENCE STA. 376+58 –L–

1. INSTALL IMPERVIOUS DIKES #1 & #2.
2. BEGIN PUMP AROUND OPERATION.
3. DEWATER WORK SITE AS NEEDED INTO SPECIAL STILLING BASIN(S).
4. CONSTRUCT 60" RCP–IV.
6. STOP PUMP AROUND OPERATION.
7. REMOVE IMPERVIOUS DIKES #1 & #2 AND REESTABLISH STREAM.



INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

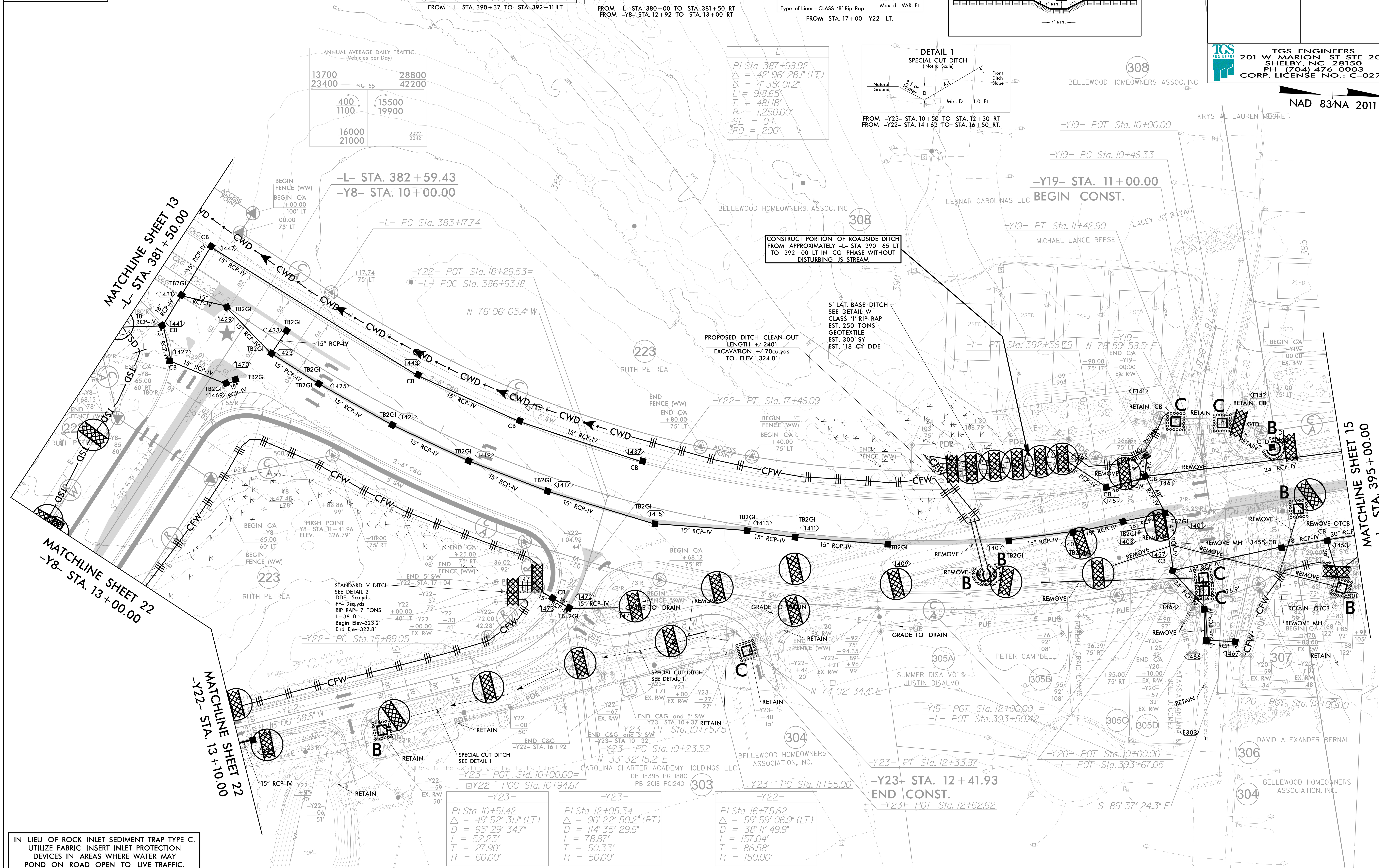
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 14

PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-14/CONSTJ4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

NAD 83/NA 2011



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-5705B	EC-15/CONST J5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

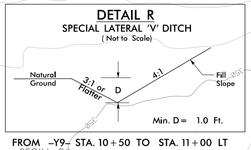
TGS ENGINEERS
201 W. MARION ST–STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

ANNUAL AVERAGE DAILY TRAFFIC
(Vehicles per Day)

2100 / 4200
1000 / 850 — 800 / 2900
28900 / 42200 — 1550 / 1250 — 28300 / 44200 — 1200 / 1100
3100 / 2900
2022 / 2042

NAD 83/NA 2011

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



FROM –Y9– STA. 10+50 TO STA. 11+00 LT

MATCHLINE SHEET 14
–L– STA. 395+00.00

MATCHLINE SHEET 16
–L– STA. 408+00.00

–Y9– STA. 9+64.00
BEGIN CONST.

–Y9– PT Sta. 10+15.96

–L– STA. 400+00.01
–Y9– STA. 12+15.32

–L– PC Sta. 403+02.62

SPECIAL LAT. 'V' DITCH
SEE DETAIL R

–Y9– N 87° 40' 20.5" E

–Y9– PT Sta. 13+49.27

–Y9– PT Sta. 13+99.88

–L– DRVI–POT Sta. 9+95.44

–L– DRVI–POT Sta. 12+25.99

–Y9– STA. 15+25.00
END CONST.

–Y9– PT Sta. 16+60.36

–EY9– POT STA. 22+54.76

LOW POINT
–Y9– STA. 11+43.97
ELEV. = 346.45

KENNEBEC BAPTIST CHURCH

BRUNO PERALTA RANGEL
AND WIFE, MARIA JANET PERALTA

BELLEWOOD HOMEOWNERS ASSOC. INC

LENNAR CAROLINAS LLC

BELLEWOOD HOMEOWNERS ASSOCIATION, INC.

KENNETH LAWRENCE

NEAL EICHHORN

ALBERMARLE PROPERTIES LLC

MOHLER INVESTMENTS, LLC

BYRD PROPERTIES OF ANGIER LLC

QUALITY OIL CO LLC

LEIGH BALANCE

REBECCA MCDONALD

GEORGE KANESHIRO

JASON EMERSON

DAVID SMITH

DEBORAH MOORE

VIOLET MCCARTNEY HEIRS

CHARLES PRICE

MARY UPCHURCH

CECIL PRICE

PAUL DOCTON

REBECCA JOHNSON

CFW

DO NOT DISTURB GRAVESITE

DO NOT DISTURB WALL

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.

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.

–L–	–Y9–		
PI Sta 405+97.57	PI Sta 8+87.62	PI Sta 13+03.66	PI Sta 15+35.75
Δ = 3° 22' 43.8" (LT)	Δ = 10° 17' 43.8" (RT)	Δ = 2° 36' 50.2" (LT)	Δ = 40° 13' 39.7" (LT)
D = 0° 34' 22.6'	D = 4° 00' 00.0"	D = 2° 51' 53.2"	D = 15° 26' 37.0"
L = 589.72'	L = 257.39'	L = 91.24'	L = 260.48'
T = 294.94'	T = 129.04'	T = 45.63'	T = 135.87'
R = 10,000.00'	R = 1,432.39'	R = 2,000.00'	R = 371.00'
SE = NC			

