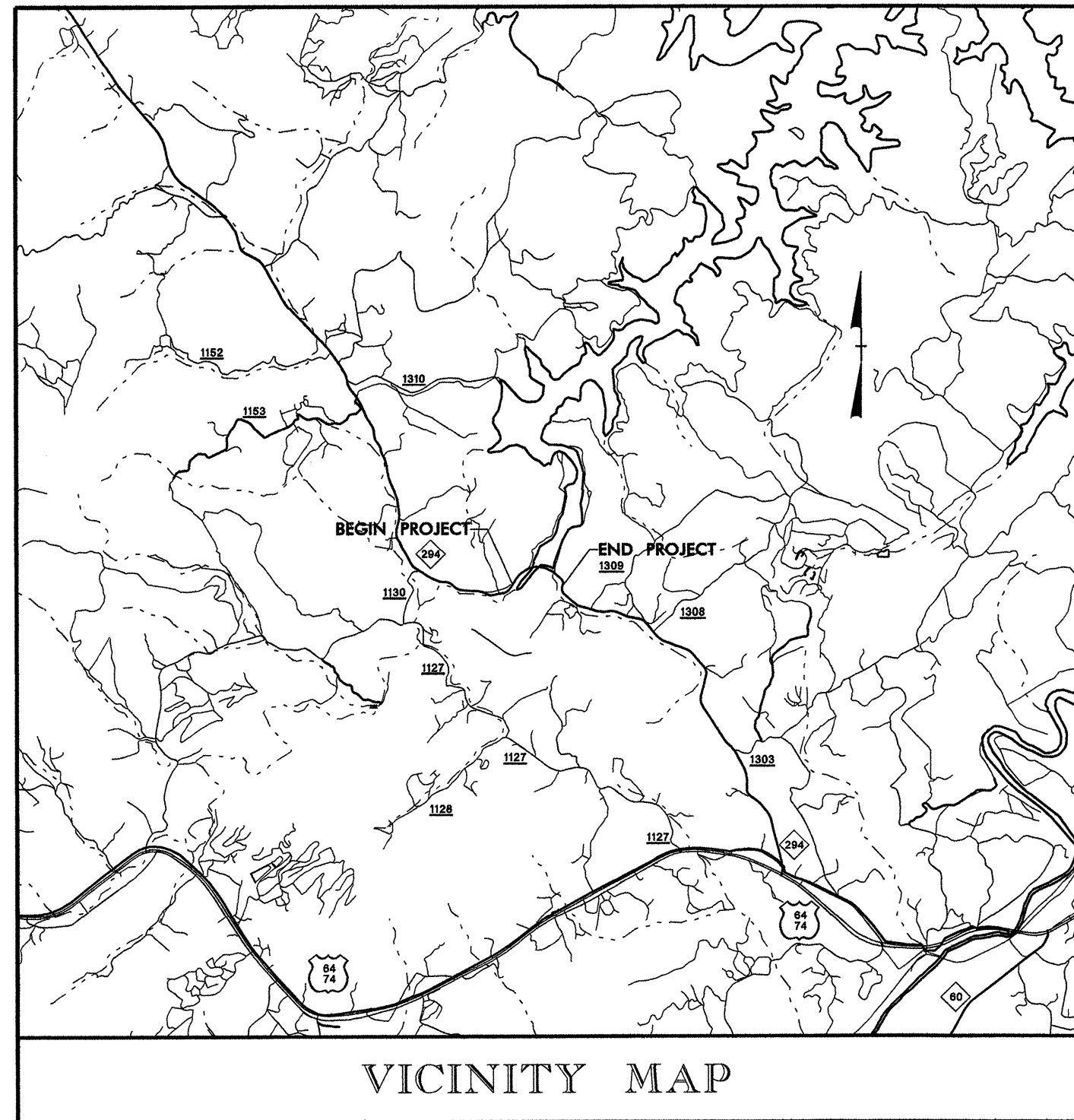


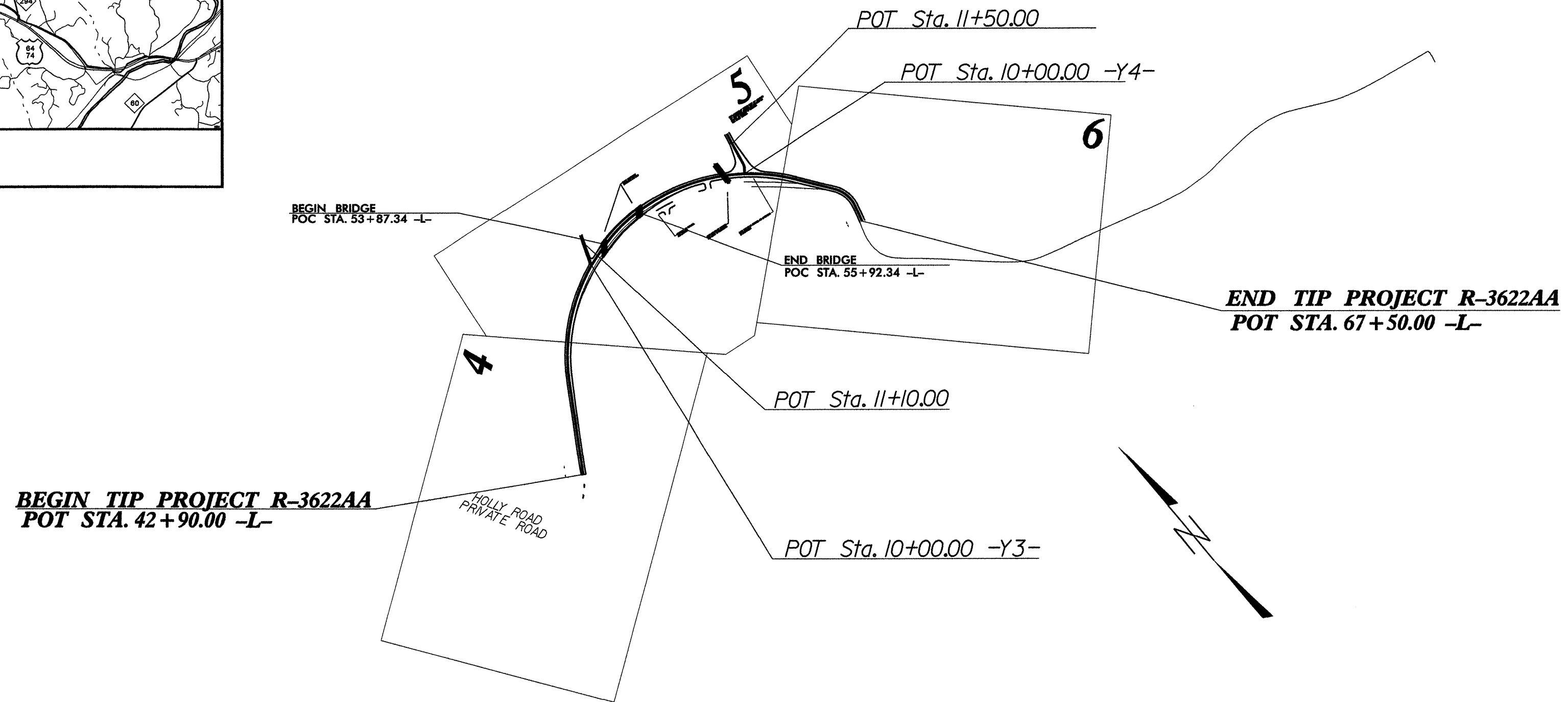
TIP PROJECT: R-3622AA

See Sheet 1-B For Conventional Symbols



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

**LOCATION: NC 294 ROADWAY IMPROVEMENTS AND BRIDGE REPLACEMENT.
TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND STRUCTURE.**



NOTES:
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.
THIS PROJECT IS NOT LOCATED WITHIN THE BOUNDARIES OF ANY MUNICIPALITY.

NCDOT CONTACT: J.B. Setzer, P.E., Division 14

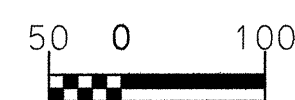
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3622AA	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38068.1.1		PE	
38068.2.1		ROW	
38068.3.1		CONST.	

EROSION AND SEDIMENT CONTROL MEASURES

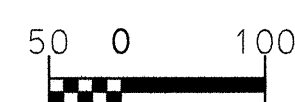
Std. #	Description	Symbol
	Streambank Reforestation.....	
1630.03	Temporary Silt Ditch.....	
1630.05	Temporary Diversion.....	
1605.01	Temporary Silt Fence.....	
1606.01	Special Sediment Control Fence.....	
1622.01	Temporary Berms and Slope Drains.....	
1630.01	Riser Basin.....	
1630.02	Silt Basin Type B.....	
1633.01	Temporary Rock Silt Check Type-A.....	
	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.....	
1630.04	Stilling Basin.....	
	Rock Inlet Sediment Trap:	
1632.01	Type A.....	
1632.02	Type B.....	
1632.05	Type C.....	
	Skimmer Basin.....	
	Tiered Skimmer Basin.....	

