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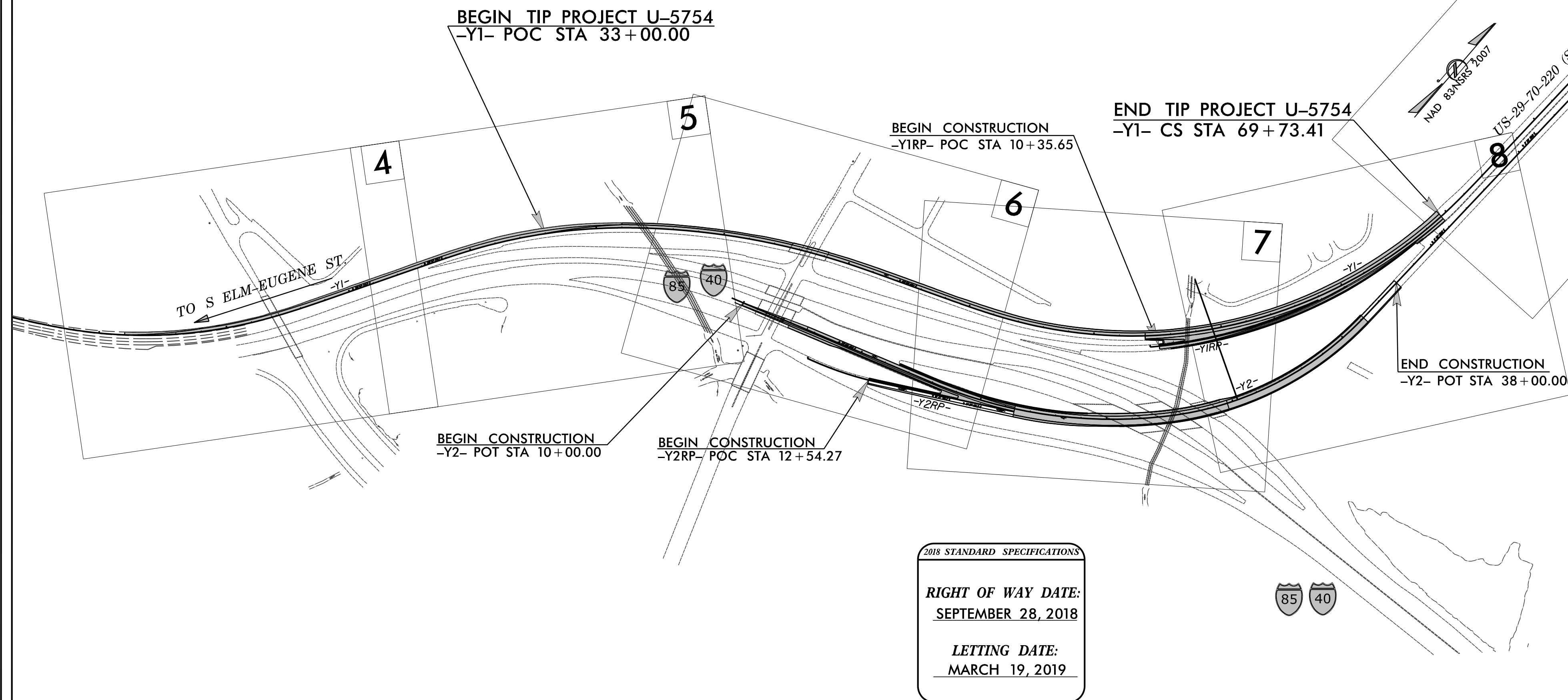
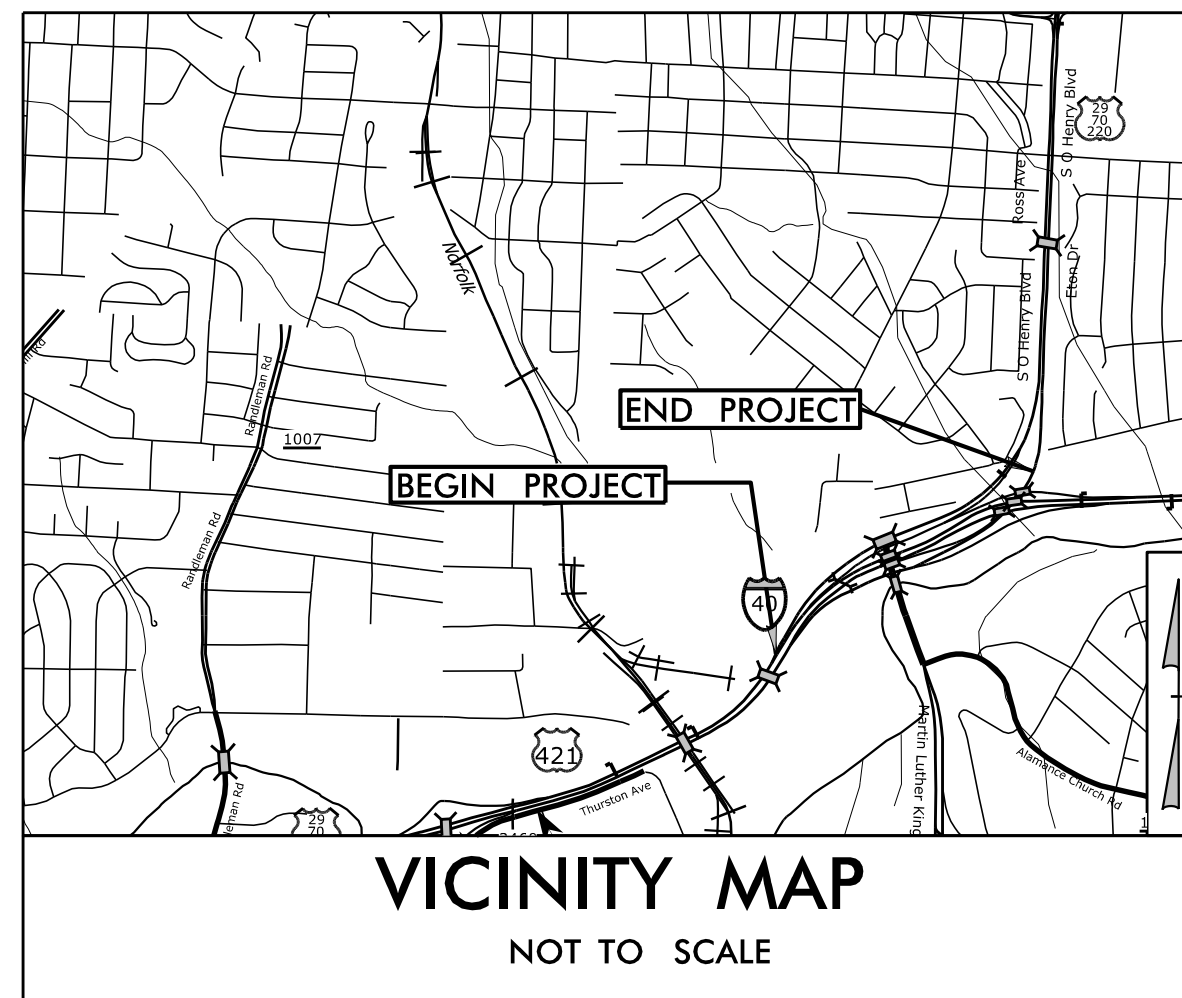
TIP PROJECT: U-5754

CONTRACT: C204295

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

**LOCATION: US 29 /US 70 /US 220 (O'HENRY BOULEVARD) FROM I-40 /
BUSINESS 85 TO SOUTH OF FLORIDA STREET IN GREENSBORO**
TYPE OF WORK: GRADING, PAVING, AND DRAINAGE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5754	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
54034.1.1	NHP-0029(065)	P.E.	
54034.2.1	NHP-0029(065)	ROW	
54034.3.1	NHP-0029(065)	CONST	



EROSION AND SEDIMENT CONTROL MEASURES

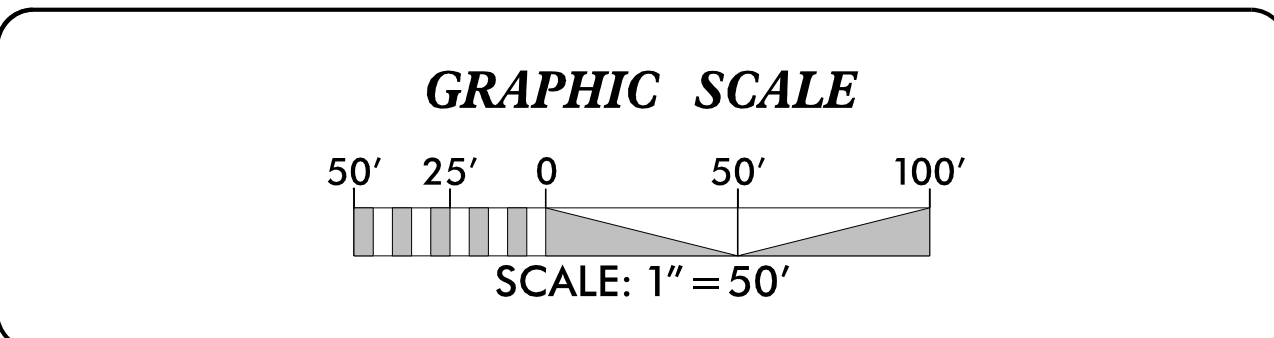
Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	no
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	III III III
1606.01	Special Sediment Control Fence	▲▲▲▲▲▲▲▲
1622.01	Temporary Berms and Slope Drains	▲▲▲▲▲▲▲▲
1630.02	Silt Basin Type B	▨
1633.01	Temporary Rock Silt Check Type-A	▨
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	▨
1633.02	Temporary Rock Silt Check Type-B	▨
	Wattle / Coir Fiber Wattle	W
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	W
1634.01	Temporary Rock Sediment Dam Type-A	▨
1634.02	Temporary Rock Sediment Dam Type-B	▨
1635.01	Rock Pipe Inlet Sediment Trap Type-A	▨
1635.02	Rock Pipe Inlet Sediment Trap Type-B	▨
1630.04	Stilling Basin	▨
1630.06	Special Stilling Basin	▨
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	▨
	Tiered Skimmer Basin	▨
	Infiltration Basin	▨

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

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

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

2018 STANDARD SPECIFICATIONS
RIGHT OF WAY DATE:
SEPTEMBER 28, 2018
LETTING DATE:
MARCH 19, 2019



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

Prepared in the Office of:
SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 858-2243
ENG FIRM LICENSE NO. C-890

Designed by:
MATTHEW C. EDWARDS, EI 3992
NAME LEVEL III CERTIFICATION NO.