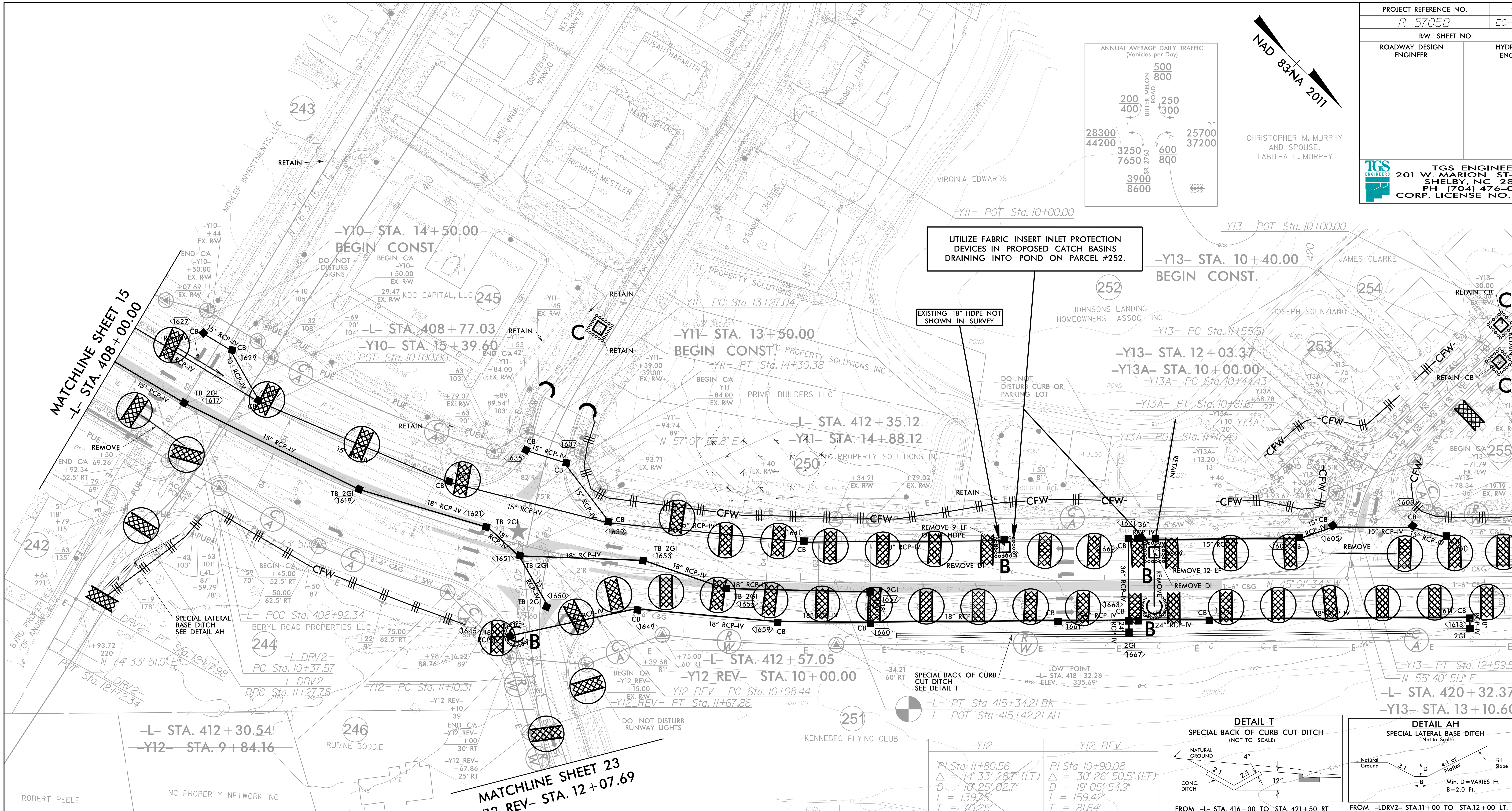
PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-16/CONSTJ6

