

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

BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET

PINE GROVE, TREMONT, FRAILEY, PORTER, HEGINS, ELDRED
TOWNSHIPS

SCHUYLKILL COUNTY

BMP DETAIL SUMMARY

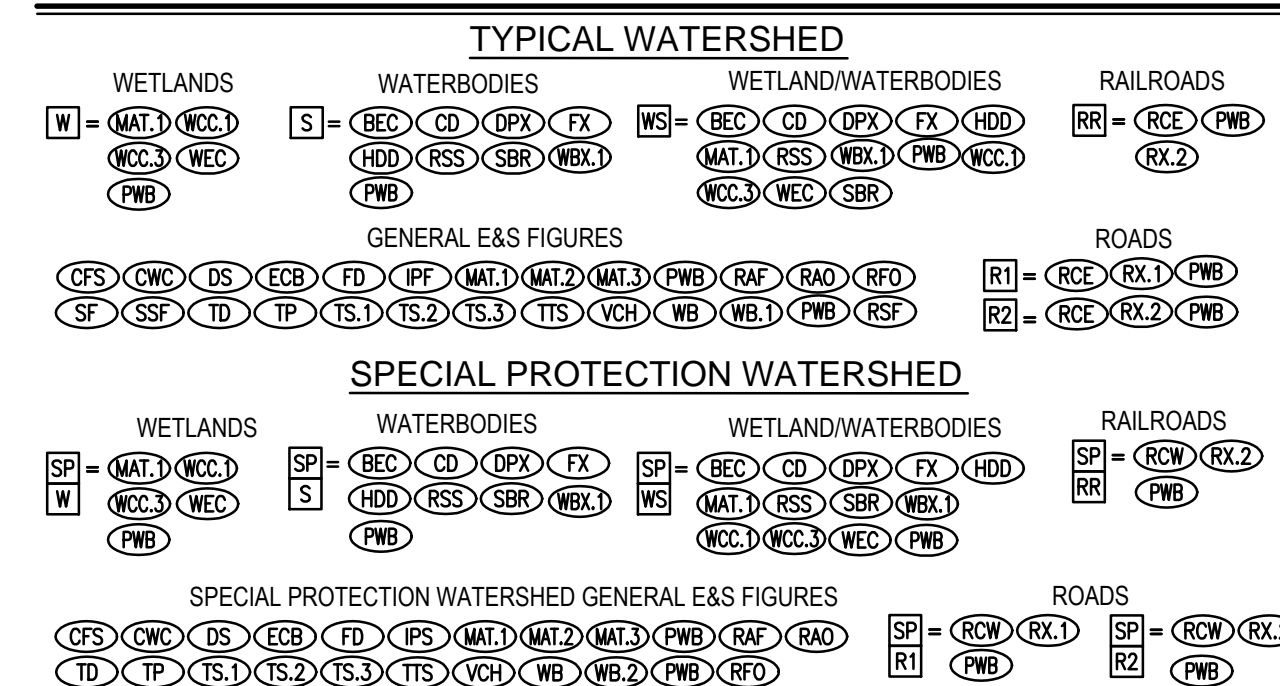
FIGURE	FIGURE TITLE	SHEET NO.
ARF	ABACT ROCK FILTER	1
BBB	BROAD-BASED BMP	
BEC	BRIDGE EQUIPMENT CROSSING	
CD	COFFERDAM STREAM CROSSING	
CDM	CHECK DAM	2
CFS	COMPOST FILTER SOCK	
CS	CLEANOUT STAKE	
CST	COMPOST SOCK SEDIMENT TRAP	
CWC	CLEAN WATER CROSSING	3
DPX	DAM AND PUMP STREAM CROSSING	
DS	HYDROSTATIC 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	
MAT.1	TIMBER MATTING CONSTRUCTION	
MAT.2	TIMBER MATTING WITH FILL OVER EXISTING PIPELINES	
MAT.3	TIMBER MATTING AIR BRIDGE	6
PWB	PUMP WATER FILTER BAG	
RAO	RIP RAP APRON AT PIPE OUTLET WITHOUT FLARED END SECTION	
RAP	RIP RAP GRADATION	
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
RX.1	TRENCHED ROAD CROSSING	
RX.2	BORED ROAD/RAILROAD CROSSING	
SBR	STREAM BANK STABILIZATION WITH REINFORCEMENT BLANKET	
SF	STANDARD SILT FENCE (18" HIGH)	9
SSF	SUPER SILT FENCE (33" HIGH)	
TD	TRENCH DEWATERING	
TP	TRENCH PLUG INSTALLATION	
TRV	TRASH RACK AND ANTI-VORTEX DEWEGE	10
TS.1	TOPSOIL SEGREGATION (1)	
TS.2	TOPSOIL SEGREGATION (2)	
TS.3	TOPSOIL SEGREGATION (3)	
TTS	SIDE SLOPE (TWO-TONE) CONSTRUCTION PROCEDURE	11
VCH	VEGETATED CHANNEL	
WB	WATERBAR	
WB.1	WATERBAR LAYOUT DETAIL	
WB.2	COMPOST FILTER SOCK AND SUMP (PADEP APPROVED ALTERNATE DETAIL) AT WATERBAR DISCHARGE	11
WBX.1	BORED WATERBODY CROSSING	
WCC.1	WETLAND INSTALLATION PROCEDURE	
WCC.3	"INUNDATED WETLAND" INSTALLATION PROCEDURE	
WD	WATER DEFLECTOR	11
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-SC-TB	1-5	QUANTITY, CROSSING, AND ACIDIC SOIL TABLES

E&S DETAIL GROUP LEGEND FOR PIPELINE CROSSINGS



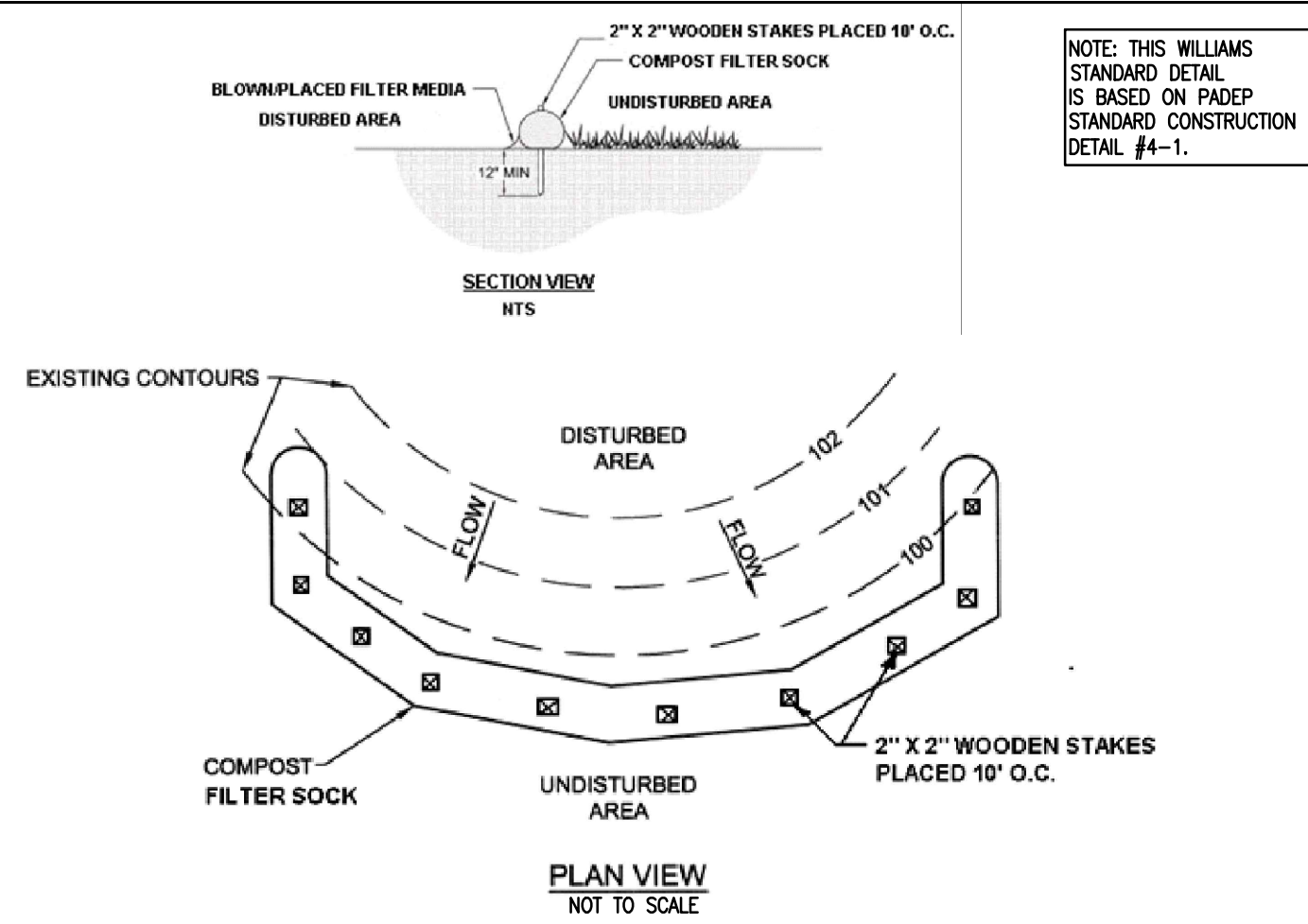
DETAILS IN THIS LEGEND ARE NOT COMPREHENSIVE AND ONLY REFER TO BMPs RELATED TO PIPELINE CROSSINGS. ADDITIONAL BMPs ARE PROVIDED FOR ACCESS ROADS.
 E&S DETAIL GROUP LEGEND IS ALSO PROVIDED ON THE PIPELINE E&S PLANS. LEGEND IS SHOWN HERE FOR COORDINATION PURPOSES.



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

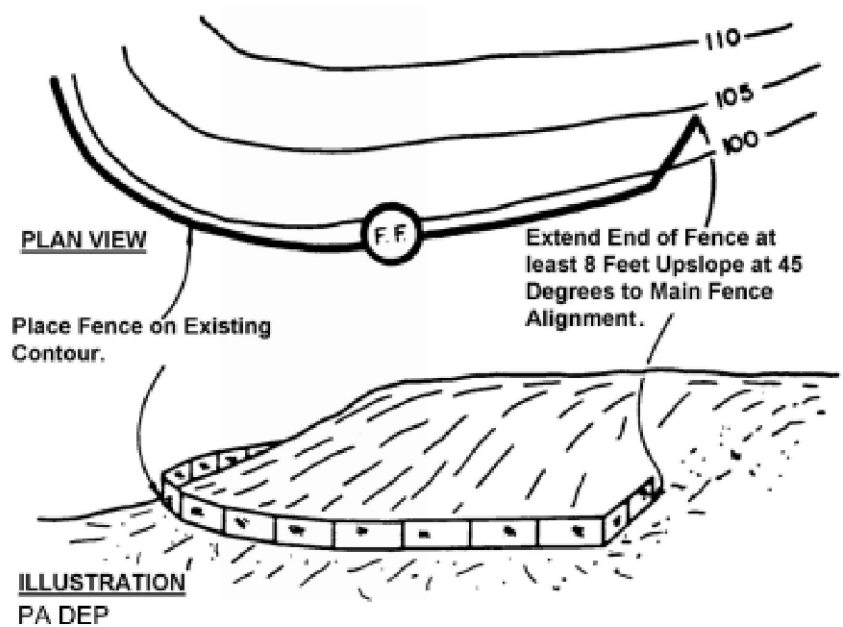
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC			
ATLANTIC SUNRISE PROJECT			
PROPOSED 42" CENTRAL PENN LINE SOUTH			
PENNSYLVANIA BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET			
SCHUYLKILL COUNTY, PENNSYLVANIA			
COVER SHEET			
DRAWN BY:	ELZ	DATE:	05/15/15
CHECKED BY:	JLK	DATE:	07/02/15
APPROVED BY: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



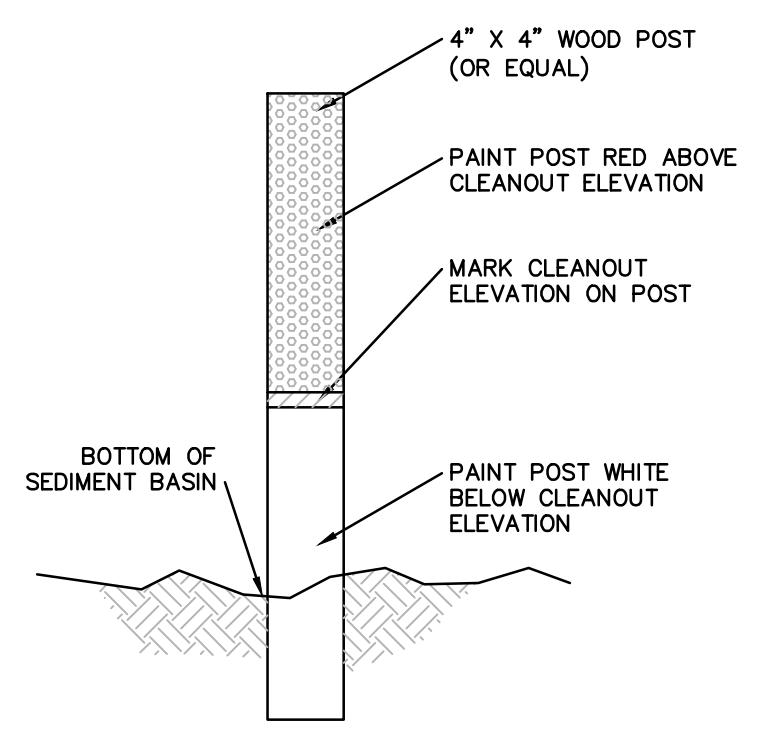


NOTE: THIS WILLIAMS STANDARD DETAIL IS BASED ON PADEP STANDARD CONSTRUCTION DETAIL #4-1.

