

# TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC ATLANTIC SUNRISE PROJECT PROPOSED 30" CENTRAL PENN LINE NORTH

## BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET

FAIRMOUNT, ROSS, LAKE, LEHMAN, DALLAS, HARVEYS LAKE, JENKINS  
TOWNSHIPS

LUZERNE COUNTY

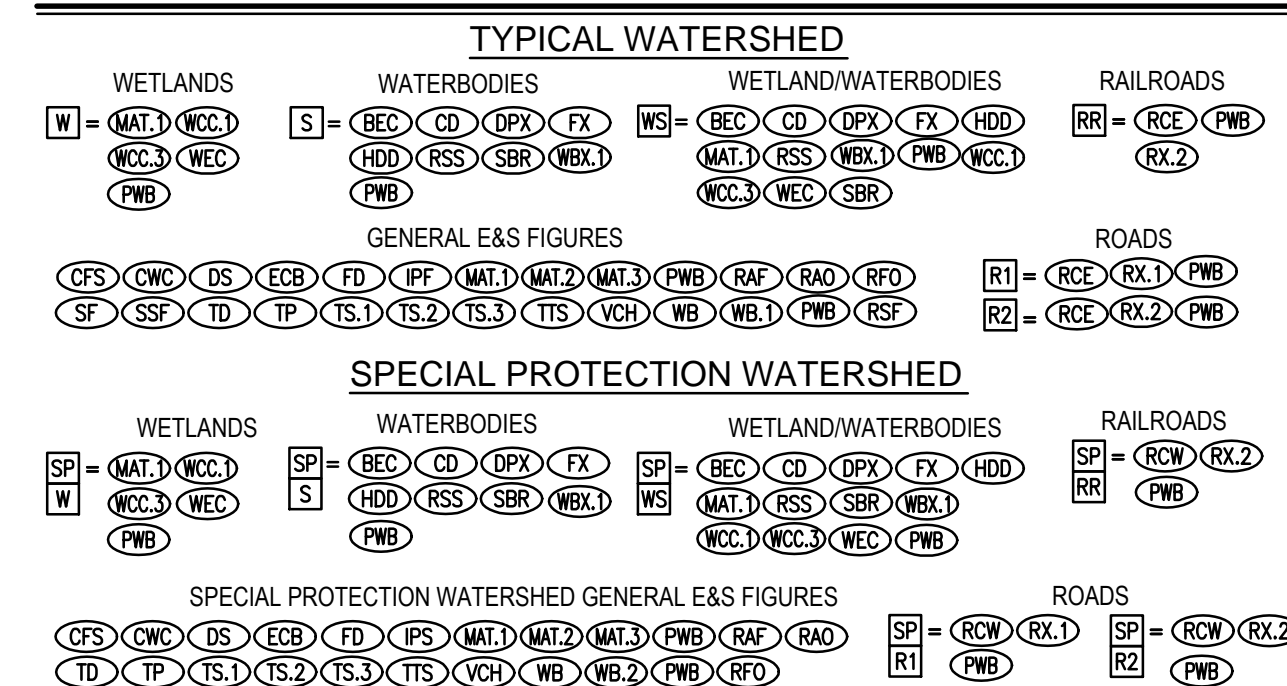
### BMP DETAIL SUMMARY

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	
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 DEWICE	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	
WEC	WETLAND EQUIPMENT CROSSING	

### DRAWING INDEX

DRAWING NUMBER	SHEET NO.	DRAWING NAME
24-1601-70-28-A/1683_3-BMP	1-1	COVER SHEET
ASR-BMP-GN	1-3	GENERAL NOTES
ASR-BMP	1-11	BEST MANAGEMENT PRACTICES STANDARD CONSTRUCTION DETAILS
24-1600-70-28-A/1683_3-BMP-LU-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.

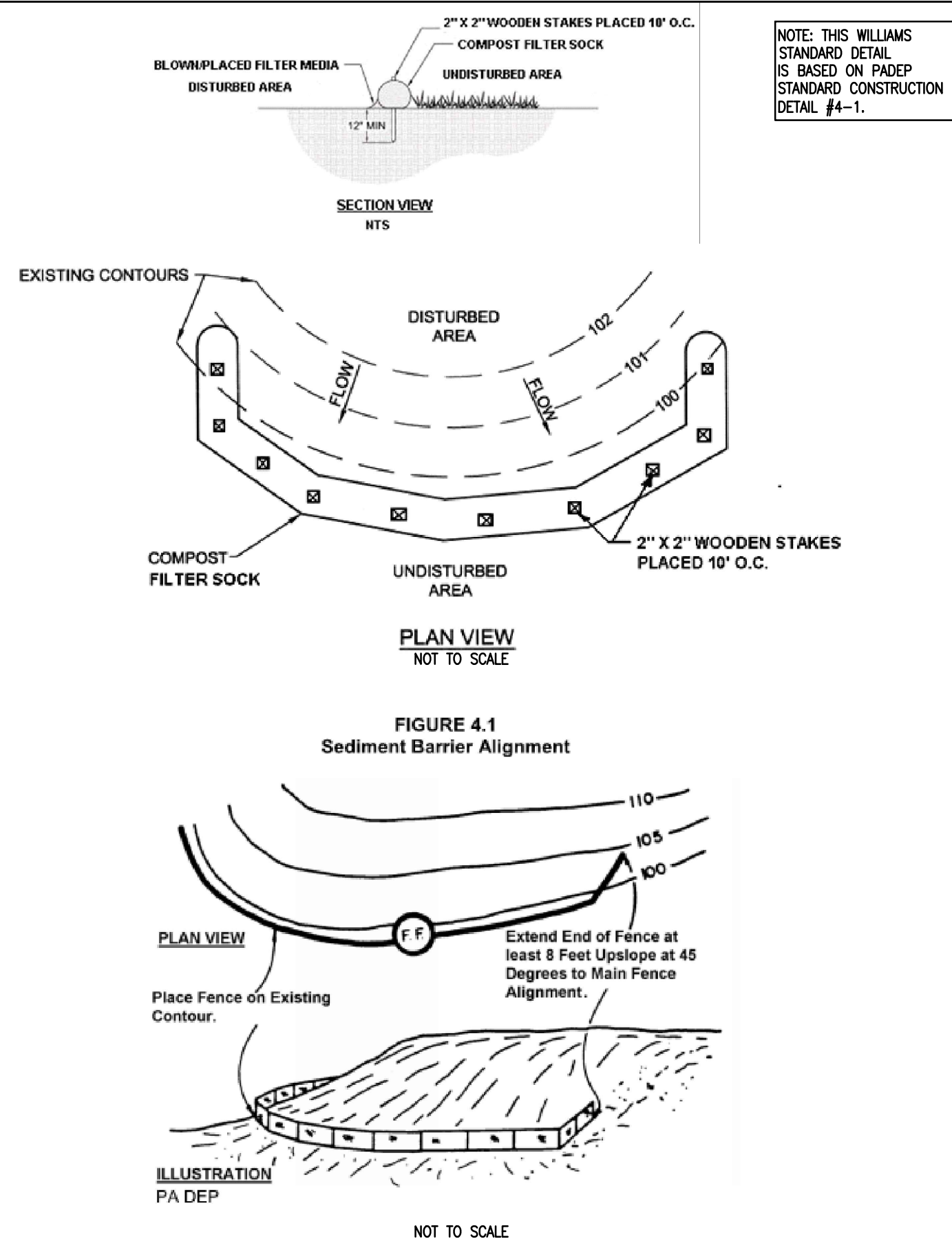


REVISIONS						
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
0	08/26/2015	BL	ISSUED FOR PADEP SUBMITTAL	W0572385	JLK	SMK
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W0572385	JLK	SMK
2	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0572385	JLK	AJB
3	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE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

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC ATLANTIC SUNRISE PROJECT PROPOSED 30" CENTRAL PENN LINE NORTH PENNSYLVANIA BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET LUZERNE COUNTY, PENNSYLVANIA					
COVER SHEET					
DRAWN BY:	ELZ	DATE:	05/15/15	ISSUED FOR:	SCALE:
CHECKED BY:	JLK	DATE:	07/02/15	ISSUED FOR:	CONSTRUCTION
APPROVED BY:	SMK	DATE:	07/08/15	DRAWING NUMBER:	24-1601-70-28-A/1683_3-BMP
W.O.:					SHEET 1 OF 1







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

FIGURE 4.1 Sediment Barrier Alignment

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

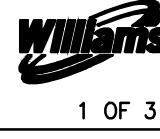


TABLE 4.1 COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS

Material Type	3 mil HDPE	4 mil HDPE	5 mil HDPE	Multi-Filament Polypropylene (MFPP)	Heavy Duty Multi-Filament Polypropylene (HDMFPP)
Material Characteristics	Photo-degradable	Photo-degradable	Bio-degradable	Photo-degradable	Photo-degradable
Sock Diameters	12", 18"	12", 18", 24"	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: HDPE biaxial net, Continuously wound, Fusion-welded junctures, 3/4" X 3/4" Max. aperture size. Composite Polypropylene Fabric (Woven layer and non-woven fleece mechanically fused via needle punch), 3/16" Max. aperture size.

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	W.D.	NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL				
			(CFS) COMPOST FILTER SOCK				

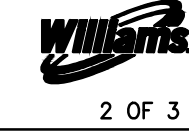
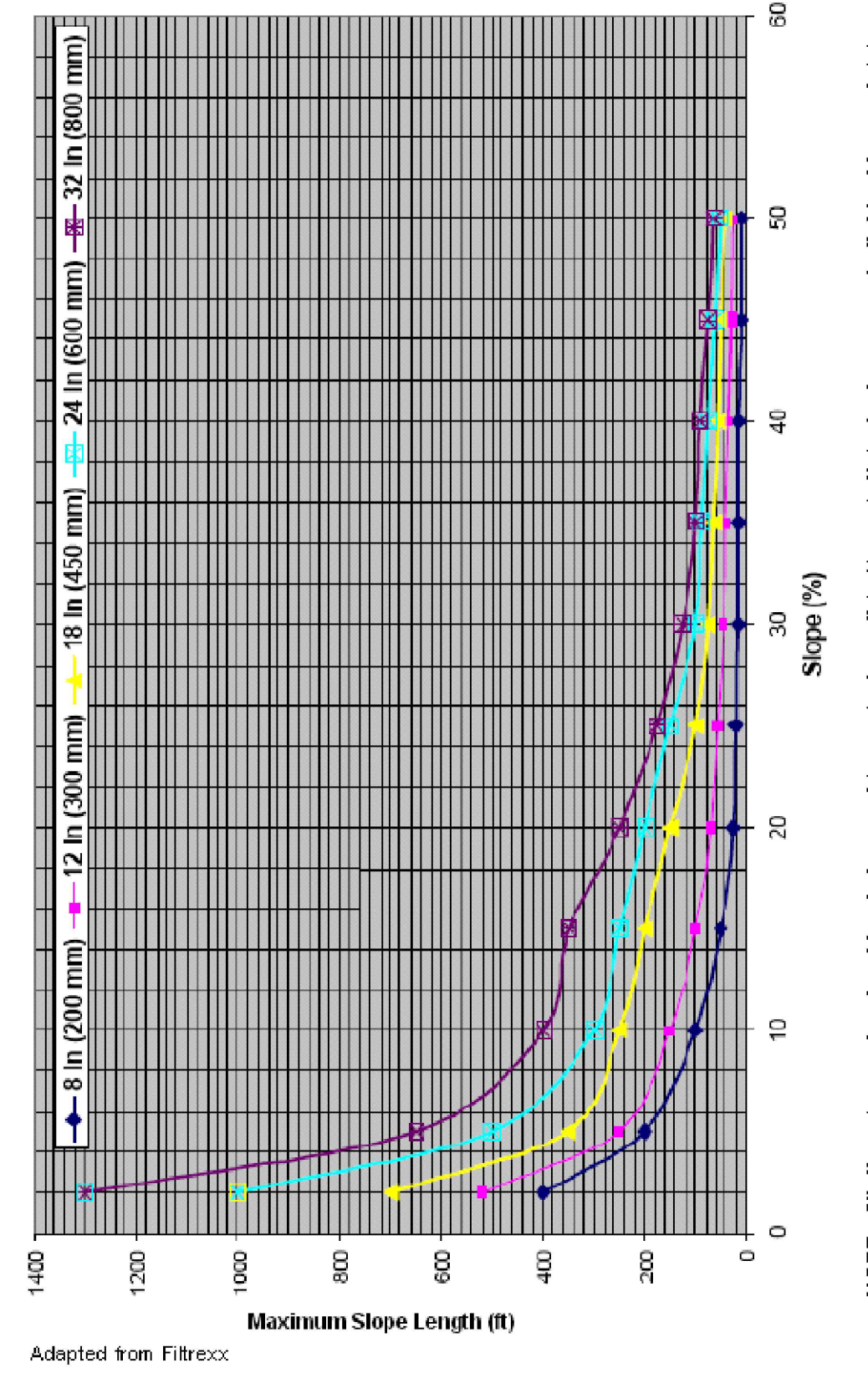
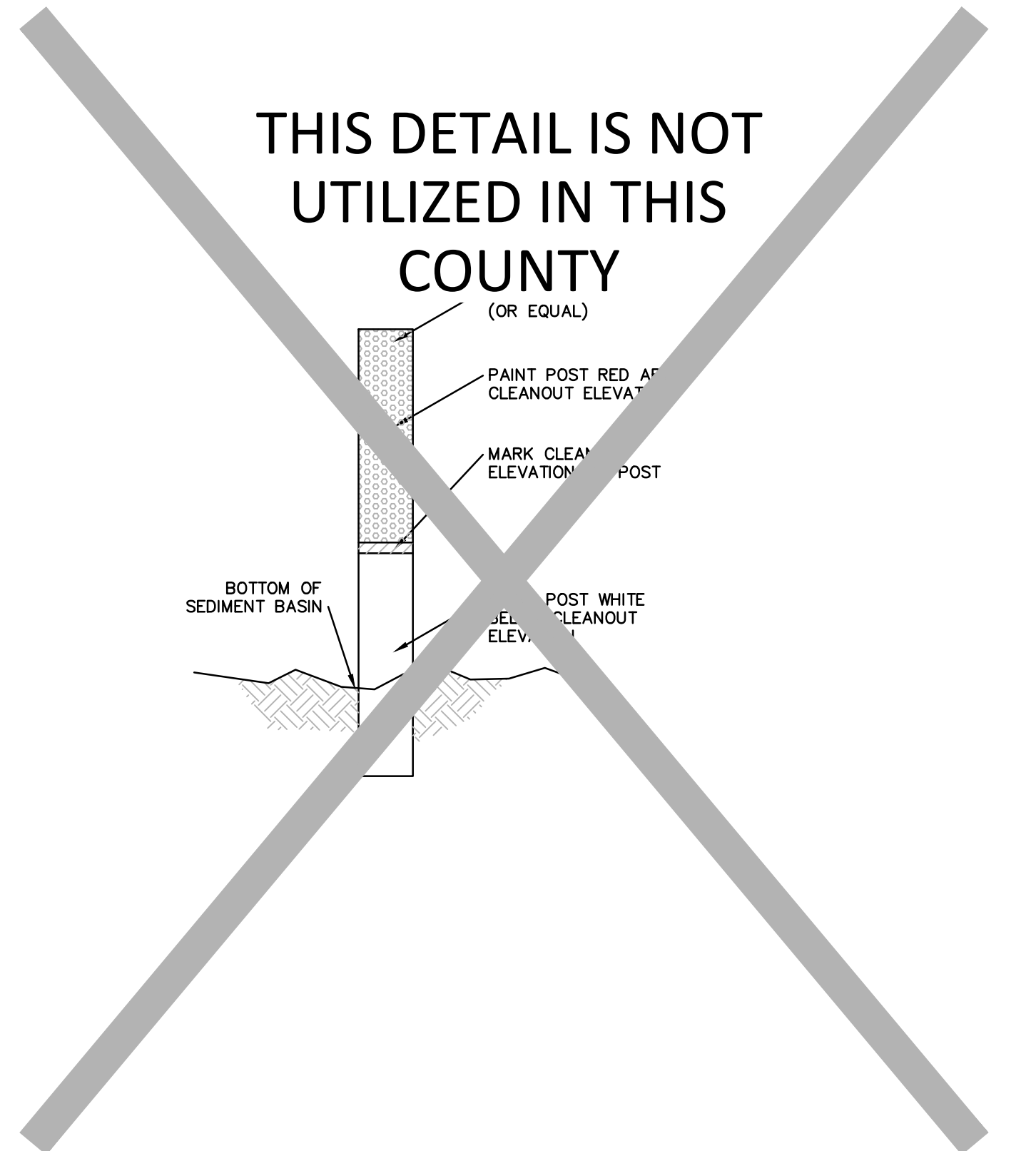