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

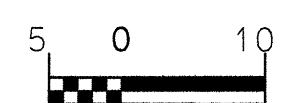
GRAPHIC SCALE



PLANS



PROFILE (HORIZONTAL)



PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT LENGTH

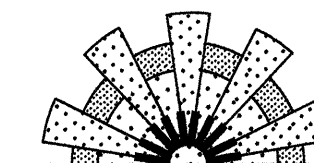
LENGTH ROADWAY	
TIP PROJECT R-3622AA =	0.434 MILES
LENGTH STRUCTURE	
TIP PROJECT R-3622AA =	0.032 MILES
TOTAL LENGTH OF	
TIP PROJECT R-3622AA =	0.466 MILES

Prepared In the Office of:

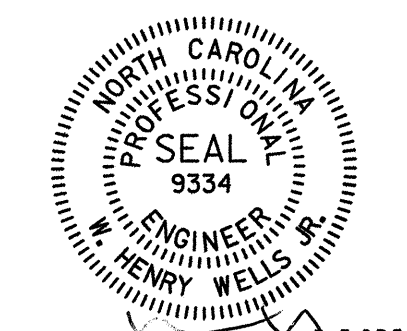
WILBUR SMITH ASSOCIATES

421 Fayetteville St., Suite 1303 Raleigh, NC 27601 Phone (919) 755-0583

SUNGATE DESIGN GROUP, P.A.



915 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243 FAX (919) 859-6258






7/31/08 DATE

For the North Carolina Department of Transportation

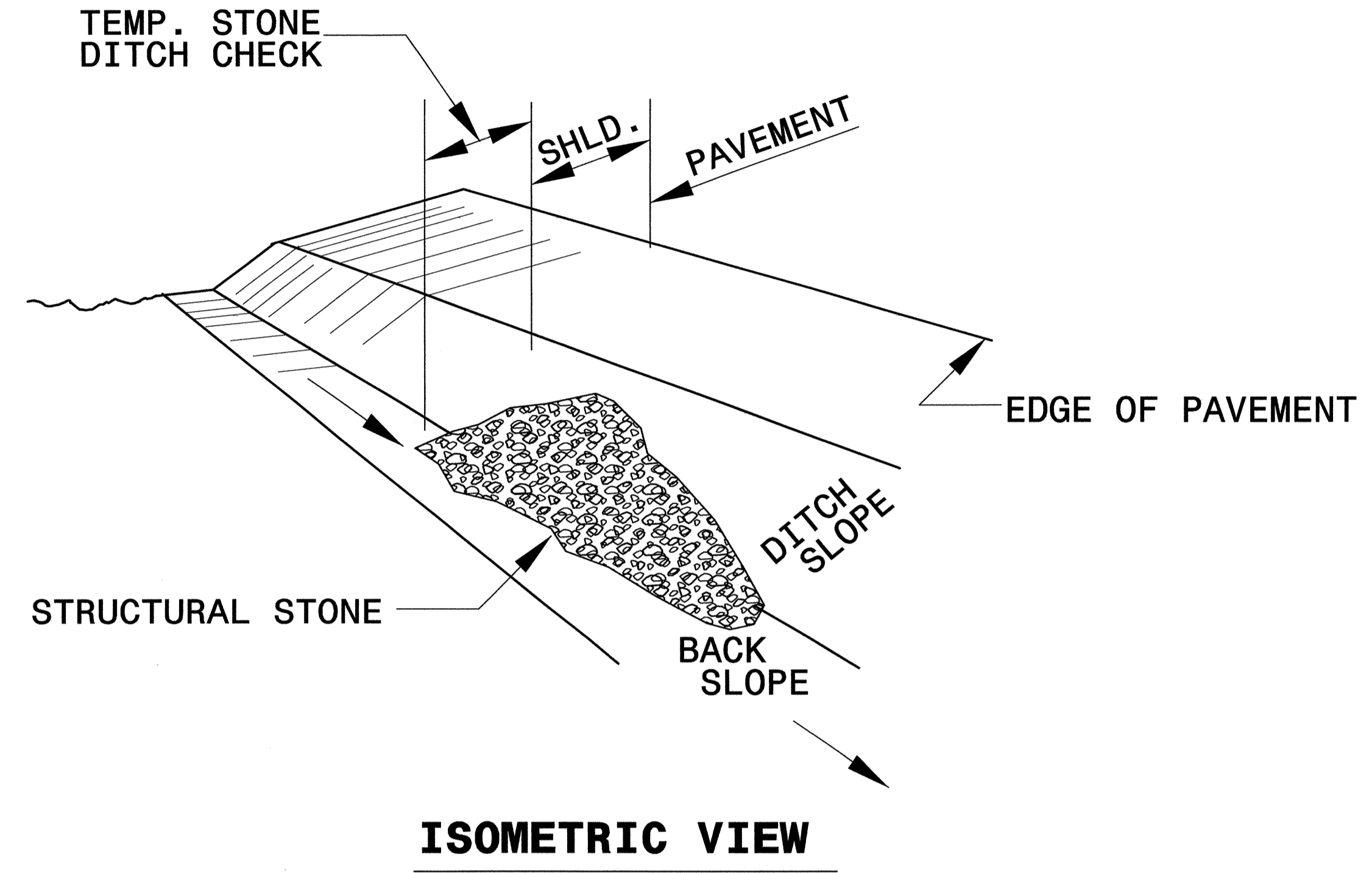
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated July 18, 2006 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	1630.06 Special Stilling Basin
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
1630.03 Temporary Silt Ditch	1634.01 Temporary Rock Sediment Dam Type A
1630.05 Temporary Diversion	1634.02 Temporary Rock Sediment Dam Type B
	1635.02 Rock Pipe Inlet Sediment Trap Type B

PROJECT REFERENCE NO. R-3622AA	SHEET NO. EC-02
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
	3/31/03
 Walker Smith Associates 421 Fayetteville Street Raleigh, N.C. 27601	 SUNGATE DESIGN GROUP, P.A. 618 JONES FERRARA ROAD RALEIGH, NORTH CAROLINA 27601

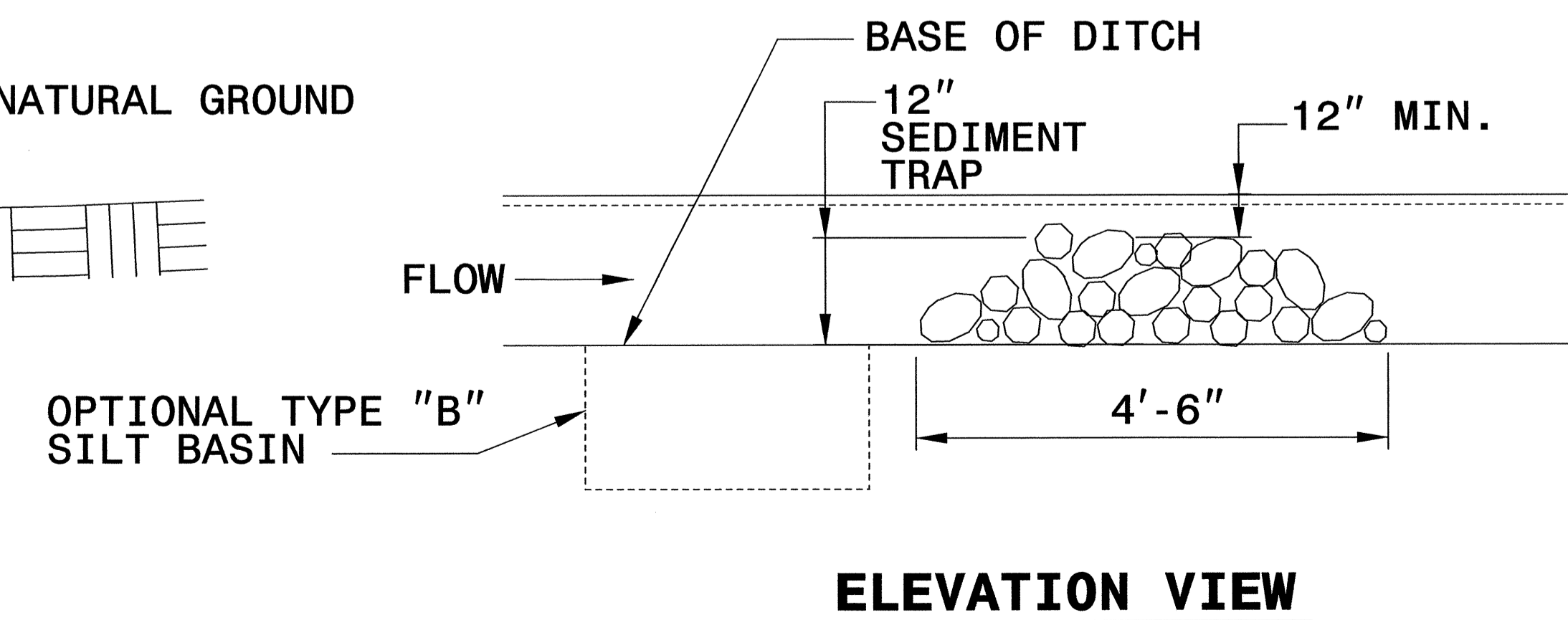
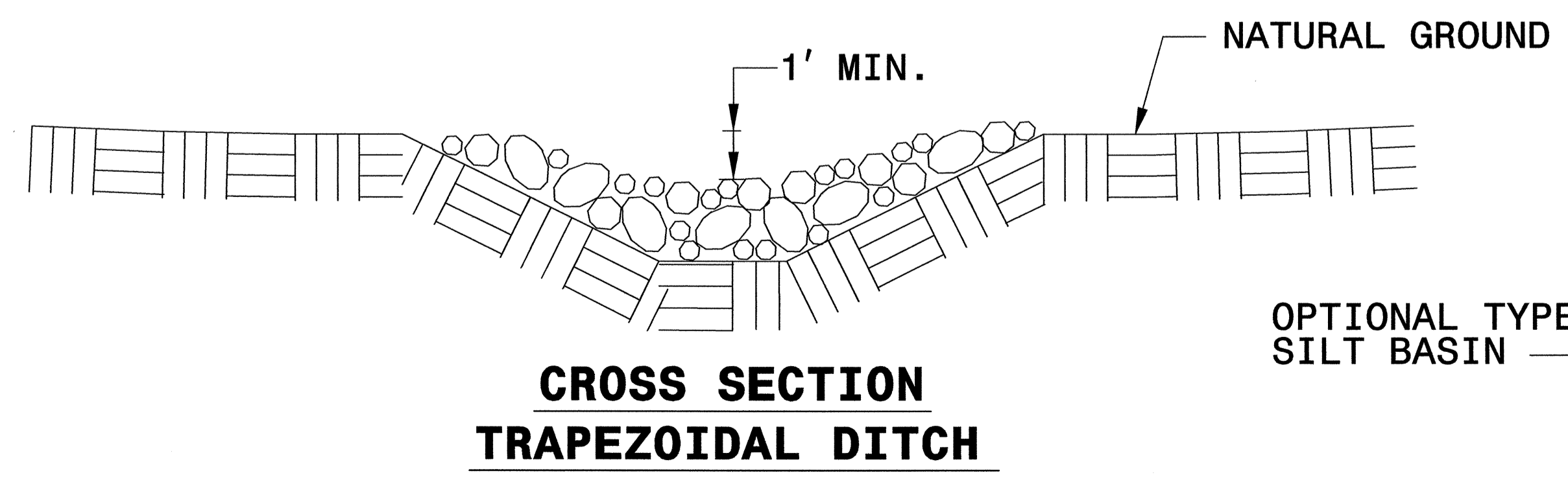
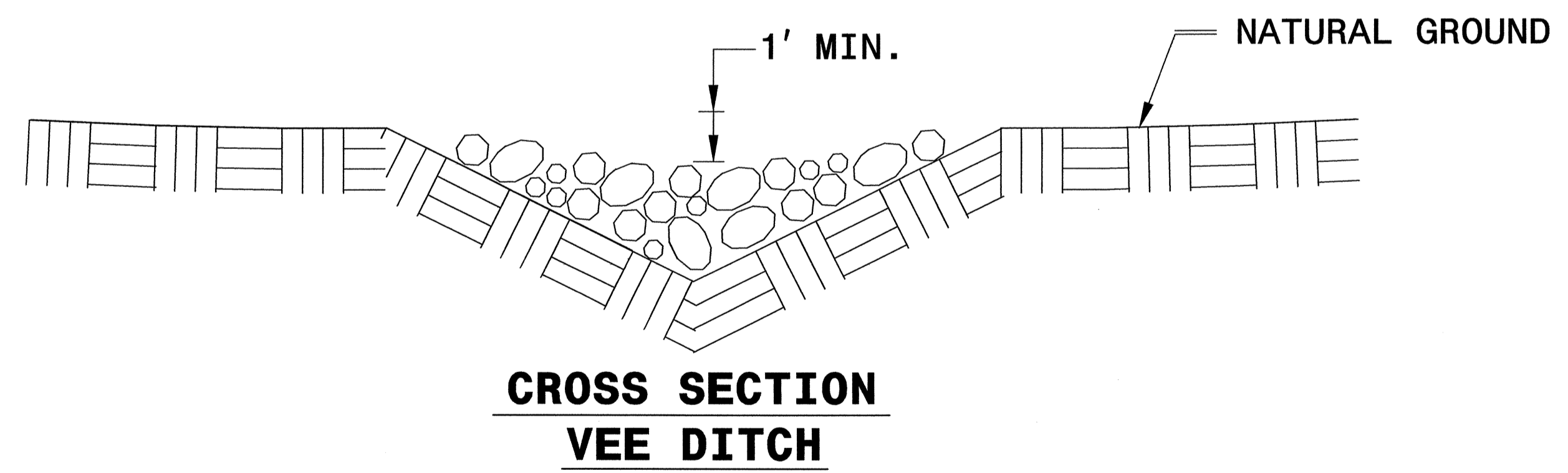
TEMPORARY ROCK SILT CHECK TYPE 'B' DETAIL