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				

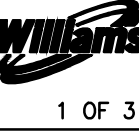


TABLE 4.1 COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS

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
Outer Filtration Mesh	Fusion-welded junctures 3/4" X 3/4" Max. aperture size Composite Polypropylene Fabric (Woven layer and non-woven fleece mechanically fused via needle punch) 3/16" Max. aperture size

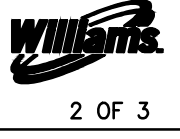
Sock fabrics composed of burlap may be used on projects lasting 6 months or less.

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.

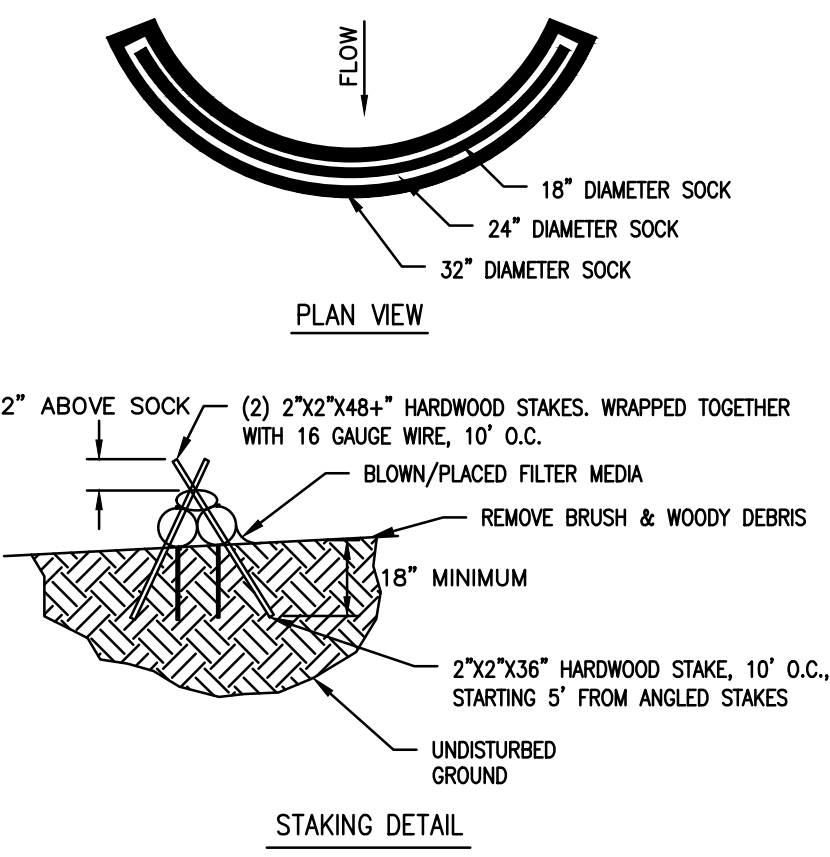
NO.	DATE	BY	REVISION DESCRIPTION	NO.	NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL				
			(CFS) COMPOST FILTER SOCK				



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

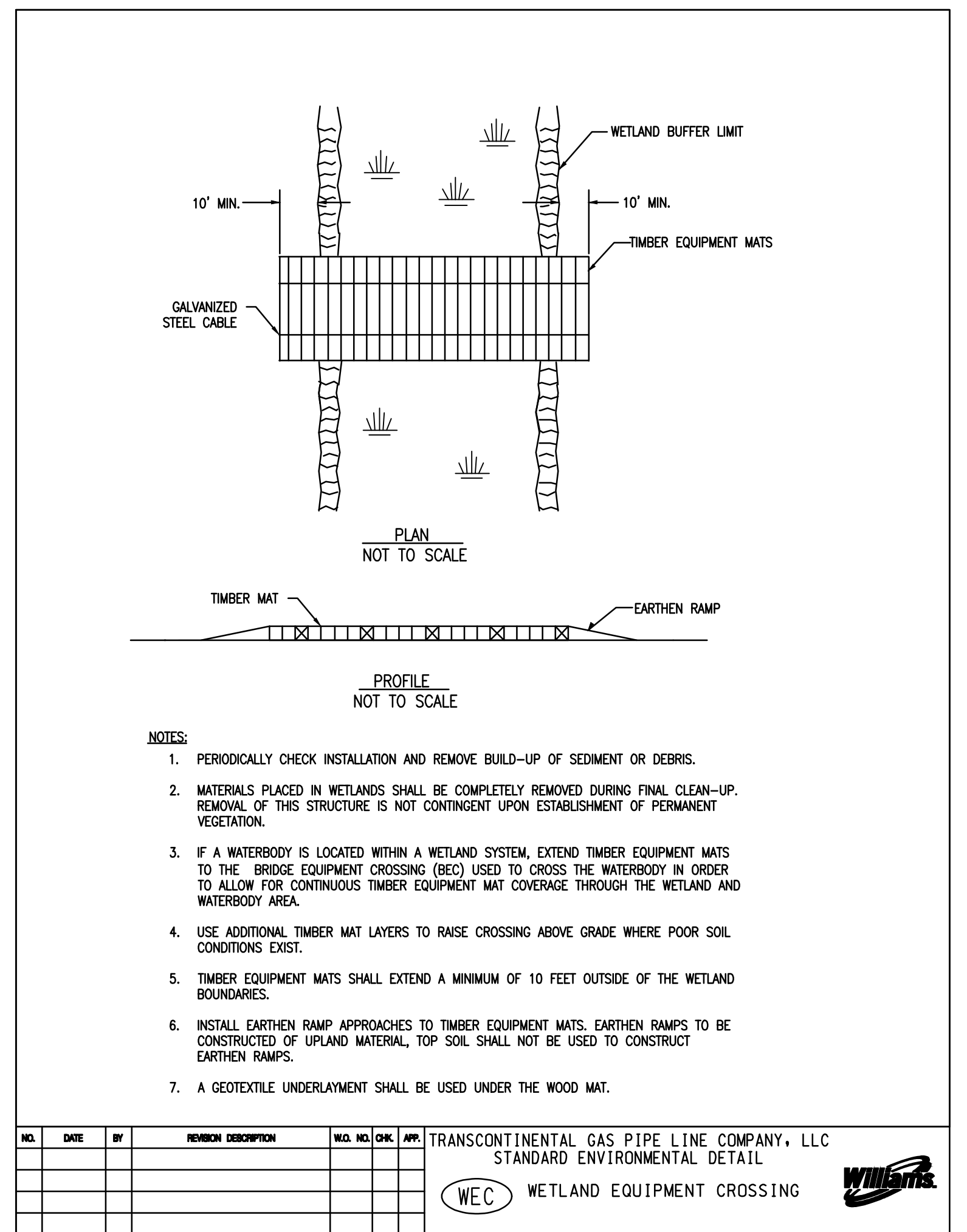
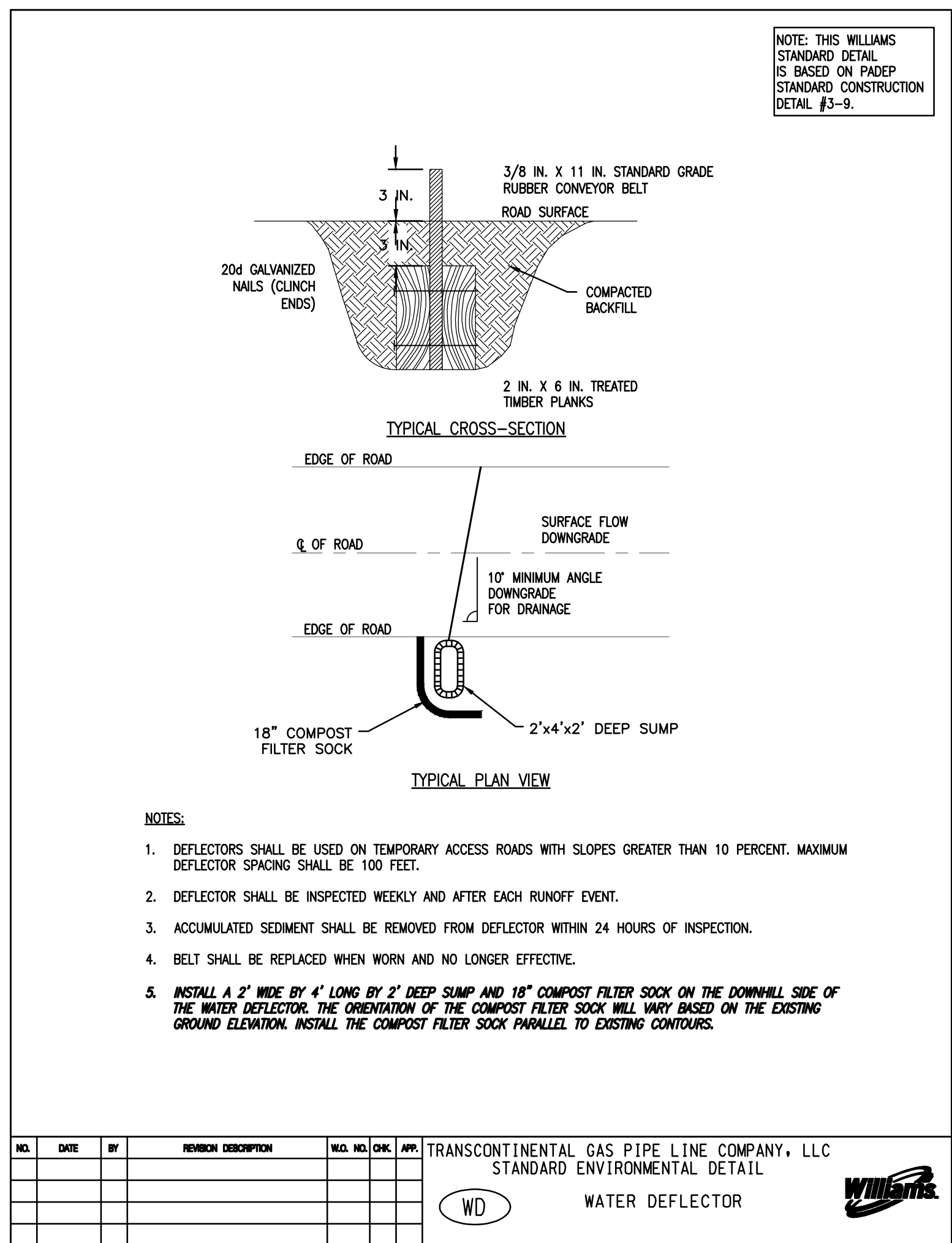
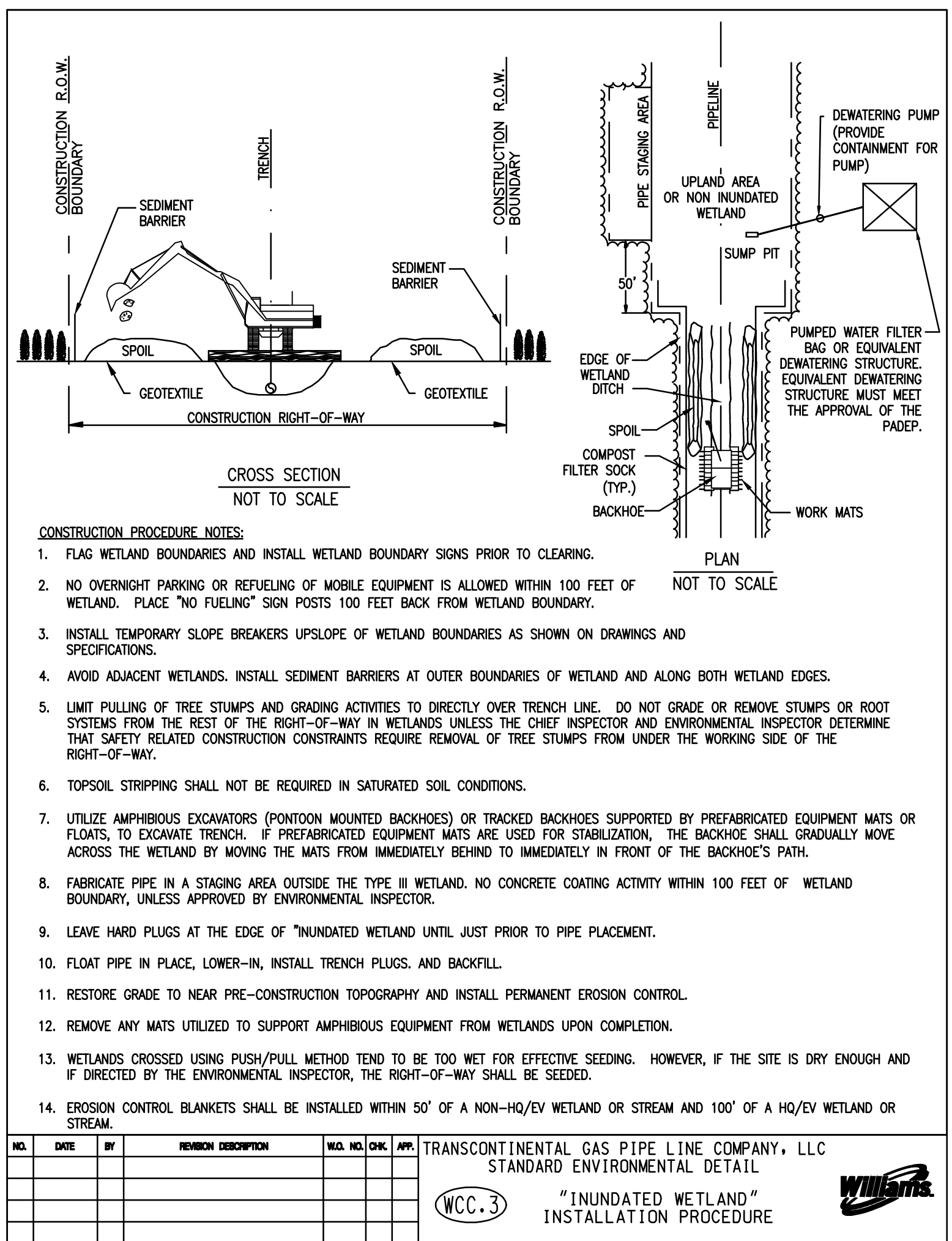
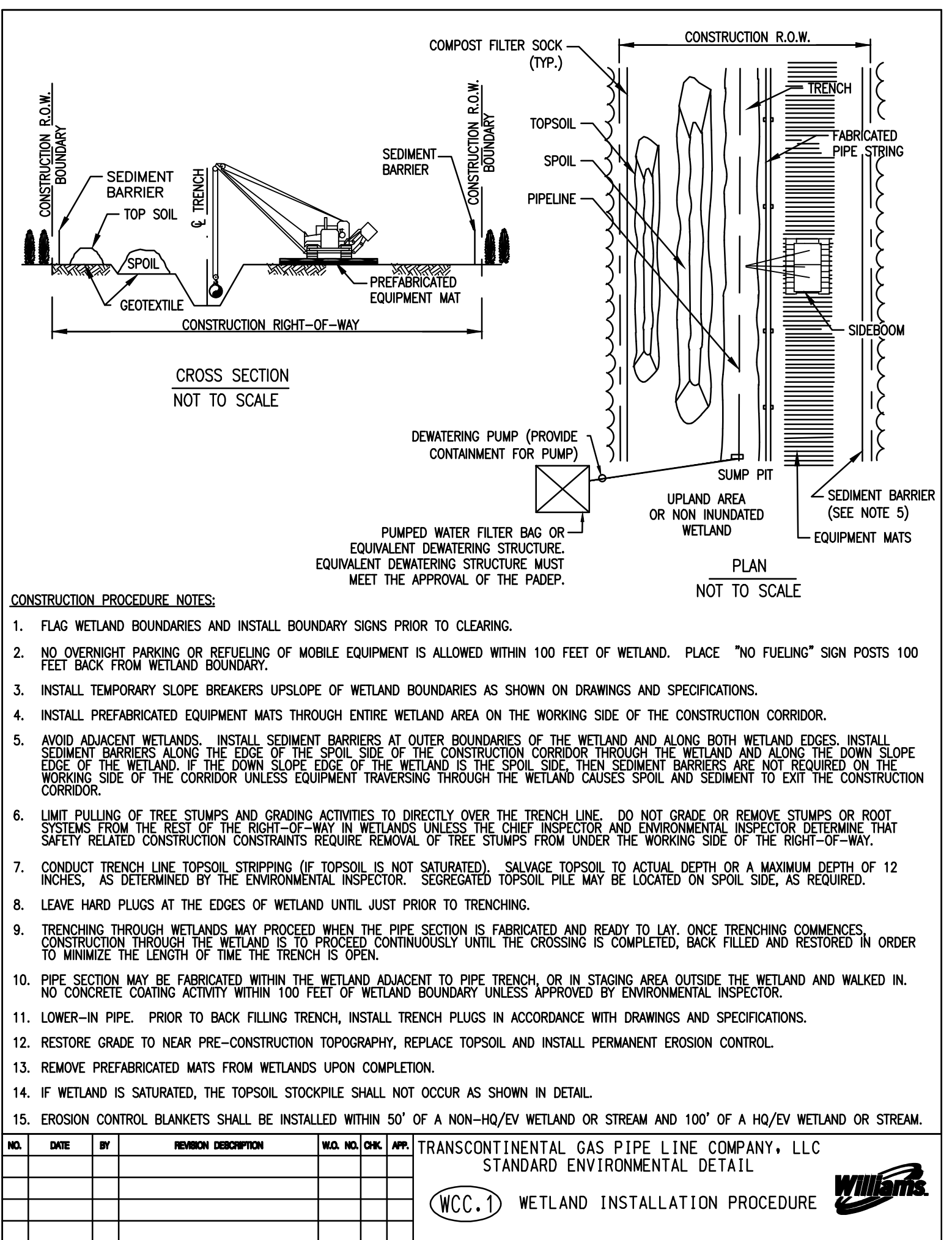
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			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL				
			(CWC) CLEAN WATER CROSSING				



