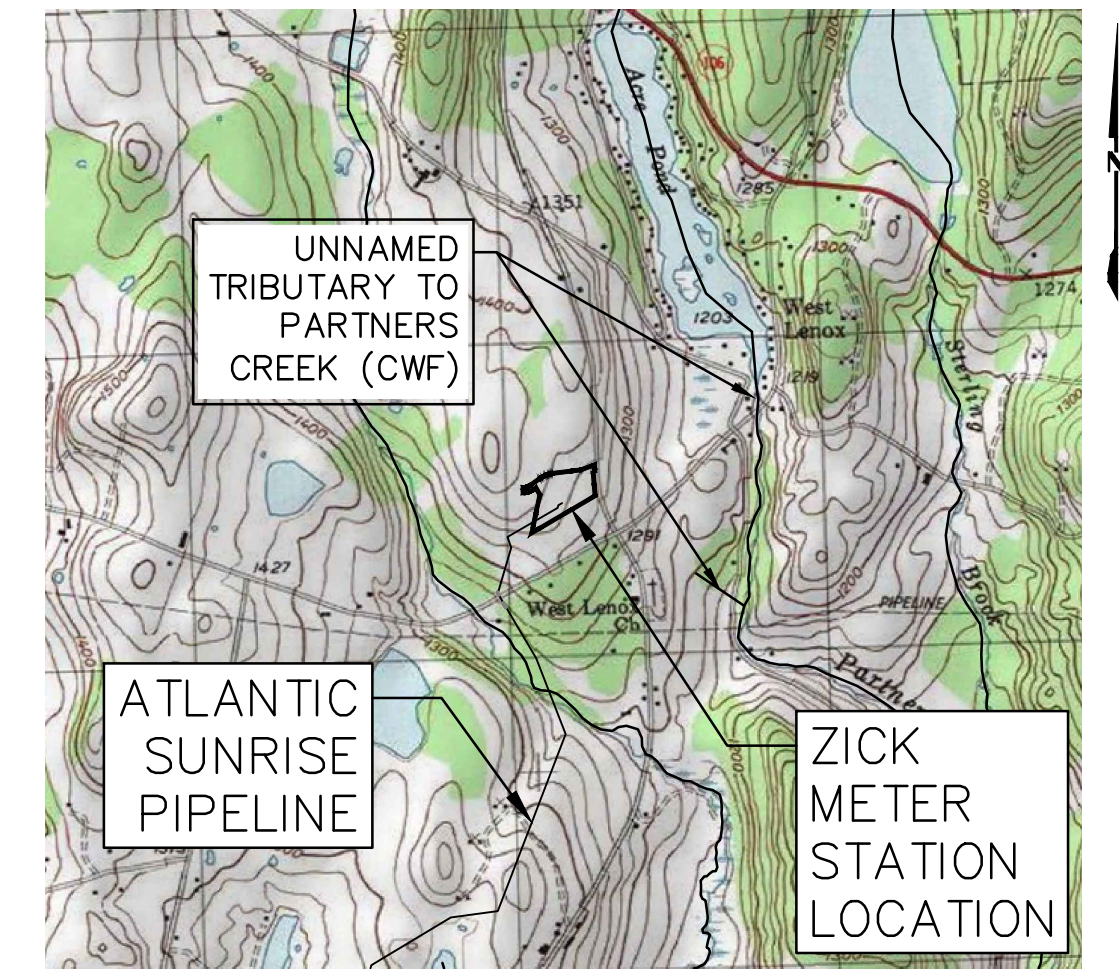


# ATLANTIC SUNRISE PROJECT PROPOSED 30" NATURAL GAS PIPELINE

## SOIL EROSION & SEDIMENT CONTROL AND LAYOUT PLANS FOR **ZICK METER STATION & ASSOCIATED PERMANENT ACCESS ROADS**



USGS LENOXVILLE QUADRANGLE  
**VICINITY MAP**  
SCALE: 1"=2,000'

FACILITY NAME & TYPE	DRAWING NO.	SHEET NO.	DRAWING NAME
ZICK METER STATION	(30-3680)MF-1A-11	1 of 11	COVER SHEET
	(30-3680)MF-1A-11	2 of 11	EXISTING CONDITIONS MAP
	(30-3680)MF-1A-11	3 of 11	OVERALL DRAINAGE AREA MAP
	(30-3680)MF-1A-11	4 of 11	SOIL EROSION & SEDIMENT CONTROL PLAN
	(30-3680)MF-1A-3	5 of 11	ACCESS ROAD SU-047 LAYOUT PLAN
	(30-3680)MF-1A-3	6 of 11	ACCESS ROAD SU-047.1 LAYOUT PLAN
	(30-3680)MF-1A-11	7 of 11	SOIL EROSION & SEDIMENT CONTROL NOTES
	(30-3680)MF-1A-11	8 of 11	SOIL EROSION & SEDIMENT CONTROL NOTES
	(30-3680)MF-1A-11	9 of 11	SOIL EROSION & SEDIMENT CONTROL NOTES
	(30-3680)MF-1A-11	10 of 11	SOIL EROSION & SEDIMENT CONTROL NOTES AND DETAILS
	(30-3680)MF-1A-11	11 of 11	SOIL EROSION & SEDIMENT CONTROL DETAILS

### PHASE 2

LENOX TOWNSHIP  
SUSQUEHANNA COUNTY

PENNSYLVANIA



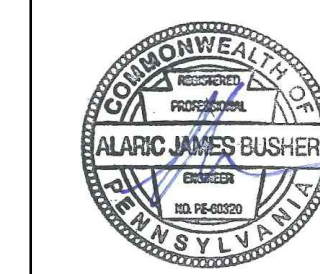
PENNSYLVANIA ACT 287 (1974)  
AS AMENDED BY PENNSYLVANIA  
ACT 199 (2004) REQUIRES NO  
LESS THAN THREE (3) WORKING  
DAYS AND NO MORE THAN (10)  
WORKING DAYS NOTICE TO  
UTILITIES BEFORE YOU EXCAVATE,  
DRILL, BLAST OR DEMOLISH.

**ENGINEER OF RECORD**  
BL COMPANIES  
4242 CARLISLE PIKE, SUITE 260  
CAMP HILL, PA 17011  
P:717-651-9850  
F:717-651-9858

REVISIONS							TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC	
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	ATLANTIC SUNRISE PROJECT- PROPOSED 30" NATURAL GAS PIPELINE	
0	08/26/2015	BL	ISSUED FOR PADEP PERMIT SUBMITTAL	W0161483	DAK	AJB	SOIL EROSION & SEDIMENT CONTROL AND LAYOUT PLANS	
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W0161483	DAK	AJB	FOR ZICK METER STATION & ASSOCIATED PERMANENT ACCESS ROADS	
3	03/29/2016	BL	ISSUED FOR PADEP RESUBMITTAL	W0161483	AJB	AJB	LENOX TOWNSHIP, SUSQUEHANNA COUNTY, PENNSYLVANIA	
4	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0161483	AJB	AJB	COVER SHEET	
5	Apr. 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0161483	AJB	AJB		

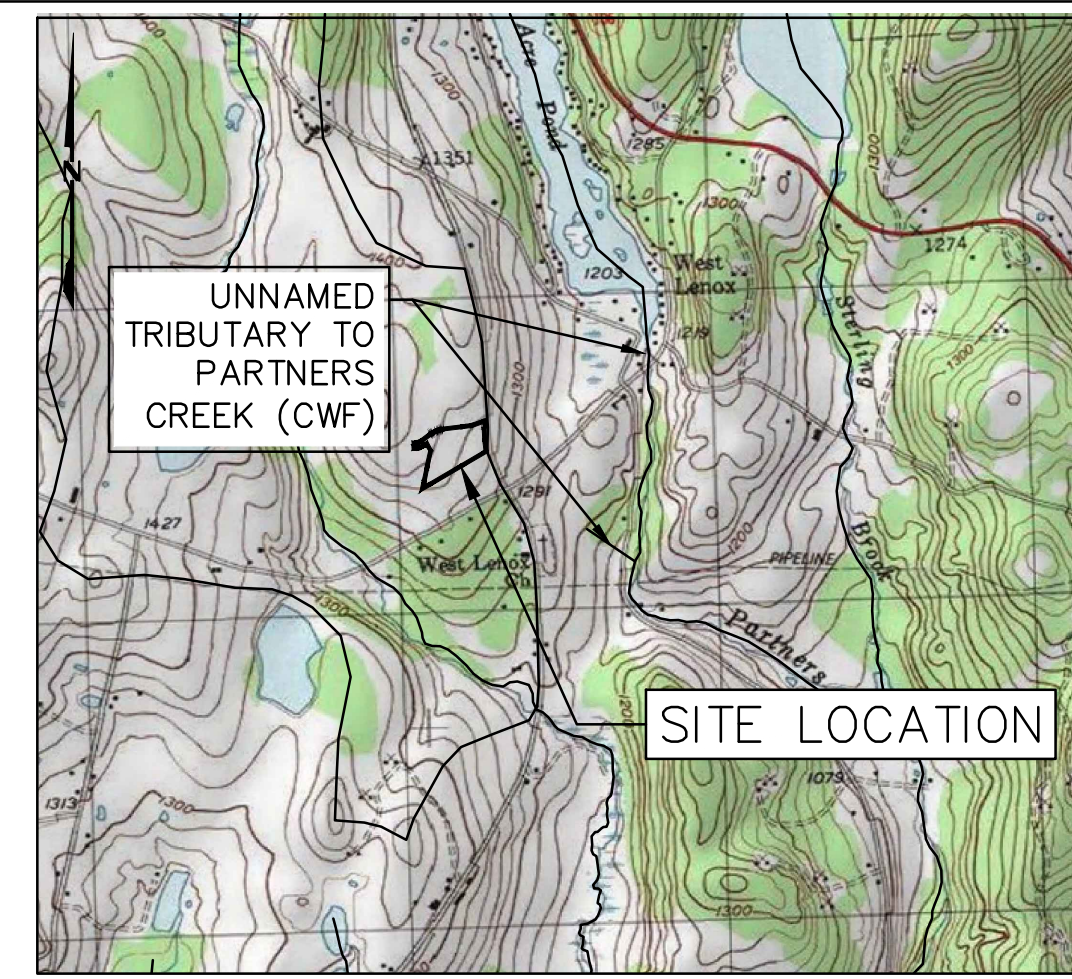
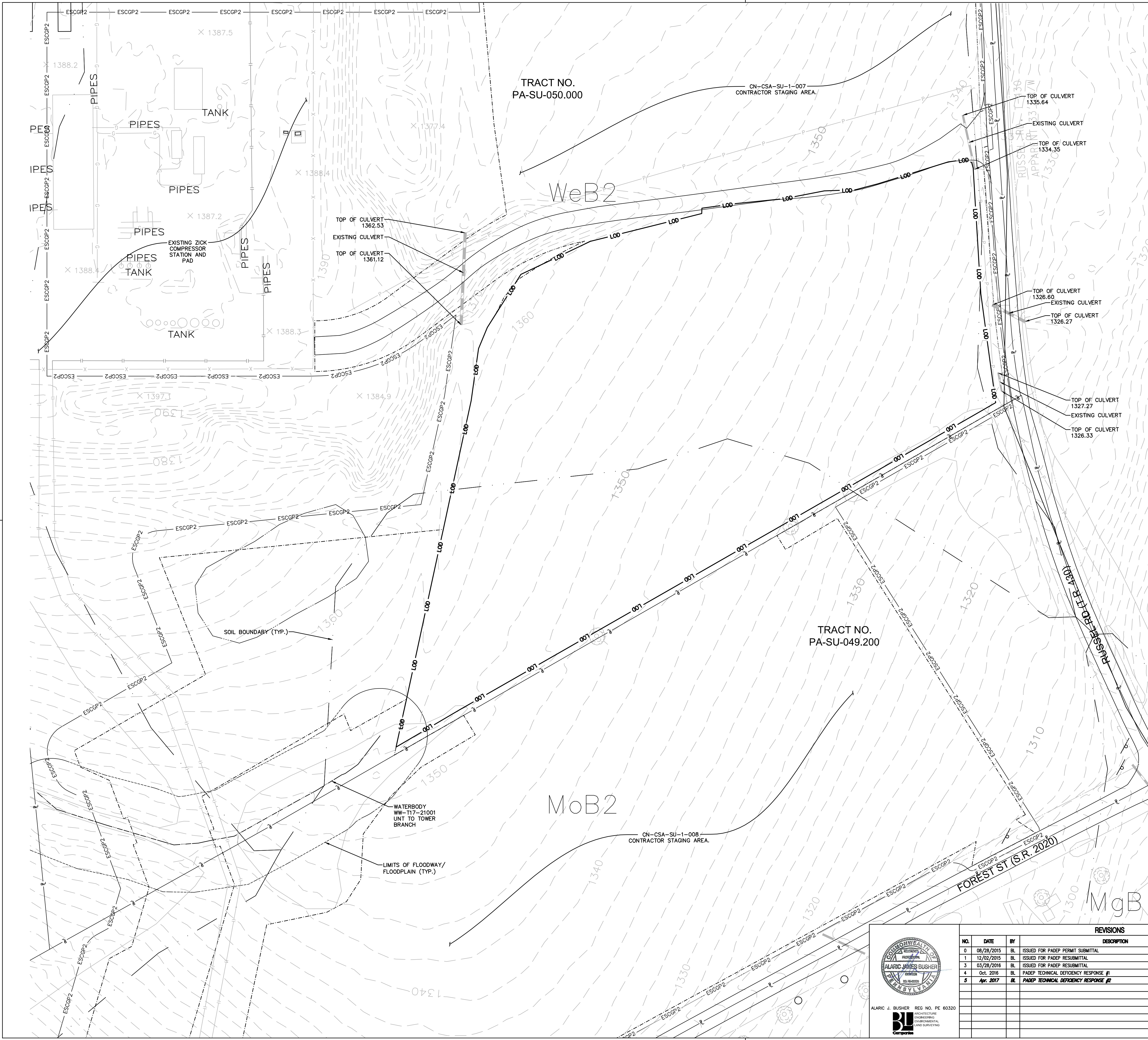
DRAWN BY:	JEC	DATE:	04/03/15	ISSUED FOR BID:	SCALE:	AS NOTED
CHECKED BY:	AJB	DATE:	04/03/15	ISSUED FOR CONSTRUCTION:	REVISION:	5
APPROVED BY:	AJB	DATE:	07/17/15	DRAWING NUMBER:	(30-3680)MF-1A-11	SHEET 1 OF 11
W.O.:	1161483					



ALARIC J. BUSHER REG. NO. PE 60320  
ARCHITECTURE  
ENGINEERING  
ENVIRONMENTAL  
LAND SURVEYING



Drawn By & Date/Time: Jfjones Apr 25, 2017 - 2:51pm  
 Drawing Location & Name: G:\08514\14C\14C4909\DWG\010-CPLN\FMS\_EC14C4909(10)\_ZICK.dwg



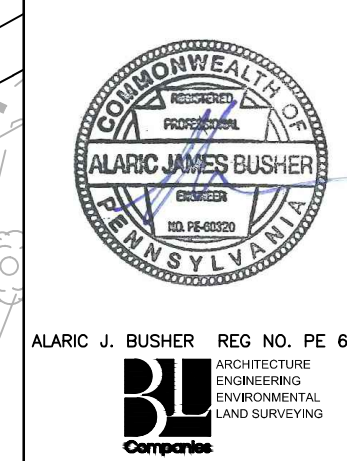
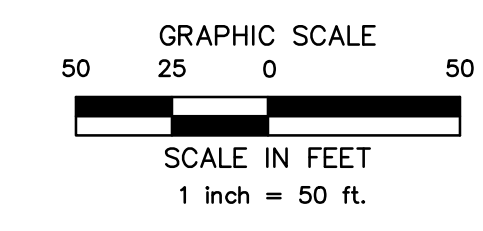
**LOCATION MAP**  
 USGS LENOXVILLE QUADRANGLE  
 SCALE: 1"=2,000'

**LEGEND**

- EXISTING FEATURES**
- PROPERTY BOUNDARY LINE (APPROXIMATE)
  - EXISTING MAJOR CONTOUR (10' INTERVAL)
  - EXISTING MINOR CONTOUR (2' INTERVAL)
  - FENCE
  - STONE ROW
  - SOIL BOUNDARY
  - TREELINE
  - CENTERLINE STREAM/EDGE WATERBODY
  - DELINEATED WETLANDS
  - SPOT ELEVATION
  - TREE OR BUSH
  - UTILITY POLE AND UTILITY LINE
  - GUY POLE
  - GUY POLE OR ANCHOR
  - POST
  - SIGN
  - WATER WELL
  - UTILITY BOX
  - MONUMENT (PROPERTY BOUNDARY MARKER)
  - IRON PIPE OR PIN (PROPERTY BOUNDARY MARKER)
  - SOIL TYPE DESIGNATION
  - ESCGP-2 PERMIT BOUNDARY
  - LIMIT OF WORKSPACE (OVERALL PIPELINE PROJECT)
  - LIMIT OF DISTURBANCE (ZICK METER STATION)
  - EXISTING ROAD
  - ROW
  - LIMIT OF FLOODWAY/FLOODPLAIN

