

TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC ATLANTIC SUNRISE PROJECT PROPOSED 42" CENTRAL PENN LINE SOUTH

BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET

CLEVELAND, FRANKLIN, MONTOUR, HEMLOCK, MT. PLEASANT, ORANGE, GREENWOOD, JACKSON, AND SUGARLOAF
TOWNSHIPS

COLUMBIA COUNTY

BMP DETAIL SUMMARY

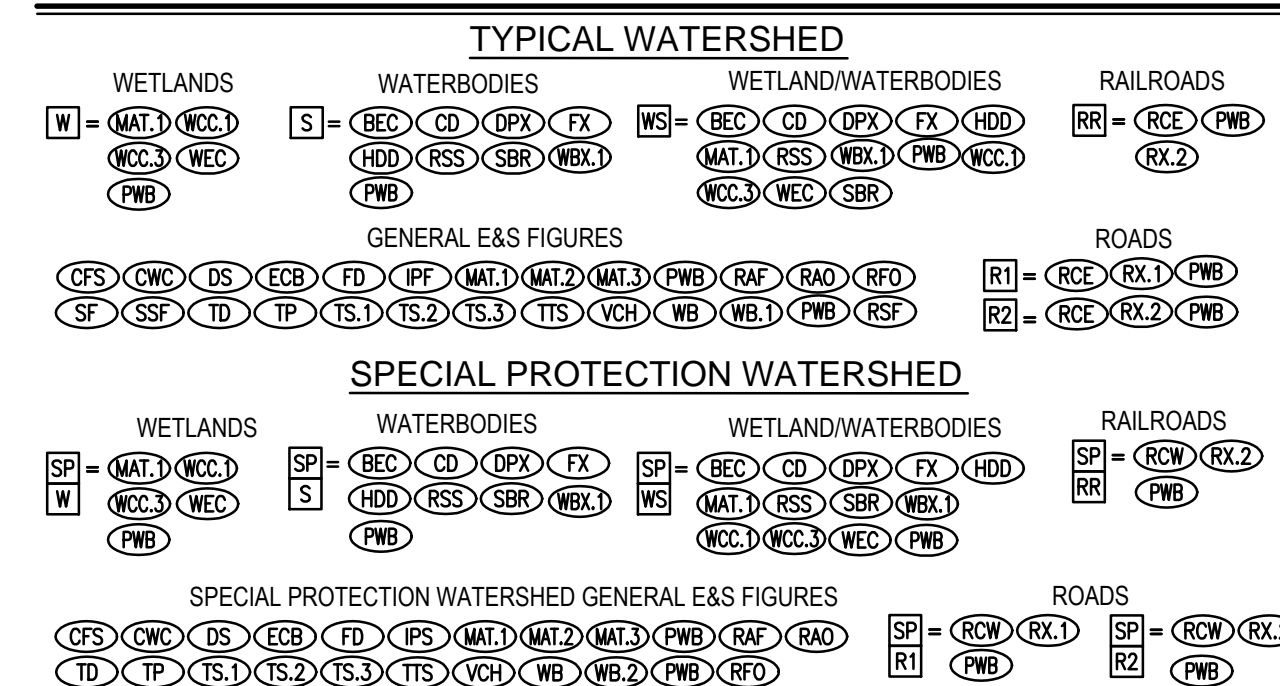
FIGURE	FIGURE TITLE	SHEET NO.
ARF	ABACT ROCK FILTER	1
BBD	BROAD-BASED DIP	
BEC	BRIDGE EQUIPMENT CROSSING	
CD	COFFERDAM STREAM CROSSING	
CDM	CHECK DAM	2
CFS	COMPOST FILTER SOCK	
CS	CLEANOUT STAKE	
CST	COMPOST SOCK SEDIMENT TRAP	
CWC	CLEAN WATER CROSSING	3
DPX	DAM AND PUMP STREAM CROSSING	
DS	HYDROSTATIC DEWATERING STRUCTURE	
ECB	EROSION CONTROL BLANKET	
FD	FILTER SOCK DIVERSION	4
FEN	CONSTRUCTION FENCE	
FX	FLUME STREAM CROSSING	
HDD	HORIZONTAL DIRECTIONAL DRILL	
IPF	FILTER BAG INLET PROTECTION - TYPE M	5
IPS	STONE AND CONCRETE INLET PROTECTION - TYPE M	
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RCE	ROCK CONSTRUCTION ENTRANCE	7
RCW	ROCK CONSTRUCTION ENTRANCE WITH WASH RACK	
RFO	ROCK FILTER OUTLET	
RSF	REINFORCED SILT FENCE (30" HIGH)	
RSS	RIP RAP STREAM BANK STABILIZATION	8
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WEC	WETLAND EQUIPMENT CROSSING	

DETAILS THAT ARE NOT UTILIZED IN THIS COUNTY ARE STRUCK THROUGH IN THIS TABLE. THESE DETAILS ARE ALSO CROSSED OUT WITH A NOTE THAT READS "DETAILS ARE NOT UTILIZED IN THIS COUNTY" ON THEIR RESPECTIVE SHEET.

DRAWING INDEX

DRAWING NUMBER	SHEET NO.	DRAWING NAME
24-1600-70-28-A/LL113_9-BMP	1-1	COVER SHEET
ASR-BMP-GN	1-3	GENERAL NOTES
ASR-BMP	1-11	BEST MANAGEMENT PRACTICES STANDARD CONSTRUCTION DETAILS
24-1601-70-28-A/LL113_9-BMP-CO-TB	1-6	QUANTITY, CROSSING, AND ACIDIC SOIL TABLES

E&S DETAIL GROUP LEGEND FOR PIPELINE CROSSINGS



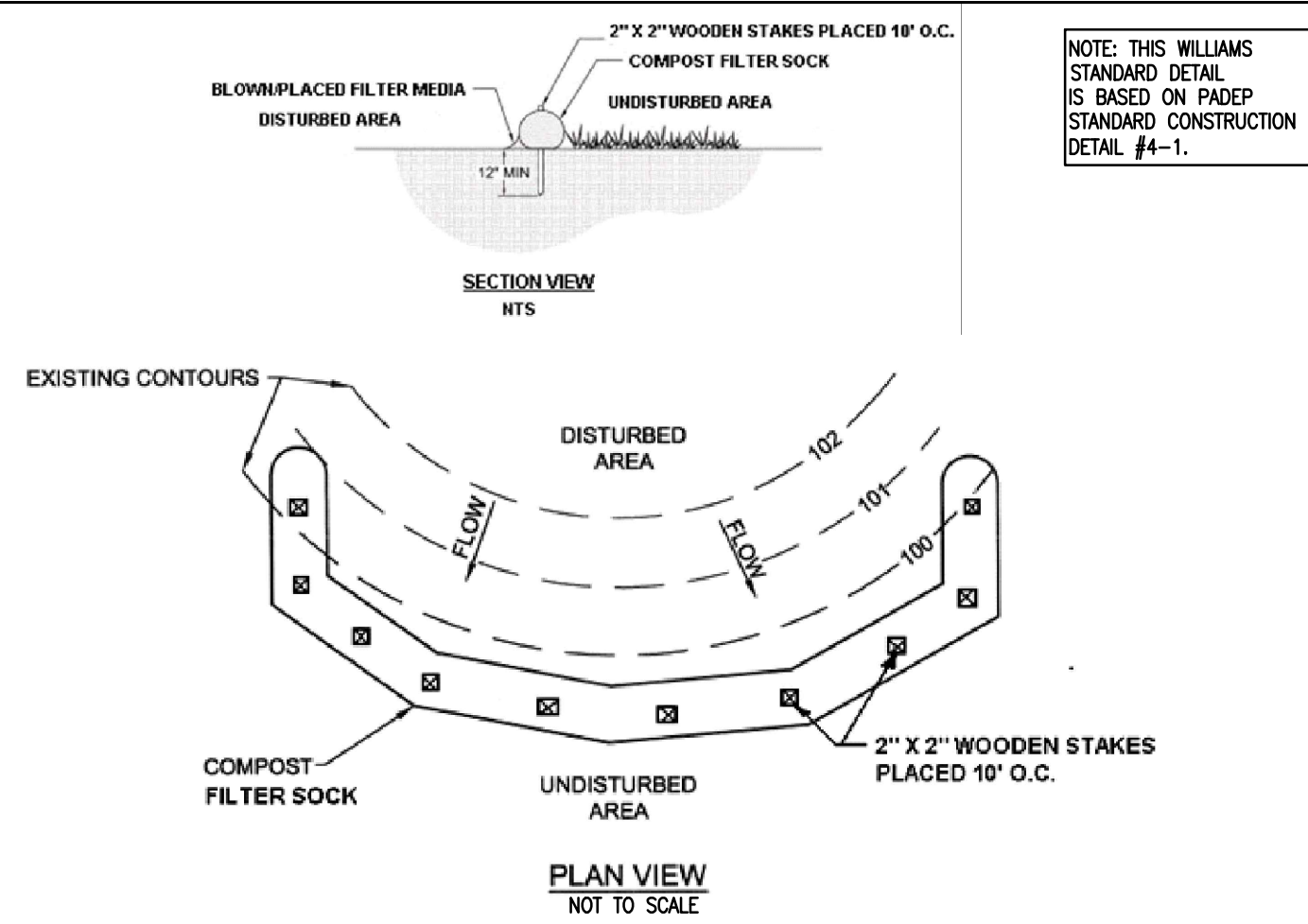
DETAILS IN THIS LEGEND ARE NOT COMPREHENSIVE AND ONLY REFER TO BMPs RELATED TO PIPELINE CROSSINGS. ADDITIONAL BMPs ARE PROVIDED FOR ACCESS ROADS.
E&S DETAIL GROUP LEGEND IS ALSO PROVIDED ON THE PIPELINE E&S PLANS. LEGEND IS SHOWN HERE FOR COORDINATION PURPOSES.



REVISIONS			
NO.	DATE	BY	DESCRIPTION
0	08/26/2015	BL	ISSUED FOR PADEP SUBMITTAL
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL
2	02/04/2016	BL	ISSUED FOR PADEP RESUBMITTAL
3	3/28/2016	BL	ISSUED FOR PADEP RESUBMITTAL
4	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1
5	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2
6	AUG. 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #3

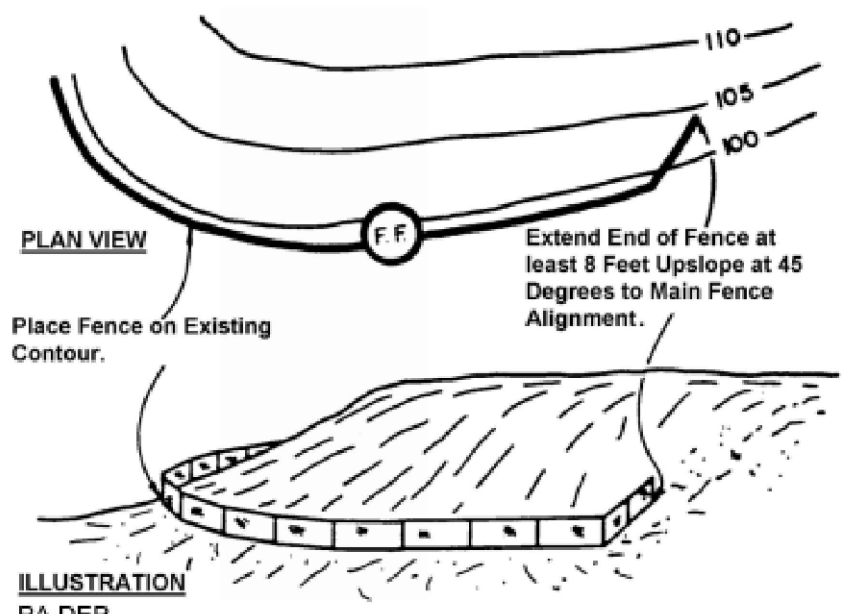
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC ATLANTIC SUNRISE PROJECT PROPOSED 42" CENTRAL PENN LINE SOUTH PENNSYLVANIA BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET COLUMBIA COUNTY, PENNSYLVANIA			
COVER SHEET			
DRAWN BY:	ELZ	DATE:	05/15/15
CHECKED BY:	JLK	DATE:	07/02/15
APPROVED BY:	SMK	DATE:	07/08/15
ISSUED FOR:	CONSTRUCTION	SCALE:	
DRAWING NUMBER:	24-1600-70-28-A/LL113_9-BMP	SHEET:	1
		OF:	1



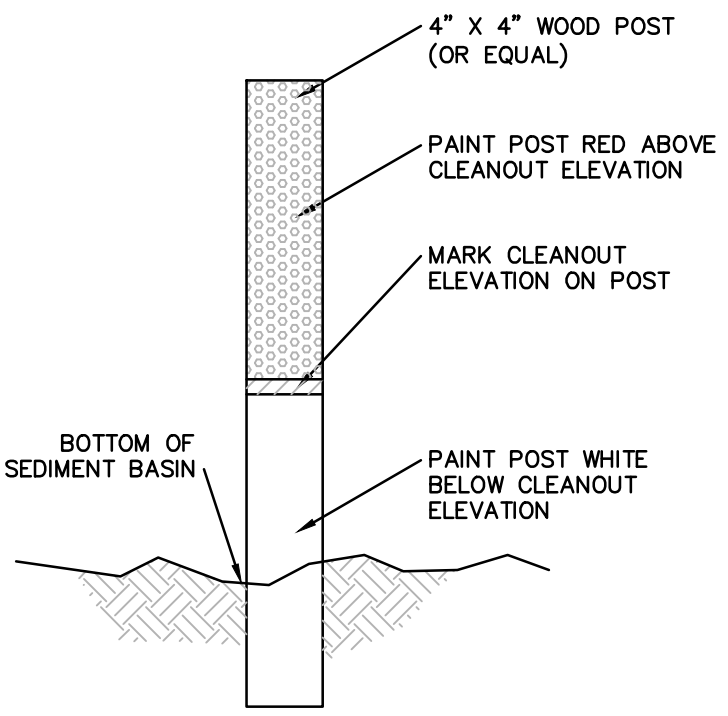


NOTE: THIS WILLIAMS STANDARD DETAIL IS BASED ON PADEP STANDARD CONSTRUCTION DETAIL #4-1.

FIGURE 4.1 Sediment Barrier Alignment



NOTE: 8" diameter socks should only be used to control small (< 1/4 acre) disturbed areas on individual house lots.



NO.	DATE	BY	REVISION DESCRIPTION	NO.	NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL				
			(CFS) COMPOST FILTER SOCK				



TABLE 4.1 COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS

Material Type	3 mil HDPE	4 mil HDPE	5 mil HDPE	Multi-Filament Polypropylene (MFPP)	Multi-Filament Polypropylene (HDMFPP)
Material Characteristics	Photo-degradable	Photo-degradable	Bio-degradable	Photo-degradable	Photo-degradable
Sock Diameters	12", 18"	12", 18", 24"	12", 18", 24", 32"	12", 18", 24", 32"	12", 18", 24", 32"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	3/8"
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	6 months	6 months	1 year	2 years

Two-ply systems

Inner Containment Netting	HDPE biaxial net Continuously wound Fusion-welded junctures 3/4" X 3/4" Max. aperture size
Outer Filtration Mesh	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/CM) MAXIMUM

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

NO.	DATE	BY	REVISION DESCRIPTION	NO.	NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL				
			(CFS) COMPOST FILTER SOCK				

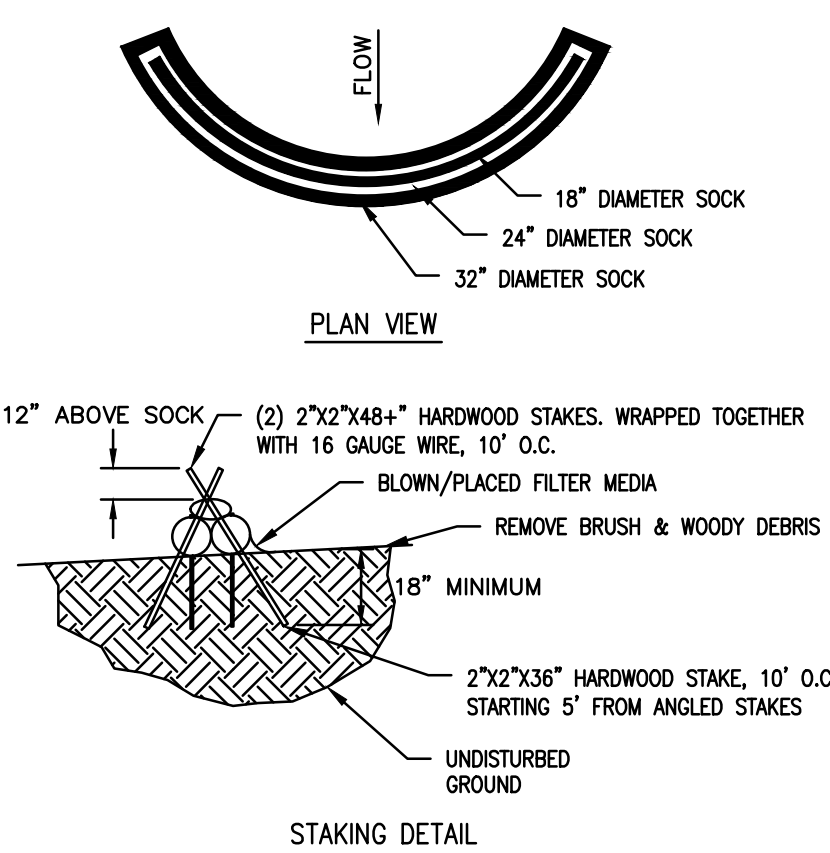


FIGURE 4.2 MAXIMUM PERMISSIBLE SLOPE LENGTH ABOVE COMPOST FILTER SOCKS

Adapted from Filtracx

NO.	DATE	BY	REVISION DESCRIPTION	NO.	NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL				
			(CFS) COMPOST FILTER SOCK				

NO.	DATE	BY	REVISION DESCRIPTION	NO.	NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL				
			(CS) CLEANOUT STAKE				



NOTE: THIS WILLIAMS STANDARD DETAIL IS BASED ON PADEP STANDARD CONSTRUCTION DETAIL #3-11.

