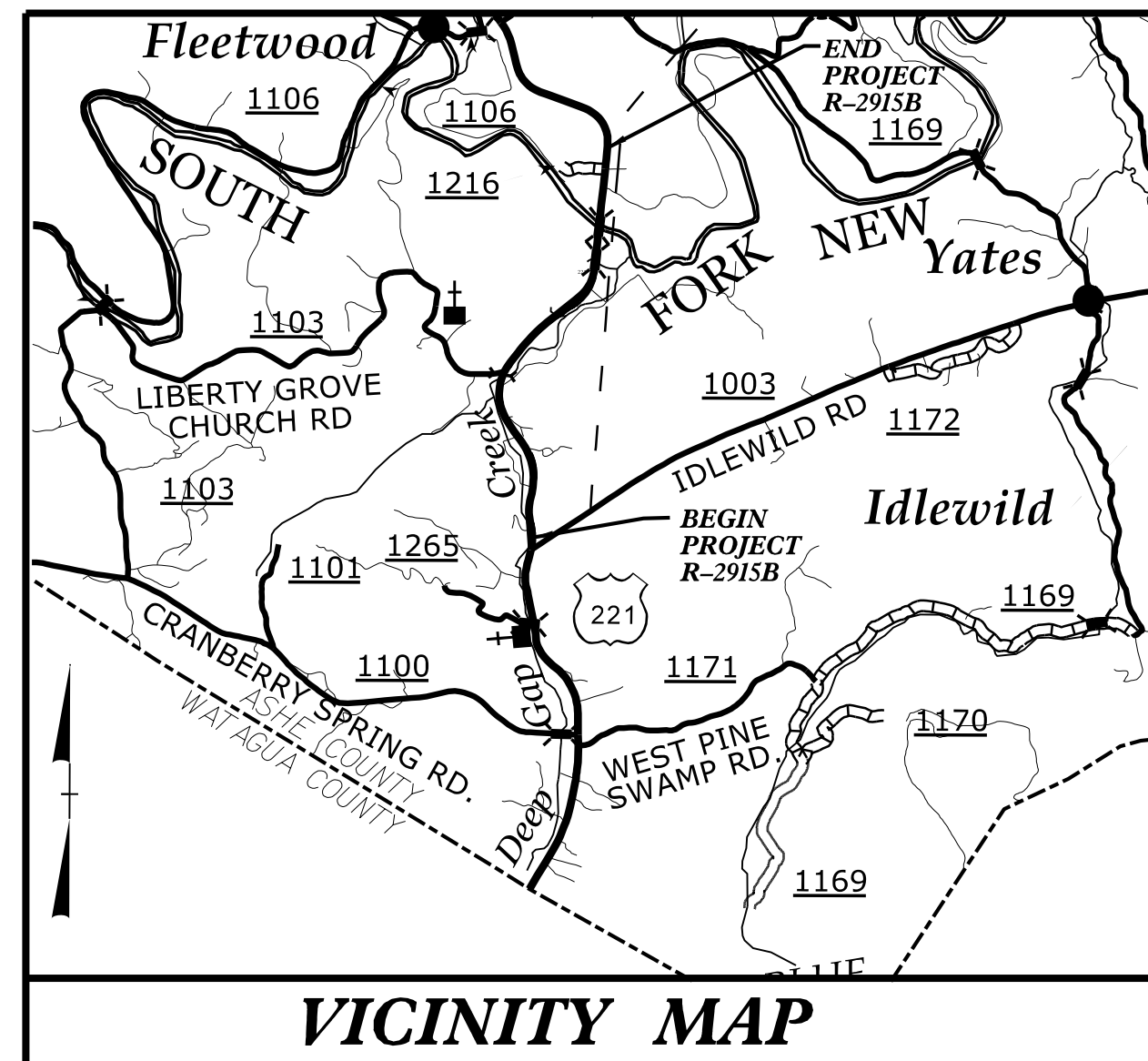


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**This file or an individual page
shall not be considered a certified document.**

TIP PROJECT: R-2915B



Eric M. Leonhart, El
LEVEL III NAME

3502
LEVEL III CERTIFICATION NO.

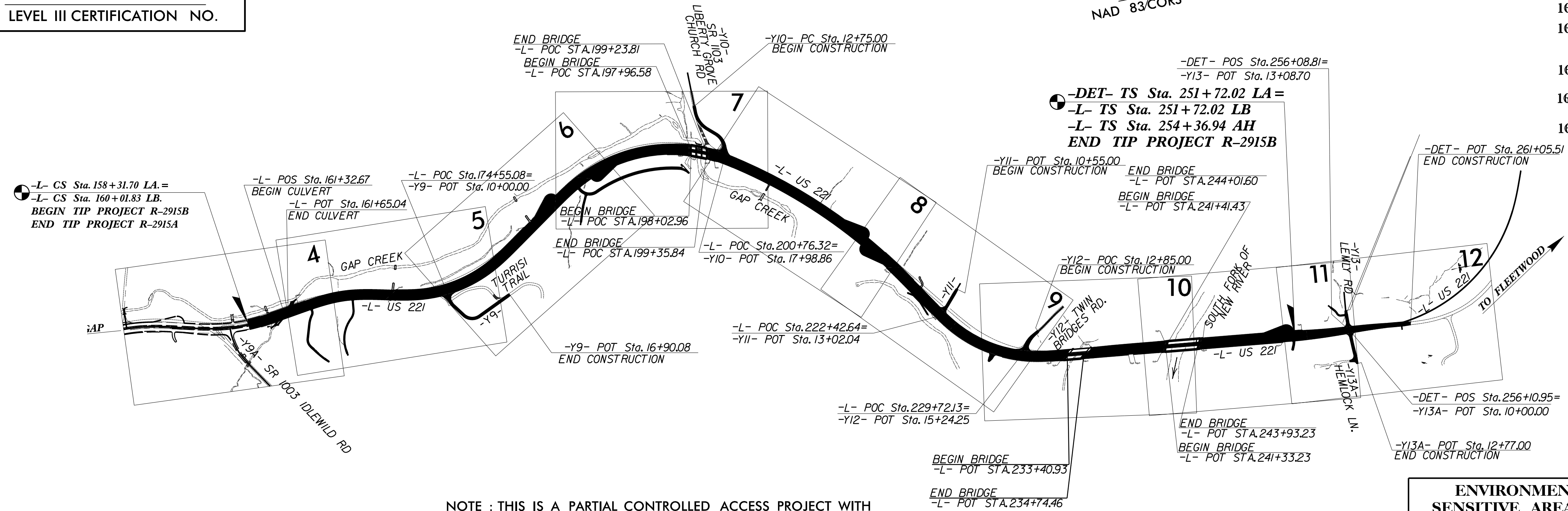
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

ASHE COUNTY

**LOCATION: US 221 FROM SR 1003 (IDLEWILD ROAD)
TO NORTH OF SOUTH FORK NEW RIVER**

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



NOTE : THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE DRIVEWAY PER PARCEL. THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2915B	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34518.1.3	STP-0221(40)	P.E.	
34518.2.FR2	STP-0221(40)	R /W	
34518.2.UFR2	STP-0221(40)	UTILITIES	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	
1630.05	Temporary Diversion	
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	
1632.02	Type B	
1632.03	Type C	
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

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

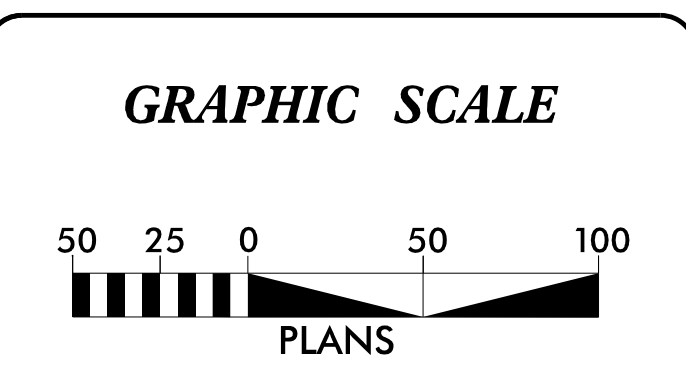
THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

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

HIGH QUALITY WATER(S) EXIST ON THIS PROJECT

High Quality Water Zone(s) Exist From Sta. 160+01.83 -L- to Sta. 251+72.02 -L- Refer To E. C. Special Provisions for Special Considerations.



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

Prepared in the Office of:

SUNGATE DESIGN GROUP, P.A.

915 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
NC COA No. C-0890

2012 STANDARD SPECIFICATIONS

Roadway Standard Drawings

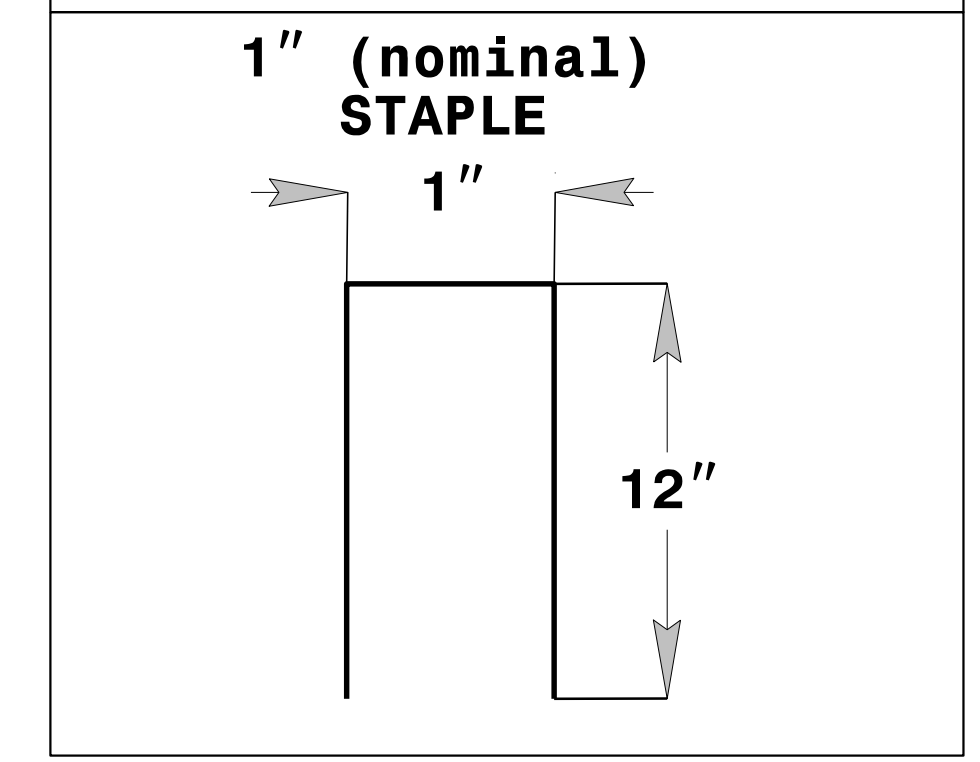
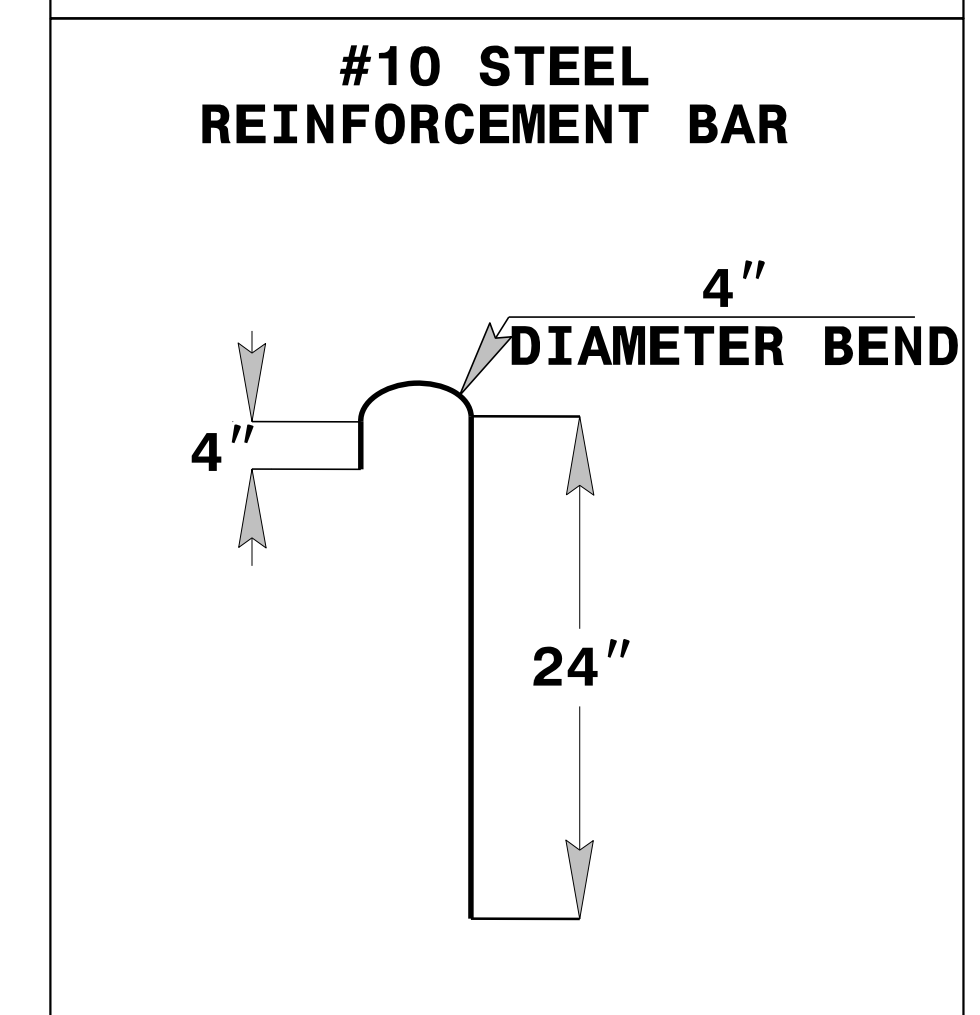
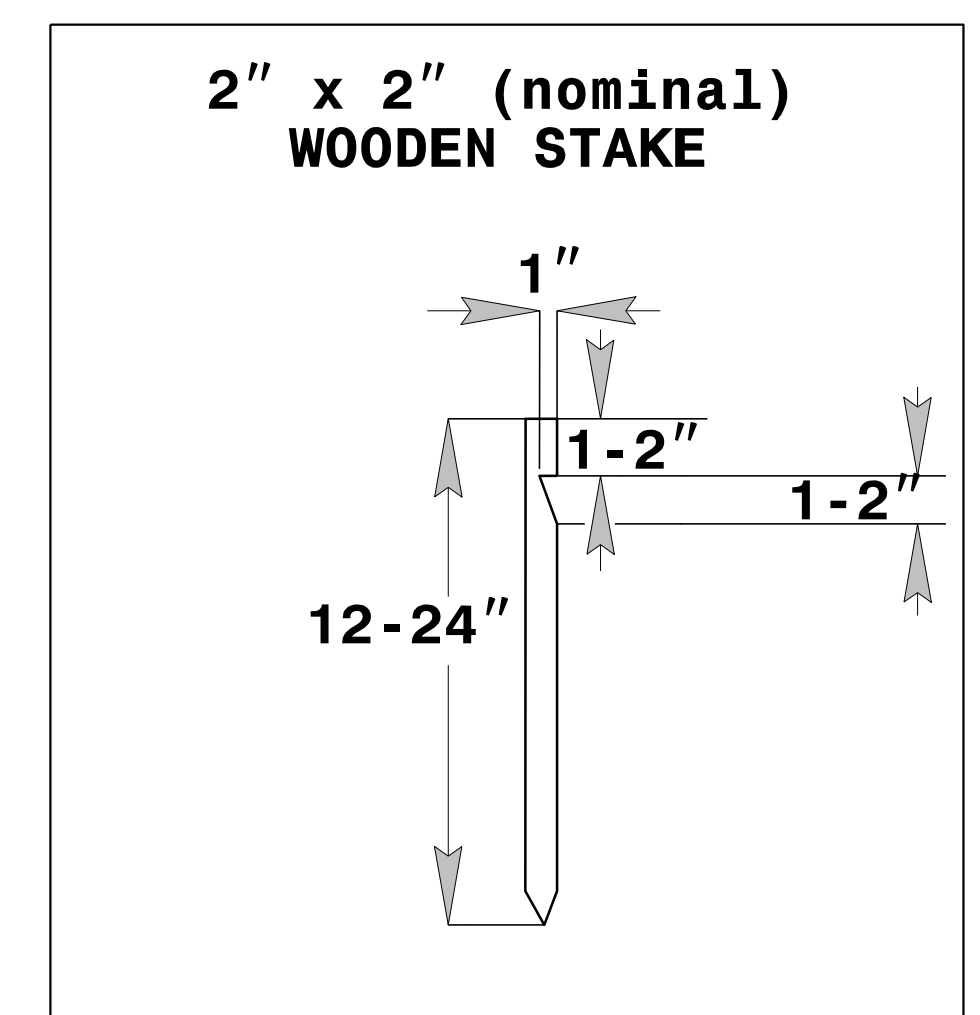
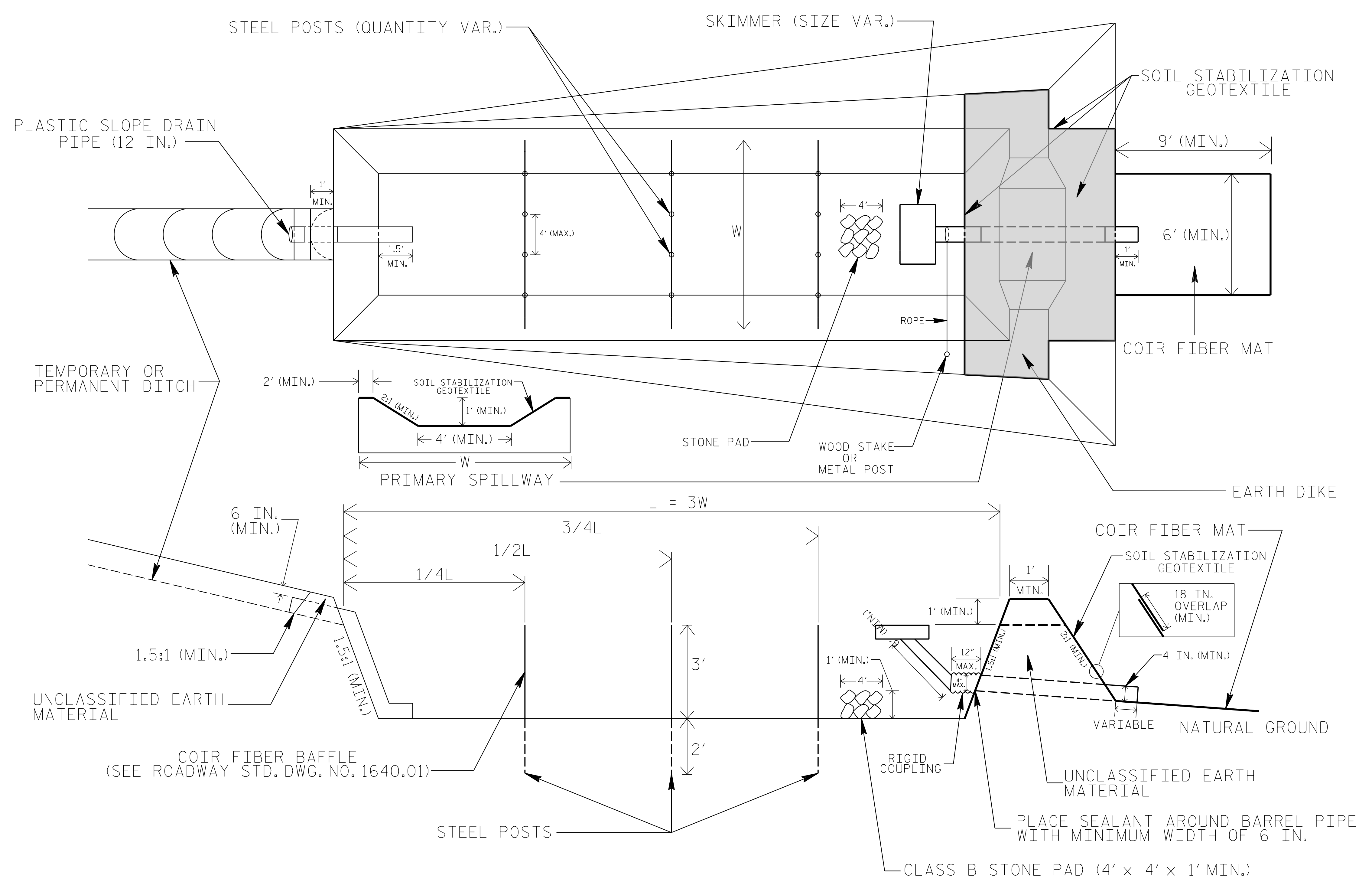
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

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

3/16/2012 10:58:10 AM EC.dwg, 01.tbd, dgn
eric.leonhart

PROJECT REFERENCE NO. R-2915B	SHEET NO. EC-02
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SKIMMER BASIN WITH BAFFLES DETAIL



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 $Q/0.4$, WHERE Q IS FLOW RATE (CFS) INTO BASIN.
5. PLASTIC SLOPE DRAIN PIPE AT INLET OF BASIN MAY BE REPLACED BY FILTRATION GEOTEXTILE OR TARP AS DIRECTED.
6. SOIL STABILIZATION GEOTEXTILE FOR PRIMARY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

PROJECT REFERENCE NO. <i>R-2915B</i>	SHEET NO. <i>EC-02B</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

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.

