

Lancaster County

**Lebanon County Conservation District
Concurrence coordination still ongoing.**



PITT-09-21-057

September 30, 2021

Mr. Eric Hout
Lancaster County Conservation District
1383 Arcadia Road
Room 200
Lancaster, Pennsylvania 17601-3149

Re: Sunoco Pipeline LP – Pennsylvania Pipeline Project (Mariner East II)
Chapter 102 Permit No. ESG0300015002
South Central DEP Region Permit Renewal effort; Lancaster County, PA

Dear Mr. Hout,

The Sunoco Pipeline, LP (SPLP) Mariner East 2 (a.k.a. PPP) project Chapter 102 permit (Permit No. ESG0300015002) expires on February 12, 2022. On August 3, SPLP requested renewal submission extension to October 29, 2021 to align with the end of the growing season. As you are aware, significant portions of the Project have been completed and are permanently stabilized. As such, we have been in coordination with the Regional Permit Coordination Office (“RPCO”), as well as each of the regional offices of PA Department of Environmental Protection (“DEP”) to determine a path forward for Permit Renewal and the submission of Partial Notice of Termination (“NOT”). The DEP and SPLP agreed that the identification of areas meeting restoration requirements and those not meeting the requirement as an initial step in having a common understanding of what areas the renewal will cover and those where the partial NOT request can be initiated. In order to clearly identify those areas, it was proposed that the E&S plans be marked up to indicate the areas where SPLP is requesting the permit coverage to be renewed and which areas meet the restoration requirements. The request for permit renewal request will be processed by RPCO but also requires involvement and assistance of the counties within each region.

As the initial step in the renewal process please find attached the E&S/SR Permit Renewal drawing set that delineate the areas that meet the restoration requirement (e.g., 70% vegetated, BMPs removed) and those that do not meet the requirement. In Lancaster County all erosion control devices (EDCs) have been removed along the linear portion of the project. The areas that have met the requirements for successful restoration are delineated with black Limit of Disturbance (LOD) lines.

At this time, we kindly request that you review the information enclosed to confirm whether the Conservation District concurs with the areas SPLP feels have met the restoration requirement for the areas identified. We request that you provide an acknowledgement in writing to the DEP South Central Regional Office and SPLP. We would like to receive your concurrence by October 15th in order to submit the renewal applications by October 29, 2021.

Tetra Tech, Inc.

661 Andersen Drive, Suite 200, Pittsburgh, PA 15220
Tel +1.412.921.7090 Fax +1.412.921.4040 | tetrattech.com

Mr. Eric Hout
Lancaster County Conservation District
September 30, 2021

Similarly, we will be working on a separate submission to DEP for a Partial NOT to formally request the termination of the permit for those specific areas [or counties] which meet the restoration requirements (LOD delineated with black lines in the E&S/SR Renewal Drawing Set). Under the same process agreed to with the DEP, we are requesting a final inspection/verification for the areas identified as meeting the NOT requirements. The Regional Offices will be processing the Partial NOT for the three Chapter 102 permits and therefore your review and concurrence would become a part of the Partial NOT application.

If you require any additional information or have any questions, please let us know at your earliest convenience. If you need any assistance with scheduling any inspections, please contact Lauren Carter the Lead EI for this area at (562) 992-4512 or via email at lauren.carter2@tetrattech.com.

Thank you for your continued support with ensuring successful restoration of the project's work areas.

Should you have questions regarding this correspondence, please do not hesitate to contact me at (412) 921-8163 or via e-mail at Robert.Simcik@tetrattech.com.

Sincerely,



Robert F. Simcik, P.E.
Project Manager
Tetra Tech, Inc.

Enclosures: 1 original

cc: File 212IC-BF-00037
D. Rocco, Regional Permit Coordination Office PA DEP
S. Williamson, South Central Region PA DEP
N. Bryan, Energy Transfer
M. Styles, Energy Transfer
C. Embry, Energy Transfer
B. Schaeffer, Tetra Tech
E. Cruz, Tetra Tech
L. Carter, Tetra Tech

Lancaster County
Permit Renewal Tracking Table
Page 1 of 2

MEII PPP5 - Lancaster COUNTY Tract Number	Beg. Station	End Station	Total Distance (ft)	E&S Plan Sheet	LOD Perennial Vegetation greater than 70% uniform coverage? (Yes, No, or Not Disturbed)	All ECDs Removed? (Yes, No, or NA)	Renewal Area? (Yes or NO)	Partial NOT Area? (Yes or No)	Comments
PA-LA-0001.0000	12860+97	12866+71	574	ES-1.01	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0002.0000	12866+71	12872+10	539	ES-1.01, ES-1.02	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0002.0001	12872+10	12897+19	2,509	ES-1.02, ES-1.03	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0002.0002	12897+19	12905+47	828	ES-1.03, ES-1.04	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0004.0000	12905+47	12927+76	2,229	ES-1.04, ES-1.05	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0004.0001	12927+76	12934+87	711	ES-1.05, ES-1.06	Yes	Yes	No	Yes	Area stablized all ECDs removed
Road bore	12934+87	12935+20	33	ES-1.06	Not Disturbed	N/A	No	Yes	Road bore
PA-LA-0004.0001	12935+20	12936+13	93	ES-1.06	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0004.0003	12936+13	12968+51	3,238	ES-1.06 - ES-1.08	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0008.0000	12968+51	12986+49	1,798	ES-1.08, ES-1.09	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0008.0001	12986+49	12987+07	58	ES-1.09	Yes	Yes	No	Yes	Area stablized all ECDs removed
Road bore	12987+07	12987+32	25	ES-1.09	Not Disturbed	N/A	No	Yes	Road bore
PA-LA-0008.0004	12987+32	12988+89	157	ES-1.09	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0010.0002	12988+89	12991+58	269	ES-1.09	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0010.0003	12991+58	12997+34	576	ES-1.09, ES-1.10	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0011.0000	12997+34	13003+66	632	ES-1.10	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0012.0000	13003+66	13008+93	527	ES-1.10	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0013.0000	13008+93	13022+97	1,404	ES-1.11	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0014.0000	13022+97	13049+15	2,618	ES-1.11 - ES-1.13	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0015.0000	13049+15	13056+67	752	ES-1.13, ES-1.14	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0016.0000	13056+69	13062+44	575	ES-1.14	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0017.0000	13062+44	13070+81	837	ES-1.14, ES-1.15	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0019.0000	13070+81	13075+20	439	ES-1.15	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0020.0000	13075+20	13081+13	593	ES-1.15	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0021.0000	13081+13	13082+54	141	ES-1.15	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0022.0000	13082+54	13087+64	510	ES-1.15, ES-1.16	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0022.0001	13087+64	13088+22	58	ES-1.16	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0023.0000	13087+95	13090+30	235	ES-1.16	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0024.0000	13090+95	13096+44	549	ES-1.16	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0025.0000	13096+44	13103+89	745	ES-1.16, ES-1.17	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0026.0000	13103+89	13106+31	242	ES-1.17	Yes	Yes	No	Yes	Area stablized all ECDs removed
Road bore	13106+31	13106+65	34	ES-1.17	Not Disturbed	N/A	No	Yes	Road bore
PA-LA-0027.0000	13106+65	13108+32	167	ES-1.17	Yes	Yes	No	Yes	Area stablized all ECDs removed
Road bore	13108+32	13108+62	30	ES-1.17	Not Disturbed	N/A	No	Yes	Road bore
PA-LA-0028.0000	13108+62	13110+85	223	ES-1.17	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0029.0000	13110+85	13117+10	625	ES-1.17, ES-1.18	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0029.0001	13117+10	13124+06	696	ES-1.18	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0030.0000	13124+30	13127+15	285	ES-1.18	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0031.0000	13127+15	13128+54	139	ES-1.18	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0032.0000	13128+54	13131+00	246	ES-1.18	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0033.0000	13131+00	13131+86	86	ES-1.18	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0034.0000	13131+63	13133+98	235	ES-1.18, ES-1.19	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0035.0000	13134+21	13139+38	517	ES-1.19	Yes	Yes	No	Yes	Area stablized all ECDs removed

Lancaster County
Permit Renewal Tracking Table
Page 2 of 2

MEII PPP5 - Lancaster COUNTY Tract Number	Beg. Station	End Station	Total Distance (ft)	E&S Plan Sheet	LOD Perennial Vegetation greater than 70% uniform coverage? (Yes, No, or Not Disturbed)	All ECDs Removed? (Yes, No, or NA)	Renewal Area? (Yes or NO)	Partial NOT Area? (Yes or No)	Comments
PA-LA-0034.0000	13139+15	13153+95	1,480	ES-1.19, ES-1.20	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0036.0000	13154+18	13158+56	438	ES-1.20	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0037.0000	13158+56	13181+43	2,287	ES-1.20 - ES-1.22	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0038.0000	13181+43	13187+35	592	ES-1.22	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0039.0000	13187+35	13194+56	721	ES-1.22, ES-1.23	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0040.0000	13194+56	13199+53	497	ES-1.23	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0041.0000	13199+53	13212+88	1,335	ES-1.23, ES-1.24	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0042.0000	13212+88	13216+38	350	ES-1.24	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0043.0000	13216+38	13219+30	292	ES-1.24	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0042.0000	13219+30	13220+00	70	ES-1.24	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0044.0000	13220+00	13222+90	290	ES-1.24	Yes	Yes	No	Yes	Area stablized all ECDs removed
PA-LA-0045.0000	13222+90	13231+81	891	ES-1.24, ES-1.25	Yes	Yes	No	Yes	Area stablized all ECDs removed
Road bore	13231+81	13232+22	41	ES-1.25	Not Disturbed	N/A	NO	Yes	Road bore

SUMMARY	Feet	Miles	Percentage
Renewal Areas	0	0.00	0%
Partial NOT Areas	37,061	7.02	100%
Total Footage	37,061	7.02	

PENNSYLVANIA PIPELINE PROJECT CONSTRUCTION SPREAD 5

LANCASTER COUNTY CONSERVATION DISTRICT EROSION & SEDIMENT CONTROL & SITE RESTORATION PLAN

SEPTEMBER 2021
PERMIT RENEWAL

DRAWING INDEX	
SHEET No.	DRAWING TITLE
ES-0.01 TO ES-0.23	EROSION & SEDIMENT CONTROL & SITE RESTORATION PLAN NOTES AND DETAILS
E-0.24	KEY PLAN
ES-1.01 TO ES-1.25	EROSION & SEDIMENT CONTROL & SITE RESTORATION PLANS

NOTE: ALL EROSION CONTROL DEVICES HAVE BEEN REMOVED ALONG LINEAR PORTION OF PROJECT IN LANCASTER COUNTY AS OF AUGUST 2021. BLAINSPORT STATION WITH LIMITS OF DISTURBANCE OF 1.85 HAS CFS REMAINING.

PREPARED BY:



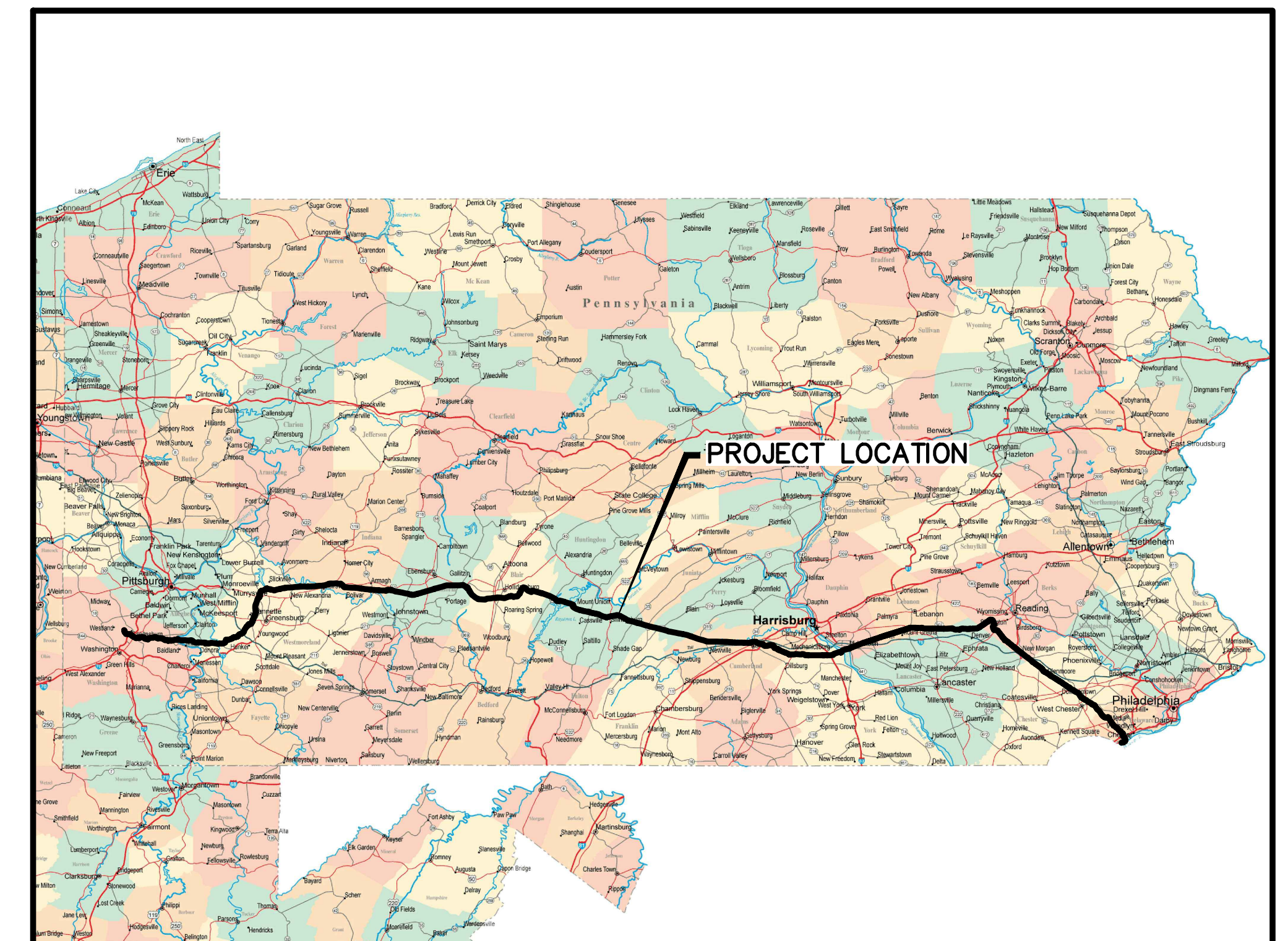
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PREPARED FOR:



SUNOCO PIPELINE LP
SINKING SPRING, PENNSYLVANIA

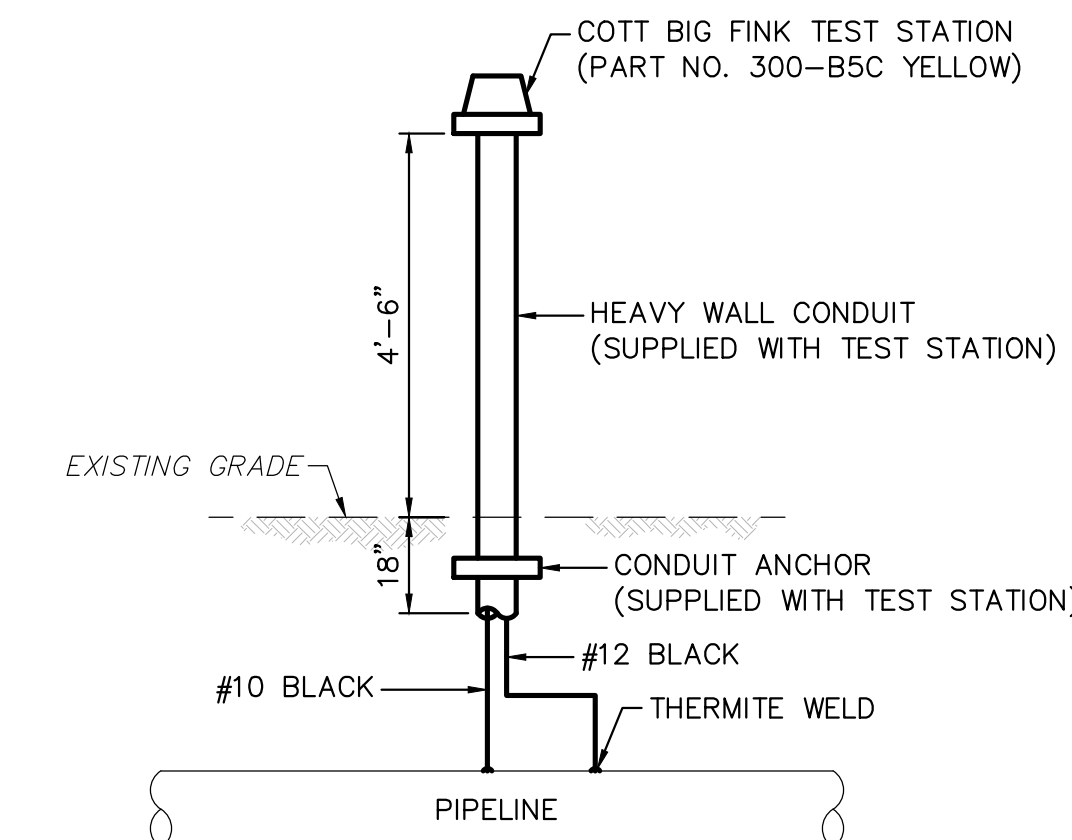


LOCATION MAP
PENNSYLVANIA PIPELINE PROJECT
HOUSTON, PENNSYLVANIA TO MARCUS HOOK, PENNSYLVANIA

STREAM & WETLAND CROSSING TABLE

Stream ID	Stream Name	Coordinates	Flow Regime	Bank to Bank Width (feet)	Crossing Method	PAFBC Stream Designation	Siltation Impaired	E&S Sheet Number
S-A76	UNT to Cocalico Creek	-76.1626, 40.2831	Intermittent	4	Dry Crossing/Temporary Bridge	Drains to ATW n/a	No	ES - 1.14
S-A77	UNT to Cocalico Creek	-76.1674, 40.2843	Intermittent	2	HDD	Drains to ATW n/a	No	ES - 1.13
S-A78	UNT to Cocalico Creek	-76.1698, 40.2834	Intermittent	3	HDD	Drains to ATW n/a	No	ES - 1.12
S-A79	UNT to Cocalico Creek	-76.1702, 40.2835	Intermittent	1	HDD	Drains to ATW n/a	No	ES - 1.12
S-A80	UNT to Cocalico Creek	-76.1743, 40.2837	Ephemeral	2	HDD Floodway	Drains to ATW n/a	No	ES - 1.11, 1.12
S-A81	UNT to Cocalico Creek	-76.1745, 40.2837	Ephemeral	2	HDD Floodway	Drains to ATW n/a	No	ES - 1.11
S-A82	UNT to Cocalico Creek	-76.1761, 40.2842	Intermittent	3	HDD Open Cut Floodway	Drains to ATW n/a	No	ES - 1.11
S-A83	UNT to Cocalico Creek	-76.1762, 40.2839	Ephemeral	2	Open Cut Floodway/HDD	Drains to ATW n/a	No	ES - 1.11
S-A85	UNT to Cocalico Creek	-76.1834, 40.2839	Intermittent	5	Dry Crossing	Drains to ATW n/a	No	ES - 1.10
S-A87	UNT to Cocalico Creek	-76.1575, 40.2832	Perennial	6	Dry Crossing/Bore/Temporary Bridge	Drains to ATW n/a	No	ES - 1.15
S-A88	UNT to Cocalico Creek	-76.1576, 40.2829	Ephemeral	2	Open Cut Floodway/Bore Floodway/Travel Lane	Drains to ATW n/a	No	ES - 1.15
S-B1	UNT to Cocalico Creek	40.2837, -76.1904	Perennial	4	Floodway Crossing	n/a	No	ES - 1.16
S-B8	UNT to Cocalico Creek	-76.1415, 40.2828	Intermittent	3	Dry Crossing	Drains to ATW n/a	No	ES - 1.17
S-B10	UNT to Little Cocalico Creek	-76.1265, 40.2837	Ephemeral	1	Open Cut Floodway/Floodway Only	Drains to STS, ATW	No	ES - 1.20
S-B11	UNT to Little Cocalico Creek	-76.1258, 40.2833	Perennial	5	Dry Crossing	Drains to STS, ATW	No	ES - 1.20
S-B12	UNT to Little Cocalico Creek	-76.1234, 40.2833	Intermittent	8	Dry Crossing	Drains to STS, ATW	No	ES - 1.21
S-B13	UNT to Little Cocalico Creek	-76.1175, 40.2833	Intermittent	3	Open Cut Floodway/Floodway Only	Drains to STS, ATW	No	ES - 1.22
S-B82	Harnish Run	-76.1516, 40.2829	Perennial	11	Dry Crossing/Bore/Temporary Bridge	n/a	No	ES - 1.16
S-B83	UNT to Harnish Run	-76.1472, 40.2827	Intermittent	5	Dry Crossing	n/a	No	ES - 1.16, 1.17
S-J59	UNT to Cocalico Creek	-76.1947, 40.2797	Perennial	10	Bore/Travel Lane	Drains to ATW n/a	No	ES - 1.07, 1.08
S-K34	UNT to Cocalico Creek	-76.2092, 40.2802	Perennial	9	HDD	Drains to ATW n/a	No	ES - 1.05
S-K35	Cocalico Creek	-76.2098, 40.2803	Perennial	12	HDD	Drains to ATW n/a	No	ES - 1.05
					21 Streams			

Wetland ID	USFWS Cowardin Classification	Coordinates	Crossing Method	Exceptional Value	E&S Sheet Number
W8c	PEM	-76.1815, 40.2842	Open Cut	n/a	ES - 1.10
A52	PEM	-76.1618, 40.2834	Open Cut/Temporary Matting	Bog Turtle Adj	ES - 1.14
A54	PEM	-76.1680, 40.2838	HDD	Bog Turtle A/O	ES - 1.12, 1.13
A55	PEM	-76.1702, 40.2838	HDD	Bog Turtle A/O	ES - 1.12, 1.13
A56	PEM	-76.1756, 40.2842	HDD	Bog Turtle A/O	ES - 1.11, 1.12
B5	PEM	-76.1581, 40.2826	Open Cut	Bog Turtle Adj	ES - 1.14, 1.15
B6	PEM	-76.1408, 40.2839	Open Cut	n/a	ES - 1.17, 1.18
B7	PEM	-76.126, 40.2833	Open Cut	n/a	ES - 1.20
B10	PEM	-76.1173, 40.2835	Open Cut	n/a	ES - 1.22
B11	PEM	-76.1111, 40.2838	Open Cut	n/a	ES - 1.23
B72	PEM	-76.1526, 40.2819	Open Cut	n/a	ES - 1.15, 1.16
B74	PEM	-76.1468, 40.2828	Open Cut	n/a	ES - 1.16, 1.17
H28	PEM	-76.1832, 40.2836	Open Cut	n/a	ES - 1.10
J54	PFO	-76.1949, 40.2793	HDD	n/a	ES - 1.07
K32	PEM	-76.2080, 40.2805	HDD	Bog Turtle Adj	ES - 1.05
14 Wetlands					

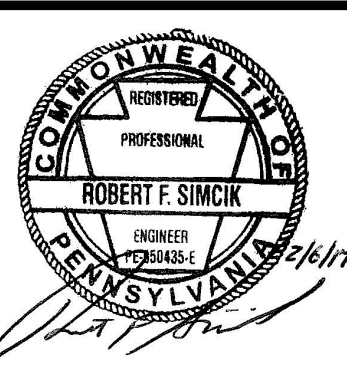


- NOTES:**
- TEST WIRES SHALL BE STRANDED COPPER WITH THW OR MTW INSULATION.
 - TEST WIRES SHALL BE OF THE GAUGE INDICATED AND PROVIDED WITH WIRE LABELS (WITHIN TEST STATION) TO IDENTIFY THE PIPELINE ATTACHMENT LOCATION. THE NO. 1 TEST WIRE SHALL BE ATTACHED TO THE PIPELINE AT THE LOWER STATION NO. WITH THE ADDITIONAL TEST WIRE ATTACHED AT THE SPACING INDICATED AND IN ORDER OF ADVANCING STATION NOS.
 - TEST WIRES ARE TO BE CONNECTED USING THE THERMITE WELD PROCESS.
 - COAT THERMITE WELD CONNECTION & ALL BELOW GRADE EXPOSED COPPER AS SPECIFIED FOR EXISTING PIPELINE COATING OR AS SPECIFIED FOR BARE PIPE.
 - INSTALL TEST WIRES WITHIN PIPE TRENCH AT THE FIVE OR SEVEN O'CLOCK POSITION OF THE PIPE. TEST WIRES SHALL NOT BE IN IMMEDIATE CONTACT WITH THE PIPE.
 - BACK-FILL AROUND WIRES MUST BE FREE OF SHARP MATERIALS WHICH COULD DAMAGE THE TEST WIRE INSULATION.

TYPICAL CATHODIC PROTECTION TEST STATION
NOT TO SCALE

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REVISIONS			
NO.	BY	DATE	REMARKS
1	RS	3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS
2	RS	5/25/17	DRAWINGS PROVIDED TO FIELD
3	RS	4/5/18	UPDATED STREAM AND WETLAND CROSSING TABLE
4	RS	6/17/21	RESTORED AREA UPDATES FOR PERMIT RENEWAL



SUNOCO PIPELINE LP
PHILADELPHIA, PENNSYLVANIA
**PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5**

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES
PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

DATE:	2/6/17
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS
COPYRIGHT:	TETRA TECH INC.
ES-0.02	
SHEET 0.02 OF 49	

AVOIDANCE MEASURES TABLE

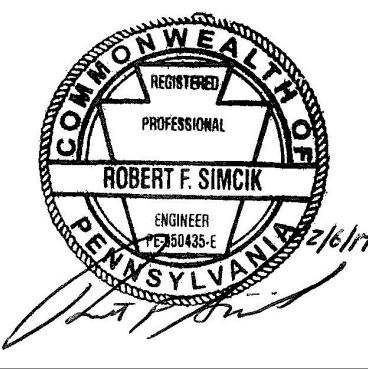
Species or Area	Agency	County/AOC/ Survey Area	Population	Pre-Construction, Construction and Restoration, Post- Construction Activity	Clearance Letter	Conservation Plan
Bog turtle	USFWS	Lancaster	NA	Construction	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	Lancaster	NA	Pre-Construction	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	Lancaster	NA	Pre-Construction	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	Lancaster and Berks	NA	Construction	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	Lancaster and Berks	NA	Construction	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	Lancaster and Berks	NA	Construction	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	Lancaster and Berks	NA	Construction	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	Lancaster and Berks	NA	Construction	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	Lancaster and Berks	NA	Post-Construction	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	Lancaster and Berks	NA	Post-Construction	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	Lancaster	NA	Post-Construction	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	Lancaster	NA	Pre-construction	10/31/16	Bog Turtle Conservation Plan (April 2016)

Species or Area	Agency	County/AOC/ Survey Area	Population	Pre-Construction, Construction and Restoration, Post- Construction Activity	Clearance Letter	Conservation Plan
Bog turtle	USFWS	Lancaster	NA	Pre-Construction	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	Lancaster	NA	Pre-Construction	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	Lancaster	NA	Pre-Construction	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	Lancaster	NA	Pre-Construction	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	Lancaster	NA	Pre-Construction	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	Lancaster	NA	Pre-Construction	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	Lancaster	NA	Construction, Restoration, Monitoring	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	Lancaster	NA	Construction, Restoration, Monitoring	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	Lancaster	NA	Construction, Restoration, Monitoring	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	Lancaster	NA	Construction, Restoration, Monitoring	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	Lancaster	NA	Construction, Restoration, Monitoring	10/31/16	Bog Turtle Conservation Plan (April 2016)
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661 ANDERSEN DRIVE - FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

REVISIONS			REMARKS
NO.	BY	DATE	
1	RS	3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS
2	RS	5/25/17	DRAWINGS PROVIDED TO FIELD
3	RS	6/17/21	RESTORED AREA UPDATES FOR PERMIT RENEWAL



SUNOCO PIPELINE LP
PHILADELPHIA, PENNSYLVANIA
**PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5**

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES
PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

DATE:	2/6/17
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS
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ES-0.03	
SHEET 0.03 OF 49	

TEMPORARY EROSION AND SEDIMENT CONTROLS INSPECTION AND MAINTENANCE SCHEDULE

Table with 3 columns: BMP, INSPECTION FREQUENCY, MAINTENANCE TO BE PERFORMED. Rows include Compost Filter Sock, Rock Construction Entrance, Mulch Stabilization, Timber Mat, Waterbars, and Pumped Water Filter Bags.

STANDARD EROSION AND SEDIMENT CONTROL PLAN NOTES (CONTINUED):

- 14. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPs SHALL BE MAINTAINED PROPERLY... 15. NO SOIL AMENDMENTS SUCH AS AGRICULTURAL LIME, FERTILIZER, ETC. WILL BE USED WITHIN WETLAND AREAS... 16. A LOG SHOWING DATES THAT E&S BMPs WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE...

STANDARD EROSION AND SEDIMENT CONTROL PLAN NOTES:

- 1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING, CUTS, FILLS, TRENCHING, AND TEMPORARY ROAD CONSTRUCTION OR IMPROVEMENT, SHALL BE DONE IN ACCORDANCE WITH AN APPROVED E&S PLAN... 2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING... 3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED...

- 31. THE TIME PERIOD BETWEEN THE TRENCH EXCAVATION TO THE BEGINNING OF DISTURBED AREA STABILIZATION FOR THE MAIN LINE PIPELINE INSTALLATION SHALL NOT EXCEED THIRTY (30) CALENDAR DAYS... 32. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS... 33. FAILURE TO CORRECTLY INSTALL E&S BMPs, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE...

CONSTRUCTION SEQUENCE:

REFER TO THE E&S PLAN DRAWINGS FOR THE LOCATION OF THE PROPOSED WORK AND THE ASSOCIATED BMPs. A GENERALIZED CONSTRUCTION SEQUENCE IS PROVIDED BELOW. THE CONSTRUCTION SEQUENCE IS INTENDED TO PROVIDE A GENERAL COURSE OF ACTION IN ORDER TO CONFORM TO THE APPLICABLE REGULATORY REQUIREMENTS...

- 3. ORANGE CONSTRUCTION FENCE WILL BE PROVIDED AND INSTALLED AT WETLAND AREAS ADJACENT TO THE LOD AND NOT PLANNED TO BE IMPACTED TO IDENTIFY AND DETER CONSTRUCTION EQUIPMENT, VEHICLES AND PERSONNEL FROM ENTERING WETLAND... 4. LOCATE STAGING AREAS AND ACCESS POINTS INCLUDING CONSTRUCTION ENTRANCES... 5. INSTALL ROCK CONSTRUCTION ENTRANCES AS NEEDED... 6. CONSTRUCT THE PROPOSED ACCESS ROADS AND IMPLEMENT TEMPORARY IMPROVEMENTS AS IDENTIFIED IN ACCESS ROAD SUMMARY TABLE AND DETAILED ON THE PLAN SHEETS...

FOR STREAM, RIVER, WETLANDS OR OTHER WATER BODY UTILITY CROSSINGS THAT WILL BE OPEN CUT:

- 1. NO WORK SHALL COMMENCE THROUGH A STREAM, RIVER, WETLANDS OR OTHER WATER BODY DURING INCLEMENT WEATHER... 2. A UTILITY LINE CROSSING OF A STREAM CHANNEL 10 FEET IN BOTTOM WIDTH OR LESS SHALL BE COMPLETED WITHIN 24 HOURS FROM START TO FINISH INCLUDING TRENCH BACKFILL, STABILIZATION OF STREAM BANKS AND STABILIZATION OF THE AREA 50 FEET BACK FROM THE TOP OF EACH STREAM BANK...

FOR CONVENTIONAL AND HDD BORE CROSSINGS:

- CONVENTIONAL BORES 1. CONVENTIONAL BORES WILL BE CONDUCTED ALONG WITH MAIN LINE INSTALLATION TO LIMIT THE TIME OF DISTURBANCE IN THOSE AREAS... 2. INSTALL COMPOST FILTER SOCKS DOWNGRADIANT OF THE BORE AND RECEIVING PITS... 3. EXCAVATE PITS AS SHOWN IN THE TYPICAL STREAM CROSSING DETAIL ON PLAN SHEET ES-017... 4. BORE BENEATH STREAMS WHERE INDICATED ON THE CONSTRUCTION DRAWINGS...

FOR WORKING WITHIN A WETLAND AREA:

- 1. LOCATE STAGING AREAS AND ACCESS POINTS. STAGING AREAS SHOULD BE LOCATED AT LEAST 50 FEET FROM THE EDGE OF THE WETLAND... 2. INSTALL ROCK CONSTRUCTION ENTRANCE AS NEEDED... 3. INSTALL ORANGE FENCING AROUND PERIMETER OF WETLAND AND SEDIMENT BARRIERS ALONG THE PERIMETERS OF THE SITE AS SHOWN ON THE CONSTRUCTION DRAWINGS... 4. MATS, PADS, OR SIMILAR DEVICES SHALL BE USED DURING THE CROSSINGS OF WETLANDS...

FOR TEMPORARY EQUIPMENT STREAM AND WETLAND CROSSINGS:

- 1. INSTALL TEMPORARY EQUIPMENT CROSSINGS AND TEMPORARY TIMBER MAT WETLAND CROSSINGS IN ACCORDANCE WITH PLAN SHEETS ES-018... 2. TEMPORARY STREAM CROSSINGS SHALL BE INSPECTED ON A DAILY BASIS... 3. AS SOON AS THE TEMPORARY CROSSING IS NO LONGER NEEDED, REMOVE TEMPORARY CROSSING. ALL MATERIALS SHALL BE DISPOSED OF PROPERLY AND DISTURBED AREAS STABILIZED...

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Table with 4 columns: NO., BY, DATE, REMARKS. Contains revision history for drawings and field updates.

SUNOCO PIPELINE LP PHILADELPHIA, PENNSYLVANIA PENNSYLVANIA PIPELINE PROJECT CONSTRUCTION SPREAD 5

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES PERMIT RENEWAL LANCASTER COUNTY CONSERVATION DISTRICT EROSION & SEDIMENT CONTROL & SITE RESTORATION PLAN NOTES & DETAILS

Table with 2 columns: FIELD, DATE. Contains project metadata like PROJECT NO., DESIGNED BY, DRAWN BY, CHECKED BY, COPYRIGHT, SHEET 0.04 OF 49.

E&S PERMIT PART C, OTHER REQUIREMENTS

I. PROHIBITED DISCHARGES

- A. ALL DISCHARGES COVERED BY THIS PERMIT SHALL BE COMPOSED ENTIRELY OF STORMWATER. DISCHARGES OF SUBSTANCES OTHER THAN STORMWATER MUST BE IN COMPLIANCE, WHEN REQUIRED, WITH AN NPDES PERMIT (OTHER THAN THIS PERMIT) ISSUED FOR THE DISCHARGE. DISCHARGES OF SEWAGE OR INDUSTRIAL WASTE TO WATERS OF THE COMMONWEALTH OR A BMP IS NOT PERMITTED.
- B. THE PERMITTEE OR CO-PERMITTEE(S) MAY NOT DISCHARGE FLOATING MATERIALS, OIL, GREASE, SCUM, FOAM, SHEEN, AND SUBSTANCES WHICH: PRODUCE ODOR, TASTE, OR TURBIDITY OR SETTLE TO FORM DEPOSITS IN CONCENTRATIONS OR AMOUNTS SUFFICIENT TO BE, OR CREATE A DANGER OF BEING, INJINICAL TO THE WATER USES TO BE PROTECTED OR HUMAN, ANIMAL, PLANT, OR AQUATIC LIFE.

II. EROSION AND SEDIMENT CONTROL (E&S) PLANS

- A. THE PERMITTEE SHALL IMPLEMENT ITS APPROVED E&S PLAN, INCLUDING ALL BMPS CONTAINED THEREIN. THE E&S PLAN IS INCORPORATED INTO THIS PERMIT.
- B. E&S PLANS REQUIRED UNDER THIS PERMIT ARE CONSIDERED REPORTS THAT SHALL BE AVAILABLE TO THE PUBLIC UNDER SECTION 607 OF THE CLEAN STREAMS LAW (35 P.S. § 691.607). THE OWNER OR OPERATOR OF A FACILITY WITH STORMWATER DISCHARGES COVERED BY THIS PERMIT SHALL MAKE E&S PLANS AVAILABLE TO THE PUBLIC UPON REQUEST. E&S PLANS MUST BE MADE AVAILABLE AT THE SITE OF THE CONSTRUCTION ACTIVITY AT ALL TIMES.
- E. ALL MANUFACTURED BMPS, INCLUDING EROSION CONTROL MATTING AND WATER QUALITY DEVICES, SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- J. FOR ALL DISCHARGES FROM THE PROJECT SITE ASSOCIATED WITH EARTH DISTURBANCE ACTIVITIES, THE PERMITTEE SHALL IMPLEMENT, MAINTAIN, REPAIR AND IF NECESSARY REPLACE BMPS TO MINIMIZE THE POTENTIAL FOR ACCELERATED EROSION AND SEDIMENTATION AND TO PROTECT, MAINTAIN, RECLAIM AND RESTORE WATER QUALITY AND EXISTING AND DESIGNATED USES.

III. POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM) PLANS

- A. THE PERMITTEE SHALL IMPLEMENT ITS APPROVED PCSM PLAN, INCLUDING ALL BMPS CONTAINED THEREIN. THE PCSM PLAN IS INCORPORATED INTO THIS PERMIT.
- B. PCSM PLANS REQUIRED UNDER THIS PERMIT ARE CONSIDERED REPORTS THAT SHALL BE AVAILABLE TO THE PUBLIC UNDER SECTION 607 OF THE CLEAN STREAMS LAW (35 P.S. § 691.607). THE OWNER OR OPERATOR OF A FACILITY WITH STORMWATER DISCHARGES COVERED BY THIS PERMIT SHALL MAKE PCSM PLANS AVAILABLE TO THE PUBLIC UPON REQUEST. THE PCSM PLANS MUST BE MADE AVAILABLE AT THE SITE OF THE CONSTRUCTION ACTIVITY AT ALL TIMES.
- D. THE PCSM PLAN MUST BE CONSISTENT WITH THE ASSUMPTIONS AND REQUIREMENTS OF ANY AVAILABLE WLAS FOR THE DISCHARGES AS SET FORTH IN ANY APPLICABLE TMDLS ESTABLISHED FOR THE RECEIVING WATERS.
- E. THE PORTION OF A SITE RECLAMATION OR RESTORATION PLAN THAT IDENTIFIES PCSM BMPS TO MANAGE STORMWATER FROM PIPELINES OR OTHER SIMILAR UTILITY INFRASTRUCTURE MAY BE USED TO SATISFY THE PCSM REQUIREMENTS IF THE PCSM RECLAMATION, OR RESTORATION PLAN MEETS THE REQUIREMENTS OF 25 PA. CODE § 102.8(B), (C), (E), (F), (H), (I) AND (J), AND WHEN APPLICABLE, (M).
- F. ALL MANUFACTURED BMPS, INCLUDING EROSION CONTROL MATTING AND WATER QUALITY DEVICES, SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- H. UPON REDUCTION, LOSS, OR FAILURE OF ANY PCSM BMP, THE PERMITTEE SHALL IMMEDIATELY TAKE MEASURES TO PREVENT POLLUTION TO WATERS OF THE COMMONWEALTH AND ADVERSE IMPACTS TO THE ENVIRONMENT. THE PERMITTEE SHALL IMMEDIATELY SUBMIT TO DEP FOR REVIEW AND APPROVAL A CORRECTIVE ACTION PLAN (CAP) AND, IF NECESSARY, A PERMIT MODIFICATION, WHICH SHALL INCLUDE A SCHEDULE FOR THE REPAIR AND/OR REPLACEMENT OF THE PCSM BMP. UPON DEP'S APPROVAL OF THE CAP, THE PERMITTEE SHALL IMPLEMENT THE CAP.

IV. PREPAREDNESS, PREVENTION, AND CONTINGENCY (PPC) PLANS

- A. IF TOXIC, HAZARDOUS, OR OTHER POLLUTING MATERIALS WILL BE ON SITE, THE PERMITTEE OR CO-PERMITTEE(S) MUST IMPLEMENT A PPC PLAN FOR USE WHILE THOSE MATERIALS ARE ON-SITE IN ACCORDANCE WITH 25 PA. CODE § 91.34 (RELATING TO ACTIVITIES UTILIZING POLLUTANTS). THE PPC PLAN SHALL IDENTIFY AREAS WHICH MAY INCLUDE, BUT ARE NOT LIMITED TO, WASTE MANAGEMENT AREAS, RAW MATERIAL STORAGE AREAS, FUEL STORAGE AREAS, TEMPORARY AND PERMANENT SPOILS STORAGE AREAS, MAINTENANCE AREAS, AND ANY OTHER AREAS THAT MAY HAVE THE POTENTIAL TO CAUSE NONCOMPLIANCE WITH THE TERMS AND CONDITIONS OF THIS PERMIT DUE TO THE STORAGE, HANDLING, OR DISPOSAL OF ANY TOXIC OR HAZARDOUS SUBSTANCES SUCH AS OIL, GASOLINE, PESTICIDES, HERBICIDES, SOLVENTS, CONCRETE WASHWATERS, ETC. BMP5 SHALL BE DEVELOPED AND IMPLEMENTED FOR EACH IDENTIFIED AREA.
- B. THE PPC PLAN SHALL BE MAINTAINED ON-SITE AT ALL TIMES AND SHALL BE MADE AVAILABLE FOR REVIEW AT THE REQUEST OF DEP OR AN AUTHORIZED CONSERVATION DISTRICT.

VIII. PHASED PROJECTS

PRIOR TO THE COMMENCEMENT OF EARTH DISTURBANCE ACTIVITIES FOR SUBSEQUENT PHASES OF THE PROJECT, THE PERMITTEE OR CO-PERMITTEE SHALL SUBMIT AN E&S PLAN AND PCSM PLAN AND SUPPORTING INFORMATION FOR EACH ADDITIONAL PHASE OR PORTION OF THE PROJECT TO DEP OR AN AUTHORIZED CONSERVATION DISTRICT FOR APPROVAL. COVERAGE UNDER THIS PERMIT IS ONLY GRANTED FOR THOSE PHASES OR PORTIONS OF A PROJECT FOR WHICH AN E&S PLAN AND PCSM PLAN HAS BEEN SUBMITTED AND APPROVED BY DEP OR AN AUTHORIZED CONSERVATION DISTRICT.

IX. WETLAND PROTECTION

IF HYDRIC SOILS OR OTHER WETLAND FEATURES ARE PRESENT, A WETLAND DETERMINATION MUST BE CONDUCTED IN ACCORDANCE WITH DEP PROCEDURES. A COPY OF THE WETLAND DETERMINATION SHALL BE PROVIDED TO DEP OR AN AUTHORIZED CONSERVATION DISTRICT AS PART OF THE APPLICATION. ALL WETLANDS IDENTIFIED MUST BE INCLUDED ON THE E&S PLAN AND PCSM PLAN. SPECIAL PRECAUTIONS MUST BE TAKEN TO PROTECT WETLANDS AND OTHER WATER RESOURCES IDENTIFIED IN THE APPLICATION, PLANS, AND OTHER SUPPORTING DOCUMENTS.

X. INFILTRATION BMPS

- A. WHERE INFILTRATION AND/OR RESTORATION BMPS ARE BEING UTILIZED, THE PERMITTEE AND CO-PERMITTEE MUST ENSURE THAT SOIL COMPACTION IS AVOIDED OR MINIMIZED IN THOSE AREAS, IF THE AREAS PLANNED FOR INFILTRATION AND/OR RESTORATION BMPS ARE COMPROMISED THROUGH COMPACTION OR OTHER MEANS, MEASURES SHALL BE TAKEN TO ENSURE THAT PROPER SOIL DE-COMPACTION OCCURS. THE PERMITTEE SHALL IMPLEMENT SUCH MEASURES IN ACCORDANCE WITH THE GUIDANCE ON SOIL RESTORATION IN THE PA STORMWATER BMP MANUAL (BMP 6.7.3, CHAPTER 6, PAGE 221). ADDITIONAL SOIL TESTING MUST BE PERFORMED TO VERIFY THAT THE BMPS WILL PERFORM AS PLANNED.
- B. TO PROTECT THE EFFECTIVE INFILTRATION AREA(S) AT PCSM BMPS DURING CONSTRUCTION ACTIVITIES (INCLUDING EARTH DISTURBANCE AND CONVERSION OR INSTALLATION), THE INFILTRATION AREA(S) FOR A PCSM BMP SHALL BE PROTECTED BY ENTIRELY SURROUNDING THE INFILTRATION AREA WITH AN 18-INCH COMPOST FILTER SOCK. THIS IS ONLY NECESSARY IN THOSE AREAS WHERE SPECIFIC INFILTRATION BMPS ARE BEING UTILIZED. THE COMPOST FILTER SOCK SHALL REMAIN IN PLACE AND BE PROPERLY MAINTAINED UNTIL THE CONTRIBUTING DRAINAGE AREA HAS REACHED PERMANENT STABILIZATION (A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION) AND DEP OR AN AUTHORIZED CONSERVATION DISTRICT APPROVES THE REMOVAL OF THE COMPOST FILTER SOCK

XII. LONG-TERM OPERATION AND MAINTENANCE

- A. THE PERMITTEE OR CO-PERMITTEE SHALL BE RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPS UNLESS A DIFFERENT PERSON IS IDENTIFIED IN THE NOT AND THAT PERSON HAS AGREED TO LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPS.
- B. FOR ANY PROPERTY CONTAINING A PCSM BMP, THE PERMITTEE OR CO-PERMITTEE SHALL RECORD AN INSTRUMENT WITH THE RECORDER OF DEEDS WHICH WILL ASSURE DISCLOSURE OF THE PCSM BMP AND THE RELATED OBLIGATIONS IN THE ORDINARY COURSE OF A TITLE SEARCH OF THE SUBJECT PROPERTY. THE RECORDED INSTRUMENT MUST IDENTIFY THE PCSM BMP, PROVIDE FOR NECESSARY ACCESS RELATED TO LONG-TERM OPERATION AND MAINTENANCE FOR PCSM BMPS, AND PROVIDE NOTICE THAT THE RESPONSIBILITY FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS IS A COVENANT THAT RUNS WITH THE LAND THAT IS BINDING UPON AND ENFORCEABLE BY SUBSEQUENT GRANTEES, AND PROVIDE PROOF OF FILING WITH THE NOT UNDER 25 PA. CODE § 102.8(M)(2).
- C. FOR COMMONWEALTH OWNED PROPERTY, A COVENANT THAT RUNS WITH THE LAND IS NOT REQUIRED UNTIL THE TRANSFER OF THE LAND CONTAINING A PCSM BMP OCCURS. UPON TRANSFER OF THE COMMONWEALTH-OWNED PROPERTY CONTAINING THE PCSM BMP, THE DEED MUST COMPLY WITH 25 PA. CODE § 102.8(M)(3). AN AGENCY OF THE FEDERAL GOVERNMENT SHALL NOT BE REQUIRED TO MAKE OR RECORD A DECLARATION OF COVENANTS ON ITS PROPERTY UNTIL TRANSFER OF THE PROPERTY TO A NON-FEDERAL OR NON-COMMONWEALTH ENTITY OR INDIVIDUAL. UPON TRANSFER OF THE COMMONWEALTH OWNED OR FEDERALLY OWNED PROPERTY CONTAINING THE PCSM BMP, THE DEED MUST COMPLY WITH 25 PA. CODE § 102.8(M)(3).
- D. THE PERSON RESPONSIBLE FOR PERFORMING LONG-TERM OPERATION AND MAINTENANCE MAY ENTER INTO AN AGREEMENT WITH ANOTHER PERSON, INCLUDING A CONSERVATION DISTRICT, NONPROFIT ORGANIZATION, MUNICIPALITY, AUTHORITY, PRIVATE CORPORATION, OR OTHER PERSON, TO TRANSFER THE RESPONSIBILITY FOR PCSM BMPS OR TO PERFORM LONG-TERM OPERATION AND MAINTENANCE AND PROVIDE NOTICE THEREOF TO DEP.
- E. A PERMITTEE OR CO-PERMITTEE THAT FAILS TO TRANSFER LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS OR OTHERWISE FAILS TO COMPLY WITH THIS REQUIREMENT, SHALL REMAIN JOINTLY AND SEVERALLY RESPONSIBLE WITH THE LANDOWNER FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS LOCATED ON THE PROPERTY.
- F. UNLESS A LATER DATE IS APPROVED BY DEP IN WRITING, THE PERMITTEE SHALL RECORD AN INSTRUMENT AS REQUIRED UNDER 25 PA. CODE SUBSECTION 102.8(M)(2) AND PARAGRAPH XII.B WITHIN 45 DAYS FROM THE DATE OF ISSUANCE OF THIS PERMIT OR AUTHORIZATION. UNLESS DEP AUTHORIZES A DIFFERENT PROCEDURE, THE LONG-TERM OPERATION AND MAINTENANCE PLAN SHALL BE RECORDED ALONG WITH THE INSTRUMENT. UNLESS A LATER DATE IS APPROVED BY DEP IN WRITING, THE PERMITTEE SHALL PROVIDE THE CONSERVATION DISTRICT AND DEP WITH THE DATE AND PLACE OF RECORDING ALONG WITH A REFERENCE TO THE DOCKET, DEED BOOK OR OTHER RECORD, WITHIN 90 DAYS FROM THE DATE OF ISSUANCE OF THIS PERMIT OR AUTHORIZATION
- G. UNLESS AN ALTERNATIVE PROCESS IS APPROVED BY DEP IN WRITING, UPON THE SALE OR OTHER TRANSFER OF ANY PARCEL, LOT, ROAD OR OTHER REAL PROPERTY INCLUDED WITHIN THE PERMIT BOUNDARY, THE PERMITTEE SHALL NOTIFY THE PURCHASER, GRANTEE, OR TRANSFEREE OF THE LONG-TERM PCSM BMP OPERATION AND MAINTENANCE REQUIREMENTS. THE PERMITTEE SHALL EXPRESSLY IDENTIFY THE PCSM BMPS ON EACH PROPERTY, THE SCHEDULE FOR INSPECTION AND REPORTING, THE PERSON OR ENTITY RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS AND HOW ACCESS TO THE BMPS WILL BE ACHIEVED AND SHALL OBTAIN APPROVAL FROM THE PURCHASER, GRANTEE OR TRANSFEREE. UNLESS A LATER DATE IS APPROVED BY DEP IN WRITING, THE PERMITTEE SHALL PROVIDE THE CONSERVATION DISTRICT AND DEP WITH NOTICE OF COMPLIANCE WITH THIS SECTION WITHIN 45 DAYS FROM THE DATE OF TRANSFER OF THE PROPERTY AND AT THE TIME THE PERMITTEE FILES A NOTICE OF TERMINATION.

XIII. PRIOR CONTAMINATION

THE PERMITTEE SHALL IMPLEMENT THE FOLLOWING PROCEDURES AT ANY LOCATION OF THE PROJECT SITE WHERE IT KNOWS OR HAS REASON TO BELIEVE THAT SOILS ARE OR MAY BE CONTAMINATED DUE TO PAST LAND USES OR UPON RECEIPT OF WRITTEN NOTIFICATION FROM DEP:

- A. MINIMIZE DISTURBANCE -- LIMIT THE EXTENT AND DURATION OF EARTH DISTURBANCE ACTIVITIES, INCLUDING THE USE OF LESS INTRUSIVE EARTH DISTURBANCE TECHNIQUES/EQUIPMENT, AND AVOIDING AND MINIMIZING THE IMPACT OF ANCILLARY AREAS THAT ARE NOT NECESSARY FOR THE PROJECT.
- B. INCORPORATE A CONTINGENCY PLAN AND ADDITIONAL SAFETY PROTOCOLS IN THE EVENT UNEXPECTED CONTAMINATION IS UNCOVERED. THESE PROTOCOLS SHALL BE ESTABLISHED IN THE PERMITTEE'S PPC PLAN. INCORPORATE APPROPRIATE DUST CONTROL AND SUPPRESSION PRACTICES AND PROCEDURES DURING DRY AND WINDY PERIODS.
- C. IMPLEMENT IMMEDIATE STABILIZATION ON ALL CONTAMINATED AREAS OF THE PROJECT SITE INVOLVING EARTH DISTURBANCE. THIS MAY BE ACHIEVED USING MATS/BLANKETS/LININGS/MULCHING (INCLUDING COMPOST); TEMPORARY AND/OR PERMANENT SEEDING/VEGETATION; TARPING OR OTHER IMPERMEABLE/IMPERVIOUS COVER; OR TEMPORARY DAILY COVER.
- D. IMPLEMENT AND MAINTAIN PERIMETER E&S BMPS INCLUDING BUT NOT LIMITED TO COMPOST FILTER BERMS, COMPOST FILTER SOCKS OR WEIGHTED SEDIMENT FILTER TUBES, AND/OR NON-ACRYLAMIDE FLOCCULANTS.

XIV. WATER SUPPLY NOTIFICATION

PRIOR TO BEGINNING ANY CONSTRUCTION OR EARTH DISTURBANCE ACTIVITIES, ALL PUBLIC WATER SUPPLIES OR OTHER USERS OF SURFACE WATERS WITHIN ONE (1) MILE DOWNSTREAM THAT MAY BE AFFECTED BY TURBIDITY INCREASES OR OTHER WATER QUALITY CHANGES CAUSED BY CONSTRUCTION OR EARTH DISTURBANCE ACTIVITIES SHALL BE NOTIFIED AT LEAST 72 HOURS PRIOR TO COMMENCING THE ACTIVITIES.

XV. ARCHAEOLOGICAL SPECIMENS

THE PERMITTEE SHALL NOT BEGIN WORK IN AREAS SUBJECT TO PHASE I OR PHASE II ARCHEOLOGICAL INVESTIGATIONS RECOMMENDED BY THE PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION (PHMC) UNTIL THE PERMITTEE SECURES THE NECESSARY CLEARANCES FOR THESE AREAS FROM PHMC. IN ADDITION, THE PERMITTEE AND ITS AGENTS SHALL VISUALLY INSPECT FOR ARCHAEOLOGICAL SPECIMENS, AS THE TERM IS DEFINED IN THE PENNSYLVANIA STATE HISTORY CODE (37 PA. C.S.A., SECTION 101 ET SEQ.), DURING EARTH DISTURBANCE ACTIVITIES, AND SHALL IMMEDIATELY CEASE EARTH DISTURBANCE ACTIVITIES UPON DISCOVERY OF ARCHAEOLOGICAL SPECIMENS. UPON DISCOVERY THE PERMITTEE SHALL IMMEDIATELY NOTIFY DEP AND PHMC (PHONE: (717) 783-8947).

XVI. DISCHARGES TO NON-SURFACE WATERS

THIS PERMIT AUTHORIZES PROPOSED DISCHARGES OF STORMWATER TO NON-SURFACE WATERS. DISCHARGES TO AREAS THAT ARE NOT SURFACE WATERS SHALL NOT CAUSE ACCELERATED EROSION OR STORMWATER DAMAGE TO DOWN SLOPE OR ADJACENT PROPERTIES. THESE AREAS THAT ARE NOT SURFACE WATERS SHALL BE MAINTAINED TO PREVENT EROSION FROM STORMWATER FLOWS.

XVII. RIPARIAN AREA REPLANTING

PRIOR TO SUBMISSION OF THE NOTICE OF TERMINATION, THE PERMITTEE SHALL REPLANT FORESTED RIPARIAN AREAS IN TEMPORARY RIGHT OF WAYS ALONG SURFACE WATERS. REPLANTING SHALL BE CONDUCTED FOR A MINIMUM DISTANCE OF FIFTY (50) FEET LANDWARD FROM THE TOP OF BOTH BANKS OF WARM WATER FISHERIES AND TROUT STOCKED FISHERIES; 100 FEET FROM COLD WATER FISHERIES; AND 150 FEET FROM HO/EV STREAMS. THE DENSITY OF REPLANTED TREES SHALL BE SIMILAR TO THE DENSITY THAT EXISTED PRIOR TO THE PERMITTEE CONDUCTING CONSTRUCTION ACTIVITIES BUT SHALL PROVIDE NO LESS THAN 60% UNIFORM CANOPY COVER UPON MATURATION AND SHALL BE APPROPRIATE TO THE GEOGRAPHIC LOCATION. MAINTENANCE AND INSPECTIONS SHALL ENSURE SURVIVAL AND GROWTH OF PLANTINGS AND PROTECTION FROM COMPETING PLANTS AND ANIMALS INCLUDING NOXIOUS WEEDS AND INVASIVE SPECIES OVER A 5-YEAR ESTABLISHMENT PERIOD TO ENSURE AND PROPER FUNCTIONING OF RIPARIAN FOREST BUFFERS, AND SHALL INCLUDE MEASURES TO REPAIR DAMAGE TO THE BUFFER FROM STORM EVENTS GREATER THAN THE 2-YEAR/24-HOUR STORM.

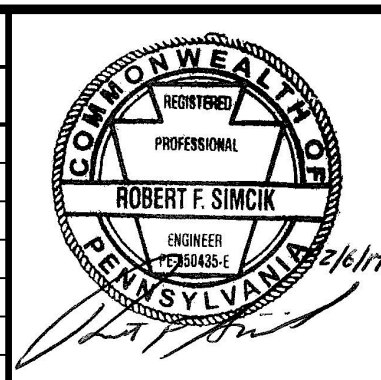
XVIII. HABITAT CONSERVATION PLANS AND THREATENED AND ENDANGERED SPECIES PROTECTION

- A. THE PERMITTEE SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE HABITAT CONSERVATION PLAN SUBMITTED AND APPROVED BY THE U.S. FISH AND WILDLIFE SERVICE (USFWS), PA GAME COMMISSION (PGC), PA FISH AND BOAT COMMISSION (PFBC) AND PA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES (DNR) TO PROTECT FEDERAL AND STATE LISTED SPECIES. THE PERMITTEE SHALL PROVIDE A COPY OF THE PLAN TO DEP PRIOR TO INITIATION OF ANY WORK UNDER THIS PERMIT.
- B. THE PERMITTEE SHALL IMPLEMENT THE APPROVED HABITAT CONSERVATION PLAN IN ACCORDANCE WITH ALL PGC APPROVALS FOR THE ALLEGHENY WOODRAT (NEOTOMA MAGISTER). THIS INCLUDES NO BLASTING OR THE USE OF HERBICIDES ON THE PROJECT OR IN THE VICINITY OF THE PROJECT ON DNR LANDS AS IDENTIFIED IN THE PGC CLEARANCE. THE PERMITTEE SHALL PROVIDE A COPY OF THE PLAN TO DEP PRIOR TO INITIATION OF ANY WORK UNDER THIS PERMIT.
- C. THE PERMITTEE SHALL IMPLEMENT THE MIGRATORY BIRD CONSERVATION PLAN APPROVED BY THE USFWS. THE PERMITTEE SHALL PROVIDE A COPY OF THE PLAN TO DEP PRIOR TO INITIATION OF ANY WORK UNDER THIS PERMIT.
- D. THE PERMITTEE SHALL IMPLEMENT ALL AVOIDANCE MEASURES IDENTIFIED BY THE JURISDICTIONAL RESOURCE AGENCIES FOR ANY THREATENED OR ENDANGERED SPECIES OR SPECIES OF SPECIAL CONCERN.
- E. WHERE APPLICABLE, THE PERMITTEE SHALL IMPLEMENT THE AVOIDANCE MEASURES IDENTIFIED IN APPENDIX A OF THE DEPARTMENT'S PERMIT ISSUED UNDER CHAPTER 105 FOR ALL OPEN TRENCH WETLAND CROSSINGS IN BOG TURTLE (CLEMMYS MUHLENBERGII) COUNTIES IDENTIFIED BY THE USFWS AS OCCUPIED, POTENTIALLY OCCUPIED OR ADJACENT HABITATS, UNLESS OTHERWISE SPECIFIED BY THE USFWS.
- F. THE PERMITTEE SHALL COMPLY WITH ALL PROTOCOLS SET FORTH BY THE USFWS FOR PROTECTION OF THE RUSTY PATCH BUMBLE BEE.
- G. PRIOR TO CONDUCTING ANY FUTURE MAINTENANCE ACTIVITIES ON THE PIPELINE OR RIGHT OF WAY WHICH INVOLVES DISTURBANCE, THE PERMITTEE SHALL CONDUCT A THEN CURRENT PENNSYLVANIA NATURAL DIVERSITY INVENTORY SEARCH, SHALL OBTAIN CLEARANCE(S) FOR ANY SPECIES OR RESOURCE WHERE A POTENTIAL IMPACT IS IDENTIFIED, PROVIDE THE AVOIDANCE AND MITIGATION PLAN TO DEP PRIOR TO INITIATING SUCH MAINTENANCE WORK, AND SHALL IMPLEMENT AND ADHERE TO ALL AVOIDANCE MEASURES OUTLINED IN SUCH CLEARANCE(S).