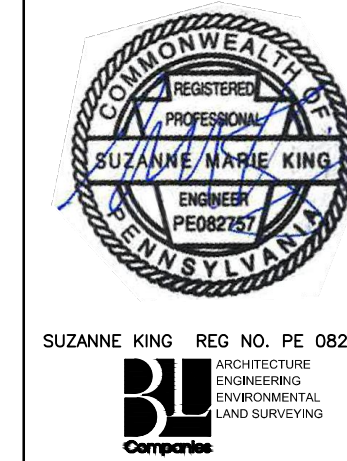
- NOTES:
- SEE COMPOST FILTER SOCK (CFS) DETAIL FOR MORE INFORMATION. SOCK MATERIAL SHALL MEET THE STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.
 - COMPOST SOCK SEDIMENT TRAPS SHALL NOT EXCEED THREE SOCKS IN HEIGHT AND SHALL BE STACKED IN PYRAMIDAL FORM AS SHOWN ABOVE. MINIMUM 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.
 - 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 1/3 THE HEIGHT OF THE SOCKS.
 - PHOTODEGRADABLE AND BIODEGRADABLE SOCKS SHALL NOT BE USED FOR MORE THAN 1 YEAR.
 - DESIGN NOTES:
 - COMPOST SOCK SEDIMENT TRAP SHALL BE SIZED TO PROVIDE 2,000 CUBIC FEET OF STORAGE CAPACITY WITH 12" FIBERBOARD FOR EACH ACRE TRIBUTARY TO THE TRAP.
 - MINIMUM BASE WIDTH IS EQUIVALENT TO THE HEIGHT.
 - SEDIMENT ACCUMULATION SHALL NOT EXCEED 1/3 THE TOTAL HEIGHT OF THE TRAP.
 - SOCKS SHALL BE OF LARGER DIAMETER AT THE BASE OF THE TRAP AND DECREASE IN DIAMETER FOR SUCCESSIVE LAYERS AS INDICATED TO THE LEFT.
 - 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.

NO.	DATE	BY	REVISION DESCRIPTION	NO.	NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL				
			(CST) COMPOST SOCK SEDIMENT TRAP				



REFER TO THE QUANTITY, CROSSING AND ACIDIC SOIL TABLES FOR DETAIL AND DESIGN

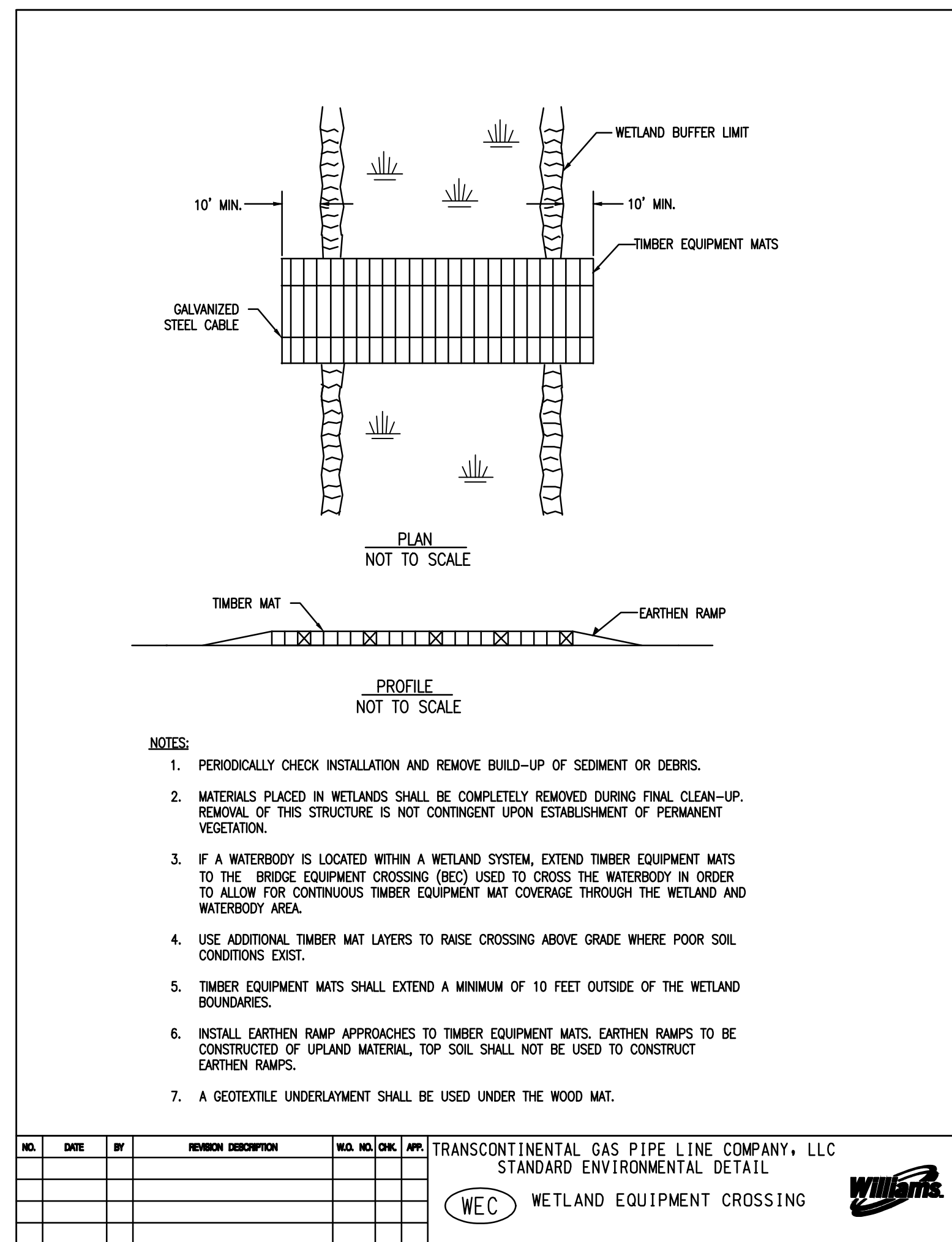
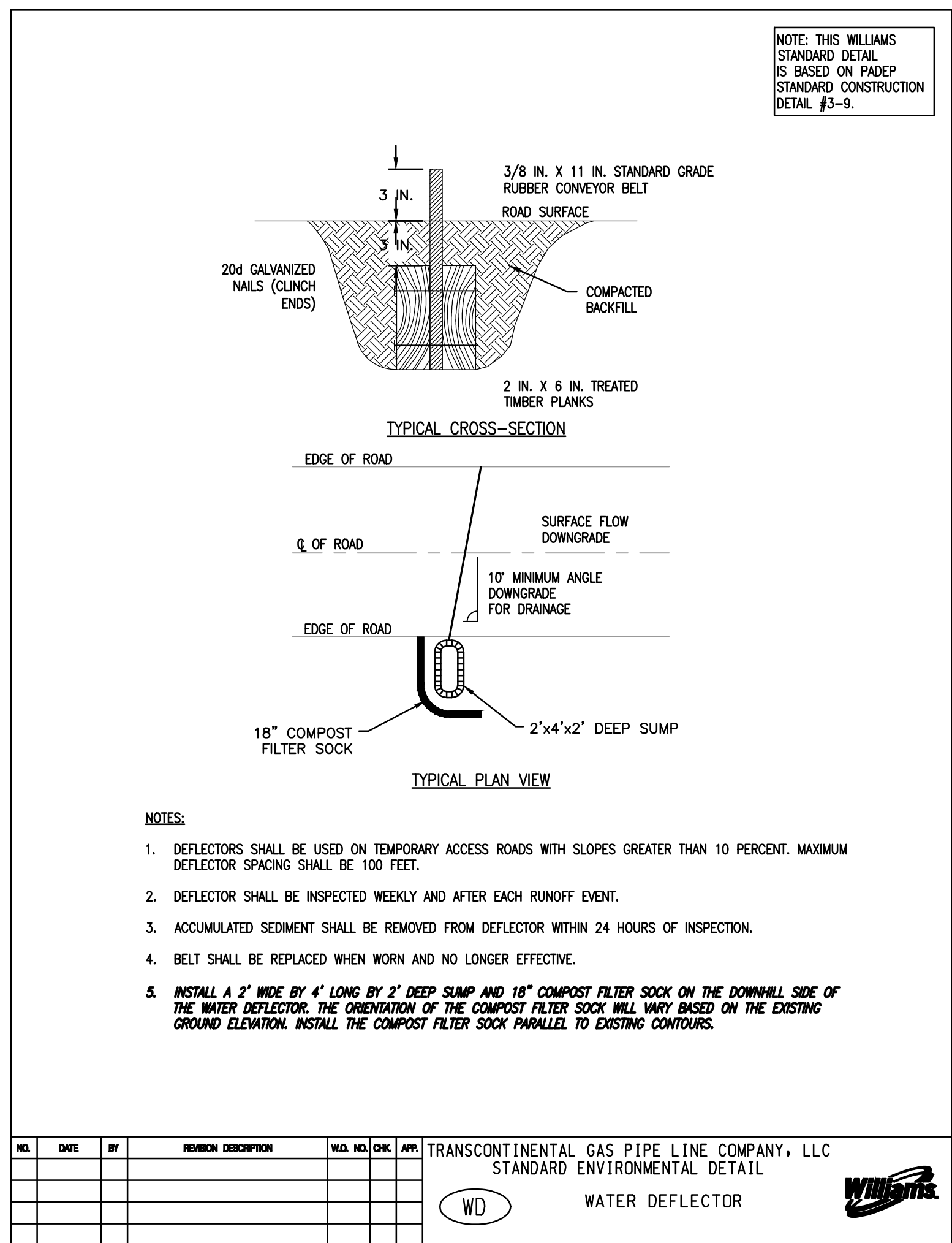
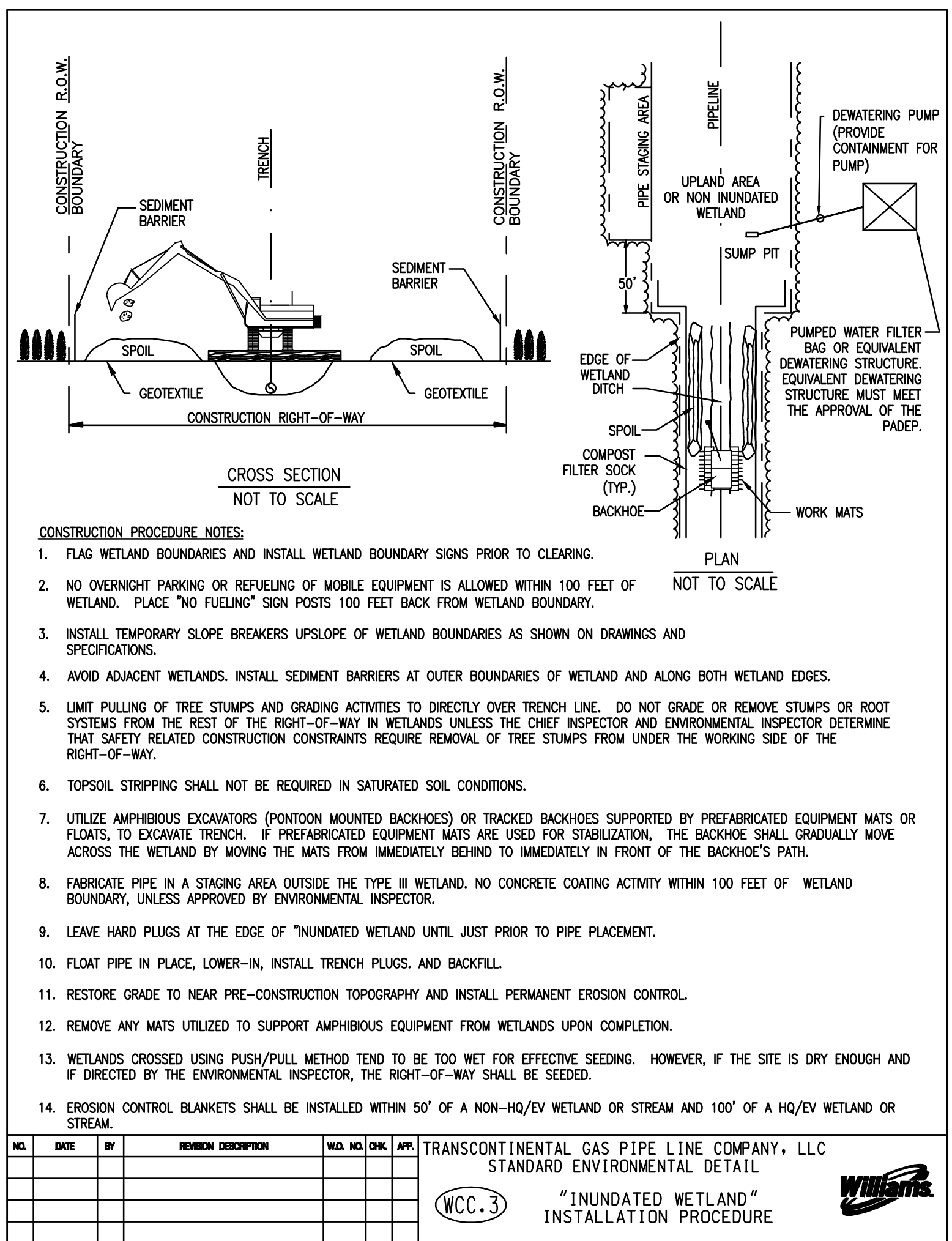
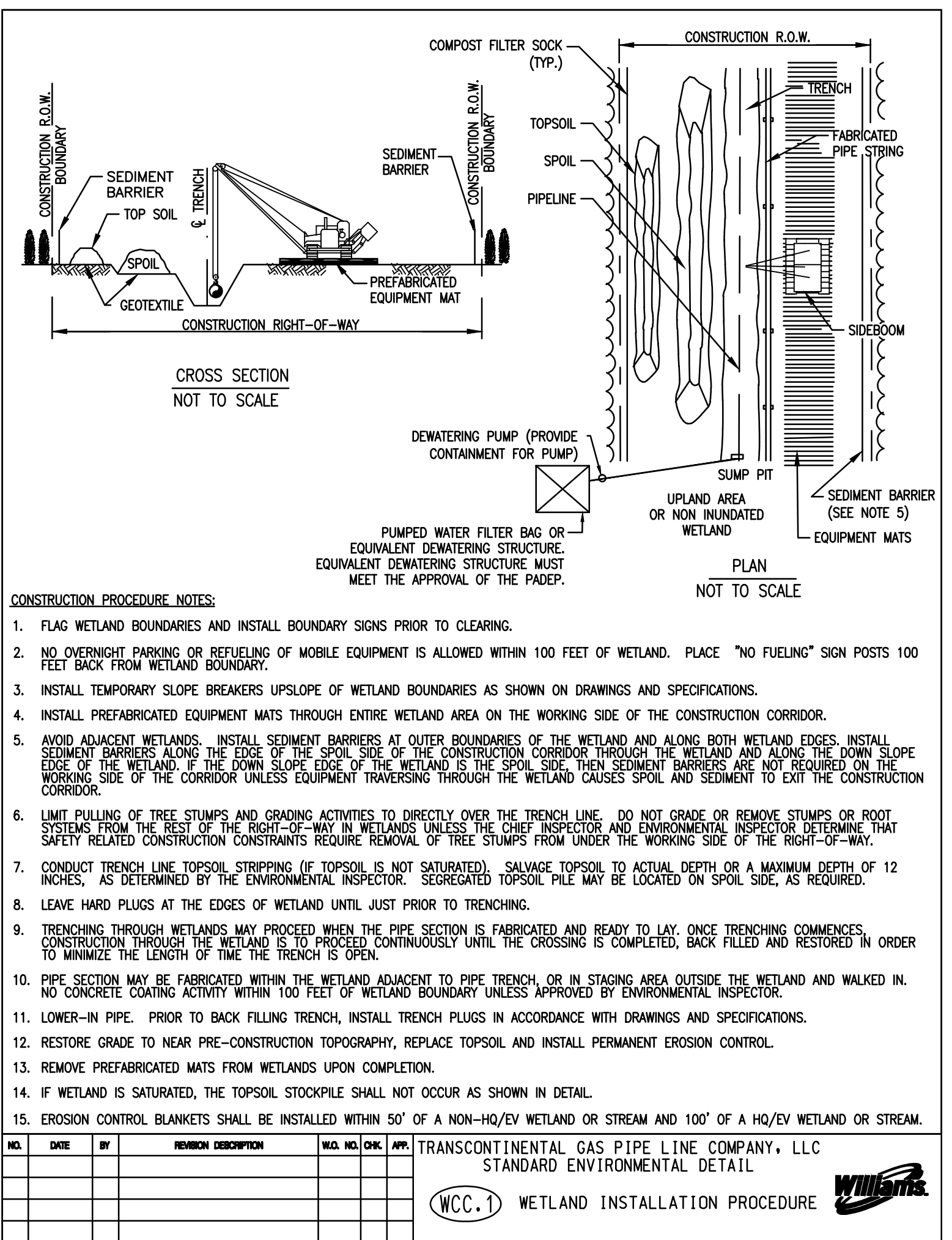
NO.	DATE	BY	REVISION DESCRIPTION	NO.	NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL				
			(CWC) CLEAN WATER CROSSING				