**SITE SOIL TYPES**

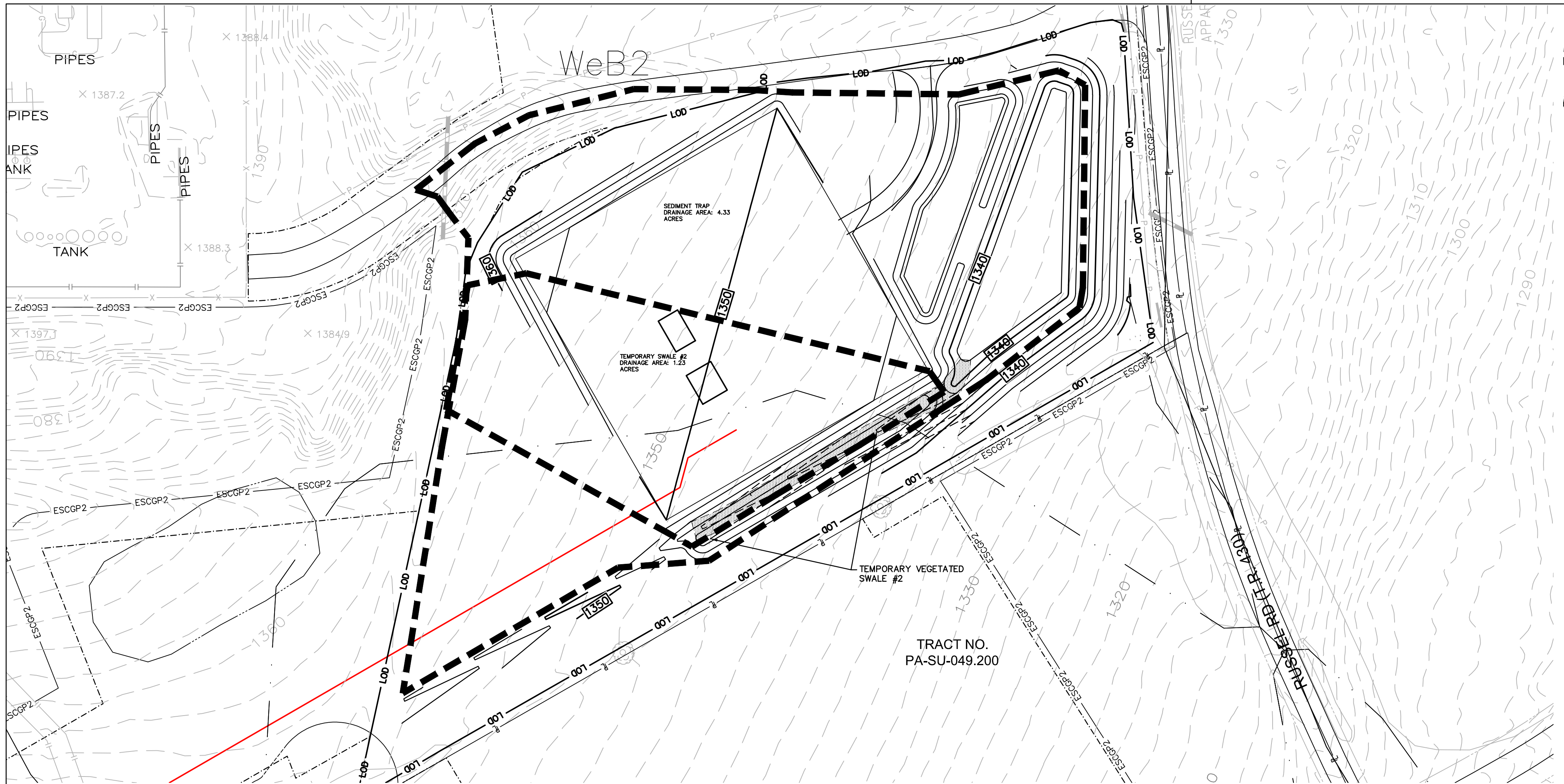
- WB2 WELLSBORO FLAGGY SILT LOAM, 3 TO 8 PERCENT SLOPES
- WeB2 WELLSBORO CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES
- WC2 WELLSBORO FLAGGY SILT LOAM, 8 TO 15 PERCENT SLOPES
- MgB MARDIN CHANNERY SILT LOAM, 0 TO 8 PERCENT SLOPES
- MoB2 MORRIS CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES
- LdL LORDSTOWN AND OQUAGA VERY STONY SILT LOAMS, 12 TO 30 PERCENT SLOPES



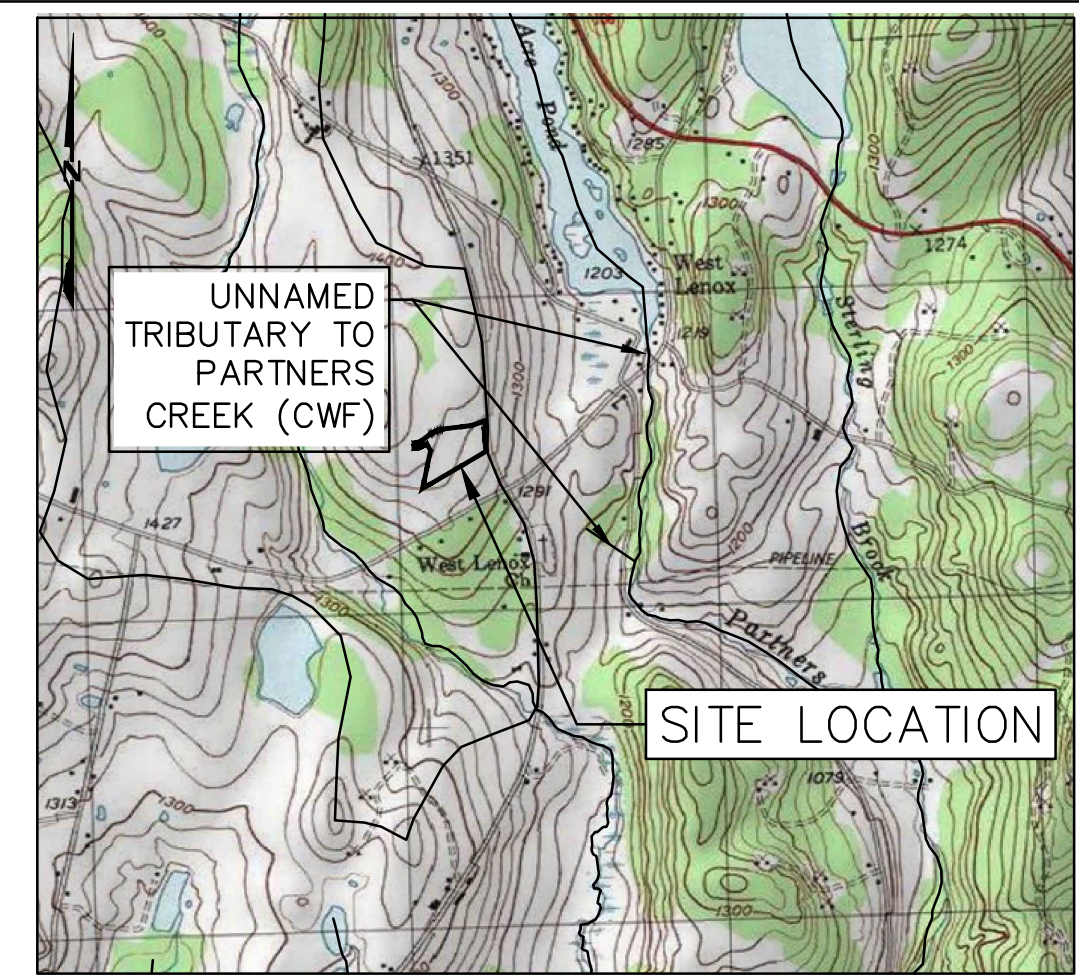
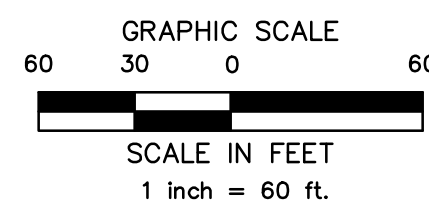
REVISIONS						
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3	03/29/2016	BL	ISSUED FOR PADEP RESUBMITTAL	W0161483	AJB	AJB
4	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0161483	AJB	AJB
5	Apr. 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0161483	AJB	AJB

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC			
ATLANTIC SUNRISE PROJECT- PROPOSED 30" NATURAL GAS PIPELINE			
SOIL EROSION & SEDIMENT CONTROL AND LAYOUT PLANS			
FOR ZICK METER STATION & ASSOCIATED PERMANENT ACCESS ROADS			
LENOX TOWNSHIP, SUSQUEHANNA COUNTY, PENNSYLVANIA			
EXISTING CONDITIONS MAP			
DRAWN BY:	JEC	DATE:	04/03/15
CHECKED BY:	AJB	DATE:	04/03/15
APPROVED BY:	AJB	DATE:	07/17/15
W.O.:	1161483	DRAWING NUMBER:	(30-3680)MF-1A-11
SCALE:	AS NOTED	REVISION:	5
		SHEET:	2
		OF:	11





TEMPORARY DRAINAGE AREAS



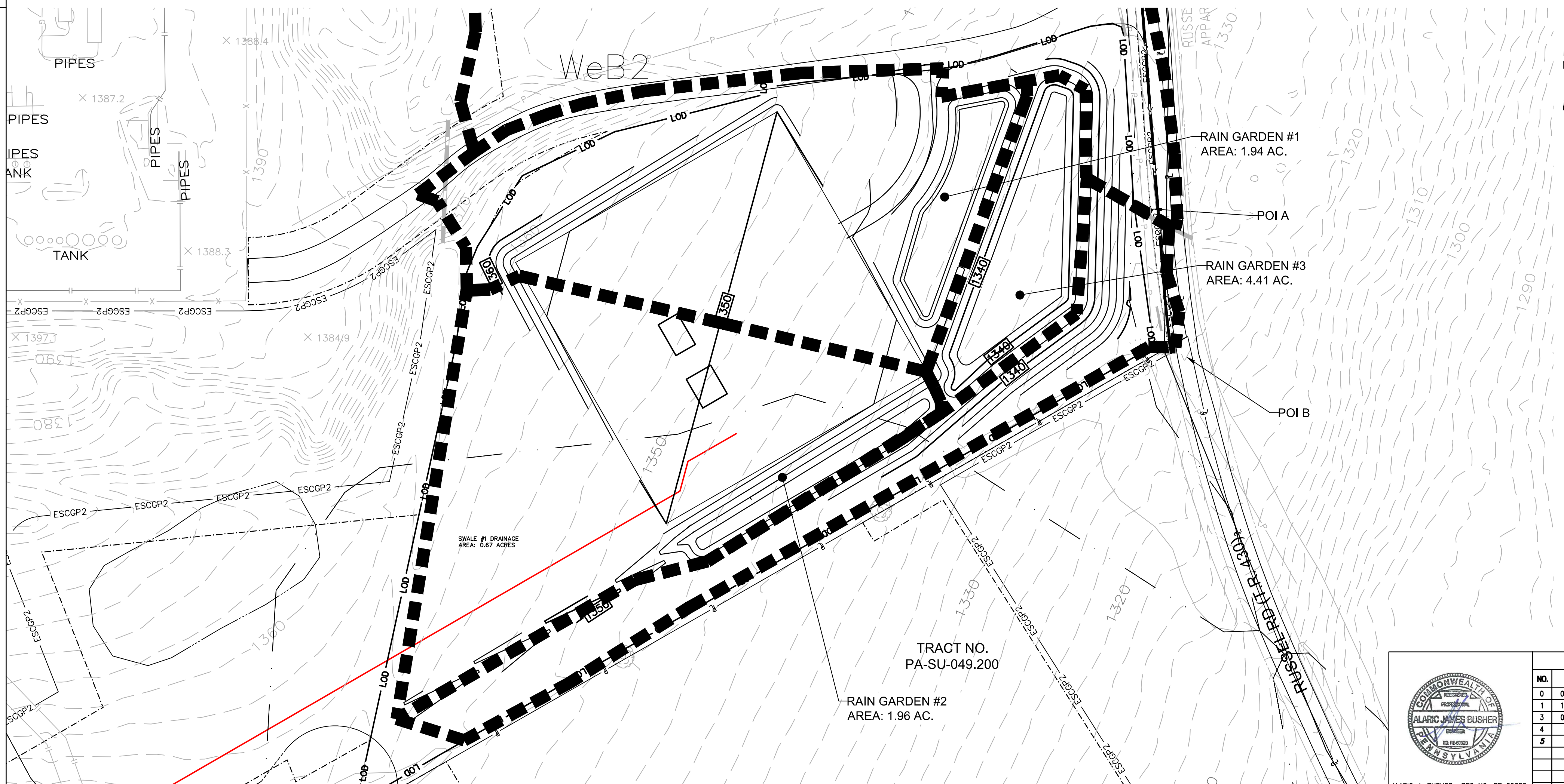
LOCATION MAP

USGS LENOXVILLE QUADRANGLE  
SCALE: 1"=2,000'

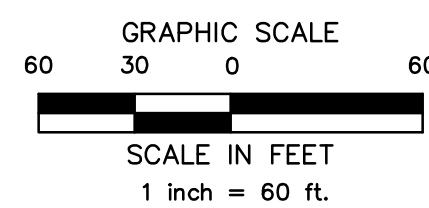
LEGEND

PROPOSED FEATURES

- PROPOSED MAJOR CONTOUR (10' INTERVAL)
- PROPOSED MINOR CONTOUR (2' INTERVAL)
- LIMIT OF DISTURBANCE (ZICK METER STATION)
- ESCGP-2 PERMIT BOUNDARY
- CENTERLINE GAS PIPELINE
- LIMIT OF WORKSPACE (OVERALL PIPELINE PROJECT)
- PROPOSED ACCESS ROAD
- DRAINAGE AREA BOUNDARIES
- EXISTING MAJOR CONTOUR (10' INTERVAL)
- EXISTING MINOR CONTOUR (2' INTERVAL)
- SOIL BOUNDARY



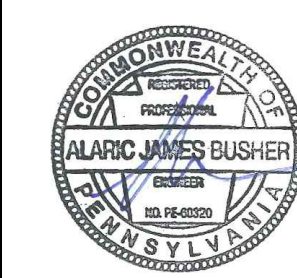
PERMANENT DRAINAGE AREAS



SITE SOIL TYPES

- WB2 WELLSBORO FLAGGY SILT LOAM, 3 TO 8 PERCENT SLOPES
- WeB2 WELLSBORO CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES
- WC2 WELLSBORO FLAGGY SILT LOAM, 8 TO 15 PERCENT SLOPES
- MgB MARDIN CHANNERY SILT LOAM, 0 TO 8 PERCENT SLOPES
- MeB2 MORRIS CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES
- LoD LORDSTOWN AND OQUAGA VERY STONY SILT LOAMS, 12 TO 30 PERCENT SLOPES

Drawn By & Date/Time: Jfjones Apr 25, 2017 - 3:20pm  
Drawing Location & Name: G:\0851\14C\1404908\DWG\010-CPLN\FMS\_EC14C4909(10)\_ZICK.dwg

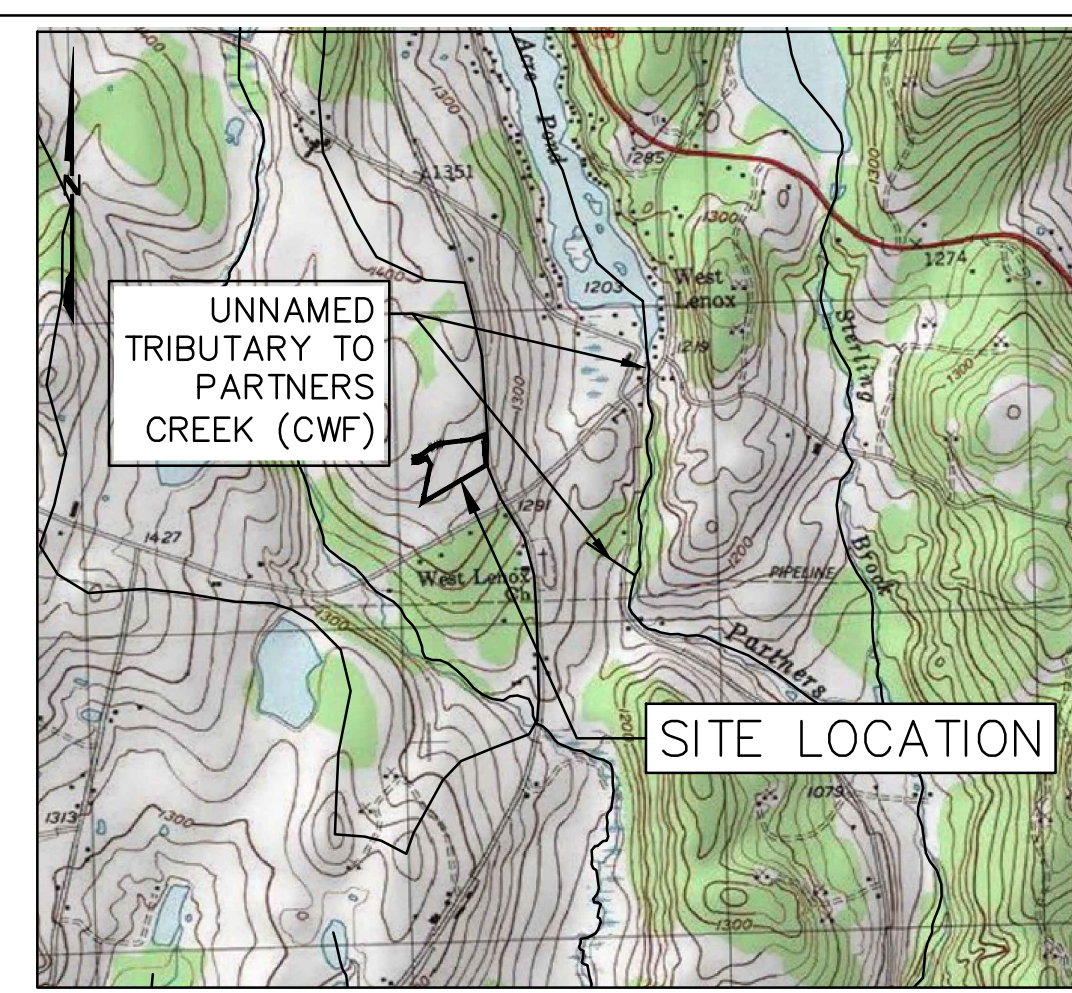
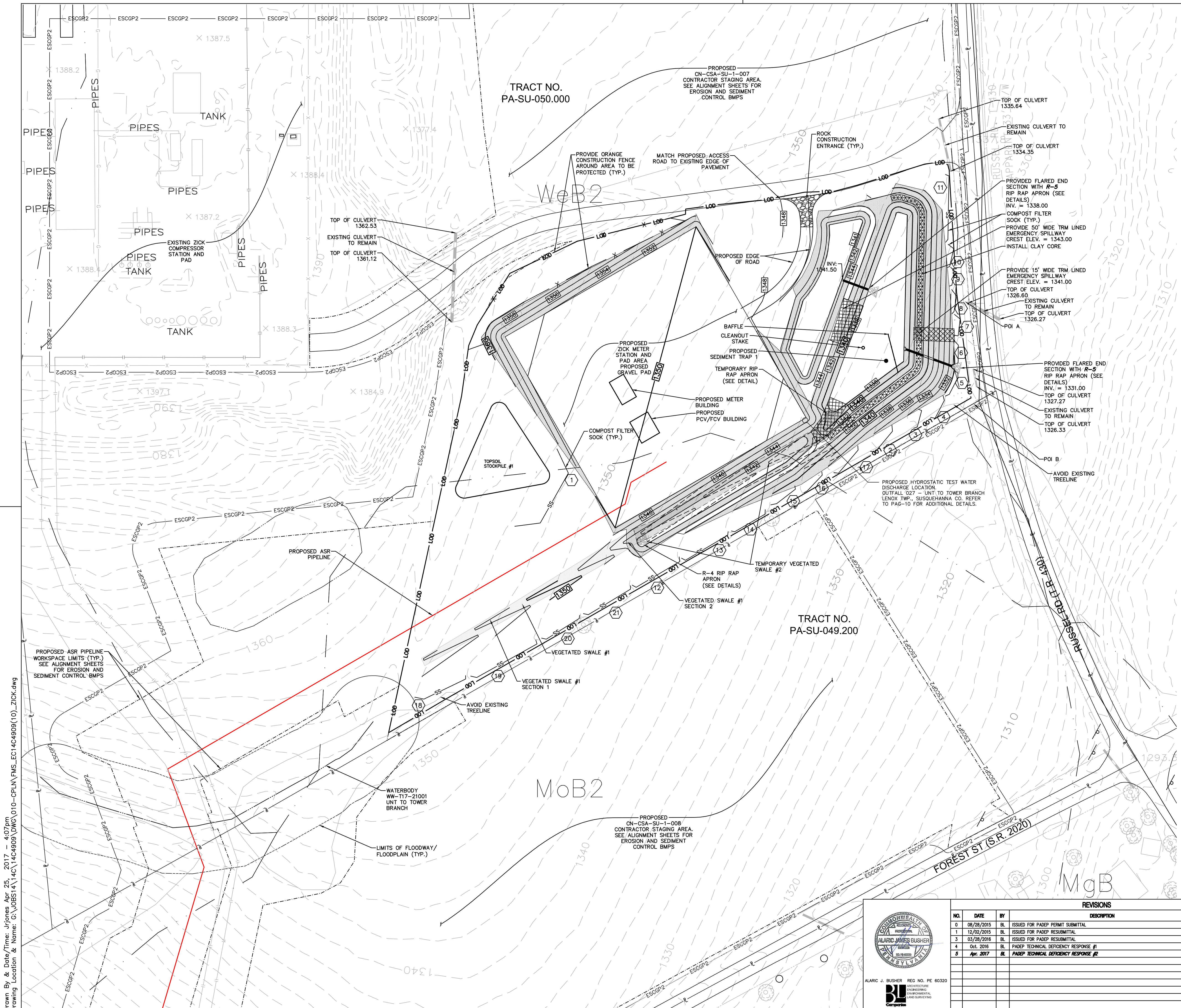