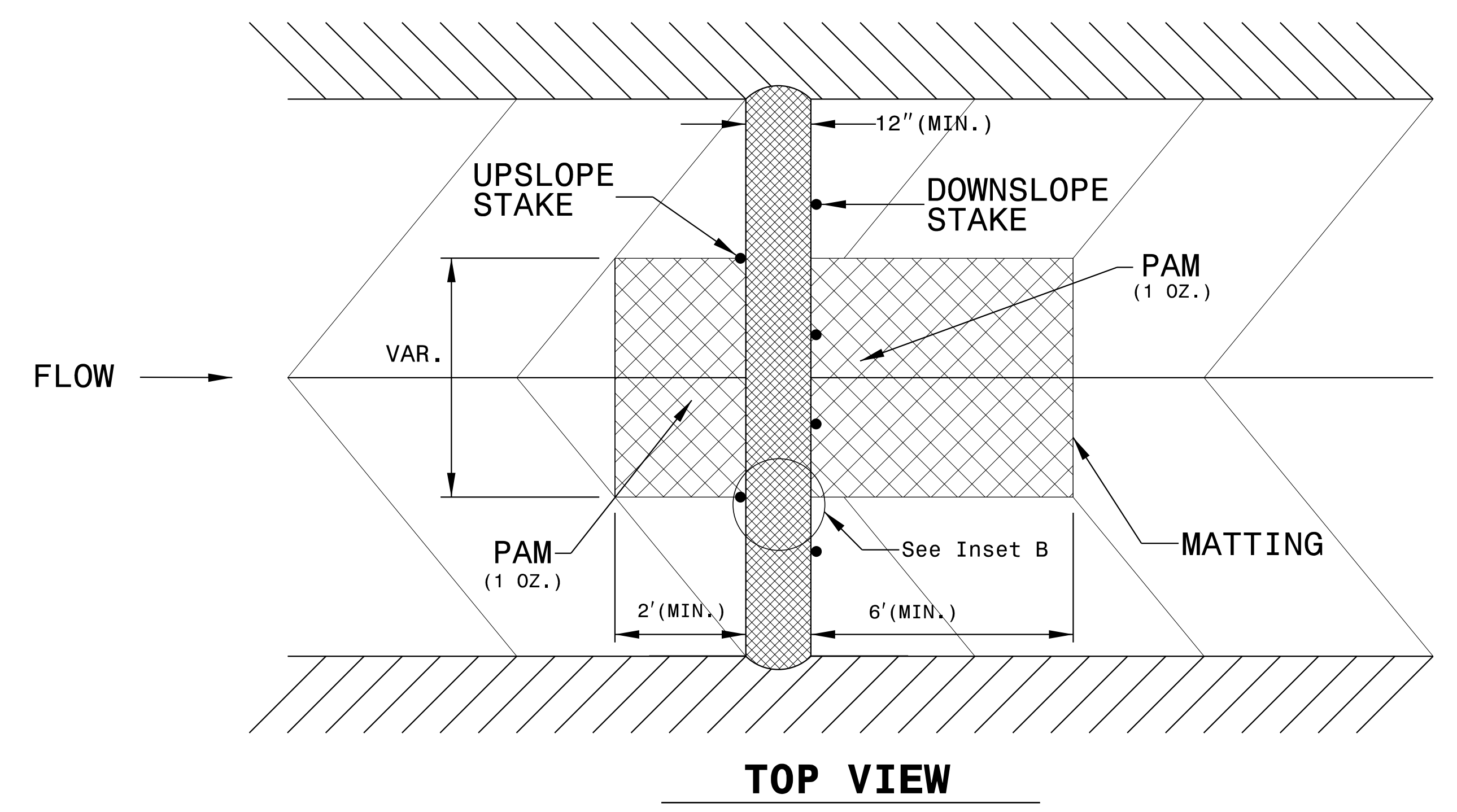
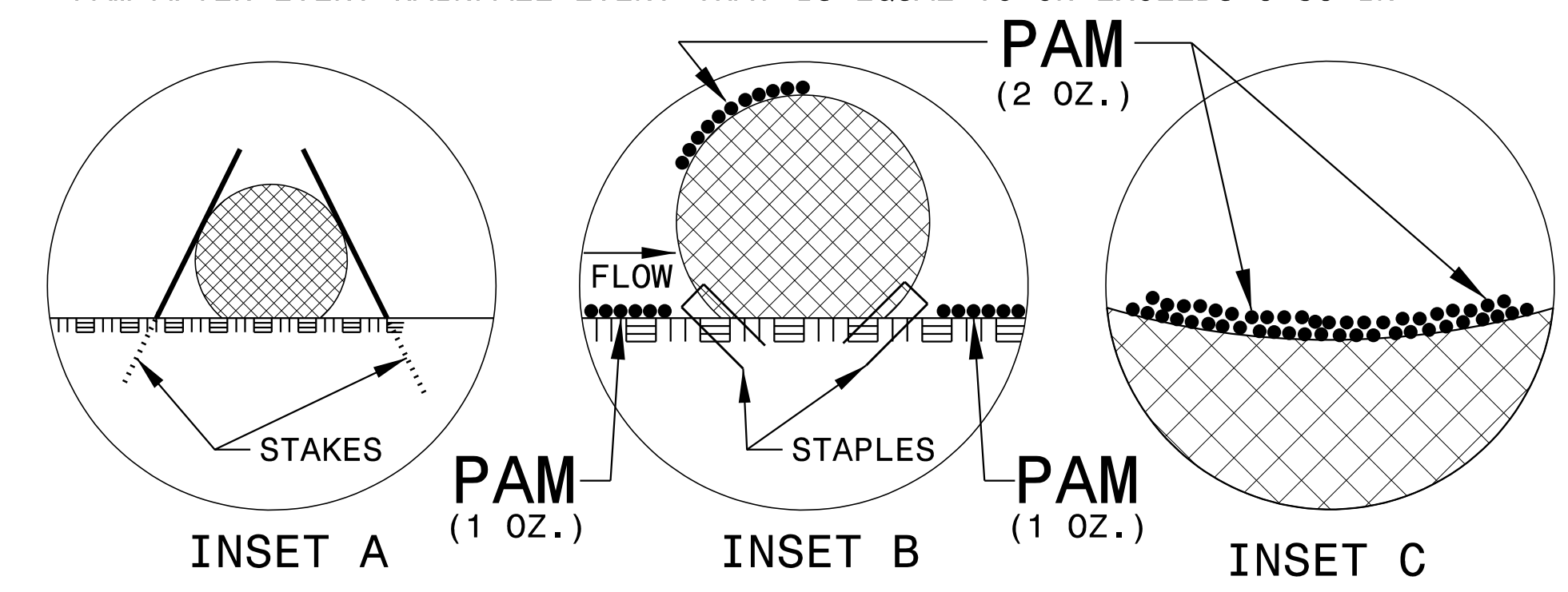
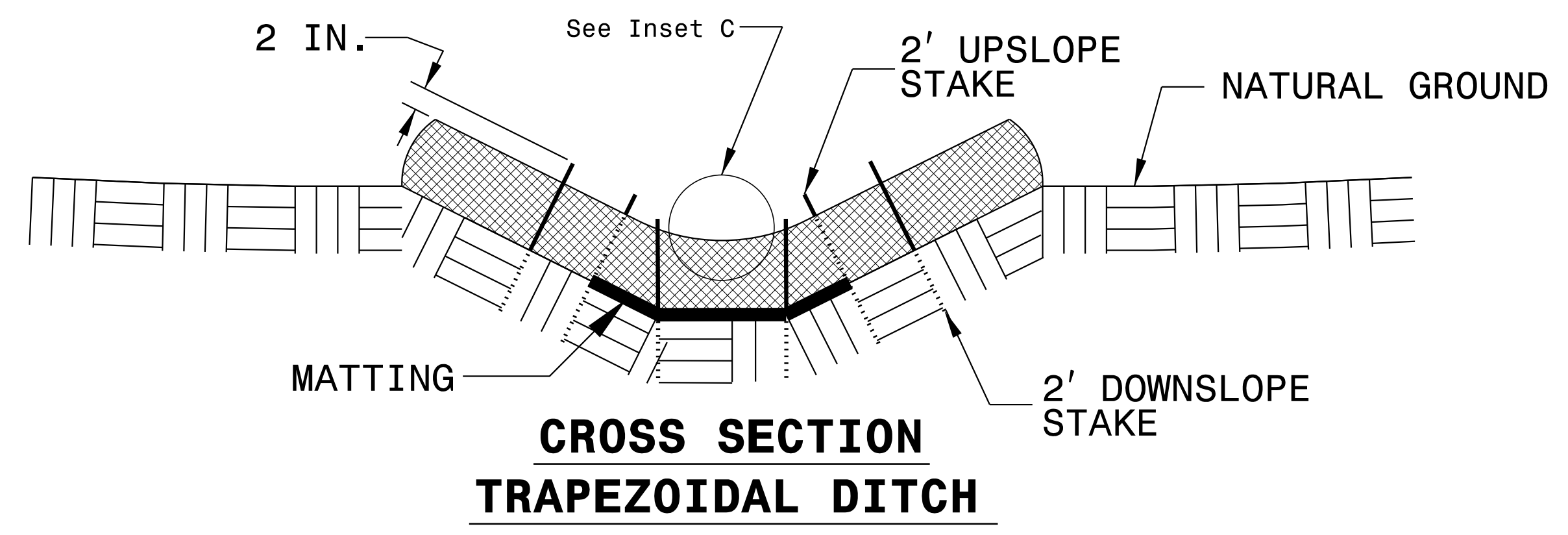
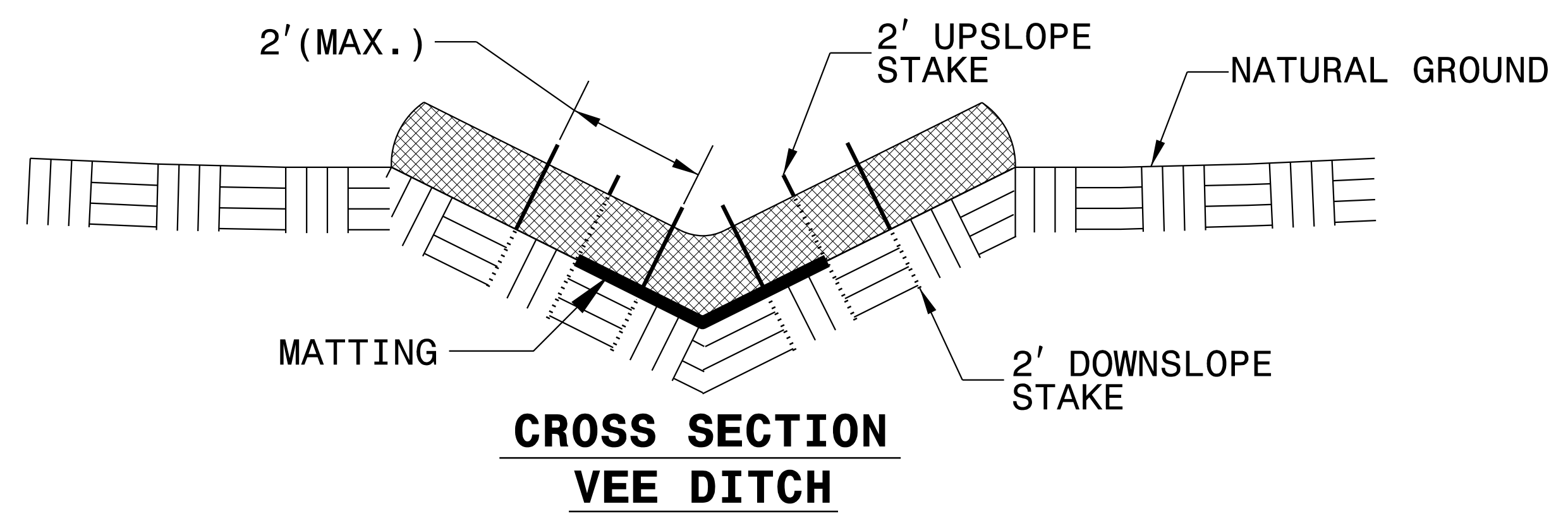
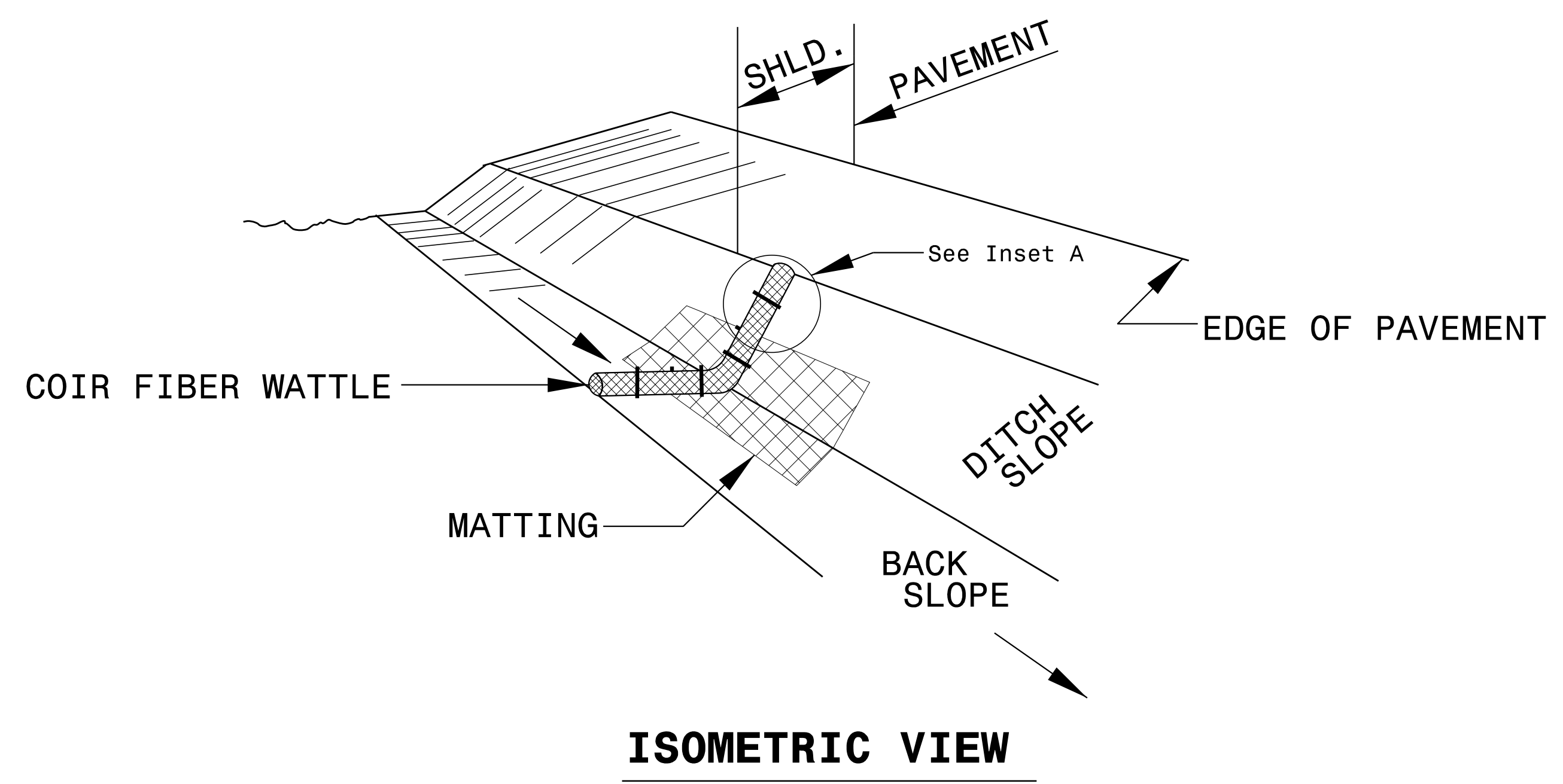
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.

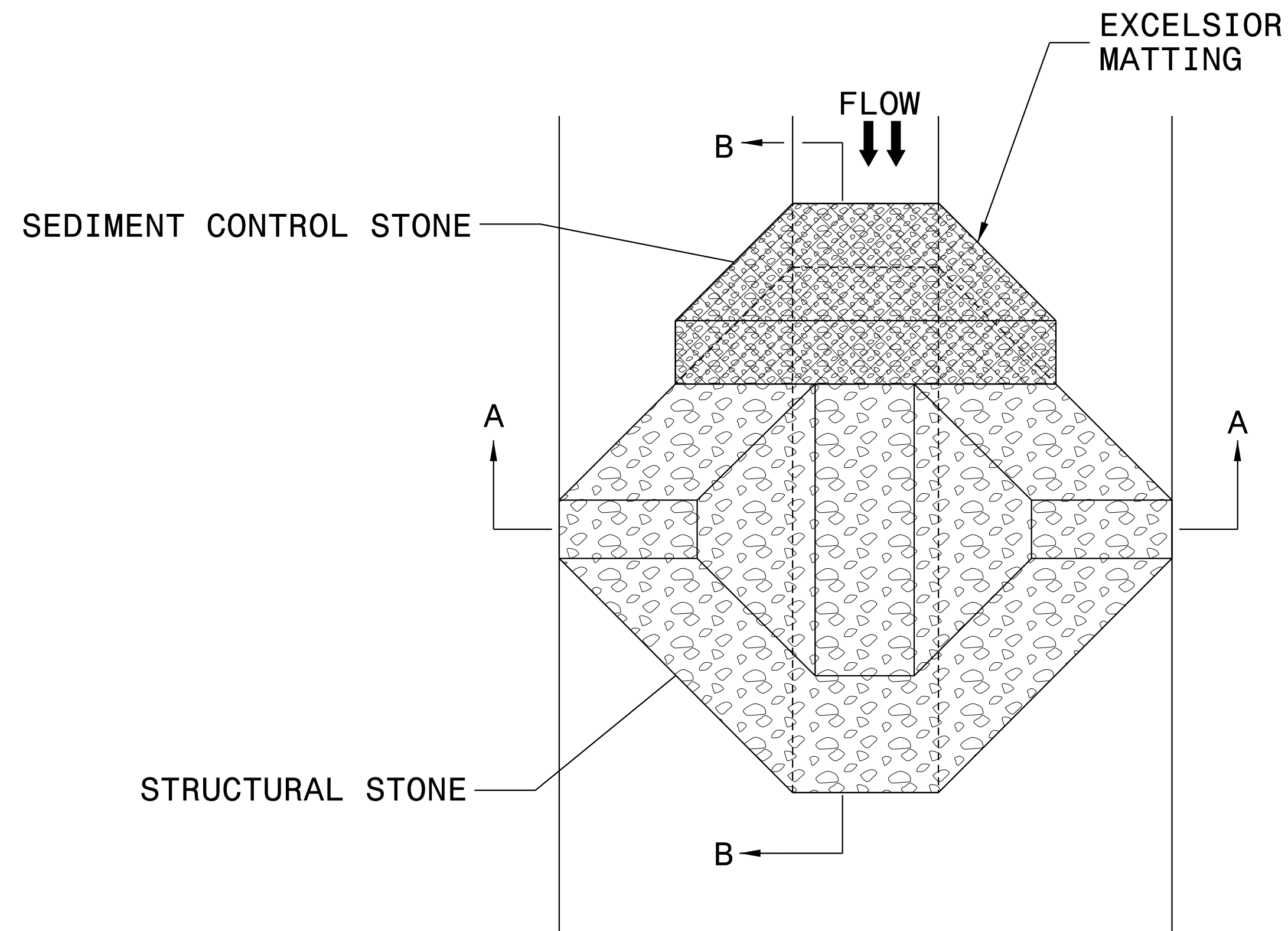
PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

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

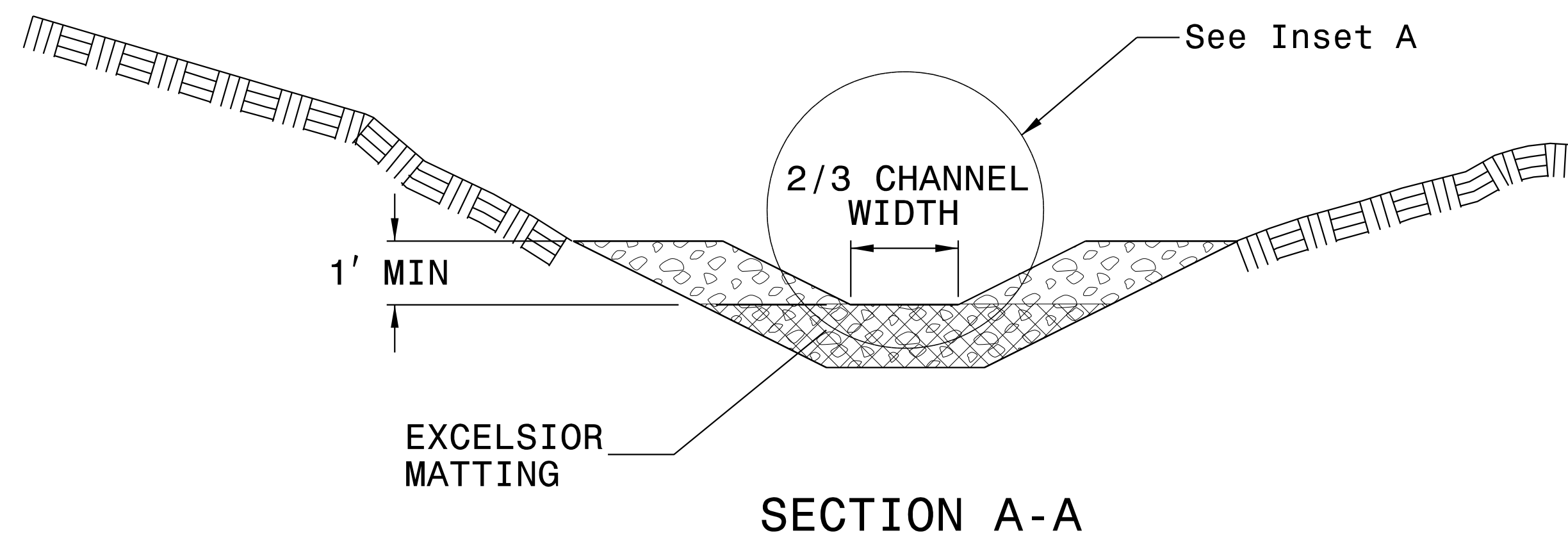


PROJECT REFERENCE NO. <i>R-2915B</i>	SHEET NO. <i>EC-02C</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN



SECTION A-A

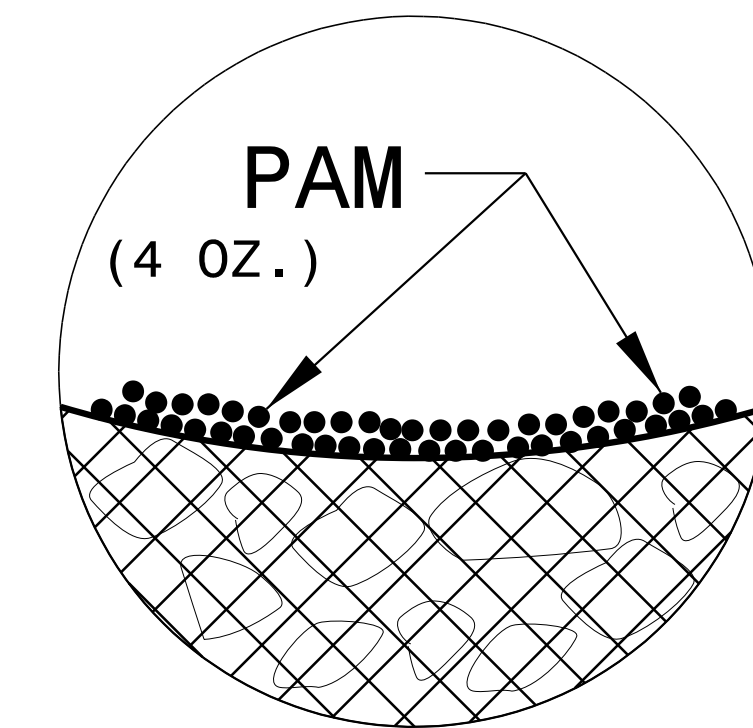
NOTES:

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

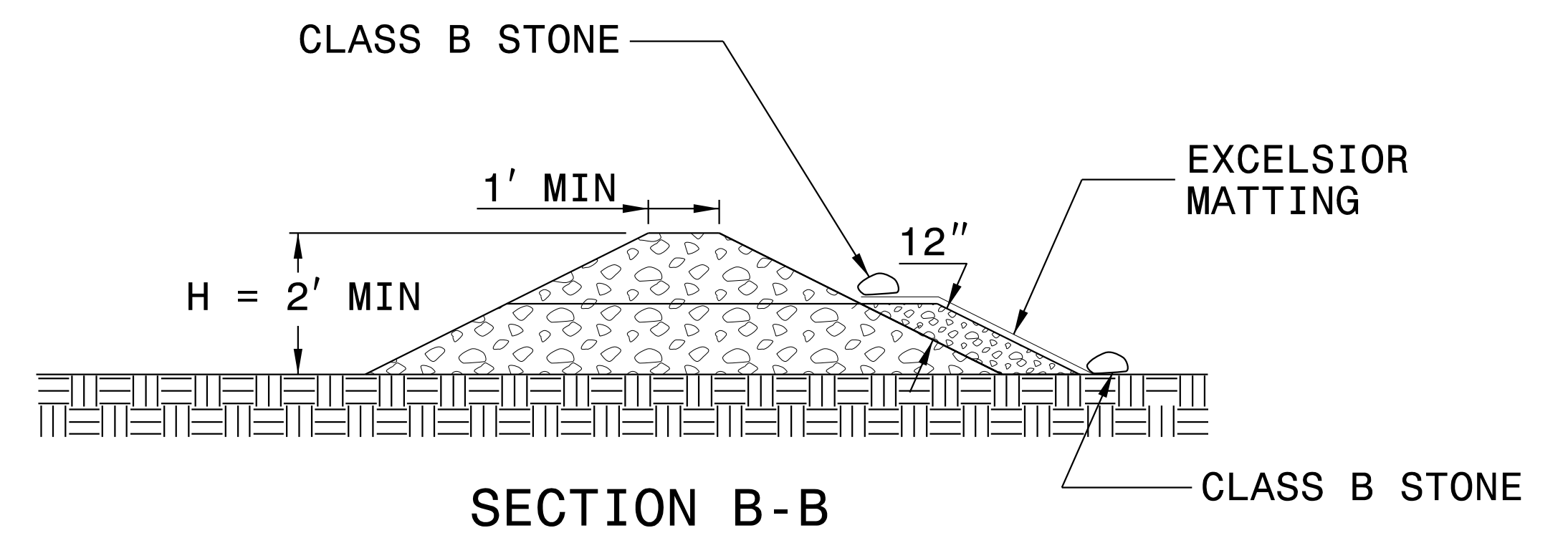
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>R-2915B</i>	SHEET NO. <i>EC-03</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	160+20	161+00	RT	75
4	-L-	162+00	163+00	RT	115
5	-L-	164+00	166+50	RT	285
5	-L-	167+50	173+50	RT	675
5	-L-	176+00	170+00	RT	120
6	-L-	170+00	190+00	RT	1,460
7	-L-	190+00	197+00	RT	780
7	-L-	201+50	203+00	LT	170
8	-L-	203+00	213+50	LT	1,180
8	-L-	215+00	216+00	LT	75
8	-L-	212+00	215+00	RT	310
9	-L-	216+00	217+40	LT	105
9	-L-	218+50	221+90	LT	460
9	-L-	222+69	223+50	LT	110
9	-L-	224+50	229+00	LT	610
10	-L-	229+00	229+50	LT	70
10	-L-	233+80	239+22	RT	500
11	-L-	242+60	250+00	RT	690
11	-L-	244+00	249+00	LT	410
			SUBTOTAL		8,200
				MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER	156,800
				TOTAL	165,000

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
8	-L-	213+50	215+00	LT	170
9	-L-	223+50	224+50	LT	140
9	-Y13-	11+50	12+50	LT	70
			SUBTOTAL		380
			ADDITIONAL PGRM TO BE INSTALLED		0
			TOTAL		380

COIR FIBER MATTING FOR EROSION CONTROL

5	-DR2-	13+85	14+25	RT	40
5	-DR2-	14+25	14+35	RT	10
5	-DR2-	14+50	14+90	LT	40
6	-L-	180+00	182+00	LT	340
			SUBTOTAL		430
			ADDITIONAL COIR FIBER MATTING TO BE INSTALLED		310
			TOTAL		740

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>R-2915B</i>	SHEET NO. <i>EC-03A</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION TIMEFRAMES

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
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.

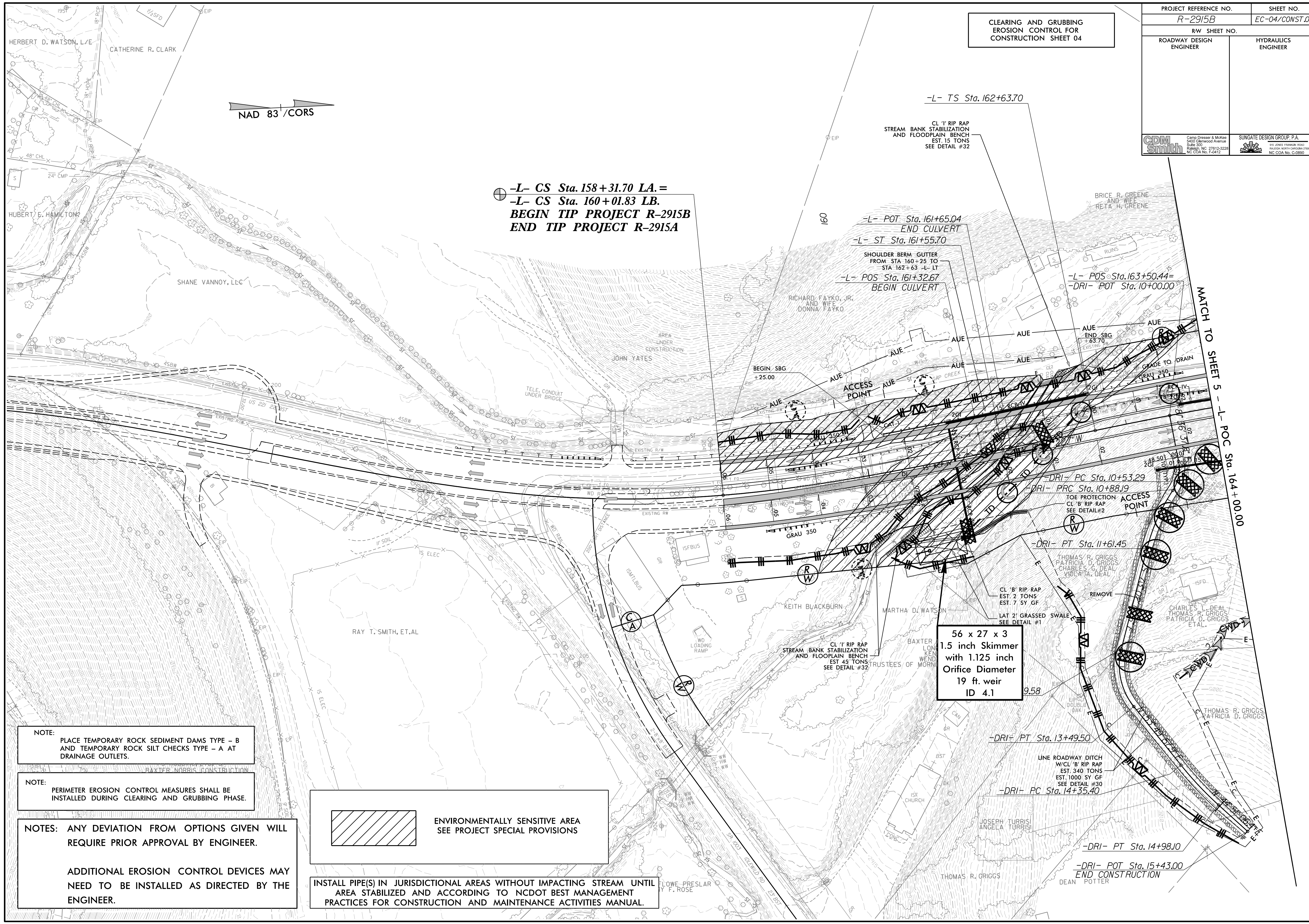
01/21/14 - RW REVISIONS: UPDATED PROPERTY OWNER NAME AND DEED REFERENCE ON PARCEL 1. - PIS
 06/03/14 - RW REVISIONS: ADDED PROPOSED RW & C/A FROM R-2915A FROM -Y9A-13-1-09-48 TO -L-160-01.83 RIGHT ON PARCEL 3, REMOVED GREEN HOUSE AND PROVIDED ACCESS ON PARCEL 3; UPDATED PROPERTY OWNER NAMES ON PARCELS 5, 7 AND 8; SUBDIVIDED PARCEL 11 INTO 11, 11A, AND 11B AND ADDED PROPERTY OWNER NAMES AND DEED REFERENCES. - JBV
 01/05/15 - RW REVISIONS: UPDATED PROPERTY OWNER NAME ON PARCEL 7. - PIS

PROJECT REFERENCE NO. <i>R-2915B</i>	SHEET NO. <i>EC-04/CONST.04</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CDM Smith Camp Dresser & McKee 8421 Glenwood Avenue Suite 300 Raleigh, NC 27612-3229 NC CEA No. F-5412	SUNGATE DESIGN GROUP, P.A. 110 JONES FRANKLIN ROAD HUNTER HORTON CAROLINA STRIP NC CEA No. G-9890

CLEARING AND GRUBBING
 EROSION CONTROL FOR
 CONSTRUCTION SHEET 04

NAD 83 /CORS

-L- CS Sta. 158+31.70 LA.=
 -L- CS Sta. 160+01.83 LB.
BEGIN TIP PROJECT R-2915B
END TIP PROJECT R-2915A



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

NOTE:
 PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

 ENVIRONMENTALLY SENSITIVE AREA
 SEE PROJECT SPECIAL PROVISIONS

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.

