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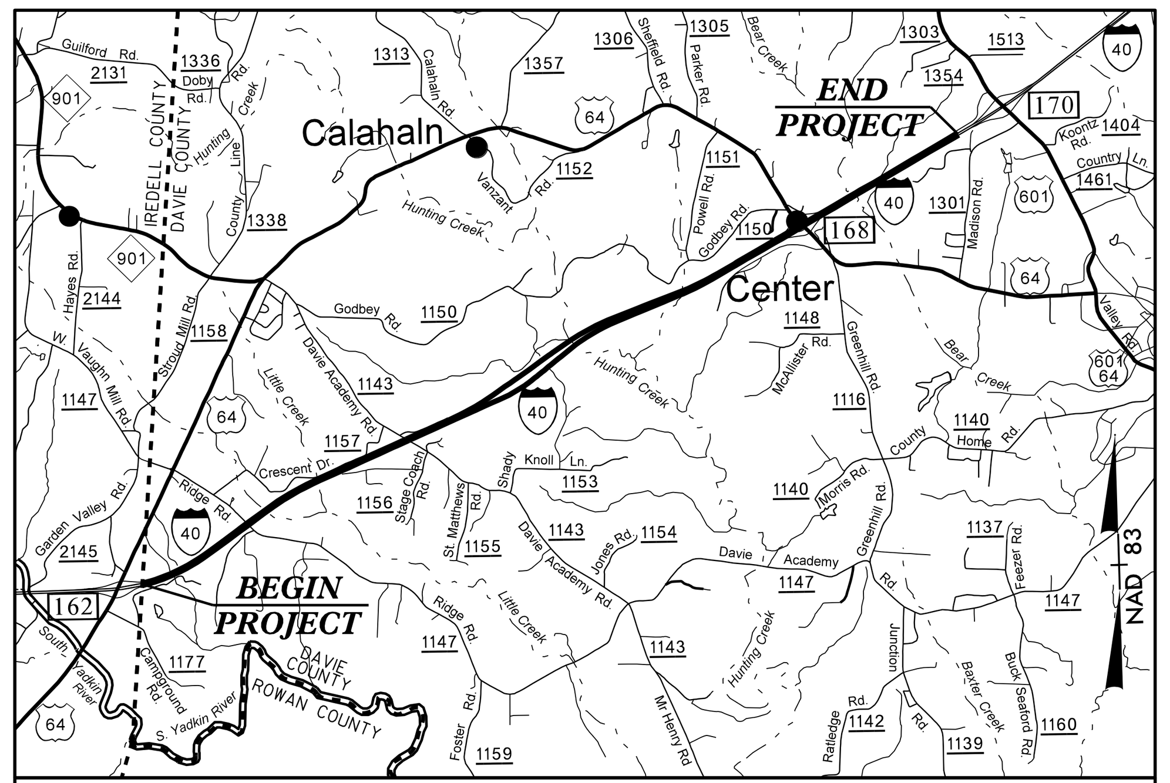
TIP PROJECT: I-5823

See Sheet 1-A For Index of Sheets



VICINITY MAP - NOT TO SCALE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5823	EC-1	

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

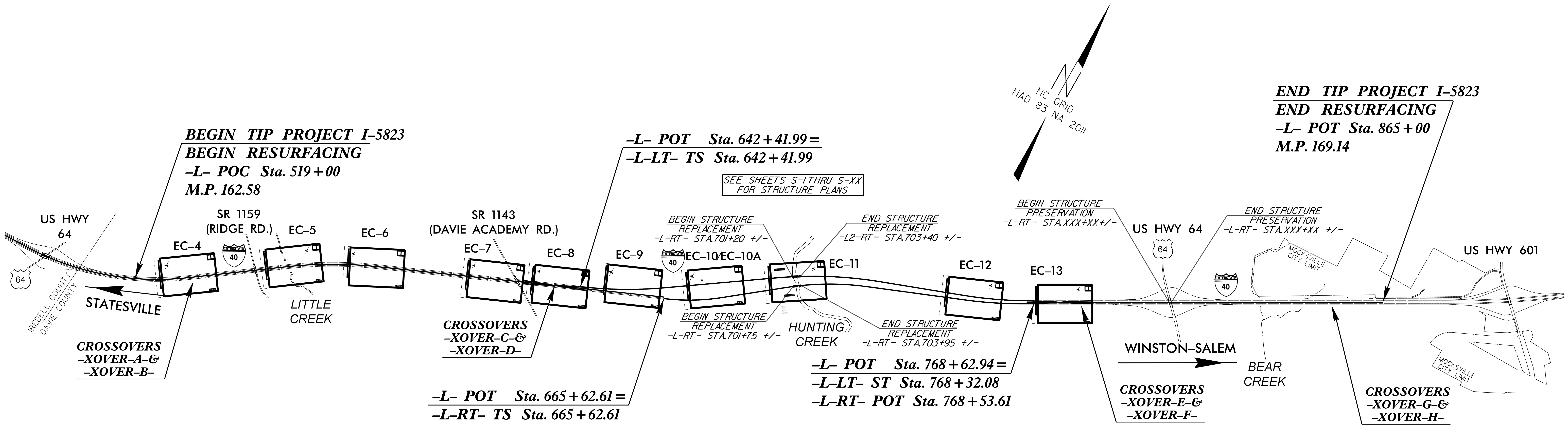
DAVIE COUNTY

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

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	EW / CFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	

Std. #	Description	Symbol
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	



GRAPHIC SCALE

25 0 50

PLANS

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 1, 2016 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

Prepared In the Office of:

ROADSIDE ENVIRONMENTAL UNIT

1 South Wilmington St.
Raleigh, NC 27611

2018 STANDARD SPECIFICATIONS

Designed by:

SCOTT A. JONES — 4058

NAME — LEVEL III CERTIFICATION NO.

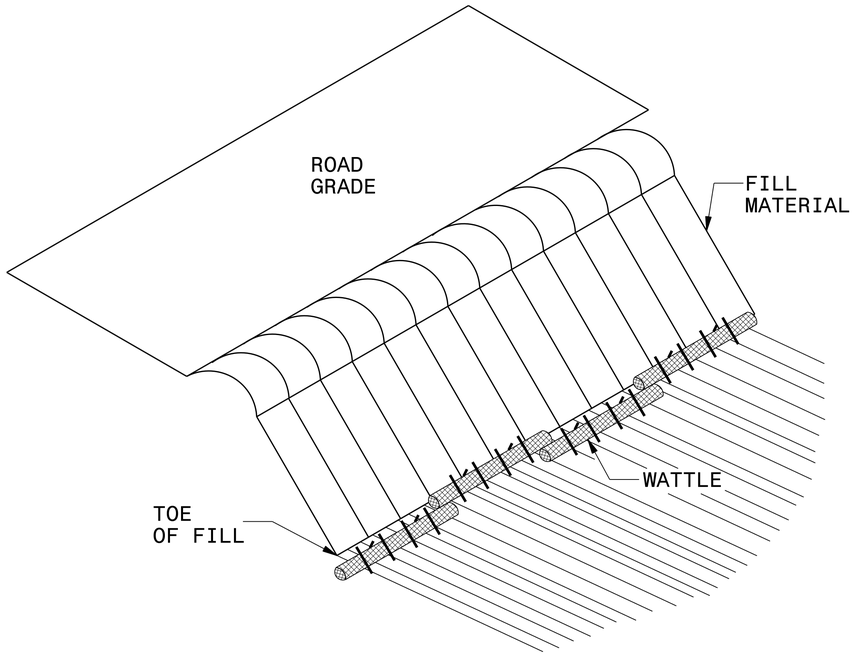
Roadway Standard Drawings

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.
I-5823	EC-2

SILT FENCE COIR FIBER WATTLE BREAK DETAIL



ISOMETRIC VIEW

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 WATTLES ON TOE OF SLOPE.

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

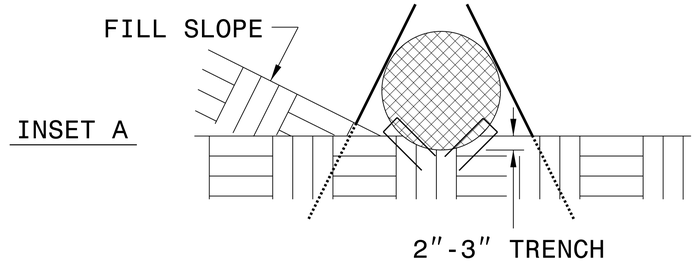
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

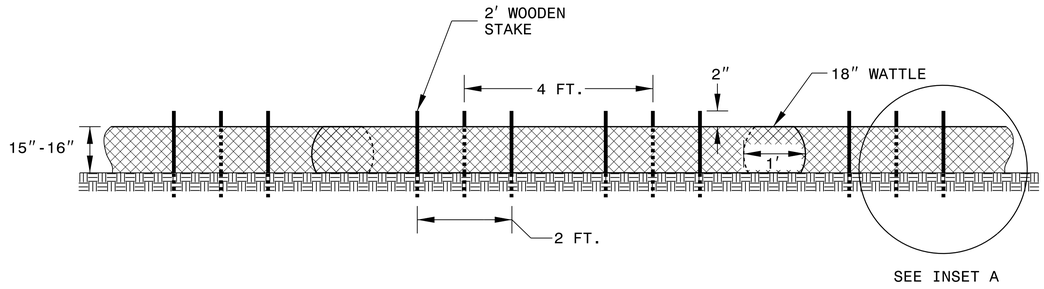
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

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

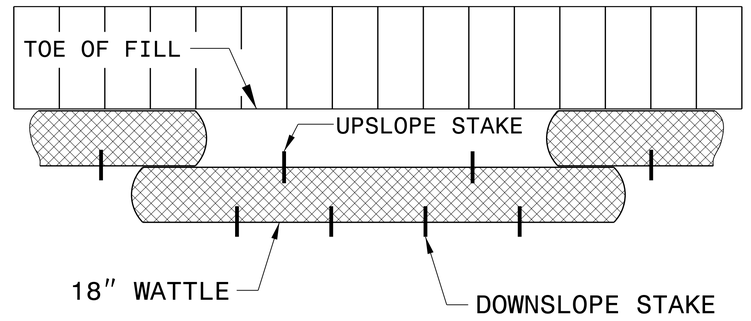
WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED

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





FRONT VIEW



TOP VIEW

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)
4	-L-	528+00	539+50	LT	2134
5	-L-	557+00	569+00	RT	1917
6	-L-	584+00	589+00	RT	956
7	-L-	620+00	624+50	RT	829
8	-L-	634+50	624+50	LT	695
8	-L-	635+50	639+00	RT	533
9	-L-LT-	652+50	659+00	LT	1582
9	-L-RT-	652+50	655+00	RT	363
10	-L-LT-	674+00	686+00	LT	4556
10	-L-RT-	669+00	683+50	LT	6639
12	-L-LT-	747+69	756+50	LT	2816
13	-L-	772+50	784+00	LT	3089
				SUBTOTAL	26,109
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					72,541
				TOTAL	98,750
				SAY	98,750

PERMANENT SOIL REINFORCEMENT MAT

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

PROJECT REFERENCE NO.	SHEET NO.
I-5823	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

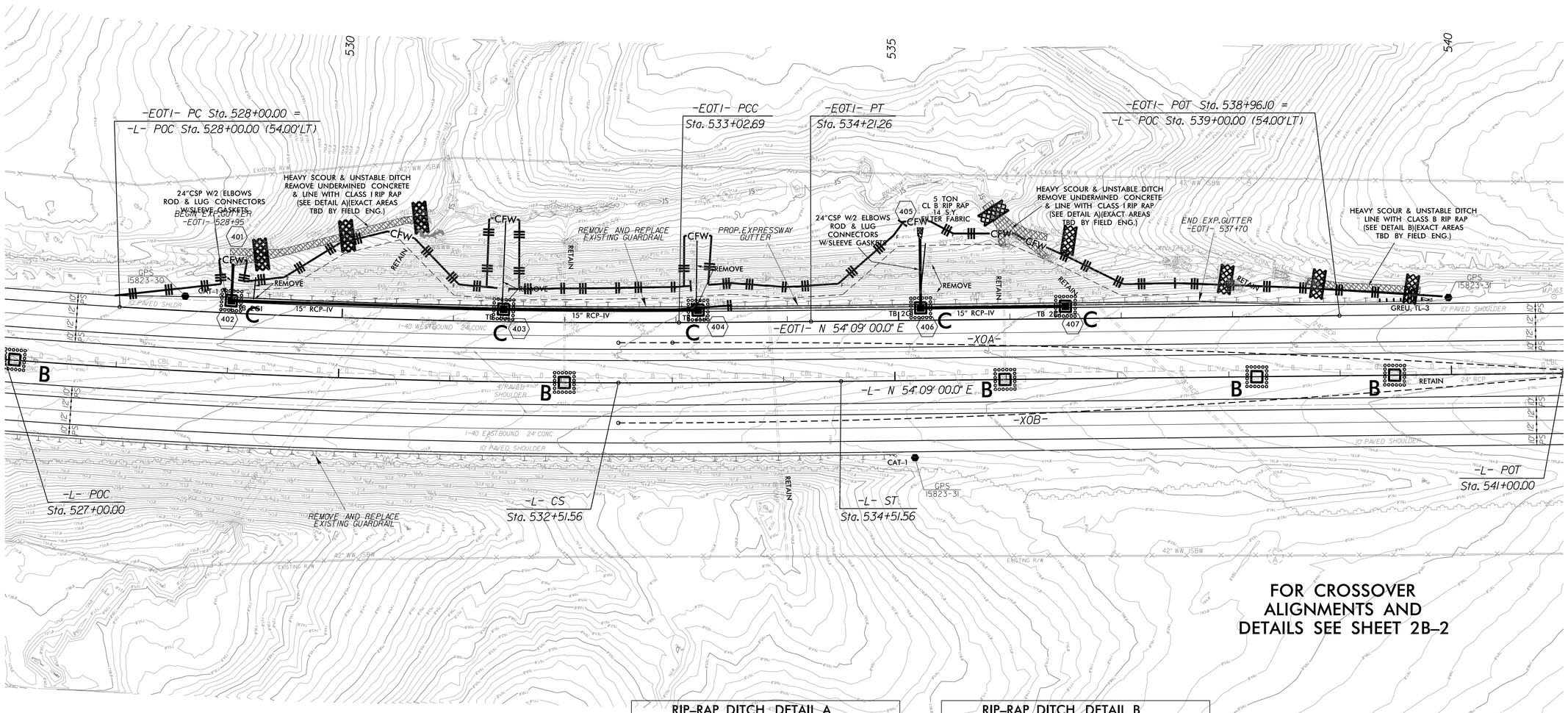
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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.
I-5823	EC-4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NC GRID
NAD 83 NA 2011



FOR CROSSOVER
ALIGNMENTS AND
DETAILS SEE SHEET 2B-2

-L-

PI Sta 511+08.38	PIs Sta 533+18.22
△ = 33° 06' 00.0" (LT)	Fs = 0° 45' 00.0"
D = 0° 45' 00.0"	Ls = 200.00'
L = 4,413.33'	LT = 133.33'
T = 2,270.16'	ST = 66.67'
R = 7,639.44'	

