

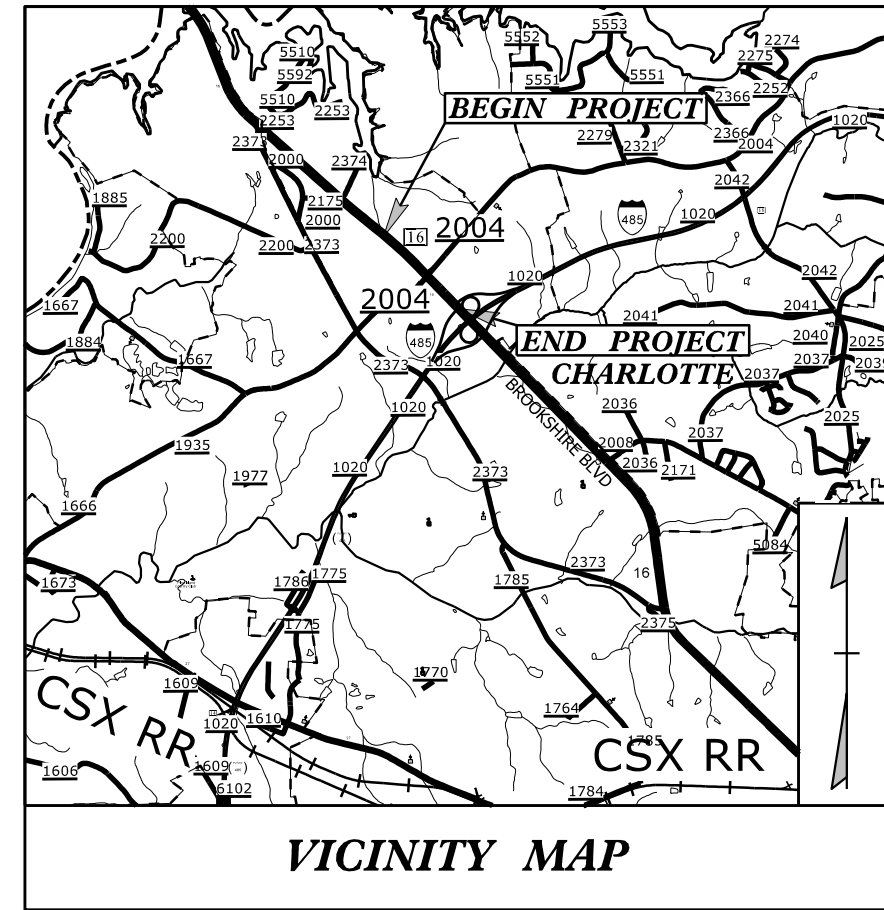
**This electronic collection of documents is provided
for the convenience of the user
and is Not a Certified Document –**

**The documents contained herein were originally issued
and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

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

TIP PROJECT: U-6084

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See Sheet 1C-1 To 1C-5 For Survey Control Sheets

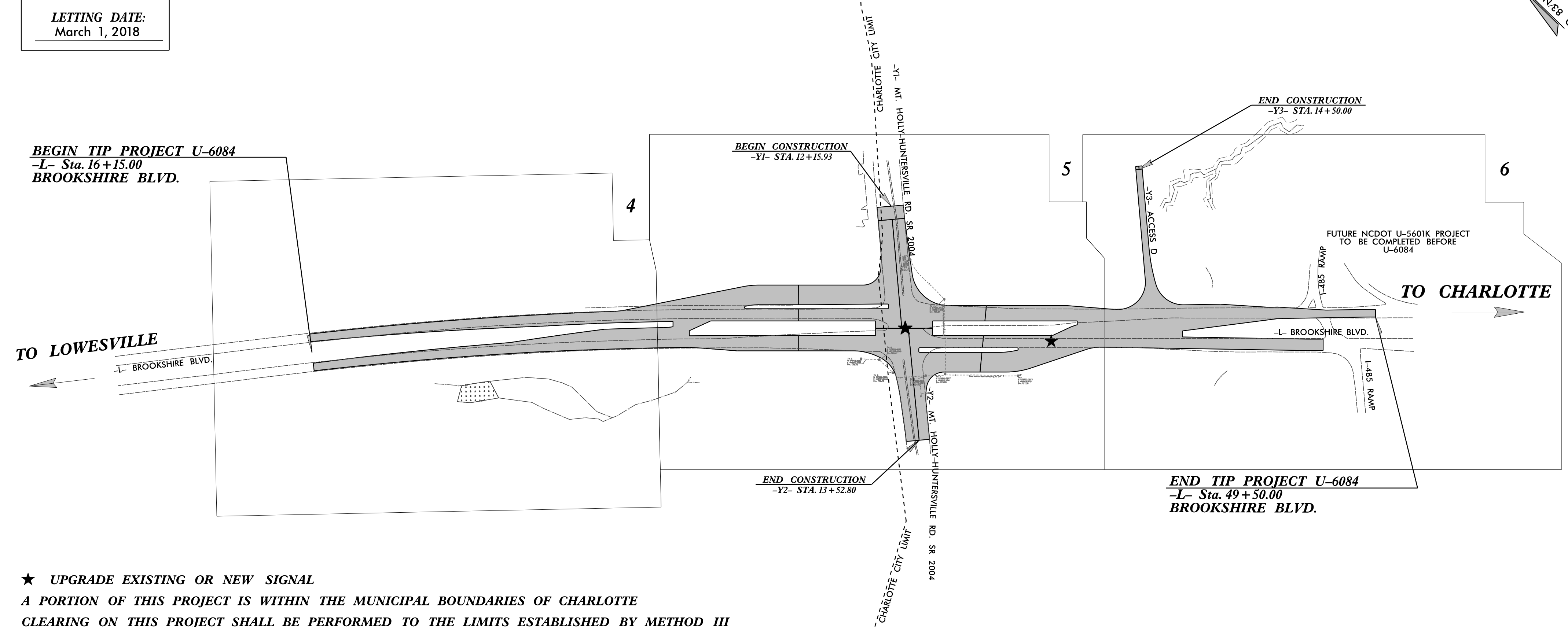


2012 STANDARD SPECIFICATIONS
RIGHT OF WAY DATE:
November 13, 2017

LETTING DATE:
March 1, 2018

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

**LOCATION: BROOKSHIRE BOULEVARD FROM
NORTH OF SR 2004 MOUNT HOLLY-HUNTERSVILLE ROAD TO
SOUTH OF INTERSTATE 485 RAMP
TYPE OF WORK: GRADING, PAVING, DRAINAGE
SIGNALS, PAVEMENT MARKINGS, PAVEMENT MARKERS**



★ UPGRADE EXISTING OR NEW SIGNAL
A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF CHARLOTTE
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.	U-6084	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

EROSION AND SEDIMENT CONTROL MEASURES

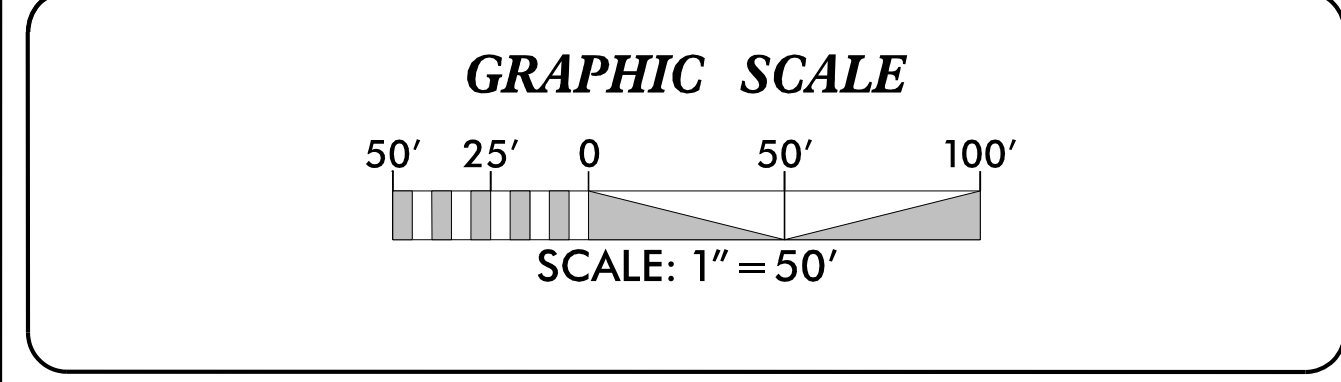
Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	—
1630.02	Silt Basin Type B	□
1633.01	Temporary Rock Silt Check Type-A	▨
	Temporary Rock Silt Check Type-A 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.

