

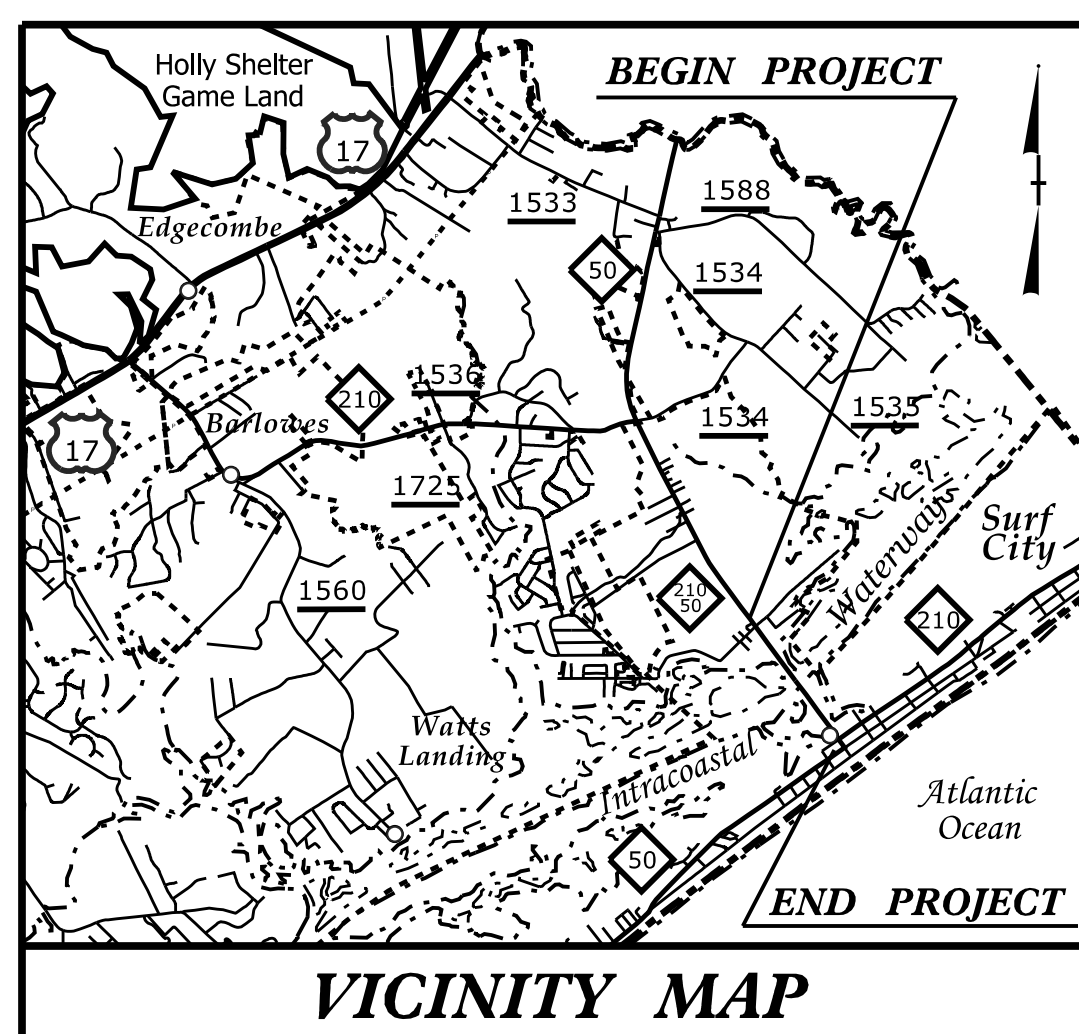
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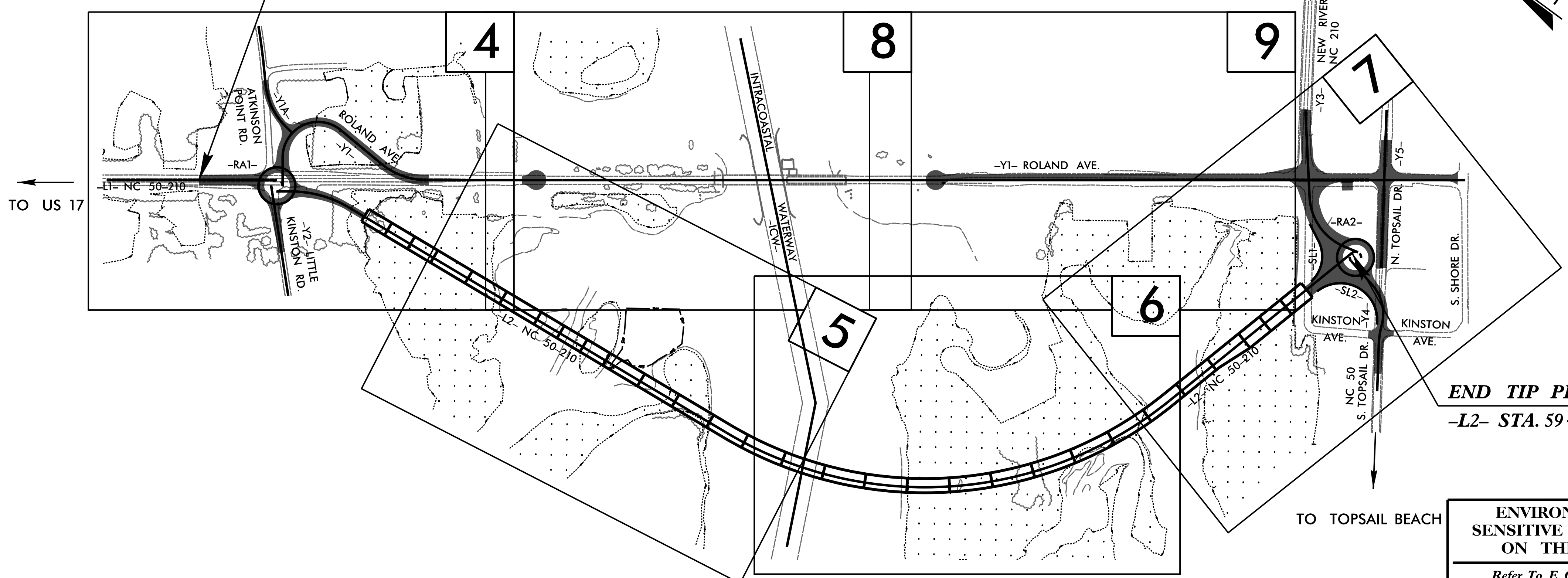
**TIP PROJECT: B-4929**

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



**LOCATION: BRIDGE NO. 16 OVER THE INTRACOASTAL WATERWAY ON NC 50-210**  
**TYPE OF WORK: GRADING, PAVING, RESURFACING, DRAINAGE, STRUCTURE, AND WALLS**

BEGIN TIP PROJECT B-4929  
 -L1- STA. 13+25.00



END TIP PROJECT B-4929  
 -L2- STA. 59+06.37

**ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT**  
 Refer To E. C. Special Provisions for Special Considerations.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4929	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

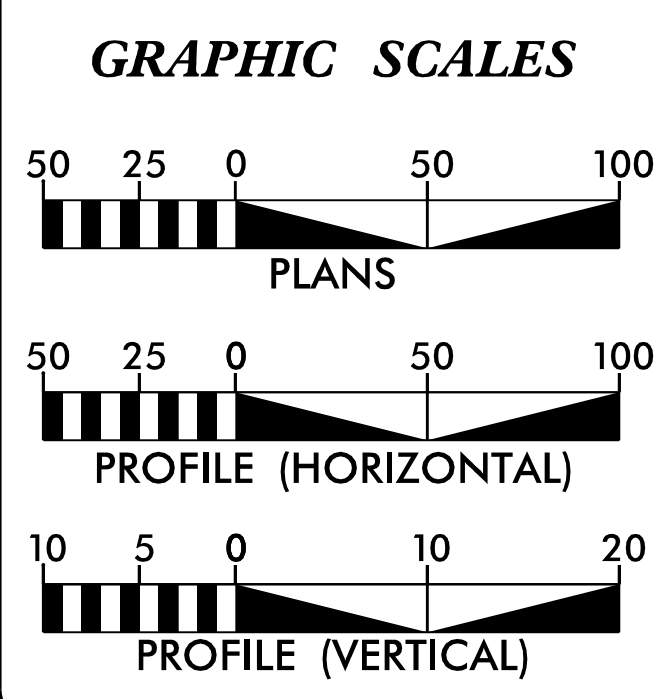
**EROSION AND SEDIMENT CONTROL MEASURES**

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

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

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

HIGH QUALITY WATER(S) EXIST ON THIS PROJECT  
 High Quality Water Zone(s) Exist From Sta. 17+56 (-L2-) to Sta. 57+82 (-L2-) Refer To E. C. Special Provisions for Special Considerations.



