

*Atlantic Sunrise Project – PA DEP Chapter 105 Joint Permit Application
Transcontinental Gas Pipe Line Company, LLC
Northumberland County*

**ATTACHMENT H-2
COUNTY SPECIFIC IMPACT MAPPING
(UNDER SEPARATE COVER)**

Revised July 2017

Project Name: Atlantic Sunrise Project – Northumberland County

PA DEP Application Number: E49-336

PA DEP APS Number: 878980

“I, Maw Jaw Hwang, do hereby certify pursuant to the penalties of 18 PA C.S.A. Sec 4904 to the best of my knowledge, information and belief, that the information contained in the accompanying plans, specifications and reports has been prepared in accordance with accepted engineering practice, is true and correct, and is in conformance with Chapter 105 of the rules and regulations of the Department of Environmental Protection.”

Commonwealth of Pennsylvania Registered Professional Engineer, PE 077841





Transcontinental Gas Pipe Line Company LLC
ATLANTIC SUNRISE PROJECT
PROPOSED 42" CENTRAL PENN LINE SOUTH
WATER OBSTRUCTION AND
ENCROACHMENT PERMIT IMPACT MAPS

M-0194-M.P. 1.13 TO M.P. 90.99 AND
M.P. 91.75 TO M.P. 92.28
NORTHUMBERLAND COUNTY, PENNSYLVANIA

24-1600-70-09-A_Northumberland-PKG
Issued for PADEP Submittal #4
Rev. 5
07-28-2017

ISSUED DATE: JULY 28, 2017



Transcontinental Gas Pipe Line Company LLC
ATLANTIC SUNRISE PROJECT
PROPOSED 42" CENTRAL PENN LINE SOUTH
WATER OBSTRUCTION AND
ENCROACHMENT PERMIT IMPACT MAPS

M-0194-M.P. 1.13 TO M.P. 90.99 AND
M.P. 91.75 TO M.P. 92.28
NORTHUMBERLAND COUNTY, PENNSYLVANIA



DRAWING NUMBER	DESCRIPTION	SHEET	REVISION
24-1600-70-20-A/M-0194-1.13-02	INDEX SHEET	1 OF 4	1
24-1600-70-20-A/M-0194-1.13-02	NOTES SHEET	2 OF 4	2
24-1600-70-14-A/M-0194-1.13-02	PROJECT LOCATION KEY MAP	3 OF 4	4
24-1600-70-14-A/M-0194-1.13-02	PROJECT LOCATION KEY MAP	4 OF 4	4
24-1600-70-09-A/AR-NO-075-01	WW-T44-10002	1 OF 4	2
24-1600-70-09-A/AR-NO-075-01	WW-T44-10003	2 OF 4	2
24-1600-70-09-A/AR-NO-075-01	WW-T44-10004	3 OF 4	2
24-1600-70-09-A/AR-NO-075-01	WW-T01-10001	4 OF 4	2
24-1600-70-09-A/83.39-02	WW-T01-10001 & WW-T44-10002C	1 OF 2	2
24-1600-70-09-A/83.39-02	WW-T01-10001 & WW-T44-10002C	2 OF 2	0
24-1600-70-20-A/83.42-01	W-T18-10001	1 OF 2	1
24-1600-70-20-A/83.42-01	W-T18-10001	2 OF 2	1
24-1600-70-09-A/AR-NO-076.1-01	WW-T68-10001	1 OF 2	2
24-1600-70-09-A/AR-NO-076.1-01	WW-T68-10002	2 OF 2	2
24-1600-70-20-A/AR-NO-076.1-01	W-T68-10001	1 OF 1	1
24-1600-70-09-A/85.45-02	WW-T04-10002	1 OF 1	2
24-1600-70-09-A/M-0240-0.20-01	WW-T04-10001	1 OF 1	1
24-1600-70-09-A/AR-NO-078.1-01	WW-T04-10001	1 OF 3	2

DRAWING NUMBER	DESCRIPTION	SHEET	REVISION
24-1600-70-09-A/AR-NO-078.1-01	WW-T04-10001	2 OF 3	1
24-1600-70-09-A/AR-NO-078.1-01	WW-T04-10001	3 OF 3	1
24-1600-70-09-A/86.59-02	WW-T18-10002	1 OF 1	3
24-1600-70-09-A/M-0372-0.11-01	WW-T68-11001B & WW-T68-11001	1 OF 2	1
24-1600-70-09-A/M-0372-0.11-01	WW-T68-11001B & WW-T68-11001	2 OF 2	0
24-1600-70-09-A/AR-NO-082.1-01	WW-T58-11001A	1 OF 3	2
24-1600-70-09-A/AR-NO-082.1-01	WW-T58-11001A	2 OF 3	1
24-1600-70-09-A/AR-NO-082.1-01	WW-T58-11001A	3 OF 3	2
24-1600-70-09-A/M-0235-1.14-01	WW-T58-11001	1 OF 1	1
24-1600-70-20-A/88.81-02	W-T44-11001C	1 OF 1	3
24-1600-70-09-A/88.95-02	WW-T44-11002	1 OF 1	3
24-1600-70-20-A/89.08-01	W-T44-11001A / W-T44-11001A-2	1 OF 1	2
24-1600-70-09-A/91.74-01	WW-T47-11002	1 OF 1	2
24-1600-70-20-A/91.77-01	W-T49-11001	1 OF 1	1
24-1600-70-09-A/M-0437-0.03-01	WW-T44-11001A & WW-T44-11001C	1 OF 1	2
24-1600-70-20-A/M-0437-0.05-01	W-T49-11003	1 OF 1	1
24-1600-70-28-A/LL113_9-BMP	PENNSYLVANIA BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET		



DRAWING NO.		REFERENCE TITLE								
		TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC WATER OBSTRUCTION AND ENCROACHMENT PERMIT IMPACT MAPS ATLANTIC SUNRISE PROJECT PROPOSED 42" CENTRAL PENN LINE SOUTH INDEX SHEET M-0194-M.P. 1.13 TO M.P. 90.99 AND M.P. 91.75 TO M.P. 92.28 NORTHUMBERLAND COUNTY, PENNSYLVANIA								
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.	DRAWN BY: MA	DATE: 04/12/17	ISSUED FOR BID:	SCALE: N.T.S.
0	04/12/17	MA	ISSUED FOR PADEP SUBMITTAL #3	1161503	CLR	MJH	CHECKED BY: CLR	DATE: 04/12/17	ISSUED FOR CONSTRUCTION:	REVISION: 1
1	07/28/17	MA	ISSUED FOR PADEP SUBMITTAL #4	1161503	CLR	MJH	APPROVED BY: MJH	DATE: 04/12/17	DRAWING NUMBER: 24-1600-70-20-A/M-0194-1.13-01	SHEET 1
							W.O. 1161503	DATE: 7/27/2017	9:50am	OF 4



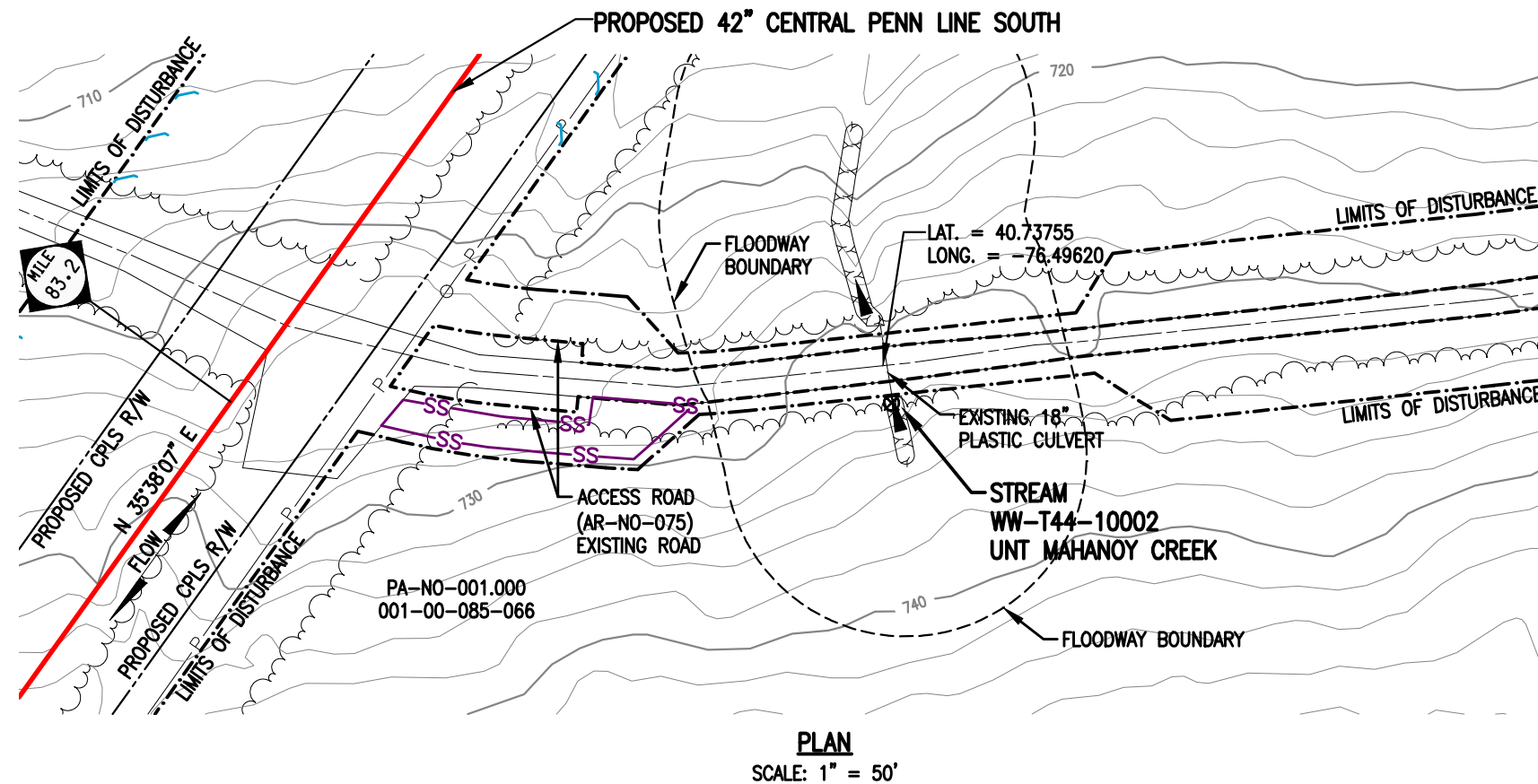
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STREAM DISTURBANCE FOR ACCESS ROAD AR-NO-075:

STREAM WW-T44-10002	ACRE
TEMPORARY STREAM DISTURBANCE	0.0000
PERMANENT STREAM DISTURBANCE	0.0000
TOTAL STREAM DISTURBANCE	0.0000
TEMPORARY FLOODWAY DISTURBANCE	0.0443
PERMANENT FLOODWAY DISTURBANCE	0.0000
TOTAL FLOODWAY DISTURBANCE	0.0443

STREAM DIMENSION	FT.
STREAM WIDTH (TOB TO TOB)	0.00
STREAM TEMPORARY IMPACT LENGTH	0.00
STREAM PERMANENT IMPACT LENGTH	0.00
STREAM TOTAL IMPACT LENGTH	0.00

FLOODWAY FILL (CU. YDS.)	71.41
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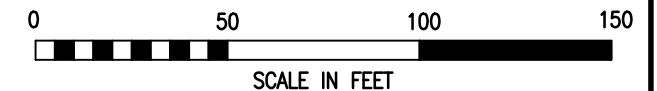


GENERAL NOTES:

1. THE TEMPORARY FLOODWAY IMPACT SHOWN ON THE DRAWING REPRESENTS THE FULL EXTENT OF THE FLOODWAY ACROSS THE EXISTING ACCESS ROAD. PROJECT ACTIVITIES WITHIN THE FLOODWAY WILL BE LIMITED TO INSTALLATION OF ROCK MATTING ON THE EXISTING GRAVEL SURFACE, INSTALLATION OF COMPOST FILTER SOCK, AND PLACEMENT OF TIMBER MATTING OVER EXISTING CULVERTS, AS WELL AS VEHICLE TRAFFIC ALONG THE EXISTING ACCESS ROAD. NO PERMANENT FILL WILL BE PLACED OR GRADING COMPLETED WITHIN THE FLOODWAY. THE ROCK MATTING DETAIL IS SHOWN ON THE ACCESS ROAD EROSION & SEDIMENT CONTROL AND LAYOUT PLANS IN ATTACHMENT M.
2. WATERBODIES WITHOUT A FEMA-ESTABLISHED FLOODPLAIN, THE FLOODWAY IS COINCIDENT WITH A 50-FOOT OFFSET MEASURED LATERALLY FROM THE PHYSICAL TOP OF BANK OF THE WATERBODY.
3. THE CALCULATION OF FILL VOLUMES PROVIDED WITHIN THE CHAPTER 105 APPLICATION IS BASED ON THE EXTENT OF THE ACCESS ROAD LOD WITHIN THE FLOODPLAIN/FLOODWAY TO ACCOUNT FOR WORST-CASE FIELD SCENARIOS REQUIRING THE ADDITION OF A ONE FOOT-DEPTH OF GRAVEL FOR MAINTENANCE AND/OR MINOR ACCESS ROAD WIDENING FOR IMPROVED ACCESS. AS SUCH, THE FILL VOLUME IS AN OVERESTIMATION AND DOES NOT REFLECT THE ACTUAL VOLUME OF FILL REQUIRED BY THE CURRENT ACCESS ROAD DESIGN, AS PRESENTED WITHIN THE CHAPTER 102 PERMIT. THE INCLUSION OF THE OVERESTIMATED FILL VOLUMES WITHIN THE CHAPTER 105 APPLICATION LIMITS FUTURE REVISIONS TO THE CHAPTER 105 APPLICATION DUE TO MINOR FIELD ADJUSTMENTS; CONVERSELY, REVISIONS TO ACCESS ROAD DESIGN AFTER THE 102 PERMIT ISSUANCE WILL BE COORDINATED WITH PADEP/CCD.

SURVEY NOTES:

1. T.B.M. SURVEY CONTROL POINT - 24.3' RT. OF M.P. 83.20, ELEV. = 724.86' (NAVD88).



LEGEND				
PROPOSED 42" CENTRAL PENN LINE SOUTH	WETLAND FLAGS	12" SEDIMENT BARRIER	PERMANENT STREAM IMPACT	
EXISTING PIPELINES	PHOTO DATA POINT	18" SEDIMENT BARRIER		TEMPORARY STREAM IMPACT
EXISTING TGPL R/W	WETLAND DATA POINT	24" SEDIMENT BARRIER		
LIMITS OF DISTURBANCE	UPLAND DATA POINT	32" SEDIMENT BARRIER		
PROPOSED CPLS R/W	WELL POINT	TOP OF BANK		
PROPERTY LINE	TRENCH PLUG			
FOREIGN PIPELINE	WATERBODY			
WETLAND AREA	TREE LINE			
STREAM FLOW	FLOODWAY BOUNDARY			
EXISTING POWER LINE	FEMA FLOODWAY BOUNDARY			
EXISTING FENCE				