56 x 27 x 3
 1.5 inch Skimmer
 with 1.125 inch
 Orifice Diameter
 19 ft. weir
 ID 4.1

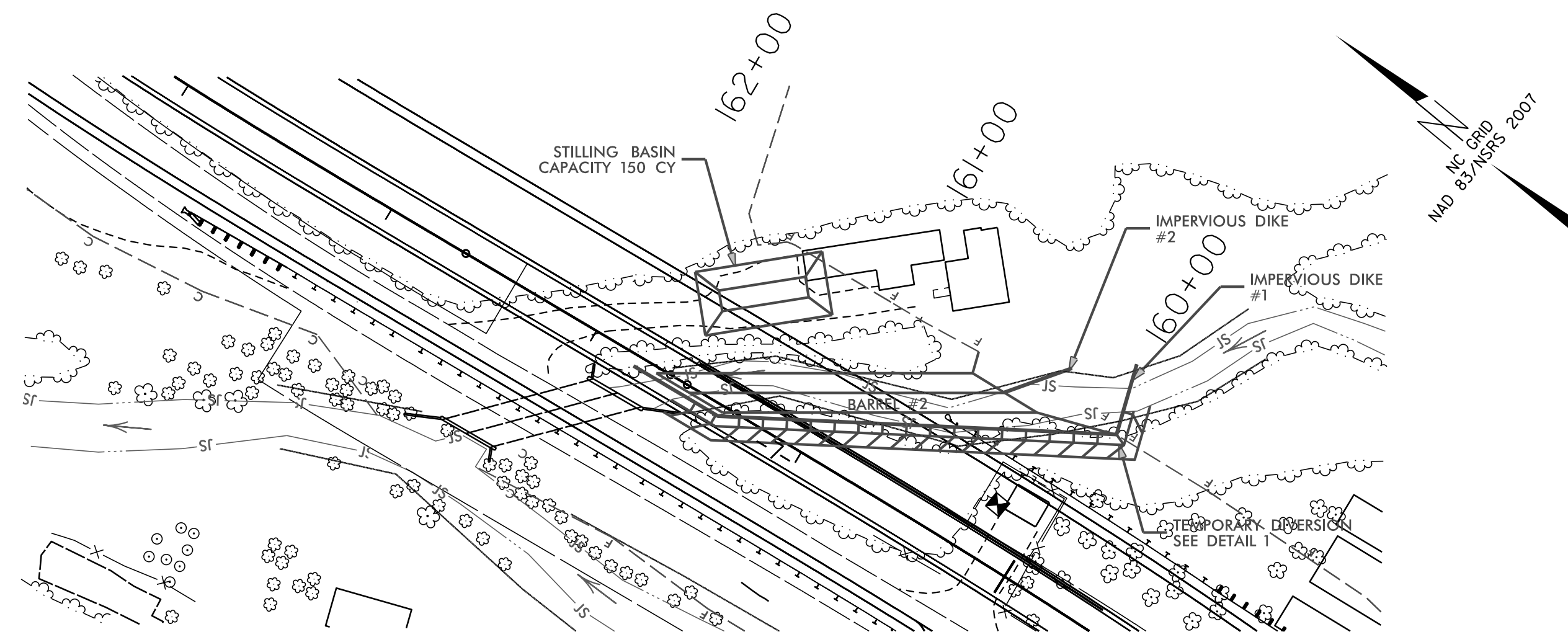
MATCH TO SHEET 5 - L- POC Sta. 164+00.00

UNNAMED TRIBUTARY TO GAP CREEK CULVERT CONSTRUCTION SEQUENCE STA. 161+49 -L-

PROJECT REFERENCE NO. <i>R-2915B</i>	SHEET NO. <i>EC-04A/CONST.04</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

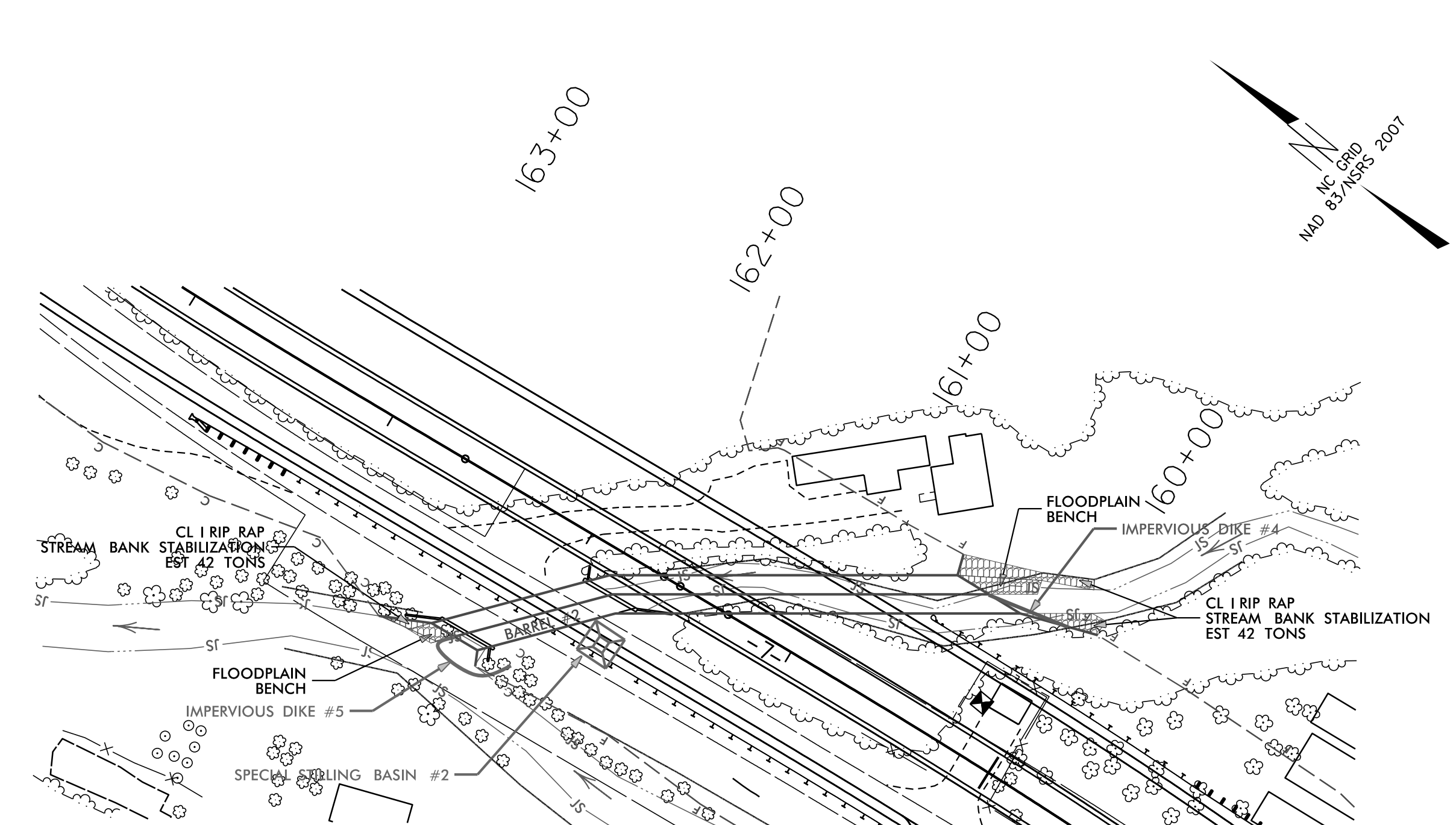
PHASE I

1. CONSTRUCT STILLING BASIN (MIN. CAPACITY=150CY)
2. CONSTRUCT IMPERVIOUS DIKE #1 AND TEMPORARY DIVERSION
3. DEWATER CONSTRUCTION AREA
4. CONSTRUCT PROPOSED CULVERT
5. INSTALL IMPERVIOUS DIKE #2 TO ROUTE STREAM THROUGH BARREL #2
6. REMOVE IMPERVIOUS DIKE #1, TEMPORARY DIVERSION AND STILLING BASIN
7. CONSTRUCT NORTH BOUND LANE AND TRANSFER TRAFFIC



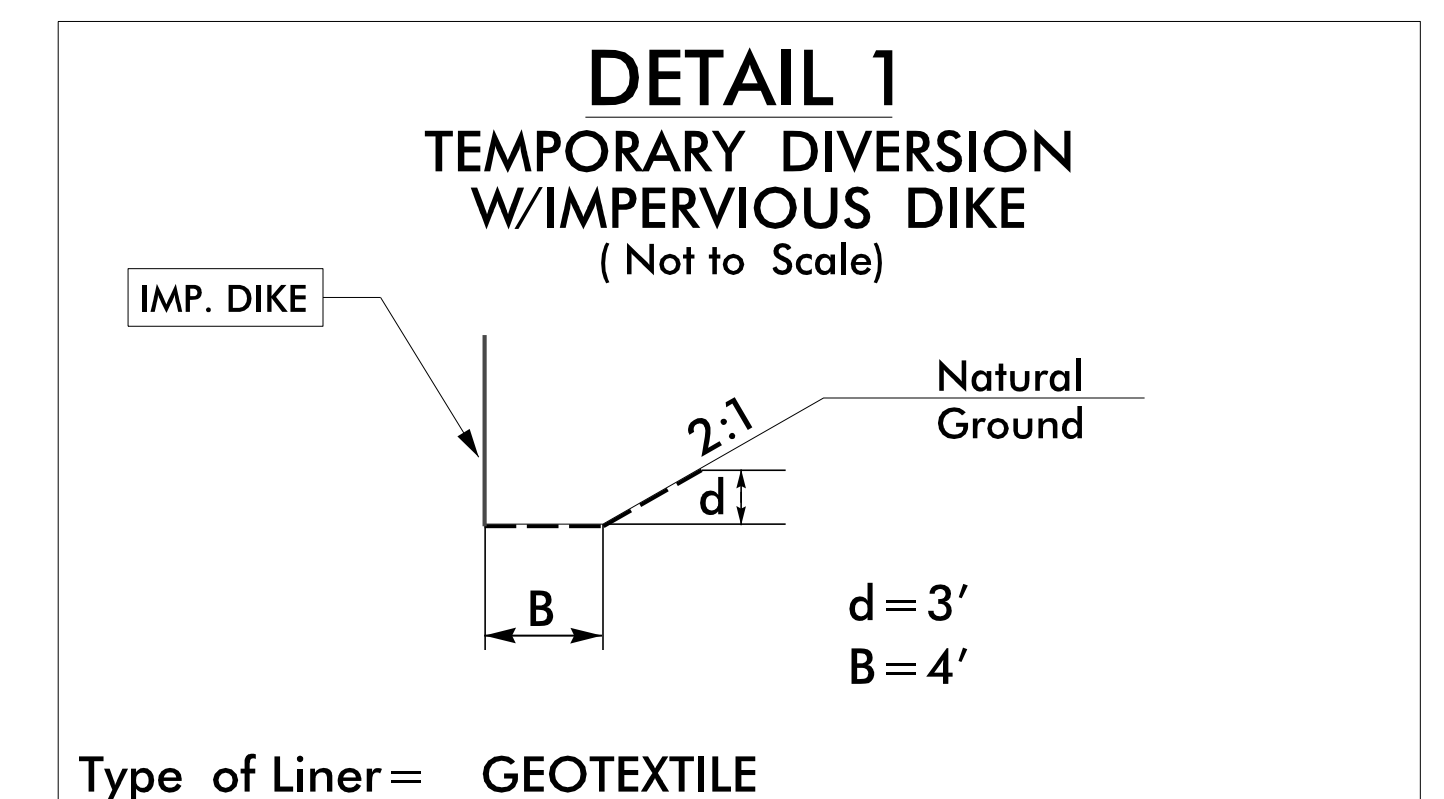
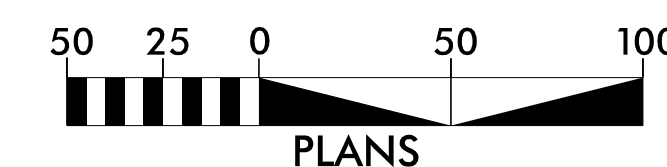
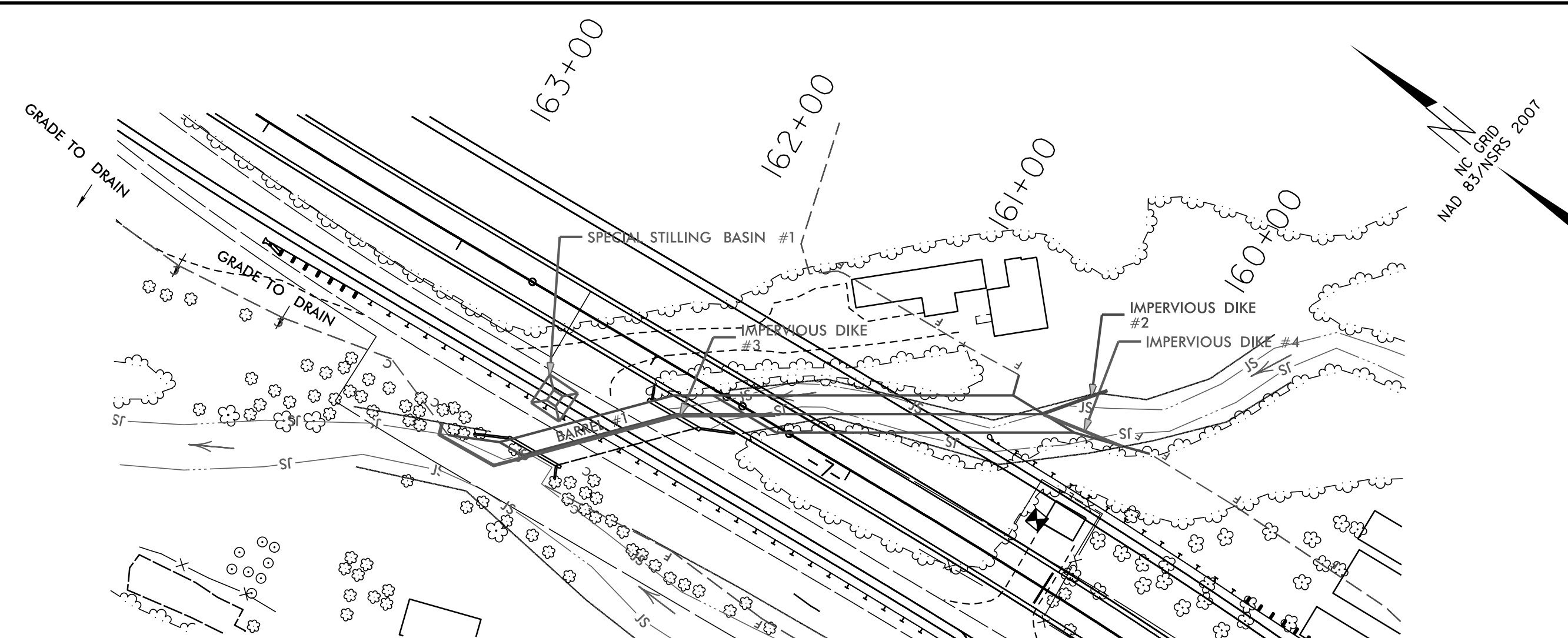
PHASE III

1. INSTALL SPECIAL STILLING BASIN #2
2. INSTALL IMPERVIOUS DIKE #5
3. DEWATER CONSTRUCTION AREA
4. CONSTRUCT BARREL #2 OF PROPOSED CULVERT
5. REMOVE IMPERVIOUS DIKE #4 AND #5 AND STILLING BASIN #2
6. CONSTRUCT FLOODPLAIN BENCHES, INSTALL SILLS AND BAFFLES, AND INSTALL STREAM BANK STABILIZATION
7. CONSTRUCT ROADWAY



PHASE II

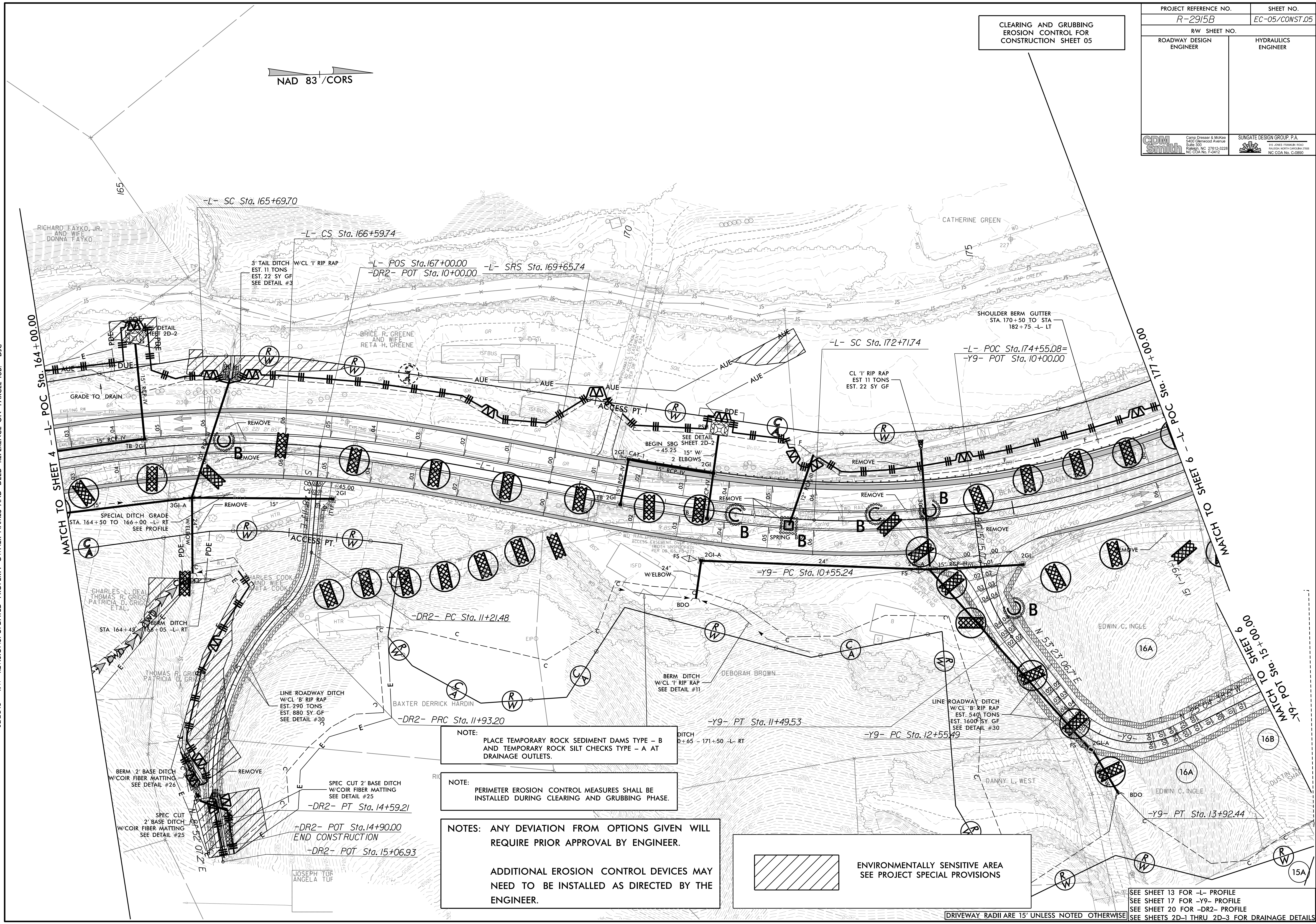
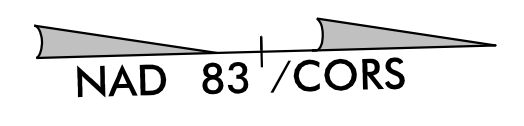
1. INSTALL SPECIAL STILLING BASIN #1
2. REMOVE EXISTING CULVERT
3. INSTALL IMPERVIOUS DIKE #3
4. DEWATER CONSTRUCTION AREA
5. CONSTRUCT BARREL #1 OF PROPOSED CULVERT
6. REMOVE IMPERVIOUS DIKES #2 AND #3
7. INSTALL IMPERVIOUS DIKE #4 TO ROUTE STREAM THROUGH BARREL #1
8. REMOVE SPECIAL STILLING BASIN #1



01/31/14 - RW REVISIONS: UPDATED PROPERTY OWNER NAME ON PARCEL 8; UPDATED PROPERTY OWNER NAMES AND DEED REFERENCES ON PARCELS 11 AND 16; SUBDIVIDED PARCEL 16
 06/03/14 - RW REVISIONS: UPDATED PROPERTY OWNER NAMES ON PARCELS 7 AND 8; SUBDIVIDED PARCEL 11 INTO PARCELS 11A AND 11B AND ADDED PROPERTY OWNER NAMES AND DEED REFERENCES; UPDATED PROPERTY OWNER NAMES AND DEED REFERENCES ON PARCELS 14 AND 15 - JBW
 09/08/14 - RW REVISIONS: REVISED TCE ON PARCEL 11; UPDATING THE PROPERTY LINES ON PARCELS 14, 15 AND 16C; CREATED PARCEL 15A - DIC
 09/09/14 - RW REVISIONS: REVISED TCE ON PARCEL 13; CREATED PARCEL 13Z - PJS
 09/05/15 - RW REVISIONS: UPDATED PROPERTY OWNER NAME ON PARCEL 7 - PJS
 05/20/15 - RW REVISIONS: UPDATED PROPERTY OWNER NAMES AND DEED REFERENCE ON PARCEL 16B - DIC

CLEARING AND GRUBBING
 EROSION CONTROL FOR
 CONSTRUCTION SHEET 05

PROJECT REFERENCE NO. R-2915B	SHEET NO. EC-05/CONST.05
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CDM Smith Camp Dresser & McKee 5425 Glenwood Avenue Suite 300 Raleigh, NC 27612-3229 NC CDA No. F-5412	SUNGATE DESIGN GROUP, P.A. P.O. BOX 17484 Raleigh, NC 27617 NC CDA No. G-9890



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

NOTE:
 PERIMETER EROSION CONTROL MEASURES SHALL BE
 INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL
 REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY
 NEED TO BE INSTALLED AS DIRECTED BY THE
 ENGINEER.

 ENVIRONMENTALLY SENSITIVE AREA
 SEE PROJECT SPECIAL PROVISIONS

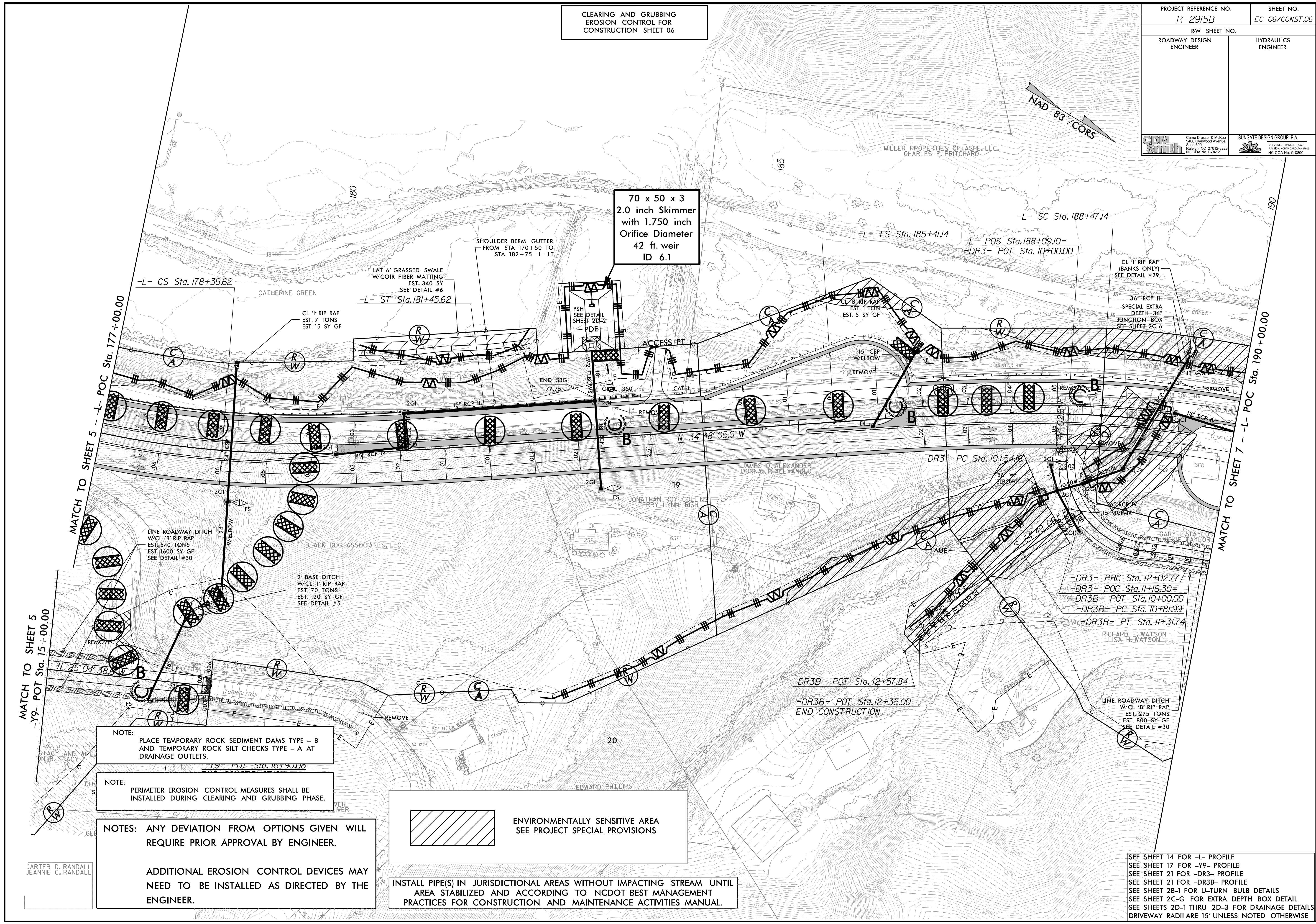
SEE SHEET 13 FOR -L- PROFILE
 SEE SHEET 17 FOR -Y9- PROFILE
 SEE SHEET 20 FOR -DR2- PROFILE
 SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS

DRIVEWAY RADII ARE 15' UNLESS NOTED OTHERWISE

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 06

PROJECT REFERENCE NO. R-2915B		SHEET NO. EC-06/CONST.06	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

01/31/14 - RW REVISIONS: UPDATED PROPERTY OWNER NAMES AND DEED REFERENCES ON PARCELS 16, 20 AND 21; SUBDIVIDED PARCEL 16 CREATING PARCELS 16, 16B AND 16C. - PJS
 09/08/14 - RW REVISIONS: UPDATING THE PROPERTY LINES ON PARCEL 16C; CREATED PARCELS 15A; UPDATED PROPERTY OWNER NAME AND DEED REFERENCE ON PARCEL 21. - DJC
 04/10/15 - RW REVISIONS: REVISED THE PROPOSED RW AND TCE ON PARCEL 23. - CJT
 05/20/15 - RW REVISIONS: UPDATED PROPERTY OWNER NAMES AND DEED REFERENCE ON PARCEL 16B. - DJC



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

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE
INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL
REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY
NEED TO BE INSTALLED AS DIRECTED BY THE
ENGINEER.