-EOTI-

PI Sta 530+51.44	PI Sta 533+61.97
△ = 3° 47' 49.2" (LT)	△ = 0° 20' 22.8" (LT)
D = 0° 45' 19.2"	D = 0° 17' 11.3"
L = 502.69'	L = 118.57'
T = 251.44'	T = 59.28'
R = 7,585.44'	R = 20,000.00'

RIP-RAP DITCH DETAIL A

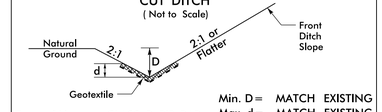
CUT DITCH
(Not to Scale)

Type of Liner= CLASS I RIP-RAP
Min. D= MATCH EXISTING
Max. d= MATCH EXISTING

-EOTI- 528+95 TO 530+75 LT, EST. 130 TONS,
EST. 267 SY GEO FAB, EST. 92 CY DDE
-EOTI- 535+76 TO 536+34 LT, EST. 72 TONS,
EST. 147 SY GEO FAB, EST. 51 CY DDE

RIP-RAP DITCH DETAIL B

CUT DITCH
(Not to Scale)



Type of Liner= CLASS B RIP-RAP
Min. D= MATCH EXISTING
Max. d= MATCH EXISTING

-EOTI- 538+67 TO 539+70 LT, EST. 36 TONS,
EST. 108 SY GEO FAB, EST. 27 CY DDE

NOTE:
TEMPORARY SILT FENCE SHALL BE INSTALLED A MINIMUM OF 3 FEET FROM TOE OF FILL IN WETLAND AREAS

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 4

8/17/99

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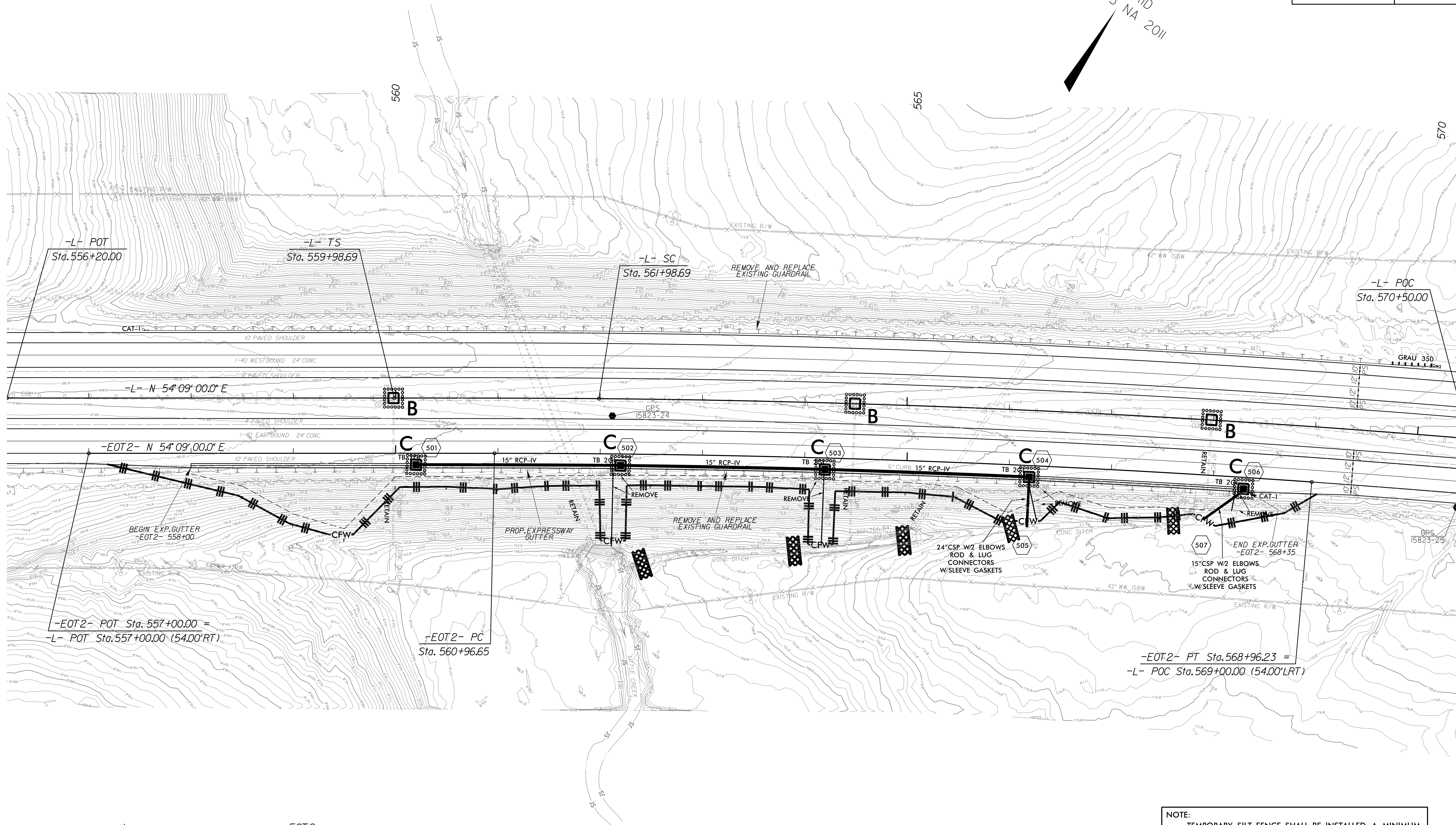
PROJECT REFERENCE NO.	SHEET NO.
I-5823	EC-5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



-L-

PIs Sta 561+32.02
θs = 0° 30' 00.0"
Ls = 200.00'
LT = 133.33'
ST = 66.67'

PI Sta = 573+42.47
Δ = 11° 24' 00.0" (RT)
D = 0° 30' 00.00"
L = 2,280.00
T = 1,143.78
R = 11,459.16

-EOT2-

PI Sta 12+96.60
Δ = 4° 01' 00.6" (RT)
D = 0° 30' 08.5"
L = 799.58'
T = 399.96'
R = 11,405.16'

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 5

NOTE:
TEMPORARY SILT FENCE SHALL BE INSTALLED A MINIMUM OF 3 FEET FROM TOE OF FILL IN WETLAND AREAS

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

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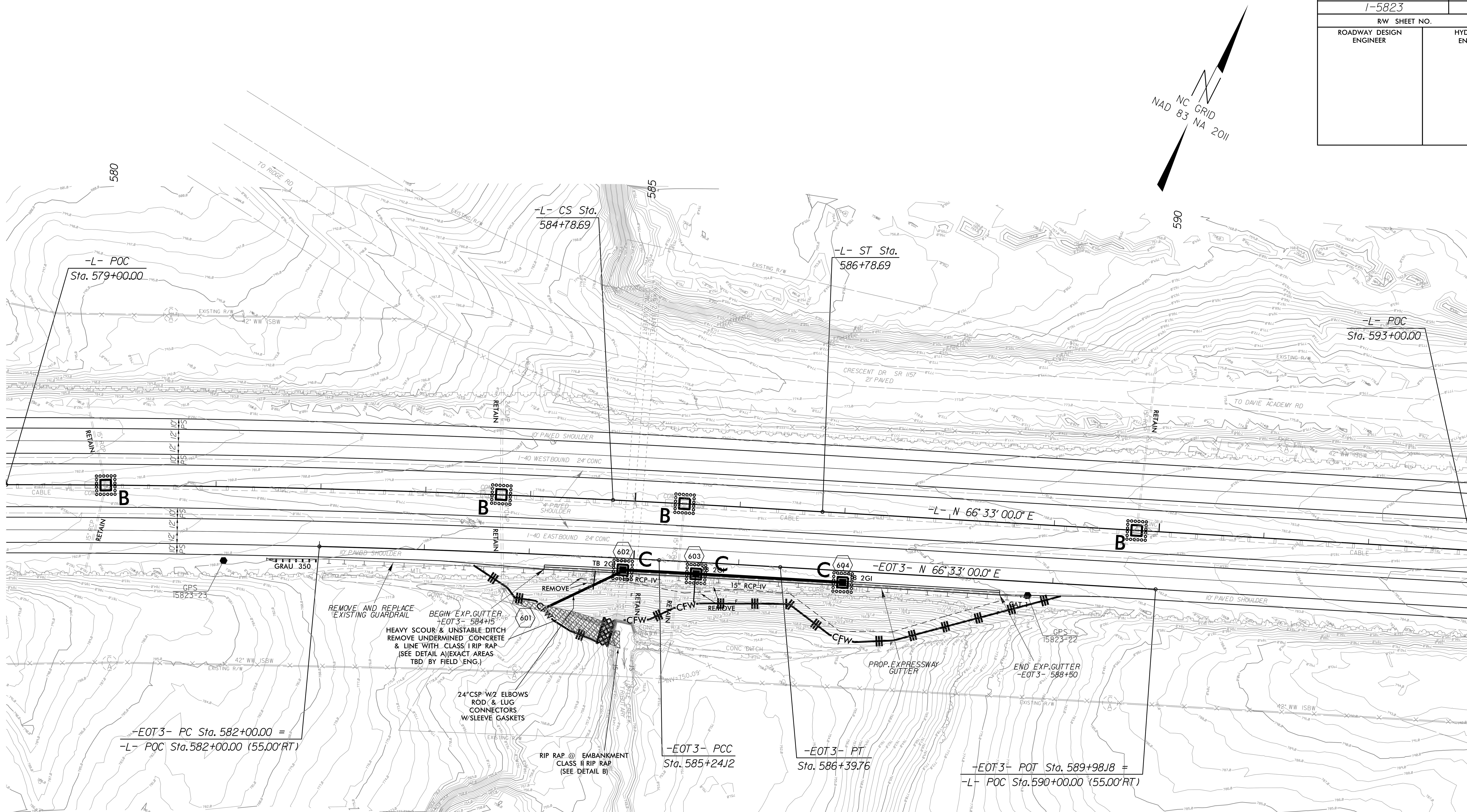
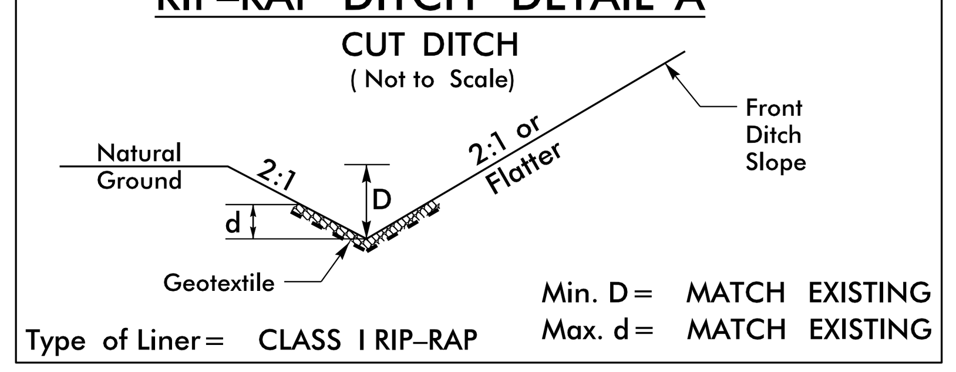
PROJECT REFERENCE NO.	SHEET NO.
I-5823	EC-6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



RIP-RAP DITCH DETAIL A

CUT DITCH
(Not to Scale)



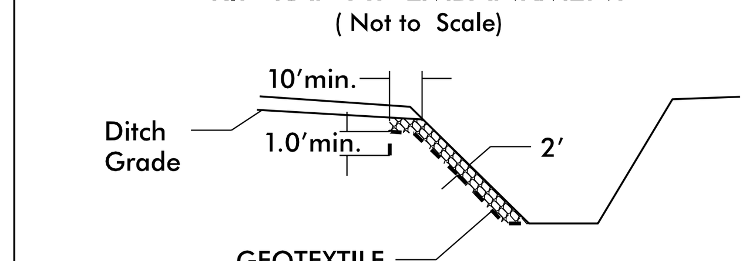
Min. D = MATCH EXISTING
Max. d = MATCH EXISTING

Type of Liner = CLASS I RIP-RAP

-EOT3- 583 + 86 TO 584 + 86 RT, EST. 72 TONS, EST. 150 SY GEO FAB, EST. 46 CY DDE

DETAIL B

RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner = 30 TONS,CL II Rip-Rap
Geotextile = 25 sy

-EOT3- 584 + 86 TO 584 + 96 RT

NOTE:
TEMPORARY SILT FENCE SHALL BE INSTALLED A MINIMUM OF 3 FEET FROM TOE OF FILL IN WETLAND AREAS

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

-L-

PI Sta = 573+42.47	PIs Sta 585+45.36
Δ = 11° 24' 00.00" (RT)	θs = 0° 30' 00.0"
D = 0° 30' 00.00"	Ls = 200.00'
L = 2,280.00	LT = 133.33'
T = 1,143.78	ST = 66.67'
R = 11,459.16	

-EOT2-

PI Sta 583+62.07	PI Sta 585+81.94
Δ = 1° 37' 42.4" (RT)	Δ = 0° 15' 54.1" (RT)
D = 0° 30' 08.7"	D = 0° 13' 45.1"
L = 324.12'	L = 115.64'
T = 162.07'	T = 57.82'
R = 11,404.16'	R = 25,000.00'

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 6

8/17/99

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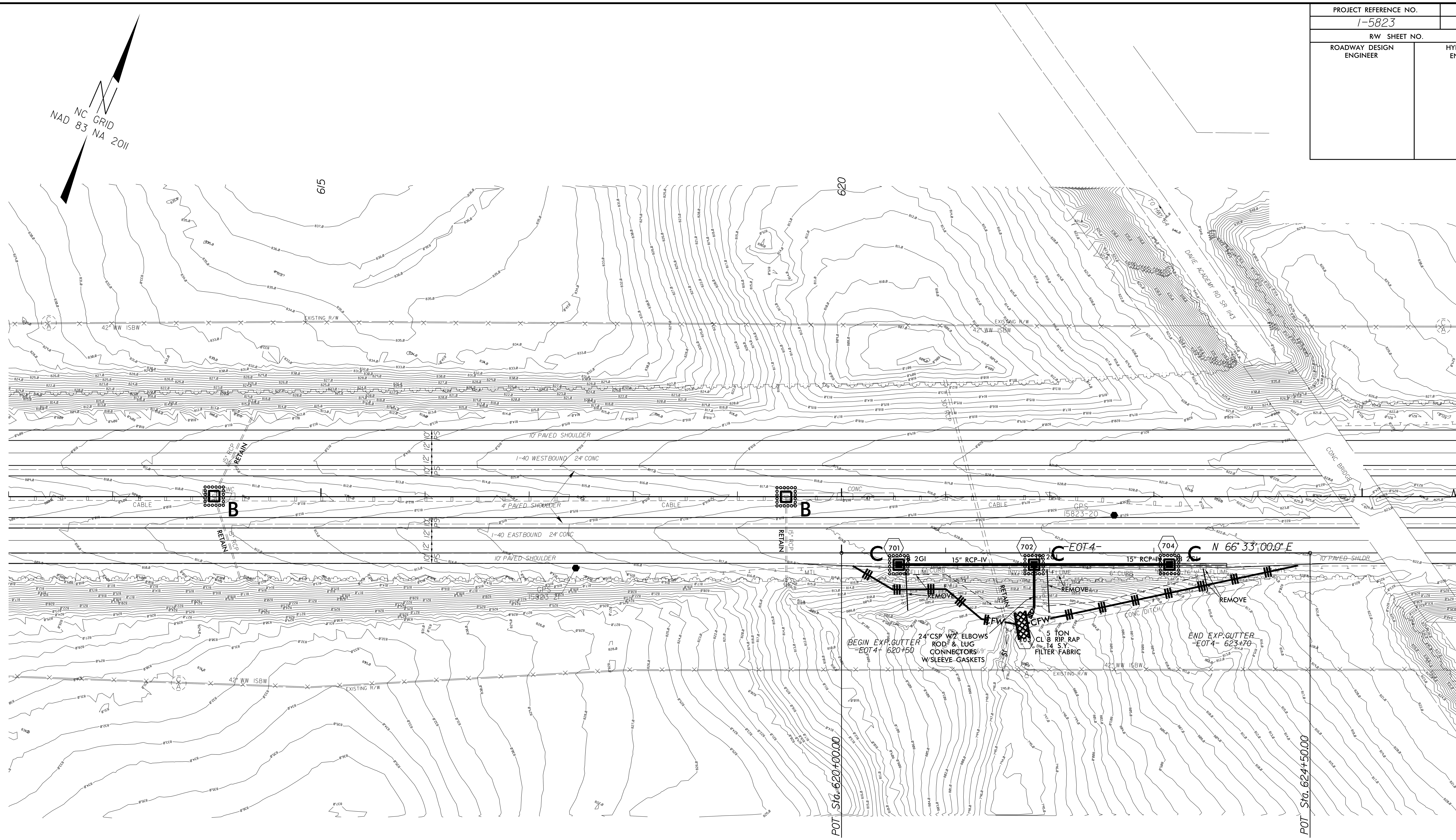
PROJECT REFERENCE NO.	SHEET NO.
I-5823	EC-7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTE:
TEMPORARY SILT FENCE SHALL BE INSTALLED A MINIMUM OF 3 FEET FROM TOE OF FILL IN WETLAND AREAS