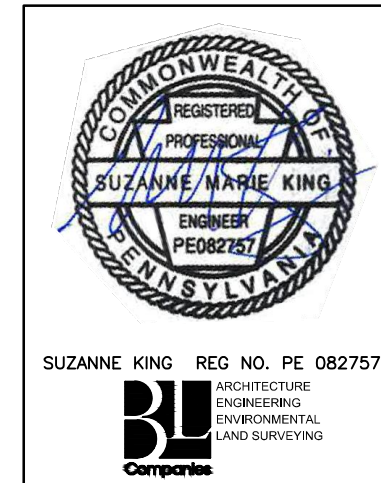
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1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W0572385	JLK	SMK	
2	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0572385	JLK	SMK	
3	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0572385	JLK	SMK	
4	AUG 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #3	W0572385	JLK	SMK	

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





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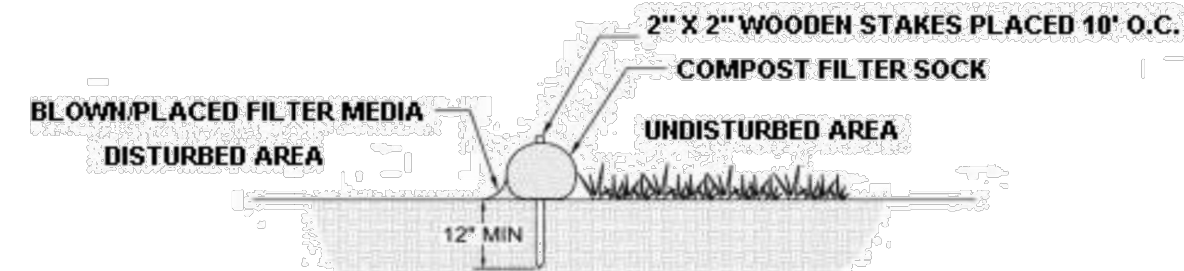
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1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W0572385	JLK	SMK	
2	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0572385	JLK	SMK	
3	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0572385	JLK	SMK	
4	AUG 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #3	W0572385	JLK	SMK	

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC				ATLANTIC SUNRISE PROJECT			
BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET				BEST MANAGEMENT PRACTICES DETAILS			
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:	ASR-BMP	SHEET	11
W.D.						OF	11



TABLE 1: SEDIMENT BARRIER SUMMARY

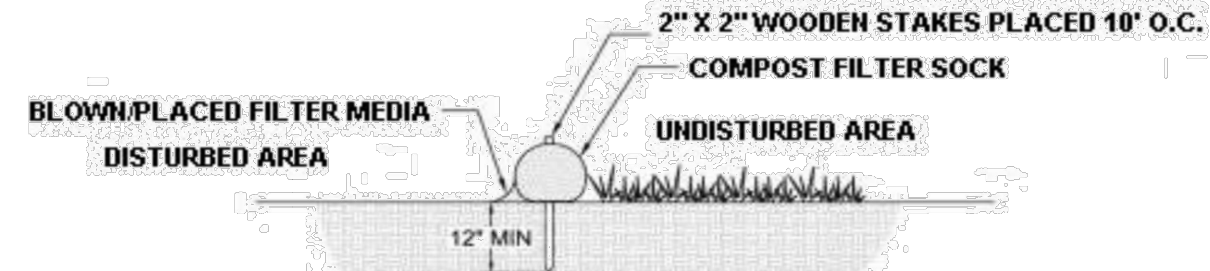
E&S WORKSHEET #1
Compost Filter Sock
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE
 LOCATION: SCHUYLKILL COUNTY
 PREPARED BY: ESS DATE: 03/20/2017
 CHECKED BY: JLK DATE: 04/10/2017



MILEPOST	Dia. In.	LOCATION			SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
		BEGIN STA.	END STA.	TYPE		
64	12	3394+75	to 3404+25	Road	6	145
	12	3404+25	to 3404+50	Road	6	172
	24	3405+00	to 3408+00	Road	4	550
	12	3408+00	to 3410+00	Road	7	135
	24	3410+00	to 3413+75	Road	7	375
	32	3420+25	to 3427+25	Road	7	495
	32	3430+50	to 3431+75	Road	21	55
	12	3431+25	to 3432+25	Road	8	123
	12	3432+25	to 3432+50	Road	7	65
	12	3432+50	to 3432+75	Road	2	215
	12	3432+75	to 3522+09	Stream/Wetland	9	35
	12	0+00	to 3525+00	Stream/Wetland	9	35
M-0474	18	3+00	to 3+00	Road	27	103
	18	3+00	to 3+00	Road	12	125
	32	3440+50	to 3443+75	Road	9	411
	24	3442+75	to 3443+75	Road	15	90
	18	3444+00	to 3444+00	Road	25	88
	12	3446+00	to 3447+00	Road	5	218
	18	3447+50	to 3449+00	Road	3	387
	18	3449+50	to 3451+00	Stream/Wetland/Waterbody	3	425
	12	3451+25	to 3453+00	Road	2	325
	12	3452+75	to 3453+50	Stream	3	366
	12	3453+50	to 3460+25	Road	4	100
	12	3460+25	to 3461+00	Stream/Wetland	7	40
	12	3461+00	to 3462+75	Road	4	207
	12	3463+00	to 3463+00	Road	3	45
	18	3470+25	to 3472+00	Road	11	148
	12	3472+75	to 3473+75	Road	24	31
	12	3474+00	to 3475+75	Road	15	40
M-0177	12	3475+75	to 3+50	Road	11	115
	18	2+25	to 5+00	Road	5	268