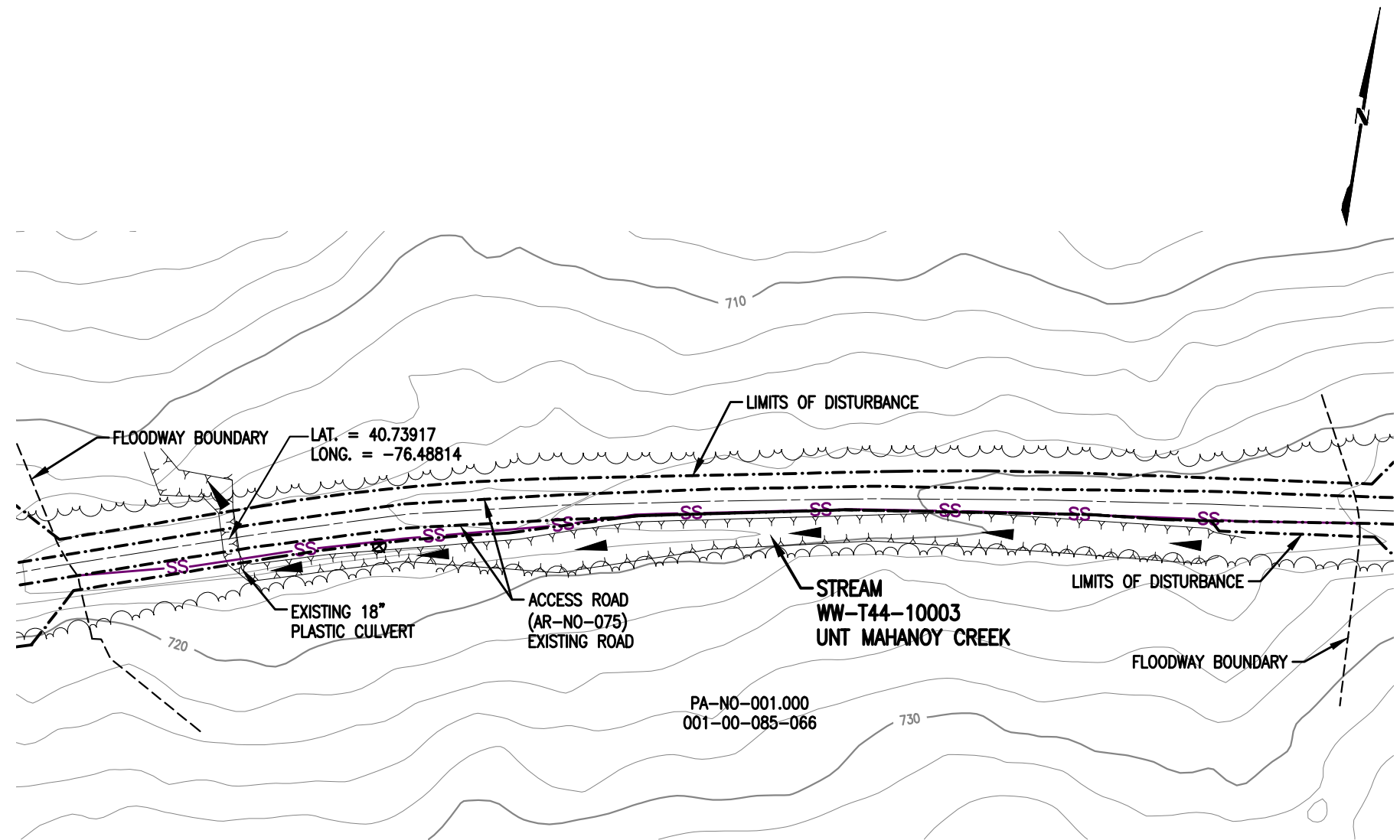
DRAWING NO.	REFERENCE TITLE	TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC								
		WATER OBSTRUCTION AND ENCROACHMENT PERMIT IMPACT MAPS								
		ATLANTIC SUNRISE PROJECT								
		PROPOSED 42" CENTRAL PENN LINE SOUTH								
		STREAM CROSSING WW-T44-10002								
		© M.P. 83.21								
		EAST CAMERON TOWNSHIP, NORTHUMBERLAND COUNTY, PENNSYLVANIA								
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.	DRAWN BY: TL	DATE: 06/21/16	ISSUED FOR BID:	SCALE: 1" = 50'
0	10/27/16	TL	ISSUED FOR PADEP SUBMITTAL #2	1161503	CLR	MJH	CHECKED BY: CLR	DATE: 07/06/16	ISSUED FOR CONSTRUCTION:	REVISION: 2
1	04/12/17	VT	ISSUED FOR PADEP SUBMITTAL #3	1161503	CLR	MJH	APPROVED BY: MJH	DATE: 07/06/16	DRAWING NUMBER: 24-1600-70-09-A/AR-NO-075-01	SHEET 1
2	07/28/17	AB	ISSUED FOR PADEP SUBMITTAL #4	1161503	CLR	MJH	IWO: 1161503		114pm K:\PL10471\Mapping\Waterbodies\CPLS_PAN\PADEP Sub #4_07-28-17\24-1600-70-09-A_AR-NO-075-01.dwg	4

STREAM DISTURBANCE FOR ACCESS ROAD AR-NO-075:

STREAM WW-T44-10003	ACRE
TEMPORARY STREAM DISTURBANCE	0.0000
PERMANENT STREAM DISTURBANCE	0.0000
TOTAL STREAM DISTURBANCE	0.0000
TEMPORARY FLOODWAY DISTURBANCE	0.1598
PERMANENT FLOODWAY DISTURBANCE	0.0000
TOTAL FLOODWAY DISTURBANCE	0.1598

STREAM DIMENSION	FT.
STREAM WIDTH (TOB TO TOB)	0.00
STREAM TEMPORARY IMPACT LENGTH	0.00
STREAM PERMANENT IMPACT LENGTH	0.00
STREAM TOTAL IMPACT LENGTH	0.00

FLOODWAY FILL (CU. YDS.)	257.81
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PLAN
SCALE: 1" = 50'

GENERAL NOTES:

1. THE TEMPORARY FLOODWAY IMPACT SHOWN ON THE DRAWING REPRESENTS THE FULL EXTENT OF THE FLOODWAY ACROSS THE EXISTING ACCESS ROAD. PROJECT ACTIVITIES WITHIN THE FLOODWAY WILL BE LIMITED TO INSTALLATION OF ROCK MATTING ON THE EXISTING GRAVEL SURFACE, INSTALLATION OF COMPOST FILTER SOCK, AND PLACEMENT OF TIMBER MATTING OVER EXISTING CULVERTS, AS WELL AS VEHICLE TRAFFIC ALONG THE EXISTING ACCESS ROAD. NO PERMANENT FILL WILL BE PLACED OR GRADING COMPLETED WITHIN THE FLOODWAY. THE ROCK MATTING DETAIL IS SHOWN ON THE ACCESS ROAD EROSION & SEDIMENT CONTROL AND LAYOUT PLANS IN ATTACHMENT M.
2. WATERBODIES WITHOUT A FEMA-ESTABLISHED FLOODPLAIN, THE FLOODWAY IS COINCIDENT WITH A 50-FOOT OFFSET MEASURED LATERALLY FROM THE PHYSICAL TOP OF BANK OF THE WATERBODY.
3. THE CALCULATION OF FILL VOLUMES PROVIDED WITHIN THE CHAPTER 105 APPLICATION IS BASED ON THE EXTENT OF THE ACCESS ROAD LOD WITHIN THE FLOODPLAIN/FLOODWAY TO ACCOUNT FOR WORST-CASE FIELD SCENARIOS REQUIRING THE ADDITION OF A ONE FOOT-DEPTH OF GRAVEL FOR MAINTENANCE AND/OR MINOR ACCESS ROAD WIDENING FOR IMPROVED ACCESS. AS SUCH, THE FILL VOLUME IS AN OVERESTIMATION AND DOES NOT REFLECT THE ACTUAL VOLUME OF FILL REQUIRED BY THE CURRENT ACCESS ROAD DESIGN, AS PRESENTED WITHIN THE CHAPTER 102 PERMIT. THE INCLUSION OF THE OVERESTIMATED FILL VOLUMES WITHIN THE CHAPTER 105 APPLICATION LIMITS FUTURE REVISIONS TO THE CHAPTER 105 APPLICATION DUE TO MINOR FIELD ADJUSTMENTS; CONVERSELY, REVISIONS TO ACCESS ROAD DESIGN AFTER THE 102 PERMIT ISSUANCE WILL BE COORDINATED WITH PADEP/CCD.

SURVEY NOTES:

1. T.B.M. SURVEY CONTROL POINT - 24.3' RT. OF M.P. 83.20, ELEV. = 724.86' (NAVD88).



LEGEND

- PROPOSED 42" CENTRAL PENN LINE SOUTH
- EXISTING PIPELINES
- EXISTING TGPL R/W
- LIMITS OF DISTURBANCE
- PROPOSED CPLS R/W
- PROPERTY LINE
- FOREIGN PIPELINE
- WETLAND AREA
- STREAM FLOW
- EXISTING POWER LINE
- EXISTING FENCE

- WETLAND FLAGS
- PHOTO DATA POINT
- WETLAND DATA POINT
- UPLAND DATA POINT
- WELL POINT
- TRENCH PLUG
- WATERBODY
- TREE LINE
- FLOODWAY BOUNDARY
- FEMA FLOODWAY BOUNDARY

WOOD GROUP USA, INC.

- 12" SEDIMENT BARRIER
- 18" SEDIMENT BARRIER
- 24" SEDIMENT BARRIER
- 32" SEDIMENT BARRIER
- TOP OF BANK
- PERMANENT STREAM IMPACT
- TEMPORARY STREAM IMPACT

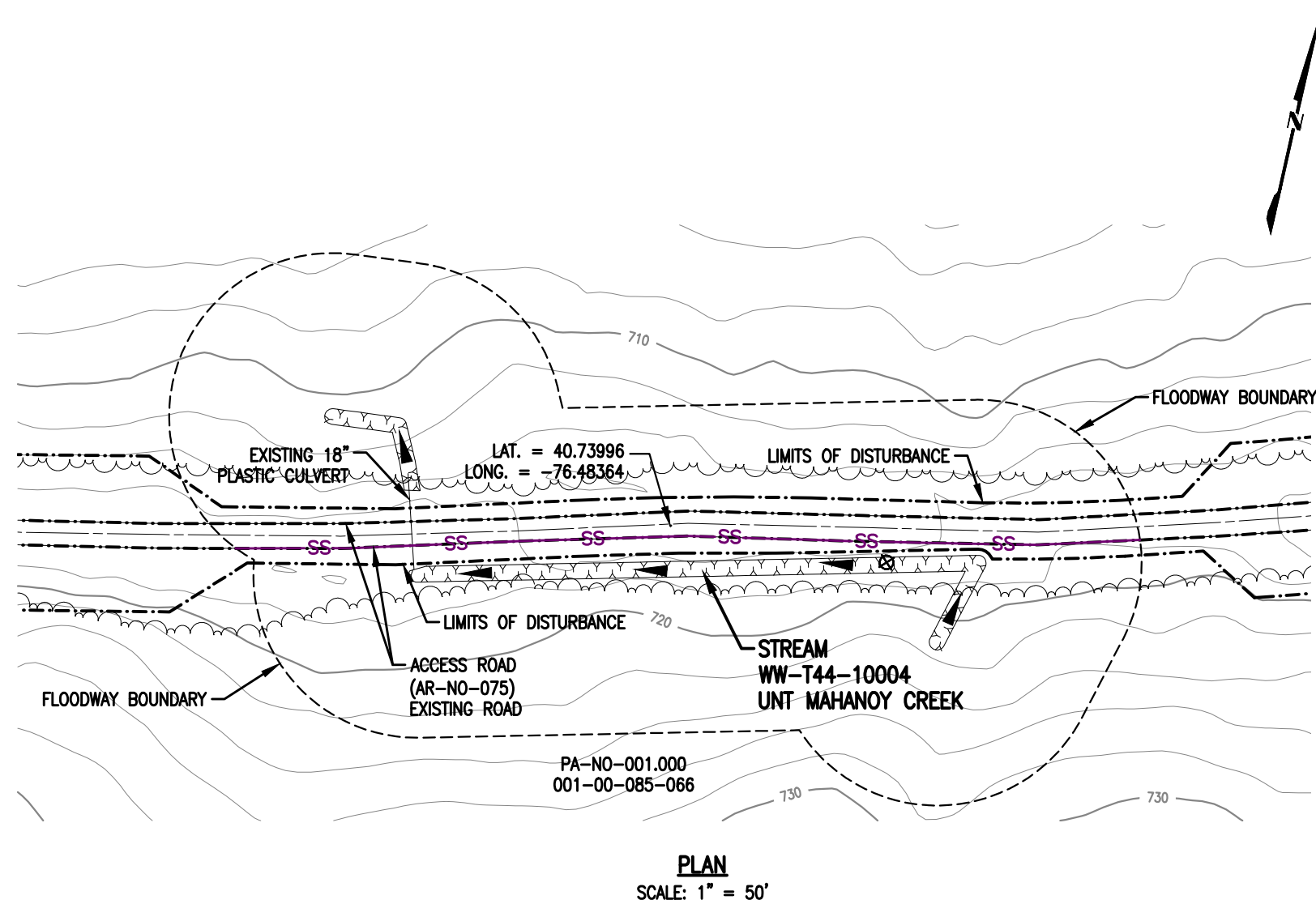
DRAWING NO.	REFERENCE TITLE	TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC WATER OBSTRUCTION AND ENCROACHMENT PERMIT IMPACT MAPS ATLANTIC SUNRISE PROJECT PROPOSED 42" CENTRAL PENN LINE SOUTH STREAM CROSSING WW-T44-10003 © M.P. 83.21 EAST CAMERON TOWNSHIP, NORTHUMBERLAND COUNTY, PENNSYLVANIA																																										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>NO.</th> <th>DATE</th> <th>BY</th> <th>REVISION DESCRIPTION</th> <th>W.O. NO.</th> <th>CHK.</th> <th>APP.</th> </tr> <tr> <td>0</td> <td>10/27/16</td> <td>TL</td> <td>ISSUED FOR PADEP SUBMITTAL #2</td> <td>1161503</td> <td>CLR</td> <td>MJH</td> </tr> <tr> <td>1</td> <td>04/12/17</td> <td>VT</td> <td>ISSUED FOR PADEP SUBMITTAL #3</td> <td>1161503</td> <td>CLR</td> <td>MJH</td> </tr> <tr> <td>2</td> <td>07/28/17</td> <td>AB</td> <td>ISSUED FOR PADEP SUBMITTAL #4</td> <td>1161503</td> <td>CLR</td> <td>MJH</td> </tr> </table>		NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.	0	10/27/16	TL	ISSUED FOR PADEP SUBMITTAL #2	1161503	CLR	MJH	1	04/12/17	VT	ISSUED FOR PADEP SUBMITTAL #3	1161503	CLR	MJH	2	07/28/17	AB	ISSUED FOR PADEP SUBMITTAL #4	1161503	CLR	MJH	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>DRAWN BY: TL</td> <td>DATE: 06/21/16</td> <td>ISSUED FOR BID:</td> </tr> <tr> <td>CHECKED BY: CLR</td> <td>DATE: 07/06/16</td> <td>ISSUED FOR CONSTRUCTION:</td> </tr> <tr> <td>APPROVED BY: MJH</td> <td>DATE: 07/06/16</td> <td>DRAWING NUMBER: 24-1600-70-09-A/AR-NO-075-01</td> </tr> <tr> <td>IWO: 1161503</td> <td>7/21/2017</td> <td>SHEET 2</td> </tr> </table>		DRAWN BY: TL	DATE: 06/21/16	ISSUED FOR BID:	CHECKED BY: CLR	DATE: 07/06/16	ISSUED FOR CONSTRUCTION:	APPROVED BY: MJH	DATE: 07/06/16	DRAWING NUMBER: 24-1600-70-09-A/AR-NO-075-01	IWO: 1161503	7/21/2017	SHEET 2	SCALE: 1" = 50' REVISION: 2
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.																																						
0	10/27/16	TL	ISSUED FOR PADEP SUBMITTAL #2	1161503	CLR	MJH																																						
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2	07/28/17	AB	ISSUED FOR PADEP SUBMITTAL #4	1161503	CLR	MJH																																						
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IWO: 1161503	7/21/2017	SHEET 2																																										

STREAM DISTURBANCE FOR ACCESS ROAD AR-NO-075:

STREAM WW-T44-10004	ACRE
TEMPORARY STREAM DISTURBANCE	0.0000
PERMANENT STREAM DISTURBANCE	0.0000
TOTAL STREAM DISTURBANCE	0.0000
TEMPORARY FLOODWAY DISTURBANCE	0.1200
PERMANENT FLOODWAY DISTURBANCE	0.0000
TOTAL FLOODWAY DISTURBANCE	0.1200

STREAM DIMENSION	FT.
STREAM WIDTH (TOB TO TOB)	0.00
STREAM TEMPORARY IMPACT LENGTH	0.00
STREAM PERMANENT IMPACT LENGTH	0.00
STREAM TOTAL IMPACT LENGTH	0.00

FLOODWAY FILL (CU. YDS.)	193.63
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GENERAL NOTES:

1. THE TEMPORARY FLOODWAY IMPACT SHOWN ON THE DRAWING REPRESENTS THE FULL EXTENT OF THE FLOODWAY ACROSS THE EXISTING ACCESS ROAD. PROJECT ACTIVITIES WITHIN THE FLOODWAY WILL BE LIMITED TO INSTALLATION OF ROCK MATTING ON THE EXISTING GRAVEL SURFACE, INSTALLATION OF COMPOST FILTER SOCK, AND PLACEMENT OF TIMBER MATTING OVER EXISTING CULVERTS, AS WELL AS VEHICLE TRAFFIC ALONG THE EXISTING ACCESS ROAD. NO PERMANENT FILL WILL BE PLACED OR GRADING COMPLETED WITHIN THE FLOODWAY. THE ROCK MATTING DETAIL IS SHOWN ON THE ACCESS ROAD EROSION & SEDIMENT CONTROL AND LAYOUT PLANS IN ATTACHMENT M.
2. WATERBODIES WITHOUT A FEMA-ESTABLISHED FLOODPLAIN, THE FLOODWAY IS COINCIDENT WITH A 50-FOOT OFFSET MEASURED LATERALLY FROM THE PHYSICAL TOP OF BANK OF THE WATERBODY.
3. THE CALCULATION OF FILL VOLUMES PROVIDED WITHIN THE CHAPTER 105 APPLICATION IS BASED ON THE EXTENT OF THE ACCESS ROAD LOD WITHIN THE FLOODPLAIN/FLOODWAY TO ACCOUNT FOR WORST-CASE FIELD SCENARIOS REQUIRING THE ADDITION OF A ONE FOOT-DEPTH OF GRAVEL FOR MAINTENANCE AND/OR MINOR ACCESS ROAD WIDENING FOR IMPROVED ACCESS. AS SUCH, THE FILL VOLUME IS AN OVERESTIMATION AND DOES NOT REFLECT THE ACTUAL VOLUME OF FILL REQUIRED BY THE CURRENT ACCESS ROAD DESIGN, AS PRESENTED WITHIN THE CHAPTER 102 PERMIT. THE INCLUSION OF THE OVERESTIMATED FILL VOLUMES WITHIN THE CHAPTER 105 APPLICATION LIMITS FUTURE REVISIONS TO THE CHAPTER 105 APPLICATION DUE TO MINOR FIELD ADJUSTMENTS; CONVERSELY, REVISIONS TO ACCESS ROAD DESIGN AFTER THE 102 PERMIT ISSUANCE WILL BE COORDINATED WITH PADEP/CCD.