ALARIC J. BUSHER REG. NO. PE 60320  
CORPORATE

REVISIONS						
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4	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0161483	AJB	AJB
5	Apr. 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0161483	AJB	AJB

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC			
ATLANTIC SUNRISE PROJECT- PROPOSED 30" NATURAL GAS PIPELINE			
SOIL EROSION & SEDIMENT CONTROL AND LAYOUT PLANS			
FOR ZICK METER STATION & ASSOCIATED PERMANENT ACCESS ROADS			
LENOX TOWNSHIP, SUSQUEHANNA COUNTY, PENNSYLVANIA			
OVERALL DRAINAGE AREA MAP			
DRAWN BY:	JEC	DATE:	04/03/15
CHECKED BY:	AJB	DATE:	04/03/15
APPROVED BY:	AJB	DATE:	07/17/15
W.O. NUMBER:	1161483	DRAWING NUMBER:	(30-3680)MF-1A-11
ISSUED FOR:	ISSUED FOR CONSTRUCTION	SCALE:	AS NOTED
REVISION:	5	SHEET:	3
		OF:	11





**LOCATION MAP**  
USGS LENOXVILLE QUADRANGLE  
SCALE: 1"=2,000'

**LEGEND**

- PROPOSED FEATURES**
- PROPOSED MAJOR CONTOUR (10' INTERVAL)
  - PROPOSED MINOR CONTOUR (2' INTERVAL)
  - PROPOSED TEMPORARY CONTOUR (2' INTERVAL)
  - LIMIT OF DISTURBANCE (ZICK METER STATION)
  - LIMIT OF WORKSPACE (OVERALL PIPELINE PROJECT)
  - ESCGP-2 PERMIT BOUNDARY
  - SEDIMENT BARRIER
  - ORANGE CONSTRUCTION FENCE
  - CENTERLINE GAS PIPELINE
  - SWALE LINING
  - EROSION CONTROL BLANKET (NAG SC150 OR APPROVED EQUAL)
  - ROCK OUTLET/RIPRAP APRON
  - PROPOSED ACCESS ROAD
  - SEDIMENT BARRIER DESIGNATION (SEE SHEET 11)
  - ROCK CONSTRUCTION ENTRANCE
  - TRM LINING
  - CLAY CORE LIMITS
  - EXISTING MAJOR CONTOUR (10' INTERVAL)
  - EXISTING MINOR CONTOUR (2' INTERVAL)
  - LIMIT OF FLOODWAY/FLOODPLAIN
  - SOIL BOUNDARY

**SITE SOIL TYPES**

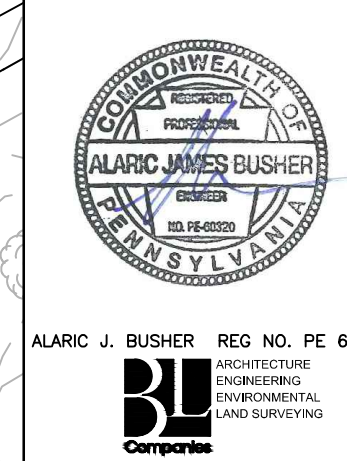
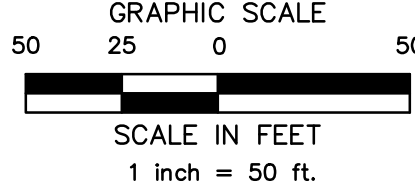
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- WbB2 WELLSBORO CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES
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- MoB2 MORRIS CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES
- LsD LORDSTOWN AND OQUAGA VERY STONY SILT LOAMS, 12 TO 30 PERCENT SLOPES

**LIMIT OF DISTURBANCE**

AREA OF THE LIMIT OF DISTURBANCE IS:  
±227,553 SF / 5.22 AC.

**RECEIVING WATERS**

PARTNERS CREEK TO TUNKHANNOCK CREEK, CW  
APPROXIMATE DISTANCE FROM SITE TO PARTNERS CREEK TO TUNKHANNOCK CREEK:  
POI A: ±40 FT (EAST)  
POI B: ±1,200 FT (SOUTH)

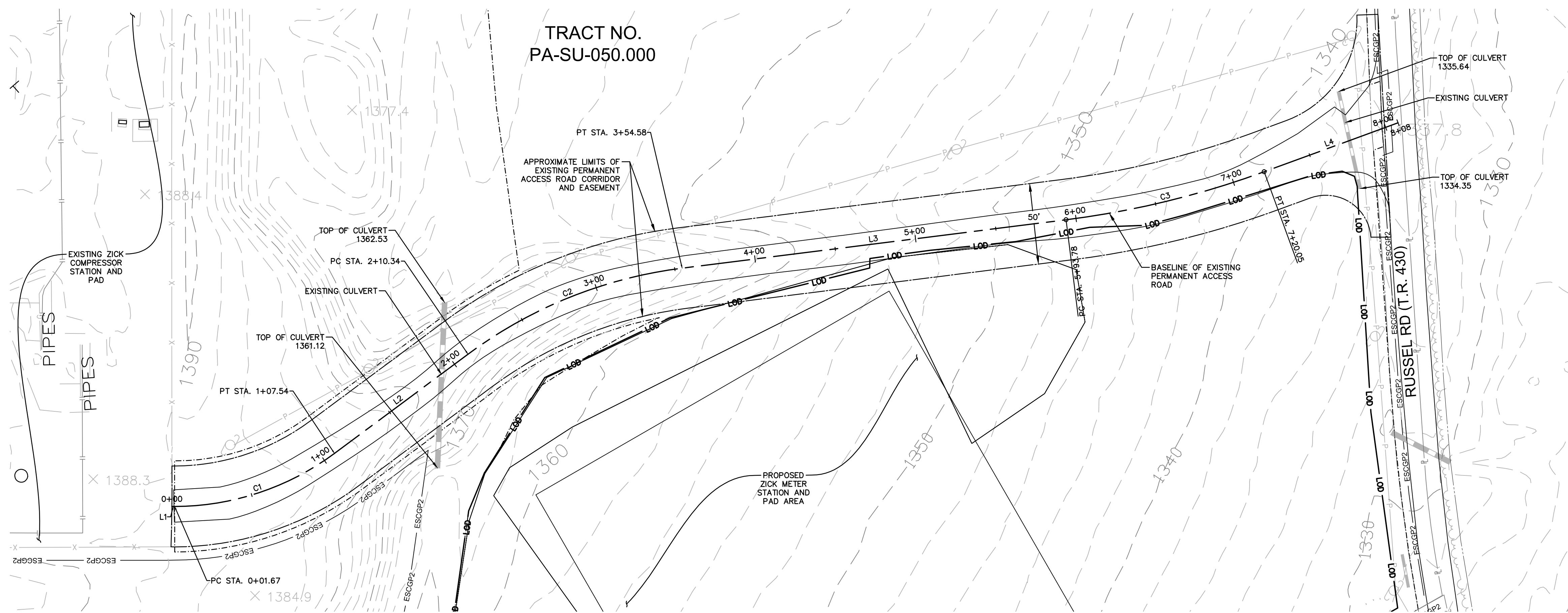


REVISIONS			
NO.	DATE	BY	DESCRIPTION
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1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL
3	03/29/2016	BL	ISSUED FOR PADEP RESUBMITTAL
4	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1
5	Apr. 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC			
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FOR ZICK METER STATION & ASSOCIATED PERMANENT ACCESS ROADS			
LENOX TOWNSHIP, SUSQUEHANNA COUNTY, PENNSYLVANIA			
SOIL EROSION & SEDIMENT CONTROL PLAN			
DRAWN BY:	JEC	DATE:	04/03/15
CHECKED BY:	AJB	DATE:	04/03/15
APPROVED BY:	AJB	DATE:	07/17/15
NO.	1161483	SCALE:	AS NOTED
REVISION:	5	DRAWING NUMBER:	(30-3680)MF-1A-11
NO.	1161483	SHEET:	4
		OF:	11

Drawn By & Date/Time: Jfjones Apr 25, 2017 - 4:07pm  
 Drawing Location & Name: G:\JOBS\14\14C\14C4908\DWG\010-CPLN\FMS\_EC14C4909(10)\_ZICK.dwg

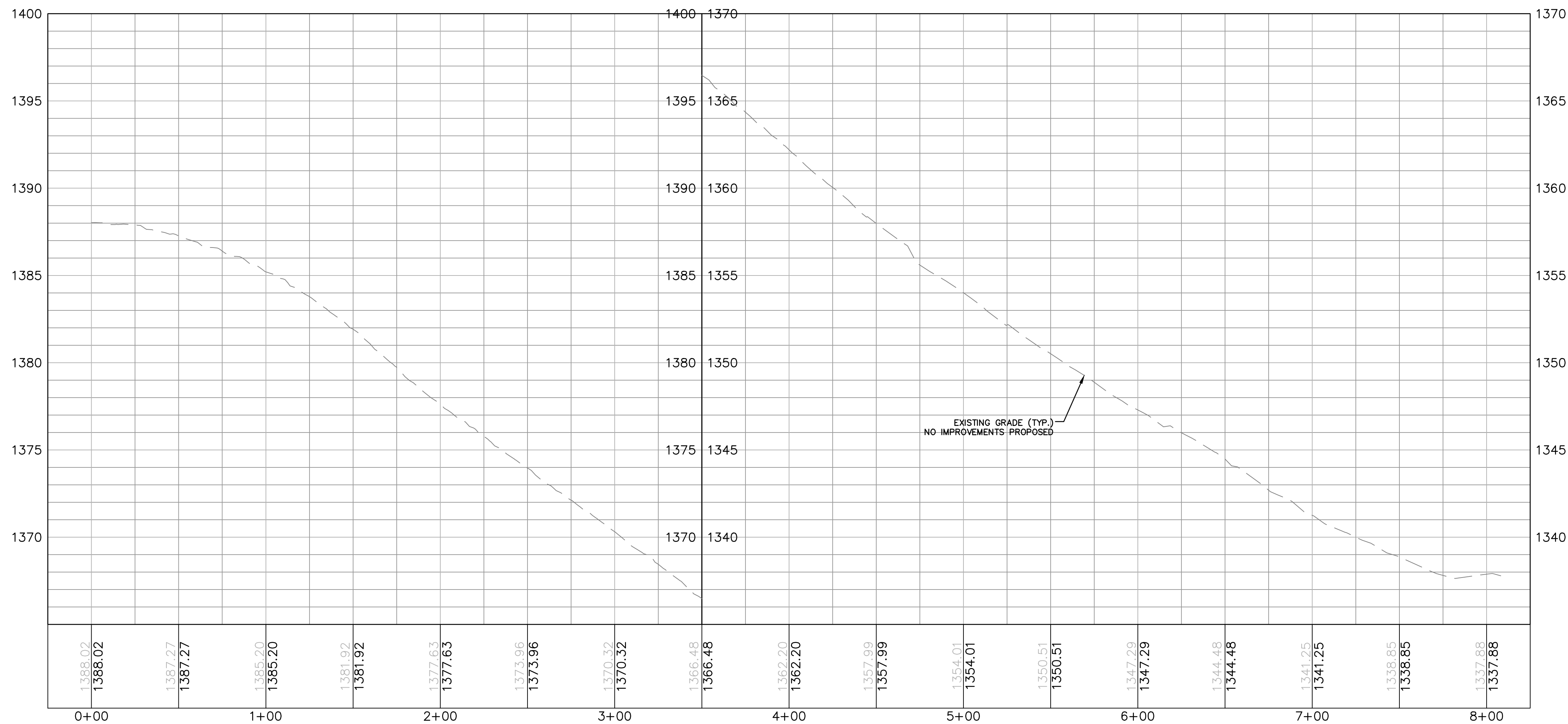
TRACT NO.  
PA-SU-050.000



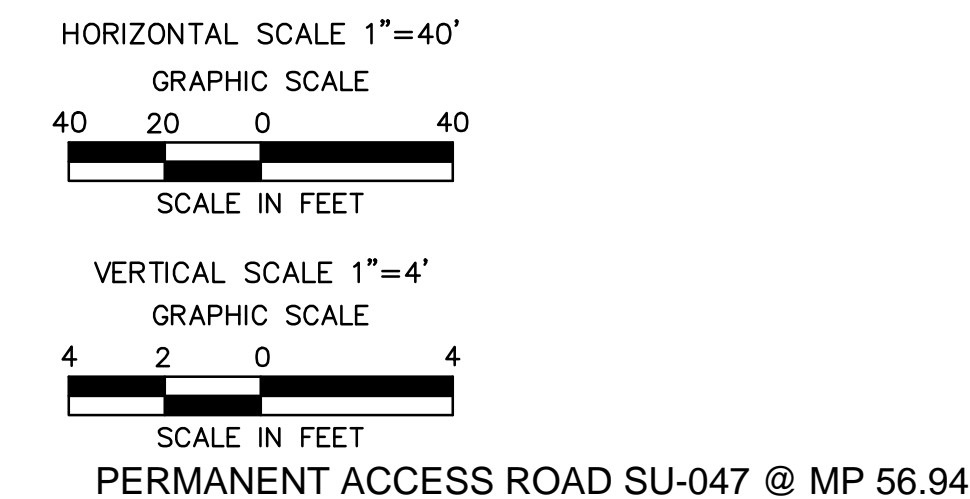
AR-SU-047							
No.	Northing	Eastng	Bearing	Delta(Δ)	Length	Tangent	Radius
L1	B 571258.26 E 571258.26	B 2525771.70 E 2525773.38	N89°54'12.54"E		1.67'		
C1	PC 571258.26 PI 571258.35 PT 571291.02	PC 2525773.38 PI 2525828.18 PT 2525872.18		36°29'38"	105.87'	54.80'	166.2'
L2	B 571291.02 E 571352.30	B 2525872.18 E 2525954.72	N53°24'34.15"E		102.80'		
C2	PC 571352.30 PI 571386.28 PT 571405.47	PC 2525954.72 PI 2526013.93 PT 2526087.09		29°24'51"	144.23'	73.74'	281.0'
L3	B 571405.47 E 571435.35	B 2526087.09 E 2526324.42	N82°49'25.18"E		239.20'		
C3	PC 571435.35 PI 571443.27 PT 571465.03	PC 2526324.42 PI 2526387.33 PT 2526446.88		12°53'28"	126.28'	63.41'	561.2'
L4	B 571465.03 E 571495.26	B 2526446.88 E 2526529.65	N69°55'57.48"E		88.12'		

AR-SU-47 TYPICAL SECTION TABLE		
BEGIN STA	END STA	TYPICAL SECTION
0+00	8+00	N/A

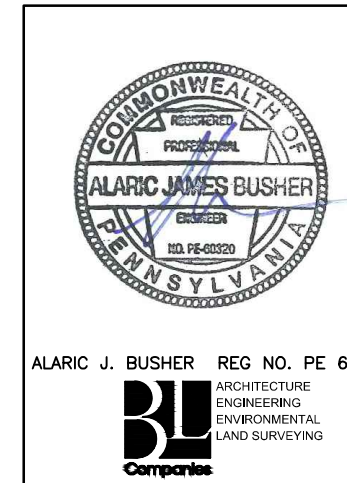
**ACCESS ROAD LAYOUT**



**ACCESS ROAD PROFILE**



PERMANENT ACCESS ROAD SU-047 @ MP 56.94



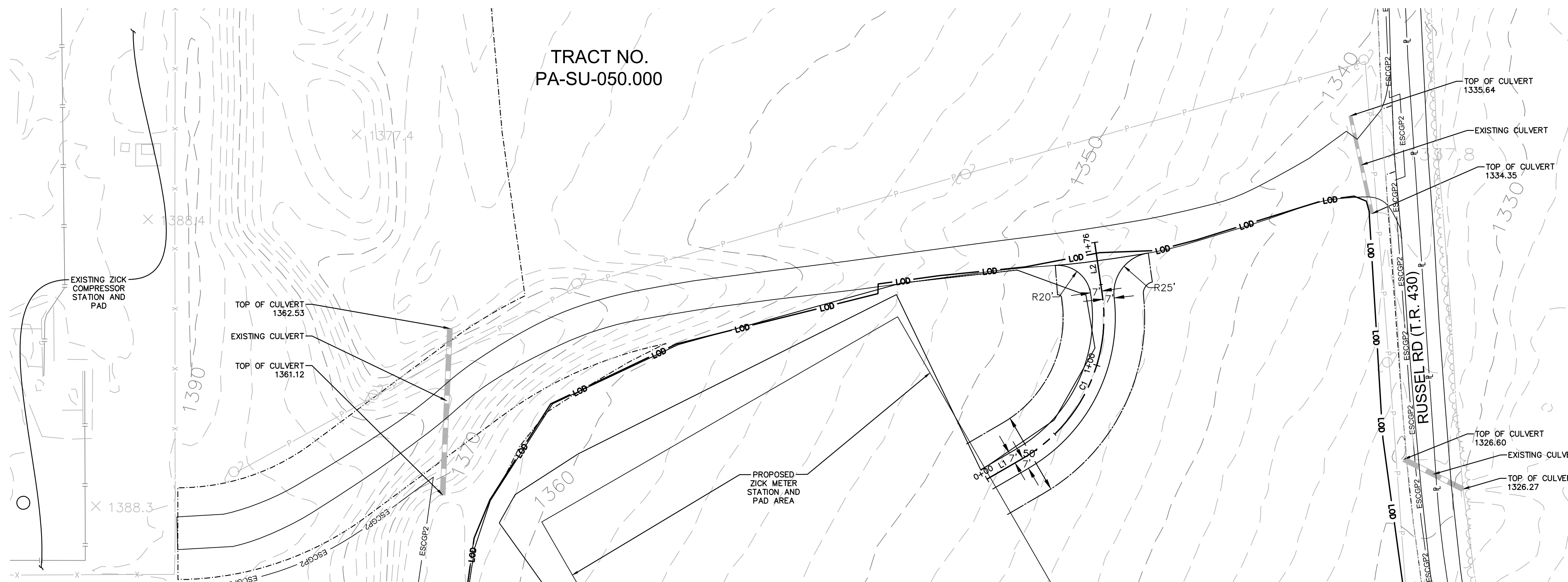
REVISIONS							
NO.	DATE	BY	DESCRIPTION	W.D. NO.	CHK.	APP.	
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FOR ZICK METER STATION & ASSOCIATED PERMANENT ACCESS ROADS			
LENOX TOWNSHIP, SUSQUEHANNA COUNTY, PENNSYLVANIA			
ACCESS ROAD SU-047 LAYOUT PLAN			
DRAWN BY:	OC	DATE:	04/03/15
CHECKED BY:	AJB	DATE:	04/03/15
APPROVED BY:	AJB	DATE:	07/17/15
W.D.:	1161483	ISSUED FOR CONSTRUCTION:	
SCALE:	AS NOTED	REVISION:	5
		DRAWING NUMBER:	(30-3680)MF-1A-3
		SHEET	5
		OF	11