ENVIRONMENTALLY
SENSITIVE AREA(S) EXIST
ON THIS PROJECT

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

THIS PROJECT HAS
BEEN DESIGNED TO
SENSITIVE WATERSHED
STANDARDS.



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:

SUNGATE DESIGN GROUP, P.A.

905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

Designed by:

Brian N. Elam, PE 3195

NAME LEVEL III CERTIFICATION NO.

Reviewed in the Office of:

WSP

434 Fayetteville St.
Raleigh, NC 27601

2018 STANDARD SPECIFICATIONS

Reviewed by:

Rana Stansell, PE, CFM

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	

12/04/2017 10:43:11 AM EC-dan-psh_01.dgn

PROJECT REFERENCE NO. U-6084	SHEET NO. EC-2A
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.

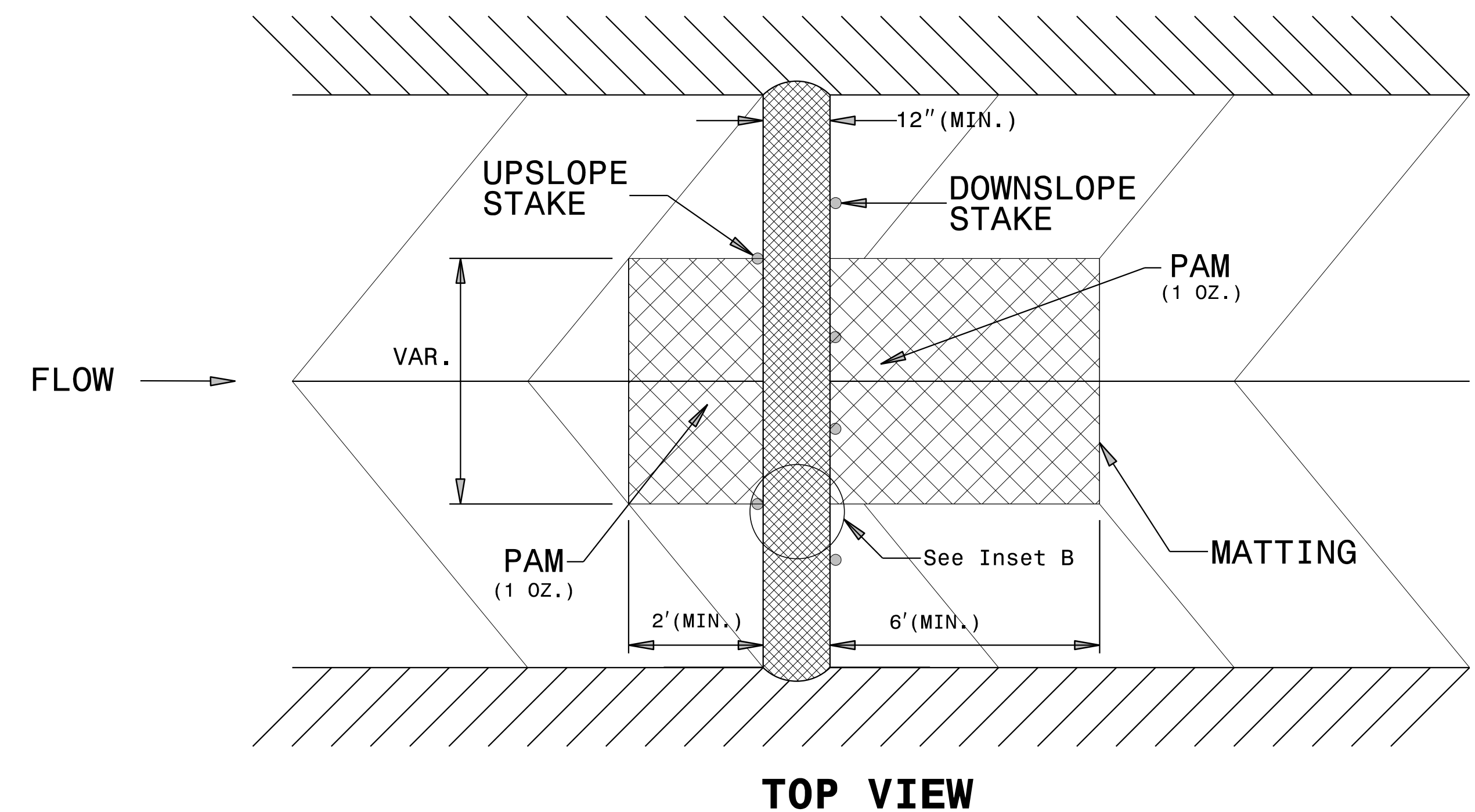
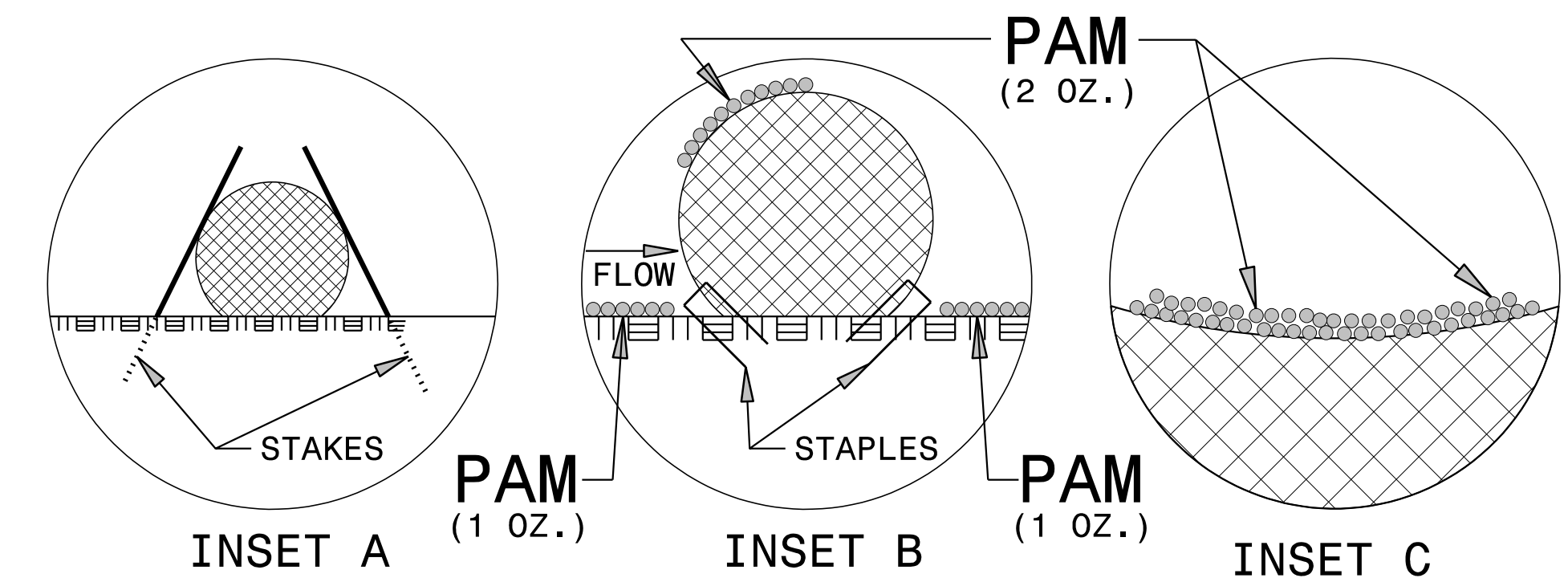
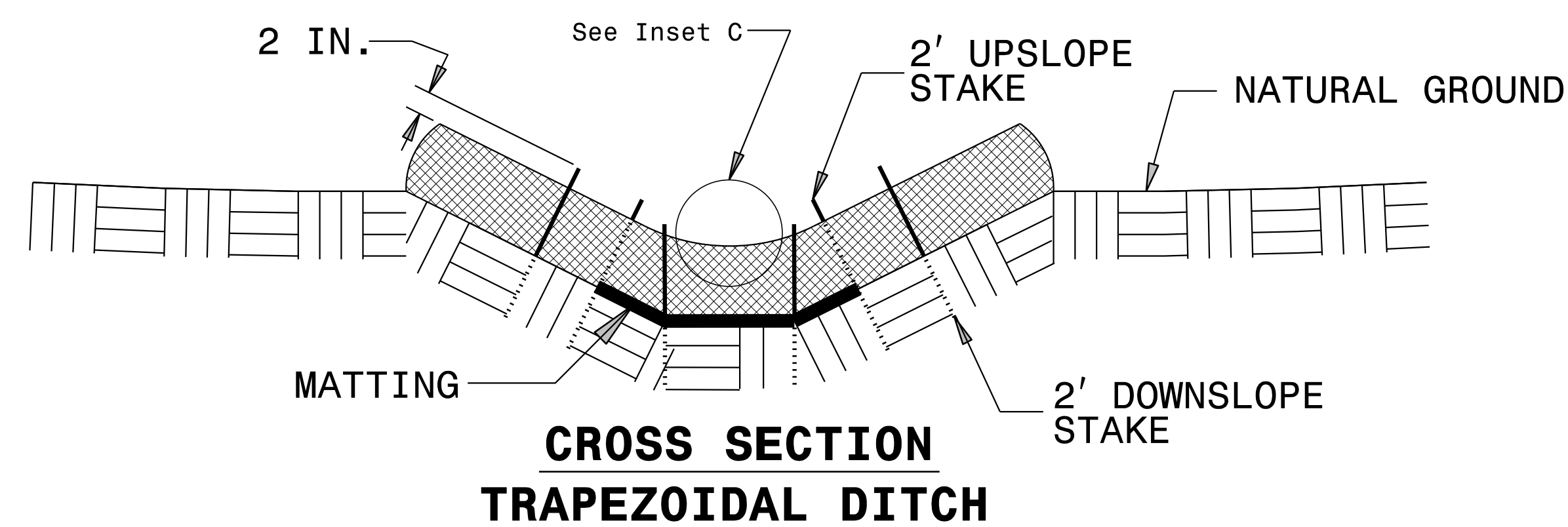
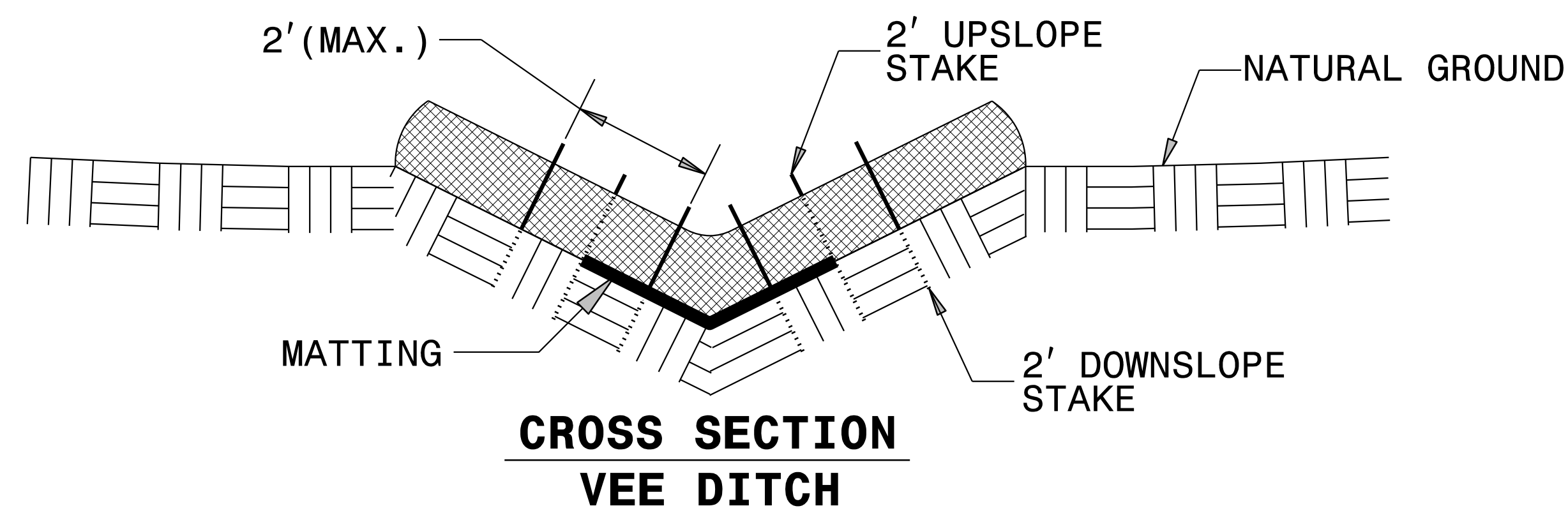
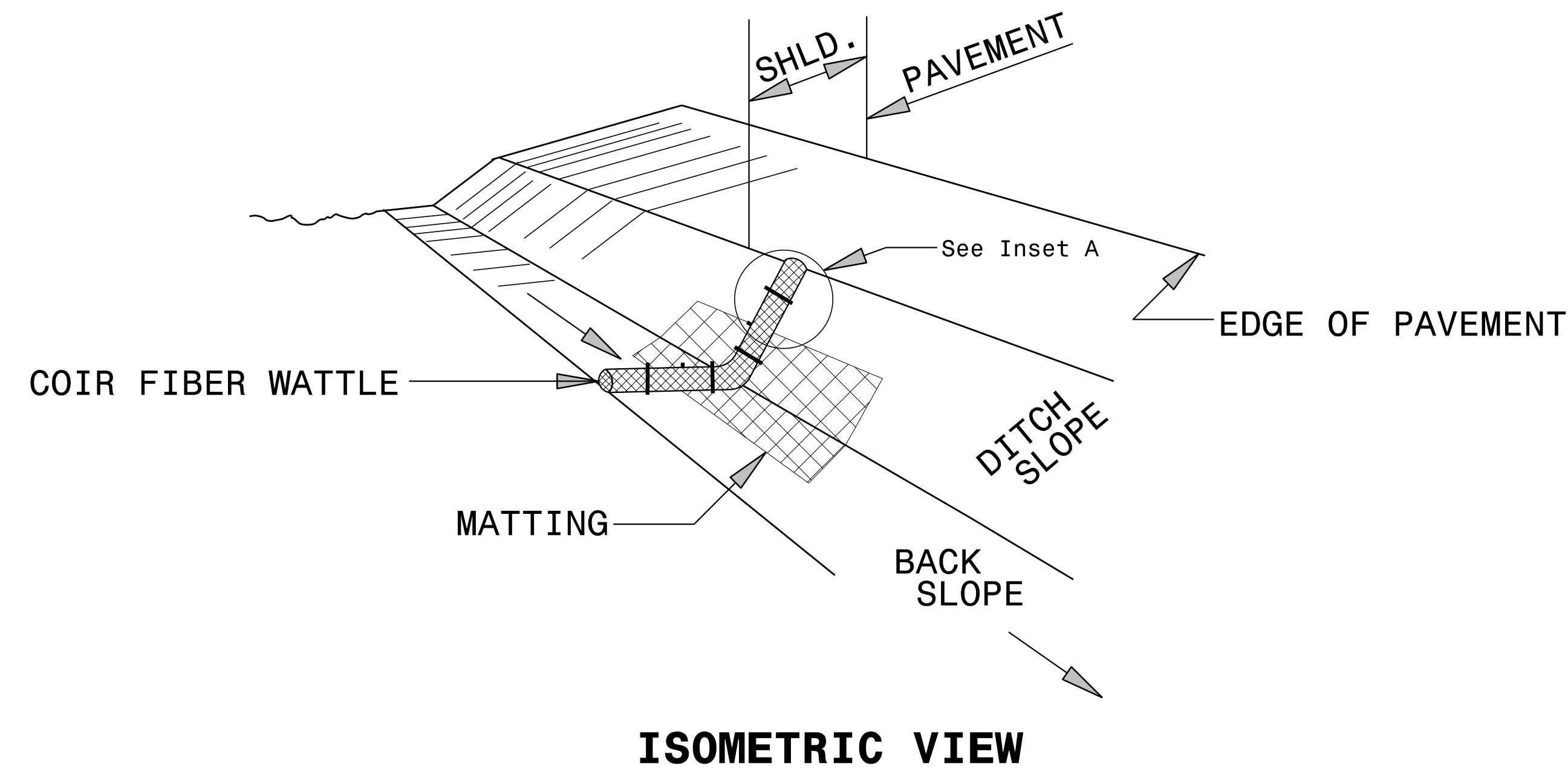
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.