Reviewed in the Office of:
ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611

2018 STANDARD SPECIFICATIONS

Reviewed by:
JENNIFER PARISH, EI, CPESC, CPSWQ

Roadway Standard Drawings

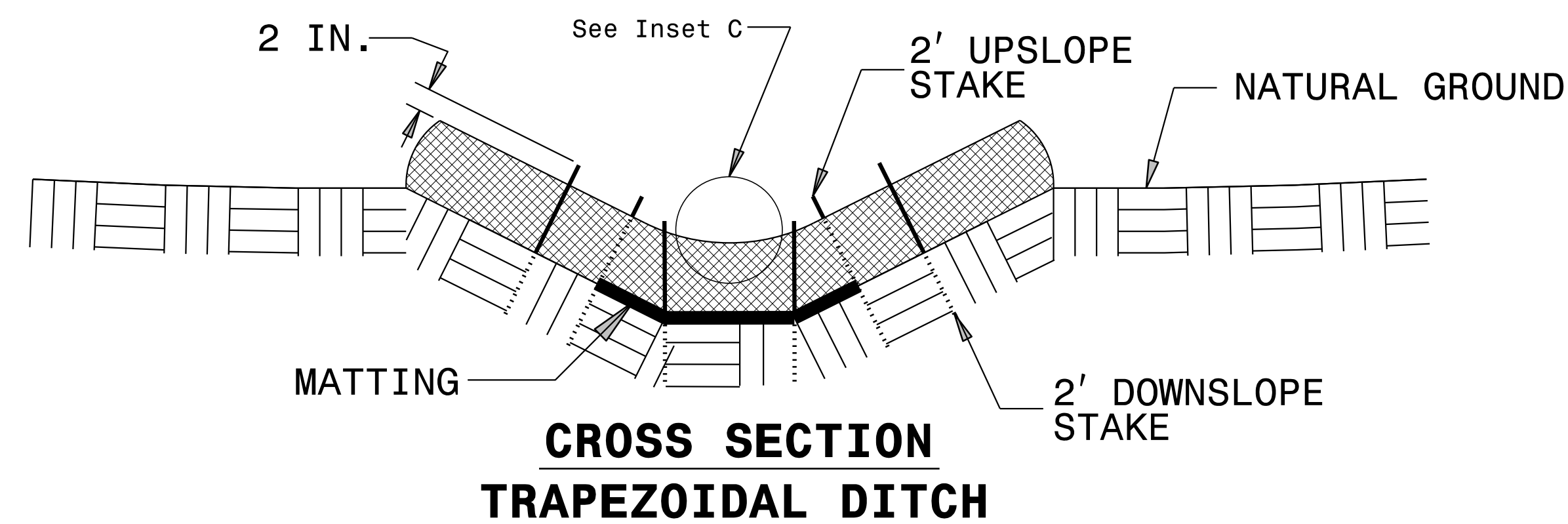
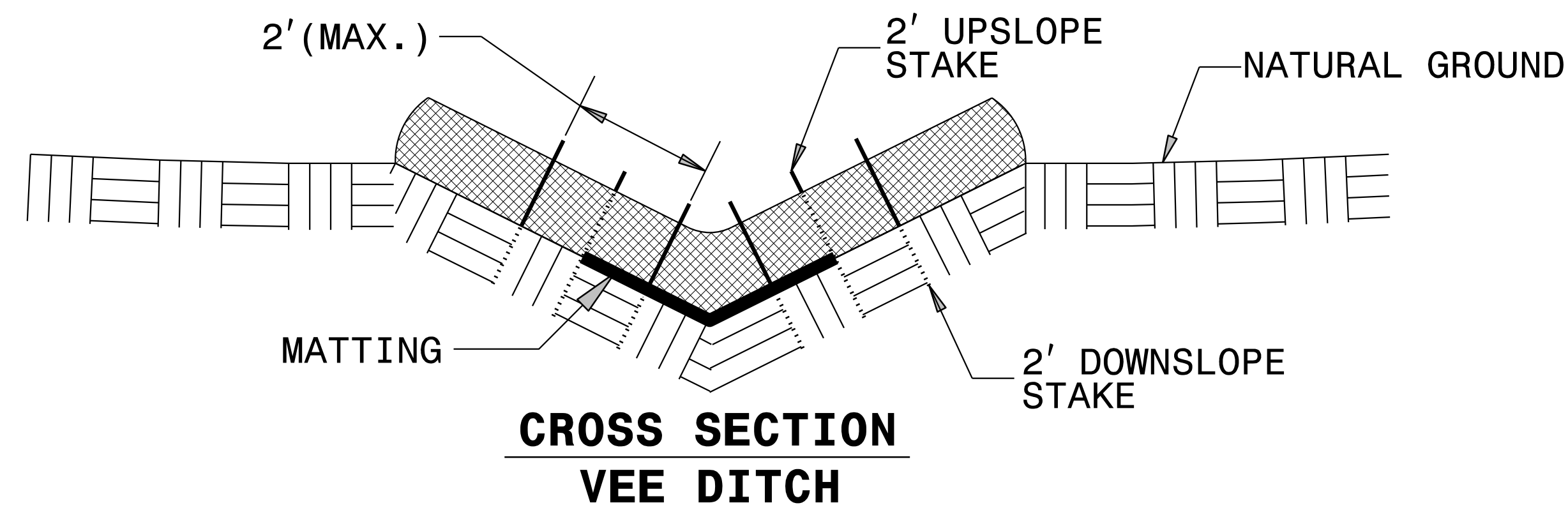
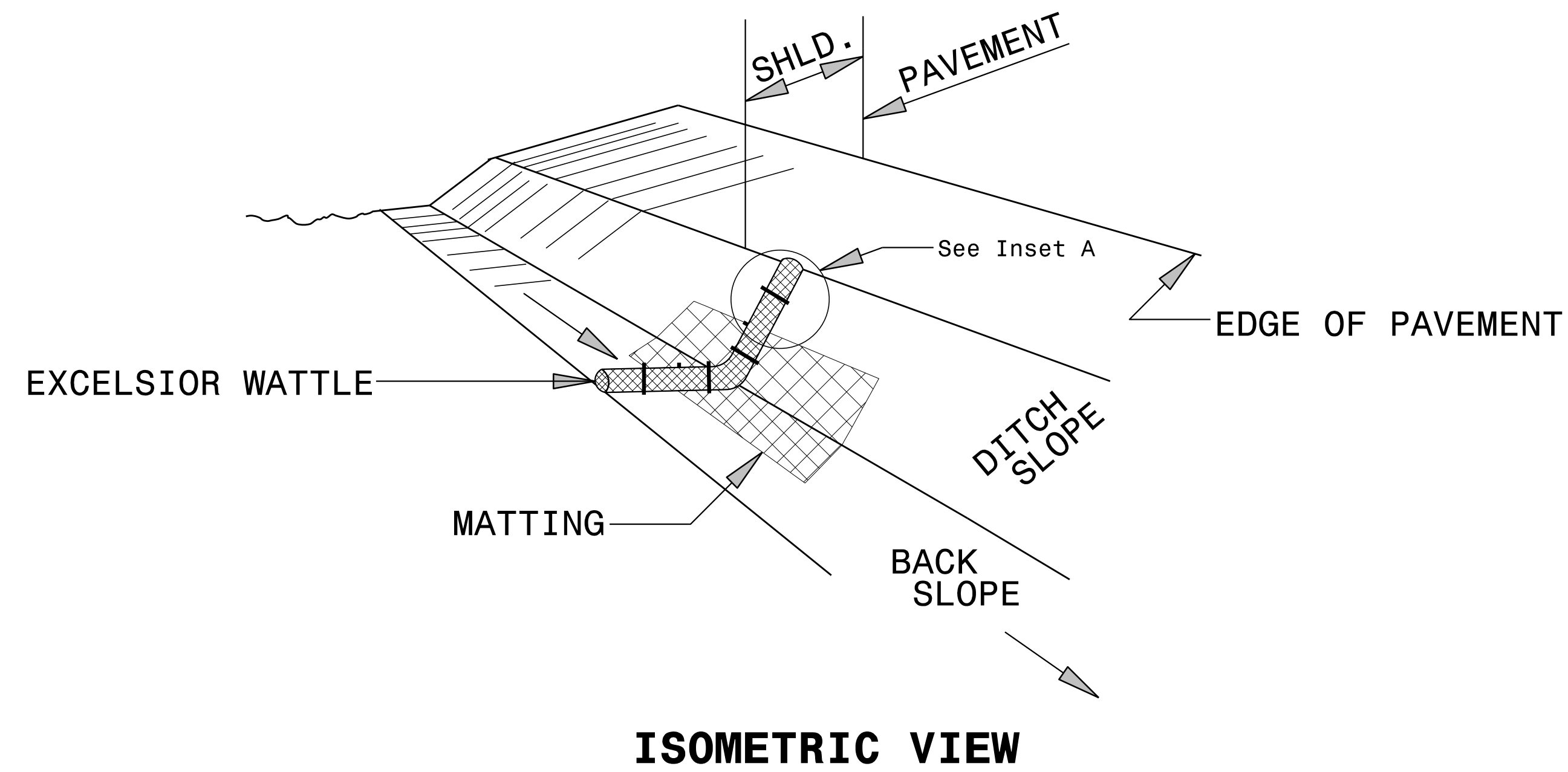
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2018 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

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	

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PROJECT REFERENCE NO. U-5754	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

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

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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