Drawn By & Date/Time: adavis Apr. 25, 2017 - 4:00pm  
 Drawing Location & Name: G:\08514\14C\14C4909\DWG\010-CPLN\FA\_PP14C4909(10)-PSU-047.dwg

TRACT NO.  
PA-SU-050.000



**ACCESS ROAD LAYOUT**

AR-SU-047.1							
No.	Northing	Eastng	Bearing	Delta(s)	Length	Tangent	Radius
L1	B 571291.73 E 571304.44	B 2526269.95 E 2526291.85	N59°52'46.85"E		25.33'		
C1	PC 571304.44 PI 571338.44 PT 571405.49	PC 2526291.85 PI 2526350.47 PT 2526340.61		68°14'50"	119.11'	67.77'	100.0'
L2	B 571405.49 E 571436.93	B 2526340.61 E 2526335.98	N8°22'03.55"W		31.78'		

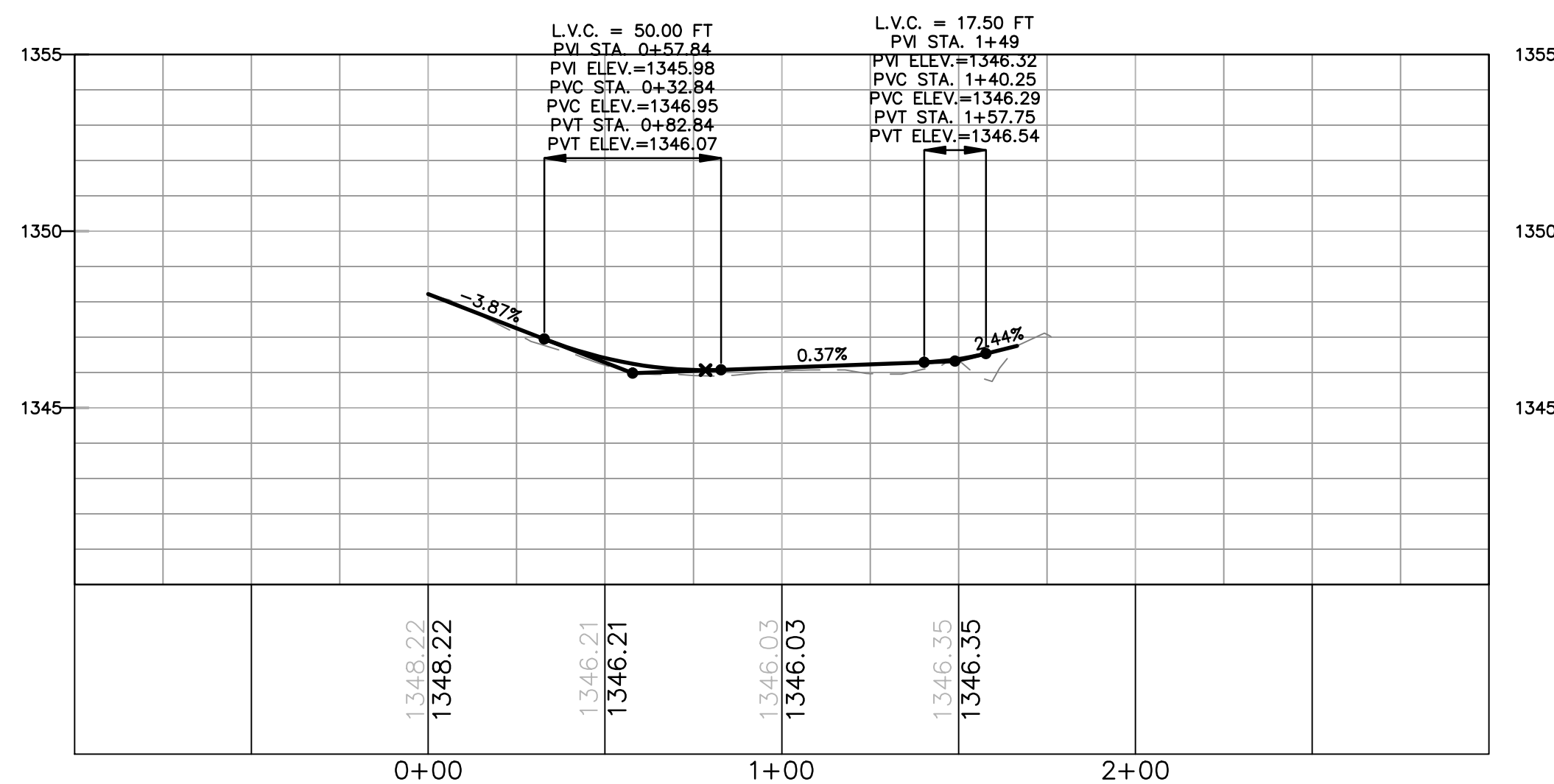
AR-SU-47-1 TYPICAL SECTION TABLE		
BEGIN STA	END STA	TYPICAL SECTION
0+00	1+60	D

**GENERAL ACCESS ROAD NOTES**

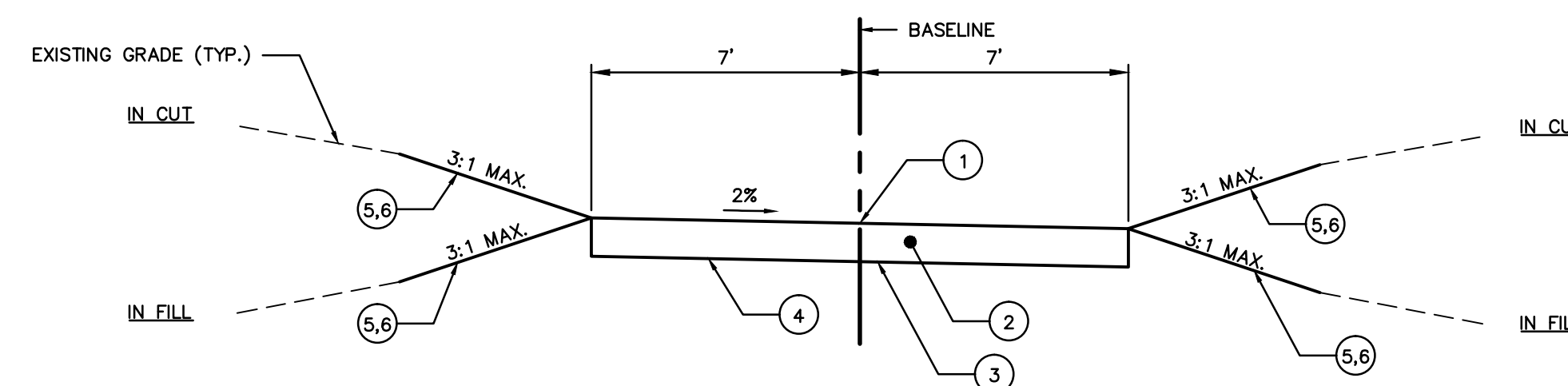
1. THE CONTRACTOR SHALL CONTACT PA ONE CALL A MINIMUM OF 72 HOURS PRIOR TO BEGINNING CONSTRUCTION.
2. TRANSITIONS BETWEEN TYPICAL ACCESS ROAD SECTIONS SHALL OCCUR OVER 50 FEET.
3. NO EARTH DISTURBING IMPROVEMENTS ARE PROPOSED WITHIN FLOODWAYS TO MINIMIZE IMPACTS.
4. EROSION & SEDIMENTATION CONTROLS SHALL BE LEFT IN PLACE UNTIL SUCH TIME AS THE DISTURBED AREAS HAVE PERMANENT STABILIZATION. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.
5. ALL SLOPES THAT ARE EQUAL TO OR STEEPER THAN 1(V):3(H) SHALL BE SEEDED AND THEN COVERED WITH EROSION CONTROL BLANKET. THE BLANKET SHALL BE NORTH AMERICAN GREEN SC150 OR APPROVED EQUAL AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.
6. ALL NONWOVEN GEOTEXTILE SHALL BE MIRAFI 140N OR EQUAL.

**TYPICAL SECTION LEGEND**

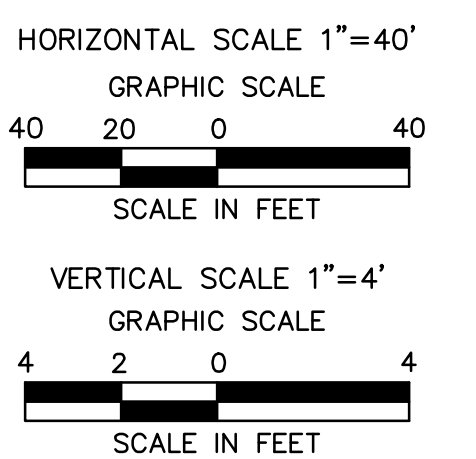
- 1 POINT OF APPLICATION OF GRADE OR MATCH EXISTING GROUND
- 2 12" LAYER CRUSHER RUN GRAVEL
- 3 NONWOVEN GEOTEXTILE (MIRAFI 140N OR EQUAL)
- 4 LIMIT OF EXCAVATION OR LIMIT OF COMPACTION
- 5 EROSION CONTROL BLANKET ON SLOPES 3:1 OR GREATER
- 6 6" TOPSOIL AND SEED



**ACCESS ROAD PROFILE**



**TYPICAL SECTION D**



PERMANENT ACCESS ROAD SU-047.1 @ MP 56.94

Drawn By & Date/Time: addavis Apr. 25, 2017 - 4:02pm  
Drawing Location & Name: G:\08514\14C\14C4909\DWG\010-CPLN\FA\_PP14c4909(10)-PSU-047-1.dwg

<p>ALARIC J. BUSHER ARCHITECTURE ENGINEERING ENVIRONMENTAL LAND SURVEYING</p>	<p><b>REVISIONS</b></p> <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>BY</th> <th>DESCRIPTION</th> <th>W.O. NO.</th> <th>CHK.</th> <th>APP.</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>08/26/2015</td> <td>BL</td> <td>ISSUED FOR PADEP PERMIT SUBMITTAL</td> <td>W0161483</td> <td>DAK</td> <td>AJB</td> </tr> <tr> <td>1</td> <td>12/02/2015</td> <td>BL</td> <td>ISSUED FOR PADEP RESUBMITTAL</td> <td>W0161483</td> <td>DAK</td> <td>AJB</td> </tr> <tr> <td>3</td> <td>03/29/2016</td> <td>BL</td> <td>ISSUED FOR PADEP RESUBMITTAL</td> <td>W0161483</td> <td>AJB</td> <td>AJB</td> </tr> <tr> <td>4</td> <td>Oct. 2016</td> <td>BL</td> <td>PADEP TECHNICAL DEFICIENCY RESPONSE #1</td> <td>W0161483</td> <td>AJB</td> <td>AJB</td> </tr> <tr> <td>5</td> <td>Apr. 2017</td> <td>BL</td> <td>PADEP TECHNICAL DEFICIENCY RESPONSE #2</td> <td>W0161483</td> <td>AJB</td> <td>AJB</td> </tr> </tbody> </table>			NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	0	08/26/2015	BL	ISSUED FOR PADEP PERMIT SUBMITTAL	W0161483	DAK	AJB	1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W0161483	DAK	AJB	3	03/29/2016	BL	ISSUED FOR PADEP RESUBMITTAL	W0161483	AJB	AJB	4	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0161483	AJB	AJB	5	Apr. 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0161483	AJB	AJB	<p>TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC ATLANTIC SUNRISE PROJECT- PROPOSED 30" NATURAL GAS PIPELINE SOIL EROSION &amp; SEDIMENT CONTROL AND LAYOUT PLANS FOR ZICK METER STATION &amp; ASSOCIATED PERMANENT ACCESS ROADS LENOX TOWNSHIP, SUSQUEHANNA COUNTY, PENNSYLVANIA</p>	
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<p>ACCESS ROAD SU-047.1 LAYOUT PLAN</p>			<p>DRAWN BY: OC DATE: 04/03/15 ISSUED FOR BID: SCALE: AS NOTED CHECKED BY: AJB DATE: 04/03/15 ISSUED FOR CONSTRUCTION: REVISION: 5 APPROVED BY: AJB DATE: 07/17/15 DRAWING NUMBER: (30-3680)MF-1A-3 SHEET 6 OF 11 W.O. NUMBER: 1161483</p>																																												





RIP RAP GRADATION, FILTER BLANKET, MAXIMUM VELOCITIES

Riprap Gradation, Filter Blanket Requirements, Maximum Velocities						
Percent Passing (Square Openings)						
Class, Size NO.	R-8	R-7	R-6	R-5	R-4	R-3
Rock Size (Inches)						
42	100					
30		100				
24	15-50		100			
18		15-50		100		
15	0-15				100	
12		0-15	15-50			
9				15-50		
6			0-15		15-50	100
4				0-15		
3					0-15	15-50
2						0-15
Nominal Placement Thickness (inches)	63	45	36	27	18	9
Filter Stone <sup>1</sup>	AASHTO #1	AASHTO #1	AASHTO #1	AASHTO #3	AASHTO #3	AASHTO #57
V <sub>max</sub> (ft/sec)	17.0	14.5	13.0	11.5	9.0	6.5

Adapted from PennDOT Pub. 406, Section 703.2(c), Table C

ADAPTED FROM PENNDOT PUB. 406, SECTION 703.2 (C), TABLE C.

1. THIS IS A GENERAL STANDARD. SOIL CONDITIONS AT EACH SITE SHOULD BE ANALYZED TO DETERMINE ACTUAL FILTER SIZE. A SUITABLE WOVEN OR NON-WOVEN GEOTEXTILE UNDERLAYMENT, USED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, MAY BE SUBSTITUTED FOR THE FILTER STONE FOR GRADIENTS < 10%.

LIMING AND FERTILIZER RATES

Soil Amendment	Permanent Seeding Application Rate			Notes
	Per Acre	Per 1,000 sq. ft.	Per 1,000 sq. yd.	
Agricultural lime	6 tons	240 lb.	2,480 lb.	Or as per soil test; may not be required in agricultural fields
10-10-20 fertilizer	1,000 lb.	25 lb.	210 lb.	Or as per soil test; may not be required in agricultural fields
Temporary Seeding Application Rate				
Agricultural lime	1 ton	40 lb.	410 lb.	Typically not required for topsoil stockpiles
10-10-10 fertilizer	500 lb.	12.5 lb.	100 lb.	Typically not required for topsoil stockpiles

PA DEP TABLE 11.2

1 NO LIME AND/OR FERTILIZER MAY BE APPLIED IN WETLANDS.

SLOPE SEED MIX

Common Name	Scientific Name	# PLS/acre	PLS/sq ft	% of Mix
Big Bluestem	Andropogon gerardii	2.0	6.0	10
Little Bluestem	Schizachyrium scoparium	1.0	6.0	10
Switchgrass	Panicum virgatum	1.3	12.0	20
Timothy	Phleum pratense	0.4	12.0	20
Virginia Wildrye	Elymus virginicus	4.4	7.5	13
Deertongue	Dichanthelium clandestinum	0.7	6.0	10
Blackeyed Susan	Rudbeckia hirta	0.1	3.0	5
White Clover	Trifolium repens	0.2	3.0	5
Oxeye Sunflower	Heliopsis helianthoides	0.6	1.5	3
Partridge Pea	Chamaecrista fasciculata	1.1	1.5	3
Purple Coneflower	Echinacea purpurea	0.6	1.5	3
Total	--	12.3	60.0	100.00

NOTES:

1 PLS IS ROUNDED TO THE NEAREST TENTH OF A POUND.  
PLS = PURE LIVE SEED

ROW SEED MIX

Common Name	Scientific Name	# PLS/acre	PLS/sq ft	% of Mix
Red Top	Agrostis gigantea	0.1	12.0	20
Timothy	Phleum pratense	0.4	12.0	20
Tall Fescue	Festuca arundinacea	1.7	9.0	15
Annual Ryegrass	Lolium perenne multiflorum	1.7	9.0	15
Italian Ryegrass	Festulium	1.7	9.0	15
Alsike Clover	Trifolium hybridum	0.2	3.0	5
White Clover	Trifolium repens	0.2	3.0	5
Ladino White Clover	Trifolium repens latum	0.2	3.0	5
Total	--	6.2	60.0	100

NOTES:

1 PLS IS ROUNDED TO THE NEAREST TENTH OF A POUND.  
PLS = PURE LIVE SEED

SPECIES TYPE AND SEASON OF PLANTING

Species Type and Season of Planting	
<b>Cover Crops<sup>1</sup></b>	
Cool Season - Spring	March 1 to June 1
Warm Season	June 1 to August 15
Cool Season - Fall	August 15 - October 15
<b>Permanent Crop<sup>2</sup></b>	
Spring	April 20 to June 15
Late Fall (dormant)	October 10 - March 1

NOTES:

1. SEEDING DATES FOR COVER CROPS ARE BASED ON DATES REFERENCED BY CLARK, ---  
2. SEEDING DATES FOR PERMANENT CROPS ARE BASED ON DATES REFERENCED BY LANDSHOOT, 1997 AND DELONG AND BRITTINGHAM, 2002.

SEED AFTER OCTOBER 10 WHEN GROUND TEMPERATURES AT A DEPTH OF 4 INCHES ARE 45 F OR LOWER AND COOLER AIR TEMPERATURES ARE FORECASTED.