REVISIONS							
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	
0	08/26/2015	BL	ISSUED FOR PADEP SUBMITTAL	W0572385	JLK	SMK	
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W0572385	JLK	SMK	
2	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0572385	JLK	SMK	
3	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0572385	JLK	SMK	
4	AUG 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #3	W0572385	JLK	SMK	

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC ATLANTIC SUNRISE PROJECT				SCALE			
BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET				REVISION: 4			
BEST MANAGEMENT PRACTICES DETAILS				DRAWN BY: ELZ DATE: 05/15/15 ISSUED FOR BID:			
CHECKED BY: JLK DATE: 07/02/15 ISSUED FOR CONSTRUCTION:				APPROVED BY: SMK DATE: 07/08/15 DRAWING NUMBER: ASR-BMP			
W.O.:				SHEET 2 OF 11			





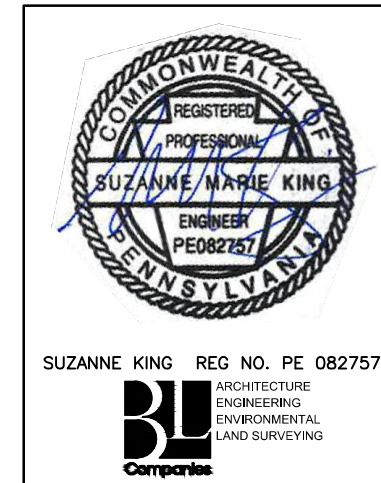
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			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL				
			WCC-1 WETLAND INSTALLATION PROCEDURE				

NO.	DATE	BY	REVISION DESCRIPTION	W.D.	NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL				
			WCC-3 "INUNDATED WETLAND" INSTALLATION PROCEDURE				

NO.	DATE	BY	REVISION DESCRIPTION	W.D.	NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL				
			WD WATER DEFLECTOR				

NO.	DATE	BY	REVISION DESCRIPTION	W.D.	NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL				
			WEC WETLAND EQUIPMENT CROSSING				

Drawn By & Date/Time: CScanzello Jul 27, 2017 - 4:35pm
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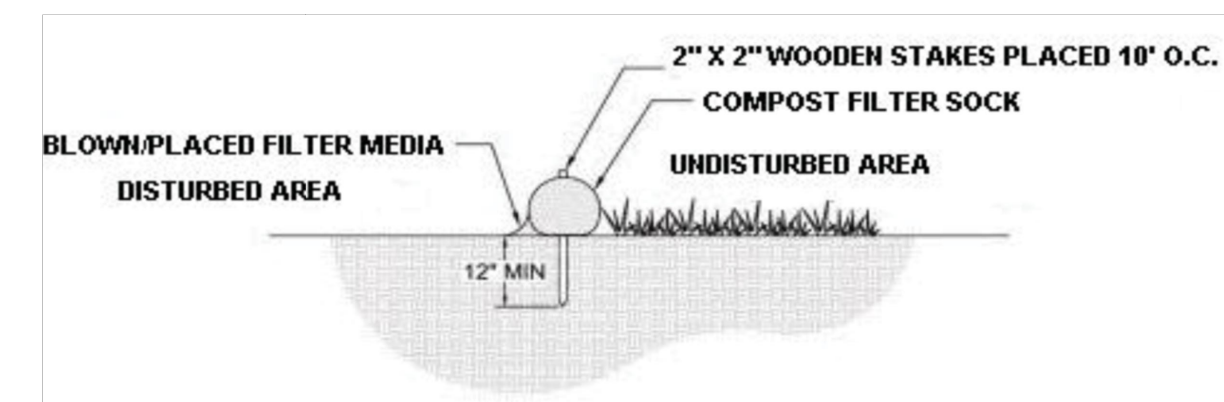
REVISIONS							
NO.	DATE	BY	DESCRIPTION	W.D.	NO.	CHK.	APP.
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1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W0572385	JLK	SMK	
2	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0572385	JLK	SMK	
3	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0572385	JLK	SMK	
4	AUG 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #3	W0572385	JLK	SMK	

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC ATLANTIC SUNRISE PROJECT				SCALE			
BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET				REVISION: 4			
BEST MANAGEMENT PRACTICES DETAILS				DRAWN BY: ELZ DATE: 05/15/15 ISSUED FOR BID:			
CHECKED BY: JLK DATE: 07/02/15 ISSUED FOR CONSTRUCTION:				DRAWING NUMBER: ASR-BMP			
APPROVED BY: SMK DATE: 07/08/15				SHEET 11 OF 11			



SEDIMENT BARRIER SUMMARY

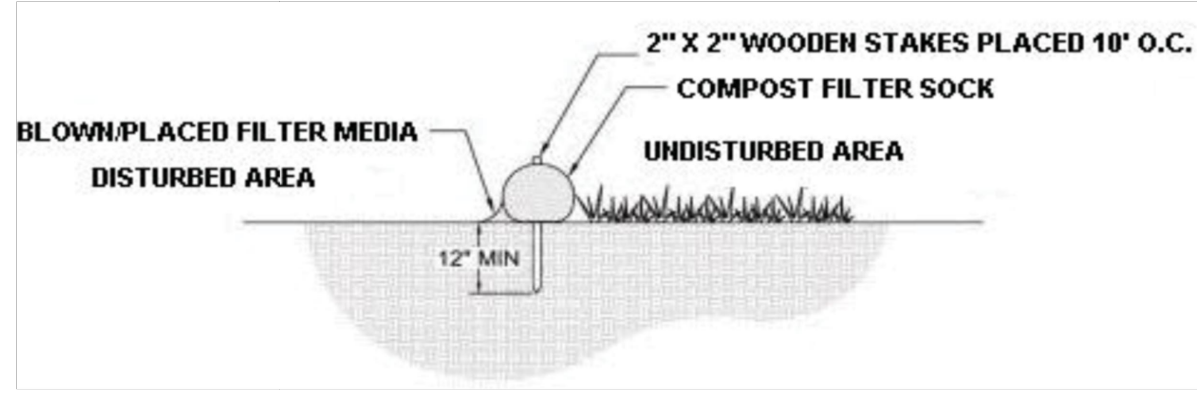
E&S WORKSHEET #1
Compost Filter Sock
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE
 LOCATION: COLUMBIA COUNTY
 PREPARED BY: ESS DATE: 03/02/2017
 CHECKED BY: AJB DATE: 04/10/2017



MILEPOST NO.	Di. In.	BEGIN STA.	END STA.	LOCATION	TYPE	SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
91	12	4804+50	to 4806+25	Wetland/Stream		3	126
12	12	4806+50	to 4813+25	Road		25	30
24	12	4807+25	to 4813+25	Road		25	25
18	12	4813+50	to 4826+00	Road		11	177
12	12	4830+00	to 4830+00	Road		7	180
17	12	4830+00	to 4838+50	Road		7	180
32	12	4833+25	to 4843+50	Road		4	42
12	12	4843+50	to 4843+50	Road		3	130
12	12	4843+75	to 4844+25	Stream		14	17
ALIGNMENT EXITS COLUMBIA COUNTY AND RE-ENTERS AT APPROX. STA 4872/5 (M-0271 (4+50))							
92	12	3+25	to 3+25	Stream		11	165
M-0271	32	3+50	to 6+25	Road		30	15
32	5+75	to 4879+00	Road		50	35	
24	4879+50	to 4884+00	Road		19	127	
18	4884+00	to 4891+00	Road		18	110	
24	4891+00	to 4893+00	Road		18	110	
32	4893+00	to 4897+00	Road		11	195	
24	4897+00	to 4911+00	Road		30	100	
18	4911+00	to 4917+75	Road		30	97	
24	4917+75	to 4919+50	Road		26	100	
12	4919+50	to 4919+75	Road		2	25	
12	4919+75	to 4923+00	Road		13	80	
24	4923+00	to 4931+25	Road		8	120	
12	4931+50	to 4931+75	Road		2	25	
24	4931+75	to 4937+50	Road		7	130	
24	4937+50	to 4937+50	Road		7	137	
24	4937+75	to 4960+50	Road		24	100	
24	4960+50	to 4969+50	Road		9	125	
32	4970+50	to 4974+50	Road		50	70	
32	4970+50	to 4974+25	Road		54	143	
24	4974+50	to 4979+75	Road		30	100	
12	4977+25	to 4977+75	Road		24	20	
24	4980+00	to 4985+00	Stream		1	800	
24	4985+50	to 4987+00	Stream		1	757	

Reroute Area
 SOURCE: Pennsylvania Erosion and Sediment Pollution Control Manual, Page 372

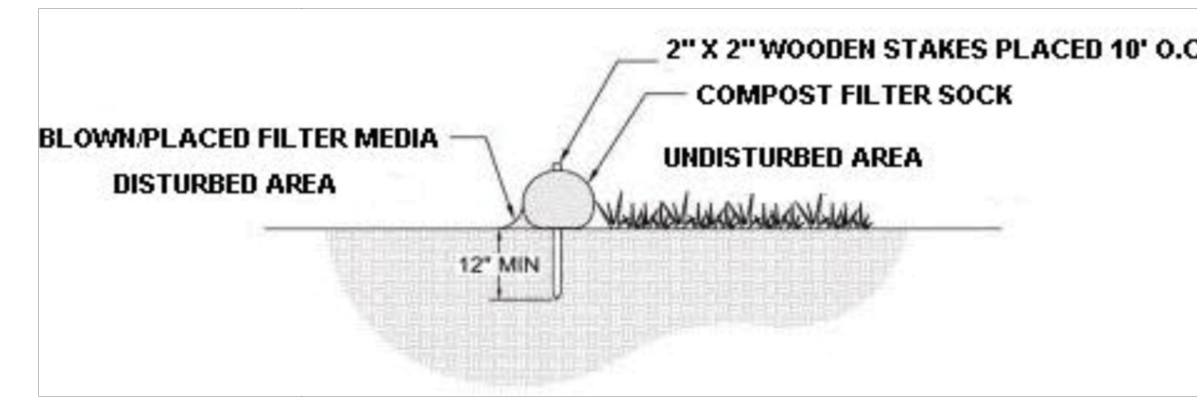
E&S WORKSHEET #1
Compost Filter Sock
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE
 LOCATION: COLUMBIA COUNTY
 PREPARED BY: ESS DATE: 03/02/2017
 CHECKED BY: AJB DATE: 04/10/2017



MILEPOST NO.	Di. In.	BEGIN STA.	END STA.	LOCATION	TYPE	SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
94	12	4987+75	to 4988+25	Road		4	40
24	4988+25	to 4990+25	Road		45	50	
12	4990+00	to 4990+25	Road		4	40	
24	4990+25	to 4998+75	Road		23	124	
18	4998+75	to 5001+00	Road		18	148	
18	5001+00	to 5009+25	Road		18	131	
12	5009+25	to 5009+50	Road		9	100	
12	5009+50	to 5014+50	Stream		4	75	
12	5014+50	to 5014+50	Stream		5	165	
24	5020+00	to 5020+25	Road		6	200	
24	5020+25	to 5031+75	Stream		12	177	
24	5031+50	to 5031+75	Stream		30	31	
24	5031+75	to 5034+25	Road		18	83	
32	5034+50	to 5035+75	Road		14	319	
24	5036+00	to 5037+75	Road		32	48	
32	5038+00	to 5038+25	Road		50	50	
24	5038+25	to 5050+75	Stream		20	150	
24	5039+25	to 5039+50	Stream		20	150	
24	5051+50	to 5059+25	Stream		40	50	
18	5059+25	to 5060+75	Stream		25	45	
18	5059+75	to 5060+75	Stream		25	45	
12	5060+75	to 5061+50	Stream		2	400	
12	5061+50	to 5066+75	Road		7	401	
M-0285	12	5064+67	to 2+00	Road		13	80
36	24	2+00	to 70+72	Road		15	161
18	5075+55	to 5076+00	Road		18	168	
24	5076+00	to 5082+00	Road		45	50	
24	5082+00	to 0+00	Road		12	156	
M-0197	24	0+00	to 10+50	Road		18	200
24	12+00	to 21+25	Road		8	140	
24	21+25	to 21+25	Road		6	270	
12	5119+25	to 5119+25	Road		10	66	
97	24	5119+75	to 5124+50	Road		9	150
24	5124+75	to 5125+00	Road		5	150	
24	5125+00	to 5128+00	Road		5	229	
24	5128+50	to 5133+50	Road		2	170	
24	5133+00	to 5133+75	Road		45	40	

Reroute Area
 SOURCE: Pennsylvania Erosion and Sediment Pollution Control Manual, Page 372

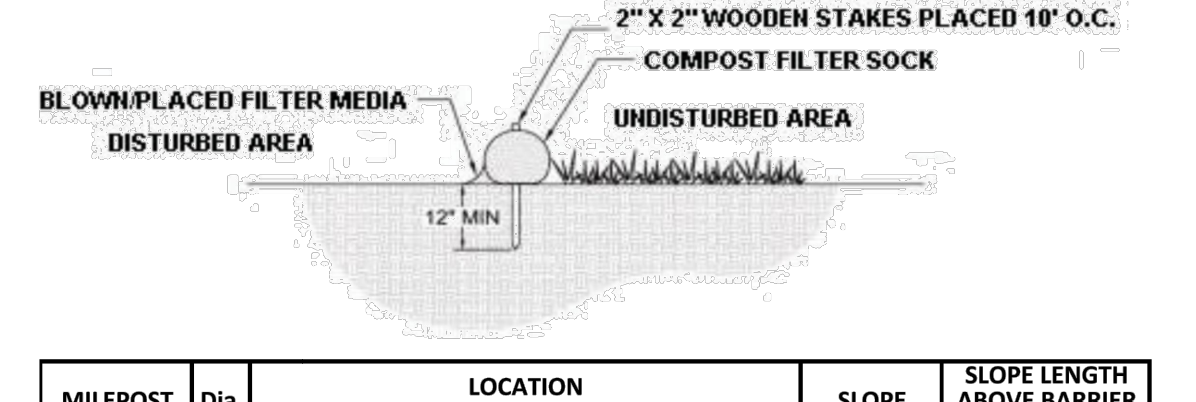
E&S WORKSHEET #1
Compost Filter Sock
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE
 LOCATION: COLUMBIA COUNTY
 PREPARED BY: ESS DATE: 03/02/2017
 CHECKED BY: AJB DATE: 04/10/2017



MILEPOST NO.	Di. In.	BEGIN STA.	END STA.	LOCATION	TYPE	SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
97	24	5134+00	to 5137+00	Road		15	150
24	5144+50	to 5153+00	Road		6	130	
24	5155+50	to 5166+25	Road		26	370	
18	5166+25	to 5167+25	Road		22	100	
12	5167+50	to 5167+75	Road		10	14	
12	5168+25	to 5177+75	Road		10	57	
12	5176+75	to 5176+75	Road		4	16	
24	5177+25	to 5179+75	Road		3	22	
M-0174	24	0+00	to 31+50	Road		12	154
24	31+60	to 31+60	Road		5	50	
M-0494	24	32+00	to 3+25	Road		8	130
12	3+50	to 4+25	Road		8	70	
24	6+50	to 15+00	Road		11	105	
M-0522	32	15+25	to 5+75	Road		6	515
12	5+75	to 6+00	Road		7	107	
99	12	5242+50	to 5242+75	Road		10	81
32	5242+75	to 5242+75	Road		15	322	
12	5270+50	to 5271+25	Road		6	75	
12	5277+75	to 5278+50	Road		4	40	
100	24	5278+00	to 5284+00	Road		34	81
M-0495	24	0+00	to 10+25	Road		17	131
24	7+00	to 12+00	Road		35	71	
32	10+25	to 14+25	Road		13	80	
24	17+00	to 17+50	Road		14	115	
18	17+50	to 18+00	Road		19	65	
24	18+25	to 31+25	Road		10	135	
12	31+25	to 33+50	Road		9	96	
12	33+50	to 37+00	Wetland		8	70	
24	37+00	to 40+00	Wetland		25	111	
32	40+00	to 44+75	Road		9	421	
101	24	45+00	to 50+00	Road		19	127
M-0179	12	50+00	to 1+50	Road		5	40
24	1+00	to 6+00	Road		5	182	

Reroute Area
 SOURCE: Pennsylvania Erosion and Sediment Pollution Control Manual, Page 372