661 ANDERSEN DRIVE - FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

REVISIONS			
NO.	BY	DATE	REMARKS
1	RS	3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS
2	RS	5/25/17	DRAWINGS PROVIDED TO FIELD
3	RS	6/17/21	RESTORED AREA UPDATES FOR PERMIT RENEWAL



SUNOCO PIPELINE LP
PHILADELPHIA, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES
PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
CHAPTER 102 PERMIT SPECIAL CONDITIONS

DATE:	2/6/17
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS
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ES-0.04A	
SHEET 0.04 OF 49	

ALL PERMIT CONDITIONS SET FORTH IN THE E&S PERMIT NO. ESG 03000 15002 AND WATER OBSTRUCTION AND ENCROACHMENT PERMIT E36-945 MUST BE FOLLOWED

WATER OBSTRUCTION AND ENCROACHMENT PERMIT SPECIAL CONDITIONS

WATER SUPPLIES:

- AT LEAST 72 HOURS IN ADVANCE OF BEGINNING ANY CONSTRUCTION ACTIVITIES, THE PERMITTEE SHALL NOTIFY ALL IDENTIFIED PUBLIC AND PRIVATE WATER SUPPLIES ALONG THE PROJECT'S CORRIDOR THAT MAY BE AFFECTED BY INCREASED TURBIDITY OR OTHER WATER QUALITY CHANGES CAUSED BY THE PERMITTEE'S CONSTRUCTION ACTIVITIES.
- IF THE PROJECT RESULTS IN A POLLUTION EVENT WHICH MAY IMPACT ANY PUBLIC OR PRIVATE WATER SUPPLIES, THE PERMITTEE SHALL IMMEDIATELY NOTIFY THE DEPARTMENT AND THE POTENTIALLY AFFECTED PUBLIC OR PRIVATE WATER SUPPLIES OF THE POLLUTION EVENT.
- IN THE EVENT THE PERMITTEE'S WORK CAUSES ADVERSE IMPACTS TO A PUBLIC OR PRIVATE WATER SUPPLY SOURCE, THE PERMITTEE SHALL ALSO IMMEDIATELY NOTIFY THE DEPARTMENT AND IMPLEMENT A CONTINGENCY PLAN, TO THE SATISFACTION OF THE PUBLIC AND PRIVATE WATER SUPPLY OWNERS THAT ADDRESSES ALL ADVERSE IMPACTS IMPOSED ON THE PUBLIC AND PRIVATE WATER SUPPLY AS A RESULT OF THE POLLUTION EVENT, INCLUDING THE RESTORATION OR REPLACEMENT OF THE IMPACTED WATER SUPPLY.
- AT LEAST 72 HOURS IN ADVANCE OF BEGINNING CONSTRUCTION ACTIVITIES, THE PERMITTEE SHALL NOTIFY ALL WATER USERS WITH DOWNSIDE SURFACE WATER INTAKES WITHIN ONE MILE DOWNSIDE, INCLUDING BUT NOT LIMITED TO DRINKING WATER USERS, INDUSTRIAL AND COMMERCIAL USERS THAT MAY BE IMPACTED BY TURBIDITY OR WATER QUALITY CHANGES.
- THE PERMITTEE SHALL NOTIFY SUCH DOWNSIDE WATER USERS IMMEDIATELY OF ANY POLLUTION EVENT OR INCIDENT AT ITS SITE THAT MAY CHANGE OR IMPROVE THEM. THE PERMITTEE SHALL IMMEDIATELY IMPLEMENT ITS APPROVED CONTINGENCY PLAN TO PREVENT FURTHER ADVERSE IMPACTS AND REMEDIATE ALL ADVERSE IMPACTS AS A RESULT OF THE POLLUTION EVENT OR INCIDENT.
- IF A PUBLIC OR PRIVATE DRINKING WATER SOURCE NOT PREVIOUSLY IDENTIFIED BY THE PERMITTEE IS DISCOVERED BY THE PERMITTEE DURING CONSTRUCTION, THE PERMITTEE SHALL IMMEDIATELY NOTIFY THE DEPARTMENT OF THE IDENTIFIED WATER SOURCE AND SHALL NOTIFY THAT SOURCE OF THE PERMITTEE'S CONSTRUCTION ACTIVITIES.

PHMC GENERAL CONDITIONS:

- THE PERMITTEE AND ITS AGENTS SHALL VISUALLY INSPECT FOR ARCHAEOLOGICAL ARTIFACTS AND SHALL IMMEDIATELY CEASE EARTH DISTURBANCE ACTIVITIES UPON DISCOVERY OF ARCHAEOLOGICAL ARTIFACTS.
- IF ARCHAEOLOGICAL ARTIFACTS ARE DISCOVERED, THE PERMITTEE SHALL IMMEDIATELY NOTIFY THE DEP REGIONAL OFFICE IN THE DEP REGION WHERE THE ARTIFACT IS FOUND AND SHALL CONCURRENTLY NOTIFY THE PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION (PHMC) AT P.O. BOX 1026, HARRISBURG, PA 17120-1026, TELEPHONE 717.783.8947.
- AT ALL TIMES, THE PERMITTEE SHALL PROTECT HISTORIC, CULTURAL AND ARCHAEOLOGICAL SITES AS IDENTIFIED IN THE LATEST PUBLISHED VERSION OF THE PENNSYLVANIA INVENTORY OF HISTORICAL PLACES AND THE NATIONAL REGISTER OF HISTORICAL PLACES.

PHMC AREAS SUBJECT TO PHASE I OR PHASE II SURVEYS:

- THE PERMITTEE SHALL NOT BEGIN WORK IN AREAS SUBJECT TO PHASE I OR PHASE II ARCHAEOLOGICAL INVESTIGATIONS RECOMMENDED BY THE PHMC UNTIL THE PERMITTEE SECURES THE NECESSARY CLEARANCES FOR THESE AREAS FROM PHMC.

SUBMERGED LANDS LICENSE AGREEMENTS:

- THIS PERMIT DOES NOT CONTAIN A SUBMERGED LANDS LICENSE AGREEMENT.

TEMPORARY ROAD CROSSINGS:

- ALL TEMPORARY ROAD CROSSINGS OF STREAMS AND WETLANDS MUST MEET ALL OF THE FOLLOWING CONDITIONS:
 - THE PERMITTEE SHALL RESTORE AND STABILIZE ALL TEMPORARY CROSSING SITES, EXCEPT FORDS, WITHIN FIVE (5) DAYS AFTER TERMINATION OF ITS PERMITTED USE.
 - PERMITTEE SHALL NOT UTILIZE OR CONSTRUCT FORDS ON ANY STREAM OR WATERCOURSE WITH HIGH QUALITY (HQ) AND EXCEPTIONAL VALUE (EV) WATERSHEDS AS SPECIFIED IN 25 PA. CODE CHAPTER 93, OR IN WATERSHEDS TRIBUTARY TO DRINKING WATER INTAKES OR RESERVOIRS FOR PUBLIC WATER SUPPLY USES, WHERE THE FORD IS WITHIN 2,000 FEET UPSTREAM OF SUCH INTAKE OR RESERVOIR.
 - THE PERMITTEE SHALL ADEQUATELY BLOCK AND STABILIZE ALL APPROACHES FOR FORDS USED AS TEMPORARY CROSSINGS WITHIN FIVE (5) DAYS AFTER TERMINATION OF THEIR PERMITTED USE IN ORDER TO PREVENT FUTURE USE.
 - THE PERMITTEE IS PROHIBITED FROM SKIDDING ACROSS FORDS.
 - WHERE A STREAMBED AT THE SITE OF A FORD DOES NOT HAVE A ROCK BOTTOM, A LAYER OF CLEAN ROCK OVER GEO-FABRIC MUST BE PLACED AND MAINTAINED. THIS LAYER OF CLEAN ROCK MUST NOT OBSTRUCT THE STREAM FLOW. IN ADDITION, THE FORD'S APPROACHES MUST: (1) BE MAINTAINED IN A FIRM AND STABLE CONDITION; AND (2) ENTER THE STREAM ON LESS THAN A 10% GRADE WITHIN 50 FEET OF THE STREAM WITH THE FLOW; AND (3) EXIT THE STREAM AGAINST THE FLOW ON THE SAME GRADE AND DISTANCE LIMITATION AS SPECIFIED FOR THE ENTRANCE. PERMITTEE SHALL ENSURE THAT ALL ROADS CROSSING WATERCOURSES AT RIGHT ANGLE TO THE STREAM UNLESS PERMITTEE OBTAINS SPECIFIC AND SEPARATE APPROVAL FROM THE DEPARTMENT.
 - PERMITTEE SHALL ENSURE THAT ALL CULVERTS PROVIDE A WATERWAY AREA SUFFICIENT TO ADEQUATELY DISCHARGE THE NORMAL FLOW OF THE WATERCOURSE OR STREAM, AND THAT CULVERTS ARE OF SUFFICIENT LENGTH TO EXTEND BEYOND THE TOE OF THE CLEAN ROCK FILL.
 - PERMITTEE SHALL ENSURE THAT CULVERTS ARE INSTALLED IN SUCH MANNER THAT OVERTOPPING OF THE ROADWAY WILL OCCUR WITHIN THE STREAM CHANNEL. THIS CAN BE ACCOMPLISHED BY PROVIDING A DEPRESSED ROADWAY EMBANKMENT.
 - PERMITTEE SHALL MINIMIZE EXCESSIVE FILL AND EXCAVATION OF STREAM BANKS BY UTILIZING CULVERTS WITH AS LARGE A DIAMETER AS POSSIBLE. THE MINIMUM DIAMETER SIZE OF A CULVERT TO BE USED IS NO LESS THAN 12 INCHES.
 - ROAD AND CAUSEWAY EMBANKMENTS SHALL ONLY CONSIST OF CLEAN ROCK MATERIAL TO PREVENT STREAM CHANNEL SEDIMENTATION DURING REMOVAL, AND PERIODS OF OVERTOPPING.
 - BRIDGES SHALL BE SINGLE SPAN FROM TOP OF BANK TO TOP OF BANK, AND MUST BE STRUCTURALLY STABLE.
 - APPROACH ROADS TO TEMPORARY ROAD CROSSINGS SHALL UTILIZE ORIGINAL GRADES, HOWEVER, CLEAN ROCK MATERIAL OR GRAVEL TO A DEPTH OF SIX INCHES ABOVE ORIGINAL GRADE CAN BE UTILIZED FOR APPROACHES, AS NECESSARY.
 - CAUSEWAYS SHALL NOT EXTEND STREAMWARD A DISTANCE GREATER THAN ONE-HALF THE WIDTH OF THE STREAM CHANNEL.

TEMPORARY ROAD CROSSINGS (CONTINUED):

- TEMPORARY ROAD CROSSINGS SHALL BE KEPT OPEN AND FUNCTIONING AT ALL TIMES BY MAINTAINING THE CROSSINGS FREE OF DEBRIS AND OTHER OBSTRUCTIONS.
- THE PERMITTEE SHALL PROMPTLY REPAIR ANY DAMAGE RESULTING FROM INCREASED BACKWATER CAUSED BY TEMPORARY ROAD CROSSING. THE PERMITTEE SHALL REMOVE TEMPORARY ROAD CROSSINGS IN THE EVENT OF HIGH WATERS TO PREVENT INCREASED BACKWATER.
- IF PERMITTEE CANNOT AVOID A WETLAND CROSSING, THE CROSSING IS PERMISSIBLE IF IT IS LOCATED AT THE NARROWEST PRACTICABLE POINT OF THE WETLAND.
- ALL WETLANDS CROSSING SITES SHALL BE STABILIZED BY APPROPRIATE MEANS, INCLUDING BUT NOT LIMITED TO USING REMOVABLE, TEMPORARY MATS, RADES OR OTHER SIMILAR DEVICES TO ENSURE MINIMIZATION OF IMPACT ON THE WETLANDS ECOLOGY.
- TEMPORARY EMBANKMENTS FOR ROADS ACROSS WETLANDS SHALL BE INSTALLED TO MAINTAIN THE HYDROLOGY OF THE WETLAND.
- POLLUTION OF ANY WATERWAY WITH HARMFUL CHEMICALS, FUELS, OILS, GREASES, BITUMINOUS MATERIAL, ACID, OR OTHER HARMFUL OR POLLUTING MATERIALS, IS PROHIBITED.
- ACCESS ROADS SHOULD NOT APPROACH THE STREAM CHANNEL DIRECTLY DOWNSLOPE, BUT SHOULD TRAVERSE THE SLOPE OBLIQUELY TO PREVENT HIGH VELOCITY ROAD DRAINAGE FLOWS FROM DIRECTLY ENTERING THE STREAM CHANNEL ROAD DRAINAGE SHALL INCLUDE PROPER EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES.
- THE PERMITTEE SHALL REMOVE ALL OR ANY PORTION OF A TEMPORARY ROAD CROSSING UPON WRITTEN NOTIFICATION TO THE PERMITTEE FROM THE DEPARTMENT IN THE EVENT THE PROJECT IS CAUSING AN ADVERSE IMPACT ON PUBLIC HEALTH, SAFETY OR THE ENVIRONMENT OR IN ANY OTHER MANNER VIOLATES THE REQUIREMENTS OF THE PENNSYLVANIA CLEAN STREAMS LAW, 25 PA. CODE CHAPTER 105, OR EITHER.
- THE PERMITTEE SHALL BE RESPONSIBLE FOR DETERMINING AND DOCUMENTING WHICH METHOD OF CROSSING IS APPROPRIATE FOR EACH RESOURCE. THIS DOCUMENTATION SHALL BE PROVIDED TO THE DEPARTMENT WITH THE PRE- AND POST-CONSTRUCTION PHOTOGRAPHS. THE PERMITTEE SHALL SUBMIT THIS DOCUMENTATION TO THE RESPECTIVE DEP REGIONAL OFFICE WITHIN NINETY (90) DAYS AFTER COMPLETION OF WORK UNDER THE RESPECTIVE PERMIT.

SITE FIELD VERIFICATION, RESTORATION AND MONITORING:

- OR TO INSTALLATION OF PIPELINE CROSSINGS, THE PERMITTEE SHALL TAKE NEW PRE-CONSTRUCTION PHOTOGRAPHS OF THE NATURAL RESOURCES AT EACH OF THE CROSSINGS. THE PERMITTEE SHALL ALSO MAINTAIN A RECORD OF PRE- AND POST- CONDITIONS OF EACH STREAM AND WETLAND CROSSING. THE PERMITTEE SHALL SUBMIT THIS DOCUMENTATION TO THE RESPECTIVE DEP REGIONAL OFFICE WITHIN NINETY (90) DAYS AFTER COMPLETION OF WORK UNDER THE RESPECTIVE PERMIT.
- ALL WETLANDS WITHIN THE PROJECT AREA SHALL BE ACCURATELY FIELD DELINEATED PRIOR TO THE START OF CONSTRUCTION ACTIVITIES AND UP TO THE TIME THAT EARTH DISTURBANCE ACTIVITIES ARE COMPLETED AND THE SITE HAS BEEN STABILIZED. AN ACCEPTABLE MEANS OF FIELD-IDENTIFICATION OF WETLANDS INCLUDES BUT NOT LIMITED TO, THE USE OF AN ORANGE CONSTRUCTION SAFETY FENCE AND/OR FLAGS.
- FOR A PERIOD OF UP TO 5 YEARS FOLLOWING CONSTRUCTION, THE PERMITTEE SHALL MONITOR FOR SECONDARY EFFECTS TO HYDROLOGY, I.E., THE LOSS OF HYDROLOGY TO ALL WATERCOURSES WITH A DRAINAGE AREA OF LESS THAN 100 ACRES, INCLUDING THOSE WATERCOURSES THAT ORIGINATE WITHIN THE PROJECT ROW. REPORTS SHALL BE SUBMITTED TO DEP IN THE SPRING AND FALL FOR THE FIRST TWO (2) CALENDAR YEARS FOLLOWING CONSTRUCTION AND ANNUALLY FOR THREE (3) YEARS THEREAFTER.
 - THE MONITORING REPORTS SHALL CONTAIN INFORMATION DESCRIBING THE PRESENCE OR ABSENCE OF HYDROLOGY AT THE TIME OF INSPECTION, A NARRATIVE COMPARISON TO HYDROLOGY PRESENT IN THE WATERCOURSE DURING PRE-PERMITTING FIELD INVESTIGATION(S), AND PHOTOGRAPHS OF THE WATERCOURSE.
 - IF THE MONITORING IDENTIFIES A DIMINUTION OR COMPLETE LOSS OF HYDROLOGY AND IDENTIFIES THE MONITORING CAUSED THE LOSS OF HYDROLOGY AND SUBMIT THIS EVALUATION TO THE DEPARTMENT FOR REVIEW.
 - IF THE DEPARTMENT DETERMINES THAT THE ACTIVITIES AUTHORIZED BY THIS PERMIT ARE CONTRIBUTING TO THE LOSS OF HYDROLOGY, THE PERMITTEE SHALL PREPARE A WRITTEN RESPONSE TO ADDRESS THE LOSS OF HYDROLOGY TO THE WATERCOURSE. THE PERMITTEE SHALL IMPLEMENT THE APPROVED PLAN WITHIN NINETY (90) AND SUBMIT THIS PLAN TO DEP FOR REVIEW AND APPROVAL. IF DEP IDENTIFIES ANY DEFICIENCIES WITH PERMITTEE'S PLAN, THEN THE PERMITTEE SHALL PROVIDE DEP A WRITTEN RESPONSE TO ADDRESS THE STATED DEFICIENCIES WITHIN 15 DAYS OF RECEIVING WRITTEN NOTICE OF DEP'S DEFICIENCIES, UNLESS DEP EXTENDS THAT TIMEFRAME IN WRITING.
 - THE PERMITTEE SHALL IMPLEMENT THE DEP-APPROVED PLAN WITHIN 90 DAYS OF RECEIVING WRITTEN APPROVAL FROM DEP, UNLESS DEP EXTENDS THAT TIMEFRAME IN WRITING.
 - IN THE EVENT THAT LOSS OF HYDROLOGY FROM ACTIVITIES CONDUCTED UNDER THIS PERMIT CANNOT BE STOPPED, THE PERMITTEE SHALL SUBMIT A MITIGATION PLAN TO DEP THAT SETS FORTH THE MANNER IN WHICH FULL LOSS OF HYDROLOGY AND ASSOCIATED WATER WILL BE COMPENSATED FOR. IF DEP IDENTIFIES ANY DEFICIENCIES WITH THE PERMITTEE'S MITIGATION PLAN, THEN THE PERMITTEE SHALL PROVIDE DEP A WRITTEN RESPONSE TO ADDRESS THE STATED DEFICIENCIES WITHIN 15 DAYS OF RECEIVING WRITTEN NOTICE OF DEP'S DEFICIENCIES, UNLESS DEP EXTENDS THAT TIMEFRAME IN WRITING. THE PERMITTEE SHALL IMPLEMENT THE DEP-APPROVED MITIGATION PLAN WITHIN 90 DAYS OF RECEIVING WRITTEN APPROVAL FROM DEP, UNLESS DEP EXTENDS THAT TIMEFRAME IN WRITING.
- WETLAND EXCAVATION SHALL SEGREGATE THE SOIL HORIZONS AND REPLACE THE SOIL HORIZONS TO MATCH PRE-CONSTRUCTION CONDITIONS. FOR AREAS WHERE BORE PITS ARE PROPOSED IN OR ADJACENT TO WETLANDS, OR IF A RESTRICTIVE LAYER, INCLUDING BUT NOT LIMITED TO CLAY OR FRAGILANS, IS ENCOUNTERED DURING THE TRENCH EXCAVATION, THE PERMITTEE SHALL HAVE A KNOWLEDGEABLE WETLANDS SCIENTIST ON THE ENVIRONMENTAL INSPECTION TEAM THAT SHALL OVERSEE BACKFILLING OF THE TRENCH AND INSTALLATION OF TRENCH PLUGS, IN ORDER TO MAINTAIN WETLAND HYDROLOGY.
- TOPSOIL SHALL BE SEGREGATED FROM SUBSOIL IN ALL WETLAND AREAS.
- ALL DISTURBED AREAS ARE TO BE RESTORED, STABILIZED AND SHALL BE REPLANTED WITH INDIGENOUS PLANT SPECIES. FILL FROM DISTURBED AREAS AND CONSTRUCTION ACTIVITIES SHALL BE LOCATED OUTSIDE OF THE FLOODWAY, FLOODPLAIN AND WETLANDS. THE PERMITTEE IS RESPONSIBLE FOR STABILIZING ANY EXCESS MATERIALS SPOILED ON-SITE OR OFF-SITE, WHETHER THE PERMITTEE OWNS THE SITE OR OTHERS OWN THE SITE.
- ROCK RIPRAP SHALL BE USED IN THE STREAM BED ONLY WHERE A SHEAR STRESS ANALYSIS HAS DETERMINED THAT SCOUR PROTECTION IS NECESSARY TO ENSURE STABILITY OF THE RESOURCE.
- A TRENCH IN WHICH THE PIPELINE WILL BE LAID SHALL BE BACKFILLED IN A MANNER THAT DOES NOT CREATE THE FORMATION OF A PERMANENT RIDGE IN A STREAMBED OR WETLAND.
- RESTORED STREAMS SHALL USE A MINIMUM OF SIX (6) INCHES OF NATIVE STREAM BED MATERIAL FOR STREAMS WHERE RIPRAP IS NECESSARY TO PREVENT SCOUR. THE RIPRAP SHALL BE DEPRESSURED TO SUFFICIENTLY TO ALLOW SIX (6) INCHES OF NATIVE STREAM BED MATERIAL OVER THE RIPRAP.

SITE FIELD VERIFICATION, RESTORATION AND MONITORING (CONTINUED):

- ALL PFO AND PSS WETLANDS WITHIN THE TEMPORARY ROW SHALL BE REPLANTED WITH WOODY SPECIES PRESENT IN THE WETLAND PRIOR TO THE PERMITTEE CONDUCTING CONSTRUCTION ACTIVITIES. THE PLANTINGS NEED NOT MIRROR PRE-CONSTRUCTION MATURITY.
- FORESTED RIPARIAN AREAS IN THE TEMPORARY ROW ALONG WATERCOURSES SHALL BE REPLANTED WITH NATIVE TREE SPECIES FOR A MINIMUM DISTANCE OF FIFTY (50) FEET LANDWARD FROM THE TOP OF BOTH BANKS OF WARM WATER FISHERIES AND FRESHWATER FISHERIES. 100 FEET FROM COLD WATER FISHERIES, AND 150 FEET FROM HO/EV STREAMS, IN A SIMILAR DENSITY AS THE TREES EXISTED PRIOR TO THE PERMITTEE CONDUCTING CONSTRUCTION ACTIVITIES. THE DENSITY OF REPLANTED TREES SHALL BE SIMILAR TO THE DENSITY THAT EXISTED PRIOR TO THE PERMITTEE CONDUCTING CONSTRUCTION ACTIVITIES BUT SHALL PROVIDE NO LESS THAN 60% UNIFORM CANOPY COVER UPON MATURITY AND SHALL BE APPROPRIATE TO THE GEOGRAPHIC LOCATION, MAINTENANCE AND INSPECTIONS SHALL ENSURE SURVIVAL AND GROWTH OF PLANTINGS AND PROTECTION FROM COMPETING PLANTS AND ANIMALS INCLUDING NOXIOUS WEEDS AND INVASIVE SPECIES OVER A 5-YEAR ESTABLISHMENT PERIOD TO ENSURE AND PROPER FUNCTIONING OF RIPARIAN FOREST BUFFERS, AND SHALL INCLUDE MEASURES TO REPAIR DAMAGE TO THE BUFFER FROM STORM EVENTS GREATER THAN THE 2-YEAR/24-HOUR STORM.
- EACH STREAM CHANNEL SHALL BE RESTORED AND PROPERLY STABILIZED UPON COMPLETION OF THE ASSOCIATED STREAM CROSSING. WHERE RIPRAP IS PROPOSED, THE RIPRAP SHALL BE DEPRESSURED AND COVERED WITH A MINIMUM OF 6-INCHES OF STREAMBED MATERIAL. THE RESTORED STREAMBED ELEVATION SHALL NOT EXCEED THE PRE-EXISTING STREAMBED ELEVATION.
- THE PERMITTEE SHALL AVOID WETLAND IMPACTS, TO THE EXTENT PRACTICABLE, AND MINIMIZE ANY SUCH IMPACTS. THE PERMITTEE SHALL IMMEDIATELY RESTORE ALL DISTURBED AREAS TO ORIGINAL CONDITIONS AND COVER WITH INDIGENOUS WETLAND VEGETATION IN ACCORDANCE WITH THEIR RESTORATION PLANS AS PRESENTED IN THEIR PERMIT APPLICATION. STREAMBANK AND WETLAND DISTURBANCES SHALL BE MINIMIZED AND STABILIZED WITH INDIGENOUS VEGETATION WITHIN THIRTY (30) DAYS OF FINAL EARTHMOVING TO PREVENT EROSION AND PROVIDE COVER, SHADING, AND FOOD SOURCE FOR AQUATIC LIFE. ANY TEMPORARY WETLAND CROSSINGS SHALL BE MADE BY LOW GROUND PRESSURE MACHINERY AND WETLAND MATS OR SIMILAR DEVICES. EXCESS FILL SHALL NOT BE DEPOSITED IN ANY WETLAND, WATERCOURSE, FLOODWAY, FLOODPLAIN, OR OTHER BODY OF WATER.
- FOR A PERIOD OF UP TO FIVE YEARS, THE PERMITTEE SHALL MONITOR THE STREAM AND WETLAND PLANTINGS. MONITORING REPORTS SHALL BE SUBMITTED TO THE RESPECTIVE DEP REGIONAL OFFICE IN THE SPRING (MAY15) AND FALL (NOVEMBER 15) FOR THE FIRST TWO (2) CALENDAR YEARS FOLLOWING CONSTRUCTION AND ANNUALLY (NOVEMBER 15) FOR FOUR (4) YEARS THEREAFTER.
 - THE MONITORING REPORTS SHALL CONTAIN INFORMATION DESCRIBING THE SUCCESS OF THE SITE AT THE TIME OF EACH INSPECTION, AN INVENTORY OF THE SURVIVING PLANT SPECIES AND PERCENT AERIAL COVERAGE. PHOTOGRAPHS OF THE REPLACEMENT SITE WITH PLANS SHOWING THE LOCATION AND ORIENTATION OF EACH OF THE PHOTOGRAPHS. A WRITTEN PLAN TO CORRECT ANY DEFICIENCIES IDENTIFIED DURING THE MONITORING PHASE.
 - PERMITTEE SHALL ENSURE AT LEAST AN 85 PERCENT SURVIVAL RATE. ADDITIONAL PLANTINGS AND OR REPORTS IN SUBSEQUENT YEARS BEYOND THE INITIAL FIVE (5) YEARS MAY BE REQUIRED IF AN 85 PERCENT SURVIVABILITY OF PLANTED SPECIES IS NOT ACHIEVED.
 - FOR A PERIOD OF AT LEAST THREE YEARS, THE PERMITTEE SHALL MONITOR ANY EXCEPTIONAL VALUE WETLANDS UNDER 25 PA. CODE §§ 105.17(1)(i) AND 105.17(1)(ii) THAT ARE DISTURBED, AS AUTHORIZED PURSUANT TO THIS PERMIT. MONITORING REPORTS SHALL BE SUBMITTED TO THE RESPECTIVE DEP REGIONAL OFFICE IN THE SPRING (MAY 15) AND FALL (NOVEMBER 15) FOR THE FIRST TWO (2) CALENDAR YEARS FOLLOWING CONSTRUCTION AND ONCE (NOVEMBER 15) IN THE THIRD YEAR. THE MONITORING REPORTS SHALL CONTAIN INFORMATION DESCRIBING THE WETLAND RESTORATION AND FUNCTION AND VALUES AT THE TIME OF INSPECTION, PHOTOGRAPHS OF THE WETLAND WITH PLANS SHOWING THE LOCATION AND ORIENTATION OF EACH PHOTOGRAPH, AND A WRITTEN PLAN TO CORRECT ANY DEFICIENCIES IDENTIFIED DURING THE MONITORING PHASE.
 - STREAMBANK DISTURBANCE SHALL BE MINIMIZED AND STABILIZED WITH INDIGENOUS VEGETATION WITHIN 24 HOURS UPON COMPLETION OF FINAL EARTHMOVING TO PREVENT EROSION AND PROVIDE COVER, SHADING, AND FOOD SOURCE FOR AQUATIC LIFE.

WETLAND COMPENSATORY MITIGATION AND MONITORING:

- THE PERMITTEE SHALL CREATE PALUSTRINE FORESTED (PFO) WETLANDS IN ACCORDANCE WITH THEIR PERMITTEE-RESPONSIBLE COMPENSATORY WETLAND MITIGATION PLAN TO COMPENSATE FOR THE FUNCTION AND VALUE LOSS ASSOCIATED WITH PERMANENTLY CONVERTING 0.405 ACRES OF PFO WETLANDS TO PALUSTRINE EMERGENT (PEM) WETLANDS.
- THE PROPOSED COMPENSATORY WETLAND MITIGATION SITE IN CUMBERLAND COUNTY: THE PERMITTEE SHALL ONLY PLANT THE 0.58 ACRES IN THE SEASONALLY SATURATED AREAS IDENTIFIED IN THE COMPENSATORY WETLAND MITIGATION PLAN AND SHALL NOT PLANT IN THE AREAS IDENTIFIED AS SATURATED IN THE PRESENT CONDITION IN THE COMPENSATORY WETLAND MITIGATION PLAN.
- FOR AT LEAST FIVE (5) YEARS AFTER THE RESTORATION ACTIVITIES ARE COMPLETED, THE PERMITTEE SHALL MONITOR THE COMPENSATORY MITIGATION SITES, WETLAND RESTORATION SITES, STREAMS RESTORATION SITES AND FLOODWAY RESTORATION SITES. WITHIN SIXTY (60) DAYS OF COMPLETING CONSTRUCTION, THE PERMITTEE SHALL SUBMIT "AS-BUILT" DRAWINGS FOR THE FORESTED WETLAND CREATION PROJECT TO THE DEP. MONITORING REPORTS SHALL BE SUBMITTED TO THE RESPECTIVE DEP REGIONAL OFFICE WHERE THE MITIGATION PROJECT(S) IS(ARE) LOCATED AT A FREQUENCY OF EVERY SIX (6) MONTHS FOR THE FIRST TWO (2) YEARS AFTER MITIGATION SITE CONSTRUCTION AND ANNUALLY FOR THREE (3) YEARS THEREAFTER.
 - THE MONITORING REPORTS SHALL CONTAIN INFORMATION DESCRIBING THE SUCCESS OF THE SITE AT THE TIME OF INSPECTION, AN INVENTORY OF THE SURVIVING PLANT SPECIES AND PERCENT AERIAL COVERAGE, PHOTOGRAPHS OF EACH SITE WITH PLANS SHOWING THE LOCATION AND ORIENTATION OF EACH OF THE PHOTOGRAPHS, AND A WRITTEN PLAN TO CORRECT ANY DEFICIENCIES IDENTIFIED DURING THE MONITORING PHASE.
 - IF THE RESTORATION SITES AND COMPENSATORY FOREST WETLAND ENHANCEMENT SITES HAVE NOT ACHIEVED DESIGN OBJECTIVES WITHIN THE MONITORING PERIOD, THE PERMITTEE WILL UNDERTAKE REMEDIAL WORK TO ASSURE ESTABLISHMENT OF FUNCTIONAL WETLAND HABITATS.
- RESTORED AND ENHANCED HABITATS SHALL BE CONSIDERED SUCCESSFUL WHEN THEY MEET THE DESIGN OBJECTIVES.
- WETLAND COMPENSATION CONSTRUCTION SHALL OCCUR PRIOR TO OR CONCURRENTLY WITH WETLAND IMPACTS REQUIRING COMPENSATION AS AUTHORIZED BY THIS PERMIT.
- COMPENSATORY WETLAND MITIGATION SHALL BE STARTED AND COMPLETED WITHIN ONE (1) GROWING SEASON FROM THE COMMENCEMENT OF THE ACTIVITIES AUTHORIZED BY THIS PERMIT. WITHIN THIRTY (30) DAYS OF COMPLETING THE PLANTING PLAN, THE PERMITTEE SHALL SUBMIT REVISED PLANS TO THE RESPECTIVE DEP REGIONAL OFFICE IF AS-BUILT CONDITIONS ARE SIGNIFICANTLY DIFFERENT FROM THE ORIGINAL APPROVED PLANS.
- THE PERMITTEE SHALL PROVIDE COPIES OF THE RECORDED DEED RESTRICTIONS OR CONSERVATION EASEMENTS FOR THE COMPENSATORY WETLAND MITIGATION SITES WITHIN 60 DAYS AFTER PERMIT ISSUANCE. TIME-STAMPED COPIES OF THE INSTRUMENTS SHALL BE SENT TO THE RESPECTIVE DEP REGIONAL OFFICE.

HORIZONTAL DIRECTIONAL DRILLING:

- THE PERMITTEE SHALL CONSTRUCT AND OPERATE THE HORIZONTAL DIRECTIONAL DRILLING (HDD) CROSSINGS AT WETLANDS, STREAMS AND FLOODWAYS IN ACCORDANCE WITH TABLES 2, 3, AND 4 OF THE JOINT PERMIT APPLICATION (SECTION F, ATTACHMENTS, ENVIRONMENTAL ASSESSMENT, ATTACHMENT 11, RESOURCE TABLES) IN A MANNER TO PREVENT A RELEASE OF DRILLING FLUID TO REGULATE WATERS OF THIS COMMONWEALTH (RWC). THE PERMITTEE SHALL IMMEDIATELY NOTIFY THE DEPARTMENT AT 866-890-0808 IN THE EVENT OF AN INADVERTENT RETURN OCCURRING, AND IMMEDIATELY ACTIVATE AND IMPLEMENT THE POLLUTION PREVENTION CONTROL PLANS (PPC PLANS) INCLUDING THE HDD INADVERTENT RETURN CONTINGENCY PLAN (RCP), WATER SUPPLY AND KARST PPC PLANS TO PREVENT ANY IMPACTS TO RWC AND OTHER NATURAL RESOURCES.
- THE PERMITTEE SHALL TAKE MEASURES TO AVOID MINE VOIDS AND UTILITIES. THE PERMITTEE SHALL VISUALLY MONITOR THE GROUND SURFACE AND WITHIN RWC GENERALLY ALONG THE PATH OF THE HORIZONTAL DIRECTIONAL DRILLING WHILE DRILLING OPERATIONS ARE OCCURRING. THIS MONITORING SHALL INCLUDE WALKING, WADING AND USE OF A BOAT, AS NECESSARY TO EFFECTIVELY OBSERVE AND MONITOR FOR ANY RETURN TO THE SURFACE DURING ALL RWC CROSSINGS. IF LOSS OF CIRCULATION OF DRILLING FLUID OCCURS OR DRILLING FLUID PRESSURE IS LOST, THE PERMITTEE SHALL IMMEDIATELY INVESTIGATE THE DRILLING PATHWAY AND GENERAL SURROUNDING AREA FOR AN INADVERTENT RETURN. IF AN INADVERTENT RETURN IS DISCOVERED, THEN DRILLING SHALL IMMEDIATELY CEASE.
- INADVERTENT RETURNS THAT IMPACT OR DISCHARGE TO STREAMS, FLOODWAYS OR WETLANDS DURING THE HORIZONTAL DIRECTIONAL DRILLING OPERATIONS SHALL BE IMMEDIATELY REPORTED TO THE DEPARTMENT AT 866-890-0808 IN ACCORDANCE WITH THE CONTINGENCY PLANS. IF CLEAN-UP OPERATIONS DIFFER FROM THE SUBMITTED PLANS, PRIOR APPROVAL FROM THE RESPECTIVE DEP REGIONAL OFFICE WILL BE NECESSARY FOR ANY MODIFICATIONS TO THE INADVERTENT RETURN CONTINGENCY PLANS.
- HDD ADDITIVES WHICH ARE CERTIFIED FOR CONFORMANCE WITH ANSI/NSF STANDARD 60 (DRINKING WATER TREATMENT CHEMICALS - HEALTH EFFECTS) ARE DEEMED ACCEPTABLE TO DEP, WHEN USED IN THE MANNER INDICATED IN THE CERTIFICATION OF THE ADDITIVE. ALL CONDITIONS INCLUDED AS PART OF THE ADDITIVE CERTIFICATION SHOULD BE FOLLOWED. A CURRENT LISTING OF CERTIFIED DRILLING FLUIDS IS MAINTAINED BY NSF AT: [HTTP://WWW.NSF.ORG/CERTIFIED/PWSCHEMICALS/LISTINGS.ASP?PRODUCTFUNCTION=DRILL+FLUID](http://www.nsf.org/certified/pwschemicals/listings.asp?productfunction=drill+fluid) USE OF DRILLING ADDITIVES CERTIFIED FOR CONFORMANCE WITH ANSI/NSF STANDARD 60 DOES NOT RELIEVE OPERATORS FROM THE REQUIREMENT TO OBTAIN THE NECESSARY PERMITS TO CONDUCT HDD OPERATIONS. USE OF CERTIFIED ADDITIVES DOES NOT RELIEVE THE OPERATOR OF LIABILITY SHOULD AN INADVERTENT RETURN OR OTHER POLLUTION OF THE WATERS OF THE COMMONWEALTH OCCUR AS A RESULT OF DRILLING OPERATIONS.

HABITAT CONSERVATION PLANS AND THREATENED AND ENDANGERED SPECIES PROTECTION:

- THE PERMITTEE SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE HABITAT CONSERVATION PLAN SUBMITTED AND APPROVED BY THE U.S. FISH AND WILDLIFE SERVICE (USFWS), PA GAME COMMISSION (PGC), PA FISH AND BOAT COMMISSION (PFCB) AND PA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES (DCNR) TO PROTECT FEDERAL AND STATE LISTED SPECIES AND PLANTS. THE PERMITTEE SHALL ADVISE THE DEPARTMENT PRIOR TO INITIATION OF ANY WORK UNDER THIS PERMIT.
- THE PERMITTEE SHALL IMPLEMENT THE APPROVED HABITAT CONSERVATION PLAN AND IN ACCORDANCE WITH ALL PA GAME COMMISSION APPROVALS FOR THE ALLEGHENY WOODRAT (NEOTOMA MAGISTER). THIS INCLUDES NO BLASTING OR THE USE OF HERBICIDES OR OTHER CHEMICALS TO REMOVE VEGETATION ON PA DCNR LANDS AS IDENTIFIED IN THE PGC CLEARANCE. PROVIDE A COPY OF THE PLAN TO THE DEPARTMENT PRIOR TO INITIATION OF ANY WORK UNDER THIS PERMIT.
- THE PERMITTEE SHALL IMPLEMENT THE MIGRATORY BIRD CONSERVATION PLAN APPROVED BY THE USFWS. PROVIDE A COPY OF THE PLAN TO THE DEPARTMENT PRIOR TO INITIATION OF ANY WORK UNDER THIS PERMIT.
- THE PERMITTEE SHALL IMPLEMENT ALL AVOIDANCE MEASURES IDENTIFIED BY THE JURISDICTIONAL RESOURCE AGENCIES FOR ANY THREATENED OR ENDANGERED SPECIES OR SPECIES OF SPECIAL CONCERN. (PERMIT SPECIFIC AVOIDANCE MEASURES SHOULD BE LISTED)
- THE PERMITTEE SHALL IMPLEMENT THE AVOIDANCE MEASURES IDENTIFIED IN APPENDIX A OF THE PERMIT FOR ALL OPEN TRENCH WETLAND CROSSINGS IN BOG TURTLE (CLEMMY'S MUEHLERBERGII) COUNTIES IDENTIFIED BY THE USFWS AS OCCUPIED, POTENTIALLY OCCUPIED OR ADJACENT HABITATS, UNLESS OTHERWISE SPECIFIED IN THIS PERMIT.
- THE PERMITTEE SHALL COMPLY WITH ALL PROTOCOLS SET FORTH BY THE USFWS FOR PROTECTION OF THE RUSTY PATCH BUMBLE BEE.
- PRIOR TO CONDUCTING ANY FUTURE MAINTENANCE ACTIVITIES ON THE PIPELINE OR RIGHT OF WAY WHICH INVOLVES DISTURBANCE, THE PERMITTEE SHALL WITHOUT THE PRIOR WRITTEN APPROVAL OF THE PENNSYLVANIA FISH AND BOAT COMMISSION, SHALL OBTAIN CLEARANCE(S) FOR ANY SPECIES OR RESOURCE WHERE A POTENTIAL IMPACT IS IDENTIFIED, PROVIDE THE AVOIDANCE AND MITIGATION PLAN TO THE DEPARTMENT PRIM TO INITIATING SUCH MAINTENANCE WORK AND SHALL IMPLEMENT AND ADHERE TO ALL AVOIDANCE MEASURES OUTLINED IN SUCH CLEARANCE(S).

SEASONAL RESTRICTIONS:

- THE PERMITTEE SHALL NOT PERFORM ANY IN-STREAM WORK IN WATERS LISTED BY THE PAFBC AS TROUT STOCKED STREAMS AND THEIR TRIBUTARIES BETWEEN MARCH 1 AND JUNE 15 WITHOUT THE PRIOR WRITTEN APPROVAL FROM THE PENNSYLVANIA FISH & BOAT COMMISSION'S DIVISION OF ENVIRONMENTAL SERVICES, 450 ROBINSON LANE, BELLEFONTE, PA 16823-9620; TELEPHONE 814.359.5147.
- THE PERMITTEE SHALL NOT PERFORM ANY IN-STREAM WORK IN WATERS LISTED BY THE PENNSYLVANIA FISH AND BOAT COMMISSION AS CLASS A WILD TROUT FISHERY STREAMS AND THEIR TRIBUTARIES BETWEEN OCTOBER 1 AND APRIL 30 WITHOUT THE PRIOR WRITTEN APPROVAL OF THE PENNSYLVANIA FISH AND BOAT COMMISSION'S DIVISION OF ENVIRONMENTAL SERVICES, 450 ROBINSON LANE, BELLEFONTE, PA 16823-9620; TELEPHONE 814.359.5147.
- OTHER SEASONAL RESTRICTIONS STATED IN THE VARIOUS HABITAT CONSERVATION PLANS SHALL BE COMPLIED WITH UNLESS A WRITTEN VARIANCE IS ISSUED BY THE APPROPRIATE RESOURCE AGENCY.

MISCELLANEOUS:

- MAINTENANCE MOWING OR HERBICIDE SPRAYING OF WETLANDS IS NOT AUTHORIZED BY THIS PERMIT. THE PERMITTEE SHALL PLACE AND MAINTAIN SIGNS OF PROPER DEMARCATION AROUND THE BOUNDARY OF EACH LAND TO CLEARLY DELINEATE THE AREAS WHERE THIS MAINTENANCE IS NOT AUTHORIZED. THE PERMITTEE SHALL PLACE THE SIGNS OR OTHER DEMARCATIONS WHEN ALL RESTORATION WORK IS COMPLETED AND PRIOR TO PERMIT TERMINATION.
- THIS PERMIT DOES NOT CONVEY ANY REAL PROPERTY RIGHTS OR INTERESTS OR AUTHORITY TO ALLOW OR PERMIT ACCESS ON PRIVATELY OWNED RIPARIAN LAND. BY ACCEPTING THIS PERMIT, THE PERMITTEE CERTIFIES THAT HE/SHE HOLDS TITLE, EASEMENT, RIGHT OR OTHER REAL INTEREST IN THE RIPARIAN LAND. ANY DISPUTE OVER OWNERSHIP OF THIS LAND IS SOLELY A MATTER FOR PRIVATE LITIGATION.
- THE PERMITTEE MAY NOT COMMENCE CONSTRUCTION ACTIVITIES ON PENNSYLVANIA PGC COMMISSION (PGC) LANDS WITHOUT PRIOR WRITTEN APPROVAL FROM PGC.

MISCELLANEOUS (CONTINUED):

- RIPRAP AND STONE USED THROUGHOUT THE PROJECT, INCLUDING THE CONSTRUCTION OF CAUSEWAYS AND COFFER DAMS, SHALL BE FREE OF FINES AND SILTS, OR OTHER NON-ERODIBLE MATERIAL.
- ALL TEMPORARY WATER WITHDRAWAL INTAKE STRUCTURES AND ALL APPURTENANCE WORKS SHALL BE REMOVED FROM THE WATERCOURSE, BODY OF WATER, FLOODWAY, AND FLOODPLAINS WITHIN SIXTY (60) DAYS OF INITIAL PLACEMENT, UNLESS OTHERWISE EXTENDED IN WRITING BY THE DEPARTMENT.
- TRENCH PLUGS SHALL BE PLACED AT EACH OF THE FOLLOWING LOCATIONS:
 - AT TEN (10) FEET FROM THE TOP OF EACH BANK OF A STREAM
 - AT FIFTY (50) FEET FROM THE TOP OF EACH BANK OF A STREAM
 - AT TEN (10) FEET FROM THE EDGE OF A WETLAND
 - AT FIFTY (50) FEET FROM THE EDGE OF A WETLAND
- PLACE A MINIMUM OF ONE (1) TRENCH PLUG AT A MAXIMUM SPACING OF 100 FEET BETWEEN TRENCH PLUGS WITHIN A WETLAND. WETLAND CROSSINGS LESS THAN FIFTY (50) FEET DO NOT REQUIRE AN INTERNAL TRENCH PLUG.
- IF DURING EXCAVATION, A GROUNDWATER SEEP IS ENCOUNTERED, A TRENCH PLUG SHALL BE PLACED AT TEN (10) FEET FROM EACH SIDE OF THE SEEP.
- ANY FRENCH DRAINS INSTALLED AS PART OF DE-WATERING FOR CONSTRUCTION ACTIVITIES SHALL BE REMOVED OR OTHERWISE RENDERED INOPERABLE PRIOR TO FINAL SITE RESTORATION.
- WATER PUMPEd FROM ANY CONSTRUCTION AREA SHALL BE DIVERGED INTO A SEDIMENT TRAP, BASIN, OR A FILTER BAG DISCHARGING INTO AN APPROPRIATE VEGETATED FILTER AREA TO PREVENT SEDIMENT FROM BEING DISCHARGED INTO ANY WATERS OF THE COMMONWEALTH.
- OPEN TRENCH CROSSINGS: THE PERMITTEE SHALL CONSTRUCT OPEN TRENCH PIPELINE CROSSINGS IN DRY CONDITIONS BY CONSTRUCTING DURING PERIODS OF NO WATER FLOW AND/OR BY INSTALLING STREAM FLOW BYPASS SYSTEMS (FLUMED OR PUMPED) THROUGH THE AFFECTED AREA.
 - EACH CROSSING SHALL BE CONDUCTED IN AN UNINTERRUPTED PROCESS IN THE SHORTEST PERIOD OF TIME POSSIBLE. IMPACTS TO RWC SHALL BE AVOIDED, TO THE EXTENT PRACTICABLE, AND IF NOT PRACTICABLE, THEN MINIMIZED IN ACCORDANCE WITH THE PERMITTEE'S APPROVED PLANS.
 - THE PERMITTEE MAY CROSS DRY CHANNELS, SWALES AND EPHEMERAL STREAMS WITHOUT THE USE OF STREAM FLOW BYPASS SYSTEMS IF THE CHANNEL HAS NO FLOW AND THE STREAM CROSSING AND STABILIZATION CAN BE COMPLETED IN DRY CONDITIONS AND WITHIN TWENTY-FOUR (24) HOURS. STANDBY SANDBAG DAMS AND PUMPS SHALL BE LOCATED ON-SITE AND INSTALLED IN THE EVENT OF PRECIPITATION RESULTING IN CHANNEL FLOW.
- THE PERMITTEE SHALL CROSS INTERMITTENT AND PERENNIAL STREAMS THROUGH THE USE OF TRENCHLESS METHODS (HDD OR DIRECT BORING (DB)) OR THROUGH THE USE OF STREAM FLOW BYPASS SYSTEMS. BYPASS SYSTEMS MUST STAY IN USE UNTIL STREAMBEDS AND BANKS ARE ADEQUATELY STABILIZED. DOWNSIDE FLOW MUST BE MAINTAINED DURING THE CONSTRUCTION.
- DEPTH OF PIPELINE IN STREAM BED: THE PERMITTEE SHALL LOCATE ALL PIPELINES UNDER STREAM BEDS SUCH THAT THERE WILL BE A MINIMUM OF THREE FEET OF COVER BETWEEN THE TOP OF THE PIPE OR ENCASEMENT AND THE LOWEST POINT IN THE STREAM BED, UNLESS THE PIPELINE IS IN ROCK, WHERE A MINIMUM COVER OF ONE FOOT SHALL BE PROVIDED.
- AIDS TO NAVIGATION PLAN: THE PERMITTEE SHALL IMPLEMENT THE APPROVED AIDS TO NAVIGATION (ATON) PLAN AS RECEIVED UNDER THE FISH AND BOAT CODE, 30 PA C.S. §§5121-5124, AND 58 PA CODE CHAPTER 113.
- THIS PERMIT AUTHORIZES SPECIFIC IMPACTS TO RWC THAT WERE SPECIFICALLY DESCRIBED IN THE PERMIT APPLICATIONS AND REVISIONS. ANY PROPOSED CHANGES REGARDING THE SPECIFIC IMPACTS WILL REQUIRE A PERMIT MODIFICATION.
- ANY ADDITIONAL IMPACTS TO RWC, SUCH AS TEMPORARY ACCESS ROADS, LAY-DOWN AREAS, STAGING AREAS, OR TEMPORARY WORK SPACES THAT HAVE NOT BEEN SPECIFICALLY IDENTIFIED IN THE PERMIT APPLICATION ARE NOT AUTHORIZED BY THIS PERMIT.
- NO DEVIATION IN THE CONSTRUCTION METHODOLOGY OR PROJECT DESIGN THAT IS SHOWN ON THE APPROVED DRAWINGS IS AUTHORIZED UNDER THIS PERMIT UNLESS APPROVED THROUGH AN AMENDMENT BY THE DEPARTMENT.
- THIS PERMIT DOES NOT RELIEVE THE PERMITTEE OF THE OBLIGATION OF COMPLYING WITH ALL FEDERAL, INTERSTATE COMPACT, STATE LAWS, REGULATIONS AND STANDARDS, AND LOCAL ORDINANCES APPLICABLE TO THE CONSTRUCTION, OPERATION OR MAINTENANCE OF THE WATER OBSTRUCTION OR ENCROACHMENT.
- THE PERMITTEE SHALL FOLLOW THE MEASURES SPECIFIED IN THE PREPAREDNESS, PREVENTION, AND CONTINGENCY PLAN DURING CONSTRUCTION.
- THE PERMITTEE SHALL MAINTAIN A COPY OF THE PREPAREDNESS, PREVENTION, AND CONTINGENCY PLAN IS ON- SITE AT ALL TIMES DURING CONSTRUCTION. TRAIN ALL STAFF TO USE AND IMPLEMENT THIS PLAN, AND HAVE THIS PLAN AVAILABLE TO PROVIDE AT THE REQUEST OF ANY DEPARTMENT INSPECTOR.
- WETLANDS 85, 872, 874 AND 875 ARE EXCEPTIONAL VALUE WETLANDS, AS PER 25 PA CODE §§105.17(1)(i) AND §105.17(1)(ii) AND THE PERMITTEE SHALL FOLLOW THE AVOIDANCE MEASURES IDENTIFIED IN SPECIAL CONDITIONS ss OF THIS PERMIT UNLESS OTHERWISE RECOMMENDED BY THE USFWS.
- ENSURE THAT THE HDD UNDERNEATH WETLANDS 454 AND 455 IS LOCATED IN BEDROCK.

TETRA TECH
www.tetratech.com
661 ANDERSEN DRIVE - FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

REVISIONS			REMARKS
NO.	BY	DATE	REMARKS
1	RS	3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS
2	RS	5/25/17	DRAWINGS PROVIDED TO FIELD
3	RS	6/17/21	RESTORED AREA UPDATES FOR PERMIT RENEWAL


SUNOCO PIPELINE LP
PHILADELPHIA, PENNSYLVANIA
PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES
PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL & SITE RESTORATION PLAN
CHAPTER 105 PERMIT SPECIAL CONDITIONS

DATE:	2/6/17
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS
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ES-0.04B	
SHEET 0.04B OF 49	

TEMPORARY REVEGETATION

TEMPORARY GRASS COVER SHALL BE ESTABLISHED IN THE FOLLOWING AREAS:

- UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY WHERE CESSATION OF EARTH DISTURBANCE ACTIVITIES IN NON-SPECIAL PROTECTION WATERSHEDS WILL EXCEED 4 DAYS, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES. IN A SPECIAL PROTECTION WATERSHED TEMPORARY STABILIZATION SHALL BE IMMEDIATE.
- WHERE SOIL STOCKPILES ARE TO BE EXPOSED FOR A PERIOD GREATER THAN FOUR (4) DAYS, THE STOCKPILE SHALL BE SEEDED.
- WHERE VEGETATIVE FILTERS MUST BE ESTABLISHED BELOW FILTER BAGS, A MINIMUM DISTANCE OF 10 FT SHALL BE SEEDED DOWN SLOPE OF THE TRAP OUTLET.
- SEED MIXTURE FOR TEMPORARY COVER SHALL CONSIST OF 100% ANNUAL RYEGRASS. SEED SHALL BE APPLIED AT THE RATE OF 40 LB/ACRE OR AS RECOMMENDED BY A LOCAL RECOGNIZED SEED SUPPLIER APPROVED BY THE OWNER'S REPRESENTATIVE. UNLESS EXPLICITLY RESTRICTED (E.G., WETLANDS) PRIOR TO SEEDING, APPLY 1 TON OF AGRICULTURAL GRADE LIMESTONE PER ACRE PLUS 10-10-10 FERTILIZER AT THE RATE OF 500 LB. PER ACRE AND WORK INTO SOIL.
- TEMPORARY REVEGETATION CAN ALSO BE USED DURING UNFAVORABLE GROWING SEASON FOR PERMANENT MIXES. APPLY PERMANENT SEEDING DURING FIRST FAVORABLE GROWING SEASON.

MULCHING

THE PURPOSE OF MULCH IS TO REDUCE RUNOFF AND EROSION, PREVENT SURFACE COMPACTION OR CRUSTING, CONSERVE MOISTURE, AID IN ESTABLISHING PLANT COVER, AND CONTROL WEEDS. MULCH SHALL BE APPLIED ON ANY AREA SUBJECT TO EROSION, OR WHICH HAS UNFAVORABLE CONDITIONS FOR PLANT ESTABLISHMENT AND GROWTH. THE PRACTICE MAY BE USED ALONE OR IN CONJUNCTION WITH OTHER STRUCTURAL AND VEGETATIVE CONSERVATION PRACTICES, SUCH AS WATERWAYS, PONDS, SEDIMENTATION TRAPS OR CRITICAL AREA PLANTING. ON SEDIMENT PRODUCING AREAS WHERE THE PERIOD OF EXPOSURE IS LESS THAN TWO (2) MONTHS, MULCH MATERIALS SHALL BE APPLIED ACCORDING TO THE FOLLOWING GUIDELINES:

- STRAW MULCH SHALL BE APPLIED AT THE RATE OF THREE TONS PER ACRE. CHEMICALLY TREATED OR SALTED STRAW IS NOT ACCEPTABLE AS MULCH.
- STRAW MULCH SHALL BE ANCHORED IMMEDIATELY AFTER APPLICATION BY AT LEAST ONE OF THE FOLLOWING METHODS.
 - "CRIMPED" INTO THE SOIL USING TRACTOR DRAWN EQUIPMENT (STRAIGHT BLADED COULTER OR SIMILAR). THIS METHOD IS LIMITED TO SLOPES NO STEEPER THAN 3:1. MACHINERY SHOULD BE OPERATED ON THE CONTOUR. (CRIMPING OF HAY OR STRAW BY RUNNING IT OVER WITH TRACKED MACHINERY IS NOT RECOMMENDED)
 - ASPHALT, EITHER EMULSIFIED OR CUT-BACK, CONTAINING NO SOLVENTS OR OTHER DILUTING AGENTS TOXIC TO PLANT OR ANIMAL LIFE, UNIFORMLY APPLIED AT THE RATE OF 31 GALLONS PER 1000 FT2.
 - SYNTHETIC BINDERS (CHEMICAL BINDERS) MAY BE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THAT IT IS NON-TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.
 - LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

MULCHED AREAS SHALL BE CHECKED PERIODICALLY AND AFTER EACH RUNOFF EVENT (E.G. RAIN, SNOWMELT, ETC.) FOR DAMAGE UNTIL THE DESIRED PURPOSE OF THE MULCHING IS ACHIEVED. DAMAGED PORTIONS OF THE MULCH OR TIE-DOWN MATERIAL SHALL BE REPAIRED UPON DISCOVERY.

PERMANENT REVEGETATION

SEEDING MIXTURES

FOLLOW WITH RECOMMENDED SEED MIXTURE TABLE AND NOTES, THEN PENNDOT FORMULA, THEN WETLAND, THEN APPLICATION GUIDANCE, THEN RATES, THEN NOTES.

LIMING RATES

MINIMUM 6 TONS PER ACRE AT 100% EFFECTIVE NEUTRALIZING VALUE (%ENV), UNLESS THE SOIL TEST DETERMINES THAT A LESSER AMOUNT IS NEEDED. TO DETERMINE THE ACTUAL AMOUNT OF REGULAR LIME TO APPLY, DIVIDE THE AMOUNT CALLED FOR BY THE SOIL TEST BY THE %ENV FOR THE PRODUCT USED. FOR EXAMPLE, IF 6 TONS PER ACRE IS NEEDED AND THE %ENV FOR THE LIME USED IS 88%, DIVIDE 6 BY 0.88 RESULTING IN 6.8 TONS NEEDED TO BE APPLIED.