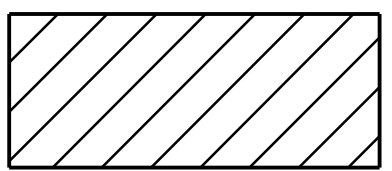
ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

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.

SEE SHEET 14 FOR -L- PROFILE
 SEE SHEET 17 FOR -Y9- PROFILE
 SEE SHEET 21 FOR -DR3- PROFILE
 SEE SHEET 21 FOR -DR3B- PROFILE
 SEE SHEET 2B-1 FOR U-TURN BULB DETAILS
 SEE SHEET 2C-G FOR EXTRA DEPTH BOX DETAIL
 SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
 DRIVEWAY RADII ARE 15' UNLESS NOTED OTHERWISE

ARTER D. RANDALL
JEANNIE C. RANDALL

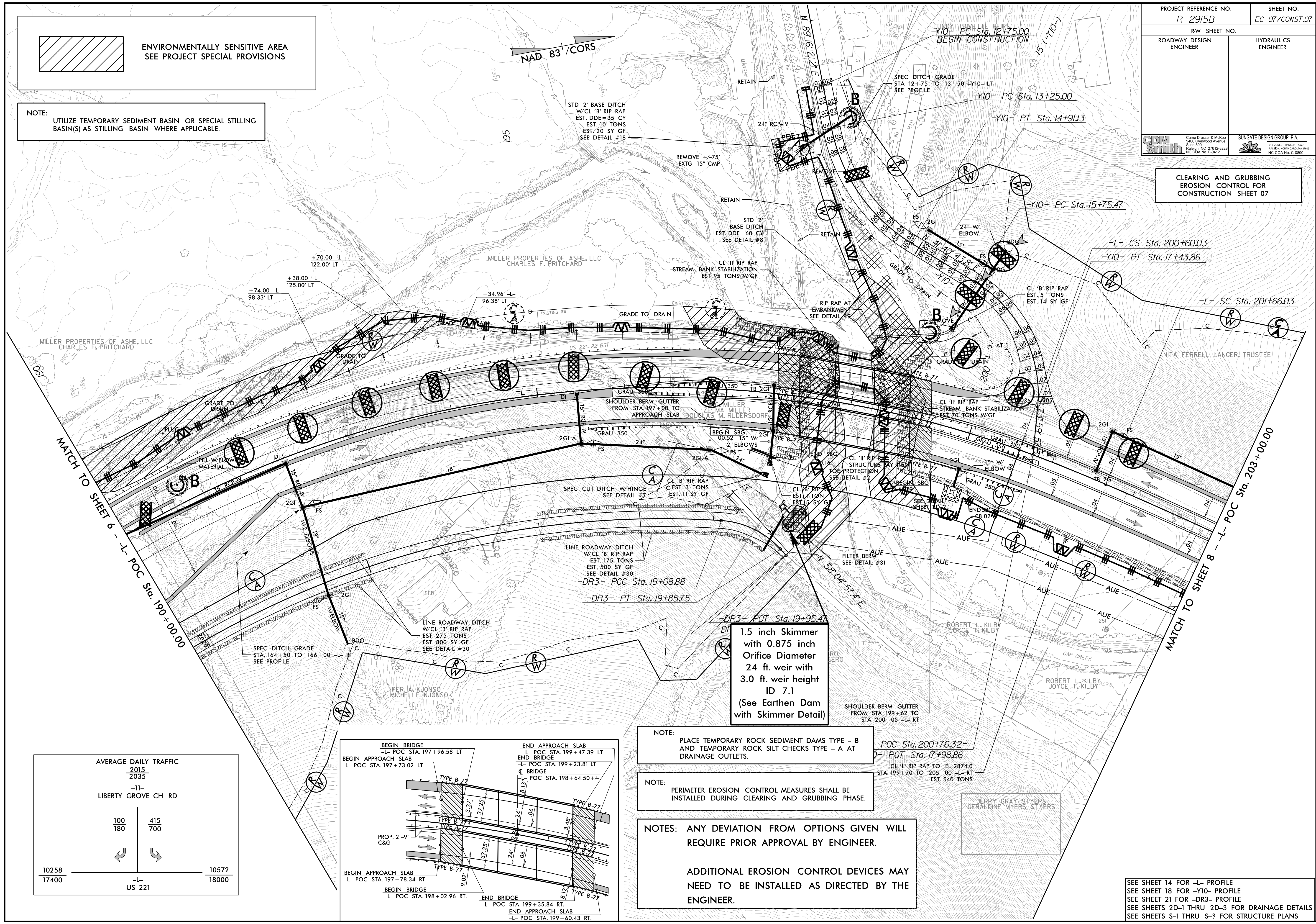
PROJECT REFERENCE NO. <i>R-2915B</i>		SHEET NO. <i>EC-07/CONST.07</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
CDM Smith		SUNGATE DESIGN GROUP, P.A.	

 ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

NOTE:
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 07

01/31/14 - RW REVISIONS: UPDATED PROPERTY OWNER NAMES AND DEED REFERENCES ON PARCELS 21 AND 29. - PJS
09/08/14 - RW REVISIONS: UPDATED PROPERTY OWNER NAME AND DEED REFERENCE ON PARCEL 21. - DJC
04/10/15 - RW REVISIONS: REVISED THE PROPOSED RW ON PARCELS 23 AND 25. - CJT
05/20/15 - RW REVISIONS: UPDATED PROPERTY LINES ON PARCEL 29 AND CREATED PARCEL 29A. - DJC



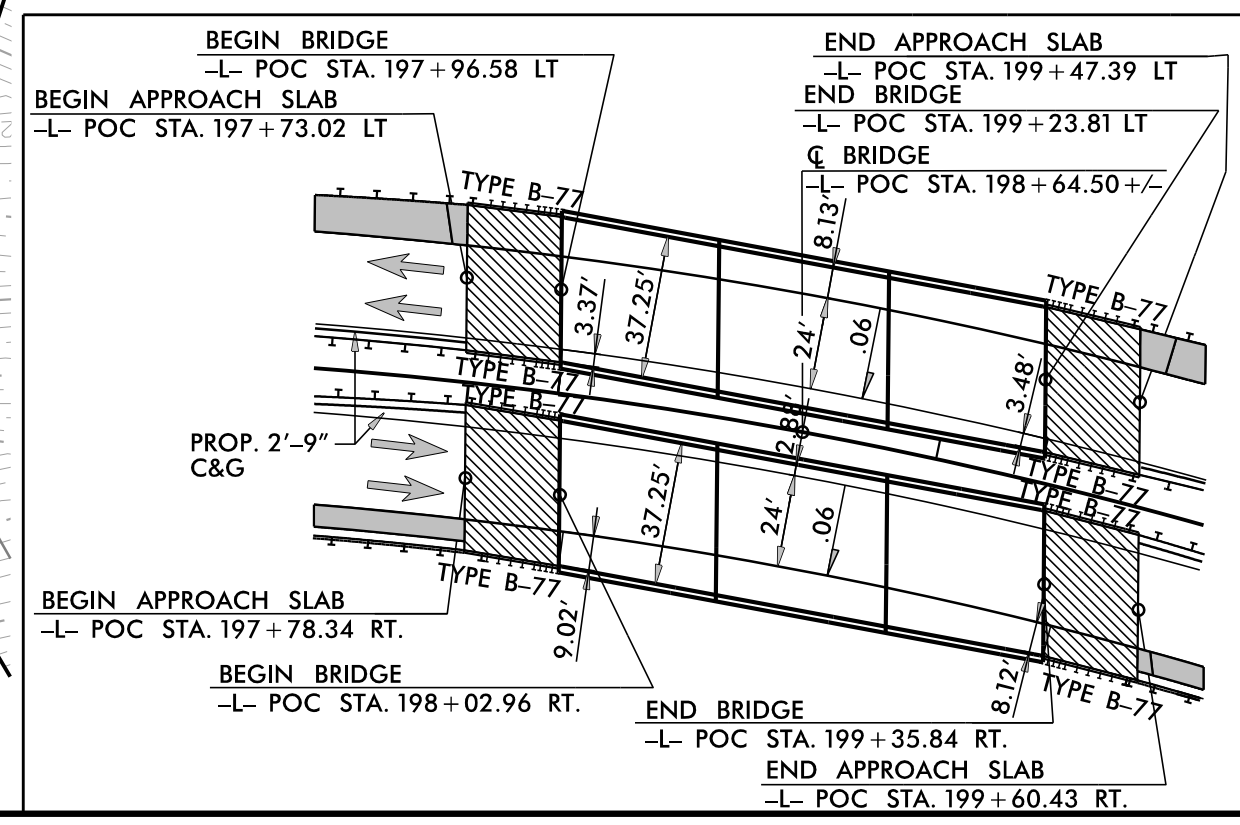
AVERAGE DAILY TRAFFIC

2015	2035
100	415
180	700

-11-
LIBERTY GROVE CH RD

10258 10572
17400 18000

←- US 221 →



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

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
24 ft. weir with
3.0 ft. weir height
ID 7.1
(See Earthen Dam
with Skimmer Detail)

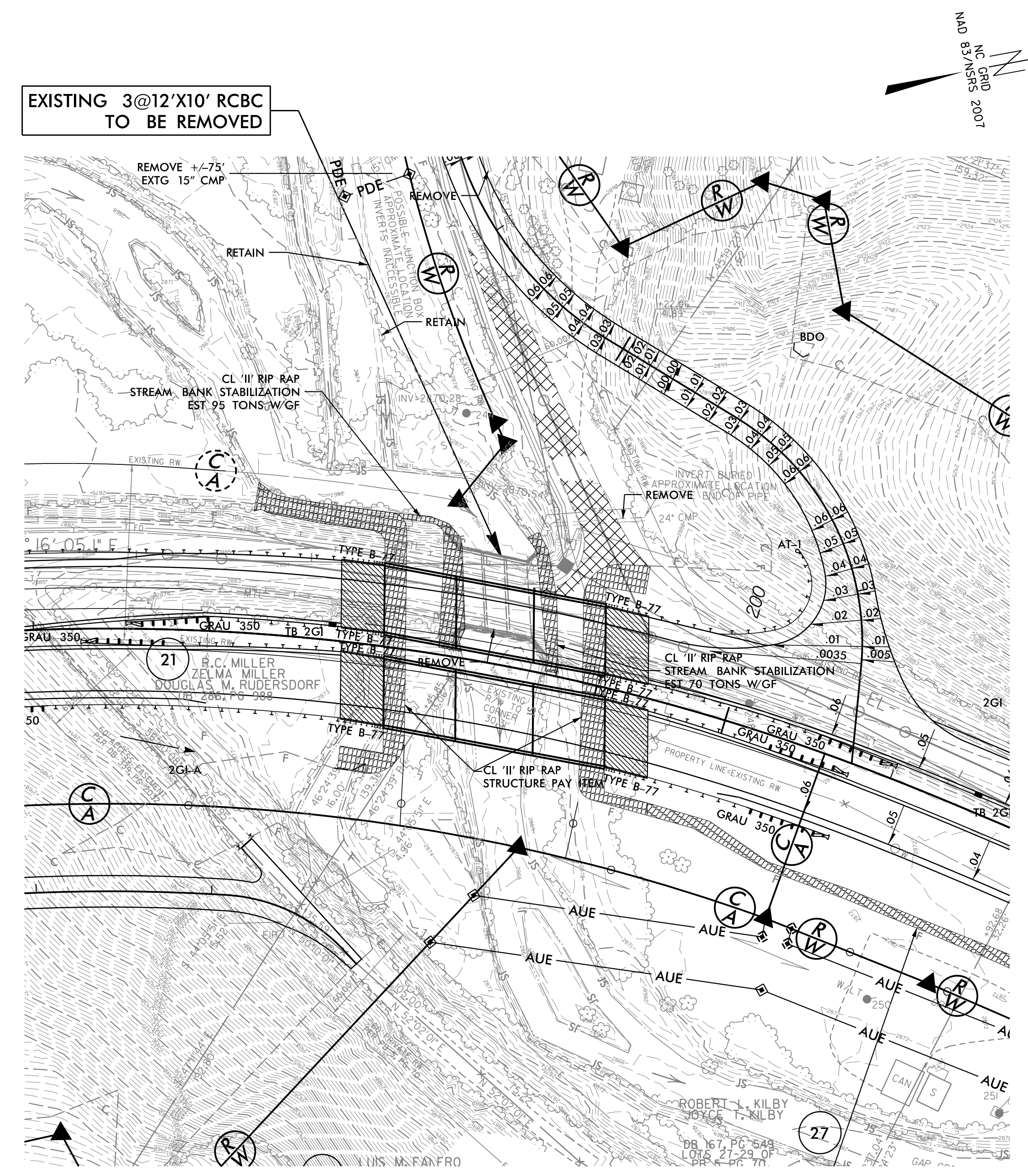
SEE SHEET 14 FOR -L- PROFILE
SEE SHEET 18 FOR -Y10- PROFILE
SEE SHEET 21 FOR -DR3- PROFILE
SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
SEE SHEETS S-1 THRU S-? FOR STRUCTURE PLANS

GAP CREEK CULVERT REMOVAL SEQUENCE STA. 198+65 -L-

PROJECT REFERENCE NO. <i>R-2915B</i>	SHEET NO. <i>EC-07A/CONST.07</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

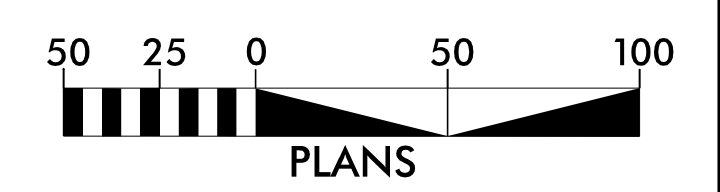
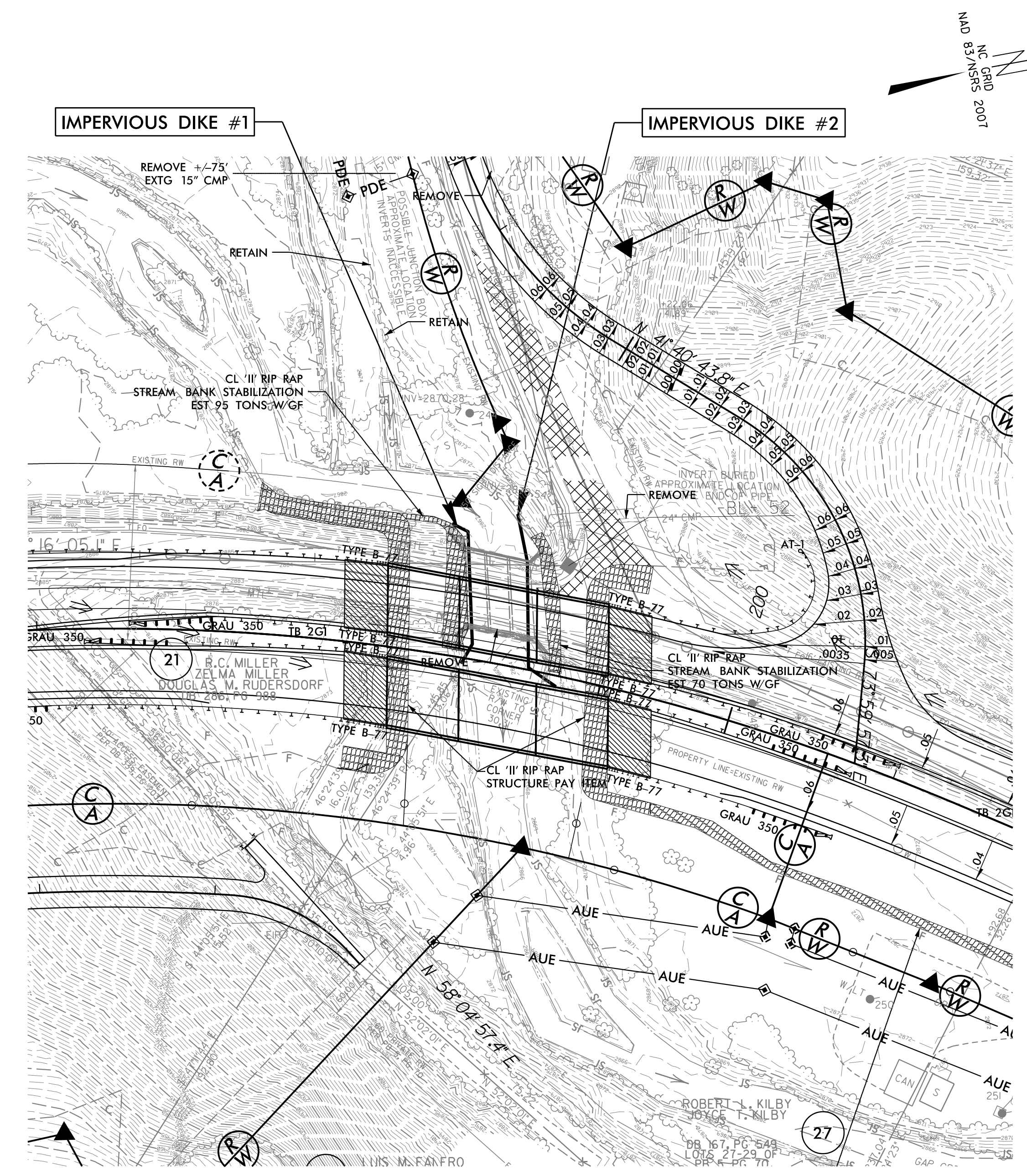
PHASE I

1. CONSTRUCT NORTH BOUND BRIDGE AND ROADWAY, UTILIZING TEMPORARY SHORING AS NEEDED.
2. SHIFT TRAFFIC TO NORTH BOUND BRIDGE.
3. REMOVE EXISTING 3@12'X10' RCBC.



PHASE II

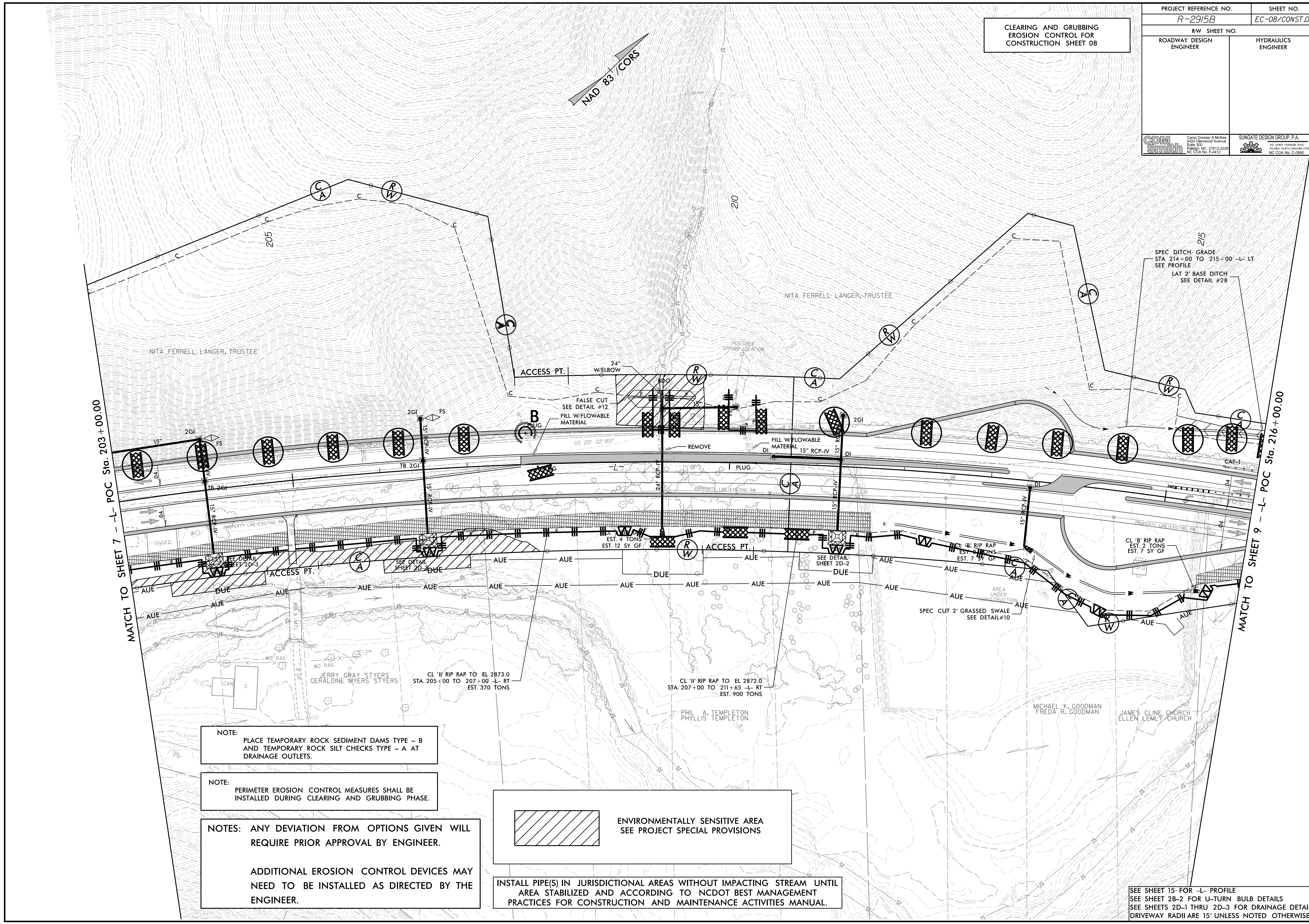
1. INSTALL IMPERVIOUS DIKE #1 AND #2.
2. CONSTRUCT INTERIOR BRIDGE BENTS OF SOUTH BOUND BRIDGE.
3. INSTALL CL 'II' RIP RAP BANK STABILIZATION.
4. CONSTRUCT SOUTH BOUND BRIDGE.



09/08/14 - RW REVISIONS: ADDED AN ACCESS POINT FROM -L- STA. 207+58.00 TO STA. 208+18.00 LT. ON PARCEL 30. - DJC

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 08

PROJECT REFERENCE NO. R-2915B	SHEET NO. EC-08/CONST.08
RW SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CDM Smith Camp Dresser & McKee 8421 Glenwood Avenue Suite 300 Raleigh, NC 27612-3229 NC COA No. F-5412	SUNGATE DESIGN GROUP, P.A. 115 JONES FARMWAY ROAD HILLSBORO, NORTH CAROLINA 27520 NC COA No. C-9890



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

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE
INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL
REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY
NEED TO BE INSTALLED AS DIRECTED BY THE
ENGINEER.

 ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

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.

SEE SHEET 15 FOR -L- PROFILE
SEE SHEET 2B-2 FOR U-TURN BULB DETAILS
SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
DRIVEWAY RADII ARE 15' UNLESS NOTED OTHERWISE

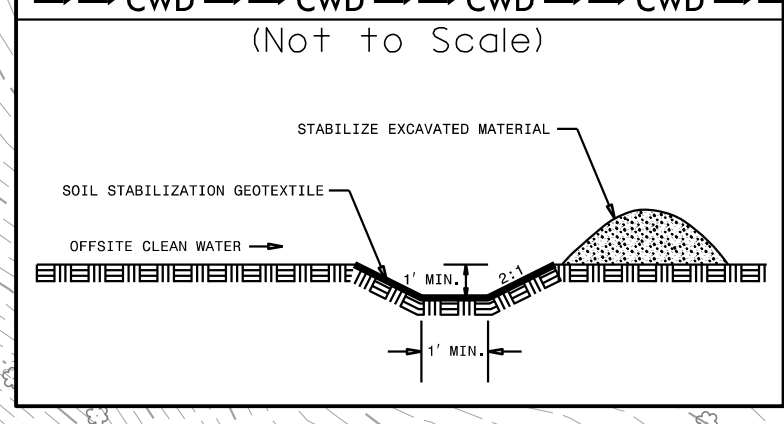
PROJECT REFERENCE NO. <i>R-2915B</i>	SHEET NO. <i>EC-09/CONST.09</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CDM Smith Camp Dresser & McKee 8425 Glenwood Avenue Suite 300 Raleigh, NC 27612-3229 NC CDA No. F-5412	SUNGATE DESIGN GROUP, P.A. 110 JONES FARM RD HUNTER HOOK, CAROLINA 27614 NC CDA No. C-9890

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.