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

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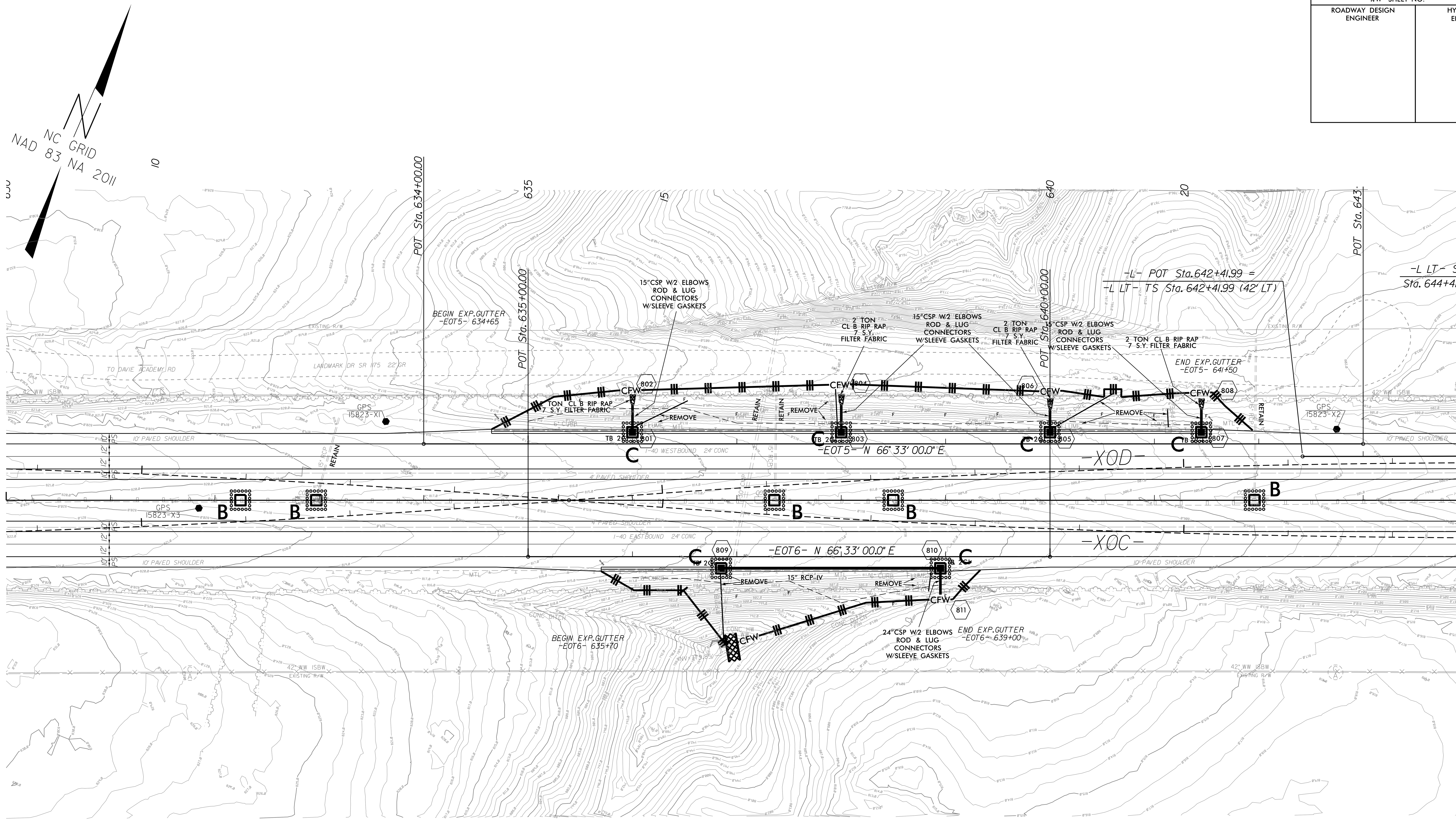
PROJECT REFERENCE NO.	SHEET NO.
I-5823	EC-8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



PIs Sta 643+75.32
Θs = 0° 30' 00.0"
Ls = 200.00'
LT = 133.33'
ST = 66.67'

NOTE:
TEMPORARY SILT FENCE SHALL BE INSTALLED A MINIMUM OF 3 FEET FROM TOE OF FILL IN WETLAND AREAS

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

8/17/99

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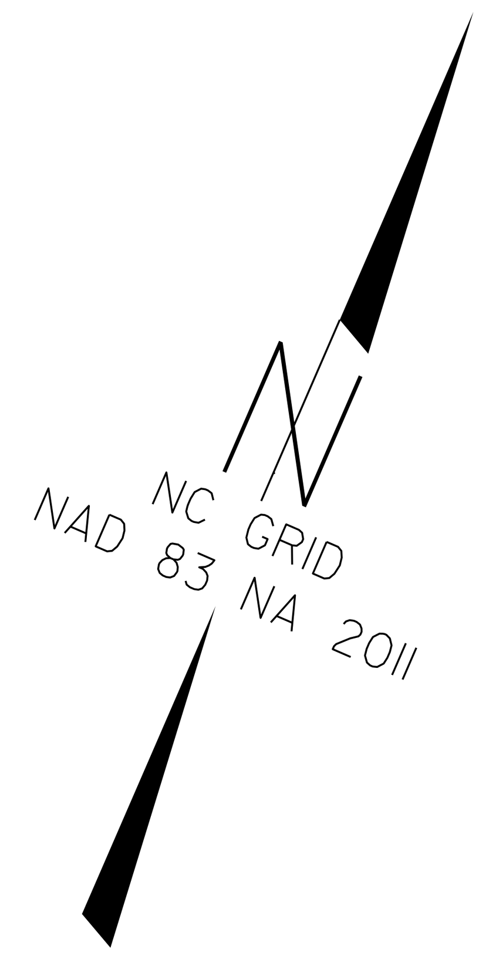
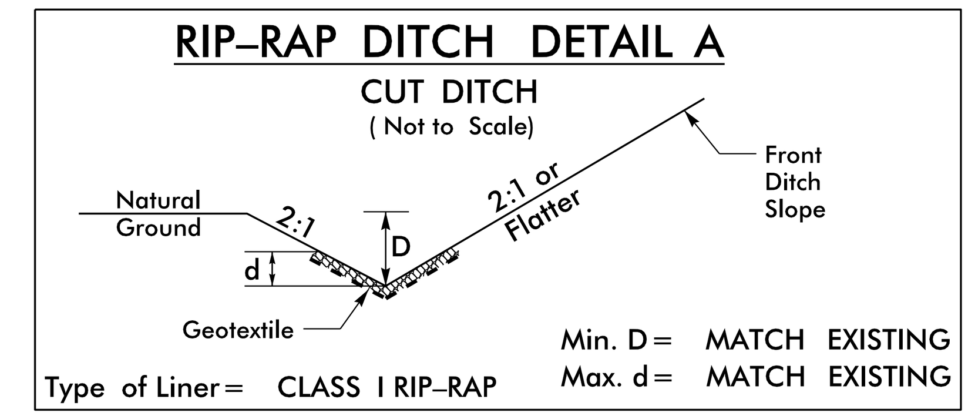
PROJECT REFERENCE NO.	SHEET NO.
I-5823	EC-9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



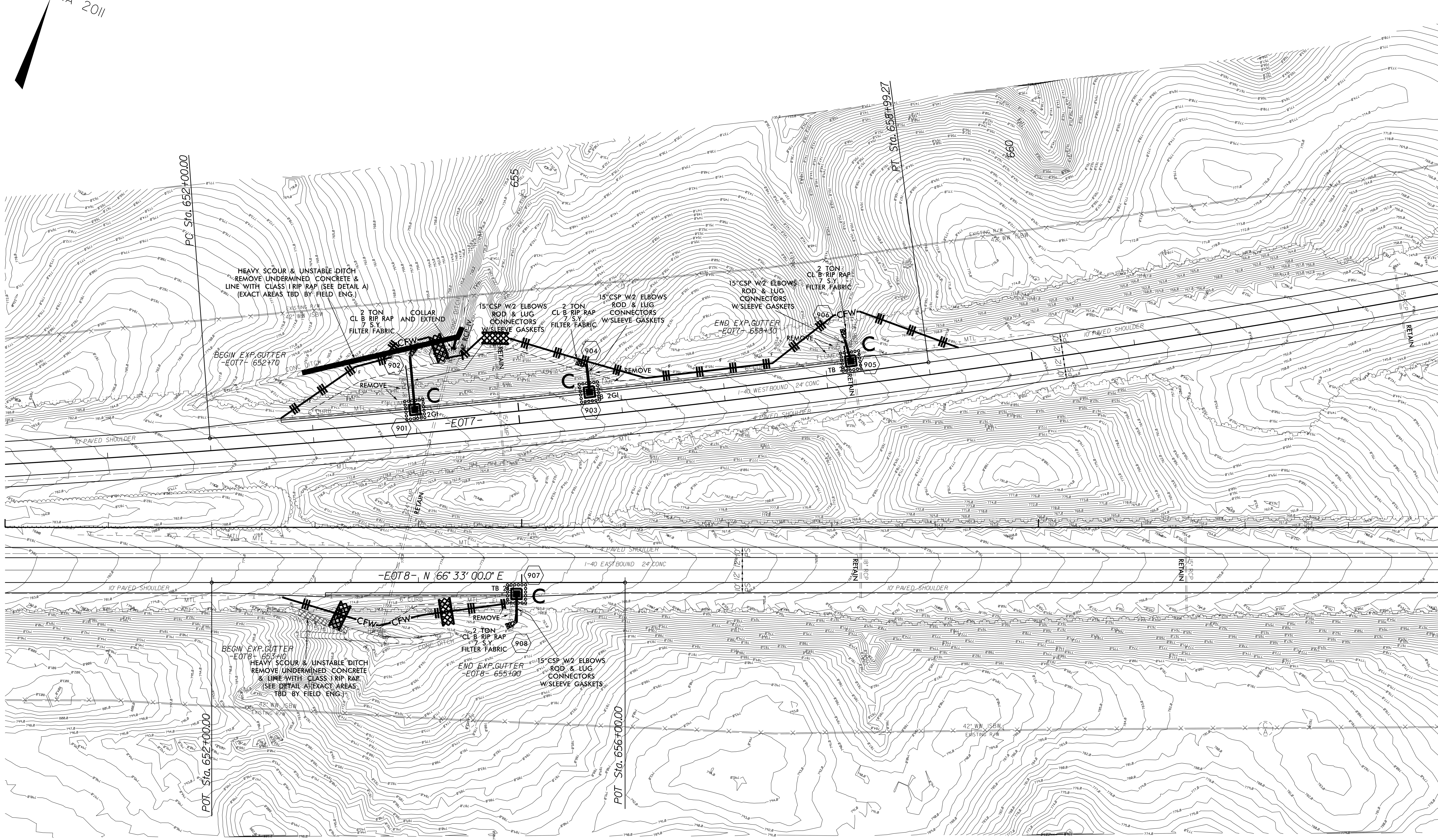


-EOT7- 652+94 TO 654+56 LT, EST. 108 TONS, EST. 220 SY GEO FAB, EST. 76 CY DDE
-EOT8- 652+83 TO 653+32 RT, EST. 33 TONS, EST. 67 SY GEO FAB, EST. 23 CY DDE