FOR DOLOMITIC LIME, WHICH HAS A SIGNIFICANT AMOUNT OF MAGNESIUM IN IT, DIVIDE THE AMOUNT CALLED FOR BY THE SOIL TEST BY THE % CALCIUM CARBONATE EQUIVALENT (%CCE) LISTED FOR THE PRODUCT INSTEAD OF THE %ENV. THE %CCE MAY BE ABOVE 100% WHICH ACCOUNTS FOR THE FACT THAT MAGNESIUM HAS A GREATER EFFECT PER POUND THAN THE CALCIUM IN REGULAR LIME.

NOTE: WHEN A SOIL TEST REQUIRES MORE THAN 8,000 POUNDS OF LIME PER ACRE, THE LIME MUST BE MIXED INTO THE TOP 6 INCHES OF SOIL.

FERTILIZATION RATES

APPLY 10-20-20 AT 600 POUNDS/ACRE, IF TOP DRESSED OR 1,000 POUNDS/AC, IF INCORPORATED, UNLESS THE SOIL TEST DETERMINES THAT THE RATE CAN BE LESS THAN THESE MINIMUMS.

RECOMMENDED SEED MIXTURES				
MIXTURE NO.	SPECIES	SEEDING RATES - PLS(1)		
		MOST SITES	ADVERSE SITES	
1 (2)	SPRING OATS (SPRING), OR 64 96	64	96	
	ANNUAL RYEGRASS (SPRING OR FALL), OR	10	15	
	WINTER WHEAT (FALL), OR	90	120	
	WINTER RYE (FALL)	56	112	
2 (3)	TALL-FESCUE, BIG BLUESTEM, OR 75	60	75	
	FINE FESCUE, OR 40	35	40	
	KENTUCKY BLUEGRASS, PLUS 25 30	25	30	
	REDTOP(4), OR	3	3	
	PERENNIAL RYEGRASS	15	20	
3	BIRDSFOOT TREFOIL, PLUS 6 10	6	10	
	TALL-FESCUE, BIG BLUESTEM,	30	35	
4	BIRDSFOOT TREFOIL, PLUS	6	10	
	REED-CANARYGRASS CANADA WILDRYE	10	15	
5 (5)	BIG BLUESTEM, PLUS	10	15	
	TALL-FESCUE, OR	20	25	
	PERENNIAL RYEGRASS	20	25	
6 (5,6)	BIG BLUESTEM, PLUS	10	15	
	ANNUAL RYEGRASS	20	25	
7 (5)	BIRDSFOOT TREFOIL, PLUS	20	30	
	BIG BLUESTEM, PLUS	20	30	
	TALL-FESCUE	20	25	
8	FLATPEA, PLUS	20	30	
	TALL-FESCUE, BIG BLUESTEM, OR	20	30	
	PERENNIAL RYEGRASS	20	25	
9 (7)	SEREGIA LESPEDEZA ROUND-HEADED BUSH CLOVER, PLUS	10	20	
	TALL-FESCUE, BIG BLUESTEM, PLUS	20	25	
	REDTOP(4)	3	3	
10	TALL-FESCUE, BIG BLUESTEM, PLUS	40	60	
	FINE FESCUE	10	15	
11	DEERTONGUE, PLUS	15	20	
	BIRDSFOOT TREFOIL	6	10	
12(8)	SWITCHGRASS, OR	15	20	
	BIG BLUESTEM, PLUS	15	20	
	BIRDSFOOT TREFOIL	6	10	
13	ORCHARDGRASS, OR	20	30	
	SMOOTH BROMEGRASS, PLUS	25	35	
	BIRDSFOOT TREFOIL	6	10	

NOTES:

- PURE LIVE SEED (PLS) IS THE PRODUCT OF THE PERCENTAGE OF PURE SEED TIMES PERCENTAGE GERMINATION DIVIDED BY 100. FOR EXAMPLE, TO SECURE THE ACTUAL PLANTING RATE FOR SWITCHGRASS, DIVIDE 12 POUNDS PLS SHOWN ON THE SEED TAG, THUS, IF THE PLS CONTENT OF A GIVEN SEED LOT IS 35 PERCENT, DIVIDE 12 PLS BY 0.35 TO OBTAIN 34.3 POUNDS OF SEED REQUIRED TO PLANT ONE-ACRE. ALL MIXTURES IN THIS TABLE ARE SHOWN IN TERMS OF PLS.
- IF HIGH-QUALITY SEED IS USED, FOR MOST SITES SEED SPRING OATS AT A RATE OF TWO BUSHELS PER ACRE, WINTER WHEAT AT 11.5 BUSHELS PER ACRE, AND WINTER RYE AT ONE BUSHEL PER ACRE. IF GERMINATION IS BELOW 90 PERCENT, INCREASE THESE SUGGESTED SEEDING RATES BY 0.5 BUSHEL PER ACRE.
- THIS MIXTURE IS SUITABLE FOR FREQUENT MOWING. DO NOT CUT SHORTER THAN FOUR INCHES.
- KEEP SEEDING RATE TO THAT RECOMMENDED IN TABLE. THESE SPECIES HAVE MANY SEEDS PER POUND AND ARE VERY COMPETITIVE. TO SEED SMALL QUANTITIES OF SMALL SEEDS SUCH AS WEEPING LOVEGRASS AND REDTOP, DILUTE WITH DRY SAWDUST, SAND, RICE HULLS, BUCKWHEAT HULLS, ETC.
- USE FOR HIGHWAY SLOPES AND SIMILAR SITES WHERE THE DESIRED SPECIES AFTER ESTABLISHMENT IS BIG BLUESTEM.
- USE ONLY IN EXTREME SOUTHEASTERN OR EXTREME SOUTHWESTERN PA. SEREGIA LESPEDEZA IS NOT WELL ADAPTED TO MOST OF PA.
- DO NOT MOW SHORTER THAN NINE TO 10 INCHES.
- ONLY SEEDS OF NATIVE PLANTS TO BE USED.**

PENNDOT FORMULA B					
SEEDING RATE	3 LBS PER 1,000 SQ FT				
SPECIES	% BY WT.	PURITY %	MIN. % GERMINATION	MAX. % WEED SEED	
KENTUCKY BLUEGRASS	50	98	80	0.20	
PERENNIAL RYE	20	98	90	0.15	
RED FESCUE	30	98	85	0.15	

SOIL AMENDMENT APPLICATION RATE EQUIVALENTS				
SOIL AMENDMENT	PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YDS.	NOTES
PERMANENT SEEDING APPLICATION RATE				
AGRICULTURAL LIME	6 TONS	240 LBS.	2,480 LBS.	OR AS PER SOIL TEST; MAY NOT BE REQUIRED IN AGRICULTURAL FIELDS
10-20-20 FERTILIZER	1,000 LBS.	25 LBS.	210 LBS.	OR AS PER SOIL TEST; MAY NOT BE REQUIRED IN AGRICULTURAL FIELDS

MULCH APPLICATION RATES				
MULCH TABLE	APPLICATION RATE (MINIMUM)			NOTES
	PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YDS.	
STRAW	3 TONS	140 LBS.	1,240 LBS.	EITHER WHEAT OR OAT STRAW, FREE OF WEEDS, NOT CHOPPED OR FINELY BROKEN
HAY	3 TONS	140 LBS.	1,240 LBS.	TIMOTHY, MIXED CLOVER AND TIMOTHY OR OTHER NATIVE FORAGE GRASSES
WOODCHIPS	4 TO 6 TONS	185 TO 275 LBS.	1,650 TO 2,500 LBS.	MAY PREVENT GERMINATION OF GRASSES AND LEGUMES
HYDROMULCH	1 TON	47 LBS.	415 LBS.	SEE LIMITATIONS ABOVE

SEED MIX APPLICATION GUIDE		
SITE CONDITIONS	NURSE CROP	SEED MIXTURE (SELECT ONE MIXTURE)
SLOPES AND BANKS (NOT MOWED)		
WELL-DRAINED	1 PLUS	3, 5, 8, OR 12 (1)
VARIABLE DRAINAGE	1 PLUS	3 OR 7
SLOPES AND BANKS (MOWED)		
WELL-DRAINED	1 PLUS	2 OR 10
SLOPES AND BANKS (GRAZED/HAY)		
WELL-DRAINED	1 PLUS	2,3, OR 13
GULLIES AND ERODED AREAS	1 PLUS	3, 5, 7, OR 12 (1)
EROSION CONTROL FACILITIES (BMPS)		
SOD WATERWAYS, SPILLWAYS, FREQUENT WATER FLOW AREAS	1 PLUS	2, 3, OR 4
DRAINAGE DITCHES		
SHALLOW, LESS THAN THREE FEET DEEP	1 PLUS	2, 3, OR 4
DEEP, NOT MOWED	1 PLUS	5 OR 7
POND BANKS, DIKES, LEVEES, DAMS, DIVERSION CHANNELS, AND OCCASIONAL WATER FLOW AREAS		
MOWED AREAS	1 PLUS	2 OR 3
NON-MOWED AREAS	1 PLUS	5 OR 7
FOR HAY OR SILAGE ON DIVERSION CHANNELS AND OCCASIONAL WATER FLOW AREAS	1 PLUS	3 OR 13
HIGHWAYS (2)		
NON-MOWED AREAS		
WELL-DRAINED	1 PLUS	5, 7, 8, 9, OR 10
VARIABLE DRAINAGE	1 PLUS	3 OR 7
POORLY DRAINED	1 PLUS	3 OR 9
AREAS MOWED SEVERAL TIMES PER YEAR	1 PLUS	2, 3, OR 10
UTILITY ROW		
WELL-DRAINED	1 PLUS	5, 8, OR 12 (1)
VARIABLE DRAINAGE	1 PLUS	3 OR 7
WELL-DRAINED AREAS FOR GRAZING/HAY	1 PLUS	2, 3, OR 13
EFFLUENT DISPOSAL AREAS	1 PLUS	3 OR 4
SANITARY LANDFILLS	1 PLUS	3, 5, 7, 11 (1), OR 12 (1)
SURFACE MINES		
SPOILS, MINE WASTES, FLY ASH, SLAG, SETTLING BASIN	1 PLUS	3, 4, 5, 7, 8, 9,11 (1) OR 12(1)
RESIDUES AND OTHER SEVERELY DISTURBED AREAS (LIME TO SOIL TEST)		
SEVERELY DISTURBED AREAS FOR GRAZING/HAY	1 PLUS	3 OR 13
	NONE	WETLAND SEED MIX
WETLAND	1 PLUS	SEE WETLAND SEED MIX
RESIDENTIAL/LAWN	1 PLUS	PENN DOT FORMULA B

NOTES:

- FOR SEED MIXTURES 11 AND 12, ONLY USE SPRING OATS OR WEEPING LOVEGRASS (INCLUDED IN MIX) AS NURSE CROP.
- CONTACT THE PA DEPARTMENT OF TRANSPORTATION DISTRICT ROADSIDE SPECIALIST FOR SPECIFIC SUGGESTIONS ON TREATMENT TECHNIQUES AND MANAGEMENT PRACTICES.
- SEED TYPICAL WETLAND RESTORATION DETAIL ON PLAN SHEET ES-0.15 FOR ADDITIONAL NOTES, DETAIL, AND SPECIAL AREA RESTORATIONS.
- DO NOT LIME OR FERTILIZE IN WETLAND.

PEM WETLAND SEED MIX			
ERNST CONSERVATION SEED MIX NO. ERNMX-122			
FACW MEADOW MIX			
SEEDING RATE	20 LB PER ACRE, OR 1/2 LB PER 1,000 SQ FT	SEEDING RATE	20 LB PER ACRE, OR 1/2 LB PER 1,000 SQ FT
%	SPECIES LIST	%	SPECIES LIST CONTINUED
31%	FOX SEDGE (CAREX VULPINOIDEA)	1%	SWAMP MILKWEED (ASCLEPIAS INCARNATA)
20%	VIRGINIA WILDRYE (ELYMUS VIRGINICUS)	1%	NEW ENGLAND ASTER (ASTER NOVAE-ANGLIAE (SYMPHYOTRICHUM N.))
14%	LURID (SHALLOW) SEDGE (CAREX LURIDA)	1%	FLAT TOPPED WHITE ASTER (ASTER UMBELLATUS (DOELLINGERIA UMBELLATE))
5%	GREEN BULRUSH (SCIPIUS ATROVIRENS)	0.5%	JOE PYE WEED (EUPATORIUM FISTULOSUM)
4%	BLUE VERVAIN (VERBENA HASTATE)	0.5%	BONESET (EUPATORIUM PERFOLIATUM)
3.5%	WOOD REEDGRASS (CINNA ARUNDINACEA)	0.5%	DITCH STONECROP (PENTHORUM SEDOIDES)
3%	SOFT RUSH (JUNCUS EFFUSES)	0.5%	NARROWLEAF BLUE EYED GRASS (SISYRINCHUM ANGSTIFOLIUM)
3%	BLUNT BROOM SEDGE (CAREX SCOPARIA)	0.5%	SEEDBOX (LUDWIGIA ALTERNIFOLIA)
3%	HOP SEDGE (CAREX LUPUTINA)	0.5%	GREAT BLUE LOBELIA (LOBELIA SIPHILITICA)
2%	SENSITIVE FERN (ONOCLEA SENSIBILIS)	0.5%	MUD PLANTAIN (WATER PLANTAIN) (ALISMA SUBCORDATA (A. PLANTAGO-AQUATICA))
2%	OXEYE SUNFLOWER (HELIOPSIS HELIANTHOIDES)	0.5%	SQUARE STEMMED MONKEYFLOWER (MIMULUS RINGENS)
1%	RATTLESNAKE GRASS (GLYCERIA CANADENSIS)	0.4%	BLADDER (STAR) SEDGE (CAREX INTUMESCENS)
1%	WOOLGRASS (SCIRPUS CYPERINUS)	0.1%	SLENDER MOUNTAINMINT (Pycnanthemum tenuifolium)
TOTAL: 100%			

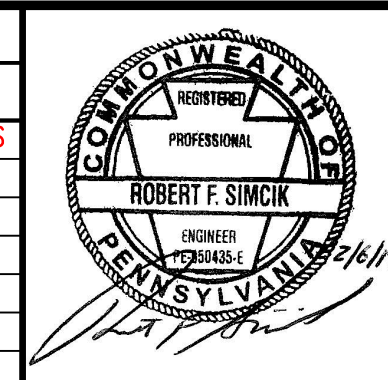
PLANTING SPECIFICATIONS FOR PFO OR PSS WETLAND RESTORATION AREAS (SEE ES-0.09 FOR RESTORATION DETAIL)				
VEGETATION PLANTING TYPE	SIZE	SPECIES ^a		WETLAND STATUS ^b
SHRUB SPECIES	TWO TO THREE-FOOT WHIP	ALNUS SERRULATA	SMOOTH ALDER	OBL
		CORNUS AMONUM	SILKY DOGWOOD	FACW
		LINDERA BENZOIN	SPICEBUSH	FAC
		VIBURNUM DENTATUM	NORTHERN ARROW-WOOD	FAC
TREE SPECIES	CONTAINERIZED (1-INCH DBH) ^c	ACER RUBRUM	RED MAPLE	FAC
		BETULA ALLEGHANIENSIS	YELLOW BIRCH	FAC
		PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	FACW
		QUERCUS BICOLOR	SWAMP WHITE OAK	FACW
		SALIX NIGRA	BLACK WILLOW	OBL

NOTES:

- IF LISTED SPECIES IS UNAVAILABLE DURING PLANTING, A COMPARABLE NATIVE SUBSTITUTE WILL BE USED.
- USACE EASTERN MOUNTAINS AND PIEDMONT WETLAND STATUS TREES AND SHRUBS WILL BE PLANTED AT A DENSITY OF AT LEAST 400 PLANTS/TREES PER ACRE IN ACCORDANCE WITH USACE GUIDANCE
- DBH - DIAMETER AT BREAST HEIGHT

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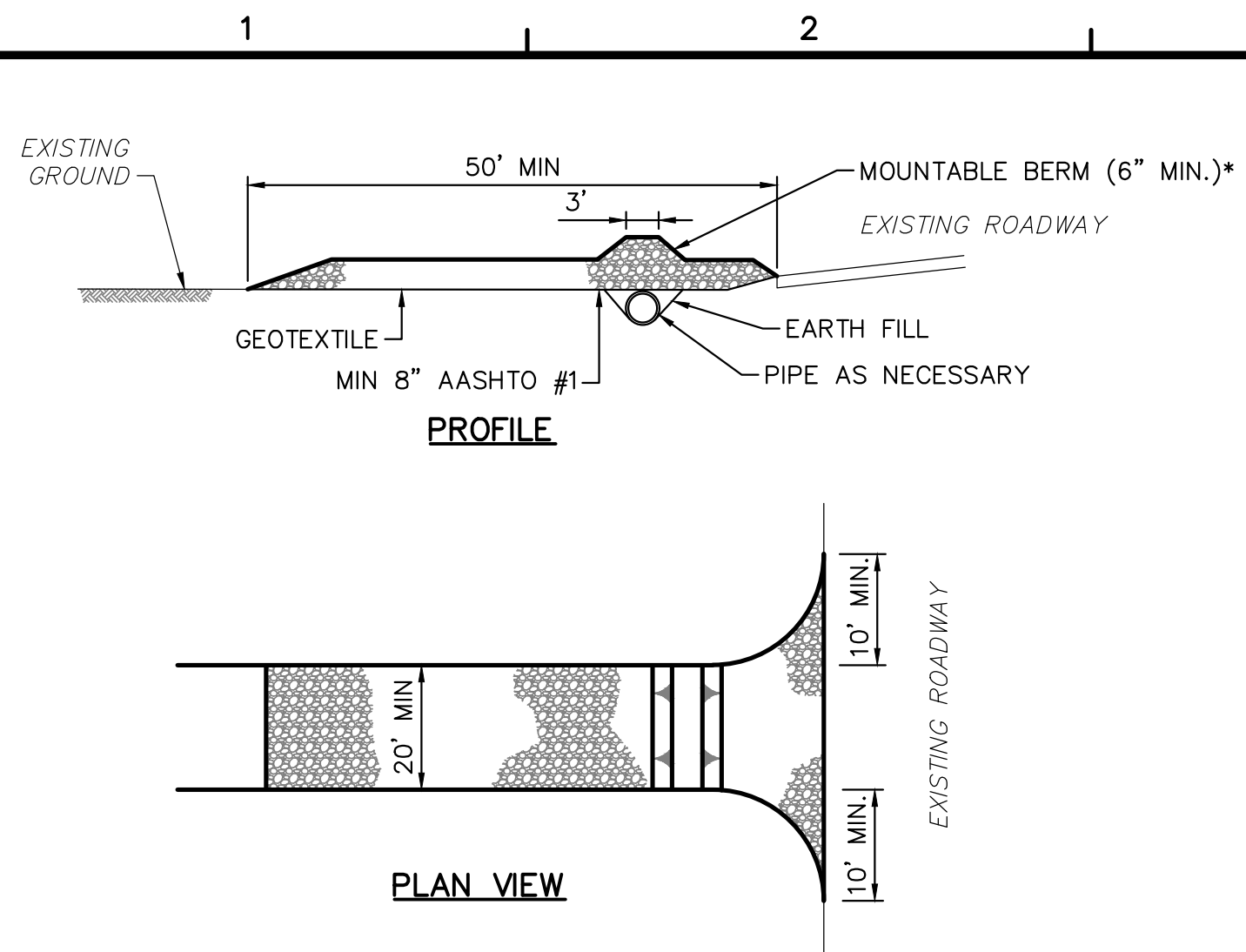
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3	RS	6/17/21	RESTORED AREA UPDATES FOR PERMIT RENEWAL



SUNOCO PIPELINE LP
PHILADELPHIA, PENNSYLVANIA
**PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5**

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES
PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

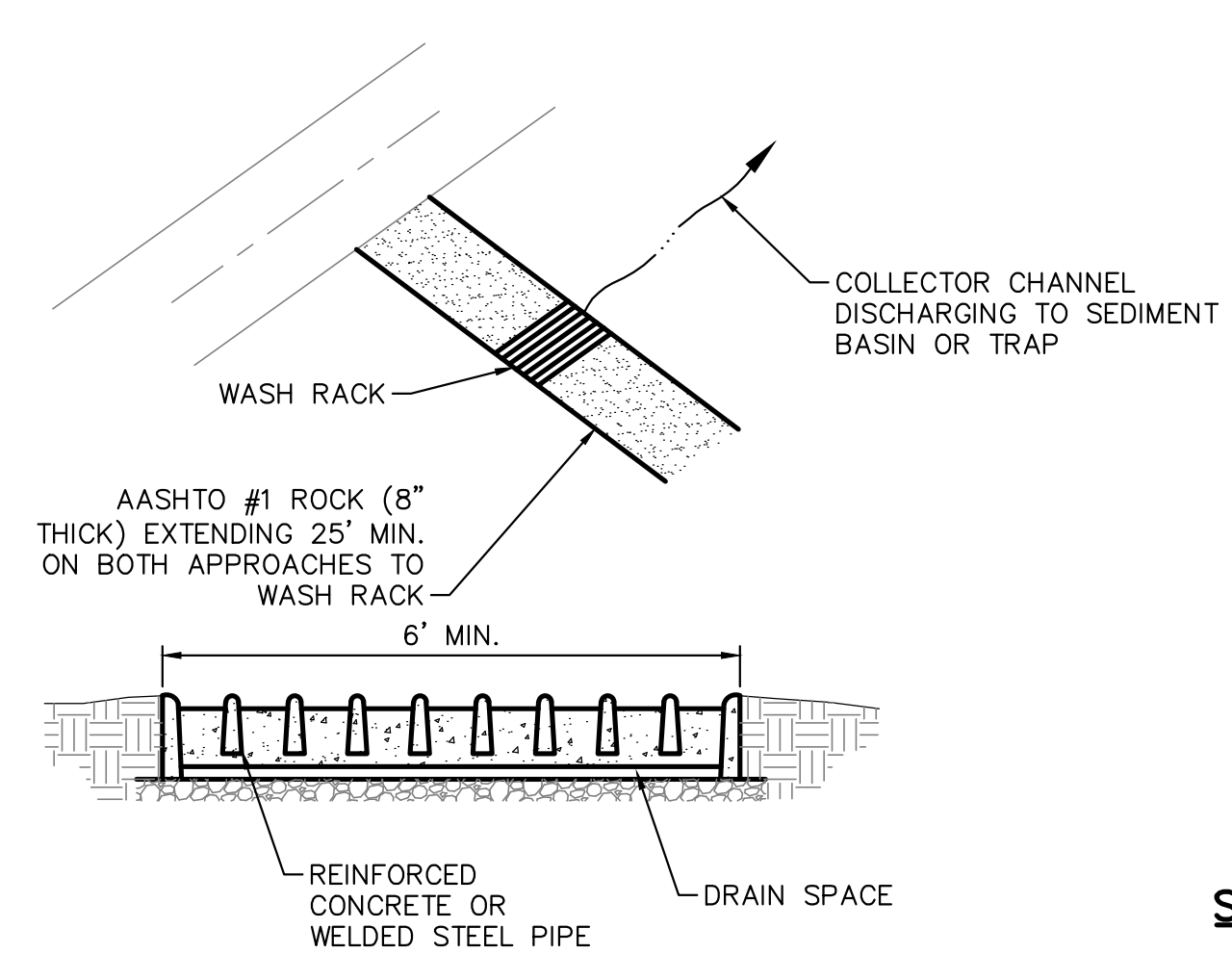
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* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE IF NEEDED.

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 OPTION 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 THE 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.

ROCK CONSTRUCTION ENTRANCE 1/0.06
NOT TO SCALE



NOTES:
 WASH RACK SHALL BE 20 FEET (MIN.) WIDE OR TOTAL WIDTH OF ACCESS.
 WASH RACK SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE ANTICIPATED CONSTRUCTION VEHICULAR TRAFFIC.
 A WATER SUPPLY SHALL BE MADE AVAILABLE TO WASH THE WHEELS OF ALL VEHICLES EXITING THE SITE.
 MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. DRAIN SPACE UNDER WASH RACK SHALL BE KEPT OPEN AT ALL TIMES. DAMAGE TO THE WASH RACK SHALL BE REPAIRED PRIOR TO FURTHER USE OF THE RACK. ALL SEDIMENT DEPOSITED ON ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE WITH WASH RACK 3/0.06
NOT TO SCALE

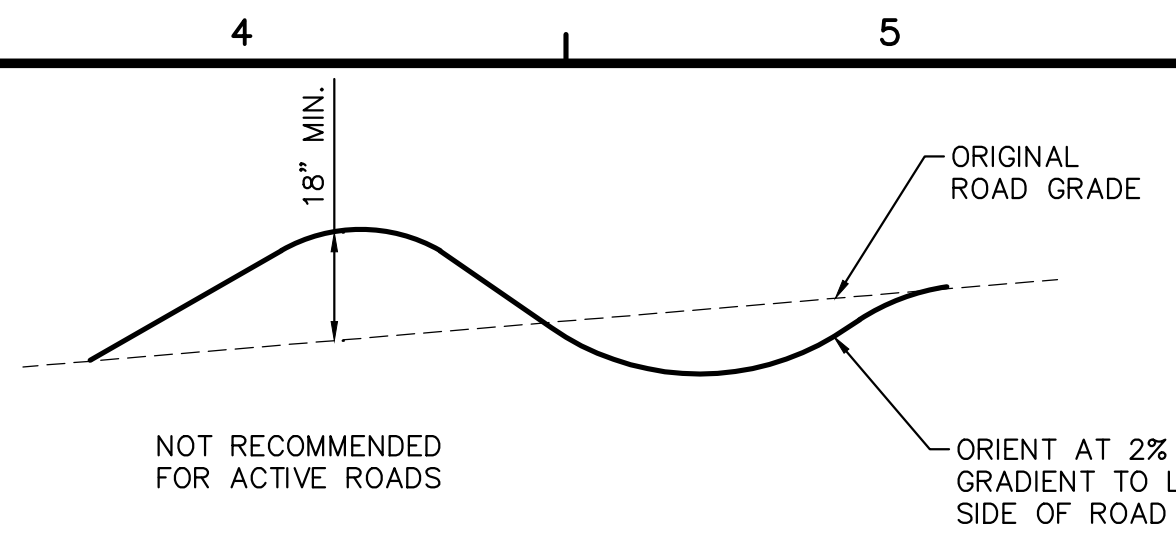
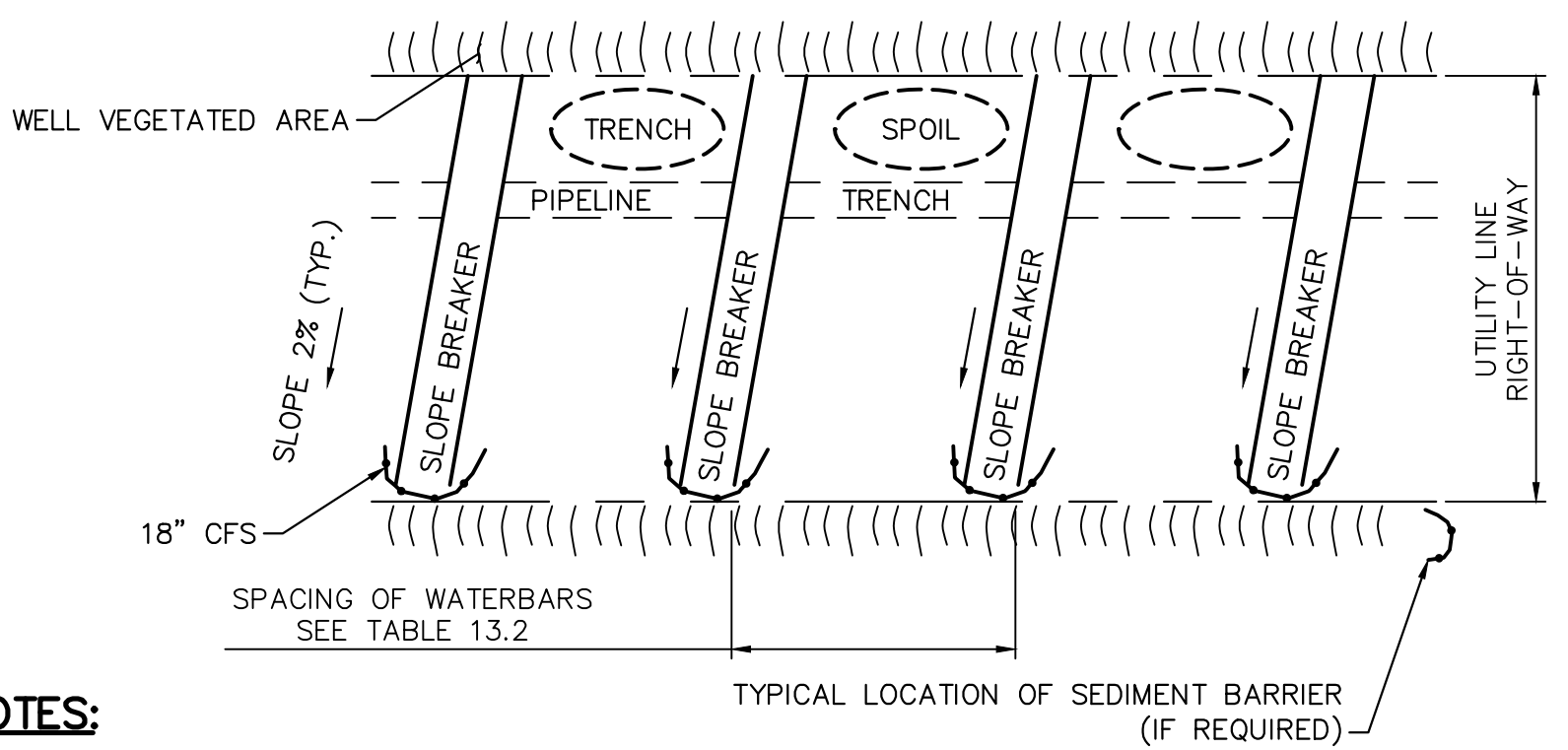


TABLE 13.2
MAXIMUM SPACING FOR PERMANENT WATERBARS ON A UTILITY LINE RIGHT-OF-WAY

PERCENT SLOPE	SPACING (FT)
<5	250
5-15	150
15-30	100
>30	50



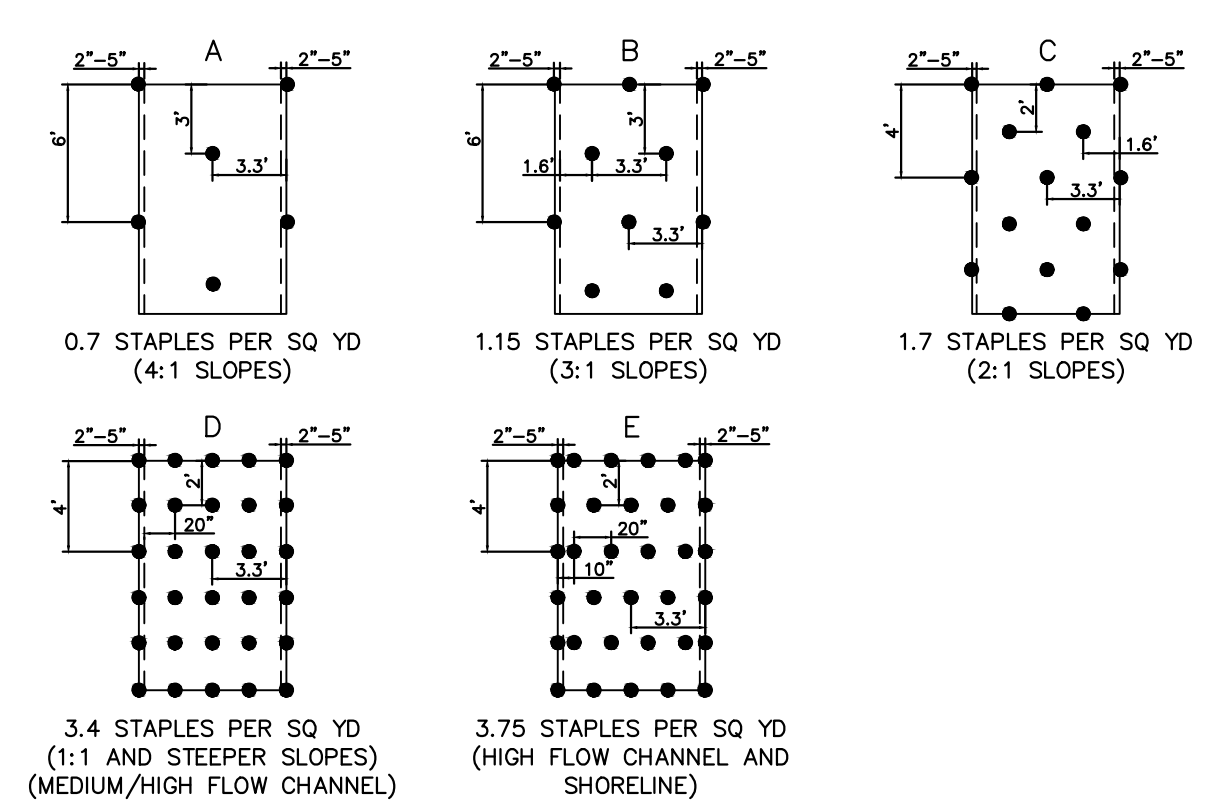
NOTES:
 WATERBARS SHALL DISCHARGE TO A STABLE AREA.
 WATERBARS SHALL BE INSPECTED WEEKLY (DAILY ON ACTIVE ROADS) AND AFTER EACH RUNOFF EVENT. DAMAGED OR ERODED WATERBARS SHALL BE RESTORED TO ORIGINAL DIMENSIONS WITHIN 24 HOURS OF INSPECTION.
 MAINTENANCE OF WATERBARS SHALL BE PROVIDED UNTIL ROADWAY, SKIDTRAIL, OR RIGHT-OF-WAY HAS ACHIEVED PERMANENT STABILIZATION.
 WATERBARS ON RETIRED ROADWAYS, SKIDTRAILS, AND RIGHT-OF-WAYS SHALL BE LEFT IN PLACE AFTER PERMANENT STABILIZATION HAS BEEN ACHIEVED.
 SEE TABLE 13.2 ABOVE FOR WATERBAR SPACING.
 PERMANENT WATERBARS ARE REQUIRED AT ALL STREAM, RIVER, AND OTHER WATER-BODY CROSSINGS AS WELL AS UPSLOPE FROM ROADWAY AND RAILROAD CUT SLOPES.
 SUMPS MAY BE ADDED AS NEEDED AT THE ENDS OF WATERBARS TO PROVIDE ADDITIONAL SEDIMENT REMOVAL PRIOR TO DISCHARGE THROUGH THE 18" COMPOST FILTER SOCK.

WATERBAR 2/0.06
NOT TO SCALE

SLOPE INSTALLATION:

- PREPARE SOIL BEFORE INSTALLING RECPs, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER AND SEED.
- BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECPs IN A 6 IN. DEEP X 6 IN. WIDE TRENCH WITH APPROXIMATELY 12 IN. OF RECPs EXTENDED BEYOND THE UPSLOPE PORTION OF THE TRENCH. ANCHOR THE RECPs WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12 IN. APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO THE COMPACTED SOIL AND FOLD THE REMAINING 12 IN. PORTION OF RECPs BACK OVER THE SEED AND COMPACTED SOIL. SECURE RECPs OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12 IN. APART ACROSS THE WIDTH OF THE RECPs.
- ROLL THE RECPs (3A) DOWN OR (3B) HORIZONTALLY ACROSS THE SLOPE. RECPs WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECPs MUST BE SECURELY FASTENED TO SOIL SURFACE BY REPLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
- THE EDGES OF PARALLEL RECPs MUST BE STAPLED WITH AN APPROXIMATELY 2 IN. - 5 IN. OVERLAP DEPENDING ON THE RECP TYPE.
- CONSECUTIVE RECP SPliced DOWN THE SLOPE MUST BE END-OVER-END (SHINGLE STYLE) WITH AN APPROXIMATE 3 IN. OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12 IN. APART ACROSS ENTIRE RECPs WIDTH.

STAPLE PATTERN GUIDE

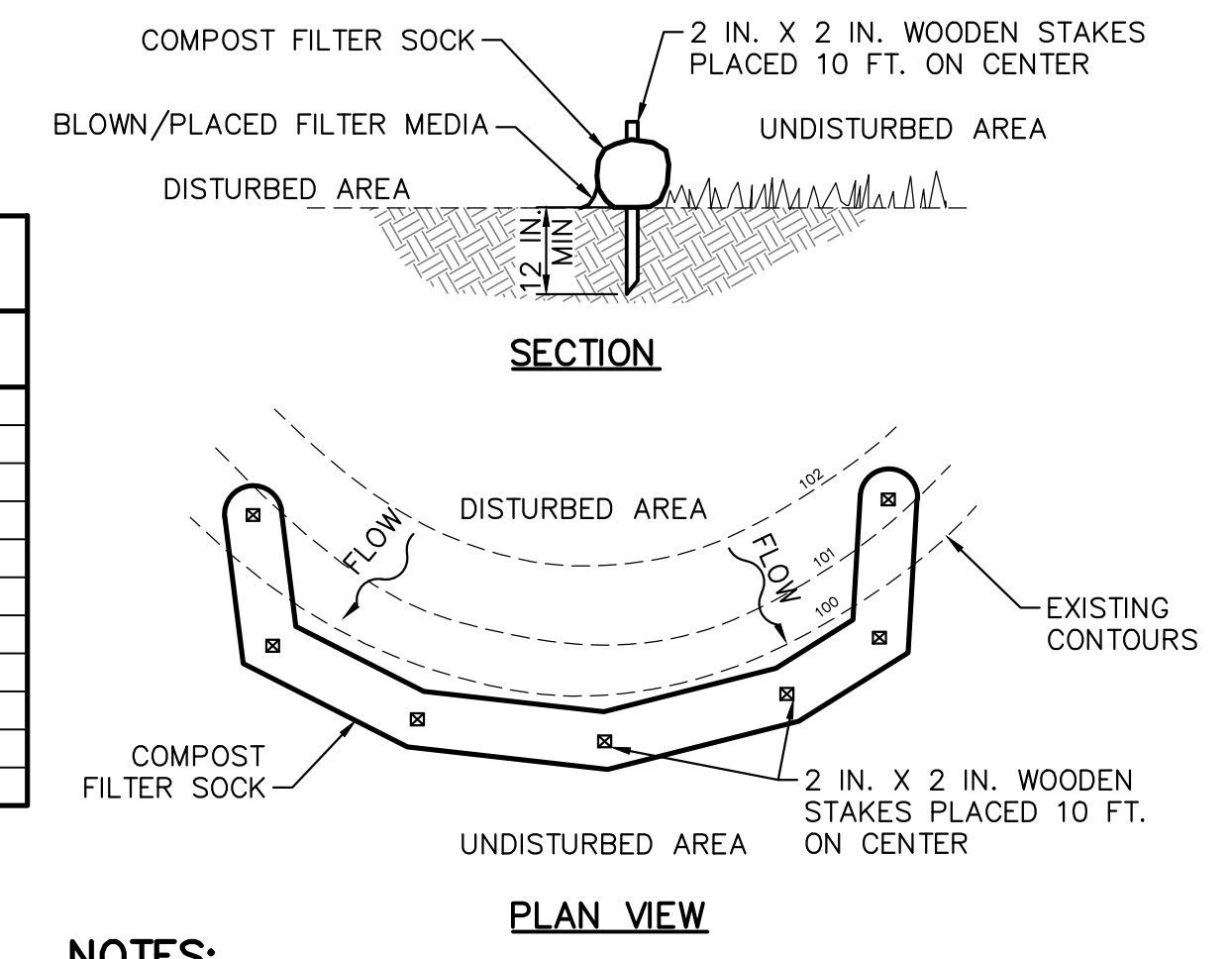


NOTES:
 1. FOR SLOPES BETWEEN 3:1 AND 1:1, USE NORTH AMERICAN GREEN ERONET SC 150 OR OWNER APPROVED EQUAL MATERIAL/METHOD.
 2. IN AREAS WHERE LIVESTOCK ARE KEPT, USE NORTH AMERICAN GREEN BIONET SC 150 BN OR OWNER APPROVED EQUAL MATERIAL/METHOD.
 3. SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.
 4. PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
 5. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
 6. BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE PROJECT LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
 7. THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
 8. BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

EROSION CONTROL BLANKET - SLOPE INSTALLATION 4/0.06
NOT TO SCALE

MAXIMUM SLOPE LENGTHS FOR COMPOST FILTER SOCK

% SLOPE	12" DIAMETER	18" DIAMETER	24" DIAMETER
2 (OR LESS)	520	700	1000
5	250	340	500
10	150	250	300
15	100	200	250
20	70	140	200
25	50	100	140
30	45	70	100
35	40	60	90
40	35	45	60
45	30	40	50
50	20	30	40



NOTES:
 SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE EPA DEP EROSION CONTROL MANUAL.
 COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.
 TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
 ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
 COMPOST FILTER SOCK 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 COMPOST 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.

TABLE 4.1
COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS

MATERIAL TYPE	3 MIL HDPE	5 MIL HDPE	5 MIL HDPE	MULTI-FILAMENT POLYPROPYLENE (MFPP)	HEAVY DUTY MULTI-FILAMENT POLYPROPYLENE (HDMFPP)
MATERIAL CHARACTERISTICS	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE	BIO-DEGRADABLE	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE
SOCK DIAMETERS	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
MESH OPENING	3/8"	3/8"	3/8"	3/8"	1/8"
TENSILE STRENGTH		26 PSI	26 PSI	44 PSI	202 PSI
ULTRAVIOLET STABILITY % ORIGINAL STRENGTH (ASTM G-155)	23% AT 1000 HR.	23% 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
OUTER FILTRATION MESH	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

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/XM) MAXIMUM

COMPOST FILTER SOCK 5/0.06
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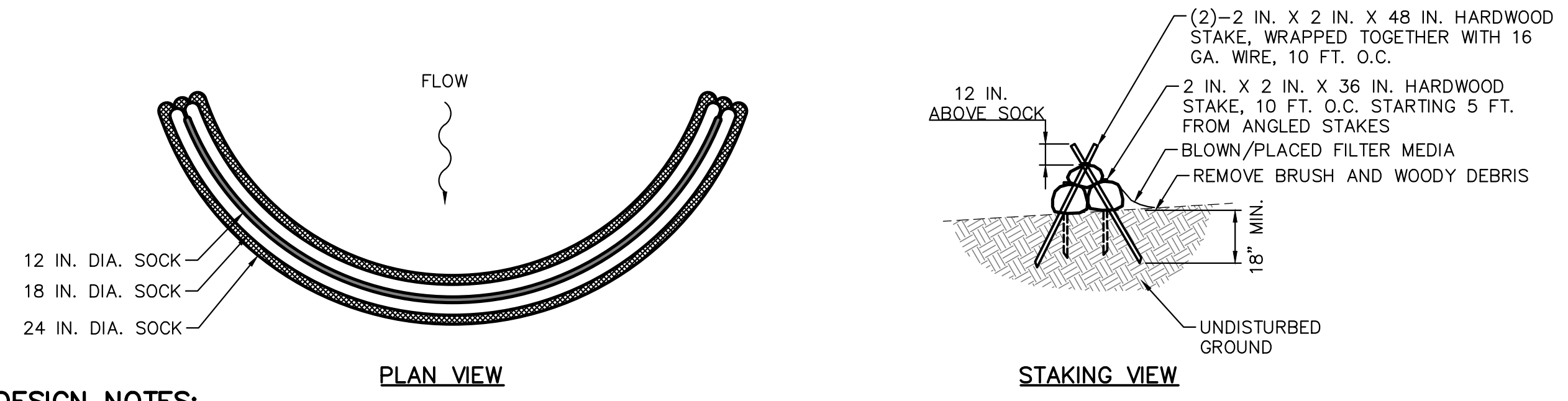
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3	RS	6/17/21	RESTORED AREA UPDATES FOR PERMIT RENEWAL

ROBERT F. SIMCIC
 ENGINEER
 PROFESSIONAL
 PENNSYLVANIA

SUNOCO PIPELINE LP
 PHILADELPHIA, PENNSYLVANIA
PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES
 PERMIT RENEWAL
 LANCASTER COUNTY CONSERVATION DISTRICT
 EROSION & SEDIMENT CONTROL &
 SITE RESTORATION PLAN
NOTES & DETAILS

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 PROJECT NO.: 112C05958
 DESIGNED BY: JB
 DRAWN BY: BH
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DESIGN NOTES:

1. COMPOST SEDIMENT TRAP SHALL BE SIZED TO PROVIDE 2000 CUBIC FEET OF STORAGE CAPACITY FOR EACH ACRE TRIBUTARY TO THE TRAP.
2. MINIMUM BASE WIDTH IS EQUAL TO THE HEIGHT.
3. SEDIMENT ACCUMULATION SHALL NOT EXCEED 1/2 THE TOTAL HEIGHT OF THE TRAP.
4. SOCKS SHALL BE OF LARGER DIAMETER AT THE BASE OF THE TRAP AND DECREASE IN DIAMETER FOR SUCCESSIVE LAYERS AS SHOWN ON THE PLAN VIEW.
5. ENDS OF THE TRAP SHALL BE A MINIMUM OF 1 FOOT HIGHER IN ELEVATION THAN THE MID-SECTION, WHICH SHALL BE LOCATED AT THE POINT OF DISCHARGE.

NOTES:

SOCK MATERIAL SHALL MEET THE STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST SOCK SEDIMENT TRAPS SHALL NOT EXCEED THREE SOCKS IN HEIGHT AND SHALL BE STACKED IN PYRAMIDAL FORM AS SHOWN ABOVE. MINIMUM TRAP HEIGHT IS ONE 24" DIAMETER SOCK. ADDITIONAL STORAGE MAY BE PROVIDED BY MEANS OF AN EXCAVATED SUMP 12" DEEP EXTENDING 1 TO 3 FEET UPSLOPE OF THE SOCKS ALONG THE LOWER SIDE OF THE TRAP.

COMPOST SOCK SEDIMENT TRAPS SHALL PROVIDE 2,000 CUBIC FEET STORAGE CAPACITY WITH 12" FREEBOARD FOR EACH TRIBUTARY DRAINAGE ACRE. (SEE MANUFACTURER FOR ANTICIPATED SETTLEMENT.)

THE MAXIMUM TRIBUTARY DRAINAGE AREA IS 5.0 ACRES. SINCE COMPOST SOCKS ARE "FLOW-THROUGH," NO SPILLWAY IS REQUIRED.

COMPOST SOCK SEDIMENT TRAPS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE HEIGHT OF THE SOCKS.

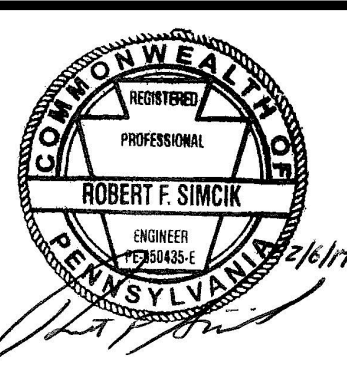
PHOTODEGRADABLE AND BIODEGRADABLE SOCKS SHALL NOT BE USED FOR MORE THAN 1 EYAR.

COMPOST SOCK SEDIMENT TRAP 6
NOT TO SCALE 0.07



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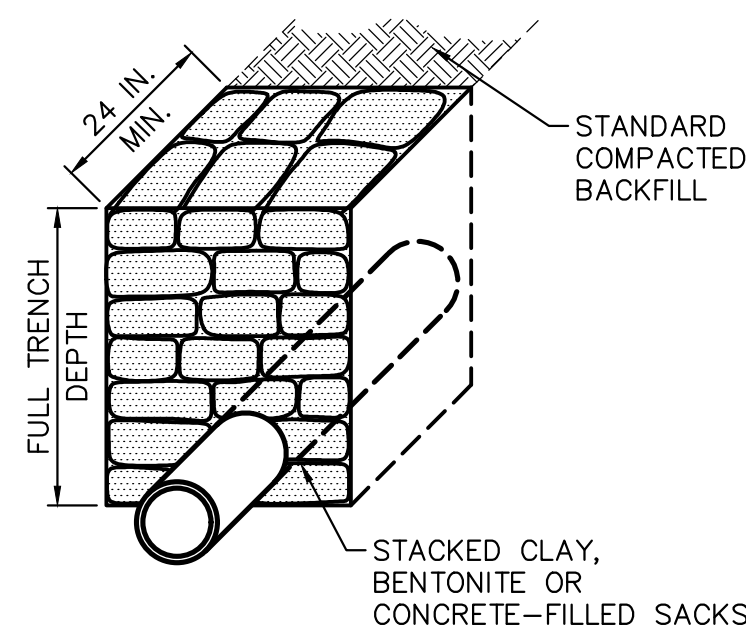
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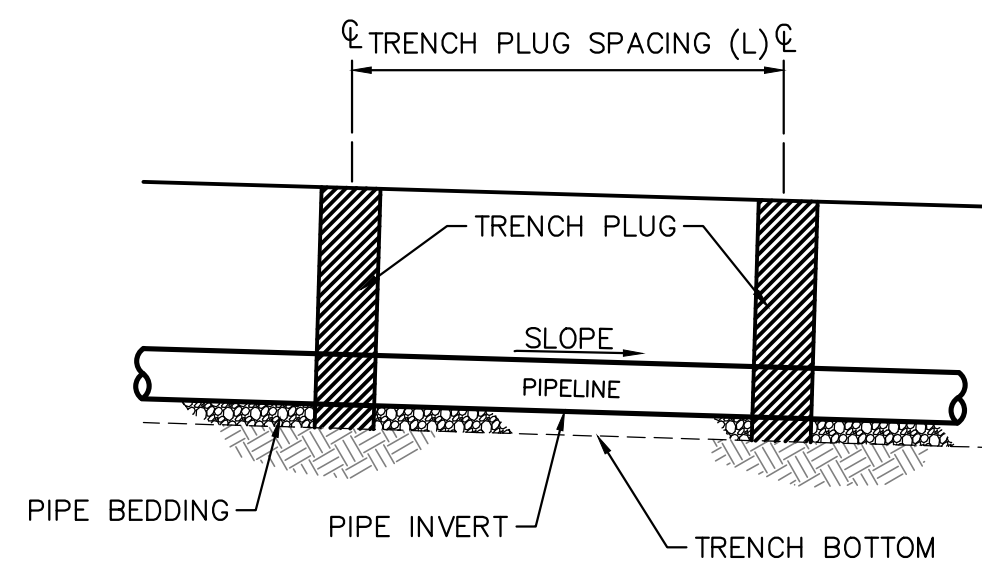
SUNOCO PIPELINE LP
PHILADELPHIA, PENNSYLVANIA
**PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5**

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES
PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
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SECTION VIEW



ELEVATION

TRENCH SLOPE (%)	SPACING L (FT)	PLUG MATERIAL
<5	1,000	* CLAY, BENTONITE OR CONCRETE-FILLED SACKS
5-15	500	* CLAY, BENTONITE OR CONCRETE-FILLED SACKS
15-25	300	* CLAY, BENTONITE OR CONCRETE-FILLED SACKS
25-35	200	* CLAY, BENTONITE OR CONCRETE-FILLED SACKS
35-100	100	* CLAY, BENTONITE OR CONCRETE-FILLED SACKS
>100	50	CEMENT BAGS (WETTED) OR MORTARED STONE

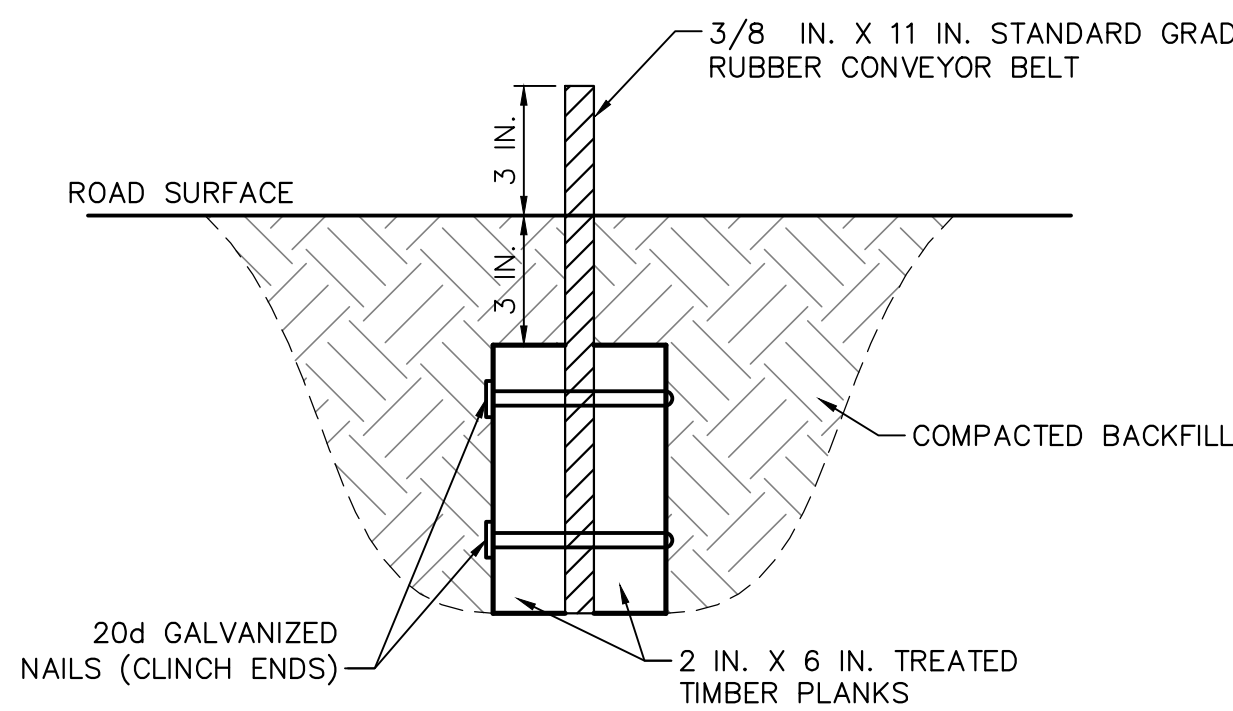
* TOP SOIL MAY NOT BE USED TO FILL SACKS

NOTES:

IMPERVIOUS TRENCH PLUGS ARE REQUIRED FOR ALL STREAM, RIVER, WETLAND, OR OTHER WATERBODY CROSSINGS.

PLACE A MINIMUM OF ONE (1) TRENCH PLUG AT A MAXIMUM SPACING OF 100 FEET BETWEEN TRENCH PLUGS WITHIN A WETLAND. WETLAND CROSSINGS LESS THAN FIFTY (50) FEET DO NOT REQUIRE AN INTERNAL TRENCH PLUG. (IN ACCORDANCE WITH SPECIAL CONDITIONS PART, SECTION 20, CONDITION #ff OF THE APPROVED CHAPTER 105 PERMIT)

TRENCH PLUG INSTALLATION 10
NOT TO SCALE 0.08

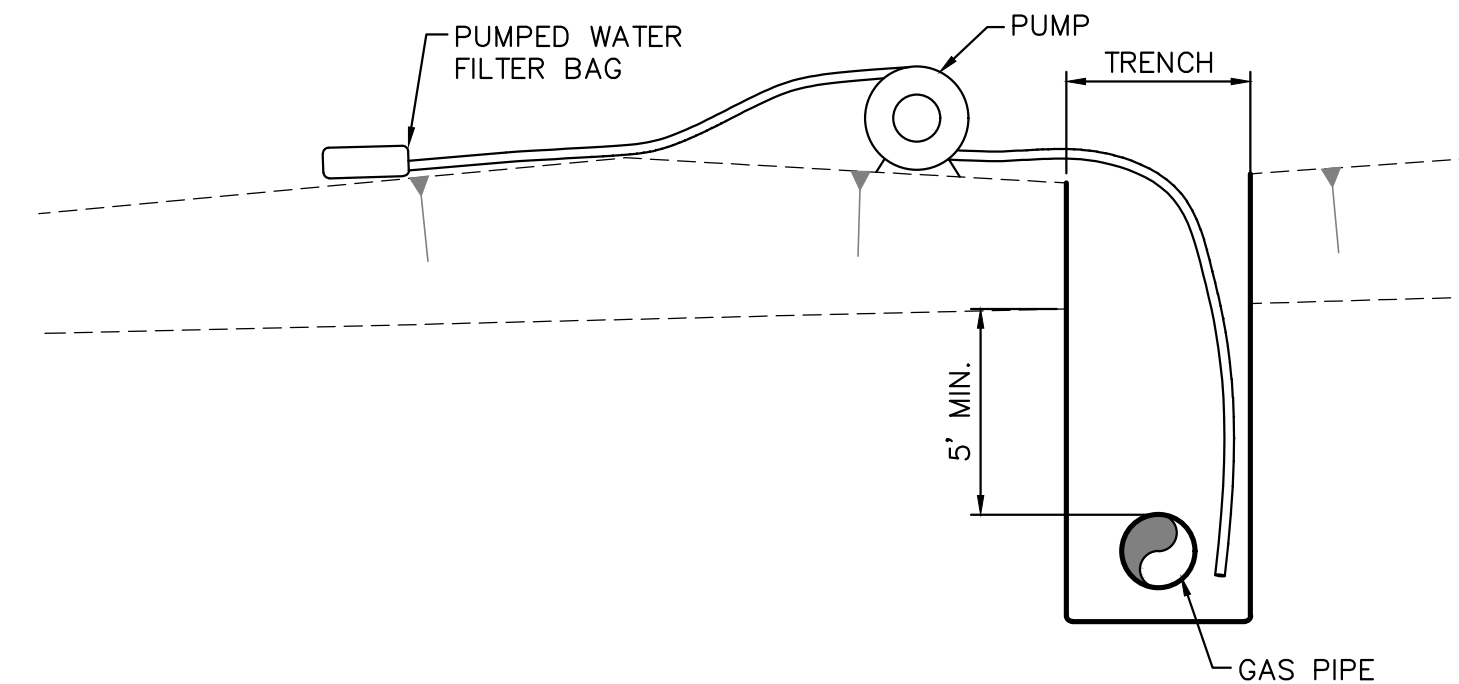


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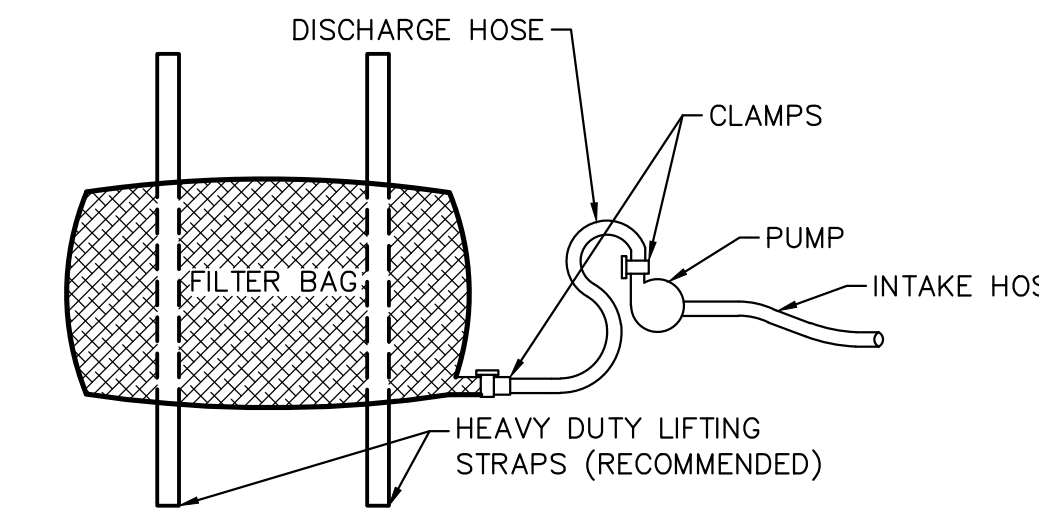
- DEFLECTOR SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT.
- ACCUMULATED SEDIMENT SHALL BE REMOVED FROM DEFLECTOR WITHIN 24 HOURS OF INSPECTION.
- BELT SHALL BE REPLACED WHEN WORN AND NO LONGER EFFECTIVE.
- MAXIMUM SPACING OF DEFLECTORS SHALL BE AS SHOWN IN TABLE.