NOTES:

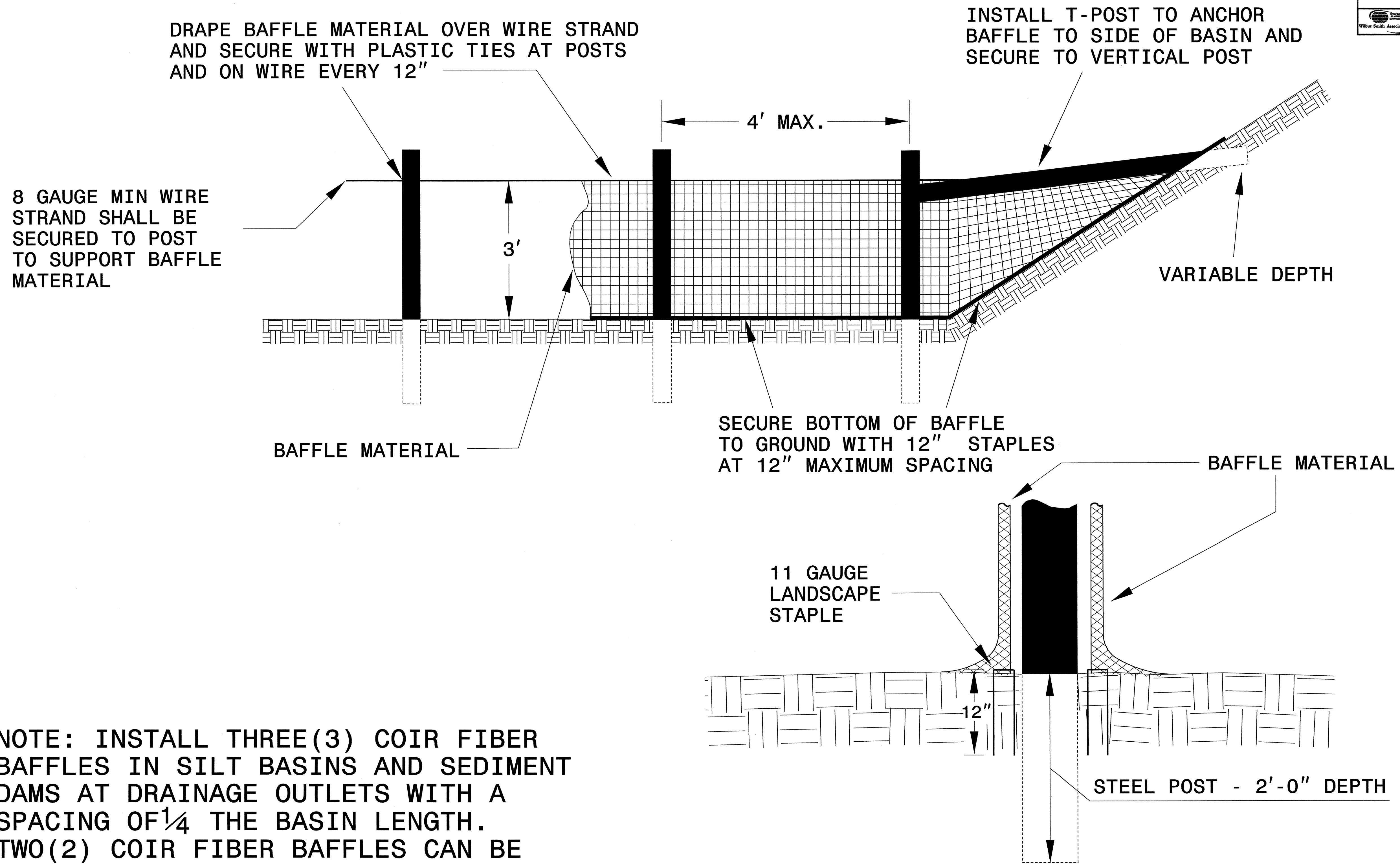
USE CLASS 'B' EROSION CONTROL STONE FOR STRUCTURAL STONE.

THE ENGINEER MAY DIRECT THE OPTION OF CLASS "A" STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.