SURVEY NOTES:

1. T.B.M. SURVEY CONTROL POINT - 24.3' RT. OF M.P. 83.20, ELEV. = 724.86' (NAVD88).



LEGEND

- PROPOSED 42" CENTRAL PENN LINE SOUTH
- EXISTING PIPELINES
- - - EXISTING TGPL R/W
- - - - - LIMITS OF DISTURBANCE
- - - - - PROPOSED CPLS R/W
- P — PROPERTY LINE
- F — FOREIGN PIPELINE
- - - - - WETLAND AREA
- ▶ STREAM FLOW
- P — EXISTING POWER LINE
- X — EXISTING FENCE

WOOD GROUP USA, INC.

- SS 12" SEDIMENT BARRIER
- SS 18" SEDIMENT BARRIER
- SS 24" SEDIMENT BARRIER
- SS 32" SEDIMENT BARRIER
- - - - - TOP OF BANK
- PERMANENT STREAM IMPACT
- TEMPORARY STREAM IMPACT

- ▶ WETLAND FLAGS
- ⊗ PHOTO DATA POINT
- ⊠ WETLAND DATA POINT
- ⊠ UPLAND DATA POINT
- ☀ WELL POINT
- ▲ TRENCH PLUG
- ◊ WATERBODY
- TREE LINE
- - - - - FLOODWAY BOUNDARY
- - - - - FEMA FLOODWAY BOUNDARY

DRAWING NO.	REFERENCE TITLE	TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC WATER OBSTRUCTION AND ENCROACHMENT PERMIT IMPACT MAPS ATLANTIC SUNRISE PROJECT PROPOSED 42" CENTRAL PENN LINE SOUTH STREAM CROSSING WW-T44-10004 © M.P. 83.21 EAST CAMERON TOWNSHIP, NORTHUMBERLAND COUNTY, PENNSYLVANIA			
		Williams			
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1	04/12/17	VT	ISSUED FOR PADEP SUBMITTAL #3	1161503	CLR MJH
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		CHECKED BY:	CLR	DATE:	07/06/16
		APPROVED BY:	MJH	DATE:	07/06/16
		W.O. NO.:	1161503		
		ISSUED FOR BID:			
		ISSUED FOR CONSTRUCTION:			
		DRAWING NUMBER:	24-1600-70-09-A/AR-NO-075-01		
		SHEET:	3		
		SCALE:	1" = 50'		
		REVISION:	2		
		W.C.:	1161503		

GENERAL NOTES:

1. THE TEMPORARY FLOODWAY IMPACT SHOWN ON THE DRAWING REPRESENTS THE FULL EXTENT OF THE FLOODWAY ACROSS THE EXISTING ACCESS ROAD. PROJECT ACTIVITIES WITHIN THE FLOODWAY WILL BE LIMITED TO INSTALLATION OF ROCK MATTING ON THE EXISTING GRAVEL SURFACE, INSTALLATION OF COMPOST FILTER SOCK, AND PLACEMENT OF TIMBER MATTING OVER EXISTING CULVERTS, AS WELL AS VEHICLE TRAFFIC ALONG THE EXISTING ACCESS ROAD. NO PERMANENT FILL WILL BE PLACED OR GRADING COMPLETED WITHIN THE FLOODWAY. THE ROCK MATTING DETAIL IS SHOWN ON THE ACCESS ROAD EROSION & SEDIMENT CONTROL AND LAYOUT PLANS IN ATTACHMENT M.
2. THIS SITE IS LOCATED WITHIN THE 100 YEAR FLOOD PLAIN PER FEMA FLOOD MAP DATA.
3. THE CALCULATION OF FILL VOLUMES PROVIDED WITHIN THE CHAPTER 105 APPLICATION IS BASED ON THE EXTENT OF THE ACCESS ROAD LOD WITHIN THE FLOODPLAIN/FLOODWAY TO ACCOUNT FOR WORST-CASE FIELD SCENARIOS REQUIRING THE ADDITION OF A ONE FOOT-DEPTH OF GRAVEL FOR MAINTENANCE AND/OR MINOR ACCESS ROAD WIDENING FOR IMPROVED ACCESS. AS SUCH, THE FILL VOLUME IS AN OVERESTIMATION AND DOES NOT REFLECT THE ACTUAL VOLUME OF FILL REQUIRED BY THE CURRENT ACCESS ROAD DESIGN, AS PRESENTED WITHIN THE CHAPTER 102 PERMIT. THE INCLUSION OF THE OVERESTIMATED FILL VOLUMES WITHIN THE CHAPTER 105 APPLICATION LIMITS FUTURE REVISIONS TO THE CHAPTER 105 APPLICATION DUE TO MINOR FIELD ADJUSTMENTS; CONVERSELY, REVISIONS TO ACCESS ROAD DESIGN AFTER THE 102 PERMIT ISSUANCE WILL BE COORDINATED WITH PADEP/CCD.

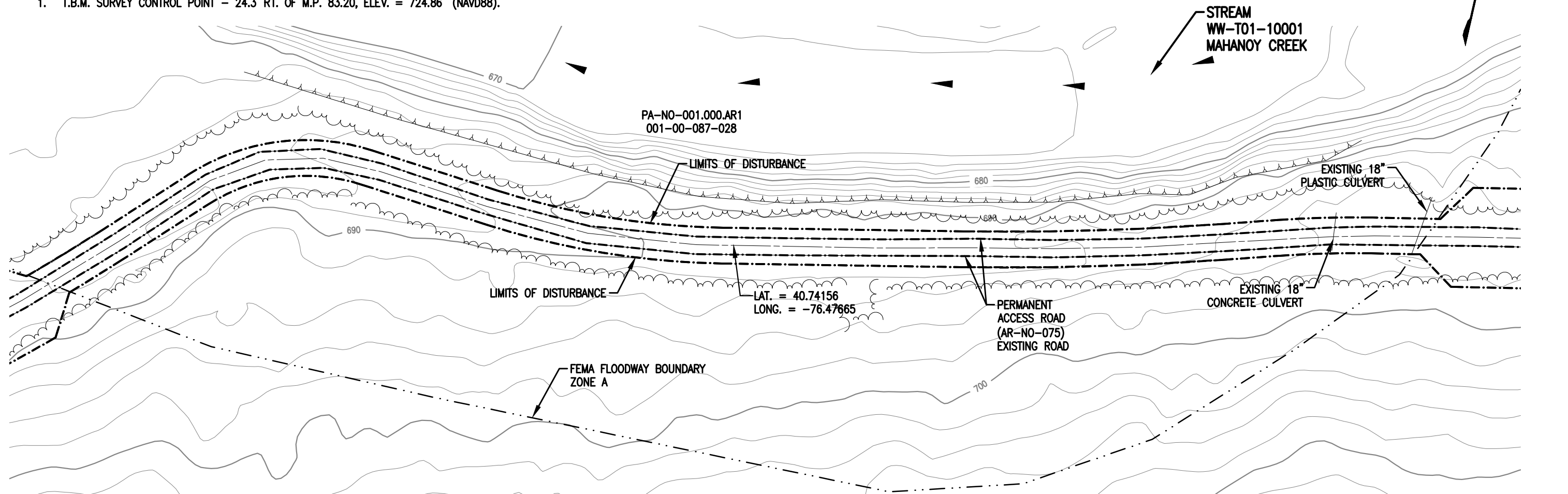
SURVEY NOTES:

1. T.B.M. SURVEY CONTROL POINT - 24.3' RT. OF M.P. 83.20, ELEV. = 724.86' (NAVD88).

STREAM DISTURBANCE FOR ACCESS ROAD AR-NO-075:

STREAM WW-T01-10001	ACRE
TEMPORARY STREAM DISTURBANCE	0.0000
PERMANENT STREAM DISTURBANCE	0.0000
TOTAL STREAM DISTURBANCE	0.0000
TEMPORARY FLOODWAY DISTURBANCE	0.2955
PERMANENT FLOODWAY DISTURBANCE	0.0000
TOTAL FLOODWAY DISTURBANCE	0.2955

STREAM DIMENSION	FT.
STREAM WIDTH (TOB TO TOB)	0.00
STREAM TEMPORARY IMPACT LENGTH	0.00
STREAM PERMANENT IMPACT LENGTH	0.00
STREAM TOTAL IMPACT LENGTH	0.00
FLOODWAY FILL (CU. YDS.)	476.67



PLAN
SCALE: 1" = 50'



LEGEND

	PROPOSED 42" CENTRAL PENN LINE SOUTH		WETLAND FLAGS		WOOD GROUP USA, INC.
	EXISTING PIPELINES		PHOTO DATA POINT		12" SEDIMENT BARRIER
	EXISTING TGPL R/W		WETLAND DATA POINT		18" SEDIMENT BARRIER
	LIMITS OF DISTURBANCE		UPLAND DATA POINT		24" SEDIMENT BARRIER
	PROPOSED CPLS R/W		WELL POINT		32" SEDIMENT BARRIER
	PROPERTY LINE		TRENCH PLUG		PERMANENT STREAM IMPACT
	FOREIGN PIPELINE		WATERBODY		TEMPORARY STREAM IMPACT
	WETLAND AREA		TREE LINE		
	STREAM FLOW		FLOODWAY BOUNDARY		
	EXISTING POWER LINE		FEMA FLOODWAY BOUNDARY		
	EXISTING FENCE				

DRAWING NO.		REFERENCE TITLE		TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC WATER OBSTRUCTION AND ENCROACHMENT PERMIT IMPACT MAPS ATLANTIC SUNRISE PROJECT PROPOSED 42" CENTRAL PENN LINE SOUTH STREAM CROSSING WW-T01-10001 © M.P. 83.21 EAST CAMERON TOWNSHIP, NORTHUMBERLAND COUNTY, PENNSYLVANIA						
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.	DRAWN BY: TL	DATE: 06/21/16	ISSUED FOR BID:	SCALE: 1" = 50'
0	10/27/16	MF	ISSUED FOR PADEP SUBMITTAL #2	1161503	CLR	MJH	CHECKED BY: CLR	DATE: 07/06/16	ISSUED FOR CONSTRUCTION:	REVISION: 2
1	04/12/17	VT	ISSUED FOR PADEP SUBMITTAL #3	1161503	CLR	MJH	APPROVED BY: MJH	DATE: 07/06/16	DRAWING NUMBER: 24-1600-70-09-A/AR-NO-075-01	SHEET 4
2	07/28/17	AB	ISSUED FOR PADEP SUBMITTAL #4	1161503	CLR	MJH	W.O. NO: 1161503		7/24/2017	11:30pm

STREAM DISTURBANCE FOR ACCESS ROAD AR-NO-076.1:

STREAM WW-T68-10001	ACRE
TEMPORARY STREAM DISTURBANCE	0.0004
PERMANENT STREAM DISTURBANCE	0.0000
TOTAL STREAM DISTURBANCE	0.0004
TEMPORARY FLOODWAY DISTURBANCE	0.0546
PERMANENT FLOODWAY DISTURBANCE	0.0000
TOTAL FLOODWAY DISTURBANCE	0.0546

STREAM DIMENSION	FT.
STREAM WIDTH (TOB TO TOB)	4.89
STREAM TEMPORARY IMPACT LENGTH	3.49
STREAM PERMANENT IMPACT LENGTH	0.00
STREAM TOTAL IMPACT LENGTH	3.49

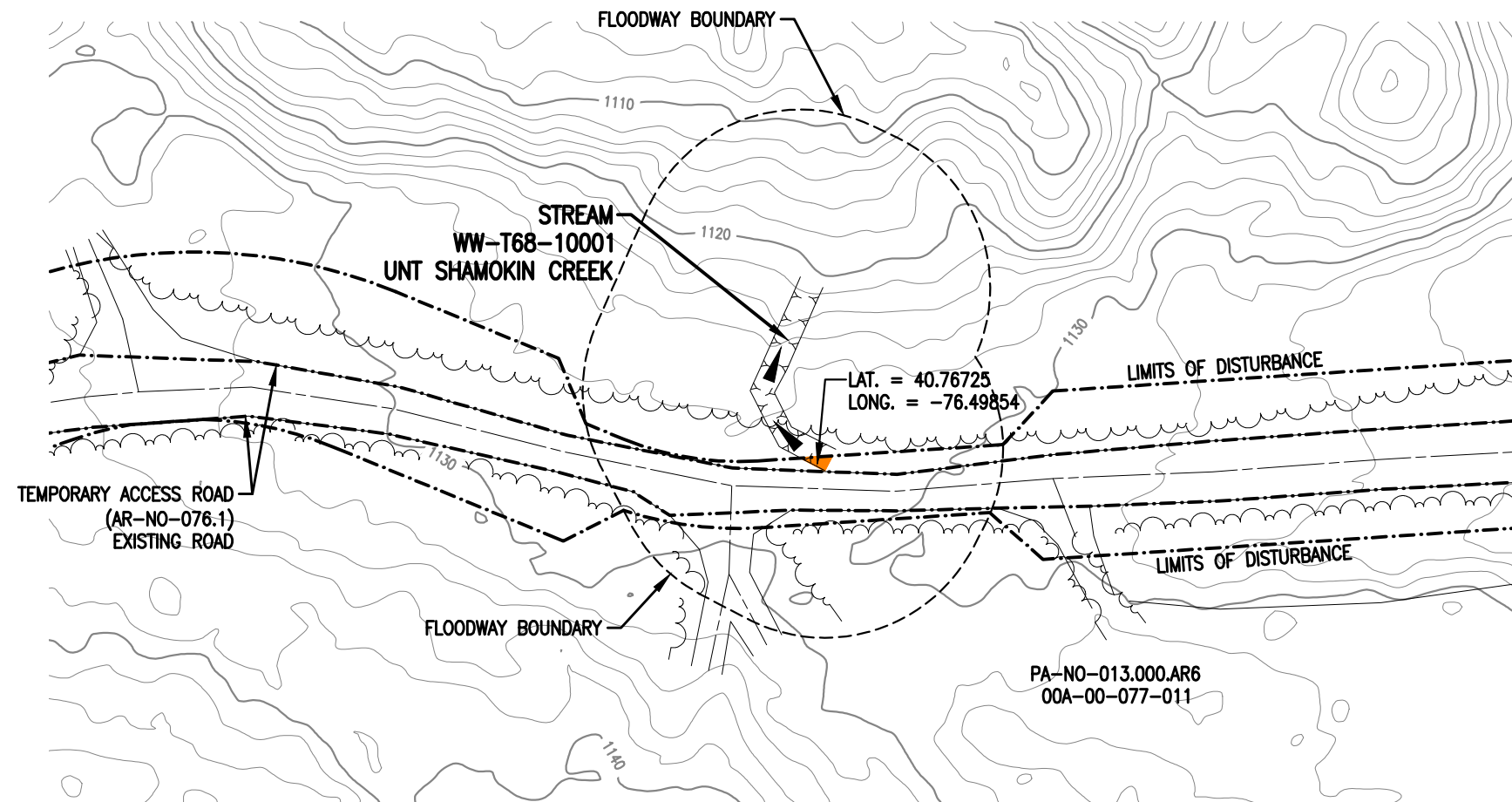
FLOODWAY FILL (CU. YDS.)	88.93
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GENERAL NOTES:

1. THE TEMPORARY FLOODWAY IMPACT SHOWN ON THE DRAWING REPRESENTS THE FULL EXTENT OF THE FLOODWAY ACROSS THE EXISTING ACCESS ROAD. PROJECT ACTIVITIES WITHIN THE FLOODWAY WILL BE LIMITED TO PLACEMENT OF BRIDGE EQUIPMENT CROSSINGS OVER THE EXISTING STREAMS, AS WELL AS VEHICLE TRAFFIC ALONG THE EXISTING ACCESS ROAD. NO PERMANENT FILL WILL BE PLACED OR GRADING COMPLETED WITHIN THE FLOODWAY.
2. WATERBODIES WITHOUT A FEMA-ESTABLISHED FLOODPLAIN, THE FLOODWAY IS COINCIDENT WITH A 50-FOOT OFFSET MEASURED LATERALLY FROM THE PHYSICAL TOP OF BANK OF THE WATERBODY.
3. THE CALCULATION OF FILL VOLUMES PROVIDED WITHIN THE CHAPTER 105 APPLICATION IS BASED ON THE EXTENT OF THE ACCESS ROAD LOD WITHIN THE FLOODPLAIN/FLOODWAY TO ACCOUNT FOR WORST-CASE FIELD SCENARIOS REQUIRING THE ADDITION OF A ONE FOOT-DEPTH OF GRAVEL FOR MAINTENANCE AND/OR MINOR ACCESS ROAD WIDENING FOR IMPROVED ACCESS. AS SUCH, THE FILL VOLUME IS AN OVERESTIMATION AND DOES NOT REFLECT THE ACTUAL VOLUME OF FILL REQUIRED BY THE CURRENT ACCESS ROAD DESIGN, AS PRESENTED WITHIN THE CHAPTER 102 PERMIT. THE INCLUSION OF THE OVERESTIMATED FILL VOLUMES WITHIN THE CHAPTER 105 APPLICATION LIMITS FUTURE REVISIONS TO THE CHAPTER 105 APPLICATION DUE TO MINOR FIELD ADJUSTMENT; CONVERSELY, REVISIONS TO ACCESS ROAD DESIGN AFTER THE 102 PERMIT ISSUANCE WILL BE COORDINATED WITH PADEP/CCD.