ROAD GRADE (PERCENT)	SPACING BETWEEN DIPS, CULVERTS, OR DEFLECTORS (FEET)
<2	300
3	235
4	200
5	180
6	165
7	155
8	150
9	145
10	140

WATER DEFLECTOR 12
NOT TO SCALE 0.08



TRENCH DEWATERING DETAIL
NOT TO SCALE



PLAN VIEW

NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-3751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED DON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5% FOR SLOPES EXCEEDING 5%. CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

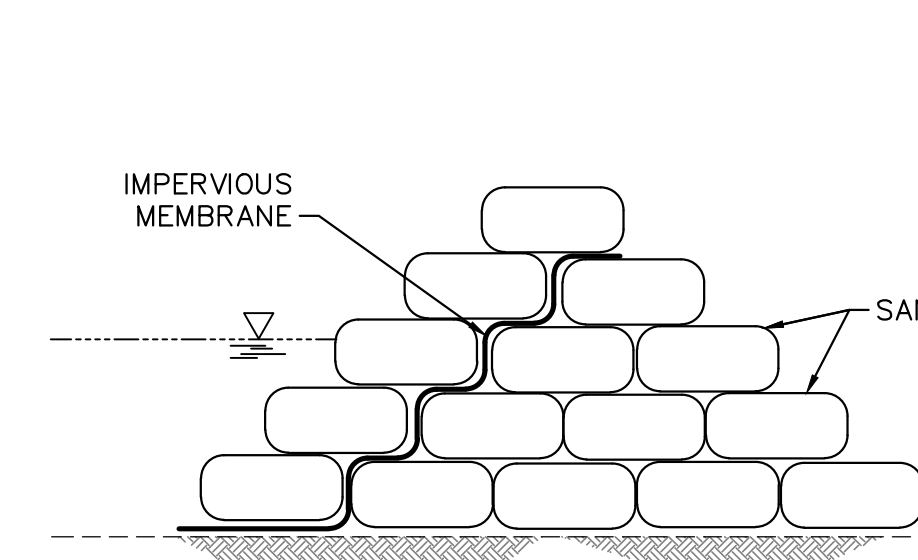
THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

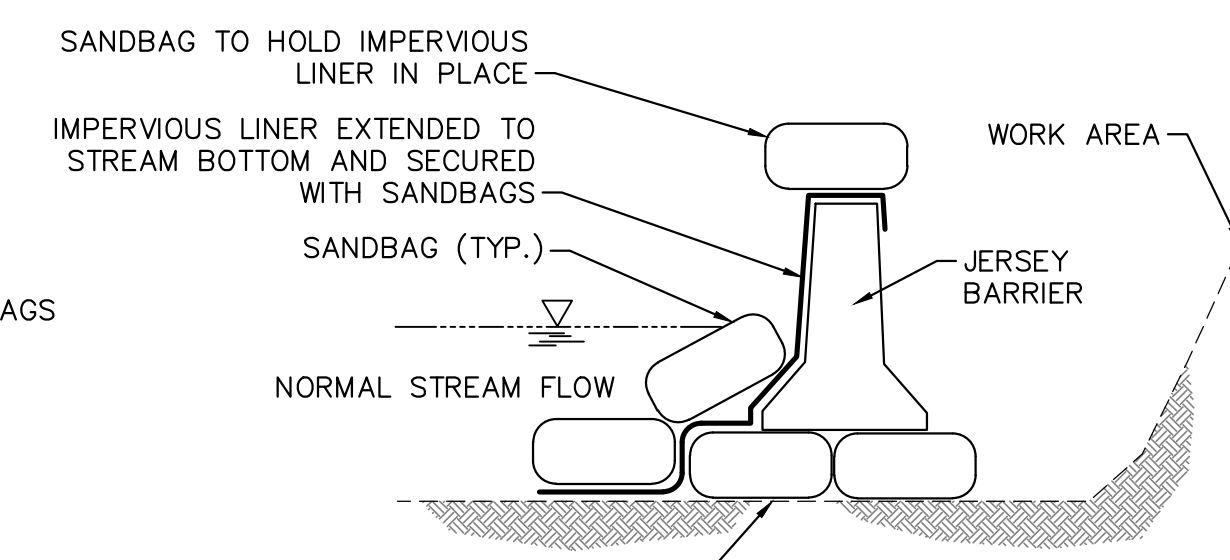
FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

WHERE COMPOST FILTER SOCK IS NECESSARY TO ELEVATE THE PUMPED WATER FILTER BAG TO AN ABACT E&S BMP, THE COMPOST FILTER SOCK SHALL BE PLACED TO SUFFICIENT LENGTH TO MANAGE ALL FLOW FROM THE PUMPED WATER FILTER BAG (IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION II, CONDITION I OF THE APPROVED CHAPTER 102 PERMIT).

PUMPED WATER FILTER BAG 11
NOT TO SCALE 0.08



STACKED SANDBAGS OPTION



JERSEY BARRIER OPTION

NOTES:

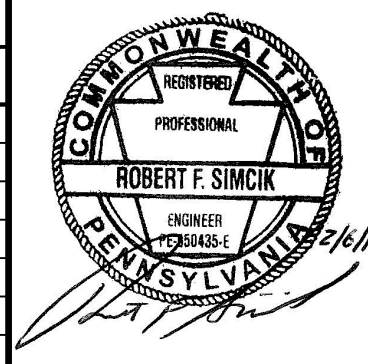
CONSTRUCT DAMS WITH SAND BAGS, JERSEY BARRIERS OR SIMILAR MATERIAL WITH AN IMPERVIOUS LINER EXTENDED TO THE STREAM BOTTOM AND SECURED WITH SANDBAGS MAINTAINING AMBIENT DOWNSTREAM FLOW RATES.

SANDBAG OR DIVERSION DAM 13
NOT TO SCALE 0.08



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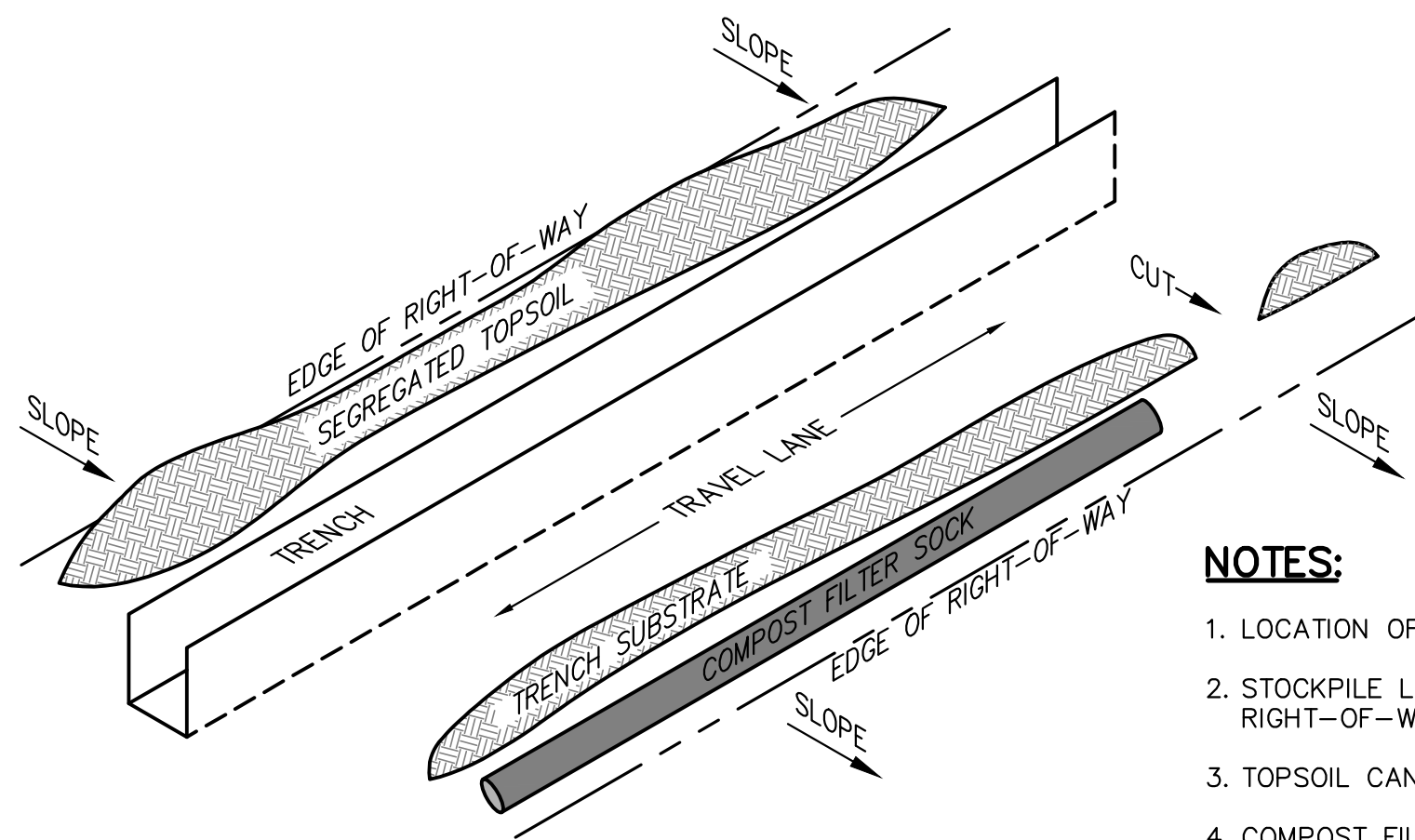
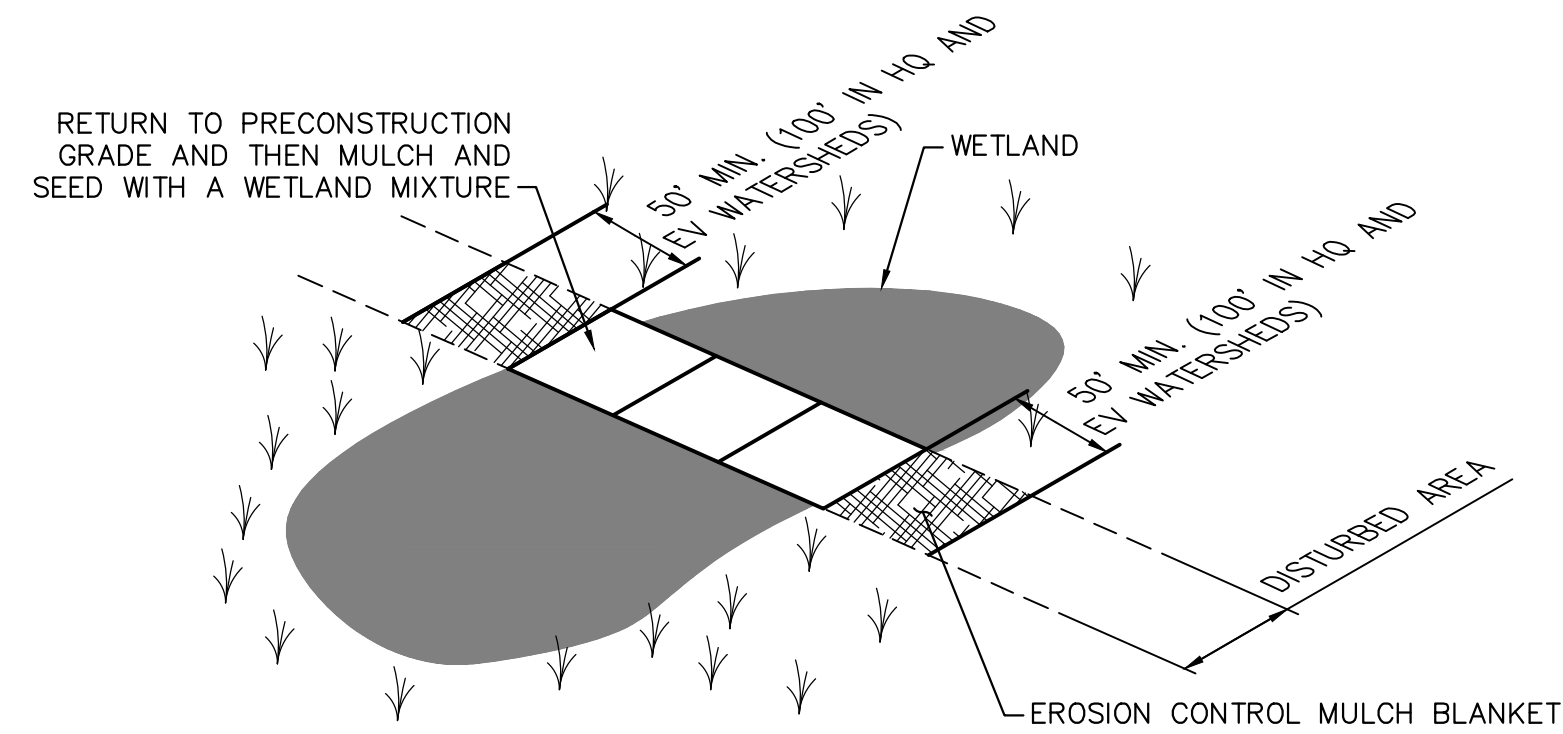
NO.		BY	DATE	REVISIONS	REMARKS
1	RS	3/28/17		INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS	
2	RS	5/25/17		DRAWINGS PROVIDED TO FIELD	
3	RS	6/17/21		RESTORED AREA UPDATES FOR PERMIT RENEWAL	



SUNOCO PIPELINE LP
PHILADELPHIA, PENNSYLVANIA
**PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5**

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES
PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

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NOTES:

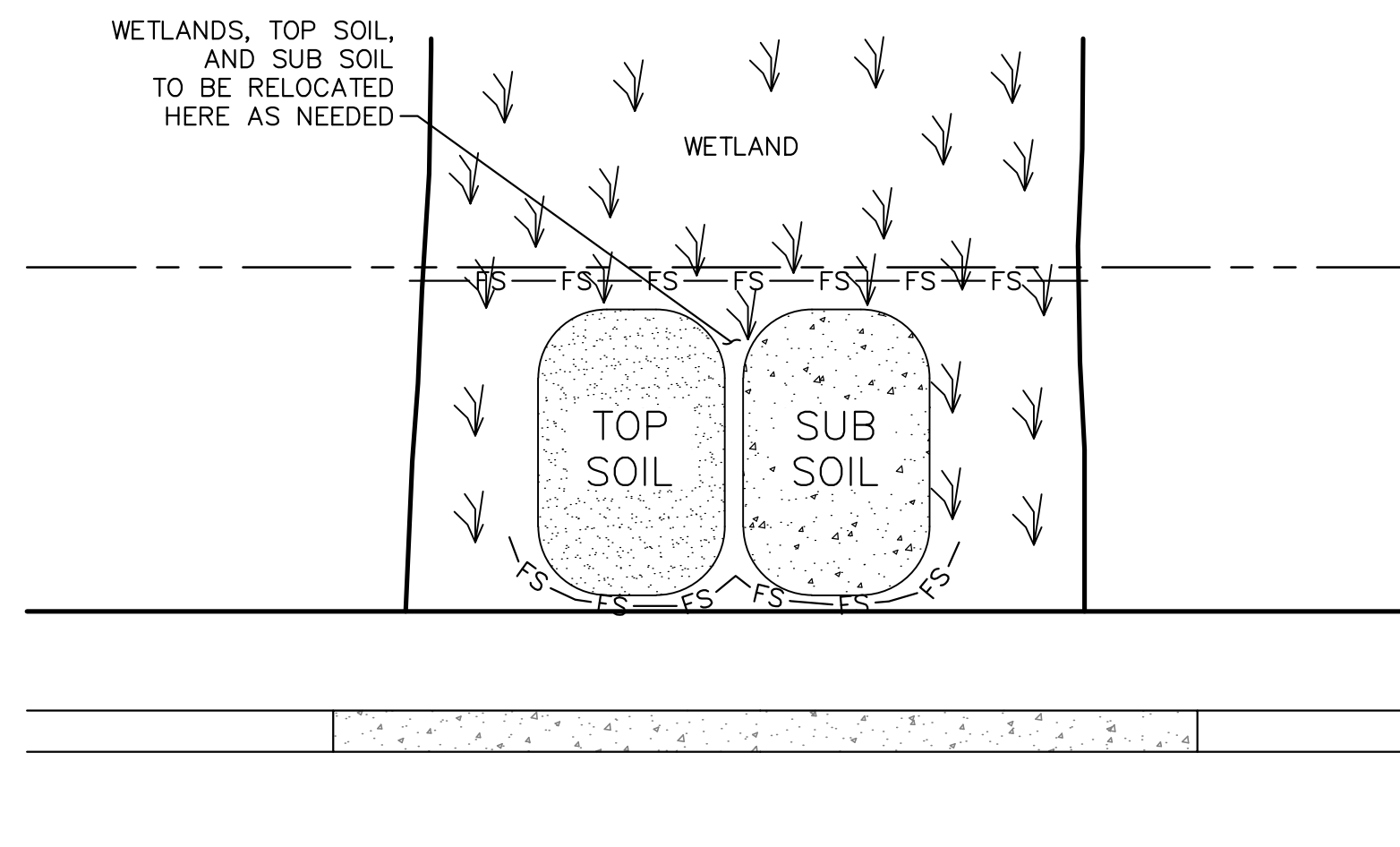
1. LOCATION OF TRENCH AND TRAVEL LANE WILL VARY BASED ON PROPOSED PIPE LOCATIONS.
2. STOCKPILE LOCATION PLACED UPSLOPE OF TRENCH TO DIVERT OFF-SITE DRAINAGE AWAY FROM RIGHT-OF-WAY.
3. TOPSOIL CAN BE PLACED WITH DITCH SPOIL IF PROPERLY SEGREGATED.
4. COMPOST FILTER SOCK TO BE INSTALLED PARALLEL TO EXISTING CONTOURS.
5. TOPSOIL TO BE REPLACED TO PRECONSTRUCTION DEPTH (TO BE FIELD VERIFIED).

NOTES:

1. BACKFILL TRENCH; WERE SOILS WERE SEGREGATED, REPLACE IN ORDER OF REMOVAL (CONSULT SPREAD HYDROGEOLOGIST PRIOR TO AND DURING BACKFILLING)
2. ONCE BACKFILLING IS COMPLETE, REMOVE TEMPORARY TIMBER MATTING AND ALL CONSTRUCTION DEBRIS AND RESTORE ORIGINAL GRADES AND HYDROLOGY.
3. RESTORATION ACTIVITIES SHALL BEGIN IMMEDIATELY AFTER BACKFILLING. TEMPORARILY REVEGETATE ALL IMPACTED WETLANDS IN ACCORDANCE WITH PLAN SHEET ES-0.05 TO ALLOW RAPID STABILIZATION AND DETER INVASIVE SPECIES.
4. PERMANENTLY REVEGETATE IMPACTED PEM WETLANDS IN ACCORDANCE WITH PLAN SHEET ES-0.05 THAT CALLS FOR ERNST CONSERVATION SEED MIX NO. ERNMX-122 FACW MEADOW MIX. PLANT DURING THE RECOMMENDED PLANTING SEASON.
5. TEMPORARY OR PERMANENT REVEGETATION IS NOT NECESSARY IN AREAS OF STANDING WATER.
6. NO SOIL AMENDMENTS, LIME, FERTILIZER, OR BINDING AGENTS ARE TO BE USED IN WETLAND AREAS.
7. PSS IMPACTED WETLAND AREAS WHERE NOTED ON PLAN SHEETS WILL BE PLANTED WITH SHRUB SPECIES IN ACCORDANCE WITH ES-0.05. PLANT DURING THE RECOMMENDED PLANTING SEASON.
8. PSS IMPACTED WETLAND AREAS WHERE THE ROOT SYSTEM WAS NOT REMOVED (E.G., MATTED OVER) DO NOT REQUIRE REPLANTING. PLANT DURING THE RECOMMENDED PLANTING SEASON.
9. PFO IMPACTED WETLANDS AREAS WHERE NOTED ON PLAN SHEETS FOR RESTORATION WILL BE PLANTED WITH THE TREE SPECIES IN ACCORDANCE WITH ES-0.05.
10. PSS AND PFO RESTORATION AREAS WILL BE PROTECTED WITH 'NO-MOW' SIGNS.
11. REFER TO THE PROJECT'S IMPACT AVOIDANCE, MINIMIZATION, AND MITIGATION PROCEDURES FOR MORE SPECIFICS ON WETLAND RESTORATION IN GENERAL AND SPECIFICS REGARDING PSS AND PFO RESTORATION EFFORTS.

TYPICAL WETLAND RESTORATION
SCALE: NOT TO SCALE

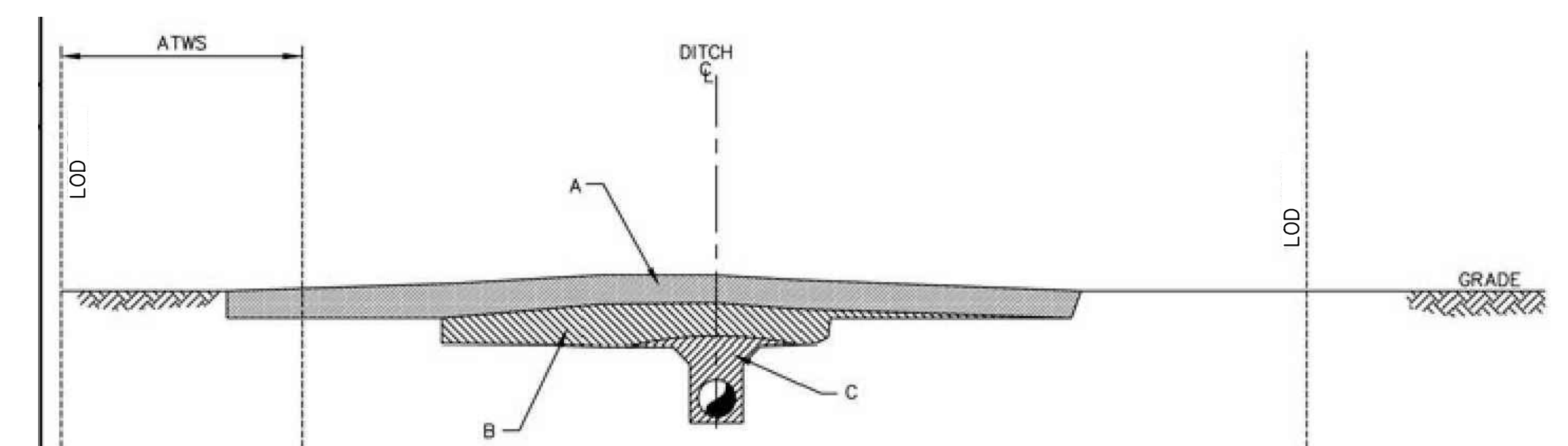
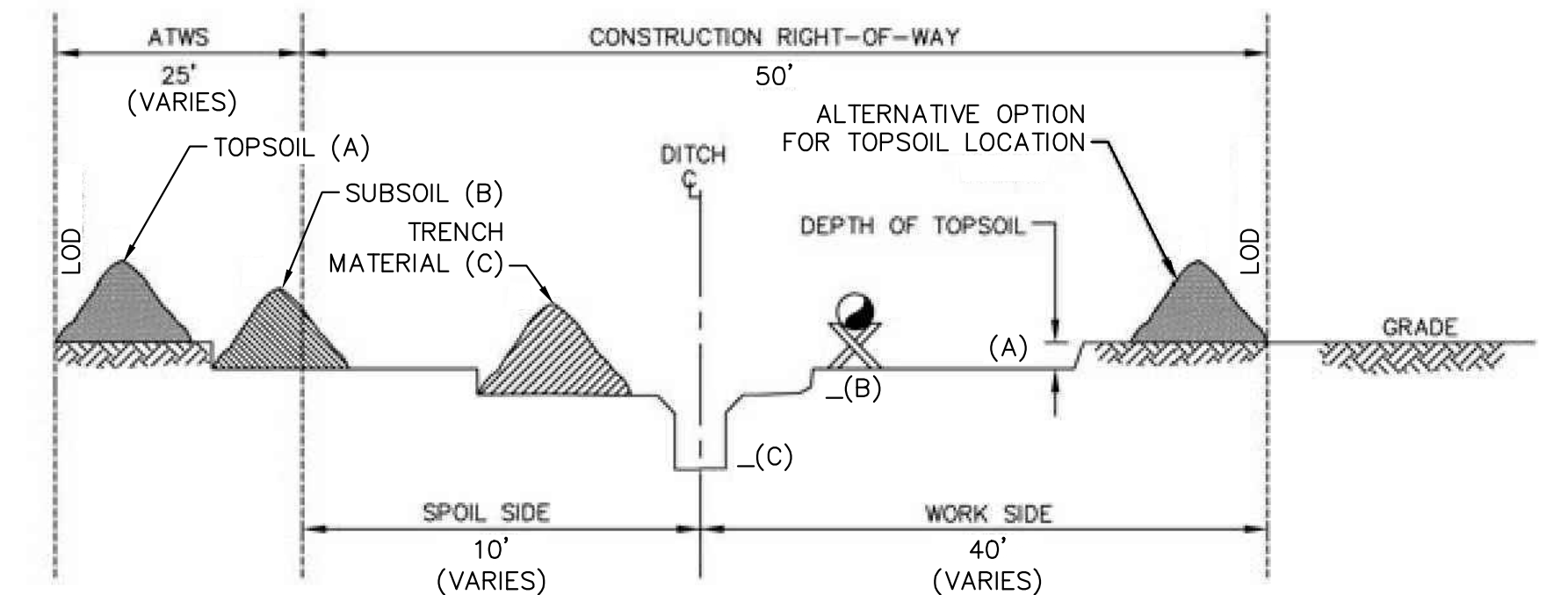
RIGHT-OF-WAY DETAIL
NOT TO SCALE



NOTES:

1. PROVIDE PHYSICAL SEPARATION BENEATH SPOIL PILES AND WETLAND SOIL TO ENSURE FULL REMOVAL AND TO MINIMIZE IMPACTS.

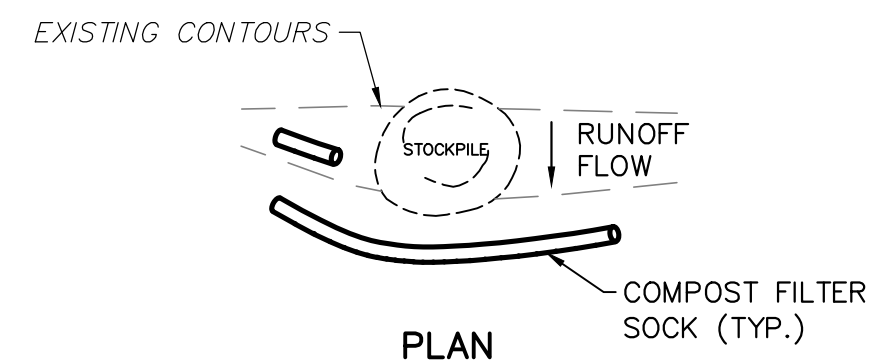
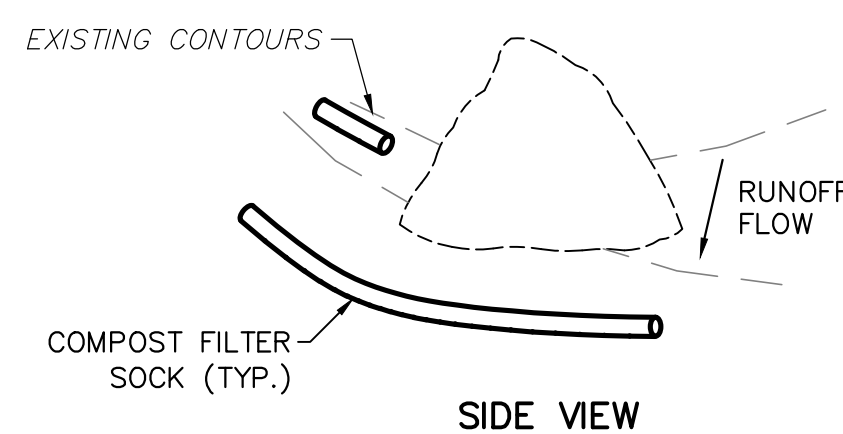
SPOIL STOCKPILE CONTAINMENT - WETLANDS
NOT TO SCALE



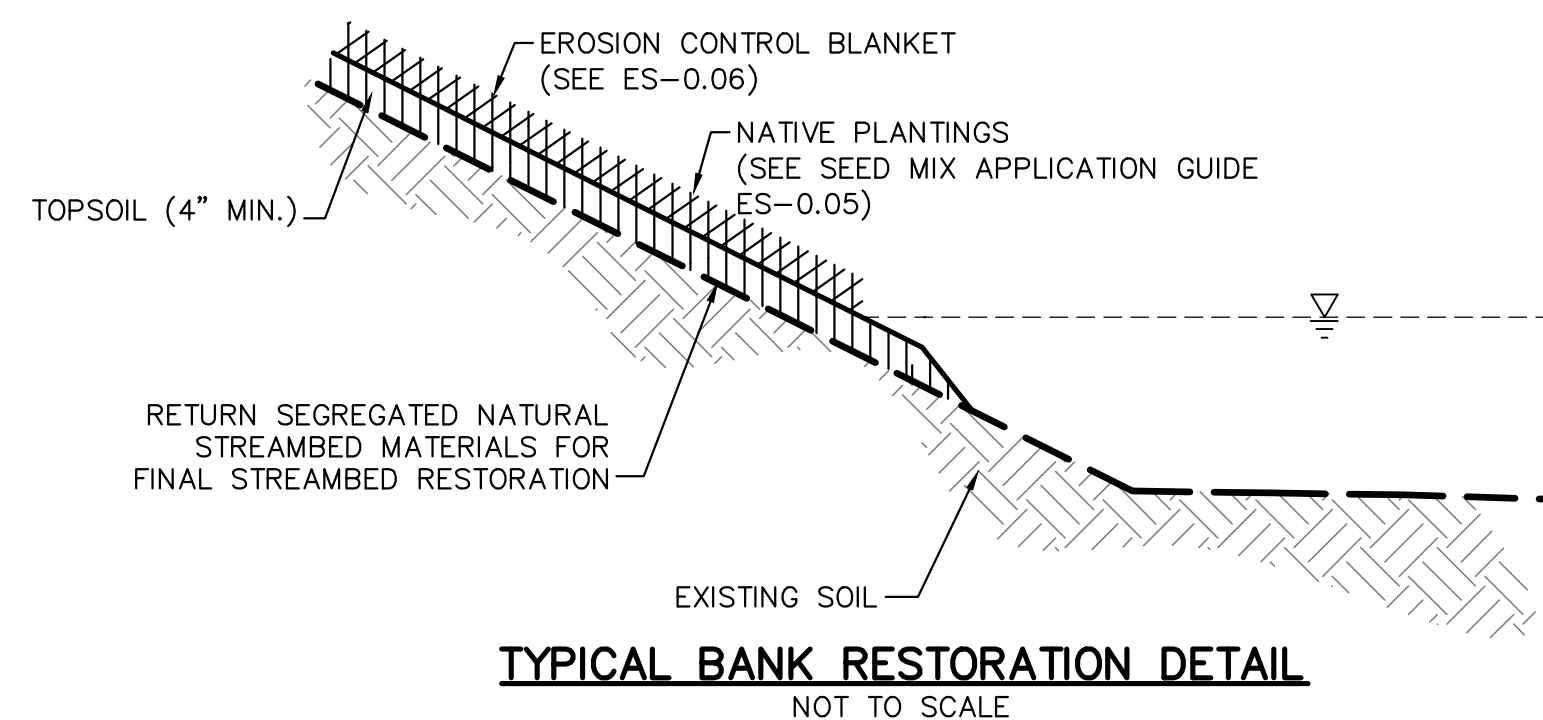
SPOIL STOCKPILE CONTAINMENT - TRIPLE DITCH
NOT TO SCALE

NOTES:

1. TRIPLE DITCH METHOD WILL BE USED TO SEGREGATE PROBLEM SOILS SUCH AS SALINE OR SODIC SOILS, IDENTIFIED STREAM CROSSINGS, AND/OR AS OTHERWISE DIRECTED.
2. ENSURE THE EXCAVATED SOILS ARE IN SEPARATE STOCKPILES WITH VISUAL SEPARATION OF AT LEAST 2' BETWEEN PILES.
3. EXCAVATED SOILS ARE TO BE PLACED BACK IN THE SEQUENCE IN WHICH WERE REMOVED.

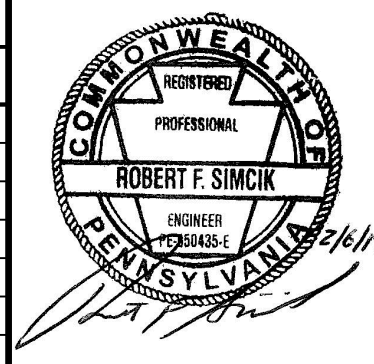


SPOIL STOCKPILE CONTAINMENT - UPLANDS
NOT TO SCALE



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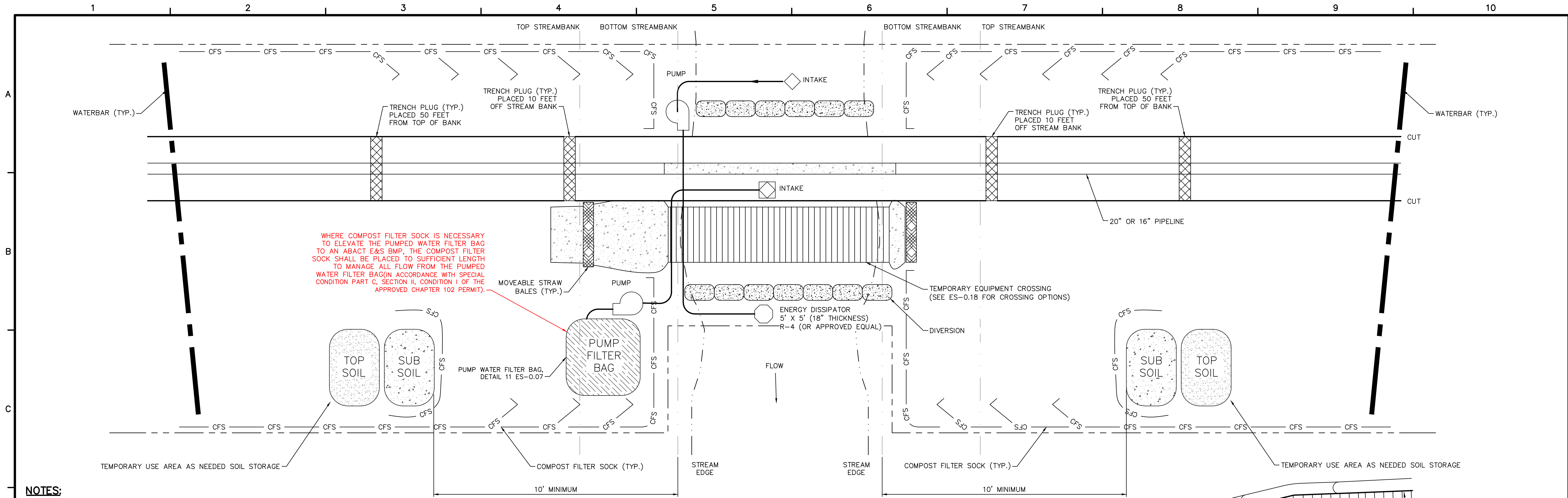
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NO.	BY	DATE	REMARKS
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SUNOCO PIPELINE LP
PHILADELPHIA, PENNSYLVANIA
**PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5**

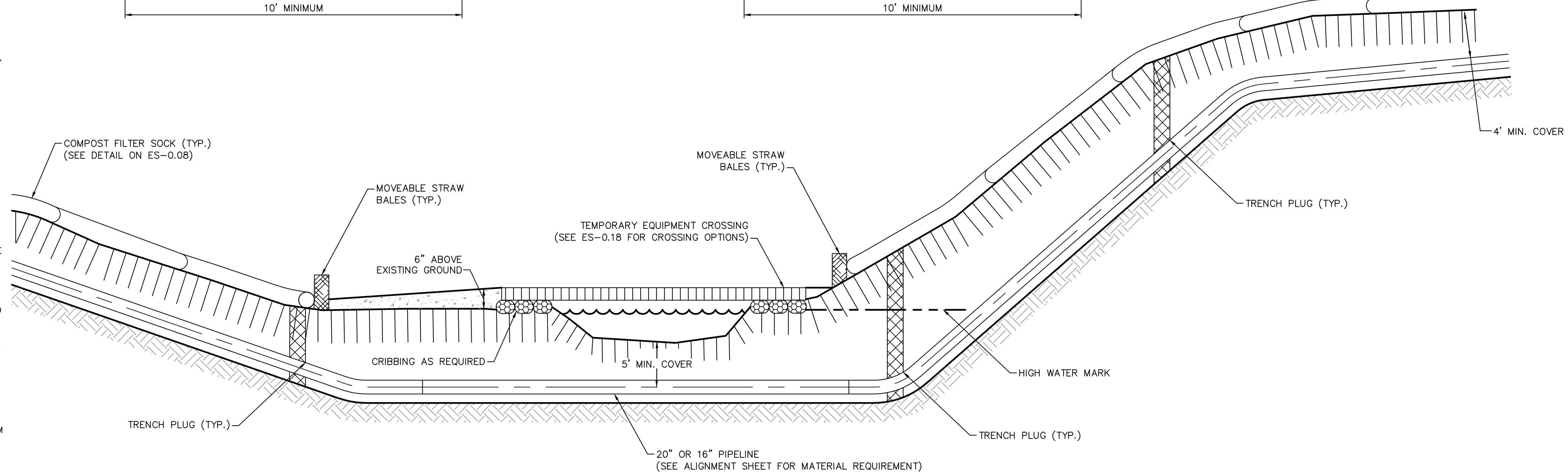
1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES
PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
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WHERE COMPOST FILTER SOCK IS NECESSARY TO ELEVATE THE PUMPED WATER FILTER BAG TO AN ABACT E&S BMP, THE COMPOST FILTER SOCK SHALL BE PLACED TO SUFFICIENT LENGTH TO MANAGE ALL FLOW FROM THE PUMPED WATER FILTER BAG IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION II, CONDITION I OF THE APPROVED CHAPTER 102 PERMIT.

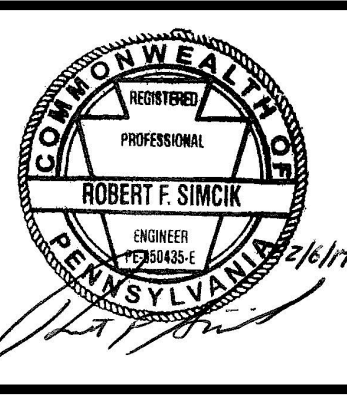
- NOTES:**
- SEE PLAN SHEETS FOR FLOODWAY AND FLOODPLAIN LOCATIONS AND FOR REFERENCE TO SITE-SPECIFIC STREAM CROSSING DRAWINGS.
 - CONSTRUCT WATERBODY CROSSINGS AS PERPENDICULAR TO THE AXIS OF THE WATERBODY CHANNEL AS ENGINEERING AND ROUTING CONDITIONS ALLOW.
 - SETUP PUMP AND HOSE AS SHOWN, OR USE OTHER PRACTICAL ALTERNATIVES. PUMP SHOULD HAVE TWICE THE PUMPING CAPACITY OF ANTICIPATED FLOW.
 - CONTRACTOR TO ENSURE A SUFFICIENT NUMBER OF ACTIVE AND BACKUP PUMPS TO MAINTAIN TWICE THE PUMPING CAPACITY OF ANTICIPATED FLOW ARE AVAILABLE AT THE SITE DURING THE INSTALLATION.
 - INSTALL UPSTREAM DAM, THEN DOWNSTREAM DAM. KEEP PUMP RUNNING TO MAINTAIN STREAM FLOW, DETAIL 13 ES-0.07.
 - BYPASS PUMP INTAKES SHALL BE SCREENED AND MAINTAINED A SUFFICIENT DISTANCE FROM THE STREAM BOTTOM TO PREVENT PUMPING OF CHANNEL BOTTOM MATERIALS AND AQUATIC LIFE.
 - AN ENERGY DISSIPATOR IS REQUIRED AT THE DISCHARGE OF THE BYPASS PUMPS.
 - WATERBARS ARE TO BE PLACED 50 FEET FROM TOP OF BANK EXCEPT AS NOTED ON SITE SPECIFIC PLAN DRAWINGS.
 - MARK THE TOP OF STREAMBANK WITH HIGH VISIBLE FLAGGING AND POST RESOURCE AND NO REFUELING SIGNS WITHIN 100 FEET OF TOP OF STREAMBANK;
 - HAZARDOUS OR POLLUTANT MATERIAL STORAGE AREAS SHALL BE LOCATED AT LEAST 100 FEET BACK FROM TOP OF STREAMBANK;
 - GRUBBING SHALL NOT TAKE PLACE WITHIN 50 FEET OF TOP OF BANK PRIOR TO STREAM INSTALLATION WITH THE EXCEPTION OF THE TRAVEL LANE UNTIL ALL MATERIALS REQUIRED TO COMPLETE CROSSING ARE ON SITE AND PIPE IS READY FOR INSTALLATION;
 - CONSTRUCT DAMS WITH SAND BAGS, JERSEY BARRIERS OR SIMILAR MATERIAL WITH AN IMPERVIOUS LINER EXTENDED TO THE STREAM BOTTOM AND SECURED WITH SANDBAGS (SEE ES-0.07) MAINTAINING AMBIENT DOWNSTREAM FLOW RATES;
 - NATURAL STREAM BED MATERIAL TO BE STRIPPED AND SEGREGATED FROM SUBSURFACE MATERIAL FOR FINAL STREAMBED RESTORATION. EXCAVATION PORTION OF NATIVE STREAM BEDS COMPRISED OF ROCK, COBBLE, OR GRAVEL ARE TO BE STRIPPED AND SEGREGATED AND USED DURING STREAM RESTORATION.
 - REMOVE ALL CONSTRUCTION MATERIAL AND STRUCTURES FROM THE WATERBODY AFTER CONSTRUCTION;
 - RESTORE STREAM CHANNELS AND BOTTOMS TO THEIR PRECONSTRUCTION CONTOURS OR BETTER, AND STABILIZING THE STREAM CHANNEL PRIOR TO REESTABLISHING FLOW.
 - ALL EXCESS EXCAVATED MATERIAL SHALL BE REMOVED FROM THE STREAM FLOODWAY PRIOR TO PERMANENTLY STABILIZING STREAM BANKS; AND,
 - ALL DISTURBED AREAS WITHIN 50 FEET OF TOP OF BANK AND 100 FEET IN SPECIAL PROTECTION WATERSHEDS SHOULD BE BLANKETED OR MATTED WITHIN 24 HOURS OF INITIAL DISTURBANCE FOR MINOR STREAMS OR 48 HOURS OF INITIAL DISTURBANCE FOR MAJOR STREAMS UNLESS OTHERWISE AUTHORIZED. APPROPRIATE STREAM BANK PROTECTION SHALL BE PROVIDED WITHIN THE CHANNEL.
 - KEEP LIME AND FERTILIZERS OUT OF STREAM.
 - TEMPORARY CROSSINGS WILL STAY IN PLACE FOR NO GREATER THAN ONE YEAR.



TYPICAL PIPELINE INSTALLATION STREAM CROSSING - PUMP BYPASS DETAIL
NOT TO SCALE

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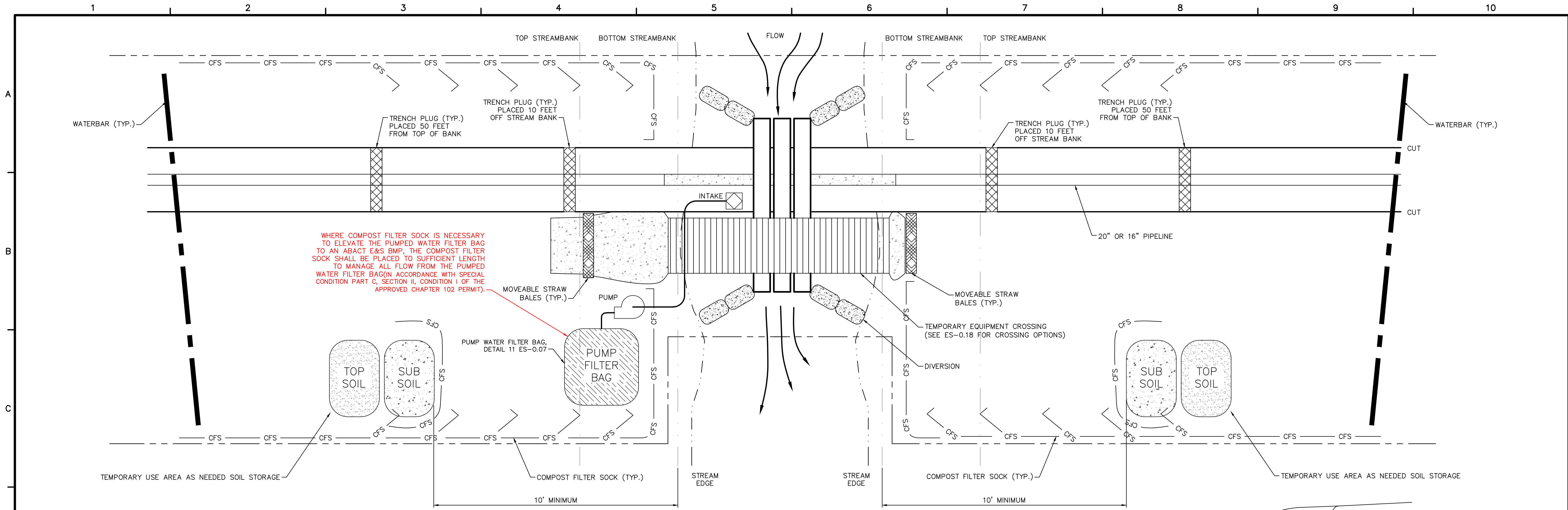
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SUNOCO PIPELINE LP
PHILADELPHIA, PENNSYLVANIA
**PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5**

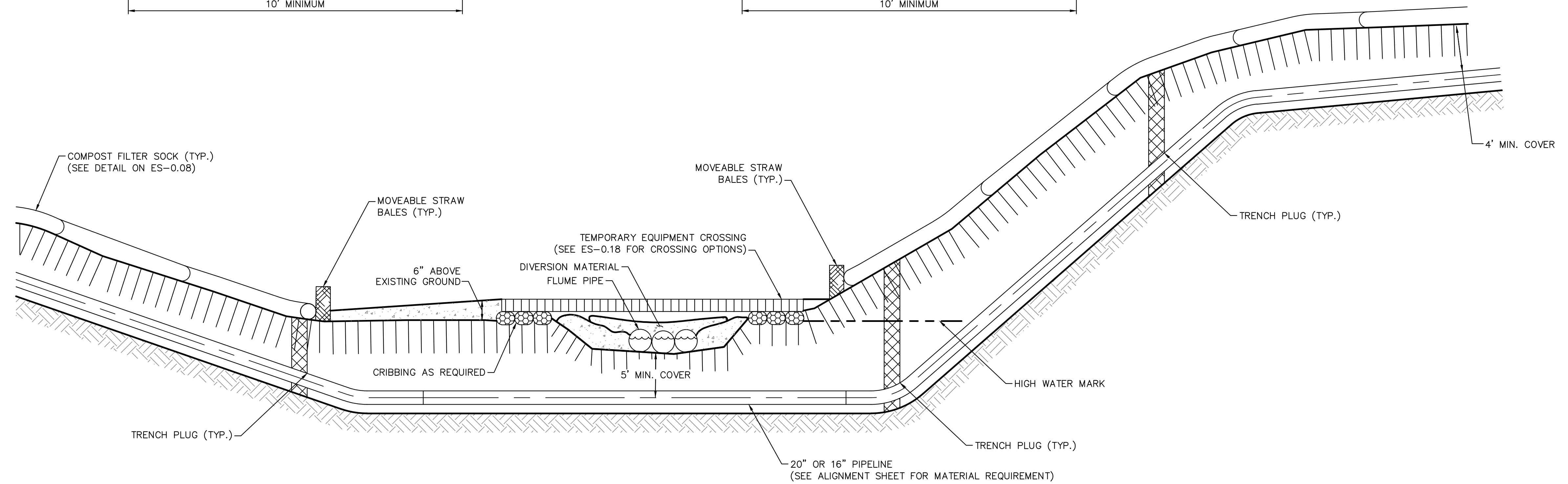
1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES
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EROSION & SEDIMENT CONTROL &
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NOTES:

1. SEE PLAN SHEETS FOR FLOODWAY AND FLOODPLAIN LOCATIONS AND FOR REFERENCE TO SITE-SPECIFIC STREAM CORRRING DRAWINGS.
2. THE FLUME SHOULD BE OF SUFFICIENT SIZE TO CONVEY NORMAL STREAM FLOW OVER THE OPEN TRENCH (MINIMUM SIZE OF 12 INCHES);
3. FLUME PIPE MUST BE ONE CONTINUOUS PIPE LONG ENOUGH TO ACCOUNT FOR THE POSSIBILITY OF THE TRENCH WIDENING UNEXPECTEDLY DURING THE EXCAVATION (DUE TO SLOUGHING);
4. FLUME SHALL BE INSTALLED PRIOR TO TRENCH EXCAVATION AT THAT LOCATION; AND,
5. AN EFFECTIVE SEAL MUST BE CREATED AROUND THE FLUME(S). ONCE IN PLACE, THE FLUMES ARE NOT REMOVED UNTIL THE PIPELINE HAS BEEN INSTALLED AND THE STREAMBED AND BANKS HAVE BEEN RESTORED.
6. WATERBARS ARE TO BE PLACED 50 FEET FROM TOP OF BANK EXCEPT AS NOTED ON SITE SPECIFIC PLAN DRAWINGS.
7. MARK THE TOP OF STREAMBANK WITH HIGH VISIBLE FLAGGING AND POST RESOURCE AND NO REFUELING SIGNS WITHIN 100 FEET OF TOP OF STREAMBANK;
8. HAZARDOUS OR POLLUTANT MATERIAL STORAGE AREAS SHALL BE LOCATED AT LEAST 100 FEET BACK FROM TOP OF STREAMBANK;
9. GRUBBING SHALL NOT TAKE PLACE WITHIN 50 FEET OF TOP OF BANK PRIOR TO STREAM INSTALLATION WITH THE EXCEPTION OF THE TRAVEL LANE UNTIL ALL MATERIALS REQUIRED TO COMPLETE CROSSING ARE ON SITE AND PIPE IS READY FOR INSTALLATION;
10. CONSTRUCT DAMS WITH SAND BAGS, JERSEY BARRIERS OR SIMILAR MATERIAL WITH AN IMPERVIOUS LINER EXTENDED TO THE STREAM BOTTOM AND SECURED WITH SANDBAGS (SEE ES-0.07) MAINTAINING AMBIENT DOWNSTREAM FLOW RATES;
11. NATURAL STREAM BED MATERIAL TO BE STRIPPED AND SEGREGATED FROM SUBSURFACE MATERIAL FOR FINAL STREAMBED RESTORATION. EXCAVATION PORTION OF NATIVE STREAM BEDS COMPRISED OF ROCK, COBBLE, OR GRAVEL ARE TO BE STRIPPED AND SEGREGATED AND USED DURING STREAM RESTORATION.
12. REMOVE ALL CONSTRUCTION MATERIAL AND STRUCTURES FROM THE WATERBODY AFTER CONSTRUCTION;
13. RESTORE STREAM CHANNELS AND BOTTOMS TO THEIR PRECONSTRUCTION CONTOURS OR BETTER, AND STABILIZING THE STREAM CHANNEL PRIOR TO REESTABLISHING FLOW.
14. ALL EXCESS EXCAVATED MATERIAL SHALL BE REMOVED FROM THE STREAM FLOODWAY PRIOR TO PERMANENTLY STABILIZING STREAM BANKS; AND,
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16. KEEP LIME AND FERTILIZERS OUT OF STREAM.
17. TEMPORARY CROSSINGS WILL STAY IN PLACE FOR NO GREATER THAN ONE YEAR.

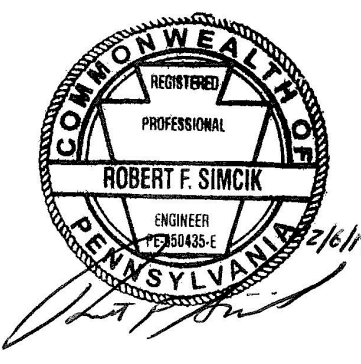


TYPICAL PIPELINE INSTALLATION STREAM CROSSING - DRY FLUME DETAIL
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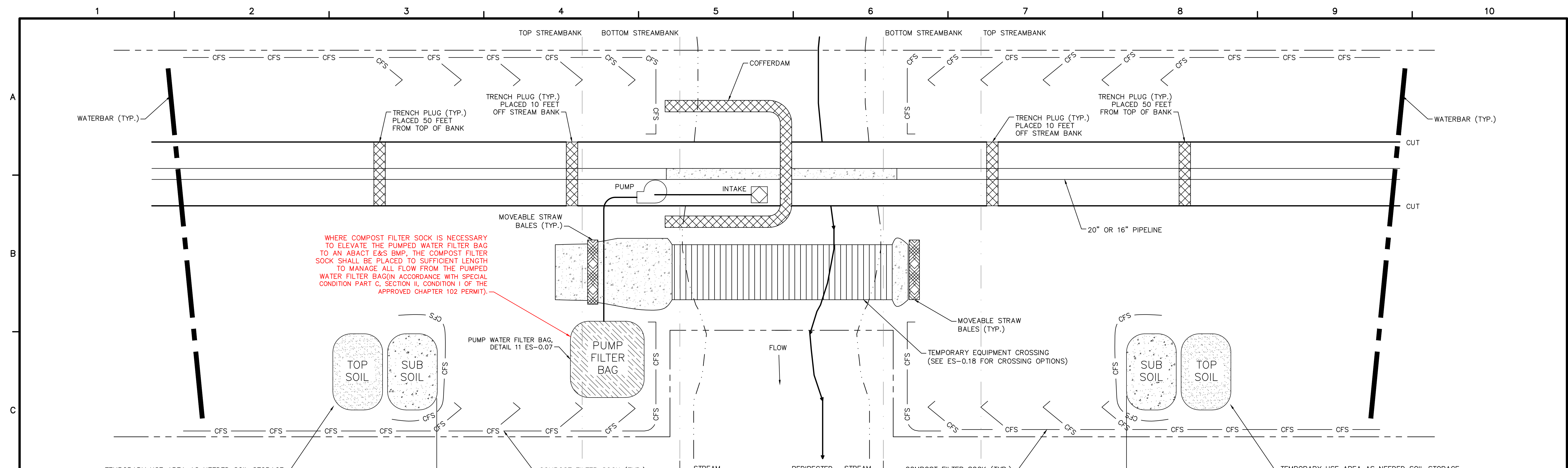
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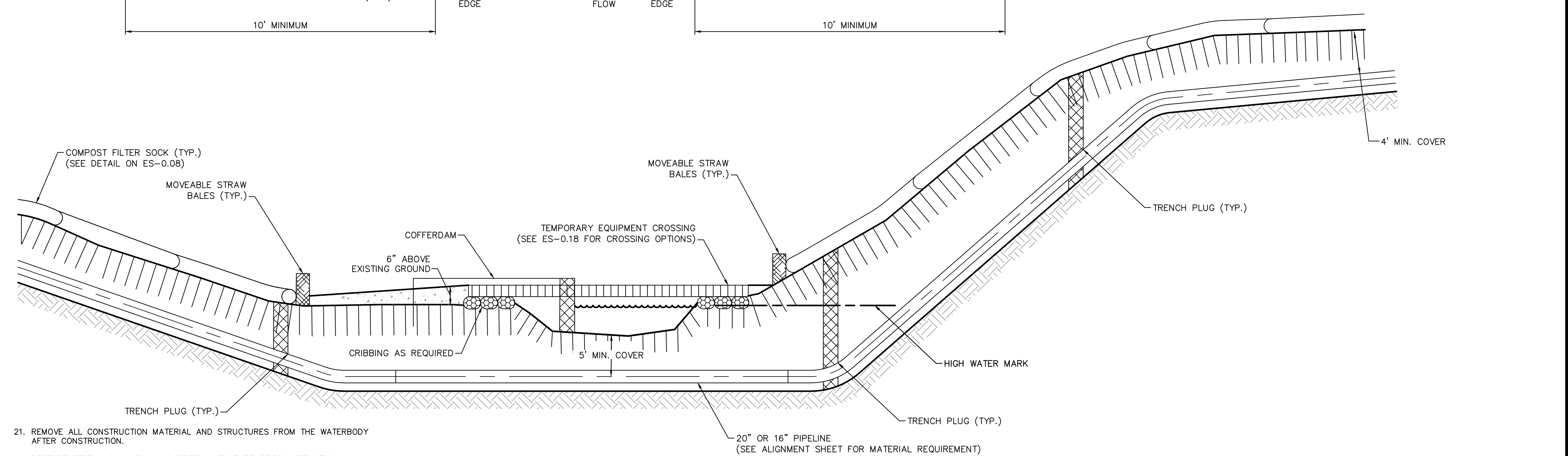
SUNOCO PIPELINE LP
PHILADELPHIA, PENNSYLVANIA
**PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5**

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES
PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
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- NOTES:**
- SEE PLAN SHEETS FOR FLOODWAY AND FLOODPLAIN LOCATIONS AND FOR REFERENCE TO SITE-SPECIFIC STREAM CROSSING DRAWINGS.
 - MAINTAIN ADEQUATE IN-STREAM PASSAGE OF WATER (MIN 1/3 THE DISTANCE OF THE CROSSING) AT ALL TIMES TO CONVEY NORMAL STREAM FLOW WITHOUT CREATING ACCELERATED BANK EROSION;
 - PREPARE STREAM BED FOR CONSTRUCTION OF COFFERDAM BY REMOVING LARGE BOULDERS AND OTHER OBJECTS THAT MAY PREVENT AN ADEQUATE DAM SEAL;
 - DRAW DOWN WATER WITHIN COFFERDAM STRUCTURE AND PUMP INTO WATERBODY;
 - PREPARE SMALL TRENCH OR BERM AROUND INTERIOR OF COFFERDAM AND LOCATE SUMP AS DEPICTED FOR CONTINUOUS PUMPING OF ANY ADDITIONAL WATER INFILTRATION INTO COFFERDAM STRUCTURE SPACE AND TRENCH. CONTINUED PUMPING DURING CONSTRUCTION ACTIVITIES SHALL BE DIRECTED TO A DEWATERING STRUCTURE.
 - INSTALL TIMBER MATS ALONG CONSTRUCTION TRAVEL LANE, IF REQUIRED.
 - EXCAVATE THE PIPELINE TRENCH AS NECESSARY.
 - DEWATER TRENCH TO ENSURE THAT IT IS SUITABLE FOR WORKER ENTRANCE TO COMPLETE A TIE-IN WELD. SHOULD THE TRENCH FAIL AND PROVE TO BE UNSAFE FOR WORKERS, DISCUSS OPTIONS WITH AGENCIES.
 - INSTALL CROSSING PIPE AND SANDBAGS OR PREFABRICATED CONCRETE WALL ADJACENT TO THE WELD CAP WHICH WILL FORM A BARRIER TO PREVENT MOVEMENT OF RE-INSTALLED TRENCH SPOIL WHILE THE EAST SIDE OF THE CROSSING IS CONSTRUCTED.
 - RETURN TRENCH SPOIL TO TRENCH AND COVER PIPELINE. RESTORE RIVER BED WITH SEGREGATED RIVER BED SEDIMENT AND ROCK MATERIAL.
 - PUMP RIVER WATER INTO COFFERDAM STRUCTURE AND ALLOW ALL SEDIMENTATION TO SETTLE.
 - DISASSEMBLE COFFERDAM STRUCTURE;
 - RESTORE RIVER BANK PRECONSTRUCTION CONTOURS TO A STABLE ANGLE OF REPOSE.
 - REPEAT STEPS ON OPPOSITE SIDE OF WATERBODY.
 - WATERBARS ARE TO BE PLACED 50 FEET FROM TOP OF BANK EXCEPT AS NOTED ON SITE SPECIFIC PLAN DRAWINGS.
 - MARK THE TOP OF STREAMBANK WITH HIGH VISIBLE FLAGGING AND POST RESOURCE AND NO REFUELING SIGNS WITHIN 100 FEET OF TOP OF STREAMBANK;
 - HAZARDOUS OR POLLUTANT MATERIAL STORAGE AREAS SHALL BE LOCATED AT LEAST 100 FEET BACK FROM TOP OF STREAMBANK;
 - GRUBBING SHALL NOT TAKE PLACE WITHIN 50 FEET OF TOP OF BANK PRIOR TO STREAM INSTALLATION WITH THE EXCEPTION OF THE TRAVEL LANE UNTIL ALL MATERIALS REQUIRED TO COMPLETE CROSSING ARE ON SITE AND PIPE IS READY FOR INSTALLATION;
 - CONSTRUCT DAMS WITH SAND BAGS, JERSEY BARRIERS OR SIMILAR MATERIAL WITH AN IMPERVIOUS LINER EXTENDED TO THE STREAM BOTTOM AND SECURED WITH SANDBAGS (SEE ES-0.08) MAINTAINING AMBIENT DOWNSTREAM FLOW RATES;
 - NATURAL STREAM BED MATERIAL TO BE STRIPPED AND SEGREGATED FROM SUBSURFACE MATERIAL FOR FINAL STREAMBED RESTORATION. EXCAVATION PORTION OF NATIVE STREAM BEDS COMPRISED OF ROCK, COBBLE, OR GRAVEL ARE TO BE STRIPPED AND SEGREGATED AND USED DURING STREAM RESTORATION.