PROJECT REFERENCE NO. R-3622AA	SHEET NO. EC-02A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER BAFFLE DETAIL



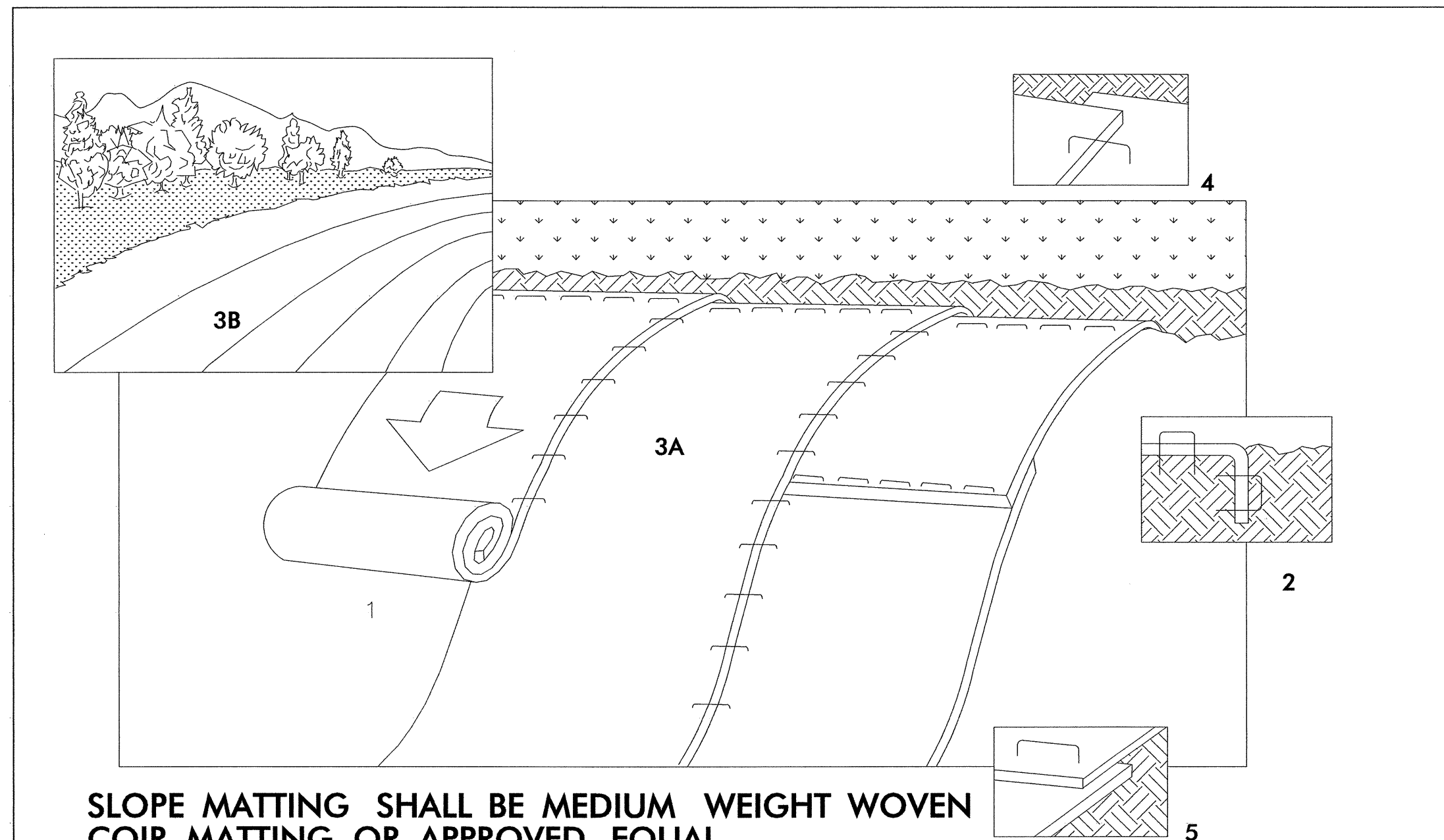
NOTE: INSTALL THREE (3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF $\frac{1}{4}$ THE BASIN LENGTH. TWO (2) COIR FIBER BAFFLES CAN BE INSTALLED IN SILT BASINS LESS THAN 20 FT. IN LENGTH WITH A SPACING OF $\frac{1}{3}$ THE BASIN LENGTH.

BAFFLE MATERIAL SHALL BE SECURED TO THE BOTTOM AND SIDES OF BASIN USING 12" LANDSCAPE STAPLES

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PROJECT REFERENCE NO. R-3622AA	SHEET NO. EC-02B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	3/31/08

SLOPE MATTING DETAIL



SLOPE MATTING SHALL BE MEDIUM WEIGHT WOVEN COIR MATTING, OR APPROVED EQUAL

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP x 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
5. WHEN BLANKETS MUST BE SPICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 4" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.
6. ALL SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED W/SLOPE MATTING. REFER TO PLAN FOR ADDITIONAL MATTING LOCATIONS.
7. REFER TO GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE PATTERN RECOMMENDATIONS FOR SLOPE.
8. SLOPE MATTING SHALL BE MEDIUM WEIGHT WOVEN COIR MATTING, OR APPROVED EQUAL

SLOPE MATTING INSTALLATION

NTS

INSTALLATION OF NETTING AND MATTING

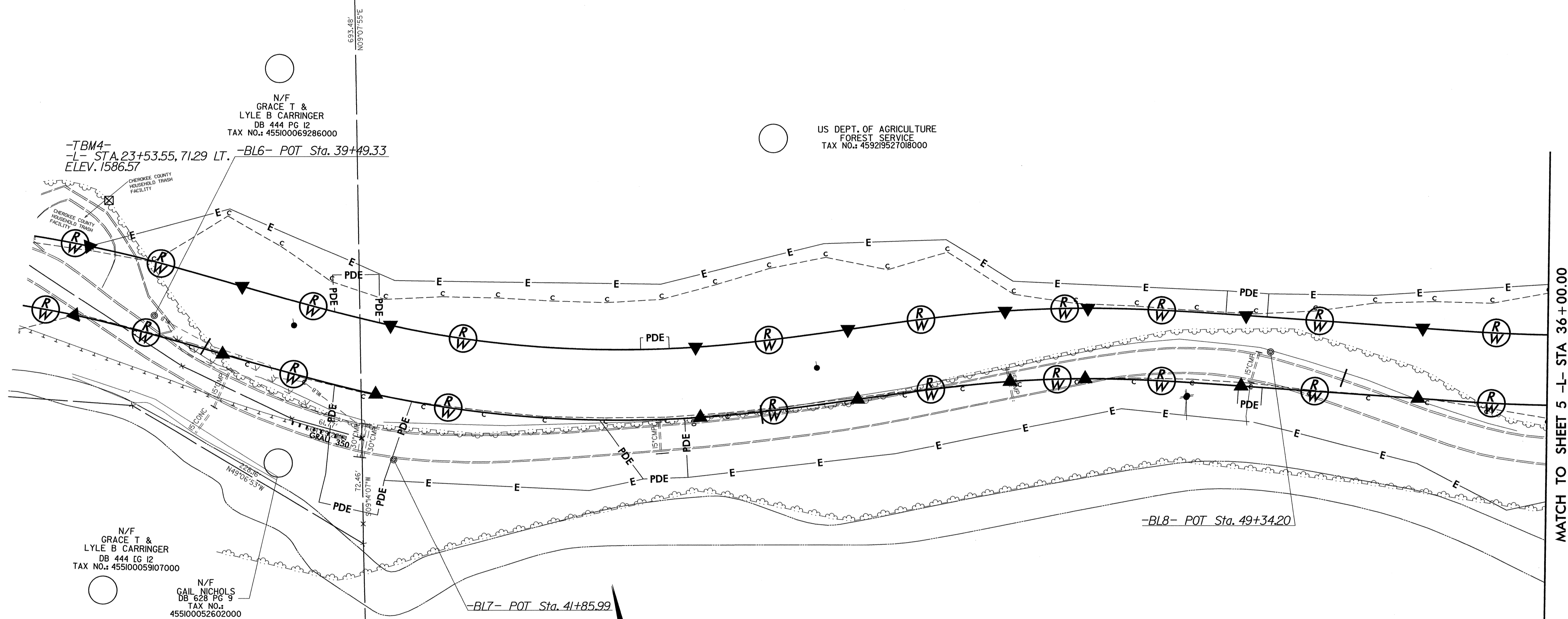
Products designed to control erosion should be installed in accordance with manufacturer's instructions. Any mat or blanket-type product used as protective mulch should provide cover of at least 30% of the surface where it is applied.

1. Prepare seedbed and apply lime, compost, fertilizer, seed and mulch before laying the net or mat.
2. Start laying the net from the top of the channel or slope and unroll it down the grade. Allow netting to lay loosely on the soil, but without wrinkles – do not stretch.
3. To secure the net, bury the upslope end in a slot or trench no less than 6 inches deep. Cover with soil and tamp firmly. Staple the net every 12 inches across the top end and every 3 feet around the edges and bottom. Where 2 strips of net are laid side by side, the adjacent edges should be overlapped a minimum of 12 inches and stapled together. Each strip of netting should also be stapled down the center, every 3 feet. Do not stretch the net when applying staples.
4. To join two strips, cut a trench to anchor the end of the new net. Overlap the end of the previous roll 18 inches and staple every 12 inches just below the anchor slot.

MAINTENANCE

Inspect all mulches and matting periodically, and after rainstorms to check for rill erosion, dislocation, or failure where erosion is observed. Apply additional mulch and matting, if washout occurs, repair the slope grade, reseed, and reinstall mulch and matting. Continue inspections until vegetation is firmly established.

SHEET SHOWN FOR ROW PURPOSES AND CLEARING LIMITS ONLY.
NO GRUBBING ALLOWED. TREE CLEARING ONLY.



REVISIONS

MATCH TO SHEET 5 -L- STA 36+00.00

SHOWN FOR ROW PURPOSES ONLY (-L- R3622AB)

PIs = 25+65.89	PI = 27+44.85	PIs = 29+22.07	PIs = 30+98.07	PI = 31+76.11	PIs = 32+54.16
Θs = 3° 57' 36.0"	Δ = 16° 05' 26.9" (LT)	Θs = 3° 57' 36.0"	Θs = 3° 57' 36.0"	Δ = 4° 05' 07.4" (RT)	Θs = 3° 57' 36.0"
Ls = 132.00'	D = 6° 00' 00.0"	Ls = 132.00'	Ls = 132.00'	D = 6° 00' 00.0"	Ls = 132.00'
LT = 88.02'	L = 268.18'	LT = 88.02'	LT = 88.02'	L = 68.09'	LT = 88.02'
ST = 44.02'	T = 134.98'	ST = 44.02'	ST = 44.02'	T = 34.06'	ST = 44.02'
	R = 954.93'			R = 954.93'	

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DATE: 3/21/2008 8:22:07 AM

NOTE: EXISTING ROW OUTSIDE PROPOSED ROW LIMITS TO REVERT TO PROPERTY OWNER AT COMPLETION OF PROJECT.