FIGURE 4.2 MAXIMUM PERMISSIBLE SLOPE LENGTH ABOVE COMPOST FILTER SOCKS



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

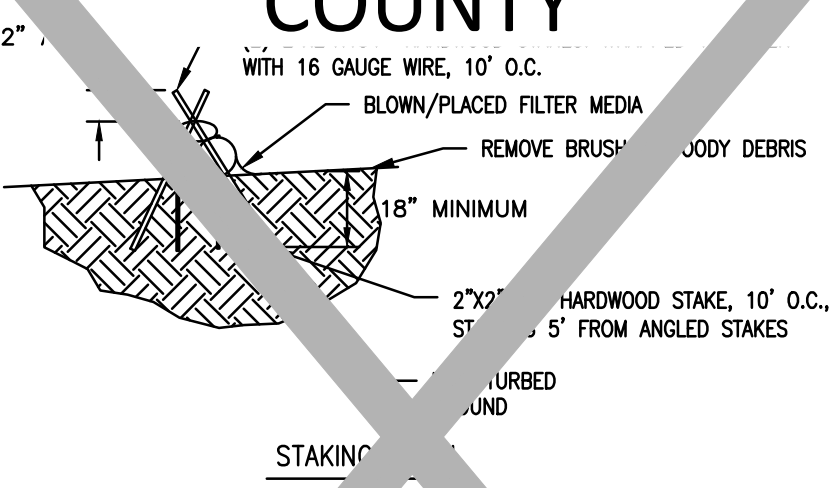
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			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL				
			(CFS) COMPOST FILTER SOCK				



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			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL				
			(CS) CLEANOUT STAKE				



THIS DETAIL IS NOT UTILIZED IN THIS COUNTY



NOTE: THIS WILLIAMS STANDARD DETAIL IS BASED ON PA DEP 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. ADDITIONAL STORAGE MAY BE PROVIDED BY MEANS OF AN EXCAVATED SUMP 12" DEEP, EXTENDING 1 TO 3 FEET UPSLOPE OF THE SLOPE ALONG THE LOWER SIDE OF THE TRAP.
  - THE MAXIMUM TRIBUTARY DRAINAGE AREA SHALL BE 0.5 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 PER 12" FREEBOARD FOR EACH AC 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	W.D.	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