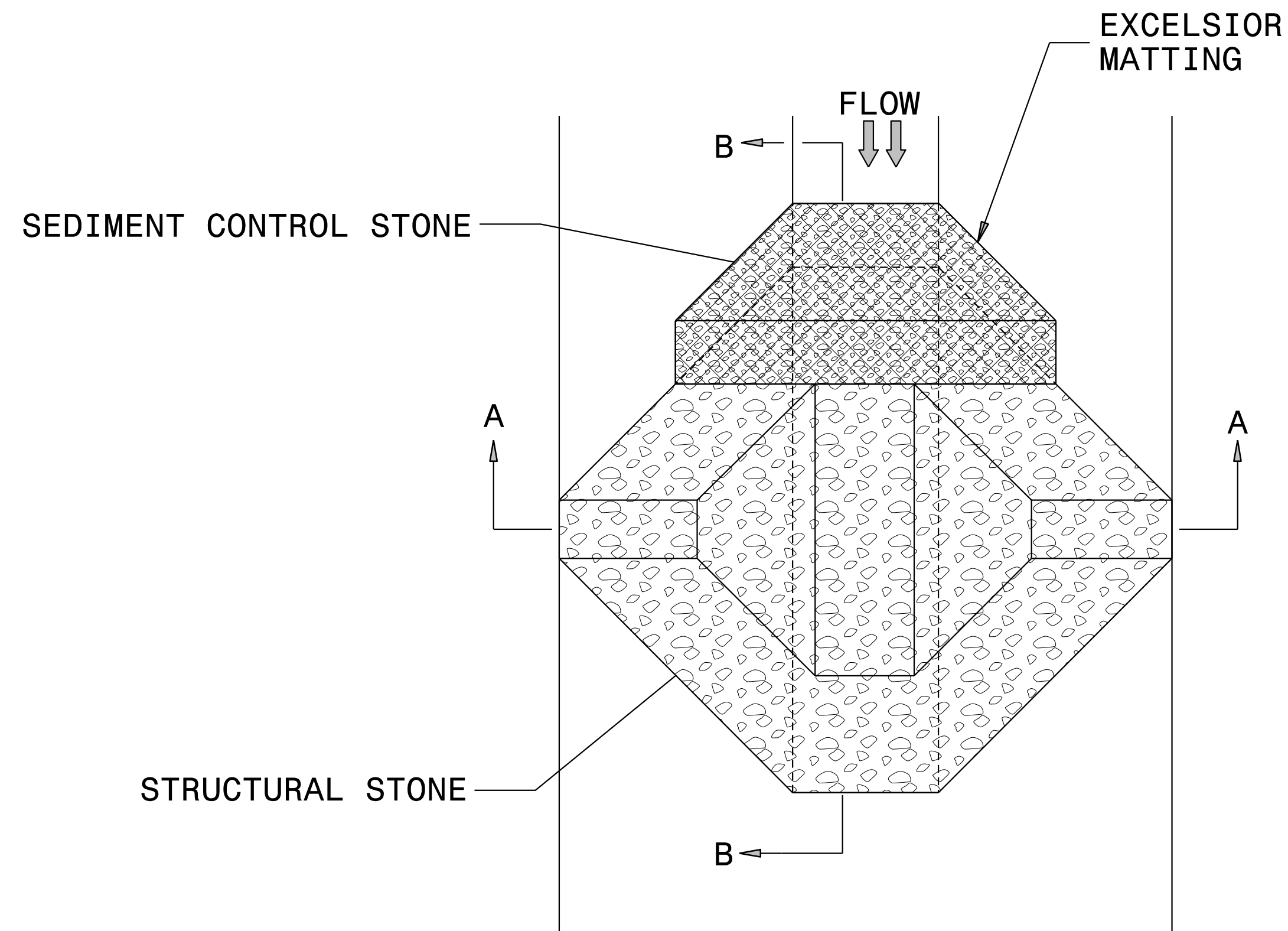
PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

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.

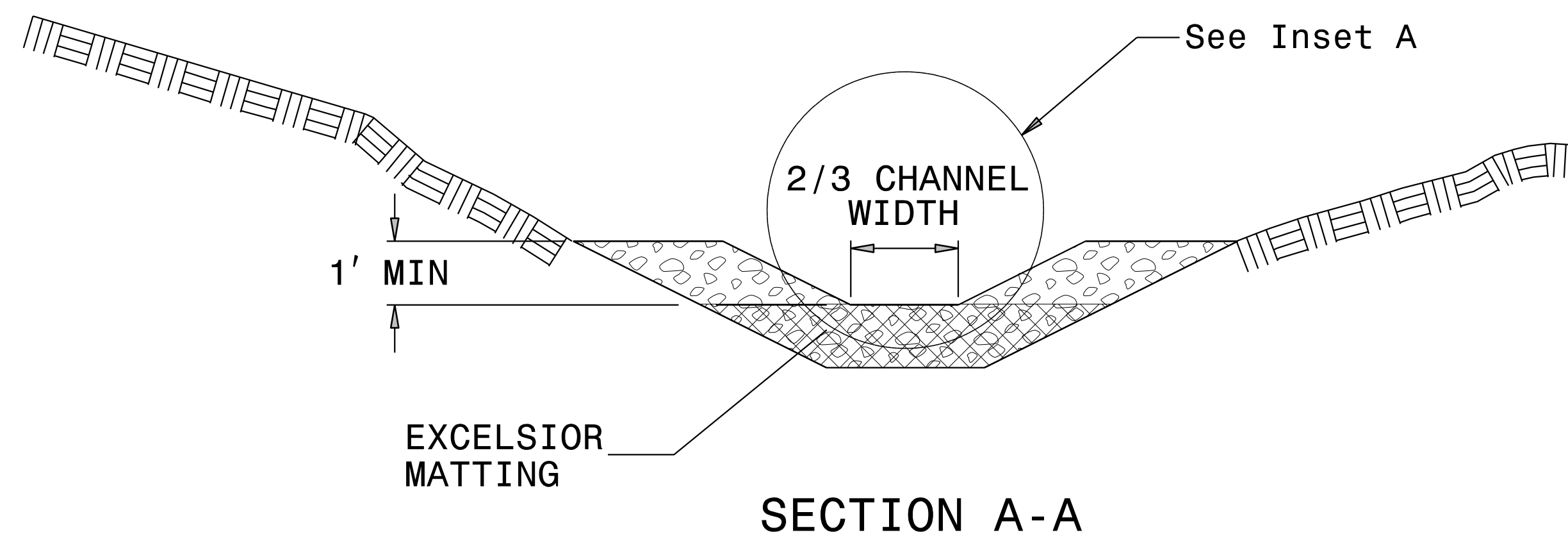


PROJECT REFERENCE NO. U-6084	SHEET NO. EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN



SECTION A-A

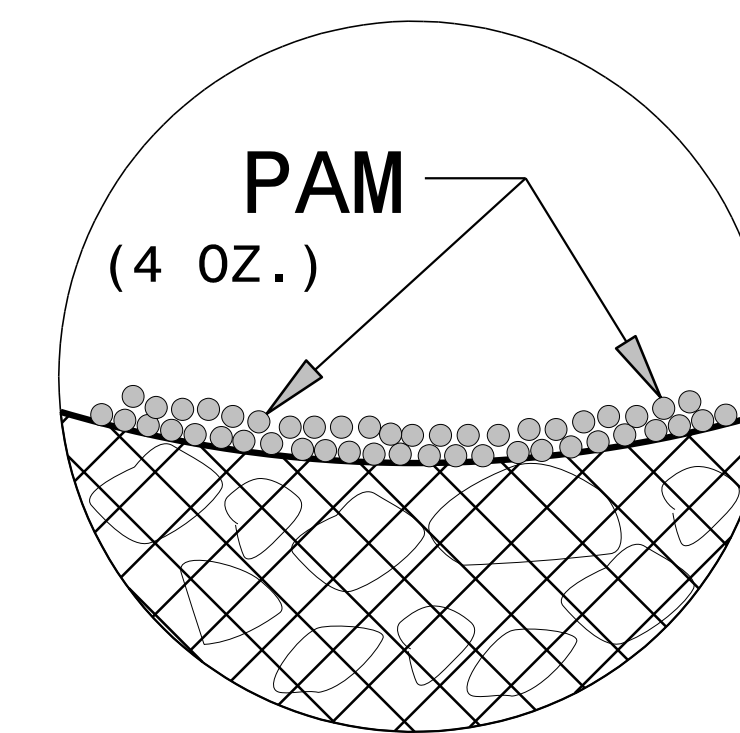
NOTES:

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

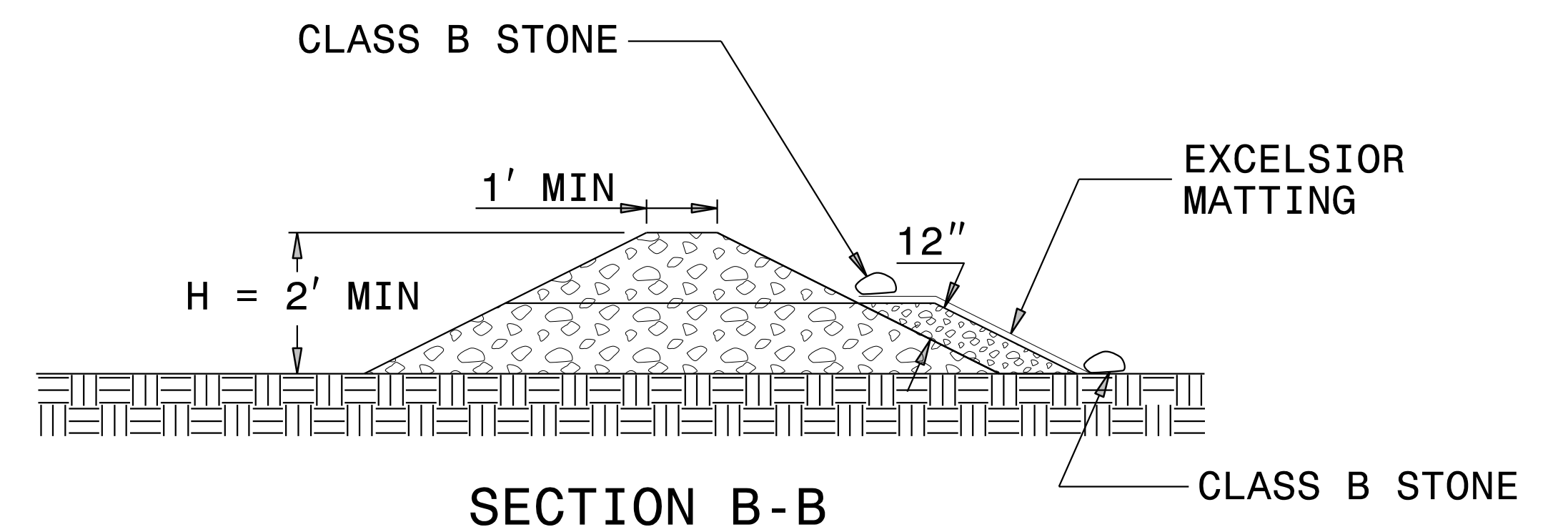
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

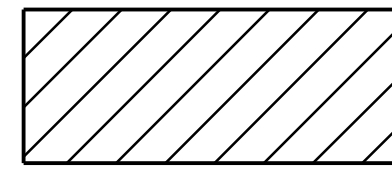
NOT TO SCALE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>U-6084</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.



ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 04

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL. (919) 856-2243
ENG. FIRM LICENSE NO. C-890

PROJECT REFERENCE NO. <i>U-6084</i>	SHEET NO. <i>EC-04/CONST.04</i>
Roadway Design Engineer	Hydraulics Engineer



Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

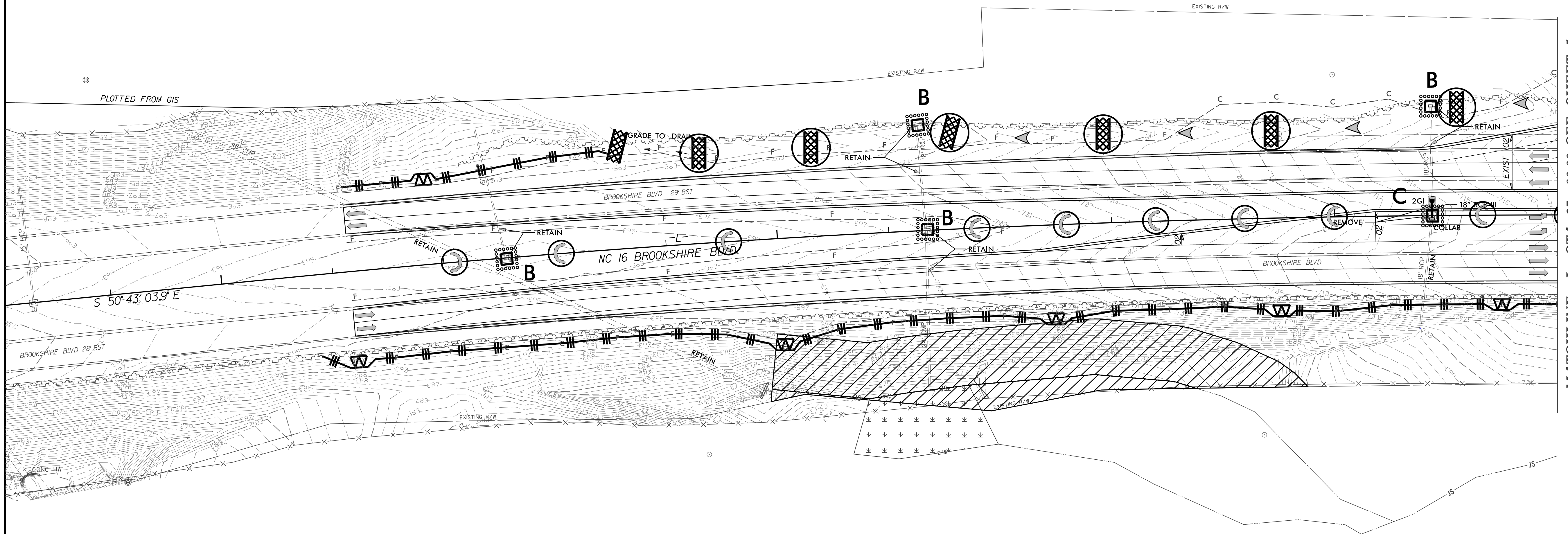
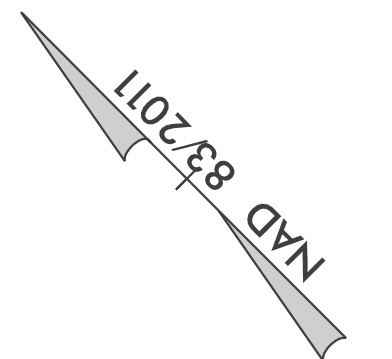
CALLABRIDGE CT

-L-
PI Sta 22+54.02
 $\Delta = 6' 48'' 36.0'' (RT)$
 $D = 0' 29'' 44.3''$
 $L = 1,373.98'$
 $T = 687.80'$
 $R = 11,560.00'$
SE = EXIST

15 -L-

20 -L-

25 -L-



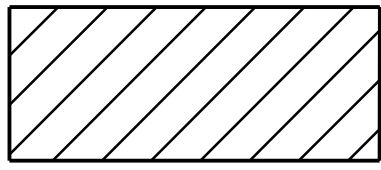
MATCHLINE -L- STA 27+00.00 SEE SHEET 5

DATUM DESCRIPTION
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "M 030" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 579273.290(±ft) EASTING: 1419723.98(±ft) ELEVATION: 732(±ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999843325 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "M 030" TO -L- STATION 15+00.00 IS N 47°19'33.6" W 1794.7301 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

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

-SBX-

PI Sta 10+41.80 Δ = 23° 36' 44.6" (LT) D = 28' 38" 52.4" L = 82.42' T = 41.80' R = 200.00' SE = EXIST	PI Sta 12+75.22 Δ = 24° 42' 25.9" (RT) D = 28' 38" 52.4" L = 86.24' T = 43.80' R = 200.00' SE = EXIST
---	---



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.