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

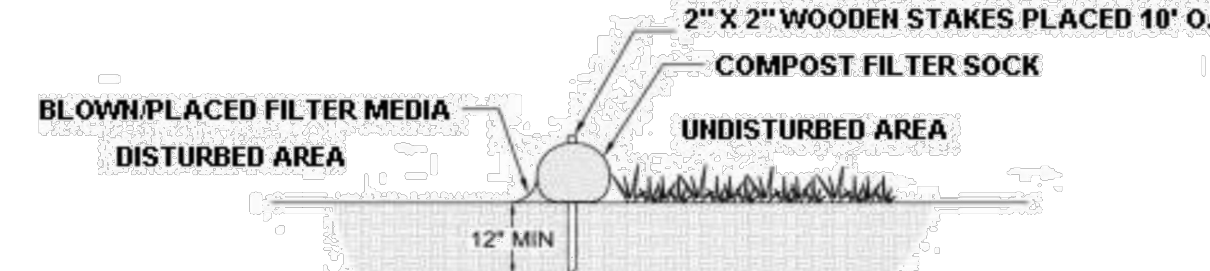
E&S WORKSHEET #1
Compost Filter Sock
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE
 LOCATION: SCHUYLKILL COUNTY
 PREPARED BY: ESS DATE: 03/20/2017
 CHECKED BY: JLK DATE: 04/10/2017



MILEPOST	Dia. In.	LOCATION			SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
		BEGIN STA.	END STA.	TYPE		
M-0221	18	0+00	to 3+75	Road	5	268
	12	3+75	to 4+00	Road	4	127
	18	4+00	to 8+62	Road	10	195
M-0301	18	0+00	to 3+00	Road	10	195
	18	3+25	to 4+25	Wetland/Stream	27	30
	12	4+50	to 5+00	Road	15	55
	12	5+00	to 5+25	Road	8	175
M-0221	18	5+75	to 18+25	Road	8	202
	24	18+25	to 22+50	Road	11	130
	32	22+50	to 3517+00	Road	9	404
	12	3517+00	to 3522+09	Road	8	120
	18	3525+00	to 3525+50	Road	14	170
	32	3534+00	to 3535+50	Road	4	691
	12	3534+75	to 0+50	Wetland	15	98
M-0196	32	0+00	to 12+25	Road	4	667
	12	1+75	to 11+00	Road	7	100
	24	13+50	to 18+00	Road	7	356
67	12	18+50	to 21+25	Road	3	292
	12	3553+00	to 3555+50	Road	2	280
	12	3557+75	to 3559+00	Road	3	77
	12	3561+25	to 3567+00	Road	5	191
	18	3567+00	to 3568+25	Road	31	47
	18	3567+50	to 3568+75	Road	9	167
	12	3568+50	to 3569+75	Stream/Wetland	2	30
	12	3569+25	to 3570+25	Road	26	25
	18	3570+25	to 3570+25	Road	15	126
	18	3577+00	to 3577+25	Road	18	107
	24	3577+25	to 3582+00	Road	9	166
	24	3582+25	to 3585+00	Road	10	110
	24	3585+00	to 3585+75	Wetland	10	110
68	24	3585+75	to 3590+50	Road	25	110

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

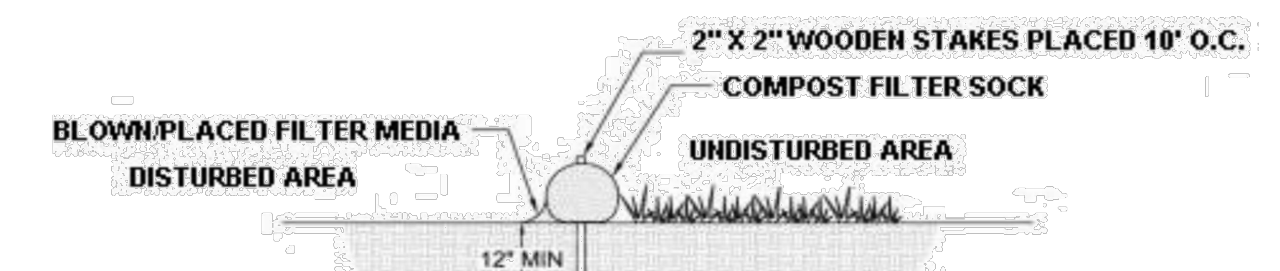
E&S WORKSHEET #1
Compost Filter Sock
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE
 LOCATION: SCHUYLKILL COUNTY
 PREPARED BY: ESS DATE: 03/20/2017
 CHECKED BY: JLK DATE: 04/10/2017



MILEPOST	Dia. In.	LOCATION			SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
		BEGIN STA.	END STA.	TYPE		
68	24	3590+50	to 3596+00	Road	18	212
	12	3596+50	to 3602+00	Road	9	134
	12	3603+25	to 3609+00	Road	6	154
	12	3609+00	to 3610+25	Stream	10	87
	18	3610+25	to 3612+50	Stream	15	184
	18	3612+00	to 3618+00	Stream	105	17
	18	3619+00	to 3624+25	Stream	13	128
	24	3624+75	to 3633+50	Road	25	142
	12	3633+50	to 3634+50	Road	10	20
69	24	3643+75	to 3644+00	Stream	30	84
	32	3643+75	to 3646+50	Stream	20	214
	18	3647+00	to 3647+25	Road	15	120
	18	3646+75	to 3648+00	Stream	10	125
	18	3647+75	to 3650+50	Road	12	132
	12	3650+50	to 3651+75	Road	8	131
	12	3651+75	to 3652+25	Road	8	134
	12	3652+25	to 3653+25	Road	9	100
M-0223	12	0+00	to 2+65	Road	9	100
	24	3656+25	to 3670+25	Road	27	100
70	32	3670+75	to 3704+75	Road	25	175
	18	3705+00	to 3718+75	Road	12	143
	18	3719+00	to 3727+25	Road	4	384
	24	3727+00	to 3733+00	Road	48	65
	24	3733+00	to 3733+50	Road	35	70
	24	3733+50	to 3735+50	Road	34	70
	12	3735+50	to 3736+00	Road	30	20
	18	3736+00	to 3739+75	Road	21	124
	24	3738+00	to 3740+00	Road	15	204
M-0181	18	0+50	to 4+00	Road	12	131
	12	5+00	to 5+50	Road	5	192
	24	6+25	to 7+25	Road	20	152

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

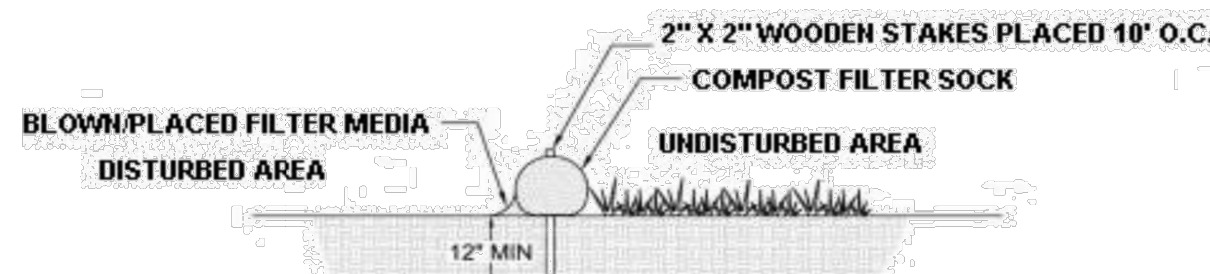
E&S WORKSHEET #1
Compost Filter Sock
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE
 LOCATION: SCHUYLKILL COUNTY
 PREPARED BY: ESS DATE: 03/20/2017
 CHECKED BY: JLK DATE: 04/10/2017



MILEPOST	Dia. In.	LOCATION			SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
		BEGIN STA.	END STA.	TYPE		
	24	3826+25	to 3829+75	Road	39	68
	24	3829+75	to 3831+50	Road	23	114
	12	3831+75	to 3832+00	Road	5	107
	24	3832+00	to 3835+75	Road	5	163
	18	3836+00	to 3522+09	Road	14	150
	24	3836+25	to 3836+50	Road	14	116
	12	3836+50	to 3837+00	Stream	12	100
	24	3836+75	to 3840+00	Road	8	132
	18	3838+00	to 3844+00	Road	33	47
	24	3844+00	to 3847+50	Road	24	151
	12	3847+50	to 3850+25	Road	6	178
73	24	3848+25	to 3855+75	Road	20	94
	18	3855+75	to 3859+50	Road	8	188
	24	3859+25	to 3861+50	Road	7	253
	18	3860+75	to 3861+75	Road	16	103
	12	3862+00	to 3864+50	Road	4	190
	24	3864+50	to 3868+00	Road	8	294
	18	3865+00	to 3871+00	Road	5	277
	18	3869+50	to 3871+50	Road	8	229
	24	3871+50	to 3875+50	Road	19	155
	12	3876+00	to 3876+00	Road	2	157
	12	3877+00	to 3877+00	Road	3	165
	24	3877+25	to 3878+00	Road	12	204
	18	3878+25	to 3878+50	Stream	15	132
	24	3879+00	to 3882+25	Road	4	227
	12	3882+50	to 3884+50	Wetland/Stream	3	218
	12	3883+75	to 3884+50	Road	3	138
	12	3885+00	to 3885+50	Road	3	70
74	18	3885+75	to 3907+25	Road	9	217
	24	3907+25	to 3909+75	Road	24	149
	18	3909+75	to 3910+25	Wetland	28	58

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

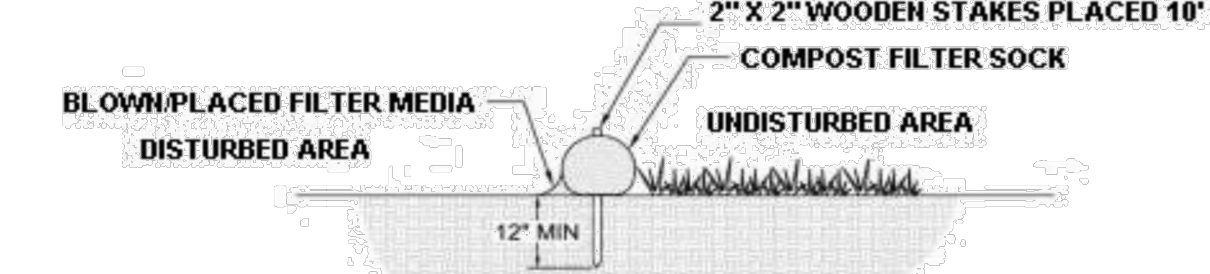
E&S WORKSHEET #1
Compost Filter Sock
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE
 LOCATION: SCHUYLKILL COUNTY
 PREPARED BY: ESS DATE: 03/20/2017
 CHECKED BY: JLK DATE: 04/10/2017



MILEPOST	Dia. In.	LOCATION			SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
		BEGIN STA.	END STA.	TYPE		
24	3826+25	to 3829+75	Road	39	68	
24	3829+75	to 3831+50	Road	23	114	
12	3831+75	to 3832+00	Road	5	107	
24	3832+00	to 3835+75	Road	5	163	
18	3836+00	to 3522+09	Road	14	150	
24	3836+25	to 3836+50	Road	14	116	
12	3836+50	to 3837+00	Stream	12	100	
24	3836+75	to 3840+00	Road	8	132	
18	3838+00	to 3844+00	Road	33	47	
24	3844+00	to 3847+50	Road	24	151	
12	3847+50	to 3850+25	Road	6	178	
24	3848+25	to 3855+75	Road	20	94	
18	3855+75	to 3859+50	Road	8	188	
24	3856+25	to 3861+50	Road	7	253	
18	3860+75	to 3861+75	Road	16	103	
12	3862+00	to 3864+50	Road	4	190	
24	3864+50	to 3868+00	Road	8	294	
18	3865+00	to 3871+00	Road	5	277	
18	3869+50	to 3871+50	Road	8	229	
24	3871+50	to 3875+50	Road	19	155	
12	3876+00	to 3876+00	Road	2	157	
24	3877+00	to 3877+00	Road	3	165	
24	3877+25	to 3878+00	Road	12	204	
18	3878+25	to 3878+50	Stream	15	132	
24	3879+00	to 3882+25	Road	4	227	
12	3882+50	to 3884+50	Wetland/Stream	3	218	
12	3883+75	to 3884+50	Road	3	138	
12	3885+00	to 3885+50	Road/Wetland	3	70	
18	3885+75	to 3907+25	Road	9	217	
24	3907+25	to 3909+75	Road	24	149	
18	3909+75	to 3910+25	Wetland	28	58	