DORMANT SEEDING CAN OCCUR UNTIL SOIL IS FROZEN AND ADEQUATE PENETRATION OF THE DRILL SEEDER DOES NOT OCCUR.

COVER CROP SEED MIXES

Cover Crop Seed Mixes				
Warm Season				
Common Name	Crop Type	# PLS/acre	PLS/sq ft	% of Mix
Pearl Millett	Grass	6.9	12.6	70
Sunn Hemp	Legume	10.5	3.6	20
Nitro Radishes	Brassicac	3.1	1.8	10
Total	--	20.5	18.0	100
Cool Season				
Annual ryegrass	Grass	8.0	35.1	65
Red Clover	Legume	3.2	13.5	25
Nitro Radishes	Brassicac	9.4	5.4	10
Total	--	20.6	54.0	100

NOTES:

1 PLS IS ROUNDED TO THE NEAREST TENTH OF A POUND.  
PLS = PURE LIVE SEED

TEMPORARY SEED MIX

TEMPORARY SEEDING SHALL CONSIST OF ANNUAL RYEGRASS (100 PERCENT BY WEIGHT), OR EQUIVALENT, AND SHALL BE PLACED AT THE RATE OF 5 POUNDS PER 1,000 SQUARE YARDS. TEMPORARY SEEDING SHALL BE APPLIED TO THOSE AREAS THAT ARE A POTENTIAL EROSION PROBLEM DURING CONSTRUCTION AND TO THOSE AREAS EXPOSED FOR LONGER THAN 20 CALENDAR DAYS. IF CONDITIONS DO NOT PERMIT TEMPORARY SEEDING, MULCHING SHALL BE EMPLOYED. ADDITIONALLY, NITROGEN FERTILIZER (50-50-50) @ ONE (1) TON PER ACRE, AGRICULTURAL LIME @ ONE (1) TON PER ACRE, AND STRAW MULCH @ THREE (3) TONS PER ACRE. STRAW MULCH SHALL BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN.

PERMANENT SEED MIXTURES COOL & WARM SEASON GRASSES

NON-AGRICULTURAL MEADOWS

Common Name	Scientific Name	# PLS/acre	PLS/sq ft	% of Mix
Virginia Wildrye	Elymus virginicus	5.3	9.0	15%
Little Bluestem	Schizachyrium scoparium	1.5	9.0	15%
Sideoats Grama	Bouteloua curtipendula	2.1	9.0	15%
Deertongue	Dichanthelium clandestinum	1.0	9.0	15%
Partridge Pea	Chamaecrista fasciculata	4.2	6.0	10%
Oxeye Sunflower	Heliopsis helianthoides	1.3	3.0	5%
Lanceleaf Coreopsis	Coreopsis lanceolata	1.2	6.0	10%
Blackeyed Susan	Rudbeckia hirta	0.1	3.0	5%
Butterfly Milkweed	Asclepias tuberosa	5.2	6.0	10%
Total	--	21.8	60.0	100%

STORM BASIN MIX

Common Name	Scientific Name	# PLS/acre	PLS/sq ft	% of Mix
Orchardgrass	Dactylis glomerata	0.8	12.0	20%
Timothy	Phleum pratense	0.4	9.0	15%
Switchgrass	Panicum virgatum	1.0	12.0	20%
Virginia Wildrye	Elymus virginicus	7.1	9.0	15%
Fox Sedge	Carex vulpinoidea	0.3	3.0	5%
Oxeye Sunflower	Heliopsis helianthoides	1.3	3.0	5%
Swamp Milkweed	Asclepias incarnata	1.7	12.0	20%
Total	--	12.6	60.0	100%

SITE SOIL TYPES AND LIMITATIONS

MAP UNIT NAME	MAP UNIT DESIGNATION	SLOPES	SOIL NAME	CUTBANKS CAVE	CORROSIVE TO CONCRETE/STEEL	DROUGHTY	EASILY ERODIBLE	FLOODING	HIGH WATER TABLE	HYDRIC/HYDRIC INCLUSIONS	LOW STRENGTH	SLOW PERCOLATION	PIPING	POOR SOURCE OF TOPSOIL	FROST ACTION	SHRINK-SWELL	POTENTIAL SINKHOLE	PONDING	WETNESS
LORDSTOWN AND OQUAGA VERY STONY SILT LOAM	LsD	12-30%	LORDSTOWN & OQUAGA	X	C/S	X	X	X	X	X	X	X	X	X	X				X
MARDIN CHANNERY SILT LOAM	MgB	0-8%	MARDIN	X	S	X	X	X	X	X	X	X	X	X	X				X
MORRIS CHANNERY SILT LOAM	MoB2	3-8%	MORRIS	X	C/S	X	X	X	X	X	X	X	X	X	X				X
WELLSBORO CHANNERY SILT LOAM	WeB2	3-8%	WELLSBORO	X	C/S	X	X	X	X	X	X	X	X	X	X				X
WELLSBORO FLAGGY SILT LOAM	WB2	3-8%		X	C/S	X	X	X	X	X	X	X	X	X	X				X
	WC2	8-15%		X	C/S	X	X	X	X	X	X	X	X	X	X				X

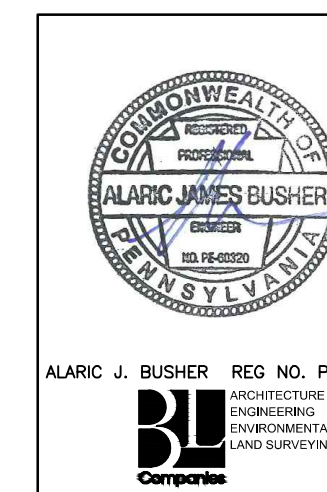
SOILS LIMITATIONS AND RESOLUTIONS

LIMITATION	RESOLUTION
CUTBANKS CAVE	EXCAVATIONS WILL BE PROPERLY SUPPORTED BY SHEETING AND SHORING TO PREVENT CAVES.
CORROSIVE TO CONCRETE/STEEL	NO CONCRETE OR STEEL PIPING IS PROPOSED WITHOUT APPROPRIATE COATING OR PROTECTION.
DROUGHTY	EXISTING SUITABLE TOPSOIL AND SOIL AMENDMENTS WILL BE USED DURING CONSTRUCTION.
EASILY ERODIBLE	TEMPORARY AND PERMANENT EROSION CONTROL BMPs WILL BE EMPLOYED THROUGHOUT THE SITE.
FLOODING	ENSURE THAT THE SITE HAS PROPER DRAINAGE.
HIGH WATER TABLE	A GEOTECHNICAL INVESTIGATION WAS CONDUCTED TO MINIMIZE CONFLICTS WITH SATURATED ZONES.
HYDRIC/HYDRIC INCLUSIONS	A WETLAND INVESTIGATION WAS COMPLETED TO DETERMINE IF WETLANDS ARE PRESENT IN THE DEVELOPMENT AREA.
LOW STRENGTH	A MAXIMUM OF 3:1 SLOPES ARE PROPOSED.
SLOW PERCOLATION	FIELD INVESTIGATIONS OF PERCOLATION RATES AT THE INFILTRATION AREAS WERE PERFORMED TO VERIFY THE SOILS PERCOLATION CAPACITY.
PIPING	WATERTIGHT PIPE, ANTISEEP COLLARS, CLAY CORES THROUGH BASIN BERMS, AND CONCRETE ENDWALLS WILL BE USED TO MINIMIZE THE DANGER OF PIPING.
POOR SOURCE OF TOPSOIL	EXISTING TOPSOIL, WHICH HAS PROVEN TO BE SUITABLE, WILL BE REUSED ON THE SITE.
FROST ACTION	PAVEMENT SUBBASE WILL BE PROVIDED TO MINIMIZE FROST AFFECTS.
SHRINK-SWELL	STONE BASE WILL BE PROVIDED TO PREVENT SHRINK-SWELL FROM EFFECTING PAVEMENT.
POTENTIAL SINKHOLE	GEOTECHNICAL ENGINEER OF RECORD RECOMMENDATIONS WILL BE FOLLOWED FOR ANY POTENTIAL OCCURRENCES.
PONDING	SURFACE GRADING AND DRAINAGE FACILITIES WILL BE PROVIDED TO MINIMIZE PONDING AFFECTS.
WETNESS	WET WEATHER CONSTRUCTION RECOMMENDATIONS, PER THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS, WILL BE EMPLOYED TO MINIMIZE THE AFFECTS OF WETNESS DURING CONSTRUCTION. SURFACE GRADING, SURFACE GRADING AND DRAINAGE WILL BE PROVIDED TO MINIMIZE WETNESS AFFECTS AFTER CONSTRUCTION.

MULCH

- MULCHES SHOULD BE APPLIED AT THE RATES SHOWN IN TABLE 11.6
- STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN. A TRACTOR-DRAWN IMPLEMENT MAY BE USED TO "CRIMP" THE STRAW OR HAY INTO THE SOIL - ABOUT 3 INCHES. THIS METHOD SHOULD BE LIMITED TO SLOPES NO STEEPER THAN 3H:1V. THE MACHINERY SHOULD BE OPERATED ON THE CONTOUR. CRIMPING OF HAY OR STRAW BY RUNNING OVER IT WITH TRACKED MACHINERY IS NOT RECOMMENDED.
- POLYMERIC AND GUM TACKIFIERS MIXED AND APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS MAY BE USED TO TACK MULCH. AVOID APPLICATION DURING RAIN AND ON WINDY DAYS. A 24-HOUR CURING PERIOD AND A SOIL TEMPERATURE HIGHER THAN 45F ARE TYPICALLY REQUIRED. APPLICATION SHOULD GENERALLY BE HEAVIEST AT EDGES OF SEEDED AREAS AND AT CRESTS OF RIDGES AND BANKS TO PREVENT LOSS BY WIND. THE REMAINDER OF THE AREA SHOULD HAVE BINDER APPLIED UNIFORMLY. BINDERS MAY BE APPLIED AFTER MULCH IS SPREAD OR SPRAYED INTO THE MULCH AS IT IS BEING BLOWN ONTO THE SOIL. APPLYING STRAW AND BINDER TOGETHER IS GENERALLY MORE EFFECTIVE.
- SYNTHETIC BINDERS, OR CHEMICAL BINDERS, MAY BE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THEY ARE NON-TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.
- MULCH ON SLOPES 8X OR STEEPER SHOULD BE HELD IN PLACE WITH NETTING. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- SHREDDED PAPER HYDROMULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5%. WOOD FIBER HYDROMULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED A TACKIFIER IS USED. THE APPLICATION RATE FOR ANY HYDROMULCH SHOULD BE 2,000 LB/ACRE AT A MINIMUM.
- HYDRAULICALLY APPLIED BLANKETS CAN BE AN EFFECTIVE METHOD OF STABILIZING STEEP SLOPES WHEN USED PROPERLY. THEY MAKE USE OF A CROSS-LINKED HYDROCOLLOID TACKIFIER TO BOND THERMALLY PROCESSED WOOD FIBERS. APPLICATION RATES VARY ACCORDING TO SITE CONDITIONS. IN ANY CASE, MANUFACTURER'S RECOMMENDATIONS SHOULD BE FOLLOWED. SHOULD NOT BE USED IN AREAS OF CONCENTRATED FLOW (E.G. CHANNELS).
- NO MULCH MAY BE APPLIED IN WETLANDS.

TABLE 11.6				
MULCH APPLICATION RATES				
MULCH TYPE	APPLICATION RATE (MIN.)			NOTES
	PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YD.	
STRAW	3 TONS	140 LB.	1,240 LB.	EITHER WHEAT OR OAT STRAW, FREE OF WEEDS, NOT CHOPPED OR FINELY BROKEN
WOOD CHIPS	4-6 TONS	185-275 LB.	1,650-2,500 LB.	MAY PREVENT GERMINATION OF GRASSES AND LEGUMES
HYDRO- MULCH	1 TON	47 LB.	415 LB.	SEE LIMITATIONS ABOVE
HYDRAULICALLY APPLIED BLANKETS	3,000 LB.	N/A	N/A	SLOPES UP TO 3H:1V
	4,000 LB.	N/A	N/A	SLOPES STEEPER THAN 3H:1V

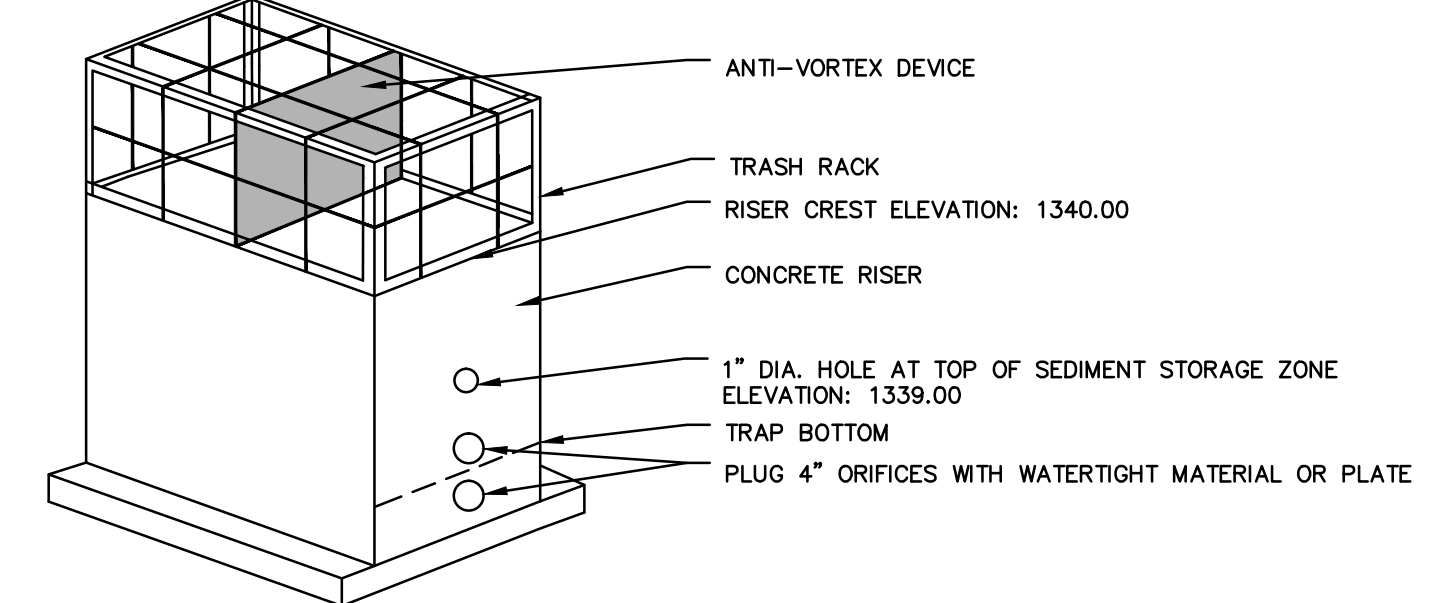
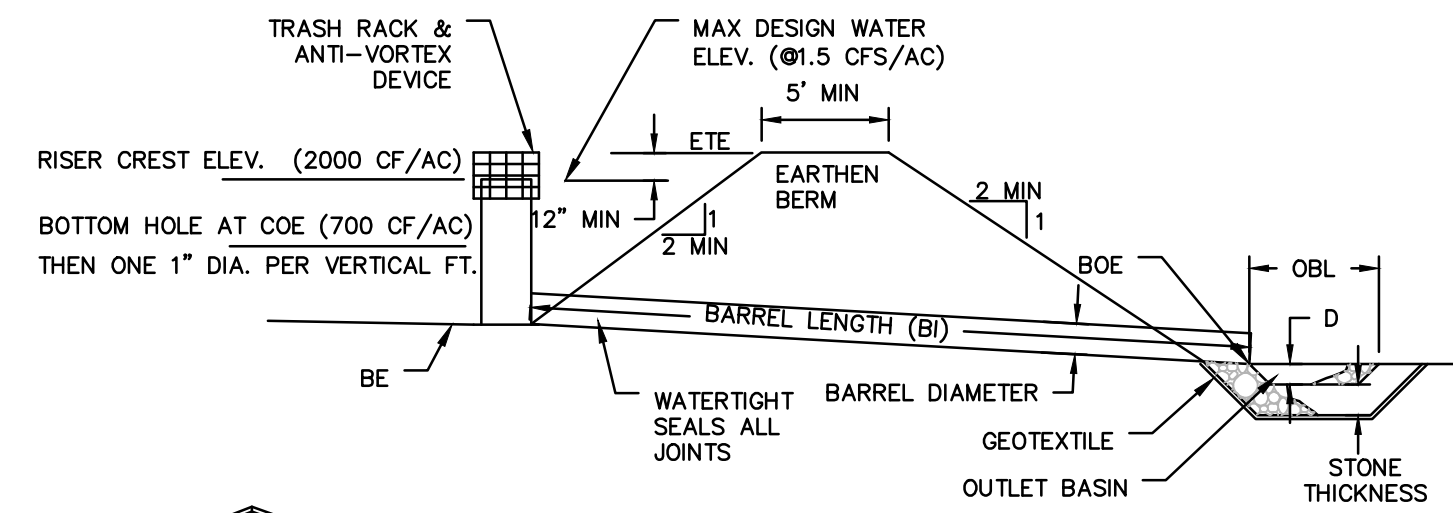


REVISIONS			
NO.	DATE	BY	DESCRIPTION
0	08/28/2015	BL	ISSUED FOR PADEP PERMIT SUBMITTAL
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4	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1
5	Apr. 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC			
ATLANTIC SUNRISE PROJECT- PROPOSED 30" NATURAL GAS PIPELINE			
SOIL EROSION & SEDIMENT CONTROL AND LAYOUT PLANS			
FOR ZICK METER STATION & ASSOCIATED PERMANENT ACCESS ROADS			
LENOX TOWNSHIP, SUSQUEHANNA COUNTY, PENNSYLVANIA			
SOIL EROSION & SEDIMENT CONTROL NOTES			
DRAWN BY:	JEC	DATE:	04/03/15
CHECKED BY:	AJB	DATE:	04/03/15
APPROVED BY:	AJB	DATE:	07/17/15
SCALE:	AS NOTED	REVISION:	5
DRAWING NUMBER:	(30-3680)MF-1A-11	SHEET:	9
W.O. NO.:	1161483	OF:	11



Drawn By & Date/Time: Jrfjones Apr 25, 2017 - 3:21pm Drawing Location & Name: G:\0051\4\14C\14C4909\DWG\010-CPLN\FMS\_EC14C4909(10)\_ZICK.dwg



TRAP NO.	Z1 (FT)	Z2 (FT)	RISER		BARREL			EMBANKMENT		CLEAN OUT ELEV. COE (FT)	BOTTOM ELEV. BE (FT)	
			BOT. PERIF. ELEV. (FT)	MATL.	DIA. (IN)	INLET ELEV. (FT)	LENGTH (FT)	OUTLET ELEV. (FT)	TOP ELEV. (FT)			TOP WIDTH (FT)
1	3	3	1339	RCP	15	1336	55	1331	1342	10	1339	1338

FILL MATERIAL FOR THE BERM SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE BERM SHALL BE COMPACTED IN LAYERED LIFTS OF NOT MORE THAN 6" TO 9". THE MAXIMUM ROCK SIZE SHALL BE NO GREATER THAN 2/3 THE LIFT THICKNESS.