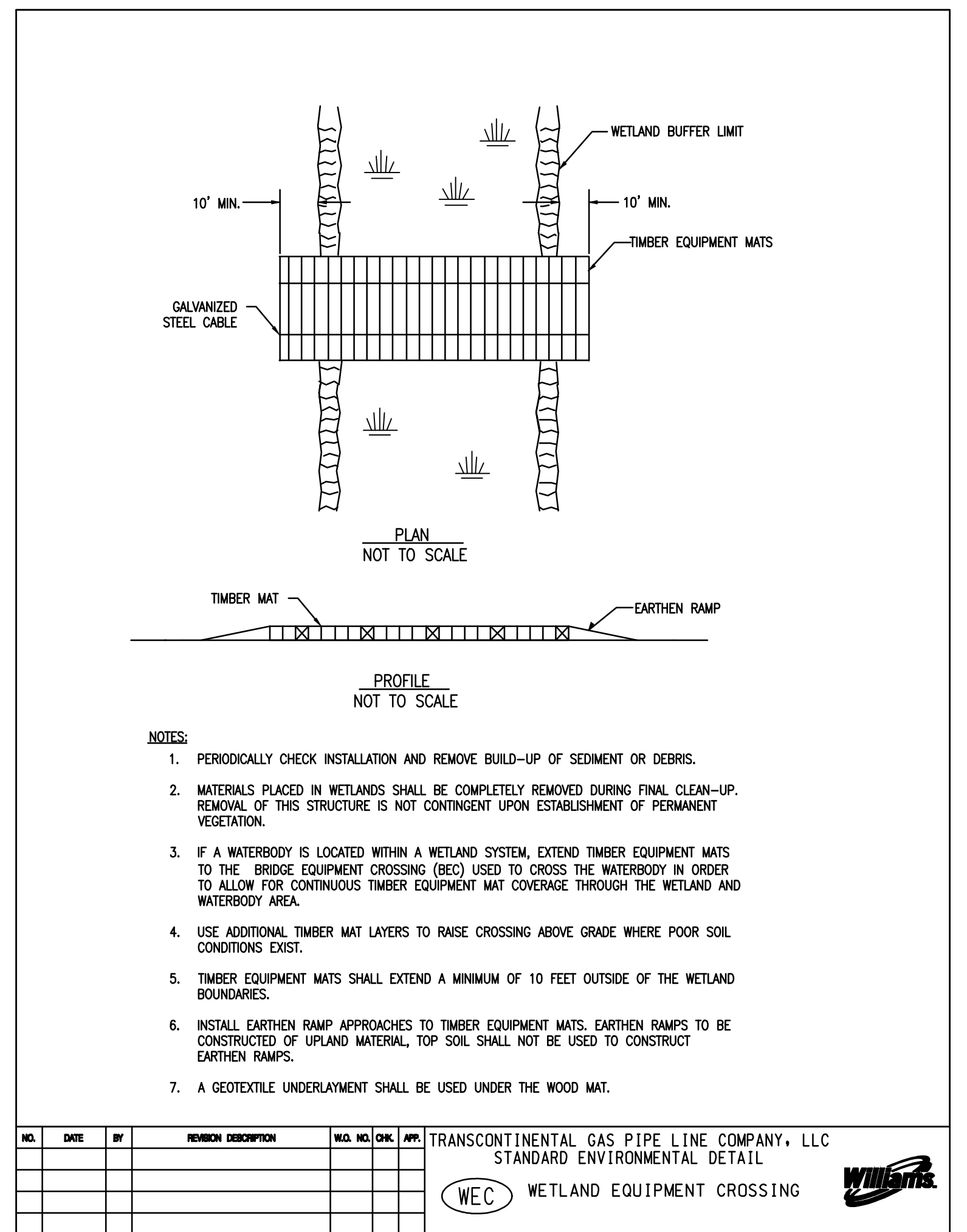
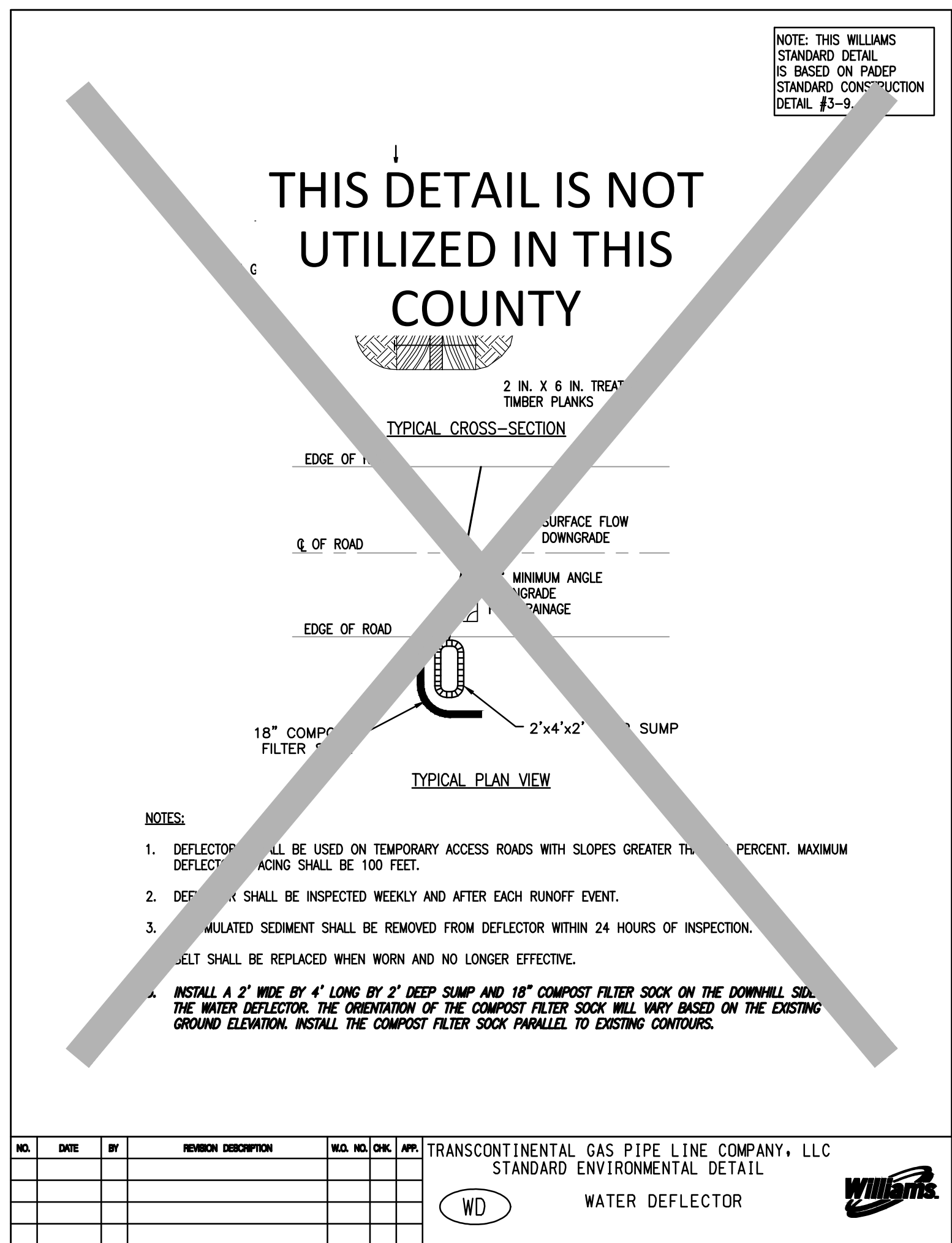
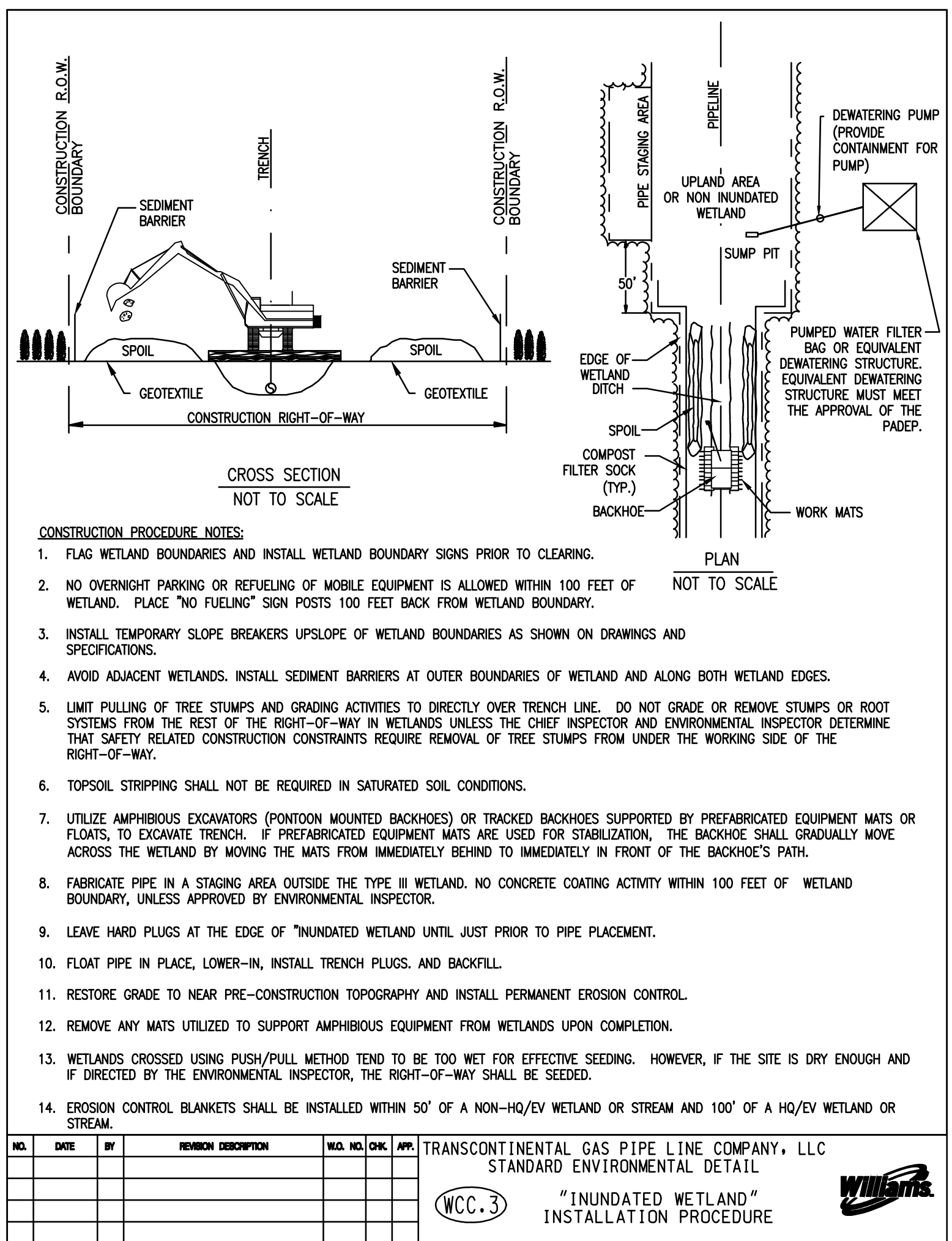
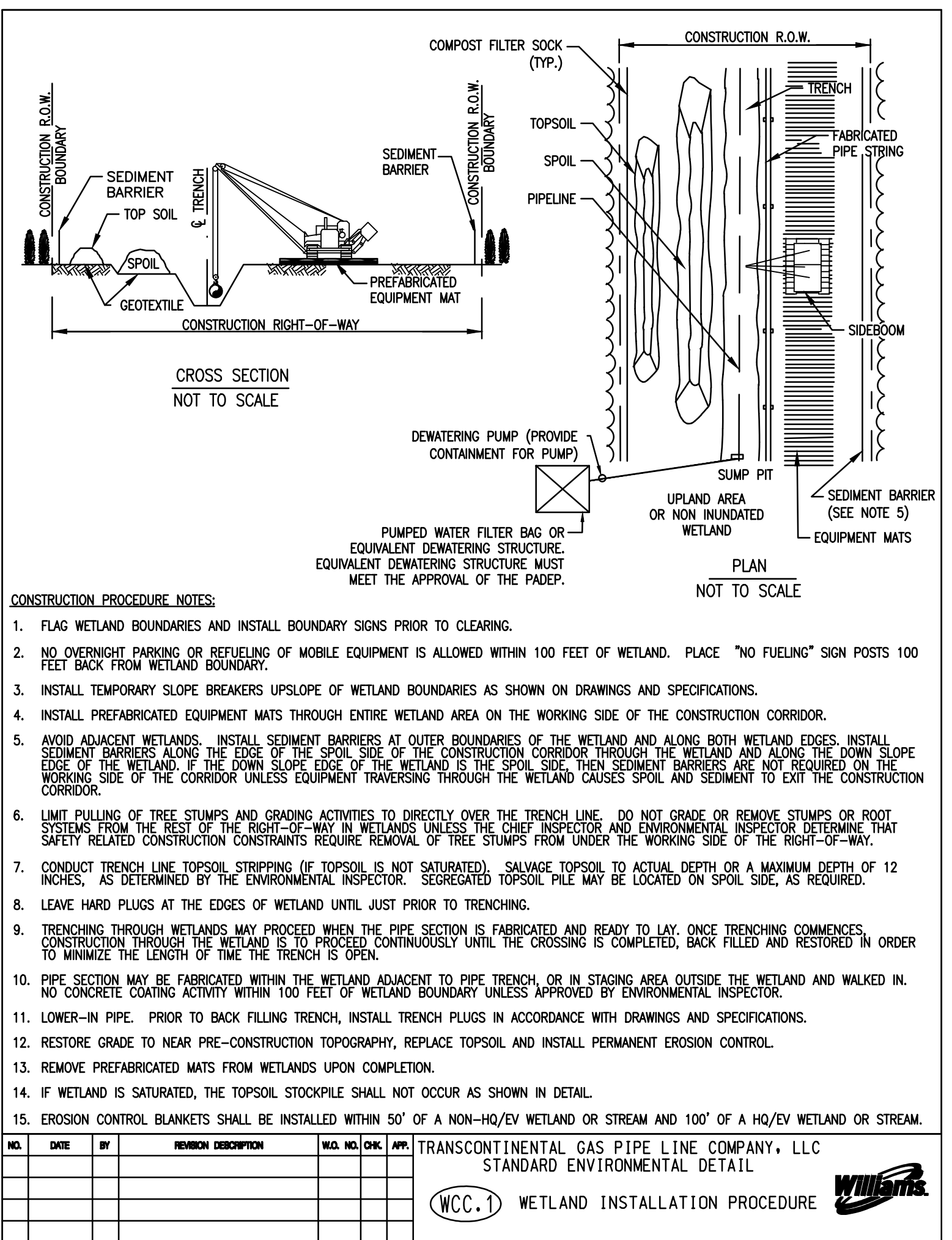
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			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL				
			(CWC) CLEAN WATER CROSSING				



REVISIONS							
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0	08/26/2015	BL	ISSUED FOR PA DEP SUBMITTAL	W0572385	JLK	SMK	
1	12/02/2015	BL	ISSUED FOR PA DEP RESUBMITTAL	W0572385	JLK	SMK	
2	Oct. 2016	BL	PA DEP TECHNICAL DEFICIENCY RESPONSE #1	W0572385	JLK	SMK	
3	April 2017	BL	PA DEP TECHNICAL DEFICIENCY RESPONSE #2	W0572385	JLK	SMK	
4	AUG 2017	BL	PA DEP 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





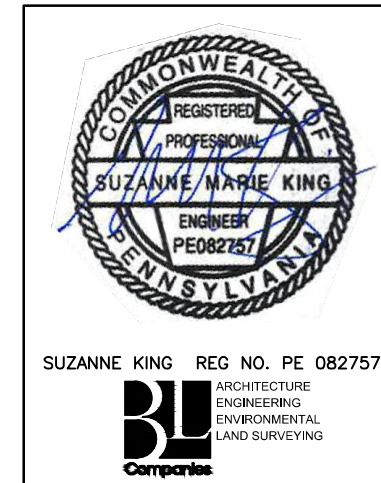
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			(WCC-1) WETLAND INSTALLATION PROCEDURE			

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 - 4:06pm  
 Drawing Location & Name: G:\JOBS\14\14C\14C4909\DWG\BMPs&DETAILS\PL\_DNT14C4909(10)\_LU-BMP-11.dwg



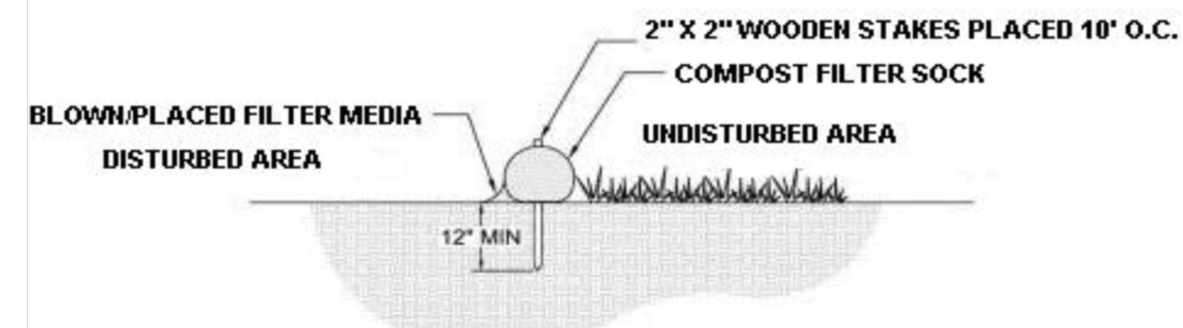
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4	AUG 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #3	W0572385	JLK	SMK

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:
APPROVED BY:	SMK	DATE:	07/08/15	DRAWING NUMBER:	ASR-BMP
W.D.:					



TABLE 1: SEDIMENT BARRIER SUMMARY

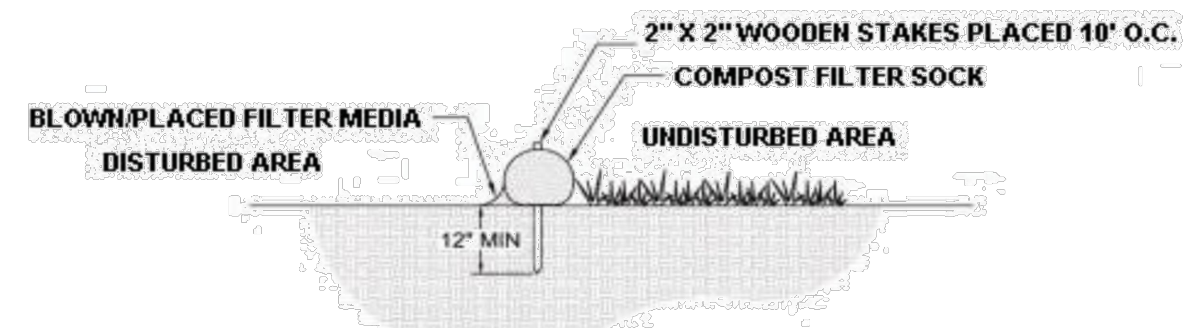
**E&S WORKSHEET #1**  
**Compost Filter Sock**  
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE  
 LOCATION: LUZERNE COUNTY  
 PREPARED BY: ESS DATE: 03/28/2017  
 CHECKED BY: AJB DATE: 04/03/2017



MILEPOST NO.	Dia. In.	LOCATION			SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
		BEGIN STA.	END STA.	TYPE		
5	12	262+75	264+25	Road	5	120
	12	264+25	266+25		5	130
	24	266+50	267+00		6	171
	12	267+00	270+50	Wetland/Stream	2	205
	18	270+50	278+75		4	361
	32	279+00	289+25		7	417
	24	289+50	292+75		2	105
	12	292+25	293+50	Road	3	95
	24	293+75	300+25		2	626
	12	301+00	303+75		4	206
	18	304+25	306+00		2	628
	12	306+00	307+00	Road	5	55
	24	306+50	309+25		6	140
	12	309+25	320+25	Wetland/Stream	2	168
	12	320+50	325+25		2	188
	18	325+50	333+00		3	548
	24	333+00	337+00		8	325
	18	337+00	342+50	Wetland	2	663
	18	341+00	346+75		2	654
	24	346+75	349+75		7	140
	18	350+00	353+25		7	208
	12	353+25	353+75	Road	16	73
	12	353+75	358+25		10	91
	12	359+25	365+25		6	153
	12	362+25	370+75	Wetland	6	80
	24	370+75	372+50		3	86
	12	372+50	376+00		2	269
M-0163	12	31+50	34+00		8	100
M-0147	12	34+00	430+00		4	213
	12	407+75	409+75		4	288
	24	410+00	411+50		5	122
	12	411+75	417+25		4	303