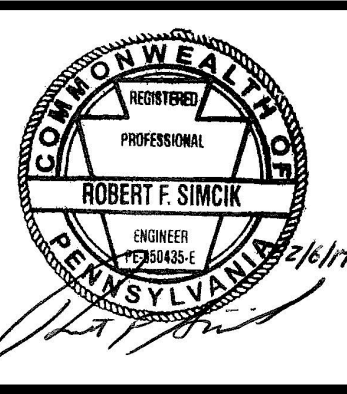


TYPICAL PIPELINE INSTALLATION STREAM CROSSING - COFFERDAM DETAIL
NOT TO SCALE

- REMOVE ALL CONSTRUCTION MATERIAL AND STRUCTURES FROM THE WATERBODY AFTER CONSTRUCTION.
- RESTORE STREAM CHANNELS AND BOTTOMS TO THEIR PRECONSTRUCTION CONTOURS OR BETTER, AND STABILIZING THE STREAM CHANNEL PRIOR TO REESTABLISHING FLOW.
- ALL EXCESS EXCAVATED MATERIAL SHALL BE REMOVED FROM THE STREAM FLOODWAY PRIOR TO PERMANENTLY STABILIZING STREAM BANKS; AND,
- ALL DISTURBED AREAS WITHIN 50 FEET OF TOP OF BANK AND 100 FEET IN SPECIAL PROTECTION WATERSHEDS SHOULD BE BLANKETED OR MATTED WITHIN 24 HOURS OF INITIAL DISTURBANCE FOR MINOR STREAMS OR 48 HOURS OF INITIAL DISTURBANCE FOR MAJOR STREAMS UNLESS OTHERWISE AUTHORIZED. APPROPRIATE STREAM BANK PROTECTION SHALL BE PROVIDED WITHIN THE CHANNEL.
- KEEP LIME AND FERTILIZER OUT OF STREAM.
- TEMPORARY CROSSINGS WILL STAY IN PLACE FOR NO GREATER THAN ONE YEAR.

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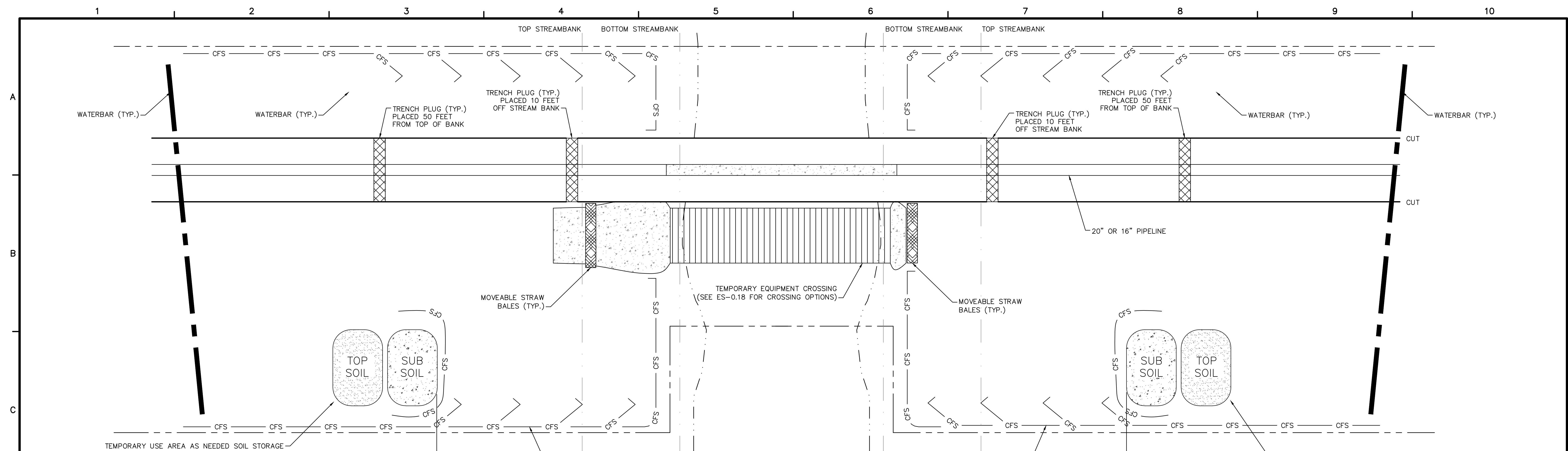
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3	RS	6/17/21			RESTORED AREA UPDATES FOR PERMIT RENEWAL



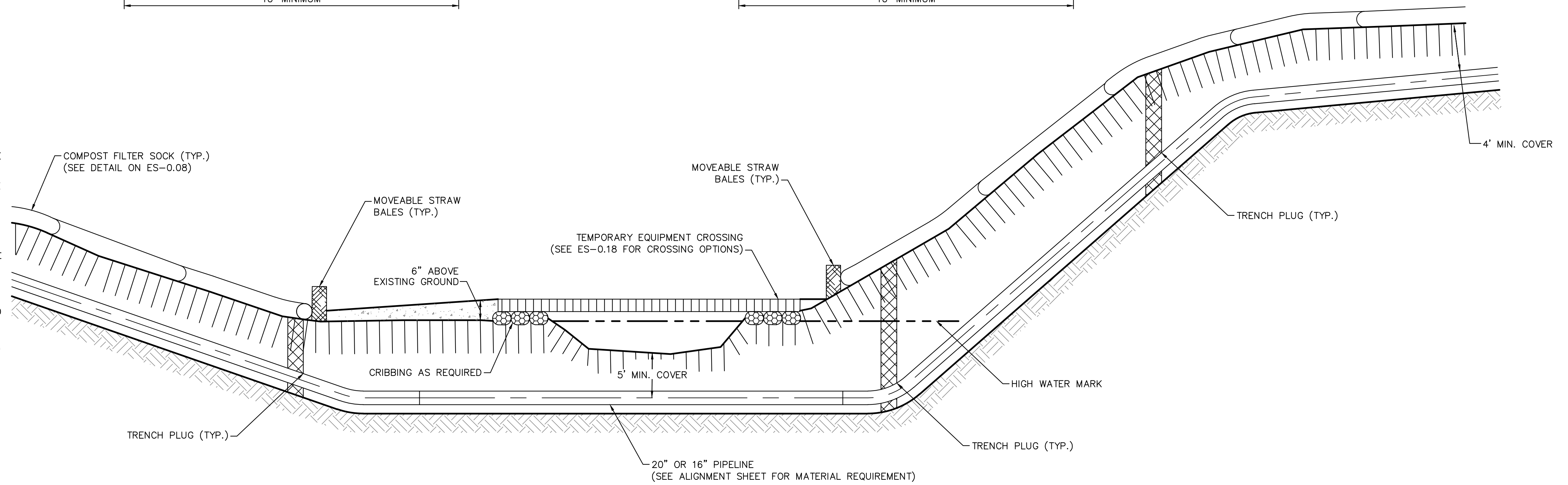
SUNOCO PIPELINE LP
PHILADELPHIA, PENNSYLVANIA
**PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5**

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES
PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

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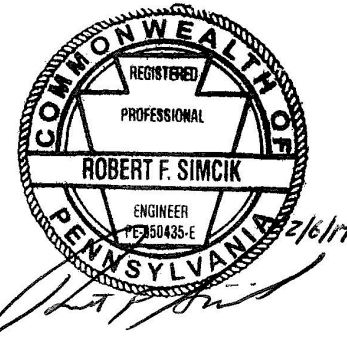
- NOTES:**
- SEE PLAN SHEETS FOR FLOODWAY AND FLOODPLAIN LOCATIONS AND FOR REFERENCE TO SITE-SPECIFIC STREAM CROSSING DRAWINGS.
 - CROSSING OF WATERBODIES WHEN THEY ARE DRY AND NOT FLOWING MAY PROCEED WITHOUT USE OF THE DRY PUMP BYPASS OR A DRY FLUME PROVIDED THAT THE ENVIRONMENTAL INSPECTOR VERIFIES THAT WATER IS UNLIKELY TO FLOW BETWEEN INITIAL DISTURBANCE AND FINAL STABILIZATION OF THE FEATURE.
 - WORK ON THE CROSSING MUST BE CONTINUOUS AND THE CROSSING MUST BE ATTENDED AT ALL TIMES.
 - IN THE EVENT PERCEPTIBLE FLOW IS ANTICIPATED OR IF THE CREW IS NOT IN ATTENDANCE AT THE CROSSING ALL OF THE REQUIREMENTS FOR A PUMP BYPASS OR DRY FLUME MUST BE MET.
 - EQUIPMENT AND SUPPLIES TO IMPLEMENT DRY PUMP BYPASS OR DRY FLUME CROSSING WILL BE ON-SITE IF STREAM-FLOW OCCURS DURING IMPLEMENTATION.
 - OPEN CUT CROSSING METHOD IS ONLY PERMITTED DURING TIMES OF NO STREAM FLOW OR RUNOFF EXISTS. DO NOT EXCAVATE TRENCH IN STREAM UNTIL THE PIPE SEGMENT IS ASSEMBLED AND READY FOR LOWERING IN. TRENCH DEWATERING SHALL USE A FILTER BAG WHEREVER FEASIBLE, TO AVOID UNCONTROLLED DOWNSTREAM SEDIMENTATION. LIMIT LENGTH OF TIME TO COMPLETE AND RESTORE STREAM CROSSING TO THE MINIMUM PRACTICABLE, E.G., LESS THAN 24 HOURS. IF FLOW AND SUBSTRATE CONDITIONS ARE SUCH THAT USE OF THIS CROSSING METHOD WOULD RESULT IN SIGNIFICANT UNCONTROLLED SEDIMENT TRANSPORT TO DOWNSTREAM AREAS, CONSIDER USING A DRY PUMP BYPASS OR DRY FLUME METHOD INSTEAD OF OPEN CUT.
 - WATERBARS ARE TO BE PLACED 50 FEET FROM TOP OF BANK EXCEPT AS NOTED ON SITE SPECIFIC PLAN DRAWINGS.
 - MARK THE TOP OF STREAMBANK WITH HIGH VISIBLE FLAGGING AND POST RESOURCE AND NO REFUELING SIGNS WITHIN 100 FEET OF TOP OF STREAMBANK;
 - HAZARDOUS OR POLLUTANT MATERIAL STORAGE AREAS SHALL BE LOCATED AT LEAST 100 FEET BACK FROM TOP OF STREAMBANK;
 - GRUBBING SHALL NOT TAKE PLACE WITHIN 50 FEET OF TOP OF BANK PRIOR TO STREAM INSTALLATION WITH THE EXCEPTION OF THE TRAVEL LANE UNTIL ALL MATERIALS REQUIRED TO COMPLETE CROSSING ARE ON SITE AND PIPE IS READY FOR INSTALLATION;
 - CONSTRUCT DAMS WITH SAND BAGS, JERSEY BARRIERS OR SIMILAR MATERIAL WITH AN IMPERVIOUS LINER EXTENDED TO THE STREAM BOTTOM AND SECURED WITH SANDBAGS (SEE ES-0.07) MAINTAINING AMBIENT DOWNSTREAM FLOW RATES;
 - NATURAL STREAM BED MATERIAL TO BE STRIPPED AND SEGREGATED FROM SUBSURFACE MATERIAL FOR FINAL STREAMBED RESTORATION. EXCAVATION PORTION OF NATIVE STREAM BEDS COMPRISED OF ROCK, COBBLE, OR GRAVEL ARE TO BE STRIPPED AND SEGREGATED AND USED DURING STREAM RESTORATION.
 - REMOVE ALL CONSTRUCTION MATERIAL AND STRUCTURES FROM THE WATERBODY AFTER CONSTRUCTION;
 - RESTORE STREAM CHANNELS AND BOTTOMS TO THEIR PRECONSTRUCTION CONTOURS OR BETTER, AND STABILIZING THE STREAM CHANNEL PRIOR TO REESTABLISHING FLOW.
 - ALL EXCESS EXCAVATED MATERIAL SHALL BE REMOVED FROM THE STREAM FLOODWAY PRIOR TO PERMANENTLY STABILIZING STREAM BANKS; AND,
 - ALL DISTURBED AREAS WITHIN 50 FEET OF TOP OF BANK AND 100 FEET IN SPECIAL PROTECTION WATERSHEDS SHOULD BE BLANKETED OR MATTED WITHIN 24 HOURS OF INITIAL DISTURBANCE FOR MINOR STREAMS OR 48 HOURS OF INITIAL DISTURBANCE FOR MAJOR STREAMS UNLESS OTHERWISE AUTHORIZED. APPROPRIATE STREAM BANK PROTECTION SHALL BE PROVIDED WITHIN THE CHANNEL.
 - KEEP LIME AND FERTILIZER OUT OF STREAM.
 - TEMPORARY CROSSINGS WILL STAY IN PLACE FOR NO GREATER THAN ONE YEAR.



**TYPICAL PIPELINE INSTALLATION STREAM CROSSING -
DRY OPEN CUT DETAIL**
NOT TO SCALE



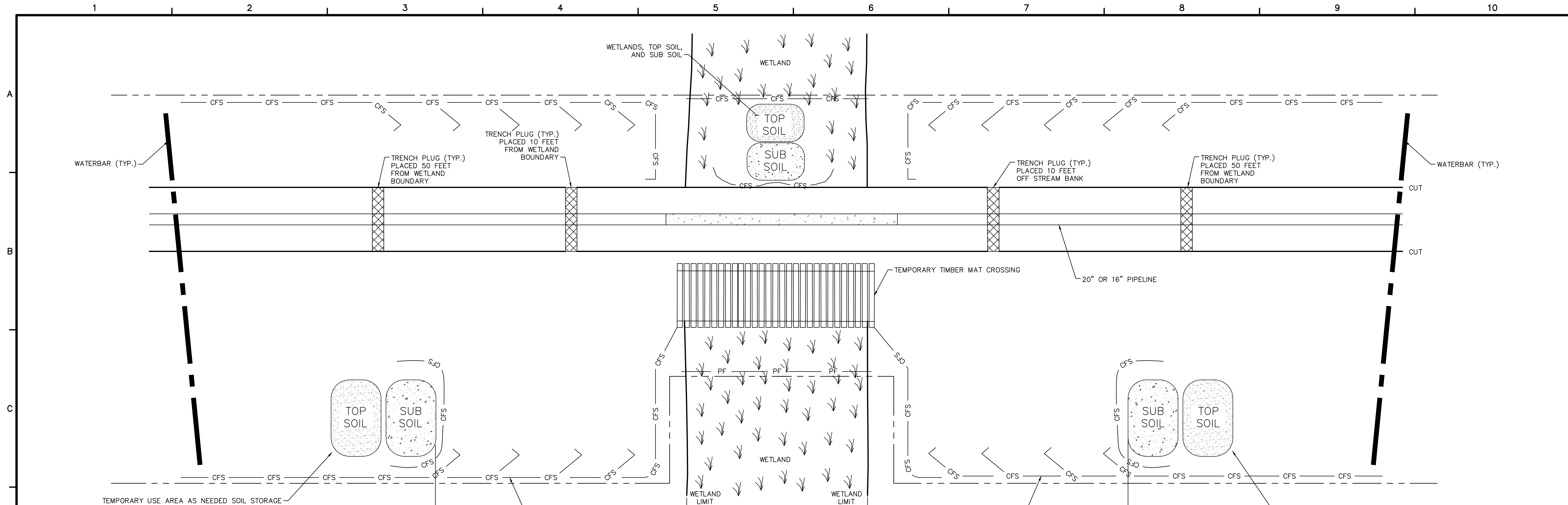
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PHILADELPHIA, PENNSYLVANIA
**PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5**

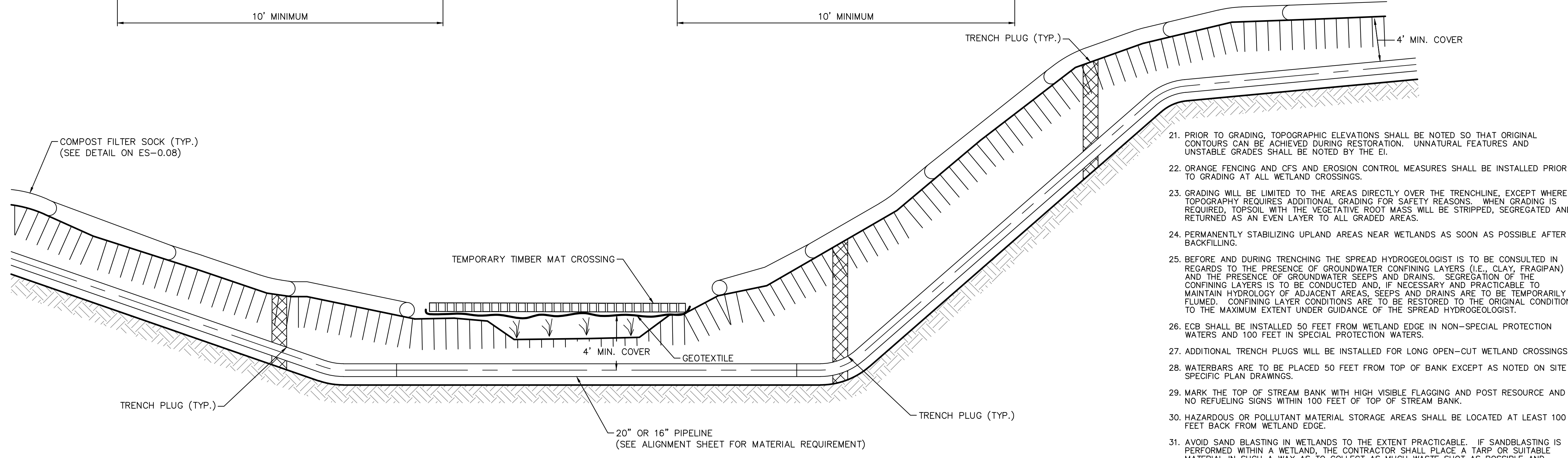
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NOTES:

1. MARK THE LIMITS OF THE WETLAND WITH HIGH VISIBLE FLAGGING AND POST RESOURCE AND NO REFUELING SIGNS WITHIN 100 FEET OF WETLANDS;
2. ORANGE SAFETY FENCE BETWEEN LOD AND ADJACENT WETLANDS.
3. STABILIZE WETLAND TRAVEL LANE APPROACH.
4. SEE SITE-SPECIFIC DETAILS WHEN NOTED ON E&S PLAN SHEETS.
5. HAZARDOUS OR POLLUTANT MATERIAL STORAGE AREAS SHALL BE LOCATED AT LEAST 100 FEET BACK FROM THE WETLAND;
6. USE NO MORE THAN TWO LAYERS OF TIMBER RIPRAP TO STABILIZE THE CONSTRUCTION RIGHT-OF-WAY;
7. CUT VEGETATION OFF AT GROUND LEVEL LEAVING EXISTING ROOT SYSTEMS IN PLACE AND REMOVE IT FROM THE WETLAND FOR DISPOSAL;
8. LIMIT PULLING OF TREE STUMPS AND GRADING ACTIVITIES TO DIRECTLY OVER THE TRENCH LINE UNLESS SAFETY CONCERNS REQUIRE THE REMOVAL OF STUMPS FROM THE WORKING-SIDE OF THE CONSTRUCTION ROW;
9. SEGREGATE A MAXIMUM OF 12 INCHES OF TOPSOIL FROM THE AREA DISTURBED BY TRENCHING IN UNSATURATED WETLANDS.
10. INSTALL TEMPORARY TIMBER MATS ALONG TRAVEL LANE. EQUIPMENT WILL WORK FROM MATS;
11. ASSEMBLE PIPE IN UPLAND AREAS UNLESS WETLAND IS DRY ENOUGH TO ADEQUATELY SUPPORT SKIDS AND PIPE;
12. IF STREAMS ARE PRESENT IMPLEMENT DRY CROSSING METHODS.
13. RESTORATION ACTIVITIES WITHIN WETLANDS (SEE TYP WETLAND RESTORATION) SHALL BEGIN IMMEDIATELY AFTER BACKFILLING, WEATHER PERMITTING;
14. NO SOIL AMENDMENTS SUCH AS AGRICULTURAL LIME OR FERTILIZER WILL BE USED WITHIN THE WETLAND AREAS.
15. RESTORE WETLANDS TO THE ORIGINAL CONTOURS AND SURFACE FLOW.
16. BULLDOZERS WILL NOT BE USED FOR CLEARING. TREES AND BRUSH WILL BE CUT BY HAND AT GROUND LEVEL BY CHAIN SAWS OR LOW GROUND PRESSURE EQUIPMENT, OR WITH EQUIPMENT THAT DOES NOT CAUSE EXCESSIVE RUTTING OF TOPSOIL OR WITH EQUIPMENT SUPPORTED BY MATS (TIMBER MATS, HDPE COMPOSITE OR SIMILAR).
17. THE MINIMUM CLEARING NECESSARY TO SAFELY CONSTRUCT THE PIPELINE WILL BE DONE. MATS OR PADS MAY BE PLACED OVER TOP OF EXISTING VEGETATION, INCLUDING SHRUBS, WHERE POSSIBLE.
18. STUMPS WILL BE LEFT IN PLACE, EXCEPT ON THE TRENCH LINE OR UNLESS THE REMOVAL IS NECESSARY TO ENSURE WORKER SAFETY. STUMPS MAY BE GROUND TO A SUITABLE HEIGHT FOR SAFETY REASONS.
19. ALL CUT TIMBER AND BRUSH WILL BE REMOVED FROM WETLANDS. GRINDINGS WILL BE REMOVED AS MUCH AS PRACTICAL. DEBRIS AND STUMPS WILL NOT BE BURIED.
20. CONTRACTOR SHALL BE REQUIRED TO INSTALL COMPLETED MAT TRAVEL LANE FOR PIPELINE CONSTRUCTION DURING THE TIME CONTRACTOR'S CLEARING CREW DOES NOT MEAN TREE FELLING IS PERFORMING ITS WORK.

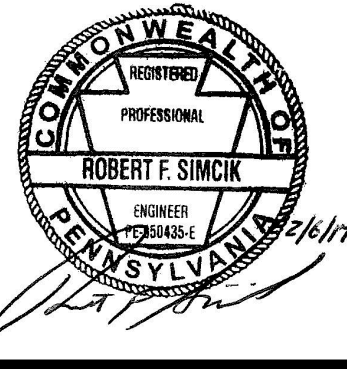


TYPICAL PIPELINE INSTALLATION WETLAND CROSSING DETAIL
NOT TO SCALE

21. PRIOR TO GRADING, TOPOGRAPHIC ELEVATIONS SHALL BE NOTED SO THAT ORIGINAL CONTOURS CAN BE ACHIEVED DURING RESTORATION. UNNATURAL FEATURES AND UNSTABLE GRADES SHALL BE NOTED BY THE EI.
22. ORANGE FENCING AND CFS AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO GRADING AT ALL WETLAND CROSSINGS.
23. GRADING WILL BE LIMITED TO THE AREAS DIRECTLY OVER THE TRENCHLINE, EXCEPT WHERE TOPOGRAPHY REQUIRES ADDITIONAL GRADING FOR SAFETY REASONS. WHEN GRADING IS REQUIRED, TOPSOIL WITH THE VEGETATIVE ROOT MASS WILL BE STRIPPED, SEGREGATED AND RETURNED AS AN EVEN LAYER TO ALL GRADED AREAS.
24. PERMANENTLY STABILIZING UPLAND AREAS NEAR WETLANDS AS SOON AS POSSIBLE AFTER BACKFILLING.
25. BEFORE AND DURING TRENCHING THE SPREAD HYDROGEOLOGIST IS TO BE CONSULTED IN REGARDS TO THE PRESENCE OF GROUNDWATER CONFINING LAYERS (I.E., CLAY, FRAGIPAN) AND THE PRESENCE OF GROUNDWATER SEEPS AND DRAINS. SEGREGATION OF THE CONFINING LAYERS IS TO BE CONDUCTED AND, IF NECESSARY AND PRACTICABLE TO MAINTAIN HYDROLOGY OF ADJACENT AREAS, SEEPS AND DRAINS ARE TO BE TEMPORARILY FLUMED. CONFINING LAYER CONDITIONS ARE TO BE RESTORED TO THE ORIGINAL CONDITION TO THE MAXIMUM EXTENT UNDER GUIDANCE OF THE SPREAD HYDROGEOLOGIST.
26. ECB SHALL BE INSTALLED 50 FEET FROM WETLAND EDGE IN NON-SPECIAL PROTECTION WATERS AND 100 FEET IN SPECIAL PROTECTION WATERS.
27. ADDITIONAL TRENCH PLUGS WILL BE INSTALLED FOR LONG OPEN-CUT WETLAND CROSSINGS.
28. WATERBARS ARE TO BE PLACED 50 FEET FROM TOP OF BANK EXCEPT AS NOTED ON SITE SPECIFIC PLAN DRAWINGS.
29. MARK THE TOP OF STREAM BANK WITH HIGH VISIBLE FLAGGING AND POST RESOURCE AND NO REFUELING SIGNS WITHIN 100 FEET OF TOP OF STREAM BANK.
30. HAZARDOUS OR POLLUTANT MATERIAL STORAGE AREAS SHALL BE LOCATED AT LEAST 100 FEET BACK FROM WETLAND EDGE.
31. AVOID SAND BLASTING IN WETLANDS TO THE EXTENT PRACTICABLE. IF SANDBLASTING IS PERFORMED WITHIN A WETLAND, THE CONTRACTOR SHALL PLACE A TARP OR SUITABLE MATERIAL IN SUCH A WAY AS TO COLLECT AS MUCH WASTE SHOT AS POSSIBLE AND DISPOSE OF THE COLLECTED WASTE. THE CONTRACTOR SHALL CLEAN UP ALL VISIBLE DEPOSITS OF WASTES AND DISPOSE OF THE WASTE AT AN APPROVED DISPOSAL FACILITY.
32. ANY EXCESS FILL MATERIAL MUST BE REMOVED AND NOT SPREAD WITHIN THE WETLAND.
33. PLACE A MINIMUM OF ONE (1) TRENCH PLUG AT A MAXIMUM SPACING OF 100 FEET BETWEEN TRENCH PLUGS WITHIN A WETLAND. WETLAND CROSSINGS LESS THAN FIFTY (50) FEET DO NOT REQUIRE AN INTERNAL TRENCH PLUG (IN ACCORDANCE WITH SPECIAL CONDITIONS UNDER SECTION "MISCELLANEOUS", CONDITION #FF OF THE APPROVED CHAPTER 105 PERMIT).

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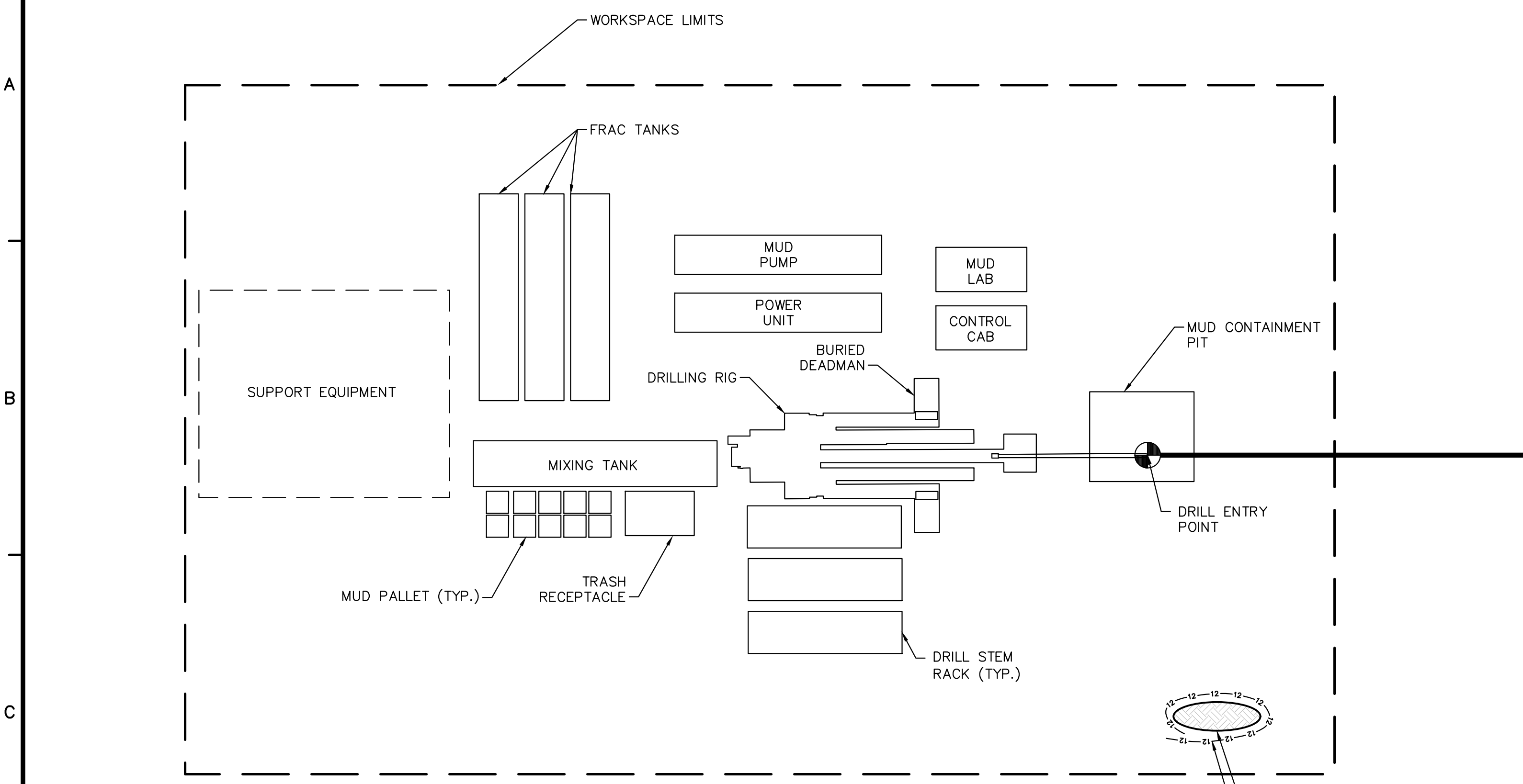
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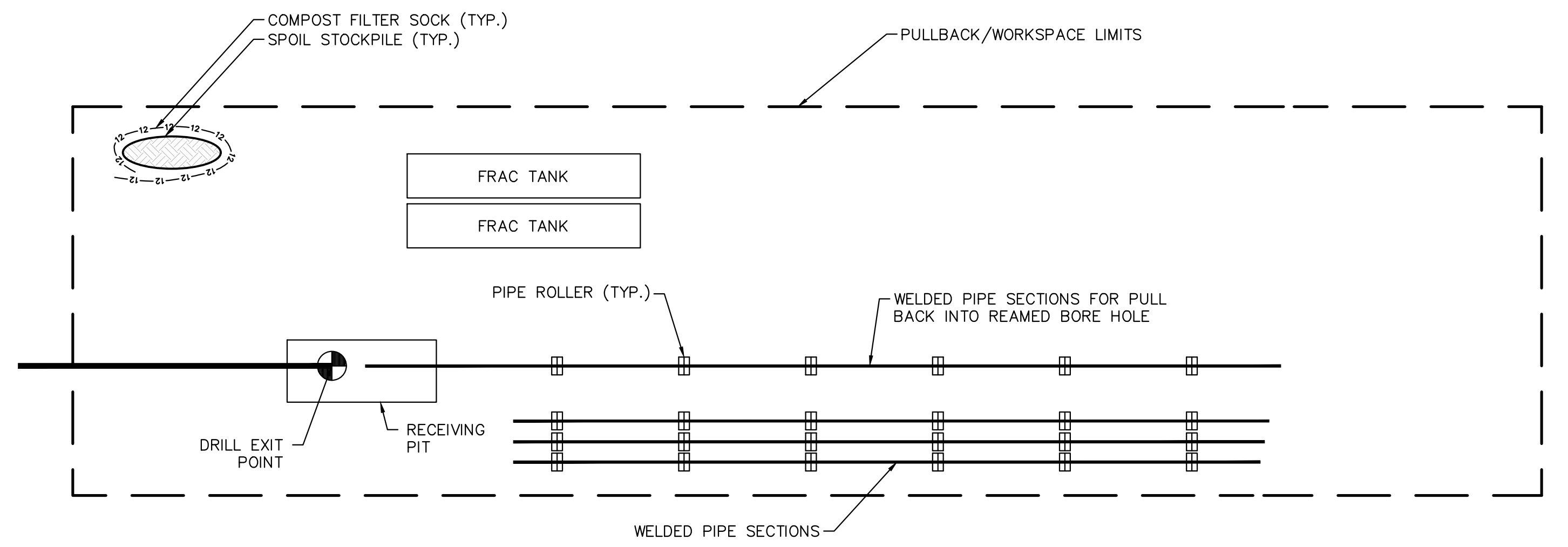
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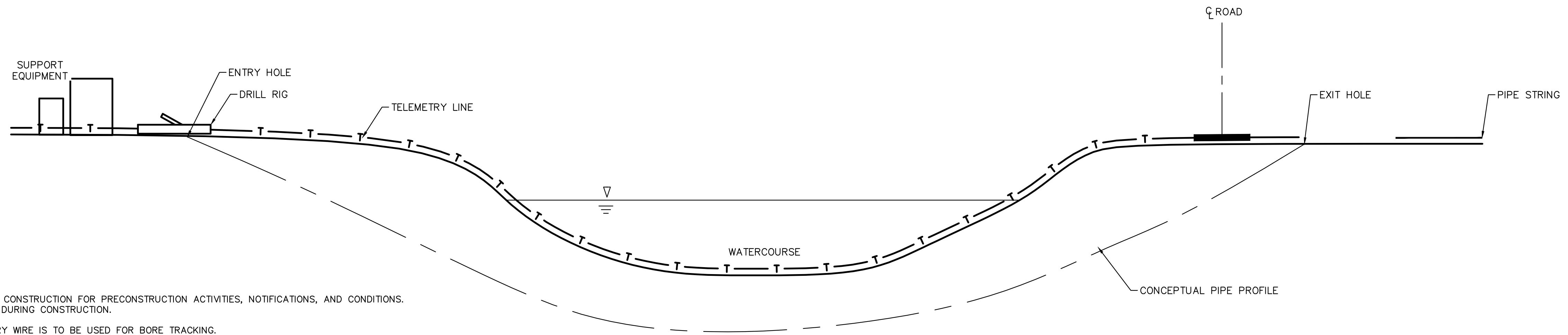
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PLAN VIEW
ENTRY SIDE LAYOUT
NOT TO SCALE



PLAN VIEW
EXIT SIDE LAYOUT
NOT TO SCALE



PROFILE VIEW
TYPICAL HDD BORE LAYOUT
NOT TO SCALE

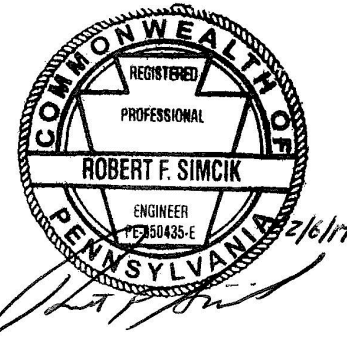
NOTES:

1. REVIEW INADVERTENT RETURN AND PROJECT PPC PLANS AHEAD OF CONSTRUCTION FOR PRECONSTRUCTION ACTIVITIES, NOTIFICATIONS, AND CONDITIONS. MAKE ALL APPROPRIATE NOTIFICATIONS. IMPLEMENT THESE PLANS DURING CONSTRUCTION.
2. REVIEW HDD FOR WRITTEN ATON PLAN AND IMPLEMENT IF TELEMETRY WIRE IS TO BE USED FOR BORE TRACKING.
3. SEE SITE PLANS FOR E&S CONTROLS.
4. LAYOUT WILL VARY ACCORDING TO AVAILABLE WORK SPACE AND FIELD CONDITIONS.
5. GRADE AND TOPSOIL WORKSPACES WHERE NECESSARY TO MAKE WORKSPACE AVAILABLE FOR PARKING, STAGING, AND OTHER USES WHEN NOT BEING USED FOR BORING.
6. HDD BENEATH WETLAND AND WATERBODIES WHERE INDICATED ON E&S PLAN SHEETS. SEE SITE-SPECIFIC DRAWINGS IF NOTED TO BE AVAILABLE.
7. INSTALL TEMPORARY TIMBER WETLAND MATS IF WORKSPACES ARE IN WETLANDS.
8. TEMPORARY WATERBAR TO BE INSTALLED AFTER CLEARING AND PRIOR TO TEMPORARY GRADING IF NEEDED FOR HDD INSTALLATION.
9. PERMANENT WATERBAR TO BE INSTALLED AFTER CLEARING AND PRIOR TO TEMPORARY GRADING IF NEEDED FOR HDD INSTALLATION AND REINSTALLED ONCE FINAL GRADING ESTABLISHED.
10. TELEMETRY WIRE WILL BE STRUNG FROM ENTRY TO EXIT POINTS.
11. INSTALL COMPOST FILTER SOCKS/SILT FENCE ALONG THE DOWN GRADIENT PERIMETERS OF THE HDD BORE PIT.
12. EXCAVATION OF THE DRILL ENTRY AND EXIT LOCATIONS WILL BE NECESSARY TO CONTAIN DRILLING FLUIDS DURING ALL PHASES OF INSTALLATION. THESE FLUIDS AND CUTTINGS MUST BE DISPOSED OF IN AN APPROVED MANNER PERIODICALLY OR AT THE COMPLETE CROSSING INSTALLATION.
13. THE CROSSING LENGTH AND CROSS SECTIONAL GEOMETRY IS DEPENDENT UPON THE PIPELINE DESIGN PARAMETERS, THE OBSTACLE CROSSED, AND THE SUBSURFACE CONDITIONS.



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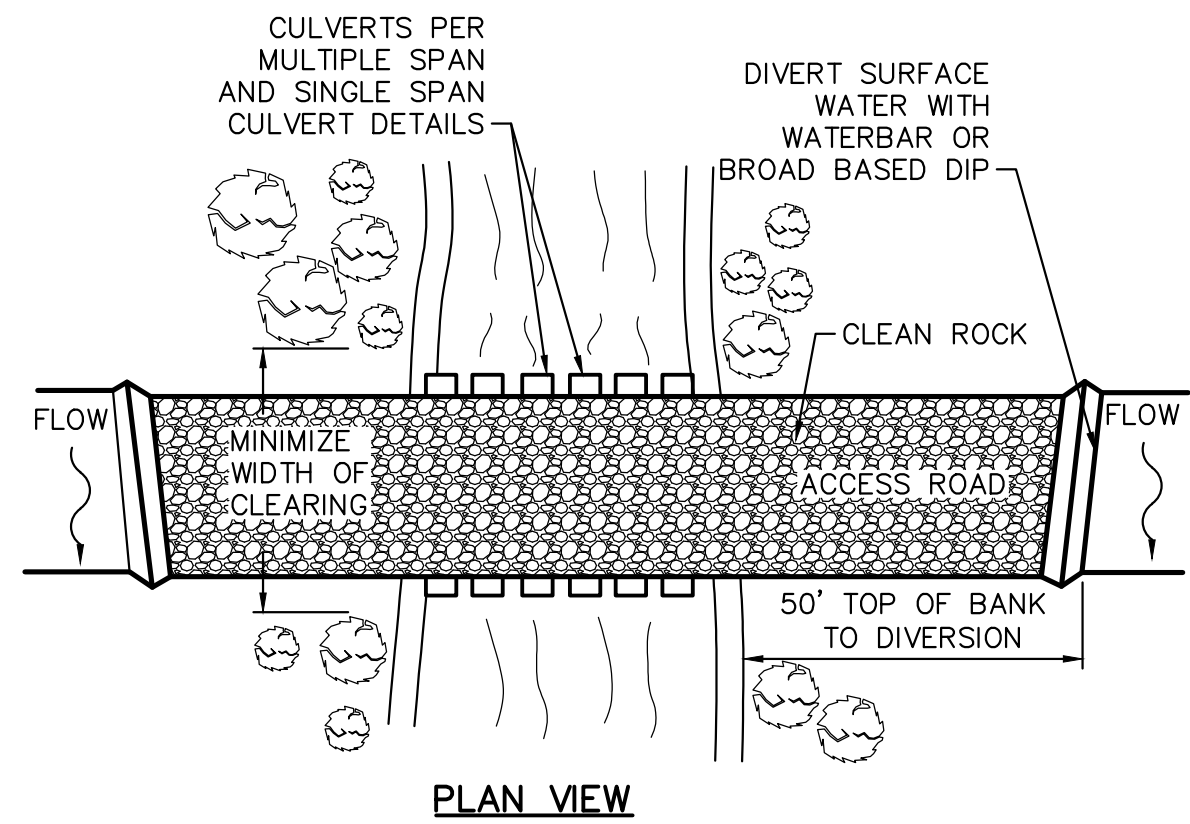
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SUNOCO PIPELINE LP
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PENNSYLVANIA PIPELINE PROJECT
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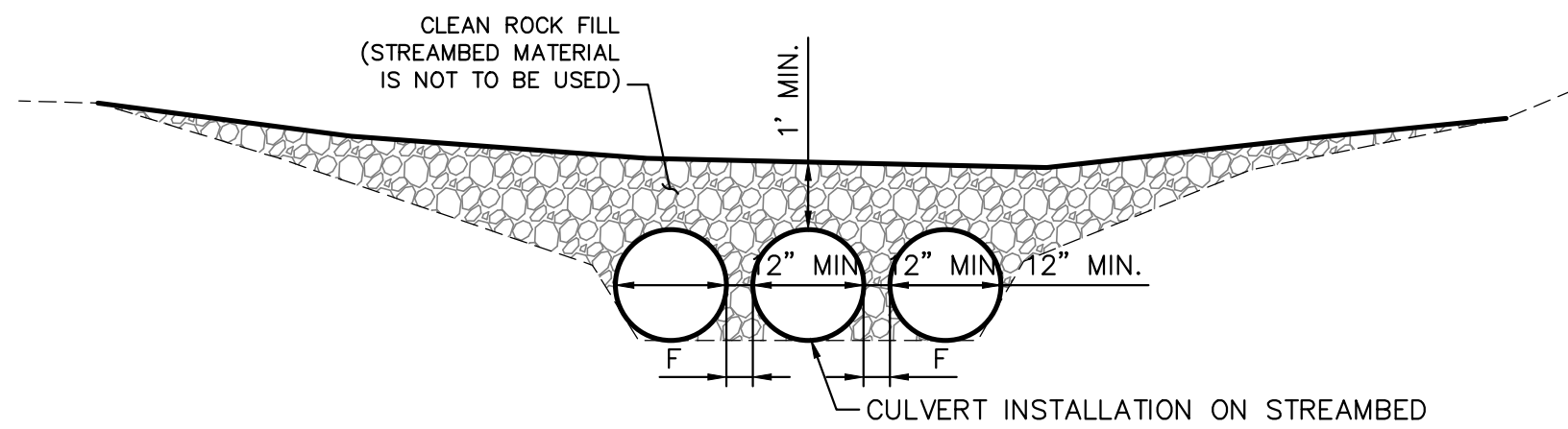
PLAN VIEW

NOTES:

1. WATERBARS AND BROAD-BASED DIPS SHALL DISCHARGE TO 18" CFS OR APPROVED SEDIMENT REMOVAL FACILITY.
2. CLEAN ROCK SHALL CONFORM TO CHAPTER 105 PERMITTING REQUIREMENTS.
3. FOLLOW PERMIT CONDITIONS REGARDING REMOVAL OF CROSSING.
4. ALTERNATIVELY, TIMBER MATS MAY BE USED TO FORM THE TRAVEL SURFACE.
5. PROVIDE 50' STABILIZED ACCESS TO CROSSING ON BOTH SIDES OF STREAM CHANNEL (SEE PLAN VIEW). THE STABILIZED APPROACH MAY CONSIST OF GRAVEL (AASHTO #1 OR EQUAL) OR TIMBER MATS.
6. PIPES SHALL EXTEND BEYOND THE TOE OF THE CROSSING SUPPORT.
7. RUNOFF FROM THE ROADWAY SHALL BE DIVERTED OFF THE ROADWAY AND INTO A SEDIMENT REMOVAL BMP BEFORE IT REACHES THE ROCK APPROACH TO THE CROSSING.
8. FOLLOW TROUT STREAM RESTRICTIONS SHOWN ON PLAN SHEETS.

TEMPORARY CULVERT STREAM CROSSING

NOT TO SCALE

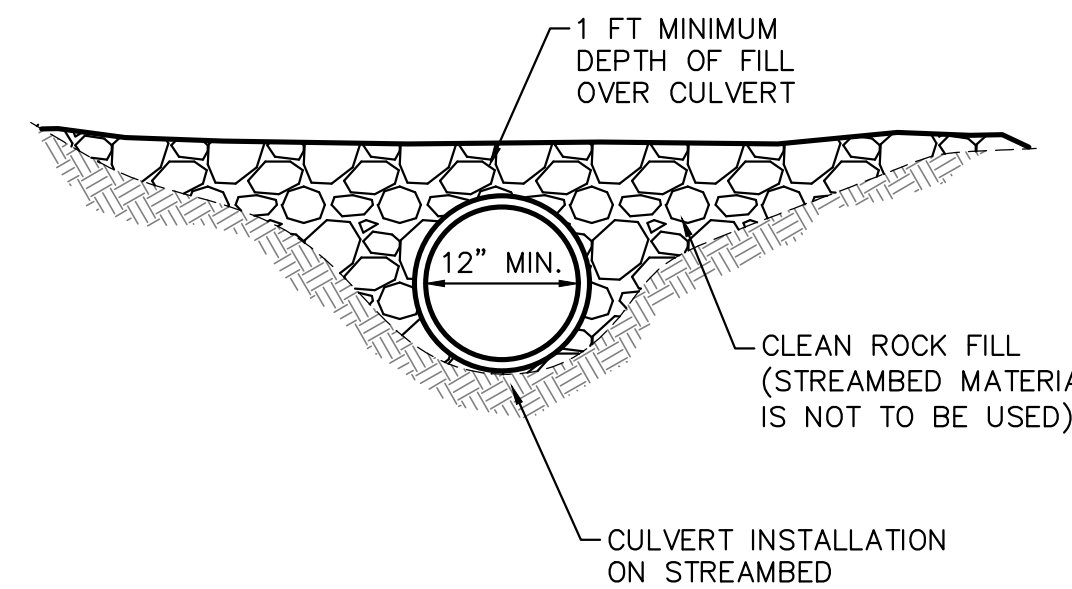


NOTE:

1. MULTIPLE PIPES AND MULTIPLE SPAN BRIDGES AND CULVERTS WHICH MAY TEND TO COLLECT DEBRIS, CONTRIBUTE TO THE FORMATION OF ICE JAMS AND INCREASE HEAD LOSSES SHALL BE AVOIDED TO THE MAXIMUM EXTENT PRACTICABLE. CROSSINGS OF LESS THAN 15 FEET SHALL BE BY ONE SPAN, EXCEPT WHERE CONDITIONS MAKE IT IMPRACTICAL TO AFFECT THE CROSSING WITHOUT MULTIPLE SPANS (SECTION 105.162).
2. REFER TO PADEP E&S MANUAL PAGES 39 AND 40 FOR DETAILS #3-13 (SINGLE SPAN CULVERT) AND #3-14 (MULTIPLE SPAN OUTLET) FOR ADDITIONAL INFORMATION.

MULTIPLE SPAN CULVERT

NOT TO SCALE



SINGLE SPAN CULVERT

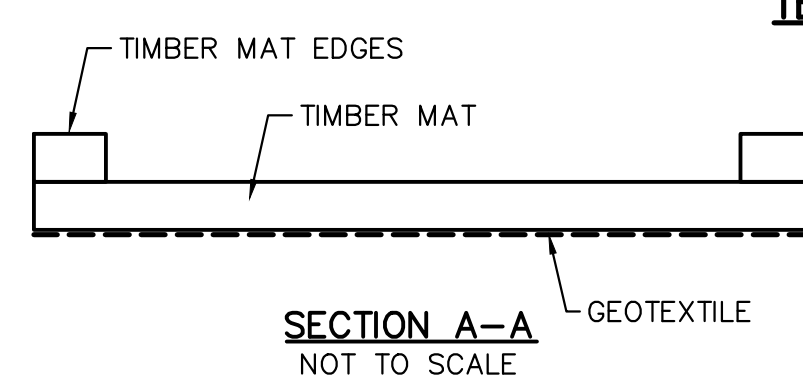
NOT TO SCALE

MAINTENANCE OF TEMPORARY EQUIPMENT CROSSING:

1. TEMPORARY STREAM CROSSING SHALL BE INSPECTED ON A DAILY BASIS.
2. DAMAGED CROSSINGS SHALL BE REPAIRED WITHIN 24 HOURS OF THE INSPECTION AND BEFORE ANY SUBSEQUENT USE.
3. SEDIMENT DEPOSITS ON THE CROSSING OR ITS APPROACHES SHALL BE REMOVED REGULARLY AND PLACED IN SOIL STOCKPILES.
4. FLOW THROUGH SHALL BE INSPECTED DAILY AND IMPEDANCES REMOVED WITHIN 24 HOURS.
5. AS SOON AS TEMPORARY CROSSING IS NO LONGER NEEDED, IT SHALL BE REMOVED. ALL MATERIALS SHALL BE DISPOSED OF PROPERLY AND AREAS STABILIZED. TEMPORARY EQUIPMENT CROSSINGS SHALL BE IN PLACE FOR NO LONGER THAN 1 YEAR.

TEMPORARY EQUIPMENT CROSSING DETAILS

NOT TO SCALE

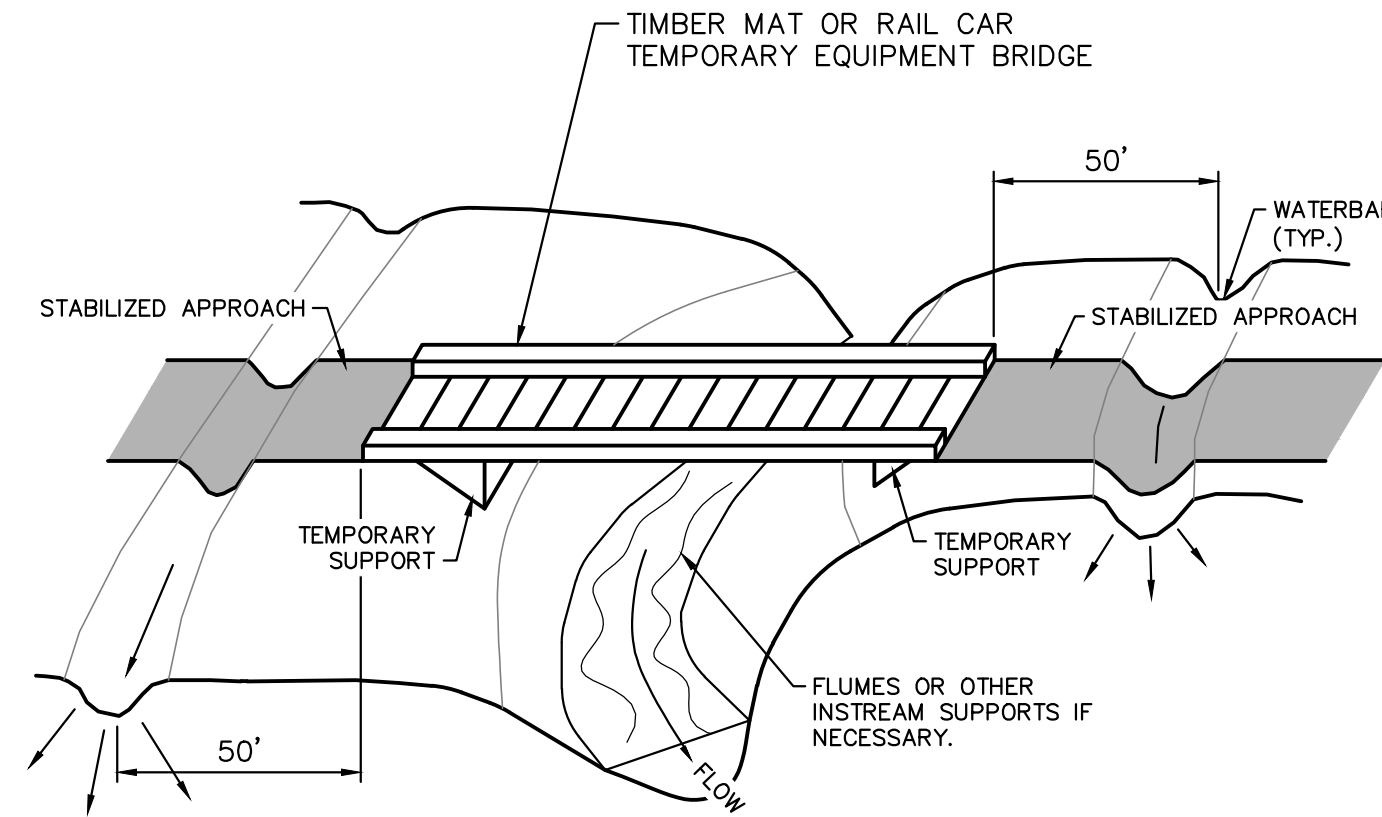


SECTION A-A

NOT TO SCALE

NOTE:

1. IF TIMBER MAT OR EQUIPMENT BRIDGE EDGES ARE NOT PROVIDED ON MAT TO CONTAIN SEDIMENT, INSTALL CFS IN SPECIAL PROTECTION WATERSHEDS OR SILT FENCE IN NON-SPECIAL PROTECTION WATERSHEDS TO PREVENT ANY SEDIMENT FROM THE EQUIPMENT CROSSING FROM ENTERING THE WETLAND.
2. GEOTEXTILE SHALL BE WOVEN WITH A MINIMUM GRAB TENSILE STRENGTH OF 200 POUNDS (MARV). ALTERNATES MUST BE APPROVED BY ENGINEER. WHERE SAFETY IS A CONCERN, GEOTEXTILE MAY BE REMOVED WITH PRIOR APPROVAL OF ENGINEER.
3. COMPOSITE MAT CAN BE SUBSTITUTED FOR TIMBER MATS.
4. ACCUMULATED SEDIMENT ON TIMBER MAT OR EQUIPMENT BRIDGE WILL BE REMOVED BY HAND AND PLACED IN SOIL STOCKPILES.



SECTION A-A

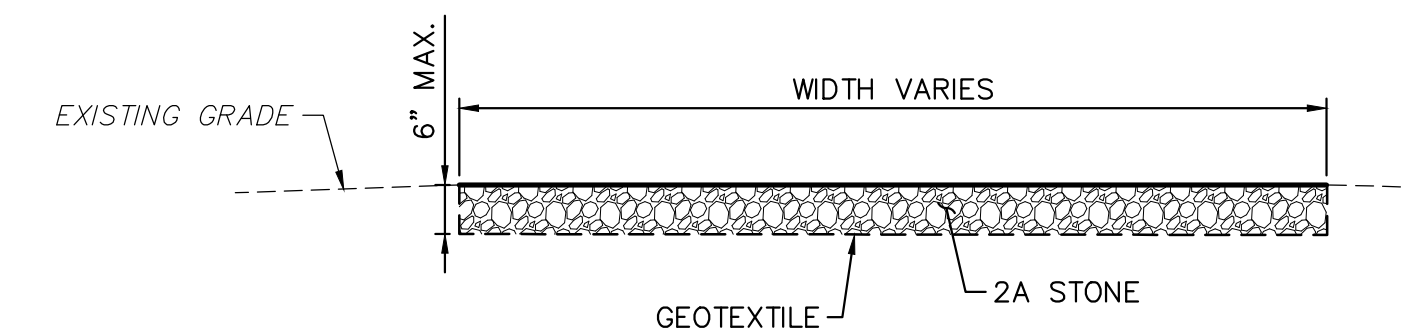
NOT TO SCALE

NOTES:

1. POST SIGNS; NO REFUELING WITHIN 100 FEET OF A STREAM.
2. APPROACHES TO CROSSINGS ARE NOT TO EXCEED 6" ABOVE ORIGINAL GRADE.
3. TIMBER MAT SPANS WITHOUT CENTER SUPPORT ARE LIMITED TO 15 FEET.
4. RAIL CAR SPANS WITHOUT CENTER SUPPORT ARE LIMITED TO 40 FEET.
5. GEOTEXTILE SHALL BE WOVEN WITH A MINIMUM GRAB TENSILE STRENGTH OF 200 POUNDS (MARV). ALTERNATES MUST BE APPROVED BY ENGINEER. WHERE SAFETY IS A CONCERN, GEOTEXTILE MAY BE REMOVED WITH PRIOR APPROVAL OF ENGINEER.
6. COMPOSITE MAT CAN BE SUBSTITUTED FOR TIMBER MATS.
7. CONSTRUCT AND MAINTAIN EQUIPMENT BRIDGES TO ALLOW UNRESTRICTED FLOW AND TO PREVENT SOIL FROM ENTERING THE WATERBODY.
8. WATERBARS AND BROAD-BASED DIPS SHALL DISCHARGE TO 18" CFS OR APPROVED SEDIMENT REMOVAL FACILITY.
9. FOLLOW PERMIT CONDITIONS REGARDING REMOVAL OF CROSSING.
10. PROVIDE 50' STABILIZED ACCESS TO CROSSING ON BOTH SIDES OF STREAM CHANNEL (SEE PLAN VIEW). THE STABILIZED APPROACH MAY CONSIST OF GRAVEL (AASHTO #1 OR EQUAL) OR TIMBER MATS.
11. RUNOFF FROM THE ROADWAY SHALL BE DIVERTED OFF THE ROADWAY AND INTO A SEDIMENT REMOVAL BMP BEFORE IT REACHES THE ROCK APPROACH TO THE CROSSING.
12. FOLLOW TROUT STREAM RESTRICTIONS SHOWN ON PLAN SHEETS.
13. ACCUMULATED SEDIMENT ON TIMBER MAT OR EQUIPMENT BRIDGE WILL BE REMOVED BY HAND AND PLACED IN SOIL STOCKPILES.