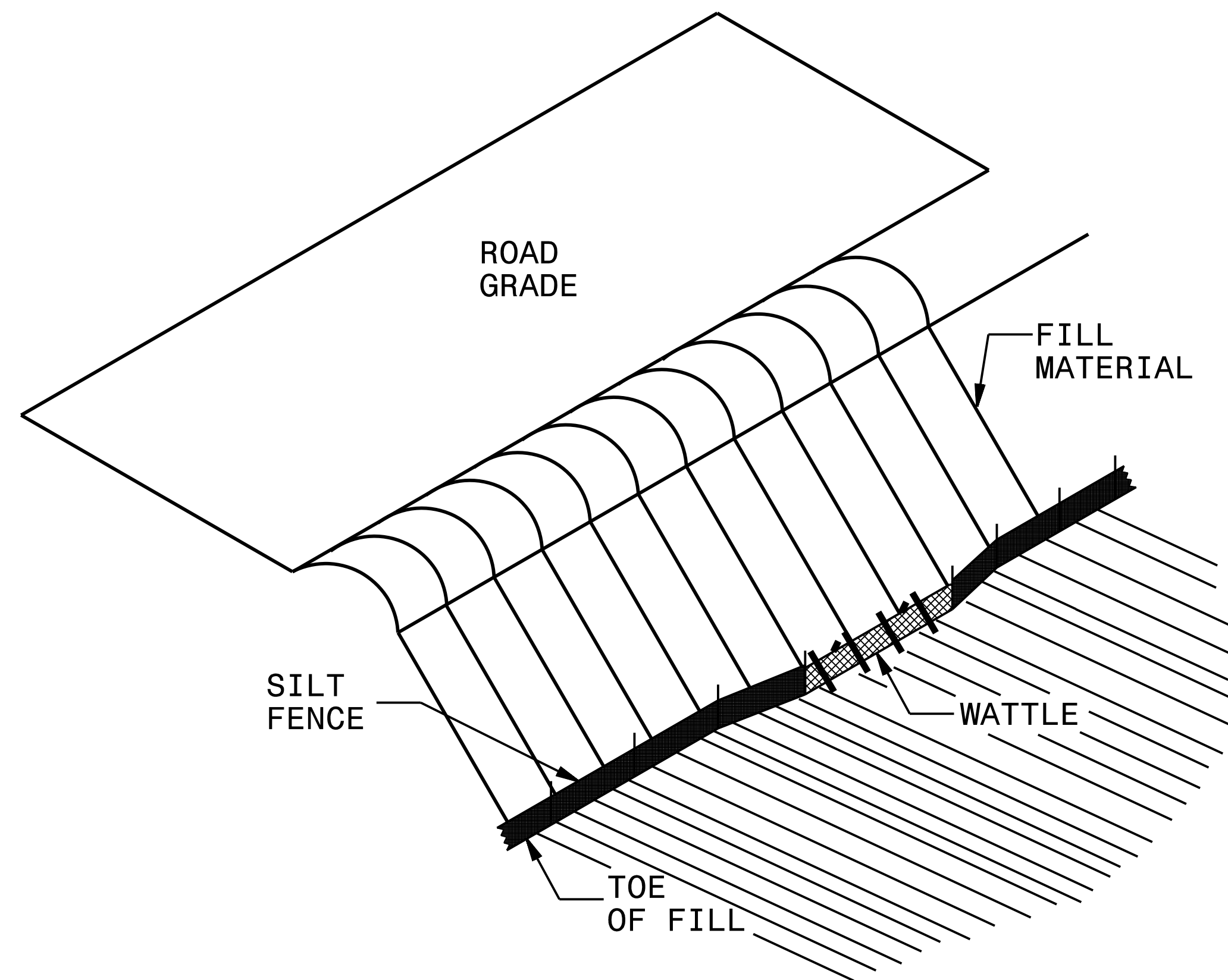
THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER RESOURCES.

Prepared In the Office of:  
**RS&H**  
 1520 SOUTH BOULEVARD, SUITE 200  
 CHARLOTTE, NC 28203  
 (704) 940-4715  
**2012 STANDARD SPECIFICATIONS**  
 Designed by:  
**WILL WEATHERSBEE, PE** 3161  
 NAME LEVEL III CERTIFICATION NO.

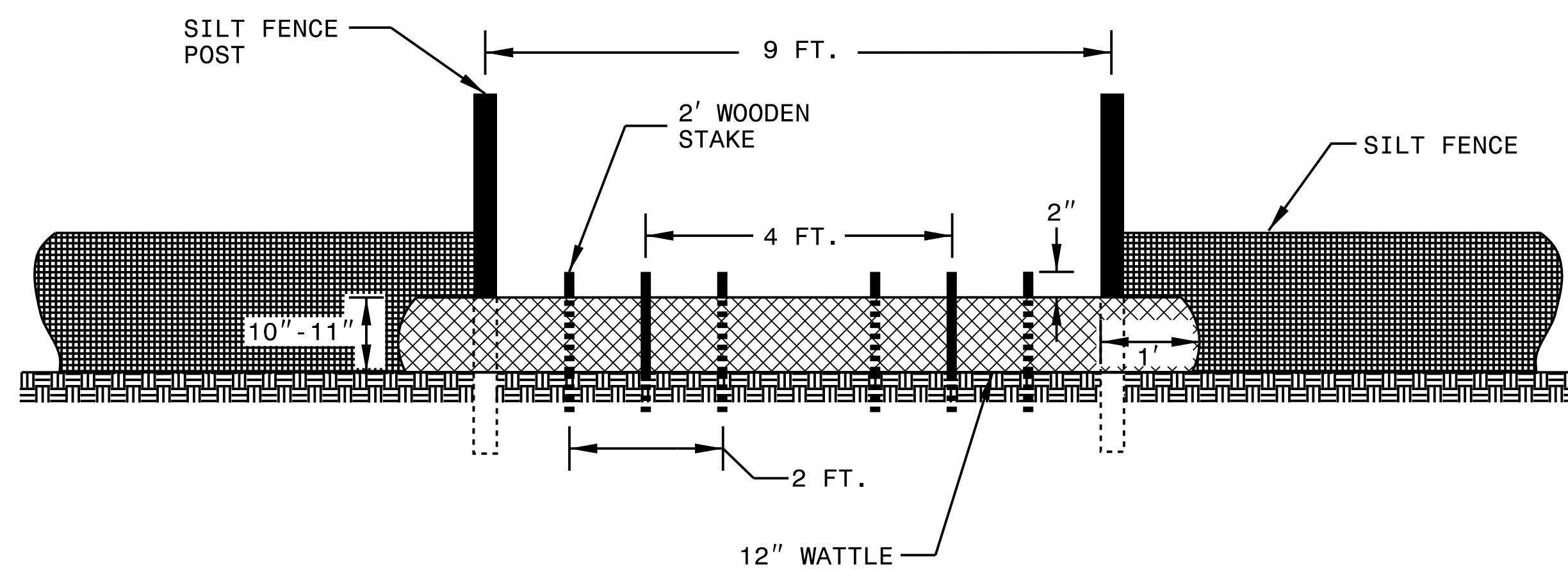
Reviewed In the Office of:  
**ROADSIDE ENVIRONMENTAL UNIT**  
 1 South Wilmington Street  
 Raleigh NC 27601  
**2012 STANDARD SPECIFICATIONS**  
 Reviewed by:  
**JEFF WALSTON, PE, CPESC, CPSWQ**

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.  
 1605.01 Temporary Silt Fence  
 1606.01 Special Sediment Control Fence  
 1607.01 Gravel Construction Entrance  
 1622.01 Temporary Berms and Slope Drains  
 1631.01 Matting Installation  
 1632.03 Rock Inlet Sediment Trap Type C  
 1633.01 Temporary Rock Silt Check Type A  
 1633.02 Temporary Rock Silt Check Type B  
 1640.01 Coir Fiber Baffle

# SILT FENCE WATTLE BREAK DETAIL



**ISOMETRIC VIEW**

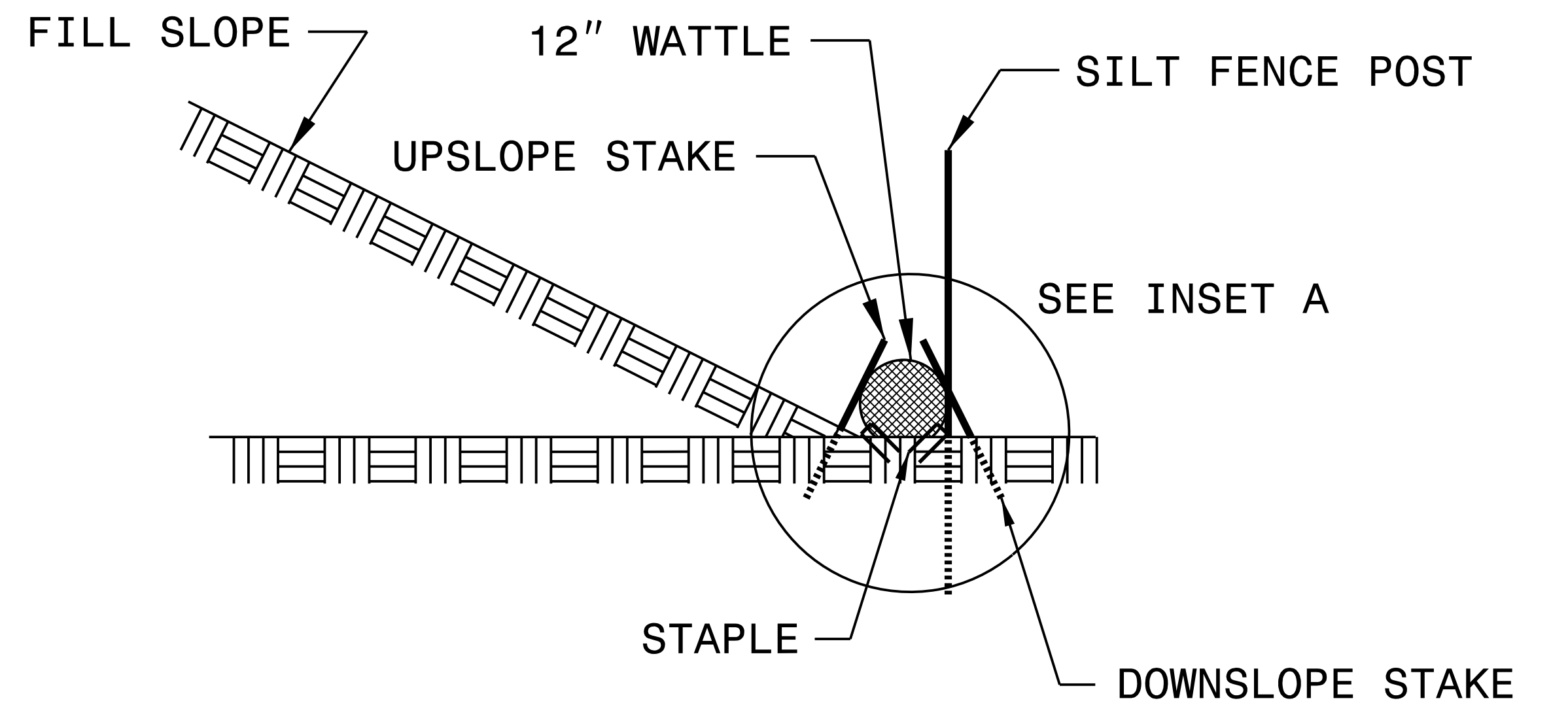
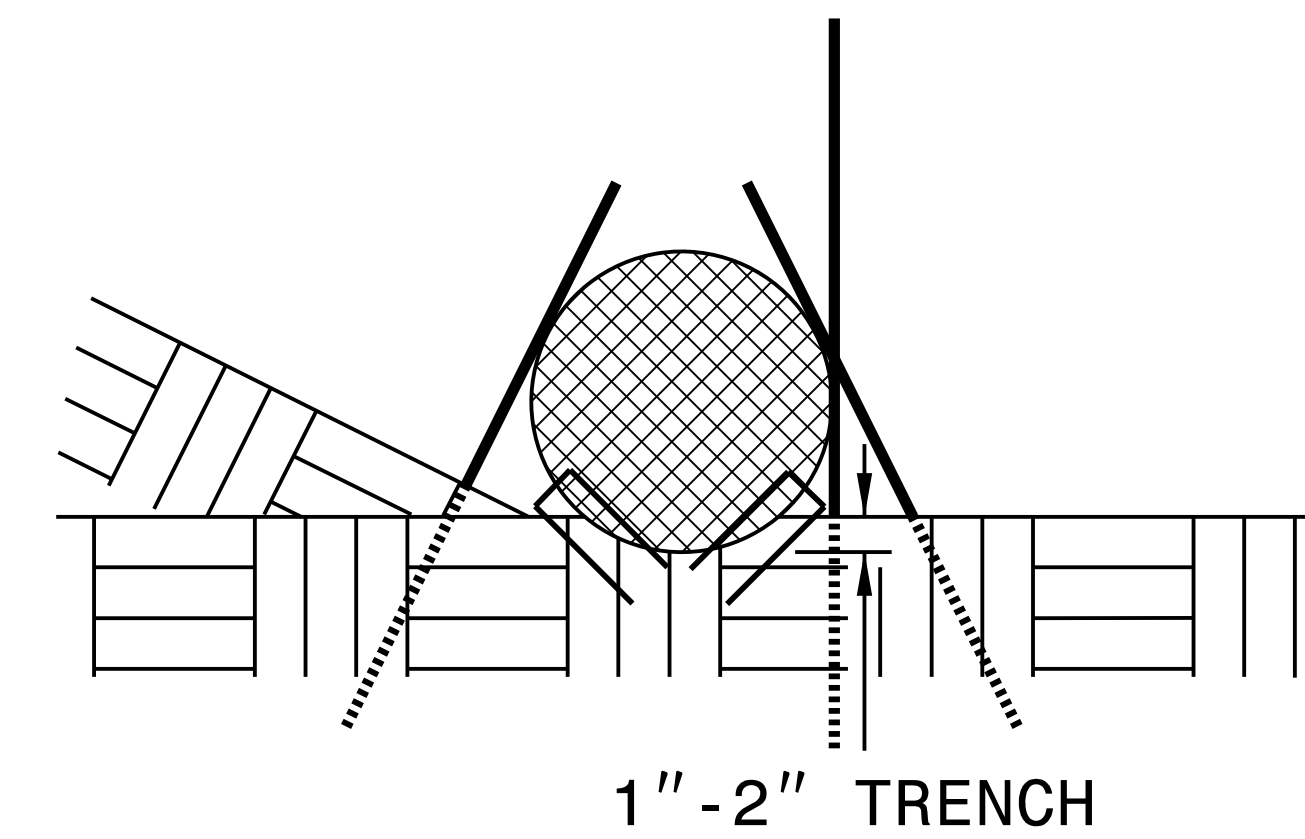