NOTE: TEMPORARY SILT FENCE SHALL BE INSTALLED A MINIMUM OF 3 FEET FROM TOE OF FILL IN WETLAND AREAS

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

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 9



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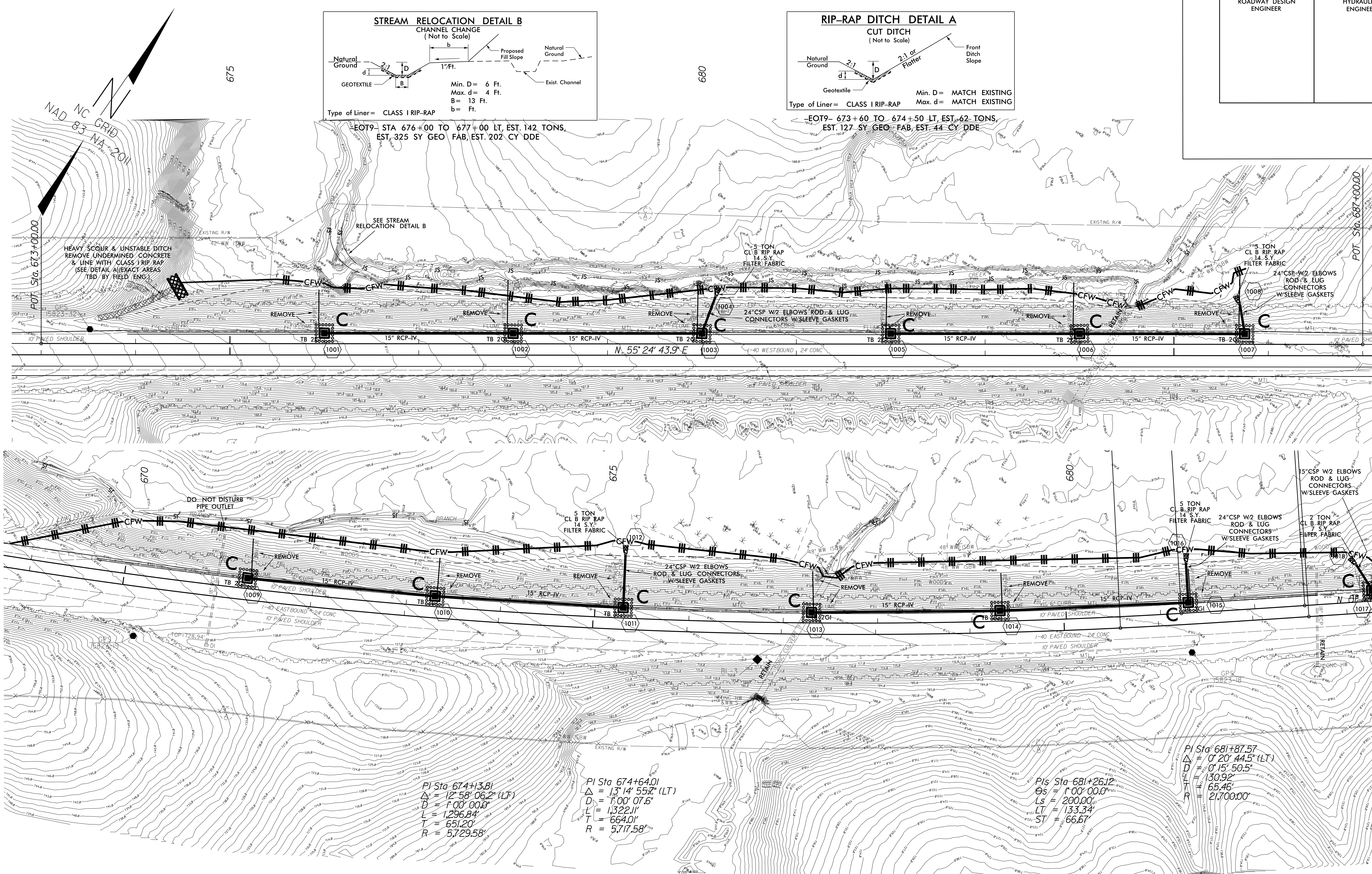
PROJECT REFERENCE NO.	SHEET NO.
I-5823	EC-10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTE:
TEMPORARY SILT FENCE SHALL BE INSTALLED A MINIMUM OF 3 FEET FROM TOE OF FILL IN WETLAND AREAS

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 10

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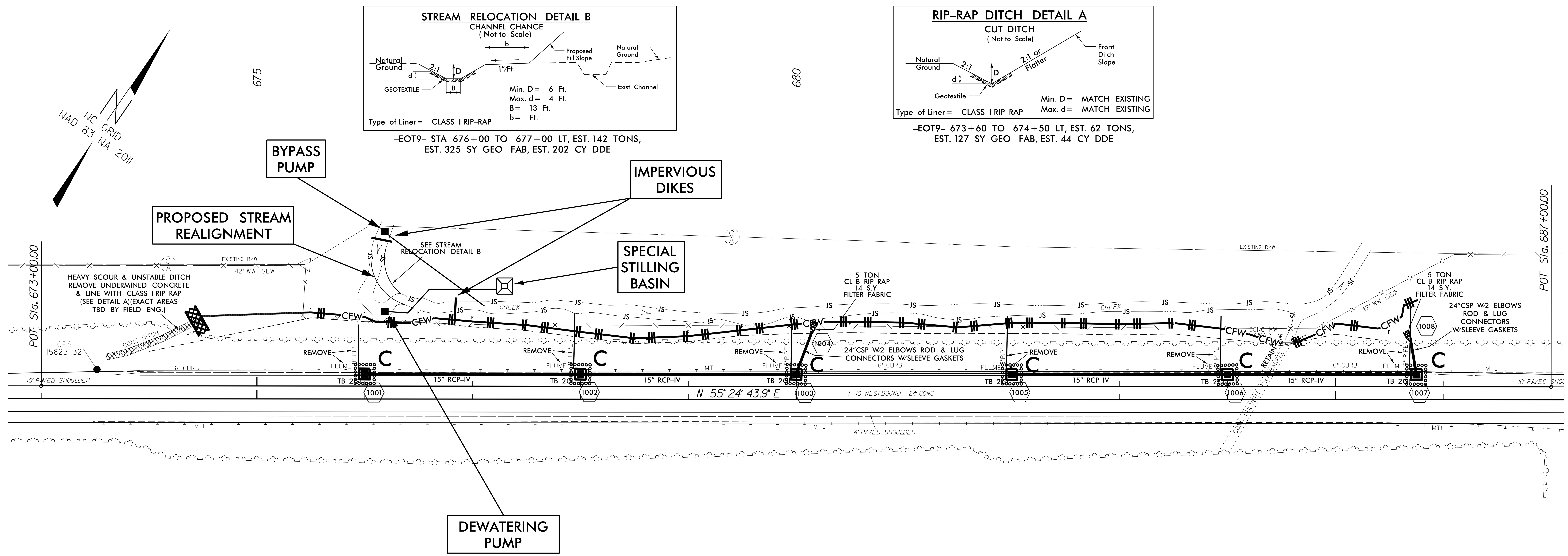
PROJECT REFERENCE NO.	SHEET NO.
I-5823	EC-10A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTE:
TEMPORARY SILT FENCE SHALL BE INSTALLED A MINIMUM OF 3 FEET FROM TOE OF FILL IN WETLAND AREAS

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

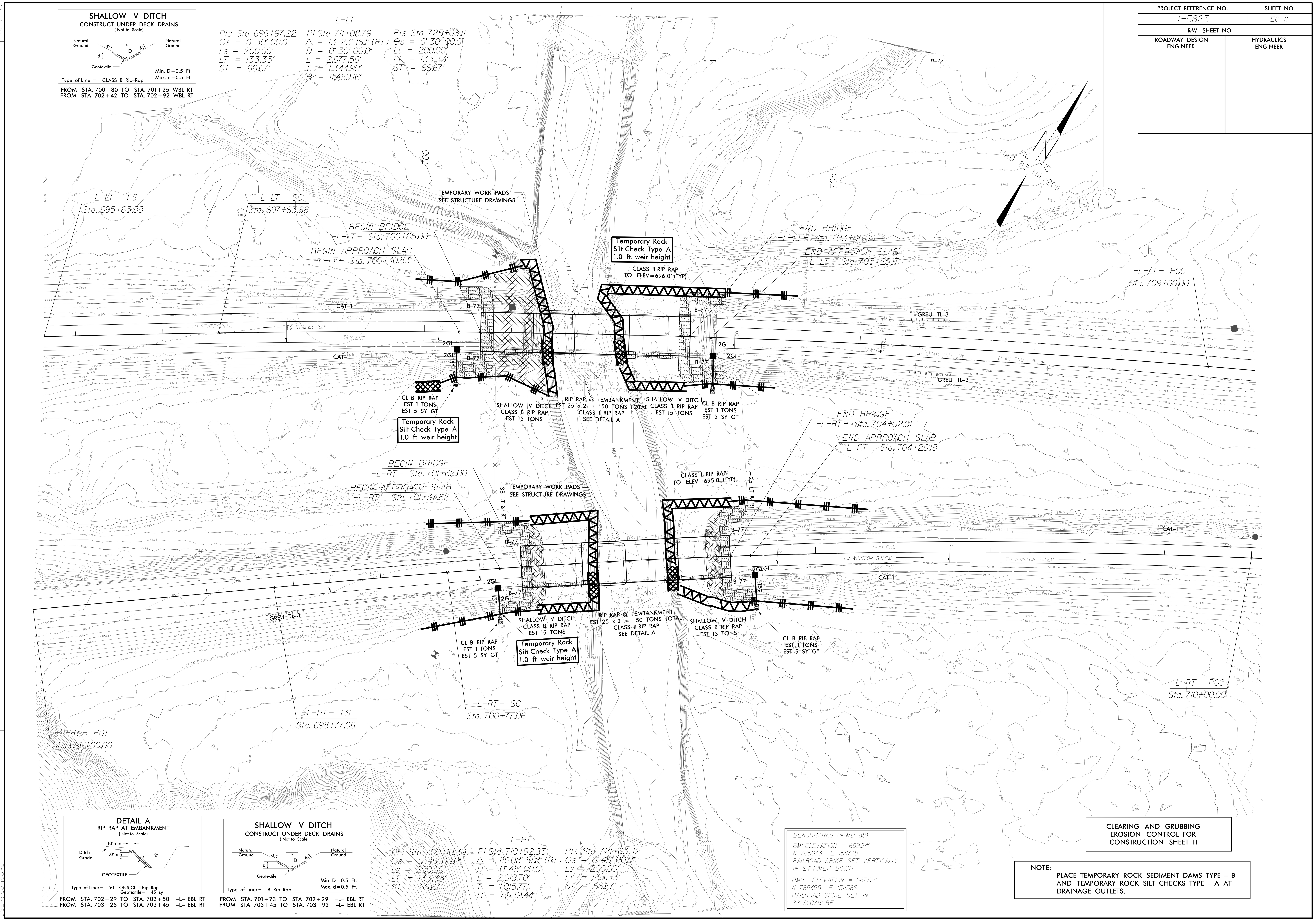


<u>NOTES</u>

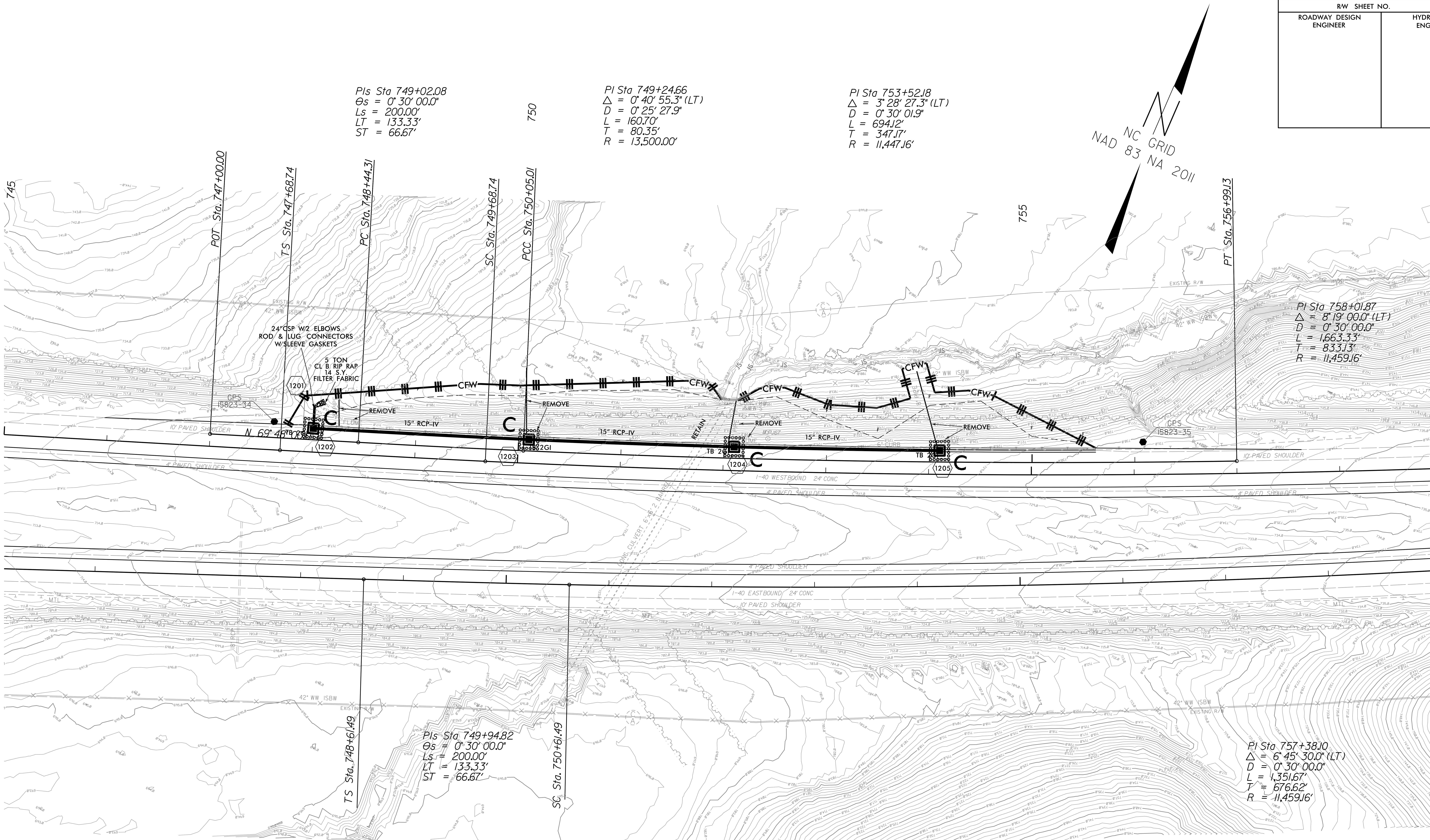
1. STREAM REALIGNMENT WORK SHALL BE PERFORMED IN ONLY DRY OR ISOLATED SECTIONS OF CHANNEL.
2. IMPERVIOUS DIKES ARE TO BE USED TO ISOLATE WORK FROM STREAM FLOW AS NECESSARY.
3. ALL GRADED AREAS SHALL BE STABILIZED WITHIN 24 HOURS.
4. MAINTENANCE OF STREAM FLOW OPERATIONS SHALL BE INCIDENTAL TO THE WORK. THIS INCLUDES POLYETHYLENE SHEETING, DIVERSION PIPES, PUMPS AND HOSES.
5. PUMPS AND HOSES SHALL BE SUFFICIENT SIZE TO DEWATER THE WORK AREA.
6. THE CONTRACTOR SHALL NOT PUMP SEDIMENT-LADEN WATER DIRECTLY INTO STREAM. FOR DEWATERING OF CULVERT SITES, THE CONTRACTOR SHALL FILTER SEDIMENT-LADEN WATER THROUGH STILLING BASIN AND/OR SPECIAL STILLING BASIN.
7. UTILIZE A STABILIZED OUTLET INSTEAD OF A SPECIAL STILLING BASIN IF PUMPING CLEAN WATER.

<u>CONSTRUCTION SEQUENCE</u>

1. INSTALL SPECIAL STILLING BASIN AT LOCATION SHOWN.
2. INSTALL BYPASS PUMP AND DEWATERING PUMP FOR SPECIAL STILLING BASIN, AS WELL AS ALL ASSOCIATED PIPING.
3. INSTALL IMPERVIOUS DIKES (37 LF) AS SHOWN.
4. PERFORM STREAM REALIGNMENT WORK, AS SHOWN.
5. PLACE SUITABLE FILL FOR VOID BETWEEN EXISTING AND PROPOSED STREAMBANK. MINIMUM 95% COMPACTION.
6. LINE & ARMOR STREAMBANKS WITH FILTER FABRIC & CLASS II RIP-RAP.
7. REMOVE IMPERVIOUS DIKES, PUMPS AND PIPING AND DIRECT WATER THROUGH NEW STREAM ALIGNMENT.
8. REMOVE SPECIAL STILLING BASIN.