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

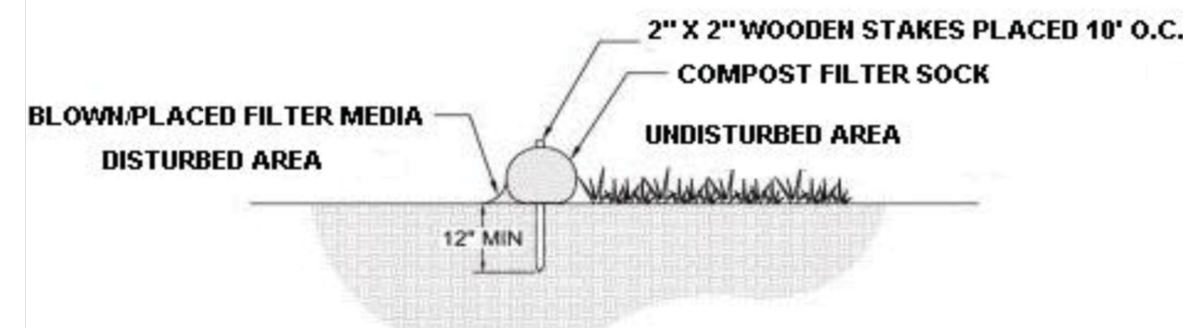
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**Compost Filter Sock**  
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE  
 LOCATION: LUZERNE COUNTY  
 PREPARED BY: ESS DATE: 03/28/2017  
 CHECKED BY: AJB DATE: 04/03/2017



MILEPOST NO.	Dia. In.	LOCATION			SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
		BEGIN STA.	END STA.	TYPE		
16	18	874+00	875+00	Road	23	95
	12	875+25	875+25	Road	14	11
	12	875+50	877+25	Wetland/Stream	24	11
	12	877+25	878+75		16	67
	12	878+00	880+00	Wetland/Stream	11	78
	24	880+25	887+25		12	101
	18	884+25	885+25	Road	28	71
	18	887+25	890+25		13	116
17	18	893+00	899+25		19	81
	24	901+00	901+75		18	50
	18	904+50	907+25		21	112
	24	907+50	907+50	Road	18	213
	12	908+00	908+50	Wetland/Stream	10	50
	24	908+75	910+00		5	133
	18	910+25	921+50		11	177
	12	921+50	922+50	Road	10	47
	18	929+00	931+00	Wetland/Stream	11	222
	24	931+00	938+25		4	303
	12	938+25	939+75		3	87
	24	939+75	941+50		10	64
	32	941+50	943+50		10	333
18	24	943+50	953+00		10	50
	32	953+00	957+00	Wetland/Stream	10	300
	24	957+25	964+75		30	91
	12	965+00	965+75	Road	15	82
	24	965+50	976+00		6	165
	12	975+50	982+25		4	100
	24	982+25	989+75		11	105
	12	990+00	994+00	Wetland/Stream	3	285
	24	993+00	996+50		3	450
	12	996+75	997+00	Road	5	200
19	12	999+00	1011+25		2	90

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

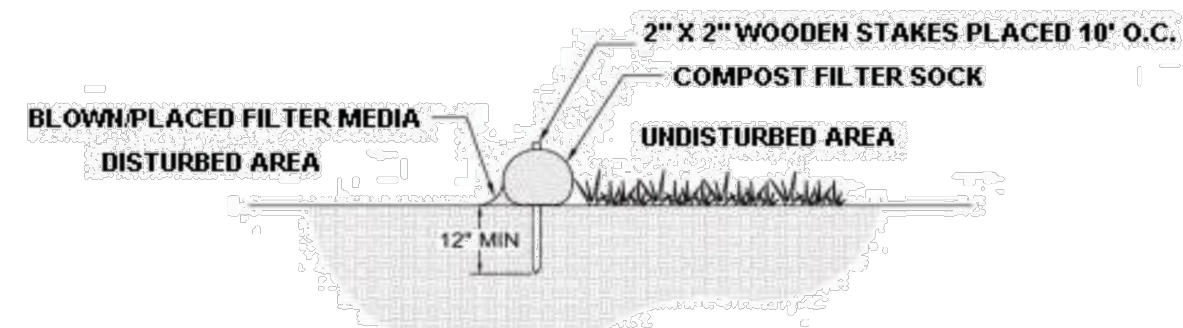
**E&S WORKSHEET #1**  
**Compost Filter Sock**  
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 LOCATION: LUZERNE COUNTY  
 PREPARED BY: ESS DATE: 03/28/2017  
 CHECKED BY: AJB DATE: 04/03/2017



MILEPOST NO.	Dia. In.	LOCATION			SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
		BEGIN STA.	END STA.	TYPE		
8	24	417+25	430+00		2	658
	12	430+50	431+00	Road	6	302
	32	430+50	441+25		6	302
	32	439+25	442+50	Wetland	5	527
M-0056	32	442+50	5+00		6	520
	18	5+25	49+75		12	80
	12	9+00	13+00		7	103
	24	13+00	16+00		7	125
	12	16+00	25+75	Wetland	5	500
	12	25+75	32+00	Road	1	51
	12	26+50	30+00		3	204
	24	32+50	33+00		7	130
	18	33+25	35+00		20	88
9	18	35+00	476+75		17	156
	32	477+00	477+25	Road	8	455
	24	477+50	481+75		40	40
	32	482+00	484+25	Stream/Wetland	42	71
	24	484+25	485+25		18	40
	24	485+50	489+25		10	230
	24	489+50	490+75	Stream	28	100
	24	490+75	502+25		28	100
	18	502+50	510+00		5	300
	24	510+00	513+50		4	208
	12	514+00	515+75	Road	4	65
	32	515+75	521+50		5	598
	12	519+50	521+50	Road	3	166
10	12	521+75	537+25		21	150
	32	536+00	545+00	Stream/Wetland	11	367
	32	544+25	545+25		11	367
	24	545+75	556+00		15	120
	12	558+25	560+75		23	170
	18	560+00	565+00		15	90

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

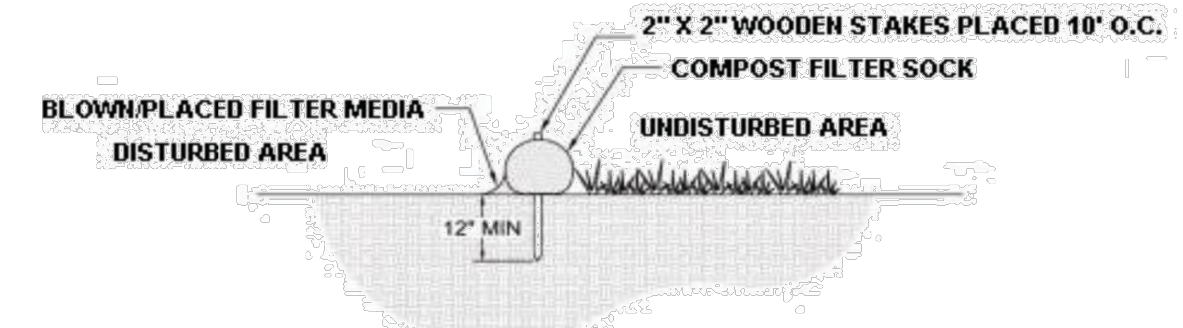
**E&S WORKSHEET #1**  
**Compost Filter Sock**  
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE  
 LOCATION: LUZERNE COUNTY  
 PREPARED BY: ESS DATE: 03/28/2017  
 CHECKED BY: AJB DATE: 04/03/2017



MILEPOST NO.	Dia. In.	LOCATION			SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
		BEGIN STA.	END STA.	TYPE		
19	12	1006+00	1007+00	Wetland	2	228
	24	1011+25	1016+50		8	72
	24	1016+75	1017+50	Road	10	100
	24	1017+75	1023+50		6	140
	18	1023+50	1023+75	Stream	27	50
	24	1024+00	1030+00		15	90
	24	1030+00	1031+75	Wetland	6	350
	24	1032+25	1046+25		3	315
20	12	1045+25	1059+25	Wetland/Stream	10	140
	18	1059+25	1060+00	Road	13	134
	24	1060+00	1103+00		13	134
	12	1059+25	1105+25		15	54
	24	1104+00	1107+25		12	125
21	12	1107+25	1109+00	Wetland	8	80
	24	1109+00	1117+25		5	160
	12	1117+25	1120+00	Wetland	5	90
	24	1124+00	1128+50		4	97
	12	1128+50	1135+75	Wetland	3	200
	12	1147+75	1148+00	Wetland	6	211
	12	1148+50	1148+50	Road	1	50
	24	1148+50	1150+75		5	450
	12	1150+50	1151+00	Wetland/Stream	8	31
22	18	1151+00	1162+00		17	153
	24	1162+25	1164+25		4	200
M-0060	12	1165+00	8+25	Wetland/Stream	5	150
	12	8+00	12+25		5	120
	12	12+25	13+25	Road	1	55
	12	13+25	14+25		2	100
	12	14+50	15+00	Road	1	20
	12	15+00	16+75		2	100
	12	17+00	18+00	Road	2	90
	24	18+00	21+25		1	150

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

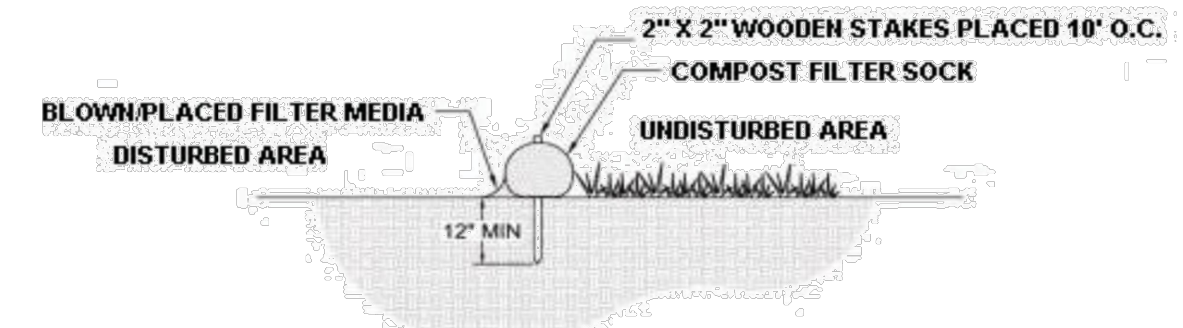
**E&S WORKSHEET #1**  
**Compost Filter Sock**  
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE  
 LOCATION: LUZERNE COUNTY  
 PREPARED BY: ESS DATE: 03/28/2017  
 CHECKED BY: AJB DATE: 04/03/2017



MILEPOST NO.	Dia. In.	LOCATION			SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
		BEGIN STA.	END STA.	TYPE		
10	32	564+75	567+00	Wetland	15	330
	12	567+00	571+00		6	92
	24	571+50	573+75		6	150
	12	574+00	576+00	Road	10	47
	24	574+75	576+00		6	89
	12	576+25	581+75	Wetland	4	150
11	12	579+50	581+50		5	92
	12	582+00	583+00	Wetland	7	50
	24	583+00	590+25		11	208
	12	589+00	590+00	Road	7	38
	18	590+50	594+00	Stream/Wetland	12	138
	18	592+50	600+50	Road	20	86
	24	594+75	601+25		18	150
	12	600+50	602+00	Road	11	58
	12	602+00	603+25		7	108
	12	605+00	606+00	Road	5	206
	12	607+25	610+00	Wetland/Waterbody	5	77
	24	610+00	614+50		8	150
	24	614+25	624+00		20	150
	12	624+00	625+00	Stream/Wetland	8	78
12	18	625+25	630+50		10	150
	24	630+75	634+00		4	400
	24	634+25	642+00		4	200
	12	642+25	643+00	Stream	9	81
	24	643+00	655+25		20	100
	18	655+00	660+50	Road	10	176
	12	661+50	664+50	Road	14	28
	12	664+75	668+50		8	93
	18	668+75	673+00		18	90
	18	673+00	675+75	Road	16	97
	12	676+25	681+75		14	150
	24	681+00	682+00	Road	9	150

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: LUZERNE COUNTY  
 PREPARED BY: ESS DATE: 03/28/2017  
 CHECKED BY: AJB DATE: 04/03/2017



MILEPOST NO.	Dia. In.	LOCATION			SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
		BEGIN STA.	END STA.	TYPE		
22 M-0060	12	21+50	21+50	Stream	5	100
	24	21+75	25+00		20	120
	12	25+00	27+00	Wetland	5	142
	24	27+25	29+50		17	133
	12	29+75	30+00	Road	9	9
	18	30+00	34+50		16	109
	32	34+50	42+75		11	287
	18	43+00	46+00		11	142