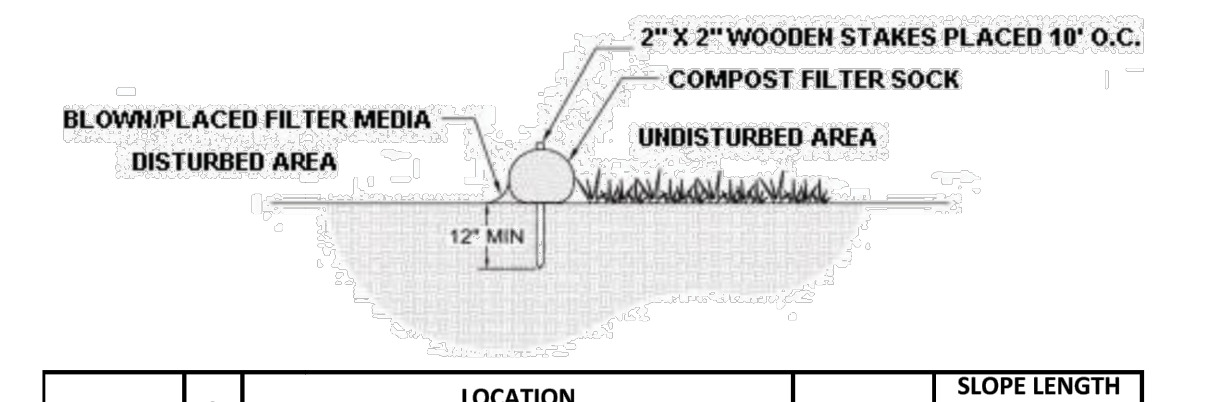
E&S WORKSHEET #1
Compost Filter Sock
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE
 LOCATION: COLUMBIA COUNTY
 PREPARED BY: ESS DATE: 03/02/2017
 CHECKED BY: AJB DATE: 04/10/2017



MILEPOST NO.	Di. In.	BEGIN STA.	END STA.	LOCATION	TYPE	SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
M-0390	24	0+00	to 7+00	Road		57	49
12	4+00	to 7+00	Road		19	72	
24	5+00	to 5357+50	Road		23	199	
32	5358+00	to 5365+50	Wetland/Stream		10	406	
12	5365+75	to 5368+00	Wetland/Stream		12	95	
M-0406	12	5368+00	to 1+25	Road		3	239
12	1+50	to 2+00	Road		8	23	
12	5375+75	to 5376+25	Road		3	15	
24	5379+00	to 5384+00	Stream		6	148	
102	24	5384+00	to 5387+50	Stream		6	357
M-0423	24	5386+00	to 2+00	Road		12	123
18	1+75	to 2+25	Road		12	129	
18	2+25	to 10+75	Road		18	98	
12	10+75	to 11+75	Road		4	151	
18	11+00	to 16+00	Road		27	75	
12	15+75	to 16+25	Stream		43	20	
24	16+00	to 18+75	Road		27	101	
12	19+00	to 21+00	Road		4	201	
32	21+00	to 23+50	Road		9	421	
18	23+50	to 23+75	Road		17	93	
M-0499	24	24+00	to 1+25	Road		30	81
18	1+50	to 4+00	Road		16	108	
12	4+00	to 5+00	Road		4	100	
18	4+00	to 7+25	Road		14	111	
12	6+00	to 7+50	Road		11	33	
24	7+50	to 11+00	Road		26	96	
12	11+50	to 11+50	Road		15	44	
M-0423	18	11+50	to 59+00	Road		22	77
12	60+00	to 61+00	Road		32	12	
18	60+75	to 70+75	Road		19	93	
24	71+00	to 76+50	Road		52	43	
32	77+50	to 77+50	Road		27	146	
18	78+00	to 78+25	Stream		43	19	
18	79+00	to 80+50	Wetland		20	129	
32	80+50	to 82+00	Road		12	362	
24	82+00	to 82+50	Road		12	230	
18	82+75	to 89+25	Road		13	167	

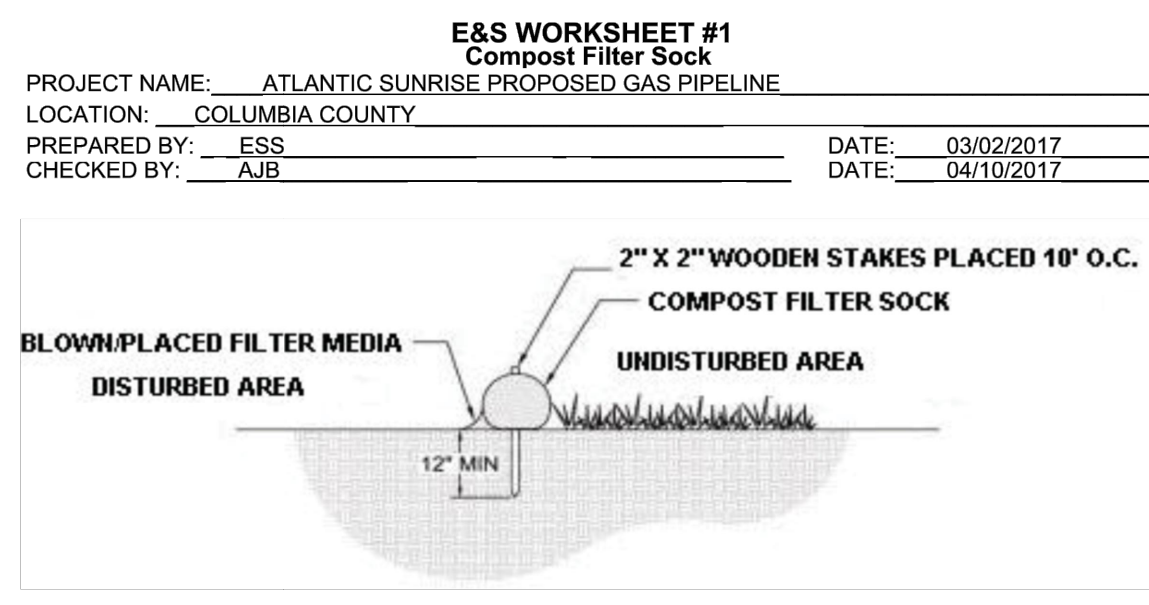
Reroute Area
 SOURCE: Pennsylvania Erosion and Sediment Pollution Control Manual, Page 372

E&S WORKSHEET #1
Compost Filter Sock
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE
 LOCATION: COLUMBIA COUNTY
 PREPARED BY: ESS DATE: 03/02/2017
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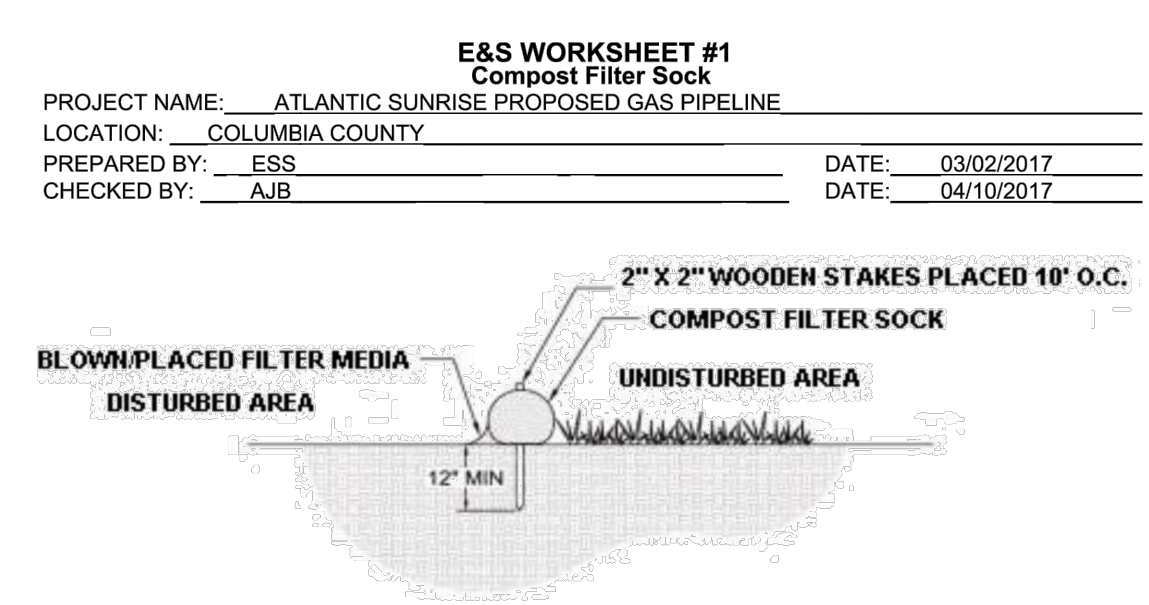
MILEPOST NO.	Di. In.	BEGIN STA.	END STA.	LOCATION	TYPE	SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
12	89+50	to 90+50	Road		17	86	
18	90+50	to 92+00	Wetland/Road		13	17	
12	92+00	to 95+00	Wetland/Road		9	117	
18	93+75	to 120+00	Road		12	133	
12	120+50	to 131+25	Road		6	172	
12	121+75	to 123+50	Road		3	128	
18	131+25	to 0+00	Road		23	85	
M-0456	18	0+00	to 8+50	Road		20	60
18	8+50	to 8+50	Road		51	23	
12	9+00	to 9+00	Road		5	5	
18	9+25	to 9+25	Stream		20	91	
18	9+65	to 160+50	Stream		20	91	
12	158+50	to 160+00	Road		4	252	
12	159+00	to 160+25	Wetland		9	122	
12	160+25	to 160+75	Wetland		9	122	
12	176+50	to 188+00	Wetland		2	488	
12	187+50	to 187+50	HDD Pullback		2	208	
12	188+00	to 189+50	Wetland/Stream		2	432	
18	190+50	to 191+00	Wetland/Stream		4	424	
12	193+00	to 193+25	Road		35	8	
12	193+25	to 194+00	Road		19	76	
32	194+25	to 196+00	Road		21	200	
32	196+25	to 196+75	Road		7	112	
12	196+75	to 201+50	R				

TABLE 1: SEDIMENT BARRIER SUMMARY



MILEPOST NO.	Dia. In.	BEGIN STA.	END STA.	TYPE	SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
113	18	5972+25	5972+25	Stream	20	86
		5971+25	5971+25	Road	6	126
		5971+50	5971+75	Road	2	138
		5972+25	5983+25	Road	8	230
		5983+75	5983+75	Road	14	43
		5984+25	5984+50	Road	4	94
		5985+50	5985+50	Road	2	100
		5986+50	5989+25	Road	2	223
		5988+75	5990+25	Wetland/Stream	4	83
		5990+25	5992+50	Road	2	817
		5992+25	5992+25	Road	2	292
		5992+75	5994+75	Road	2	891
		5995+00	5995+00	Wetland/Stream	2	330
		5996+50	5996+50	Road	2	1106
		5996+50	6007+50	Road	2	364
		6008+75	6008+75	Road	2	138
		6009+25	6009+25	Road	2	473
		6010+00	6013+00	Road	2	197
		6024+00	6024+00	Road	2	755
		6037+50	6037+50	Road	2	312
		6038+00	6042+00	Road	3	508
		6042+75	6046+00	Road	3	478
		6046+25	6046+75	Road	2	353
		6047+00	6052+00	Road	5	250
		6055+50	6056+75	Road	4	210
		6057+00	6057+25	Road	5	100
		6057+50	6062+00	Road	9	65
		6062+00	6065+00	Road	3	350
		6064+75	6065+00	Road	4	383
		6065+00	6077+00	Road	13	80
		6077+50	6080+50	Road	4	110
		6083+00	6083+00	Road	3	220
		6083+25	6083+25	Road	3	600
		6095+00	6095+50	Wetland/Stream	1	200
		6097+00	6100+00	Road	10	75
		6098+50	6099+25	Wetland	3	75

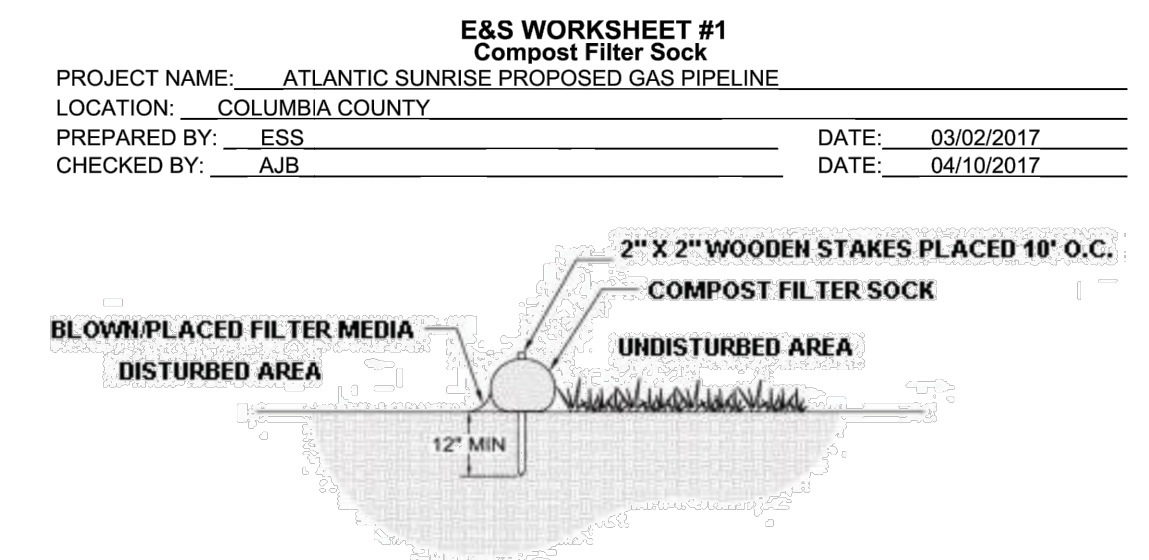
SOURCE: Pennsylvania Erosion and Sediment Pollution Control Manual, Page 372



MILEPOST NO.	Dia. In.	BEGIN STA.	END STA.	TYPE	SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
115	12	6100+25	6100+25	Road	8	100
		6100+50	6111+50	Road	9	145
		6111+75	6117+75	Road	10	400
		6117+50	6117+75	Road	14	135
		6118+00	6125+00	Road	28	97
		6118+00	6129+00	Road	10	125
		6129+00	6129+75	Road	14	93
		6127+00	6130+00	Road	11	60
		6130+00	6130+00	Road	10	78
		6130+00	6131+00	Road	20	66
		6131+00	6131+25	Road	18	56
		6131+75	6132+75	Road	31	16
		6133+00	6135+00	Road	14	85
		6135+00	6136+00	Road	17	136
		6136+25	6142+75	Road	14	125
		6143+00	6147+00	Road	20	92
		6147+00	6148+50	Road	7	465
		6148+50	6153+25	Road	20	65
		6153+50	6156+50	Road	20	130
		6156+50	6163+75	Road	30	40
		6163+75	6168+25	Road	4	375
		6168+25	6170+00	Road	14	60
		6170+50	6172+00	Road	6	50
		6172+50	6177+50	Road	6	320
		6177+50	6179+50	Road	19	75
		6179+50	6186+00	Road	8	264
		6185+00	6186+00	Road	4	256
		6186+50	6188+50	Road	7	275
		6188+00	6190+50	Road	3	330
		6189+00	6197+75	Road	3	215
		6197+75	6205+00	Road	20	130
		6201+25	6205+00	Road	20	100
		6206+00	6206+25	Road	7	5
		6205+75	6210+75	Road	7	120
		6210+75	6211+00	Road	9	71
		6212+00	6216+25	Road	13	80
		6216+50	6216+75	Road	6	124
		6216+50	6217+50	Road	6	465
		6217+50	6232+25	Road	16	95
		6232+25	6232+50	Road	16	40