-L-

PI Sta 22+54.02 Δ = 6° 48' 36.0" (RT) D = 0' 29' 44.3" L = 1,373.98' T = 687.80' R = 11,560.00' SE = EXIST
--

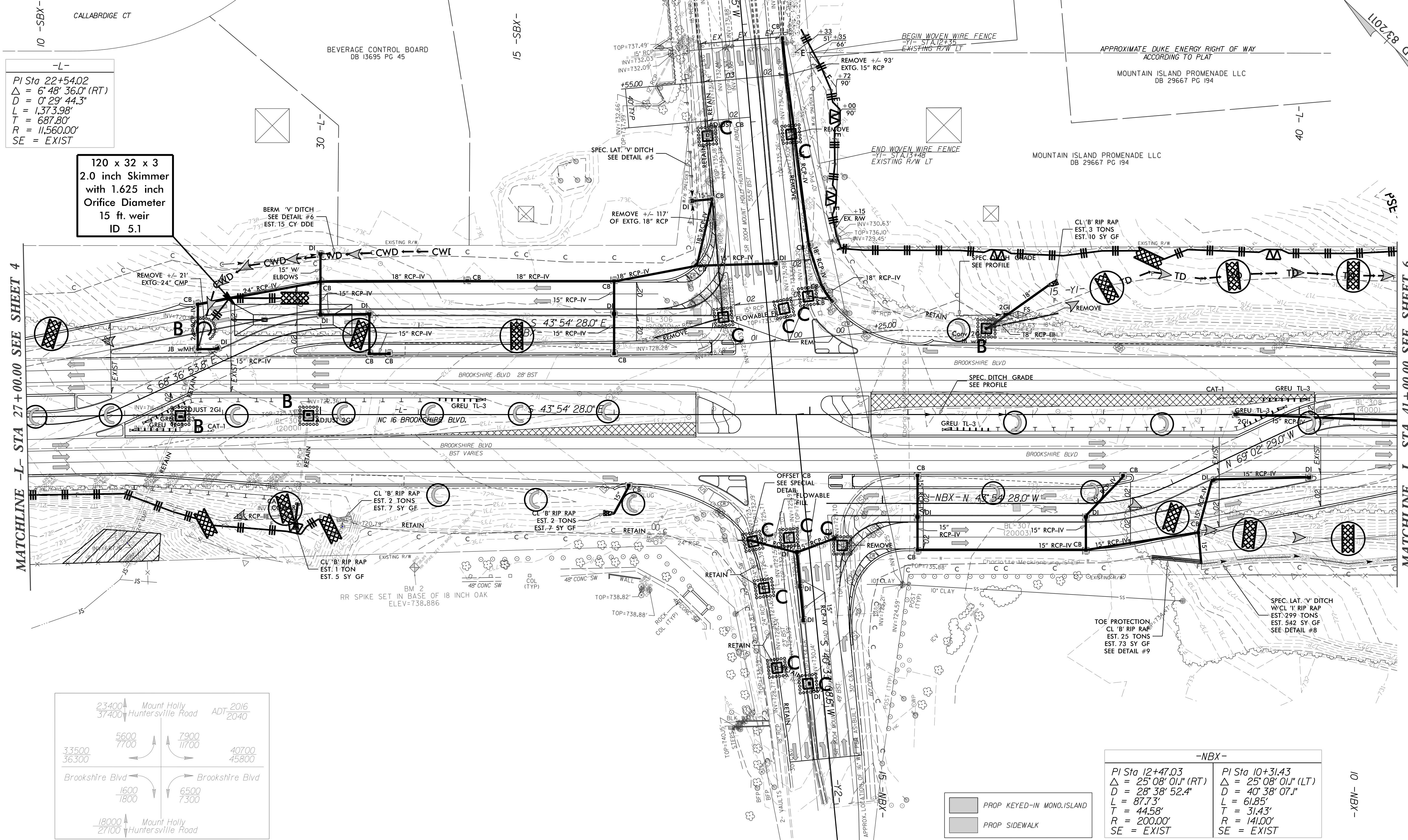
120 x 32 x 3
2.0 inch Skimmer
with 1.625 inch
Orifice Diameter
15 ft. weir
ID 5.1

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 05

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

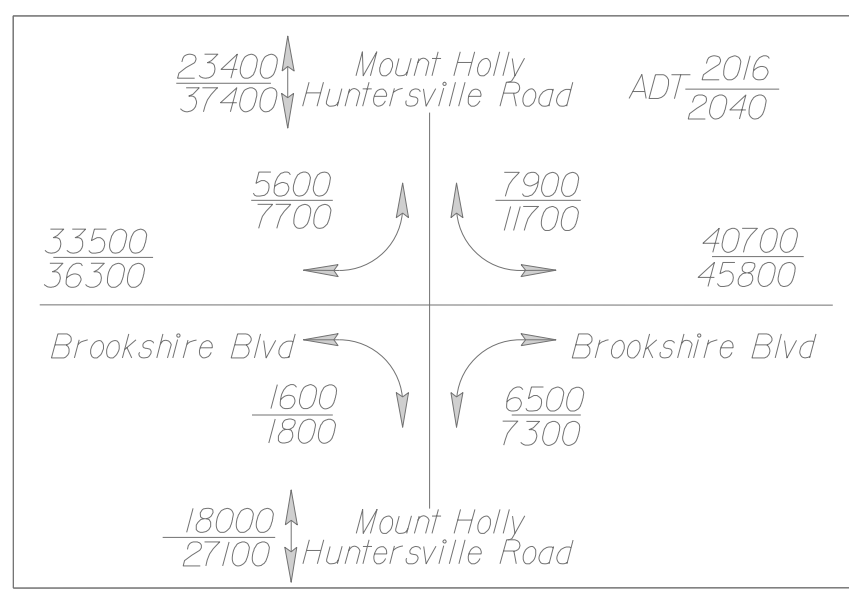
Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO. U-6084	SHEET NO. EC-05/CONST.05
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



MATCHLINE -L- STA 27+00.00 SEE SHEET 4

MATCHLINE -L- STA 41+00.00 SEE SHEET 6



-NBX-

PI Sta 12+47.03 Δ = 25° 08' 01.1" (RT) D = 28' 38" 52.4" L = 87.73' T = 44.58' R = 200.00' SE = EXIST	PI Sta 10+31.43 Δ = 25° 08' 01.1" (LT) D = 40' 38" 07.1" L = 61.85' T = 31.43' R = 141.00' SE = EXIST
---	---

