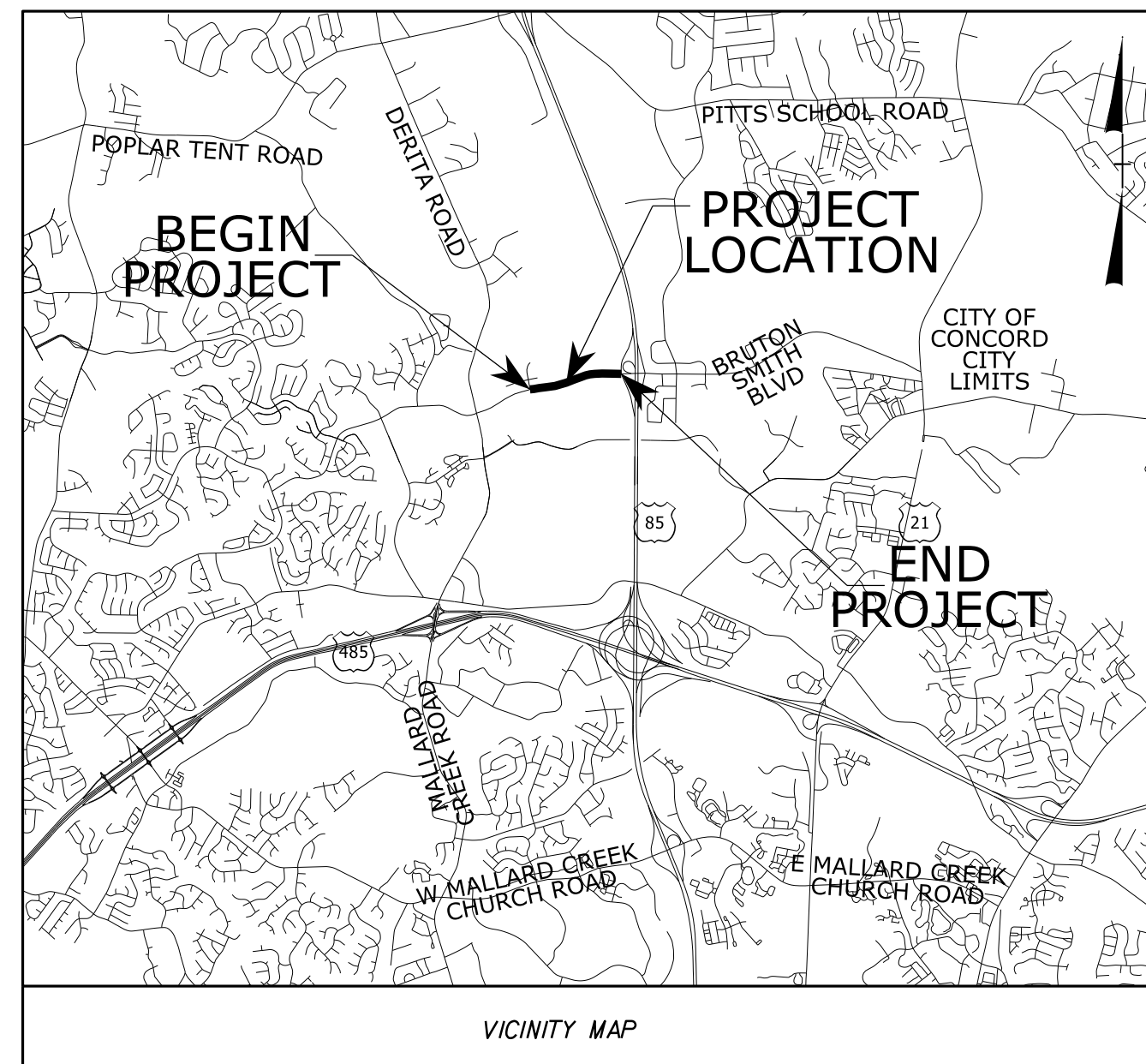


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TIP PROJECT: U-5806



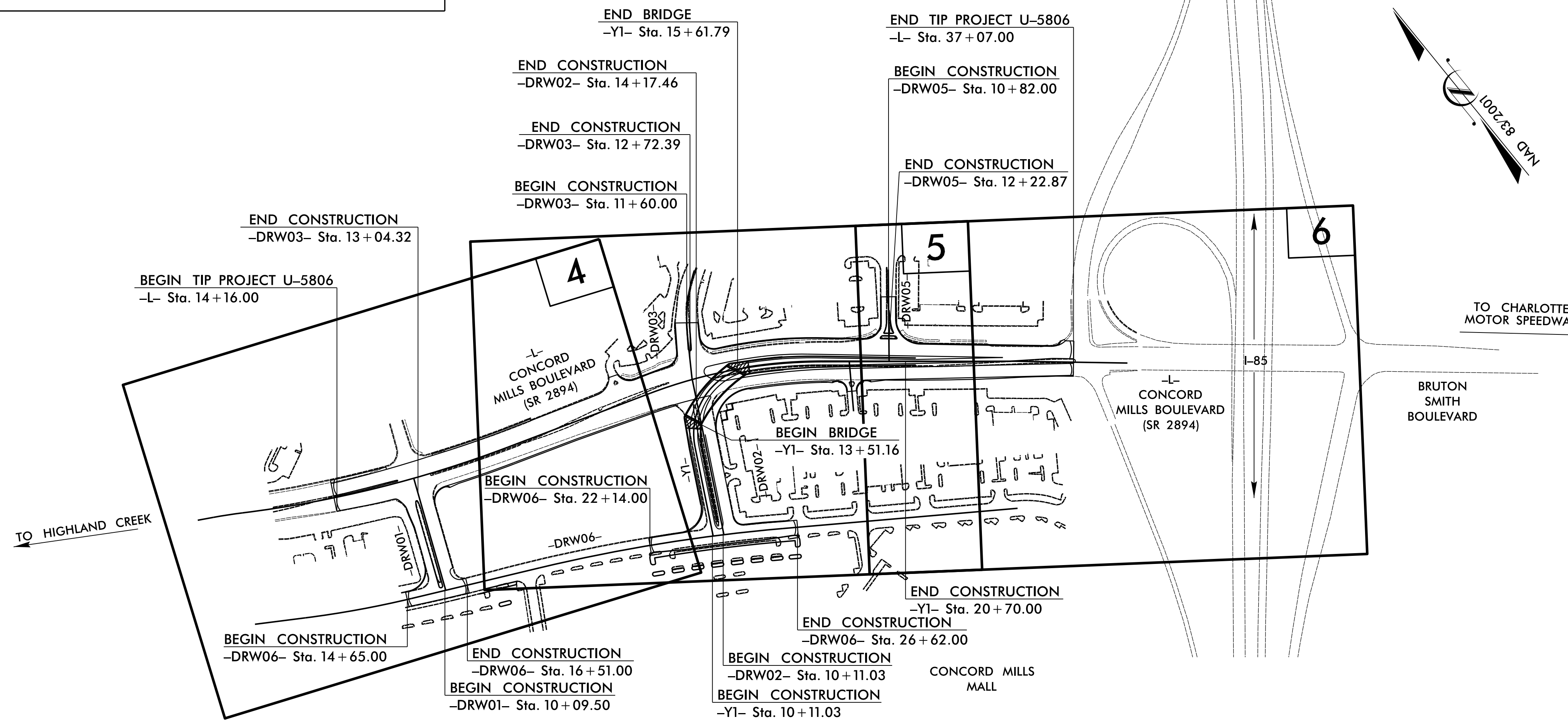
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

CABARRUS COUNTY

LOCATION: INTERSECTION OF SR 2894 (CONCORD MILLS BOULEVARD) AND ENTRANCE NO.1 (KINGS GRANT PAVILION)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, RETAINING WALLS AND STRUCTURE

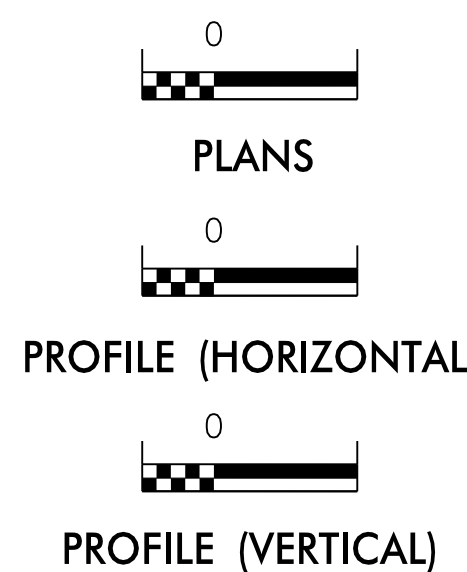


EROSION AND SEDIMENT CONTROL MEASURES

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	△△△△△△△△
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	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.