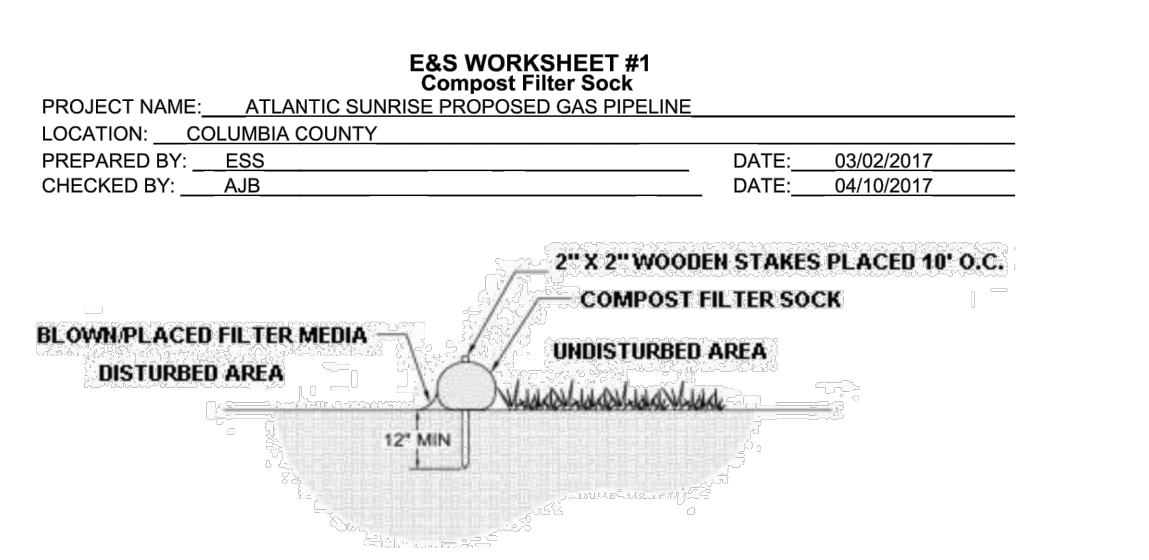
- Reroute Area

SOURCE: Pennsylvania Erosion and Sediment Pollution Control Manual, Page 372



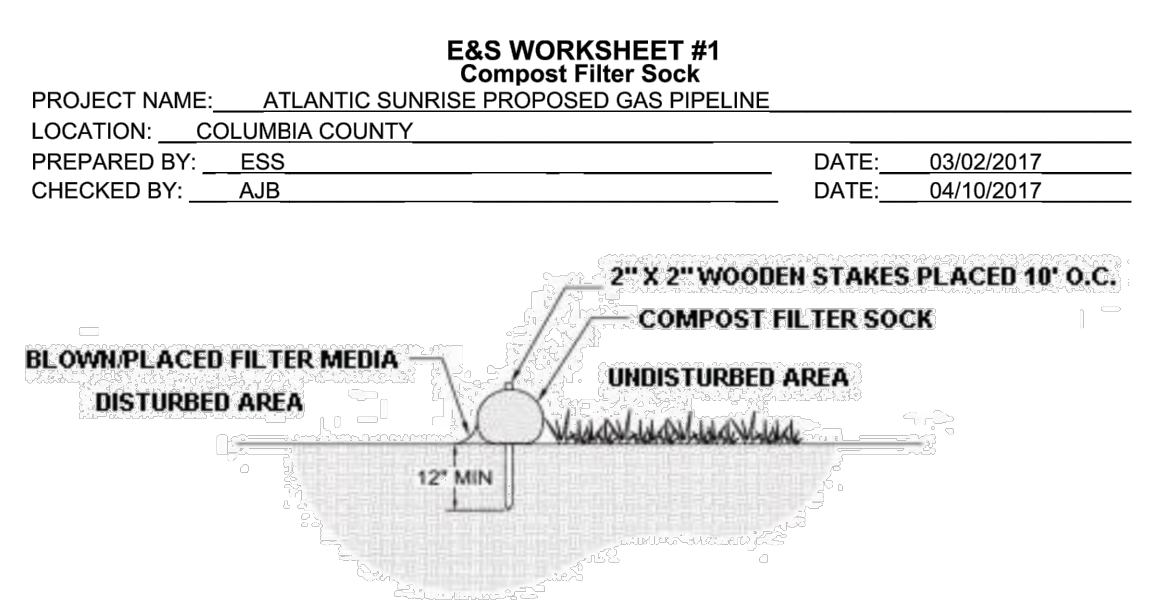
MILEPOST NO.	Dia. In.	BEGIN STA.	END STA.	TYPE	SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
120	18	6354+25	6354+50	Road	14	86
		6354+50	6355+00	Road	13	152
		6355+00	6355+25	Road	11	60
		6355+25	6356+00	Road	10	58
		6356+25	6356+50	Road	15	30
		6356+50	6359+50	Road	10	35
		6360+25	6365+00	Road	14	100
		6365+50	6369+25	Road	14	75
		6369+75	6367+25	Road	14	65
		6367+50	6368+75	Road	11	125
		6369+00	6371+50	Road	7	110
		6371+50	6373+75	Road	7	113
		6374+00	6377+00	Road	5	180
		6377+50	6381+75	Road	5	632
		6381+00	6384+00	Road	16	100
		6384+00	6403+50	Wetland/Stream	16	100
		6403+50	6404+75	Road	20	80
		6404+75	6418+25	Road	6	200
		6418+25	6418+25	Road	11	135
		6418+50	6421+50	Road	11	135
		6421+75	6430+50	Road	4	350
		6430+50	6439+50	Road	12	108
		6439+50	6442+50	Road	17	130
		6442+50	6442+75	Road	16	140
		6442+75	6447+25	Road	7	488
		6451+50	6451+75	Road	13	80
		6451+50	6468+50	Road	25	144
		6468+50	6473+50	Road	16	104
		6474+00	6474+25	Road	25	20
		6474+25	6474+75	Stream	16	59
		6477+50	6480+25	Road	23	140
		6480+50	6483+50	Road	31	89
		6482+75	6491+25	Road	9	415
		6483+25	6500+50	Stream	25	146
		6500+75	6500+80	Stream	15	109
		6500+75	6504+00	Road	14	244
		6504+00	6504+50	Road	15	60
		6505+25	6505+50	Stream	10	60

SOURCE: Pennsylvania Erosion and Sediment Pollution Control Manual, Page 372



MILEPOST NO.	Dia. In.	BEGIN STA.	END STA.	TYPE	SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
123	18	6505+75	6512+50	Wetland	14	92
		6512+50	6512+50	Wetland	17	841
		6512+75	6526+00	Road	21	125
		6526+00	6529+25	Road	12	167
		6529+25	6538+50	Road	13	110
		6538+50	6545+50	Road	11	130
		6539+00	6545+50	Road	13	110
		6545+75	6550+50	Road	4	620
		6550+75	6551+75	Road	10	60
		6551+50	6555+50	Road	25	67
		6552+50	6554+25	Road	5	175
		6555+50	6568+50	Road	8	180
		6568+50	6579+25	Road	32	40
		6579+50	6579+00	Stream	8	100
		6578+75	6582+50	Road	2	180
		6582+50	6583+75	Stream	10	65
		6583+75	6584+50	Road/Wetland	14	65
		6585+00	6593+00	Road	16	85
		6593+00	6596+00	Road	7	381
		6596+25	5+00	Road	7	215

SOURCE: Pennsylvania Erosion and Sediment Pollution Control Manual, Page 372



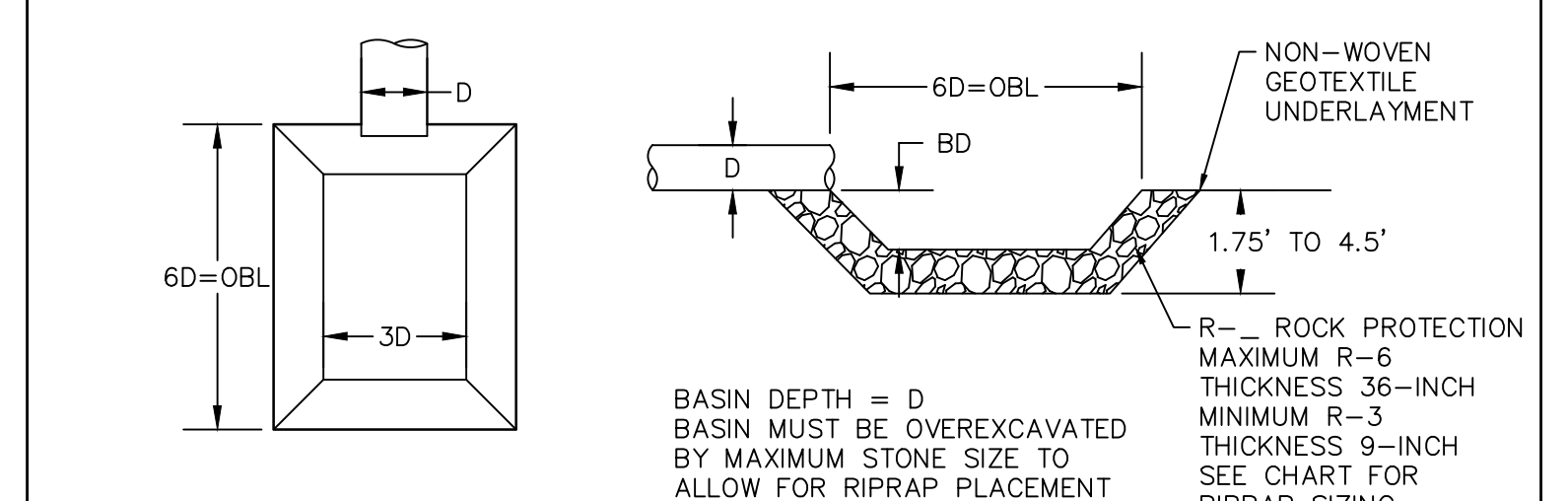
MILEPOST NO.	Dia. In.	BEGIN STA.	END STA.	TYPE	SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
118	12	6233+50	6235+00	Stream/Wetland	25	30
		6234+75	6240+50	Road	17	70
		6240+75	6244+50	Road	25	95
		6244+50	6247+50	Road	30	40
		6247+50	6247+75	Road	42	50
		6248+25	6255+00	Road	12	125
		6255+00	6262+75	Road	12	125
		6262+75	6265+00	Road	8	380
		6265+25	6265+50	Road	8	380
		6265+75	6272+00	Road	17	150
		6272+00	6274+50	Road	7	230
		6274+50	6290+25	Road	4	150
		6290+50	6295+25	Road	9	100
		6295+50	6295+50	Road	25	90
		6296+75	6297+00	Stream	23	40
		6297+25	6297+75	Road	12	97
		6297+25	6298+00	Road	12	97
		6300+25	6300+25	Road	9	165
		8+50	8+25	Road	13	130
		8+50	8+75	Road	13	140
		8+75	12+25	Road	14	150
		12+25	12+50	Road	14	150
		12+50	13+25	Road	14	150
		13+25	15+00	Road	8	155
		15+00	6327+50	Road	21	100
		6327+50	6329+50	Road	27	90
		6329+50	6330+50	Road	16	95
		6330+50	6331+00	Stream	16	95
		6331+00	6335+50	Road	13	175
		6335+75	6336+25	Road	40	80
		6336+25	6337+00</			

TABLE 3: WATERBODIES CROSSED BY CPLS PIPELINE AND ACCESS ROADS IN COLUMBIA COUNTY

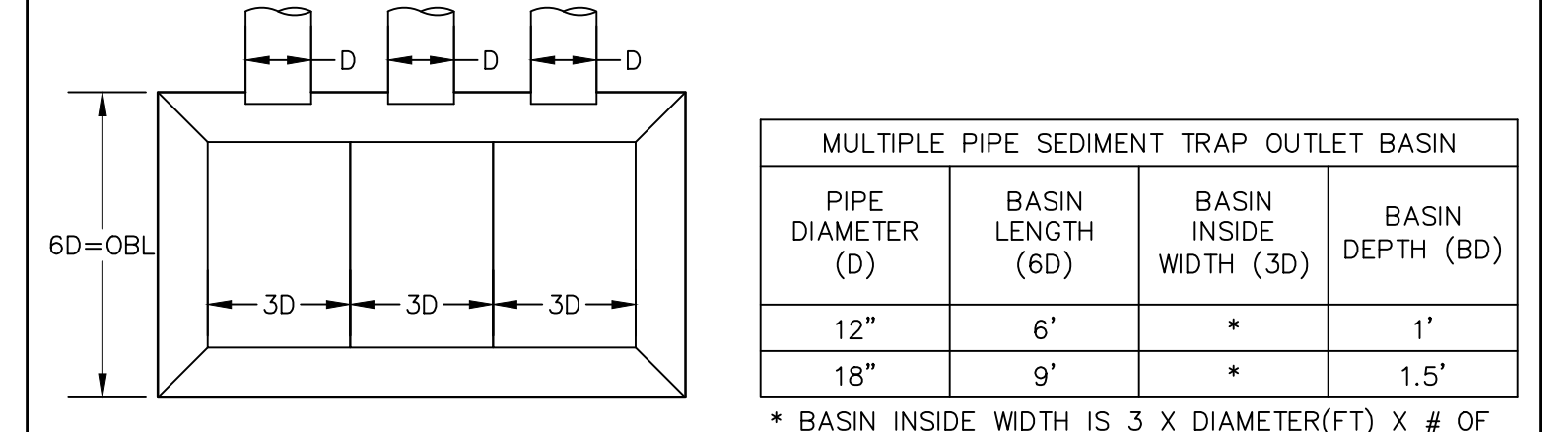
Waterbody ID	Waterbody Name	Milepost	County	Township	Stream Type	State Water Quality Use Classification - Designated Use	State Fishery Classification	Crossing Method	Crossing Window
WW-T45-11001	South Branch Roaring Creek (WW-T45-11001)	90.99	Columbia	Ralpho	Perennial	HQ-CWF, MF	Class A Wild Trout Waters	Dam-and-Pump	April 2 through September 30
WW-T51-11001	UNT to South Branch Roaring Creek (WW-T51-11001)	91.01	Columbia	Cleveland	Intermittent	HQ-CWF, MF	Class A Wild Trout Waters	Dam-and-Pump	April 2 through September 30
WW-T47-11001	UNT to South Branch Roaring Creek (WW-T47-11001)	91.74	Columbia	Cleveland	Perennial	HQ-CWF, MF	Class A Wild Trout Waters	Dam-and-Pump	April 2 through September 30
WW-T44-11001	South Branch Roaring Creek (WW-T44-11001)	M-0437-0.06	Columbia	Cleveland	Perennial	HQ-CWF, MF	Class A Wild Trout Waters	Dam-and-Pump	April 2 through September 30
WW-T31-11001	UNT to Mugser Run (WW-T31-11001)	94.13	Columbia	Cleveland	Intermittent	HQ-CWF, MF	Approved Trout Waters, Trout Stocked Stream, Wild Trout Waters	Dam-and-Pump	January 1 through February 28 & June 16 through September 30
WW-T04-11001	Mugser Run (WW-T04-11001)	94.43	Columbia	Cleveland	Perennial	HQ-CWF, MF	Approved Trout Waters, Trout Stocked Stream, Wild Trout Waters	Dam-and-Pump	January 1 through February 28 & June 16 through September 30
WW-T04-11001A	UNT to Mugser Run (WW-T04-11001A)	94.43	Columbia	Cleveland	Intermittent	HQ-CWF, MF	Approved Trout Waters, Trout Stocked Stream, Wild Trout Waters	Dam-and-Pump	January 1 through February 28 & June 16 through September 30
WW-T04-11002	UNT to Roaring Creek (WW-T04-11002)	94.96	Columbia	Cleveland	Perennial	TSF, MF	Wild Trout Waters	Conventional Bore	January 1 through September 30
WW-T28-12005	UNT to Roaring Creek (WW-T28-12005)	95.29	Columbia	Cleveland	Intermittent	TSF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T28-12004	UNT to Roaring Creek (WW-T28-12004)	95.44	Columbia	Franklin	Intermittent	TSF, MF	Approved Trout Waters, Trout Stocked Stream, Wild Trout Waters	Dam-and-Pump	January 1 through February 28 & June 16 through September 30
WW-T35-11001	Unnamed Pond (WW-T35-11001)	95.83	Columbia	N/A	N/A	N/A	None	N/A	None
WW-T35-11001	Roaring Creek (WW-T35-11001)	95.85	Columbia	Franklin	Perennial	TSF, MF	Approved Trout Waters, Trout Stocked Stream, Wild Trout Waters	Dam-and-Pump	January 1 through February 28 & June 16 through September 30
WW-T90-14003	UNT to Mud Run (WW-T90-14003)	113.37	Columbia	Greenwood	Intermittent	TSF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T21-13001	Mud Run (WW-T21-13001)	113.43	Columbia	Greenwood	Perennial	TSF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T21-13001A	UNT to Mud Run (WW-T21-13001A)	113.54	Columbia	Greenwood	Perennial	TSF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T16-14003	Little Green Creek (WW-T16-14003)	115.44	Columbia	Greenwood	Perennial	TSF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T16-14001	UNT to Green Creek (WW-T16-14001)	116.01	Columbia	Greenwood	Ephemeral	TSF, MF	Wild Trout Waters	N/A	None
WW-T16-14002	UNT to Green Creek (WW-T16-14002)	116.06	Columbia	Greenwood	Intermittent	TSF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T70-12003	Hemlock Creek (WW-T70-12003)	M-0423-3.01	Columbia	Hemlock	Perennial	CWF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T70-12011	UNT to Fishing Creek (WW-T70-12011)	M-0423-3.01	Columbia	Hemlock	Perennial	CWF, MF	None	Dam-and-Pump	None
WW-T70-12011-1	Little Fishing Creek (WW-T70-12011-1)	M-0423-3.28	Columbia	Hemlock	Perennial	CWF, MF	WWCW Fisheries Streams	Open Cut	June 16 through February 28
WW-T70-12012	UNT to Little Fishing Creek (WW-T70-12012)	M-0423-3.83	Columbia	Hemlock	Ephemeral	CWF, MF	None	Dam-and-Pump	None
WW-T01-12005	UNT to Little Fishing Creek (WW-T01-12005)	M-0423-4.77	Columbia	Hemlock	Intermittent	CWF, MF	None	Dam-and-Pump	None
WW-T15-14003	UNT to Green Creek (WW-T15-14003)	119.26	Columbia	Jackson	Perennial	TSF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T15-14005	UNT to Green Creek (WW-T15-14005)	119.90	Columbia	Jackson	Intermittent	TSF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T15-14005	Green Creek (WW-T15-14005)	120.12	Columbia	Jackson	Perennial	TSF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T15-14007A	UNT to Green Creek (WW-T15-14007A)	120.12	Columbia	Jackson	Perennial	TSF, MF	Wild Trout Waters	N/A	None
WW-T15-14008	UNT to Green Creek (WW-T15-14008)	121.28	Columbia	Jackson	Intermittent	TSF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T15-14001	UNT to York Hollow (WW-T15-14001)	122.62	Columbia	Jackson	Perennial	CWF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T17-14002	UNT to York Hollow (WW-T17-14002)	123.12	Columbia	Jackson	Intermittent	CWF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T17-14003	York Hollow (WW-T17-14003)	123.20	Columbia	Jackson	Ephemeral	CWF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T06-14001	West Creek (WW-T06-14001)	124.60	Columbia	Perennial	CWF, MF	Approved Trout Waters, Wild Trout Waters	Dam-and-Pump	January 1 through September 30	
WW-T06-14001	UNT to West Creek (WW-T06-14001)	124.67	Columbia	Perennial	CWF, MF	Approved Trout Waters, Wild Trout Waters	Dam-and-Pump	January 1 through September 30	
WW-T04-12001	Susquehanna River (WW-T04-12001)	99.66	Columbia	Montour	Perennial	WWF	WWCW Fisheries Streams	HDD	June 16 through February 28
WW-T04-12002	UNT to Montour Run (WW-T04-12002)	101.61	Columbia	Montour	Intermittent	CWF, MF	None	Dam-and-Pump	None
WW-T04-12003	UNT to Montour Run (WW-T04-12003)	101.61	Columbia	Montour	Intermittent	CWF, MF	None	Dam-and-Pump	None
WW-T04-12004	UNT to Montour Run (WW-T04-12004)	101.62	Columbia	Montour	Intermittent	CWF, MF	None	Dam-and-Pump	None
WW-T04-12005	Montour Run (WW-T04-12005)	101.65	Columbia	Montour	Perennial	CWF, MF	None	Dam-and-Pump	None
WW-T04-12005A	UNT to Montour Run (WW-T04-12005A)	101.68	Columbia	Montour	Intermittent	CWF, MF	None	Dam-and-Pump	None
WB-T89-001	Unnamed Pond (WB-T89-001)	101.98	Columbia	Montour	N/A	CWF, MF	None	Dam-and-Pump	None
WW-T89-001	UNT to Montour Run (WW-T89-001)	102.00	Columbia	Montour	Perennial	CWF, MF	None	Dam-and-Pump	None
WW-T04-12006	UNT to Montour Run (WW-T04-12006)	102.02	Columbia	Montour	Perennial	CWF, MF	None	Dam-and-Pump	None
WW-T04-12007	UNT to Montour Run (WW-T04-12007)	M-0423-0.30	Columbia	Montour	Intermittent	CWF, MF	None	Dam-and-Pump	None
WW-T01-12010	Little Fishing Creek (WW-T01-12010)	M-0423-3.58	Columbia	Mount Pleasant	Perennial	CWF, MF	WWCW Fisheries Streams	Dam-and-Pump	June 16 through February 28
WW-T81-13001	Little Fishing Creek (WW-T81-13001)	107.03	Columbia	Mount Pleasant	Perennial	CWF, MF	None	Dam-and-Pump	None
WW-T52-13001C	UNT to Little Fishing Creek (WW-T52-13001C)	M-0214-0.17	Columbia	Mount Pleasant	Intermittent	CWF, MF	None	Dam-and-Pump	None
WW-T52-13001	UNT to Little Fishing Creek (WW-T52-13001)	M-0214-0.17	Columbia	Mount Pleasant	Perennial	CWF, MF	None	Dam-and-Pump	None
WW-T01-13002	UNT to Little Fishing Creek (WW-T01-13002)	108.67	Columbia	Mount Pleasant	Intermittent	CWF, MF	None	Dam-and-Pump	None
WW-T01-13003	UNT to Little Fishing Creek (WW-T01-13003)	108.75	Columbia	Mount Pleasant	Intermittent	CWF, MF	None	Dam-and-Pump	None
WW-T01-13004	UNT to Little Fishing Creek (WW-T01-13004)	109.17	Columbia	Mount Pleasant	Intermittent	CWF, MF	None	Dam-and-Pump	None
WW-T06-13001	UNT to Deerlick Run (WW-T06-13001)	109.93	Columbia	Mount Pleasant	Intermittent	CWF, MF	Wild Trout Waters (Under Review)	Dam-and-Pump	January 1 through September 30
WW-T06-13002	UNT to Deerlick Run (WW-T06-13002)	110.20	Columbia	Mount Pleasant	Perennial	CWF, MF	Wild Trout Waters (Under Review)	Dam-and-Pump	January 1 through September 30
WW-T90-14006	UNT to Deerlick Run (WW-T90-14006)	146.94	Columbia	Mount Pleasant	Intermittent	CWF, MF	None	Dam-and-Pump	None
WW-T35-13002	Deerlick Run (WW-T35-13002)	111.23	Columbia	Mount Pleasant	Perennial	CWF, MF	Wild Trout Waters (Under Review)	Dam-and-Pump	January 1 through September 30
WW-T35-13001	UNT to Deerlick Run (WW-T35-13001)	111.59	Columbia	Mount Pleasant	Perennial	CWF, MF	Wild Trout Waters (Under Review)	Dam-and-Pump	January 1 through September 30