PROP KEYED-IN MONO ISLAND
PROP SIDEWALK

10 -NBX-

REVISIONS

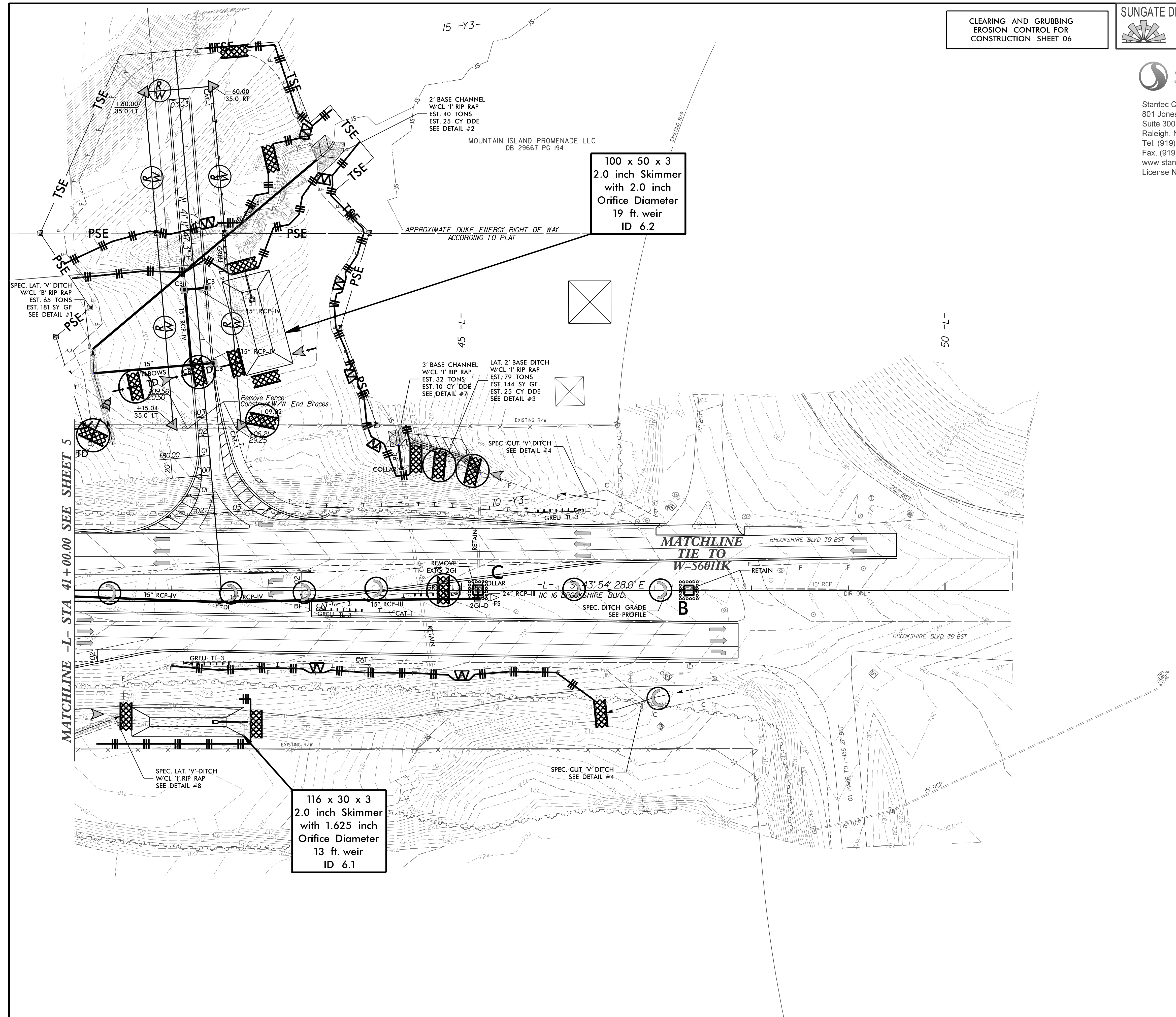
8/17/99

12/21/2017
U6084_EC_dsn_pah_05_c9.dgn

PROJECT REFERENCE NO. U-6084	SHEET NO. EC-06/CONST.06
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

NAD 83 2011



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

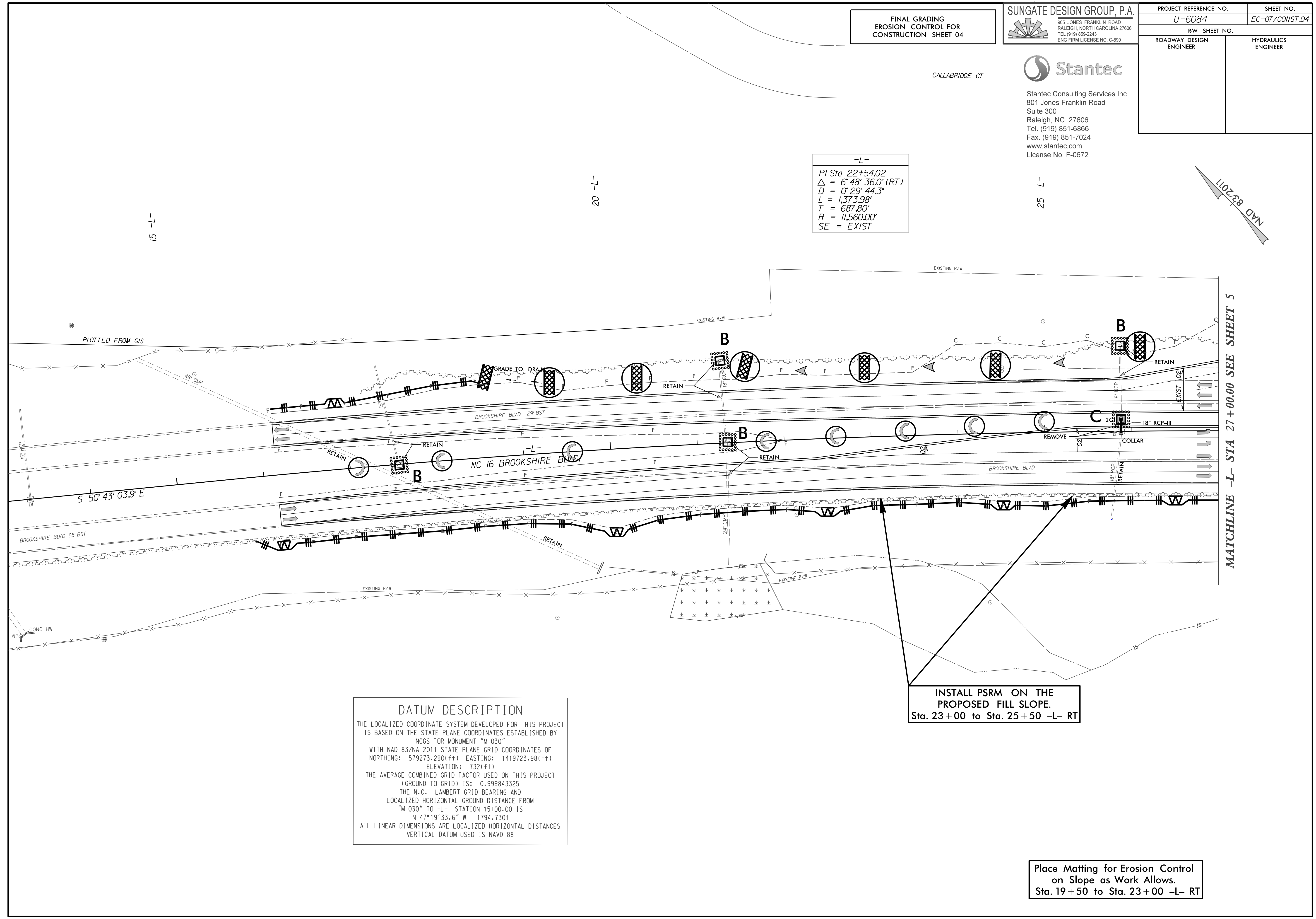
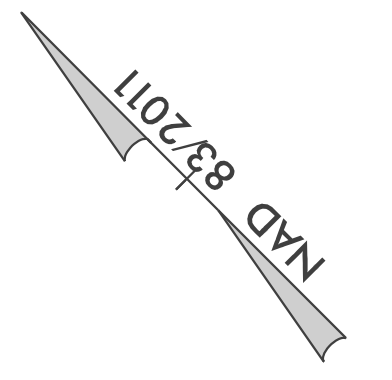
PROP KEYED-IN MONO-ISLAND

PROJECT REFERENCE NO. <i>U-6084</i>	SHEET NO. <i>EC-07/CONST.04</i>
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