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275



NAD 83/NA 2011
ANNUAL AVERAGE DAILY TRAFFIC (Vehicles per Day)
MATCHLINE SHEET 15 -L- STA. 408+00.00
MATCHLINE SHEET 17 -L- STA. 422+00.00
MATCHLINE SHEET 23 -Y12_REV- STA. 12+07.69
-Y10- STA. 14+50.00 BEGIN CONST.
-L- STA. 408+77.03
-Y10- STA. 15+39.60
-Y11- STA. 13+50.00 BEGIN CONST.
-L- STA. 412+35.12
-Y11- STA. 14+88.12
-Y13- STA. 10+40.00 BEGIN CONST.
-Y13- STA. 12+03.37
-Y13A- STA. 10+00.00
-L- STA. 412+57.05
-Y12_REV- STA. 10+00.00
-L- STA. 412+30.54
-Y12- STA. 9+84.16
-L- STA. 420+32.37
-Y13- STA. 13+10.60
UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN PROPOSED CATCH BASINS DRAINING INTO POND ON PARCEL #252.
EXISTING 18" HDPE NOT SHOWN IN SURVEY
DO NOT DISTURB CURB OR PARKING LOT
DO NOT DISTURB SIGNS
DO NOT DISTURB RUNWAY LIGHTS
SPECIAL LATERAL BASE DITCH SEE DETAIL AH
SPECIAL BACK OF CURB CUT DITCH SEE DETAIL T
LOW POINT -L- STA. 418+32.26 ELEV. = 335.69'
-L- PT Sta 415+34.21 BK = -L- POT Sta 415+42.21 AH
DETAIL T
SPECIAL BACK OF CURB CUT DITCH (NOT TO SCALE)
FROM -L- STA. 416+00 TO STA. 421+50 RT
DETAIL AH
SPECIAL LATERAL BASE DITCH (Not to Scale)
Min. D = VARIES Ft. B = 2.0 Ft.
FROM -LDRV2- STA.11+00 TO STA.12+00 LT.

-Y12-	-Y12_REV-
PI Sta 11+80.56	PI Sta 10+90.08
Δ = 14° 33′ 28.7″ (LT)	Δ = 30° 26′ 50.5″ (LT)
D = 10° 25′ 02.7″	D = 19° 05′ 54.9″
L = 139.75′	L = 159.42′
T = 70.25′	T = 81.64′
R = 550.00′	R = 300.00′

-L_DRV2-	
PI Sta 10+83.46	PI Sta 11+73.66
Δ = 25° 50′ 31.0″ (RT)	Δ = 25° 50′ 31.0″ (LT)
D = 28° 38′ 52.4″	D = 28° 38′ 52.4″
L = 90.21′	L = 90.21′
T = 45.88′	T = 45.88′
R = 200.00′	R = 200.00′

-L-		-Y11-	-Y13-	-Y13A-
PI Sta 405+97.57	PI Sta 412+21.15	PI Sta 13+79.23	PI Sta 12+09.32	PI Sta 10+65.88
Δ = 3° 22′ 43.8″ (LT)	Δ = 30° 38′ 48.7″ (LT)	Δ = 19° 44′ 16.9″ (LT)	Δ = 36° 19′ 57.2″ (LT)	Δ = 71° 07′ 09.5″ (LT)
D = 0° 34′ 22.6″	D = 4° 46′ 28.7″	D = 19° 05′ 54.9″	D = 34° 56′ 11.2″	D = 190° 59′ 09.4″
L = 589.72′	L = 641.87′	L = 103.35′	L = 104.00′	L = 37.24′
T = 294.94′	T = 328.81′	T = 52.19′	T = 53.81′	T = 21.45′
R = 10,000.00′	R = 1,200.00′	R = 300.00′	R = 164.00′	R = 30.00′
SE = NC	SE = 04			
	RO = 200′			

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.