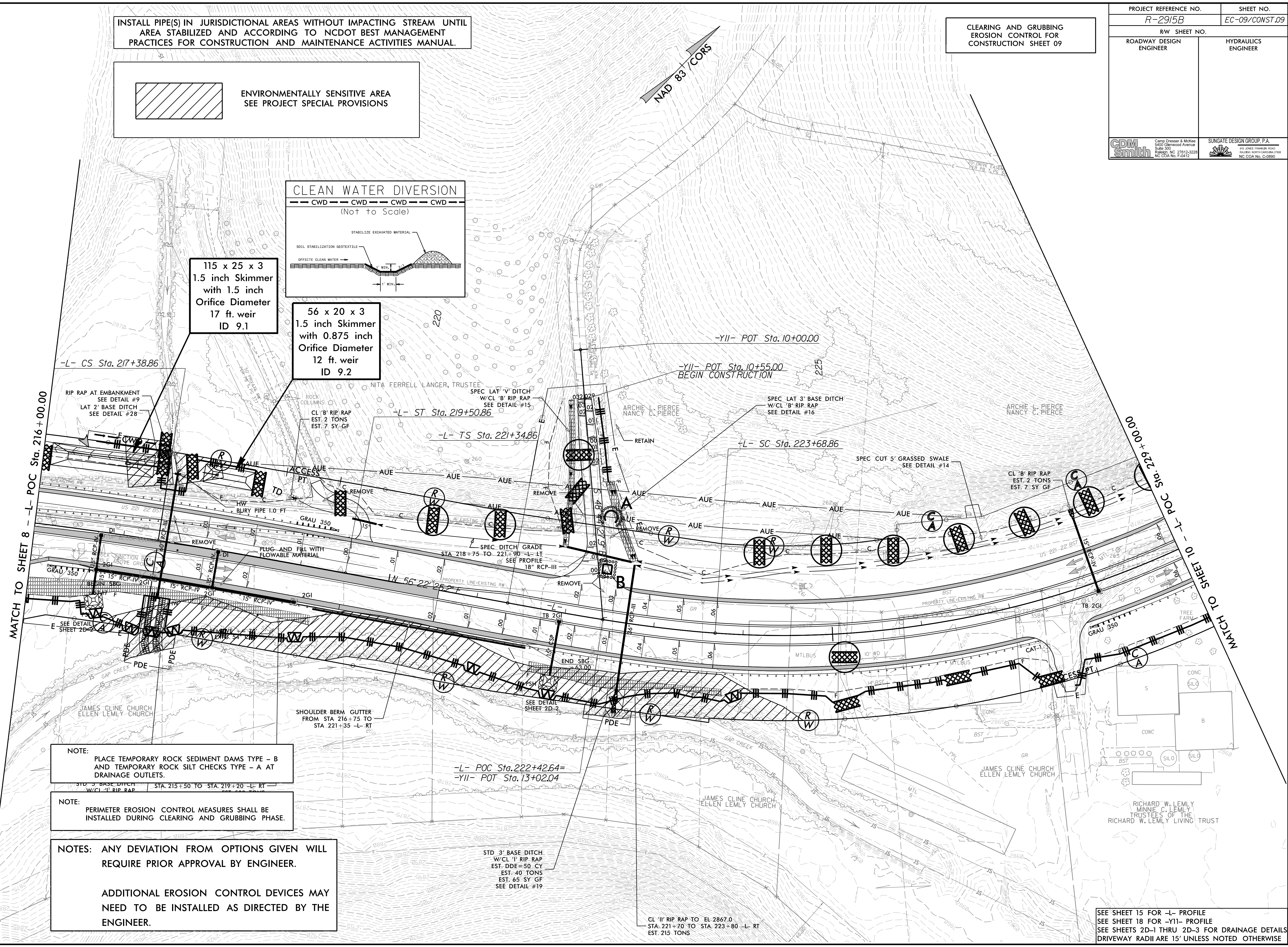
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 09

CLEAN WATER DIVERSION



115 x 25 x 3
1.5 inch Skimmer
with 1.5 inch
Orifice Diameter
17 ft. weir
ID 9.1

56 x 20 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
12 ft. weir
ID 9.2



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

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE
INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL
REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY
NEED TO BE INSTALLED AS DIRECTED BY THE
ENGINEER.

060314 - RW REVISIONS: ADDED PDE FROM -L- STATION 222+38.00 TO 222+88.00 RIGHT ON PARCEL 36. - JBW
090814 - RW REVISIONS: REVISED DRIVEWAY OPENING FROM 11' +/- TO 30' +/- ON PARCEL 38. - DJC

SEE SHEET 15 FOR -L- PROFILE
SEE SHEET 18 FOR -YII- PROFILE
SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
DRIVEWAY RADII ARE 15' UNLESS NOTED OTHERWISE

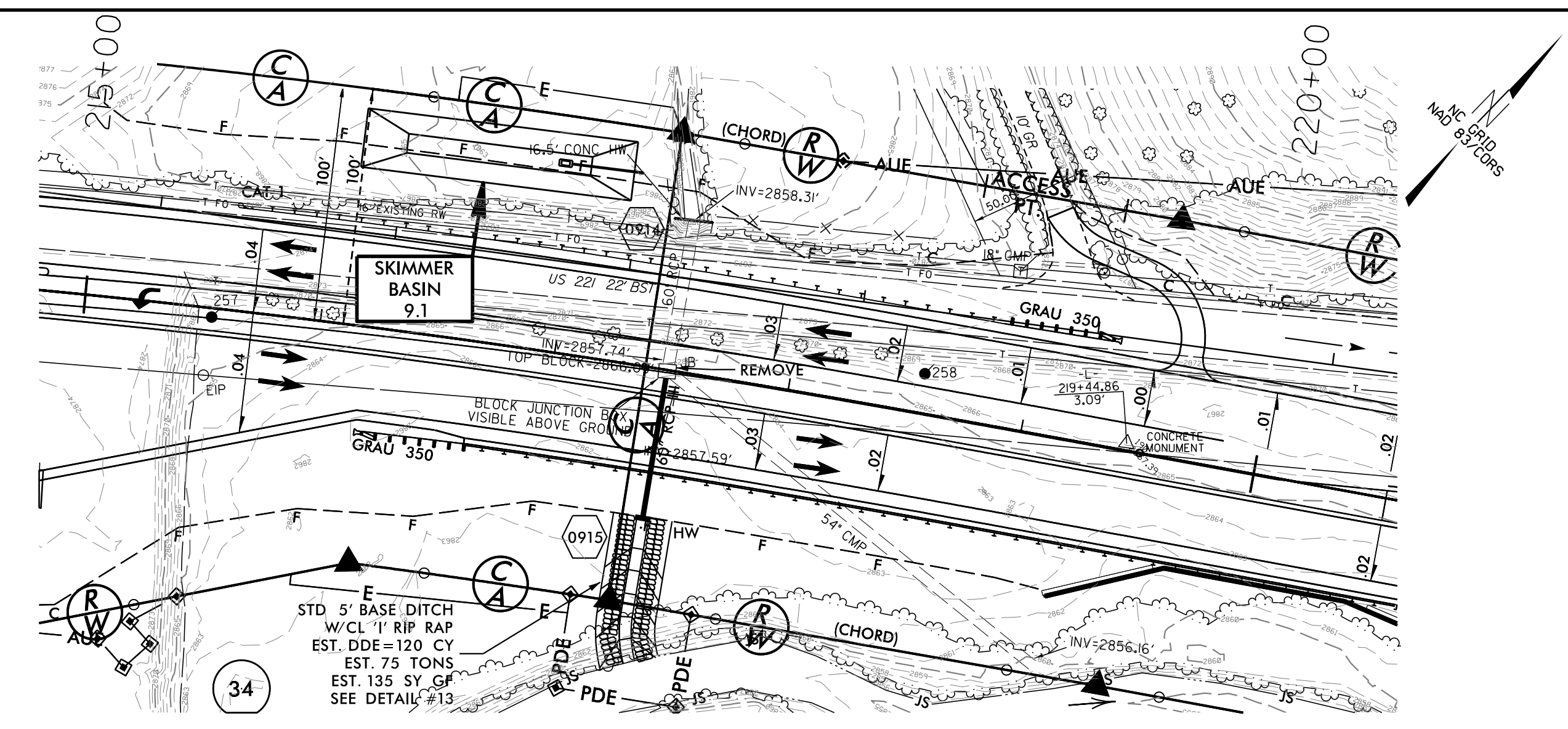
UNNAMED TRIBUTARY TO GAP CREEK

60" RCP CONSTRUCTION SEQUENCE STA. 217+48 -L-

PROJECT REFERENCE NO.	SHEET NO.
R-2915B	EC-09A/CONST.09
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

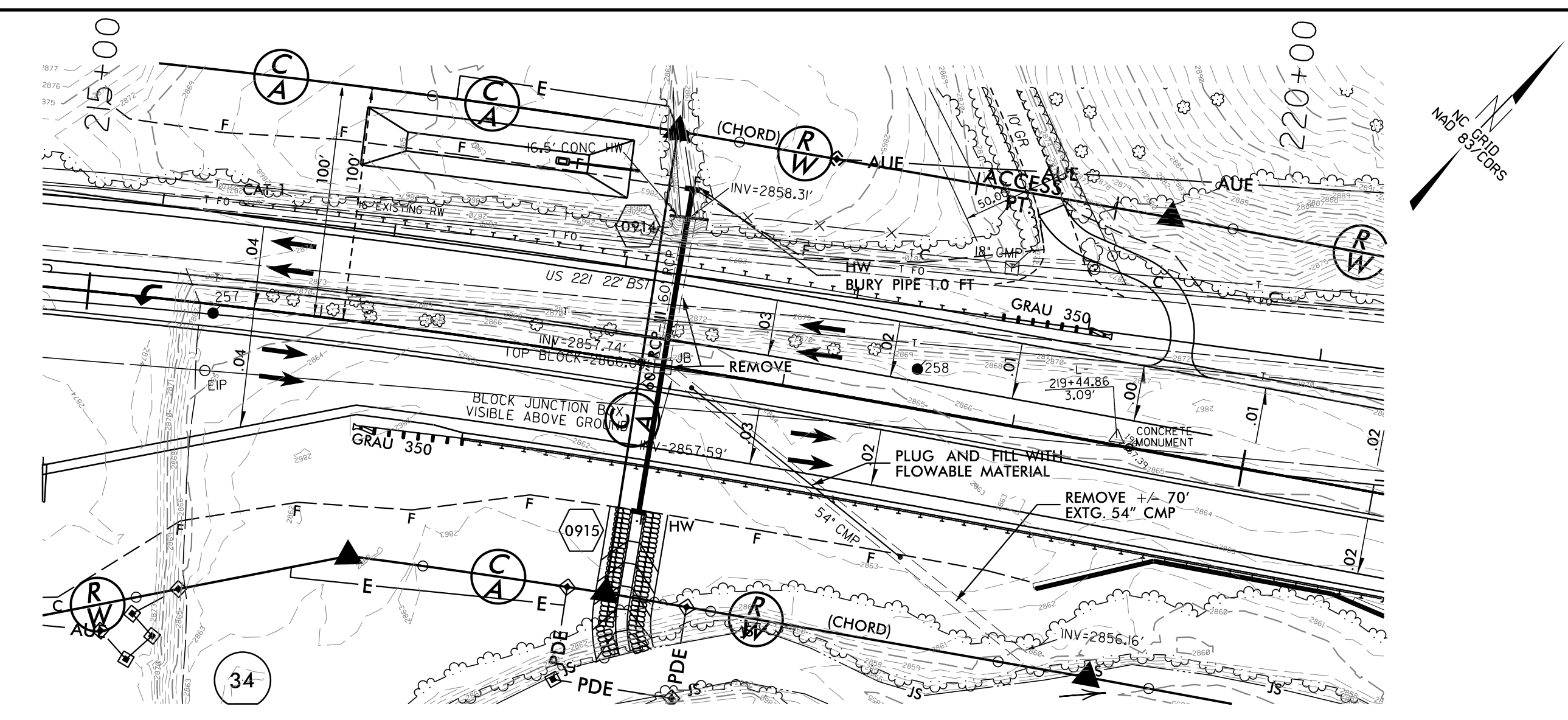
PHASE I

1. INSTALL SKIMMER BASIN 9.1 AND UTILIZE FOR DEWATERING AS NEEDED.
2. CONSTRUCT OUTLET CHANNEL AND +/- 60' OF PROPOSED 60" RCP FROM HW 0915 AT OUTLET CHANNEL TO THE EXISTING JB.
3. REMOVE EXISTING JB AND DIVERT FLOW FROM EXISTING 54" CMP TO INSTALLED SECTION OF PROPOSED 60" RCP.
4. CONSTRUCT NORTH BOUND LANES, USING TEMPORARY SHORING AS NECESSARY, AND SHIFT TRAFFIC.



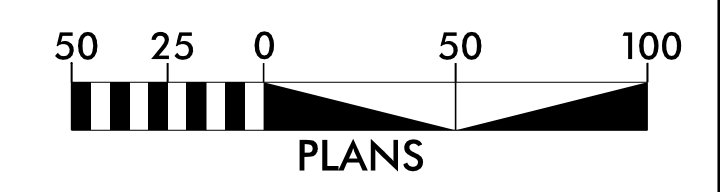
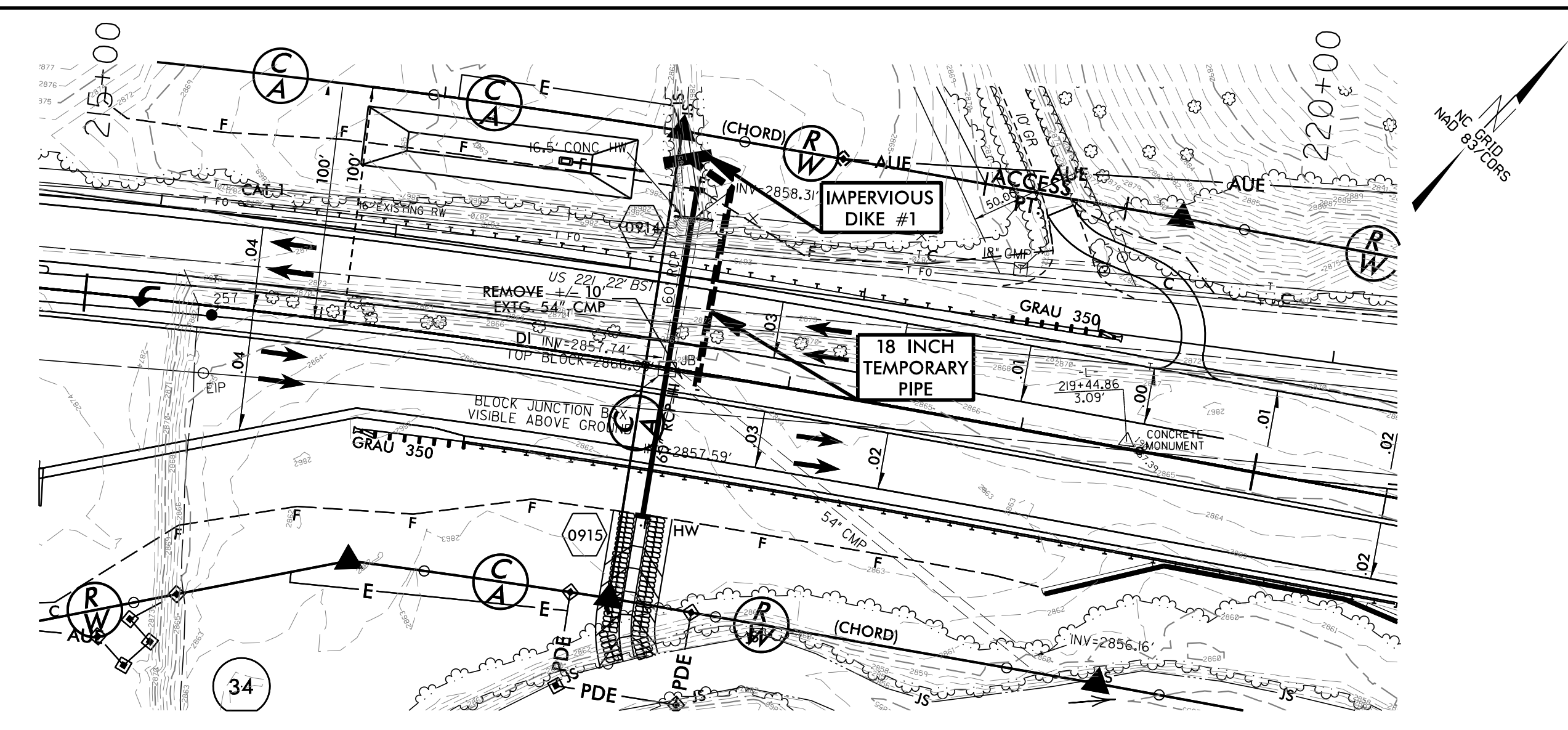
PHASE III

1. REMOVE IMPERVIOUS DIKE #1 AND TEMPORARY 18" PIPE, ALLOWING FLOW THROUGH PROPOSED 60" RCP.
2. REMOVE +/- 70' OF EXISTING 54" CMP, OUTSIDE OF PROPOSED FILL SLOPE.
3. PLUG AND FILL REMAINING +/- 115' OF EXISTING 54" CMP WITH FLOWABLE MATERIAL.



PHASE II

1. REMOVE +/- 10' OF EXISTING 54" CMP.
2. INSTALL TEMPORARY 18" PIPE FROM EXISTING 54" CMP TO UPSTREAM CHANNEL.
3. INSTALL IMPERVIOUS DIKE #1 AND DIVERT FLOW TO TEMPORARY 18" PIPE.
4. REMOVE EXISTING 60" RCP AND INSTALL REMAINING +/- 80' OF PROPOSED 60" RCP AND HEADWALL.



010515 - RW REVISIONS: UPDATED PROPERTY OWNER NAME ON PARCEL 39. - PJS

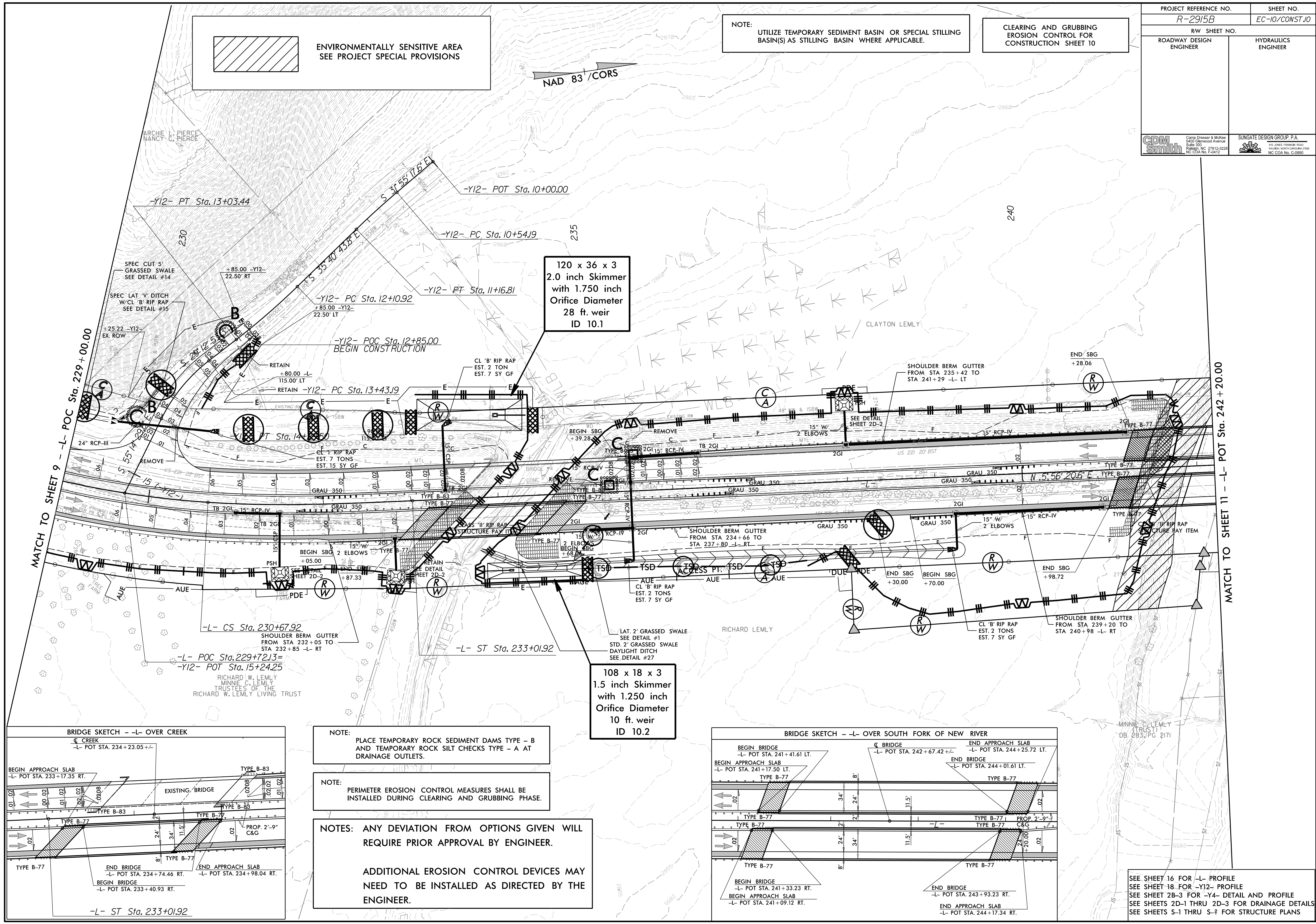
PROJECT REFERENCE NO. <i>R-2915B</i>	SHEET NO. <i>EC-10/CONST.10</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CDM Smith Camp Dresser & McKee 8421 Glenwood Avenue Suite 500 Raleigh, NC 27612-3229 NC CDA No. F-5412	SUNGATE DESIGN GROUP, P.A. 110 JONES FARMER ROAD HUNTER HOOKS, CAROLINA 27614 NC CDA No. G-9890

 ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

NOTE:
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

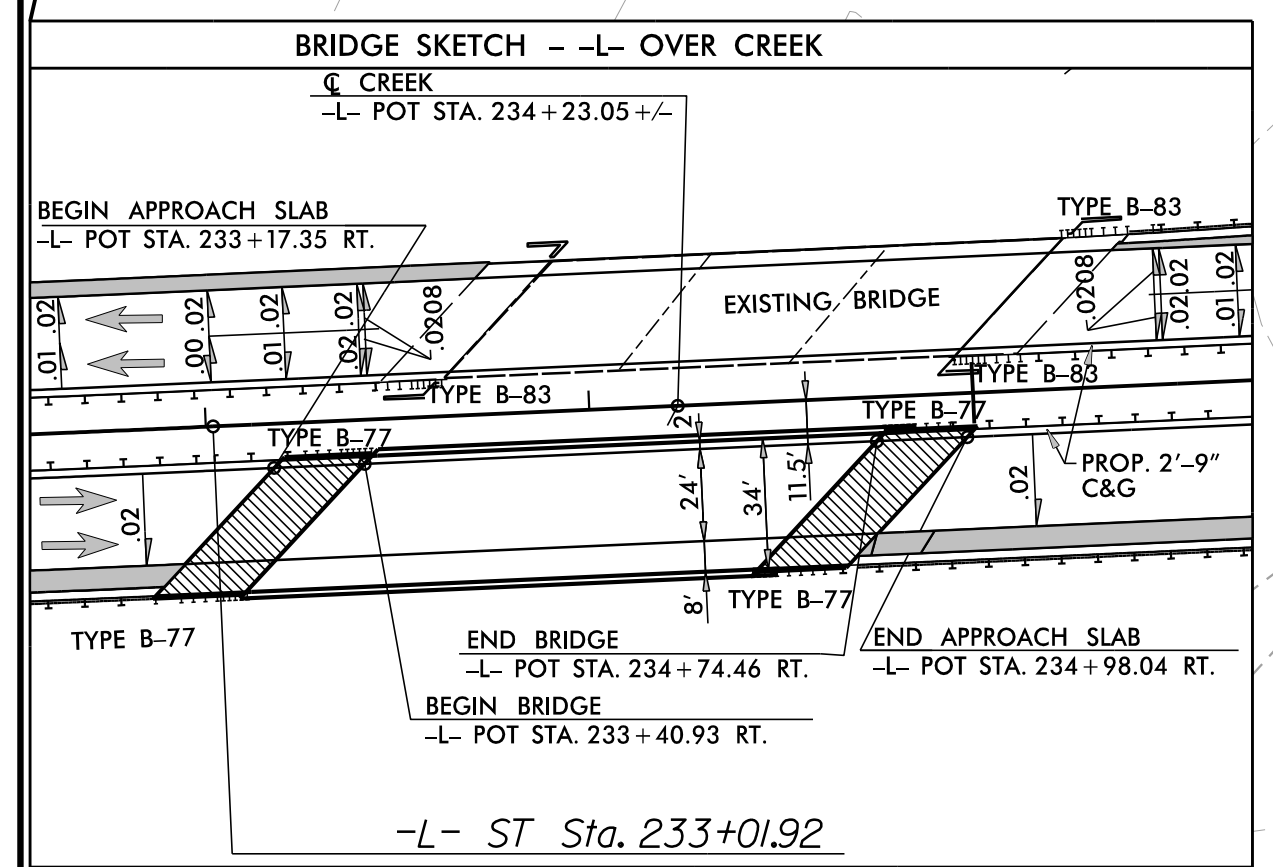
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 10

NAD 83 / CORS



MATCH TO SHEET 9 - L- POC Sta. 229+00.00

MATCH TO SHEET 11 - L- POT Sta. 242+20.00

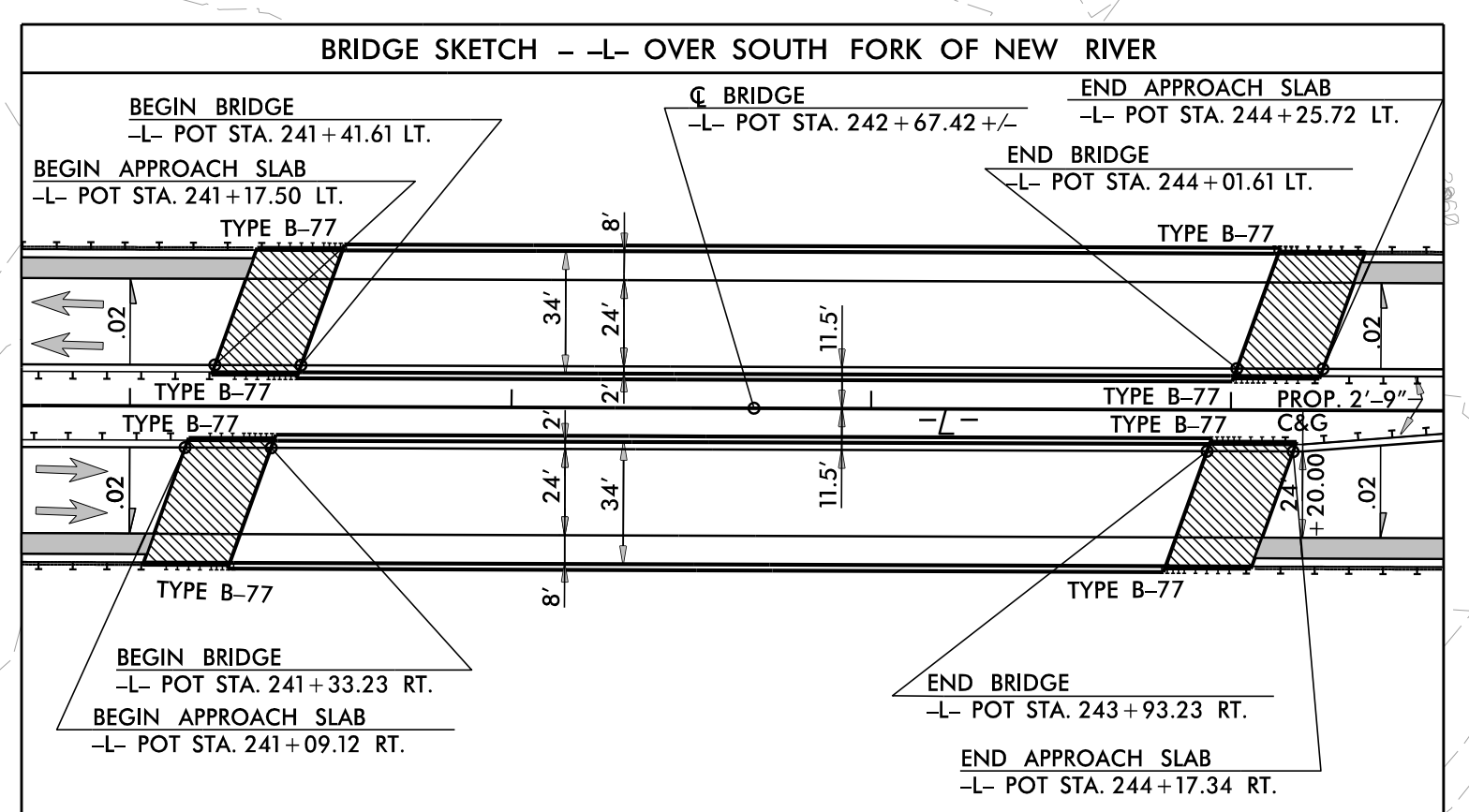


NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.