PROJECT REFERENCE NO.
I-5823
SHEET NO.
EC-11
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
SHALLOW V DITCH
CONSTRUCT UNDER DECK DRAINS
(Not to Scale)
Natural Ground
Geotextile
Min. D=0.5 Ft.
Max. d=0.5 Ft.
Type of Liner = CLASS B Rip-Rap
FROM STA. 700+80 TO STA. 701+25 WBL RT
FROM STA. 702+42 TO STA. 702+92 WBL RT
L-LT
PIs Sta 696+97.22
Θs = 0° 30' 00.0"
Ls = 200.00'
LT = 133.33'
ST = 66.67'
PI Sta 711+08.79
Δ = 13° 23' 16.1" (RT)
D = 0° 30' 00.0"
L = 2,677.56'
T = 1,344.90'
R = 11,459.16'
PIs Sta 725+08.11
Θs = 0° 30' 00.0"
Ls = 200.00'
LT = 133.33'
ST = 66.67'
NC GRID NAD 83 NA 2011
-L-LT- TS
Sta. 695+63.88
-L-LT- SC
Sta. 697+63.88
TEMPORARY WORK PADS
SEE STRUCTURE DRAWINGS
BEGIN BRIDGE
-L-LT- Sta. 700+65.00
BEGIN APPROACH SLAB
-L-LT- Sta. 700+40.83
Temporary Rock
Silt Check Type A
1.0 ft. weir height
CLASS II RIP RAP
TO ELEV=696.0' (TYP)
END BRIDGE
-L-LT- Sta. 703+05.00
END APPROACH SLAB
-L-LT- Sta. 703+29.17
-L-LT- POC
Sta. 709+00.00
GREU TL-3
CAT-1
TO STATESVILLE
2GI
B-77
CL B RIP RAP
EST 1 TONS
EST 5 SY GT
SHALLOW V DITCH
CLASS B RIP RAP
EST 15 TONS
RIP RAP @ EMBANKMENT
EST 25 x 2 = 50 TONS TOTAL
CLASS II RIP RAP
SEE DETAIL A
HUNTING CREEK
END BRIDGE
-L-RT- Sta. 704+02.01
END APPROACH SLAB
-L-RT- Sta. 704+26.18
BEGIN BRIDGE
-L-RT- Sta. 701+62.00
BEGIN APPROACH SLAB
-L-RT- Sta. 701+37.82
CLASS II RIP RAP
TO ELEV=695.0' (TYP)
TEMPORARY WORK PADS
SEE STRUCTURE DRAWINGS
TO WINSTON SALEM
CAT-1
GREU TL-3
SHALLOW V DITCH
CLASS B RIP RAP
EST 13 TONS
-L-RT- TS
Sta. 698+77.06
-L-RT- SC
Sta. 700+77.06
-L-RT- POT
Sta. 696+00.00
-L-RT- POC
Sta. 710+00.00
DETAIL A
RIP RAP AT EMBANKMENT
(Not to Scale)
10'min.
1.0'min.
Ditch Grade
GEOTEXTILE
Type of Liner = 50 TONS,CL II Rip-Rap
Geotextile = 45 sy
FROM STA. 702+29 TO STA. 702+50 -L- EBL RT
FROM STA. 703+25 TO STA. 703+45 -L- EBL RT
SHALLOW V DITCH
CONSTRUCT UNDER DECK DRAINS
(Not to Scale)
Type of Liner = B Rip-Rap
Min. D=0.5 Ft.
Max. d=0.5 Ft.
FROM STA. 701+73 TO STA. 702+29 -L- EBL RT
FROM STA. 703+45 TO STA. 703+92 -L- EBL RT
L-RT
PIs Sta 700+10.39
Θs = 0° 45' 00.0"
Ls = 200.00'
LT = 133.33'
ST = 66.67'
PI Sta 710+92.83
Δ = 15° 08' 51.8" (RT)
D = 0° 45' 00.0"
L = 2,019.70'
T = 1,015.77'
R = 7,639.44'
PIs Sta 721+63.42
Θs = 0° 45' 00.0"
Ls = 200.00'
LT = 133.33'
ST = 66.67'
BENCHMARKS (NAVD 88)
BM1 ELEVATION = 689.84'
N 785073 E 1511778
RAILROAD SPIKE SET VERTICALLY
IN 24" RIVER BIRCH
BM2 ELEVATION = 687.92'
N 785495 E 1511586
RAILROAD SPIKE SET IN
22" SYCAMORE
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.

PROJECT REFERENCE NO.	SHEET NO.
I-5823	EC-12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTE:
TEMPORARY SILT FENCE SHALL BE INSTALLED A MINIMUM OF 3 FEET FROM TOE OF FILL IN WETLAND AREAS

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 12

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

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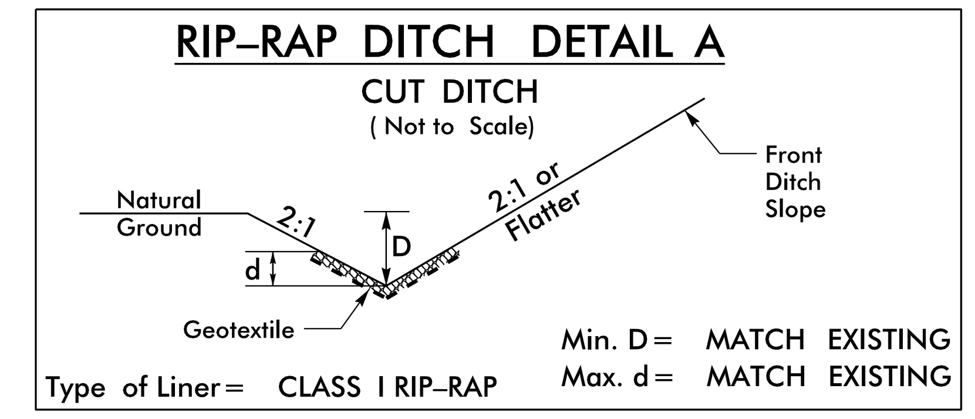
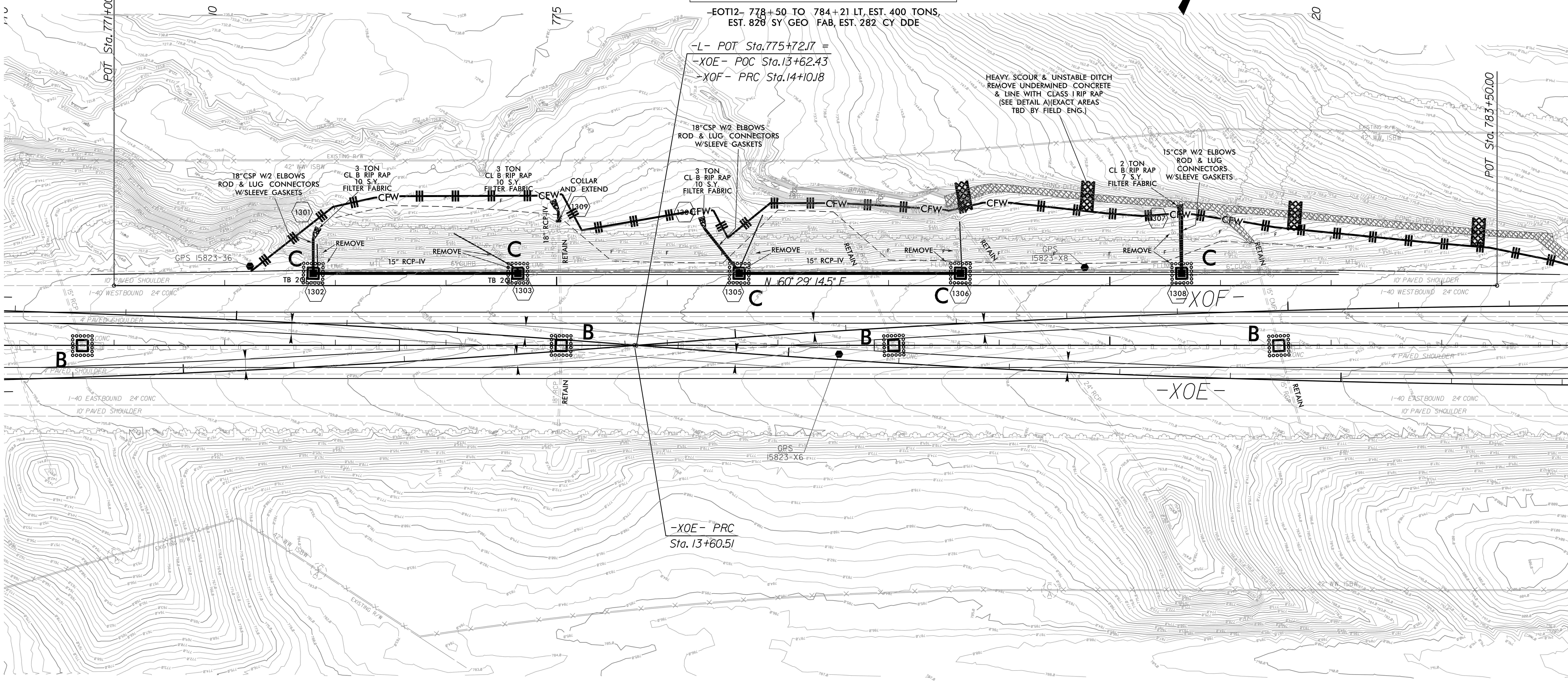
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
I-5823	EC-13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER





NOTE:
TEMPORARY SILT FENCE SHALL BE INSTALLED A MINIMUM OF 3 FEET FROM TOE OF FILL IN WETLAND AREAS

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

29-NOV-2018 11:28
S:\Project Development\TIP_Projects_1\I-5823-I40-Davie\ErosionControl\I5823_ddc_EC-13.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
I-5823	EC-14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NC GRID
NAD 83 NA 2011

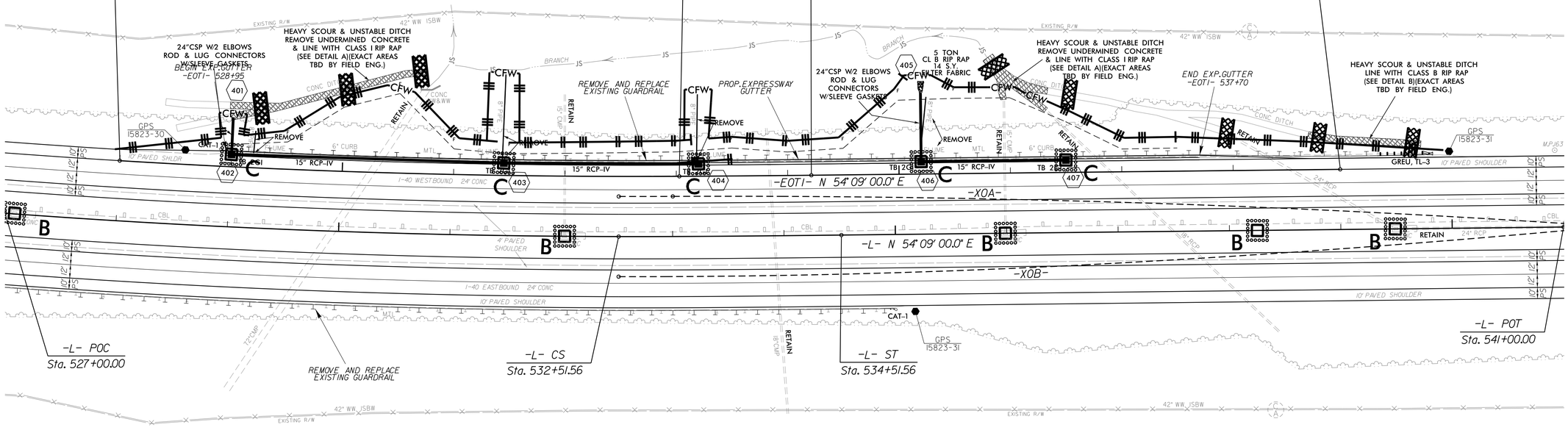
530 535 540

-EOTI- PC Sta. 528+00.00 =
-L- POC Sta. 528+00.00 (54.00'LT)

-EOTI- PCC
Sta. 533+02.69

-EOTI- PT
Sta. 534+21.26

-EOTI- POT Sta. 538+96.10 =
-L- POC Sta. 539+00.00 (54.00'LT)



FOR CROSSOVER ALIGNMENTS AND DETAILS SEE SHEET 2B-2

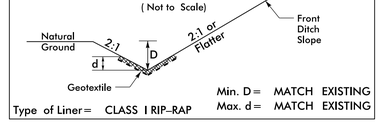
-L-

PI Sta 511+08.38	PIs Sta 533+18.22
△ = 33° 06' 00.0" (LT)	Fs = 0° 45' 00.0"
D = 0° 45' 00.0"	Ls = 200.00'
L = 4,413.33'	LT = 133.33'
T = 2,270.16'	ST = 66.67'
R = 7,639.44'	

-EOTI-

PI Sta 530+51.44	PI Sta 533+61.97
△ = 3° 47' 49.2" (LT)	△ = 0° 20' 22.8" (LT)
D = 0° 45' 19.2"	D = 0° 17' 11.3"
L = 502.69'	L = 118.57'
T = 251.44'	T = 59.28'
R = 7,585.44'	R = 20,000.00'

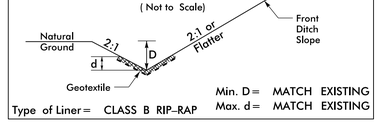
RIP-RAP DITCH DETAIL A
CUT DITCH
(Not to Scale)



Type of Liner= CLASS I RIP-RAP
Min. D= MATCH EXISTING
Max. d= MATCH EXISTING

-EOTI- 528+95 TO 530+75 LT, EST. 130 TONS,
EST. 267 SY GEO FAB, EST. 92 CY DDE
-EOTI- 535+76 TO 536+34 LT, EST. 72 TONS,
EST. 147 SY GEO FAB, EST. 51 CY DDE

RIP-RAP DITCH DETAIL B
CUT DITCH
(Not to Scale)