**VIEW FROM SLOPE**

**NOTES:**

- USE MINIMUM 12 IN. DIAMETER EXCELSIOR 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**

REVISIONS

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DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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# *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.

8/17/99

REVISIONS

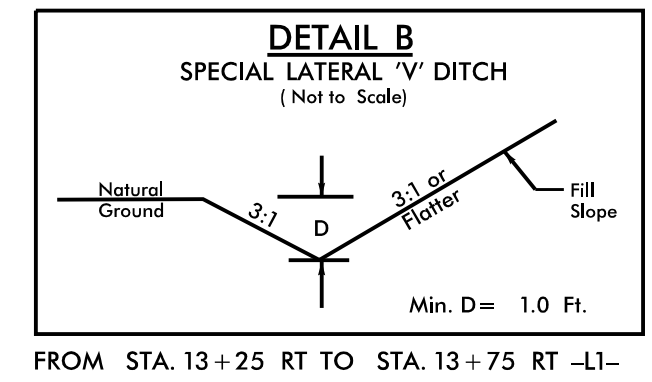
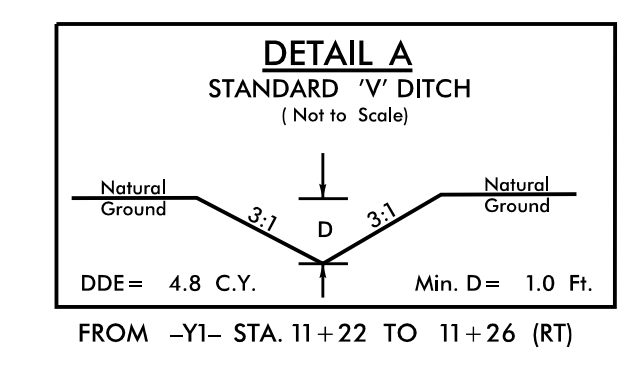
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PROJECT REFERENCE NO.	SHEET NO.
B-4929	EC-4/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**RS&H**

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



 ENVIRONMENTALLY SENSITIVE AREA  
SEE PROJECT SPECIAL PROVISIONS

**BEGIN TIP PROJECT B-4929**  
-L1- POT STA. 10+00.00

**BEGIN CONSTRUCTION**  
-Y1A- STA. 12+90.00

**END CONSTRUCTION**  
-Y1- STA. 17+50.00

**END CONSTRUCTION**  
-Y2- STA. 12+35.00

**BEGIN BRIDGE**  
-L2- STA. 19+27.06

**END RETAINING WALL**

**BEGIN APPROACH SLAB**  
-L2- STA. 19+03.06

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 4

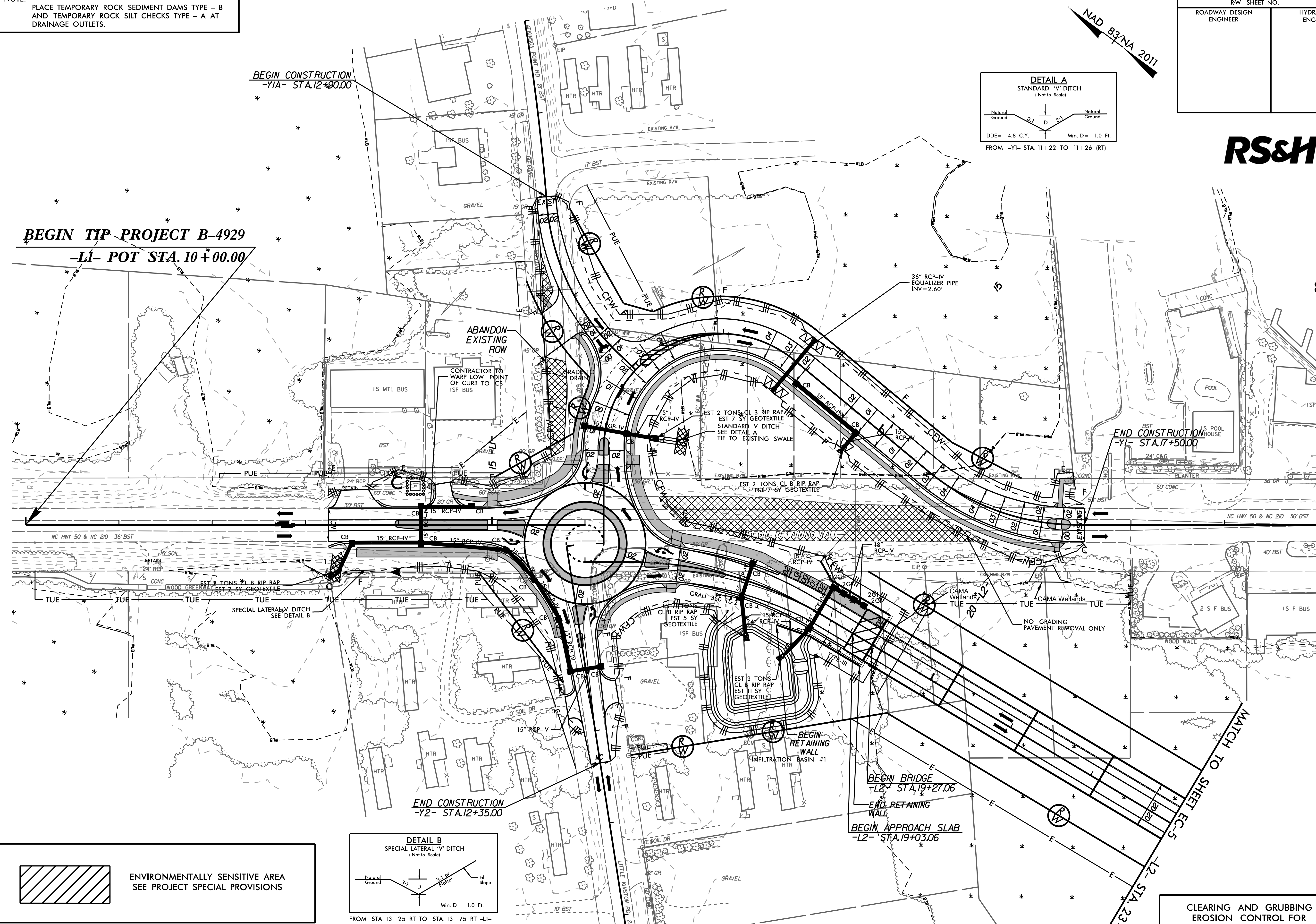
REVISIONS

B.17/99

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MATCH TO SHEET EC-8  
-Y1- STA. 20+00

MATCH TO SHEET EC-5  
-L2- STA. 23+00



PROJECT REFERENCE NO. <b>B-4929</b>	SHEET NO. <b>EC-5/CONST.5</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