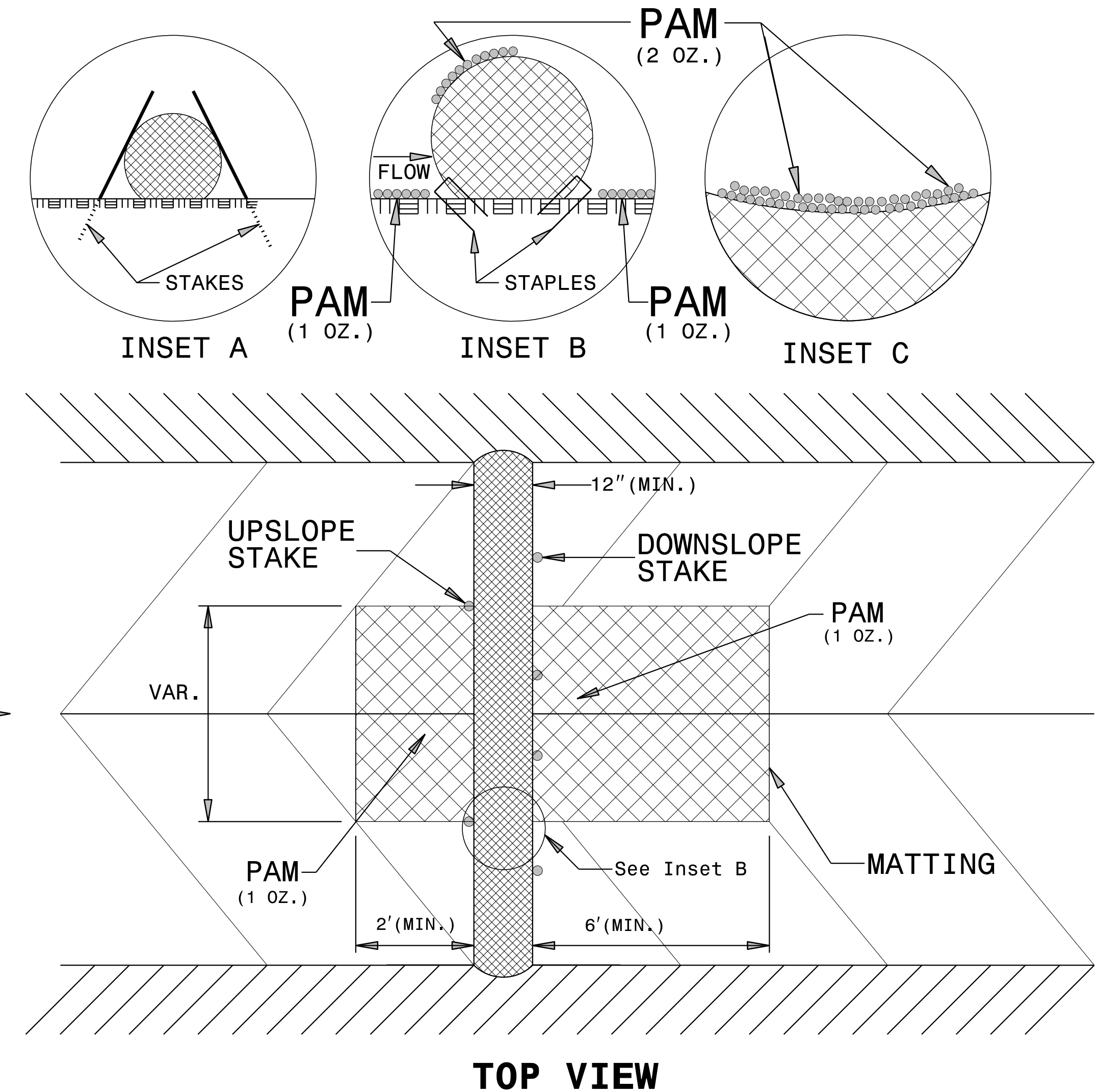
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

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

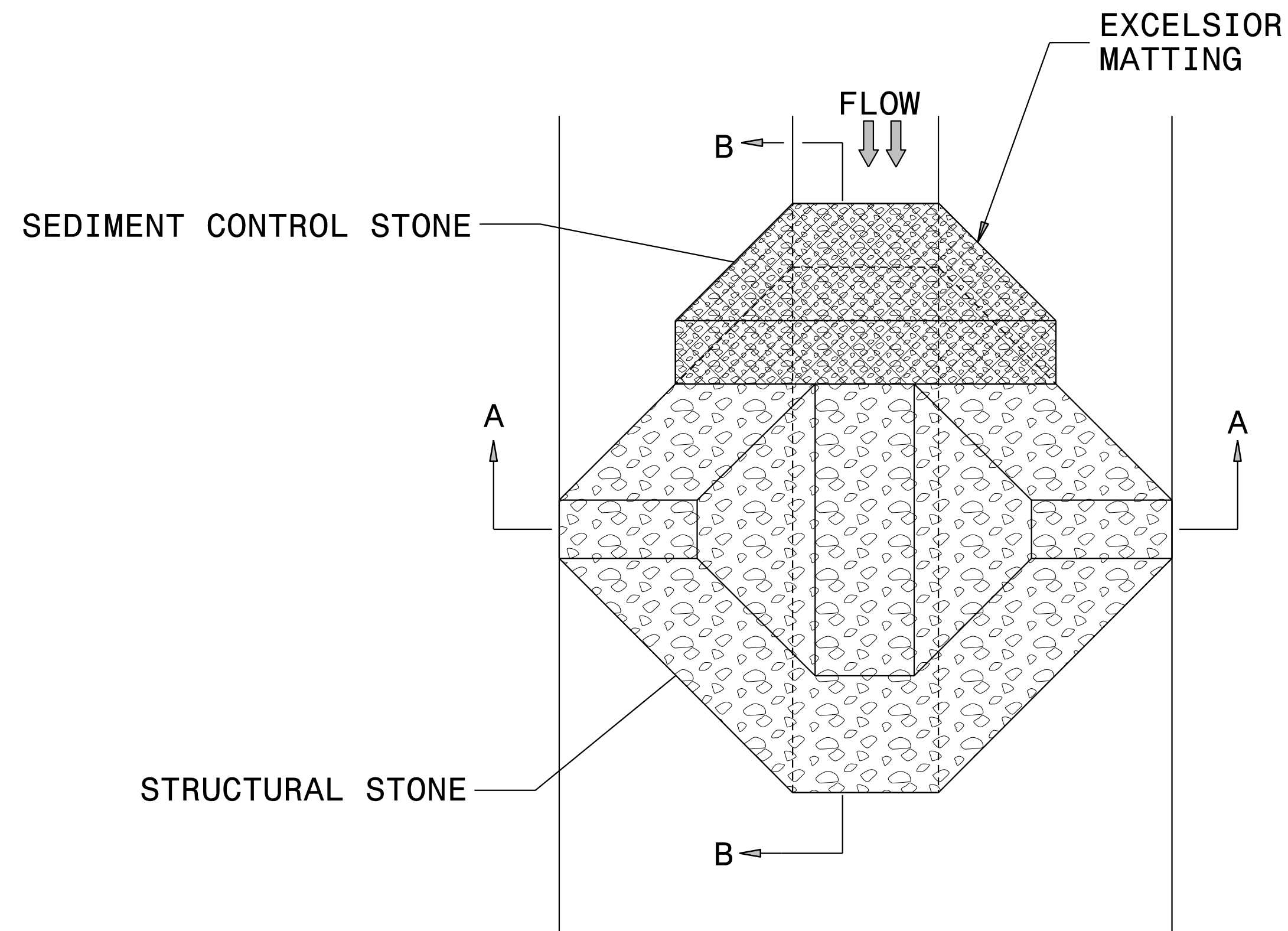
PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

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

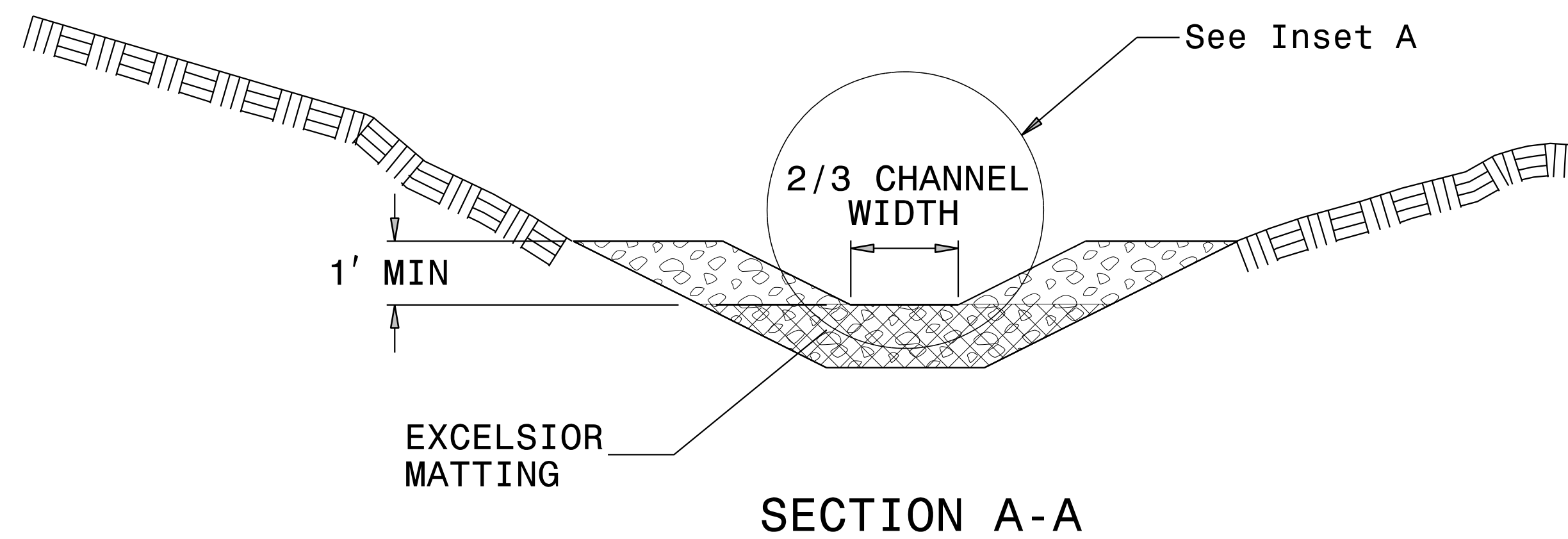


PROJECT REFERENCE NO. U-5754	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN