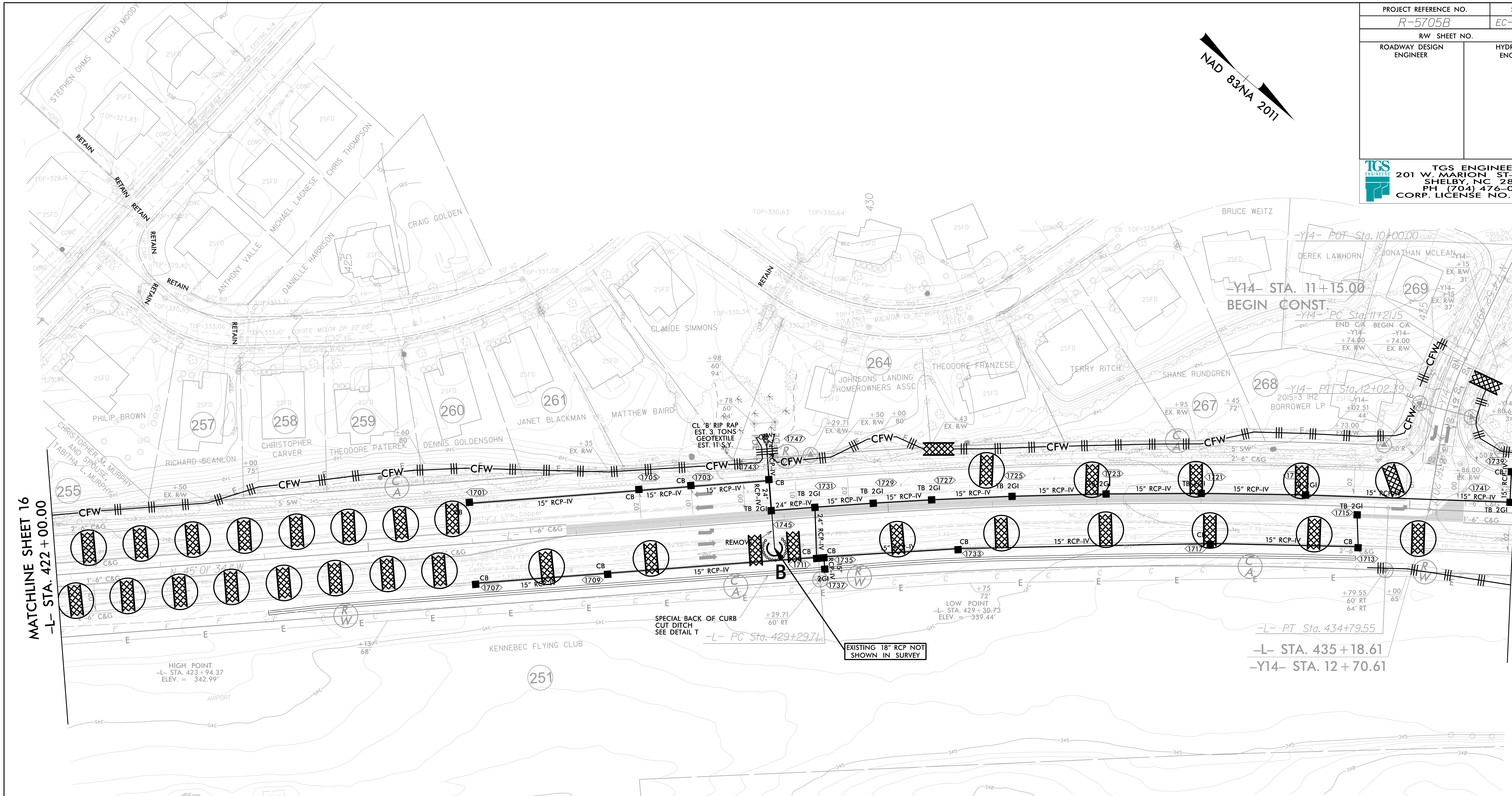
IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN AREAS WHERE WATER MAY POND ON ROAD OPEN TO LIVE TRAFFIC.

PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-17/CONST.17

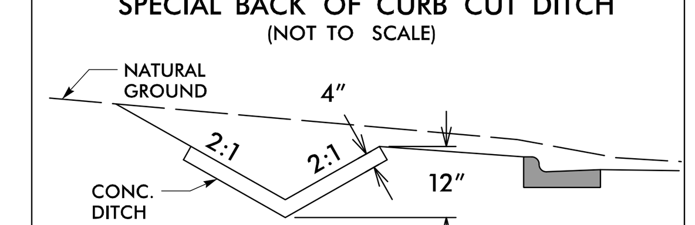
R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275



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



FROM -L- STA. 424+00 TO STA. 434+50 RT

-L-	-Y14-
PI Sta 432+04.95	PI Sta 11+62.05
△ = 6° 48' 15.4" (RT)	△ = 16° 16' 29.0" (LT)
D = 1° 14' 15.0"	D = 20° 02' 00.6"
L = 549.85'	L = 81.24'
T = 275.25'	T = 40.89'
R = 4,630.00'	R = 286.00'
SE = 02	
RO = 100'	

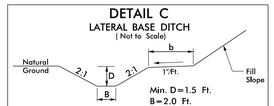
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 17

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

PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-18/CONST J8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST–STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

DETAIL C
LATERAL BASE DITCH
(Not to Scale)



FROM –L– STA. 443+17 TO STA. 443+72 LT

NAD 83/NA 2011

–Y15– STA. 11+50.00
BEGIN CONST.