SEE SHEET 16 FOR -L- PROFILE
SEE SHEET 18 FOR -Y12- PROFILE
SEE SHEET 2B-3 FOR -Y4- DETAIL AND PROFILE
SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
SEE SHEETS S-1 THRU S-2 FOR STRUCTURE PLANS

NOTE: UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 11

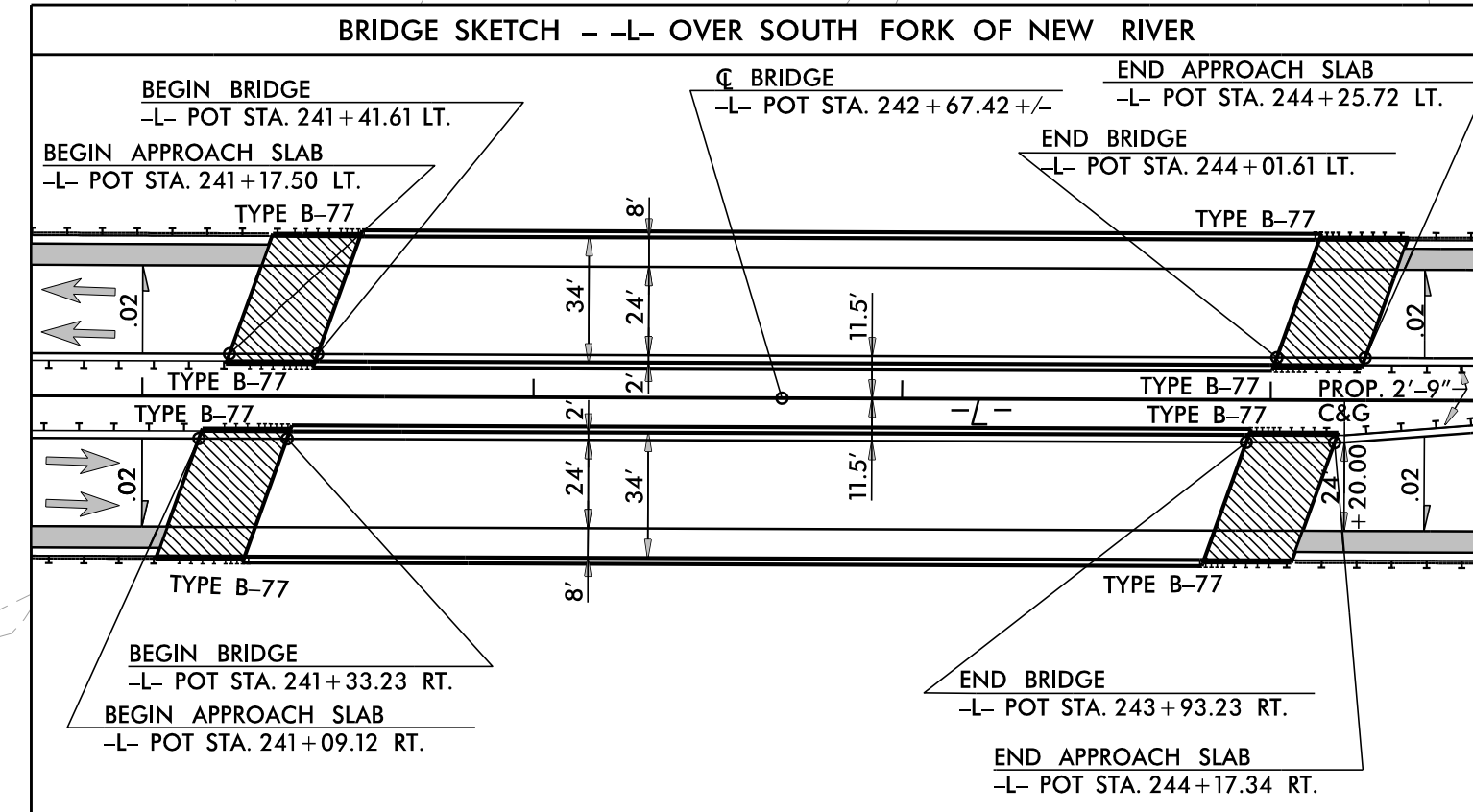
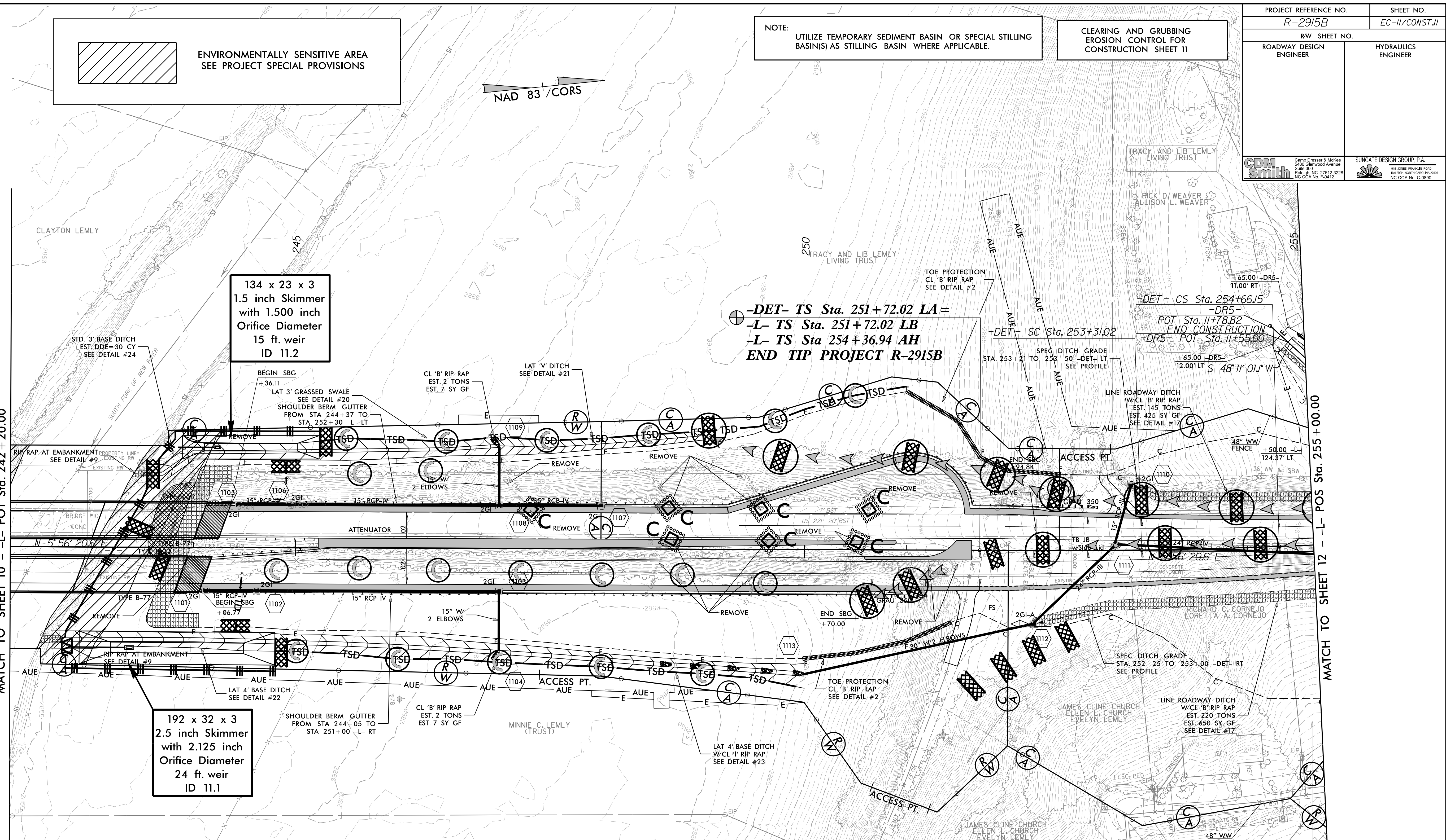
ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

NAD 83 / CORS

01/31/14 - RW REVISIONS: UPDATED PROPERTY OWNER NAME ON PARCEL 41. - PJS
 03/25/14 - RW REVISIONS: REVISED PROPOSED RW ON PARCELS 41, 43, 44, 45, 46, 53 AND 55; ADDED AUE ON PARCELS 42 AND 44; REVISED CA LIMITS TO PROVIDE DRIVEWAY ACCESS ON PARCEL 43; ADDED PARCEL NUMBER 55. - DJC
 01/05/15 - RW REVISIONS: UPDATED PROPERTY OWNER NAME ON PARCEL 39 AND 46. - PJS
 04/10/15 - RW REVISIONS: ADDED A TCE ON PARCEL 44. - CIT
 05/20/15 - RW REVISIONS: UPDATED PROPERTY OWNER NAMES AND DEED REFERENCES ON PARCEL 42 AND 47; REVISED THE FULL CA LIMITS FROM -L- STA. 257+50.00 TO STA. 255+15.00 LT.; AND ADDED AND ACCESS POINT FROM -L- STA. 255+15.00 TO STA. 255+65.00 LT. ON PARCELS 42. - DJC

MATCH TO SHEET 10 -L- POT Sta. 242+20.00

MATCH TO SHEET 12 -L- POS Sta. 255+00.00



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

NOTE: PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

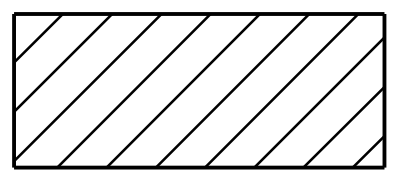
ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

SEE SHEET 21 FOR -DR5- PROFILE

DRIVEWAY RADII ARE 15' UNLESS NOTED OTHERWISE

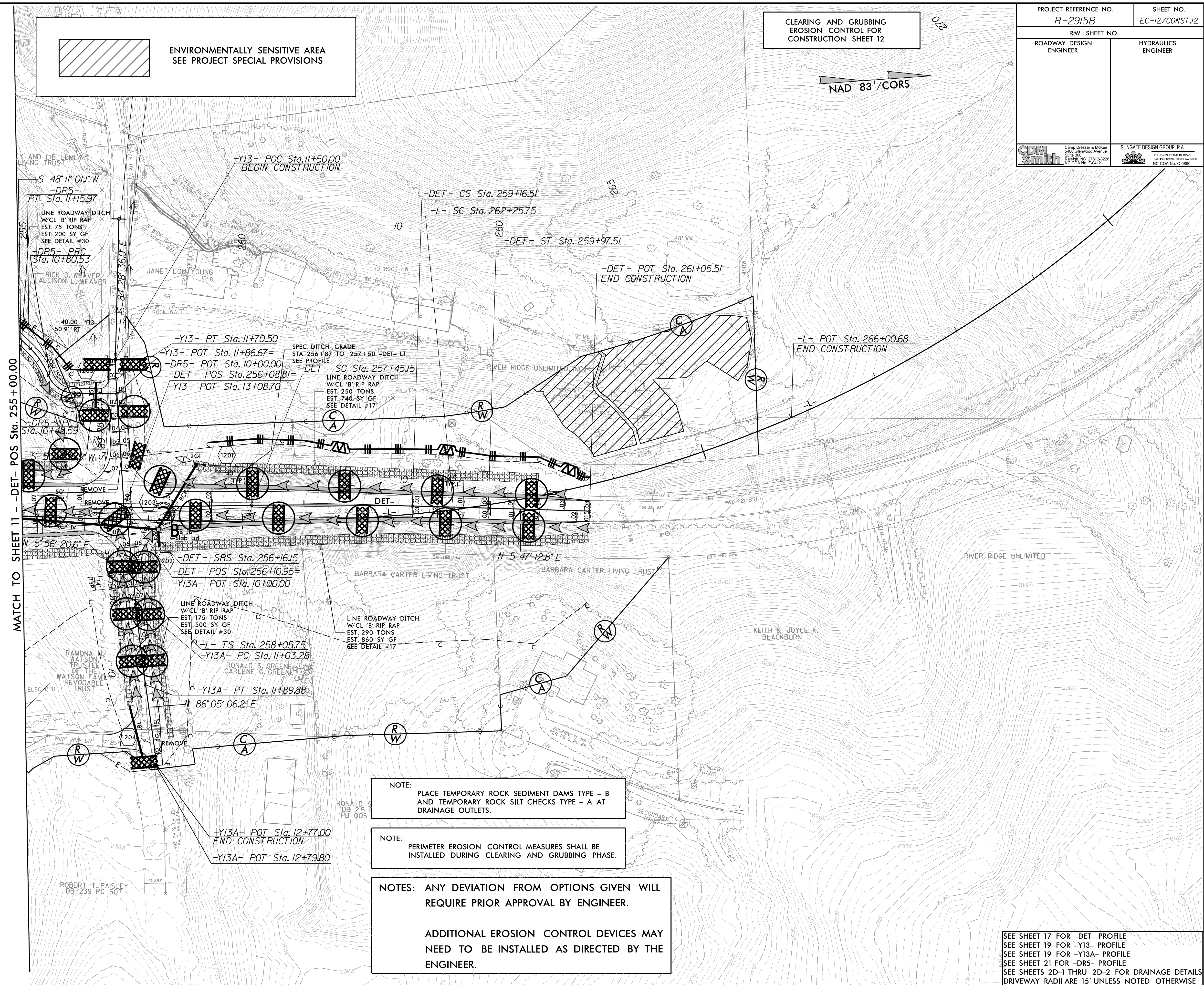
SEE SHEET 16 FOR -L- PROFILE
 SEE SHEET 16 FOR -DET- PROFILE
 SEE SHEET 2B-2 FOR U-TURN BULB DETAILS
 SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
 SEE SHEETS S-1 THRU S-? FOR STRUCTURE PLANS

PROJECT REFERENCE NO. <i>R-2915B</i>	SHEET NO. <i>EC-12/CONST12</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CDM Smith Camp Dresser & McKee 8425 Glenwood Avenue Suite 300 Raleigh, NC 27612-3229 NC COA No. F-5412	SUNGATE DESIGN GROUP, P.A. 110 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27612 NC COA No. C-9890

 ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 12

NAD 83 / CORS



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

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE
INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL
REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY
NEED TO BE INSTALLED AS DIRECTED BY THE
ENGINEER.

SEE SHEET 17 FOR -DET- PROFILE
SEE SHEET 19 FOR -Y13- PROFILE
SEE SHEET 19 FOR -Y13A- PROFILE
SEE SHEET 21 FOR -DR5- PROFILE
SEE SHEETS 2D-1 THRU 2D-2 FOR DRAINAGE DETAILS
DRIVEWAY RADII ARE 15' UNLESS NOTED OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
R-2915B	EC-13/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INSTALL MATTING FOR
EROSION CONTROL IN THE
PROPOSED DITCH LINE
AND CUT SLOPE

NAD 83 /CORS

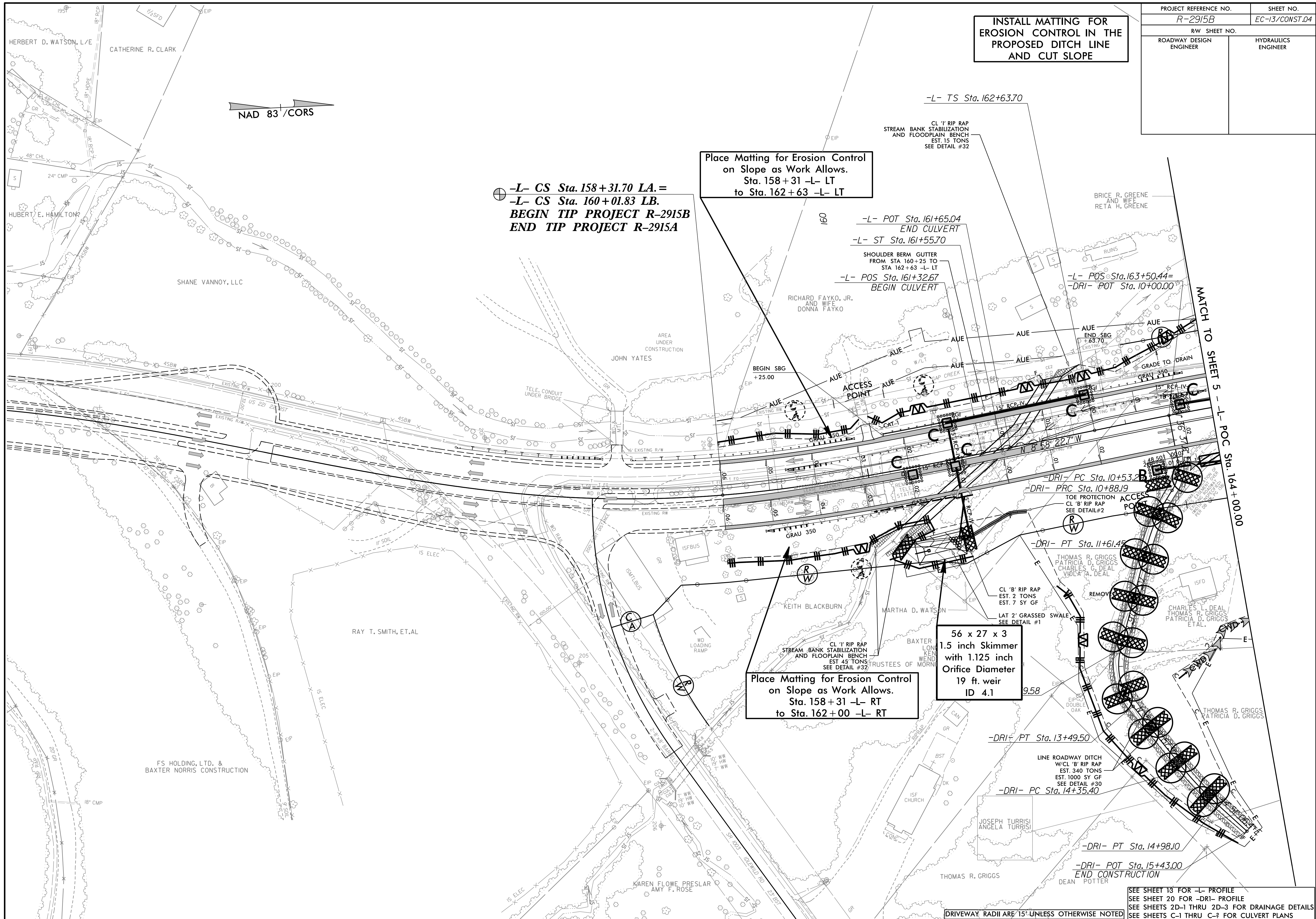
-L- CS Sta. 158+31.70 LA.=
-L- CS Sta. 160+01.83 LB.
BEGIN TIP PROJECT R-2915B
END TIP PROJECT R-2915A

Place Matting for Erosion Control
on Slope as Work Allows.
Sta. 158+31 -L- LT
to Sta. 162+63 -L- LT

Place Matting for Erosion Control
on Slope as Work Allows.
Sta. 158+31 -L- RT
to Sta. 162+00 -L- RT

56 x 27 x 3
1.5 inch Skimmer
with 1.125 inch
Orifice Diameter
19 ft. weir
ID 4.1

01/31/14 - RW REVISIONS: UPDATED PROPERTY OWNER NAME AND DEED REFERENCE ON PARCEL 1. - PIS
06/03/14 - RW REVISIONS: ADDED PROPOSED RW & C/A FROM R-2915A FROM -Y9A-12-09-08 TO -L-160-01.83 RIGHT ON PARCEL 3; REMOVED GREEN HOUSE AND PROVIDED ACCESS ON PARCEL 3; UPDATED PROPERTY OWNER NAMES ON PARCELS 5, 7 AND 8; SUBDIVIDED PARCEL 11 INTO 11, 11A, AND 11B AND ADDED PROPERTY OWNER NAMES AND DEED REFERENCES. - JBV
01/05/15 - RW REVISIONS: UPDATED PROPERTY OWNER NAME ON PARCEL 7. - PIS



SEE SHEET 13 FOR -L- PROFILE
SEE SHEET 20 FOR -DRI- PROFILE
SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
SEE SHEETS C-1 THRU C-2 FOR CULVERT PLANS

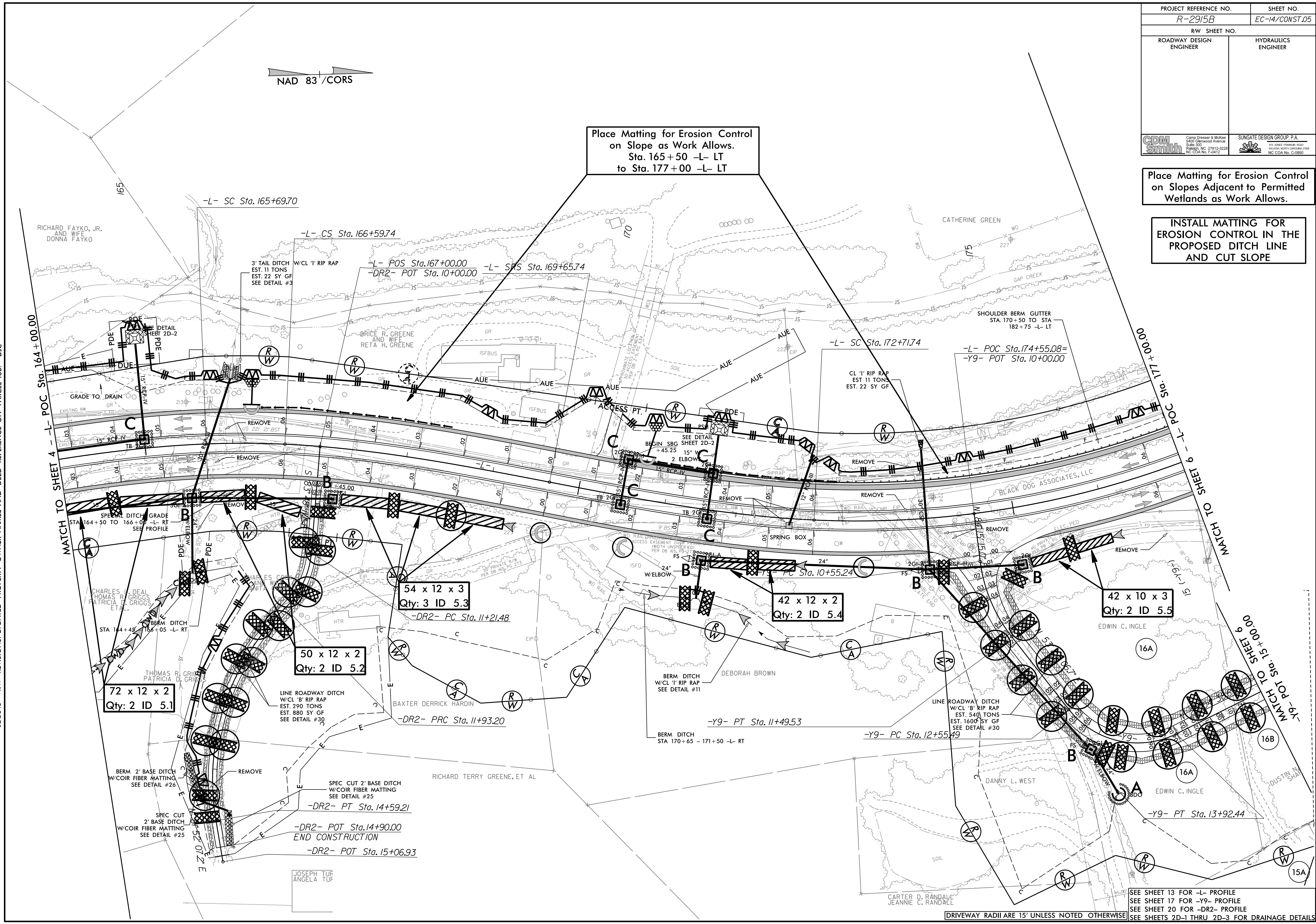
DRIVEWAY RADII ARE 15' UNLESS OTHERWISE NOTED

01/31/14 - RW REVISIONS: UPDATED PROPERTY OWNER NAME ON PARCEL 8; UPDATED PROPERTY OWNER NAMES AND DEED REFERENCES ON PARCELS 11 AND 16; SUBDIVIDED PARCEL 16
 06/03/14 - RW REVISIONS: UPDATED PROPERTY OWNER NAMES ON PARCELS 7 AND 8; SUBDIVIDED PARCEL 11 INTO PARCELS 11A AND 11B AND ADDED PROPERTY OWNER NAMES AND DEED REFERENCES; UPDATED PROPERTY OWNER NAMES AND DEED REFERENCES ON PARCELS 14 AND 15 - JBW
 09/08/14 - RW REVISIONS: REVISED TCE ON PARCEL 11; UPDATING THE PROPERTY LINES ON PARCELS 14, 15 AND 16C; CREATED PARCEL 15A - DIC
 09/09/14 - RW REVISIONS: REVISED TCE ON PARCEL 13; CREATED PARCEL 13Z - PJS
 01/03/15 - RW REVISIONS: UPDATED PROPERTY OWNER NAME ON PARCEL 7 - PJS
 02/20/15 - RW REVISIONS: UPDATED PROPERTY OWNER NAMES AND DEED REFERENCE ON PARCEL 16B - DIC