TEMPORARY EQUIPMENT BRIDGE STREAM CROSSING DETAIL

NOT TO SCALE

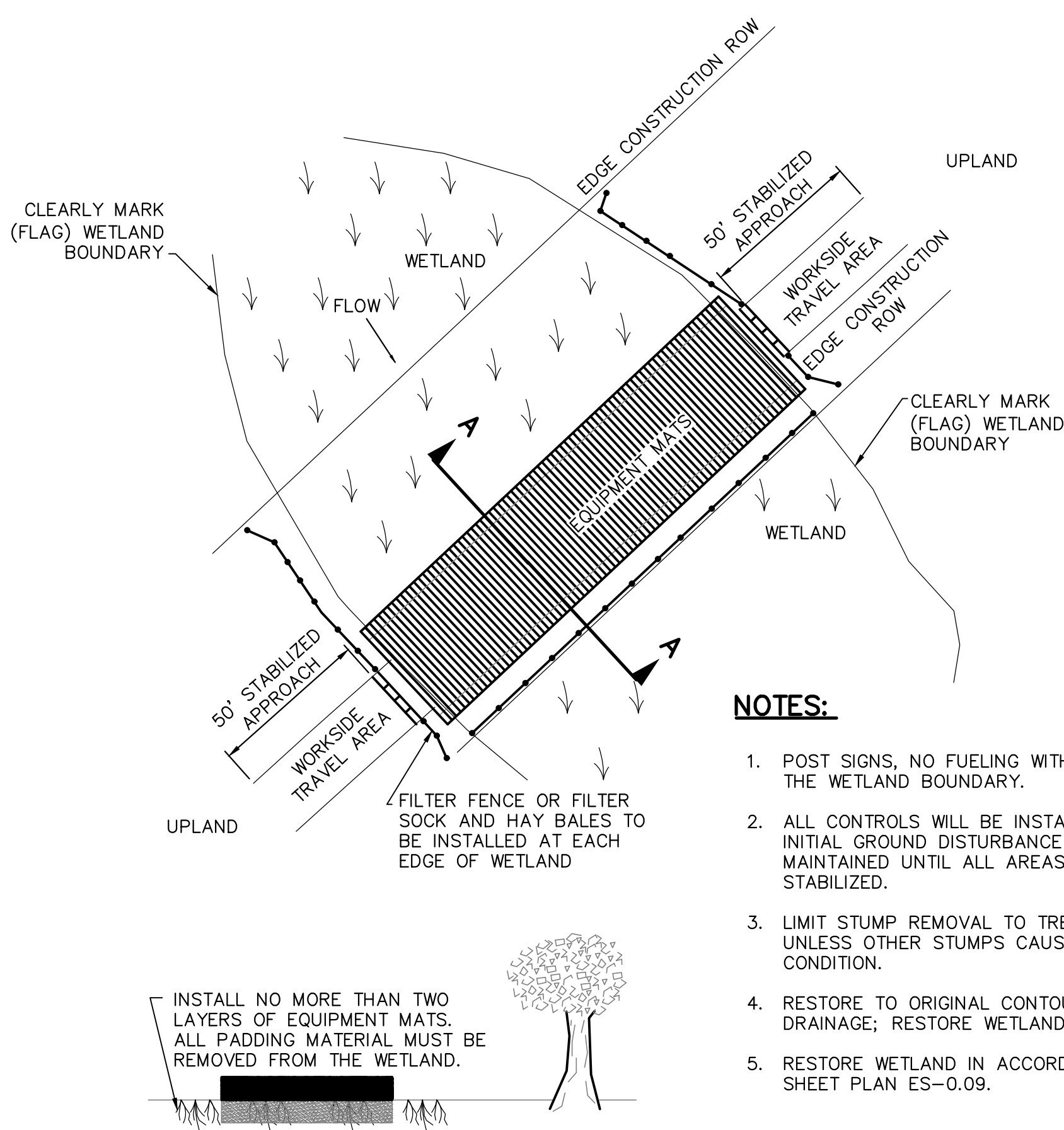


TYPICAL AGGREGATE ACCESS ROAD DETAIL

NOT TO SCALE

NOTES:

1. ENSURE RUNOFF FROM THE TRAVEL LANE SHALL BE DIVERTED OFF THE TRAVEL LANE INTO A SEDIMENT REMOVAL BMP BEFORE IT REACHES THE STABILIZED APPROACH.
2. GEOTEXTILE SHALL BE WOVEN WITH A MINIMUM GRAB TENSILE STRENGTH OF 200 POUNDS (MARV). ALTERNATES MUST BE APPROVED BY ENGINEER. WHERE SAFETY IS A CONCERN, GEOTEXTILE MAY BE REMOVED WITH PRIOR APPROVAL OF ENGINEER.



TEMPORARY TIMBER MAT WETLAND CROSSING

NOT TO SCALE

NOTES:

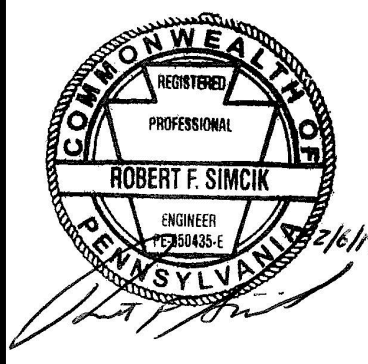
1. POST SIGNS, NO FUELING WITHIN 100' OF THE WETLAND BOUNDARY.
2. ALL CONTROLS WILL BE INSTALLED AFTER INITIAL GROUND DISTURBANCE AND MAINTAINED UNTIL ALL AREAS ARE STABILIZED.
3. LIMIT STUMP REMOVAL TO TRENCH LINE, UNLESS OTHER STUMPS CAUSE AN UNSAFE CONDITION.
4. RESTORE TO ORIGINAL CONTOUR AND DRAINAGE; RESTORE WETLAND MATERIAL.
5. RESTORE WETLAND IN ACCORDANCE WITH SHEET PLAN ES-0.09.

16
0.18



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REVISIONS			
NO.	BY	DATE	REMARKS
1	RS	3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS
2	RS	5/25/17	DRAWINGS PROVIDED TO FIELD
3	RS	6/17/21	RESTORED AREA UPDATES FOR PERMIT RENEWAL



SUNOCO PIPELINE LP
PHILADELPHIA, PENNSYLVANIA
**PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5**

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES
PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

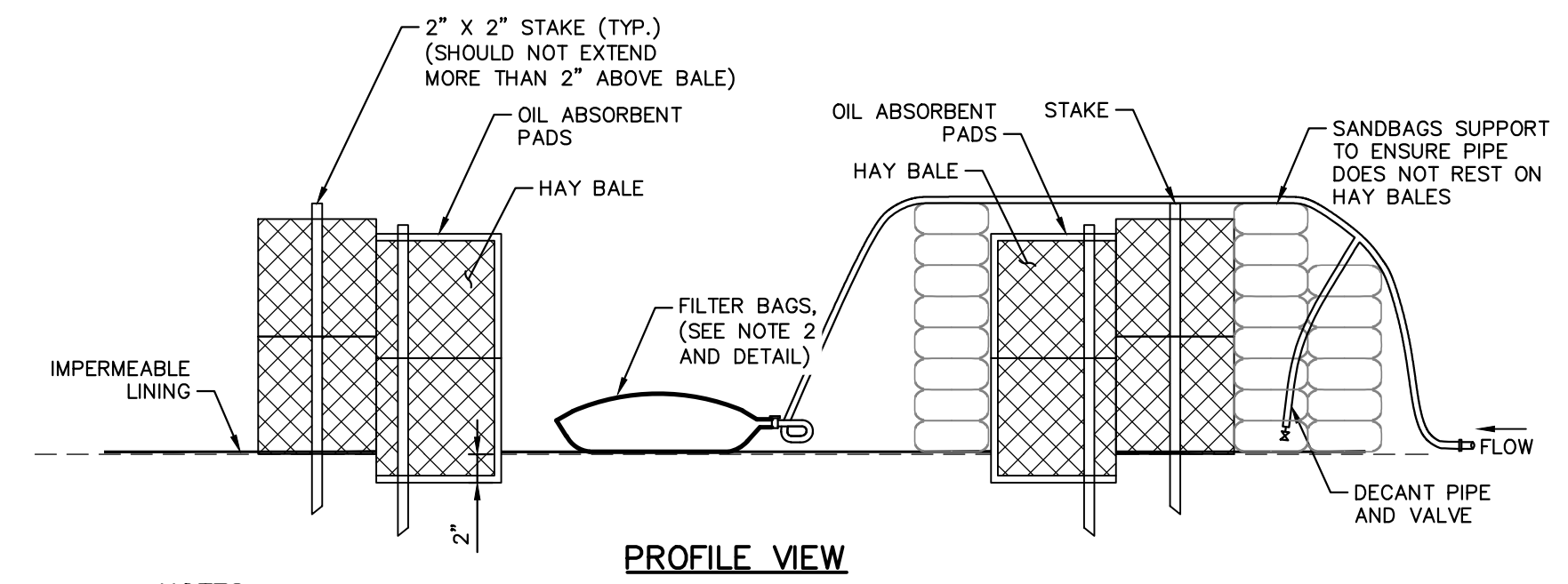
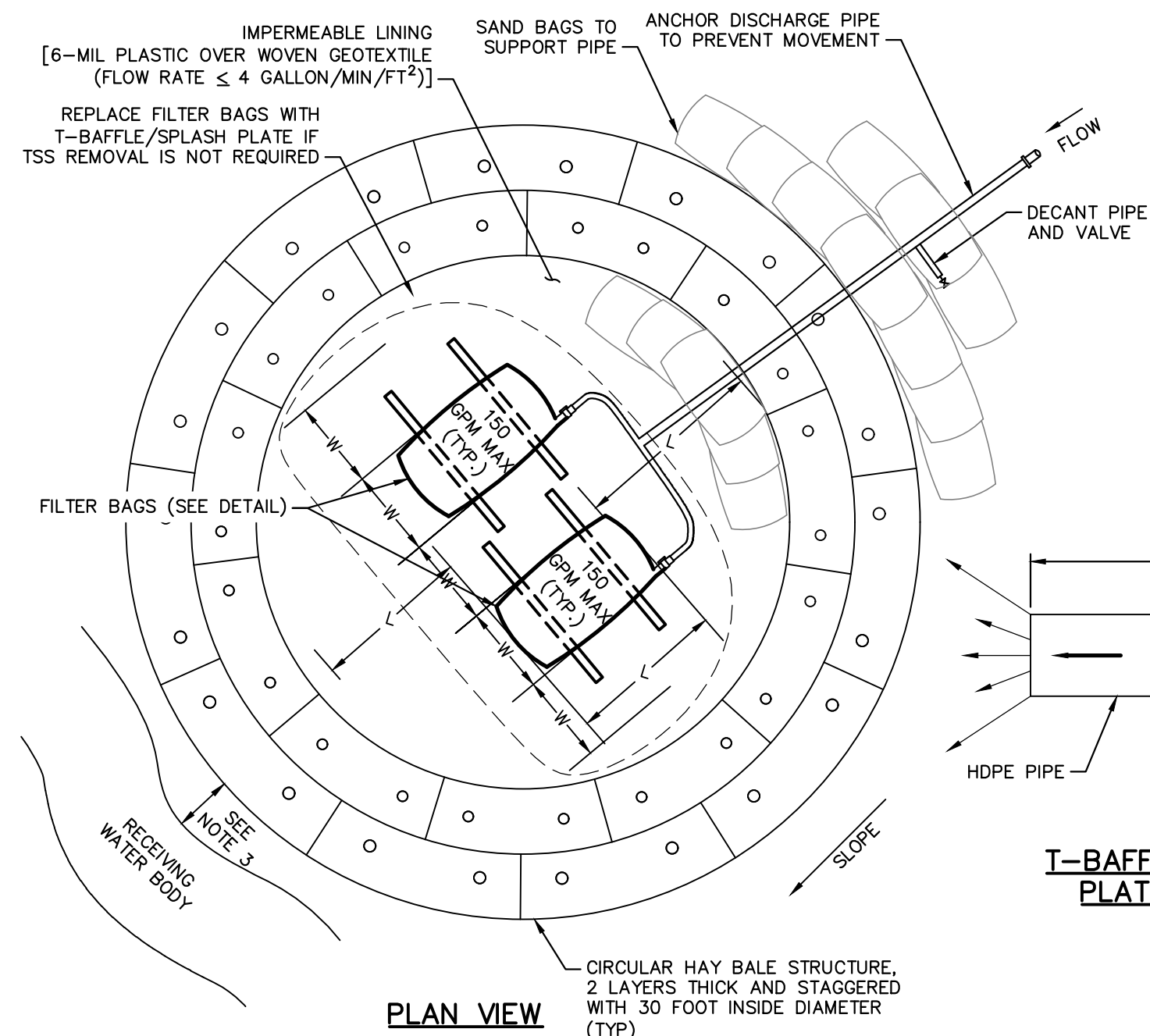
DATE:	2/6/17
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS
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ES-0.18	
SHEET 0.18 OF 49	

NOTE:
DETAIL NOT REQUIRED IN LANCASTER COUNTY.

**HYDROSTATIC TESTING WATER
DIRECT DISCHARGE DETAIL**

NOT TO SCALE

17
0.19



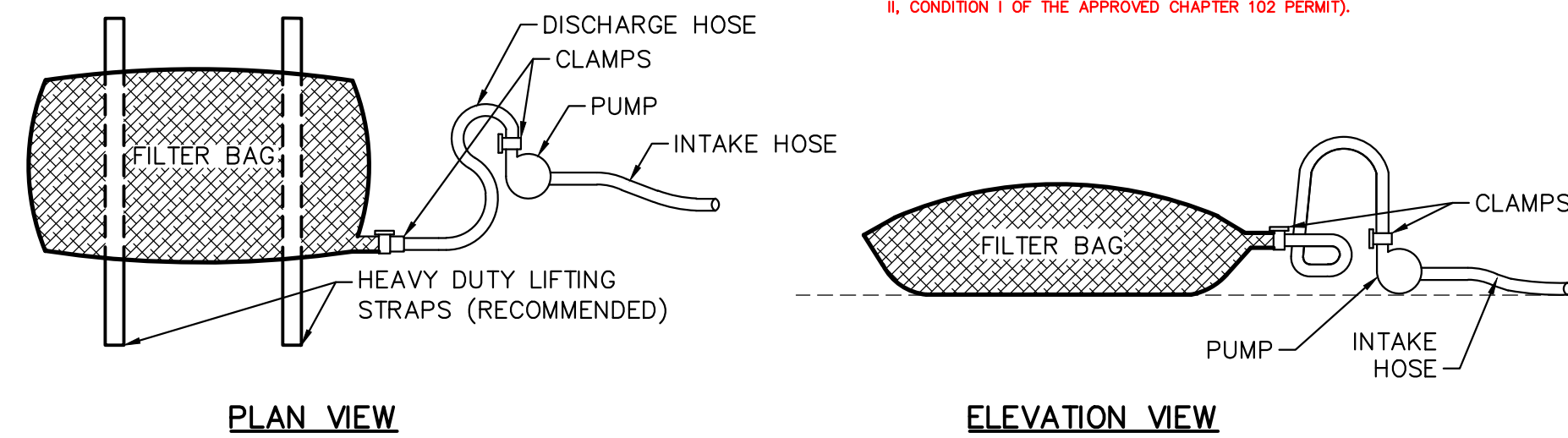
NOTES:

- NOTICE OF INTENT MUST BE SUBMITTED AND NOTIFICATION OF PERMIT COVERAGE RECEIVED PRIOR TO DISCHARGING HYDROSTATIC TEST WATER.
- HYDROSTATIC TEST WATER DISCHARGE STRUCTURE WILL BE LOCATED WITHIN THE PROJECT RIGHT-OF-WAY OR OTHER ESTABLISHED RIGHT-OF-WAY APPROVED BY SUNOCO AND LANDOWNER. INCREASE SIZE OF DISCHARGE STRUCTURE AND NUMBER OF FILTER BAGS TO MATCH REQUIRED DISCHARGE RATE AND TSS REMOVAL AS LONG AS REQUIRED LAND IS AVAILABLE. ADD ADDITIONAL SMALLER DISCHARGE STRUCTURES IF SPACE IS LIMITED. ELIMINATE FILTER BAG(S) IF TSS REMOVAL NOT REQUIRED AND REPLACE WITH T-BAFFLE/SPLASH PLATE.
- HYDROSTATIC WATER DISCHARGE STRUCTURE WILL BE LOCATED AT LEAST 100 FEET FROM THE EDGE OF A DELINEATED WETLAND, AND 50 FEET OR THE CHANNEL WIDTH, WHICHEVER IS GREATER, FROM THE TOP OF BANK OF A RECEIVING STREAM.
- HYDROSTATIC WATER DISCHARGE STRUCTURE WILL BE LOCATED SUCH THAT IT DRAINS TO A WELL-VEGETATED AREA WITH SLOPES BETWEEN 1% AND 5% TOWARD THE RECEIVING WATERBODY.
- HYDROSTATIC TEST WATER MUST BE SAMPLED AND ANALYZED TO CONFIRM COMPLIANCE WITH PARAMETERS IDENTIFIED IN PAPER PAG-10 GENERAL PERMIT FOR DISCHARGE FROM HYDROSTATIC TESTING OF TANKS AND PIPELINES AND THE APPROVED SAMPLING AND ANALYSIS PROGRAM FOR HYDROSTATIC TEST WATERS FOR PPP IN PENNSYLVANIA.
- THE DISCHARGE RATE TO THE STRUCTURE SHOULD BE LIMITED TO THE LOWEST POSSIBLE RATE TO MINIMIZE ANY POTENTIAL IMPACT ON AQUATIC LIFE AND TO REDUCE THE POTENTIAL FOR EROSION (E.G., 150 GPM).
- IF MUNICIPAL WATER IS USED FOR TESTING, HOLD THE WATER IN THE PIPE FOR AT LEAST 24 HOURS PRIOR TO DISCHARGE TO MEET TOTAL RESIDUAL CHLORINE LIMITS.
- IMPLEMENT ADDITIONAL EROSION AND SEDIMENT CONTROLS AS REQUIRED IN PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION EROSION AND SEDIMENT CONTROL PROGRAM MANUAL, TECHNICAL GUIDANCE NUMBER 363-2134-008, MARCH 2012.
- DO NOT DISCHARGE HYDROSTATIC TEST WATER TO EV OR HQ WATERS.
- DO NOT DISCHARGE HYDROSTATIC TEST WATER TO TROUT STOCKED STREAMS FROM MARCH 1 TO JUNE 15. THE LISTING OF TROUT STOCKED STREAMS CAN BE FOUND ON THE PENNSYLVANIA FISH AND BOAT COMMISSION'S WEBSITE: WWW.FISH.STATE.PA.US.
- A PREPAREDNESS, PREVENTION, AND CONTINGENCY (PPC) PLAN MUST BE DEVELOPED IN ACCORDANCE WITH PA DEP'S "GUIDELINES FOR THE DEVELOPMENT AND IMPLEMENTATION OF ENVIRONMENTAL EMERGENCY RESPONSE PLANS" (DEP ID 400-2200-001) AND ITS NPDES-SPECIFIC ADDENDUM. THE PPC PLAN MUST BE MAINTAINED ON-SITE AND BE MADE AVAILABLE UPON REQUEST.
- WHERE COMPOST FILTER SOCK IS NECESSARY TO ELUATE THE PUMPED WATER FILTER BAG TO AN ABACT E&S BMP, THE COMPOST FILTER SOCK SHALL BE PLACED TO SUFFICIENT LENGTH TO MANAGE ALL FLOW FROM THE PUMPED WATER FILTER BAG (IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION II, CONDITION I OF THE APPROVED CHAPTER 102 PERMIT).

STREAMBANK STABILIZATION TABLE

COUNTY	STREAM	SPECIAL PROTECTION WATER	NORMAL DEPTH (ft)	SLOPE (ft/ft)	VELOCITY (ft/sec)	SHEAR STRESS (lb/ft ²)	SHEAR STRESS LESS THAN NATIVE SOIL 0.25?	SHEAR STRESS OF NATIVE SOIL (lb/ft ²)	RIP RAP REQUIRED	IF "RIP RAP" REQ'D, SIZE (TABLE 6.6)	THICKNESS (IN) OF RIP RAP (TABLE 6.6)	FILTER STONE TYPE
LANCASTER	S-BB3	NO	1.08	0.01	3.07	0.67	NO		YES	R-3 (1)	9	AASHTO #57

(1) R-4 IS MINIMUM RIPRAP SIZE TO BE USED. IF CALCULATIONS IDENTIFIED SMALLER STONE SIZE WILL BE INCREASED TO R-4



NOTE:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-3751	80 SIEVE

ELEVATION VIEW

FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

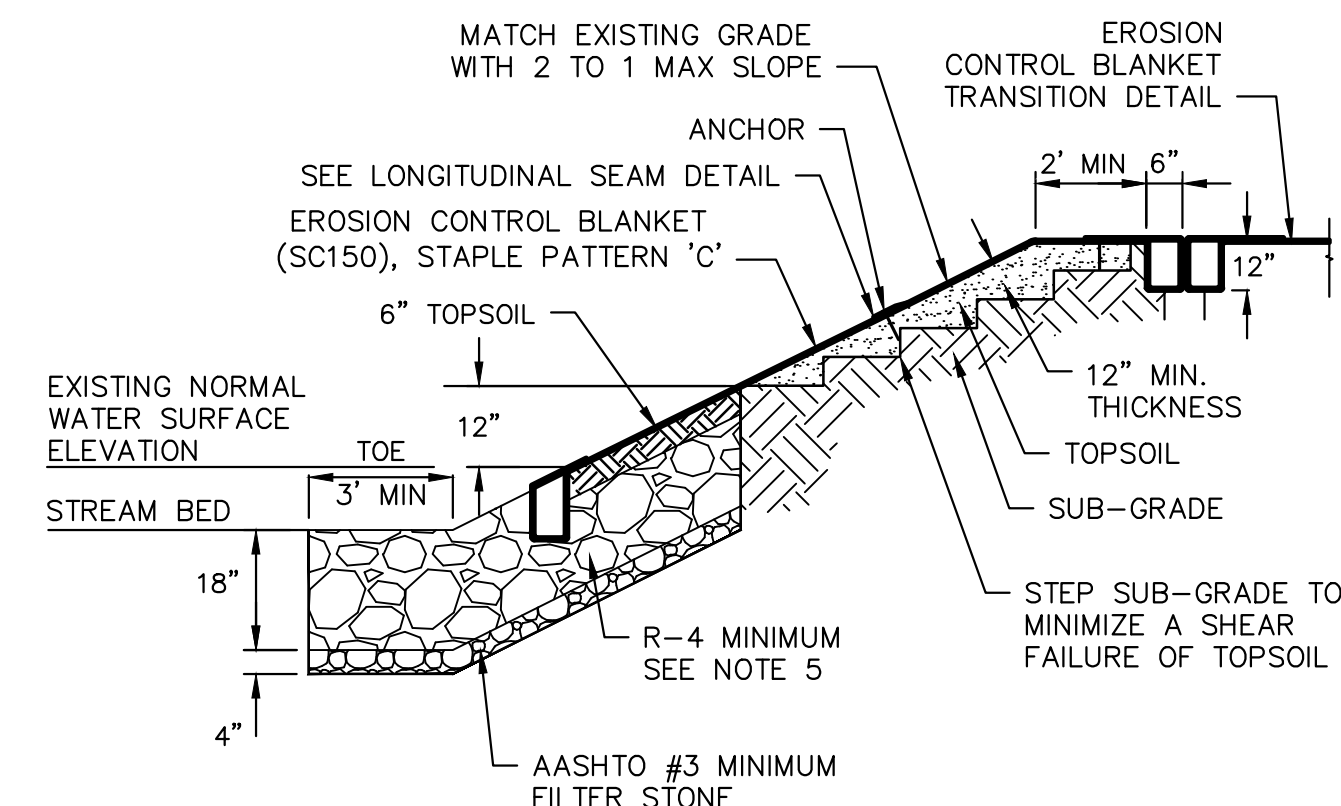
**FILTER BAG DETAIL USE IN HAY BALE
DISCHARGE STRUCTURE**

NOT TO SCALE

**DISCHARGE STRUCTURES TO BE USED
FOR HYDROSTATIC TEST WATER**

NOT TO SCALE

18
0.19

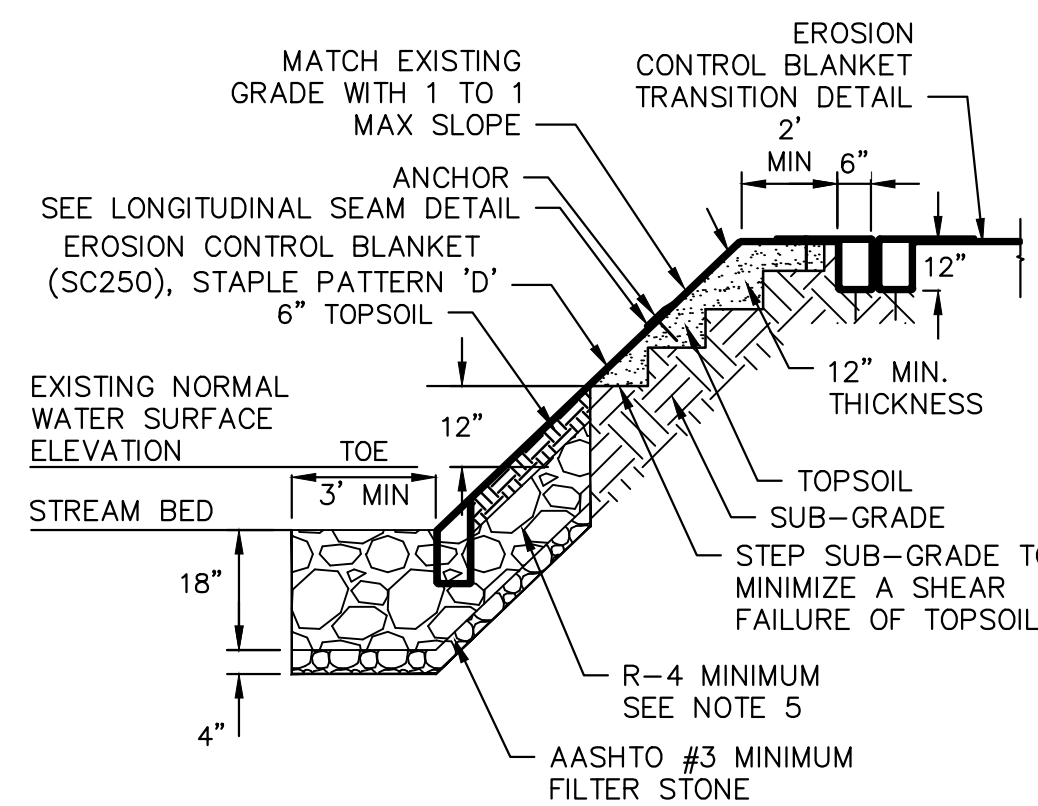


NOTES:

- A SUITABLE WOVEN OR NON-WOVEN GEOTEXTILE UNDERLAYMENT MUST BE USED IN ACCORDANCE TO MANUFACTURER'S RECOMMENDATIONS.
- REFER TO NORTH AMERICAN GREEN DETAILS.
- MATTING WILL EXTEND FROM TOP OF BANK 50' PERPENDICULARLY AWAY FROM TOP OF BANK OR 100' IN HQ/EV WATERSHEDS.
- NATURAL STREAM BED MATERIAL TO BE STRIPPED AND SEGREGATED FROM SUBSURFACE MATERIAL FOR FINAL STREAMBED RESTORATION.
- WHERE NATURAL STONE IS REMOVED FROM THE STREAM CROSSING, NATURAL STONE SHALL BE INSTALLED AS TOP 6 INCHES OF RIPRAP.

RIP-RAP BANK STABILIZATION DETAIL

NOT TO SCALE



NOTES:

- A SUITABLE WOVEN OR NON-WOVEN GEOTEXTILE UNDERLAYMENT MUST BE USED IN ACCORDANCE TO MANUFACTURER'S RECOMMENDATIONS.
- REFER TO NORTH AMERICAN GREEN DETAILS.
- MATTING WILL EXTEND FROM TOP OF BANK 50' PERPENDICULARLY AWAY FROM TOP OF BANK OR 100' IN HQ/EV WATERSHEDS.
- NATURAL STREAM BED MATERIAL TO BE STRIPPED AND SEGREGATED FROM SUBSURFACE MATERIAL FOR FINAL STREAMBED RESTORATION.
- WHERE NATURAL STONE IS REMOVED FROM THE STREAM CROSSING, NATURAL STONE SHALL BE INSTALLED AS TOP 6 INCHES OF RIPRAP.
- FOR SLOPES GREATER THAN 1:1 REFER TO SITE SPECIFIC PLANS FOR APPROPRIATE CONTROLS.

STEEP BANK STABILIZATION DETAIL

NOT TO SCALE

**LANCASTER COUNTY (SPREAD 1) HDD
TESTING DISCHARGE LOCATION INFORMATION**

NOT TO SCALE

19
0.19

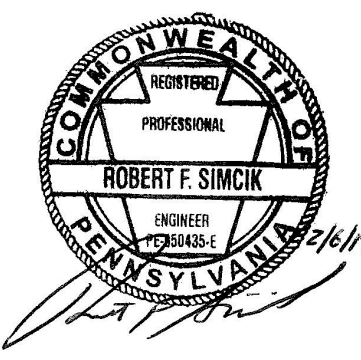
OUTFALL NO.	LATITUDE			LONGITUDE			ANTICIPATED DISCHARGE EVENTS				DISCHARGE TYPE	RECEIVING WATER NAME	CH. 93 EXISTING USE	PAFBC DESIGNATION	DRAINS TO EV WETLANDS?
	DEGREES	MINUTES	SECONDS	DEGREES	MINUTES	SECONDS	MAXIMUM FLOW (GPM)	DURATION (HRS)	VOLUME (GAL)	NO./YEAR					
069	40	17	1.19	-76	6	58.69	2,000	39.1	4,693,296	1	HAY BALE STRUCTURE	UNT TO LITTLE COCALICO CREEK	TSF	DRAINS TO STS	NO

* VOLUME DISPLAYS MAXIMUM POSSIBLE DISCHARGE VOLUME FOR EACH DISCHARGE LOCATION. NOT ALL DISCHARGE LOCATIONS WILL BE USED.



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REVISIONS			
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1	RS	3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS
2	RS	5/25/17	DRAWINGS PROVIDED TO FIELD
3	RS	10/1/18	REVISED STREAMBANK STABILIZATION TABLE
4	RS	6/17/21	RESTORED AREA UPDATES FOR PERMIT RENEWAL



SUNOCO PIPELINE LP
PHILADELPHIA, PENNSYLVANIA
**PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5**

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES
PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

DATE: 2/6/17
PROJECT NO.: 112C05958
DESIGNED BY: JB
DRAWN BY: BH
CHECKED BY: RS
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ES-0.19
SHEET 0.19 OF 49

SITE RESTORATION GENERAL NOTES:

1. TOPOGRAPHIC MAPPING AND FEATURES COMPILED FROM WWW.PASDA.PSU.EDU.
2. THE PROJECT TAKES PLACE WITHIN LANCASTER COUNTY, PENNSYLVANIA.
3. TOWNSHIP BOUNDARIES TAKEN FROM WWW.PASDA.PSU.EDU.
4. 100-YEAR FEMA FLOODPLAINS TAKEN FROM WWW.PASDA.PSU.EDU.
5. SEE SHEET ES-0.02 FOR STREAM AND WETLAND CROSSING TABLE.
6. PIPELINE LOCATION AND RIGHT-OF-WAY FROM SUNOCO PIPELINE L.P.
7. USE COMPOST FILTER SOCK AS REQUIRED TO PREVENT RUNOFF FROM SPOIL AREA.
8. AT ALL STREAM CROSSINGS, RUNOFF MUST BE DIRECTED TO A SEDIMENT REMOVAL AREA (I.E. COMPOST FILTER SOCKS).
9. THE RIGHTS-OF-WAYS AND EASEMENTS SHOWN ON THIS PLAN ARE THE RESPONSIBILITY OF SUNOCO PIPELINE L.P. TO SECURE WITH THE INDIVIDUAL PROPERTY OWNER. THE RIGHTS-OF-WAY AND EASEMENTS SHOWN ON THIS PERMIT DRAWING REPRESENT THE BEST AVAILABLE PROPERTY INFORMATION AS PROVIDED TO TETRA TECH, INC. BY SUNOCO PIPELINE L.P. THE RIGHTS-OF-WAY AND EASEMENTS SHALL BE VERIFIED AND LOCATED IN THE FIELD BY SUNOCO PIPELINE L.P.
10. PAST AND PRESENT LAND USE CONSISTS OF AGRICULTURAL, FORESTED AND RESIDENTIAL AREAS. POST CONSTRUCTION LAND USE WILL BE A MAINTAINED, VEGETATED RIGHT-OF-WAY.
11. DRAWINGS REPRESENT THE FINAL PLAN FOR CONSTRUCTION.
12. THE EROSION & SEDIMENT CONTROL PLAN AND SITE RESTORATION PLAN, INSPECTION REPORTS, AND MONITORING REPORTS MUST BE AVAILABLE AT THE PROJECT SITE FOR REVIEW AND INSPECTION BY THE DEPARTMENT OR CONSERVATION DISTRICT.

SITE RESTORATION SCHEDULE:

1. AGRICULTURAL LIME APPLICATION RATES WILL BE DETERMINED BY FIELD PH TESTING. TESTING WILL BE PERFORMED AT A RATE OF 1 TEST/ACRE (MIN). IN ABSENCE OF FIELD TESTING, APPLY AT 6 TONS/ACRE.
2. APPLY 10-20-20 FERTILIZER AT THE RATE OF 1,000 LB/ACRE, OR AT A RATE DETERMINED BY FIELD TESTING.
3. WORK IN LIME AND FERTILIZER TO A DEPTH OF 4 IN. USING SUITABLE EQUIPMENT.
4. SEED PER PERMANENT SEED MIXTURE.
5. STRAW MULCH SHALL BE APPLIED AT THE RATE OF THREE TONS PER ACRE. CHEMICALLY TREATED OR SALTED STRAW IS NOT ACCEPTABLE AS MULCH.

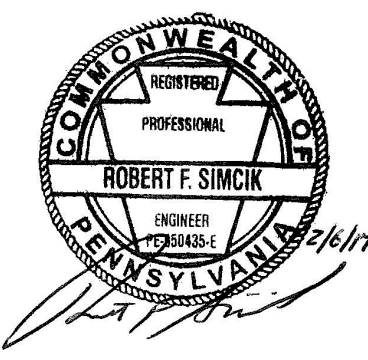
SITE RESTORATION:

FOLLOWING COMPLETION OF PIPELINE INSTALLATION AND TRENCH BACKFILLING, THE AREA SHALL BE RETURNED TO GENERAL PRECONSTRUCTION GRADES PRESENT PRIOR TO PIPELINE INSTALLATION IN ORDER TO MAINTAIN PRECONSTRUCTION DRAINAGE PATTERNS. GROUNDS DISTURBED BY ANY OF THE OPERATIONS NECESSARY TO COMPLETE THE WORK FOR THIS PROJECT ARE TO BE PERMANENTLY SEEDED, OR IF SPECIFIED, SODDED, UNLESS OCCUPIED BY STRUCTURES, PAVED, OR DESIGNATED AS A PERMANENT ACCESS ROAD. THE ENTIRE RIGHT-OF-WAY WILL BE RESTORED BACK TO A MEADOW CONDITION OR LAWN IN ACCORDANCE WITH THE PERMANENT REVEGETATION PLAN ON ES-0.04. A TEMPORARY CESSATION OF EARTH DISTURBANCE ACTIVITIES THAT LASTS FOUR DAYS OR LONGER REQUIRES TEMPORARY STABILIZATION. DISTURBED AREAS, WHICH ARE AT FINAL GRADE, SHALL BE SEEDED AND MULCHED IMMEDIATELY, WITH THE EXCEPTION OF THE PERMANENT ACCESS ROADS. IF SEEDING CANNOT BE COMPLETED IMMEDIATELY AFTER THE AREA REACHES FINAL GRADE DUE TO WEATHER CONDITIONS, THE DISTURBED AREA SHALL BE STABILIZED AND MULCHED WITH STRAW AT THE RATE OF THREE TONS PER ACRE. THIS STRAW SHALL BE ANCHORED USING A METHOD DESCRIBED UNDER MULCHING OF THIS NARRATIVE. TEMPORARY ACCESS ROADS WILL BE RESTORED TO A VEGETATED CONDITION FOLLOWING CONSTRUCTION. THE PROPOSED PERMANENT ACCESS ROADS WILL REMAIN IN PLACE FOLLOWING CONSTRUCTION.



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**PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5**

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES
PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
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NOTES & DETAILS

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DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS
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ES-0.20	
SHEET 0.20 OF 49	

NOTES:

1. TOPOGRAPHIC MAPPING AND FEATURES COMPILED FROM WWW.PASDA.PSU.EDU.
2. THE PROJECT TAKES PLACE WITHIN DAUPHIN COUNTY, PENNSYLVANIA.
3. TOWNSHIP BOUNDARIES TAKEN FROM WWW.PASDA.PSU.EDU.
4. 100-YEAR FEMA FLOODPLAINS FROM WWW.PASDA.PSU.EDU.
5. PIPELINE LOCATION AND RIGHT-OF-WAY FROM SUNOCO PIPELINE L.P.
6. USE COMPOST FILTER SOCK AS REQUIRED TO PREVENT RUNOFF FROM SPOIL AREA.
7. AT ALL STREAM CROSSINGS, RUNOFF MUST BE DIRECTED TO A SEDIMENT REMOVAL AREA (i.e. COMPOST FILTER SOCKS).
8. THE RIGHTS-OF-WAYS AND EASEMENTS SHOWN ON THIS PLAN ARE THE RESPONSIBILITY OF SUNOCO PIPELINE L.P. TO SECURE WITH THE INDIVIDUAL PROPERTY OWNER. THE RIGHTS-OF-WAY AND EASEMENTS SHOWN ON THIS PERMIT DRAWING REPRESENT THE BEST AVAILABLE PROPERTY INFORMATION AS PROVIDED TO TETRA TECH, INC. BY SUNOCO PIPELINE L.P. THE RIGHTS-OF-WAY AND EASEMENTS SHALL BE VERIFIED AND LOCATED IN THE FIELD BY SUNOCO PIPELINE L.P.
9. PAST AND PRESENT LAND USE CONSISTS OF AGRICULTURAL, FORESTED AND RESIDENTIAL AREAS. POST CONSTRUCTION LAND USE WILL BE A MAINTAINED, VEGETATED RIGHT-OF-WAY.
10. DRAWINGS REPRESENT THE FINAL PLAN FOR CONSTRUCTION.
11. ~~THE EROSION & SEDIMENT CONTROL PLAN AND SITE RESTORATION PLAN, INSPECTION REPORTS, AND MONITORING REPORTS MUST BE AVAILABLE FOR REVIEW AND INSPECTION BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, THE PCSM PLAN, INSPECTION REPORTS, AND MONITORING RECORDS SHALL BE MADE AVAILABLE AT THE PROJECT SITE FOR REVIEW AND INSPECTION BY DEP AND THE AUTHORIZED CONSERVATION DISTRICT. (IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION III, CONDITION J OF THE APPROVED CHAPTER 102 PERMIT).~~
12. ~~THE LICENSED PROFESSIONAL OR DESIGNEE SHALL BE PRESENT ON-SITE FOR THE CONSTRUCTION OF THE INFILTRATION BERMS AND TRENCHES. A LICENSED PROFESSIONAL OR THEIR DESIGNEE SHALL BE PRESENT ON-SITE AND BE RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE APPROVED PCSM PLAN. THE LICENSED PROFESSIONAL WILL BE RESPONSIBLE TO PROVIDE A FINAL CERTIFICATION, PURSUANT TO 25 PA. CODE § 102.8(1) ALONG WITH THE REQUIRED NOT AND RECORD DRAWINGS, INDICATING THAT THE PROJECT SITE WAS CONSTRUCTED IN ACCORDANCE WITH THE APPROVED OR MODIFIED PCSM PLAN. (IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION III, CONDITION C OF THE APPROVED CHAPTER 102 PERMIT).~~
13. A RECORDED INSTRUMENT WILL BE RECORDED AT THE RECORDER OF DEEDS TO PROVIDE FOR NECESSARY ACCESS FOR LONG TERM OPERATION AND MAINTENANCE FOR PCSM BMP'S. THE DEED WILL PROVIDE NOTICE THAT THE RESPONSIBILITY FOR THE LONG TERM OPERATION AND MAINTENANCE OF THE PCSM BMP'S IS A COVENANT THAT RUNS WITH THE LAND AND IS BINDING AND ENFORCEABLE BY SUBSEQUENT GRANTEEES.

SITE RESTORATION

FOLLOWING COMPLETION OF PIPELINE INSTALLATION AND TRENCH BACKFILLING, THE PIPELINE RIGHT OF WAY, ASSOCIATED WORKSPACES, AND TEMPORARY ACCESS ROADS SHALL BE RETURNED TO THE GENERAL GRADE PRESENT PRIOR TO PIPELINE INSTALLATION IN ORDER TO MAINTAIN PRECONSTRUCTION DRAINAGE PATTERNS. AFTER COMPLETION OF MAJOR CONSTRUCTION WORK, TOPSOIL THAT WAS STOCKPILED DURING CONSTRUCTION WILL BE PLACED ALONG THE ROW. GROUNDS DISTURBED BY ANY OF THE OPERATIONS NECESSARY TO COMPLETE THE WORK FOR THIS PROJECT ARE TO BE PERMANENTLY SEEDED, OR IF SPECIFIED, SODDED, UNLESS OCCUPIED BY STRUCTURES, PAVED OR DESIGNATED AS A PERMANENT ACCESS ROAD. DISTURBED AREAS, WHICH ARE AT FINAL GRADE, SHALL BE SEEDED AND MULCHED ONCE FINAL GRADES ARE ACHIEVED. THE PERMANENT SEED MIXTURE WILL RESTORE DISTURBED AREAS TO A MEADOW IN GOOD CONDITION OR BETTER. IF SEEDING CANNOT BE COMPLETED WITHIN A FOUR (4) DAY PERIOD DUE TO WEATHER CONDITIONS, THE DISTURBED AREA WILL BE MULCHED WITH STRAW AT THE RATE OF THREE (3) TONS PER ACRE. THIS STRAW WILL BE ANCHORED USING A METHOD OUTLINED ON DRAWING PCS-0.03.

SITE RESTORATION CONSTRUCTION SEQUENCE

A GENERALIZED CONSTRUCTION SEQUENCE IS PROVIDED BELOW. THE CONSTRUCTION SEQUENCE IS INTENDED TO PROVIDE A GENERAL COURSE OF ACTION TO CONFORM TO THE APPLICABLE REGULATORY AGENCY REQUIREMENTS FOR SITE RESTORATION AND POST-CONSTRUCTION STORMWATER MANAGEMENT OF THE SITE. NECESSARY STEPS FOR PROPER AND COMPLETE EXECUTION OF WORK PERTAINING TO THIS PLAN, WHETHER SPECIFICALLY MENTIONED OR NOT, ARE TO BE PERFORMED BY THE CONTRACTOR. THE CONTRACTOR WILL COMPLY WITH ALL REQUIREMENTS LISTED IN THIS SECTION. THE CONTRACTOR MAY BE REQUIRED TO ALTER CONTROLS BASED ON THE EFFECTIVENESS OF CONTROLS OR DIFFERING CONDITIONS ENCOUNTERED IN THE FIELD. THE APPROPRIATE COUNTY CONSERVATION DISTRICT AND DEP SHALL BE CONTACTED AND MUST APPROVE ANY DEVIATION TO THE AUTHORIZED PLANS. THE PERMITTEE SHALL IMPLEMENT PCSM BMP'S AS DETAILED IN THE APPROVED PCSM PLAN. ANY CHANGES TO THE PCSM PLAN, INCLUDING THE INTRODUCTION OF ALTERNATE PCSM BMP'S OR THE ELIMINATION OF ANY APPROVED PCSM BMP'S, MUST BE APPROVED BY DEP PRIOR TO THE IMPLEMENTATION OF THESE CHANGES. (IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION III, CONDITION I OF THE APPROVED CHAPTER 102 PERMIT).

A PRE-CONSTRUCTION MEETING IS REQUIRED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY. THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (PADEP) OR APPLICABLE COUNTY CONSERVATION DISTRICT, CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, AND THE PLAN PREPARER MUST BE INVITED TO THIS MEETING AT LEAST 7 DAYS IN ADVANCE FOR EARTH DISTURBANCE ACTIVITIES AUTHORIZED BY THIS PERMIT. AT LEAST ONE PRE-CONSTRUCTION MEETING IS REQUIRED. THE PERMITTEE SHALL CONTACT DEP TO SCHEDULE THE PRE-CONSTRUCTION MEETING AND PROVIDE AT LEAST SEVEN (7) DAYS' NOTICE OF THE PRE-CONSTRUCTION MEETING TO ALL INVITED ATTENDEES, UNLESS OTHERWISE APPROVED BY DEP IN WRITING. PERMITTEES, CO-PERMITTEES, OPERATORS, AND LICENSED PROFESSIONALS, OR DESIGNEES RESPONSIBLE FOR EARTH DISTURBANCE ACTIVITY, INCLUDING IMPLEMENTATION OF E&S, PCSM AND PPC PLANS AND CRITICAL STAGES OF IMPLEMENTATION OF THE APPROVED PCSM PLAN, SHALL ATTEND THE PRE-CONSTRUCTION MEETING(S). PERMITTEES, CO-PERMITTEES, OPERATORS AND LICENSED PROFESSIONALS ARE RESPONSIBLE FOR ENSURING THAT ALL ACTIVITIES ON THE SITE COMPLY WITH THE REQUIREMENTS OF THE PERMIT. (IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION VI OF THE APPROVED CHAPTER 102 PERMIT).

1. GRADE SURFACE TO FINISHED GRADE ELEVATIONS AS SOON AS PRACTICABLE FOLLOWING COMPLETION OF PIPE INSTALLATION.
2. SURFACE ROUGHENING WILL BE UTILIZED TO ROUGH THE SOIL SURFACE WITH HORIZONTAL DEPRESSIONS FOR THE PURPOSE OF REDUCING RUNOFF VELOCITY, INCREASING INFILTRATION, AIDING THE ESTABLISHMENT OF VEGETATION, AND REDUCING EROSION. SURFACE ROUGHENING SHOULD BE APPLIED TO SLOPES 3H:1V OR STEEPER UNLESS A STABLE ROCK FACE IS PROVIDED OR IT CAN BE SHOWN THAT THERE IS NOT A POTENTIAL FOR SEDIMENT POLLUTION TO SURFACE WATERS. FOR ROUGHENED SURFACES WITHIN 50 FEET OF A SURFACE WATER, AND WHERE BLANKETING OF SEEDED AREAS IS PROPOSED AS THE MEANS TO ACHIEVING PERMANENT STABILIZATION, SPRAY-ON TYPE BLANKETS ARE RECOMMENDED. SURFACE ROUGHENING SHALL BE ACCOMPLISHED USING DOZERS AFFIXED WITH GROUSER TRACKED EQUIPMENT. DOZERS SHALL RUN UP AND DOWN THE SLOPES LEAVING HORIZONTAL GROOVES PERPENDICULAR TO THE SLOPE. DOZER BLADES SHALL BE RAISED AND NOT USED DURING SURFACE ROUGHENING. WHERE COMPACTION DOES OCCUR, CONTRACTOR SHALL SCARIFY THE SOIL OR PROVIDE ADDITIONAL ROUGHENING SUCH AS DEEP RIPPING OR CHISEL RIPPING TO RESTORE THE AREA TO A MINIMAL COMPACTED STATE. IN AREAS OF PROPOSED INFILTRATION, SOILS SHALL BE AMENDED TO 2' BELOW GRADE. SEE SOIL AMENDMENT AND RESTORATION CONSTRUCTION SEQUENCE BELOW. IN ACCORDANCE WITH THE E&S AND SITE RESTORATION PLANS, MEASURES SHALL BE TAKEN TO ENSURE THAT PROPER SOIL DE-COMPACTION OCCURS FOR ALL AREAS OF SITE RESTORATION FOR THE PROJECT. THE PERMITTEE SHALL IMPLEMENT SUCH MEASURES IN ACCORDANCE WITH THE GUIDANCE ON SOIL RESTORATION IN THE PA STORMWATER BMP MANUAL (BMP 6.7.3, CHAPTER 6, PAGE 221). (IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION III, CONDITION G OF THE APPROVED CHAPTER 102 PERMIT)
3. PLACE TOPSOIL FROM TOPSOIL STOCKPILES AS THE UPPER LAYER OF BACKFILL. TOPSOIL SHALL NOT BE PLACED WHEN THE SUBGRADE IS FROZEN OR WHEN IT IS EXCESSIVELY WET OR DRY AND SHALL NOT BE HANDLED WHEN IN A FROZEN OR MUDDY CONDITION.
4. REMOVE GRAVEL AND GEOTEXTILE FROM THE TEMPORARY ACCESS ROADS AND SCARIFY THE SOIL. REFER TO STEP 2 OF THIS SEQUENCE TO ADDRESS COMPACTION AT ACCESS ROADS. AFTER ADDRESSING COMPACTION CONCERNS, PLACE TOPSOIL THAT WAS STRIPPED PRIOR TO INSTALLATION OF THE ACCESS ROADS.
5. IMMEDIATELY SEED AND MULCH DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING SCHEDULE ONCE FINAL GRADE IS ESTABLISHED AND TOPSOIL IS PLACED.
6. MAINTAIN EROSION AND SEDIMENTATION CONTROL DEVICES UNTIL SITE WORK IS COMPLETE AND A UNIFORM 70-PERCENT PERENNIAL VEGETATIVE COVER IS ESTABLISHED. REGRADE AND REVEGETATE AREAS DISTURBED DURING THE REMOVAL OF THE EROSION AND SEDIMENT CONTROLS.

GEOWEB CONSTRUCTION SEQUENCE

1. GRADE SURFACE TO SUBGRADE ELEVATIONS AS SOON AS PRACTICABLE FOLLOWING COMPLETION OF PIPE INSTALLATION. DO NOT COMPACT.
2. IF NEEDED, SCARIFY THE SOIL OR PROVIDE ADDITIONAL ROUGHENING SUCH AS DEEP RIPPING OR CHISEL RIPPING TO RESTORE THE AREA TO A MINIMAL COMPACTED STATE.
3. INSTALL GEOTEXTILE SEPARATION LAYER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
4. EXPAND GEOWEB TO REQUIRED DIMENSIONS AND ANCHOR EDGES WITH ATRA ANCHORS, IF NEEDED. JOIN ADJACENT SECTIONS WITH ATRA KEYS.
5. ANCHOR GEOWEB ON SLOPES GREATER THAN 5% WITH 24" ATRA ANCHORS PLACED ON A 3X8 CELL PATTERN.
6. MIX AND PLACE ENGINEERED INFILL MATERIAL (2/3 AASHTO #57 STONE AND 1/3 SCREENED TOPSOIL) INTO THE GEOWEB CELLS. INFILL MATERIAL SHALL BE FREE-FLOWING AND NOT FROZEN WHEN PLACED IN THE GEOWEB SECTIONS. LIMIT DROP HEIGHT TO 3 FEET TO AVOID DAMAGING OR DISPLACEMENT OF THE CELL WALL. SLIGHTLY OVERFILL THE CELLS AND LEVEL OFF MATERIAL ONCE SETTLEMENT IS NEGLIGIBLE. DO NOT COMPACT.
7. SEED AND MULCH FILLED SECTIONS IN ACCORDANCE WITH THE PERMANENT SEEDING SCHEDULE ONCE INFILL IS PLACED.
8. MAINTAIN EROSION AND SEDIMENTATION CONTROL DEVICES UNTIL SITE WORK IS COMPLETE AND A UNIFORM 70-PERCENT PERENNIAL VEGETATIVE COVER IS ESTABLISHED.

SOIL AMENDMENT AND RESTORATION CONSTRUCTION SEQUENCE

1. GRADE SURFACE TO FINISHED GRADE ELEVATIONS AS SOON AS PRACTICABLE FOLLOWING COMPLETION OF PIPE INSTALLATION.
2. IN THE DESIGNATED SOIL AMENDMENT AREA, TILL THE GROUND AND MIX IN THE COMPOST AT A RATIO OF 2:1 (SOIL:COMPOST) TO A DEPTH OF 24 INCHES.
3. IMMEDIATELY SEED AND MULCH DISTURBED AREAS ONCE FINAL GRADE IS ESTABLISHED IN ACCORDANCE WITH THE PERMANENT SEEDING SCHEDULE.
4. MAINTAIN EROSION AND SEDIMENTATION CONTROL DEVICES UNTIL SITE WORK IS COMPLETE AND A UNIFORM 70% PERENNIAL VEGETATIVE COVER IS ESTABLISHED.

POST CONSTRUCTION STORMWATER MANAGEMENT CONSTRUCTION SEQUENCE

1. GRADE SURFACE TO FINISHED GRADE ELEVATIONS AS SOON AS PRACTICABLE FOLLOWING COMPLETION OF PIPE INSTALLATION.
2. INSTALL POST CONSTRUCTION BMP'S AFTER COMPLETION OF PIPELINE CONSTRUCTION:

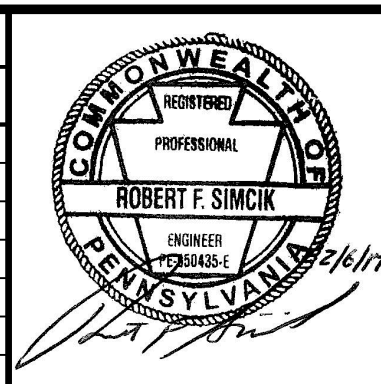
SOIL AMENDMENT AND RESTORATION

1. GRADE SURFACE TO FINISHED GRADE ELEVATIONS AS SOON AS PRACTICABLE FOLLOWING COMPLETION OF PIPE INSTALLATION.
2. IN THE DESIGNATED SOIL AMENDMENT AREA, TILL THE GROUND AND MIX IN THE COMPOST AT A RATIO OF 2:1 (SOIL:COMPOST) TO A DEPTH OF 24 INCHES.
3. IMMEDIATELY SEED AND MULCH DISTURBED AREAS ONCE FINAL GRADE IS ESTABLISHED IN ACCORDANCE WITH THE PERMANENT SEEDING SCHEDULE.
4. MAINTAIN EROSION AND SEDIMENTATION CONTROL DEVICES UNTIL SITE WORK IS COMPLETE AND A UNIFORM 70% PERENNIAL VEGETATIVE COVER IS ESTABLISHED.



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REVISIONS			
NO.	BY	DATE	REMARKS
1	RS	3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS
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SUNOCO PIPELINE LP
 PHILADELPHIA, PENNSYLVANIA

 PENNSYLVANIA PIPELINE PROJECT
 CONSTRUCTION SPREAD 5

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES
 PERMIT RENEWAL
 LANCASTER COUNTY CONSERVATION DISTRICT
 EROSION & SEDIMENT CONTROL &
 SITE RESTORATION PLAN
 NOTES & DETAILS

DATE:	2/6/17
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS
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ES-0.21	
SHEET 0.21 OF 49	

LONG TERM INSPECTIONS AND MAINTENANCE FOR SITE RESTORATION AND PCSM CONTROLS:

LONG-TERM MAINTENANCE OF THE PIPELINE ROW WILL INCLUDE PERIODIC VISUAL INSPECTIONS FOR SUFFICIENT VEGETATIVE GROWTH AND COVER. INSUFFICIENT VEGETATIVE COVER IS DEFINED AS ANY AREA NOT ACHIEVING A UNIFORM 70-PERCENT PERENNIAL VEGETATIVE COVER. BARE SPOTS AND AREAS WITH INSUFFICIENT VEGETATIVE COVER WILL BE RESEEDED AND MULCHED WITHIN 24 HOURS OF DISCOVERY. THE RIGHT OF WAY WILL BE INSPECTED FOR SIGNS OF EROSION, ESPECIALLY ON STEEP SLOPES. CORRECTIVE MEASURES WILL BE TAKEN, AS NEEDED. IF THERE IS EVIDENCE OF TRENCH SETTLING, THE AREA WILL BE REGRADED TO MAINTAIN PRE-CONSTRUCTION DRAINAGE PATTERNS, MULCHED, AND SEEDED. A WRITTEN REPORT IS REQUIRED FOR EACH INSPECTION AND FOR EACH REPAIR OR MAINTENANCE ACTIVITY, AND THE REPORT SHOULD SPECIFY HOW TO ACCESS THE SITE. SPLP IS RESPONSIBLE FOR MAINTAINING THE ROW UNDER THE PROVISIONS OF THIS PERMIT.

PERMANENT PROPOSED ACCESS ROADS AND VALVE PADS WILL BE CONSTRUCTED AS PART OF THE PROJECT. THESE ACCESS ROADS WILL REMAIN AS A PERMANENT GRAVEL DRIVE AFTER CONSTRUCTION IS COMPLETE. THE ACCESS ROADS WILL BE INSPECTED PERIODICALLY, AND AGGREGATE WILL BE APPLIED TO THE PERMANENT ACCESS ROADS AS NEEDED TO MAINTAIN AN ADEQUATE THICKNESS.

INSPECTION AND MAINTENANCE PROCEDURES FOR PERMANENT POST-CONSTRUCTION STORMWATER MANAGEMENT FACILITIES AND STORMWATER CONVEYANCE BMPs ARE SUMMARIZED BELOW. IF ANY POST-CONSTRUCTION STORMWATER MANAGEMENT FACILITIES ARE CONSTRUCTED PRIOR TO STABILIZATION OF UPSLOPE CONTRIBUTORY DRAINAGE AREAS, INSPECTIONS SHALL OCCUR WEEKLY AND AFTER RUNOFF EVENTS UNTIL THE SURROUNDING AREA ACHIEVES STABILIZATION. SPECIFY WHERE WE HAVE TO DO POST-CONSTRUCTION INFILTRATION TESTING.

SOIL AMENDMENT AND RESTORATION

- THE SOIL RESTORATION PROCESS MAY NEED TO BE REPEATED OVER TIME, DUE TO COMPACTION BY USE AND/OR SETTLING.
- SOIL AMENDMENT AREAS SHALL BE INSPECTED AT LEAST 4 TIMES PER YEAR FOR SIGNS OF COMPACTION. TO REMEDY COMPACTION, TILL THE SOIL TO A DEPTH OF 24 INCHES AND MIX IN COMPOST AT A RATIO OF 2:1 (SOIL:COMPOST).