SHEET SHOWN FOR ROW PURPOSES ONLY

PROJECT REFERENCE NO. R-3622AA	SHEET NO. EC-5/CONST. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 9334 HENRY WELLS JR. 3/31/03
421 Fayetteville Street Suite 1305 Raleigh, N.C. 27601	SINGATE DESIGN GROUP, P.A. 100 JONES FARM ROAD RALEIGH, NORTH CAROLINA 27605

EROSION CONTROL PLAN CLEAR AND GRUBBING

7
US DEPT. OF AGRICULTURE
FOREST SERVICE
TAX NO.: 459219527018000

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 5

REVISIONS

MATCH TO SHEET 4 - L- STA 36+00.00

-BLII- POT Sta. 64+04.03 =
-L- POC 47+57.73 (4.97 LT.)

-L- POT Sta. 42+90.00
BEGIN TIP PROJECT R-3622AA
BEGIN CONSTRUCTION

-BL9- POT Sta. 52+15.93

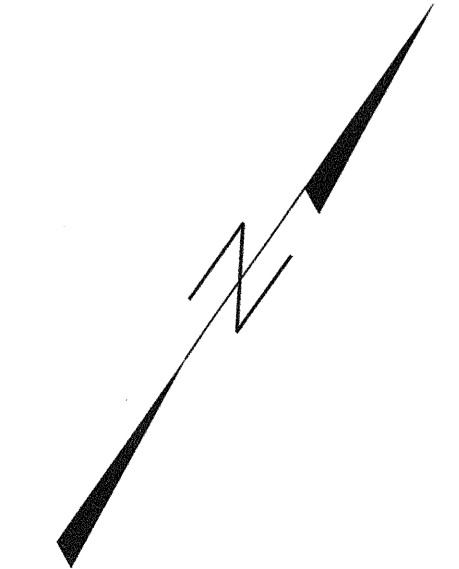
-BLIO- POT Sta. 58+11.74

32 x 16 x 3
5' weir

29 x 14 x 3
5' weir

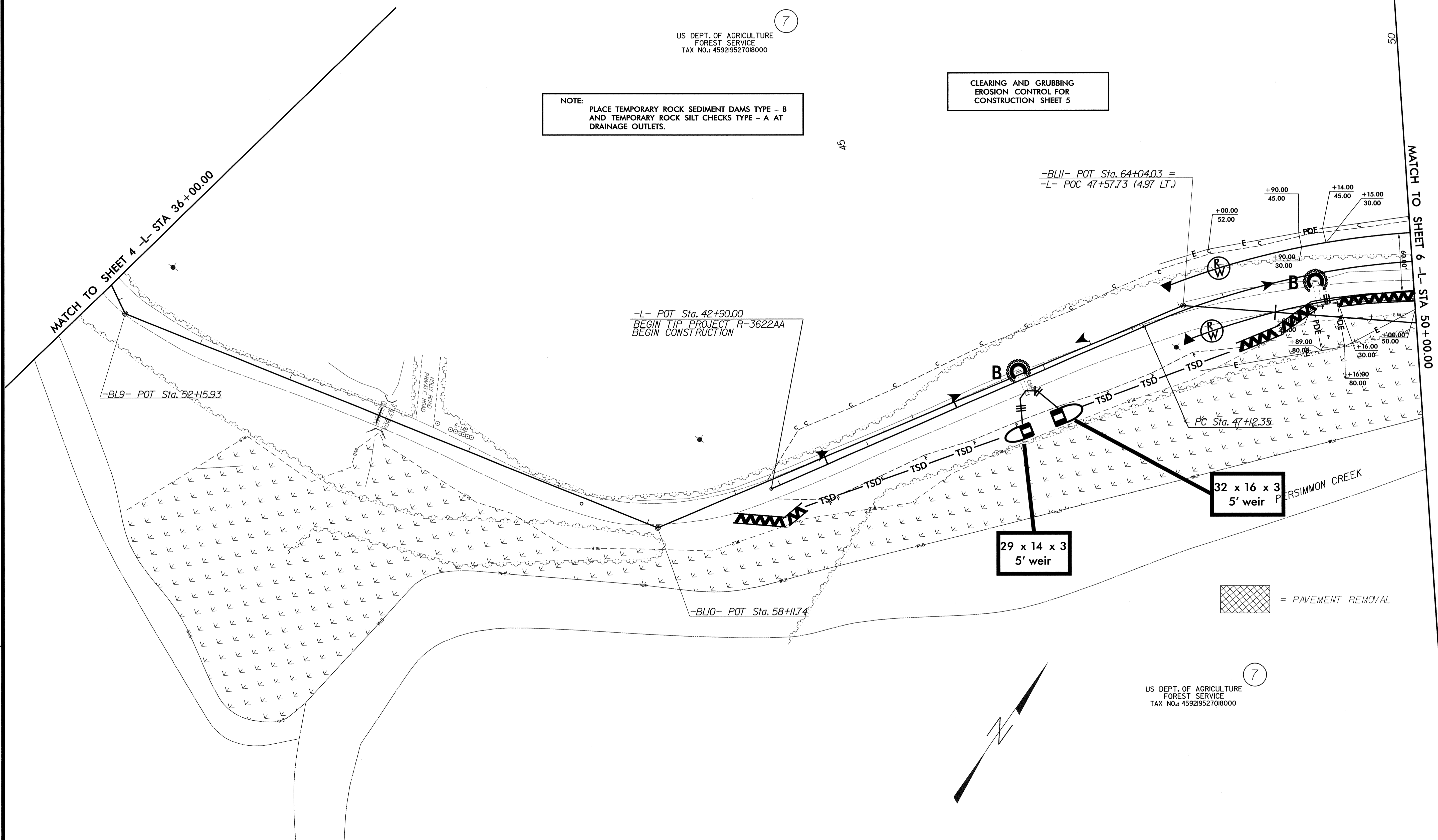
 = PAVEMENT REMOVAL

7
US DEPT. OF AGRICULTURE
FOREST SERVICE
TAX NO.: 459219527018000



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MATCH TO SHEET 6 - L- STA 50+00.00



PROJECT REFERENCE NO.		SHEET NO.	
R-3622AA		EC-6/CONST. 6	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
		SUNGATE DESIGN GROUP, P.A.	
<small>421 Fayetteville Street Suite 1203 Raleigh, N.C. 27601</small>		<small>811 Jones Franklin Road Raleigh, N.C. 27608</small>	

NOTE: 6 INCHES OF TOPSOIL FROM +/- 58+00 TO +/- 61+00 TO BE REMOVED AND REPLACED ON PROJECT AS DIRECTED BY ENGINEER. SEE PERMIT DETAILS.

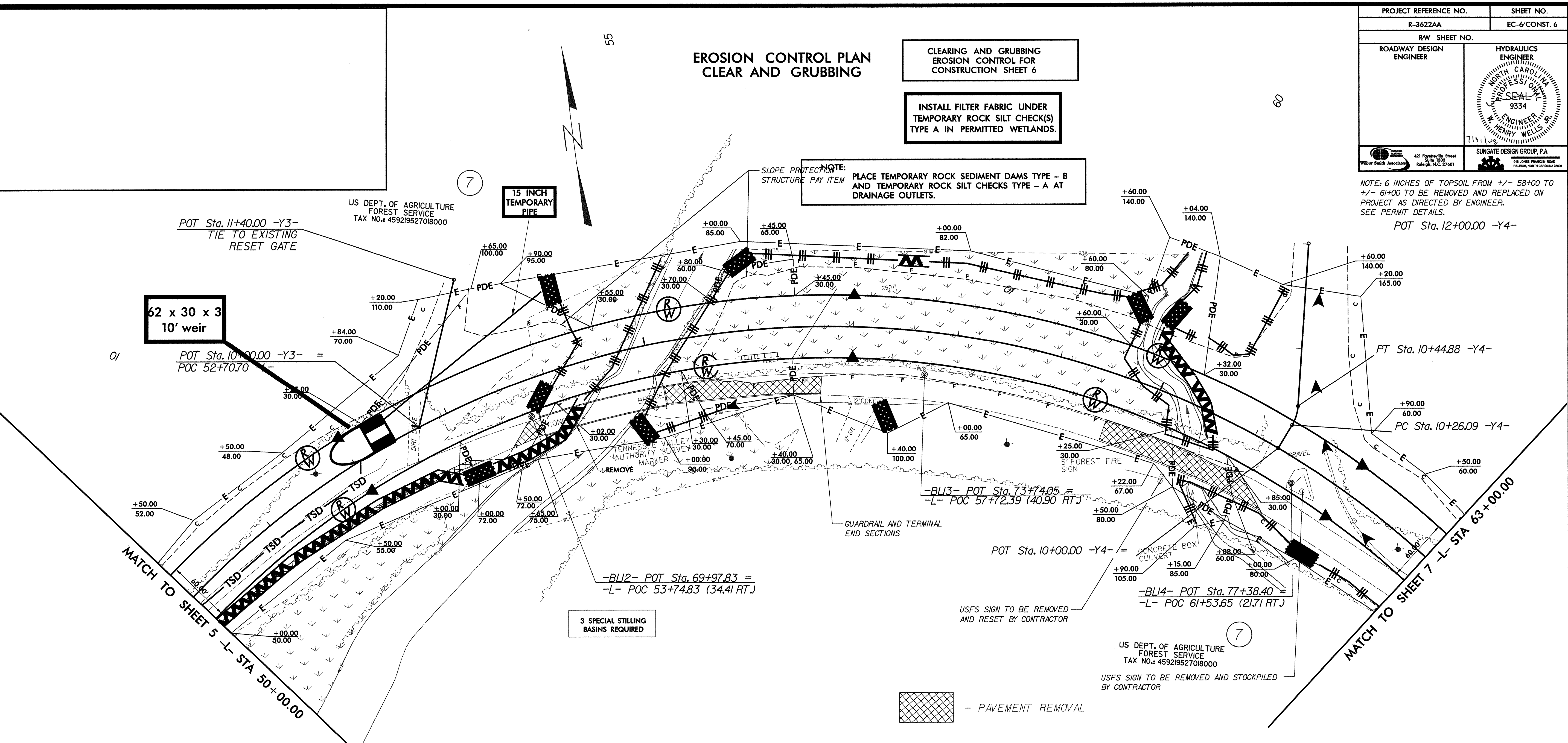
**EROSION CONTROL PLAN
CLEAR AND GRUBBING**

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 6

INSTALL FILTER FABRIC UNDER
TEMPORARY ROCK SILT CHECK(S)
TYPE A IN PERMITTED WETLANDS.