Waterbody ID	Waterbody Name	Milepost	County	Township	Stream Type	State Water Quality Use Classification - Designated Use	State Fishery Classification	Crossing Method	Crossing Window
WW-T70-12005	Fishing Creek (WW-T70-12005)	M-0423-0.07	Columbia	Hemlock	Perennial	WWF, MF	WWCW Fisheries Streams	Water Withdrawal	June 16 through February 28
WW-T88-004	Susquehanna River (WW-T88-004)	99.63	Columbia	Catwissa	Perennial	WWF	WWCW Fisheries Streams	Water Withdrawal	June 16 through February 28

Key: CWF = Coldwater Fishes, MF = Migratory Fishes, UNT = Unnamed Tributary

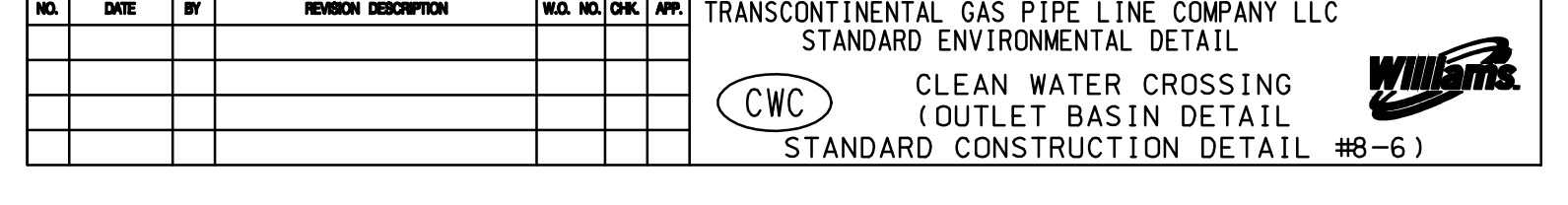


PIPE DIAMETER (D)	Basin Length (6D)	Basin Inside Width (3D)	Basin Depth (BD)
12"	6'	3'	1'
18"	9'	4.5'	1.5'



PIPE DIAMETER (D)	Basin Length (6D)	Basin Inside Width (3D)	Basin Depth (BD)
12"	6'	*	1'
18"	9'	*	1.5'

* Basin Inside Width is 3 x Diameter (FT) x # of Pipes



- NOTES:
- ALL SEDIMENT TRAP OUTLET BASINS SHALL BE INSPECTED ON AT LEAST A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT.
 - DISPLACED RIPRAP WITHIN THE OUTLET BASIN SHALL BE REPLACED IMMEDIATELY.
 - SIDE SLOPES SHALL NOT EXCEED 1.5H:1V.
 - IF NOT ON LEVEL GROUND, AREA NEAR PIPE SHALL BE EXCAVATED TO MAKE GENERALLY LEVEL TRAP.
 - TRAP SHALL BE REMOVED AND DISTURBED AREA TO BE RESTORED IN ACCORDANCE WITH E AND S PLAN.
 - RIPRAP WILL HAVE NON-WOVEN GEOTEXTILE UNDERLAYMENT BETWEEN THE STONE AND THE SOIL.
 - CONTRACTOR SHALL USE SEDIMENT TRAP OUTLET BASIN WHEN FIELD CONDITIONS PREVENT THE EFFECTIVENESS OF THE LEVEL SPREADER.
 - DESIGN AND CALCULATIONS PROVIDED BY STV ENERGY SERVICES, INC.

NO.	DATE	BY	REVISION DESCRIPTION	NO.	NO.	CHK.	APP.
1	12/20/2015	BL	ISSUED FOR PADEP SUBMITTAL	1	12/20/2015	JLK	SMK
2	12/20/2015	BL	ISSUED FOR PADEP RESUBMITTAL	2	12/20/2015	JLK	SMK
3	12/20/2015	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	3	12/20/2015	JLK	SMK
4	12/20/2015	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	4	12/20/2015	JLK	SMK
5	12/20/2015	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #3	5	12/20/2015	JLK	SMK



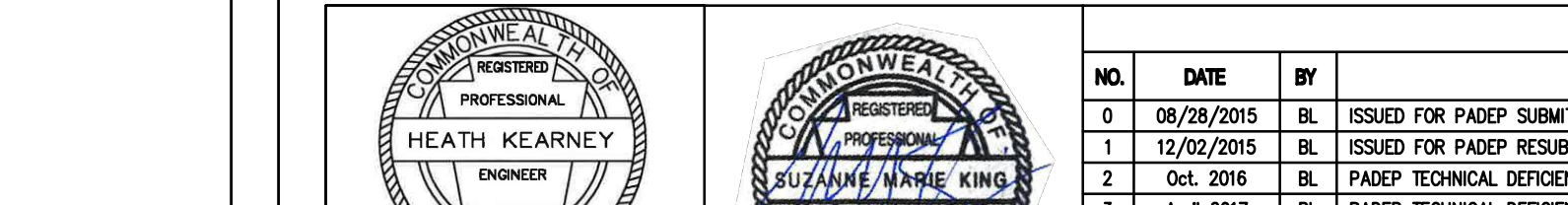
- NOTES:
- LEVEL SPREADER PIPES TO BE 12-INCH JM EAGLE EAGLE CORR PE PERFORATED PIPE (OR APPROVED EQUAL) AND SHALL BE CAPPED AT BOTH ENDS.
 - LEVEL SPREADER TO BE INSTALLED PARALLEL TO CONTOURS AT LEVEL ELEVATION.
 - PERFORATED PIPE TO BE UNDERLAIN WITH GEOTEXTILE FABRIC AND COVERED WITH AASHTO NO. 1 STONE. MINIMUM STONE COVER SHALL BE 4-INCHES OVER PERFORATED PIPE.
 - ALL LEVEL SPREADER STONE WILL BE REMOVED AND DISTURBED AREA TO BE RESTORED IN ACCORDANCE WITH E&S PLAN.
 - LEVEL SPREADERS TO BE INSTALLED AT ALL TEMPORARY SLOPE PIPE DISCHARGES AT LOW POINTS OF DIVERSION BERM.
 - LEVEL SPREADERS TO BE INSPECTED WEEKLY OR AFTER MEASURABLE RAINFALL EVENT AND SHALL BE MAINTAINED IN GOOD CONDITION AT ALL TIMES.
 - TOTAL REQUIRED LEVER SPREADER LENGTH TO BE L1 + L2.
 - THE EDGE TO EDGE DIMENSION OF THE MULTIPLE SLOPE PIPES IS CALLED OUT AS A MINIMUM AND MAY BE INCREASED TO FACILITATE INSTALLATION OF SANDBAGS, T-CONNECTIONS, AND ACCESS ACROSS THE SLOPE PIPES.

NO.	DATE	BY	REVISION DESCRIPTION	NO.	NO.	CHK.	APP.
1	12/20/2015	BL	ISSUED FOR PADEP SUBMITTAL	1	12/20/2015	JLK	SMK
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4	12/20/2015	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	4	12/20/2015	JLK	SMK
5	12/20/2015	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #3	5	12/20/2015	JLK	SMK



- NOTES:
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3	12/20/2015	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	3	12/20/2015	JLK	SMK
4	12/20/2015	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	4	12/20/2015	JLK	SMK
5	12/20/2015	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #3	5	12/20/2015	JLK	SMK



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4	12/20/2015	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	4	12/20/2015	JLK	SMK
5	12/20/2015	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #3	5	12/20/2015	JLK	SMK

Columbia County - South Temporary Perforated Pipe Level Spreader Calculations

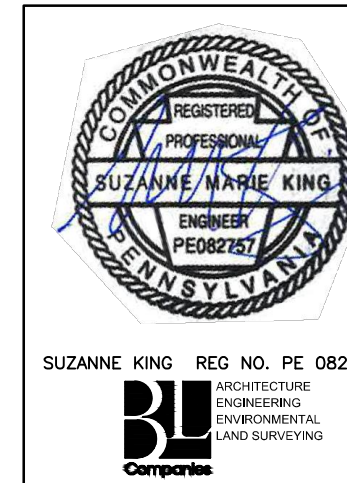
Waterbody ID	Waterbody Name	Milepost	County	Township	Stream Type	State Water Quality Use Classification - Designated Use	State Fishery Classification	Crossing Method	Crossing Window	Level Spreader	Outlet Basin
91.01A	1	12	2.7								