TABLE 2: TEMPORARY CLEAN WATER DIVERSION SUMMARY

MILE POST	TEMPORARY DIVERSION SUMMARY - LUZERNE COUNTY, PENNSYLVANIA										WATERBODY**				TEMPORARY PIPE				
	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
5	05.01	FILTER SOCK	0	1.6	7.9	0	5	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	13	5.28	12	1
8	08.01*	SWALE	2	2	10	2	2	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	7	4.5	12	1
	08.02*	SWALE	2	3	14	2	2	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	1	12.38	12	3
	08.03*	FILTER SOCK	0	1	9	0	9	C125	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	16	3.6	12	1
9	9.01*	SWALE	2	2	1.2	2	2	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	16	3.6	12	1
	9.02*	SWALE	2	2	10	2	2	W3000	REINFORCED VEGETATION	WATERBODY	2	2	8	R-4	18	N/A	6.98	N/A	N/A
10	10.01*	SWALE	2	2	10	2	2	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	5	6.98	12	2
	10.02A*	SWALE	2	3	14	2	2	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	6	16.43	12	3
	10.02B*	SWALE	2	2	10	2	2	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	6	11.03	12	2
	10.02C*	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	5	11.03	12	2
12	12.01*	SWALE	2	2	10	2	2	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	4	3.6	12	1
	12.02A*	SWALE	2	2	10	2	2	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	6	5.85	12	1
	12.02B*	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	9	10.35	12	2
	12.03*	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	13	6.3	12	2
	13.01*	FILTER SOCK	0	1.6	8.7	0	5.5	P550	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	38	3.38	12	1
13	13.02A*	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	29	10.8	12	2
	13.02B*	FILTER SOCK	0	1.6	4.9	0	3.1	W3000	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	29	2.03	12	1
	13.03*	FILTER SOCK	0	1.6	5.5	0	3.5	P550	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	19	1.35	12	1
	13.04*	FILTER SOCK	0	1.6	5.5	0	3.5	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	18	0.68	12	1
	13.05A*	SWALE	2	2	10	2	2	P550	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	2	7.2	12	2
	13.05B*	FILTER SOCK	0	1.6	5.1	0	3.2	P550	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	28	5.18	12	1
	14.01A*	SWALE	2	2	10	2	2	W3000	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	30	16.2	12	3
	14.01B*	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	35	10.35	12	2
	14.02A*	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	17	6.3	12	2
	14.02B*	FILTER SOCK	0	1.6	8.8	0	5.6	W3000	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	14	5.4	12	1
14	14.03*	FILTER SOCK	0	1.6	6.3	0	4	P550	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	28	0.9	12	1
	14.04*	FILTER SOCK	0	1.6	6.3	0	4	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	22	2.25	12	1
	14.05*	FILTER SOCK	0	1.6	6.3	0	4	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	11	1.8	12	1
	14.06*	FILTER SOCK	0	1.6	6.3	0	4	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	9	1.35	12	1
	14.07*	FILTER SOCK	0	1.6	6.3	0	4	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	7	5.85	12	1
	14.08*	SWALE	2	2.5	12	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	7	21.83	12	4
	14.09*	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	7	7.65	12	2
	15.01*	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	10	6.98	12	2
	15.02A*	SWALE	2	2	10	2	2	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	3	8.1	12	2
	15	15.02B*	SWALE	2	2	10	2	2	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	2	9.23	12
15.02C*		SWALE	2	2	10	2	2	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	2	10.58	12	2
15.02D*		SWALE	2	2	10	2	2	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	3	10.58	12	2
16.01*		SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	4	5.85	12	1
16.02*		SWALE	0	2	10	2	2	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	19	2.48	12	1
16	16.03*	FILTER SOCK	0	1.6	9.5	0	6	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	11	2.03	12	1
	17.01*	SWALE	2	2	10	2	2	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	6	0.68	12	1
	17.02A*	SWALE	2	2	10	2	2	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	4	7.65	12	2
17	17.02B*	SWALE	2	2	10	2	2	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	4	6.08	12	2
	17.03	SWALE	2	2	10	2	2	C125	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	3	8.78	12	2
	18.01*	SWALE	2	2	10	2	2	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	1	4.28	12	1
	18.02*	SWALE	2	2	10	2	2	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	4	8.78	12	2
21	21.01A	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	13	6.72	12	2
	21.01B	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	16	8	12	2
	21.01C	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	16	8	12	2
	21.01D	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	13	8	12	2
	21.01E	SWALE	2	2	10	2	2	C125	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	14	7.52	12	2
	21.01F	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	18	8	12	2
	21.02	SWALE	2	2	10	2	2	C125	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	14	7.52	12	2
	22.01	SWALE	2	2	10	2	2	C125	REINFORCED VEGETATION	WATERBODY	2	2	12	R-4	18	N/A	12	N/A	N/A
	22.02	SWALE	2	2	10	2	2	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	3	7.04	12	2
	22	22.03	SWALE	2	2	10	2	2	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	3	1.76	12
22.04A		SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	9	8	12	2
22.04B		SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	10	7.36	12	2
22.04C		SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	11	7.52	12	2
23.01		SWALE	2	2	10	2	2	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	1	2.24	12	1
23.02		SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	WATERBODY	2	2	12	R-4	18	N/A	14.4	N/A	N/A
23	23.03	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	WATERBODY	2	2	18	R-4	18	N/A	25.12	N/A	N/A
	23.04	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	WATERBODY	2	2	8	R-4	18	N/A	4	N/A	N/A
	23.05	SWALE	2	2	10	2	2	575	UNREINFORCED VEGETATION	WATERBODY	2	2	8	R-4	18	N/A	4.96	N/A	N/A
	23.06	SWALE	2	2	10	2	2	575	UNREINFORCED VEGETATION	WATERBODY	2	2	8	R-4	18	N/A	7.2	N/A	N/A
	23.07	FILTER SOCK	0	1.6	7.9	0	5	575	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	18	3.36	12	1
	23.08	FILTER SOCK	0	1.6	6.3	0	4	C125	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	20	3.84	12	1
	23.09	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	19	4.32	12	1
	23.10	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	12	1.92	12	1
	23.11	FILTER SOCK	0	1	7	0	7	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	13	1.44	12	1
	24	24.01*	FILTER SOCK	0	1.6	6.3	0	4	P550	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	10	1.8	12
24.02*		SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	4	7.88	12	2
24.03A*		SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	24	7.88	12	2
24.03B*		SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	27	5.85	12	1
24.04*		SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	40	9.9	12	2
25	25																		