UPON COMPLETION, THE BERM SHALL BE SEEDED, MULCHED, BLANKETED OR OTHERWISE STABILIZED ACCORDING TO THE SPECIFICATIONS OF THE E&S PLAN DRAWINGS.

ALL SEDIMENT TRAPS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT.

ACCESS FOR SEDIMENT REMOVAL AND OTHER REQUIRED MAINTENANCE ACTIVITIES SHALL BE PROVIDED.

A CLEAN OUT STAKE SHALL BE PLACED NEAR THE CENTER OF EACH TRAP. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED THE CLEAN OUT ELEVATION ON THE STAKE AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS. DISPOSE OF MATERIALS REMOVED FROM THE TRAP IN THE MANNER DESCRIBED IN THE E&S PLAN.

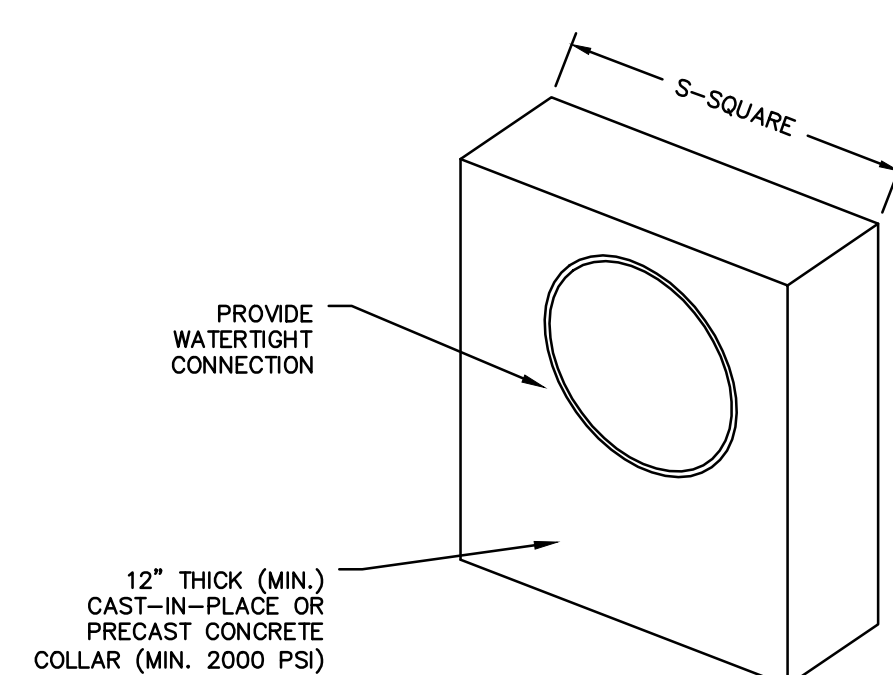
CHECK BERMS FOR EROSION, PIPING, AND SETTLEMENT. CLOGGED OR DAMAGED INLETS SHALL BE IMMEDIATELY RESTORED TO THE DESIGN SPECIFICATIONS.

ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISTURBED AREAS INSIDE THE TRAP SHALL BE STABILIZED BEFORE CONVERSION TO A STORMWATER MANAGEMENT FACILITY.

ANTI-VORTEX DEVICE IS OPTIONAL FOR THIS TRAP.

### CONCRETE RISER WITH TEMPORARY DEWATERING HOLES DETAIL

N.T.S. PADEP-8-8



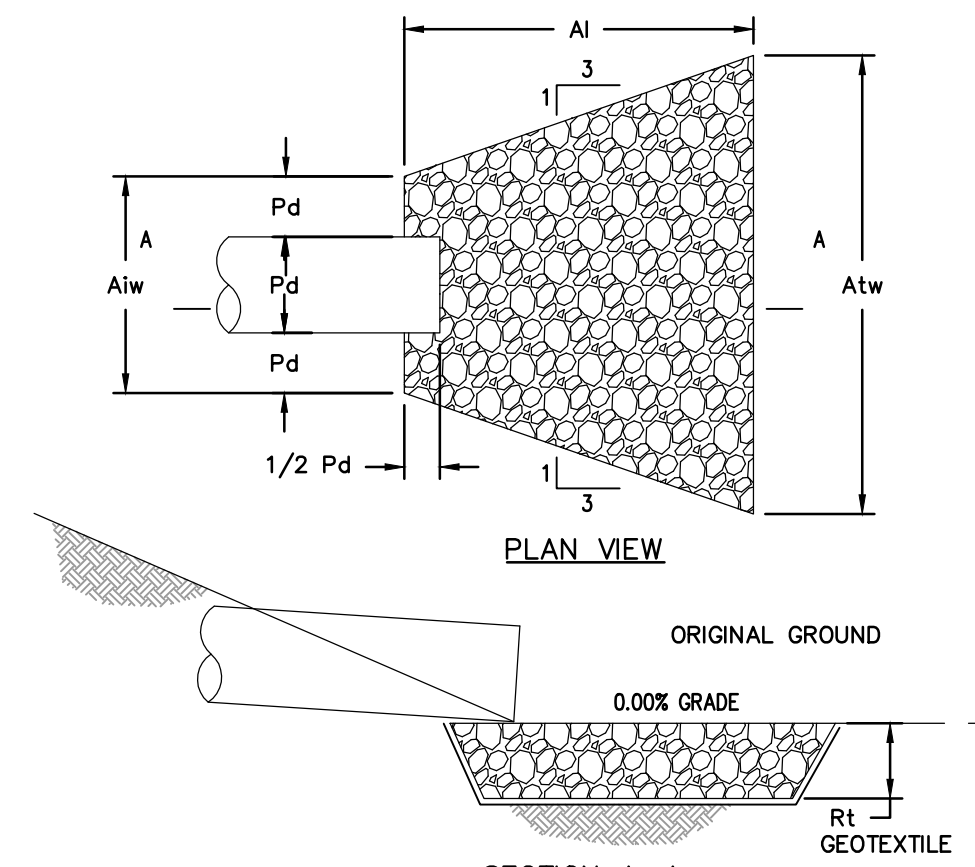
ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.

COLLAR SIZE AND SPACING SHALL BE AS INDICATED BELOW.

BASIN OR TRAP NO.	PIPE SIZE (IN)	S (IN)	NO. OF COLLARS	DISTANCE RISER TO 1ST COLLAR (FT)	COLLAR SPACING (FT)
TRAP #1	15	94	1	20	N/A

### CONCRETE ANTI-SEEP COLLAR FOR PERMANENT BASINS OR TRAPS DETAIL

N.T.S. PADEP-7-16



NOTE: THIS WILLIAMS STANDARD DETAIL IS BASED ON PADEP STANDARD CONSTRUCTION DETAIL #8-2.

OUTLET NO.	PIPE DIA PD (IN)	RIPRAP		APRON		
		SIZE (R-...)	THICK. Rt (IN)	LENGTH AI (FT)	INITIAL WIDTH AIw (FT)	TERMINAL WIDTH Atw (FT)
* ALL INFORMATION CAN BE FOUND ON ACCESS ROAD AND EROSION AND SEDIMENT CONTROL PLANS. REFER TO NOTES 4 AND 5 FOR DIMENSION LOCATIONS.						

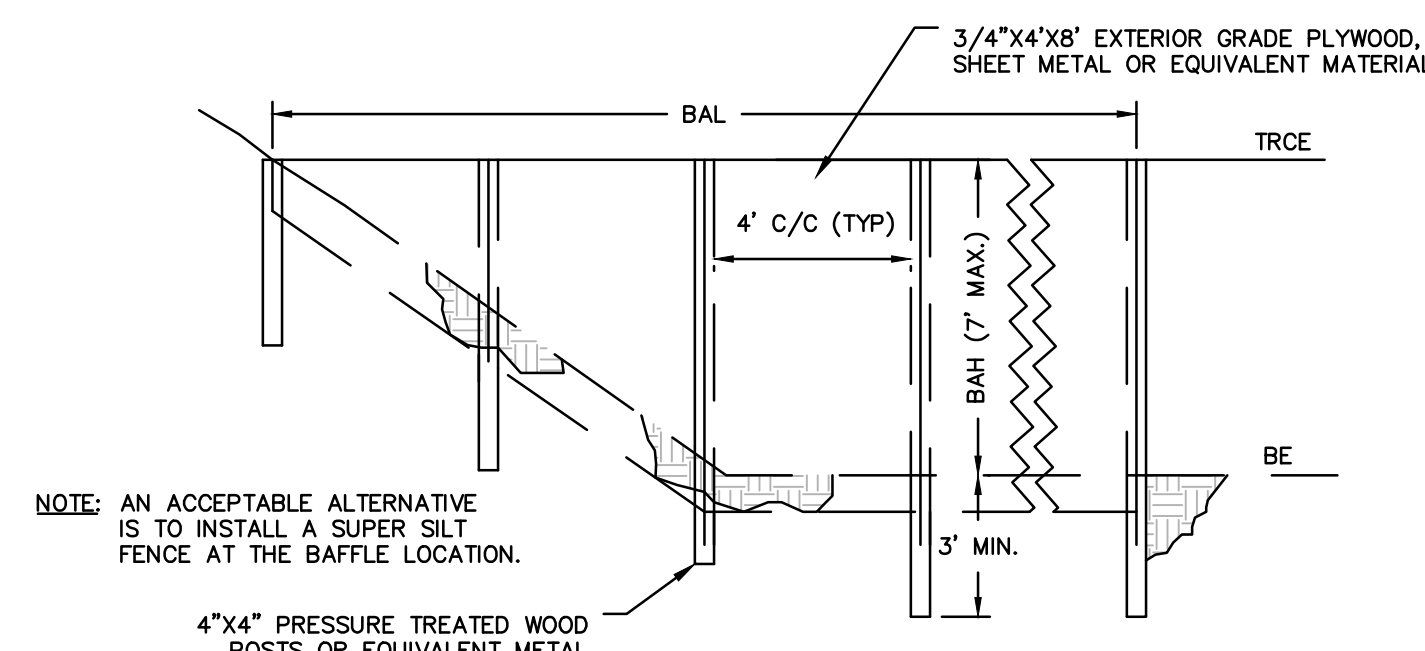
NOTES:

- ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN ON THE PLANS. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.
- ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.
- EXTEND RIPRAP ON BACK SIDE OF APRON TO AT LEAST 1/2 DEPTH OF PIPE ON BOTH SIDES TO PREVENT SCOUR AROUND THE PIPE.
- FOR APRONS ON ACCESS ROADS, THE DIMENSIONS FOR THE APRONS ARE GIVEN AS FOLLOWS: L x D x W WHERE: L = LENGTH OF APRON OR "AI" AS SHOWN IN THE PLAN VIEW ABOVE  
D = DEPTH OF RIP RAP OR "RT" AS SHOWN IN THE SECTION ABOVE  
W/W = WIDTH OF SHORT END OF APRON/WIDTH OF LONG END OF APRON OR "AIw"/"Atw" AS SHOWN IN THE PLAN VIEW ABOVE
- FOR APRON ON SWALES AND FLUME CROSSINGS, THE DIMENSIONS FOR THE APRONS ARE AS FOLLOWS: DIMENSIONS LOCATED ON TABLE 2: TEMPORARY CLEAN WATER DIVERSION SUMMARY:  
a. RIP RAP SIZE (R-...) UNDER WATERBODY  
b. APRON INITIAL WIDTH AND TERMINAL WIDTH IS TWO FEET FOR FILTER SOCK DIVERSIONS AND SWALES.  
c. RIP RAP THICKNESS (RT)  
d. APRON LENGTH (AI)

OUTLET NO.	PIPE DIA PD (IN)	RIPRAP		APRON		
		SIZE (R-...)	THICK. Rt (IN)	LENGTH AI (FT)	INITIAL WIDTH AIw (FT)	TERMINAL WIDTH (Atw) (FT)
SWALE 1 SECTION 2	N/A	4	18	10	6	16
SED TRAP/RG #3	18	5	27	9	4.50	12.50
RAIN GARDEN #1 TEMPORARY SWALE 2	12	5	27	6	3	9
1	N/A	4	18	10	6	16

### RIP-RAP APRON AT PIPE OUTLET WITHOUT FLARED END SECTION

N.T.S.



NOTE: AN ACCEPTABLE ALTERNATIVE IS TO INSTALL A SUPER SILT FENCE AT THE BAFFLE LOCATION.

4"x4" PRESSURE TREATED WOOD POSTS OR EQUIVALENT METAL

IN POOLS WITH DEPTHS EXCEEDING 7', THE TOP OF THE PLYWOOD BAFFLE DOES NOT NEED TO EXTEND TO THE TEMPORARY RISER CREST. SUPER SILT FENCE BAFFLES NEED NOT EXTEND TO TRCE ELEVATION.

BASIN	BAFFLE	TEMP. RISER	BOTTOM
BASIN OR TRAP NO.	LENGTH BAL (FT)	HEIGHT BAH (FT)	CREST ELEV. TRCE (FT)
1	45	2.00	1,340.00
			BOTTOM ELEV. BE (FT)
			1,338.00

SEE APPROPRIATE BASIN DETAIL FOR PROPER LOCATION AND ORIENTATION.

BAFFLES SHALL BE TIED INTO ONE SIDE OF THE BASIN UNLESS OTHERWISE SHOWN ON THE PLAN DRAWINGS.

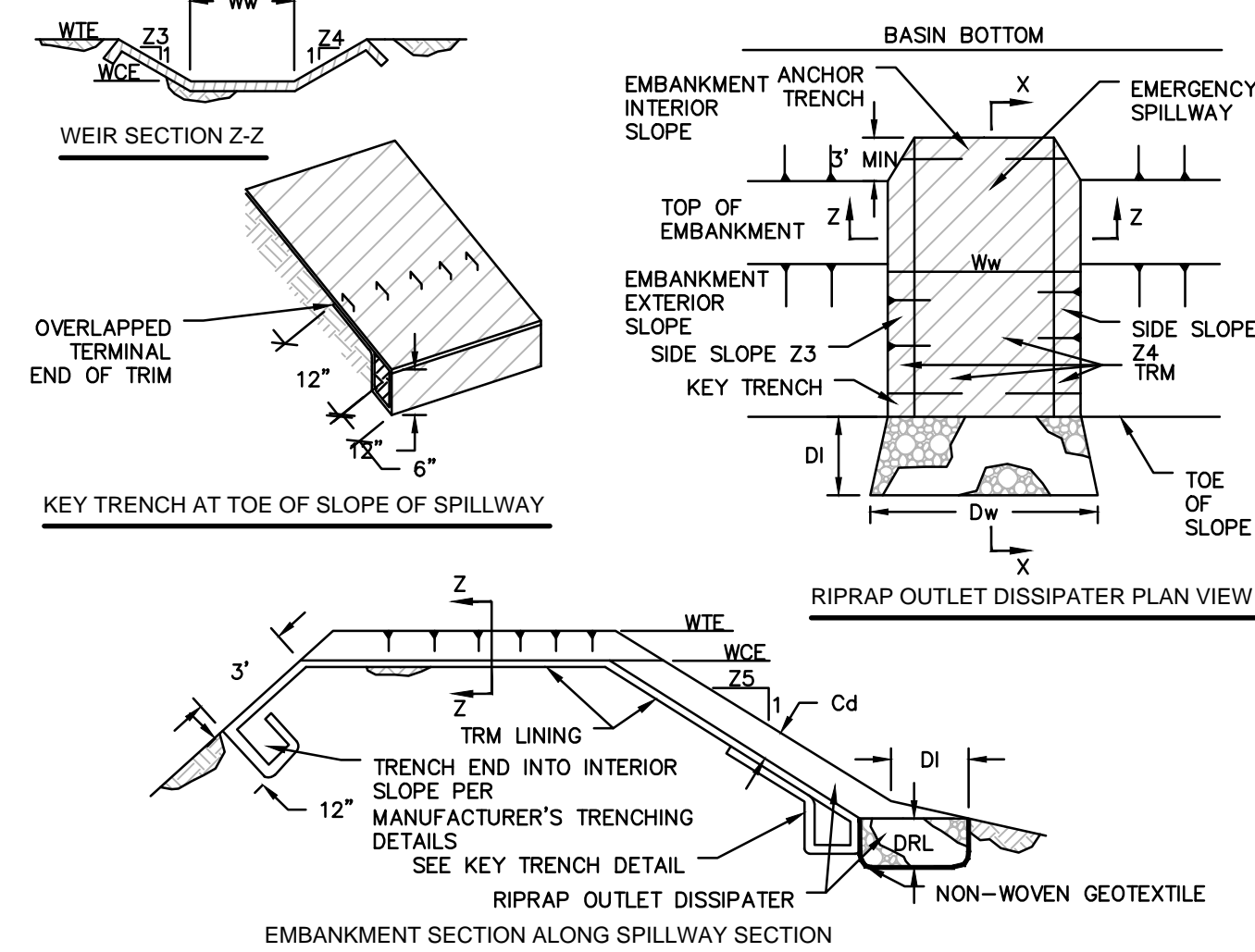
SUBSTITUTION OF MATERIALS NOT SPECIFIED IN THIS DETAIL SHALL BE APPROVED BY THE DEPARTMENT OR THE LOCAL CONSERVATION DISTRICT BEFORE INSTALLATION.

DAMAGED OR WARPED BAFFLES SHALL BE REPLACED WITHIN 7 DAYS OF INSPECTION.

BAFFLES REQUIRING SUPPORT POSTS SHALL NOT BE INSTALLED IN BASINS REQUIRING IMPERVIOUS LINERS.

### BAFFLE

N.T.S. PADEP-7-14



HEAVY EQUIPMENT SHALL NOT CROSS OVER SPILLWAY WITHOUT PRECAUTIONS TAKEN TO PROTECT TRM LINING.

DISPLACED LINER WITHIN THE SPILLWAY AND/OR OUTLET SWALE SHALL BE REPLACED IMMEDIATELY.