TABLE 5: LOCATIONS OF ACID SOILS ALONG CPLS PIPELINE IN COLUMBIA COUNTY

MP Begin	MP End	County	Map Unit Symbol	pH	MP Begin	MP End	County	Map Unit Symbol	pH	MP Begin	MP End	County	Map Unit Symbol	pH
90.99	91.02	COLUMBIA	TS	6.2	99.52	99.57	COLUMBIA	W	5.0	107.02	107.03	COLUMBIA	W	Water
91.02	91.03	COLUMBIA	LI2	5.3	99.57	99.75	COLUMBIA	W	Water	107.03	107.28	COLUMBIA	TS	6.2
91.03	91.06	COLUMBIA	KE	5.3	99.75	99.82	COLUMBIA	W	5.8	M-0214.000	M-0214.010	COLUMBIA	TS	6.2
91.06	91.19	COLUMBIA	LI2	5.8	99.82	99.97	COLUMBIA	Tt	6.2	M-0214.010	M-0214.035	COLUMBIA	KE	5.3
91.19	91.30	COLUMBIA	LI3	5.8	99.97	100.00	COLUMBIA	Md	5.8	M-0214.035	M-0214.043	COLUMBIA	KaC3	5.3
91.30	91.59	COLUMBIA	LI2	5.8	100.00	100.08	COLUMBIA	LgB	5.3	M-0195.029	M-0195.036	COLUMBIA	KaC3	5.3
91.59	91.65	COLUMBIA	LI3	5.8	M-0495.000	M-0495.008	COLUMBIA	LgB	5.3	M-0195.036	M-0195.045	COLUMBIA	KaD2	5.3
91.65	91.67	COLUMBIA	KE	5.3	M-0495.008	M-0495.015	COLUMBIA	LgC2	5.3	M-0195.045	M-0195.045	COLUMBIA	KE	5.3
91.67	91.73	COLUMBIA	LI2	5.3	M-0495.015	M-0495.018	COLUMBIA	HhD3	5.0	M-0195.045	M-0195.047	COLUMBIA	KaD3	5.3
91.73	91.75	COLUMBIA	TS	6.2	M-0495.018	M-0495.017	COLUMBIA	HhD2	5.0	M-0195.047	M-0195.058	COLUMBIA	LI2	5.8
M-0437.005	M-0437.005	COLUMBIA	WtE	5.3	M-0495.017	M-0495.027	COLUMBIA	WcF2	5.7	M-0195.058	M-0195.060	COLUMBIA	KaC3	5.3
M-0437.005	M-0437.008	COLUMBIA	WcF2	5.7	M-0495.027	M-0495.053	COLUMBIA	HhB2	5.0	M-0195.060	M-0195.065	COLUMBIA	LI2	5.8
M-0271.013	M-0271.021	COLUMBIA	WcF2	5.7	M-0495.053	M-0495.058	COLUMBIA	HhD3	5.0	M-0195.065	M-0195.074	COLUMBIA	KaD3	5.3
M-0271.021	M-0271.025	COLUMBIA	WcD2	5.2	M-0495.058	M-0495.059	COLUMBIA	HhC3	5.0	M-0195.074	M-0195.081	COLUMBIA	KE	5.3
92.40	92.47	COLUMBIA	WcD2	5.2	M-0495.059	M-0495.069	COLUMBIA	HhB2	5.0	M-0195.081	M-0195.084	COLUMBIA	KaD3	5.3
92.47	92.61	COLUMBIA	WcC2	5.0	M-0495.069	M-0495.072	COLUMBIA	HhD3	5.0	M-0195.084	M-0195.087	COLUMBIA	KaC2	5.3
92.61	92.66	COLUMBIA	WcB2	5.0	M-0495.072	M-0495.082	COLUMBIA	HhC3	5.0	108.29	108.36	COLUMBIA	KaC2	5.3
92.66	92.68	COLUMBIA	WcC2	5.0	M-0495.082	M-0495.115	COLUMBIA	HhB2	5.0	108.36	108.53	COLUMBIA	LI2	5.8
92.68	92.77	COLUMBIA	WcB2	5.0	M-0179.000	M-0179.011	COLUMBIA	HhB2	5.0	108.53	108.65	COLUMBIA	LI3	5.8
92.77	92.87	COLUMBIA	WcD2	5.2	M-0179.011	M-0179.013	COLUMBIA	HhC2	5.0	108.65	108.68	COLUMBIA	LI3	5.8
92.87	92.85	COLUMBIA	WcF2	5.7	M-0390.000	M-0390.001	COLUMBIA	HhC2	5.0	108.68	108.68	COLUMBIA	LI3	5.8
92.85	92.94	COLUMBIA	WcF2	5.7	M-0390.001	M-0390.011	COLUMBIA	WcF2	5.7	108.68	108.73	COLUMBIA	LI2	5.8
92.94	93.02	COLUMBIA	WcC2	5.0	M-0179.025	M-0179.026	COLUMBIA	WcF2	5.7	108.73	108.76	COLUMBIA	LI3	5.8
93.02	93.05	COLUMBIA	WcF2	5.7	101.42	101.43	COLUMBIA	WcF2	5.7	108.76	108.79	COLUMBIA	LI3	5.8
93.05	93.10	COLUMBIA	WcC2	5.0	101.43	101.46	COLUMBIA	WcD2	5.2	108.79	108.96	COLUMBIA	LI2	5.8
93.10	93.14	COLUMBIA	WcD2	5.2	101.46	101.46	COLUMBIA	PKB2	5.5	108.96	108.98	COLUMBIA	LI3	5.8
93.14	93.17	COLUMBIA	WcC2	5.0	M-0521.000	M-0521.005	COLUMBIA	PKB2	5.5	109.88	109.92	COLUMBIA	LI2	5.8
93.17	93.47	COLUMBIA	WcB2	5.0	M-0521.005	M-0521.011	COLUMBIA	HS	6.2	109.92	109.14	COLUMBIA	LI3	5.8
93.47	93.51	COLUMBIA	WcC2	5.0	101.58	101.60	COLUMBIA	HS	6.2	109.14	109.18	COLUMBIA	AaB2	5.6
93.51	93.53	COLUMBIA	WcD2	5.2	101.60	101.70	COLUMBIA	LgB	5.3	109.18	109.23	COLUMBIA	LI2	5.8
93.53	93.63	COLUMBIA	WcF2	5.7	M-0460.000	M-0460.007	COLUMBIA	LgB	5.3	109.23	109.34	COLUMBIA	KaB2	5.3
93.63	93.81	COLUMBIA	WcD2	5.2	M-0460.007	M-0460.012	COLUMBIA	BeB2	5.8	109.34	109.41	COLUMBIA	LI2	5.8
93.81	93.84	COLUMBIA	WcC2	5.0	101.81	101.85	COLUMBIA	BeB2	5.8	109.41	109.42	COLUMBIA	LI3	5.8
93.84	93.85	COLUMBIA	HhB2	5.0	M-0496.000	M-0496.002	COLUMBIA	BeB2	5.8	109.42	109.51	COLUMBIA	LI2	5.8
93.85	93.86	COLUMBIA	WcC2	5.0	101.87	101.88	COLUMBIA	BeB2	5.8	109.51	109.61	COLUMBIA	LI2	5.8
93.86	93.88	COLUMBIA	HhB2	5.0	101.88	101.98	COLUMBIA	CaC2	5.3	109.61	109.65	COLUMBIA	LI2	5.8
93.88	93.99	COLUMBIA	WcD2	5.2	101.98	102.04	COLUMBIA	WmB2	5.8	109.65	109.67	COLUMBIA	KaB2	5.3
93.99	94.12	COLUMBIA	HhB2	5.0	M-0497.000	M-0497.000	COLUMBIA	WmB2	5.8	109.67	109.70	COLUMBIA	KaD3	5.3
94.12	94.14	COLUMBIA	WcD2	5.2	M-0497.000	M-0497.001	COLUMBIA	WmB2	5.8	109.70	109.74	COLUMBIA	KaC3	5.3
94.14	94.19	COLUMBIA	WcF2	5.7	M-0497.001	M-0497.010	COLUMBIA	BeB2	5.8	109.74	109.88	COLUMBIA	LI2	5.8
94.19	94.30	COLUMBIA	WcC2	5.0	M-0423.000	M-0423.004	COLUMBIA	BeB2	5.8	109.88	109.98	COLUMBIA	LI2	5.8
94.30	94.33	COLUMBIA	SdB2	4.6	M-0423.004	M-0423.005	COLUMBIA	BeC2	5.8	109.98	110.05	COLUMBIA	LI2	5.8
94.33	94.36	COLUMBIA	Md	5.8	M-0423.005	M-0423.011	COLUMBIA	BeB2	5.8	110.05	110.15	COLUMBIA	KaC3	5.3
94.36	94.41	COLUMBIA	TS	6.2	M-0423.011	M-0423.014	COLUMBIA	BeC2	5.8	110.15	110.17	COLUMBIA	KaD3	5.3
94.41	94.42	COLUMBIA	W	Water	M-0423.014	M-0423.018	COLUMBIA	LgC2	5.3	110.17	110.20	COLUMBIA	AaB2	5.6
94.42	94.47	COLUMBIA	BkB2	5.1	M-0423.018	M-0423.024	COLUMBIA	BeB2	5.8	110.20	110.31	COLUMBIA	KaC3	5.3
94.47	94.49	COLUMBIA	WcD2	5.2	M-0423.024	M-0423.026	COLUMBIA	BeC2	5.8	110.31	110.34	COLUMBIA	HhB2	5.0
94.49	94.54	COLUMBIA	WcF2	5.7	M-0423.026	M-0423.032	COLUMBIA	CbD2	5.3	110.34	110.44	COLUMBIA	KaB2	5.3
94.54	94.67	COLUMBIA	WcB2	5.0	M-0423.032	M-0423.042	COLUMBIA	WbB2	5.0	110.44	110.52	COLUMBIA	HhC2	5.0
94.67	94.79	COLUMBIA	WcC2	5.0	M-0423.042	M-0423.058	COLUMBIA	HhD2	5.0	110.52	110.62	COLUMBIA	HhC3	5.0
94.79	94.84	COLUMBIA	WcD2	5.2	M-0499.000	M-0499.004	COLUMBIA	HhD2	5.0	110.62	111.01	COLUMBIA	HhB2	5.0
94.84	94.88	COLUMBIA	WcC2	5.0	M-0499.004	M-0499.015	COLUMBIA	HhD3	5.0	111.01	111.14	COLUMBIA	HhC2	5.0
94.88	95.07	COLUMBIA	BkB2	5.1	M-0499.015	M-0499.020	COLUMBIA	HhD2	5.0	111.14	111.20	COLUMBIA	WbB2	5.0
95.07	95.11	COLUMBIA	WcD2	5.2	M-0499.020	M-0499.036	COLUMBIA	Hd	5.0	111.20	111.25	COLUMBIA	SdB2	4.6
95.11	95.15	COLUMBIA	WcC2	5.0	M-0499.036	M-0499.044	COLUMBIA	HhD2	5.0	111.25	111.30	COLUMBIA	HhD3	5.0
95.15	95.24	COLUMBIA	WcB2	5.0	M-0423.102	M-0423.105	COLUMBIA	HhD2	5.0	111.30	111.48	COLUMBIA	HhB2	5.0
95.24	95.27	COLUMBIA	WcC2	5.0	M-0423.105	M-0423.111	COLUMBIA	HhC2	5.0	111.48	111.55	COLUMBIA	HhC2	5.0
95.27	95.32	COLUMBIA	WcF2	5.7	M-0423.111	M-0423.123	COLUMBIA	HhB2	5.0	111.55	111.56	COLUMBIA	HhB2	5.0
95.32	95.33	COLUMBIA	WcD2	5.2	M-0423.123	M-0423.131	COLUMBIA	HhC2	5.0	111.56	111.61	COLUMBIA	HhC2	5.0
95.33	95.39	COLUMBIA	WcC2	5.0	M-0423.131	M-0423.133	COLUMBIA	WcD2	5.2	111.61	111.71	COLUMBIA	WcC2	5.0
95.39	95.43	COLUMBIA	WcD2	5.0	M-0423.133	M-0423.147	COLUMBIA	WcF2	5.7	111.71	111.92	COLUMBIA	WcB2	5.0
95.43	95.46	COLUMBIA	SdB2	4.6	M-0423.147	M-0423.153	COLUMBIA	Md	5.8	111.92	111.93	COLUMBIA	WcC2	5.0
95.46	95.48	COLUMBIA	WcC2	5.0	M-0423.153	M-0423.167	COLUMBIA	HhC2	5.0	111.93	112.05	COLUMBIA	HhC3	5.0
95.48	95.52	COLUMBIA	WcB2	5.0	M-0423.167	M-0423.204	COLUMBIA	LI3	5.8	112.05	112.34	COLUMBIA	HhB2	5.0
95.52	95.58	COLUMBIA	WcC2	5.0	M-0423.204	M-0423.258	COLUMBIA	HhB2	5.0	M-0360.000	M-0360.027	COLUMBIA	HhB2	5.0
95.58	95.67	COLUMBIA	WcB2	5.0	M-0423.258	M-0423.273	COLUMBIA	HhC2	5.0	M-0207.019	M-0207.021	COLUMBIA	HhB2	5.0
95.67	95.71	COLUMBIA	WcD2	5.2	M-0423.273	M-0423.282	COLUMBIA	HhD2	5.0	112.60	112.63	COLUMBIA	HhB2	5.0
95.71	95.80	COLUMBIA	WcF2	5.7	M-0456.000	M-0456.008	COLUMBIA	HhD2	5.0	112.63	112.70	COLUMBIA	WcB2	5.0
95.80	95.86	COLUMBIA	Md	5.8	M-0456.008	M-0456.012	COLUMBIA	HhC2	5.0	112.70	112.72	COLUMBIA	WcC2	5.0
95.86	95.87	COLUMBIA	W	Water	M-0456.012	M-0456.016	COLUMBIA	HhD2	5.0	112.72	112.75	COLUMBIA	WcD2	5.2
95.87	95.92	COLUMBIA	HhB2	5.0	M-0456.016	M-0456.018	COLUMBIA	HhC2	5.0	112.75	112.84	COLUMBIA	HhB2	5.0
M-0285.000	M-0285.021	COLUMBIA	HhB2	5.0	M-0456.018	M-0456.019	COLUMBIA	Md	5.8	112.84	112.89	COLUMBIA	WcD2	5.2
96.12	96.20	COLUMBIA	HhB2	5.0	M-0423.300	M-0423.308	COLUMBIA	Md	5.8	112.89	112.92	COLUMBIA	WcC2	5.0
96.20	96.23	COLUMBIA	HhC2	5.0	M-0423.308	M-0423.316	COLUMBIA	CbE2	5.3	112.92	112.99	COLUMBIA	WcF2	5.7
96.2														

TABLE 7: RESOURCE SPECIFIC AVOIDANCE AND MINIMIZATION MEASURES

Resource Type (Stream or Wetland)	Resource Name	Resource ID	MP	Chapter 93 Classification, Wetland Classification	Stream Type (Perennial, Intermittent, Ephemeral)	Stream Trout Status (Class A Wild Trout, Wild Trout, Trout Stocked)	Cowardin Classification	Limits of Disturbance (LOD) Adjustments (Supporting Information for Technical Deficiency #29)	Field Routing Adjustments within 600-foot Wide Corridor (Supporting Information for Technical Deficiency #15)*	Stream Bank Stabilization BMP	Width of Erosion Control Blanket Required for Stream Bank Stabilization (ft)
Stream	South Branch Roaring Creek (WW-T45-11001)	WW-T45-11001	80.99	HQ-CWF, MF	Perennial	Class A Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T45-11001.	The pipeline was routed through agricultural fields in this area to minimize forest impact, and the route provides a perpendicular crossing of the stream.	SBR with C125 fabric	N/A
Stream	UNT to South Branch Roaring Creek (WW-T51-11001)	WW-T51-11001	91.01	HQ-CWF, MF	Intermittent	Class A Wild Trout Waters	R4	LOD has been reduced to 90' to minimize impacts to WW-T45-11001.	The pipeline was routed through agricultural fields in this area to minimize forest impact, and the route provides a perpendicular crossing of the stream.	SBR with SC150 fabric	100
Wetland	N/A	W-T49-11002	91.03	EV	N/A	N/A	PEM	LOD reduced to 90' to minimize impacts to W-T49-11002. Further LOD reduction was not possible due to the steep terrain on both sides of the wetland leading into adjacent stream WW-T51-11001. The additional workspace will be used for equipment crossing and spoil storage to accommodate a safe and efficient stream crossing.	The pipeline was routed through agricultural fields in this area to minimize forest impact. Avoidance of wetland W-T49-11002 was not feasible due to the linear nature of the wetland, extending north and south beyond the routing corridor.	N/A	N/A
Stream	UNT to South Branch Roaring Creek (WW-T47-11001)	WW-T47-11001	91.74	HQ-CWF, MF	Perennial	Class A Wild Trout Waters	R3	Full construction ROW width is needed due to the surrounding terrain and adjacent road crossing.	The pipeline was routed in this location to avoid impacting wetland W-T47-11001, located immediately north of the LOD, and to provide a perpendicular crossing of the stream.	SBR with SC150 fabric	100
Stream	South Branch Roaring Creek (WW-T44-11001)	WW-T44-11001	M-0437 0.06	HQ-CWF, MF	Perennial	Class A Wild Trout Waters	R3	Full construction ROW width is needed due to the surrounding terrain and adjacent road crossing.	The pipeline was routed in this location to avoid impacting wetland W-T47-11001, located immediately north of the LOD, and to provide a perpendicular crossing of the stream.	SBR with C125 fabric	100
Wetland	N/A	W-T49-11003-1	M-0271 0.10	EV	N/A	N/A	PEM	The LOD for W-T49-11003-1 has been modified to eliminate impacts.	This feature is no longer impacted based on LOD reductions.	N/A	N/A
Stream	UNT to Magsier Run (WW-T31-11001)	WW-T31-11001	94.13	HQ-CWF, MF	Intermittent	Approved Trout Waters, Trout Stocked Stream, Wild Trout Waters	R4	LOD has been reduced to 90' to minimize impacts to WW-T31-11001.	The pipeline was routed in this location to provide a perpendicular crossing of the stream, and to avoid impacting stream WW-T31-11001A and a spring located immediately west and east of the proposed LOD, respectively.	SBR with C125 fabric	100
Wetland	N/A	W-T04-11004	94.32	None	N/A	N/A	PEM	The LOD for W-T04-11004 has been modified to eliminate impacts.	This feature is no longer impacted based on LOD reductions.	N/A	N/A
Stream	Magsier Run (WW-T04-11001) UNT to Magsier Run (WW-T04-11001A)	WW-T04-11001 WW-T04-11001A	94.43	HQ-CWF, MF	Perennial/ Intermittent	Approved Trout Waters, Trout Stocked Stream, Wild Trout Waters	R3/R4	LOD has been reduced to 90' to minimize impacts to WW-T04-11001 and WW-T04-11001A.	Pipeline routing was significantly constrained in this location by adjacent water resources. The pipeline was routed in this location to avoid impact to a vernal pool located west of the proposed route and to avoid impact to an additional stream, WW-T04-11001B, located immediately east of the proposed route.	SBR with SC150 fabric	100
Stream	UNT to Roaring Creek (WW-T04-11002)	WW-T04-11002	94.96	TSF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T04-11002.	The pipeline and temporary workspace was routed in this location to provide a perpendicular crossing of the stream. Immediately north of the stream crossing, the pipeline was re-routed to turn northwest to avoid construction immediately parallel to the stream, which bends north beyond the crossing location.	SBR with SC150 fabric	50
Stream	UNT to Roaring Creek (WW-T28-12005)	WW-T28-12005	95.29	TSF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 90' to minimize impacts to WW-T28-12005.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T28-12005. Additionally, the pipeline was routed to minimize forest impact by routing within existing agricultural fields to the greatest extent possible.	SBR with SC150 fabric	50
Stream	UNT to Roaring Creek (WW-T28-12004)	WW-T28-12004	95.44	TSF, MF	Intermittent	Approved Trout Waters, Trout Stocked Stream, Wild Trout Waters	R4	LOD has been reduced to 90' to minimize impacts to WW-T28-12004.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T28-12004. Additionally, the pipeline was routed to minimize forest impact by routing within existing agricultural fields to the greatest extent possible.	SBR with SC150 fabric	50
Slough	WB-T35-11001	WB-T35-11001	95.83	None	N/A	N/A	PUB	LOD has been reduced to 90' to minimize impacts to WB-T35-11001.	The pipeline was routed in this location to minimize forest impact by following an agricultural field located north of the crossing, and to provide a perpendicular crossing of nearby stream WW-T35-11001. Slough WB-T35-11001 extends east and west beyond the limits of the routing corridor, making avoidance impractical.	SBR with SC150 fabric	50
Stream	Roaring Creek (WW-T35-11001)	WW-T35-11001	95.85	TSF, MF	Perennial	Approved Trout Waters, Trout Stocked Stream, Wild Trout Waters	R3	The current LOD configuration for WW-T35-11001 is required due to the feature being a navigable water requiring Aids To Navigation (ATON).	The pipeline was routed in this location to minimize forest impact by following an agricultural field located north of the crossing, and to provide a perpendicular crossing of stream WW-T35-11001.	SBR with SC150 fabric	50
Stream	Susquehanna River (WW-T04-12001)	WW-T04-12001	99.66	WWF	Perennial	WWCW Fisheries Streams	R3	WW-T04-12001 is being crossed via HDD.	The pipeline was routed in this location to provide a safe and effective HDD crossing of the Susquehanna River (WW-T04-12001).	SBR with SC150 fabric	50
Wetland	N/A	W-T04-12001C	99.83	None	N/A	N/A	PFO	WW-T04-12001C is being crossed via HDD.	The pipeline was routed in this location to provide a safe and effective HDD crossing of the Susquehanna River (WW-T04-12001).	N/A	N/A
Wetland	N/A	W-T74-12001A-1/ W-T74-12001C	M-0495 0.68	None	N/A	N/A	PEM, PFO	W-T74-12001 does not cross the full width of the LOD, and any LOD reductions at this crossing would only be possible in an existing transmission line in this area and crosses the wetland along a small portion of its western margin only.	The pipeline alignment was not significantly changed in this area during field routing. The original alignment is collocated with an existing transmission line in this area and crosses the wetland along a small portion of its western margin only.	N/A	N/A
Wetland	N/A	W-T04-12002A/ W-T04-12002C	101.50	None	N/A	N/A	PEM, PFO	LOD reduction to 75' was not possible due to the saturated nature of the wetland complex, unconsolidated soils in area, and adjacent streams. The additional workspace will provide storage for spoil within the wetland and will result in less impact than transporting material to a stockpile area outside the wetland.	Pipeline routing was significantly constrained in this location by adjacent water resources and residential development. The pipeline was routed in this location to avoid impact to a pond located west of the proposed route. The pipeline was also routed to avoid construction parallel to streams WW-T04-12002 and WW-T28-12002, which flank and run parallel to the crossing in this area. Additionally, the route selected avoids crossing streams WW-T04-12002 and WW-T04-12004, which abut the workspace to the east, and the route provides perpendicular crossings of streams WW-T04-12002, WW-T04-12005, and WW-T04-12005A. Construction to the east or west of the proposed route was considered, but was not feasible due to the locations of existing homes and the aforementioned water resources.	N/A	N/A
Stream	UNT to Montour Run (WW-T04-12002)	WW-T04-12002	101.61	CWF, MF	Intermittent	None	R4	LOD has been reduced to 90' to minimize impacts to WW-T04-12002.	The pipeline was routed in this location to provide a perpendicular crossing of the stream, and to avoid the features noted for the W-T04-12002 crossing.	SBR with SC150 fabric	50
Stream	UNT to Montour Run (WW-T04-12003)	WW-T04-12003	101.61	CWF, MF	Intermittent	None	R4	LOD reduced by 90' to minimize impacts to WW-T04-12003. Further LOD reduction to completely avoid the stream is not possible because a minimum of 25' of LOD is required in the spoil side of the LOD, where the stream is present.	The pipeline was routed in this location to avoid a direct crossing of stream WW-T04-12003.	SBR with SC150 fabric	50
Stream	UNT to Montour Run (WW-T04-12004)	WW-T04-12004	101.62	CWF, MF	Intermittent	None	R4	LOD has been reduced to 90' to minimize impacts to WW-T04-12004.	The pipeline was routed in this location to avoid a direct crossing of stream WW-T04-12004.	SBR with SC150 fabric	50
Stream	Montour Run (WW-T04-12005)	WW-T04-12005	101.65	CWF, MF	Perennial	None	R3	LOD has been reduced to 90' to minimize impacts to WW-T04-12005.	The pipeline was routed in this location to cross the stream at its narrowest point at a 90 degree angle.	SBR with SC150 fabric	50
Wetland	W-T04-12004/ W-T04-12004-1	W-T04-12004/ W-T04-12004-1	101.65	None	N/A	N/A	PSS	LOD has been reduced to 75' to minimize impacts to W-T04-12004.	The pipeline was routed in this location to provide a perpendicular crossing of the wetland, and to avoid the features noted for the W-T04-12002 crossing.	N/A	N/A
Stream	UNT to Montour Run (WW-T04-12005A)	WW-T04-12005A	101.68	CWF, MF	Intermittent	None	R4	LOD has been reduced to 90' to minimize impacts to WW-T04-12005A.	The pipeline was routed in this location to provide a perpendicular crossing of the stream, and to avoid the features noted for the W-T04-12002 crossing.	SBR with SC150 fabric	50
Pond	Unnamed pond	WB-T89-001	101.98	CWF, MF	N/A	None	PUB	LOD has been reduced to 80' to minimize impacts to WB-T89-001.	The pipeline was routed in this location to avoid impacting wetland W-T04-12005 and a residence located immediately east and west of the LOD, respectively.	N/A	N/A
Stream	UNT to Montour Run	WW-T89-001	102.00	CWF, MF	Perennial	None	R3	LOD has been reduced to 80' to minimize impacts to WW-T89-001.	The pipeline was routed in this location to avoid impacting wetland W-T04-12006 and a residence located immediately east and west of the LOD, respectively.	SBR with SC150 fabric	50
Stream	UNT to Montour Run (WW-T04-12006)	WW-T04-12006	102.02	CWF, MF	Perennial	None	R3	LOD has been reduced to 80' to minimize impacts to WW-T04-12006.	The pipeline was routed in this location to avoid impacting wetland W-T04-12006 and a residence located immediately east and west of the LOD, respectively.	SBR with SC150 fabric	50