CHANNEL

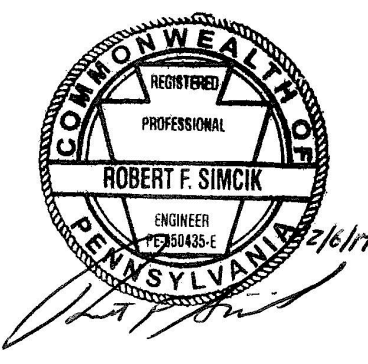
- INSPECTIONS TO BE DONE ANNUALLY AND WITHIN 48 HOURS AFTER EVERY MAJOR STORM EVENT (> 1 INCH RAINFALL DEPTH).
 - INSPECT AND CORRECT EROSIONS PROBLEMS, DAMAGE TO VEGETATION, AND SEDIMENT AND DEBRIS ACCUMULATION (ADDRESS WHEN > 3 INCHES AT ANY SPOT OR COVERING VEGETATION).
 - FOR VEGETATED CHANNELS, INSPECT VEGETATION ON SIDE SLOPES FOR EROSION AND FORMATION OF RILLS OR GULLIES, CORRECT AS NEEDED.
 - INSPECT FOR POOLS OF STANDING WATER, DEWATER AND DISCHARGE TO AN APPROVED LOCATION AND RESTORE TO DESIGN GRADE.
 - FOR VEGETATED CHANNELS, MOW AND TRIM VEGETATION TO ENSURE SAFETY, AESTHETICS, PROPER SWALE OPERATION, OR TO SUPPRESS WEEDS AND INVASIVE VEGETATION; DISPOSE OF CUTTINGS IN A LOCAL COMPOSTING FACILITY; MOW ONLY WHEN CHANNEL IS DRY TO AVOID RUTTING.
 - INSPECT FOR LITTER; REMOVE PRIOR TO MOWING.
 - INSPECT FOR UNIFORMITY IS CROSS-SECTION AND LONGITUDINAL SLOPE, CORRECT AS NEEDED.
 - INSPECT CHANNEL INLET (CURB CUTS, PIPES, ETC.) AND OUTLET FOR SIGNS OF EROSION OR BLOCKAGE, CORRECT AS NEEDED.
 - REPLACE ANY DISPLACED RIPRAP FOR RIPRAP LINED CHANNELS.

A
B
C
D
E
F



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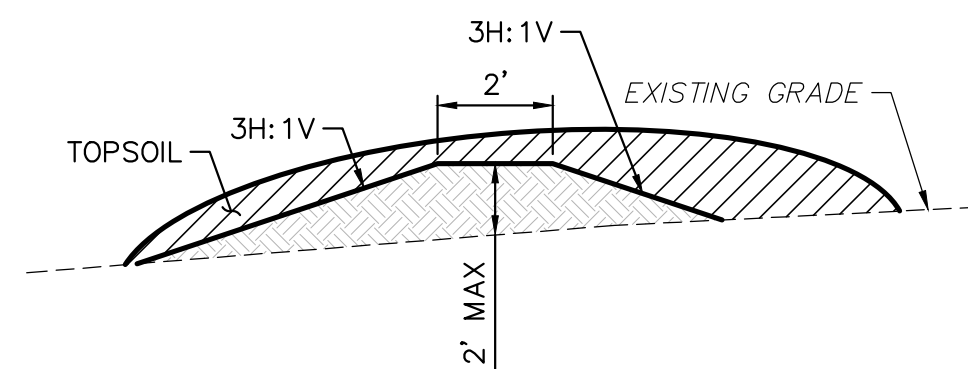
REVISIONS			
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SUNOCO PIPELINE LP
PHILADELPHIA, PENNSYLVANIA
**PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5**

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES
PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

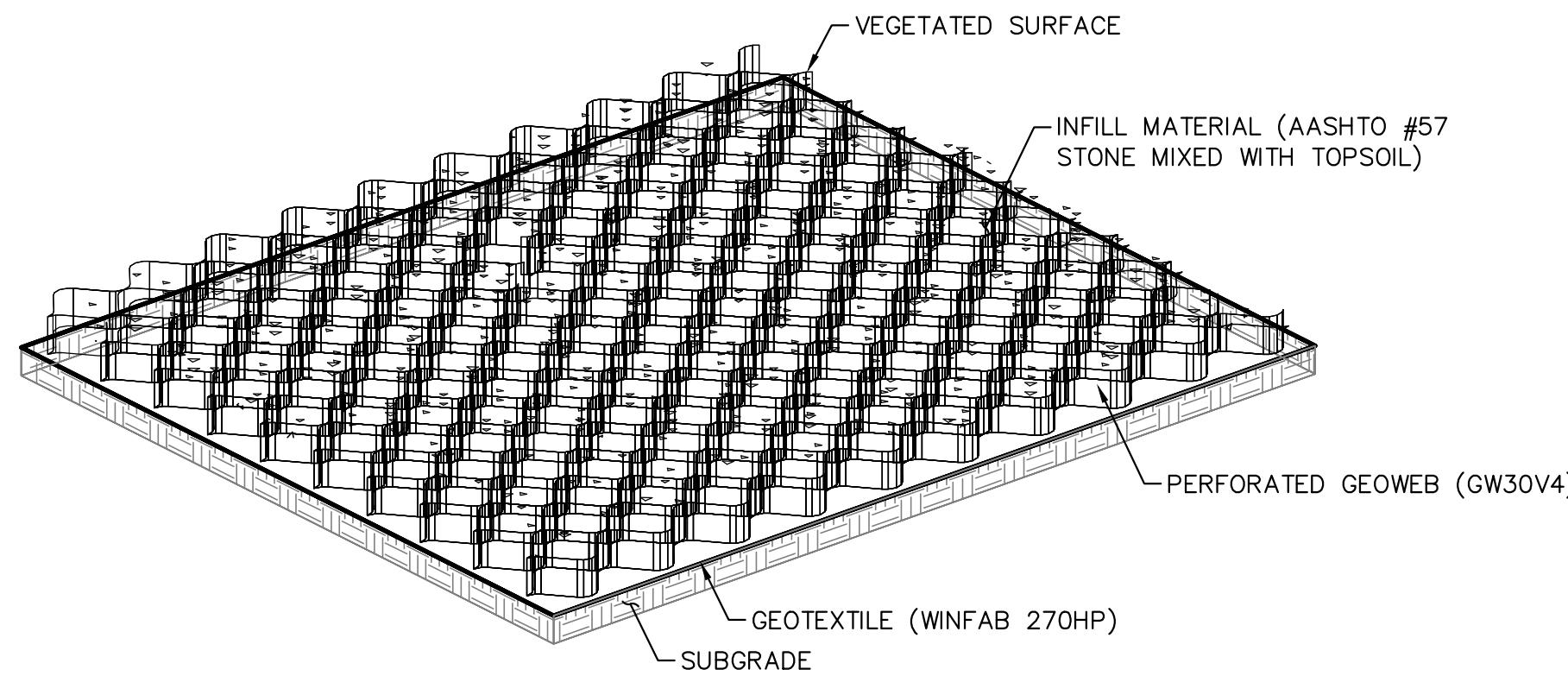
DATE:	2/6/17
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DESIGNED BY:	JB
DRAWN BY:	BH
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NOTES:

1. FILL WITH TOPSOIL TO ACHIEVE DESIRED SHAPE.

INFILTRATION BERM DETAIL
NOT TO SCALE

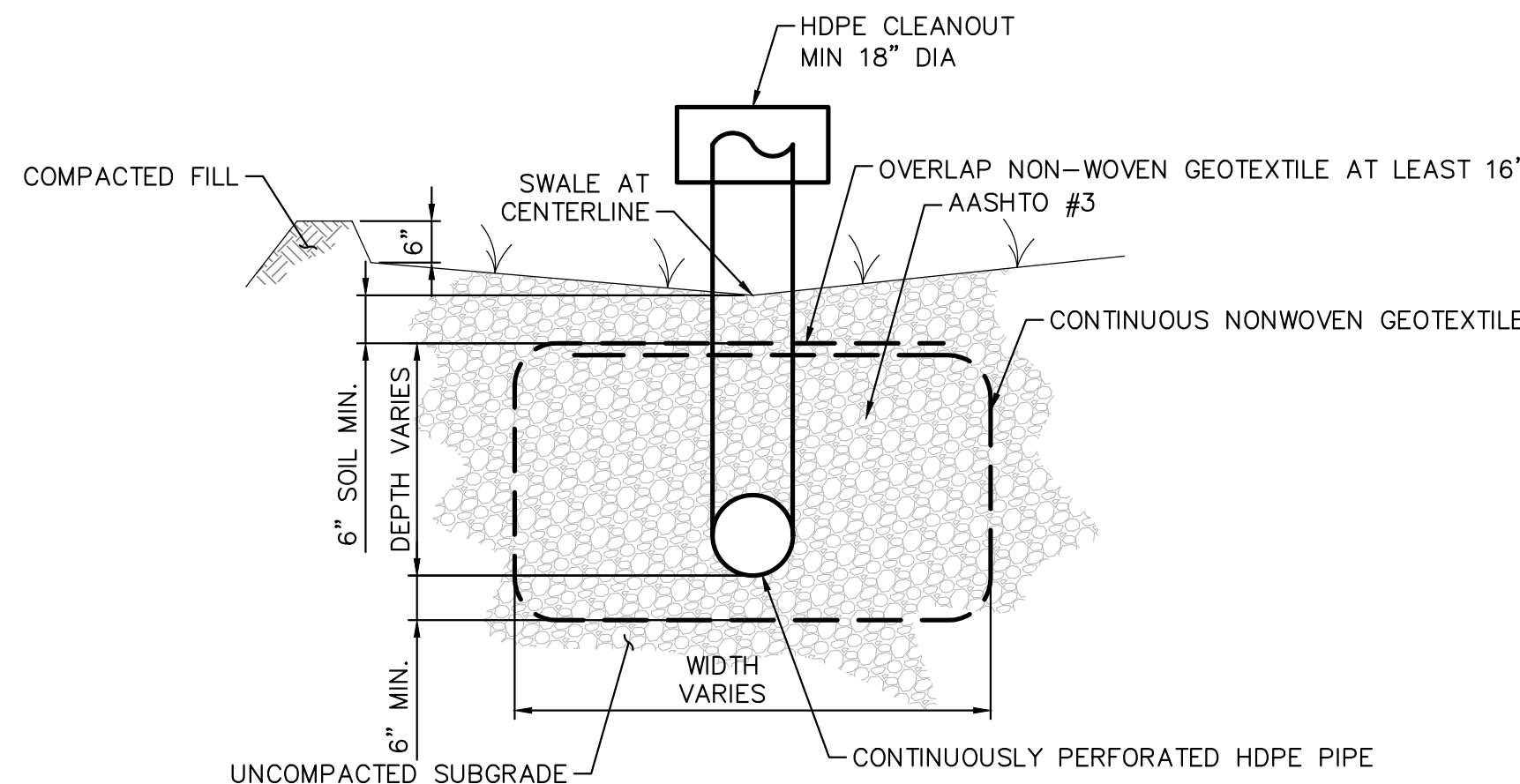


ISOMETRIC

NOTES:

1. PREPARE THE SUBGRADE AS SHOWN ON THE CONSTRUCTION DRAWINGS.
2. DO NOT COMPACT SUBGRADE.
3. PROVIDE WOVEN HIGH STRENGTH STABILIZATION GEOTEXTILE (WINFAB 270HP).
4. EXPAND THE GEOWEB SECTIONS INTO POSITION AND CONNECT THE END TO END AND INTERLEAF CONNECTIONS WITH ATRA KEYS.
5. GEOWEB CELL INFILL MATERIAL SHALL BE A MIX OF AASHTO #57 STONE AND SCREENED TOPSOIL IN AN APPROXIMATE RATIO OF 2/3 #57 AND 1/3 TOPSOIL.
6. PLACE THE SPECIFIED INFILL MATERIAL INTO CELLS AND TRACK UNTIL CELL IS FILLED AND SETTLEMENT OF INFILL IS NEGLIGIBLE.
7. ROUGH GRADE CONTOURS DEPICT THE TOP OF SUBGRADE IN AREAS WHERE GEOWEB IS TO BE INSTALLED.
8. TOP OF GEOWEB IS AT ELEVATION 4 INCHES ABOVE ROUGH GRADE SHOWN ON GRADING PLAN.
9. ON SLOPES GREATER THAN 5%, ANCHOR GEOWEB WITH 24" ATRA ANCHORS IN A 3x8 CELL PATTERN.

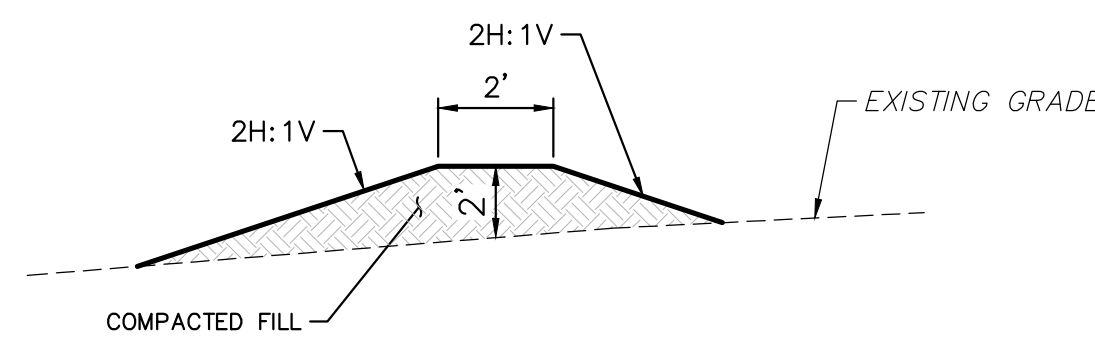
BLOCK VALVE GEOWEB DETAIL
NOT TO SCALE



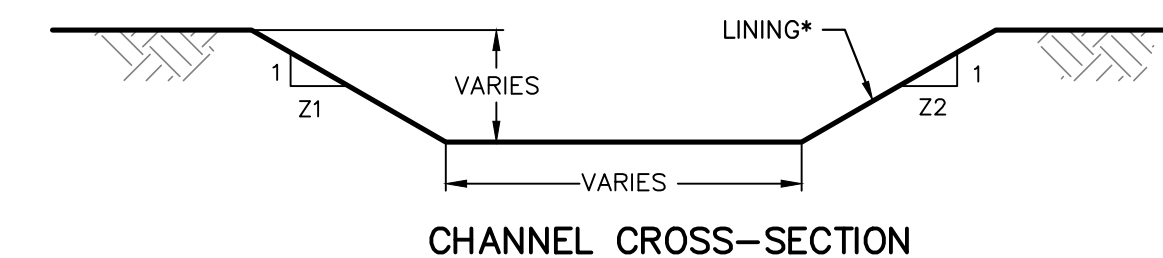
NOTES:

1. HEAT-SET OR HEAT-CALENDARED FIBERS ARE NOT PERMITTED.
2. ACCEPTABLE NON-WOVEN GEOTEXTILE TYPES INCLUDE MIRAFI 140N, AMOCO 4547, AND GEOTEX 451.

INFILTRATION TRENCH DETAIL
NOT TO SCALE



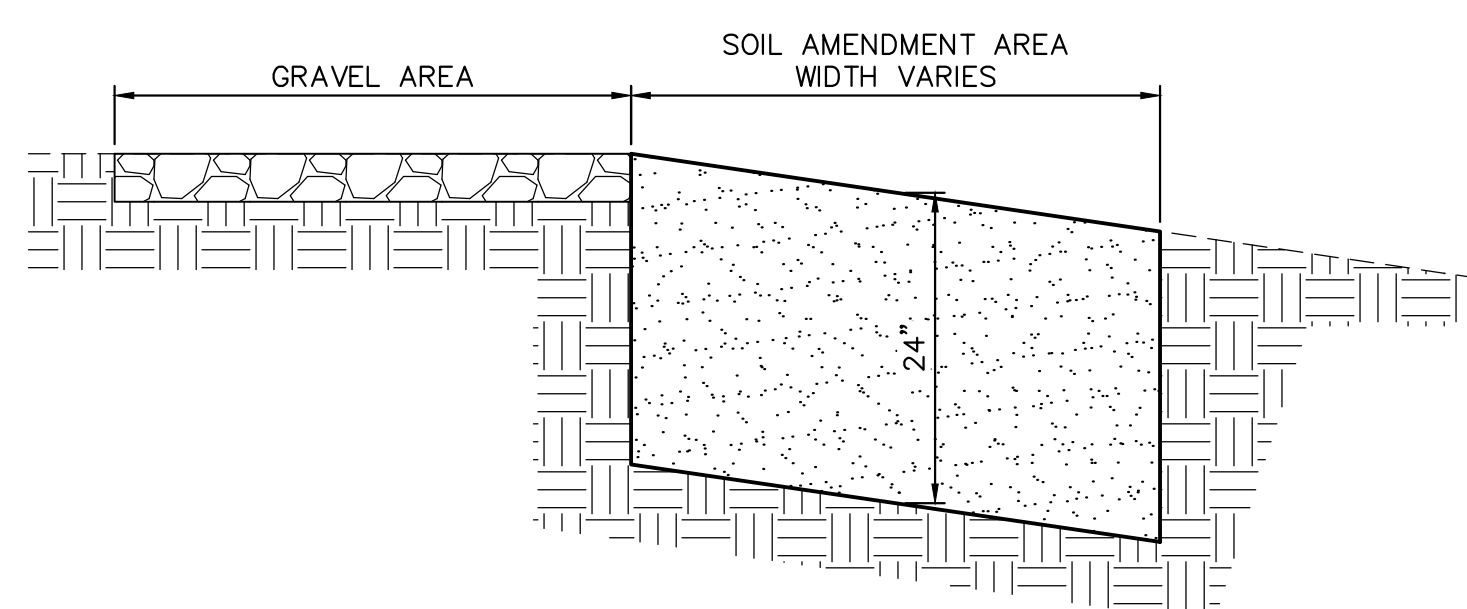
DIVERSION BERM DETAIL
NOT TO SCALE



CHANNEL CROSS-SECTION

CHANNEL NO.	BOTTOM WIDTH B (FT)	DEPTH D (FT)	Z1 (FT)	Z2 (FT)	LINING*
A	4.0	2.0	2	2	NAG S150 ECB WITH CLASS C FINAL STABILIZATION
B	4.0	2.0	2	2	NAG P300 ECB WITH CLASS C FINAL STABILIZATION
C	4.0	2.0	2	2	NAG S150 ECB WITH CLASS C FINAL STABILIZATION
D	4.0	2.0	2	2	NAG S150 ECB WITH CLASS C FINAL STABILIZATION
E	6.0	2.0	2	2	NAG P300 ECB WITH CLASS C FINAL STABILIZATION
F	4.0	2.0	2	2	NAG S150 ECB WITH CLASS C FINAL STABILIZATION
G	2.0	2.0	2	2	NAG S150 ECB WITH CLASS C FINAL STABILIZATION

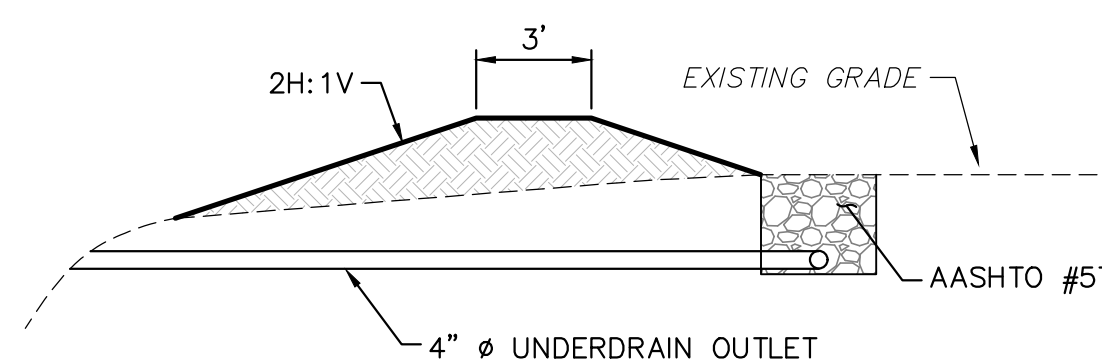
PERMANENT CHANNEL DETAIL
NOT TO SCALE



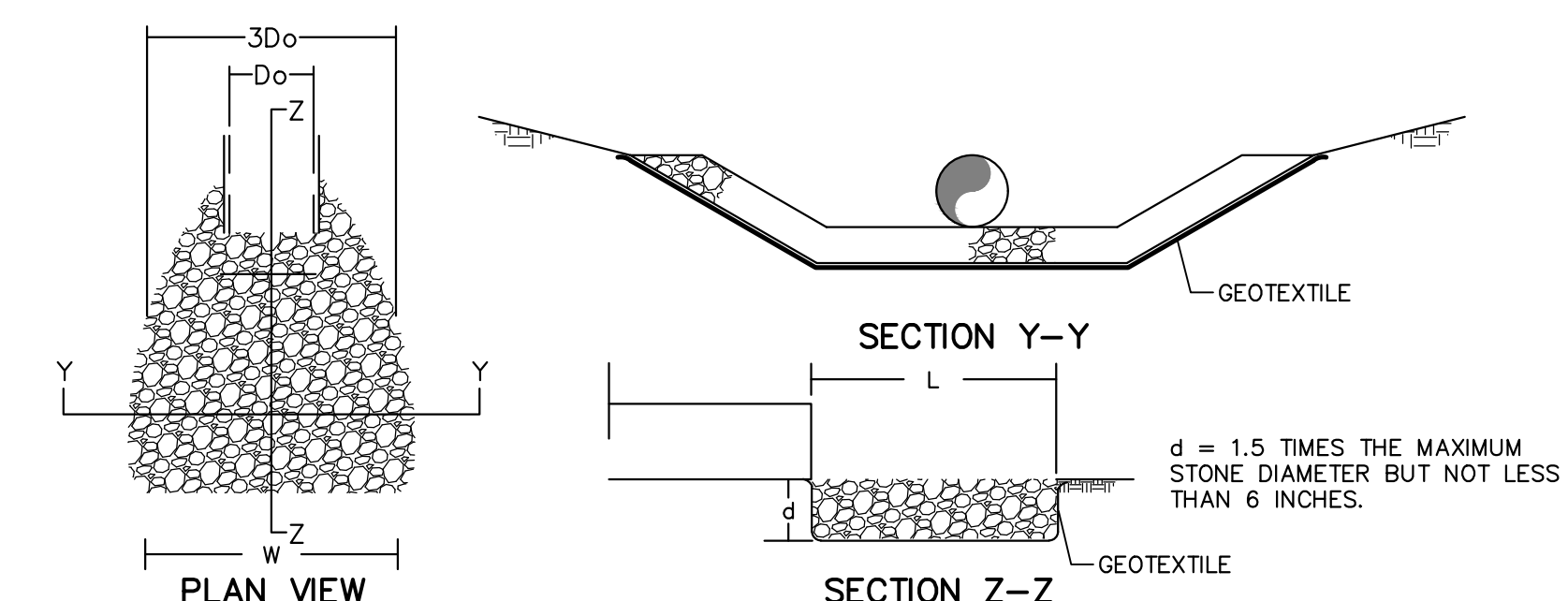
NOTES:

1. SOIL AMENDMENT MEDIA SHOULD CONSIST OF SOIL AND COMPOST AT A RATIO OF 2:1 (SOIL:COMPOST).
2. SOIL AMENDMENT SHOULD NOT BE USED ON SLOPES GREATER THAN 30%.
3. COMPOST CAN BE SUBSTITUTED WITH MULCH, MANURE, SAND.
4. NO VEHICULAR TRAFFIC WILL BE PERMITTED TO DRIVE IN UNPROTECTED SOIL AMENDMENT AREAS TO MINIMIZE THE POSSIBILITY OF COMPACTION.
5. ALL CONSTRUCTION SHOULD BE COMPLETED AND STABILIZED BEFORE BEGINNING SOIL RESTORATION.
6. SOIL AMENDMENT TO BE INSTALLED BY TILLING.

SOIL AMENDMENT DETAIL
NOT TO SCALE



SLOW RELEASE TRENCH DETAIL
NOT TO SCALE



OUTLET NO.	PIPE DIA Do (FT)	Q (CFS)	MINIMUM RIPRAP SIZE	MINIMUM L (FT)	MINIMUM W (FT)
RA-01	4.0	6.66	R-3	12.0	16.0
RA-02	4.0	19.77	R-3	14.0	18.0
RA-03	2.0	7.76	R-3	10.0	13.0
RA-04	2.0	48.43	R-5	26.0	32.0
RA-05	1.5	9.99	R-3	10.0	13.0
RA-06	1.5	10.34	R-3	10.0	13.0

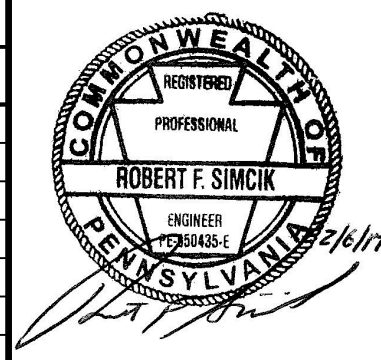
RIPRAP APRONS AT PIPE OUTLETS WITH FLARED END SECTIONS
NOT TO SCALE

PCSM DETAILS



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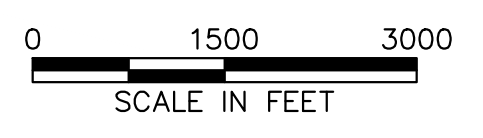
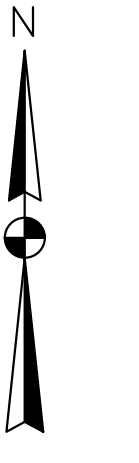
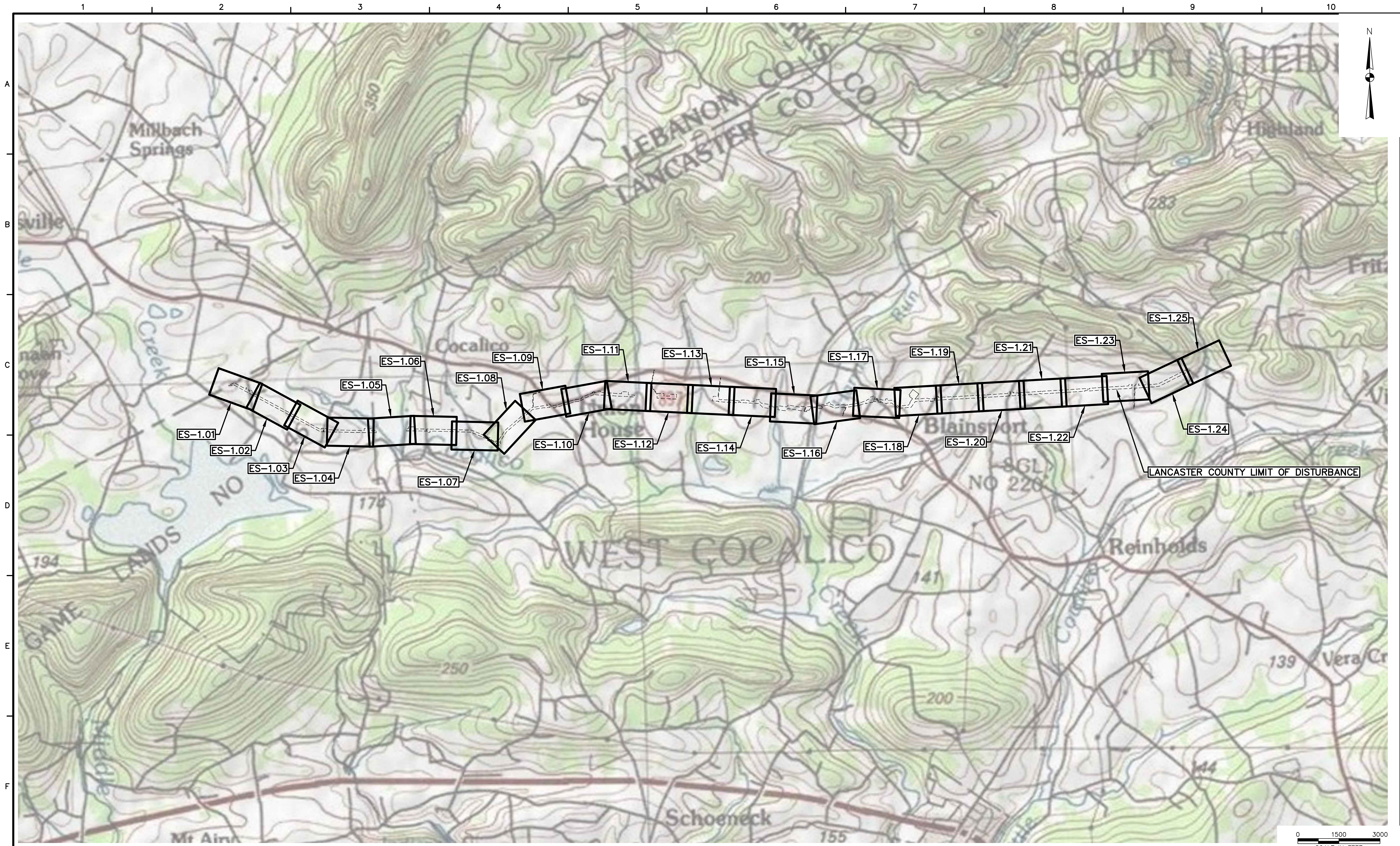
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SUNOCO PIPELINE LP
PHILADELPHIA, PENNSYLVANIA
**PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5**

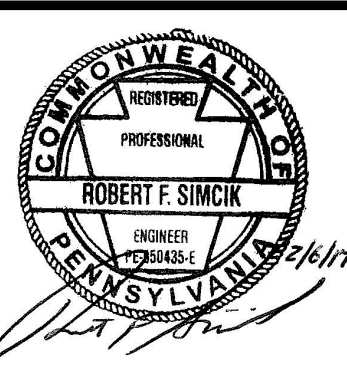
1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES
PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

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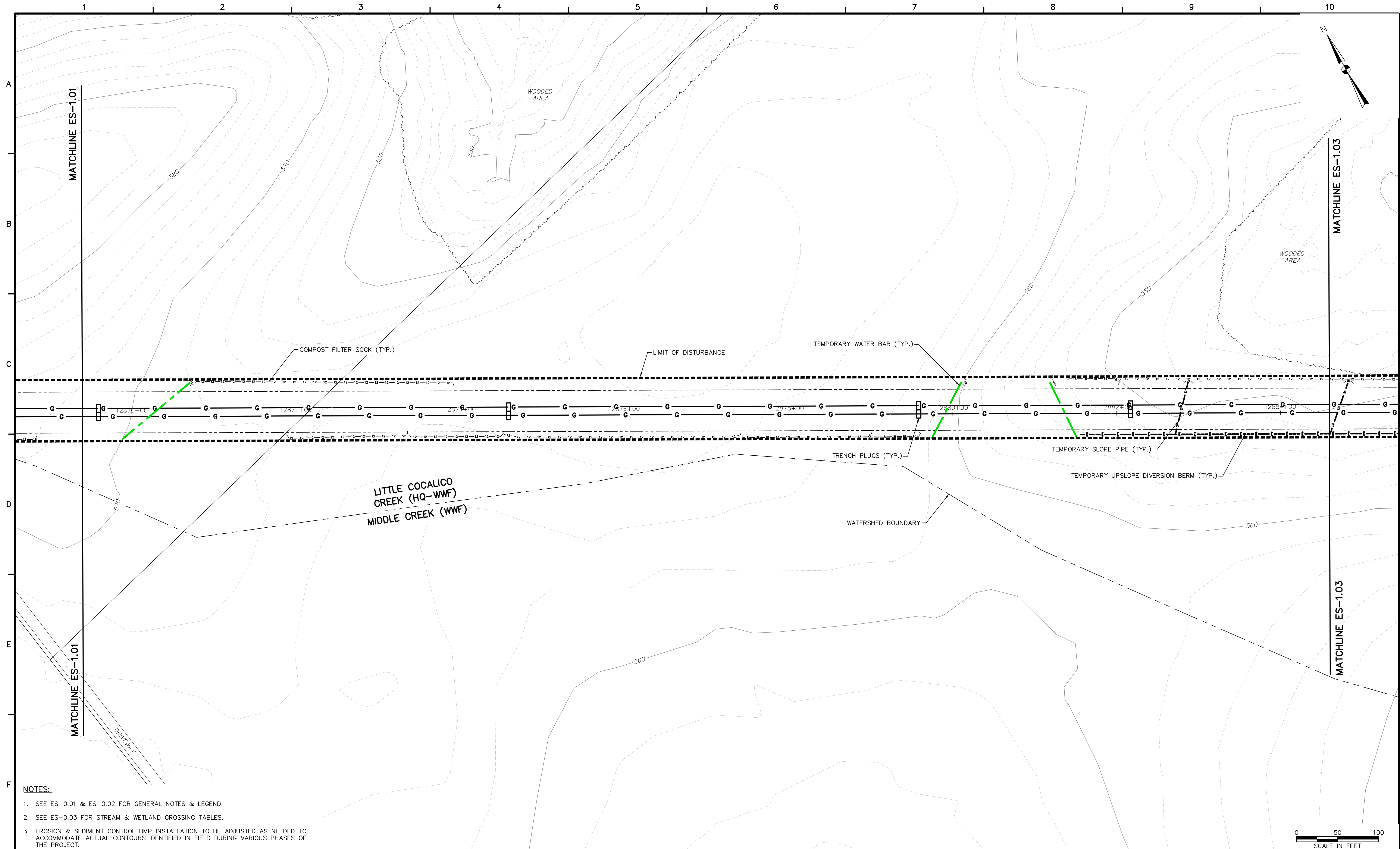
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1	RS		3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS	
2	RS		5/25/17	DRAWINGS PROVIDED TO FIELD	
3	RS		6/17/21	RESTORED AREA UPDATES FOR PERMIT RENEWAL	



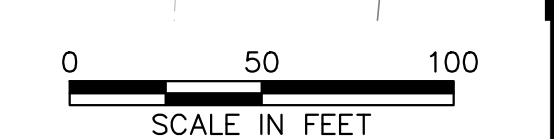
SUNOCO PIPELINE LP
 PHILADELPHIA, PENNSYLVANIA
**PENNSYLVANIA PIPELINE PROJECT
 CONSTRUCTION SPREAD 5**

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES
 PERMIT RENEWAL
 LANCASTER COUNTY CONSERVATION DISTRICT
 EROSION & SEDIMENT CONTROL &
 SITE RESTORATION PLAN
KEY PLAN

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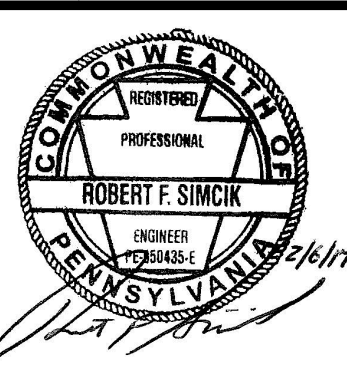


- NOTES:**
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 2. SEE ES-0.03 FOR STREAM & WETLAND CROSSING TABLES.
 3. EROSION & SEDIMENT CONTROL BMP INSTALLATION TO BE ADJUSTED AS NEEDED TO ACCOMMODATE ACTUAL CONTOURS IDENTIFIED IN FIELD DURING VARIOUS PHASES OF THE PROJECT.



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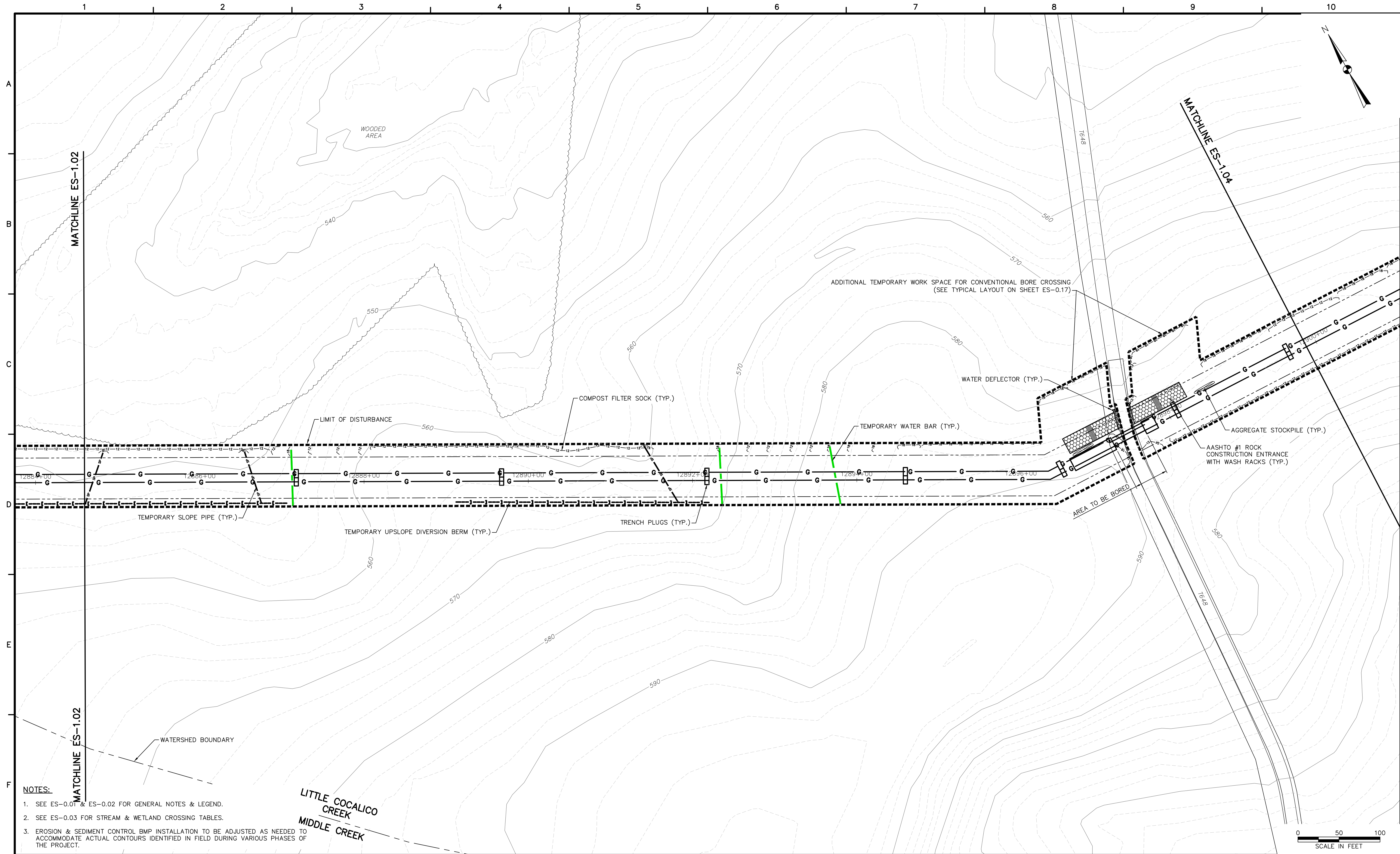
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SUNOCO PIPELINE LP
PHILADELPHIA, PENNSYLVANIA
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PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
SHEET 2 OF 25

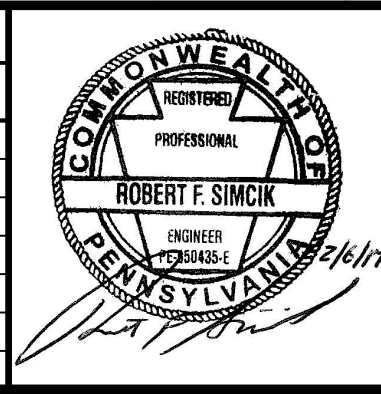
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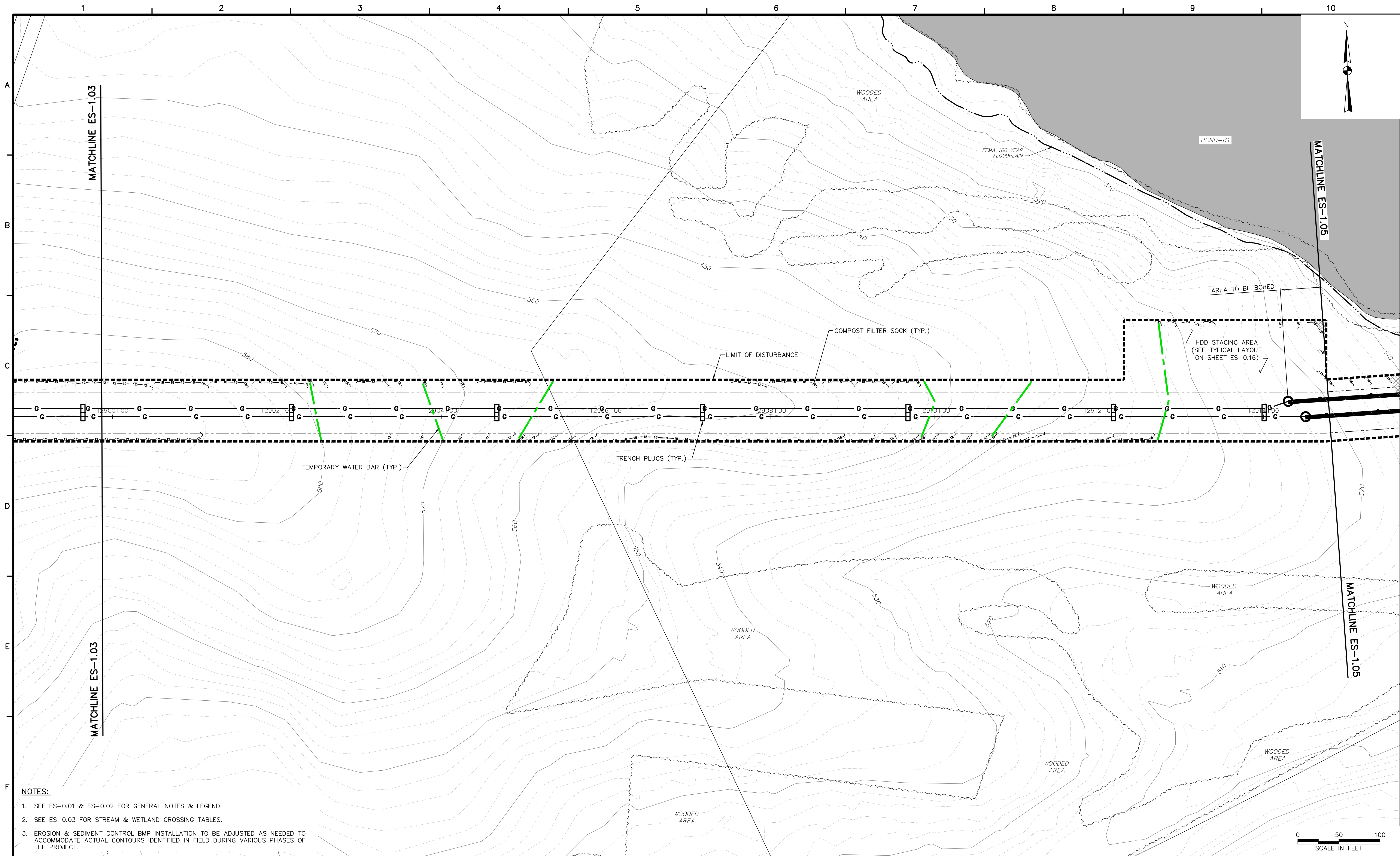
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SUNOCO PIPELINE LP
PHILADELPHIA, PENNSYLVANIA
**PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5**

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LANCASTER COUNTY CONSERVATION DISTRICT
**EROSION & SEDIMENT CONTROL &
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SHEET 3 OF 25**

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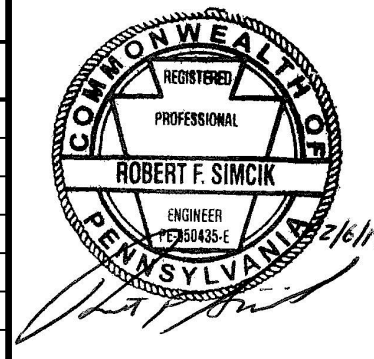
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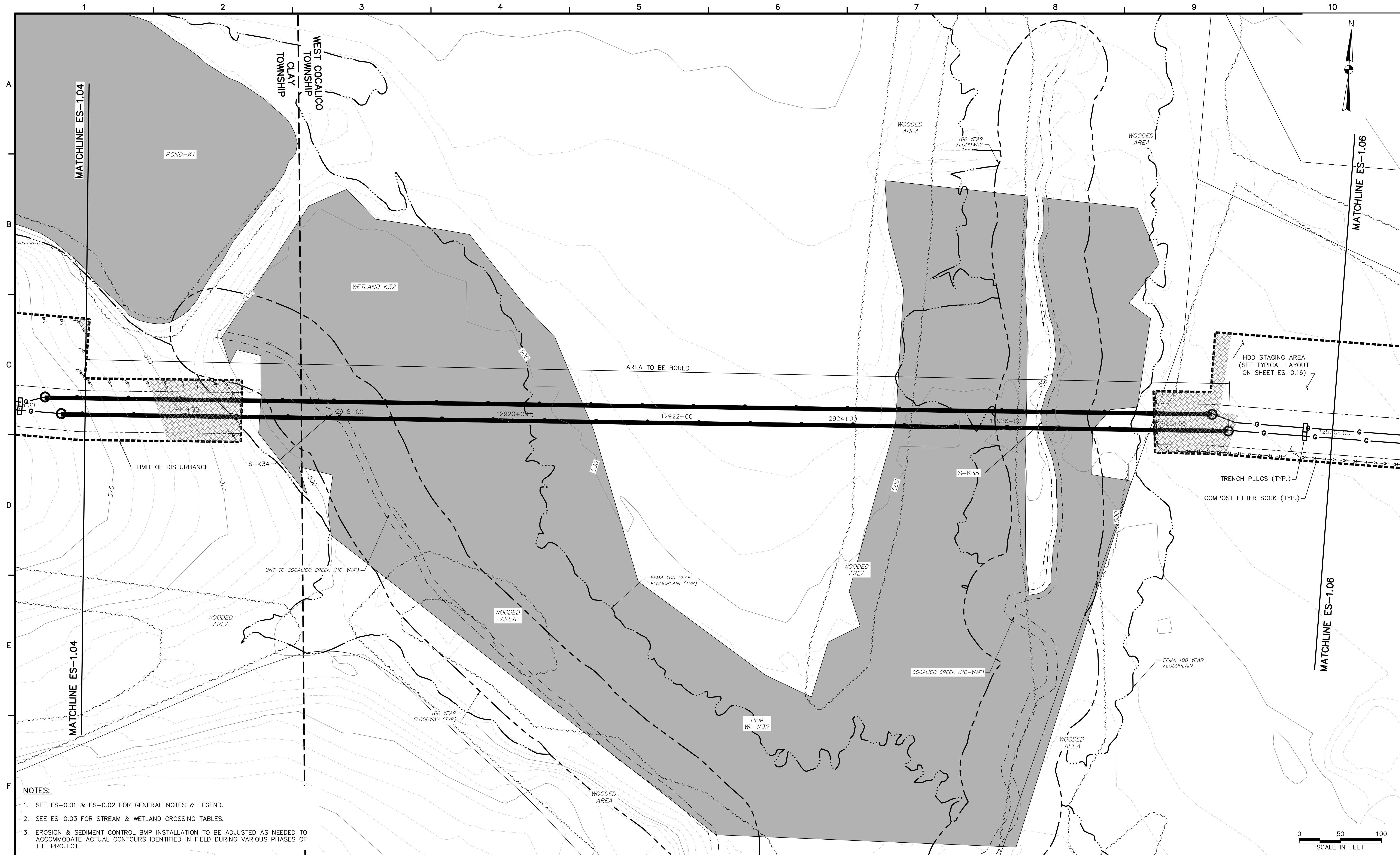
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SUNOCO PIPELINE LP
PHILADELPHIA, PENNSYLVANIA
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LANCASTER COUNTY CONSERVATION DISTRICT
**EROSION & SEDIMENT CONTROL &
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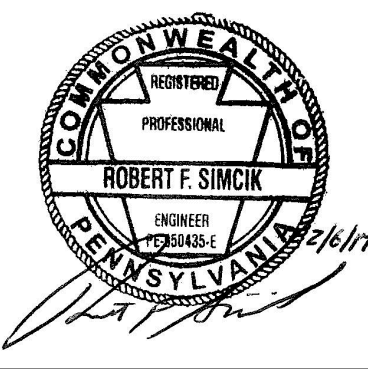


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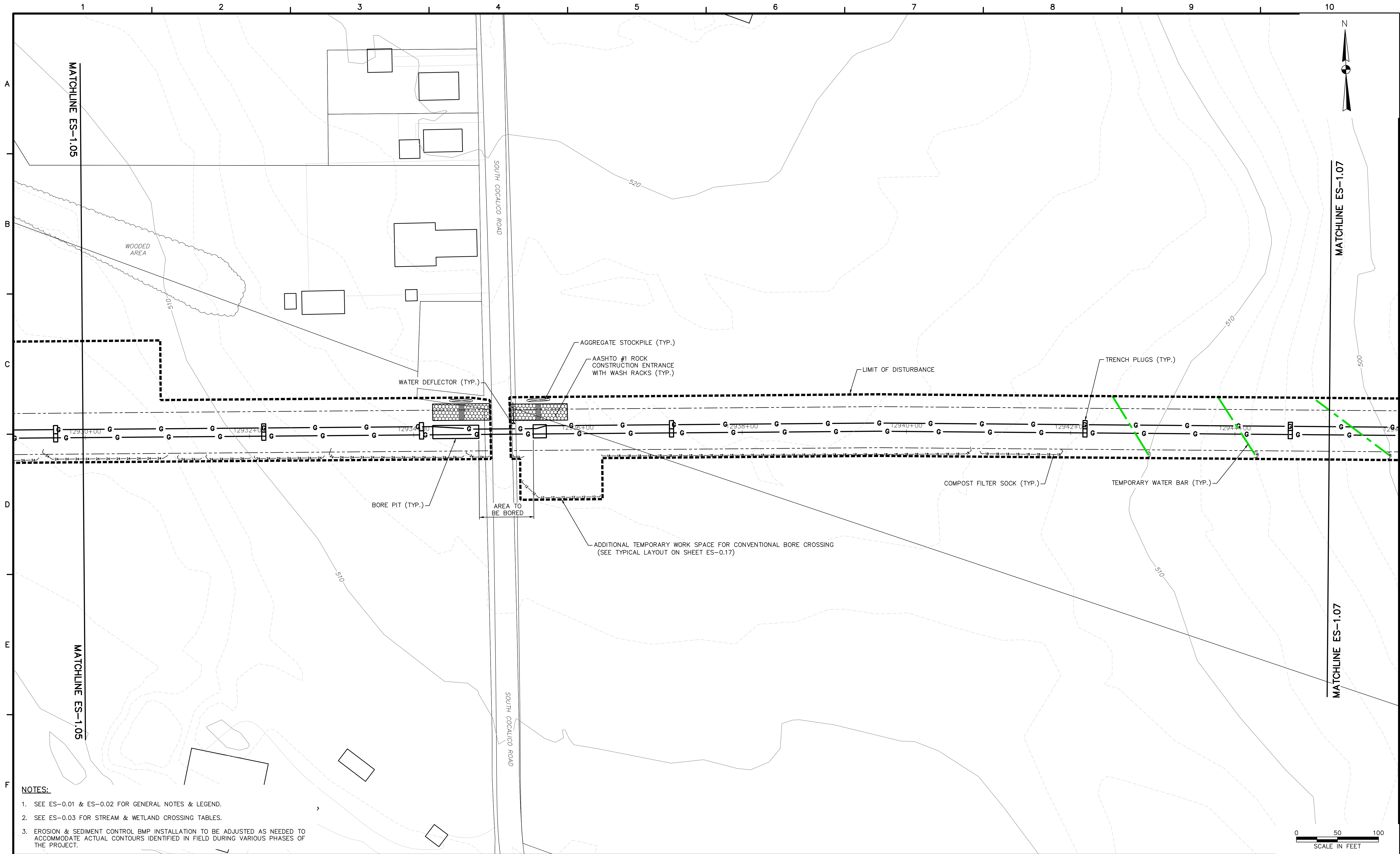
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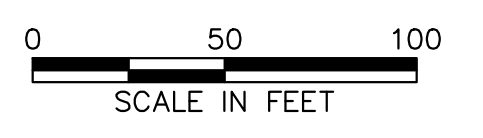
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**PENNSYLVANIA PIPELINE PROJECT
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EROSION & SEDIMENT CONTROL &
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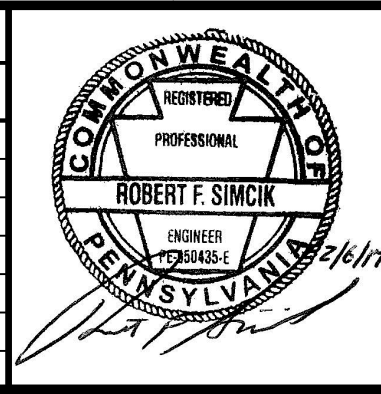


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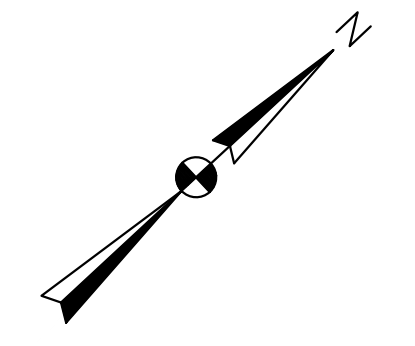
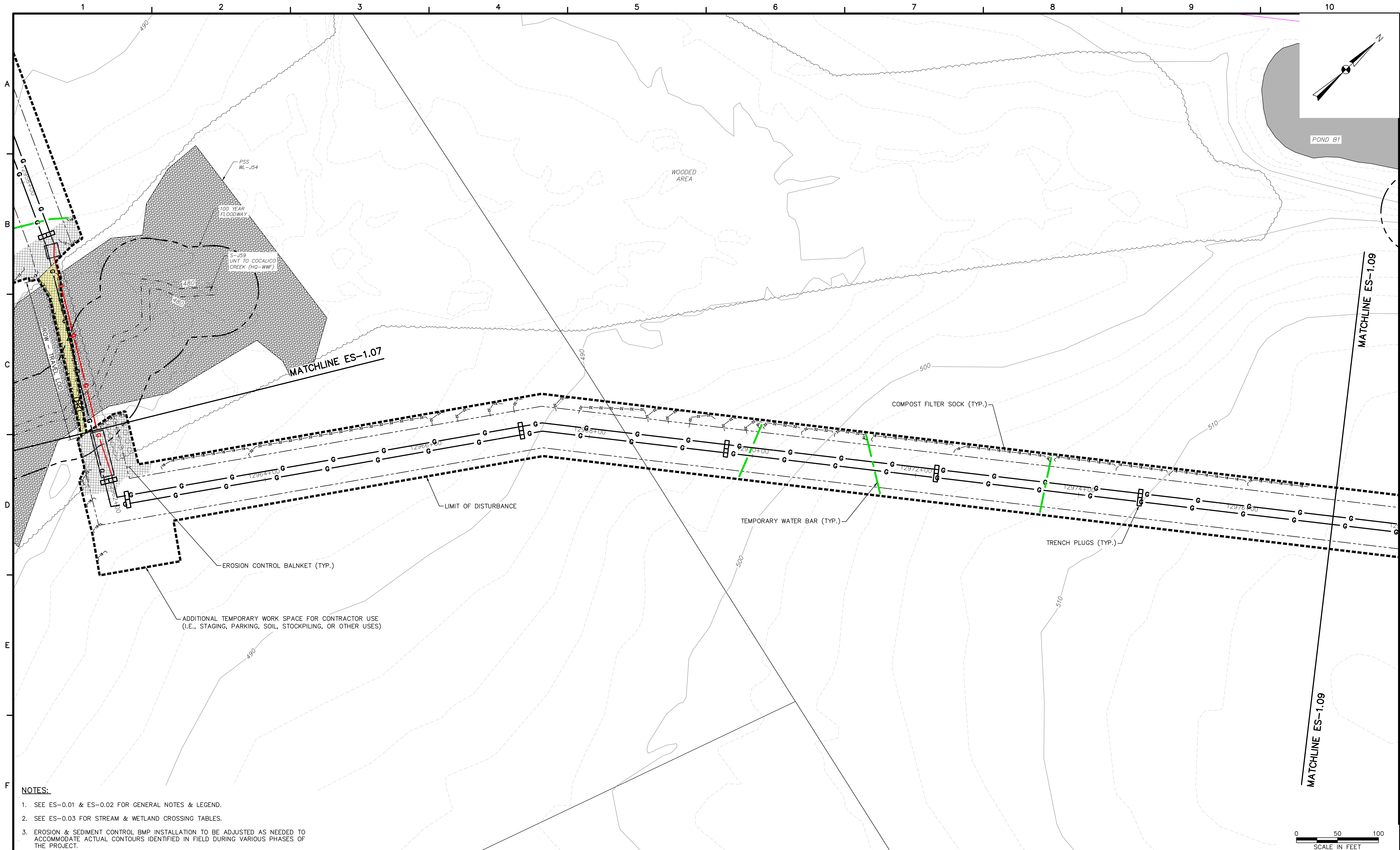
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PHILADELPHIA, PENNSYLVANIA
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CONSTRUCTION SPREAD 5**

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LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
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SHEET 6 OF 25

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POND B1

WOODED AREA

MATCHLINE ES-1.07

MATCHLINE ES-1.09

MATCHLINE ES-1.09

ADDITIONAL TEMPORARY WORK SPACE FOR CONTRACTOR USE
(I.E., STAGING, PARKING, SOIL, STOCKPILING, OR OTHER USES)

LIMIT OF DISTURBANCE

EROSION CONTROL BALNKET (TYP.)

COMPOST FILTER SOCK (TYP.)

TEMPORARY WATER BAR (TYP.)

TRENCH PLUGS (TYP.)