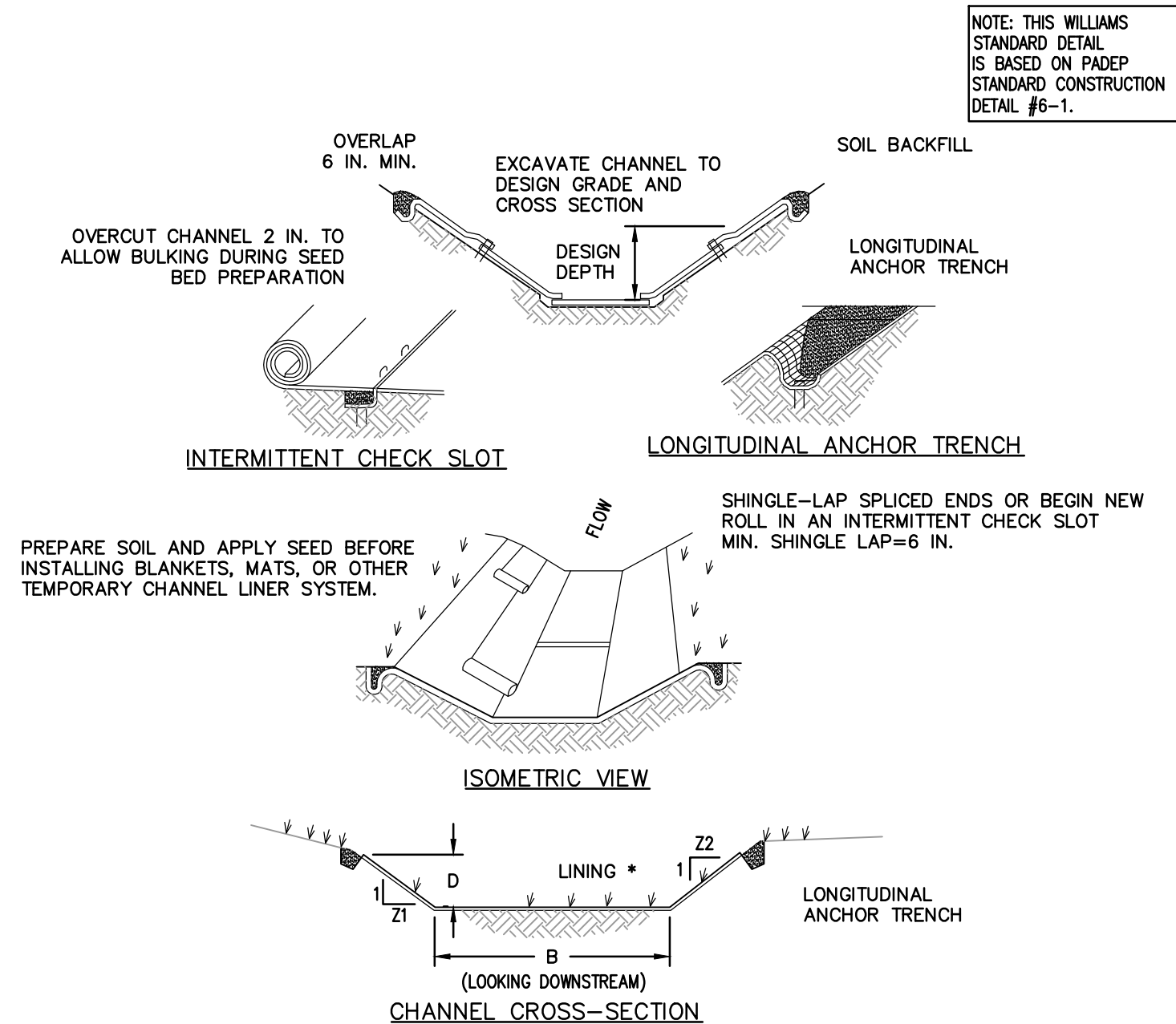
RIPRAP AT TOE OF EMBANKMENT SHALL BE EXTENDED A SUFFICIENT LENGTH IN BOTH DIRECTIONS TO PREVENT SCOUR.

THE USE OF BAFFLES THAN REQUIRE SUPPORT POSTS ARE RESTRICTED FROM USE IN BASINS REQUIRING IMPERVIOUS LINERS.

### SEDIMENT TRAP / RAIN GARDEN EMERGENCY SPIILLWAY WITH TRM LINING

N.T.S. PADEP-7-13

BASIN NO.	WEIR			WIDTH Ww (FT)	TRM TYPE	STAPLE PATTERN	SWALE		DISSIPATER				
	Z3 (FT)	Z4 (FT)	TOP ELEV. WTE (FT)				DEPTH Cd (FT)	LENGTH DI (FT)	WIDTH Dw (FT)	RIPRAP SIZE (R-...)	RIPRAP THICK. DR1 (IN)		
3 (TRAP 1)	3	3	1342.00	1341.00	15	P550	B	NA	NA	NA	NA	NA	NA
2	3	3	1344.00	1343.00	13	P300	B	NA	NA	NA	NA	NA	NA
1	3	3	1344.00	1343.00	50	P300	B	NA	NA	NA	NA	NA	NA



NOTE: THIS WILLIAMS STANDARD DETAIL IS BASED ON PADEP STANDARD CONSTRUCTION DETAIL #6-1.

\* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, VEGETATIVE STABILIZATION FOR SOIL AMENDMENTS, SEED MIXTURES AND MULCHING INFORMATION

NOTES:  
ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF SWALE IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.

SWALE DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. SWALE SHALL BE CLEANED WHENEVER TOTAL SWALE DEPTH IS REDUCED BY 25% AT ANY LOCATION. SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO SWALE WITHOUT FURTHER DAMAGE. DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.

NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT SWALES TO ENSURE SUFFICIENT SWALE CAPACITY.

SWALE SUMMARY TABLE							
SWALE NO.	BOTTOM WIDTH B (FT)	DEPTH D (FT)	TOP WIDTH W (FT)	Z1 (FT)	Z2 (FT)	TEMPORARY LINING*	PERMANENT LINING
SWALE 1 SECTION 1	2.0	1.5	11.0	3.0	3.0	SC150	GRASS
TEMPORARY SWALE 2	2.0	1.5	11.0	3.0	3.0	SC150	N/A
SWALE 1 SECTION 2	2.0	1.5	11	3.0	3.0	SC250	GRASS

### VEGETATED SWALE

N.T.S.

REVISIONS				W.D. NO.		CHK.		APP.	
NO.	DATE	BY	DESCRIPTION	W.D. NO.	CHK.	APP.	W.D. NO.	CHK.	APP.
0	08/26/2015	BL	ISSUED FOR PADEP PERMIT SUBMITTAL	W0161483	DAK	AJB			
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W0161483	DAK	AJB			
3	03/29/2016	BL	ISSUED FOR PADEP RESUBMITTAL	W0161483	DAK	AJB			
4	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0161483	AJB	AJB			
5	Apr. 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0161483	AJB	AJB			

ALARIC J. BUSHER REG. NO. PE 60320  
ALARIC J. BUSHER  
REGISTERED PROFESSIONAL ENGINEER  
ENVIRONMENTAL  
LAND SURVEYING

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC  
ATLANTIC SUNRISE PROJECT- PROPOSED 30" NATURAL GAS PIPELINE  
SOIL EROSION & SEDIMENT CONTROL AND LAYOUT PLANS  
FOR ZICK METER STATION & ASSOCIATED PERMANENT ACCESS ROADS  
LENOX TOWNSHIP, SUSQUEHANNA COUNTY, PENNSYLVANIA  
SOIL EROSION & SEDIMENT CONTROL NOTES AND DETAILS

DRAWN BY: JEC DATE: 04/03/15 ISSUED FOR BID: SCALE: AS NOTED  
CHECKED BY: AJB DATE: 04/03/15 ISSUED FOR CONSTRUCTION: REVISION: 5  
APPROVED BY: AJB DATE: 07/17/15 DRAWING NUMBER: (30-3680)MF-1A-11 SHEET 10 OF 11  
W.D. NO.: 1161483

# FILTER SOCK MEDIA STANDARDS

## WOOD CHIP FILTER MEDIA STANDARD SPECIFICATIONS FOR WOOD CHIP FILTER SOCKS

- A. WOOD CHIPS USED FOR FILTER SOCKS SHALL BE WEED FREE AND DERIVED FROM CHOPPED TREE MATERIAL.
- B. PARTICLE SIZE - LESS THAN OR EQUAL TO 5 IN WITH 95% PASSING A 2 IN (50MM) SIEVE AND LESS THAN 30% PASSING A 1 IN (25MM) SIEVE.
- C. WOOD CHIPS SHALL NOT INCLUDE PAINTED, CREOSOTED, PRESSURE TREATED, OR ANY OTHER COATED OR EMBEDDED WOOD MATERIAL AND SHALL BE FREE OF INERT OR FOREIGN MAN MADE MATERIALS.
- D. A SAMPLE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO BEING USED AND MUST COMPLY WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

## GROWING MEDIA STANDARD SPECIFICATIONS FOR FILTER SOCK DIVERSIONS

**MATERIAL**  
COMPOSTED PRODUCTS USED FOR FILTER SOCK DIVERSION SHALL BE WEED FREE AND DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER. THE COMPOSTED PRODUCTS SHALL BE PRODUCED USING AN AEROBIC COMPOSTING PROCESS MEETING USEPA CFR 503 REGULATIONS (IN CANADA: M.O.E. 101, C.C.M.E. TYPE "A" AND TYPE "AA" REGULATIONS), INCLUDING TIME AND TEMPERATURE DATA INDICATING EFFECTIVE WEED SEED, PATHOGEN AND INSECT LARVAE KILL. THE COMPOSTED PRODUCTS SHALL BE FREE OF ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH. NON-COMPOSTED PRODUCTS WILL NOT BE ACCEPTED. TEST METHODS FOR THE ITEMS BELOW SHOULD FOLLOW USCC IMECC GUIDELINES FOR LABORATORY PROCEDURES:

- A. PH - 5.0-8.0 IN ACCORDANCE WITH TMECC 04.11-A, "ELECTROMETRIC PH DETERMINATIONS FOR COMPOST"
- B. MOISTURE CONTENT OF LESS THAN 60% IN ACCORDANCE WITH STANDARDIZED TEST METHODS FOR MOISTURE DETERMINATION.
- C. COMPOST MATERIAL TO BE USED IN FILTER SOCK DIVERSION AND WHERE SEEDING AND/OR LIVE STAKES ARE SPECIFIED; ON LOW GRADE SLOPES WHERE VEGETATION ESTABLISHMENT IS THE PRIORITY; OR WHERE RAINWATER ABSORPTION, WATER HOLDING CAPACITY, RUNOFF REDUCTION AND INFILTRATION ARE THE PRIORITY SHALL MEET THE FOLLOWING PARTICLE SIZE DISTRIBUTION:
- D. MATERIAL SHALL BE RELATIVELY FREE (<1% BY DRY WEIGHT) OF INERT OR FOREIGN MAN MADE MATERIALS.
- E. A SAMPLE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO BEING USED AND MUST COMPLY WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

### OPTION A: EROSION CONTROL

FOR VEGETATED APPLICATIONS WHERE SLOPE GRADES ARE GREATER THAN 3:1, WHERE SHEET RUNOFF RATE OR VELOCITY MAY BE HIGH, OR RAINFALL RATE/INTENSITY MAY BE HIGH.

SUBSTITUTION FOR SECTION C. PARTICLE SIZE OF COMPOST FILTER SOCK DIVERSION SHALL USE THE FOLLOWING PARTICLE SIZE DISTRIBUTION SPECIFICATION: 99% PASSING A 1 IN (25MM) SIEVE, MAXIMUM OF 50% PASSING A 1/2 IN (12.5MM) SIEVE.

### OPTION B: NON-VEGETATED TEMPORARY EROSION CONTROL

FOR NON-VEGETATED APPLICATIONS WHERE SLOPE GRADES ARE GREATER THAN 3:1, WHERE SHEET RUNOFF RATE OR VELOCITY MAY BE HIGH, OR RAINFALL RATE/INTENSITY MAY BE HIGH.

SUBSTITUTION FOR SECTION C. PARTICLE SIZE OF COMPOST FILTER SOCK DIVERSION SHALL USE THE FOLLOWING PARTICLE SIZE DISTRIBUTION SPECIFICATION: 99% PASSING A 3 IN (75MM) SIEVE AND A MAXIMUM OF 30% PASSING A 1/2 IN (12.5MM) SIEVE.

SEDIMENT BARRIER TABLE	
SEDIMENT BARRIER DESIGNATION	SEDIMENT BARRIER TYPE
1*	12 INCH FILTER SOCK
2	12 INCH FILTER SOCK
3	12 INCH FILTER SOCK
4	12 INCH FILTER SOCK
5	12 INCH FILTER SOCK
6	12 INCH FILTER SOCK
7	12 INCH FILTER SOCK
8	12 INCH FILTER SOCK
9	12 INCH FILTER SOCK
10	12 INCH FILTER SOCK
11	12 INCH FILTER SOCK
12	12 INCH FILTER SOCK
13	12 INCH FILTER SOCK
14	12 INCH FILTER SOCK
15	12 INCH FILTER SOCK
16	12 INCH FILTER SOCK
17	12 INCH FILTER SOCK
18	12 INCH FILTER SOCK
19	12 INCH FILTER SOCK
20	12 INCH FILTER SOCK
21	12 INCH FILTER SOCK

\* = STOCKPILE

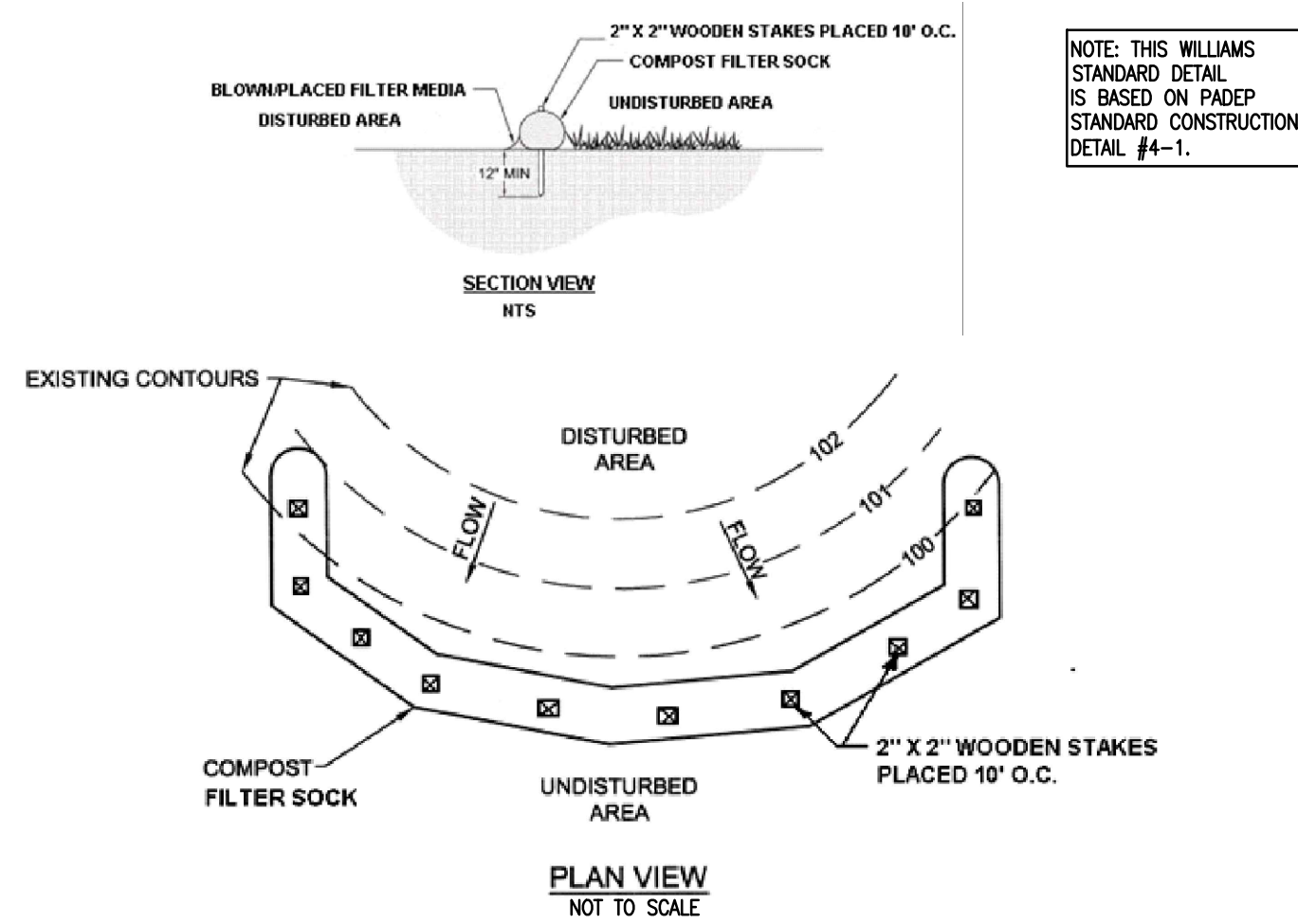
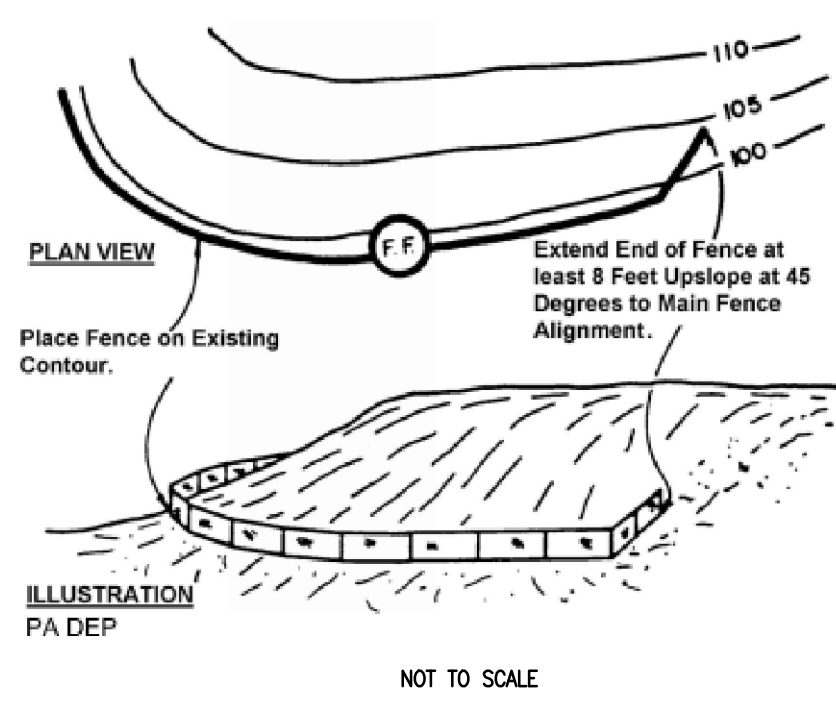


FIGURE 4.1 Sediment Barrier Alignment



Sediment barriers should be installed on existing level grade in order to be effective. Barriers which cross contours divert runoff to a low point where failure usually occurs. The ends of sediment barriers should be turned upslope at 45 degrees to the main barrier alignment for a distance sufficient to elevate the bottom of the barrier ends to the elevation of the top of the barrier at the lowest point. This is to prevent runoff from flowing around the barrier rather than through it. For most locations, a distance of 8 feet will suffice, as shown in Figure 4.1. In locations where the topography is such that the barrier would have to extend for a long distance, a compacted berm tying into the ends of the barrier may be substituted for the upslope extension.