SURVEY NOTES:

1. T.B.M. SURVEY CONTROL POINT - 19.5' LT. OF M.P. 85.3, ELEV. = 1186.68' (NAVD88).



PLAN
SCALE: 1" = 50'

LEGEND		WOOD GROUP USA, INC.	
— PROPOSED 42" CENTRAL PENN LINE SOUTH	▽ WETLAND FLAGS	— SS — 12" SEDIMENT BARRIER	— PERMANENT STREAM IMPACT
— EXISTING PIPELINES	⊗ PHOTO DATA POINT	— SS — 18" SEDIMENT BARRIER	— TEMPORARY STREAM IMPACT
— EXISTING TGPL R/W	⊠ WETLAND DATA POINT	— SS — 24" SEDIMENT BARRIER	
- - - LIMITS OF DISTURBANCE	⊡ UPLAND DATA POINT	— SS — 32" SEDIMENT BARRIER	
— PROPOSED CPLS R/W	☼ WELL POINT	— SS — TOP OF BANK	
— PROPERTY LINE	▲ TRENCH PLUG		
— FOREIGN PIPELINE	☼ WATERBODY		
— WETLAND AREA	— TREE LINE		
▲ STREAM FLOW	- - - FLOODWAY BOUNDARY		
— EXISTING POWER LINE	- - - FEMA FLOODWAY BOUNDARY		
— EXISTING FENCE			

DRAWING NO.	REFERENCE TITLE	TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC								
		WATER OBSTRUCTION AND ENCROACHMENT PERMIT IMPACT MAPS								
		ATLANTIC SUNRISE PROJECT								
		PROPOSED 42" CENTRAL PENN LINE SOUTH								
		STREAM CROSSING WW-T68-10001								
		● M.P. 85.31								
		COAL TOWNSHIP, NORTHUMBERLAND COUNTY, PENNSYLVANIA								
		Williams								
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.	DRAWN BY: MF	DATE: 06/15/16	ISSUED FOR BID:	SCALE: 1" = 50'
0	10/27/16	MF	ISSUED FOR PADEP SUBMITTAL #2	1161503	CLR	MJH	CHECKED BY: CLR	DATE: 07/06/16	ISSUED FOR CONSTRUCTION:	REVISION: 2
1	04/12/17	VT	ISSUED FOR PADEP SUBMITTAL #3	1161503	CLR	MJH	APPROVED BY: MJH	DATE: 07/06/16	DRAWING NUMBER: 24-1600-70-09-A/AR-NO-076.1-01	SHEET 1
2	07/28/17	AB	ISSUED FOR PADEP SUBMITTAL #4	1161503	CLR	MJH	W.O. NUMBER: 1161503	DATE: 7/20/2017 3:26pm	nlu	OF 2

STREAM DISTURBANCE FOR ACCESS ROAD AR-NO-076.1:

STREAM WW-T68-10002	ACRE
TEMPORARY STREAM DISTURBANCE	0.0046
PERMANENT STREAM DISTURBANCE	0.0000
TOTAL STREAM DISTURBANCE	0.0046
TEMPORARY FLOODWAY DISTURBANCE	0.1212
PERMANENT FLOODWAY DISTURBANCE	0.0000
TOTAL FLOODWAY DISTURBANCE	0.1212

STREAM DIMENSION	FT.
STREAM WIDTH (TOB TO TOB)	11.91
STREAM TEMPORARY IMPACT LENGTH	40.10
STREAM PERMANENT IMPACT LENGTH	0.00
STREAM TOTAL IMPACT LENGTH	40.10

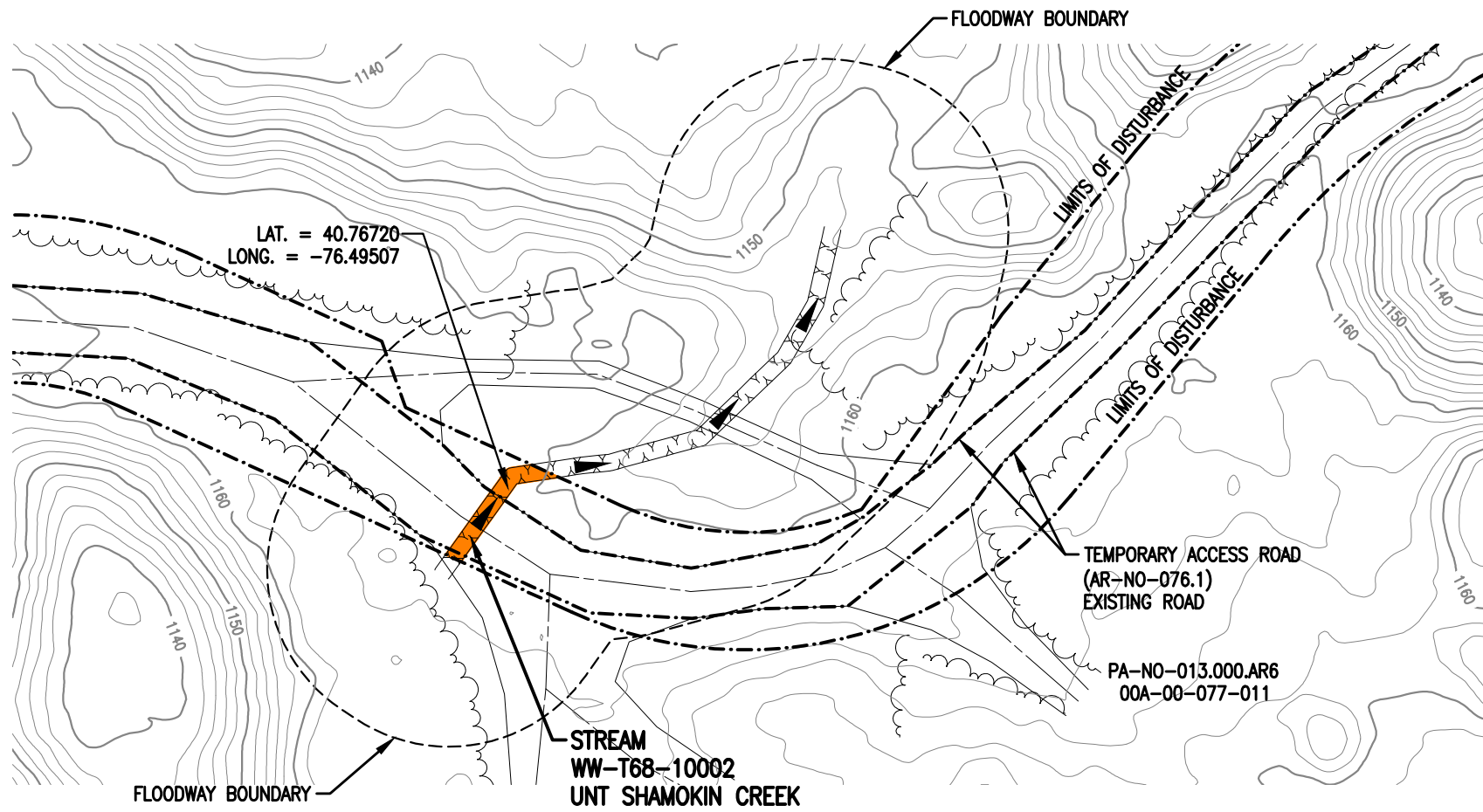
FLOODWAY FILL (CU. YDS.)	202.96
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GENERAL NOTES:

1. THE TEMPORARY FLOODWAY IMPACT SHOWN ON THE DRAWING REPRESENTS THE FULL EXTENT OF THE FLOODWAY ACROSS THE EXISTING ACCESS ROAD. PROJECT ACTIVITIES WITHIN THE FLOODWAY WILL BE LIMITED TO PLACEMENT OF BRIDGE EQUIPMENT CROSSINGS OVER THE EXISTING STREAMS, AS WELL AS VEHICLE TRAFFIC ALONG THE EXISTING ACCESS ROAD. NO PERMANENT FILL WILL BE PLACED OR GRADING COMPLETED WITHIN THE FLOODWAY.
2. WATERBODIES WITHOUT A FEMA-ESTABLISHED FLOODPLAIN, THE FLOODWAY IS COINCIDENT WITH A 50-FOOT OFFSET MEASURED Laterally FROM THE PHYSICAL TOP OF BANK OF THE WATERBODY.
3. THE CALCULATION OF FILL VOLUMES PROVIDED WITHIN THE CHAPTER 105 APPLICATION IS BASED ON THE EXTENT OF THE ACCESS ROAD LOD WITHIN THE FLOODPLAIN/FLOODWAY TO ACCOUNT FOR WORST-CASE FIELD SCENARIOS REQUIRING THE ADDITION OF A ONE FOOT-DEPTH OF GRAVEL FOR MAINTENANCE AND/OR MINOR ACCESS ROAD WIDENING FOR IMPROVED ACCESS. AS SUCH, THE FILL VOLUME IS AN OVERESTIMATION AND DOES NOT REFLECT THE ACTUAL VOLUME OF FILL REQUIRED BY THE CURRENT ACCESS ROAD DESIGN, AS PRESENTED WITHIN THE CHAPTER 102 PERMIT. THE INCLUSION OF THE OVERESTIMATED FILL VOLUMES WITHIN THE CHAPTER 105 APPLICATION LIMITS FUTURE REVISIONS TO THE CHAPTER 105 APPLICATION DUE TO MINOR FIELD ADJUSTMENT; CONVERSELY, REVISIONS TO ACCESS ROAD DESIGN AFTER THE 102 PERMIT ISSUANCE WILL BE COORDINATED WITH PADEP/CCD.

SURVEY NOTES:

1. T.B.M. SURVEY CONTROL POINT - 19.5' LT. OF M.P. 85.3, ELEV. = 1186.68' (NAVD88).



PLAN
SCALE: 1" = 50'

LEGEND

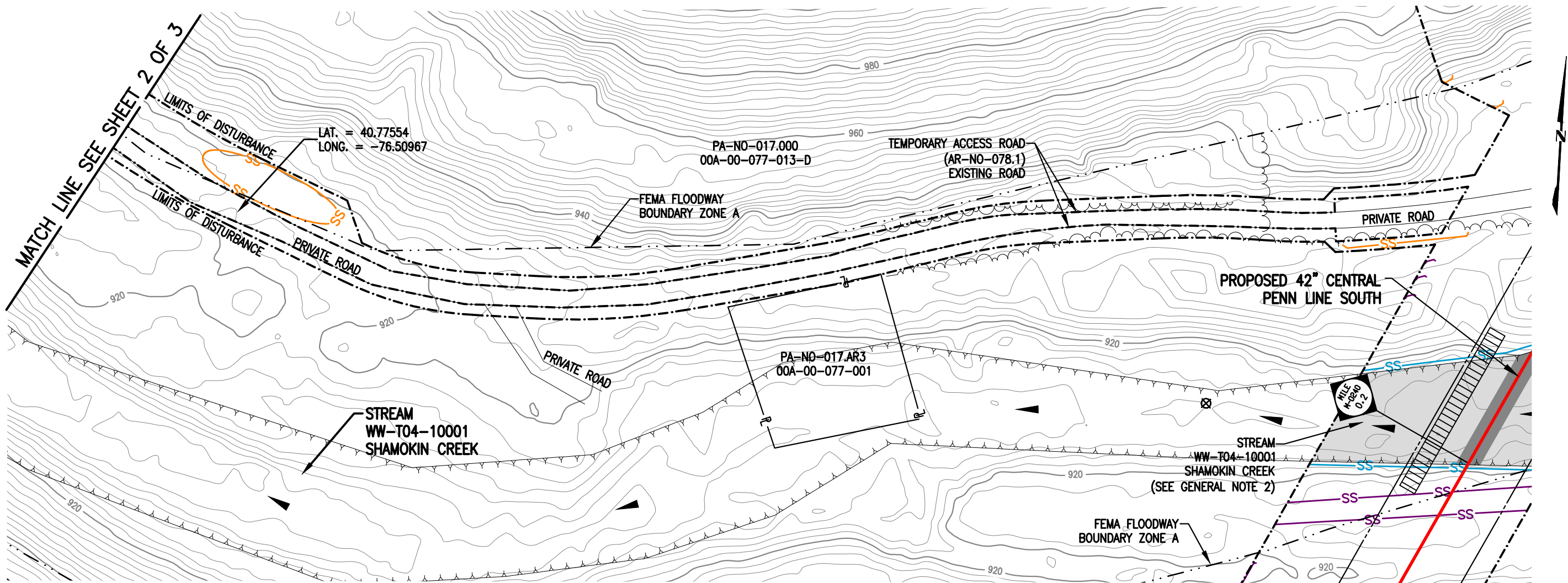
- PROPOSED 42" CENTRAL PENN LINE SOUTH
- EXISTING PIPELINES
- EXISTING TGPL R/W
- LIMITS OF DISTURBANCE
- PROPOSED CPLS R/W
- PROPERTY LINE
- FOREIGN PIPELINE
- WETLAND AREA
- STREAM FLOW
- EXISTING POWER LINE
- EXISTING FENCE

- WETLAND FLAGS
- PHOTO DATA POINT
- WETLAND DATA POINT
- UPLAND DATA POINT
- WELL POINT
- TRENCH PLUG
- WATERBODY
- TREE LINE
- FLOODWAY BOUNDARY
- FEMA FLOODWAY BOUNDARY

WOOD GROUP USA, INC.

- 12" SEDIMENT BARRIER
- 18" SEDIMENT BARRIER
- 24" SEDIMENT BARRIER
- 32" SEDIMENT BARRIER
- TOP OF BANK
- PERMANENT STREAM IMPACT
- TEMPORARY STREAM IMPACT

DRAWING NO.		REFERENCE TITLE	
<p>TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC WATER OBSTRUCTION AND ENCROACHMENT PERMIT IMPACT MAPS ATLANTIC SUNRISE PROJECT PROPOSED 42" CENTRAL PENN LINE SOUTH STREAM CROSSING WW-T68-10002 M.P. 85.31 COAL TOWNSHIP, NORTHUMBERLAND COUNTY, PENNSYLVANIA</p>			
NO. DATE BY REVISION DESCRIPTION W.O. NO. CHK. APP.		DRAWN BY: MF DATE: 06/15/16 ISSUED FOR BID: SCALE: 1" = 50' CHECKED BY: CLR DATE: 07/06/16 ISSUED FOR CONSTRUCTION: REVISION: 2 APPROVED BY: MJH DATE: 07/06/16 DRAWING NUMBER: 24-1600-70-09-A/AR-NO-076.1-01 SHEET 2 W.O. NUMBER: 1161503 3-37pm 7/20/2017 nlu OE 2	



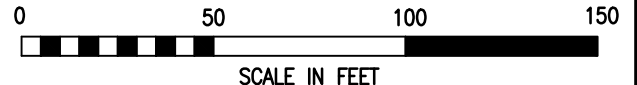
PLAN
SCALE: 1" = 50'

GENERAL NOTES:

1. THE TEMPORARY FLOODWAY IMPACT SHOWN ON THE DRAWING REPRESENTS THE FULL EXTENT OF THE FLOODWAY ACROSS THE EXISTING ACCESS ROAD. PROJECT ACTIVITIES WITHIN THE FLOODWAY WILL BE LIMITED TO VEHICLE TRAFFIC ALONG THE EXISTING ACCESS ROAD. NO PERMANENT FILL WILL BE PLACED OR GRADING COMPLETE WITHIN THE FLOODWAY.
2. PIPELINE IMPACT TO STREAM WW-T04-10001 IS SHOWN ON DWG. 24-1600-70-09-A/M-0240-0.02-01.
3. THE CALCULATION OF FILL VOLUMES PROVIDED WITHIN THE CHAPTER 105 APPLICATION IS BASED ON THE EXTENT OF THE ACCESS ROAD LOD WITHIN THE FLOODPLAIN/FLOODWAY TO ACCOUNT FOR WORST-CASE FIELD SCENARIOS REQUIRING THE ADDITION OF A ONE FOOT-DEPTH OF GRAVEL FOR MAINTENANCE AND/OR MINOR ACCESS ROAD WIDENING FOR IMPROVED ACCESS. AS SUCH, THE FILL VOLUME IS AN OVERESTIMATION AND DOES NOT REFLECT THE ACTUAL VOLUME OF FILL REQUIRED BY THE CURRENT ACCESS ROAD DESIGN, AS PRESENTED WITHIN THE CHAPTER 102 PERMIT. THE INCLUSION OF THE OVERESTIMATED FILL VOLUMES WITHIN THE CHAPTER 105 APPLICATION LIMITS FUTURE REVISIONS TO THE CHAPTER 105 APPLICATION DUE TO MINOR FIELD ADJUSTMENTS; CONVERSELY, REVISIONS TO ACCESS ROAD DESIGN AFTER THE 102 PERMIT ISSUANCE WILL BE COORDINATED WITH PADEP/CCD.