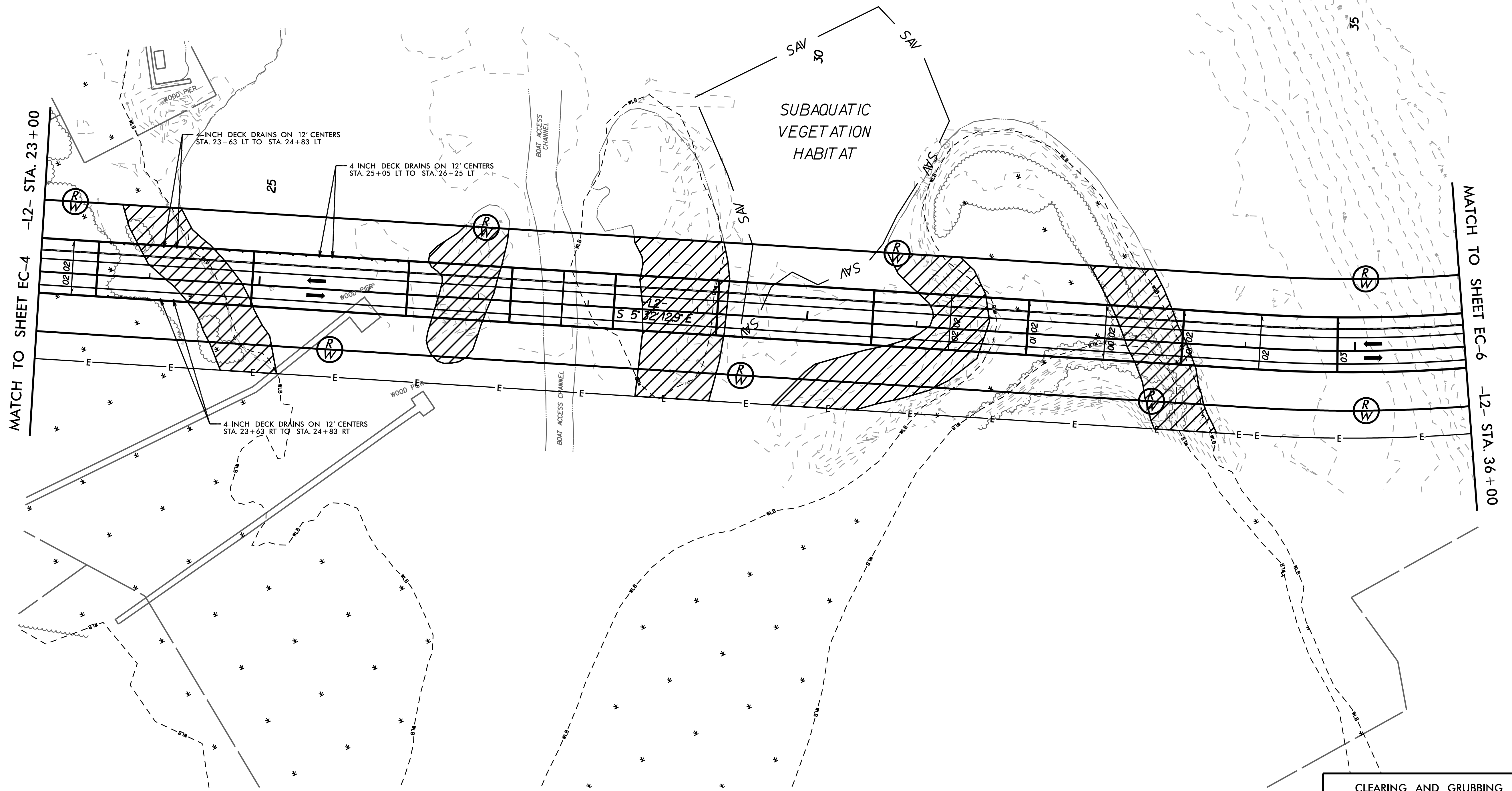
NAD 83/NA 2011



 ENVIRONMENTALLY SENSITIVE AREA  
SEE PROJECT SPECIAL PROVISIONS

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

REVISIONS



CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 5

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PROJECT REFERENCE NO.	SHEET NO.
B-4929	EC-6/CONST.6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**RS&H**

NAD 83/NA 2011

8/17/99

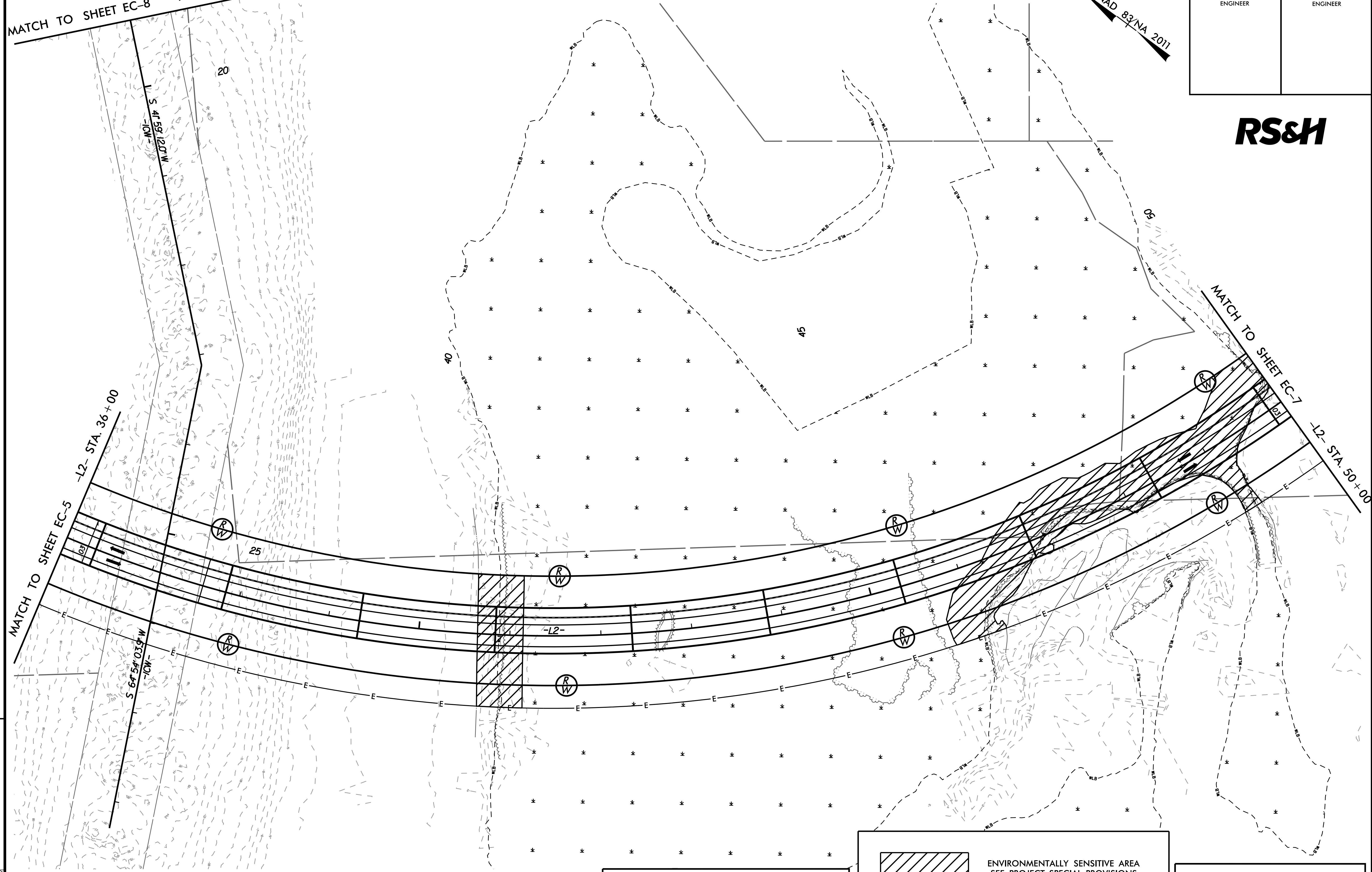
MATCH TO SHEET EC-8 -ICW- STA. 19+25

MATCH TO SHEET EC-5 -L2- STA. 36+00

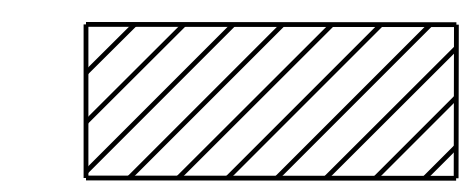
MATCH TO SHEET EC-7 -L2- STA. 50+00

REVISIONS

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



ENVIRONMENTALLY SENSITIVE AREA  
 SEE PROJECT SPECIAL PROVISIONS

CLEARING AND GRUBBING  
 EROSION CONTROL FOR  
 CONSTRUCTION SHEET 6



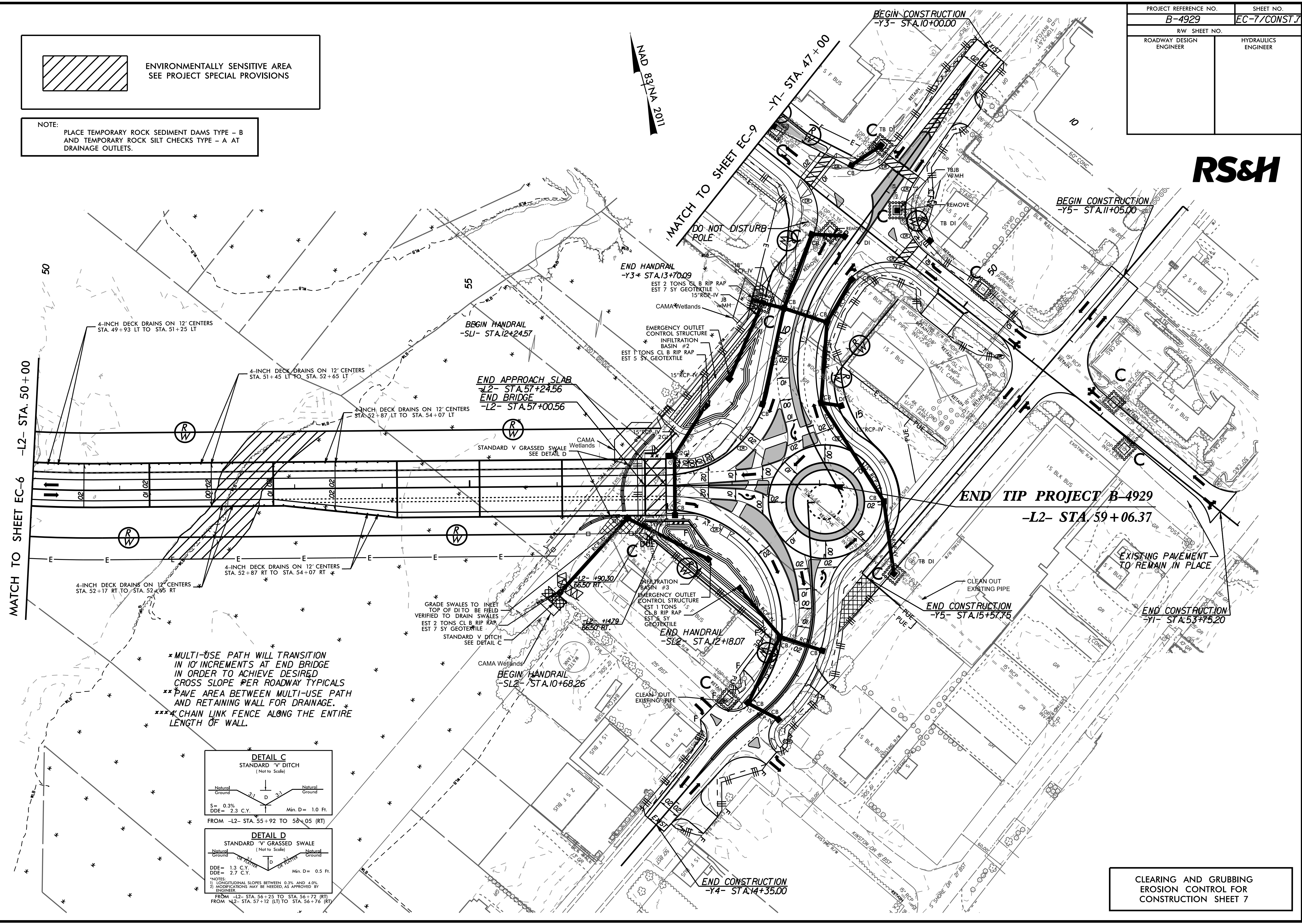
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B-4929	EC-7/CONST.7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**RS&H**