SECTION A-A

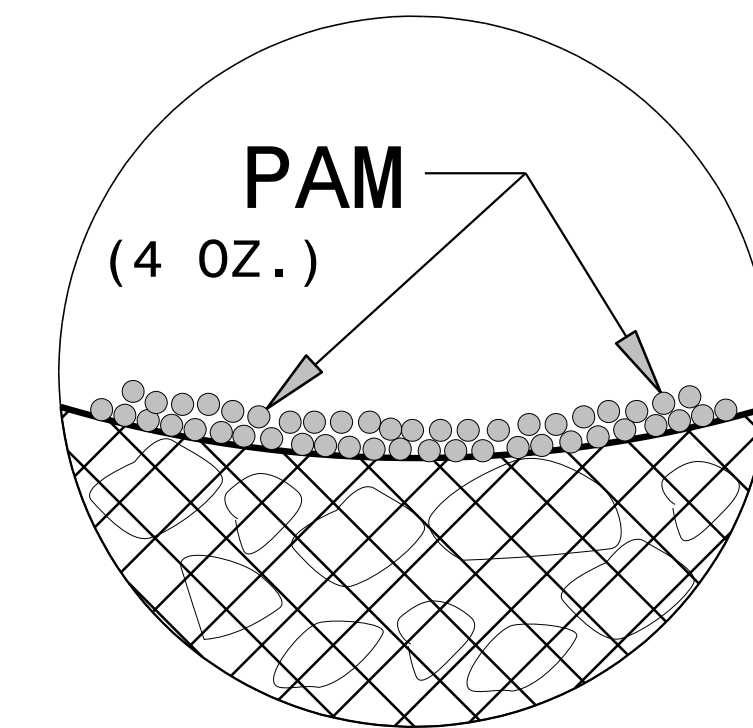
NOTES:

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

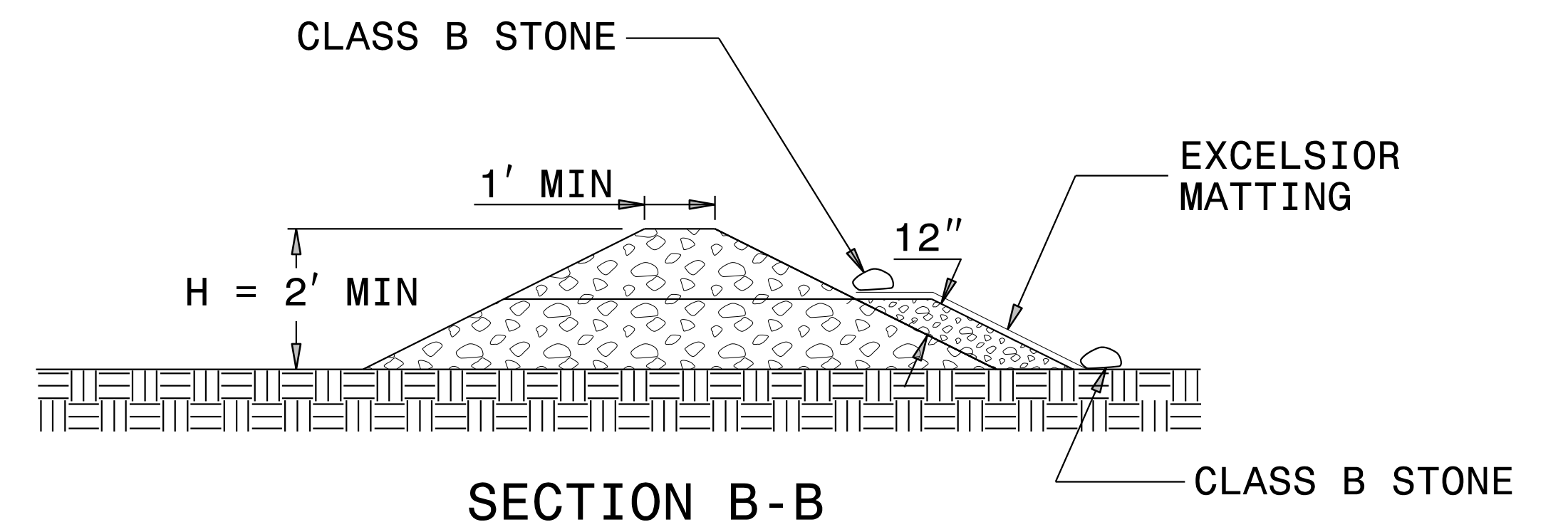
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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>U-5754</i>	SHEET NO. <i>EC-3A</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.

NAD 83/NSRS 2007

-YI-		
Pls Sta 12+89.27	PI Sta 17+57.89	Pls Sta 22+18.60
Os = 5' 58" 05.9"	Δ = 21' 37" 27.0" (LT)	Os = 5' 58" 05.9"
Ls = 375.00'	D = 3' 10' 59.2"	Ls = 375.00'
LT = 250.14'	L = 679.34'	LT = 250.14'
ST = 125.13'	R = 1,800.00'	ST = 125.13'
	DS = 60 MPH	
	SE = EXIST	

PROJECT REFERENCE NO.	SHEET NO.
U-5754	EC-04/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 04