- 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: SCHUYLKILL COUNTY
 PREPARED BY: ESS DATE: 03/20/2017
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MILEPOST	Dia. In.	LOCATION			SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
		BEGIN STA.	END STA.	TYPE		
24	3910+50	to 3913+50	Road	6	271	
18	3913+75	to 3914+75	Road	21	118	
24	3914+75	to 3916+00	Wetland	29	98	
12	3916+00	to 3916+41	Railroad	4	26	
12	3916+					

TABLE 2: TEMPORARY CLEAN WATER DIVERSION SUMMARY

MILE POST	TEMPORARY DIVERSION SUMMARY - SCHUYLKILL COUNTY, PENNSYLVANIA										TEMP. PIPE (CLEAN WATER) CROSSING								
	DIVERSION ID	DIVERSION TYPE	BOTTOM WIDTH B (FT)	DEPTH D (FT)	TOP WIDTH W (FT)	Z1 (FT)	Z2 (FT)	TEMPORARY LINING	PERMANENT LINING	DISCHARGE TYPE	INITIAL WIDTH (FT)	TERMINAL WIDTH (FT)	LENGTH (FT)	RIP RAP SIZE***	RIP RAP THICKNESS (IN)	R.O.W. SLOPE (%)	Q (CFS)	TEMPORARY PIPE SIZE DIAMETER (IN)	# OF PIPES
64	64.03	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	8	3.68	12	1
65	65.01	SWALE	2	2	10	2	2	S75	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	2	0.8	12	1
66	66.01	SWALE	2	2	10	2	2	S75	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	13	2.4	12	1
67	67.02	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	18	12.96	12	3
68	68.01	SWALE	2	2	10	2	2	W3000	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	12	12.16	12	3
69	69.01	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	14	7.84	12	2
70	70.01	SWALE	2	3	14	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	16	97.12	18	9
71	71.01	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	11	5.12	12	1
72	72.01	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	12	6.4	12	2
73	73.01	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	11	6.88	12	2
74	74.01	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	11	7.68	12	2
75	75.01	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	9	4.16	12	1
76	76.01	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	4	4.16	12	1
77	77.01	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	4	4.16	12	1
78	78.01	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	4	4.16	12	1
79	79.01	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	4	4.16	12	1
80	80.01	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	4	4.16	12	1
81	81.01	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	6	4.8	12	1
82	82.01	SWALE	2	2	10	2	2	P550	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	9	35.84	18	4

*High Quality or Exceptional Value watershed
 ** Diversion End Treatment to Stream or Wetland
 *** Sizing was determined using maximum allowable velocity outlined in Table 6.6 of the PA DEP Erosion and Sediment Pollution Control Program Manual, dated March 2012
 Drainage Area > 5 acres due to valley/drainage ditch
 Drainage Area > 5 acres due to wetlands

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

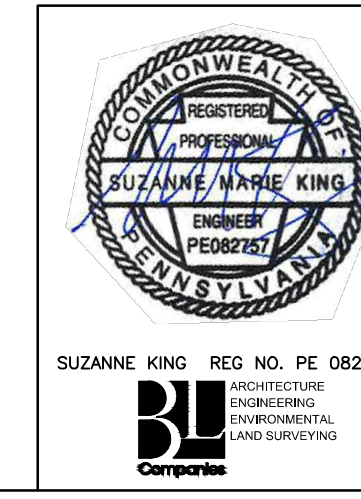
Waterbody ID	Waterbody Name	Milepost	County	Township	Stream Type	State Water Quality Use Classification - Designated Use	State Fishery Classification	Crossing Method	Crossing Window
WW-T34-7001	UNT to Mill Creek(WW-T34-7001)	65.02	Schuylkill	Pine Grove	Perennial	CWF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WB-T35-7001	Unnamed Pond	65.34	Schuylkill	Pine Grove	N/A	None	None	Dam-and-Pump	None
WW-T35-7002	Mill Creek(WW-T35-7002)	65.40	Schuylkill	Pine Grove	Perennial	CWF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T34-7002	UNT to Mill Creek(WW-T34-7002)	65.54	Schuylkill	Pine Grove	Perennial	CWF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T34-8001	UNT to Swatara Creek(WW-T34-8001)	MOC-0301.0.07	Schuylkill	Pine Grove	Perennial	CWF, MF	None	Dam-and-Pump	None
WW-T34-8001A	UNT to Swatara Creek(WW-T34-8001A)	MOC-0301.0.08	Schuylkill	Pine Grove	Intermittent	CWF, MF	None	Dam-and-Pump	None
WW-T31-7001	UNT to Swatara Creek(WW-T31-7001)	MOC-0468.0.02	Schuylkill	Pine Grove	Perennial	CWF, MF	None	Dam-and-Pump	None
WW-T18-7007C	UNT to Swatara Creek(WW-T18-7007C)	68.36	Schuylkill	Pine Grove	Intermittent	CWF, MF	None	Dam-and-Pump	None
WW-T18-7007A	UNT to Swatara Creek(WW-T18-7007A)	68.38	Schuylkill	Pine Grove	Perennial	CWF, MF	None	Dam-and-Pump	None
WW-T18-7007	UNT to Swatara Creek(WW-T18-7007)	68.38	Schuylkill	Pine Grove	Perennial	CWF, MF	None	Dam-and-Pump	None
WW-T21-7001	UNT to Swatara Creek(WW-T21-7001)	69.01	Schuylkill	Pine Grove	Intermittent	CWF, MF	None	Dam-and-Pump	None
WW-T21-7002	UNT to Swatara Creek(WW-T21-7002)	69.09	Schuylkill	Pine Grove	Intermittent	CWF, MF	None	Dam-and-Pump	None
WW-T31-8001	Lorberry Creek(WW-T31-8001)	MOC-0181.0.145	Schuylkill	Tremont	Perennial	CWF, MF	Wild Trout Waters (under review)	Dam-and-Pump	January 1 through September 30
WW-T31-8001A	UNT to Lorberry Creek(WW-T31-8001A)	MOC-0181.0.161	Schuylkill	Tremont	Ephemeral	CWF, MF	Wild Trout Waters (under review)	Dam-and-Pump	January 1 through September 30
WB-T32-8002	Unnamed Pond	MOC-198.0.13	Schuylkill	Tremont	N/A	None	None	N/A	None
WW-T43-8002	UNT to Lower Rausch Creek(WW-T43-8002)	MOC-0198.0.26	Schuylkill	Tremont	Perennial	CWF, MF	Wild Trout Waters (under review)	Dam-and-Pump	January 1 through September 30
WW-T43-8001	UNT to Lower Rausch Creek(WW-T43-8001)	MOC-0198.0.283	Schuylkill	Tremont	Intermittent	CWF, MF	Wild Trout Waters (under review)	Dam-and-Pump	January 1 through September 30
WW-T24-8003	UNT to Lower Rausch Creek(WW-T24-8003)	72.67	Schuylkill	Tremont	Intermittent	CWF, MF	Wild Trout Waters (under review)	Dam-and-Pump	January 1 through September 30
WW-T24-8002	Lower Rausch Creek(WW-T24-8002)	73.45	Schuylkill	Frailey	Perennial	CWF, MF	Wild Trout Waters (under review)	Dam-and-Pump	January 1 through September 30
WW-T24-8001	UNT to Lower Rausch Creek(WW-T24-8001)	73.54	Schuylkill	Frailey	Intermittent	CWF, MF	Wild Trout Waters (under review)	Dam-and-Pump	January 1 through September 30
WW-T95-8001	UNT to Lower Rausch Creek(WW-T95-8001)	73.55	Schuylkill	Frailey	Intermittent	CWF, MF	Wild Trout Waters (under review)	Dam-and-Pump	January 1 through September 30
WW-T95-8001A	UNT to Lower Rausch Creek(WW-T95-8001A)	73.56	Schuylkill	Frailey	Ephemeral	CWF, MF	Wild Trout Waters (under review)	Dam-and-Pump	January 1 through September 30
WW-T35-8001	Good Spring Creek(WW-T35-8001)	74.74	Schuylkill	Porter	Perennial	CWF, MF	Wild Trout Waters (under review)	Dam-and-Pump	January 1 through September 30
WW-T20-8001A	UNT to Pine Creek(WW-T20-8001A)	MOC-0316.1.03	Schuylkill	Hegins	Perennial	CWF, MF	Approved Trout Waters; Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T20-8001	Pine Creek(WW-T20-8001)	76.14	Schuylkill	Hegins	Perennial	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-T20-9001	UNT to Pine Creek(WW-T20-9001)	76.54	Schuylkill	Hegins	Perennial	CWF, MF	Approved Trout Waters; Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T16-9001	UNT to Pine Creek(WW-T16-9001)	MOC-00170.0.01	Schuylkill	Hegins	Perennial	CWF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WB-T10-9001	Unnamed Pond	MOC-00170.0.03	Schuylkill	Hegins	N/A	None	None	N/A	None
WW-T16-9003	Deep Creek(WW-T16-9003)	77.97	Schuylkill	Hegins	Perennial	CWF, MF	Approved Trout Waters; Trout Stocked Stream	Flume	June 16 through February 28
WW-T11-9001	Mahantango Creek(WW-T11-9001)	80.25	Schuylkill	Eldred	Perennial	CWF, MF	Approved Trout Waters	Dam-and-Pump	None
WW-T09-9002	UNT to Little Mahantango Creek(WW-T09-9002)	81.18	Schuylkill	Eldred	Perennial	CWF, MF	None	Dam-and-Pump	None
WW-T09-9001	Little Mahantango Creek(WW-T09-9001)	MOC-0194.0.181	Schuylkill	Eldred	Perennial	CWF, MF	Approved Trout Waters	Dam-and-Pump	None
Access Roads									
WW-T65-8001A	UNT to Swatara Creek(WW-T65-8001A)	AR-SC-061.1	Schuylkill	Pine Grove	Intermittent	CWF, MF	None	N/A	None
WW-T65-8001	UNT to Swatara Creek(WW-T65-8001)	AR-SC-061.1	Schuylkill	Pine Grove	Perennial	CWF, MF	None	N/A	None
WW-T87-9001	UNT to Mahantango Creek(WW-T87-9001)	AR-SC-073	Schuylkill	Eldred	Perennial	CWF, MF	Approved Trout Waters	N/A	None

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

TABLE 4: WETLANDS CROSSED BY CPLS PIPELINE IN SCHUYLKILL COUNTY

Wetland ID	Milepost	County	Township	Wetland Classes Impacted
W-T11-9002 / W-T11-9002-1	80.23	Schuylkill	Eldred	PEM
W-T11-9001	80.28	Schuylkill	Eldred	PEM
W-T09-9002	81.18	Schuylkill	Eldred	PFO
W-T24-8004	73.55	Schuylkill	Frailey	PEM
W-T24-8002	74.05	Schuylkill	Frailey	PEM
W-T20-8006	74.15	Schuylkill	Frailey	PFO
W-T20-8007	74.16	Schuylkill	Frailey	PFO
W-T96-9003 / W-T96-9003-1 / W-T96-9003-2	MOC-201.0.26	Schuylkill	Frailey	PEM
W-T20-8003A / W-T20-8003A-1	MOC-0316.1.02	Schuylkill	Hegins	PEM
W-T16-9001	MOC-00170.0.01	Schuylkill	Hegins	PEM
W-T53-9001A / W-T53-9001A-1	77.86	Schuylkill	Hegins	PEM
W-T53-9001C	77.88	Schuylkill	Hegins	PFO
W-T16-9003C	77.95	Schuylkill	Hegins	PFO
W-T16-9003A	77.95	Schuylkill	Hegins	PEM
W-T35-7001	65.35	Schuylkill	Pine Grove	PEM
W-T34-7002	65.55	Schuylkill	Pine Grove	PEM
W-T34-8001 / W-T34-8001-1	MOC-0301.0.06	Schuylkill	Pine Grove	PFO
W-T31-7001	M-0468.0.02	Schuylkill	Pine Grove	PEM
W-T18-7005A	67.59	Schuylkill	Pine Grove	PEM
W-T21-7001	67.91	Schuylkill	Pine Grove	PSS
W-T96-9004	74.71	Schuylkill	Porter	PSS
W-T95-9001A	74.79	Schuylkill	Porter	PEM
W-T95-9001B / W-T95-9001B-1 / W-T95-9001B-2	74.82	Schuylkill	Porter	PSS
W-T62-8001	MOC-0181.0.182	Schuylkill	Tremont	PEM
W-T24-8005	MOC-0198.0.230	Schuylkill	Tremont	PEM