 ENVIRONMENTALLY SENSITIVE AREA  
SEE PROJECT SPECIAL PROVISIONS

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

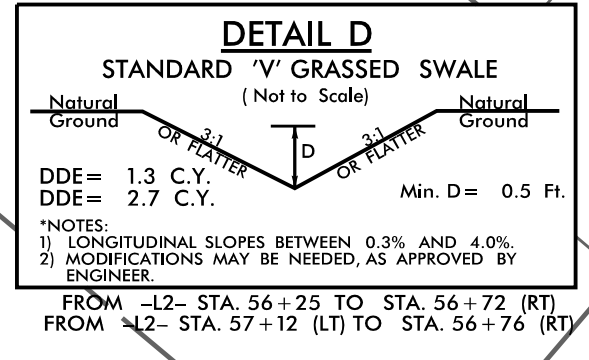
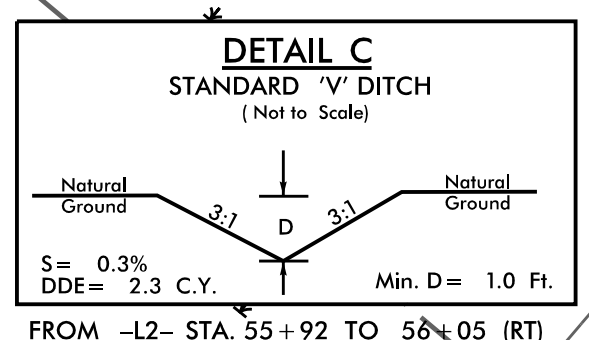
NAD 83 ANA 2011



MATCH TO SHEET EC-6 -L2- STA. 50+00

END TIP PROJECT B-4929  
-L2- STA. 59+06.37

- \* MULTI-USE PATH WILL TRANSITION IN 10' INCREMENTS AT END BRIDGE IN ORDER TO ACHIEVE DESIRED CROSS SLOPE PER ROADWAY TYPICALS
- \*\* PAVE AREA BETWEEN MULTI-USE PATH AND RETAINING WALL FOR DRAINAGE.
- \*\*\* CHAIN LINK FENCE ALONG THE ENTIRE LENGTH OF WALL.



\*NOTES:  
1) LONGITUDINAL SLOPES BETWEEN 0.3% AND 4.0%  
2) MODIFICATIONS MAY BE NEEDED, AS APPROVED BY ENGINEER

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 7

REVISIONS

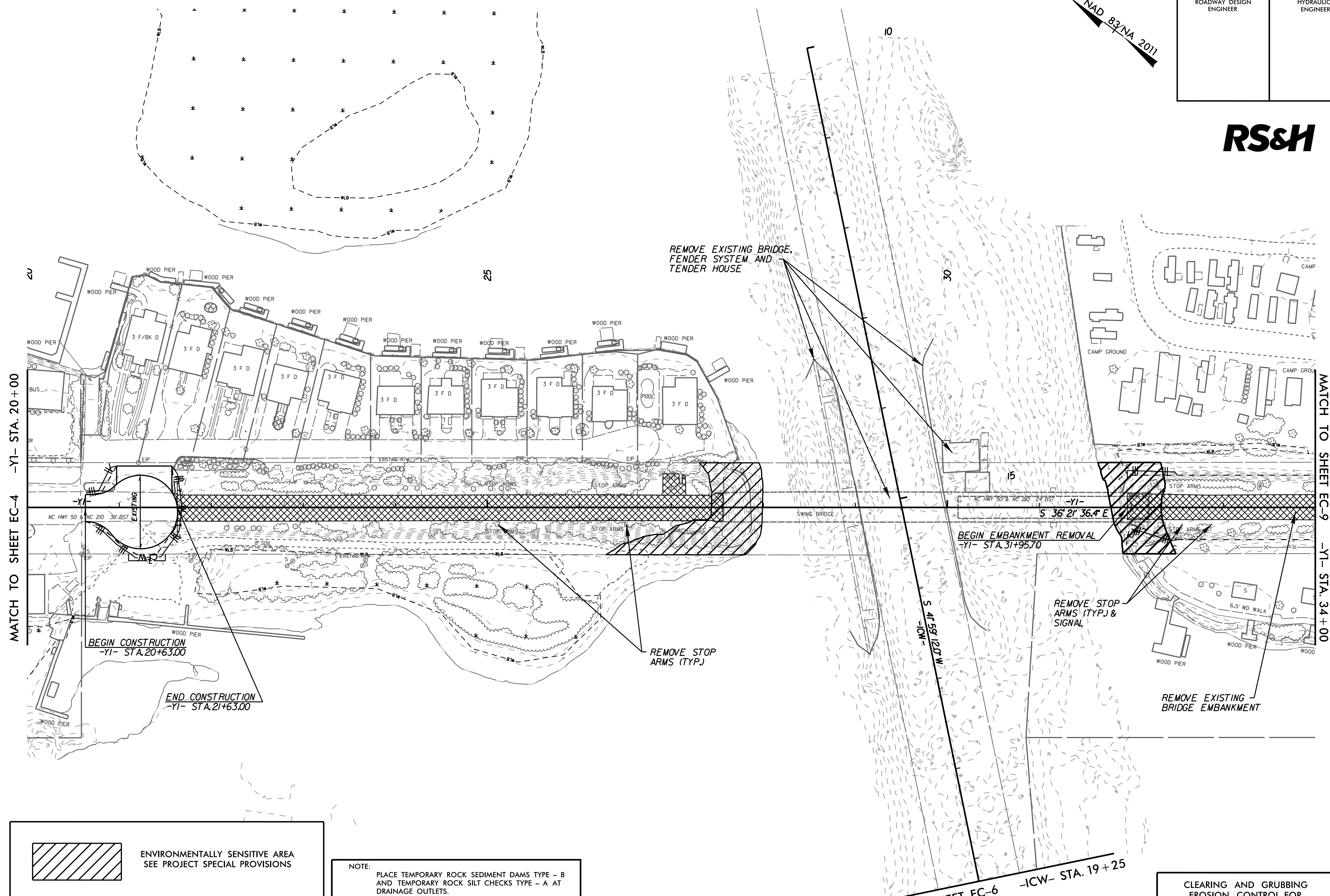
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PROJECT REFERENCE NO. <b>B-4929</b>	SHEET NO. <b>EC-8/CONST.8</b>
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

**RS&H**

NAD 83/NA 2011



REVISIONS

MATCH TO SHEET EC-4 -YI- STA. 20+00

MATCH TO SHEET EC-9 -YI- STA. 34+00

 ENVIRONMENTALLY SENSITIVE AREA  
SEE PROJECT SPECIAL PROVISIONS

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

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 8

MATCH TO SHEET EC-6 -ICW- STA. 19+25

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PROJECT REFERENCE NO.	SHEET NO.
B-4929	EC-9/CONST.9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**RS&H**