-YI- SC Sta. 14+14.13

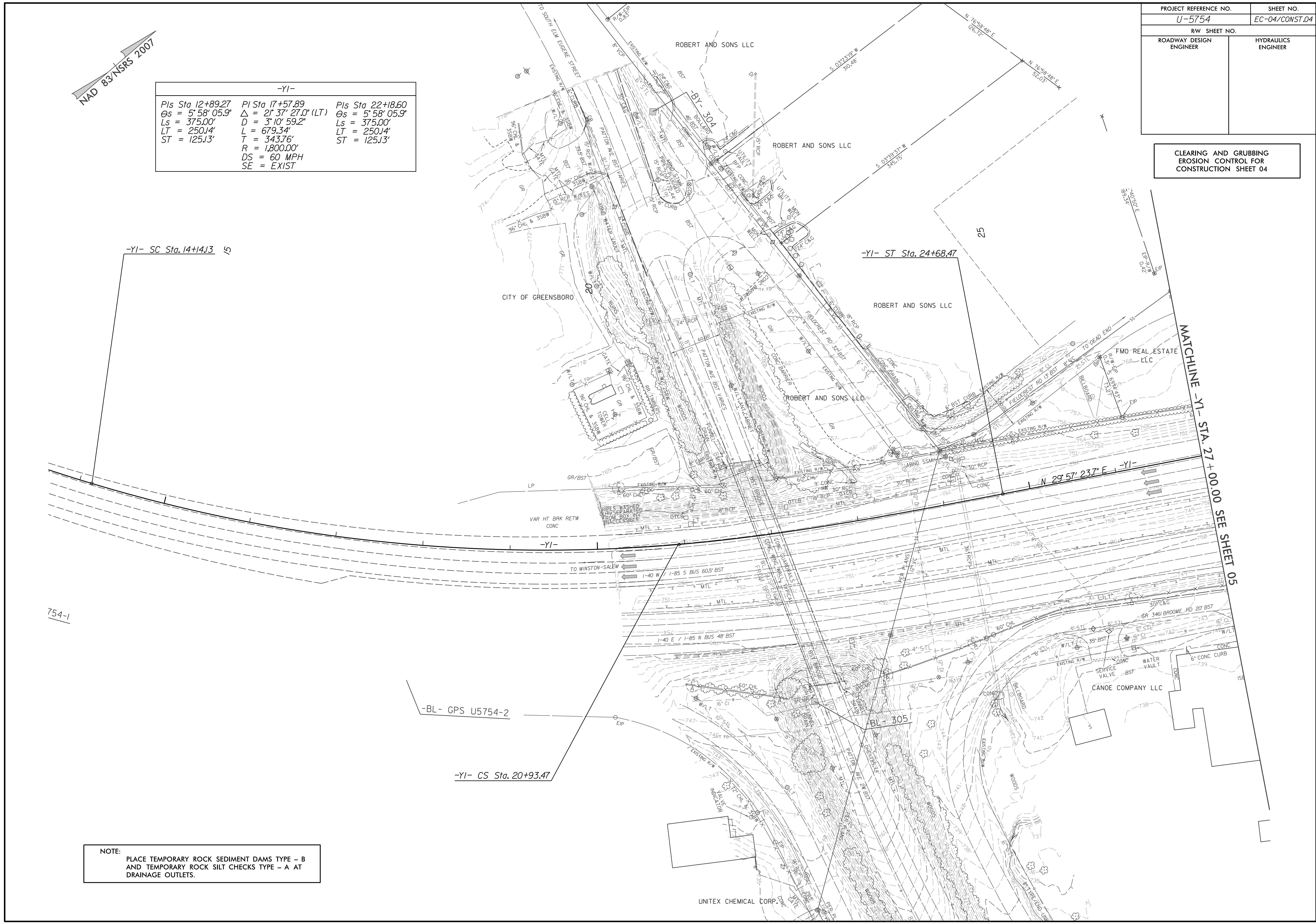
-YI- ST Sta. 24+68.47

754-1

-BL- GPS U5754-2

-YI- CS Sta. 20+93.47

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



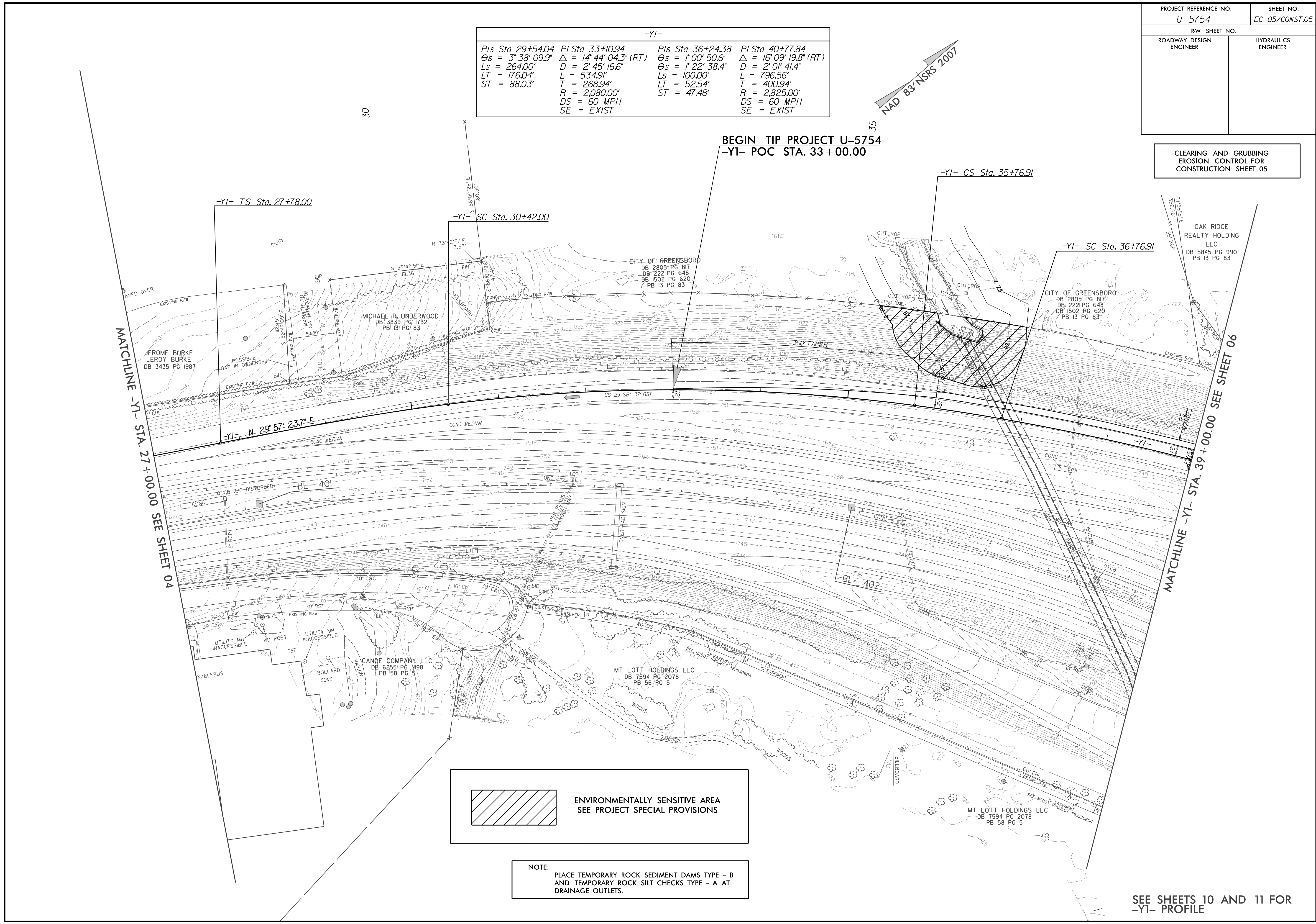
MATCHLINE -YI- STA. 27+00.00 SEE SHEET 05

PROJECT REFERENCE NO.	SHEET NO.
U-5754	EC-05/CONST.05
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

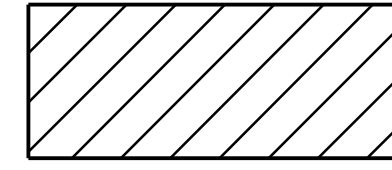
-Y1-			
Pls Sta 29+54.04	PI Sta 33+10.94	Pls Sta 36+24.38	PI Sta 40+77.84
$\Theta_s = 3^\circ 38' 09.9"$	$\Delta = 14^\circ 44' 04.3"$ (RT)	$\Theta_s = 1^\circ 00' 50.6"$	$\Delta = 16^\circ 09' 19.8"$ (RT)
$L_s = 264.00'$	$D = 2^\circ 45' 16.6"$	$\Theta_s = 1^\circ 22' 38.4"$	$D = 2^\circ 01' 41.4"$
$LT = 176.04'$	$L = 534.91'$	$L_s = 100.00'$	$L = 796.56'$
$ST = 88.03'$	$T = 268.94'$	$LT = 52.54'$	$T = 400.94'$
	$R = 2,080.00'$		$R = 2,825.00'$
	$DS = 60$ MPH		$DS = 60$ MPH
	$SE = EXIST$		$SE = EXIST$

NAD 83 / NRS 2007

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 05



SEE SHEETS 10 AND 11 FOR
-Y1- PROFILE



ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

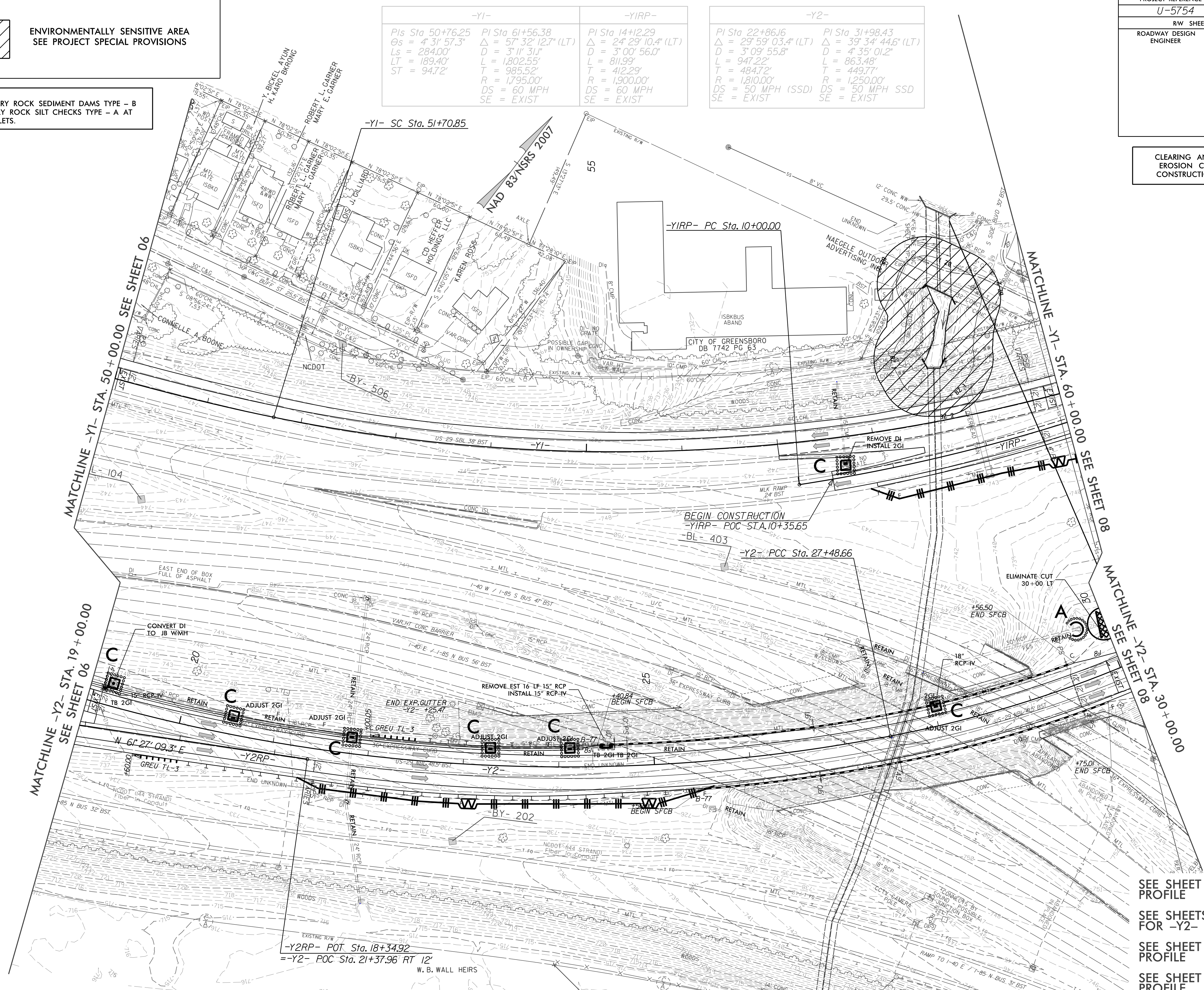
NOTE:

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

-Y1-		-Y1RP-		-Y2-	
PI Sta 50+76.25	PI Sta 61+56.38	PI Sta 14+12.29	PI Sta 22+86.16	PI Sta 31+98.43	
$\theta_s = 4' 31' 57.3"$	$\Delta = 57' 32' 12.7"$ (LT)	$\Delta = 24' 29' 10.4"$ (LT)	$\Delta = 29' 59' 03.4"$ (LT)	$\Delta = 39' 34' 44.6"$ (LT)	
$L_s = 284.00'$	$D = 3' 11' 31"$	$D = 3' 00' 56.0"$	$D = 3' 09' 55.8"$	$D = 4' 35' 01.2"$	
$LT = 189.40'$	$L = 1,802.55'$	$L = 811.99'$	$L = 947.22'$	$L = 863.48'$	
$ST = 94.72'$	$T = 985.52'$	$T = 412.29'$	$T = 484.72'$	$T = 449.77'$	
	$R = 1,795.00'$	$R = 1,900.00'$	$R = 1,810.00'$	$R = 1,250.00'$	
	$DS = 60$ MPH	$DS = 60$ MPH	$DS = 50$ MPH (SSD)	$DS = 50$ MPH SSD	
	$SE = EXIST$	$SE = EXIST$	$SE = EXIST$	$SE = EXIST$	

PROJECT REFERENCE NO. U-5754	SHEET NO. EC-07/CONST.07
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 07