GRAPHIC SCALE



ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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

Prepared in the Office of:
ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611
2012 STANDARD SPECIFICATIONS

Designed by:
Natalie Chan, P.E. **3444**
NAME LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C. dated January 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 J
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 J
1630.01 Riser Basin	1634.01 Temporary Rock Sediment Dam Type A
1630.02 Silt Basin Type J	1634.02 Temporary Rock Sediment Dam Type J
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 J
1630.05 Temporary Diversion	1640.01 Coir Fiber Jaffle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	

PROJECT REFERENCE NO. U-5806	SHEET NO. EC-2
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.

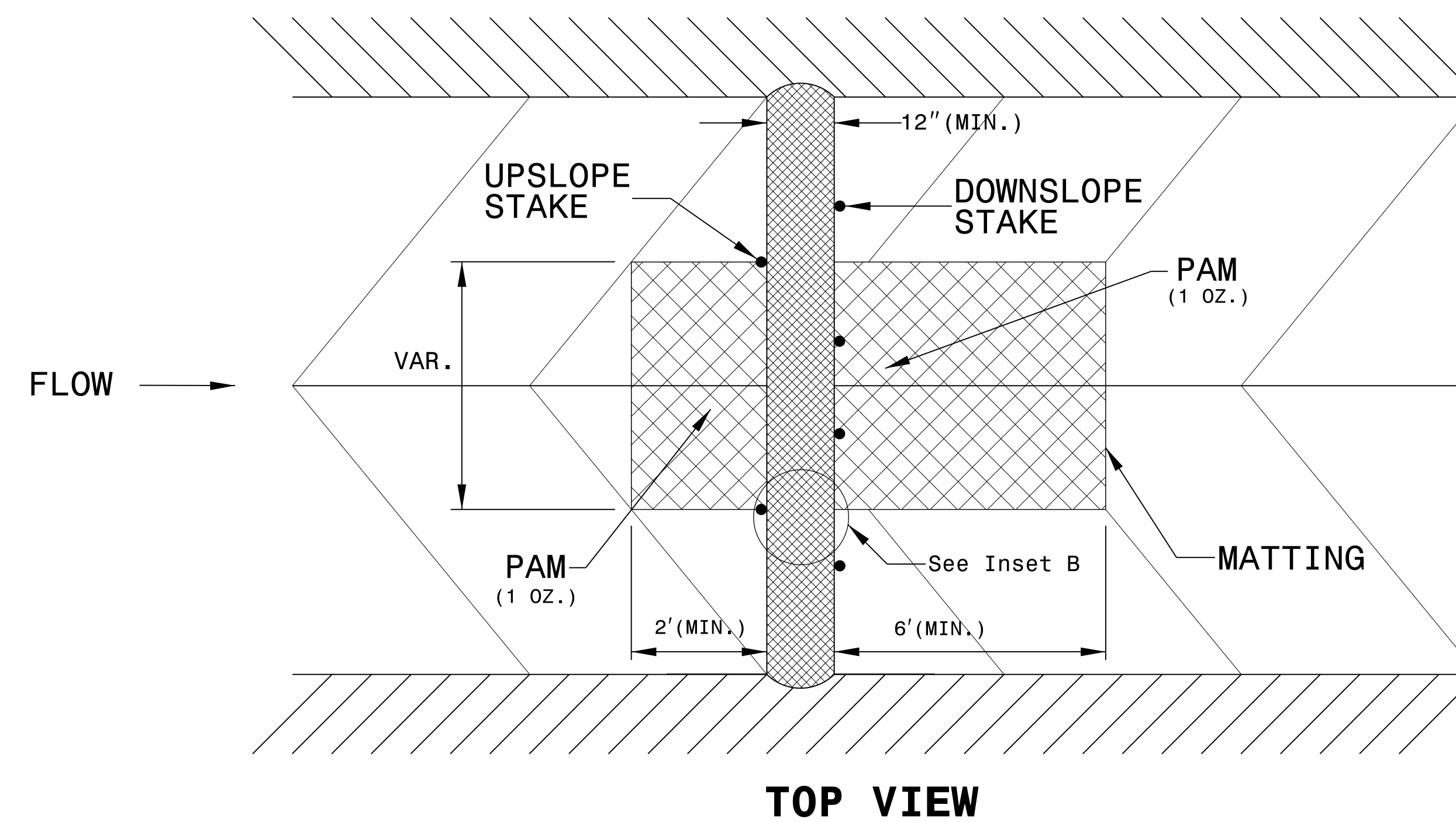
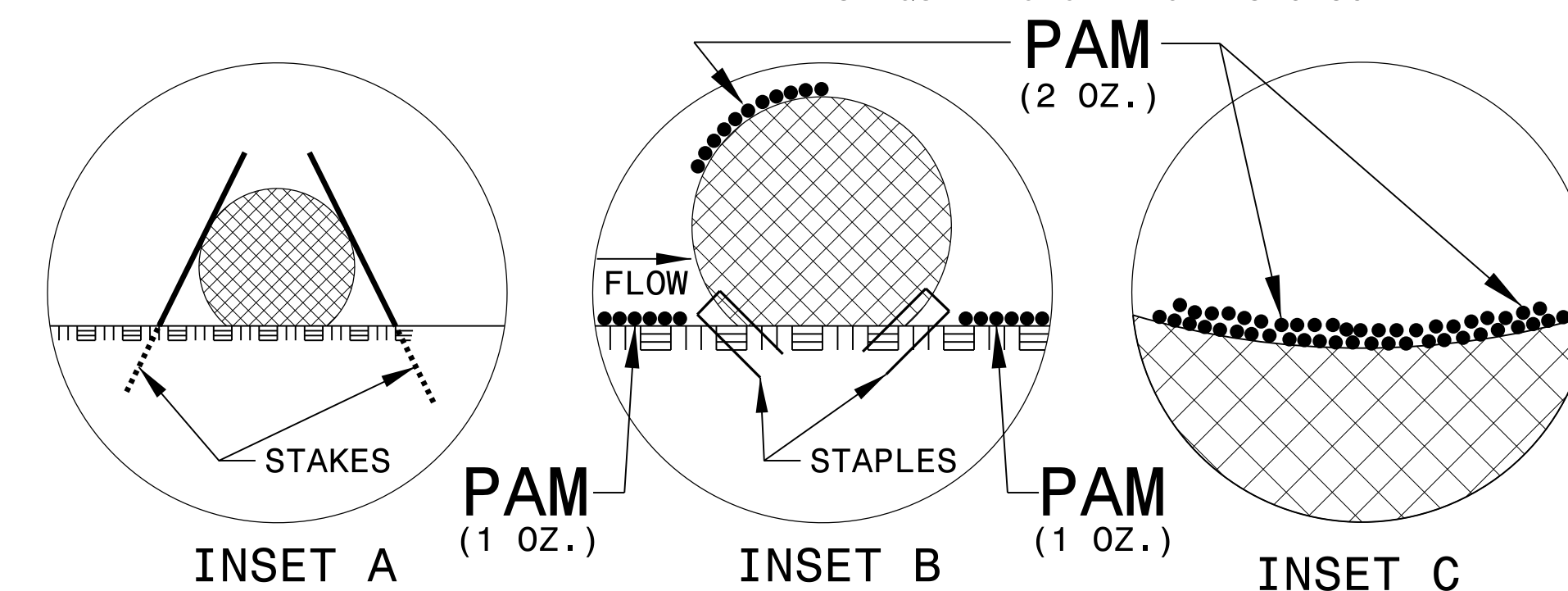
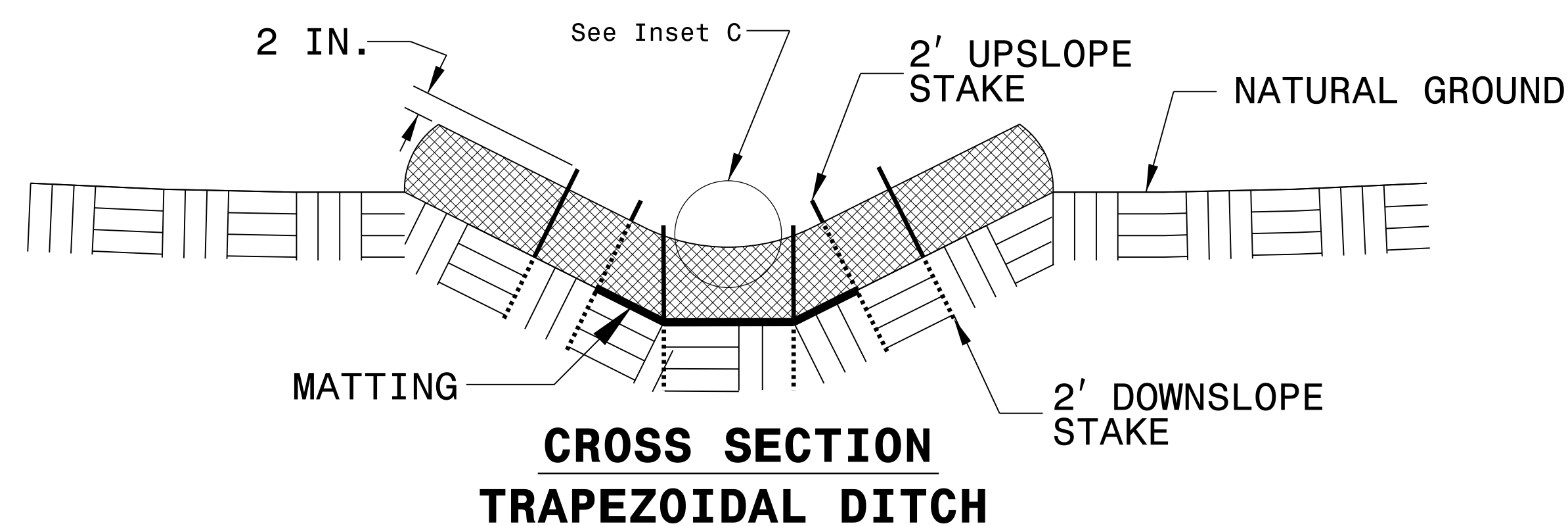
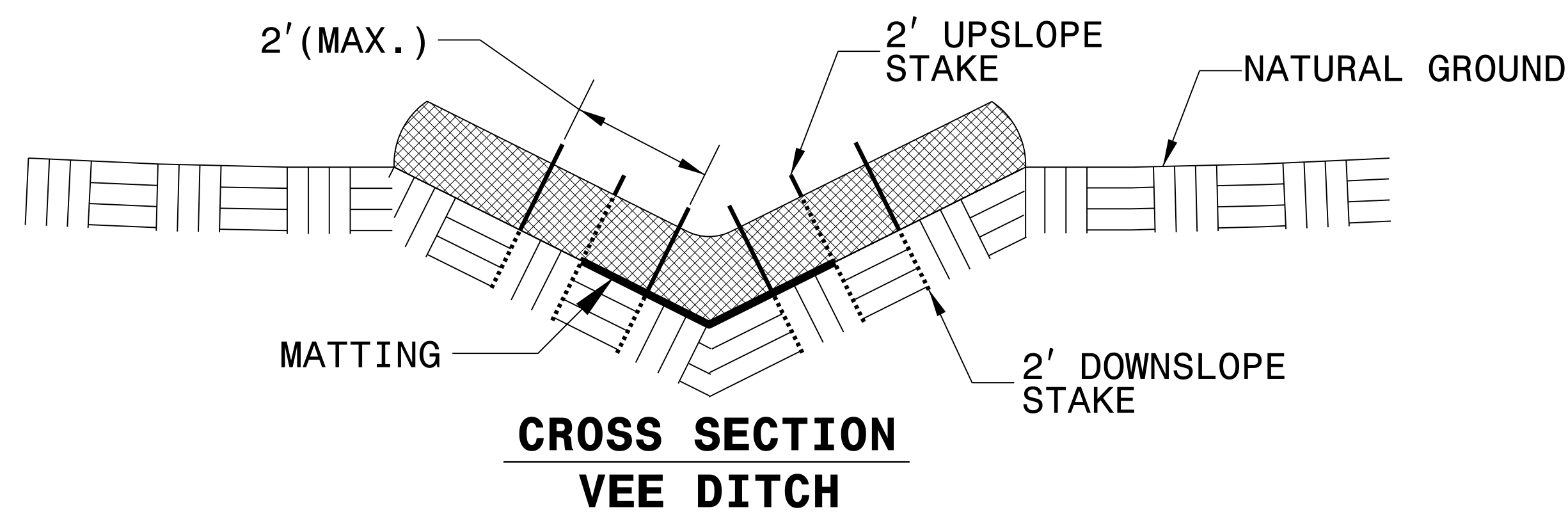
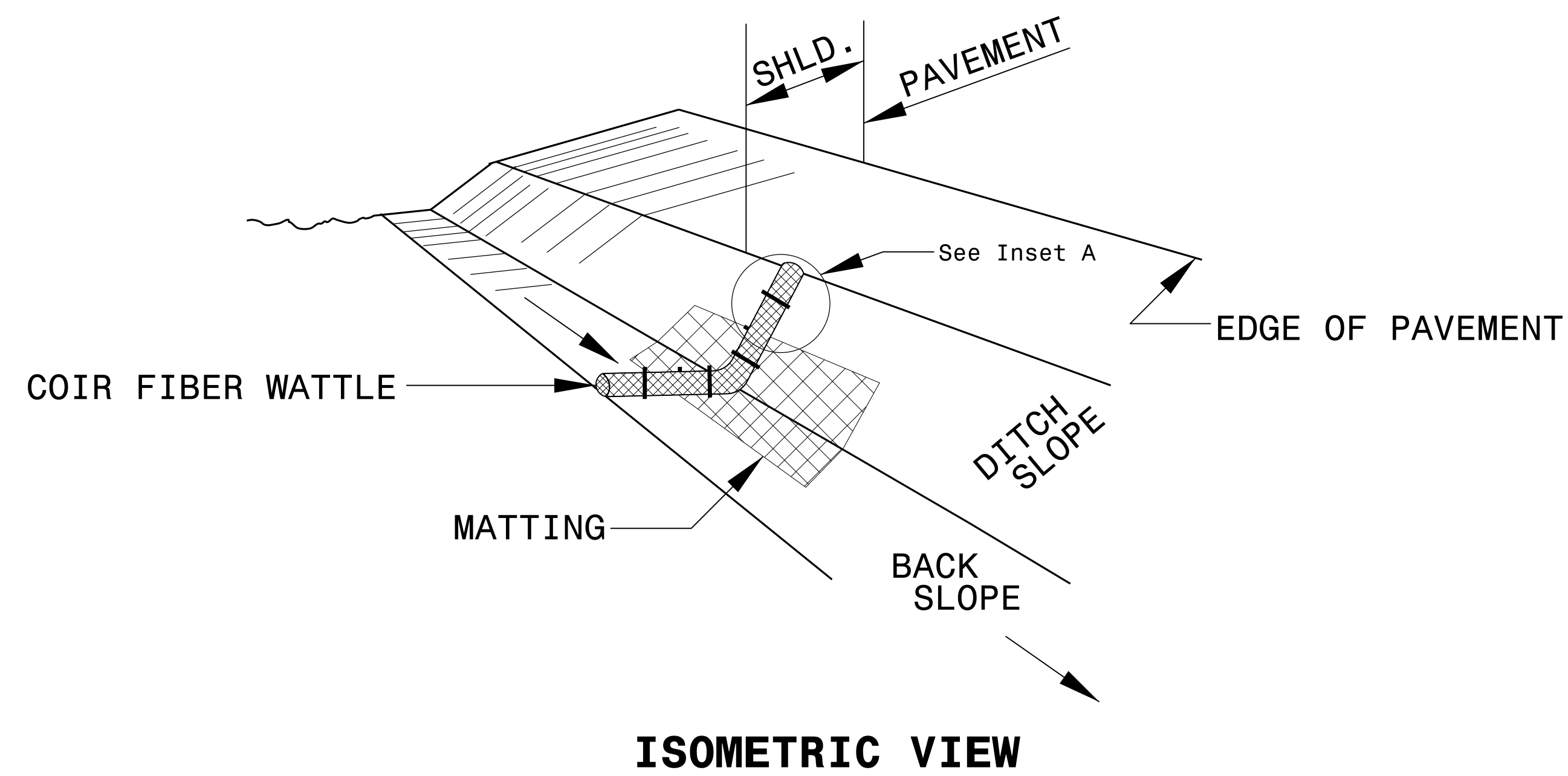
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.