PROJECT REFERENCE NO. <i>R-2915B</i>	SHEET NO. <i>EC-14/CONST.05</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CDM Smith Camp Dresser & McKee 5425 Glenwood Avenue Suite 300 Raleigh, NC 27612-3229 NC CDA No. F-5412	SUNGATE DESIGN GROUP, P.A. 110 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27612 NC CDA No. C-9890

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

INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE AND CUT SLOPE



SEE SHEET 13 FOR -L- PROFILE
 SEE SHEET 17 FOR -Y9- PROFILE
 SEE SHEET 20 FOR -DR2- PROFILE
 SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS

DRIVEWAY RADII ARE 15' UNLESS NOTED OTHERWISE

01/31/14 - RW REVISIONS: UPDATED PROPERTY OWNER NAMES AND DEED REFERENCES ON PARCELS 16, 20 AND 21; SUBDIVIDED PARCEL 16 CREATING PARCELS 16, 16B AND 16C. - PJS
 09/08/14 - RW REVISIONS: UPDATING THE PROPERTY LINES ON PARCEL 16C; CREATED PARCELS 15A; UPDATED PROPERTY OWNER NAME AND DEED REFERENCE ON PARCEL 21. - DJC
 04/10/15 - RW REVISIONS: REVISED THE PROPOSED RW AND TCE ON PARCEL 23. - CJT
 05/20/15 - RW REVISIONS: UPDATED PROPERTY OWNER NAMES AND DEED REFERENCE ON PARCEL 16B. - DJC

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

INSTALL MATTING FOR
 EROSION CONTROL IN THE
 PROPOSED DITCH LINE
 AND CUT SLOPE

Place Matting for Erosion Control
 on Slope as Work Allows.
 Sta. 177+00 -L- LT
 to Sta. 187+00 -L- LT

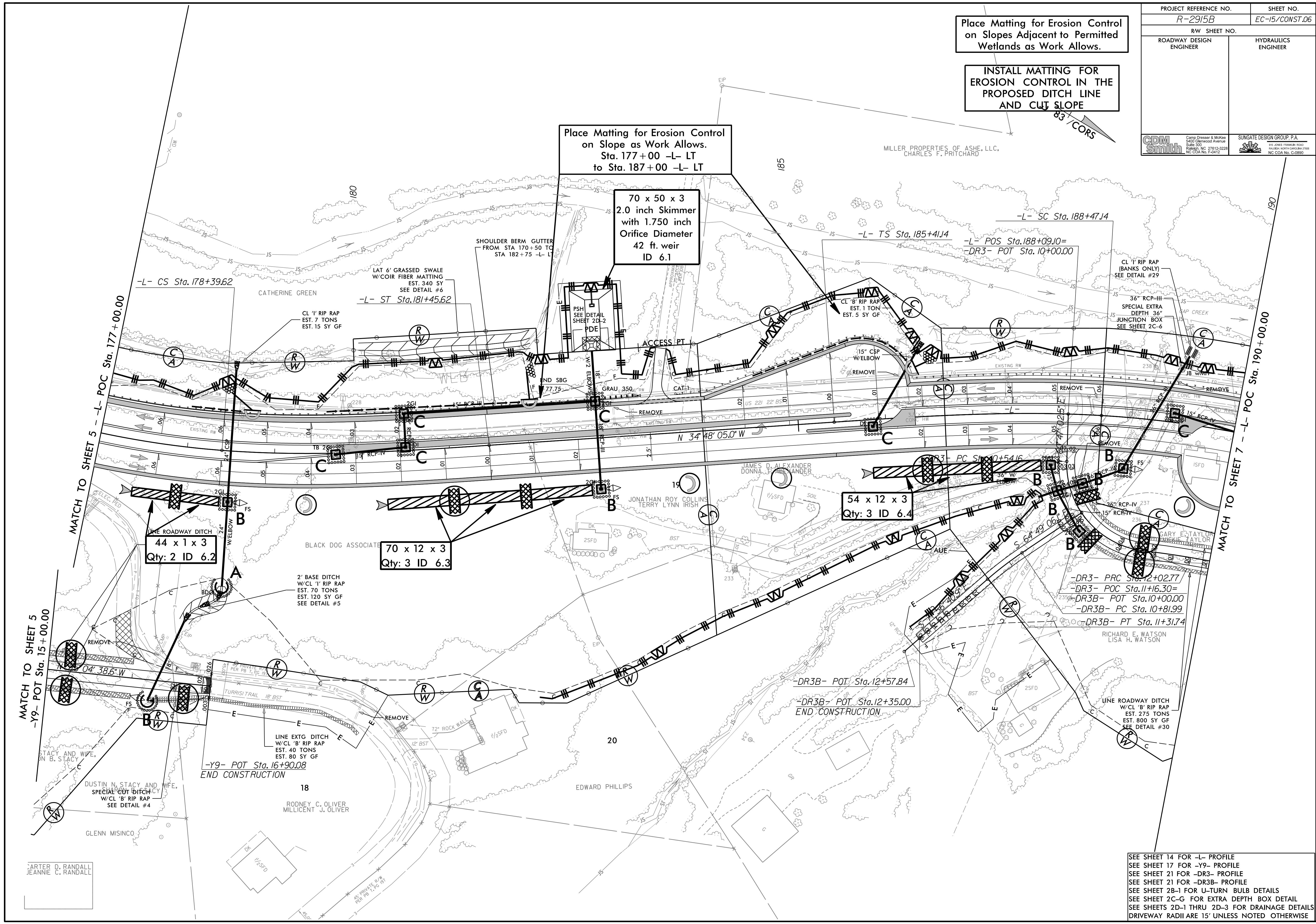
70 x 50 x 3
 2.0 inch Skimmer
 with 1.750 inch
 Orifice Diameter
 42 ft. weir
 ID 6.1

44 x 1 x 3
 Qty: 2 ID 6.2

70 x 12 x 3
 Qty: 3 ID 6.3

54 x 12 x 3
 Qty: 3 ID 6.4

PROJECT REFERENCE NO. R-2915B	SHEET NO. EC-15/CONST.06
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CDM Smith	SUNGATE DESIGN GROUP, P.A.



ARTER D. RANDALL
 JEANNIE C. RANDALL

SEE SHEET 14 FOR -L- PROFILE
 SEE SHEET 17 FOR -Y9- PROFILE
 SEE SHEET 21 FOR -DR3- PROFILE
 SEE SHEET 21 FOR -DR3B- PROFILE
 SEE SHEET 2B-1 FOR U-TURN BULB DETAILS
 SEE SHEET 2C-G FOR EXTRA DEPTH BOX DETAIL
 SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
 DRIVEWAY RADII ARE 15' UNLESS NOTED OTHERWISE

PROJECT REFERENCE NO. R-2915B	SHEET NO. EC-16/CONST.07
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CDM Smith Camp Dresser & McKee 5401 Glenwood Avenue Suite 300 Raleigh, NC 27612-3229 NC CDA No. F-5412	SUNGATE DESIGN GROUP, P.A. 115 JONES FARM ROAD HUNTER HILL, NC 27520 NC CDA No. C-9890

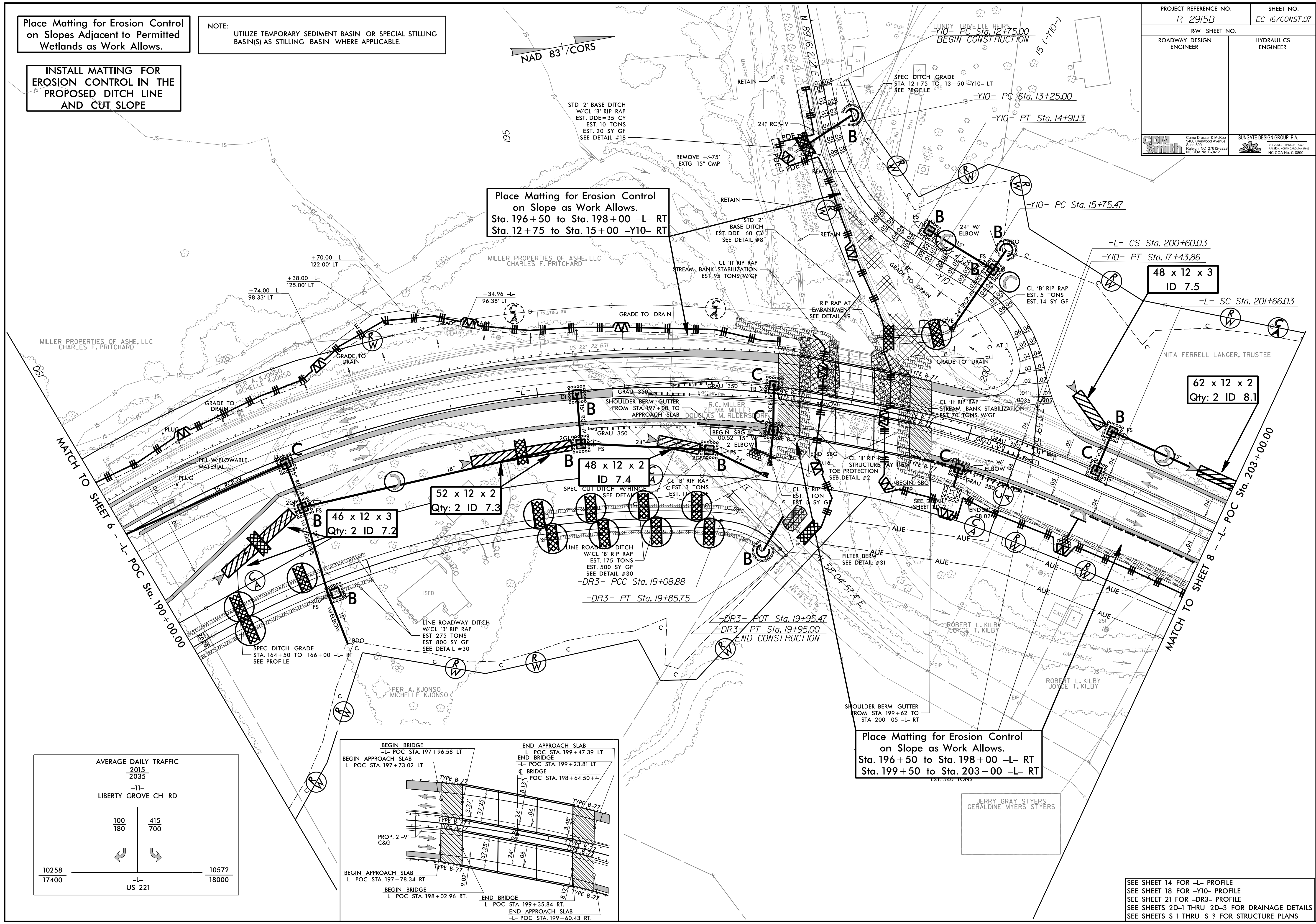
Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.

NOTE: UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

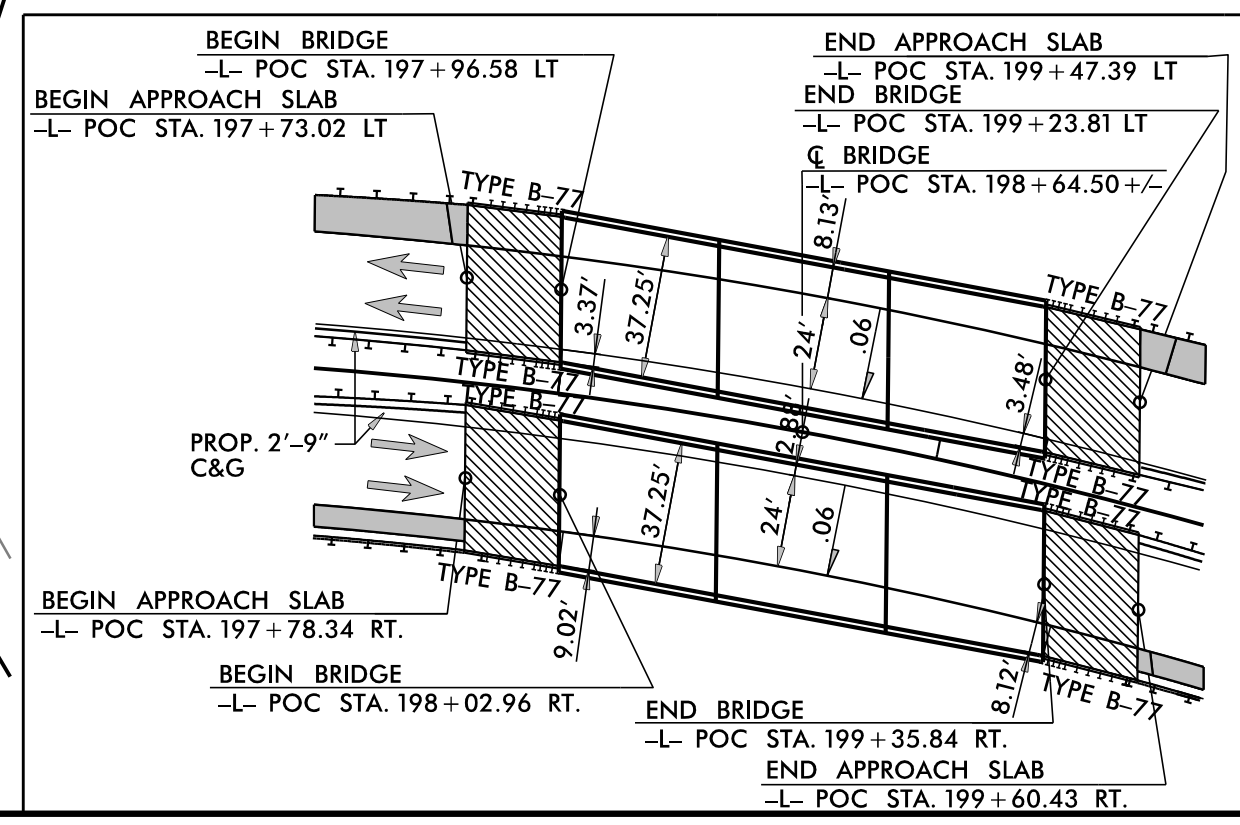
INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE AND CUT SLOPE

Place Matting for Erosion Control on Slope as Work Allows. Sta. 196+50 to Sta. 198+00 -L- RT Sta. 12+75 to Sta. 15+00 -Y10- RT

Place Matting for Erosion Control on Slope as Work Allows. Sta. 196+50 to Sta. 198+00 -L- RT Sta. 199+50 to Sta. 203+00 -L- RT



AVERAGE DAILY TRAFFIC	
2015	2035
100	415
180	700
-11- LIBERTY GROVE CH RD	
10258	10572
17400	18000
-L- US 221	



01/31/14 - RW REVISIONS: UPDATED PROPERTY OWNER NAMES AND DEED REFERENCES ON PARCELS 21 AND 29. - PJS
 09/08/14 - RW REVISIONS: UPDATED PROPERTY OWNER NAME AND DEED REFERENCE ON PARCEL 21. - DJC
 04/10/15 - RW REVISIONS: REVISED THE PROPOSED RW ON PARCELS 23 AND 25. - CJT
 05/20/15 - RW REVISIONS: UPDATED PROPERTY LINES ON PARCEL 29 AND CREATED PARCEL 29A. - DJC

SEE SHEET 14 FOR -L- PROFILE
 SEE SHEET 18 FOR -Y10- PROFILE
 SEE SHEET 21 FOR -DR3- PROFILE
 SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
 SEE SHEETS S-1 THRU S-? FOR STRUCTURE PLANS

09/08/14 - RW REVISIONS: ADDED AN ACCESS POINT FROM -L- STA. 207+58.00 TO STA. 208+18.00 LT. ON PARCEL 30. - DJC

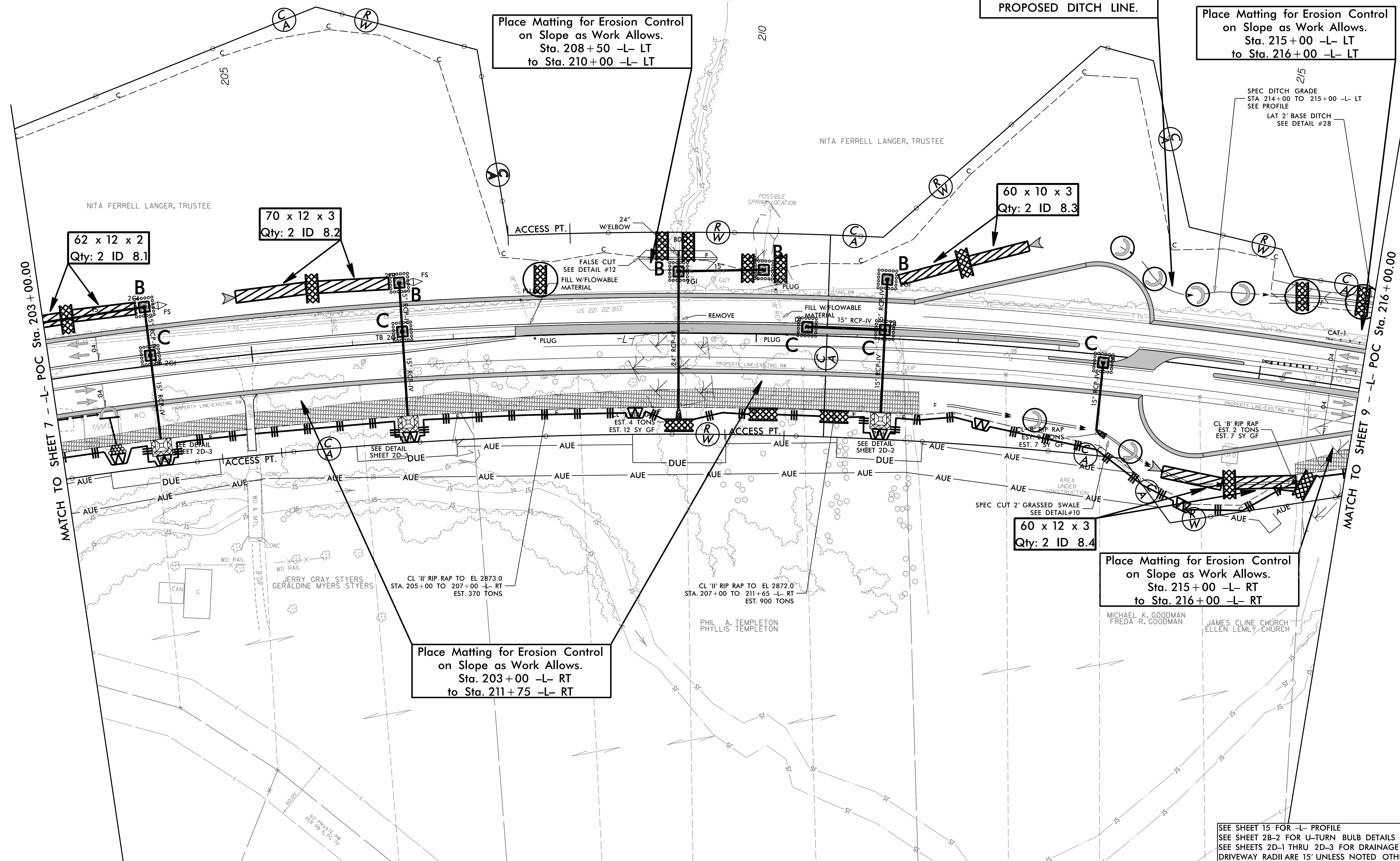
PROJECT REFERENCE NO. R-2915B	SHEET NO. EC-17/CONST.08
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
CDM Smith Camp Dresser & McKee 5425 Glenwood Avenue Suite 300 Raleigh, NC 27612-3229 NC CDA No. F-5412	SUNGATE DESIGN GROUP, P.A. 110 JONES FARM ROAD HARRISBORO, NC 27533 NC CDA No. G-3890

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

INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE AND CUT SLOPE

INSTALL PSRM FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

Place Matting for Erosion Control on Slope as Work Allows. Sta. 215+00 -L- LT to Sta. 216+00 -L- LT



Place Matting for Erosion Control on Slope as Work Allows. Sta. 208+50 -L- LT to Sta. 210+00 -L- LT

62 x 12 x 2
Qty: 2 ID 8.1

70 x 12 x 3
Qty: 2 ID 8.2

60 x 10 x 3
Qty: 2 ID 8.3

60 x 12 x 3
Qty: 2 ID 8.4

Place Matting for Erosion Control on Slope as Work Allows. Sta. 203+00 -L- RT to Sta. 211+75 -L- RT

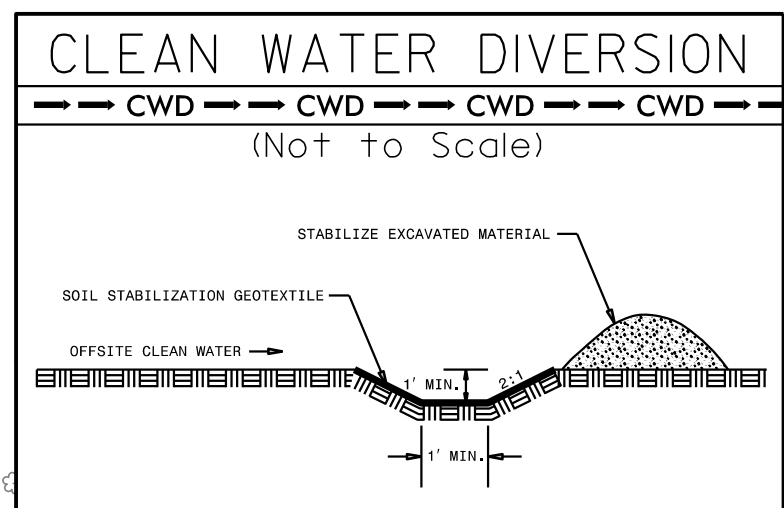
Place Matting for Erosion Control on Slope as Work Allows. Sta. 215+00 -L- RT to Sta. 216+00 -L- RT

SEE SHEET 15 FOR -L- PROFILE
SEE SHEET 2B-2 FOR U-TURN BULB DETAILS
SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
DRIVEWAY RADII ARE 15' UNLESS NOTED OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
R-2915B	EC-18/CONST.09
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CDM Smith	SUNGATE DESIGN GROUP, P.A.

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

INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE AND CUT SLOPE



70 x 16 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
8 ft. weir
ID 9.4

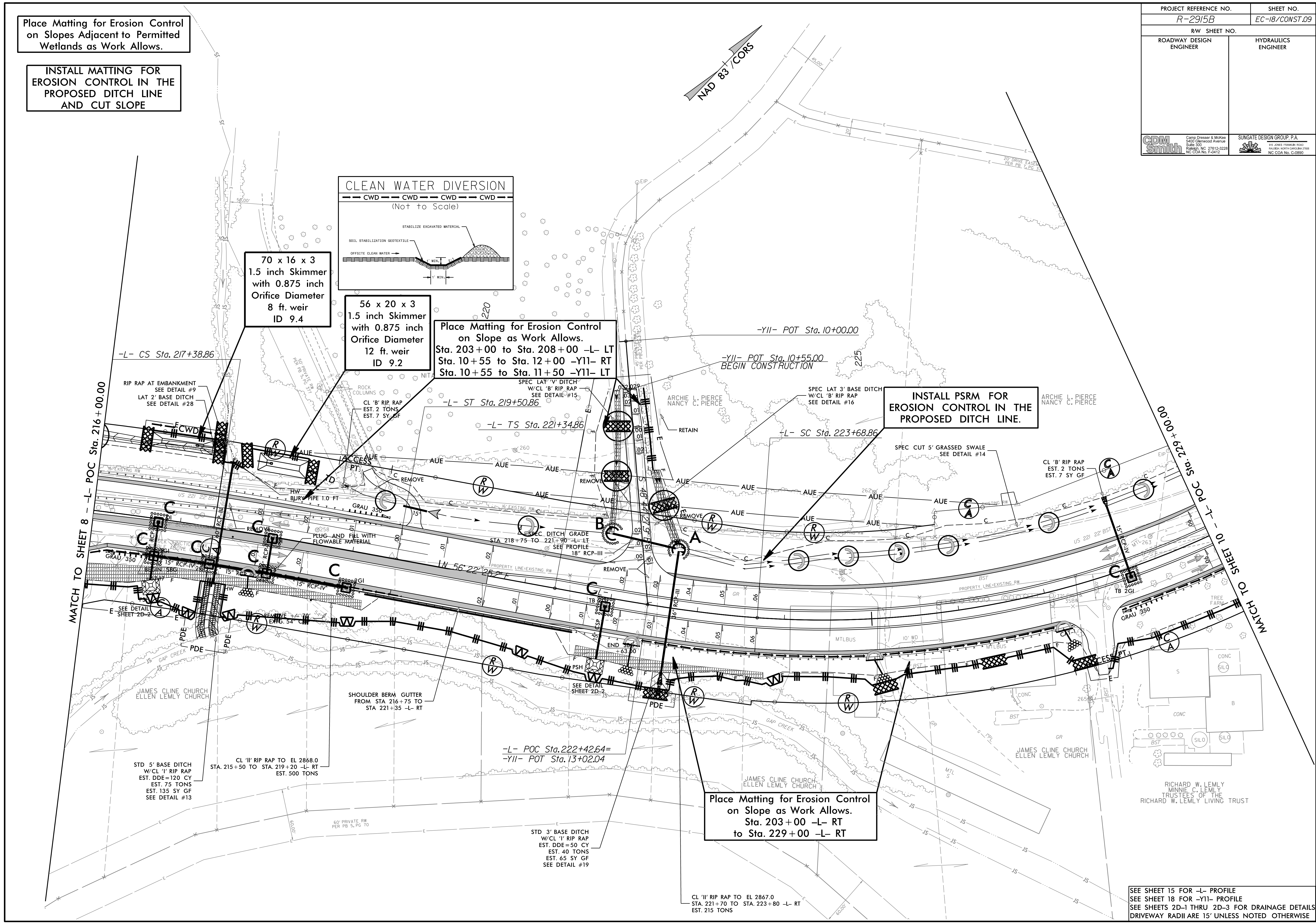
56 x 20 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
12 ft. weir
ID 9.2

Place Matting for Erosion Control on Slope as Work Allows.
Sta. 203+00 to Sta. 208+00 -L- LT
Sta. 10+55 to Sta. 12+00 -Y11- RT
Sta. 10+55 to Sta. 11+50 -Y11- LT

INSTALL PSRM FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

Place Matting for Erosion Control on Slope as Work Allows.
Sta. 203+00 -L- RT
to Sta. 229+00 -L- RT

060314 - RW REVISIONS: ADDED PDE FROM -L- STATION 222+38.00 TO 222+88.00 RIGHT ON PARCEL 36. - JBW
09/08/14 - RW REVISIONS: REVISED DRIVEWAY OPENING FROM 11' +/- TO 30' +/- ON PARCEL 38. - DJC