## COMPOST FILTER SOCK

N.T.S. 1 OF 3

Material Type	3 mil HDPE	5 mil HDPE	5 mil HDPE	Multi-Filament Polypropylene (MFPP)	Heavy Duty Multi-Filament Polypropylene (HMFPP)
Material Characteristics	Photo-degradable	Photo-degradable	Bio-degradable	Photo-degradable	Photo-degradable
Sock Diameters	12", 18"	12", 18", 24", 30"	12", 18", 24", 30"	12", 18", 24", 30"	12", 18", 24", 30"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
Tensile Strength		29 psi	29 psi	44 psi	202 psi
Ultraviolet Stability %				100% at 1000 hr.	100% at 1000 hr.
Original Strength (ASTM G-155)	73% at 1000 hr.	75% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
Minimum Functional Longevity	6 months	9 months	6 months	1 year	2 years

Two-ply systems

Inner Containment Netting	HDPE biaxial net
	Continuously wound
	Fusion-welded junctures
	3/4" X 3/4" Max. aperture size
	Composite Polypropylene Fabric (Woven layer and non-woven fleece mechanically fused via needle punch)
	3/16" Max. aperture size

Outer Filtration Mesh

Sock fabrics composed of burlap may be used on projects lasting 6 months or less.

TABLE 4.2 COMPOST STANDARDS

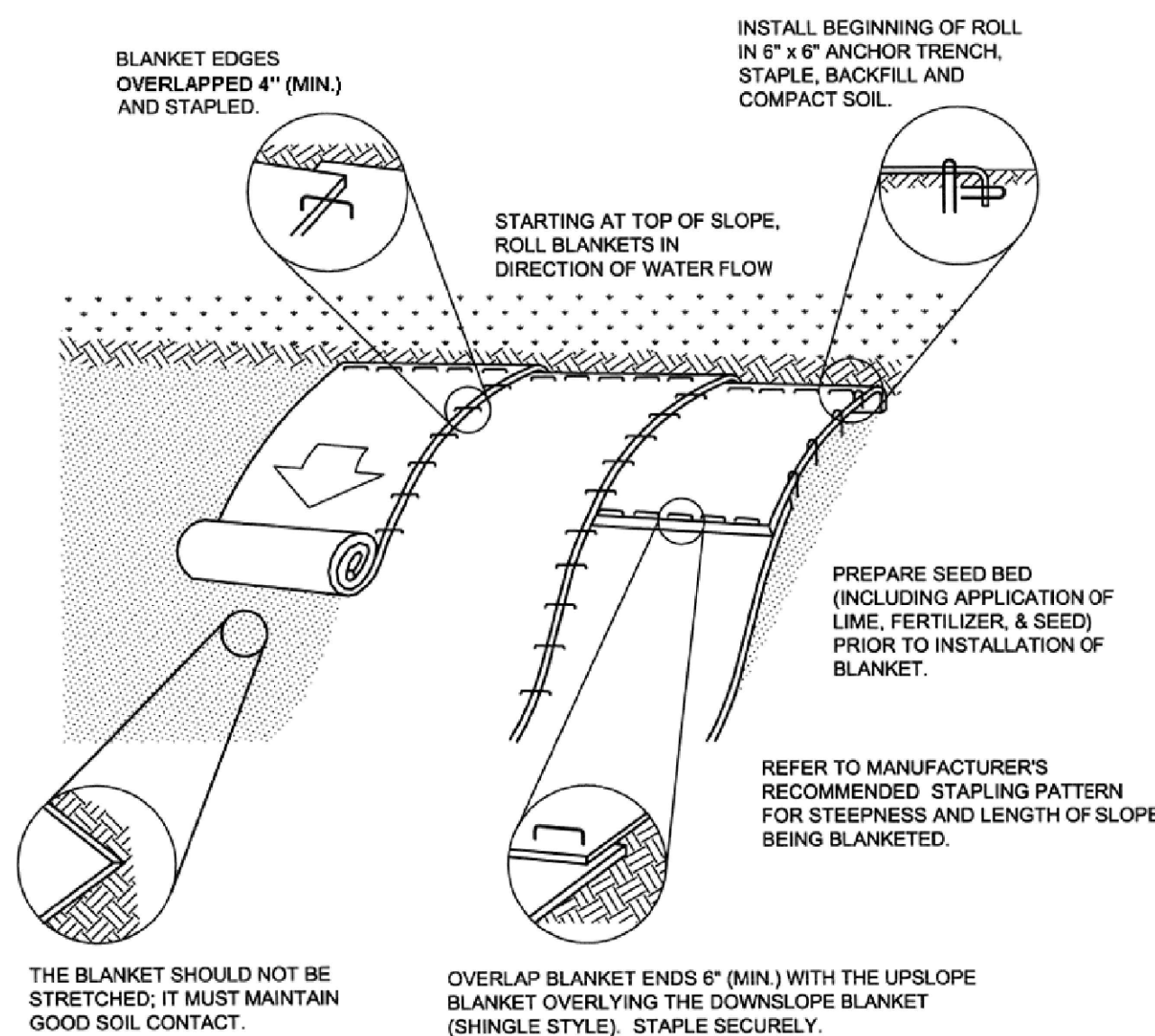
ORGANIC MATTER CONTENT	25%-100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
PH	5.5 - 8.5
MOISTURE CONTENT	30% - 60%
PARTICLE SIZE	30%-50% PASS THROUGH 3/8" SIEVE
SOLUBLE SALT CONCENTRATION	5.0 DS/M (MMHOS/CM) MAXIMUM

### NOTES:

- SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2. (SEE SHEET 2 OF 3 OF THIS DETAIL.)
- COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2. (SEE SHEET 3 OF 3 OF THIS DETAIL.) STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
- TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
- ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
- SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
- BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.
- SOCKS SHALL BE INSTALLED PARALLEL TO THE CONTOURS, TYPICALLY IN AREAS WHERE THE SLOPE OF THE CATCHMENT AREA IS LESS THAN FIVE PERCENT, THE SOCKS MAY BE INSTALLED AS NECESSARY TO MINIMIZE THE NUMBER OF SEPARATE SOCK SEGMENTS ALONG THE EDGE OF DISTURBANCE.

## COMPOST FILTER SOCK

N.T.S. 2 OF 3



### NOTES:

- SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.
- PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
- SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
- BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
- STAPLING OF THE BLANKET SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM TOW COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.
- BIODEGRADABLE STAPLES SHALL BE USED.

### WILLIAMS SUPPLEMENTAL NOTES:

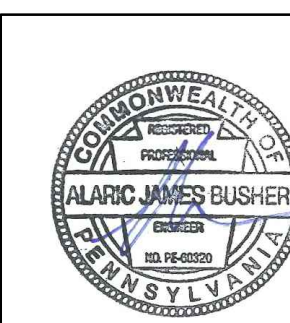
- CONTRACTOR SHALL USE SINGLE MAT STRAW FOR SLOPES FLATTER THAN 3:1.
- HYDRAULIC APPLIED EROSION CONTROL BLANKETS MAY BE USED IN LIEU OF ECB.

NOTE: THIS WILLIAMS STANDARD DETAIL IS BASED ON PADEP STANDARD CONSTRUCTION DETAIL #11-1.

ADAPTED FROM PADEP

## EROSION CONTROL BLANKET

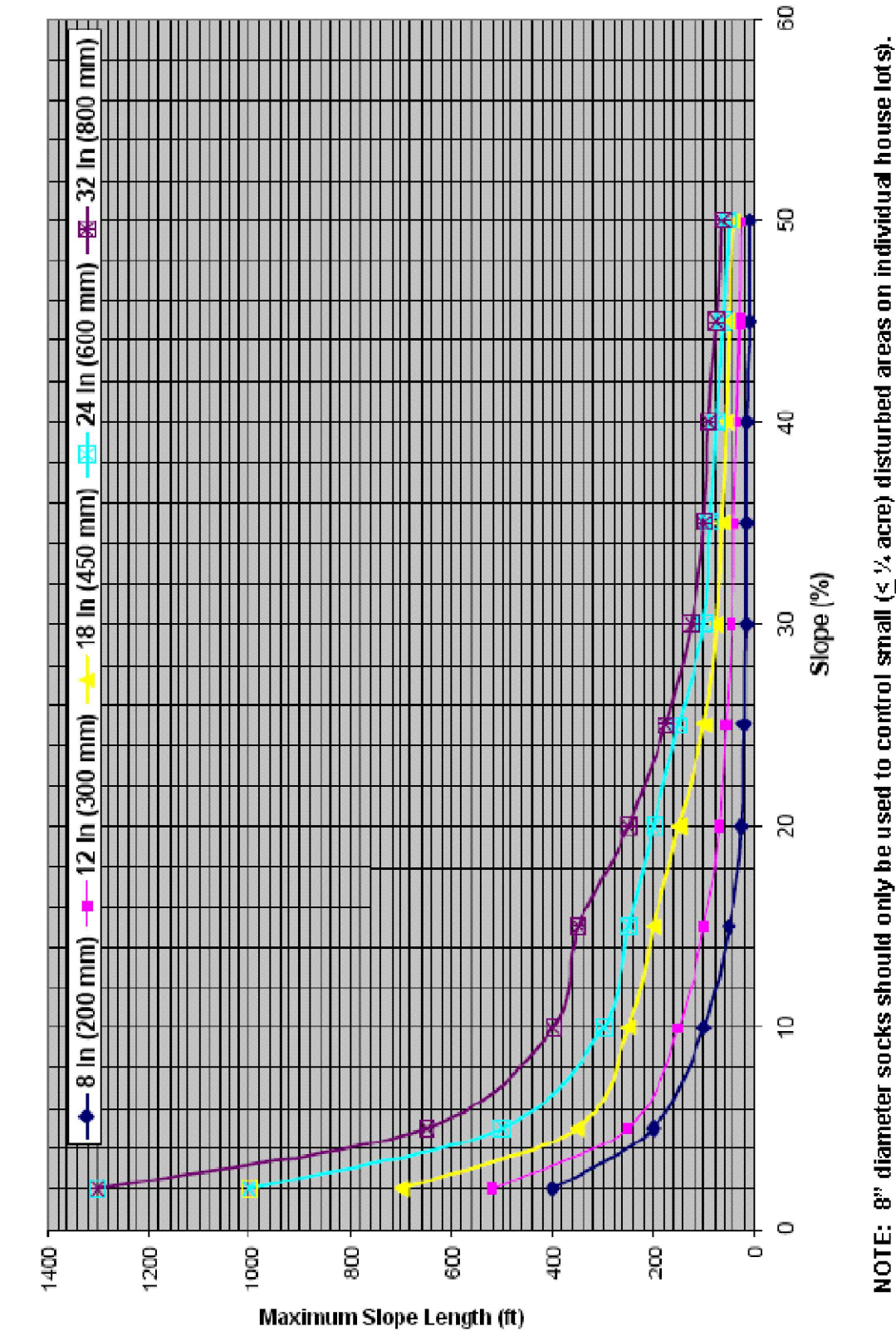
N.T.S.



ALARIC J. BUSHER REG. NO. PE 60320

REVISIONS					
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK. APP.
0	08/26/2015	BL	ISSUED FOR PADEP PERMIT SUBMITTAL	W0161483	DAK AJB
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3	03/29/2016	BL	ISSUED FOR PADEP RESUBMITTAL	W0161483	AJB AJB
4	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0161483	AJB AJB
5	Apr. 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0161483	AJB AJB

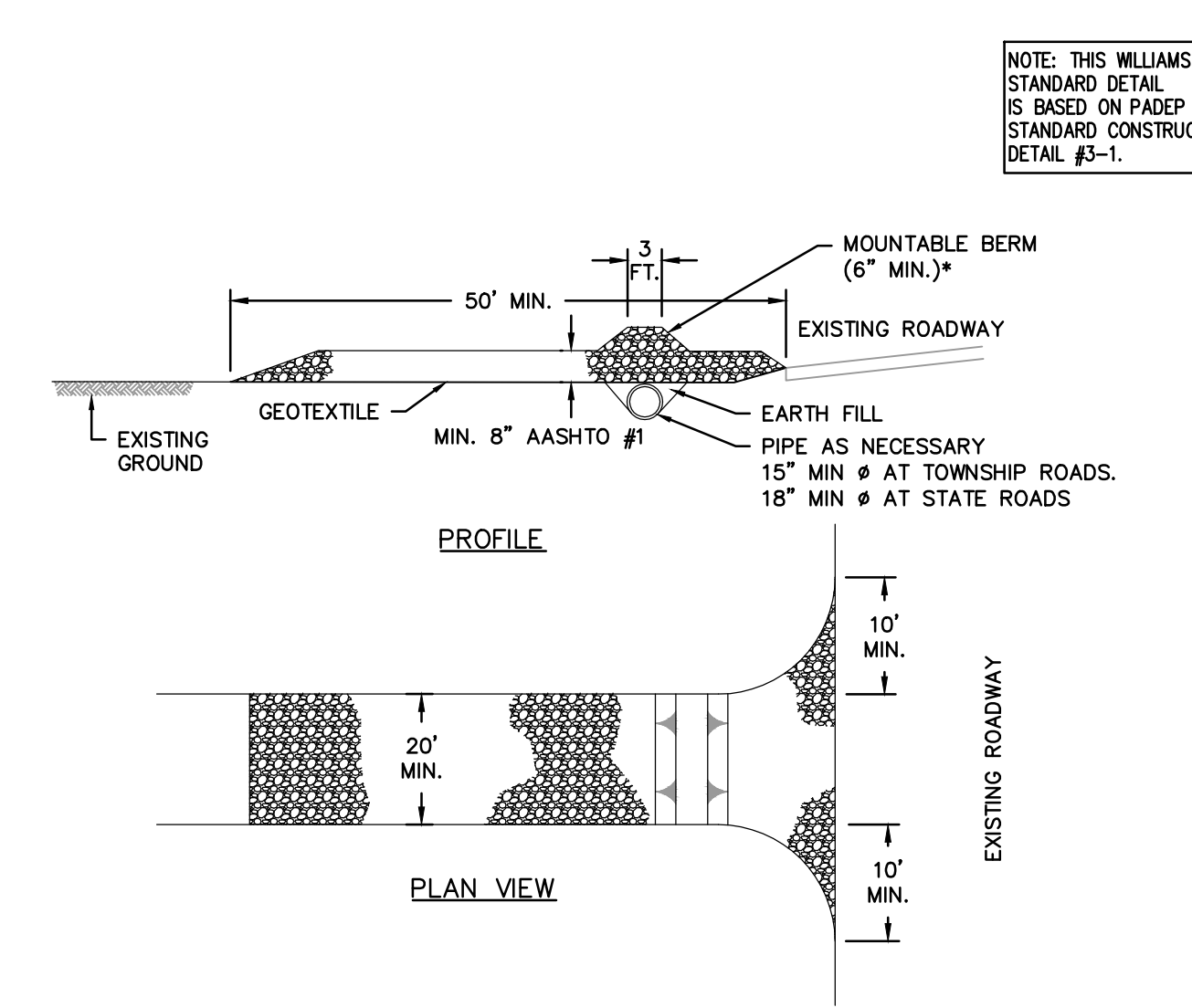
FIGURE 4.2 MAXIMUM PERMISSIBLE SLOPE LENGTH ABOVE COMPOST FILTER SOCKS



Adapted from Filtrix

## COMPOST FILTER SOCK

N.T.S. 3 OF 3

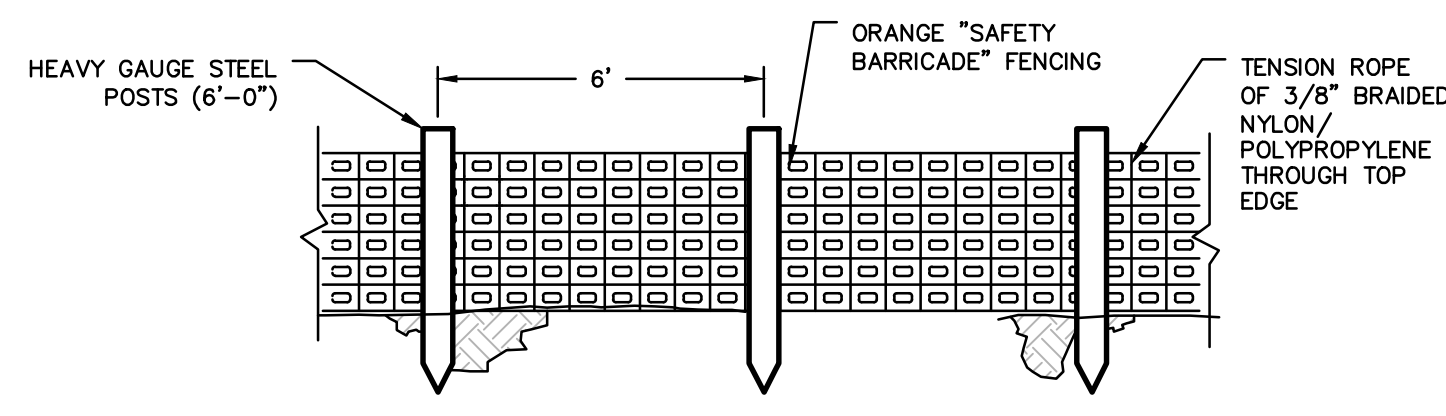


### NOTES:

- REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
- RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
- MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.
- MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.
- RCE WITH WASH RACK, SEE DETAIL ROW, TO BE INSTALLED IN, OR WITHIN 100 FEET OF, SPECIAL PROTECTION WATERSHEDS AS WELL AS WITHIN 50 FEET OF WETLANDS.
- WITHIN WETLANDS RCE AND/OR RCE WITH WASHRACK SHALL BE REPLACED WITH TIMBER MAT AND CLASS 1 GEOTEXTILE UNDERLAYMENT.

## ROCK CONSTRUCTION ENTRANCE

N.T.S.



## CONSTRUCTION FENCE

N.T.S.

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC			
ATLANTIC SUNRISE PROJECT- PROPOSED 30" NATURAL GAS PIPELINE			
SOIL EROSION & SEDIMENT CONTROL AND LAYOUT PLANS			
FOR ZICK METER STATION & ASSOCIATED PERMANENT ACCESS ROADS			
LENOX TOWNSHIP, SUSQUEHANNA COUNTY, PENNSYLVANIA			
SOIL EROSION & SEDIMENT CONTROL DETAILS			
DRAWN BY:	JEC	DATE:	04/03/15
CHECKED BY:	AJB	DATE:	04/03/15
APPROVED BY:	AJB	DATE:	07/17/15
W.O.:	1161483	SCALE:	AS NOTED
REVISION:	5	DRAWING NUMBER:	(30-3680)MF-1A-11
SHEET:	11	OF:	11