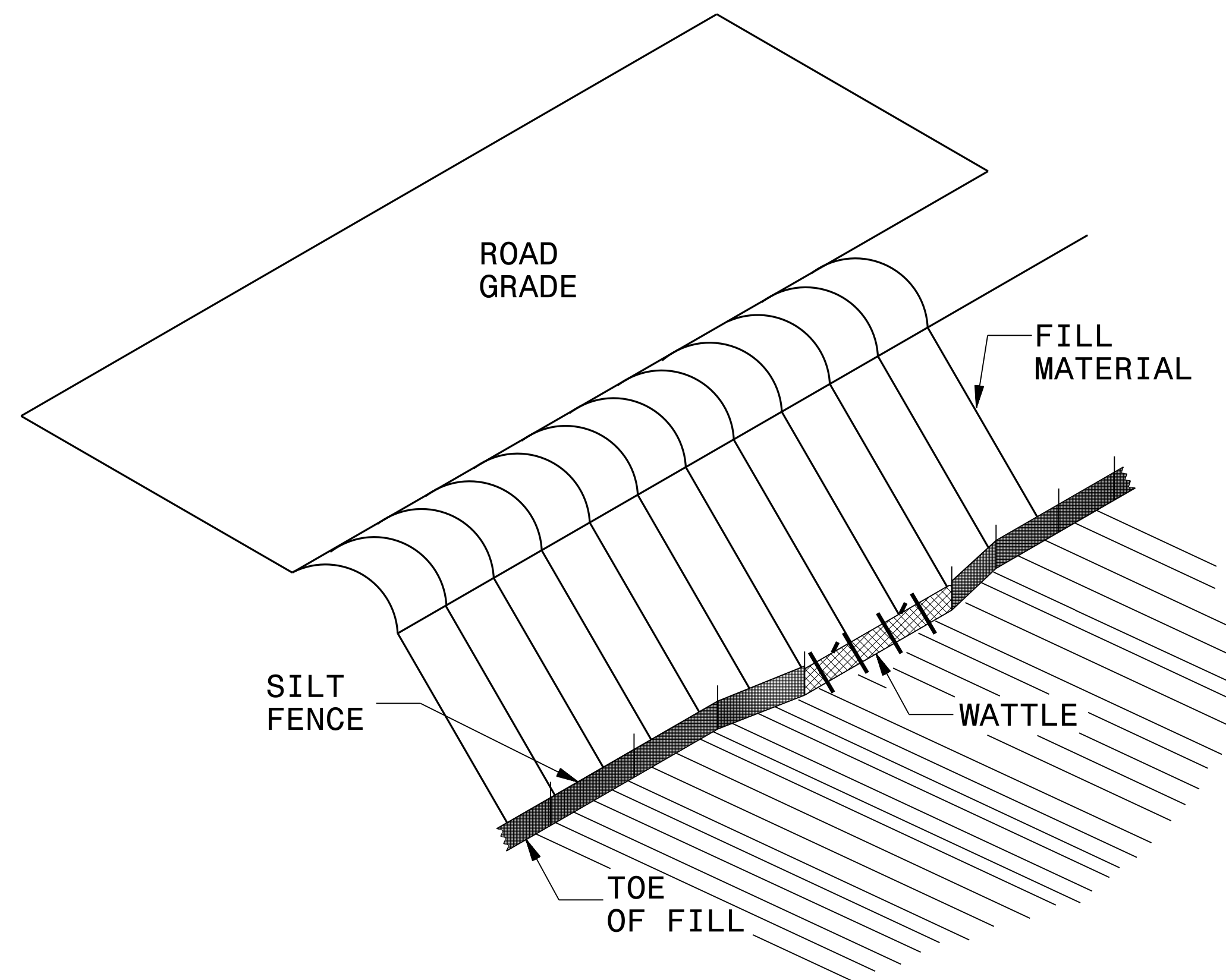
PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