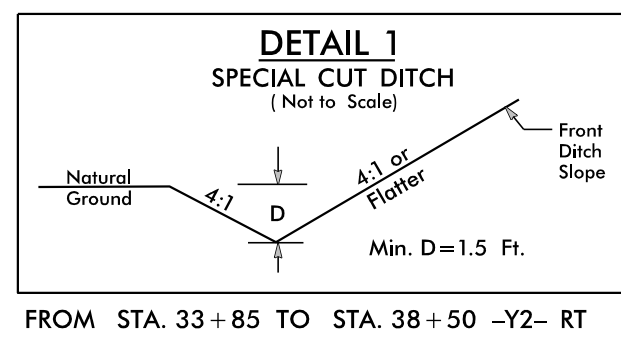
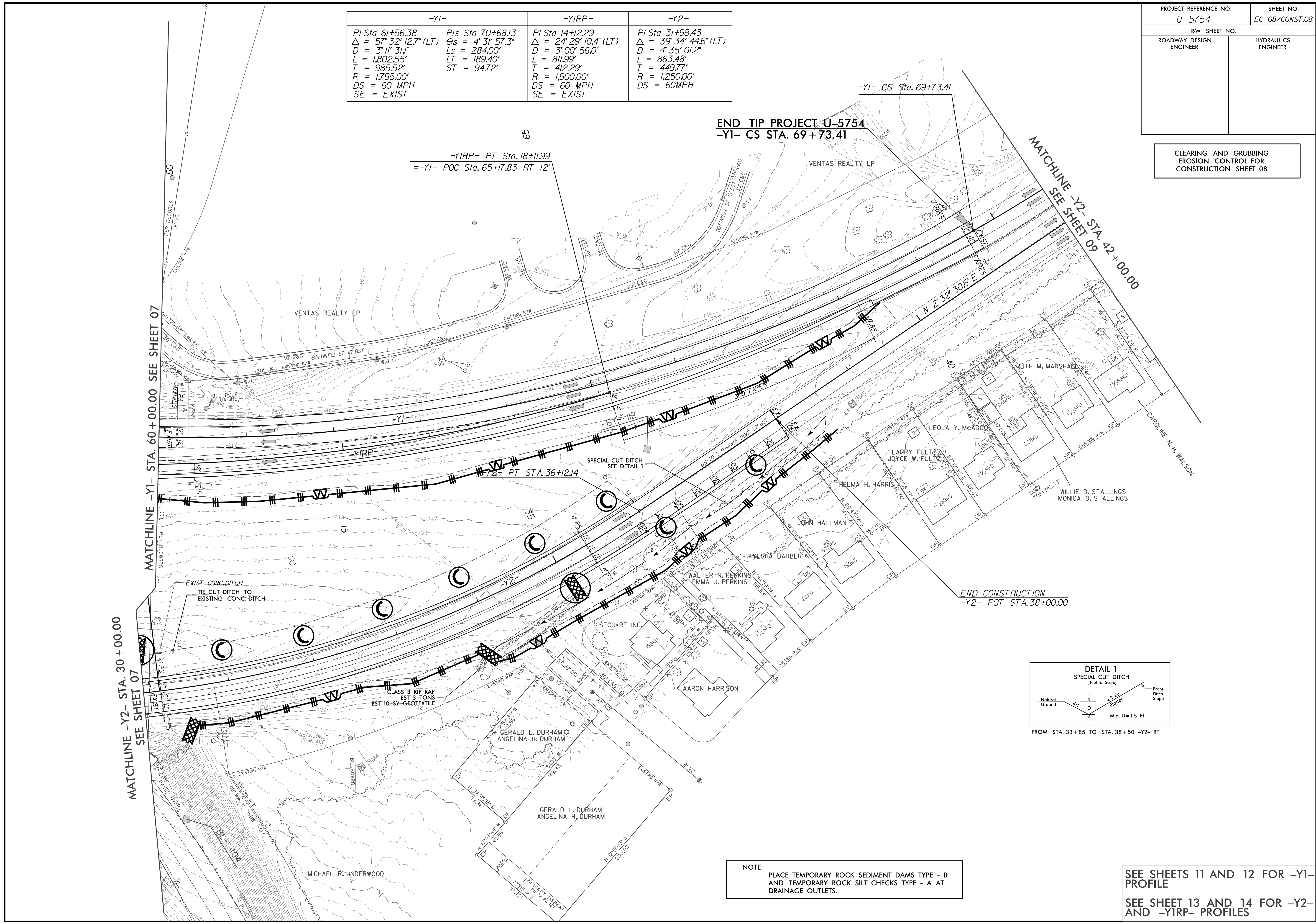


SEE SHEET 12 FOR -Y1-
PROFILE
SEE SHEETS 12 AND 13
FOR -Y2- PROFILE
SEE SHEET 14 FOR -Y1RP-
PROFILE
SEE SHEET 14 FOR -Y2RP-
PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-5754	EC-08/CONST.08
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 08

-Y1-		-Y1RP-	-Y2-
PI Sta 61+56.38	PIs Sta 70+68.13	PI Sta 14+12.29	PI Sta 31+98.43
$\Delta = 57^{\circ} 32' 12.7" (LT)$	$\Theta_s = 4^{\circ} 31' 57.3"$	$\Delta = 24^{\circ} 29' 10.4" (LT)$	$\Delta = 39^{\circ} 34' 44.6" (LT)$
D = 3' 11' 31.1"	Ls = 284.00'	D = 3' 00' 56.0"	D = 4' 35' 01.2"
L = 1,802.55'	LT = 189.40'	L = 811.99'	L = 863.48'
T = 985.52'	ST = 94.72'	T = 412.29'	T = 449.77'
R = 1,795.00'		R = 1,900.00'	R = 1,250.00'
DS = 60 MPH		DS = 60 MPH	DS = 60 MPH
SE = EXIST		SE = EXIST	SE = EXIST



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

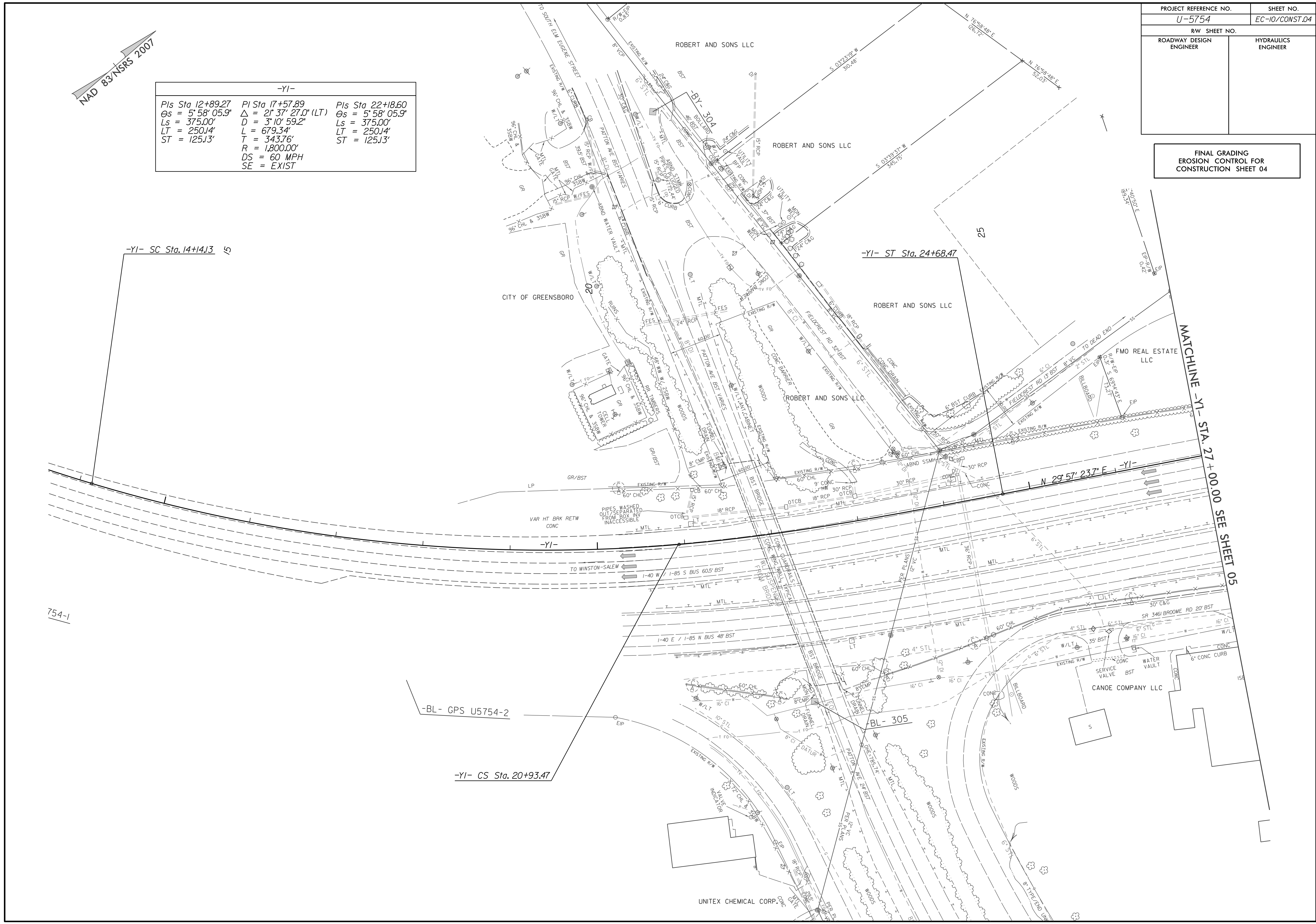
SEE SHEETS 11 AND 12 FOR -Y1-
PROFILE
SEE SHEET 13 AND 14 FOR -Y2-
AND -Y1RP- PROFILES

NAD 83/NSRS 2007

-YI-		
Pls Sta 12+89.27	PI Sta 17+57.89	Pls Sta 22+18.60
Os = 5' 58" 05.9"	Δ = 21' 37" 27.0" (LT)	Os = 5' 58" 05.9"
Ls = 375.00'	D = 3' 10' 59.2"	Ls = 375.00'
LT = 250.14'	L = 679.34'	LT = 250.14'
ST = 125.13'	T = 343.76'	ST = 125.13'
	DS = 60 MPH	
	SE = EXIST	

PROJECT REFERENCE NO.	SHEET NO.
U-5754	EC-10/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FINAL GRADING
EROSION CONTROL FOR
CONSTRUCTION SHEET 04