–Y15– POT Sta. 10+00.00

RETAIN

–L– STA. 440+25.90
–Y15– STA. 12+75.00

2' LATERAL BASE DITCH
SEE DETAIL C
EST. 10 CY DDE

LOW POINT
–L– STA. 444+94.65
ELEV. = 345.00'

HIGH POINT
–L– STA. 437+35.59
ELEV. = 352.74'

–L– PC Sta. 441+49.51

–L– PT Sta. 449+60.45

MATCHLINE SHEET 17
–L– STA. 436+00.00

MATCHLINE SHEET 19
–L– STA. 450+00.00

CLASS 'I' RIP RAP
EST. 26 TONS
GEOTEXTILE
EST. 50 SY

REMOVE

CFW

–L–
PI Sta 445+63.89
Δ = 29° 02' 22.4" (RT)
D = 3° 34' 51.6"
L = 810.94'
T = 414.38'
R = 1,600.00'
SE = 04
RO = 200'

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 18

PROJECT REFERENCE NO.	SHEET NO.
R-5705B	EC-19/CONST J9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST–STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

NAD 83/NA 2011

42 x 14 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
4 ft. weir
ID 19.2

120 x 20 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
8 ft. weir
ID 19.3

144 x 24 x 3
2X inch Skimmer
with 1.625 inch
Orifice Diameter
13 ft. weir
ID 19.1

MATCHLINE SHEET 18
–L– STA. 450+00.00

MATCHLINE SHEET 20
–L– STA. 464+00.00

–Y21– POT Sta. 10+00.00

–Y21– POT Sta. 11+00.00 =
–L– POT Sta. 454+87.65

–Y17– STA. 10+75.00
BEGIN ROAD CONST.

–Y17– PC Sta. 11+77.92

–Y17– PT Sta. 13+13.38

–Y17– STA. 9+44.62
BEGIN DRAINAGE

–Y17– PRC Sta. 10+00.00

–L– STA. 454+92.43
–Y16– STA. 10+00.00

–L– STA. 459+58.88
–Y17– STA. 13+44.09

–Y16– STA. 11+25.00
END CONST.

–Y16– POT Sta. 11+96.72

PROPOSED DITCH CLEAN–OUT
LENGTH– +/–35'
EXCAVATION– +/–20cu.yds
TO APPROX. ELEV– 341.3'

CLASS 'I' RIP RAP
EST. 20 TONS
GEOTEXTILE
EST. 39 SY

CLASS 'I' RIP RAP
EST. 3 TONS
GEOTEXTILE
EST. 7 SY

CLASS 'I' RIP RAP
EST. 11 TONS
GEOTEXTILE
EST. 22 SY

JAMES HARTE
PULTE HOME COMPANY
HARTE FINANCIAL, L.L.C.
WARREN BROOKS
GIDEON BURNETT
BENJAMIN DICKENS
THOMAS TRUELOVE
KENNEBEC FLYING CLUB
A E SAUNDERS
HARTELAND LLC
ISFD
CULTIVATED
ABANDONED RR R/W

–L–	–Y17–	–Y17–
PI Sta 445+63.89 Δ = 29° 02' 22.4" (RT) D = 3° 34' 51.6" L = 810.94' T = 414.38' R = 1,600.00' SE = 04 RO = 200'	PI Sta 12+58.34 Δ = 77° 36' 35.0" (LT) D = 57° 17' 44.8" L = 135.45' T = 80.42' R = 100.00'	PI Sta 8+95.42 Δ = 12° 35' 58.8" (LT) D = 5° 59' 58.4" L = 210.01' T = 105.43' R = 955.00'

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 19

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.