Type of Liner= CLASS B RIP-RAP
Min. D= MATCH EXISTING
Max. d= MATCH EXISTING

-EOTI- 538+67 TO 539+70 LT, EST. 36 TONS,
EST. 108 SY GEO FAB, EST. 27 CY DDE

FINAL EROSION CONTROL PLAN FOR CONSTRUCTION SHEET 4

8/17/99

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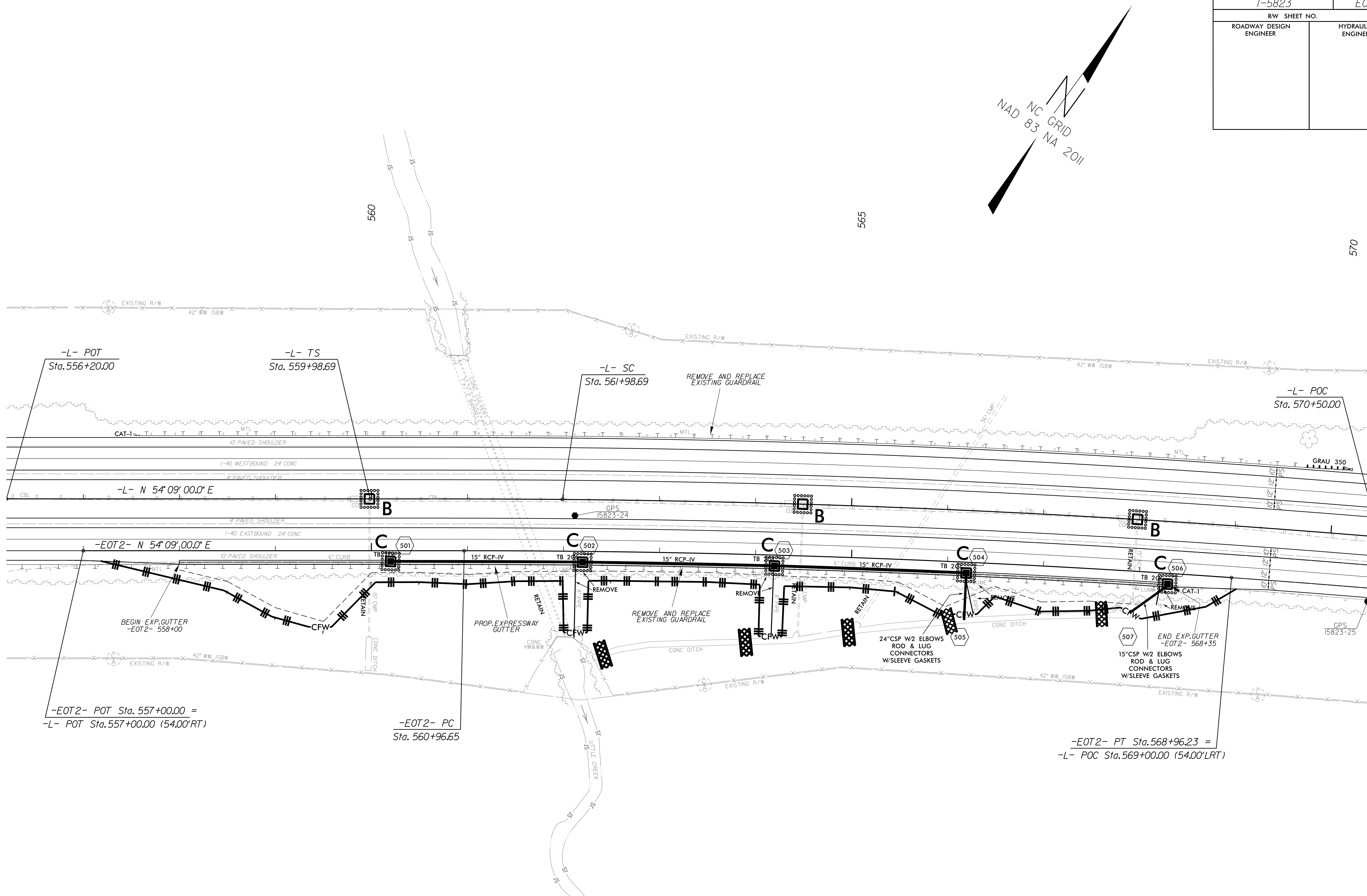
PROJECT REFERENCE NO.	SHEET NO.
I-5823	EC-15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



-L-

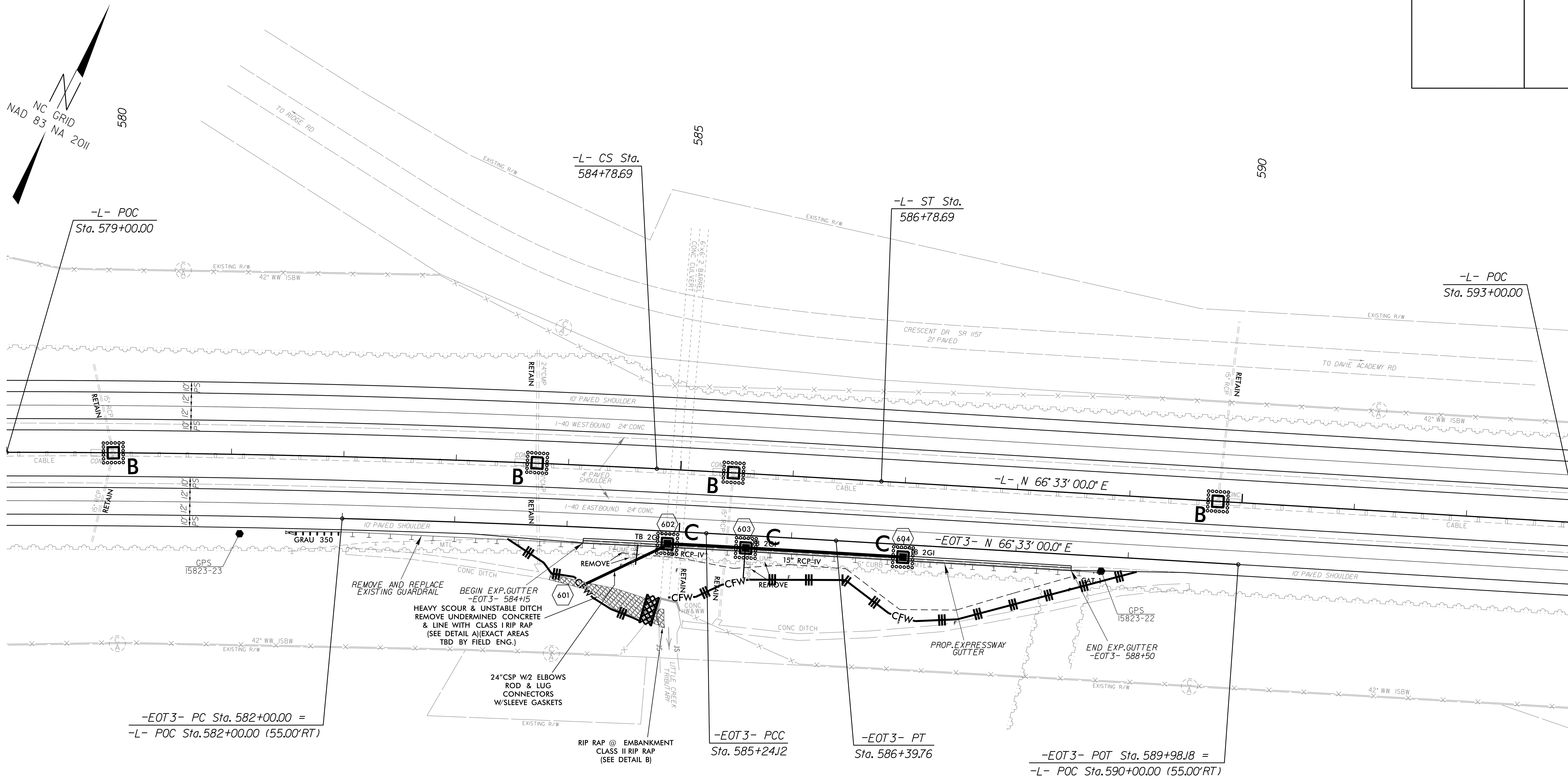
PIs Sta 561+32.02	PI Sta = 573+42.47
Θs = 0° 30' 00.0"	Δ = 11° 24' 00.00" (RT)
Ls = 200.00'	D = 0° 30' 00.00"
LT = 133.33'	L = 2,280.00
ST = 66.67'	T = 1,143.78
	R = 11,459.16

-EOT2-

PI Sta 12+96.60
Δ = 4° 01' 00.6" (RT)
D = 0° 30' 08.5"
L = 799.58'
T = 399.96'
R = 11,405.16'

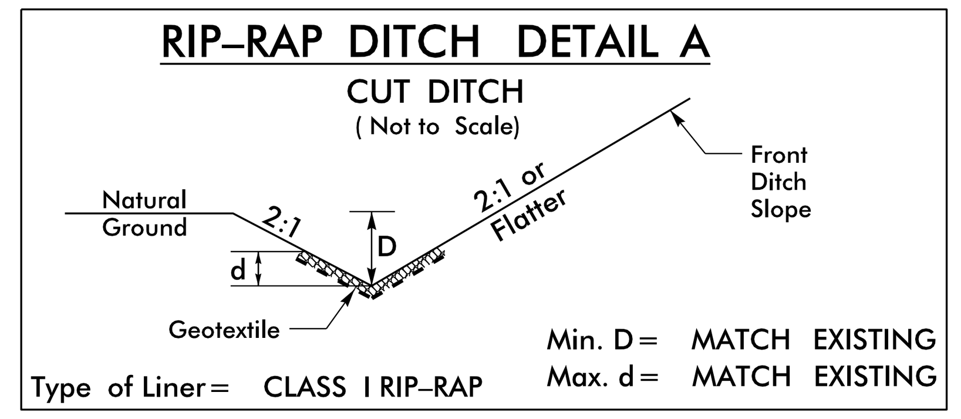
FINAL EROSION CONTROL PLAN
FOR CONSTRUCTION SHEET 5

PROJECT REFERENCE NO.	SHEET NO.
I-5823	EC-16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



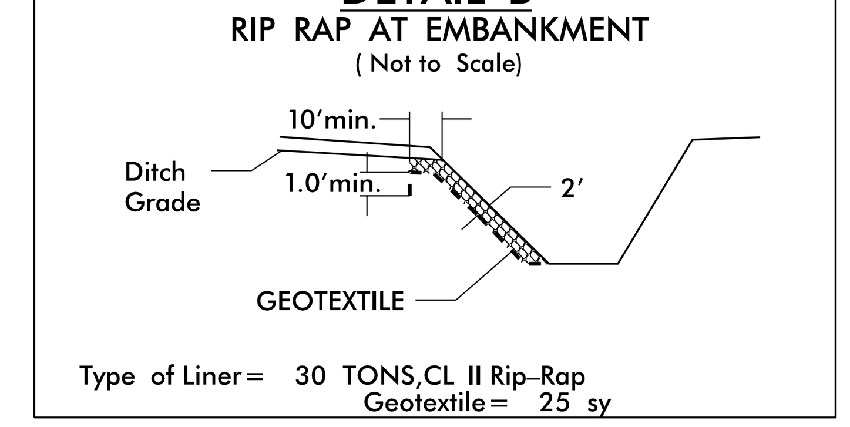
NC GRID
NAD 83 NA 2011
580
585
590
-L- CS Sta.
584+78.69
-L- ST Sta.
586+78.69
-L- POC
Sta. 579+00.00
-L- POC
Sta. 593+00.00
TO RIDGE RD
EXISTING R/W
42" WW ISBW
CRESCENT DR SR 1157
21' PAVED
TO DAVIE ACADEMY RD
6'x6' 2 BARREL CONC. CULVERT
10' PAVED SHOULDER
I-40 WESTBOUND 24' CONC
4' PAVED SHOULDER
I-40 EASTBOUND 24' CONC
CABLE
RETAIN
-L- N 66° 33' 00.0" E
-EOT3- N 66° 33' 00.0" E
GRAU 350
TB 2GI
2GI
15" RCP-IV
RCP-IV
REMOVE
CFW
CONC DITCH
GPS
15823-23
GPS
15823-22
REMOVE AND REPLACE EXISTING GUARDRAIL
BEGIN EXP.GUTTER
-EOT3- 584+15
HEAVY SCOUR & UNSTABLE DITCH
REMOVE UNDERMINED CONCRETE
& LINE WITH CLASS I RIP RAP
(SEE DETAIL A)(EXACT AREAS
TBD BY FIELD ENG.)
24"CSP W/2 ELBOWS
ROD & LUG
CONNECTORS
W/SLEEVE GASKETS
RIP RAP @ EMBANKMENT
CLASS II RIP RAP
(SEE DETAIL B)
LITTLE CREEK TRIBUTARY
PROP.EXPRESSWAY GUTTER
END EXP.GUTTER
-EOT3- 588+50
601
602
603
604
B
C
-EOT3- PC Sta. 582+00.00 =
-L- POC Sta.582+00.00 (55.00'RT)
-EOT3- PCC
Sta. 585+24.12
-EOT3- PT
Sta. 586+39.76
-EOT3- POT Sta. 589+98.18 =
-L- POC Sta.590+00.00 (55.00'RT)

RIP-RAP DITCH DETAIL A



-EOT3- 583+86 TO 584+86 RT, EST. 72 TONS, EST. 150 SY GEO FAB, EST. 46 CY DDE

DETAIL B



-EOT3- 584+96 TO 584+96 RT

-L-

PI Sta = 573+42.47	PIs Sta 585+45.36
△ = 11° 24' 00.00" (RT)	Θs = 0° 30' 00.0"
D = 0° 30' 00.00"	Ls = 200.00'
L = 2,280.00	LT = 133.33'
T = 1,143.78	ST = 66.67'
R = 11,459.16	

-EOT2-

PI Sta 583+62.07	PI Sta 585+81.94
△ = 1° 37' 42.4" (RT)	△ = 0° 15' 54.1" (RT)
D = 0° 30' 08.7"	D = 0° 13' 45.1"
L = 324.12'	L = 115.64'
T = 162.07'	T = 57.82'
R = 11,404.16'	R = 25,000.00'

FINAL EROSION CONTROL PLAN
FOR CONSTRUCTION SHEET 6

8/17/99

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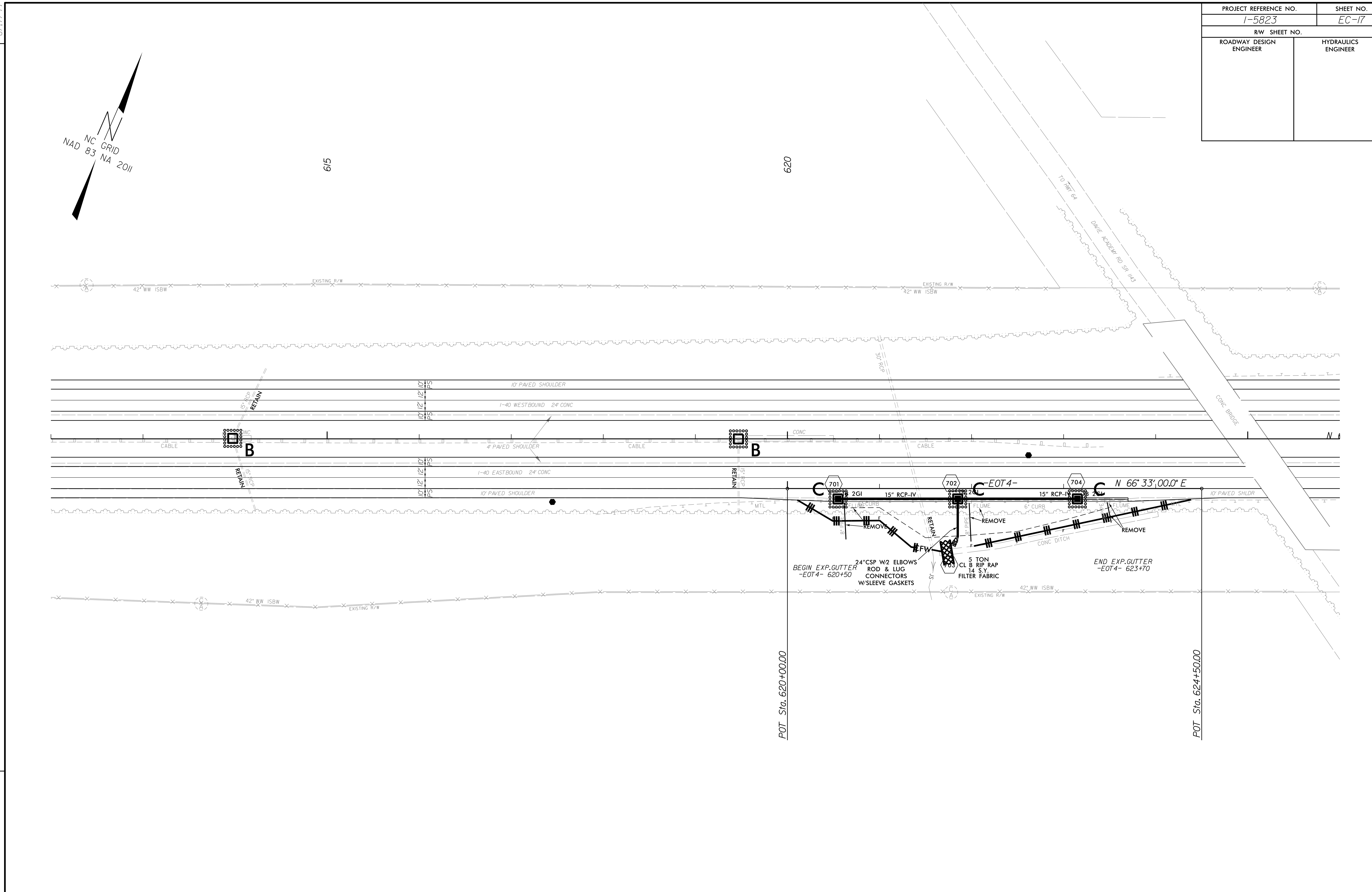
PROJECT REFERENCE NO.	SHEET NO.
I-5823	EC-17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