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

SLOPE PROTECTION
STRUCTURE PAY ITEM



**62 x 30 x 3
10' weir**

**15 INCH
TEMPORARY
PIPE**

**3 SPECIAL STILLING
BASINS REQUIRED**

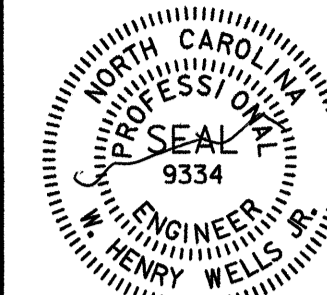
= PAVEMENT REMOVAL

REVISIONS

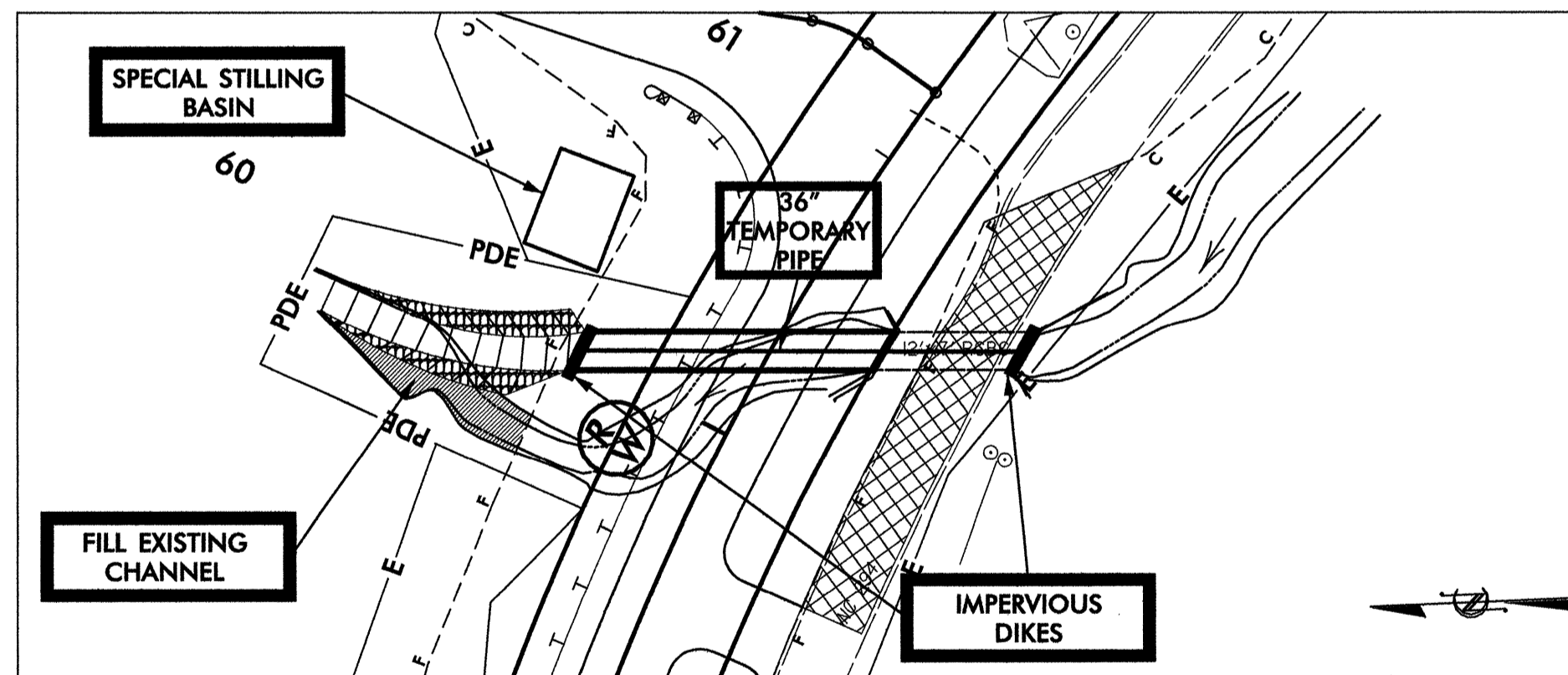
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NOTE: EXISTING ROW OUTSIDE PROPOSED ROW LIMITS TO REVERT TO PROPERTY OWNER AT COMPLETION OF PROJECT.
SEE SHEET 9 FOR -L- PROFILE
SEE SHEETS X-8 THRU X-15 FOR -L- X-SECTIONS
SEE SHEET 11 FOR Y-3 AND Y-4 PROFILES
SEE SHEETS X-20 THRU X-22 FOR Y-3 AND Y-4 X-SECTIONS
SEE SHEETS S-1 THRU S-36 FOR BRIDGE DESIGN
SEE SHEETS C-1 THRU C-4 FOR CULVERT DESIGN

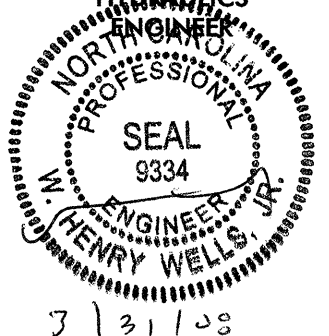


CULVERT CONSTRUCTION SEQUENCE STA. 60+29 -L-

PROJECT REFERENCE NO. R3622AA	SHEET NO. EC-07/CONST.05
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
	7/31/08

1. UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED DURING CULVERT CONSTRUCTION TO DEWATER SITE.
2. CONSTRUCT IMPERVIOUS DIKES AND INSTALL TEMP 36" DIVERSION PIPE.
3. CONSTRUCT CULVERT EXTENSION AND OUTLET CHANNEL.
4. REMOVE TEMPORARY PIPE AND IMPERVIOUS DIKES.
5. FILL ABANDONED EXISTING CHANNEL.
6. COMPLETE ROADWAY.



CULVERT STAGING PLAN
 NC 294 OVER UT TO LAKE CHEROKEE
 CL STA 60+29.3 -L-

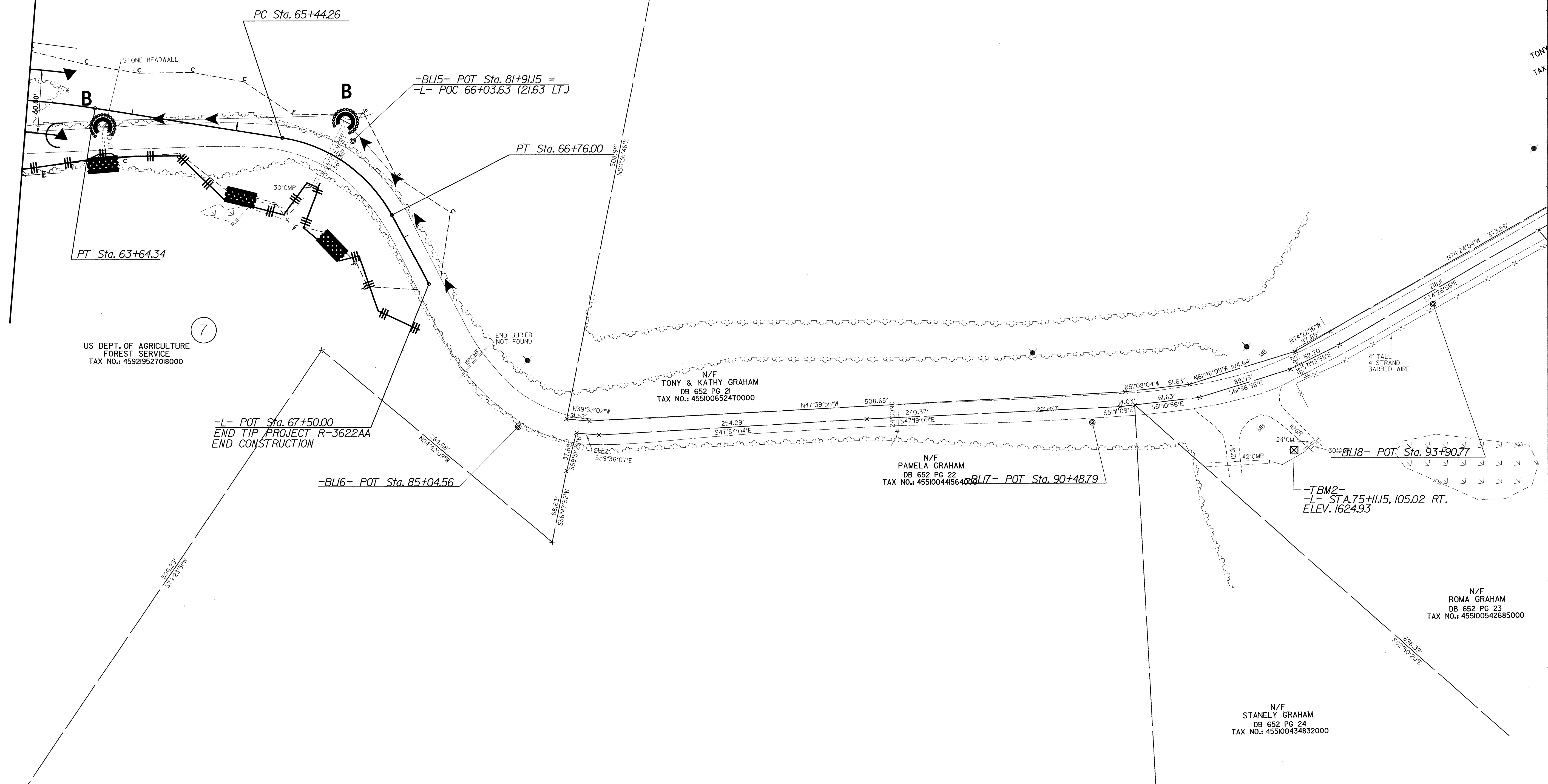
PROJECT REFERENCE NO. R-3622AA		SHEET NO. EC-8/CONST. 7	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
			