-YI- SC Sta. 14+14.13

-YI- ST Sta. 24+68.47

-YI- CS Sta. 20+93.47

-BL- GPS U5754-2

BL- 305

MATCHLINE -YI- STA. 27+00.00 SEE SHEET 05

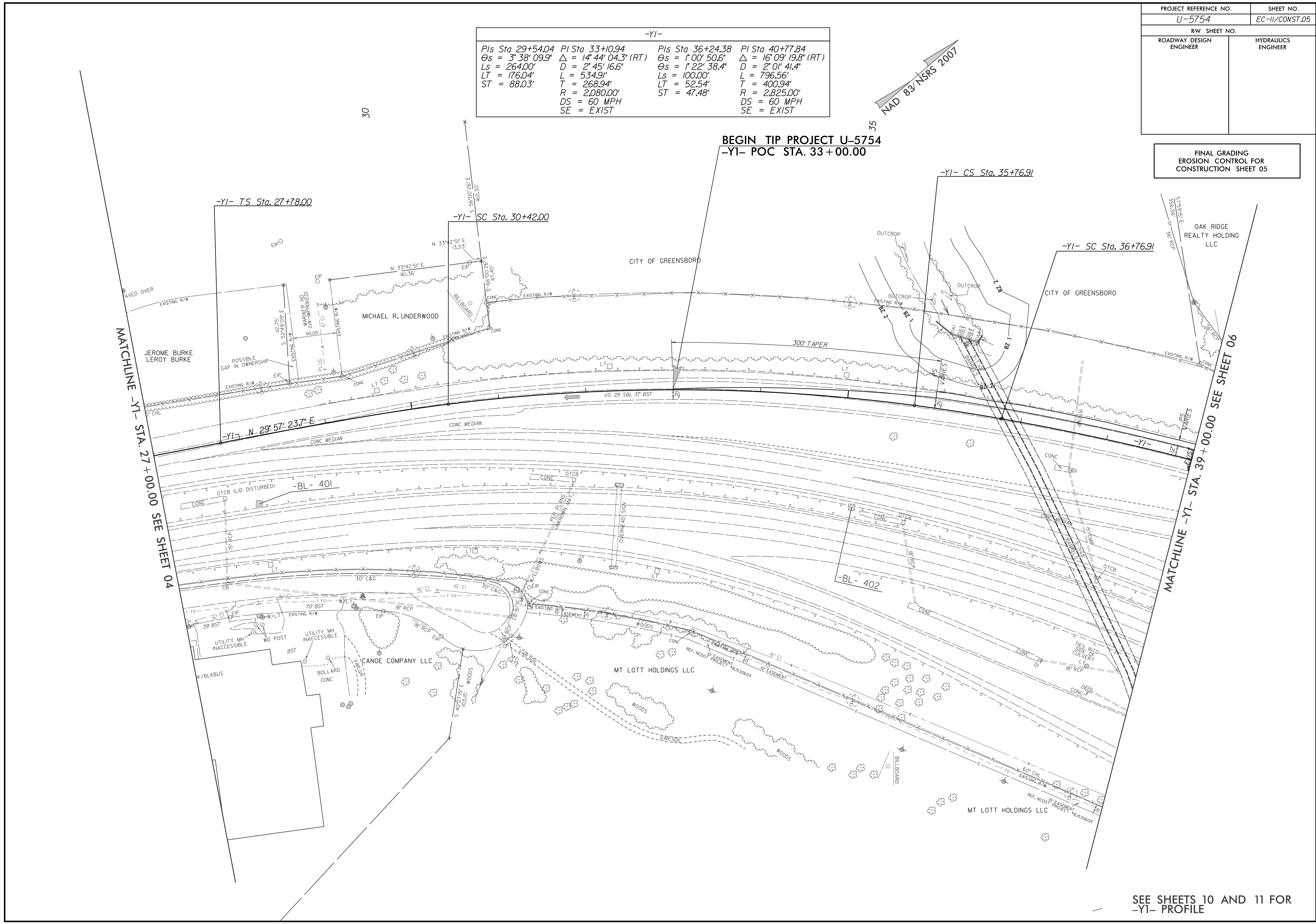
754-1

UNITEX CHEMICAL CORP.

PROJECT REFERENCE NO.	SHEET NO.
U-5754	EC-II/CONST.05
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-Y1-			
PIs Sta. 29+54.04	PI Sta. 33+10.94	PIs Sta. 36+24.38	PI Sta. 40+77.84
$\Theta s = 3^{\circ} 38' 09.9"$	$\Delta = 14^{\circ} 44' 04.3"$ (RT)	$\Theta s = 1^{\circ} 00' 50.6"$	$\Delta = 16^{\circ} 09' 19.8"$ (RT)
$Ls = 264.00'$	$D = 2^{\circ} 45' 16.6"$	$\Theta s = 1^{\circ} 22' 38.4"$	$D = 2^{\circ} 01' 41.4"$
$LT = 176.04'$	$L = 534.91'$	$Ls = 100.00'$	$L = 796.56'$
$ST = 88.03'$	$T = 268.94'$	$LT = 52.54'$	$T = 400.94'$
	$R = 2,080.00'$	$ST = 47.48'$	$R = 2,825.00'$
	$DS = 60$ MPH		$DS = 60$ MPH
	$SE = EXIST$		$SE = EXIST$

NAD 83/NRS 2007



BEGIN TIP PROJECT U-5754
-Y1- POC STA. 33+00.00

FINAL GRADING
EROSION CONTROL FOR
CONSTRUCTION SHEET 05

MATCHLINE -Y1- STA. 27+00.00 SEE SHEET 04

MATCHLINE -Y1- STA. 39+00.00 SEE SHEET 06

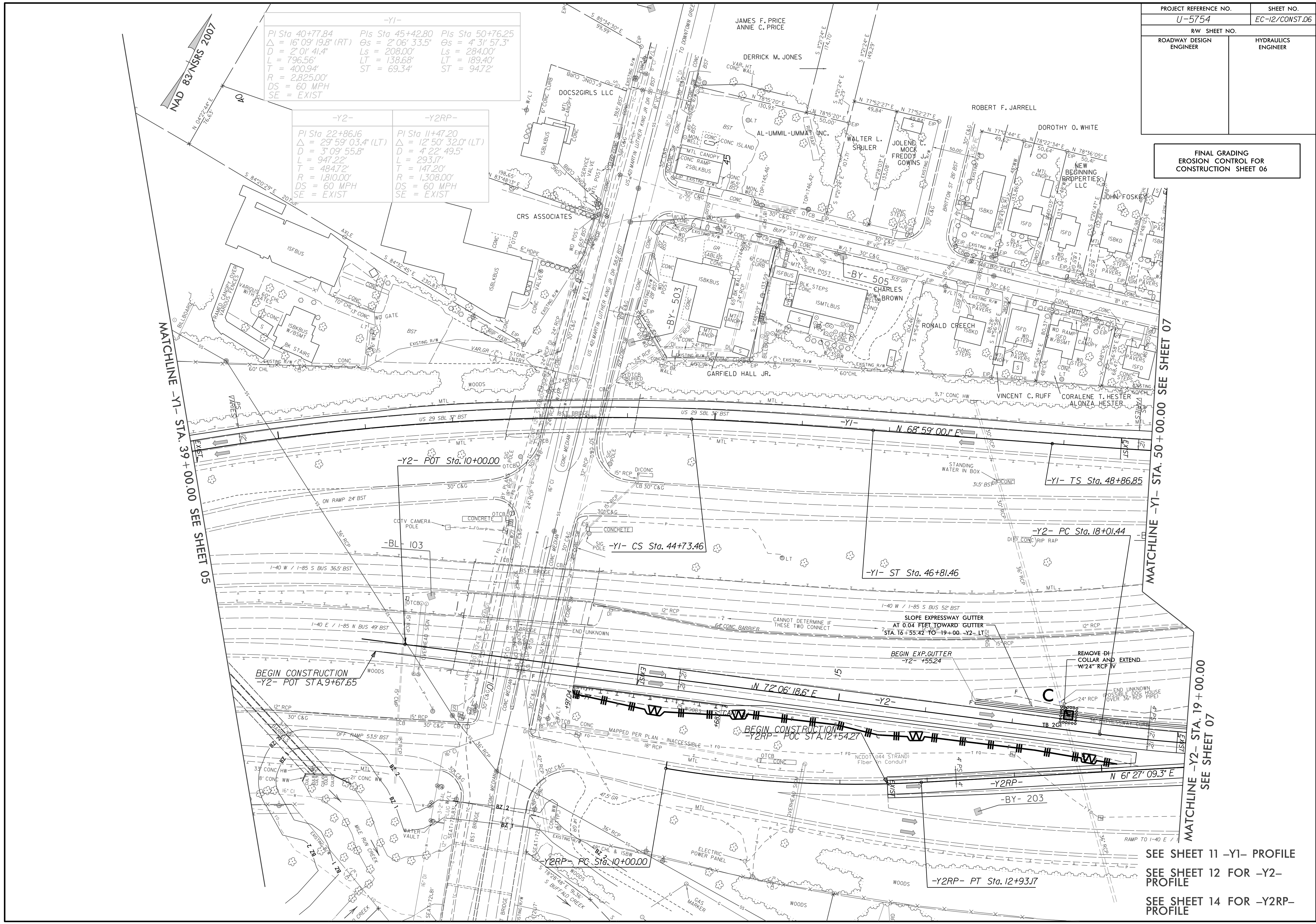
SEE SHEETS 10 AND 11 FOR
-Y1- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-5754	EC-12/CONST.06
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FINAL GRADING
EROSION CONTROL FOR
CONSTRUCTION SHEET 06

-Y1-
PI Sta 40+77.84 Δ = 16° 09' 19.8" (RT) D = 2' 01" 41.4" L = 796.56' T = 400.94' R = 2,825.00' DS = 60 MPH SE = EXIST
PIs Sta 45+42.80 Δs = 2' 06' 33.5" Ls = 208.00' LT = 138.68' ST = 69.34'
PIs Sta 50+76.25 Δs = 4' 31' 57.3" Ls = 284.00' LT = 189.40' ST = 94.72'

-Y2-
PI Sta 22+86.16 Δ = 29° 59' 03.4" (LT) D = 3' 09' 55.8" L = 947.22' T = 484.72' R = 1,810.00' DS = 60 MPH SE = EXIST
-Y2RP-
PI Sta 11+47.20 Δ = 12° 50' 32.0" (LT) D = 4' 22' 49.5" L = 293.17' T = 147.20' R = 1,308.00' DS = 60 MPH SE = EXIST