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

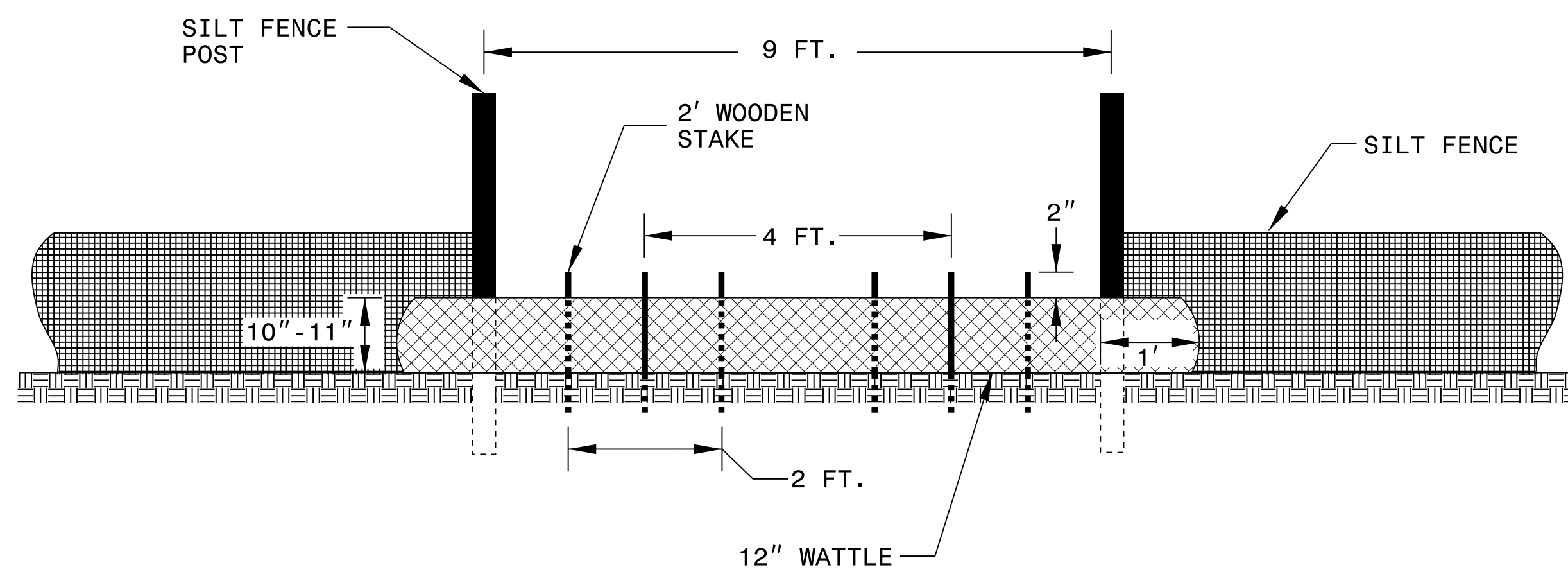


SILT FENCE COIR FIBER WATTLE BREAK DETAIL

PROJECT REFERENCE NO. <i>U-5806</i>	SHEET NO. <i>EC-2A</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



ISOMETRIC VIEW



VIEW FROM SLOPE

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE 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.