SURVEY NOTES:

1. T.B.M. SURVEY CONTROL POINT - 67' LT. OF M-0240-0.21, ELEV. = 923.29' (NAVD88).



STREAM DISTURBANCE FOR ACCESS ROAD AR-NO-078.1

STREAM WW-T04-10001	ACRE
TEMPORARY STREAM DISTURBANCE	0.0000
PERMANENT STREAM DISTURBANCE	0.0000
TOTAL STREAM DISTURBANCE	0.0000
TEMPORARY FLOODWAY DISTURBANCE	0.6308
PERMANENT FLOODWAY DISTURBANCE	0.0000
TOTAL FLOODWAY DISTURBANCE	0.6308

STREAM DIMENSION	FT.
STREAM WIDTH (TOB TO TOB)	0.00
STREAM TEMPORARY IMPACT LENGTH	0.00
STREAM PERMANENT IMPACT LENGTH	0.00
STREAM TOTAL IMPACT LENGTH	0.00
FLOODWAY FILL (CU. YDS.)	1017.81

LEGEND

- PROPOSED 42" CENTRAL PENN LINE SOUTH
- EXISTING PIPELINES
- EXISTING TGPL R/W
- - - LIMITS OF DISTURBANCE
- - - PROPOSED CPLS R/W
- P — PROPERTY LINE
- F — FOREIGN PIPELINE
- W — WETLAND AREA
- ▶ STREAM FLOW
- P — EXISTING POWER LINE
- X — EXISTING FENCE

WOOD GROUP USA, INC.

- SS 12" SEDIMENT BARRIER
- SS 18" SEDIMENT BARRIER
- SS 24" SEDIMENT BARRIER
- SS 32" SEDIMENT BARRIER
- Y — TOP OF BANK
- PERMANENT STREAM IMPACT
- TEMPORARY STREAM IMPACT

- P WETLAND FLAGS
- ⊗ PHOTO DATA POINT
- ⊠ WETLAND DATA POINT
- ⊡ UPLAND DATA POINT
- ☼ WELL POINT
- ▲ TRENCH PLUG
- W — WATERBODY
- T — TREE LINE
- - - FLOODWAY BOUNDARY
- - - FEMA FLOODWAY BOUNDARY

DRAWING NO.		REFERENCE TITLE		TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC WATER OBSTRUCTION AND ENCROACHMENT PERMIT IMPACT MAPS ATLANTIC SUNRISE PROJECT PROPOSED 42" CENTRAL PENN LINE SOUTH STREAM CROSSING WW-T04-10001 ⊙ M-0240 M.P. 0.20 COAL TOWNSHIP, NORTHUMBERLAND COUNTY, PENNSYLVANIA						
				Williams						
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.	DRAWN BY: JB	DATE: 07/21/16	ISSUED FOR BID:	SCALE: 1" = 50'
0	10/27/16	JB	ISSUED FOR PADEP SUBMITTAL #2	1161503	CLR	MJH	CHECKED BY: CLR	DATE: 07/21/16	ISSUED FOR CONSTRUCTION:	REVISION: 2
1	04/12/17	THL	ISSUED FOR PADEP SUBMITTAL #3	1161503	CLR	MJH	APPROVED BY: MJH	DATE: 07/21/16	DRAWING NUMBER: 24-1600-70-09-A/AR-NO-078.1-01	SHEET 1
2	07/28/17	AB	ISSUED FOR PADEP SUBMITTAL #4	1161503	CLR	MJH	W.O. NUMBER: 1161503	DATE: 07/21/16	7/21/2017	OF 3

STREAM DISTURBANCE FOR ACCESS ROAD AR-NO-082:

STREAM WW-T58-11001A	ACRE
TEMPORARY STREAM DISTURBANCE	0.0000
PERMANENT STREAM DISTURBANCE	0.0000
TOTAL STREAM DISTURBANCE	0.0000
TEMPORARY FLOODWAY DISTURBANCE	0.1120
PERMANENT FLOODWAY DISTURBANCE	0.0000
TOTAL FLOODWAY DISTURBANCE	0.1120

STREAM DIMENSION	FT.
STREAM WIDTH (TOB TO TOB)	0.00
STREAM TEMPORARY IMPACT LENGTH	0.00
STREAM PERMANENT IMPACT LENGTH	0.00
STREAM TOTAL IMPACT LENGTH	0.00

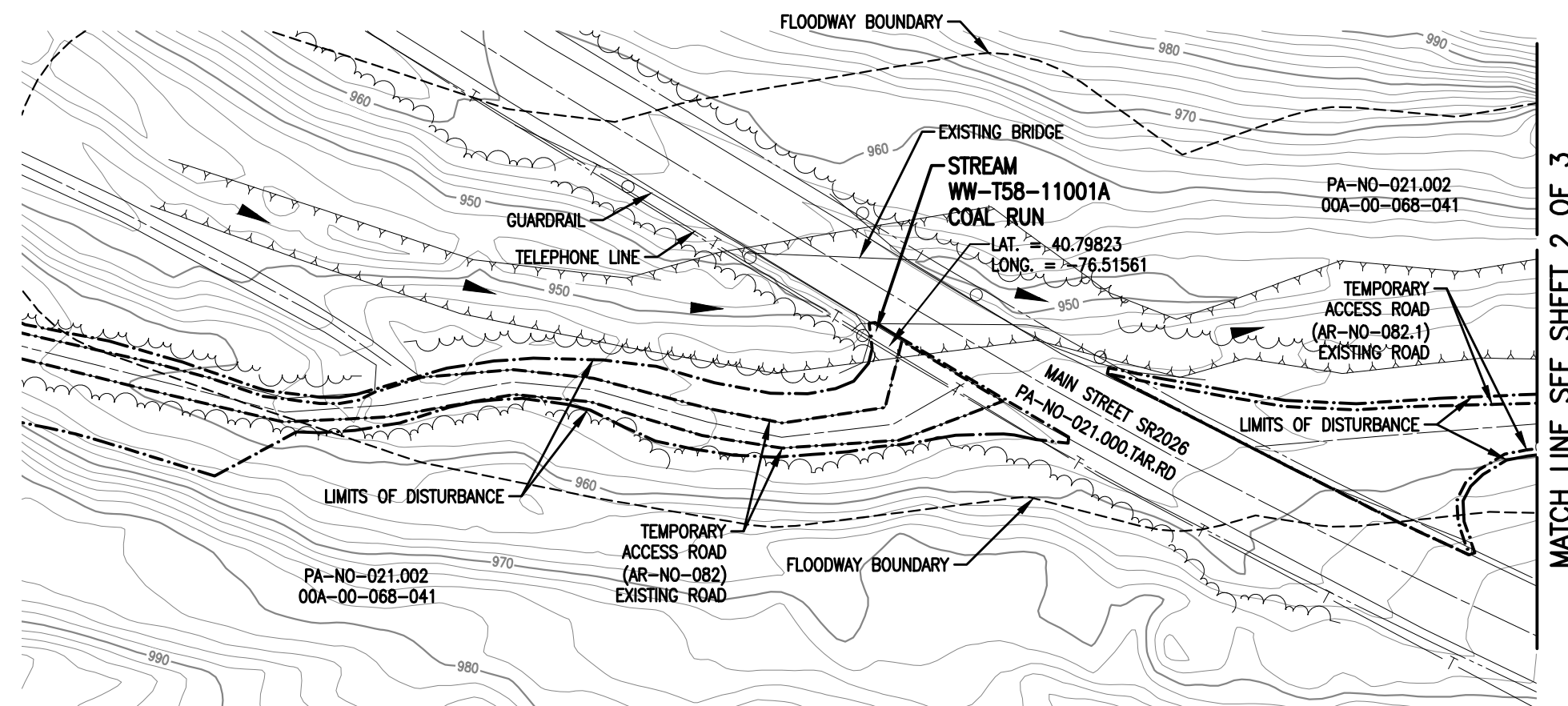
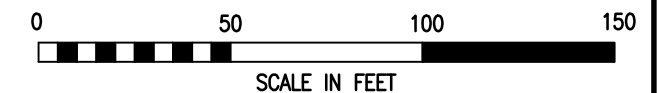
FLOODWAY FILL (CU. YDS.)	180.63
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GENERAL NOTES:

1. THE TEMPORARY FLOODWAY IMPACT SHOWN ON THE DRAWING REPRESENTS THE FULL EXTENT OF THE FLOODWAY ACROSS THE EXISTING ACCESS ROAD. PROJECT ACTIVITIES WITHIN THE FLOODWAY WILL BE LIMITED TO VEHICLE TRAFFIC ALONG THE EXISTING ACCESS ROAD. NO PERMANENT FILL WILL BE PLACED OR GRADING COMPLETE WITHIN THE FLOODWAY.
2. WATERBODIES WITHOUT A FEMA-ESTABLISHED FLOODPLAIN, THE FLOODWAY IS COINCIDENT WITH A 50-FOOT OFFSET MEASURED Laterally FROM THE PHYSICAL TOP OF BANK OF THE WATERBODY.
3. THE CALCULATION OF FILL VOLUMES PROVIDED WITHIN THE CHAPTER 105 APPLICATION IS BASED ON THE EXTENT OF THE ACCESS ROAD LOD WITHIN THE FLOODPLAIN/FLOODWAY TO ACCOUNT FOR WORST-CASE FIELD SCENARIOS REQUIRING THE ADDITION OF A ONE FOOT-DEPTH OF GRAVEL FOR MAINTENANCE AND/OR MINOR ACCESS ROAD WIDENING FOR IMPROVED ACCESS. AS SUCH, THE FILL VOLUME IS AN OVERESTIMATION AND DOES NOT REFLECT THE ACTUAL VOLUME OF FILL REQUIRED BY THE CURRENT ACCESS ROAD DESIGN, AS PRESENTED WITHIN THE CHAPTER 102 PERMIT. THE INCLUSION OF THE OVERESTIMATED FILL VOLUMES WITHIN THE CHAPTER 105 APPLICATION LIMITS FUTURE REVISIONS TO THE CHAPTER 105 APPLICATION DUE TO MINOR FIELD ADJUSTMENTS; CONVERSELY, REVISIONS TO ACCESS ROAD DESIGN AFTER THE 102 PERMIT ISSUANCE WILL BE COORDINATED WITH PADEP/CCD.

SURVEY NOTES:

1. T.B.M. SURVEY CONTROL POINT - 8.5' RT. OF M-0235 M.P. 0.9, ELEV. = 1201.90' (NAVD88).



MATCH LINE SEE SHEET 2 OF 3

PLAN
SCALE: 1" = 50'

LEGEND

- PROPOSED 42" CENTRAL PENN LINE SOUTH
- EXISTING PIPELINES
- EXISTING TGPL R/W
- LIMITS OF DISTURBANCE
- PROPOSED CPLS R/W
- PROPERTY LINE
- FOREIGN PIPELINE
- WETLAND AREA
- STREAM FLOW
- EXISTING POWER LINE
- EXISTING FENCE

- WETLAND FLAGS
- PHOTO DATA POINT
- WETLAND DATA POINT
- UPLAND DATA POINT
- WELL POINT
- TRENCH PLUG
- WATERBODY
- TREE LINE
- FLOODWAY BOUNDARY
- FEMA FLOODWAY BOUNDARY

WOOD GROUP USA, INC.

- 12" SEDIMENT BARRIER
- 18" SEDIMENT BARRIER
- 24" SEDIMENT BARRIER
- 32" SEDIMENT BARRIER
- TOP OF BANK
- PERMANENT STREAM IMPACT
- TEMPORARY STREAM IMPACT

DRAWING NO.	REFERENCE TITLE	<p>TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC WATER OBSTRUCTION AND ENCROACHMENT PERMIT IMPACT MAPS ATLANTIC SUNRISE PROJECT PROPOSED 42" CENTRAL PENN LINE SOUTH STREAM CROSSING WW-T58-11001A M-0235 M.P. 0.90 COAL TOWNSHIP, NORTHUMBERLAND COUNTY, PENNSYLVANIA</p>								
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.	DRAWN BY: MF	DATE: 06/15/16	ISSUED FOR BID:	SCALE: 1" = 50'
0	10/27/16	MF	ISSUED FOR PADEP SUBMITTAL #2	1161503	CLR	MJH	CHECKED BY: CLR	DATE: 07/06/16	ISSUED FOR CONSTRUCTION:	REVISION: 2
1	04/12/17	THL	ISSUED FOR PADEP SUBMITTAL #3	1161503	CLR	MJH	APPROVED BY: MJH	DATE: 07/06/16	DRAWING NUMBER: 24-1600-70-09-A/AR-NO-082.1-01	SHEET 1
2	07/28/17	AB	ISSUED FOR PADEP SUBMITTAL #4	1161503	CLR	MJH	IWO: 1161503		7/21/2017	OF 3

STREAM DISTURBANCE FOR ACCESS ROAD AR-NO-082.1:

STREAM WW-T58-11001A	ACRE
TEMPORARY STREAM DISTURBANCE	0.0000
PERMANENT STREAM DISTURBANCE	0.0000
TOTAL STREAM DISTURBANCE	0.0000
TEMPORARY FLOODWAY DISTURBANCE	0.4575
PERMANENT FLOODWAY DISTURBANCE	0.0000
TOTAL FLOODWAY DISTURBANCE	0.4575

STREAM DIMENSION	FT.
STREAM WIDTH (TOB TO TOB)	0.00
STREAM TEMPORARY IMPACT LENGTH	0.00
STREAM PERMANENT IMPACT LENGTH	0.00
STREAM TOTAL IMPACT LENGTH	0.00