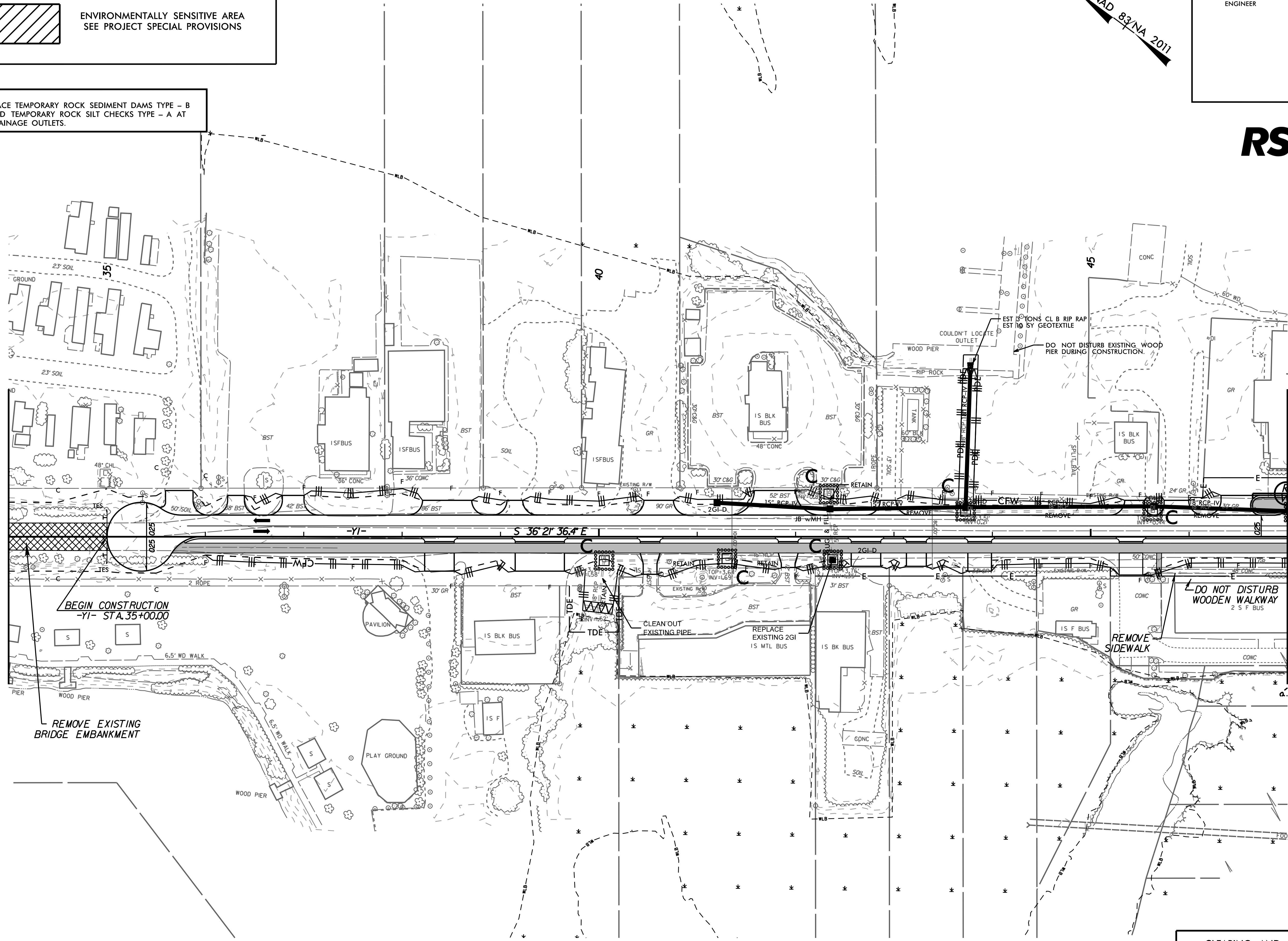
NAD 83/NA 2011

 ENVIRONMENTALLY SENSITIVE AREA  
SEE PROJECT SPECIAL PROVISIONS

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

MATCH TO SHEET EC-8 -Y1- STA. 34+00

MATCH TO SHEET EC-7 -Y1- STA. 47+00



BEGIN CONSTRUCTION  
-Y1- STA. 35+00.00

REMOVE EXISTING  
BRIDGE EMBANKMENT

DO NOT DISTURB  
WOODEN WALKWAY  
2' S F BUS

REMOVE  
SIDEWALK

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 9

REVISIONS

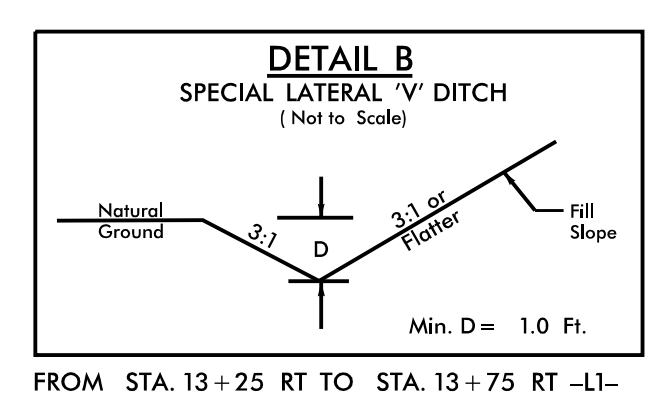
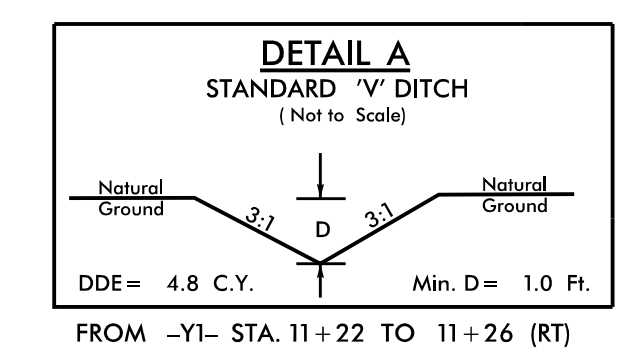
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PROJECT REFERENCE NO.	SHEET NO.
B-4929	EC-10/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NAD 83/NA 2011



**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.

**BEGIN TIP PROJECT B-4929**  
**-L1- POT STA. 10+00.00**

**BEGIN CONSTRUCTION**  
**-Y1- STA. 12+90.00**

**END CONSTRUCTION**  
**-Y1- STA. 17+50.00**

**END CONSTRUCTION**  
**-Y2- STA. 12+35.00**

**BEGIN BRIDGE**  
**-L2- STA. 19+27.06**

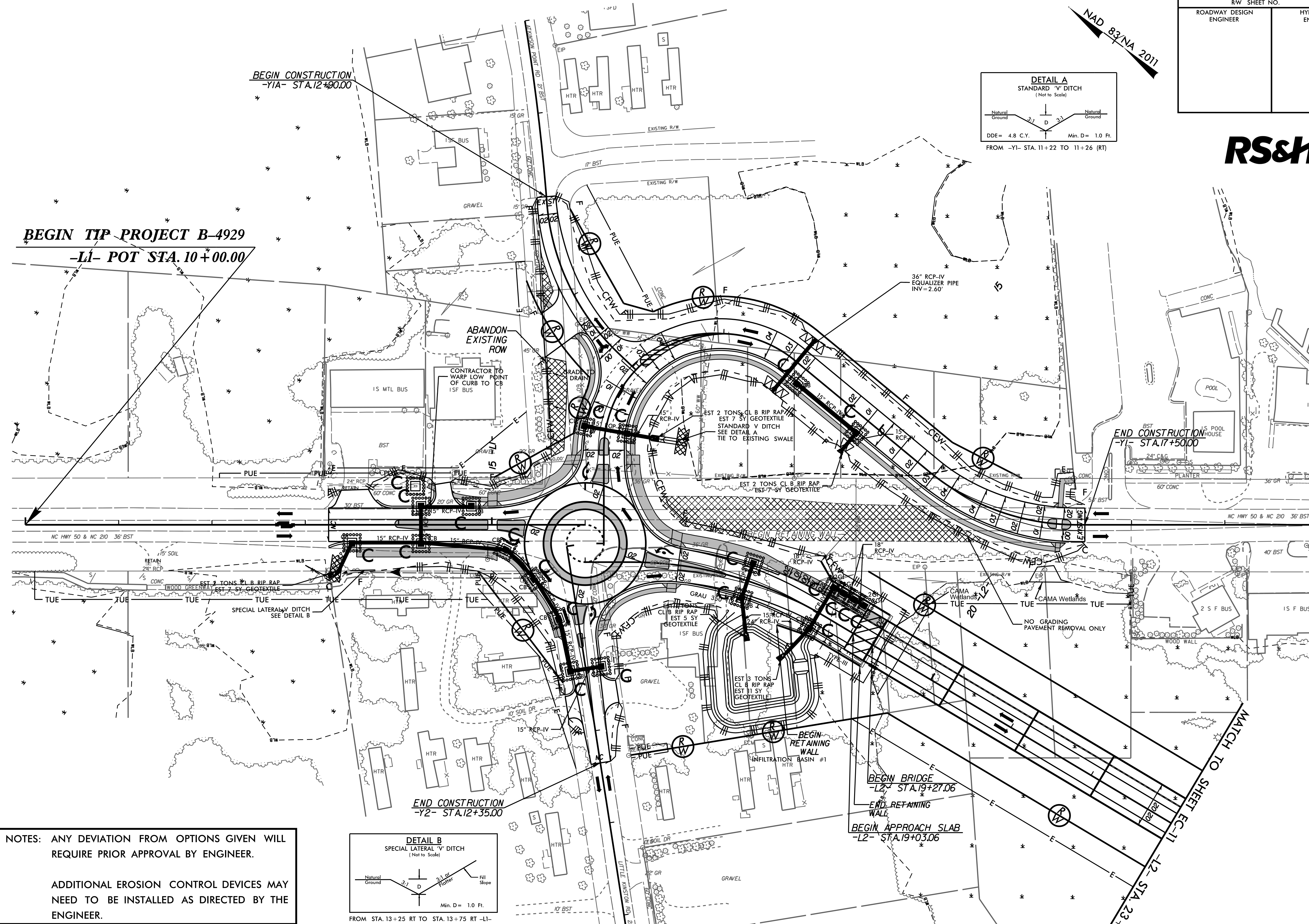
**END RETAINING WALL**

**BEGIN APPROACH SLAB**  
**-L2- STA. 19+03.06**

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MATCH TO SHEET EC-14  
 -Y1- STA. 20+00

MATCH TO SHEET EC-11  
 -L2- STA. 23+00



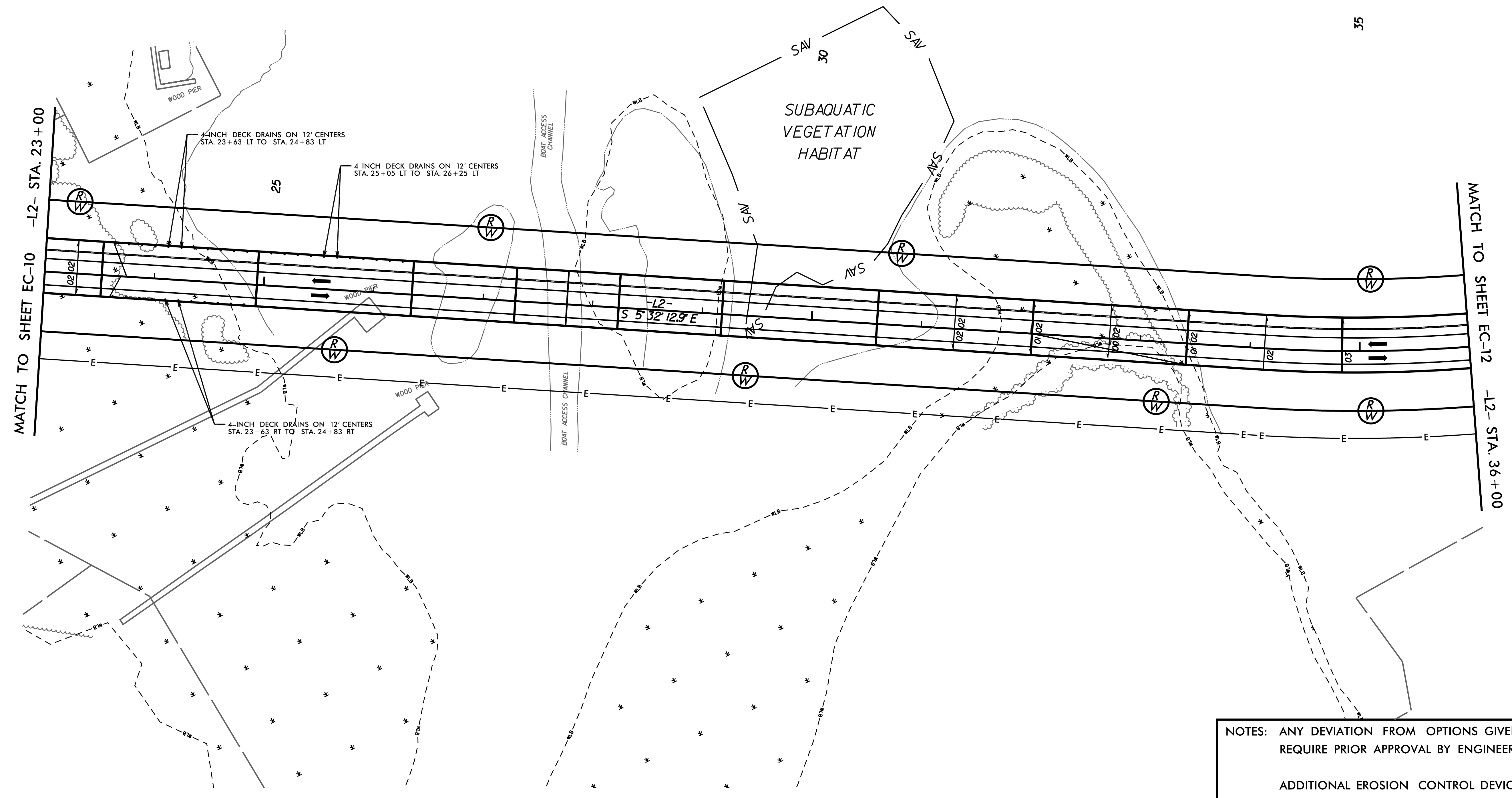


PROJECT REFERENCE NO.	SHEET NO.
B-4929	EC-11/CONST.5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/NA 2011



35



MATCH TO SHEET EC-10 -L2- STA. 23+00

MATCH TO SHEET EC-12 -L2- STA. 36+00

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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.