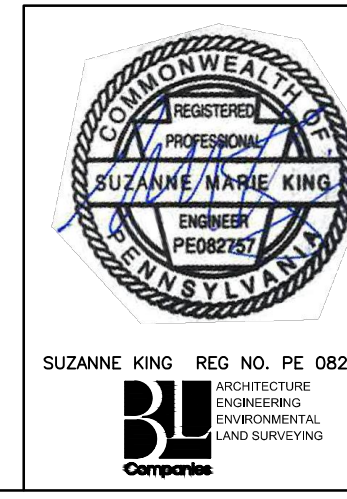
TABLE 5: LOCATIONS OF ACID SOILS ALONG CPLN PIPELINE IN LUZERNE COUNTY

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
4.98	5.07	Luzerne	Ld	4.90	12.57	12.63	Luzerne	WmB	4.80	19.44	19.53	Luzerne	MaB	5.50
5.07	5.18	Luzerne	MaB	5.70	12.63	12.77	Luzerne	OpD	4.80	19.53	19.57	Luzerne	Vb	6.00
5.18	5.37	Luzerne	OpD	4.80	12.77	12.87	Luzerne	Lb	4.90	19.57	19.68	Luzerne	Wb	5.30
5.37	5.44	Luzerne	MaB	5.70	12.87	12.90	Luzerne	Ld	4.80	19.68	19.73	Luzerne	LaC	4.90
5.44	5.48	Luzerne	MaB	5.20	12.90	13.04	Luzerne	WmB	4.80	19.73	19.81	Luzerne	Ld	4.90
5.48	5.50	Luzerne	OpD	4.80	13.04	13.12	Luzerne	WmD	4.80	19.81	19.85	Luzerne	Vb	6.00
5.50	5.59	Luzerne	Wb	5.30	13.12	13.13	Luzerne	OpD	4.80	19.85	19.92	Luzerne	GA	5.90
5.59	5.81	Luzerne	LaB	5.00	13.13	13.30	Luzerne	Ld	4.90	19.92	19.97	Luzerne	Wa	6.50
5.81	5.83	Luzerne	OpD	4.80	13.30	13.44	Luzerne	Lb	4.90	19.97	20.02	Luzerne	CrB	5.90
5.83	5.86	Luzerne	MaB	5.70	13.44	13.52	Luzerne	Ld	4.90	20.02	20.07	Luzerne	Wc	4.90
5.86	6.04	Luzerne	Wa	6.50	13.52	13.84	Luzerne	OpD	4.80	20.07	20.13	Luzerne	Bd	5.30
6.04	6.07	Luzerne	Ld	4.90	13.84	13.95	Luzerne	Ho	6.50	20.13	20.19	Luzerne	OID	4.80
6.07	6.29	Luzerne	Lb	4.90	13.95	14.00	Luzerne	Ld	4.90	20.19	20.37	Luzerne	OC	4.80
6.29	6.32	Luzerne	Ld	4.90	14.00	14.03	Luzerne	Ho	6.50	20.37	20.48	Luzerne	OpD	4.80
6.32	6.34	Luzerne	MaB	5.70	14.03	14.15	Luzerne	Ld	4.90	20.48	20.57	Luzerne	OC	4.80
6.34	6.44	Luzerne	CrB	5.90	14.15	14.38	Luzerne	Lb	4.90	20.57	20.64	Luzerne	OB	4.80
6.44	6.47	Luzerne	MaB	5.70	14.38	14.39	Luzerne	Ld	4.90	20.64	20.69	Luzerne	OC	4.80
6.47	6.60	Luzerne	WmB	4.80	14.39	14.50	Luzerne	Bf	5.50	20.69	20.80	Luzerne	OpD	4.80
6.60	6.74	Luzerne	Ld	4.90	14.50	14.63	Luzerne	OpD	4.80	20.80	20.85	Luzerne	WmB	4.80
6.74	6.78	Luzerne	OpD	4.80	14.63	14.86	Luzerne	OC	4.80	20.85	20.92	Luzerne	WID	5.30
6.78	6.90	Luzerne	Lb	4.90	14.86	14.90	Luzerne	OpD	4.80	20.92	21.01	Luzerne	Wc	4.90
6.90	6.94	Luzerne	Ld	4.90	14.90	15.08	Luzerne	WmD	4.80	21.01	21.16	Luzerne	MaB	5.20
6.94	6.98	Luzerne	CrB	5.90	15.08	15.14	Luzerne	Wc	4.90	21.16	21.28	Luzerne	Wb	5.30
6.98	7.01	Luzerne	MaB	5.70	15.14	15.19	Luzerne	OpD	4.80	21.28	21.36	Luzerne	Bf	5.30
7.01	7.09	Luzerne	Lb	4.90	15.19	15.23	Luzerne	OpD	4.80	21.36	21.37	Luzerne	GA	5.90
M-0163-000	M-0163-004	Luzerne	Ld	4.90	15.23	15.30	Luzerne	OB	4.80	21.37	21.48	Luzerne	AI	6.20
M-0163-004	M-0163-007	Luzerne	WmB	4.80	15.30	15.35	Luzerne	OpD	4.80	21.48	21.50	Luzerne	RdA	5.80
M-0163-007	M-0163-013	Luzerne	CrB	5.90	15.35	15.44	Luzerne	OpD	4.80	21.50	21.55	Luzerne	OpD	4.80
M-0163-013	M-0163-015	Luzerne	WmB	4.80	15.44	15.48	Luzerne	Wc	4.90	21.55	21.59	Luzerne	Wc	4.90
M-0163-015	M-0163-020	Luzerne	Ld	4.90	15.48	15.56	Luzerne	Wb	5.30	21.59	21.66	Luzerne	Wb	5.30
M-0163-020	M-0163-029	Luzerne	OpD	4.80	15.56	15.76	Luzerne	Ld	4.90	21.66	21.71	Luzerne	LaB	5.00
M-0163-029	M-0163-035	Luzerne	Lb	4.90	15.76	15.77	Luzerne	Wf	4.80	21.71	21.85	Luzerne	Wb	5.30
M-0163-035	M-0163-041	Luzerne	OpD	4.80	15.77	15.80	Luzerne	Bf	5.50	21.85	22.00	Luzerne	Wc	4.90
M-0163-041	M-0163-044	Luzerne	Ld	4.90	15.80	15.86	Luzerne	OpD	4.80	22.00	22.18	Luzerne	MaB	5.20
M-0163-044	M-0163-058	Luzerne	Ld	4.90	15.86	16.14	Luzerne	Wb	5.30	M-0060-000	M-0060-028	Luzerne	MaB	5.20
M-0163-058	M-0163-064	Luzerne	Lb	4.90	16.14	16.17	Luzerne	MaB	5.20	M-0060-028	M-0060-038	Luzerne	Wb	5.30
M-0147-022	M-0147-038	Luzerne	Ld	4.90	16.17	16.24	Luzerne	Wc	4.90	M-0060-038	M-0060-051	Luzerne	MaB	5.20
M-0147-038	M-0147-047	Luzerne	Ld	4.90	16.24	16.27	Luzerne	WmD	4.80	M-0060-051	M-0060-056	Luzerne	OpD	4.80
M-0147-047	M-0147-047	Luzerne	Ld	4.90	16.27	16.30	Luzerne	OpD	4.80	M-0060-056	M-0060-058	Luzerne	OpB	4.80
M-0147-047	M-0147-053	Luzerne	MaB	5.70	16.30	16.37	Luzerne	OpB	4.80	M-0060-058	M-0060-060	Luzerne	OID	4.80
M-0147-053	M-0147-058	Luzerne	Ld	4.90	16.37	16.43	Luzerne	OID	4.80	M-0060-060	M-0060-065	Luzerne	OB	4.80
8.09	8.10	Luzerne	Ld	4.90	16.43	16.44	Luzerne	Ld	4.90	M-0060-065	M-0060-072	Luzerne	OC	4.80
8.10	8.28	Luzerne	LaB	5.00	16.44	16.53	Luzerne	LaC	4.90	M-0060-072	M-0060-080	Luzerne	WID	5.30
8.28	8.32	Luzerne	Lb	4.90	16.53	16.56	Luzerne	OpD	4.80	M-0060-080	M-0060-087	Luzerne	Wc	4.90
8.32	8.38	Luzerne	MaB	5.70	16.56	16.59	Luzerne	ChC	5.30	M-0060-087	M-0060-092	Luzerne	WmD	4.80
M-0056-000	M-0056-019	Luzerne	MaB	5.70	16.59	16.62	Luzerne	Ho	6.50	M-0060-092	M-0060-100	Luzerne	OpD	4.80
M-0056-019	M-0056-032	Luzerne	Lb	4.90	16.62	16.66	Luzerne	ChC	5.30	23.16	23.23	Luzerne	OpD	4.80
M-0056-032	M-0056-038	Luzerne	MaB	5.70	16.66	16.74	Luzerne	WmD	4.80	23.23	23.35	Luzerne	OpD	4.80
M-0056-038	M-0056-054	Luzerne	Ld	4.90	16.74	16.79	Luzerne	OpD	4.80	M-154-000	M-154-009	Luzerne	OpD	4.80
M-0056-054	M-0056-062	Luzerne	OpD	4.80	16.79	16.83	Luzerne	OpB	4.80	M-154-009	M-154-026	Luzerne	OpD	4.80
M-0056-062	M-0056-074	Luzerne	Ld	4.90	16.83	16.86	Luzerne	OpD	4.80	M-154-026	M-154-041	Luzerne	OpB	4.80
9.02	9.04	Luzerne	Ld	4.90	16.86	16.87	Luzerne	OpB	4.80	M-154-041	M-154-053	Luzerne	OpD	4.80
9.04	9.14	Luzerne	Ld	4.90	16.87	16.98	Luzerne	OpD	4.80	M-154-053	M-154-059	Luzerne	Wb	5.30
9.14	9.18	Luzerne	OpD	4.80	16.98	17.04	Luzerne	Wb	5.30	M-154-059	M-154-061	Luzerne	OB	4.80
9.18	9.21	Luzerne	Ld	4.90	17.04	17.07	Luzerne	OID	4.80	M-154-061	M-154-068	Luzerne	OC	4.80
9.21	9.31	Luzerne	OpD	4.80	17.07	17.13	Luzerne	OC	4.80	M-154-068	M-154-071	Luzerne	OID	4.80
9.31	9.41	Luzerne	Ld	4.90	17.13	17.21	Luzerne	OpD	4.80	M-154-071	M-154-072	Luzerne	Wc	4.90
9.41	9.46	Luzerne	OpD	4.80	17.21	17.22	Luzerne	Wa	6.50	M-154-072	M-154-078	Luzerne	Wb	5.30
9.46	9.51	Luzerne	Ld	4.90	17.22	17.25	Luzerne	ChC	5.30	M-154-078	M-154-080	Luzerne	Wc	4.90
9.51	9.57	Luzerne	Lb	4.90	17.25	17.29	Luzerne	ChB	5.30	M-154-080	M-154-081	Luzerne	Wb	5.30
9.57	9.95	Luzerne	LaB	5.00	17.29	17.31	Luzerne	WmB	4.80	M-154-081	M-154-082	Luzerne	MaB	5.20
9.95	10.05	Luzerne	LaC	4.90	17.31	17.36	Luzerne	ChA	5.30	24.10	24.16	Luzerne	MaB	5.20
10.05	10.15	Luzerne	Lb	4.90	17.36	17.47	Luzerne	WmB	4.80	M-0161-000	M-0161-001	Luzerne	MaB	5.20
10.15	10.19	Luzerne	Ld	4.90	17.47	17.48	Luzerne	Wc	4.90	M-0161-001	M-0161-013	Luzerne	MaB	5.20
10.19	10.25	Luzerne	MaB	5.70	17.48	17.53	Luzerne	ChB	5.30	M-0161-013	M-0161-020	Luzerne	Wc	4.90
10.25	10.54	Luzerne	Ld	4.90	17.53	17.55	Luzerne	BfB	5.30	M-0161-020	M-0161-029	Luzerne	MaC	5.20
10.54	10.75	Luzerne	Lb	4.90	17.55	17.62	Luzerne	ChC	5.30	M-0161-029	M-0161-032	Luzerne	MaB	5.20
10.75	10.75	Luzerne	LaB	5.00	17.62	17.63	Luzerne	Ag	5.50	M-0150-000	M-0150-009	Luzerne	MaB	5.20
10.75	10.82	Luzerne	Wb	5.30	17.63	17.65	Luzerne	WfD	4.80	M-0150-009	M-0150-009	Luzerne	MaC	5.20
10.82	10.89	Luzerne	LaB	5.00	17.65	17.70	Luzerne	Ld	4.90	M-0141-043	M-0141-045	Luzerne	MaC	5.20
10.89	10.94	Luzerne	Wb	5.30	17.70	17.75	Luzerne	Lb	4.90	M-0141-045	M-0141-053	Luzerne	MaC	5.70
10.94	11.08	Luzerne	WmD	4.80	17.75	17.77	Luzerne	Ld	4.90	M-0141-053	M-0141-062	Luzerne	WmD	4.80
11.08	11.11	Luzerne	Ld	4.90	17.77	17.82	Luzerne	OpD	4.80	M-0141-062	M-0141-064	Luzerne	OpD	4.80
11.11	11.15	Luzerne	WmB	4.80	17.82	17.86	Luzerne	OpB	4.80	M-0141-064	M-0141-069	Luzerne	OpD	4.80
11.15	11.19	Luzerne	Ld	4.90	17.86	17.92	Luzerne	OpD	4.80	24.71	24.94	Luzerne	OpD	4.80
11.19	11.28	Luzerne	WmB	4.80	17.92	17.99	Luzerne	ChC	5.30	24.94	25.05	Luzerne	OpD	4.80
11.28	11.40	Luzerne	OpD	4.80	17.99	18.05	Luzerne	WfD	4.80	25.05	25.13	Luzerne	OpD	4.80
11.40	11.50	Luzerne	OpB	4.80	18.05	18.12	Luzerne	Ho	6.50	25.13	25.23	Luzerne	WID	5.30
11.50	11.54	Luzerne	MaB	5.70	18.12	18.28	Luzerne	LEF	5.80	25.23	25.36	Luzerne	Wc	4.90
11.54	11.59	Luzerne	OpD	4.80	18.28	18.37	Luzerne	Ld	4.90	25.36	25.43	Luzerne	MaC	5.20
11.59	11.61	Luzerne	OC	4.80	18.37	18.68	Luzerne	Lb	4.90	25.43	25.56	Luzerne	Wc	4.90
11.61	11.67	Luzerne	OpB	4.80	18.68	18.70	Luzerne	Ld	4.90	25.56	25.59	Luzerne	OpD	4.80
11.67	11.76	Luzerne	OpD	4.80	18.70	18.73	Luzerne	MaB	5.70	25.59	25.62	Luzerne	OID	4.80
11.76	11.79	Luzerne	WmB	4.80	18.73	18.81	Luzerne	CrB	5.90	25.62	25.64	Luzerne	OpD	4.80
11.79	11.83	Luzerne	MaB	5.70	18.81	18.87	Luzerne	MaB	5.70	M-0142-000	M-0142-001	Luzerne	OpD	4.80
11.83	11.88	Luzerne	WmB	4.80	18.87	18.95	Luzerne	BfB	5.80	M-0142-001	M-0142-003	Luzerne	OID	4.80
11.88	11.91	Luzerne	Ld	4.90	18.95	18.99	Luzerne	MaB	5.50	M-0142-003	M-0142-008	Luzerne	OpD	4.80
11.91	12.08	Luzerne	OpB	4.80	18.99	19.01	Luzerne	Vb	6.00	M-0142-008	M-0142-012	Luzerne	OpD	4.80
12.08	12.14	Luzerne	Ld</											