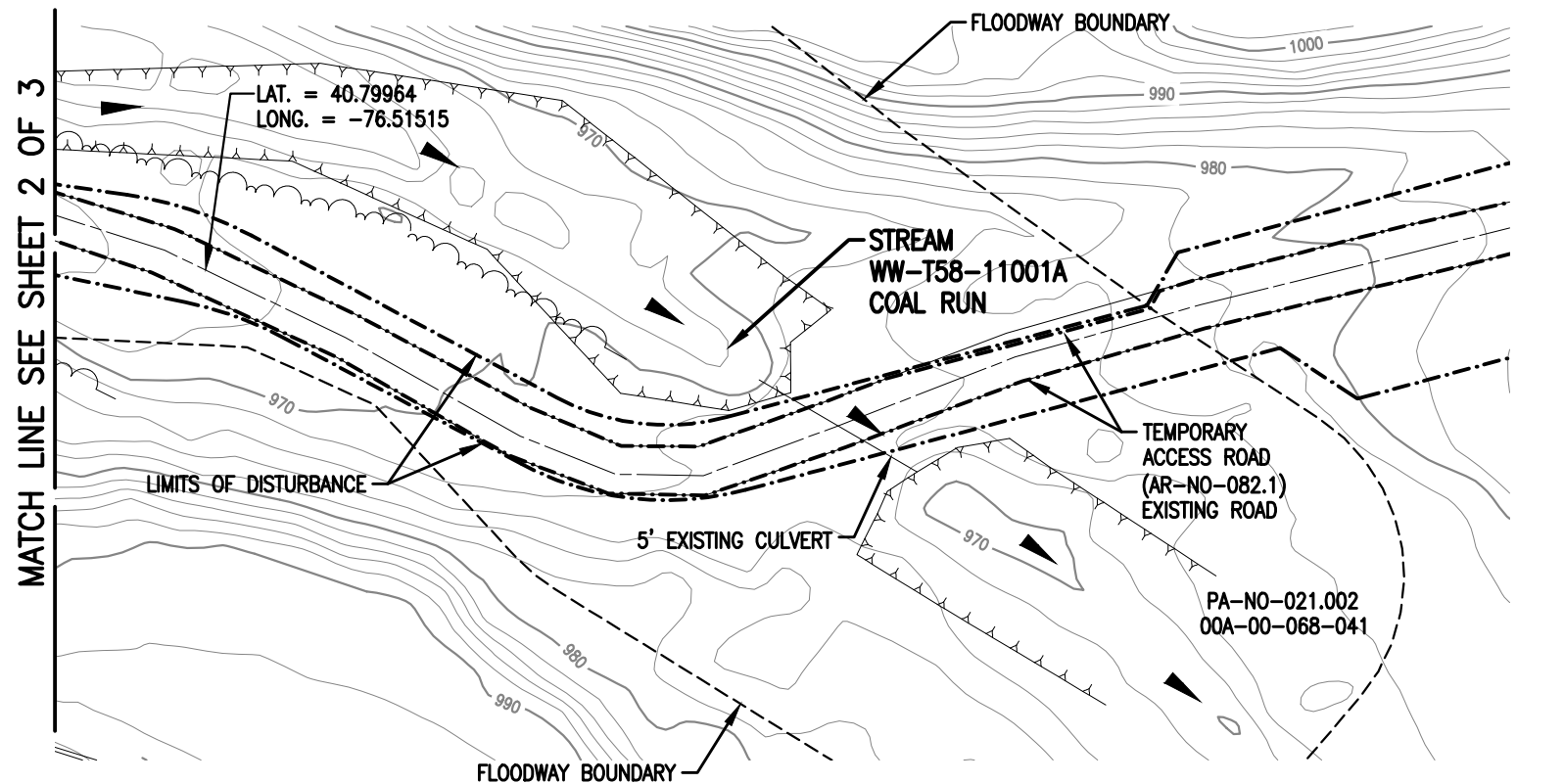
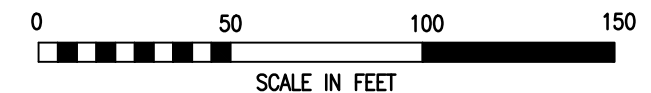
FLOODWAY FILL (CU. YDS.)	561.93
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GENERAL NOTES:

1. THE TEMPORARY FLOODWAY IMPACT SHOWN ON THE DRAWING REPRESENTS THE FULL EXTENT OF THE FLOODWAY ACROSS THE EXISTING ACCESS ROAD. PROJECT ACTIVITIES WITHIN THE FLOODWAY WILL BE LIMITED TO PLACEMENT OF TIMBER OVER THE EXISTING CULVERT ON THE GRAVEL ROAD SURFACE, AS WELL AS VEHICLE TRAFFIC ALONG THE EXISTING ROAD. NO PERMANENT FILL WILL BE PLACED OR GRADING COMPLETED WITHIN THE FLOODWAY.
2. WATERBODIES WITHOUT A FEMA-ESTABLISHED FLOODPLAIN, THE FLOODWAY IS COINCIDENT WITH A 50-FOOT OFFSET MEASURED Laterally FROM THE PHYSICAL TOP OF BANK OF THE WATERBODY.
3. THE CALCULATION OF FILL VOLUMES PROVIDED WITHIN THE CHAPTER 105 APPLICATION IS BASED ON THE EXTENT OF THE ACCESS ROAD LOD WITHIN THE FLOODPLAIN/FLOODWAY TO ACCOUNT FOR WORST-CASE FIELD SCENARIOS REQUIRING THE ADDITION OF A ONE FOOT-DEPTH OF GRAVEL FOR MAINTENANCE AND/OR MINOR ACCESS ROAD WIDENING FOR IMPROVED ACCESS. AS SUCH, THE FILL VOLUME IS AN OVERESTIMATION AND DOES NOT REFLECT THE ACTUAL VOLUME OF FILL REQUIRED BY THE CURRENT ACCESS ROAD DESIGN, AS PRESENTED WITHIN THE CHAPTER 102 PERMIT. THE INCLUSION OF THE OVERESTIMATED FILL VOLUMES WITHIN THE CHAPTER 105 APPLICATION LIMITS FUTURE REVISIONS TO THE CHAPTER 105 APPLICATION DUE TO MINOR FIELD ADJUSTMENTS; CONVERSELY, REVISIONS TO ACCESS ROAD DESIGN AFTER THE 102 PERMIT ISSUANCE WILL BE COORDINATED WITH PADEP/CCD.

SURVEY NOTES:

1. T.B.M. SURVEY CONTROL POINT - 8.5' RT. OF M-0235 M.P. 0.9, ELEV. = 1201.90' (NAVD88).



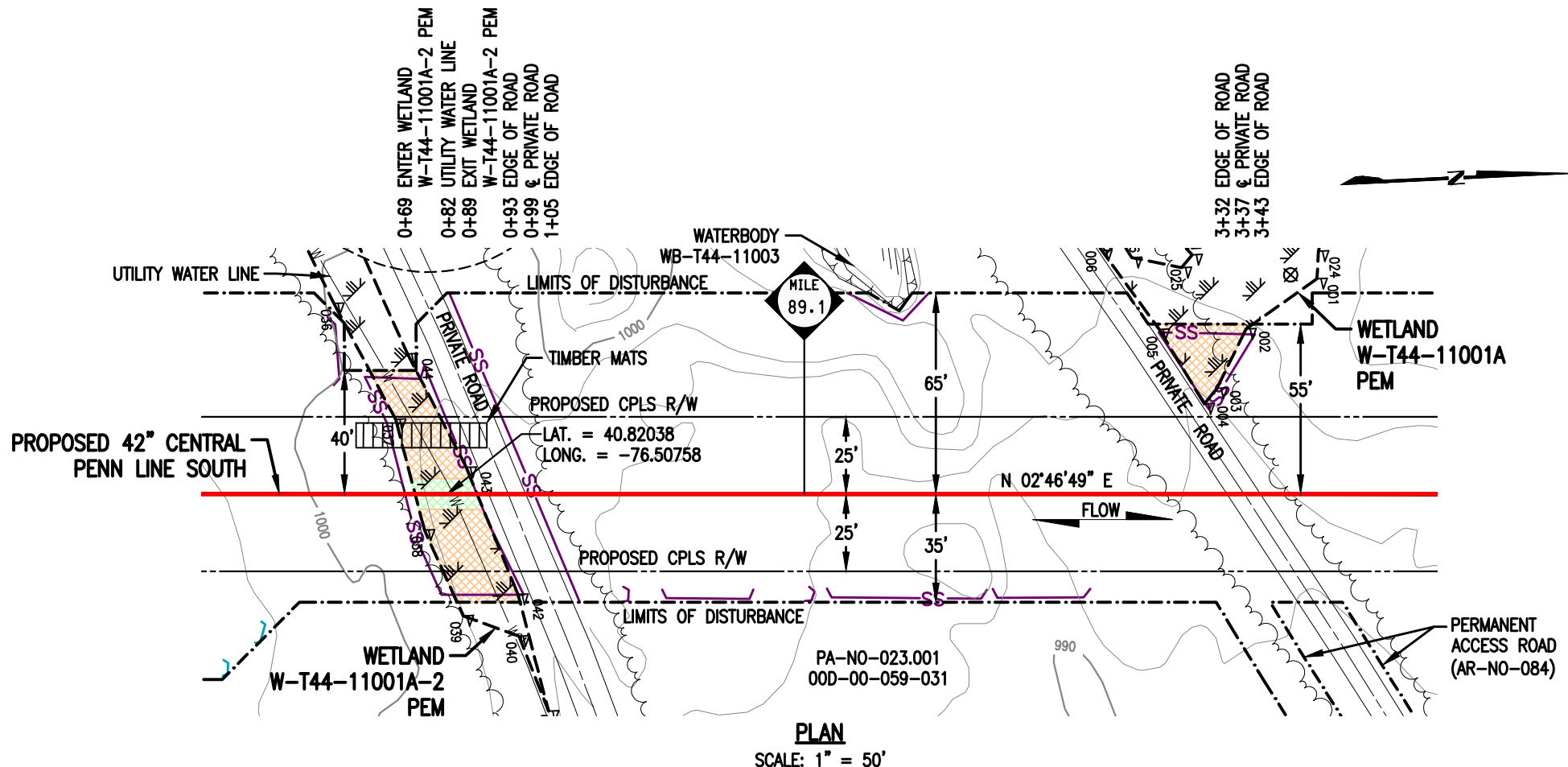
PLAN
SCALE: 1" = 50'

MATCH LINE SEE SHEET 2 OF 3

LEGEND

	PROPOSED 42" CENTRAL PENN LINE SOUTH		WETLAND FLAGS		WOOD GROUP USA, INC.				
	EXISTING PIPELINES		PHOTO DATA POINT						
	EXISTING TGPL R/W		WETLAND DATA POINT						
	LIMITS OF DISTURBANCE		UPLAND DATA POINT						
	PROPOSED CPLS R/W		WELL POINT						
	PROPERTY LINE		TRENCH PLUG						
	FOREIGN PIPELINE		WATERBODY						
	WETLAND AREA		TREE LINE						
	STREAM FLOW		FLOODWAY BOUNDARY						
	EXISTING POWER LINE		FEMA FLOODWAY BOUNDARY						
	EXISTING FENCE		PERMANENT STREAM IMPACT		TEMPORARY STREAM IMPACT				
	12" SEDIMENT BARRIER		18" SEDIMENT BARRIER		24" SEDIMENT BARRIER		32" SEDIMENT BARRIER		TOP OF BANK

DRAWING NO.		REFERENCE TITLE		TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC WATER OBSTRUCTION AND ENCROACHMENT PERMIT IMPACT MAPS ATLANTIC SUNRISE PROJECT PROPOSED 42" CENTRAL PENN LINE SOUTH STREAM CROSSING WW-T58-11001A M-0235 M.P. 0.90 COAL TOWNSHIP, NORTHUMBERLAND COUNTY, PENNSYLVANIA						
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.	DRAWN BY: MF	DATE: 06/15/16	ISSUED FOR BID:	SCALE: 1" = 50'
0	10/27/16	MF	ISSUED FOR PADEP SUBMITTAL #2	1161503	CLR	MJH	CHECKED BY: CLR	DATE: 07/06/16	ISSUED FOR CONSTRUCTION:	REVISION: 2
1	04/12/17	THL	ISSUED FOR PADEP SUBMITTAL #3	1161503	CLR	MJH	APPROVED BY: MJH	DATE: 07/06/16	DRAWING NUMBER: 24-1600-70-09-A/AR-NO-082.1-01	SHEET 3
2	07/28/17	AB	ISSUED FOR PADEP SUBMITTAL #4	1161503	CLR	MJH	W.O. NUMBER: 1161503	DATE: 07/06/16	7/21/2017 nlu	OF 3

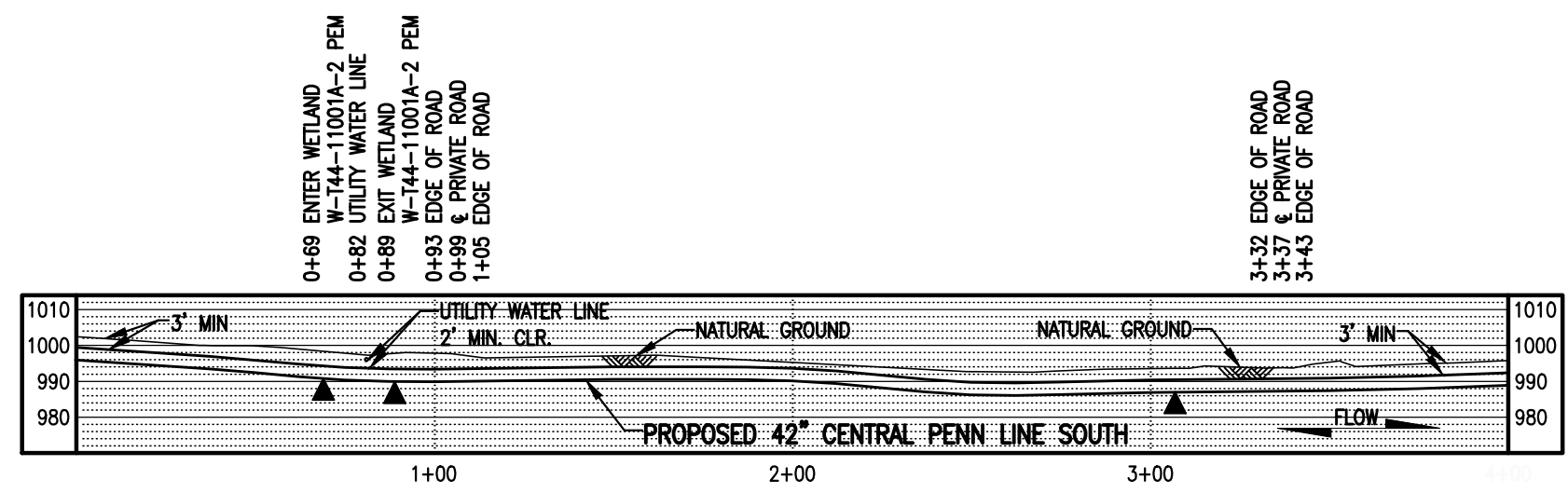


PLAN
SCALE: 1" = 50'

WETLAND DISTURBANCE:

WETLAND W-T44-11001A / W-T44-11001A-2 (EV)	ACRE
TEMPORARY DISTURBANCE	0.0370
TOTAL DISTURBANCE	0.0370

WETLAND W-T44-11001A-2	ACRE
PERMANENT DISTURBANCE	0.0046
TOTAL DISTURBANCE	0.0046



PROFILE
SCALE: 1" = 50' HORIZONTAL
1" = 50' VERTICAL

NOTES:

- UTILIZE A WETLAND EQUIPMENT CROSSING (WEC) AND WCC.1.
- STATION 2+00 SHOWN IS EQUAL TO STATION 4704+53 ON THE EROSION AND SEDIMENT CONTROL PLAN.

SURVEY NOTES:

- T.B.M. SURVEY CONTROL POINT - 41' LT. OF M.P. 89.12, ELEV. = 995.28' (NAVD88).



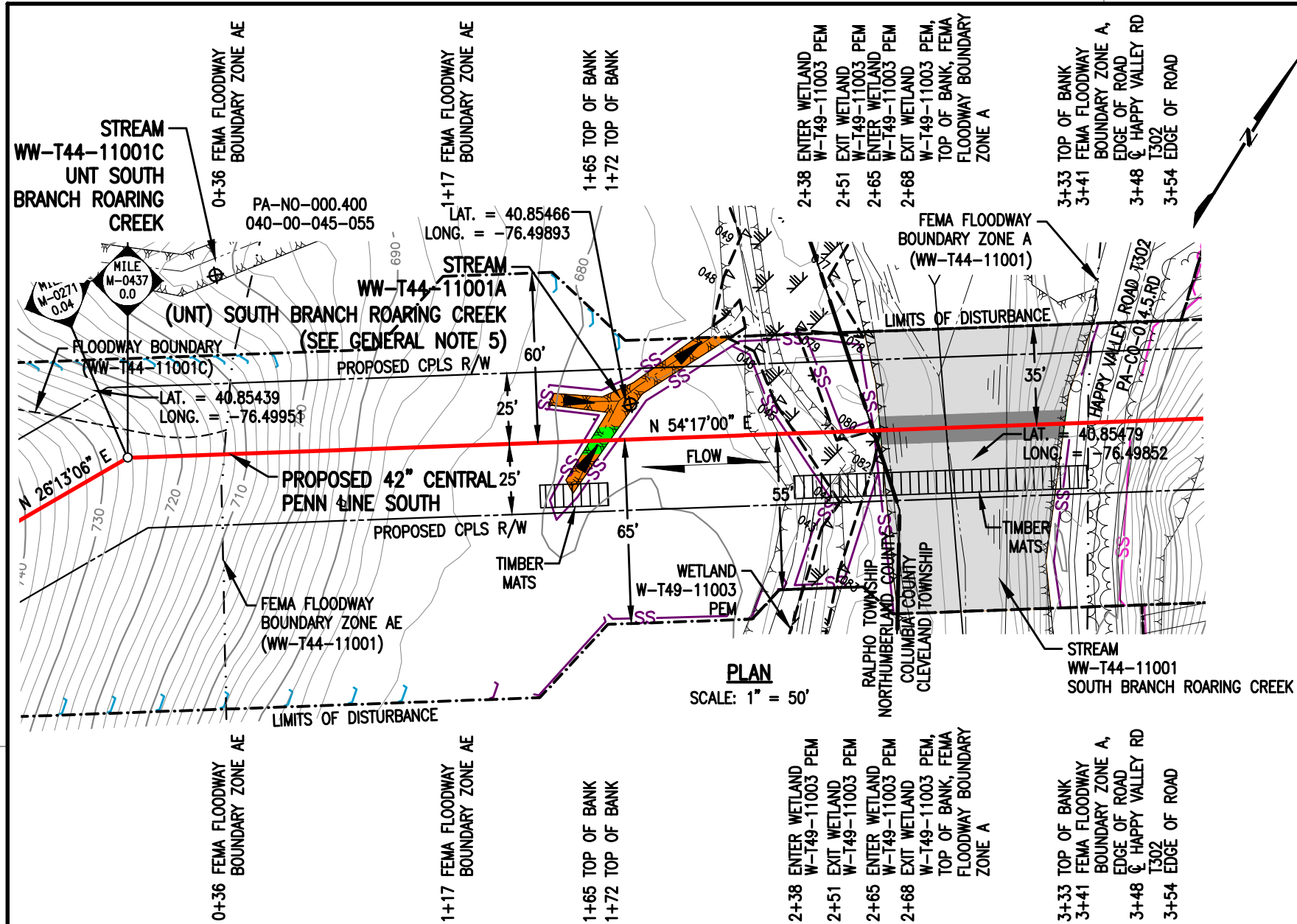
LEGEND

	PROPOSED 42" CENTRAL PENN LINE SOUTH		WETLAND FLAGS		PERMANENT WETLAND IMPACT
	EXISTING PIPELINES		PHOTO DATA POINT		TEMPORARY WETLAND IMPACT
	EXISTING TGPL R/W		WETLAND DATA POINT		
	LIMITS OF DISTURBANCE		UPLAND DATA POINT		
	PROPOSED CPLS R/W		WELL POINT		
	PROPERTY LINE		TRENCH PLUG		
	FOREIGN PIPELINE		WATERBODY		
	WETLAND AREA		TREE LINE		
	EXISTING POWER LINE		FLOODWAY BOUNDARY		
	EXISTING FENCE		FEMA FLOODWAY BOUNDARY		