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PROJECT REFERENCE NO.	SHEET NO.
B-4929	EC-12/CONST.6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NAD 83/NA 2011

8/17/99

MATCH TO SHEET EC-14 -ICW- STA. 19+25

MATCH TO SHEET EC-11 -L2- STA. 36+00

MATCH TO SHEET EC-13 -L2- STA. 50+00

S 64°54'03" W  
-ICW-

S 41°59'12" W  
-ICW-

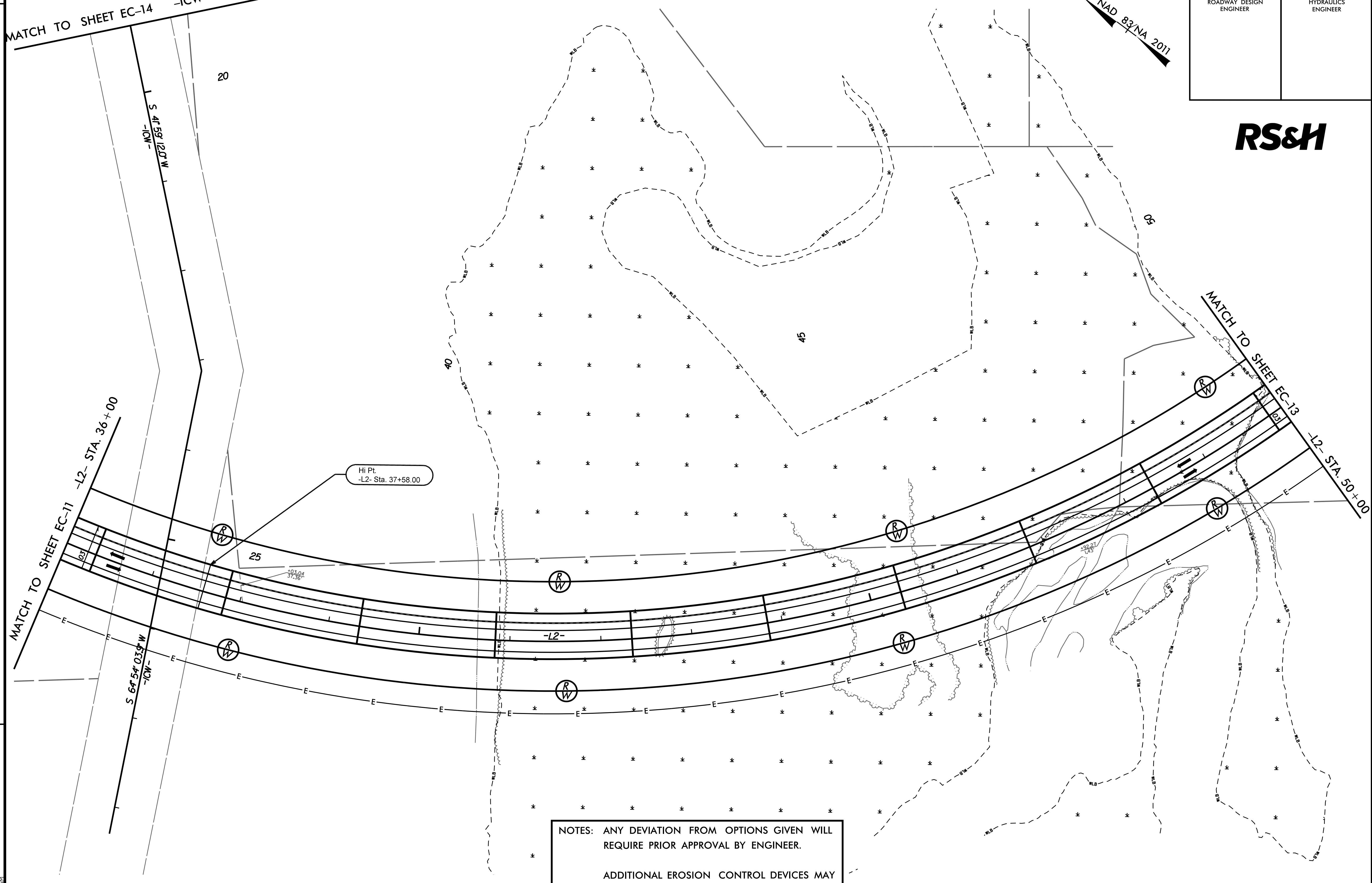
Hi Pt.  
-L2- Sta. 37+58.00

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.

REVISIONS

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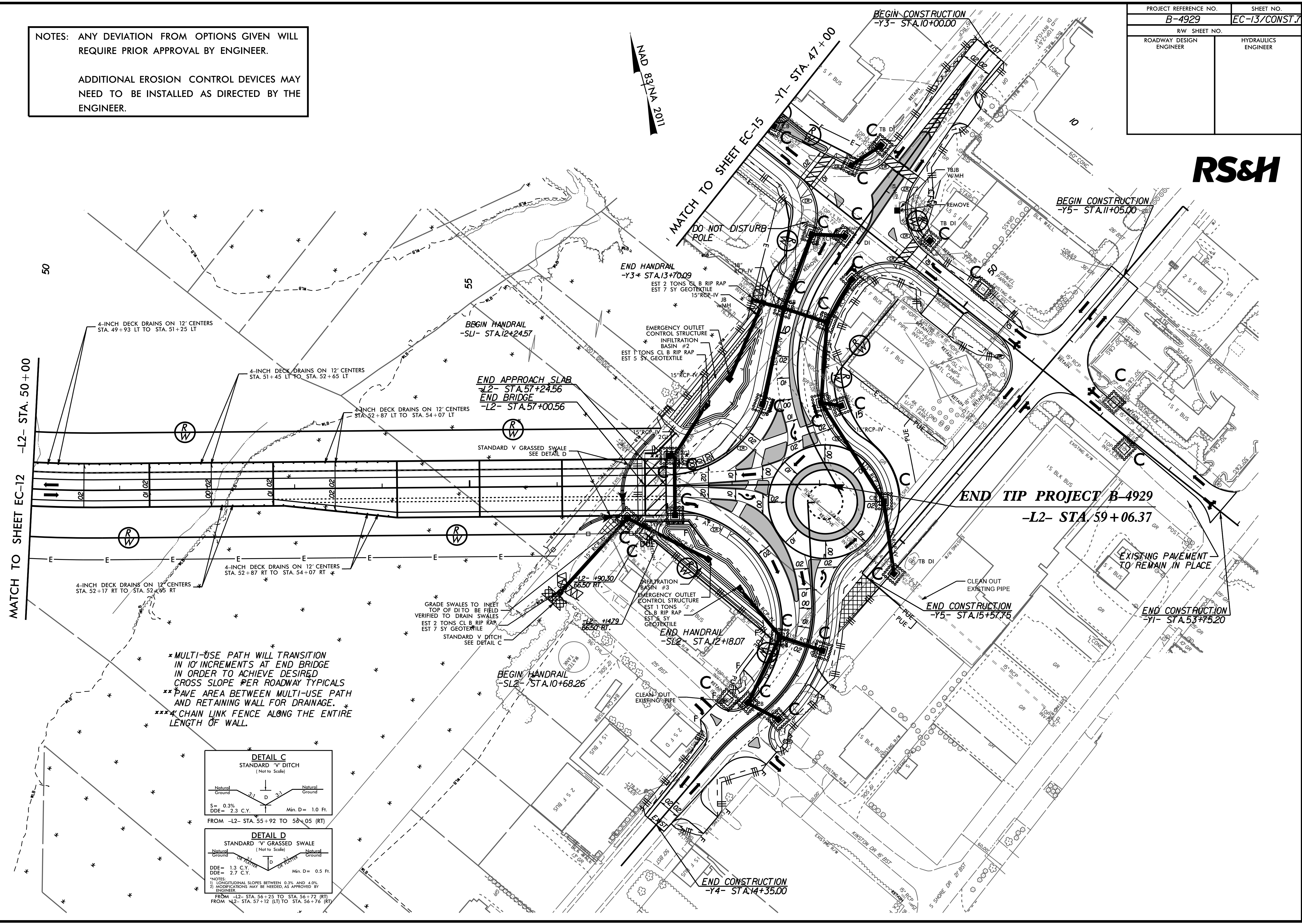
PROJECT REFERENCE NO.	SHEET NO.
B-4929	EC-13/CONST.7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**RS&H**

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.