Key:
 PEM = Palustrine Emergent
 PFO = Palustrine Forested
 PSS = Palustrine Scrub-Shrub



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
 SCHUYLKILL 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-SC-TB SHEET 3 OF 5

TABLE 5: LOCATIONS OF ACID SOILS ALONG CPLS PIPELINE IN SCHUYLKILL 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
64.28	64.62	SCHUYLKILL	LeB	5.7	70.65	70.82	SCHUYLKILL	DMF	4.6	76.93	76.94	SCHUYLKILL	CaC	5.5
64.62	64.74	SCHUYLKILL	CaC	5.5	70.82	70.83	SCHUYLKILL	MKC	5.4	76.94	76.96	SCHUYLKILL	WKF	5.3
64.74	64.80	SCHUYLKILL	CaD	5.3	M-0181 0.00	M-0181 0.14	SCHUYLKILL	MKC	5.4	76.96	77.00	SCHUYLKILL	CaD	5.3
64.80	64.86	SCHUYLKILL	CaC	5.5	M-0181 0.14	M-0181 0.27	SCHUYLKILL	BxB	4.6	M-0170 0.00	M-0170 0.00	SCHUYLKILL	CaD	5.3
64.86	64.97	SCHUYLKILL	CaD	5.3	M-0181 0.27	M-0181 0.31	SCHUYLKILL	LdC	4.6	M-0170 0.00	M-0170 0.03	SCHUYLKILL	KeB	4.6
64.97	64.99	SCHUYLKILL	WKF	5.3	71.15	71.24	SCHUYLKILL	LdC	4.6	M-0170 0.03	M-0170 0.09	SCHUYLKILL	MeC	4.6
64.99	65.03	SCHUYLKILL	KeB	4.6	71.24	71.26	SCHUYLKILL	MKC	5.4	M-0170 0.09	M-0170 0.22	SCHUYLKILL	MeB	4.6
65.03	65.06	SCHUYLKILL	CaD	5.3	71.26	71.45	SCHUYLKILL	LdC	4.6	M-0170 0.22	M-0170 0.27	SCHUYLKILL	MeC	4.6
65.06	65.11	SCHUYLKILL	LeC	5.7	71.45	71.58	SCHUYLKILL	DMF	4.6	77.26	77.28	SCHUYLKILL	MeC	4.6
65.11	65.15	SCHUYLKILL	LeB	5.7	71.58	71.63	SCHUYLKILL	HFC	5.4	77.28	77.46	SCHUYLKILL	DMF	4.6
65.15	65.22	SCHUYLKILL	LeC	5.7	M-0198 0.00	M-0198 0.13	SCHUYLKILL	HFC	5.4	77.46	77.47	SCHUYLKILL	LhC	5.4
65.22	65.31	SCHUYLKILL	MeB	4.6	M-0198 0.13	M-0198 0.20	SCHUYLKILL	LdC	4.6	77.47	77.63	SCHUYLKILL	DMF	4.6
65.31	65.35	SCHUYLKILL	Ln	5.8	M-0198 0.20	M-0198 0.26	SCHUYLKILL	BxD	4.5	77.63	77.77	SCHUYLKILL	LeC	5.7
65.35	65.41	SCHUYLKILL	Ba	5.0	M-0198 0.26	M-0198 0.32	SCHUYLKILL	DR	5.1	77.77	77.82	SCHUYLKILL	MeB	4.6
65.41	65.50	SCHUYLKILL	MeB	4.6	M-0198 0.32	M-0198 0.34	SCHUYLKILL	BxD	4.5	77.82	77.91	SCHUYLKILL	KeB	4.6
65.50	65.54	SCHUYLKILL	Ba	5.0	M-0198 0.34	M-0198 0.48	SCHUYLKILL	HFC	5.4	77.91	77.94	SCHUYLKILL	At	5.0
65.54	65.58	SCHUYLKILL	MeB	4.6	M-0198 0.48	M-0198 0.49	SCHUYLKILL	DMF	4.6	77.94	77.99	SCHUYLKILL	Ba	5.0
65.58	65.63	SCHUYLKILL	HaD	5.0	M-0198 0.49	M-0198 0.53	SCHUYLKILL	HFC	5.4	77.99	78.00	SCHUYLKILL	WKF	5.3
65.63	65.67	SCHUYLKILL	HaC	5.0	M-0198 0.53	M-0198 0.56	SCHUYLKILL	DR	5.1	78.00	78.01	SCHUYLKILL	Ba	5.0
65.67	65.70	SCHUYLKILL	HaB	5.0	M-0198 0.56	M-0198 0.59	SCHUYLKILL	HFC	5.4	78.01	78.04	SCHUYLKILL	CaB	5.5
65.70	65.91	SCHUYLKILL	HaC	5.0	72.21	72.23	SCHUYLKILL	HFC	5.4	78.04	78.09	SCHUYLKILL	LeB	5.7
65.91	65.94	SCHUYLKILL	HaB	5.0	72.23	72.25	SCHUYLKILL	DR	5.1	78.09	78.12	SCHUYLKILL	LeC	5.7
M-0177 0.00	M-0177 0.07	SCHUYLKILL	HaB	5.0	72.25	72.34	SCHUYLKILL	HFC	5.4	78.12	78.17	SCHUYLKILL	CaC	5.5
M-0177 0.07	M-0177 0.10	SCHUYLKILL	HaC	5.0	72.34	72.39	SCHUYLKILL	UM	6.5	78.17	78.24	SCHUYLKILL	CaB	5.5
M-0221 0.00	M-0221 0.16	SCHUYLKILL	HaC	5.0	72.39	72.39	SCHUYLKILL	DMF	4.6	78.24	78.34	SCHUYLKILL	LeB	5.7
M-0301 0.00	M-0301 0.02	SCHUYLKILL	HaC	5.0	72.39	72.53	SCHUYLKILL	HFC	5.4	78.34	78.37	SCHUYLKILL	CaB	5.5
M-0301 0.02	M-0301 0.04	SCHUYLKILL	BeD	5.7	72.53	72.60	SCHUYLKILL	UM	6.5	78.37	78.45	SCHUYLKILL	LeB	5.7
M-0301 0.04	M-0301 0.16	SCHUYLKILL	WKF	5.3	72.60	72.64	SCHUYLKILL	HFC	5.4	78.45	78.54	SCHUYLKILL	BxB	4.6
M-0301 0.16	M-0301 0.17	SCHUYLKILL	HaC	5.0	72.64	72.69	SCHUYLKILL	BxB	4.6	78.54	78.63	SCHUYLKILL	BxD	4.5
M-0221 0.33	M-0221 0.50	SCHUYLKILL	HaC	5.0	72.69	72.96	SCHUYLKILL	DMF	4.6	78.63	78.84	SCHUYLKILL	LdC	4.6
M-0221 0.50	M-0221 0.50	SCHUYLKILL	HaB	5.0	72.96	73.32	SCHUYLKILL	DKC	5.1	M-0213 0.00	M-0213 0.10	SCHUYLKILL	LdC	4.6
66.43	66.59	SCHUYLKILL	HaB	5.0	73.32	73.38	SCHUYLKILL	DMF	4.6	M-0213 0.10	M-0213 0.22	SCHUYLKILL	DMF	4.6
66.59	66.66	SCHUYLKILL	HaC	5.0	73.38	73.63	SCHUYLKILL	WaB	5.4	M-0213 0.22	M-0213 0.29	SCHUYLKILL	DR	5.1
M-0468 0.00	M-0468 0.03	SCHUYLKILL	WKF	5.3	73.63	73.97	SCHUYLKILL	UM	6.5	M-0213 0.29	M-0213 0.36	SCHUYLKILL	DKC	5.1
M-0474 0.00	M-0474 0.01	SCHUYLKILL	HaC	5.0	73.97	74.02	SCHUYLKILL	DMF	4.6	M-0213 0.36	M-0213 0.76	SCHUYLKILL	DMF	4.6
M-0474 0.01	M-0474 0.09	SCHUYLKILL	HaB	5.0	74.02	74.09	SCHUYLKILL	UM	6.5	M-0213 0.76	M-0213 0.86	SCHUYLKILL	MKC	5.4
M-0468 0.03	M-0468 0.17	SCHUYLKILL	HaD	5.0	74.09	74.10	SCHUYLKILL	DMF	4.6	79.70	79.75	SCHUYLKILL	MKC	5.4
M-0474 0.09	M-0474 0.12	SCHUYLKILL	HaC	5.0	74.10	74.14	SCHUYLKILL	UM	6.5	79.75	79.83	SCHUYLKILL	MeC	4.6
M-0468 0.17	M-0468 0.26	SCHUYLKILL	HaC	5.0	74.14	74.17	SCHUYLKILL	ArB	5.5	79.83	79.89	SCHUYLKILL	MKC	5.4
66.82	66.87	SCHUYLKILL	HaC	5.0	M-0201 0.00	M-0201 0.08	SCHUYLKILL	ArB	5.5	79.89	79.92	SCHUYLKILL	MeB	4.6
66.87	66.93	SCHUYLKILL	WKF	5.3	M-0201 0.08	M-0201 0.48	SCHUYLKILL	BxD	4.5	79.92	80.03	SCHUYLKILL	LeC	5.7
M-0196 0.23	M-0196 0.24	SCHUYLKILL	HaC	5.0	74.65	74.69	SCHUYLKILL	BxD	4.5	80.03	80.06	SCHUYLKILL	CaD	5.3
M-0196 0.24	M-0196 0.40	SCHUYLKILL	HaB	5.0	74.69	74.73	SCHUYLKILL	ArB	5.5	80.06	80.24	SCHUYLKILL	WKF	5.3
M-0196 0.40	M-0196 0.40	SCHUYLKILL	LeB	5.7	74.73	74.80	SCHUYLKILL	UD	5.5	80.24	80.30	SCHUYLKILL	Ba	5.0
M-0196 0.40	M-0196 0.41	SCHUYLKILL	HaC	5.0	74.80	74.83	SCHUYLKILL	ArB	5.5	M-0351 0.00	M-0351 0.01	SCHUYLKILL	Ba	5.0
67.29	67.30	SCHUYLKILL	HaC	5.0	74.83	74.89	SCHUYLKILL	BxB	4.6	M-0351 0.01	M-0351 0.02	SCHUYLKILL	MeB	4.6
67.30	67.35	SCHUYLKILL	LeB	5.7	74.89	74.94	SCHUYLKILL	UM	6.5	M-0351 0.02	M-0351 0.07	SCHUYLKILL	WKF	5.3
67.35	67.38	SCHUYLKILL	MeB	4.6	74.94	75.07	SCHUYLKILL	Du	Dumps	M-0351 0.07	M-0351 0.13	SCHUYLKILL	CaD	5.3
67.38	67.52	SCHUYLKILL	LeB	5.7	M-0316 0.00	M-0316 0.04	SCHUYLKILL	Du	Dumps	80.42	80.46	SCHUYLKILL	CaD	5.3
67.52	67.56	SCHUYLKILL	HaC	5.0	M-0316 0.04	M-0316 0.08	SCHUYLKILL	UM	6.5	80.46	80.50	SCHUYLKILL	LeC	5.7
67.56	67.58	SCHUYLKILL	WKF	5.3	M-0316 0.08	M-0316 0.26	SCHUYLKILL	DMF	4.6	80.50	80.53	SCHUYLKILL	MeC	4.6
67.58	67.61	SCHUYLKILL	AgA	4.6	M-0316 0.26	M-0316 0.31	SCHUYLKILL	UM	6.5	80.53	80.57	SCHUYLKILL	LeC	5.7
67.61	67.76	SCHUYLKILL	LeC	5.7	M-0316 0.31	M-0316 0.34	SCHUYLKILL	DKC	5.1	80.57	80.59	SCHUYLKILL	CaD	5.3
67.76	67.82	SCHUYLKILL	LeB	5.7	M-0316 0.34	M-0316 0.38	SCHUYLKILL	UM	6.5	80.59	80.77	SCHUYLKILL	LeC	5.7
67.82	67.87	SCHUYLKILL	WKF	5.3	M-0316 0.38	M-0316 0.51	SCHUYLKILL	DKB	4.7	80.77	80.83	SCHUYLKILL	LeB	5.7
67.87	67.88	SCHUYLKILL	KeB	4.6	M-0316 0.51	M-0316 0.69	SCHUYLKILL	DMF	4.6	80.83	80.87	SCHUYLKILL	MeB	4.6
67.88	68.02	SCHUYLKILL	WKF	5.3	M-0316 0.69	M-0316 0.82	SCHUYLKILL	MKC	5.4	80.87	81.00	SCHUYLKILL	LeB	5.7
68.02	68.15	SCHUYLKILL	LeB	5.7	M-0316 0.82	M-0316 0.93	SCHUYLKILL	KvC	5.4	81.00	81.07	SCHUYLKILL	LeC	5.7
68.15	68.26	SCHUYLKILL	LeC	5.7	M-0316 0.93	M-0316 0.98	SCHUYLKILL	MKC	5.4	81.07	81.23	SCHUYLKILL	MeB	4.6
68.26	68.33	SCHUYLKILL	MeC	4.6	M-0316 0.98	M-0316 1.04	SCHUYLKILL	KvC	5.4	81.23	81.24	SCHUYLKILL	CaD	5.3
68.33	68.37	SCHUYLKILL	KvC	5.4	M-0316 1.04	M-0316 1.05	SCHUYLKILL	Ba	5.0	81.24	81.29	SCHUYLKILL	LeC	5.7
68.37	68.48	SCHUYLKILL	MeB	4.6	76.12	76.15	SCHUYLKILL	Ba	5.0	81.29	81.44	SCHUYLKILL	LeB	5.7
68.48	68.56	SCHUYLKILL	MeC	4.6	76.15	76.18	SCHUYLKILL	LeB	5.7	81.44	81.53	SCHUYLKILL	LeC	5.7
68.56	68.57	SCHUYLKILL	CaC	5.5	76.18	76.21	SCHUYLKILL	LeC	5.7	M-0194 0.00	M-0194 0.11	SCHUYLKILL	LeC	5.7
68.57	68.82	SCHUYLKILL	MeB	4.6	76.21	76.37	SCHUYLKILL	LeB	5.7	M-0194 0.11	M-0194 0.17	SCHUYLKILL	CaD	5.3
68.82	68.87	SCHUYLKILL	MKC	5.4	76.37	76.41	SCHUYLKILL	LeC	5.7	M-0194 0.17	M-0194 0.20	SCHUYLKILL	MeB	4.6
68.87	68.90	SCHUYLKILL	KeB	4.6	76.41	76.43	SCHUYLKILL	LeB	5.7	M-0194 0.20	M-0194 0.22	SCHUYLKILL	CaD	5.3
68.90	69.11	SCHUYLKILL	MKC	5.4	76.43	76.48	SCHUYLKILL	LeC	5.7	M-0194 0.22	M-0194 0.39	SCHUYLKILL	LeB	5.7
69.11	69.19	SCHUYLKILL	MeB	4.6	76.48	76.49	SCHUYLKILL	CaC	5.5	M-0194 0.39	M-0194 0.43	SCHUYLKILL	CaD	5.3
M-0223 0.00	M-0223 0.01	SCHUYLKILL	MeB	4.6	76.49	76.52	SCHUYLKILL	LeC	5.7	M-0194 0.43	M-0194 0.46	SCHUYLKILL	CaB	5.5
M-0223 0.01	M-0223 0.05	SCHUYLKILL	MKC	5.4	76.52	76.56	SCHUYLKILL	KeB	4.6	M-0194 0.46	M-0194 0.65	SCHUYLKILL	LeB	5.7
69.24	69.36	SCHUYLKILL	MKC	5.4	76.56	76.60	SCHUYLKILL	CaD	5.3	M-0194 0.65	M-0194 0.76	SCHUYLKILL	LeC	5.7
69.36	69.68	SCHUYLKILL	DMF	4.6	76.60	76.61	SCHUYLKILL	CaC	5.5	M-0194 0.76	M-0194 0.78	SCHUYLKILL	MeB	4.6
69.68	70.17	SCHUYLKILL	LhC	5.4	76.61	76.67	SCHUYLKILL	CaB	5.5	M-0194 0.78	M-0194 0.79	SCHUYLKILL	MeD	4.6
70.17	70.30	SCHUYLKILL	DMF	4.6	76.67	76.69	SCHUYLKILL	CaC	5.5	M-0247 0.00	M-0247 0.02	SCHUYLKILL	MeD	4.6
70.30	70.38	SCHUYLKILL	BxD	4.5	76.69	76.78	SCHUYLKILL	LeB	5.7	M-0247 0.02	M-0247 0.13	SCHUYLKILL	MeB	4.6
70.38	70.42	SCHUYLKILL	DMF	4.6	76.78	76.80	SCHUYLKILL	KeB	4.6	M-0247 0.13	M-0247 0.18	SCHUYLKILL	MKC	5.4
70.42	70.46	SCHUYLKILL	HGC	5.4	76.80	76.88	SCHUYLKILL	MeB	4.6	M-0247 0.18	M-0247 0.33	SCHUYLKILL	DMF	4.6
70.46	70.56	SCHUYLKILL	DMF	4.6	76.88	76.90	SCHUYLKILL	LeC	5.7					
70.56	70.65	SCHUYLKILL	DR	5.1	76.90	76.93	SCHUYLKILL	CaB	5.5					