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)	Wetland (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	Marsh Run	WW-T02-15016	5.07	CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T02-15016.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with SC150 fabric	50
Wetland	N/A	W-T02-15017	5.10	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T02-15017.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream. 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.	N/A	N/A
Wetland	N/A	W-T02-15019A/ W-T02-15019B/ W-T02-15019C	5.96	EV	N/A	N/A	PEM, PSS, PFO	LOD has been reduced to 75' in portions of the crossing. Full LOD reduction to 75' was not possible due to the saturated nature of the wetlands with unconsolidated soils and presence of two complex stream crossings adjacent to the wetland. The stream crossings will require a minimum of 5 foot of cover over the proposed pipeline and will result in a larger and deeper trench excavation. The additional worksite will provide storage for spoil within the wetland and will result in less impact than transporting material to a stockpile area outside the wetland.	The pipeline was routed in this location to parallel existing ROW and crosses the wetland at one of its narrowest points. Changes to improve this crossing were not considered as any modification would increase wetland impacts, tree clearing, and overall habitat fragmentation.	N/A	N/A
Stream	Maple Run	WW-T02-15017A/ WW-T02-15017B	6.00	HQ-CWF, MF	Perennial	Class A Wild Trout Waters	R3	LOD reduction not possible at this crossing (per justification provided for wetland W-T02-15017A crossing).	The pipeline was routed in this location to parallel existing ROW and cross the meandering stream at a roughly perpendicular angle.	SBR with SC150 fabric	100
Wetland	N/A	W-T02-15020C	6.43	None	N/A	N/A	PFO	LOD has been reduced to 75' to minimize impacts to W-T02-15020C.	The pipeline route was adjusted in this location to deviate from existing ROW in order to minimize impacts to this wetland system. The proposed route crosses closer to the margin of the wetland and reduces the crossing distance by approximately 300'. A more significant realignment to the south was considered but was not implemented due to increased habitat fragmentation and increased impacts to upland forest.	N/A	N/A
Wetland	N/A	W-T02-15022A/ W-T02-15022C	6.95	None	N/A	N/A	PEM, PFO	LOD has been reduced to 75' to minimize impacts to W-T02-15022.	The pipeline was routed in this location to parallel existing ROW and allows the foreclosed portion of this wetland to be crossed at a 90 degree angle at one of the narrowest points.	N/A	N/A
Wetland	N/A	W-T02-15023A/ W-T02-15023C	M-0163 0.09	None	N/A	N/A	PEM, PFO	W-T02-15023A/W-T02-15023C is being crossed via HDD.	The pipeline was routed in this location to facilitate an HDD crossing.	N/A	N/A
Stream	Kitchen Creek (WW-T02-15018)	WW-T02-15018	M-0163 0.2	HQ-CWF, MF	Perennial	Approved Trout Waters; Class A Wild Trout Waters	R3	WW-T02-15018 is being crossed via HDD.	The pipeline was routed in this location to facilitate an HDD crossing.	SBR with C125 fabric	100
Stream	Crooked Creek	WW-T24-15001	M-0163 0.38	HQ-CWF, MF	Perennial	Class A Wild Trout Waters	R3	WW-T24-15001 is being crossed via HDD.	The pipeline was routed in this location to facilitate an HDD crossing.	SBR with SC150 fabric	100
Wetland	N/A	W-T24-15001	7.47	EV	N/A	N/A	PEM	The LOD has been modified to eliminate impacts to W-T24-15001.	This feature is no longer impacted based on LOD reductions.	N/A	N/A
Wetland	N/A	W-T02-16001	8.36	EV	N/A	N/A	PEM	W-T24-16001 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 in this location to parallel existing ROW; avoidance of this feature was not practicable as it is located entirely within the existing ROW.	N/A	N/A
Wetland	N/A	W-T02-16001A/ W-T02-16001B/ W-T02-16001C-1	M-0056 0.39	EV	N/A	N/A	PEM	W-T02-16001 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. However, the portion of the LOD within this wetland was reduced by 5' to minimize impacts.	The pipeline was routed in this location to deviate from existing ROW to avoid a known population of Northeastern Blunfish (18 fish) that was identified during environmental surveys in W-T02-16001C. The realignment to avoid northeastern blunfish shifted the pipeline ~400' south avoiding nearly all of the W-T02-16001 complex. The proposed route crosses the margin of the complex in previously disturbed area (old logging roads) and avoids the Northeastern Blunfish habitat.	N/A	N/A
Stream	UNT to Phillips Creek	WW-T02-16001	9.14	HQ-CWF, MF	Intermittent	Class A Wild Trout Waters	R4	LOD has been reduced to 80' to minimize impacts to WW-T02-16001.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with C125 fabric	100
Wetland	N/A	W-T02-16002	9.16	EV	N/A	N/A	PEM	W-T02-16002 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 in this location to parallel existing ROW; avoidance of this feature was not practicable as it is located entirely within the existing ROW.	N/A	N/A
Stream	Phillips Creek	WW-T02-16002	9.28	HQ-CWF, MF	Perennial	Class A Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T02-16002.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with SC150 fabric	100
Wetland	N/A	W-T05-16004	10.20	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T05-16004.	The pipeline was routed in this location to parallel existing ROW, and the route crosses the wetland in an area where there are several upland islands, reducing overall wetland impacts.	N/A	N/A
Stream	Lick Branch	WW-T05-16003	10.23	HQ-CWF, MF	Perennial	Class A Wild Trout Waters	R3	LOD has been reduced to 75' to minimize impacts to WW-T05-16003.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with SC150 fabric	100
Wetland	N/A	W-T05-16005	10.72	None	N/A	N/A	PEM	W-T05-16005 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 in this location to parallel existing ROW, and the route crosses only a small section of the wetland along its margin.	N/A	N/A
Wetland	N/A	W-T11-16001A/ W-T11-16001B/ W-T11-16001C-1	10.94	None	N/A	N/A	PEM, PSS, PFO	LOD has been reduced to 75' to minimize impacts to W-T11-16001.	The pipeline was routed in this location to parallel existing ROW, and the route crosses the wetland along its northern margin.	N/A	N/A
Stream	UNT to Arnold Creek	WW-T11-16001D	11.19	HQ-CWF, MF	Perennial	Class A Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T11-16001D.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with SC150 fabric	100
Stream	Arnold Creek	WW-T11-16001	11.22	HQ-CWF, MF	Perennial	Class A Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T11-16001.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with SC150 fabric	100
Stream	UNT to Arnold Creek	WW-T11-16001B	11.24	HQ-CWF, MF	Perennial	Class A Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T11-16001B.	The pipeline was routed in this location to parallel existing ROW. This is a small feeder stream to WW-T11-16001. Although this crossing occurs at an oblique angle, a route change was not considered in order to maintain collocation and perpendicular crossing angles for WW-T11-16001D and WW-T11-16001.	SBR with SC150 fabric	100
Wetland	N/A	W-T11-16002A	11.20	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T11-16002A.	The pipeline was routed in this location to parallel existing ROW; avoidance of this feature was not practicable as it is located entirely within the existing ROW.	N/A	N/A
Wetland	N/A	W-T13-16002A/ W-T13-16002C	11.52	None	N/A	N/A	PEM, PFO	LOD has been reduced to 75' to minimize impacts to W-T13-16002C.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this wetland.	N/A	N/A
Pond	N/A	WB-T13-16002	11.52	None	N/A	N/A	PUB	This feature is part of a larger wetland complex and the LOD has been reduced to 75' to minimize impacts to the entire complex.	The pipeline was routed in this location to parallel existing ROW. Only the fringe of this ponded area portion of wetland W-T13-16002 is crossed.	SBR with SC150 fabric	100
Stream	UNT to Shingle Run (WW-T13-16002)	WW-T13-16002	11.82	HQ-CWF, MF	Perennial	Class A Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T13-16002.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with SC150 fabric	50
Wetland	N/A	W-T13-16001	11.83	EV	N/A	N/A	PEM	W-T13-16001 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 in this location to parallel existing ROW and crosses the wetland at a perpendicular angle along its northern margin.	N/A	N/A
Stream	Shingle Run (WW-T13-16001)	WW-T13-16001	12.17	HQ-CWF, MF	Perennial	Class A Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T13-16001.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with SC150 fabric	100
Stream	UNT to Mitchell Run (WW-T05-16002)	WW-T05-16002	12.92	HQ-CWF, MF	Perennial	Class A Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T05-16002.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with SC150 fabric	100
Stream	UNT to Mitchell Run (WW-T05-16002)	WW-T05-16002	13.06	HQ-CWF, MF	Perennial	Class A Wild Trout Waters	R3	LOD was not reduced as the stream does not cross the full width of the LOD, and an LOD reduction at this location would only be possible in the adjacent upland area and would not result in minimization of stream impacts.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with SC150 fabric	100
Stream	Mitchler Run (WW-T05-16003)	WW-T05-16003	13.09	HQ-CWF, MF	Perennial	Class A Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T05-16003.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with SC150 fabric	100
Stream	UNT to Mitchell Run (WW-T05-16003A)	WW-T05-16003A	13.09	HQ-CWF, MF	Ephemeral	Class A Wild Trout Waters	R6	LOD has been reduced to 80' to minimize impacts to WW-T05-16003A.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with SC150 fabric	100
Stream	UNT to Mitchell Run (WW-T05-16003)	WW-T05-16003	13.11	HQ-CWF, MF	Perennial	Class A Wild Trout Waters	R3	LOD was not reduced as the stream does not cross the full width of the LOD, and an LOD reduction at this location would only be possible in the adjacent upland area and would not result in minimization of stream impacts.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with SC150 fabric	100
Wetland	N/A	W-T05-16003/ W-T05-16003-2	13.13	EV	N/A	N/A	PEM	LOD has been reduced to 75' for the portion of W-T05-16003 that crosses the full width of the LOD. Additional LOD reduction for the portion of the wetland encroaching on the southern end of the LOD would only be possible in the adjacent upland area and would not result in additional minimization of wetland impacts.	The pipeline was routed in this location to parallel existing ROW, and the impacted area is along the northern margin of the wetland.	N/A	N/A
Wetland	N/A	W-T05-16002	13.65	None	N/A	N/A	PEM	W-T05-16002 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 in this location to parallel existing ROW, and the impacted area is confined to the existing cleared ROW.	N/A	N/A
Wetland	N/A	W-T05-16001	13.70	None	N/A	N/A	PEM	W-T05-16001 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 in this location to parallel existing ROW, and the impacted area is confined to the existing cleared ROW.	N/A	N/A
Wetland	N/A	W-T03-16005/ W-T03-16005-1	13.85	EV	N/A	N/A	PEM	LOD has been reduced to 75' for the portion of W-T03-16005 that crosses the full width of the LOD. Additional LOD reduction for the portion of the wetland encroaching on the southern end of the LOD would only be possible in the adjacent upland area and would not result in additional minimization of wetland impacts.	The pipeline was routed in this location to parallel existing ROW, and the impacted area is along the northern margin of the wetland.	N/A	N/A
Stream	UNT to Huntington Creek	WW-T03-16003C	13.90	HQ-CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T03-16003C.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with SC150 fabric	100
Stream	UNT to Huntington Creek	WW-T03-16004	13.93	HQ-CWF, MF	Intermittent	Wild Trout Waters	R4	The LOD has been modified to eliminate impacts to WW-T03-16004.	This feature is no longer impacted based on LOD reductions.	SBR with SC150 fabric	100
Wetland	N/A	W-T03-16004	13.94	EV	N/A	N/A	PEM	W-T03-16004 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 in this location to parallel existing ROW, and the impacted area is along the northern margin of the wetland.	N/A	N/A

Drawn By & Date/Time: CScomzello Jul 28, 2017 -- 4:41 pm  
Drawing Location & Name: G:\08514\14C\1404909\DWG\BMPs&DETAILS\PL\_DNT14C4909(1)\_LU-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 30" CENTRAL PENN LINE NORTH  
PENNSYLVANIA BEST MANAGEMENT PRACTICES AND  
QUANTITIES PLAN SET  
LUZERNE COUNTY, PENNSYLVANIA

QUANTITY, CROSSING AND ACIDIC SOIL TABLES

DRAWN BY: ELZ	DATE: 05/15/15	ISSUED FOR BID:	SCALE:
CHECKED BY: JJK	DATE: 07/02/15	ISSUED FOR CONSTRUCTION:	REVISION: 4
APPROVED BY: SMK	DATE: 07/08/15	DRAWING NUMBER: 24-1601-70-28-A/1683_3-BMP-LU-TB	SHEET 5 OF 6