NAD 83/NA 2011



MATCH TO SHEET EC-12 -L2- STA. 50+00

MATCH TO SHEET EC-15 -Y1- STA. 47+00

END TIP PROJECT B-4929  
-L2- STA. 59+06.37

END CONSTRUCTION  
-Y5- STA. 15+57.76

END CONSTRUCTION  
-Y1- STA. 53+75.20

END CONSTRUCTION  
-Y4- STA. 14+35.00

BEGIN CONSTRUCTION  
-Y3- STA. 10+00.00

BEGIN CONSTRUCTION  
-Y5- STA. 11+05.00

END APPROACH SLAB  
-L2- STA. 57+24.56  
END BRIDGE  
-L2- STA. 57+00.56

END HANDRAIL  
-Y3- STA. 13+70.09

END HANDRAIL  
-SL2- STA. 12+18.07

BEGIN HANDRAIL  
-SL2- STA. 10+68.26

4-INCH DECK DRAINS ON 12' CENTERS  
STA. 49+93 LT TO STA. 51+25 LT

4-INCH DECK DRAINS ON 12' CENTERS  
STA. 51+45 LT TO STA. 52+65 LT

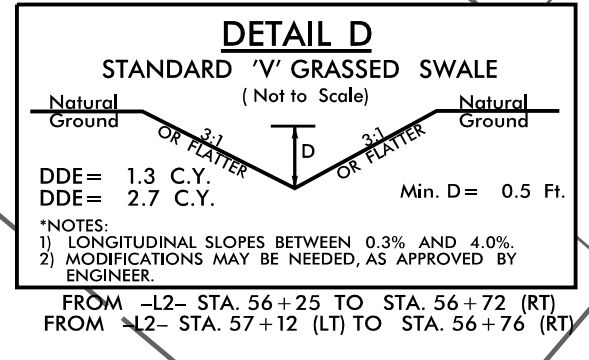
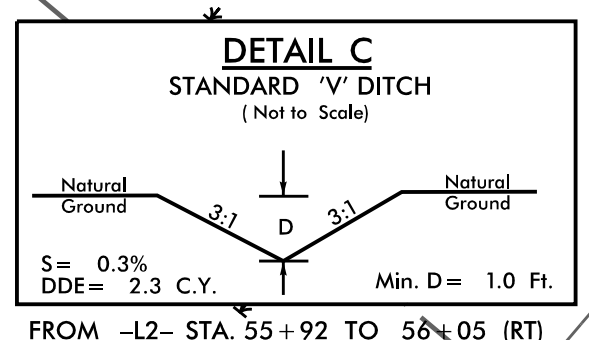
4-INCH DECK DRAINS ON 12' CENTERS  
STA. 52+87 LT TO STA. 54+07 LT

4-INCH DECK DRAINS ON 12' CENTERS  
STA. 52+17 RT TO STA. 52+95 RT

4-INCH DECK DRAINS ON 12' CENTERS  
STA. 52+87 RT TO STA. 54+07 RT

GRADE SWALES TO INLET  
TOP OF DITCH TO BE FIELD  
VERIFIED TO DRAIN SWALES  
EST 2 TONS CL B RIP RAP  
EST 7 SY GEOTEXTILE

- \* MULTI-USE PATH WILL TRANSITION IN 10' INCREMENTS AT END BRIDGE IN ORDER TO ACHIEVE DESIRED CROSS SLOPE PER ROADWAY TYPICALS
- \*\* PAVE AREA BETWEEN MULTI-USE PATH AND RETAINING WALL FOR DRAINAGE.
- \*\*\* CHAIN LINK FENCE ALONG THE ENTIRE LENGTH OF WALL.



\*NOTES:  
1) LONGITUDINAL SLOPES BETWEEN 0.3% AND 4.0%  
2) MODIFICATIONS MAY BE NEEDED, AS APPROVED BY ENGINEER.

REVISIONS

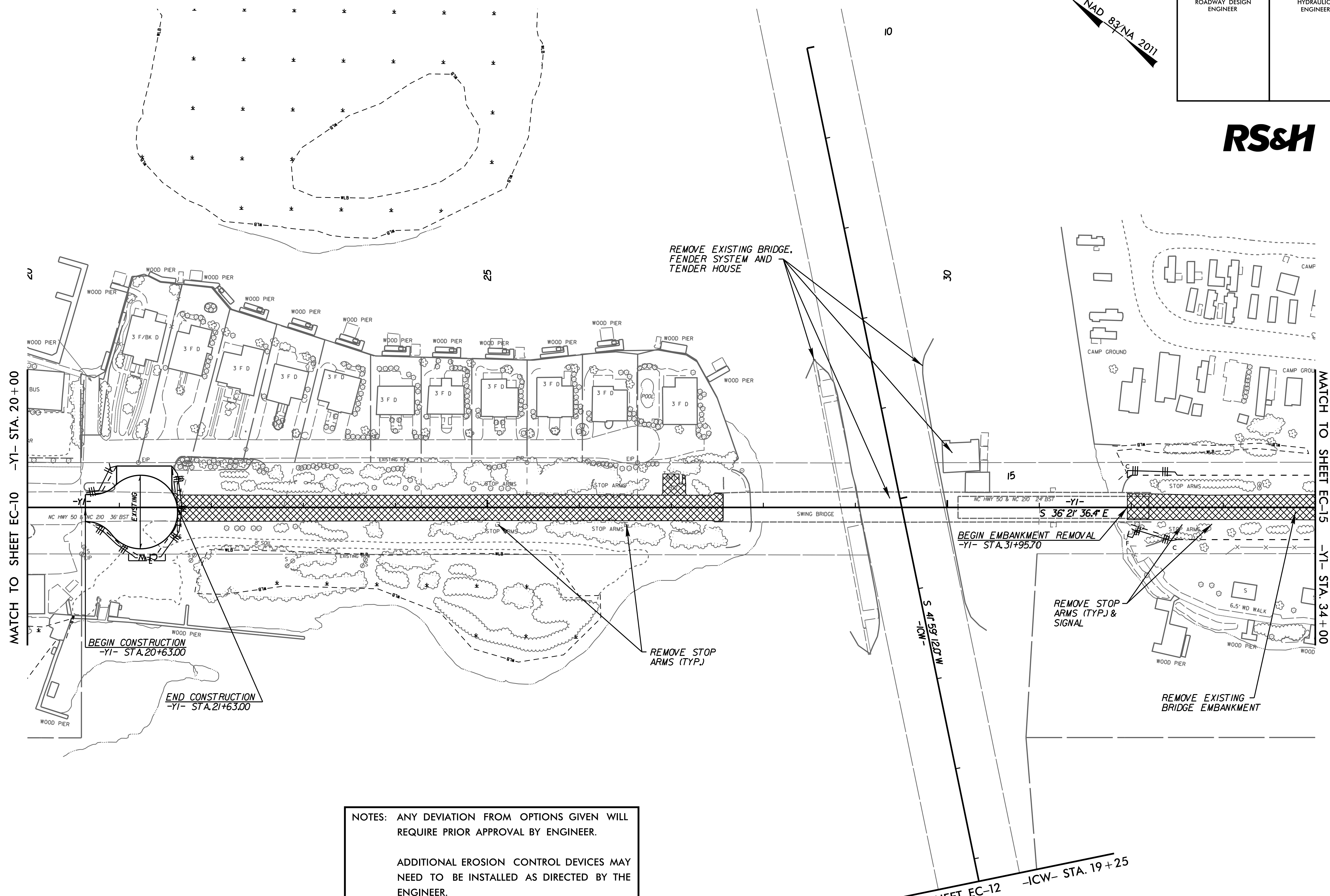
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PROJECT REFERENCE NO.	SHEET NO.
B-4929	EC-14/CONST.8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**RS&H**

NAD 83/NA 2011



REVISIONS

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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.

8/17/99

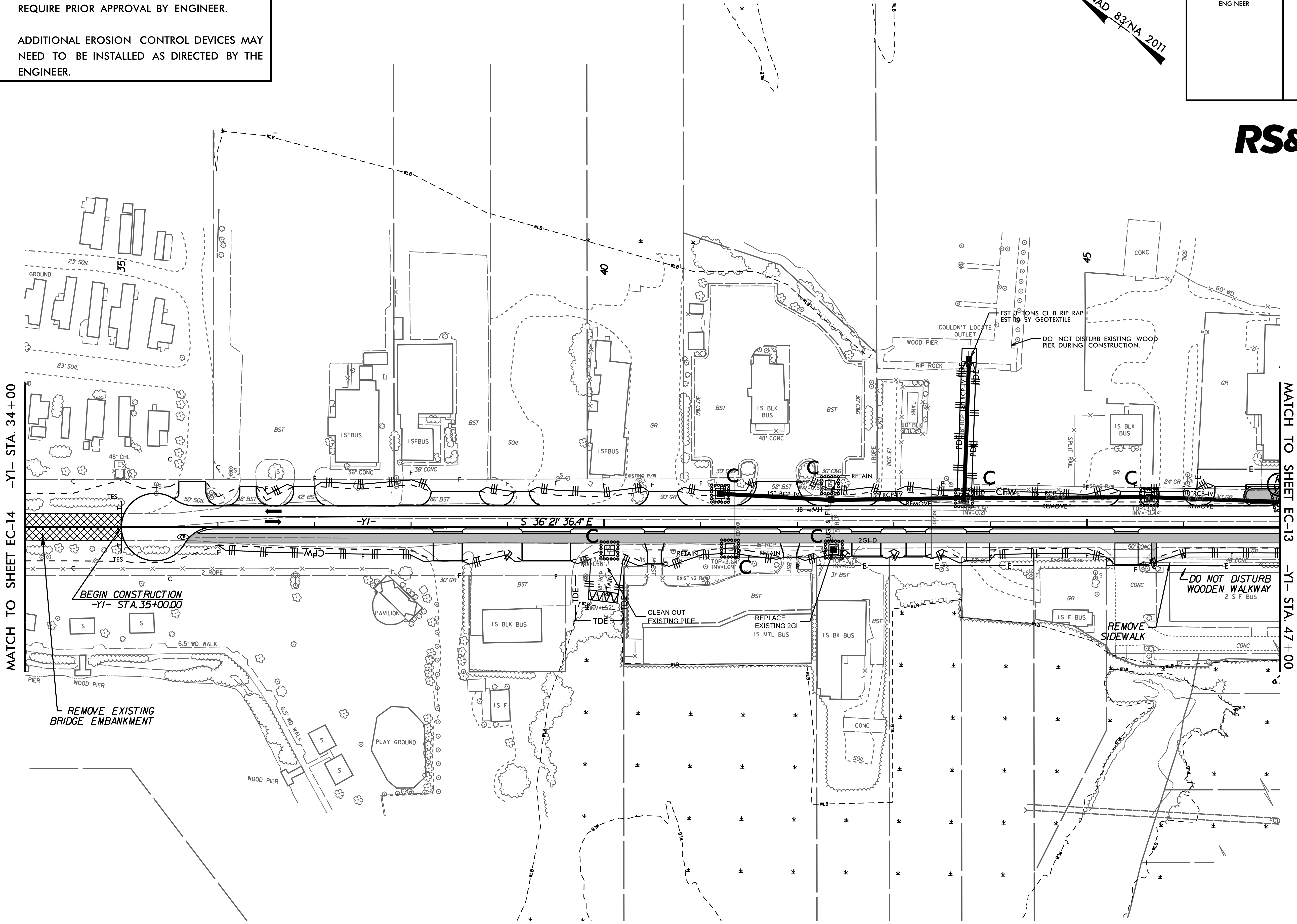
PROJECT REFERENCE NO.	SHEET NO.
B-4929	EC-15/CONST.9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**RS&H**

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.

NAD 83/NA 2011



REVISIONS

MATCH TO SHEET EC-14 -YI- STA. 34+00

MATCH TO SHEET EC-13 -YI- STA. 47+00

BEGIN CONSTRUCTION  
-YI- STA. 35+00.00

REMOVE EXISTING  
BRIDGE EMBANKMENT

DO NOT DISTURB  
WOODEN WALKWAY

REMOVE  
SIDEWALK

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