NOTE: SEE THE SUPPORTING PIPELINE AND ACCESS ROAD EROSION AND SEDIMENT CONTROL NARRATIVES FOR DEFINITIONS AND DESCRIPTIONS OF THE MAP UNIT SYMBOL ABBREVIATIONS.

TABLE 6: LOCATIONS OF ACIDIC BEDROCK ALONG CPLS PIPELINE IN SCHUYLKILL COUNTY

Pipeline Facility/County	Mile Post with Shallow Bedrock		Linear Distance Crossed (miles)	Bedrock Formation	Acid Potential	Karst	Rock Type
	From	To					
CPL-SOUTH							
SCHUYLKILL	64.28	64.62	0.35	Sherman Creek Member of Catskill Formation	Typically non-acid sulfide bearing		mudstone, siltstone, and sandstone
SCHUYLKILL	64.62	65.17	0.55	Trimmers Rock Formation	Typically		

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 Deficiencies #25 and 29)	Field Routing Adjustments within 600-foot Wide Corridor (Supporting Information for Technical Deficiency #13)*	Stream Bank Stabilization BMP	Width of Erosion Control Blanket Required for Stream Bank Stabilization (ft)
Wetland	N/A	W-T48-7001	65.02	EV	N/A	N/A	PEM	The LOD for W-T48-7001 has been modified to eliminate impacts.	This feature is no longer impacted based on LOD reductions.	N/A	N/A
Stream	UNT to Mill Creek (WW-T34-7001)	WW-T34-7001	65.01	CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T34-7001.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T34-7001.	SBR with SC150 fabric	50
Pond	WB-T35-7001	WB-T35-7001	65.34	None	N/A	None	PUB	LOD has been reduced to 75' to minimize impacts to WB-T35-7001.	The pipeline was routed at this location to cross the narrowest portion of the waterbody possible. Additional route adjustments north or south were constrained by residences on both sides of the route.	SBR with SC150 fabric	50
Wetland	N/A	W-T35-7001	65.35	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T35-7001.	The pipeline was routed at this location to provide a perpendicular crossing of the wetland. Additional route adjustments north or south were constrained by residences on both sides of the route.	N/A	N/A
Stream	Mill Creek (WW-T35-7002)	WW-T35-7002	65.40	CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T35-7002.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T35-7002.	SBR with SC150 fabric	50
Stream	UNT to Mill Creek (WW-T34-7002)	WW-T34-7002	65.54	CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 75' to minimize impacts to WW-T34-7002.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T34-7002.	SBR with SC150 fabric	50
Wetland	N/A	W-T34-7002	65.55	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T34-7002.	The pipeline was routed at this location to provide a perpendicular crossing of the wetland. Avoidance of wetland W-T35-7002 was not feasible due to the linear nature of the wetland, extending south beyond the routing corridor. A route adjustment north was not feasible due to a residence located in the northern portion of the corridor.	N/A	N/A
Wetland	N/A	W-T34-8001/ W-T34-8001-1	M-0301.006	None	N/A	N/A	PFO	LOD reduced to 90' to minimize impacts to W-T34-8001. Further LOD reduction was not possible due to the adjacent stream and road crossing, as well as steep terrain immediately west of the wetland crossing. The additional workspace will be used for equipment crossing and spoil storage to accommodate a safe and efficient wetland crossing.	The pipeline was routed at this location to cross the narrowest section of the wetland, and along the wetland margin.	N/A	N/A
Stream	UNT to Swatara Creek (WW-T34-8001)	WW-T34-8001	M-0301.007	CWF, MF	Perennial	None	R3	LOD has been reduced to 90' to minimize impacts to WW-T34-8001.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T34-8001.	SBR with SC150 fabric	50
Stream	UNT to Swatara Creek (WW-T34-8001A)	WW-T34-8001A	M-0301.008	CWF, MF	Intermittent	None	R4	LOD has been reduced to 90' to minimize impacts to WW-T34-8001A.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T34-8001A.	SBR with SC150 fabric	50
Stream	UNT to Swatara Creek (WW-T31-7001)	WW-T31-7001	M-0468.002	CWF, MF	Perennial	None	R3	LOD has been reduced to 80' to minimize impacts to WW-T31-7001.	The pipeline was field routed in this area to cross stream WW-T31-7001 and riparian wetland W-T31-7001 at a perpendicular angle and near the northern extent of the system. A realignment to move the pipeline further north and avoid the system entirely was considered, but determined infeasible due to the proximity of a residence north of the current alignment.	SBR with SC150 fabric	50
Wetland	N/A	W-T31-7001	M-0468.002	None	N/A	N/A	PEM	LOD has been reduced to 80' to minimize impacts to W-T31-7001.	The pipeline was field routed in this area to cross stream WW-T31-7001 and riparian wetland W-T31-7001 at a perpendicular angle and near the northern extent of the system. A realignment to move the pipeline further north and avoid the system entirely was considered, but determined infeasible due to the proximity of a residence north of the current alignment.	N/A	N/A
Wetland	N/A	W-T18-7005A	67.59	None	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T18-7005A.	The pipeline was field routed in this area to cross stream WW-T31-7001 and riparian wetland W-T31-7001 at a perpendicular angle and near the northern extent of the system. A realignment to move the pipeline further north and avoid the system entirely was considered, but determined infeasible due to the proximity of a residence north of the current alignment.	N/A	N/A
Wetland	N/A	W-T21-7001	67.91	None	N/A	N/A	PSS	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-T21-7001.	The pipeline was routed in this location to cross the margin of the wetland. Shifting the route further west to completely avoid the wetland was constrained by steep slopes and a residence west of the route.	N/A	N/A
Stream	UNT to Swatara Creek (WW-T18-7007C)	WW-T18-7007C	68.36	CWF, MF	Intermittent	None	R4	LOD has been reduced to 90' to minimize impacts to WW-T18-7007C.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T18-7007C.	SBR with SC150 fabric	50
Stream	UNT to Swatara Creek (WW-T18-7007A)	WW-T18-7007A	68.38	CWF, MF	Perennial	None	R3	LOD has been reduced to 90' to minimize impacts to WW-T18-7007A.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T18-7007A.	SBR with SC150 fabric	50
Stream	UNT to Swatara Creek (WW-T18-7007)	WW-T18-7007	68.38	CWF, MF	Perennial	None	R3	LOD has been reduced to 90' to minimize impacts to WW-T18-7007.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T18-7007.	SBR with SC150 fabric	50
Stream	UNT to Swatara Creek (WW-T21-7001)	WW-T21-7001	69.01	CWF, MF	Intermittent	None	R4	LOD has been reduced to 90' to minimize impacts to WW-T21-7001.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T21-7001. Other routing considerations in this area included avoidance of residences and side slope construction.	SBR with SC150 fabric	50
Stream	UNT to Swatara Creek (WW-T21-7002)	WW-T21-7002	69.09	CWF, MF	Intermittent	None	R4	LOD has been reduced to 90' to minimize impacts to WW-T21-7002.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T21-7002. Other routing considerations in this area included avoidance of residences and side slope construction.	SBR with SC150 fabric	50
Stream	Lorberry Creek (WW-T31-8001)	WW-T31-8001	M-0181.014	CWF, MF	Perennial	Wild Trout Waters (under review)	R3	LOD has been reduced to 90' to minimize impacts to WW-T31-8001.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T31-8001.	SBR with SC150 fabric	50
Stream	UNT to Lorberry Creek (WW-T31-8001A)	WW-T31-8001A	M-0181.016	CWF, MF	Ephemeral	Wild Trout Waters (under review)	R5	LOD has been reduced to 90' to minimize impacts to WW-T31-8001A.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T31-8001A.	SBR with SC150 fabric	50
Wetland	N/A	W-T62-8001	M-0181.018	EV	N/A	N/A	PEM	The LOD for W-T62-8001 has been modified to eliminate impacts.	This feature is no longer impacted based on LOD reductions.	N/A	N/A
Pond	WB-T32-8002	WB-T32-8002	M-0198.013	None	N/A	None	PUB	Full ROW width is needed at this location due to surrounding steep terrain and approaching PI.	The pipeline was routed at this location to avoid crossing the pond with the trench line.	SBR with SC150 fabric	50
Wetland	N/A	W-T24-8005	M-0198.023	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T24-8005.	The pipeline was routed at this location to cross the narrowest section of the wetland, and to provide a perpendicular crossing.	N/A	N/A
Stream	UNT to Lower Rausch Creek (WW-T43-8002)	WW-T43-8002	M-0198.026	CWF, MF	Perennial	Wild Trout Waters (under review)	R3	LOD has been reduced to 90' to minimize impacts to WW-T43-8002.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T43-8002.	SBR with SC150 fabric	50
Stream	UNT to Lower Rausch Creek (WW-T43-8001)	WW-T43-8001	M-0198.028	CWF, MF	Intermittent	Wild Trout Waters (under review)	R4	LOD has been reduced to 90' to minimize impacts to WW-T43-8001.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T43-8001.	SBR with SC150 fabric	50
Pond	WB-T32-8001	WB-T32-8001	M-0198.030	None	N/A	None	PUB	LOD has been modified to eliminate impacts to this feature.	This feature is no longer impacted based on LOD reductions.	N/A	N/A
Stream	UNT to Lower Rausch Creek (WW-T24-8003)	WW-T24-8003	72.67	CWF, MF	Intermittent	Wild Trout Waters (under review)	R4	LOD has been reduced to 90' to minimize impacts to WW-T24-8003.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T24-8003.	SBR with SC150 fabric	50
Stream	Lower Rausch Creek (WW-T24-8002)	WW-T24-8002	73.45	CWF, MF	Perennial	Wild Trout Waters (under review)	R3	LOD has been reduced to 90' to minimize impacts to WW-T24-8002.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T24-8002.	SBR with SC150 fabric	50
Stream	UNT to Lower Rausch Creek (WW-T24-8001)	WW-T24-8001	73.54	CWF, MF	Intermittent	Wild Trout Waters (under review)	R4	LOD has been reduced to 90' to minimize impacts to WW-T24-8001.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T24-8001.	SBR with SC150 fabric	50
Wetland	N/A	W-T24-8004	73.55	EV	N/A	N/A	PEM	This wetland encroaches within the northern portion of the LOD only, and this portion of the LOD was reduced by 10' to minimize impacts to W-T24-8004.	The pipeline was routed in this location to provide a perpendicular crossing of stream W-T24-8004.	N/A	N/A