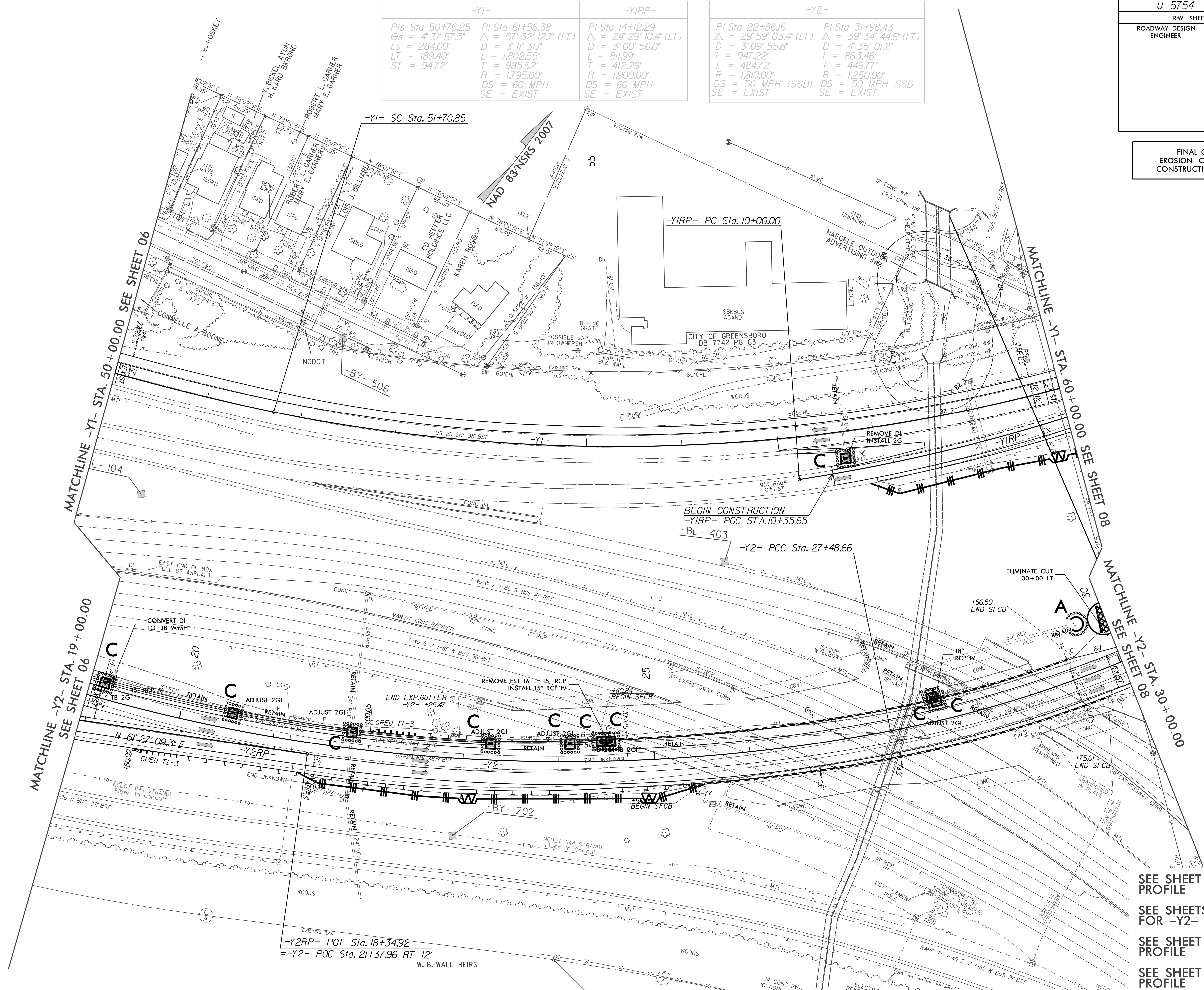


SEE SHEET 11 -Y1- PROFILE
SEE SHEET 12 FOR -Y2- PROFILE
SEE SHEET 14 FOR -Y2RP- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-5754	EC-13/CONST.07
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FINAL GRADING
EROSION CONTROL FOR
CONSTRUCTION SHEET 07

-Y1-		-Y1RP-		-Y2-	
PI Sta 50+76.25	PI Sta 61+56.38	PI Sta 14+12.29	PI Sta 22+86.16	PI Sta 31+98.43	
$\theta_s = 4^\circ 31' 57.3"$	$\Delta = 57^\circ 32' 12.7"$ (LT)	$\Delta = 24^\circ 29' 10.4"$ (LT)	$\Delta = 29^\circ 59' 03.4"$ (LT)	$\Delta = 39^\circ 34' 44.6"$ (LT)	
$L_s = 284.00'$	$D = 3^\circ 11' 31"$	$D = 3^\circ 00' 56.0"$	$D = 3^\circ 09' 55.8"$	$D = 4^\circ 35' 01.2"$	
$LT = 189.40'$	$L = 1,802.55'$	$L = 811.99'$	$L = 947.22'$	$L = 863.48'$	
$ST = 94.72'$	$T = 985.52'$	$T = 412.29'$	$T = 484.72'$	$T = 449.77'$	
	$R = 1,795.00'$	$R = 1,900.00'$	$R = 1,810.00'$	$R = 1,250.00'$	
	$DS = 60$ MPH	$DS = 60$ MPH	$DS = 50$ MPH (SSD)	$DS = 50$ MPH SSD	
	$SE = EXIST$	$SE = EXIST$	$SE = EXIST$	$SE = EXIST$	

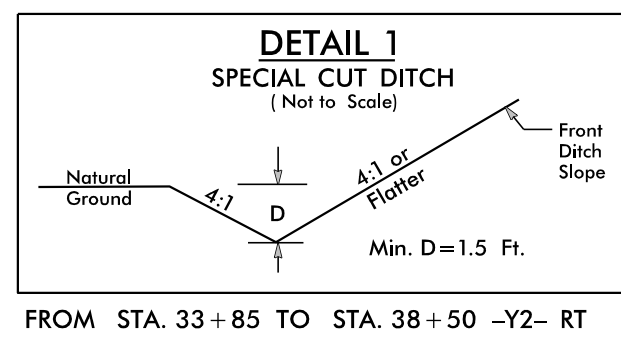
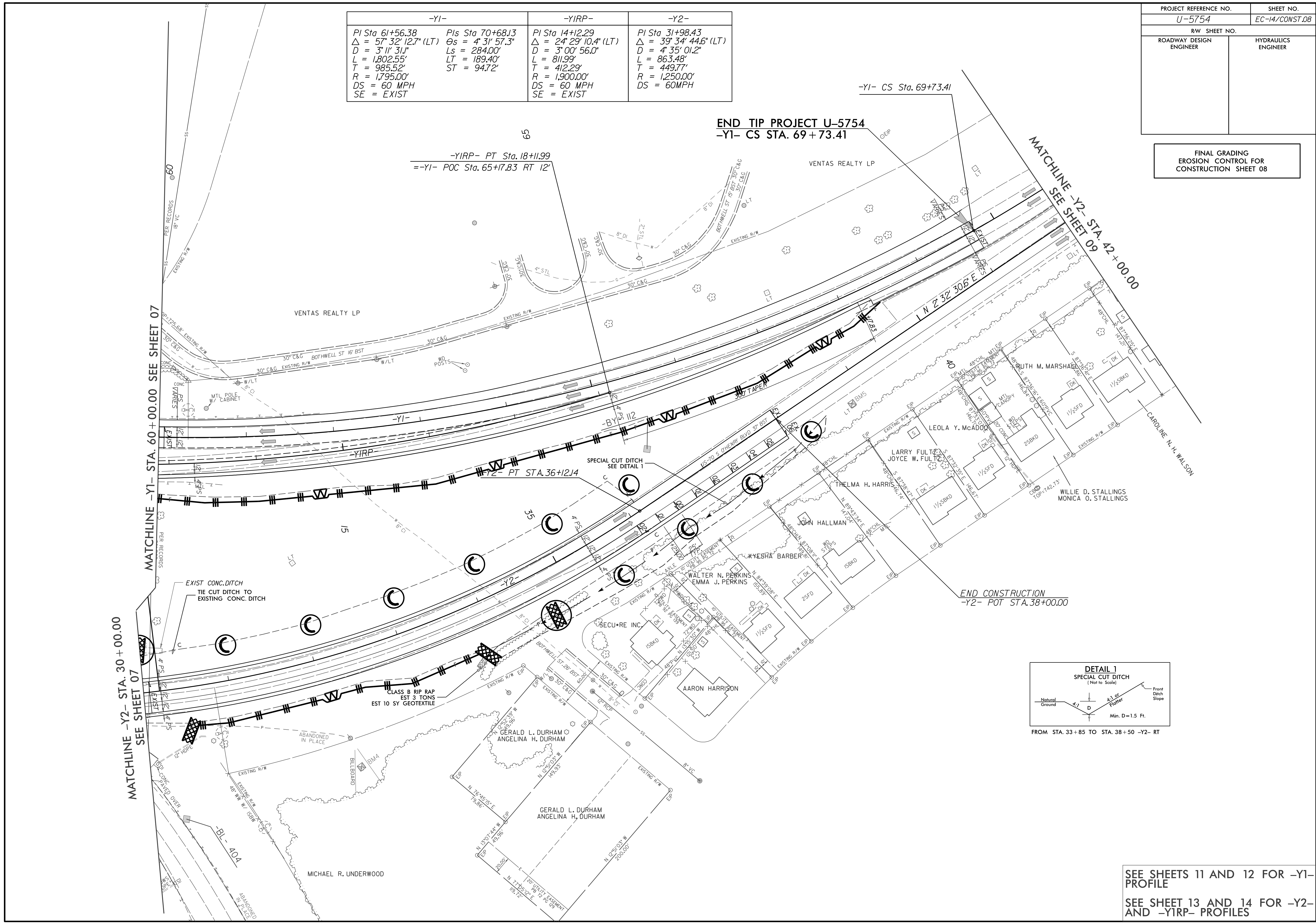


SEE SHEET 12 FOR -Y1- PROFILE
SEE SHEETS 12 AND 13 FOR -Y2- PROFILE
SEE SHEET 14 FOR -Y1RP- PROFILE
SEE SHEET 14 FOR -Y2RP- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-5754	EC-14/CONST.08
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FINAL GRADING
EROSION CONTROL FOR
CONSTRUCTION SHEET 08

-Y1-		-YIRP-	-Y2-
PI Sta 61+56.38	PIs Sta 70+68.13	PI Sta 14+12.29	PI Sta 31+98.43
$\Delta = 57^{\circ} 32' 12.7" (LT)$	$\Theta s = 4^{\circ} 31' 57.3"$	$\Delta = 24^{\circ} 29' 10.4" (LT)$	$\Delta = 39^{\circ} 34' 44.6" (LT)$
$D = 3^{\circ} 11' 31.1"$	$Ls = 284.00'$	$D = 3^{\circ} 00' 56.0"$	$D = 4^{\circ} 35' 01.2"$
$L = 1,802.55'$	$LT = 189.40'$	$L = 811.99'$	$L = 863.48'$
$T = 985.52'$	$ST = 94.72'$	$T = 412.29'$	$T = 449.77'$
$R = 1,795.00'$		$R = 1,900.00'$	$R = 1,250.00'$
$DS = 60 MPH$		$DS = 60 MPH$	$DS = 60 MPH$
$SE = EXIST$		$SE = EXIST$	



SEE SHEETS 11 AND 12 FOR -Y1-
PROFILE
SEE SHEET 13 AND 14 FOR -Y2-
AND -YIRP- PROFILES