SEE SHEET 15 FOR -L- PROFILE
SEE SHEET 18 FOR -Y11- PROFILE
SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
DRIVEWAY RADII ARE 15' UNLESS NOTED OTHERWISE

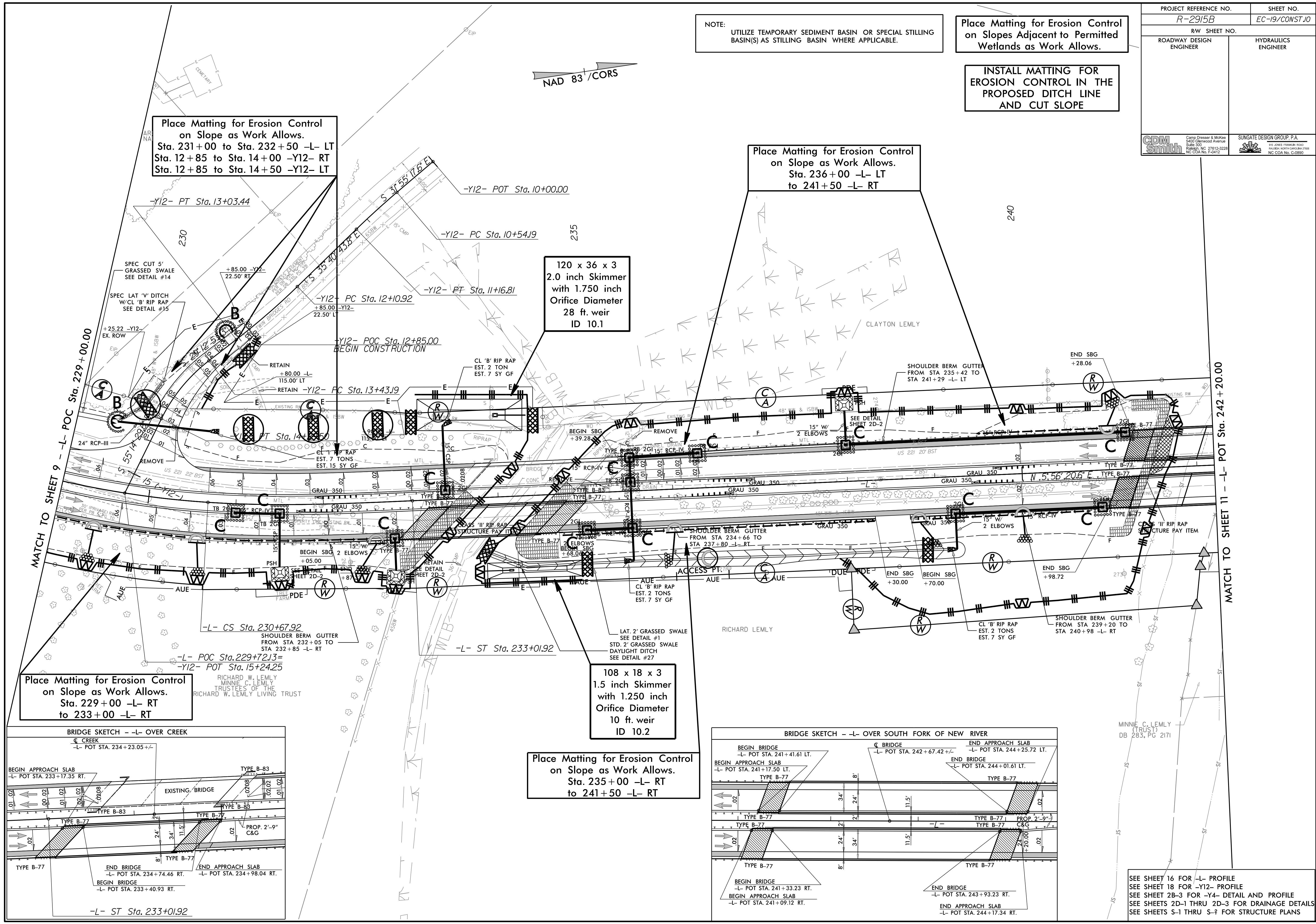
010515 - RW REVISIONS: UPDATED PROPERTY OWNER NAME ON PARCEL 39. - PJS

NOTE: UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

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

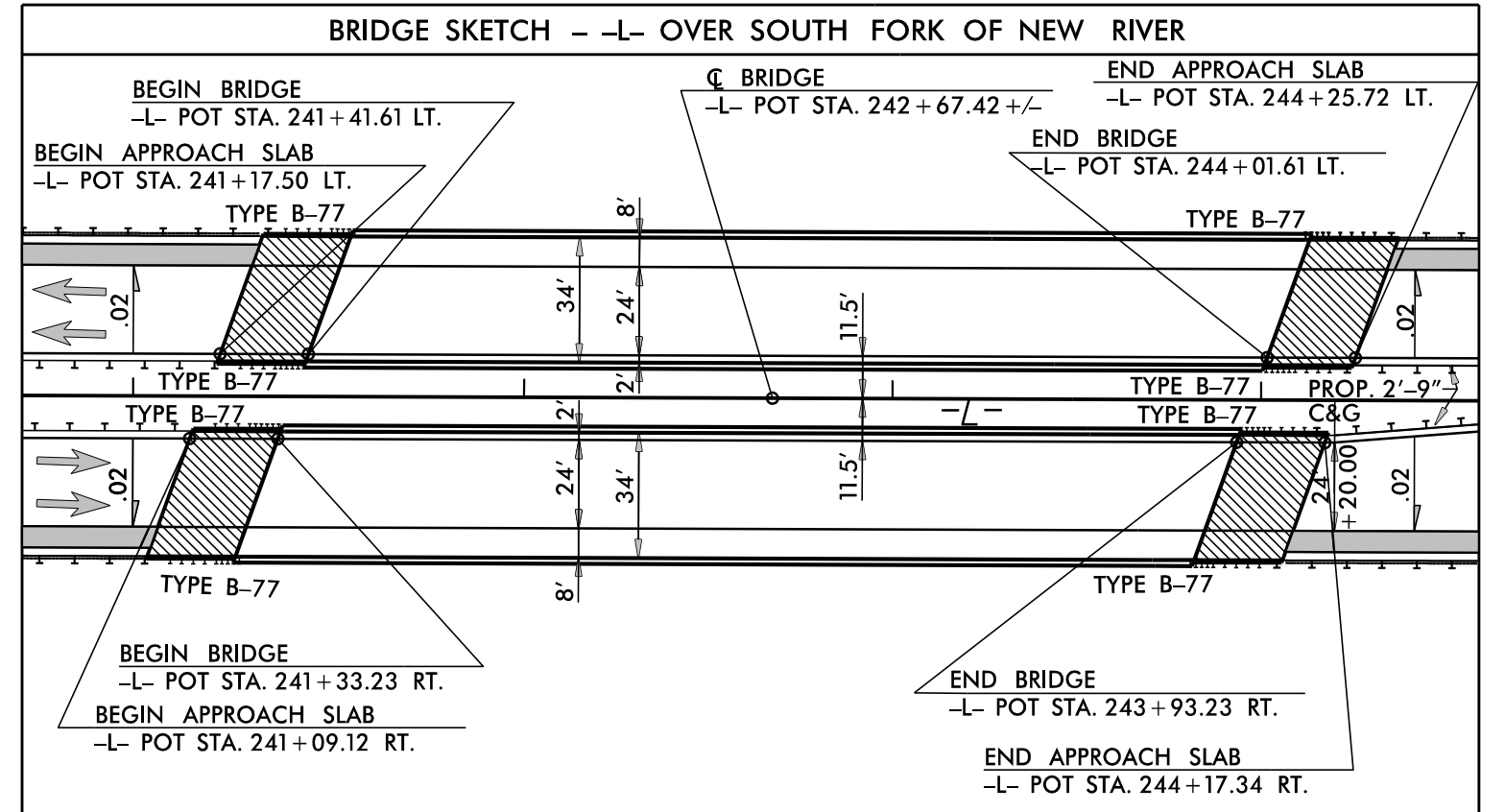
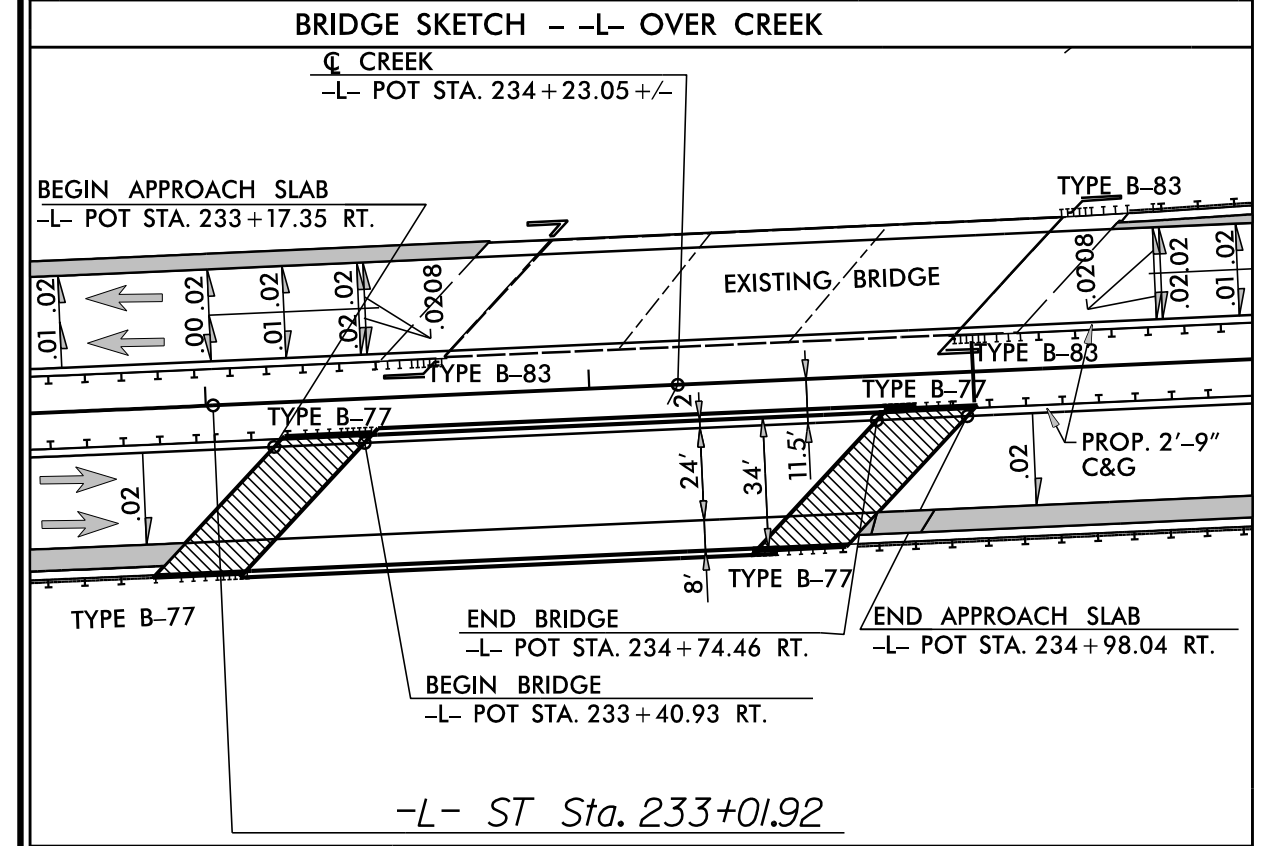
INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE AND CUT SLOPE

PROJECT REFERENCE NO. R-2915B	SHEET NO. EC-19/CONST.10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CDM Smith Camp Dresser & McKee 5425 Glenwood Avenue Suite 500 Raleigh, NC 27612-3229 NC CDA No. F-5412	SUNGATE DESIGN GROUP, P.A. 110 JONES FARM ROAD HILLSBORO, NC 27541 NC CDA No. C-9890



Place Matting for Erosion Control on Slope as Work Allows. Sta. 229+00 -L- RT to 233+00 -L- RT

Place Matting for Erosion Control on Slope as Work Allows. Sta. 235+00 -L- RT to 241+50 -L- RT



SEE SHEET 16 FOR -L- PROFILE
SEE SHEET 18 FOR -Y12- PROFILE
SEE SHEET 2B-3 FOR -Y4- DETAIL AND PROFILE
SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
SEE SHEETS S-1 THRU S-9 FOR STRUCTURE PLANS

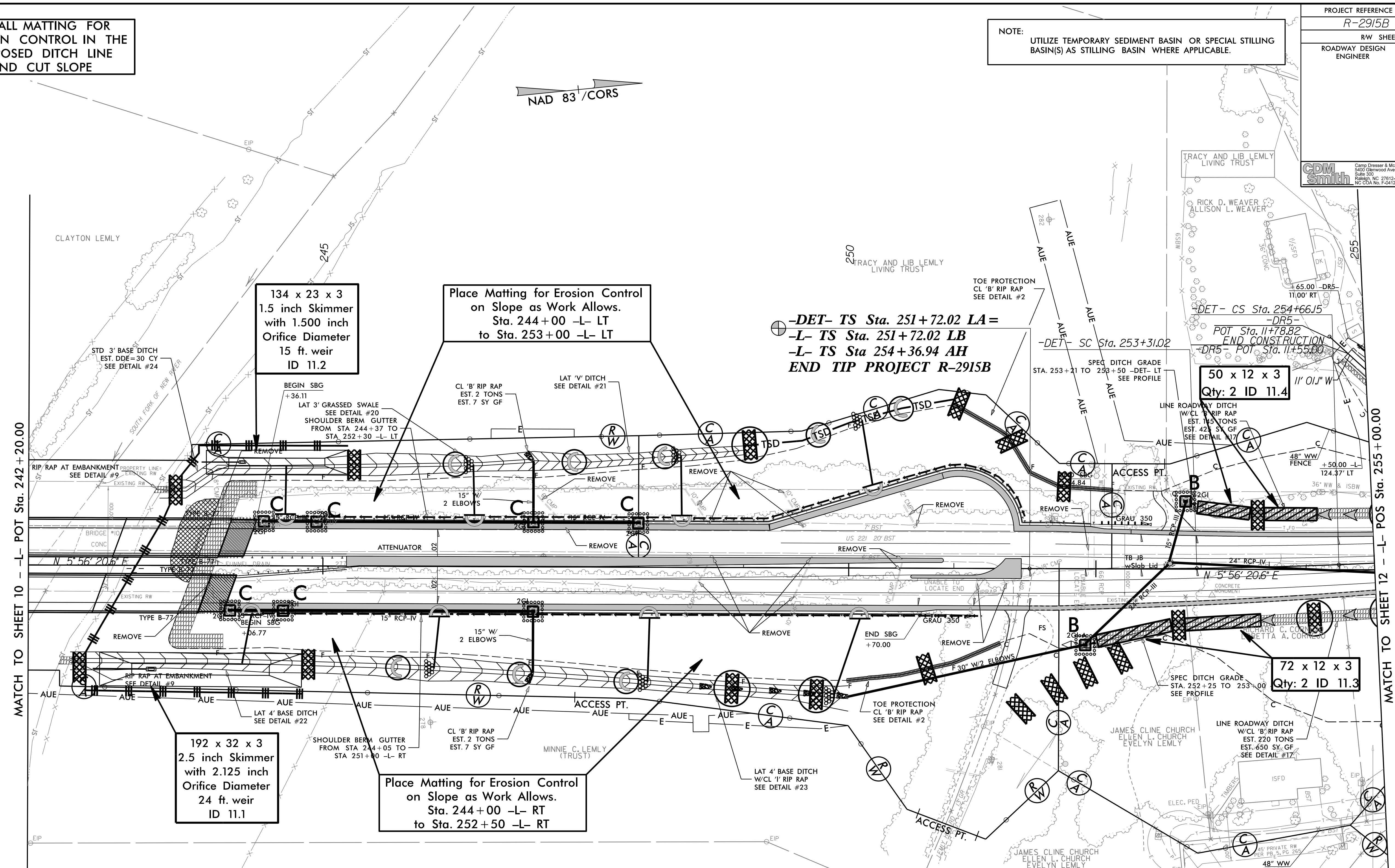
PROJECT REFERENCE NO. R-2915B	SHEET NO. EC-20/CONST II
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CDM Smith Camp Dresser & McKee 8425 Glenwood Avenue Suite 300 Raleigh, NC 27612-3229 NC COA No. F-5412	SUNGATE DESIGN GROUP, P.A. 115 JONES FRANKLIN ROAD HARRISBORO, NORTH CAROLINA 27533 NC COA No. C-9890

INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE AND CUT SLOPE

NOTE: UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

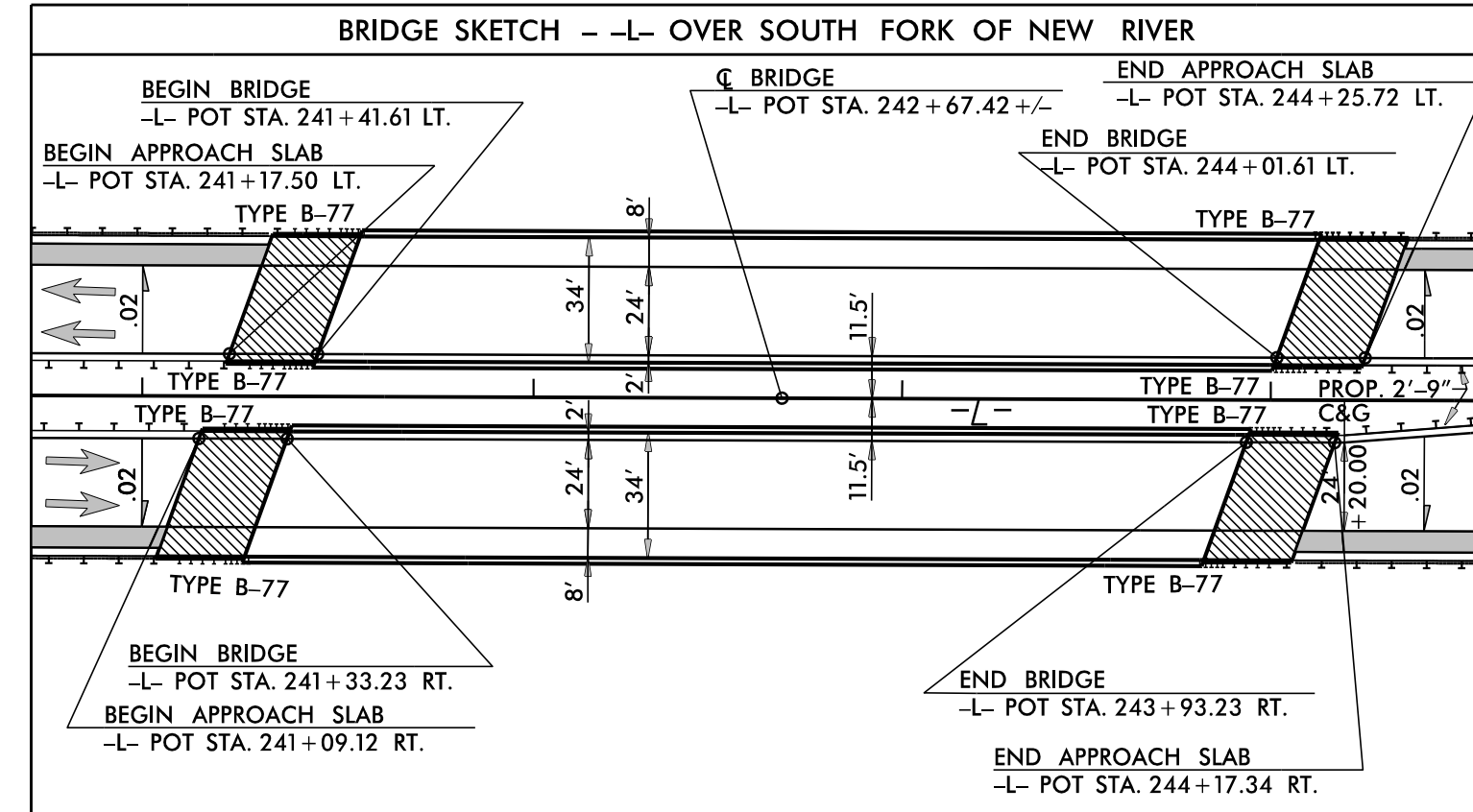
NAD 83 / CORS

01/31/14 - RW REVISIONS: UPDATED PROPERTY OWNER NAME ON PARCEL 41. - PJS
 03/23/14 - RW REVISIONS: REVISED PROPOSED RW ON PARCELS 41, 43, 44, 45, 46, 53 AND 55; ADDED AUE ON PARCELS 42 AND 44; REVISED CA LIMITS TO PROVIDE DRIVEWAY ACCESS ON PARCEL 43; ADDED PARCEL NUMBER 55. - DJC
 01/05/15 - RW REVISIONS: UPDATED PROPERTY OWNER NAME ON PARCEL 39 AND 46. - PJS
 04/10/15 - RW REVISIONS: ADDED A TCE ON PARCEL 44. - CIT
 05/20/15 - RW REVISIONS: UPDATED PROPERTY OWNER NAMES AND DEED REFERENCES ON PARCEL 42 AND 47; REVISED THE FULL CA LIMITS FROM -L- STA. 257+50.00 TO STA. 255+15.00 LT.; AND ADDED AND ACCESS POINT FROM -L- STA. 255+15.00 TO STA. 255+65.00 LT. ON PARCELS 42. - DJC



MATCH TO SHEET 10 -L- POT Sta. 242 + 20.00

MATCH TO SHEET 12 -L- POS Sta. 255 + 00.00



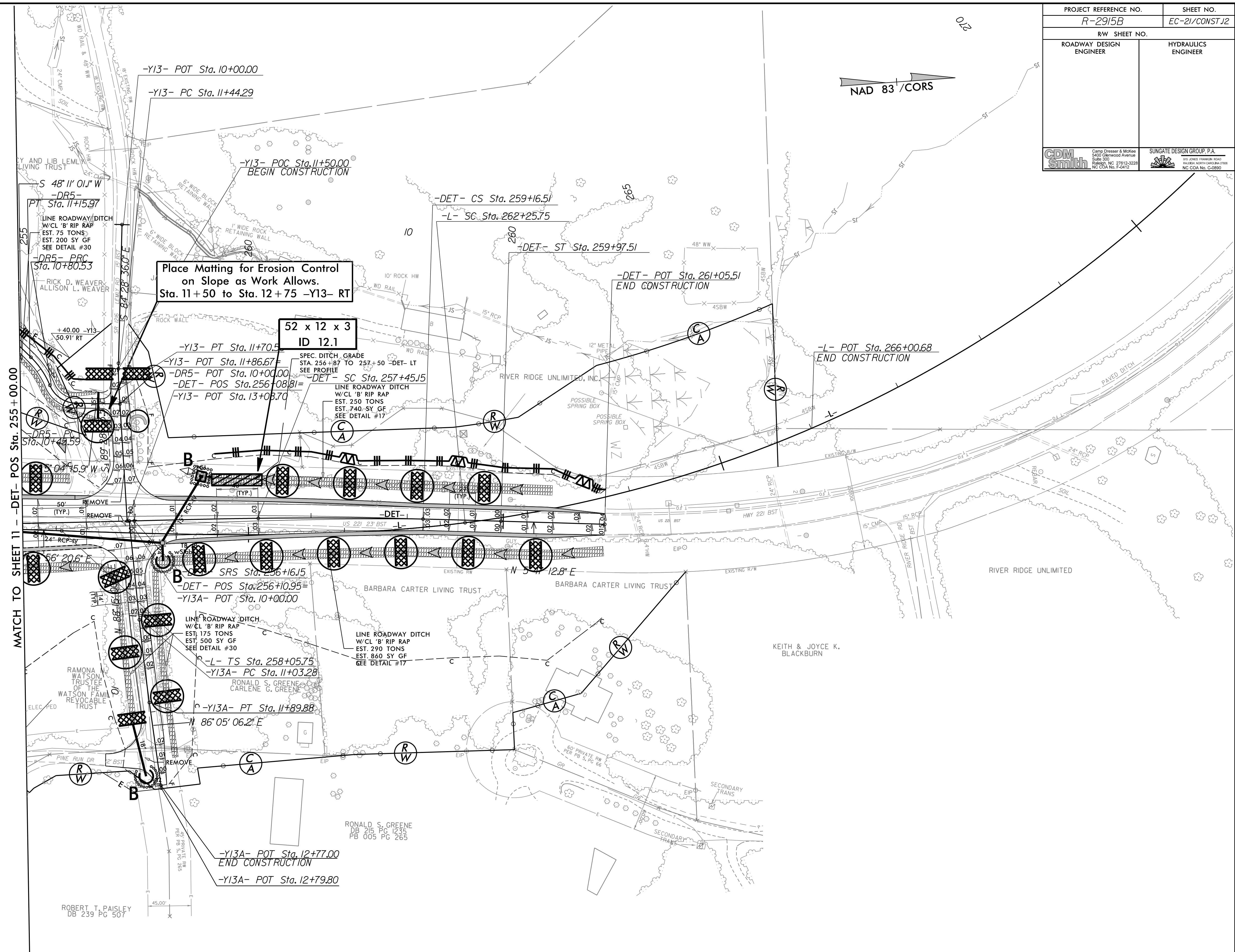
SEE SHEET 16 FOR -L- PROFILE
 SEE SHEET 16 FOR -DET- PROFILE
 SEE SHEET 2B-2 FOR U-TURN BULB DETAILS
 SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
 SEE SHEETS S-1 THRU S-? FOR STRUCTURE PLANS

SEE SHEET 16 FOR -L- PROFILE
 SEE SHEET 16 FOR -DET- PROFILE
 SEE SHEET 2B-2 FOR U-TURN BULB DETAILS
 SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
 SEE SHEETS S-1 THRU S-? FOR STRUCTURE PLANS

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

INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE AND CUT SLOPE

PROJECT REFERENCE NO. <i>R-2915B</i>	SHEET NO. <i>EC-21/CONST J2</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CDM Smith Camp Dresser & McKee 5425 Glenwood Avenue Suite 500 Raleigh, NC 27612-3229 NC CDA No. F-5412	SUNGATE DESIGN GROUP, P.A. 115 JONES FARM ROAD HILLSBORO, NC 27541 NC CDA No. C-3890



Place Matting for Erosion Control on Slope as Work Allows. Sta. 11+50 to Sta. 12+75 -Y13- RT

52 x 12 x 3
ID 12.1

MATCH TO SHEET 11 - DET- POS Sta. 255+00.00

SEE SHEET 17 FOR -DET- PROFILE
SEE SHEET 19 FOR -Y13- PROFILE
SEE SHEET 19 FOR -Y13A- PROFILE
SEE SHEET 21 FOR -DR5- PROFILE
SEE SHEETS 2D-1 THRU 2D-2 FOR DRAINAGE DETAILS
DRIVEWAY RADII ARE 15' UNLESS NOTED OTHERWISE