CALLABRIDGE CT

-L-
PI Sta 22+54.02
 $\Delta = 6' 48" 36.0" (RT)$
 $D = 0' 29" 44.3"$
 $L = 1,373.98'$
 $T = 687.80'$
 $R = 11,560.00'$
SE = EXIST



MATCHLINE -L- STA 27+00.00 SEE SHEET 5

DATUM DESCRIPTION
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "M 030" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 579273.290(±ft) EASTING: 1419723.98(±ft) ELEVATION: 732(±ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999843325 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "M 030" TO -L- STATION 15+00.00 IS N 47°19'33.6" W 1794.7301 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

INSTALL PSRM ON THE PROPOSED FILL SLOPE.
Sta. 23+00 to Sta. 25+50 -L- RT

Place Matting for Erosion Control on Slope as Work Allows.
Sta. 19+50 to Sta. 23+00 -L- RT

-SBX-	
PI Sta 10+41.80	PI Sta 12+75.22
$\Delta = 23^\circ 36' 44.6" (LT)$	$\Delta = 24^\circ 42' 25.9" (RT)$
$D = 28^\circ 38' 52.4"$	$D = 28^\circ 38' 52.4"$
$L = 82.42'$	$L = 86.24'$
$T = 41.80'$	$T = 43.80'$
$R = 200.00'$	$R = 200.00'$
SE = EXIST	SE = EXIST

-L-	
PI Sta 22+54.02	
$\Delta = 6^\circ 48' 36.0" (RT)$	
$D = 0^\circ 29' 44.3"$	
$L = 1373.98'$	
$T = 687.80'$	
$R = 11,560.00'$	
SE = EXIST	

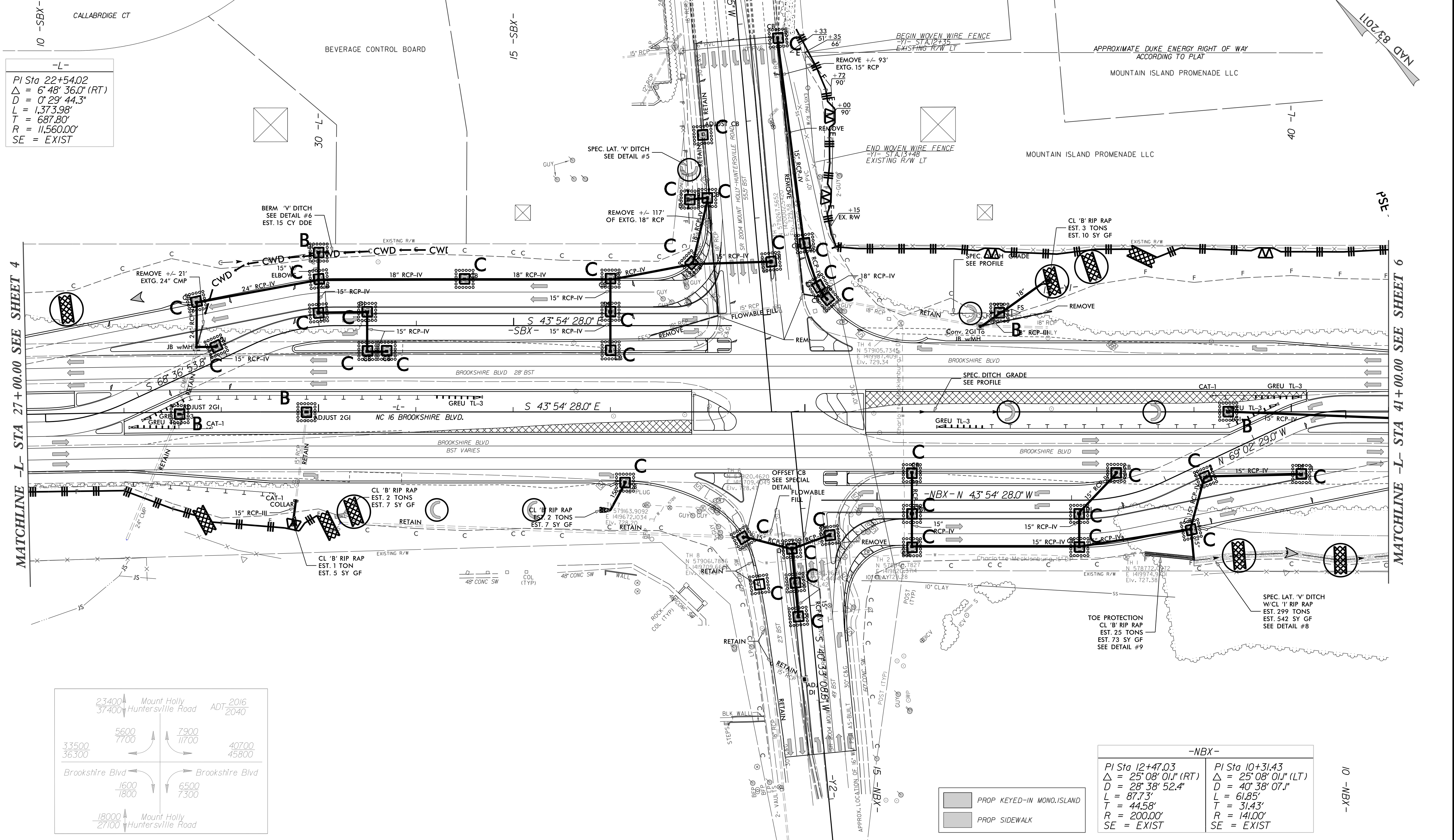
FINAL GRADE
EROSION CONTROL FOR
CONSTRUCTION SHEET 05

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL. (919) 856-2243
ENG. FIRM LICENSE NO. C-890

PROJECT REFERENCE NO.		SHEET NO.	
U-6084		EC-08/CONST.05	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

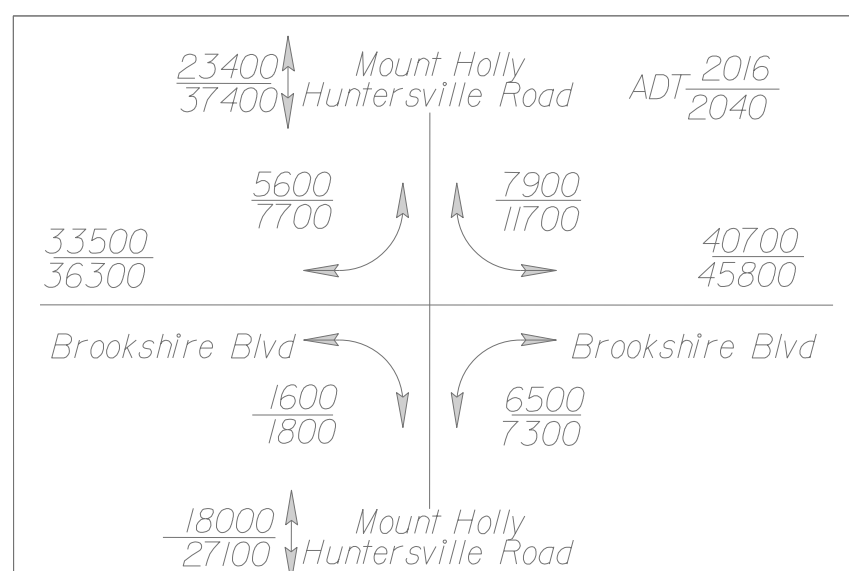


Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672



MATCHLINE -L- STA 27+00.00 SEE SHEET 4

MATCHLINE -L- STA 41+00.00 SEE SHEET 6



-NBX-	
PI Sta 12+47.03	PI Sta 10+31.43
$\Delta = 25^\circ 08' 01.1" (RT)$	$\Delta = 25^\circ 08' 01.1" (LT)$
$D = 28^\circ 38' 52.4"$	$D = 40^\circ 38' 07.1"$
$L = 87.73'$	$L = 61.85'$
$T = 44.58'$	$T = 31.43'$
$R = 200.00'$	$R = 141.00'$
SE = EXIST	SE = EXIST

- PROP KEYED-IN MONO ISLAND
- PROP SIDEWALK

10 -NBX-