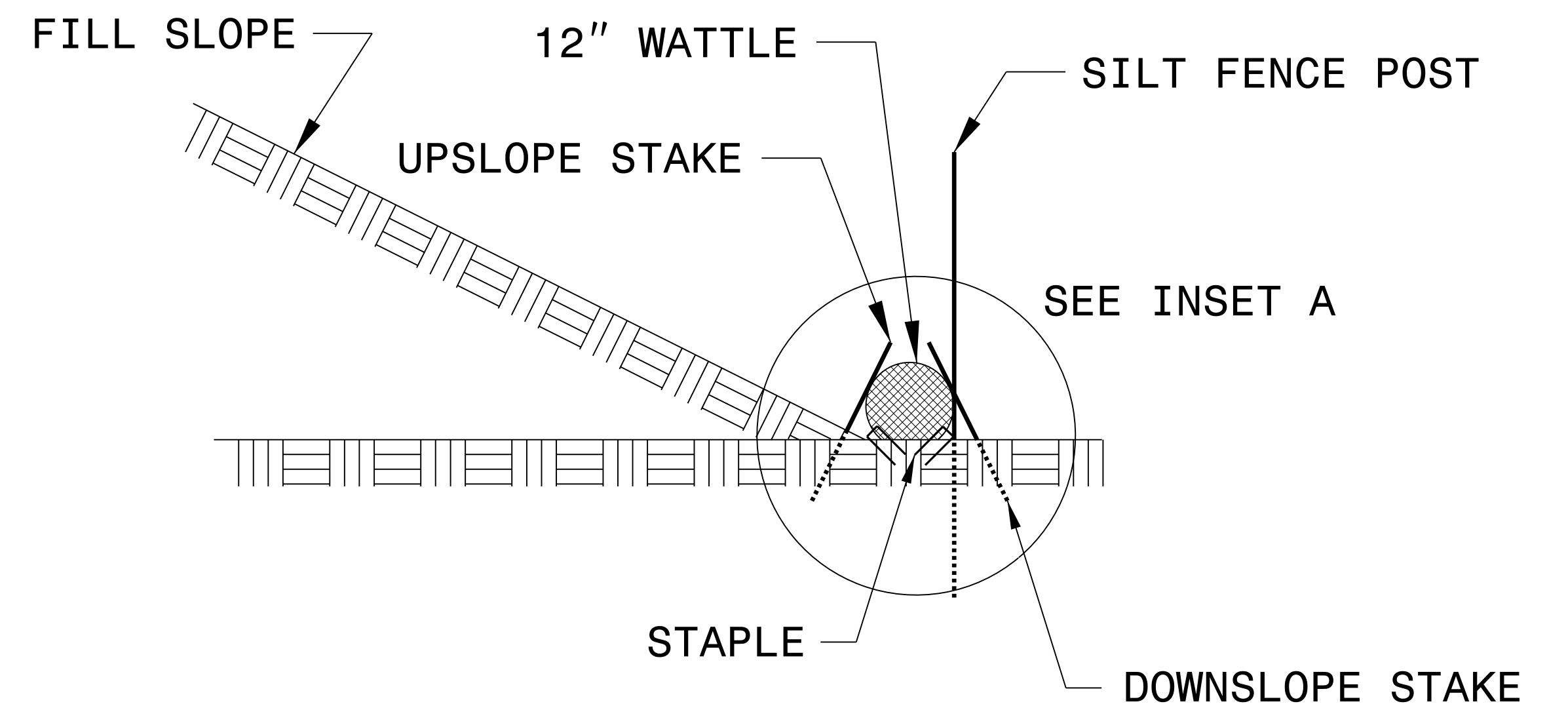
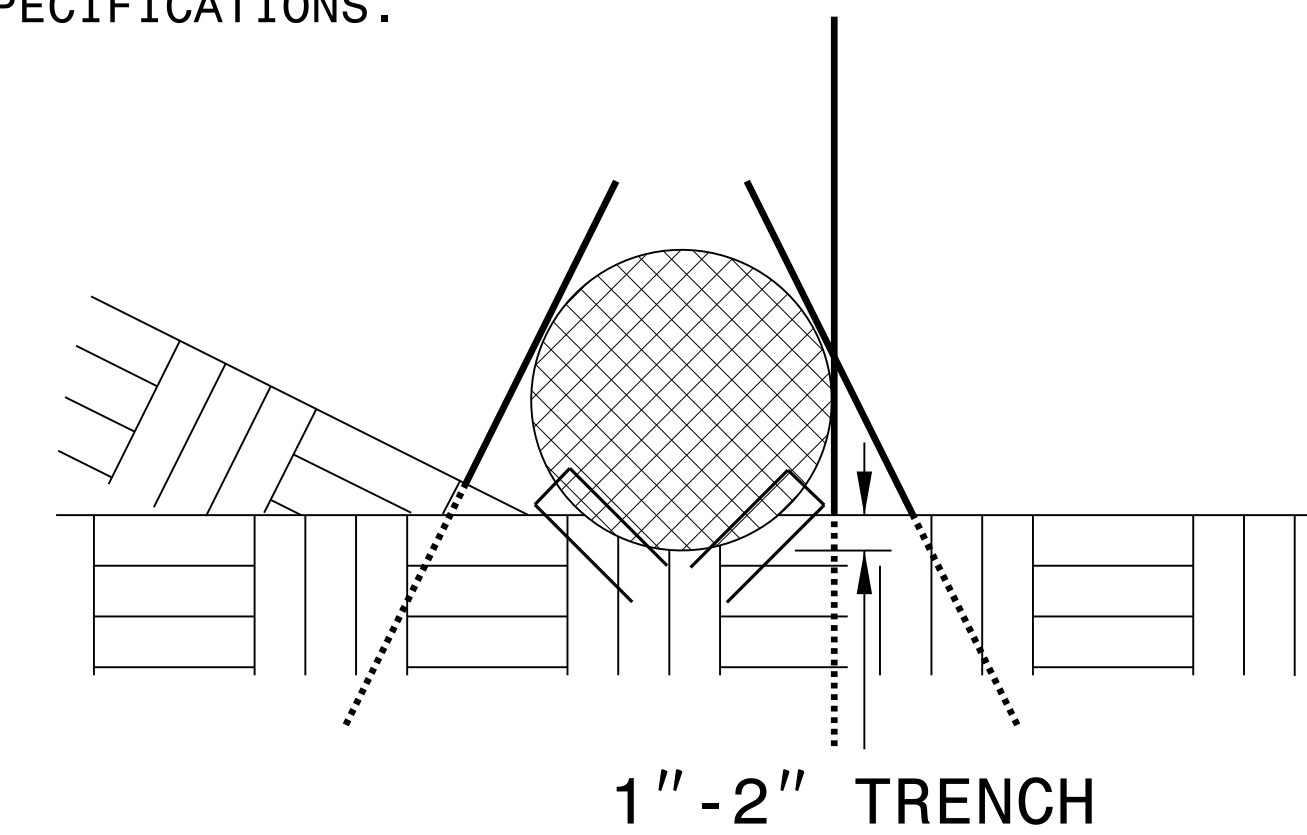
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>U-5806</i>	SHEET NO. <i>EC-3</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION TIMEFRAMES

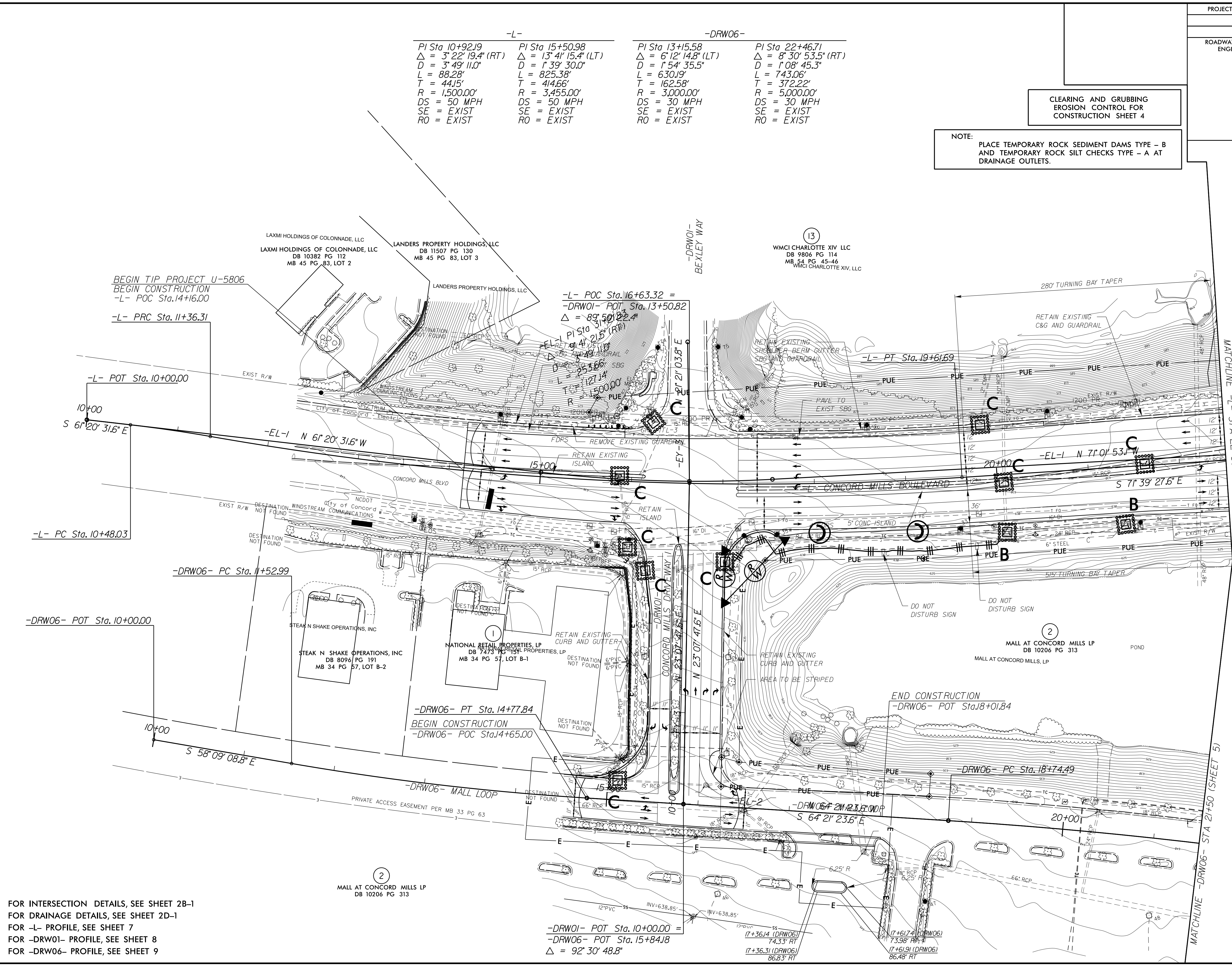
<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 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.