FINAL EROSION CONTROL PLAN FOR CONSTRUCTION SHEET 7

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
I-5823	EC-18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NC GRID
NAD 83 NA 2011

POT Sta. 634+00.00
POT Sta. 635+00.00
POT Sta. 640+00.00
POT Sta. 643+

BEGIN EXP.GUTTER
-EOT5- 634+65

END EXP.GUTTER
-EOT5- 641+50

BEGIN EXP.GUTTER
-EOT6- 635+70

END EXP.GUTTER
-EOT6- 639+00

-L- POT Sta.642+41.99 =
-L LT- TS Sta. 642+41.99 (42' LT)

-L LT- SC
Sta. 644+41.9

15"CSP W/2 ELBOWS ROD & LUG CONNECTORS W/SLEEVE GASKETS

2 TON CL B RIP RAP 7 S.Y. FILTER FABRIC

24"CSP W2 ELBOWS ROD & LUG CONNECTORS W/SLEEVE GASKETS

15" RCP-IV

-EOT5- N 66° 33' 00.0" E

-EOT6- N 66° 33' 00.0" E

-XOD-

-XOC-

PIs Sta 643+75.32
Θs = 0° 30' 00.0"
Ls = 200.00'
LT = 133.33'
ST = 66.67'

FINAL EROSION CONTROL PLAN
FOR CONSTRUCTION SHEET 8

23-NOV-2018 11:29
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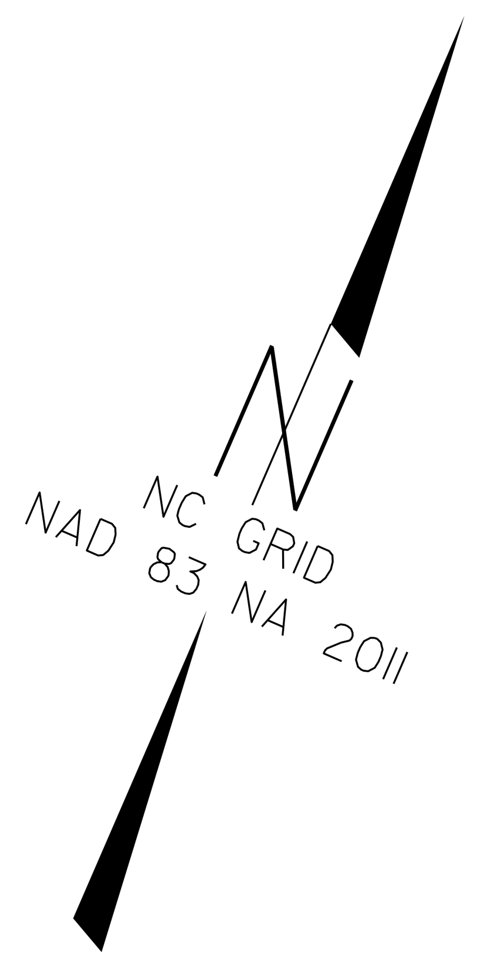
PROJECT REFERENCE NO.	SHEET NO.
I-5823	EC-19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



PI Sta 654+58.42
△ = 10° 08' 16.1" (LT)
D = 0° 30' 00.0"
L = 2,027.56'
T = 1,016.43'
R = 11,459.16'

RIP-RAP DITCH DETAIL A

CUT DITCH
(Not to Scale)

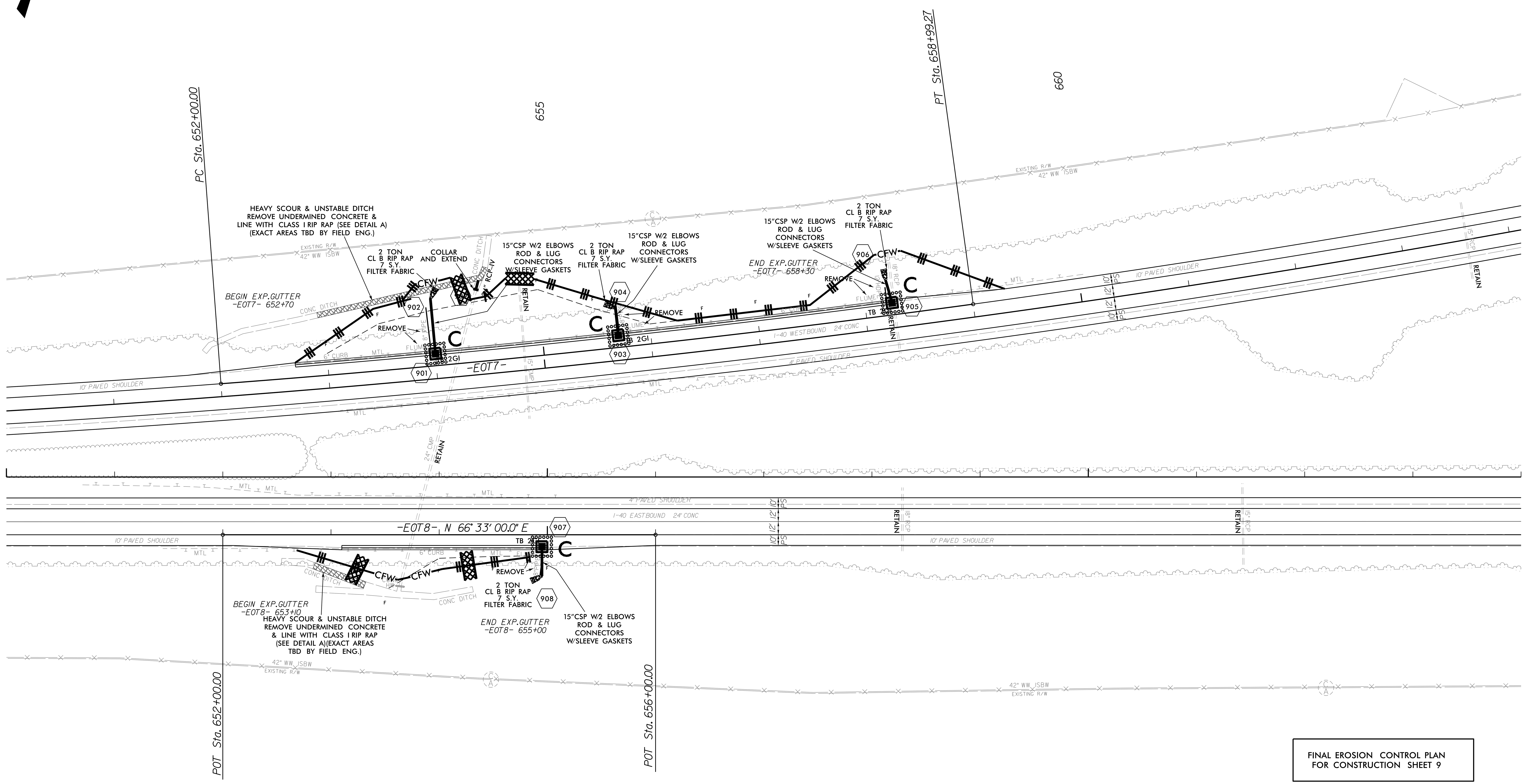
PI Sta 655+49.74
△ = 3° 30' 00.0" (LT)
D = 0° 30' 01.9"
L = 699.27'
T = 349.74'
R = 11,447.16'

Natural Ground · D · d · 2:1 or Flatter · Front Ditch Slope

Min. D = MATCH EXISTING
Max. d = MATCH EXISTING

Type of Liner = CLASS I RIP-RAP

-EOT7- 652+94 TO 654+56 LT, EST. 108 TONS, EST. 220 SY GEO FAB, EST. 76 CY DDE
-EOT8- 652+83 TO 653+32 RT, EST. 33 TONS, EST. 67 SY GEO FAB, EST. 23 CY DDE



FINAL EROSION CONTROL PLAN
FOR CONSTRUCTION SHEET 9

29-NOV-2018 11:29
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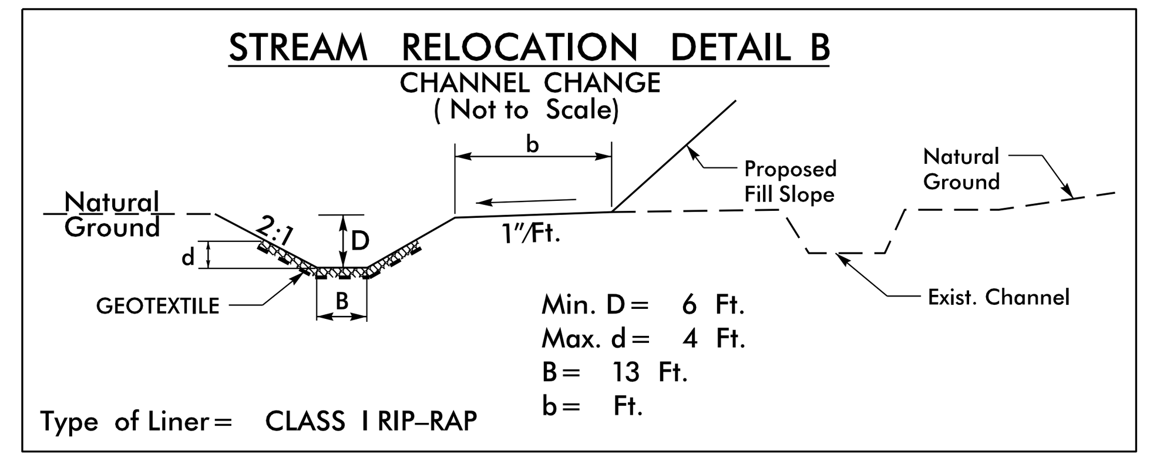
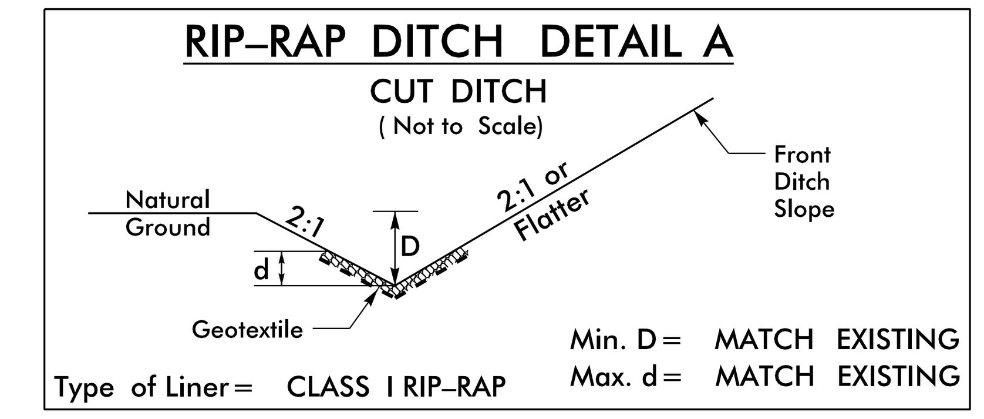
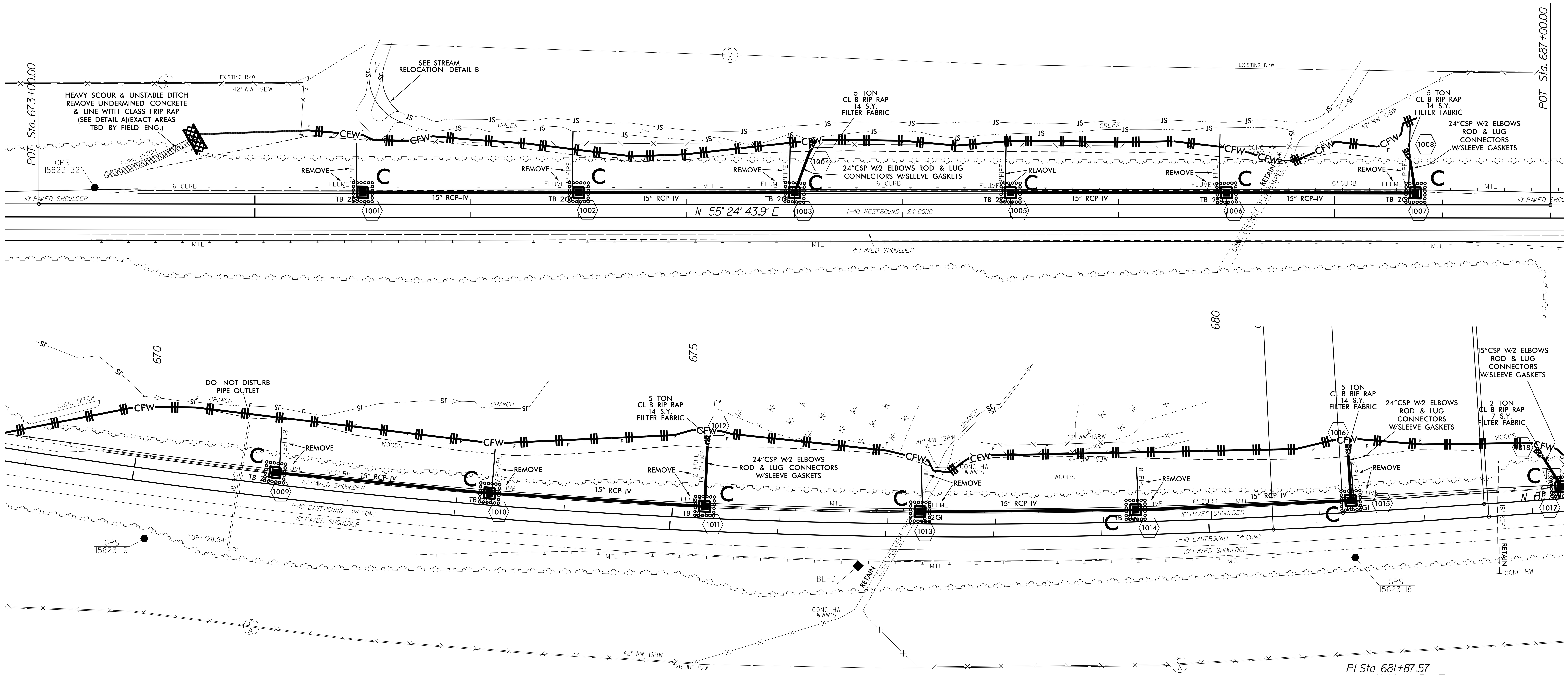
PROJECT REFERENCE NO.	SHEET NO.
I-5823	EC-20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