			

EROSION CONTROL PLAN CLEAR AND GRUBBING

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.

N/F
TONY & KATHY GRAHAM
DB 652 PG 21
TAX NO.: 455100652470000



REVISIONS

FILE: c:\msd91\c622a\roadway\proj\R3622AA_Rdy_pht_EC08(CAG).dgn
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N/F
STANELLY GRAHAM
DB 652 PG 24
TAX NO.: 455100434832000

N/F
ROMA GRAHAM
DB 652 PG 23
TAX NO.: 455100542685000

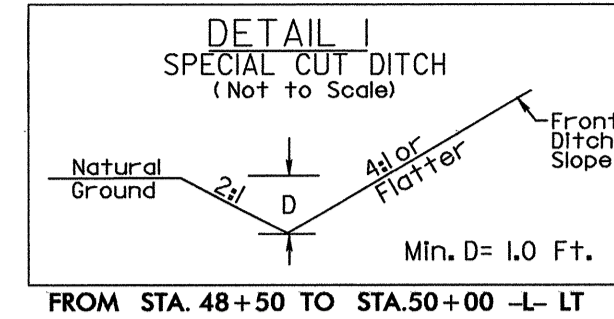
N/F
PAMELA GRAHAM
DB 652 PG 22
TAX NO.: 455100445640000

N/F
TONY & KATHY GRAHAM
DB 652 PG 21
TAX NO.: 455100652470000

US DEPT. OF AGRICULTURE
FOREST SERVICE
TAX NO.: 459219527018000

US DEPT. OF AGRICULTURE
FOREST SERVICE
TAX NO.: 459219527018000

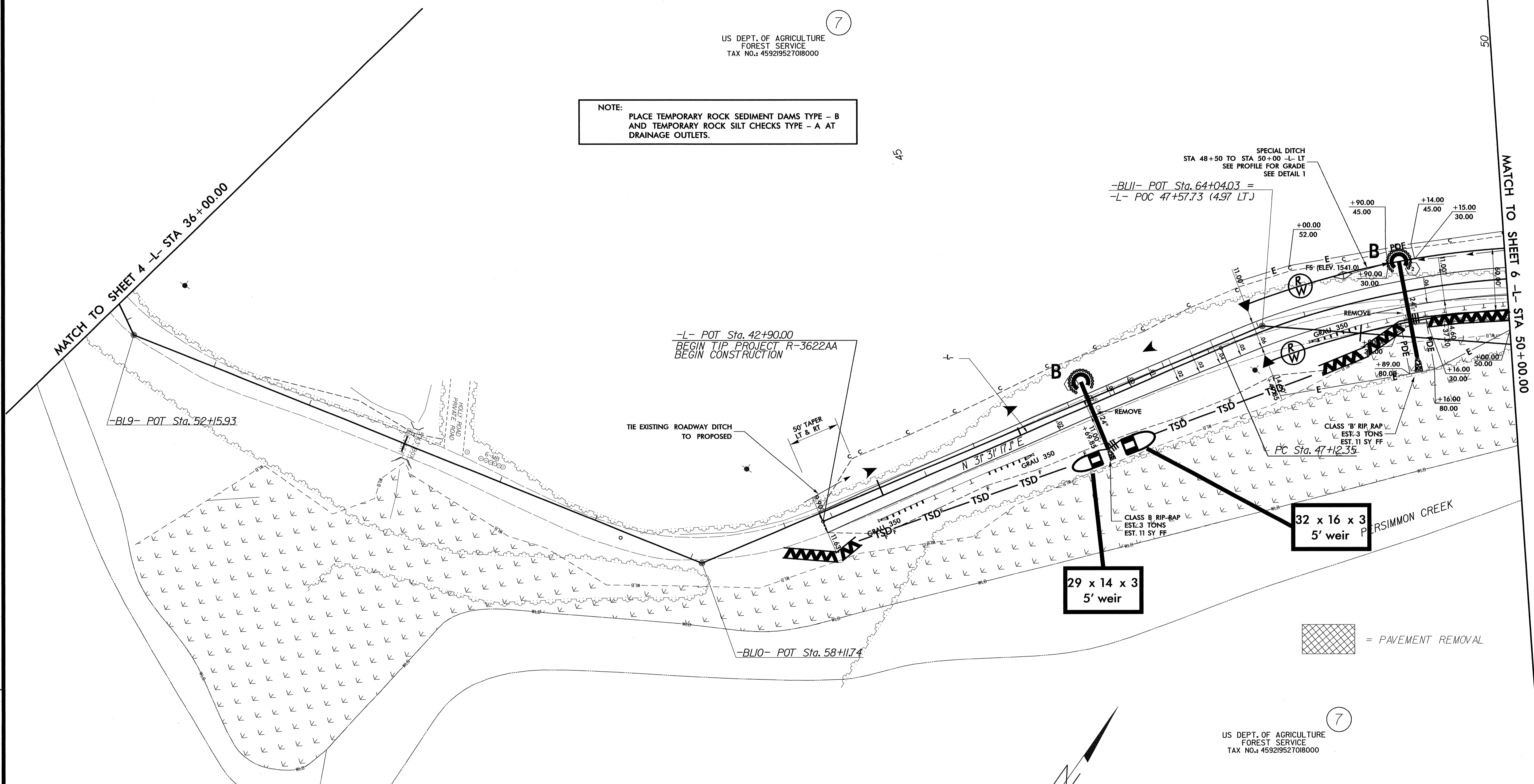
EROSION CONTROL PLAN FINAL GRADE



-L- (R-3622AA)
 PI Sta 59+76.41
 $\Delta = 112' 53'' 09.8''$ (RT)
 $D = 6' 50'' 00.0''$
 $L = 1,651.99'$
 $T = 1,264.06'$
 $R = 838.47'$
 $SE = .06$
 Runoff = 132'

US DEPT. OF AGRICULTURE
 FOREST SERVICE
 TAX NO.: 459219527018000

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

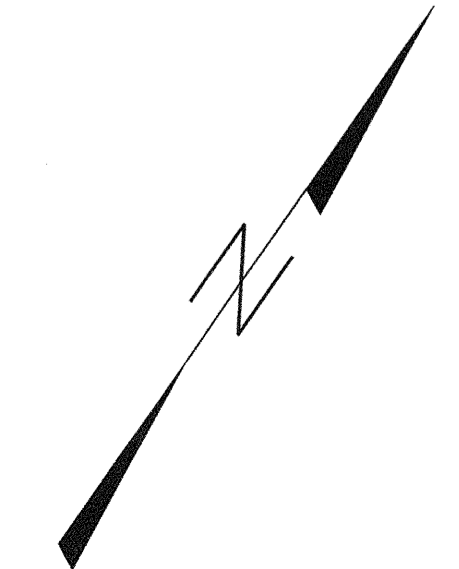


SHOWN FOR ROW PURPOSES ONLY (-L- R3622AB)

PIs = 35+80.77	PI = 41+07.35	PIs = 45+29.89
$\Theta_s = 4' 57'' 00.0''$	$\Delta = 64' 37'' 43.4''$ (LT)	$\Theta_s = 4' 57'' 00.0''$
LS = 132.00'	D = 7' 30' 00.0"	LS = 132.00'
LT = 88.03'	L = 861.72'	LT = 88.03'
ST = 44.03'	T = 483.21'	ST = 44.03'
	R = 763.94'	