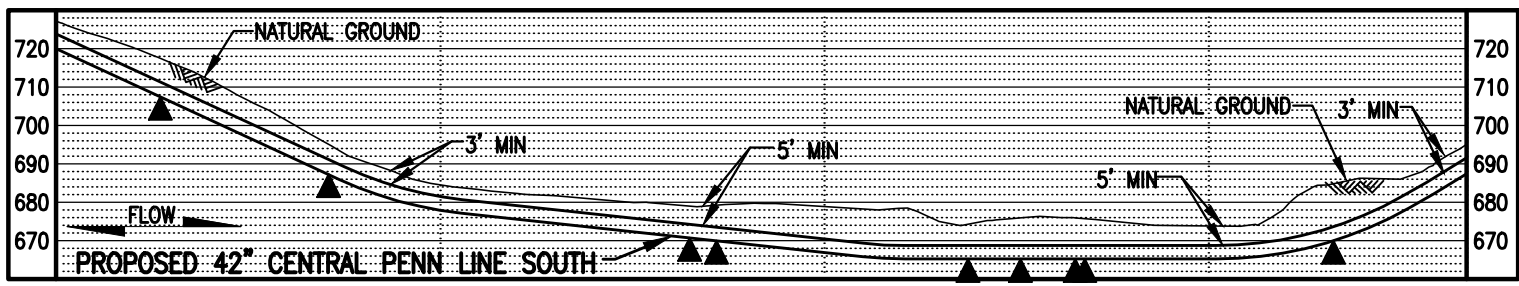
WOOD GROUP USA, INC.

	12" SEDIMENT BARRIER
	18" SEDIMENT BARRIER
	24" SEDIMENT BARRIER
	32" SEDIMENT BARRIER
	TOP OF BANK

DRAWING NO.	REFERENCE TITLE	TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC								
		WATER OBSTRUCTION AND ENCROACHMENT PERMIT IMPACT MAPS								
		ATLANTIC SUNRISE PROJECT								
		PROPOSED 42" CENTRAL PENN LINE SOUTH								
		WETLAND CROSSINGS W-T44-11001A / W-T44-11001A-2								
		Ⓞ M.P. 89.08								
		COAL TOWNSHIP, NORTHUMBERLAND COUNTY, PENNSYLVANIA								
		SCALE: 1" = 50'								
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.	DRAWN BY: TL	DATE: 07/05/16	ISSUED FOR BID:	SCALE: 1" = 50'
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1	04/12/17	AB	ISSUED FOR PADEP SUBMITTAL #3	1161503	CLR	MJH	APPROVED BY: MJH	DATE: 07/06/16	DRAWING NUMBER: 24-1600-70-20-A/89.08-01	SHEET 1
2	07/28/17	MP	ISSUED FOR PADEP SUBMITTAL #4	1161503	CLR	MJH	W.O. NO.: 1161503	DATE: 07/06/16	7/26/2017	OF 1



PLAN
SCALE: 1" = 50'



PROFILE
SCALE: 1" = 50' HORIZONTAL
1" = 50' VERTICAL

LEGEND

- PROPOSED 42° CENTRAL PENN LINE SOUTH
- EXISTING PIPELINES
- EXISTING TGPL R/W
- LIMITS OF DISTURBANCE
- PROPOSED CPLS R/W
- PROPERTY LINE
- FOREIGN PIPELINE
- WETLAND AREA
- STREAM FLOW
- EXISTING POWER LINE
- EXISTING FENCE
- WETLAND FLAGS
- PHOTO DATA POINT
- WETLAND DATA POINT
- UPLAND DATA POINT
- WELL POINT
- TRENCH PLUG
- WATERBODY
- TREE LINE
- FLOODWAY BOUNDARY
- FEMA FLOODWAY BOUNDARY
- 12" SEDIMENT BARRIER
- 18" SEDIMENT BARRIER
- 24" SEDIMENT BARRIER
- 32" SEDIMENT BARRIER
- TOP OF BANK
- PERMANENT STREAM IMPACT
- TEMPORARY STREAM IMPACT



STREAM DISTURBANCE:

STREAM WW-T44-11001A (HQ)	ACRE
TEMPORARY STREAM DISTURBANCE	0.0109
PERMANENT STREAM DISTURBANCE	0.0016
TOTAL STREAM DISTURBANCE	0.0125
TEMPORARY FLOODWAY DISTURBANCE	0.0000
PERMANENT FLOODWAY DISTURBANCE	0.0000
TOTAL FLOODWAY DISTURBANCE	0.0000

STREAM WW-T44-11001C (HQ)	ACRE
TEMPORARY STREAM DISTURBANCE	0.0000
PERMANENT STREAM DISTURBANCE	0.0000
TOTAL STREAM DISTURBANCE	0.0000
TEMPORARY FLOODWAY DISTURBANCE	0.0537
PERMANENT FLOODWAY DISTURBANCE	0.0000
TOTAL FLOODWAY DISTURBANCE	0.0537

STREAM DIMENSION	FT.
STREAM WIDTH (TOB TO TOB)	6.99
STREAM TEMPORARY IMPACT LENGTH	118.78
STREAM PERMANENT IMPACT LENGTH	10.04
STREAM TOTAL IMPACT LENGTH	128.82

STREAM DIMENSION	FT.
STREAM WIDTH (TOB TO TOB)	0.00
STREAM TEMPORARY IMPACT LENGTH	0.00
STREAM PERMANENT IMPACT LENGTH	0.00
STREAM TOTAL IMPACT LENGTH	0.00

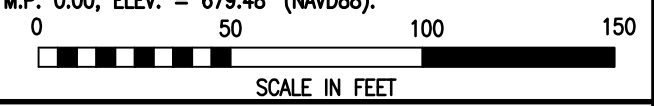
STREAM CROSSING METHOD	
PRIMARY	DAM AND PUMP (DPX)
SECONDARY	DRY OPEN CUT

GENERAL NOTES:

- PIPELINE INSTALLATION WILL BE COMPLETED UTILIZING THE PRIMARY CROSSING METHOD REFERENCED ABOVE; EQUIPMENT TO CROSS STREAM USING A BRIDGE EQUIPMENT CROSSING (BEC). ALL TYPICALS FOR THE CROSSING METHODS AND BMPS REFERENCED WITHIN THIS PACKAGE ARE INCLUDED WITHIN THE 'BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET' (BMP PLAN SET), WHICH IS INCLUDED AT THE BACK OF THIS PACKAGE. THE BMP PLAN SET IS ALSO INCLUDED WITHIN ATTACHMENT M OF THE JOINT PERMIT APPLICATION, ALONG WITH THE EROSION AND SEDIMENT CONTROL PLANS AND NARRATIVES.
- (WW-T44-11001A) THE SECONDARY DRY OPEN CUT METHOD WILL BE IMPLEMENTED IF THE STREAM IS LOW FLOW OR DRY AT THE TIME OF THE CROSSING SUCH THAT THE PRIMARY CROSSING IS NOT PRACTICABLE. IN THIS EVENT, THE PRIMARY EQUIPMENT WILL BE PRESENT ON SITE FOR USE AS NEEDED SHOULD STREAM FLOW CONDITIONS CHANGE. THE SECONDARY CROSSING METHOD WOULD UTILIZE THE SAME WORKSPACE AS THE PROPOSED PRIMARY CROSSING METHOD. THEREFORE, STREAM DISTURBANCE ACREAGE WOULD BE THE SAME FOR EITHER CROSSING METHOD.
- THE FEMA FLOODWAY BOUNDARY COVERS STREAMS WW-T44-11001 AND WW-T44-11001A. FLOODWAY IMPACTS FOR WW-T44-11001A ARE INCLUDED IN FLOODWAY IMPACTS CALCULATION FOR STREAM WW-T44-11001C.
- THIS SITE IS LOCATED WITHIN THE 100 YEAR FLOOD PLAIN PER FEMA FLOOD MAP DATA.
- STATION 1+00 SHOWN IS EQUAL TO M-0437 STATION 0+98 ON THE EROSION AND SEDIMENT CONTROL PLAN.
- IMPACT FOR STREAM WW-T44-11001 IS SHOWN ON DRAWING NUMBER 24-1600-70-09-A/M-0437-0.06 IN THE COLUMBIA CPLS PACKAGE.

SURVEY NOTES:

- T.B.M. SURVEY CONTROL POINT - 176' RT. OF M-0437 M.P. 0.00, ELEV. = 679.48' (NAVD88).



DRAWING NO.		REFERENCE TITLE		TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC WATER OBSTRUCTION AND ENCROACHMENT PERMIT IMPACT MAPS ATLANTIC SUNRISE PROJECT PROPOSED 42° CENTRAL PENN LINE SOUTH STREAM CROSSING WW-T44-11001A & WW-T44-11001C © M-0437 M.P. 0.03 RALPHO TOWNSHIP, NORTHUMBERLAND COUNTY, PENNSYLVANIA						
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.	DRAWN BY: DJG	DATE: 09/09/16	ISSUED FOR BID:	SCALE: 1" = 50'
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1	04/12/17	THL	ISSUED FOR PADEP SUBMITTAL #3	1161503	CLR	MJH	APPROVED BY: MJH	DATE: 09/23/16	DRAWING NUMBER: 24-1600-70-09-A/M-0437-0.03-01	SHEET 1
2	07/28/17	MP	ISSUED FOR PADEP SUBMITTAL #4	1161503	CLR	MJH	W.O. NUMBER: 1161503	DATE: 7/27/2017	945an	OF 1

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

BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET

EAST CAMERON, COAL, RALPHO
TOWNSHIPS

NORTHUMBERLAND COUNTY

BMP DETAIL SUMMARY

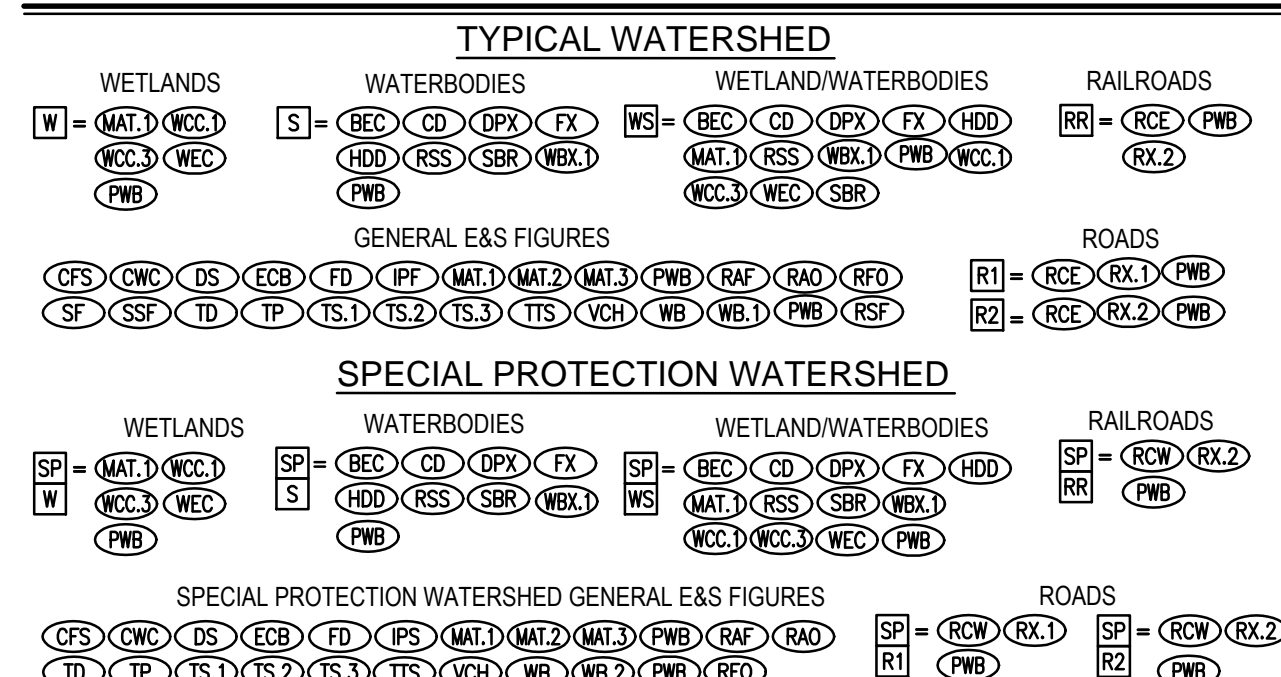
FIGURE	FIGURE TITLE	SHEET NO.
ARF	ABACT ROCK FILTER	1
BBD	BROAD-BASED DIP	
BEC	BRIDGE EQUIPMENT CROSSING	
CD	COFFERDAM STREAM CROSSING	
CDM	CHECK DAM	2
CFS	COMPOST FILTER SOCK	
CS	CLEANOUT STAKE	
CST	COMPOST SOCK SEDIMENT TRAP	
CWC	CLEAN WATER CROSSING	3
DPX	DAM AND PUMP STREAM CROSSING	
DS	HYDROSTATIC 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 DEWIGE	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	
WBX.1	BORED WATERBODY CROSSING	
WCC.1	WETLAND INSTALLATION PROCEDURE	
WCC.3	"INUNDATED WETLAND" INSTALLATION PROCEDURE	
WD	WATER DEFLECTOR	
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-NO-TB	1-3	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	3/26/2016	BL	ISSUED FOR PADEP RESUBMITTAL
4	06/1/2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1
5	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2
6	AUG 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #3