-EOT9- STA 676+00 TO 677+00 LT, EST. 142 TONS, EST. 325 SY GEO FAB, EST. 202 CY DDE



-EOT9- 673+60 TO 674+50 LT, EST. 62 TONS, EST. 127 SY GEO FAB, EST. 44 CY DDE



PI Sta 674+13.81
△ = 12° 58' 06.2" (LT)
D = 1° 00' 00.0"
L = 1,296.84'
T = 651.20'
R = 5,729.58'

PI Sta 674+64.01
△ = 13° 14' 55.7" (LT)
D = 1° 00' 07.6"
L = 1,322.11'
T = 664.01'
R = 5,717.58'

PIs Sta 681+26.12
θs = 1° 00' 00.0"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

PI Sta 681+87.57
△ = 0° 20' 44.5" (LT)
D = 0° 15' 50.5"
L = 130.92'
T = 65.46'
R = 21,700.00'

FINAL EROSION CONTROL PLAN FOR CONSTRUCTION SHEET 10

30-NOV-2018 15:56
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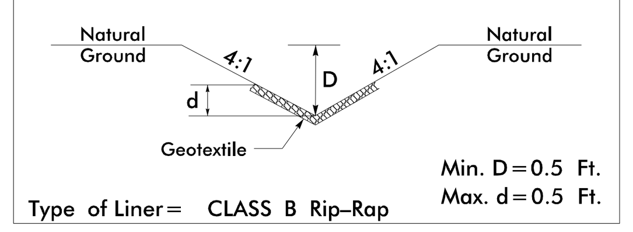
PROJECT REFERENCE NO.	SHEET NO.
I-5823	EC-21
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SHALLOW V DITCH
CONSTRUCT UNDER DECK DRAINS
(Not to Scale)

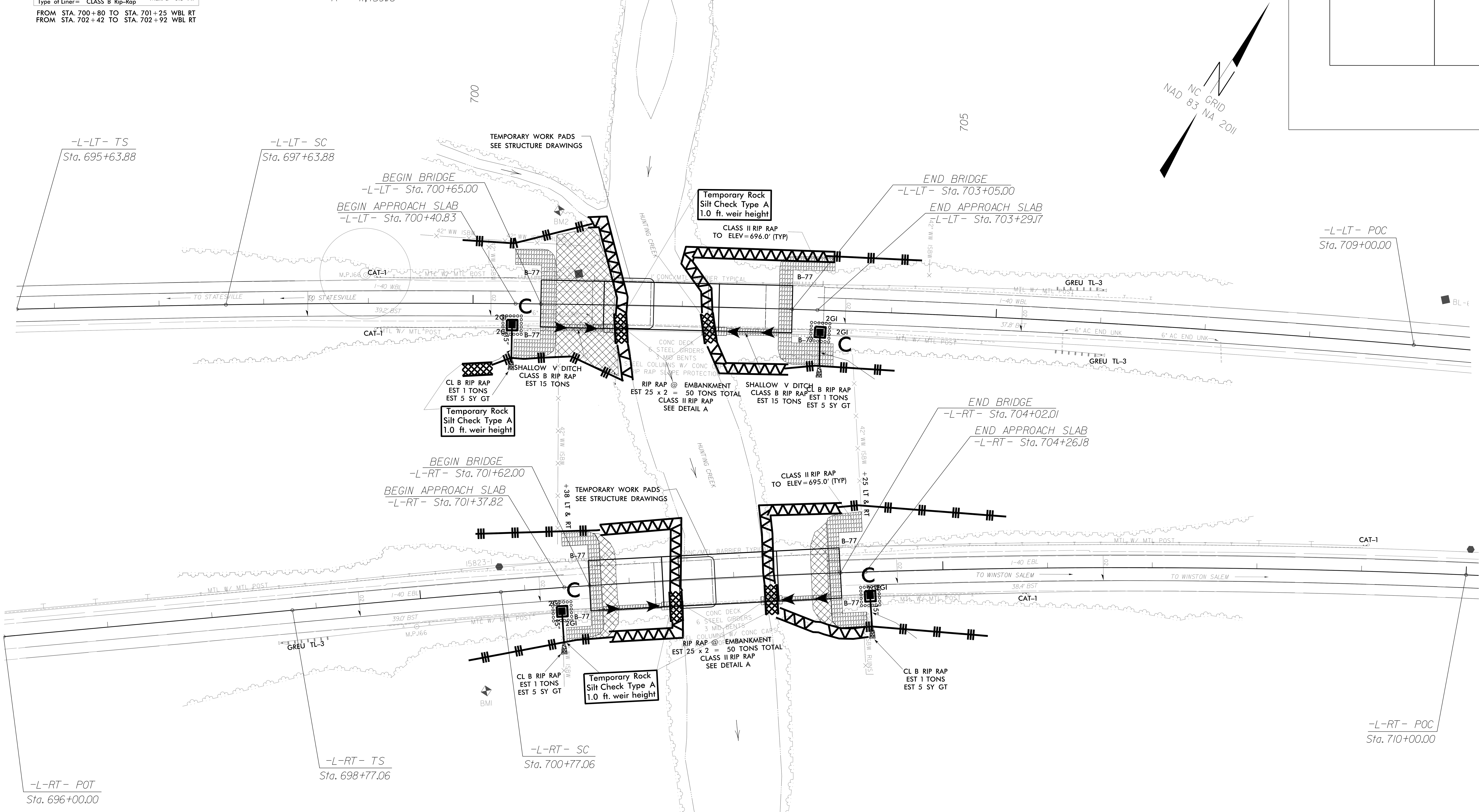


Type of Liner= CLASS B Rip-Rap

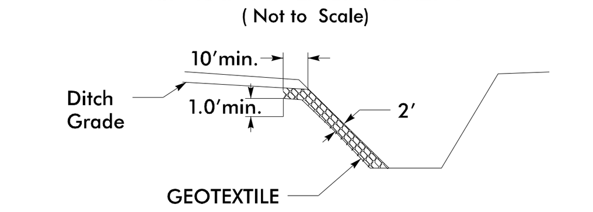
FROM STA. 700+80 TO STA. 701+25 WBL RT
FROM STA. 702+42 TO STA. 702+92 WBL RT

L-LT

PIs Sta 696+97.22	PI Sta 711+08.79	PIs Sta 725+08.11
Θs = 0° 30' 00.0"	△ = 13° 23' 16.1" (RT)	Θs = 0° 30' 00.0"
Ls = 200.00'	D = 0° 30' 00.0"	Ls = 200.00'
LT = 133.33'	L = 2,677.56'	LT = 133.33'
ST = 66.67'	T = 1,344.90'	ST = 66.67'
	R = 11,459.16'	



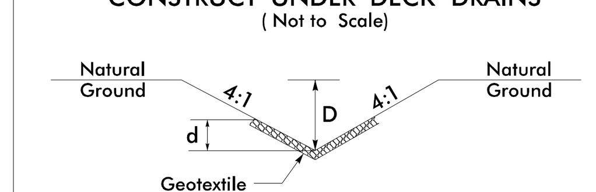
DETAIL A
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 50 TONS, CL II Rip-Rap
Geotextile= 45 sy

FROM STA. 702+29 TO STA. 702+50 -L- EBL RT
FROM STA. 703+25 TO STA. 703+45 -L- EBL RT

SHALLOW V DITCH
CONSTRUCT UNDER DECK DRAINS
(Not to Scale)



Type of Liner= B Rip-Rap

FROM STA. 701+73 TO STA. 702+29 -L- EBL RT
FROM STA. 703+45 TO STA. 703+92 -L- EBL RT

L-RT

PIs Sta 700+10.39	PI Sta 710+92.83	PIs Sta 721+63.42
Θs = 0° 45' 00.0"	△ = 15° 08' 51.8" (RT)	Θs = 0° 45' 00.0"
Ls = 200.00'	D = 0° 45' 00.0"	Ls = 200.00'
LT = 133.33'	L = 2,019.70'	LT = 133.33'
ST = 66.67'	T = 1,015.77'	ST = 66.67'
	R = 7,639.44'	

BENCHMARKS (NAVD 88)

BM1 ELEVATION = 689.84'
N 785073 E 1511778
RAILROAD SPIKE SET VERTICALLY
IN 24" RIVER BIRCH

BM2 ELEVATION = 687.92'
N 785495 E 1511586
RAILROAD SPIKE SET IN
22" SYCAMORE

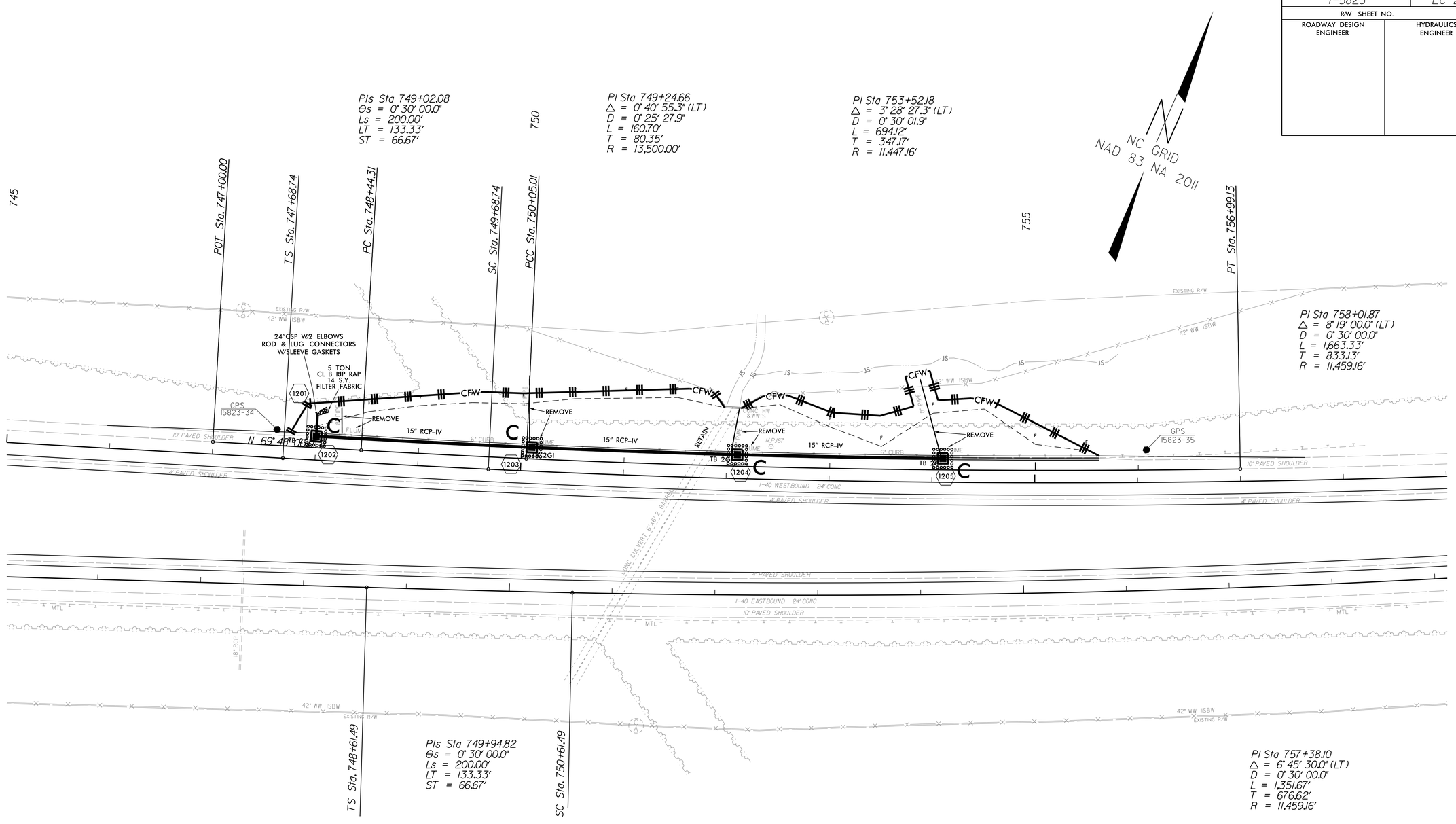
INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

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

8/17/99

11/29/2018 10:02:50 AM

PROJECT REFERENCE NO.	SHEET NO.
I-5823	EC-22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



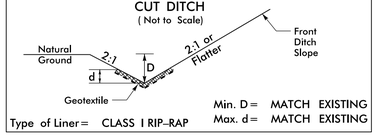
FINAL EROSION CONTROL PLAN
FOR CONSTRUCTION SHEET 12

PROJECT REFERENCE NO.	SHEET NO.
I-5823	EC-23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

RIP-RAP DITCH DETAIL A

CUT DITCH

(Not to Scale)



Type of Liner = CLASS I RIP-RAP

Min. D = MATCH EXISTING

Max. d = MATCH EXISTING

-EOT12- 778+50 TO 784+21 LT, EST. 400 TONS, EST. 820 SY GEO FAB, EST. 282 CY DDE

NC GRID NAD 83 NA 2011

-L- POT Sta.775+72.17 =
-XOE- POC Sta.13+62.43
-XOF- PRC Sta.14+10.18

-XOE- PRC Sta. 13+60.51

POT Sta.771+00.00

POT Sta.783+50.00

N 60° 29' 14.5" E

HEAVY SCOUR & UNSTABLE DITCH REMOVE UNDERMINED CONCRETE & LINE WITH CLASS I RIP RAP (SEE DETAIL A)(EXACT AREAS TBD BY FIELD ENG.)

18"CSP W/2 ELBOWS ROD & LUG CONNECTORS W/SLEEVE GASKETS

3 TON CL B RIP RAP 10 S.Y. FILTER FABRIC

COLLAR AND EXTEND

2 TON CL B RIP RAP 7 S.Y. FILTER FABRIC

15"CSP W/2 ELBOWS ROD & LUG CONNECTORS W/SLEEVE GASKETS

1301 1302 1303 1305 1306 1307 1308 1309 1310

REMOVE

RETAIN

18" RCP-IV

15" RCP-IV

6" CURB

FLUME

CONC DITCH

BRANCH

GPS 15823-36

GPS 15823-X8

GPS 15823-X6

EXISTING R/W

42" WW ISBW

10' PAVED SHOULDER

I-40 WESTBOUND 24" CONC

4' PAVED SHOULDER

I-40 EASTBOUND 24" CONC

10'

-XOE-

-XOF-

FINAL EROSION CONTROL PLAN FOR CONSTRUCTION SHEET 13