REVISIONS

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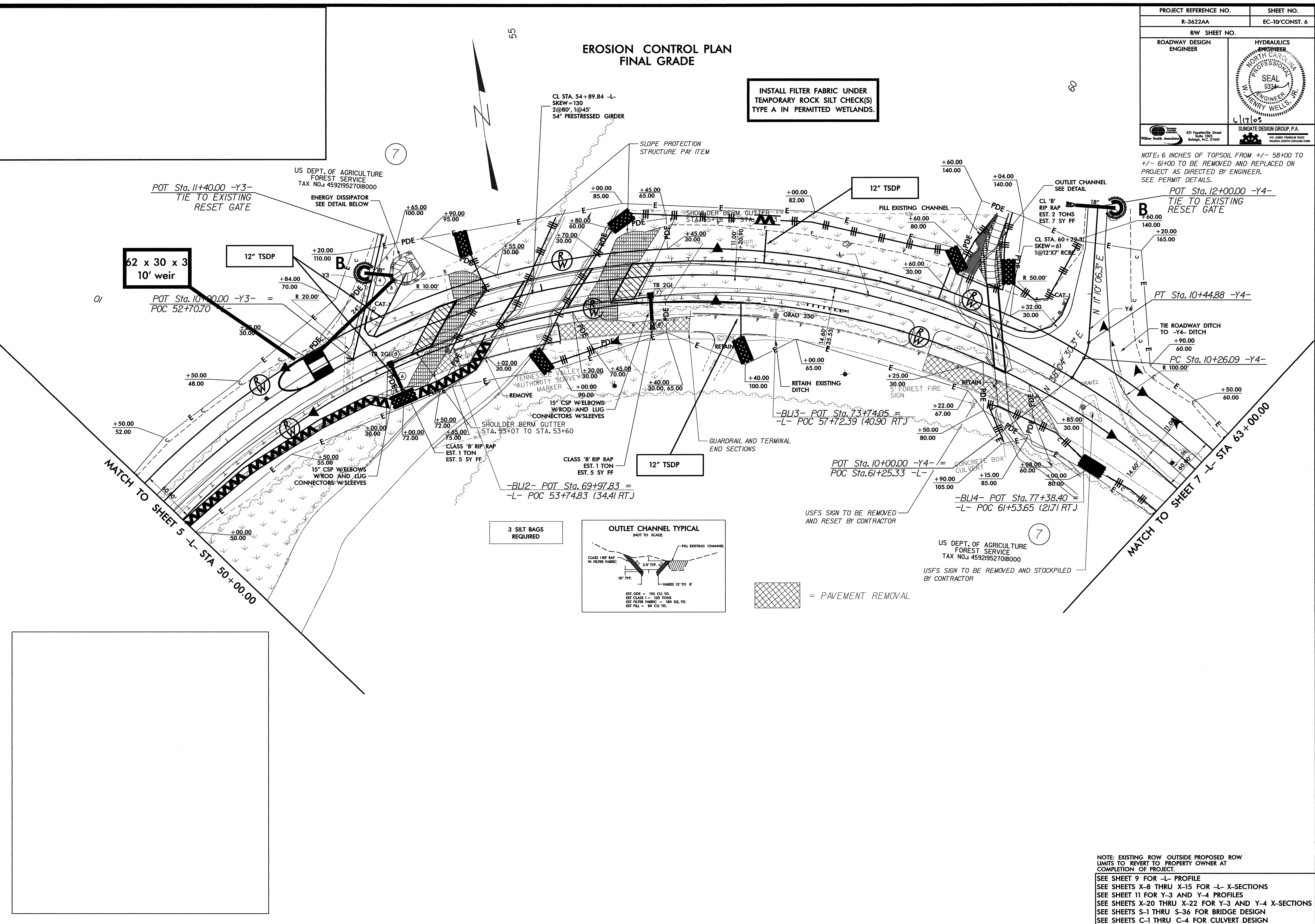


US DEPT. OF AGRICULTURE
 FOREST SERVICE
 TAX NO.: 459219527018000

PROJECT REFERENCE NO. R-3622AA	SHEET NO. EC-10/CONST. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
SUNGATE DESIGN GROUP, P.A.	

EROSION CONTROL PLAN FINAL GRADE

INSTALL FILTER FABRIC UNDER
TEMPORARY ROCK SILT CHECK(S)
TYPE A IN PERMITTED WETLANDS.



NOTE: 6 INCHES OF TOPSOIL FROM +/- 58+00 TO +/- 61+00 TO BE REMOVED AND REPLACED ON PROJECT AS DIRECTED BY ENGINEER. SEE PERMIT DETAILS.

NOTE: EXISTING ROW OUTSIDE PROPOSED ROW LIMITS TO REVERT TO PROPERTY OWNER AT COMPLETION OF PROJECT.

SEE SHEET 9 FOR -L- PROFILE
SEE SHEETS X-8 THRU X-15 FOR -L- X-SECTIONS
SEE SHEET 11 FOR Y-3 AND Y-4 PROFILES
SEE SHEETS X-20 THRU X-22 FOR Y-3 AND Y-4 X-SECTIONS
SEE SHEETS S-1 THRU S-36 FOR BRIDGE DESIGN
SEE SHEETS C-1 THRU C-4 FOR CULVERT DESIGN

REVISIONS

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PROJECT REFERENCE NO. R-3622AA	SHEET NO. EC-1V/CONST. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 9334 HENRY WELLS, JR. 3/31/08
SUNGATE DESIGN GROUP, P.A. 421 Fayetteville Street Suite 1200 Raleigh, N.C. 27601	

EROSION CONTROL PLAN
FINAL GRADE

US DEPT. OF AGRICULTURE
FOREST SERVICE
TAX NO.: 459219527018000

N/F
TONY & KATHY GRAHAM
DB 652 PG 21
TAX NO.: 455100652470000

US DEPT. OF AGRICULTURE
FOREST SERVICE
TAX NO.: 459219527018000

N/F
TONY & KATHY GRAHAM
DB 652 PG 21
TAX NO.: 455100652470000

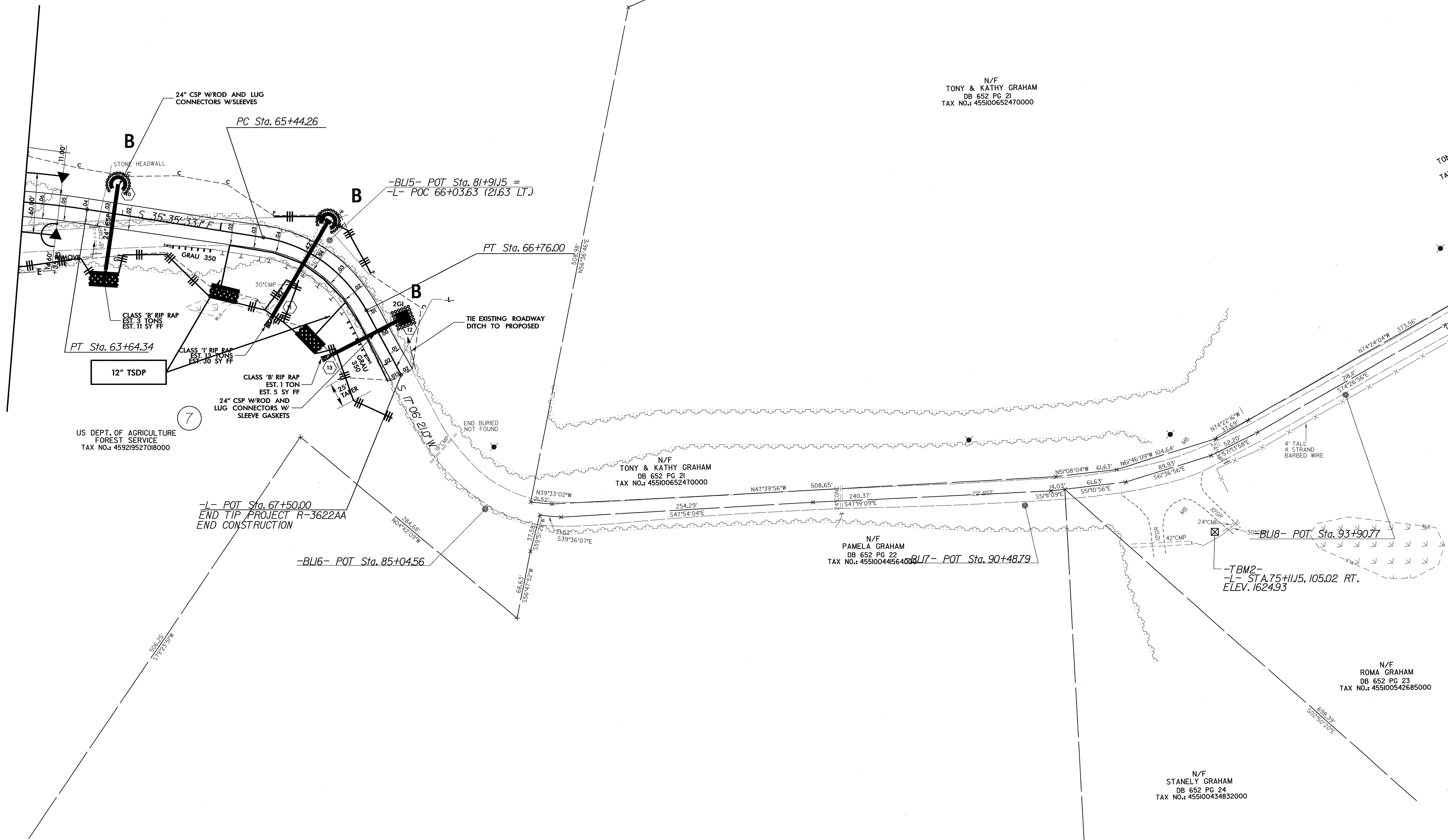
N/F
PAMELA GRAHAM
DB 652 PG 22
TAX NO.: 455100441564000

-BL17- POT Sta. 90+48.79

-TBM2-
-L- STA. 75+11.15, 105.02 RT.
ELEV. 1624.93

N/F
ROMA GRAHAM
DB 652 PG 23
TAX NO.: 455100542685000

N/F
STANLEY GRAHAM
DB 652 PG 24
TAX NO.: 455100434832000



REVISIONS

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