PROJECT REFERENCE NO.	SHEET NO.
U-5806	EC-4/CONST.4
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

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

-L-		-DRW06-	
PI Sta 10+92.19	PI Sta 15+50.98	PI Sta 13+15.58	PI Sta 22+46.71
$\Delta = 3^{\circ} 22' 19.4"$ (RT)	$\Delta = 13^{\circ} 41' 15.4"$ (LT)	$\Delta = 6^{\circ} 12' 14.8"$ (LT)	$\Delta = 8^{\circ} 30' 53.5"$ (RT)
D = 3' 49' 11.0"	D = 1' 39' 30.0"	D = 1' 54' 35.5"	D = 1' 08' 45.3"
L = 88.28'	L = 825.38'	L = 630.19'	L = 743.06'
T = 44.15'	T = 414.66'	T = 162.58'	T = 372.22'
R = 1,500.00'	R = 3,455.00'	R = 3,000.00'	R = 5,000.00'
DS = 50 MPH	DS = 50 MPH	DS = 30 MPH	DS = 30 MPH
SE = EXIST	SE = EXIST	SE = EXIST	SE = EXIST
RO = EXIST	RO = EXIST	RO = EXIST	RO = EXIST



FOR INTERSECTION DETAILS, SEE SHEET 2B-1
FOR DRAINAGE DETAILS, SEE SHEET 2D-1
FOR -L- PROFILE, SEE SHEET 7
FOR -DRW01- PROFILE, SEE SHEET 8
FOR -DRW06- PROFILE, SEE SHEET 9

-DRW01- POT Sta. 10+00.00 =
-DRW06- POT Sta. 15+84.18
 $\Delta = 92^{\circ} 30' 48.8"$

(7+36.14 (DRW06))
74.33' RT

(7+36.31 (DRW06))
86.83' RT

(7+61.74 (DRW06))
73.98' RT

(7+61.91 (DRW06))
86.48' RT

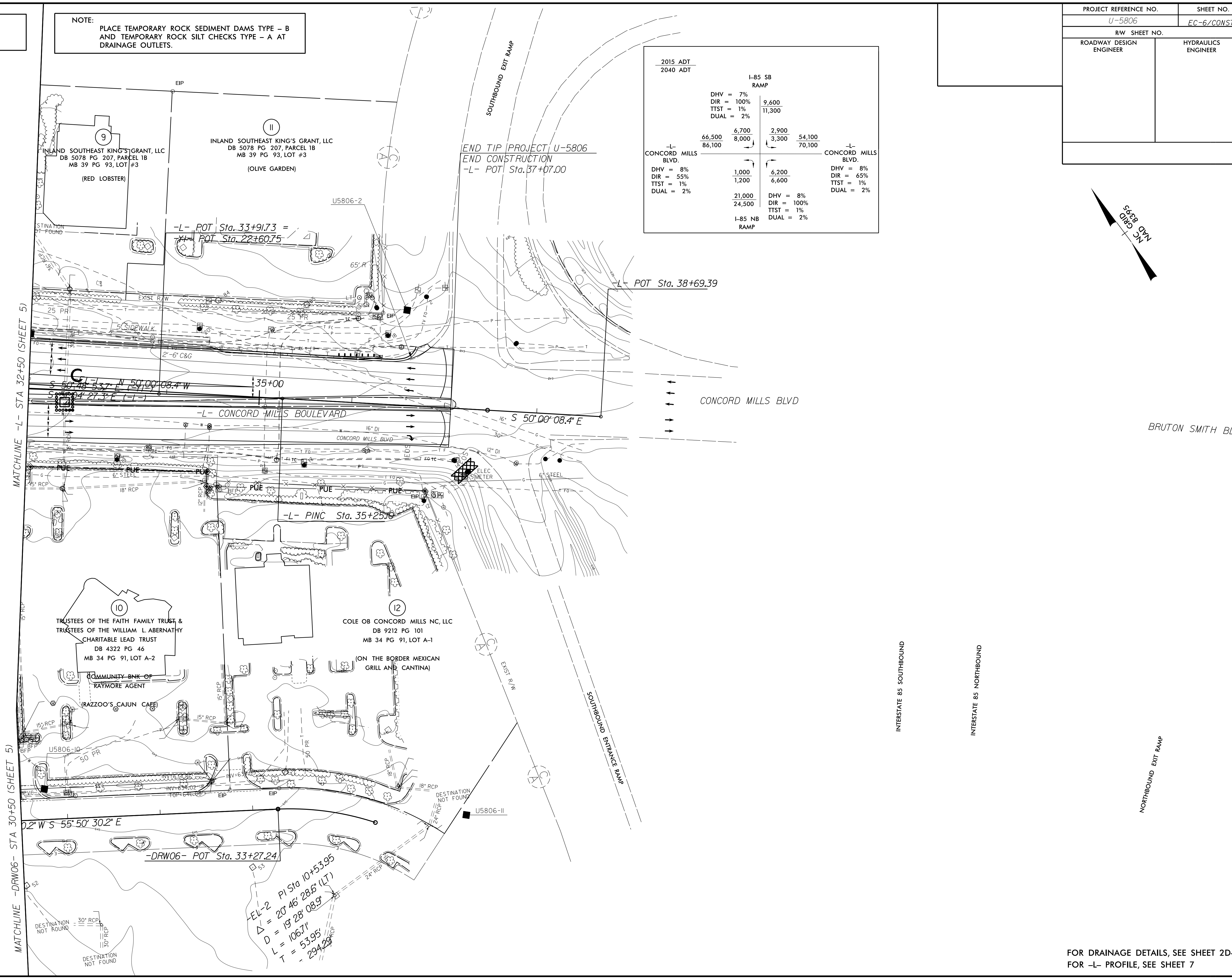
DATE\$

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 6

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

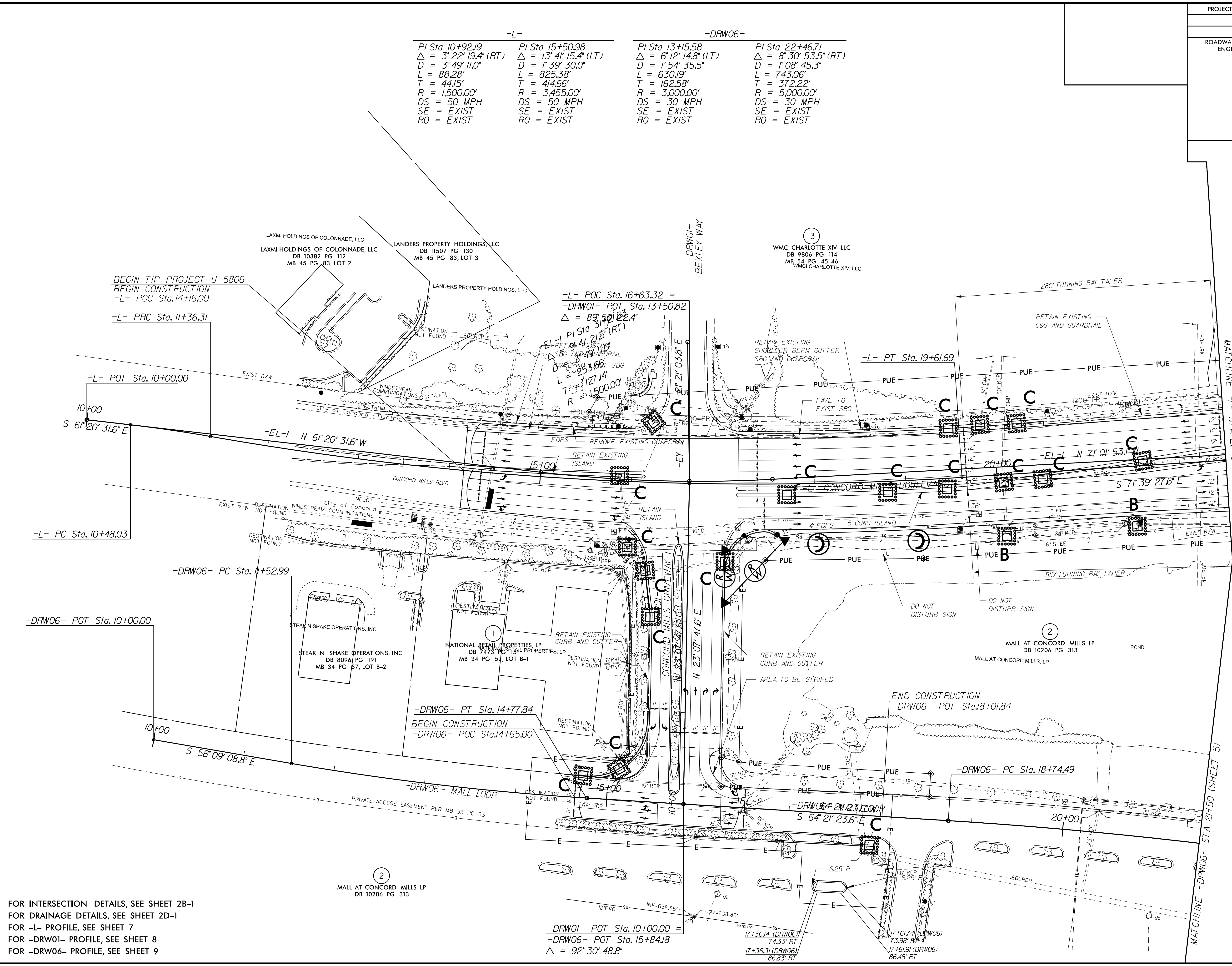
PROJECT REFERENCE NO.	SHEET NO.
U-5806	EC-6/CONST.6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