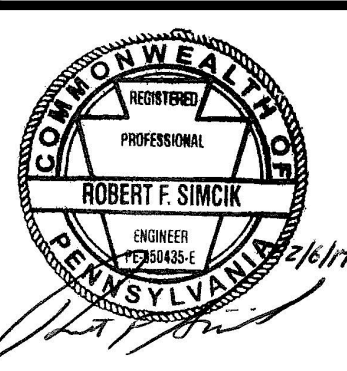
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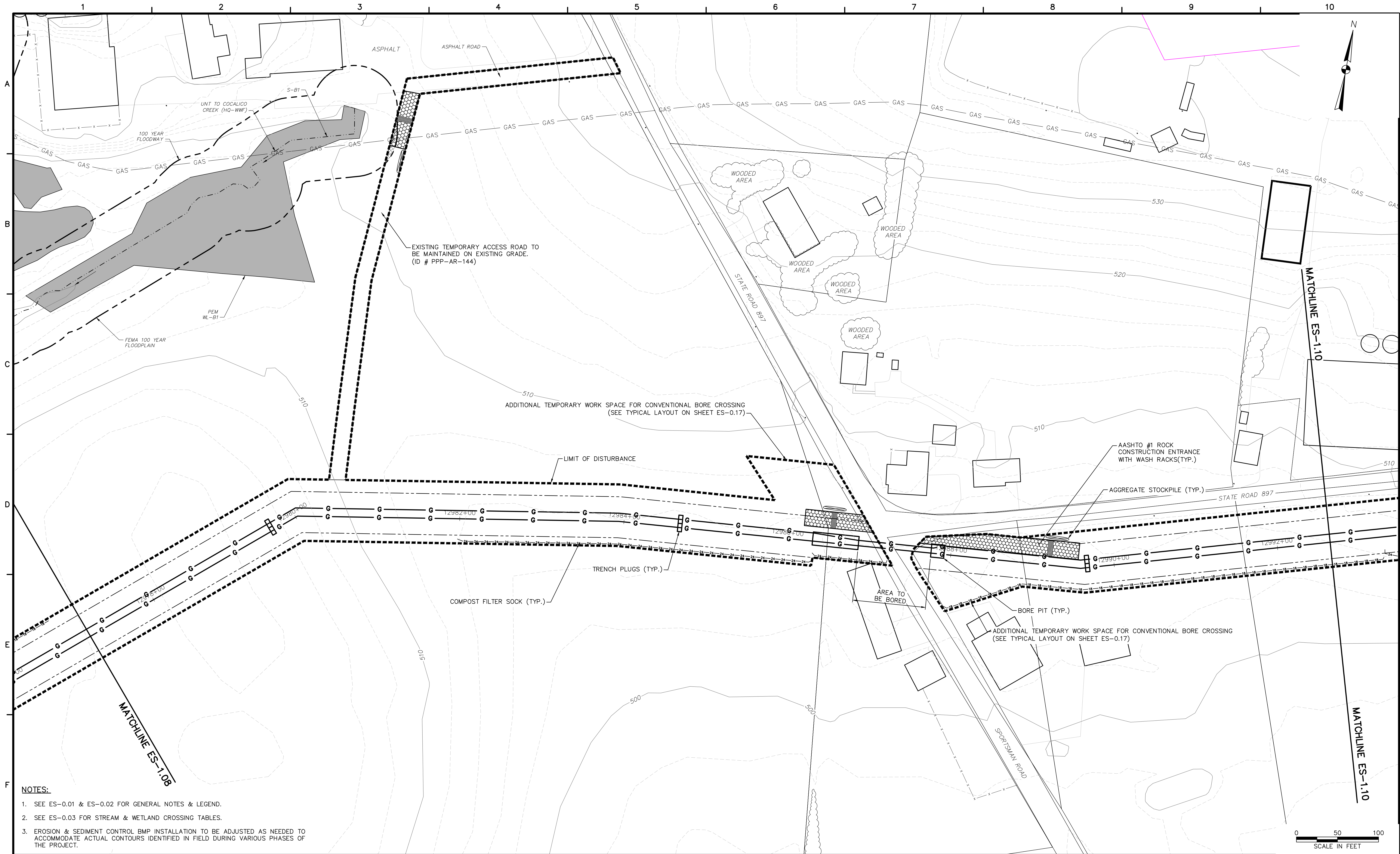
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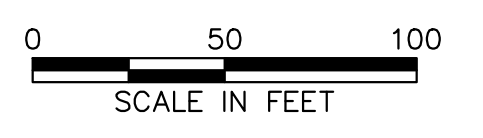
SUNOCO PIPELINE LP
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**PENNSYLVANIA PIPELINE PROJECT
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PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
SHEET 8 OF 25

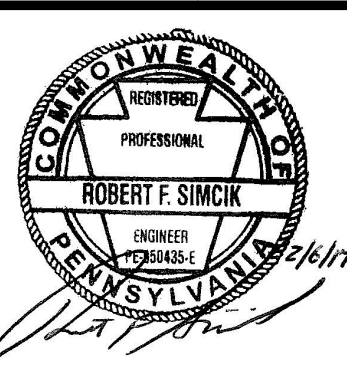
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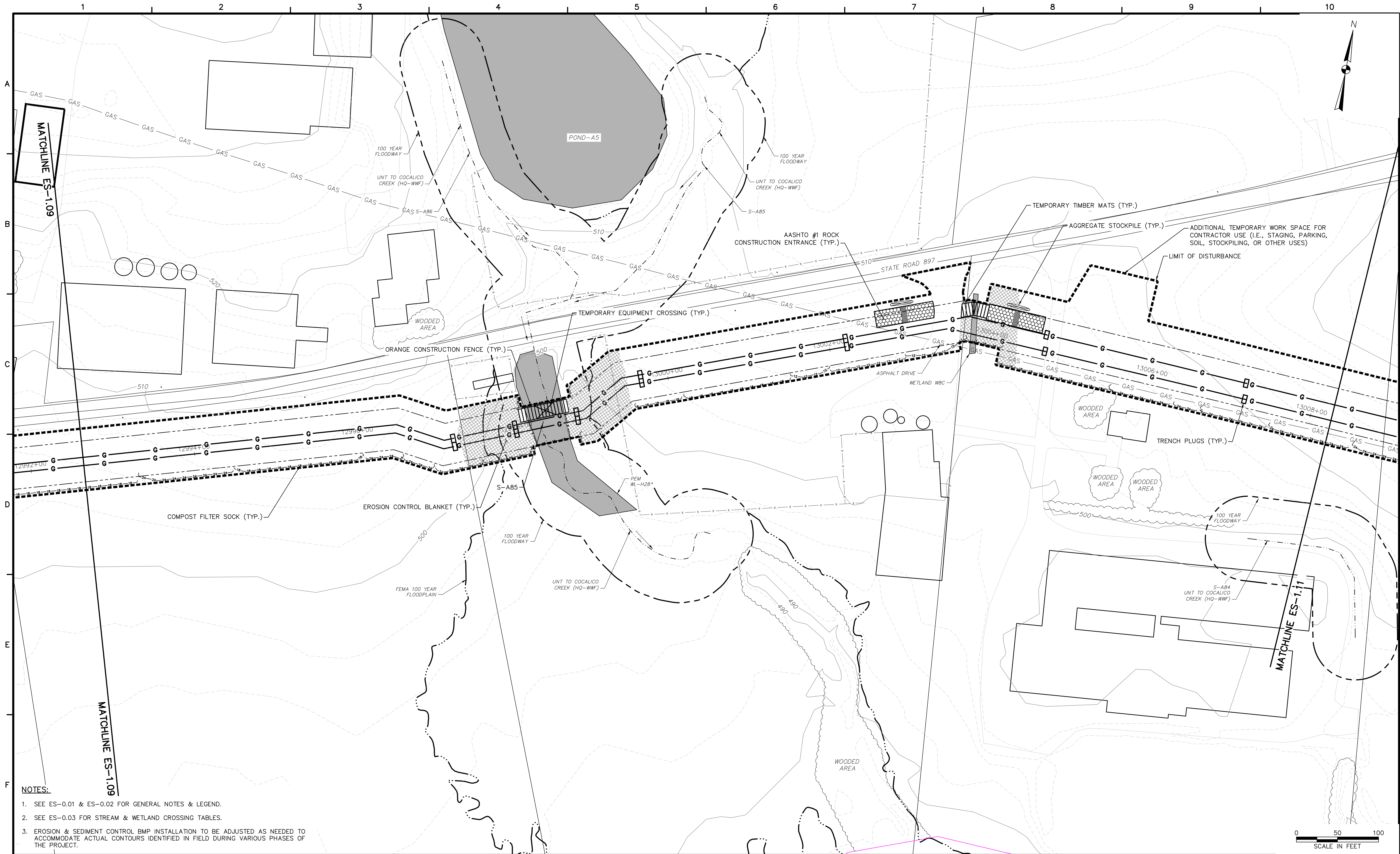
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LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
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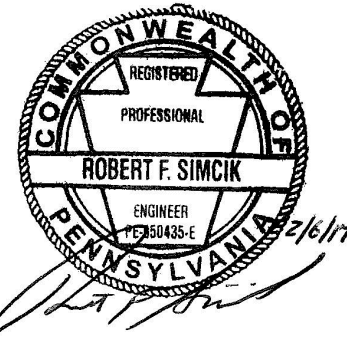


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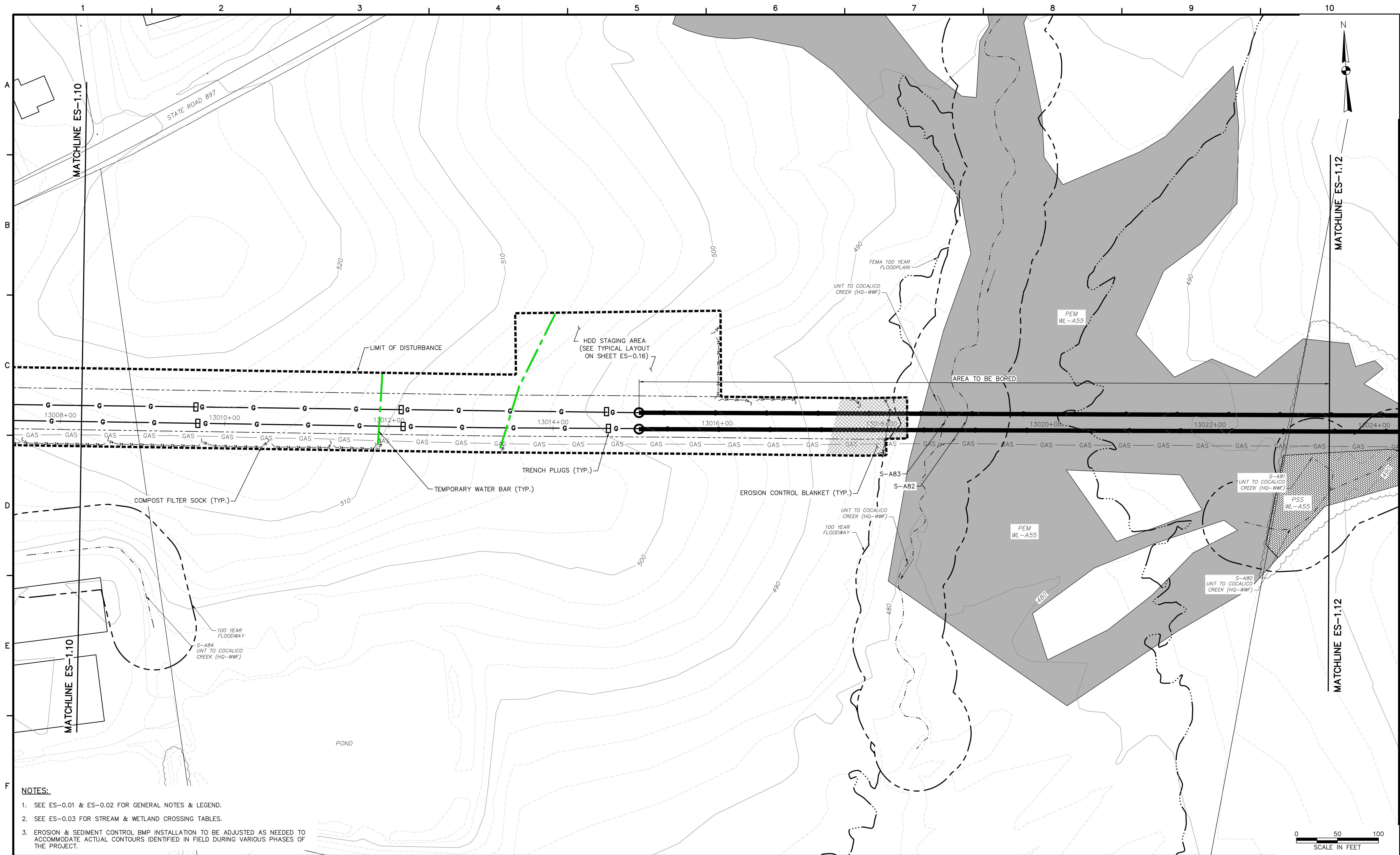
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SUNOCO PIPELINE LP
 PHILADELPHIA, PENNSYLVANIA
**PENNSYLVANIA PIPELINE PROJECT
 CONSTRUCTION SPREAD 5**

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 PERMIT RENEWAL
 LANCASTER COUNTY CONSERVATION DISTRICT
**EROSION & SEDIMENT CONTROL &
 SITE RESTORATION PLAN**
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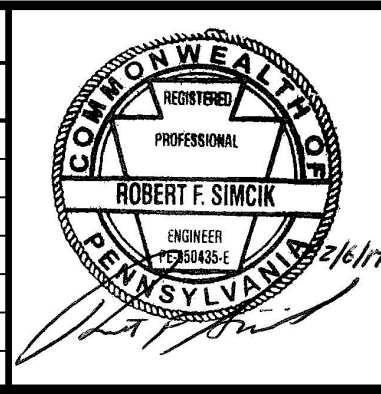
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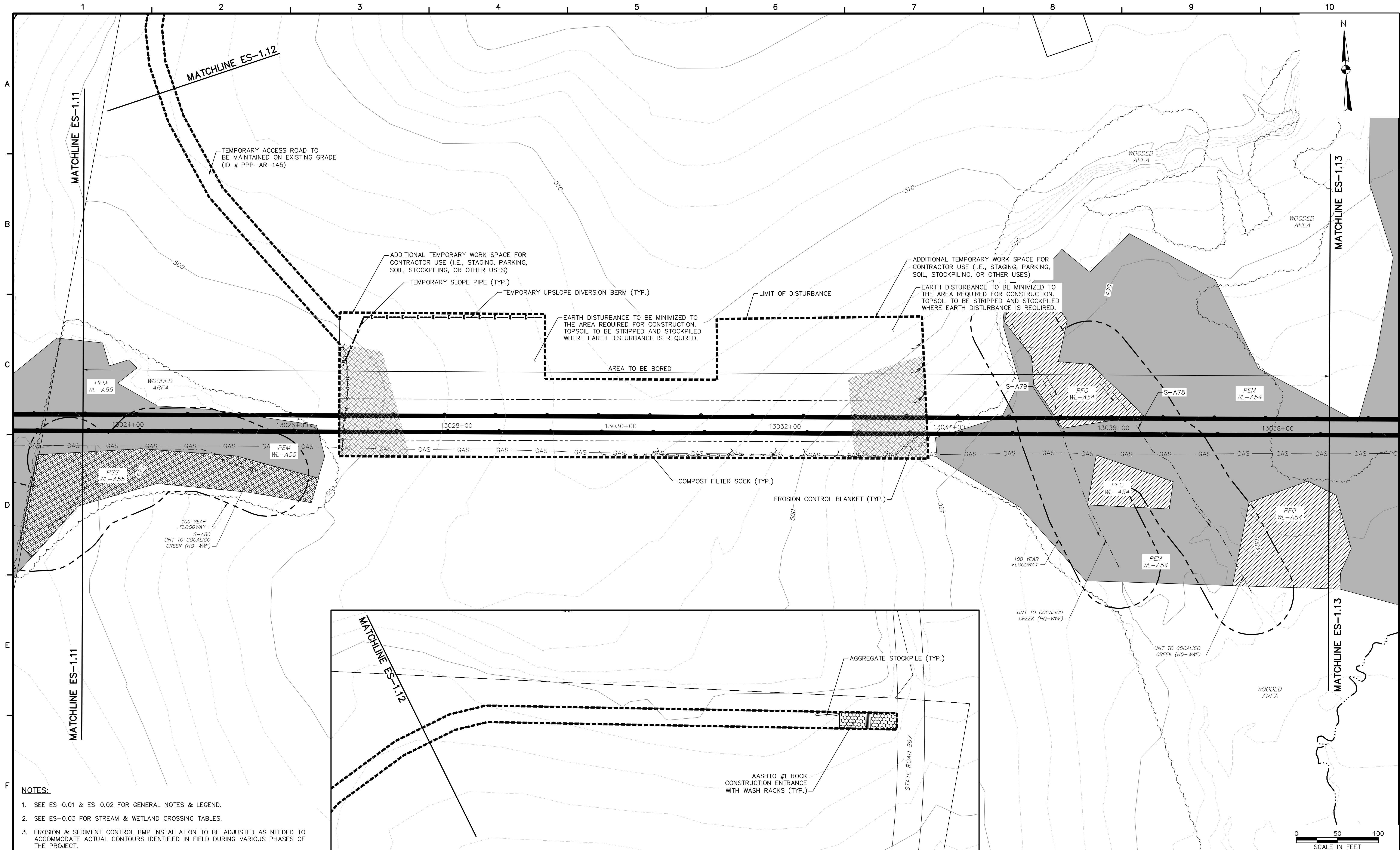
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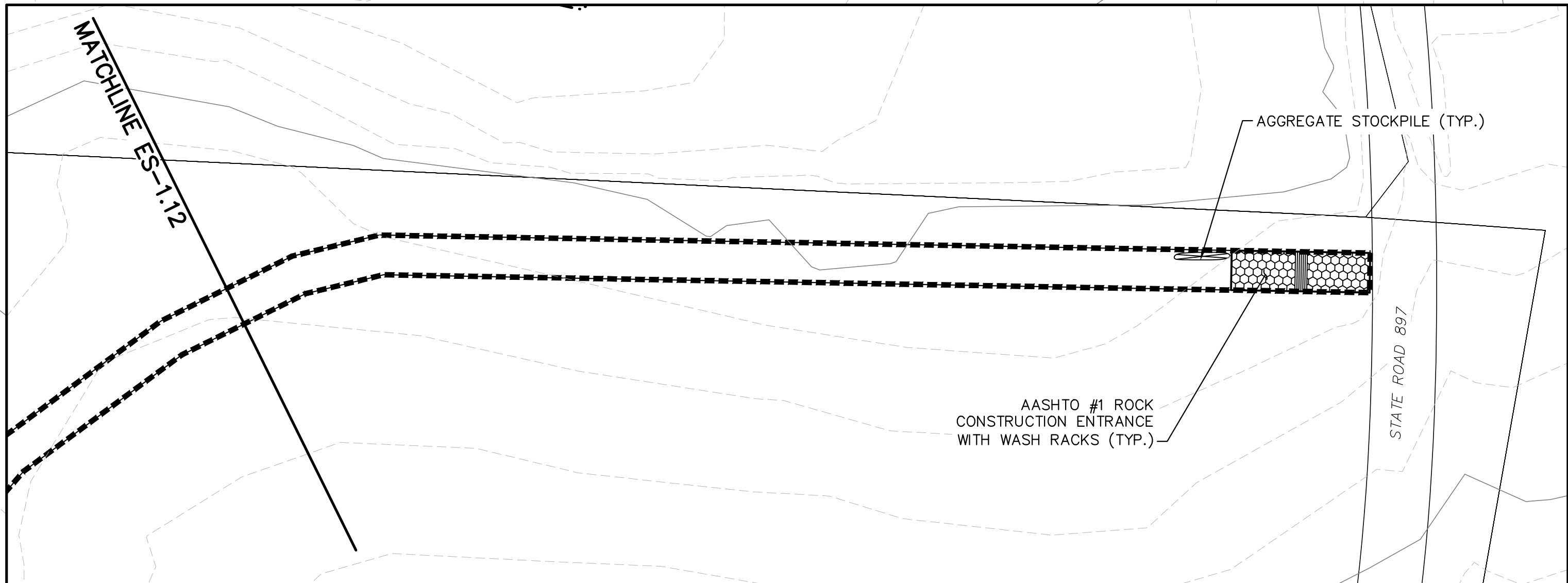
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**PENNSYLVANIA PIPELINE PROJECT
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EROSION & SEDIMENT CONTROL &
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SHEET 11 OF 25

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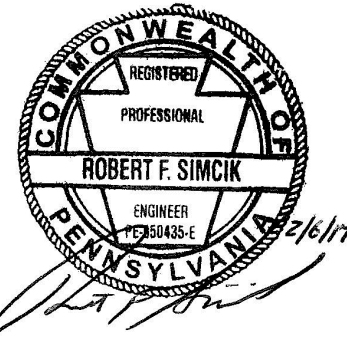


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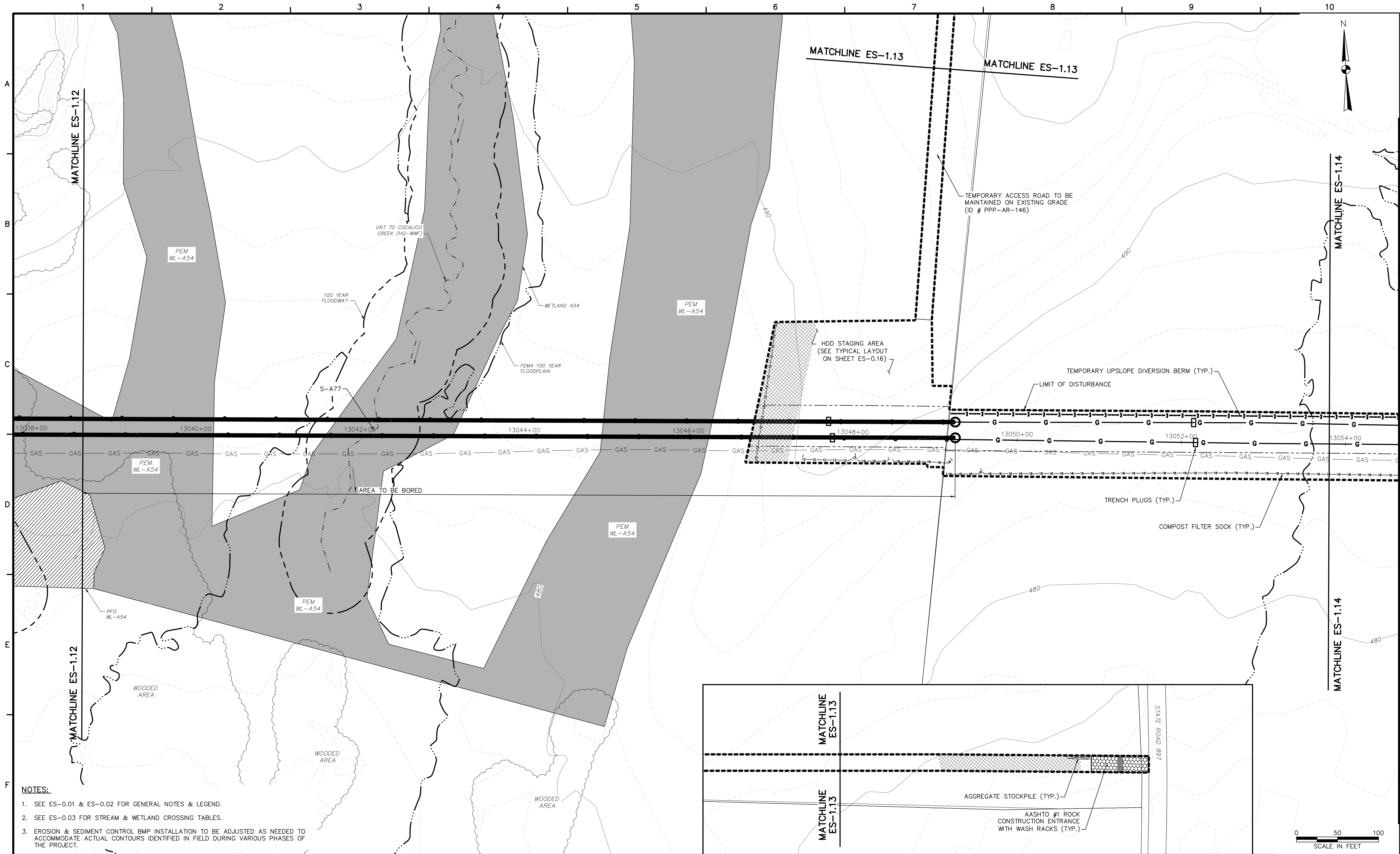
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SUNOCO PIPELINE LP
PHILADELPHIA, PENNSYLVANIA
**PENNSYLVANIA PIPELINE PROJECT
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PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
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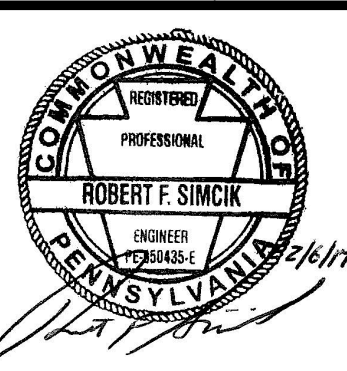
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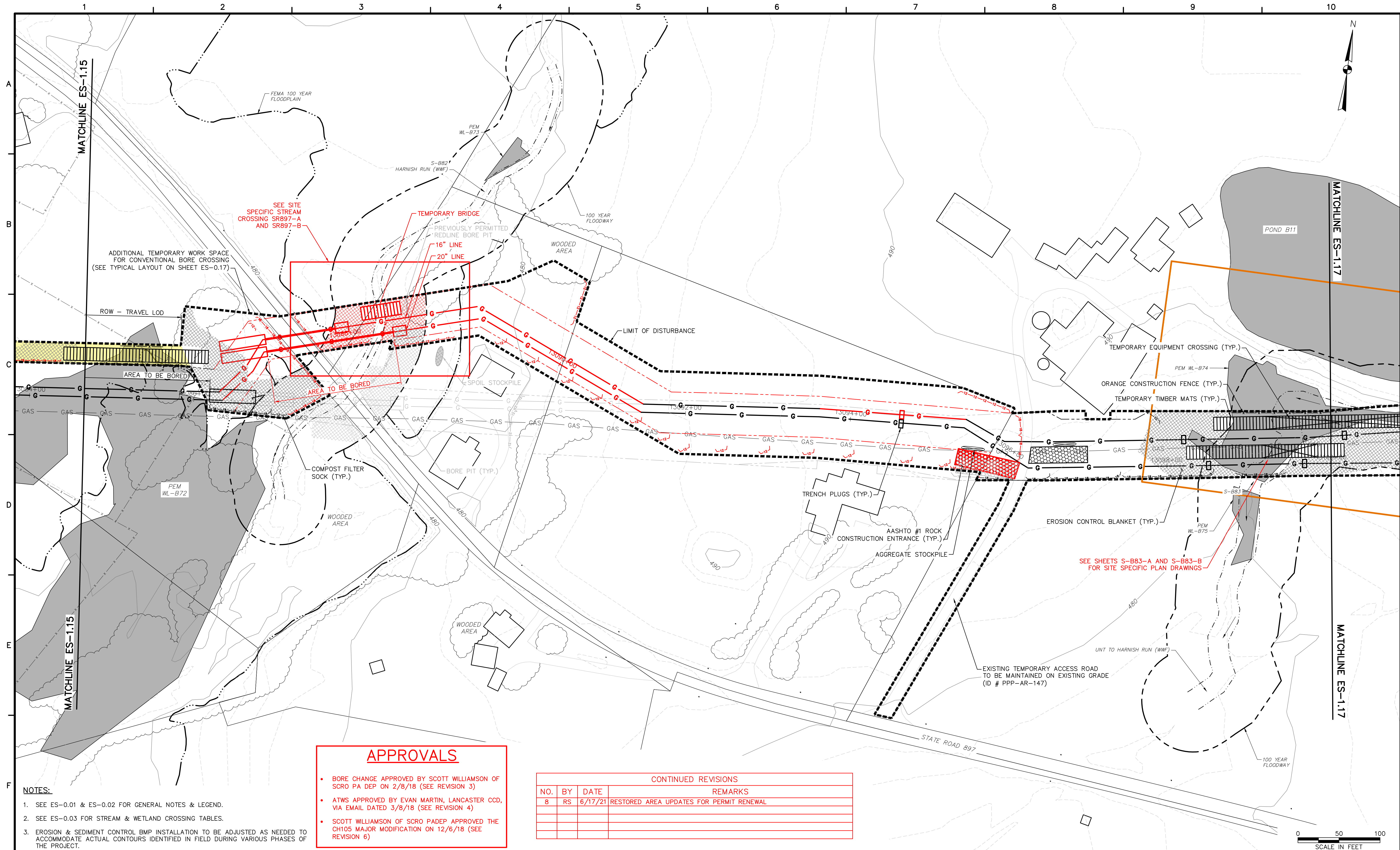


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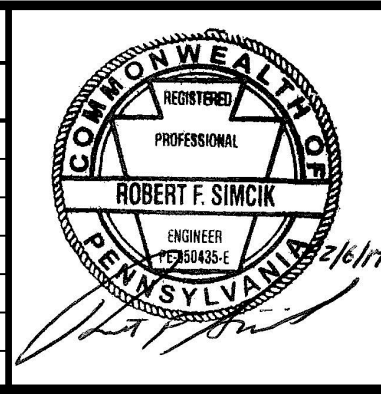
APPROVALS	
•	BORE CHANGE APPROVED BY SCOTT WILLIAMSON OF SCRO PA DEP ON 2/8/18 (SEE REVISION 3)
•	ATWS APPROVED BY EVAN MARTIN, LANCASTER CCD, VIA EMAIL DATED 3/8/18 (SEE REVISION 4)
•	SCOTT WILLIAMSON OF SCRO PADEP APPROVED THE CH105 MAJOR MODIFICATION ON 12/6/18 (SEE REVISION 6)

CONTINUED REVISIONS			
NO.	BY	DATE	REMARKS
8	RS	6/17/21	RESTORED AREA UPDATES FOR PERMIT RENEWAL

- NOTES:**
- SEE ES-0.01 & ES-0.02 FOR GENERAL NOTES & LEGEND.
 - SEE ES-0.03 FOR STREAM & WETLAND CROSSING TABLES.
 - EROSION & SEDIMENT CONTROL BMP INSTALLATION TO BE ADJUSTED AS NEEDED TO ACCOMMODATE ACTUAL CONTOURS IDENTIFIED IN FIELD DURING VARIOUS PHASES OF THE PROJECT.

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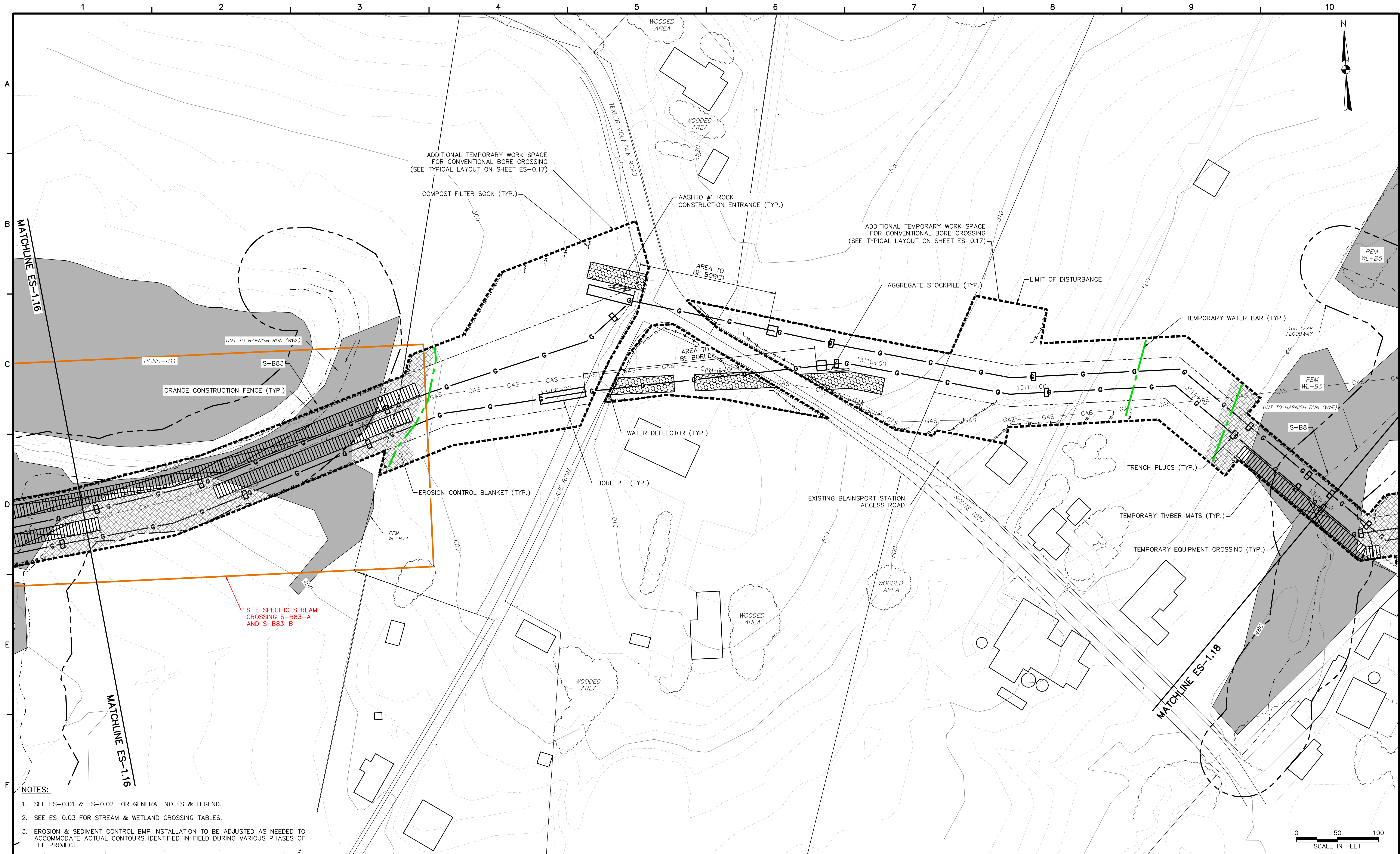
REVISIONS			
NO.	BY	DATE	REMARKS
1	RS	3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS
2	RS	5/25/17	DRAWINGS PROVIDED TO FIELD
3	RS	7/18/17	SHIFT CONVENTIONAL BORE, LOD, AND ALIGNMENT
4	RS	3/2/18	ADDITIONAL ATWS
5	RS	5/14/18	ADDED STREAM BYPASS AND REPAIR INSERT AND DETAIL (8/24/18 REMOVED INSERT)
6	RS	8/24/18	UPDATED CROSSING INFORMATION
7	RS	6/26/19	REVISED STREAM RESTORATION TO REMOVE RIPRAP



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**PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5**

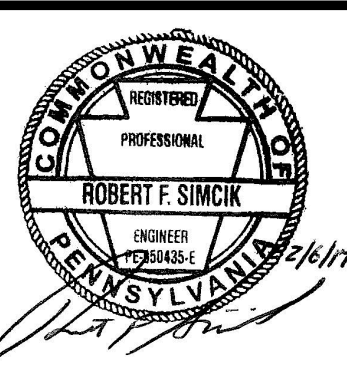
1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES
PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
**EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN**
SHEET 16 OF 25

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 2. SEE ES-0.03 FOR STREAM & WETLAND CROSSING TABLES.
 3. EROSION & SEDIMENT CONTROL BMP INSTALLATION TO BE ADJUSTED AS NEEDED TO ACCOMMODATE ACTUAL CONTOURS IDENTIFIED IN FIELD DURING VARIOUS PHASES OF THE PROJECT.

NO.		BY	DATE	REVISIONS	REMARKS
1	RS	3/28/17		INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS	
2	RS	5/25/17		DRAWINGS PROVIDED TO FIELD	
3	RS	6/26/19		REVISED STREAM RESTORATION TO REMOVE RIPRAP	
4	RS	6/17/21		RESTORED AREA UPDATES FOR PERMIT RENEWAL	

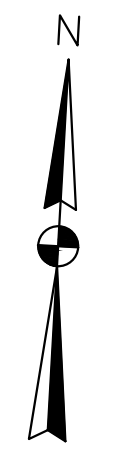
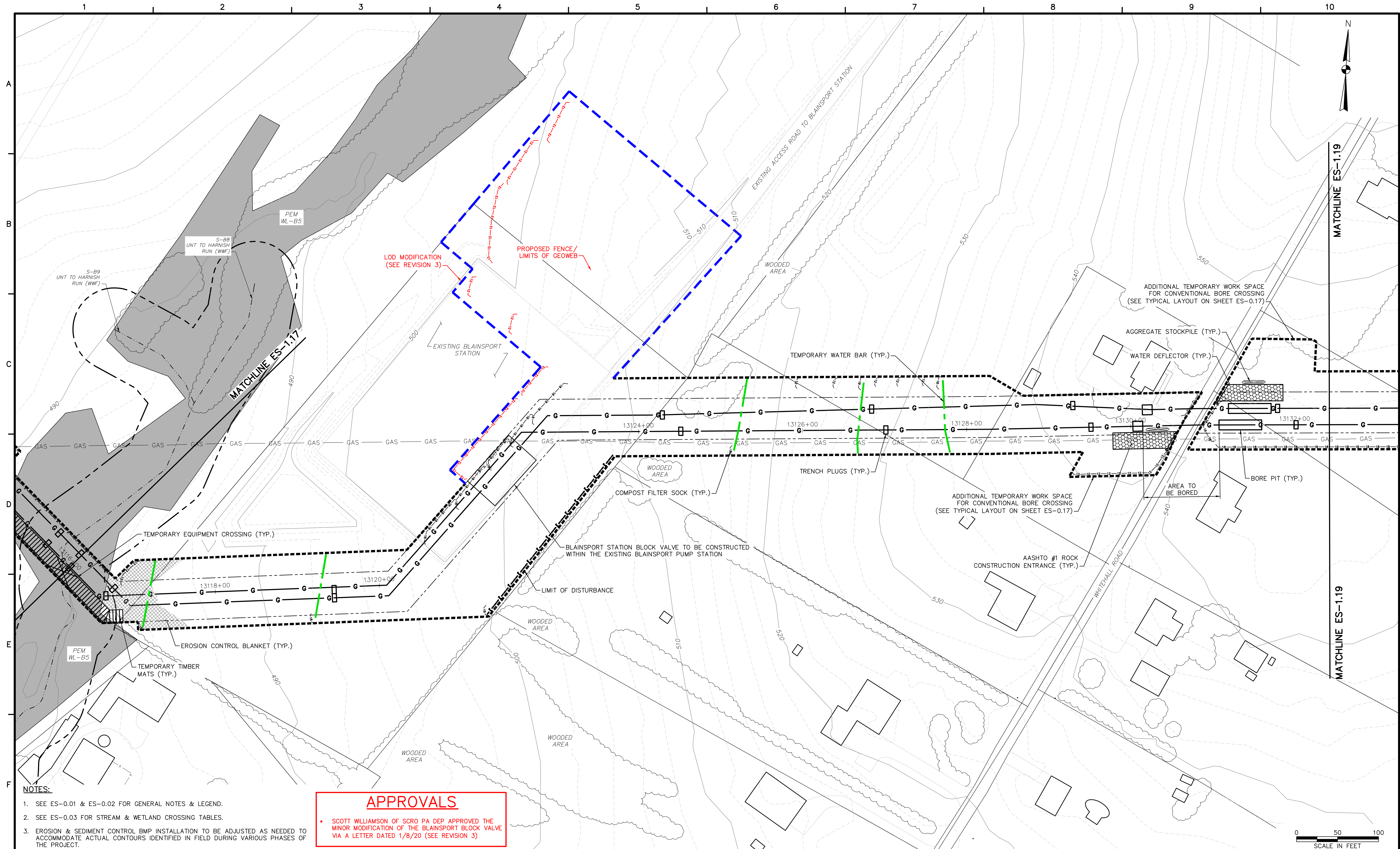


SUNOCO PIPELINE LP
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**PENNSYLVANIA PIPELINE PROJECT
 CONSTRUCTION SPREAD 5**

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 PERMIT RENEWAL
 LANCASTER COUNTY CONSERVATION DISTRICT
**EROSION & SEDIMENT CONTROL &
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 SHEET 17 OF 25

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MATCHLINE ES-1.19

MATCHLINE ES-1.19

- NOTES:**
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APPROVALS

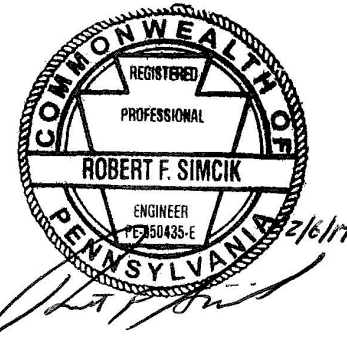
- SCOTT WILLIAMSON OF SCRO PA DEP APPROVED THE MINOR MODIFICATION OF THE BLAINSPORT BLOCK VALVE VIA A LETTER DATED 1/8/20 (SEE REVISION 3)

SCALE IN FEET
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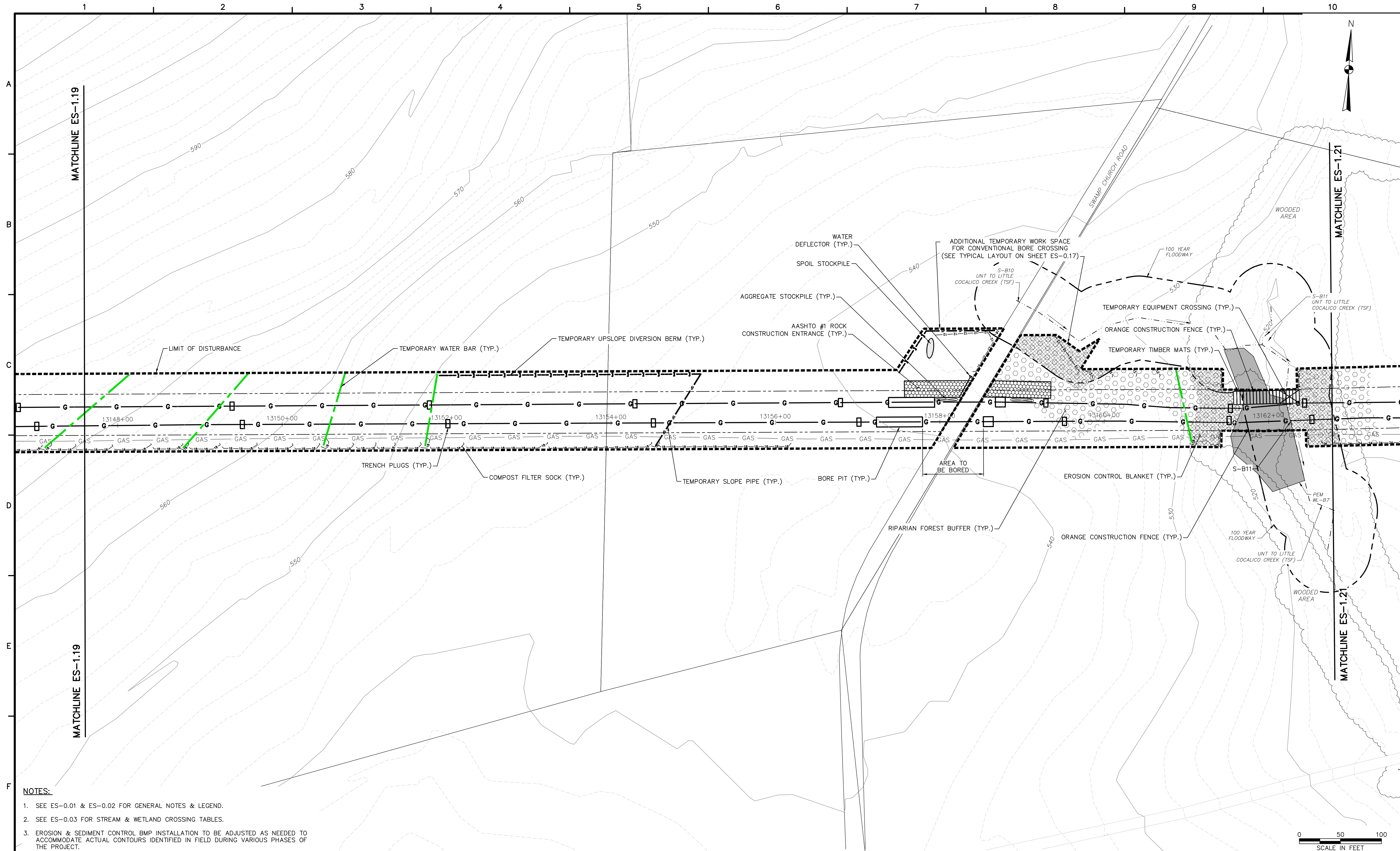
REVISIONS			
NO.	BY	DATE	REMARKS
1	RS	3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS
2	RS	5/25/17	DRAWINGS PROVIDED TO FIELD
3	RS	5/22/19	ADDED STATION EQUIPMENT LAYOUT AND LOD MODIFICATION
4	RS	6/17/21	RESTORED AREA UPDATES FOR PERMIT RENEWAL



SUNOCO PIPELINE LP
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CONSTRUCTION SPREAD 5**

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PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
SHEET 18 OF 25

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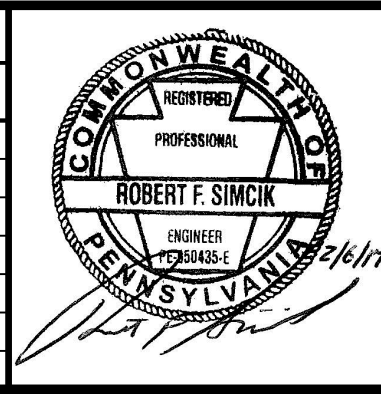


- NOTES:**
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2	RS		5/25/17	DRAWINGS PROVIDED TO FIELD	
3	RS		6/17/21	RESTORED AREA UPDATES FOR PERMIT RENEWAL	



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PHILADELPHIA, PENNSYLVANIA
**PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5**

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PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
SHEET 20 OF 25

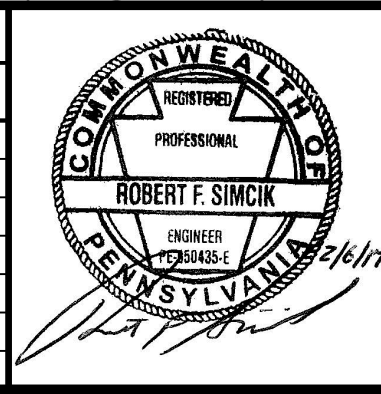
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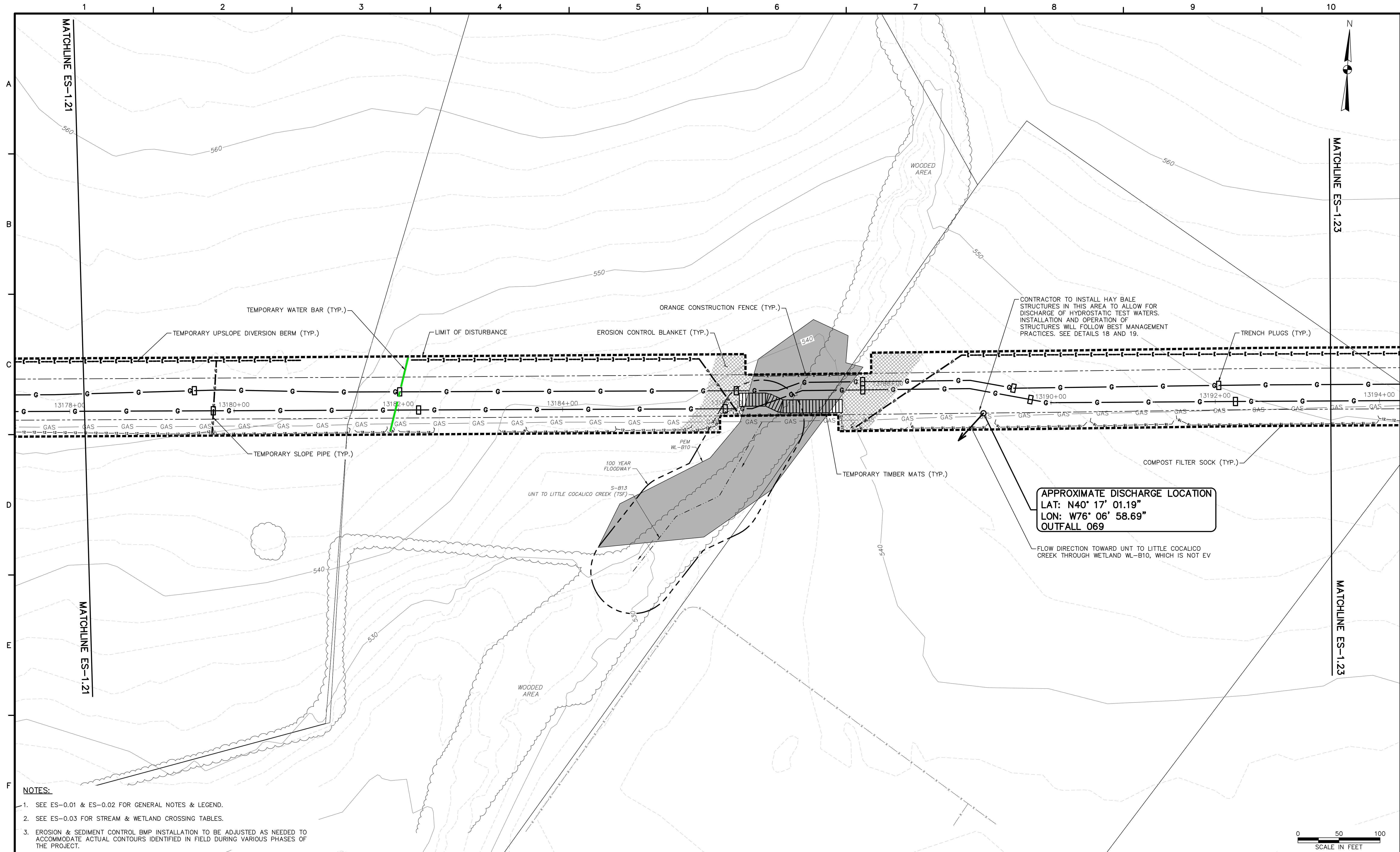
NO.		BY	DATE	REVISIONS	REMARKS
1	RS	3/28/17		INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS	
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SUNOCO PIPELINE LP
PHILADELPHIA, PENNSYLVANIA
**PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 5**

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PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
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SHEET 21 OF 25

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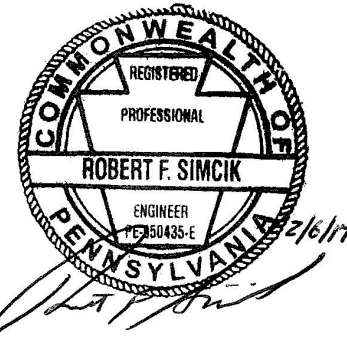


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1	RS		3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS	
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CONSTRUCTION SPREAD 5**

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PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
SHEET 22 OF 25

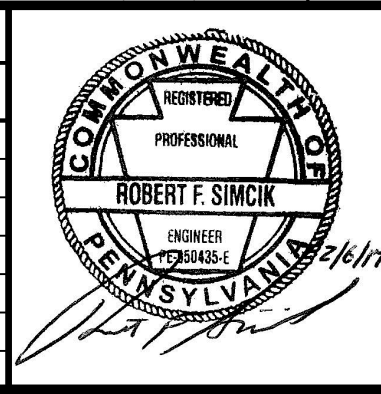
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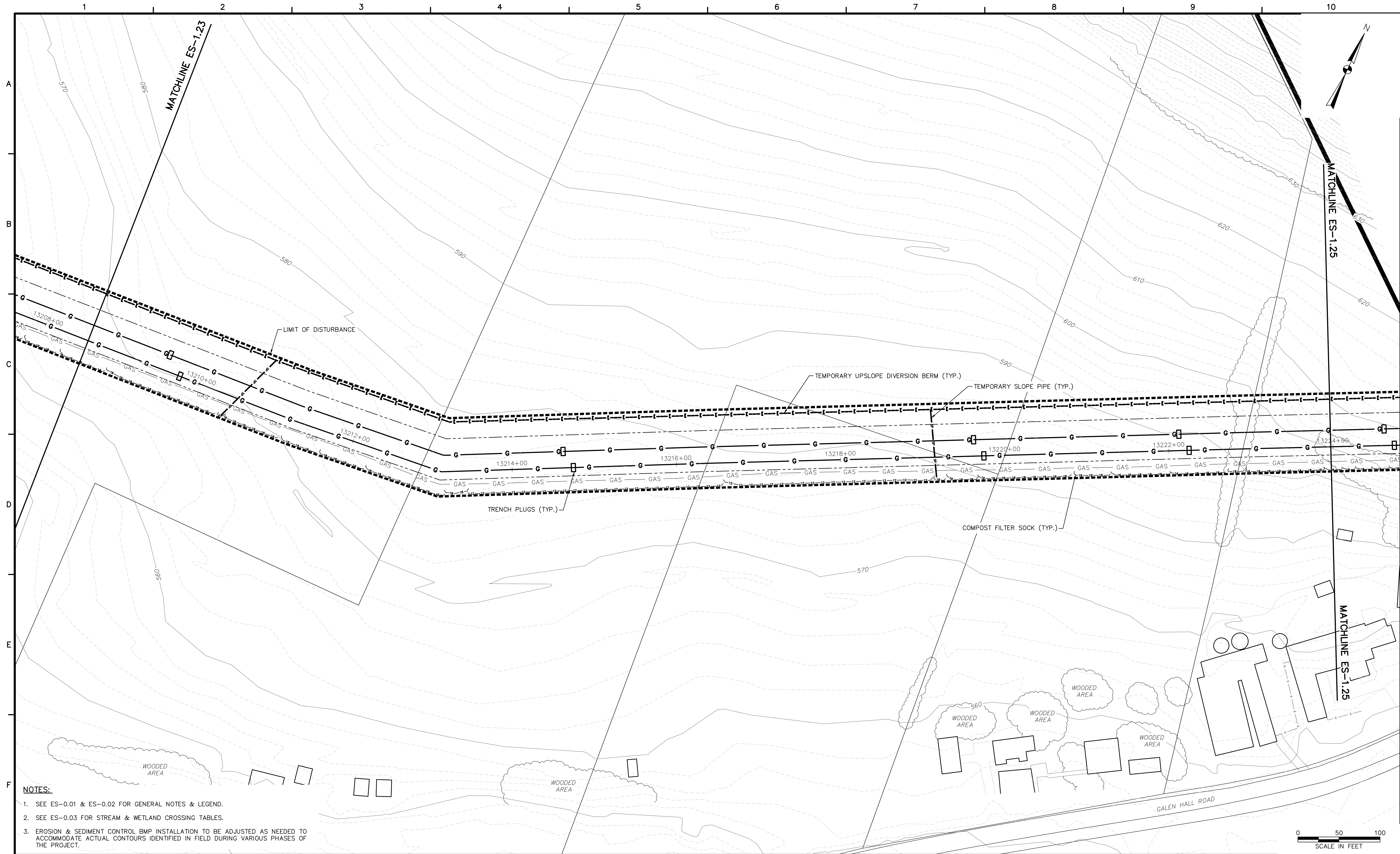
NO.		BY	DATE	REVISIONS	REMARKS
1	RS		3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS	
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SUNOCO PIPELINE LP
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CONSTRUCTION SPREAD 5**

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PERMIT RENEWAL
LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
SHEET 23 OF 25

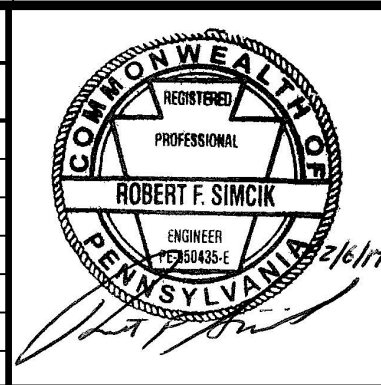
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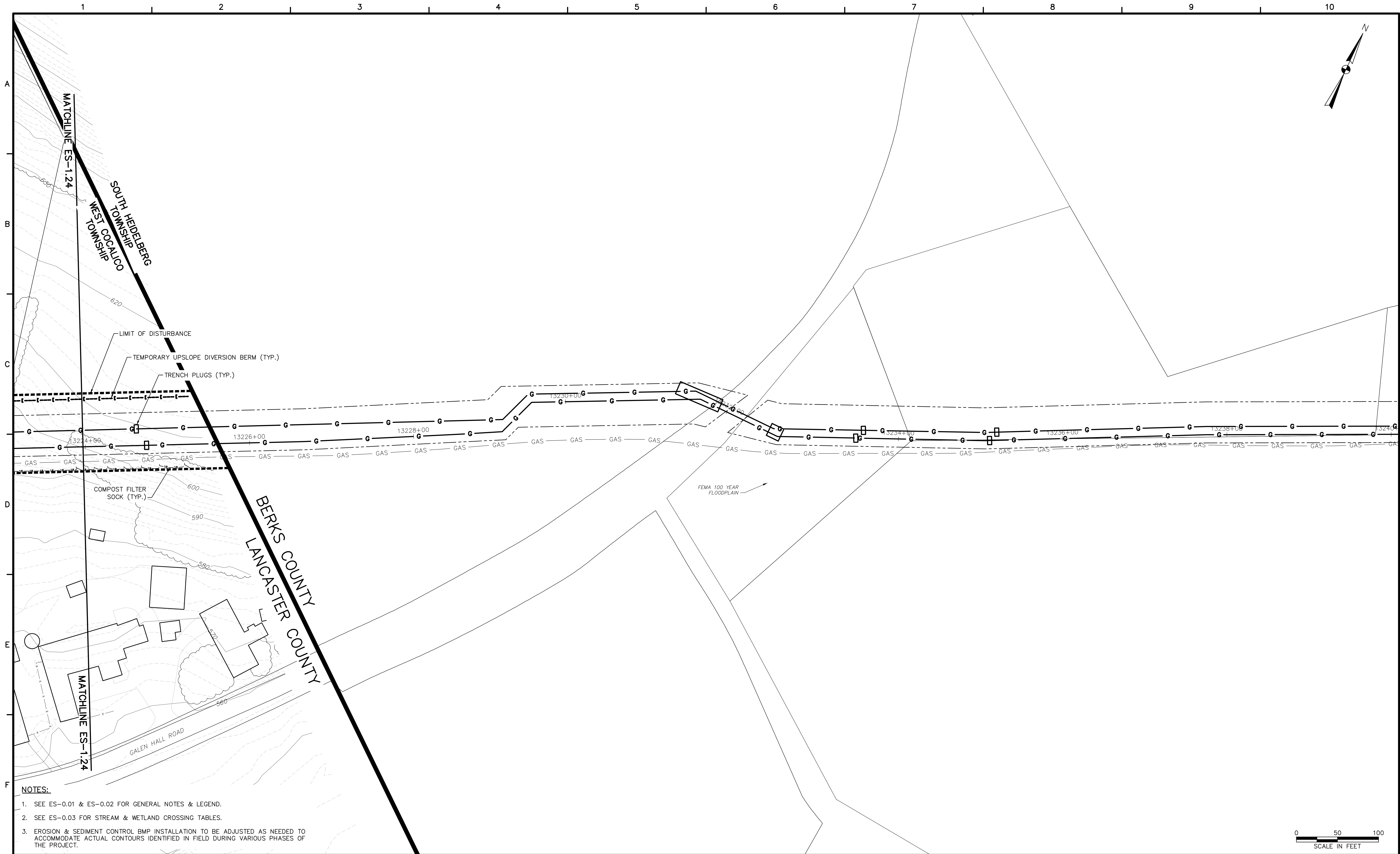
NO.		BY	DATE	REVISIONS	REMARKS
1	RS		3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS	
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SUNOCO PIPELINE LP
PHILADELPHIA, PENNSYLVANIA
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CONSTRUCTION SPREAD 5**

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LANCASTER COUNTY CONSERVATION DISTRICT
**EROSION & SEDIMENT CONTROL &
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SHEET 24 OF 25

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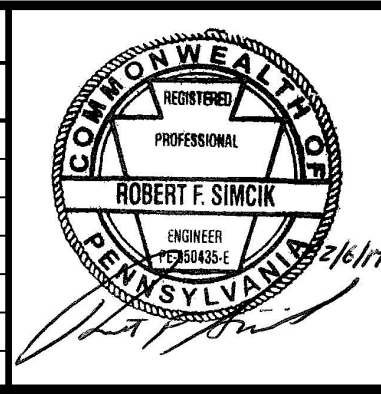


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REVISIONS		REMARKS	
NO.	BY	DATE	
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LANCASTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
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