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)	Wetland (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	W-T05-17001A	W-T05-17001A / W-T05-17001B	19.86	EV	N/A	N/A	PEM, PSS	LOD has been reduced to 75' for the portion of W-T05-17001 that crosses the full width of the LOD. Additional LOD reduction for the portion of the wetland encroaching on the northern end of the LOD would only be possible in the adjacent upland area and would not result in additional minimization of wetland impacts.	This crossing was adjusted during field routing to crossover the existing pipeline to collocate on the south side of the existing ROW. The crossover and southern collocation reduces impacts to this wetland by crossing along its southern margin. This is a large system that cannot be avoided without adding significant distance/disturbance and habitat fragmentation to the route.	N/A	N/A
Stream	UNT to Harveys Creek (WW-T49-17003)	WW-T49-17003	19.93	HQ-CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T49-17003.	This crossing was adjusted during field routing to crossover the existing pipeline at MP 19.6 to collocate on the south side of the existing ROW. The crossover and southern collocation improves this stream crossing by eliminating parallel impacts along 100' of the stream reach and avoiding a 60' wide ponded area.	SBR with SC150 fabric	100
Wetland	N/A	W-T03-17003	20.99	None	N/A	N/A	PEM	W-T03-17003 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 in this location to parallel existing ROW, and the impacted area is along the southern margin of the wetland.	N/A	N/A
Wetland	N/A	W-T03-17001	21.18	None	N/A	N/A	PEM	W-T03-17001 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.	This crossing was adjusted during field routing to crossover the existing pipeline at MP 19.6 to collocate on the south side of the existing ROW. The realignment increases the impact to this wetland, however, this impact is negligible compared to the overall reduction in impacts to wetland systems between MP 19.6 and 21.15. This is a small PEM entirely contained within the existing pipeline ROW. W-T03-17002 in this area is avoided entirely by the crossover.	N/A	N/A
Stream	UNT to Huntsville Creek	WW-T93-17001	21.38	CWF, MF	Perennial	Wild Trout Waters	R3	LOD reduction not possible at this crossing (per justification provided for wetland W-T07-17001 crossing). In addition, the stream only encroaches within a portion of the LOD.	The original alignment crossed this stream 250' northwest of the current location. This crossing location was adjusted to increase the distance from a residence and to avoid impacting stream WW-T07-17001. There is little difference in the stream crossing from the original alignment to the current - both alignments cross this stream at a roughly perpendicular angle in similar locations.	SBR with SC150 fabric	50
Stream	UNT to Huntsville Creek	WW-T93-18001	21.39	CWF, MF	Perennial	Wild Trout Waters	R3	LOD reduction not possible at this crossing (per justification provided for wetland W-T07-17001 crossing).	The original alignment crossed this stream 250' northwest of the current location. This crossing location was adjusted to increase the distance from a residence and to avoid impacting stream WW-T07-17001. There is little difference in the stream crossing from the original alignment to the current - both alignments cross this stream at a roughly perpendicular angle in similar locations.	SBR with SC150 fabric	50
Wetland	N/A	W-T07-17001	21.45	EV	N/A	N/A	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.	The original alignment crossed this wetland 250' northwest of the current location. The crossing location was adjusted to increase distance from a residence and to avoid impacting stream WW-T07-17001. The wetland is also crossed at a roughly 90 degree angle along the current alignment.	N/A	N/A
Wetland	N/A	W-T49-17001	21.74	None	N/A	N/A	PEM	LOD reduction not possible at this crossing in order to safely enter and exit onto public road from ROW. In addition, the wetland only encroaches within a portion of the LOD.	The pipeline was routed in this location to cross the wetland at a perpendicular angle along its southern margin and at its narrowest point.	N/A	N/A
Wetland	N/A	W-T49-17002	21.79	EV	N/A	N/A	PEM	LOD has been modified to eliminate impacts to W-T49-17002.	This feature is no longer impacted based on LOD reductions.	N/A	N/A
Stream	UNT to Huntsville Creek (WW-T49-17001)	WW-T49-17001	21.80	CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T49-17001.	The pipeline was routed in this location to provide a perpendicular crossing of this stream. Note that the pipeline was specifically routed in this area from MP 21.8 to 22.0 to entirely avoid a large wetland and stream system located east of the current LOD (W-T07-17001 and WW-T07-17002).	SBR with SC150 fabric	50
Stream	UNT to Huntsville Creek (WW-T51-17001)	WW-T51-17001	22.06	CWF, MF	Ephemeral	Wild Trout Waters	R6	LOD has been reduced to 85' to minimize impacts to WW-T51-17001.	This crossing was not significantly changed during field routing. The pipeline only dips this feature, crossing the stream at its origin in an area where it is poorly defined.	SBR with SC150 fabric	50
Wetland	N/A	W-T07-17003A / W-T07-17003B-1 / W-T07-17003C-1 / W-T07-17003C-2	22.08	EV	N/A	N/A	PEM, PSS, PFO	LOD has been reduced to 75' for the portions of W-T07-17003 that crosses the full width of the LOD. Additional LOD reduction for the portion of the wetland complex encroaching on portions of the LOD would only be possible in the adjacent upland area and would not result in additional minimization of wetland impacts.	This crossing was adjusted during field routing to avoid an RV sales lot and several residences both east and west of the LOD. Impacts to the wetland complex were minimized by crossing the margins of the wetland wherever possible, and crossing all portions of the wetland at 90 degree angles.	N/A	50
Stream	UNT to Huntsville Creek	WW-T52-17002	22.10	CWF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 85' to minimize impacts to WW-T52-17002.	This crossing was not significantly changed during field routing. Avoidance of this crossing was not possible due to several residences located immediately east and west of the LOD.	SBR with SC150 fabric	50
Stream	UNT to Huntsville Creek	WW-T52-17001	22.15	CWF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 75' to minimize impacts to WW-T52-17001.	This crossing was not significantly changed during field routing. Avoidance of this crossing was not possible due to several residences located immediately east and west of the LOD.	SBR with SC150 fabric	50
Stream	UNT to Huntsville Creek (WW-T07-17002C)	WW-T07-17002C	MOC-0060 0.15	CWF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 80' to minimize impacts to WW-T07-17002C.	This crossing was not significantly changed during field routing. Avoidance of this crossing was not possible due to several residences located immediately east and west of the LOD.	SBR with SC150 fabric	50
Stream	UNT to Huntsville Creek (WW-T08-17001)	WW-T08-17001	MOC-0060 0.41	CWF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 80' to minimize impacts to WW-T08-17001.	The alignment in this area was changed during field routing to place the pipeline at the western edge of parcels LU-217,000 and LU-222,000 to avoid a large NWI and NHD wetland and stream system. The change improves this stream crossing by crossing at a perpendicular angle west of a small meander in the channel. The realignment in this area also avoids wetland W-T08-17001 entirely.	SBR with SC150 fabric	50
Wetland	N/A	W-T51-17001C	M-0060 0.48	None	N/A	N/A	PFO	LOD has been reduced to 75' to minimize impacts to W-T51-17001C.	The alignment in this area was changed during field routing to place the pipeline at the western edge of parcels LU-217,000 and LU-222,000 to avoid a large NWI and NHD wetland and stream system. The pipeline was also routed to only impact the eastern portion of the wetland and to cross the wetland at a 90 degree angle.	N/A	N/A
Stream	UNT to Huntsville Creek (WW-T53-17002)	WW-T53-17002	M-0060 0.87	CWF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 80' to minimize impacts to WW-T53-17002.	The pipeline was routed in this location to provide a perpendicular crossing of this stream.	SBR with SC150 fabric	50
Stream	UNT to Huntsville Creek	WW-T53-17002A	M-0060 0.87	CWF, MF	Intermittent	Wild Trout Waters	R4	LOD has been modified to eliminate impacts to WW-T53-17002A.	This feature is no longer impacted based on LOD reductions.	SBR with SC150 fabric	50
Stream	UNT to Huntsville Creek (WW-T53-17003)	WW-T53-17003	M-0060 0.89	CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T53-17003.	The pipeline was routed in this location to provide a perpendicular crossing of this stream.	SBR with SC150 fabric	50
Stream	UNT to Huntsville Creek (WW-T53-17003B)	WW-T53-17003B	M-0060 0.90	CWF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 80' to minimize impacts to WW-T53-17003B.	The pipeline was routed in this location to provide a perpendicular crossing of this stream.	SBR with SC150 fabric	50
Stream	UNT to Huntsville Creek	WW-T53-17003A	M-0060 0.91	CWF, MF	Intermittent	Wild Trout Waters	R4	LOD has been modified to eliminate impacts to WW-T53-17003A.	This feature is no longer impacted based on LOD reductions.	SBR with SC150 fabric	50
Stream	UNT to Huntsville Creek (WW-T53-17004)	WW-T53-17004	M-0060 0.94	CWF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 85' to minimize impacts to WW-T53-17004.	The pipeline was routed in this location to provide a perpendicular crossing of this stream.	SBR with SC150 fabric	50
Stream	UNT to Huntsville Creek (WW-T90-17002)	WW-T90-17002	MOC-0060 0.98	CWF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 85' to minimize impacts to WW-T90-17002.	The pipeline was routed in this location to provide a perpendicular crossing of this stream.	SBR with SC150 fabric	50
Wetland	N/A	W-T51-17002	M-0060 0.99	EV	N/A	N/A	PFO	W-T51-17002 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 in this location to only impact the southern margin of the wetland.	N/A	N/A
Wetland	N/A	W-T07-17005	24.39	None	N/A	N/A	PEM	LOD has been modified to eliminate impacts to WW-T07-17005.	This feature is no longer impacted based on LOD reductions.	N/A	N/A
Wetland	N/A	W-T24-17001A-1	M-0161 0.0	None	N/A	N/A	PEM	LOD reduction is not possible at this location due to the adjacent road crossing and PI.	The alignment in this area was modified during field routing to shift the pipeline roughly 400' to the west. This change allows overall habitat fragmentation to be reduced by collocating the pipeline with Lake Street for roughly 0.4 miles. In order to achieve collocation and to cross Lake Street at a perpendicular angle, a PI was placed within this wetland. The PI is located in an area of the wetland where it is relatively narrow, regularly disturbed and situated in an agricultural field. By placing the PI in this area of the wetland, overall habitat fragmentation is reduced through collocation and wetland impacts are limited to disturbed and relatively narrow areas near the southern boundary.	N/A	N/A


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)	Wetland (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 Leonard Creek (WW-T07-17003)	WW-T07-17003	M-0150 0.03	HQ-CWF, MF	Intermittent	Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T07-17003.	The pipeline was routed in this location to provide a perpendicular crossing of this stream.	SBR with SC150 fabric	100
Wetland	N/A	W-T71-18002B-1	M-0150 0.5	EV	N/A	N/A	PSS	LOD has been reduced to 75' to minimize impacts to W-T71-18002B-1.	The pipeline was routed in this location to cross the wetland at a 90 degree angle along its southern margin. The route was also placed in this location to avoid impacting several other nearby wetlands, including W-T71-18002B-2; W-T71-18002A-2; W-T71-18002A-1; W-T71-18001A and W-T71-18001B.	N/A	N/A
Stream	UNT to Leonard Creek (WW-T07-17004)	WW-T07-17004	M-0141 0.48	HQ-CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T07-17004.	The pipeline was routed in this location to provide a perpendicular crossing of this stream.	SBR with SC150 fabric	100
Wetland	N/A	W-T07-17006	25.37	None	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T07-17006.	This crossing was not significantly changed during field routing. The wetland is crossed at a roughly perpendicular angle near its northern margin.	N/A	N/A
Stream	UNT to Leonard Creek (WW-T17-18001)	WW-T17-18001	25.55	HQ-CWF, MF	Perennial	Wild Trout Waters	R3	Full ROW width needed at this crossing to complete a safe and efficient road crossing (HWY 309).	This crossing was not significantly changed during field routing. The stream is crossed at a roughly perpendicular angle.	SBR with SC150 fabric	100
Wetland	N/A	W-T17-18001	25.74	None	N/A	N/A	PEM	LOD has been modified to eliminate impacts to W-T17-18001.	This feature is no longer impacted based on LOD reductions.	N/A	N/A
Stream	UNT to Leonard Creek (WW-T65-18001)	WW-T65-18001	M-0166 0.20	HQ-CWF, MF	Ephemeral	Wild Trout Waters	R6	LOD has been reduced to 80' to minimize impacts to WW-T65-18001.	The pipeline route across LU-250,000 and LU-256,000 was changed to move the pipeline to the east to avoid wetlands and improve a stream crossing angle. During field routing, the angle of this stream crossing was improved to a roughly perpendicular crossing angle roughly 100' west of the original crossing location.	SBR with SC150 fabric	100
Wetland	N/A	W-T65-18002	M-0142 0.26	EV	N/A	N/A	PFO	N/A	This feature is no longer impacted based on incorporation of MOC-166.	N/A	N/A
Wetland	N/A	W-T65-18003	M-0142 0.30	None	N/A	N/A	PEM	N/A	This feature is no longer impacted based on incorporation of MOC-166.	N/A	N/A
Stream	UNT to Leonard Creek (WW-T76-18009)	WW-T76-18009	M-0179 0.26	HQ-CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T76-18009.	The pipeline was field routed at this location to cross stream WW-T76-18009 and riparian wetland W-T76-18001-3 at a roughly perpendicular angle. Utilizing this crossing location and orientation avoids additional tree clearing associated with side slope construction in a forested area. This crossing location also allows several small wetlands, seeps, and feeder streams located to the east of the crossing to be avoided entirely. A large manmade pond located west of the crossing is also avoided.	SBR with SC150 fabric	100
Wetland	N/A	W-T76-18001-3	M-0179 0.26	EV	N/A	N/A	PEM	W-T76-18001-3 is a small PEM wetland contained entirely within the middle portion of the LOD. Therefore, LOD reduction to avoid or minimize impacts to this feature is not possible.	The pipeline was field routed at this location to cross stream WW-T76-18009 and riparian wetland W-T76-18001-3 at a roughly perpendicular angle. Utilizing this crossing location and orientation avoids additional tree clearing associated with side slope construction in a forested area. This crossing location also allows several small wetlands, seeps, and feeder streams located to the east of the crossing to be avoided entirely. A large manmade pond located west of the crossing is also avoided.	N/A	N/A
Stream	UNT to Leonard Creek (WW-T61-18001)	WW-T61-18001	26.66	HQ-CWF, MF	Intermittent	Wild Trout Waters	R4	N/A	This feature is no longer impacted based on incorporation of CPL North Alternative 13.	SBR with SC150 fabric	100
Wetland	N/A	W-T61-18001	27.06	EV	N/A	N/A	PEM	N/A	This feature is no longer impacted based on incorporation of CPL North Alternative 13.	N/A	N/A
Wetland	N/A	W-T56-18001C-2 / W-T56-18001C-3 / W-T56-18001C-5 / W-T56-18001C-6 / W-T56-18001C-8	M-0088 1.08	EV	N/A	N/A	PFO	N/A	This feature is no longer impacted based on incorporation of CPL North Alternative 13.	N/A	N/A
Stream	UNT to Leonard Creek (WW-T56-18002)	WW-T56-18002	M-0088 1.11	HQ-CWF, MF	Ephemeral	Wild Trout Waters	R6	N/A	This feature is no longer impacted based on incorporation of CPL North Alternative 13.	SBR with SC150 fabric	100
Wetland	N/A	W-T56-18002	M-0088 1.57	None	N/A	N/A	PEM	N/A	This feature is no longer impacted based on incorporation of CPL North Alternative 13.	N/A	N/A
Wetland	N/A	W-T56-18004	M-0088 1.67	None	N/A	N/A	PEM	N/A	This feature is no longer impacted based on incorporation of CPL North Alternative 13.	N/A	N/A
Stream	UNT to Leonard Creek (WW-T56-18004)	WW-T56-18004	M-0088 1.75	HQ-CWF, MF	Intermittent	Wild Trout Waters	R4	N/A	This feature is no longer impacted based on incorporation of CPL North Alternative 13.	SBR with C125 fabric	100
Wetland	N/A	W-T56-18003B	M-0088 1.75	EV	N/A	N/A	PSS	N/A	This feature is no longer impacted based on incorporation of CPL North Alternative 13.	N/A	N/A
Wetland	N/A	W-T56-18005	M-0088 1.81	None	N/A	N/A	PEM	N/A	This feature is no longer impacted based on incorporation of CPL North Alternative 13.	N/A	N/A

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: CScanzello Jul 28, 2017 - 4:42pm  
Drawing Location & Name: G:\08514\14C\14C4909\BMPs&DETAILS\PL\_DNT14C4909(10)\_LU-TB.dwg

REVISIONS				W.O. NO.		CHK.	APP.	TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC	
NO.	DATE	BY	DESCRIPTION	NO.	NO.			ATLANTIC SUNRISE PROJECT	
0	08/28/2015	BL	ISSUED FOR PADEP SUBMITTAL	W0572385	JLK	SMK		PROPOSED 30" CENTRAL PENN LINE NORTH PENNSYLVANIA BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET LUZERNE COUNTY, PENNSYLVANIA	
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W0572385	JLK	SMK		QUANTITY, CROSSING AND ACIDIC SOIL TABLES	
2	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0572385	JLK	SMK		DRAWN BY: ELZ DATE: 05/15/15 ISSUED FOR BID: SCALE:	
3	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0572385	JLK	SMK		CHECKED BY: JLK DATE: 07/02/15 ISSUED FOR CONSTRUCTION: REVISION: 4	
4	AUG 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #3	W0572385	JLK	SMK		APPROVED BY: SMK DATE: 07/08/15 DRAWING NUMBER: 24-1601-70-28-A/1683_3-BMP-LU-TB SHEET 6	
								W.O. NO. OF 6	



WILLIAMS  
GAS PIPELINE