2015 ADT	I-85 SB RAMP			
2040 ADT	DHV = 7%	9,600		
	DIR = 100%	11,300		
	TTST = 1%			
	DUAL = 2%			
	66,500	6,700	2,900	54,100
	86,100	8,000	3,300	70,100
-L- CONCORD MILLS BLVD.				-L- CONCORD MILLS BLVD.
DHV = 8%	1,000	6,200		DHV = 8%
DIR = 55%	1,200	6,600		DIR = 65%
TTST = 1%				TTST = 1%
DUAL = 2%				DUAL = 2%
	21,000			DHV = 8%
	24,500			DIR = 100%
				TTST = 1%
				DUAL = 2%
	I-85 NB RAMP			



PROJECT REFERENCE NO.		SHEET NO.	
U-5806		EC-7/CONST.4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

-L-		-DRW06-	
PI Sta 10+92.19	PI Sta 15+50.98	PI Sta 13+15.58	PI Sta 22+46.71
$\Delta = 3' 22' 19.4''$ (RT)	$\Delta = 13' 4' 15.4''$ (LT)	$\Delta = 6' 12' 14.8''$ (LT)	$\Delta = 8' 30' 53.5''$ (RT)
D = 3' 49' 11.0"	D = 1' 39' 30.0"	D = 1' 54' 35.5"	D = 1' 08' 45.3"
L = 88.28'	L = 825.38'	L = 630.19'	L = 743.06'
T = 44.15'	T = 414.66'	T = 162.58'	T = 372.22'
R = 1,500.00'	R = 3,455.00'	R = 3,000.00'	R = 5,000.00'
DS = 50 MPH	DS = 50 MPH	DS = 30 MPH	DS = 30 MPH
SE = EXIST	SE = EXIST	SE = EXIST	SE = EXIST
RO = EXIST	RO = EXIST	RO = EXIST	RO = EXIST

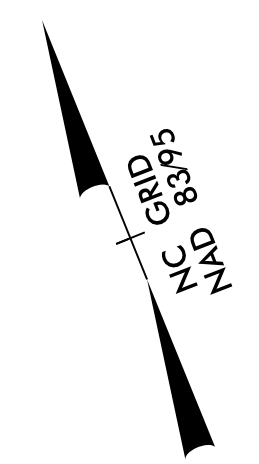


FOR INTERSECTION DETAILS, SEE SHEET 2B-1
 FOR DRAINAGE DETAILS, SEE SHEET 2D-1
 FOR -L- PROFILE, SEE SHEET 7
 FOR -DRW01- PROFILE, SEE SHEET 8
 FOR -DRW06- PROFILE, SEE SHEET 9

-DRW01- POT Sta. 10+00.00 =
 -DRW06- POT Sta. 15+84.18
 $\Delta = 92' 30' 48.8''$

(7+36.14 (DRW06))
 74.33' RT
 (7+36.31 (DRW06))
 86.83' RT

(17+61.74 (DRW06))
 73.98' RP-1
 (17+61.91 (DRW06))
 86.48' RT

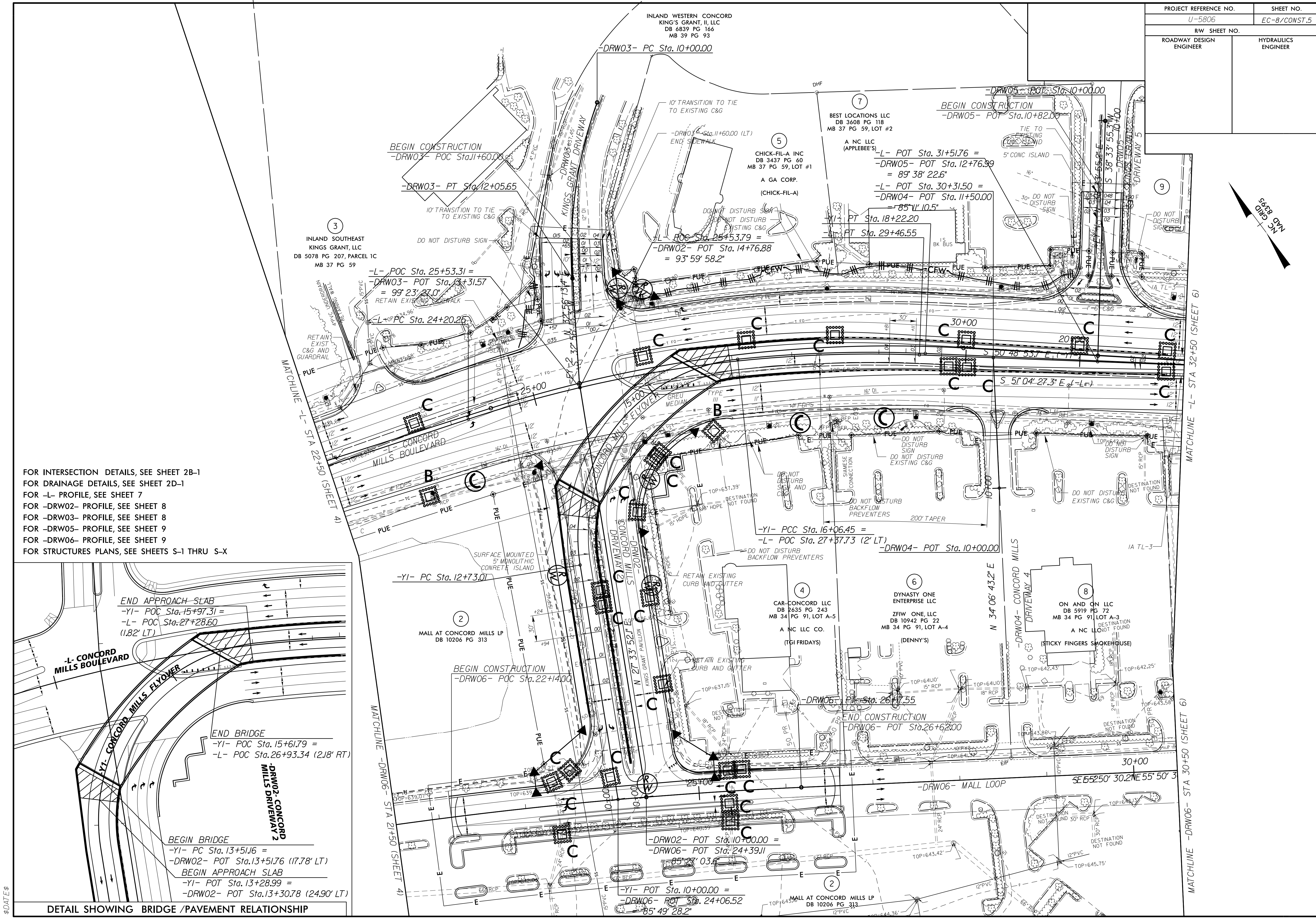


MATCHLINE -L- STA 22+50 (SHEET 5)