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 Deficiencies #25 and 29)	Field Routing Adjustments within 600-foot Wide Corridor (Supporting Information for Technical Deficiency #13)*	Stream Bank Stabilization BMP	Width of Erosion Control Blanket Required for Stream Bank Stabilization (ft)
Stream	UNT to Lower Rausch Creek (WW-T95-8001)	WW-T95-8001	73.55	CWF, MF	Intermittent	Wild Trout Waters (under review)	R4	LOD has been reduced to 90' to minimize impacts to WW-T95-8001.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T95-8001.	SBR with SC150 fabric	50
Stream	UNT to Lower Rausch Creek (WW-T95-8001A)	WW-T95-8001A	73.56	CWF, MF	Ephemeral	Wild Trout Waters (under review)	R6	LOD has been reduced to 90' to minimize impacts to WW-T95-8001A.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T95-8001A.	SBR with SC150 fabric	50
Wetland	N/A	W-T24-8003	73.59	EV	N/A	N/A	PEM	The LOD for W-T24-8003 has been modified to eliminate impacts.	This feature is no longer impacted based on LOD reductions.	N/A	N/A
Wetland	N/A	W-T24-8002	74.05	None	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T24-8002.	The pipeline was routed in this location to provide a perpendicular crossing of wetland W-T24-8002.	N/A	N/A
Wetland	N/A	W-T20-8006	74.15	None	N/A	N/A	PFO	W-T20-8006 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, LOD reduction at this location to minimize impacts is not possible due to the adjacent railroad crossing and approaching PI.	The pipeline was routed in this location to cross the margin of the wetland with workspace only.	N/A	N/A
Wetland	N/A	W-T20-8007	74.16	None	N/A	N/A	PFO	W-T20-8007 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, LOD reduction at this location to minimize impacts is not possible due to the adjacent railroad crossing and approaching PI.	The pipeline was routed in this location to cross the margin of the wetland with workspace only.	N/A	N/A
Wetland	N/A	W-T96-9003 / W-T96-9003-1 / W-T96-9003-2	M-201.026	EV	N/A	N/A	PEM	LOD reduced to 90' to minimize impacts to W-T96-9003. Further LOD reduction was not possible due to the saturated nature of the wetland with unconsolidated soils. The additional workspace will be used for equipment crossing and spoil storage to accommodate a safe and efficient wetland crossing.	The pipeline was routed in this location to cross the northern margin of this large wetland complex, which extends to the north well beyond the routing corridor. Further minimization of impacts by shifting the route south was not possible due to the presence of an active railroad.	N/A	N/A
Wetland	N/A	W-T96-9004	74.71	EV	N/A	N/A	PSS	LOD has been reduced to 75' to minimize impacts to W-T96-9004.	The pipeline was routed in this location to cross the narrowest portion of the wetland.	N/A	N/A
Stream	Good Spring Creek (WW-T35-8001)	WW-T35-8001	74.74	CWF, MF	Perennial	Wild Trout Waters (under review)	R3	LOD has been reduced to 90' to minimize impacts to WW-T35-8001.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T35-8001.	SBR with SC150 fabric	50
Wetland	N/A	W-T95-9001B-2	74.82	None	N/A	N/A	PSS	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-T95-9001B-2.	The pipeline was routed in this location to provide a perpendicular crossing of the wetland. Avoidance of this wetland was not possible as it extends for a significant distance both east and west of the routing corridor.	N/A	N/A
Wetland	N/A	W-T95-9001A / W-T95-9001B / W-T95-9001B-1	74.82	None	N/A	N/A	PEM, PSS	LOD reduced to 90' to minimize impacts to W-T95-9001A-W-T95-9001B-W-T95-9001B-1. Further LOD reduction was not possible due to the saturated nature of the wetland with unconsolidated soils, and adjacent stream and road crossings. The additional workspace will be used for equipment crossing and spoil storage to accommodate a safe and efficient wetland crossing.	The pipeline was routed in this location to provide a perpendicular crossing of the wetland. Avoidance of this wetland was not possible as it extends for a significant distance both east and west of the routing corridor.	N/A	N/A
Wetland	N/A	W-T20-8003A / W-T20-8003A-1	M-0316.102	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T20-8003.	The pipeline was routed in this location to avoid multiple stream crossings to the east of the LOD, and to minimize crossing distance within the wetland as much as possible.	N/A	N/A
Stream	UNT to Pine Creek (WW-T20-8001A)	WW-T20-8001A	M-0316.103	CWF, MF	Perennial	Approved Trout Waters; Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T20-8001A.	The pipeline was routed in this location to avoid multiple stream crossings to the east of the LOD, and to cross stream WW-T20-8001A at a perpendicular angle.	SBR with SC150 fabric	50
Stream	Pine Creek (WW-T20-8001)	WW-T20-8001	76.14	CWF, MF	Perennial	Approved Trout Waters; Trout Stocked Stream; Wild Trout Waters	R3	LOD has been reduced to 75' to minimize impacts to WW-T20-8001.	The pipeline was routed in this location to avoid multiple stream crossings to the east of the LOD, and to cross stream WW-T20-8001 at a perpendicular angle.	SBR with SC150 fabric	50
Stream	UNT to Pine Creek (WW-T20-9001)	WW-T20-9001	76.54	CWF, MF	Perennial	Approved Trout Waters; Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T20-9001.	The pipeline was routed in this location to cross stream WW-T20-9001 at a perpendicular angle.	SBR with SC150 fabric	50
Wetland	N/A	W-T16-9001	M-0170.001	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T16-9001.	The pipeline was routed in this location to cross wetland W-T16-9001 at a perpendicular angle.	N/A	N/A
Stream	UNT to Pine Creek (WW-T16-9001)	WW-T16-9001	M-0170.001	CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 75' to minimize impacts to WW-T16-9001.	The pipeline was routed in this location to cross stream WW-T16-9001 at a perpendicular angle.	SBR with SC150 fabric	50
Pond	WB-T10-9001	WB-T10-9001	M-0170.002	None	N/A	N/A	PUB	The LOD for WB-T10-9001 has been modified to eliminate impacts.	This feature is no longer impacted based on LOD reductions.	N/A	N/A
Wetland	N/A	W-T53-9001A / W-T53-9001A-1 / W-T53-9001C	77.85 / 77.73 / 77.86	None	N/A	N/A	PEM, PFO	LOD has been reduced to 75' to minimize impacts to W-T53-9001.	The pipeline was routed in this location to cross the narrowest portion of the wetland, primarily along its eastern margin.	N/A	N/A
Wetland	N/A	W-T16-9003A / W-T16-9003C	77.95 / 77.95	None	N/A	N/A	PEM, PFO	LOD has been reduced to 75' to minimize impacts to W-T16-9003.	The pipeline was routed in this location to cross the narrowest portion of the wetland.	N/A	N/A
Stream	Deep Creek (WW-T16-9003)	WW-T16-9003	77.97	CWF, MF	Perennial	Approved Trout Waters; Trout Stocked Stream	R3	LOD has been reduced to 90' to minimize impacts to WW-T16-9003.	The pipeline was routed in this location to cross stream WW-T16-9003 at a perpendicular angle.	SBR with SC150 fabric	50
Stream	UNT to Mahantango Creek (WW-T87-9001)	WW-T87-9001	80.11	CWF, MF	Perennial	Approved Trout Waters	R3	LOD reduced to 'X' to accommodate an equipment bridge crossing of the stream.	The access road was routed to cross this stream along an existing dirt/gravel road. The bridge equipment crossing will minimize stream impacts.	SBR with SC150 fabric	50
Wetland	N/A	W-T11-9002 / W-T11-9002-1	80.23	None	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T11-9002.	The pipeline was routed in this location to cross wetland W-T11-9002 at a narrow location with workspace only.	N/A	N/A
Stream	Mahantango Creek (WW-T11-9001)	WW-T11-9001	80.25	CWF, MF	Perennial	Approved Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T11-9001.	The pipeline was routed in this location to cross stream WW-T11-9001 at a perpendicular angle.	SBR with SC150 fabric	50
Wetland	N/A	W-T11-9001	80.28	None	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T11-9001.	The pipeline was routed in this location to cross the western margin of wetland W-T11-9001 at a perpendicular angle.	N/A	N/A
Stream	UNT to Little Mahantango Creek (WW-T09-9002)	WW-T09-9002	81.18	CWF, MF	Perennial	None	R3	LOD has been reduced to 75' to minimize impacts to WW-T09-9002.	The pipeline was routed in this location to cross the western margin of stream WW-T09-9002 at a perpendicular angle.	SBR with SC150 fabric	50
Wetland	N/A	W-T09-9002	81.18	None	N/A	N/A	PFO	LOD has been reduced to 75' to minimize impacts to W-T09-9002.	The pipeline was routed in this location to cross the western margin of wetland W-T09-9002 at a perpendicular angle.	N/A	N/A
Stream	Little Mahantango Creek (WW-T09-9001)	WW-T09-9001	MDC0194.018	CWF, MF	Perennial	Approved Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T09-9001.	The pipeline was routed in this location to cross stream WW-T09-9001 at a perpendicular angle, and avoid impact wetland W-T09-9001 located approximately 25 feet west of the LOD.	SBR with SC150 fabric	50

Note: *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: CScanzello Jul 28, 2017 - 4:50pm
 Drawing Location & Name: G:\JOBS\14\14C4909\DWG\BMPs&DETAILS\PL_DNT14C4909(205)_SC-TB.dwg



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
 SCHUYLKILL COUNTY, PENNSYLVANIA
 QUANTITY, CROSSING AND ACIDIC SOIL TABLES

WILLIAMS GAS PIPELINE

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-SC-TB SHEET 5 OF 5