REVISIONS					
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK. APP.
0	08/26/2015	BL	ISSUED FOR PADEP SUBMITTAL	W0572385	JLK SMK
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W0572385	JLK SMK
2	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0572385	JLK SMK
3	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0572385	JLK SMK
4	AUG 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #3	W0572385	JLK SMK

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
 ATLANTIC SUNRISE PROJECT
 PROPOSED 42" CENTRAL PENN LINE SOUTH
 PENNSYLVANIA BEST MANAGEMENT PRACTICES AND
 QUANTITIES PLAN SET
 COLUMBIA COUNTY, PENNSYLVANIA
 QUANTITY, CROSSING AND ACIDIC SOIL TABLES

DRAWN BY: ELZ DATE: 05/15/15 ISSUED FOR BID: SCALE: _____
 CHECKED BY: JLK DATE: 07/02/15 ISSUED FOR CONSTRUCTION: REVISION: 4
 APPROVED BY: SMK DATE: 07/08/15 DRAWING NUMBER: 24-1600-70-28-A/LL113_9-BMP-CO-TB SHEET 5 OF 6

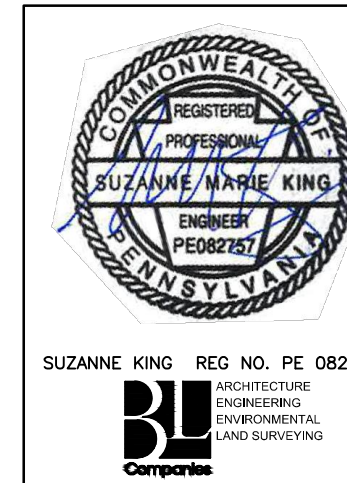
Drawn By & Date/Time: CScanzello Jul 28, 2017 - 4:46pm
 Drawing Location & Name: G:\05B14\14C\14C4909\DWG\BMP\DETAILS\PL_DNT14C4909(20N)_CO-TB.dwg

TABLE 7: RESOURCE SPECIFIC AVOIDANCE AND MINIMIZATION MEASURES (CONTINUED)

Resource Type (Stream or Wetland)	Resource Name	Resource ID	MP	Chapter 93 Classification, Wetland Classification	Stream Type (Perennial, Intermittent, Ephemeral)	Stream Trout Status (Class A Wild Trout, Wild Trout, Trout Stocked)	Cowardin Classification	Limits of Disturbance (LOD) Adjustments (Supporting Information for Technical Deficiency #2)	Field Routing Adjustments within 600-foot Wide Corridor (Supporting Information for Technical Deficiency #15)*	Stream Bank Stabilization BMP	Width of Erosion Control Blanket Required for Stream Bank Stabilization (ft)
Wetland	N/A	W-T63-14001	111.19	None	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T63-14001.	The pipeline was routed at this location to minimize impacts to the wetland by crossing the margin of the wetland. Complete avoidance was not possible due to a residence east of the LOD.	N/A	N/A
Stream	Deerlick Run (WW-T35-13002)	WW-T35-13002	111.23	CWF, MF	Perennial	Wild Trout Waters (Under Review)	R3	LOD has been reduced to 75' to minimize impacts to WW-T35-13002.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T35-13002.	SBR with SC150/fabric	50
Wetland	N/A	W-T35-13002	111.24	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T35-13002.	The pipeline was routed at this location to minimize impacts by crossing the narrowest section of the wetland.	N/A	N/A
Stream	UNT to Deerlick Run (WW-T35-13001)	WW-T35-13001	111.59	CWF, MF	Perennial	Wild Trout Waters (Under Review)	R3	LOD has been reduced to 75' to minimize impacts to WW-T35-13001.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T35-13001 and to minimize tree clearing.	SBR with SC150/fabric	50
Wetland	N/A	W-T35-13001	111.60	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T35-13001.	The pipeline was routed at this location to minimize impacts by crossing the narrowest section of the wetland, and to minimize tree clearing.	N/A	N/A
Pond	WB-T21-13001	WB-T21-13001	113.11	None	N/A	N/A	PUB	LOD has been modified to eliminate impacts to WB-T21-13001.	This feature is no longer impacted based on LOD reductions.	N/A	N/A
Stream	UNT to Mud Run (WW-T90-14003)	WW-T90-14003	113.37	TSF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 75' to minimize impacts to WW-T90-14003.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T90-14003.	SBR with SC150/fabric	50
Wetland	N/A	W-T21-13002	113.37	EV	N/A	N/A	PSS	LOD has been reduced to 75' to minimize impacts to W-T21-13002.	The pipeline was routed at this location to provide a perpendicular crossing of wetland W-T21-13002.	N/A	N/A
Wetland	N/A	W-T21-13001	113.42	EV	N/A	N/A	PEM	This wetland encroaches within the western portion of the LOD only, and this portion of the LOD was reduced by 10' to minimize impacts to W-T21-13001.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T21-13001.	N/A	N/A
Stream	Mud Run (WW-T21-13001)	WW-T21-13001	113.43	TSF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T21-13001.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T21-13001.	SBR with SC150/fabric	50
Stream	UNT to Mud Run (WW-T21-13001A)	WW-T21-13001A	113.54	TSF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T21-13001A.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T21-13001A and minimize tree clearing within the forested riparian buffer.	SBR with SC150/fabric	50
Wetland	N/A	W-T90-14005/ W-T90-14005A	113.54	EV	N/A	N/A	PEM, PFO	This wetland encroaches within the western portion of the LOD only, and this portion of the LOD was reduced by 10' to minimize impacts to W-T90-14005.	The pipeline was routed at this location to avoid larger forested wetland area west of the LOD and to minimize tree clearing within the forested riparian buffer of stream WW-T21-13001.	N/A	N/A
Stream	Little Green Creek (WW-T16-14003)	WW-T16-14003	115.44	TSF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T16-14003.	The pipeline was routed at this location to minimize impacts to a much larger portion of wetland W-T16-14001 west of the LOD.	SBR with SC150/fabric	50
Wetland	N/A	W-T16-14001A	115.46	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T16-14001A.	The pipeline was routed at this location to minimize impacts to a much larger portion of the wetland west of the LOD.	N/A	N/A
Wetland	N/A	W-T16-14002	115.46	EV	N/A	N/A	PSS	LOD has been modified to eliminate impacts to W-T16-14002.	This feature is no longer impacted based on LOD reductions.	N/A	N/A
Wetland	N/A	W-T44-14001A	115.51	EV	N/A	N/A	PEM	This wetland encroaches within the western portion of the LOD only, and this portion of the LOD was reduced by 10' to minimize impacts to W-T44-14001A.	The pipeline was routed at this location to minimize impacts to a much larger portion of wetland W-T16-14001 west of the LOD.	N/A	N/A
Wetland	N/A	W-T44-14001B	115.51	EV	N/A	N/A	PSS	LOD has been modified to eliminate impacts to W-T44-14001B.	This feature is no longer impacted based on LOD reductions.	N/A	N/A
Stream	UNT to Green Creek (WW-T16-14001)	WW-T16-14001	116.01	TSF, MF	Ephemeral	Wild Trout Waters	R6	WW-T16-14001 does not cross the full width of the LOD, and any LOD reductions at this crossing would only be possible in adjacent upland areas and would not result in minimization of stream impacts.	The alignment was not significantly changed in this area during field routing. The original alignment allows for the pipeline trench and permanent ROW to avoid the stream channel passing to the east. The original alignment also allows for a slight PI to be executed on relatively level ground in order to cross a forested slope at a perpendicular angle, avoiding possible side slope construction and any need for additional workspace in a forested area.	SBR with SC150/fabric	50
Wetland	N/A	W-T10-14001A/ W-T10-14001B	118.07	EV	N/A	N/A	PEM, PSS	LOD has been reduced to 75' to minimize impacts to W-T16-14001.	The pipeline was routed at this location to cross the narrowest section of the wetland and avoid paralleling a stream immediately west of the LOD.	N/A	N/A
Stream	UNT to Green Creek (WW-T16-14002)	WW-T16-14002	118.06	TSF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 75' to minimize impacts to WW-T16-14002.	The pipeline was routed at this location to cross the narrowest section of the adjacent wetland and avoid paralleling a stream immediately west of the LOD.	SBR with SC150/fabric	50
Stream	UNT to Green Creek (WW-T15-14003)	WW-T15-14003	119.26	TSF, MF	Perennial	Wild Trout Waters	R3	Full construction ROW width is needed due to steep slopes, the adjacent road crossing, and approaching PI.	The pipeline was routed at this location to avoid crossing stream WW-T15-14004 immediately east of the LOD.	SBR with SC150/fabric	50
Stream	UNT to Green Creek (WW-T15-14005)	WW-T15-14005	119.90	TSF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 90' to minimize impacts to WW-T15-14005.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T15-14005.	SBR with SC150/fabric	50
Stream	UNT to Green Creek (WW-T15-14006)	WW-T15-14006	119.90	TSF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 90' to minimize impacts to WW-T15-14006.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T15-14006.	SBR with SC150/fabric	50
Wetland	N/A	W-T15-14003	120.09	EV	N/A	N/A	PEM	W-T15-14003 does not extend across the full width of the LOD. Since the wetland width within the LOD is less than 75', the FERC Procedures do not require LOD reduction. In addition, an LOD reduction at this location would only be possible in the adjacent upland area and would not result in minimization of wetland impacts.	The pipeline was routed at this location to avoid impacting a much larger wetland to the south of the LOD (wetland W-T15-14002). Shifting the route north to avoid this crossing would result in additional tree clearing and encroach on residences.	N/A	N/A
Stream	Green Creek (WW-T15-14007)	WW-T15-14007	120.11	TSF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T15-14007.	The pipeline was routed at this location to avoid impacting a much larger wetland to the south of the LOD (wetland W-T15-14002).	SBR with SC150/fabric	50
Stream	UNT to Green Creek (WW-T15-14007A)	WW-T15-14007A	120.12	TSF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T15-14007A.	The pipeline was routed at this location to avoid impacting a much larger wetland to the south of the LOD (wetland W-T15-14002).	SBR with SC150/fabric	50
Stream	UNT to Green Creek (WW-T15-14008)	WW-T15-14008	121.28	TSF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 75' to minimize impacts to WW-T15-14008.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T15-14008.	SBR with SC150/fabric	50
Wetland	N/A	W-T15-14004	121.28	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T15-14004.	The pipeline was routed in this location to provide a perpendicular crossing of wetland W-T15-14004. Avoidance of this wetland was not feasible due to the linear nature of the wetland, extending north and south beyond the routing corridor.	N/A	N/A
Stream	UNT to York Hollow (WW-T17-14001)	WW-T17-14001	122.62	CWF, MF	Perennial	Wild Trout Waters	R3	Full construction ROW width is needed due to the adjacent road crossing.	The pipeline was routed in this location to avoid paralleling the reach of stream WW-T17-14001 east of the LOD.	SBR with SC150/fabric	50
Stream	UNT to York Hollow (WW-T17-14002)	WW-T17-14002	123.12	CWF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 90' to minimize impacts to WW-T17-14002.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T17-14002.	SBR with SC150/fabric	50
Stream	York Hollow (WW-T17-14003)	WW-T17-14003	123.20	CWF, MF	Ephemeral	Wild Trout Waters	R6	Full construction ROW width is needed due to the adjacent road crossing and approaching PI.	The pipeline was routed in this location to avoid paralleling the reach of stream WW-T17-14003 west of the LOD.	SBR with SC150/fabric	50
Wetland	N/A	W-T02-14001	123.34	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T02-14001.	The pipeline was routed at this location to cross the narrowest section of the wetland.	N/A	N/A
Stream	West Creek (WW-T06-14002)	WW-T06-14002	124.60	CWF, MF	Perennial	Approved Trout Waters; Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T06-14002.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T06-14002.	SBR with SC150/fabric	50
Stream	UNT to West Creek (WW-T06-14001)	WW-T06-14001	124.67	CWF, MF	Perennial	Approved Trout Waters; Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T06-14001.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T06-14001.	SBR with SC150/fabric	50
Wetland	N/A	W-T06-14001	124.70	EV	N/A	N/A	PEM	This wetland encroaches within the eastern portion of the LOD only, and this portion of the LOD was reduced by 10' to minimize impacts to W-T06-14001.	The pipeline was routed at this location to provide a perpendicular crossing of stream wetland W-T06-14001, and to cross the margin of the wetland.	N/A	N/A

*The FERC Alignment Sheets provided in Attachment H-1 show field delineated streams and wetlands within the 300-foot wide environmental survey corridor, and surrounding land use features on an aerial base map.

Drawn By & Date/Time: CSconzello Jul 28, 2017 4:46pm Drawing Location & Name: G:\0514\14C\14C4909\DWG\BMPs&DETAILS\PL_DNT14C4909(20N)_CO-TB.dwg



REVISIONS						
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
0	08/28/2015	BL	ISSUED FOR PADEP SUBMITTAL	W0572385	JLK	SMK
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W0572385	JLK	SMK
2	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0572385	JLK	SMK
3	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0572385	JLK	SMK
4	AUG 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #3	W0572385	JLK	SMK

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
 ATLANTIC SUNRISE PROJECT
 PROPOSED 42" CENTRAL PENN LINE SOUTH
 PENNSYLVANIA BEST MANAGEMENT PRACTICES AND
 QUANTITIES PLAN SET
 COLUMBIA COUNTY, PENNSYLVANIA
 QUANTITY, CROSSING AND ACIDIC SOIL TABLES

DRAWN BY:	ELZ	DATE:	05/15/15	ISSUED FOR:	CONSTRUCTION	SCALE:	
CHECKED BY:	JLK	DATE:	07/02/15	ISSUED FOR:	CONSTRUCTION	REVISION:	4
APPROVED BY:	SMK	DATE:	07/08/15	DRAWING NUMBER:	24-1600-70-28-A/LL113_9-BMP-CO-TB	SHEET:	6
W.O. NO.:		DATE:		DRAWING NUMBER:		SHEET:	