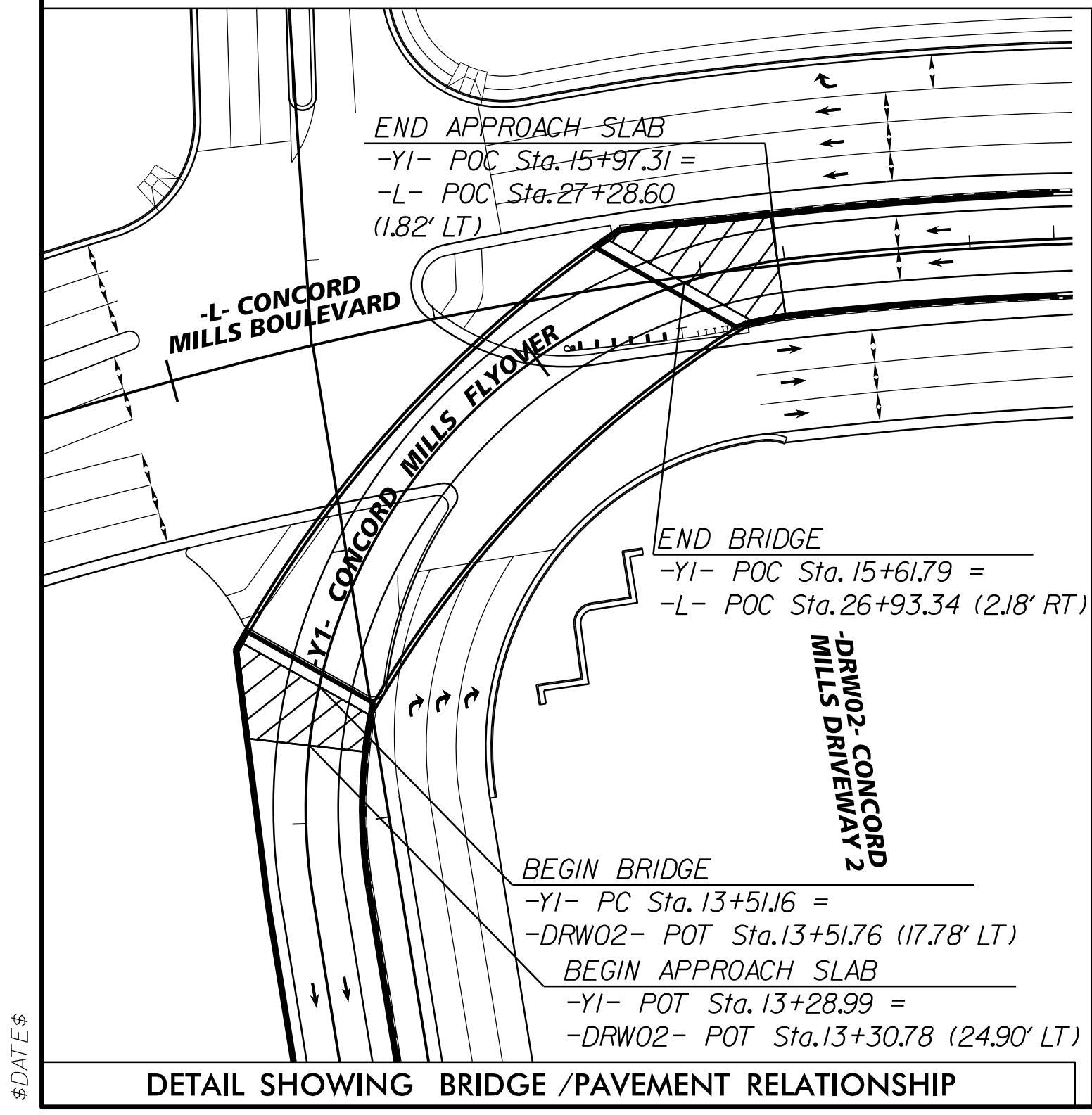
MATCHLINE -DRW06- STA 21+50 (SHEET 5)

\$ DATE \$

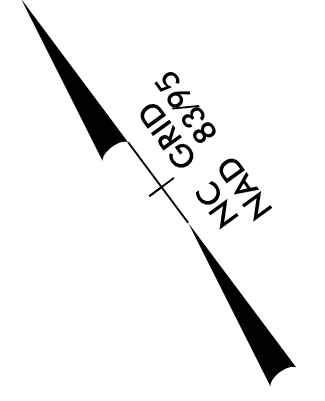
PROJECT REFERENCE NO.	SHEET NO.
U-5806	EC-8/CONST.5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



FOR INTERSECTION DETAILS, SEE SHEET 2B-1
 FOR DRAINAGE DETAILS, SEE SHEET 2D-1
 FOR -L- PROFILE, SEE SHEET 7
 FOR -DRW02- PROFILE, SEE SHEET 8
 FOR -DRW03- PROFILE, SEE SHEET 8
 FOR -DRW05- PROFILE, SEE SHEET 9
 FOR -DRW06- PROFILE, SEE SHEET 9
 FOR STRUCTURES PLANS, SEE SHEETS S-1 THRU S-X



DATE: \$



MATCHLINE -L- STA 32+50 (SHEET 6)

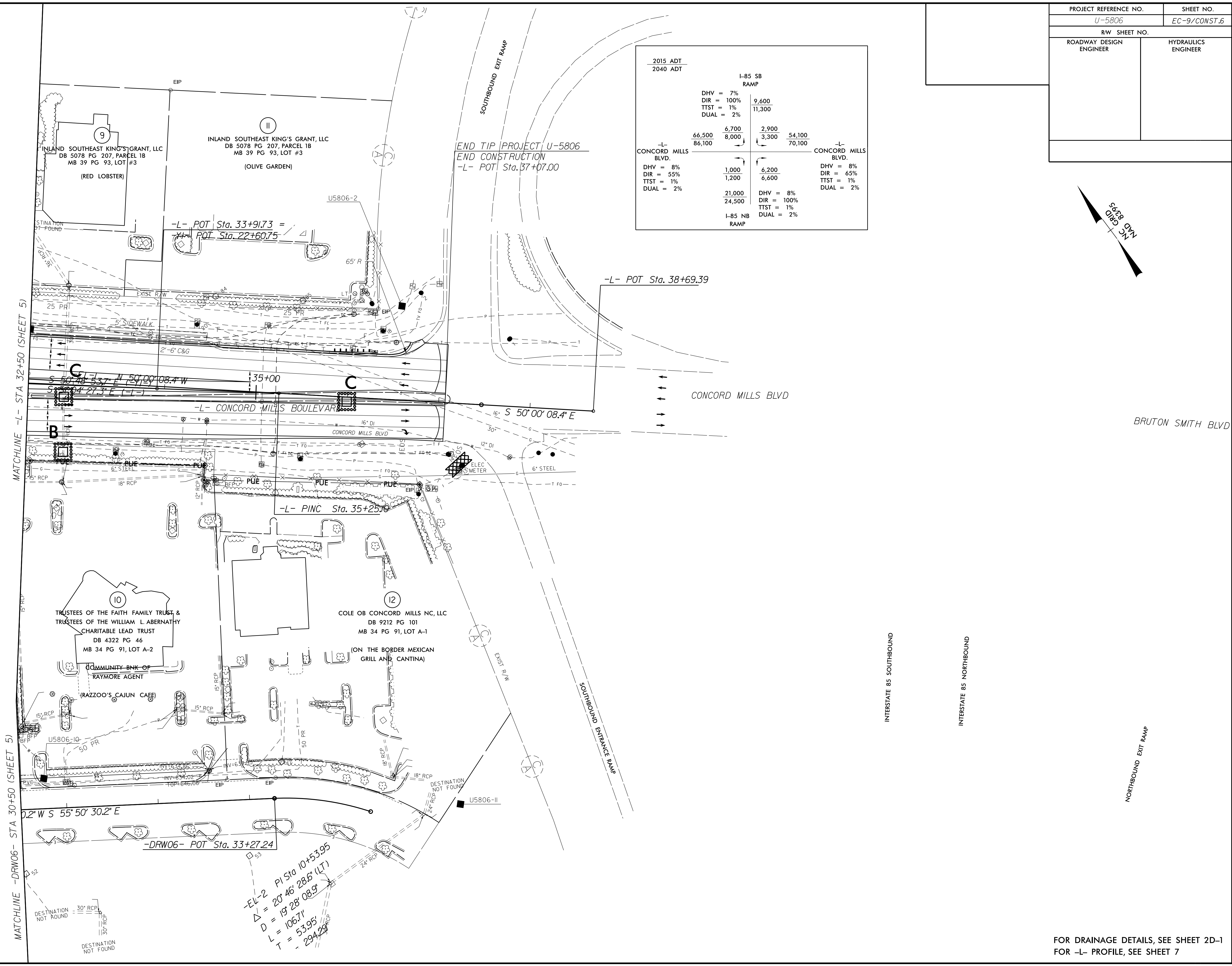
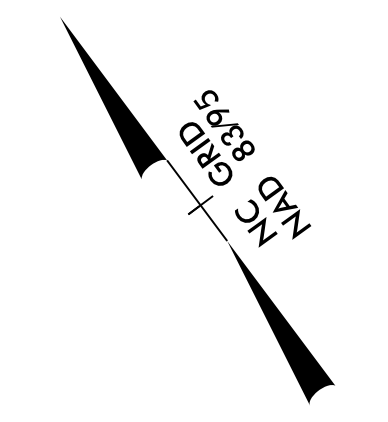
MATCHLINE -L- STA 22+50 (SHEET 4)

MATCHLINE -DRW06- STA 21+50 (SHEET 4)

MATCHLINE -DRW06- STA 30+50 (SHEET 6)

PROJECT REFERENCE NO.		SHEET NO.	
U-5806		EC-9/CONST.6	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

2015 ADT	I-85 SB RAMP			
2040 ADT	DHV = 7%	9,600		
	DIR = 100%	11,300		
	TTST = 1%			
	DUAL = 2%			
	66,500	6,700	2,900	54,100
	86,100	8,000	3,300	70,100
-L- CONCORD MILLS BLVD.	DHV = 8%	1,000	6,200	DHV = 8%
	DIR = 55%	1,200	6,600	DIR = 65%
	TTST = 1%			TTST = 1%
	DUAL = 2%			DUAL = 2%
	21,000			DHV = 8%
	24,500			DIR = 100%
				TTST = 1%
				DUAL = 2%
				I-85 NB RAMP



\$DATE\$

FOR DRAINAGE DETAILS, SEE SHEET 2D-1
FOR -L- PROFILE, SEE SHEET 7