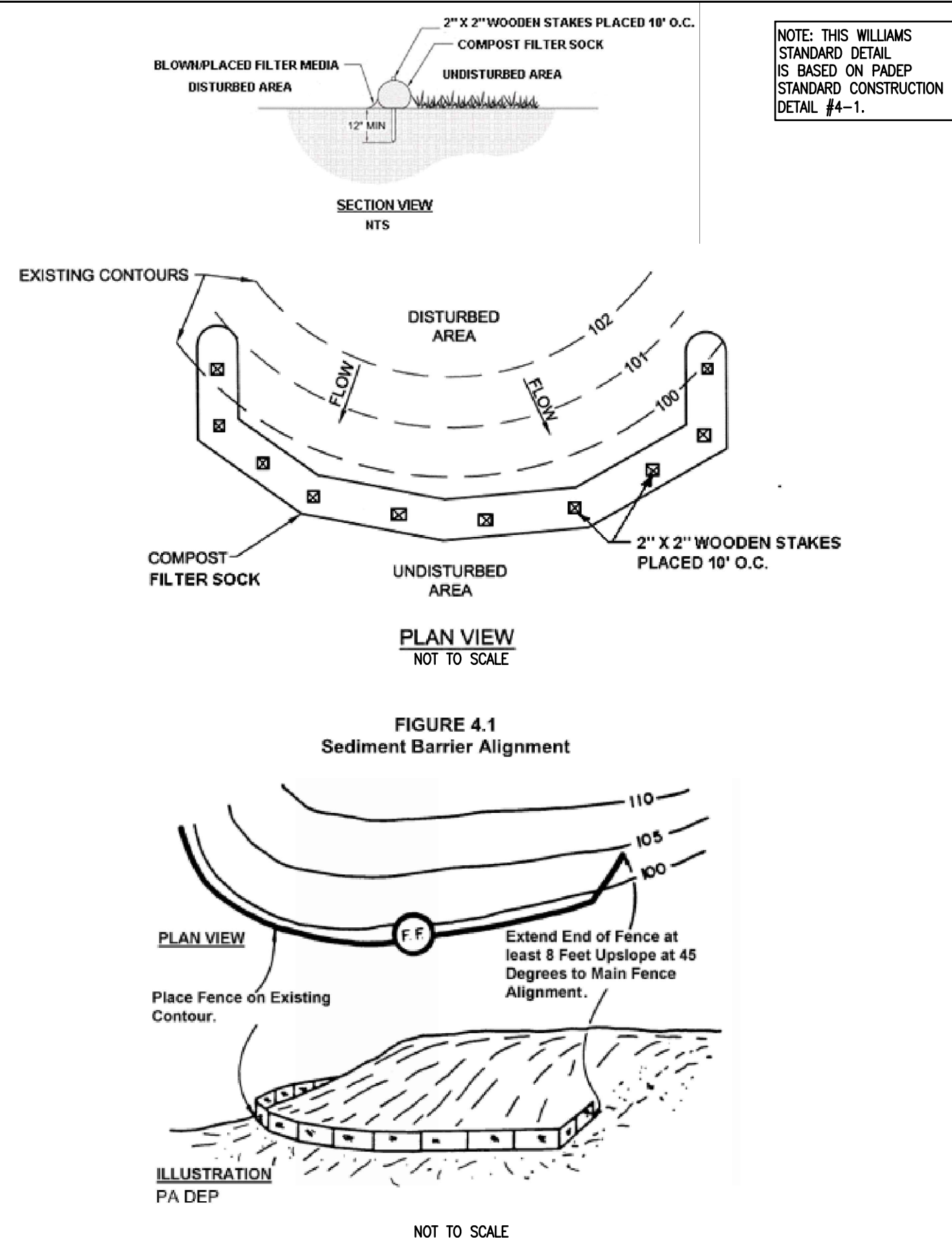
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
ATLANTIC SUNRISE PROJECT
PROPOSED 42" CENTRAL PENN LINE SOUTH
PENNSYLVANIA BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET
NORTHUMBERLAND COUNTY, PENNSYLVANIA

Williams
GAS PIPELINE

COVER SHEET

DRAWN BY: ELZ	DATE: 05/15/15	ISSUED FOR: CONSTRUCTION	SCALE:
CHECKED BY: JLK	DATE: 07/02/15	ISSUED FOR: CONSTRUCTION	REVISION: 6
APPROVED BY: SMK	DATE: 07/08/15	DRAWING NUMBER: 24-1600-70-28-A/LL113_9-BMP	SHEET 1 OF 1

Drawn By & Date/Time: C:\scanzello Jul 27, 2017 - 3:56pm
 Drawing Location & Name: G:\08514\14C\14C4909\DWG\BMPs&DETAILS\PL_DNT14C4909(01)_CV-01.dwg



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

FIGURE 4.1 Sediment Barrier Alignment

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

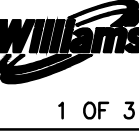


TABLE 4.1 COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS

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", 24"	12", 18", 24", 30"	12", 18", 24", 30"	12", 18", 24", 30"	12", 18", 24", 30"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	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	NO.	NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL				
			(CFS) COMPOST FILTER SOCK				

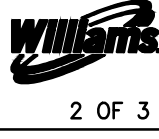
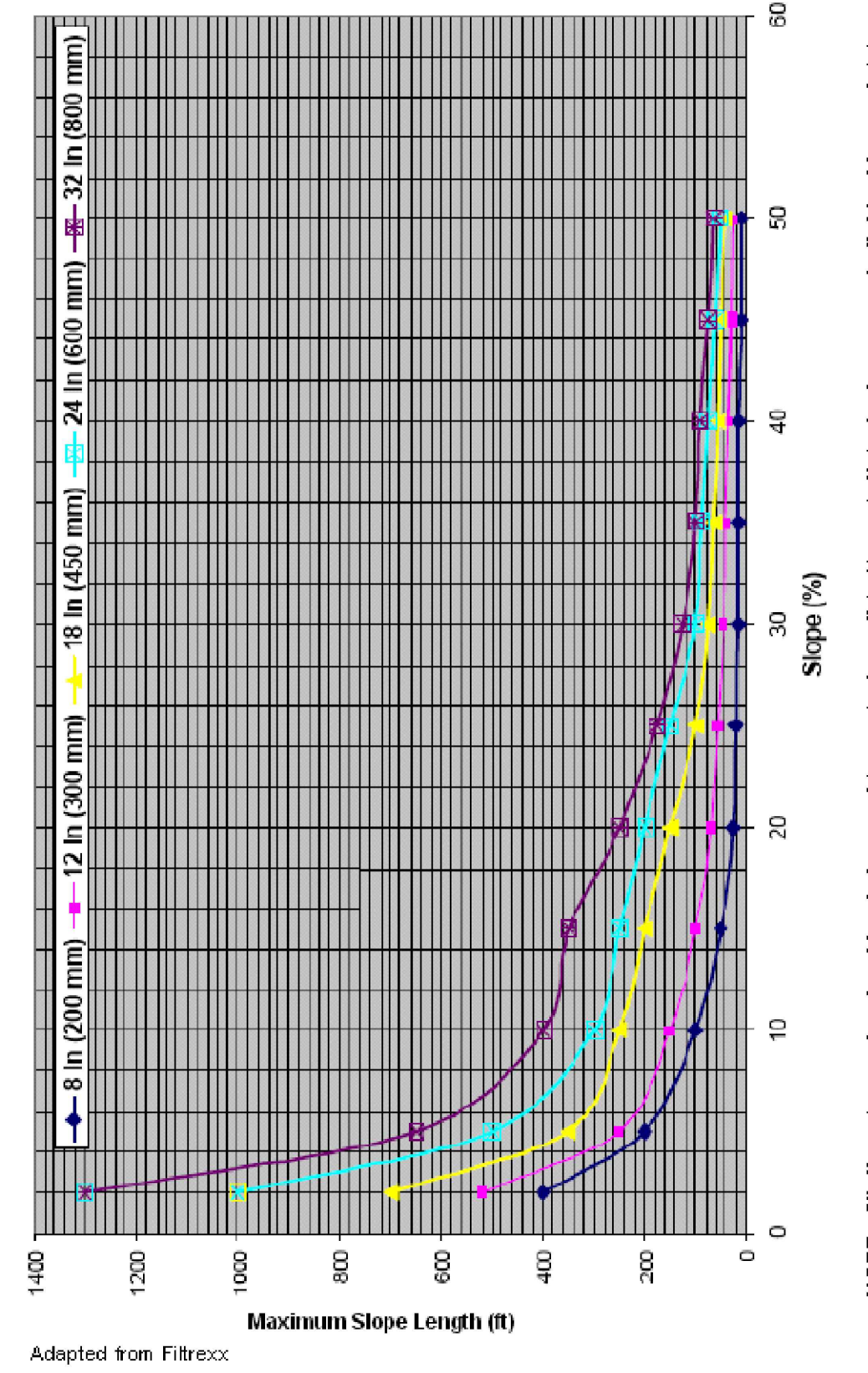
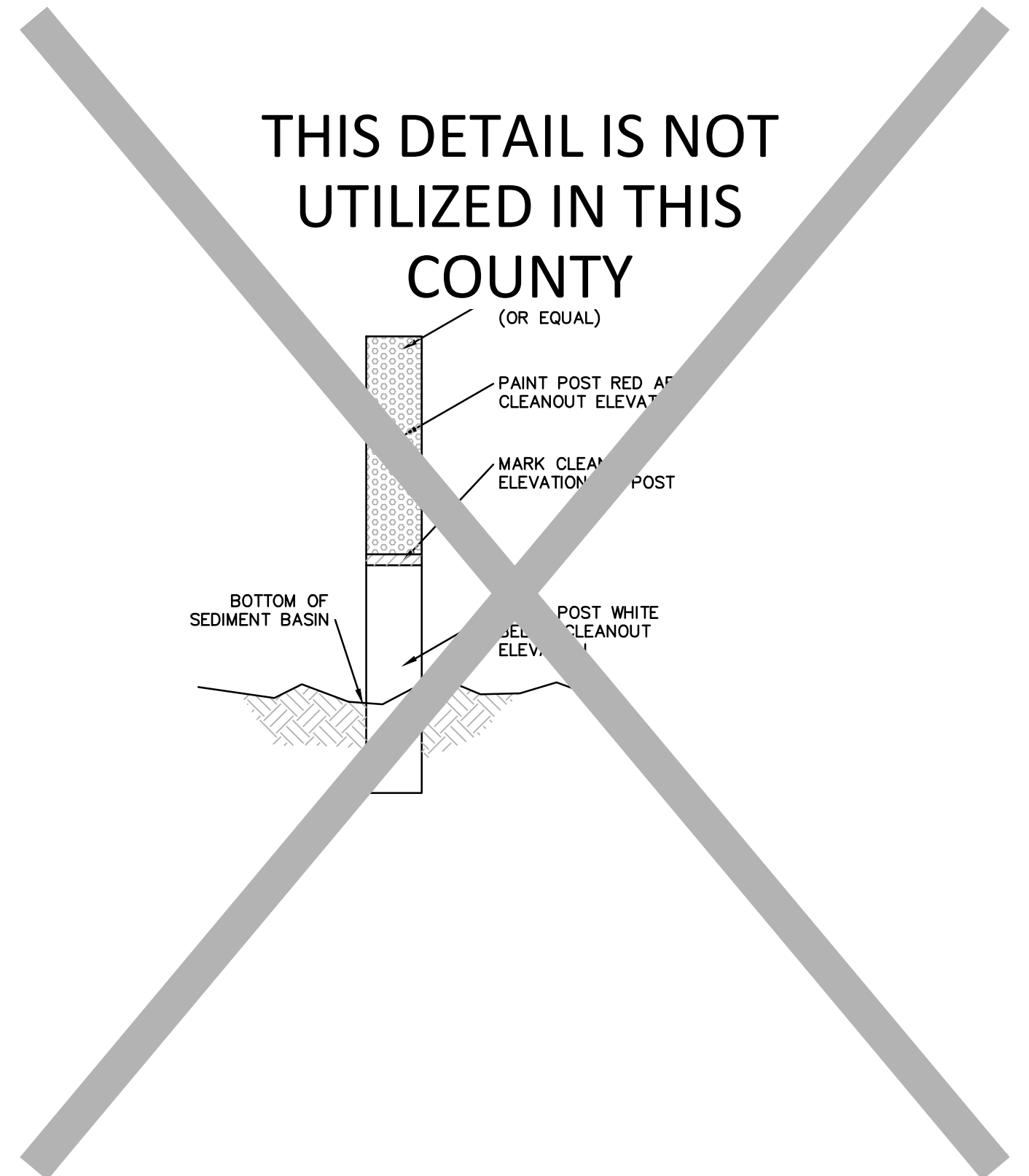


FIGURE 4.2 MAXIMUM PERMISSIBLE SLOPE LENGTH ABOVE COMPOST FILTER SOCKS



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

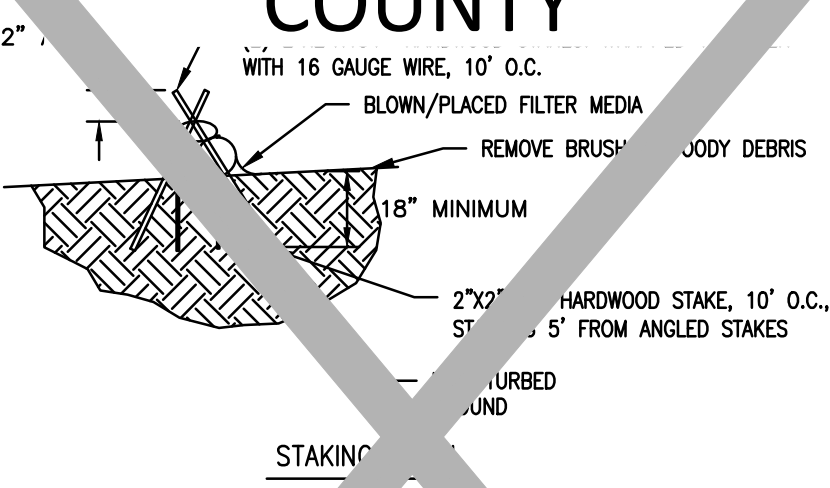
NO.	DATE	BY	REVISION DESCRIPTION	NO.	NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL				
			(CFS) COMPOST FILTER SOCK				



NO.	DATE	BY	REVISION DESCRIPTION	NO.	NO.	CHK.	APP.
			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 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. ADDITIONAL STORAGE MAY BE PROVIDED BY MEANS OF AN EXCAVATED SUMP 12" DEEP, EXTENDING 1 TO 3 FEET UPSLOPE OF THE SOCKS.
 - 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	NO.	NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL				
			(CST) COMPOST SOCK SEDIMENT TRAP				



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

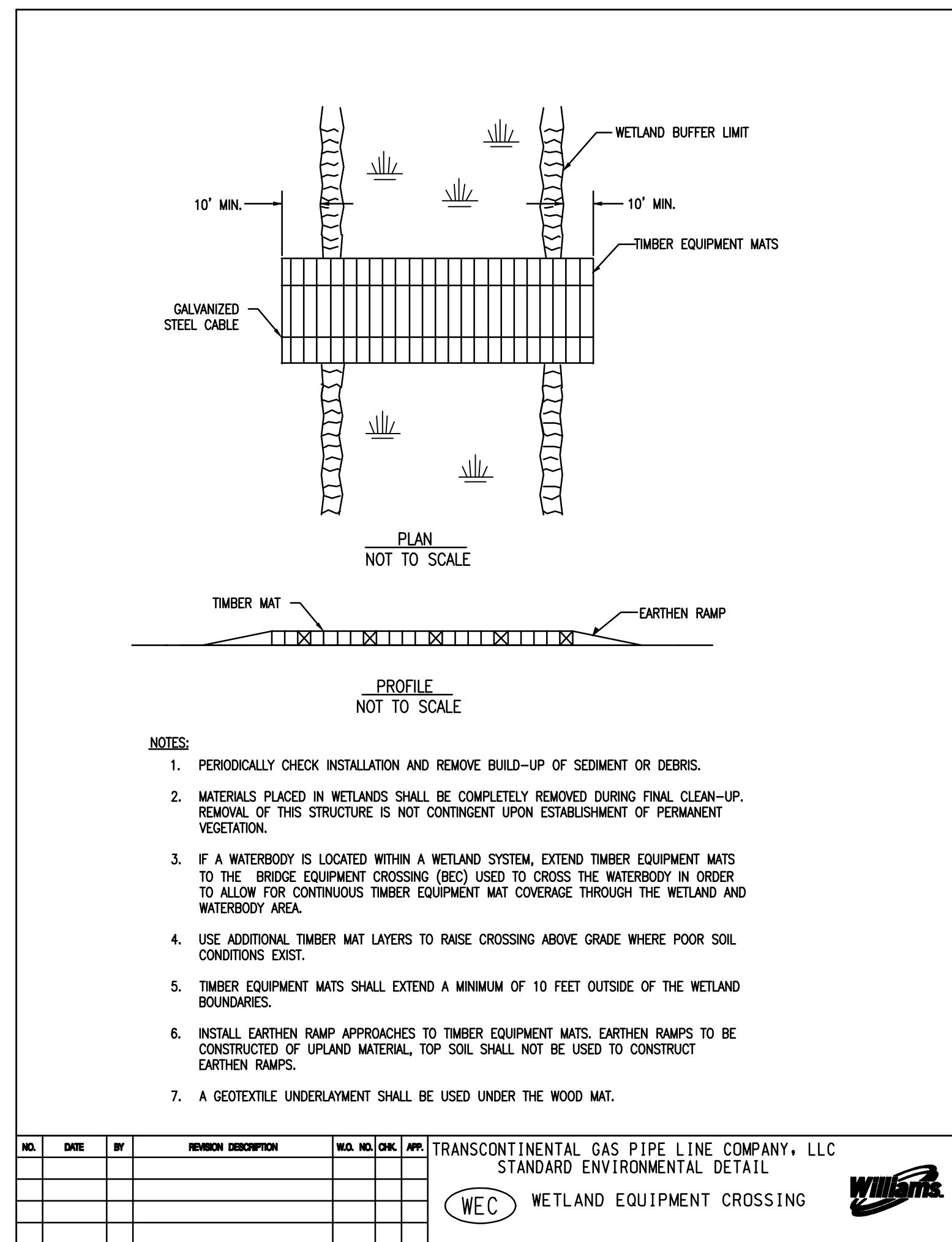
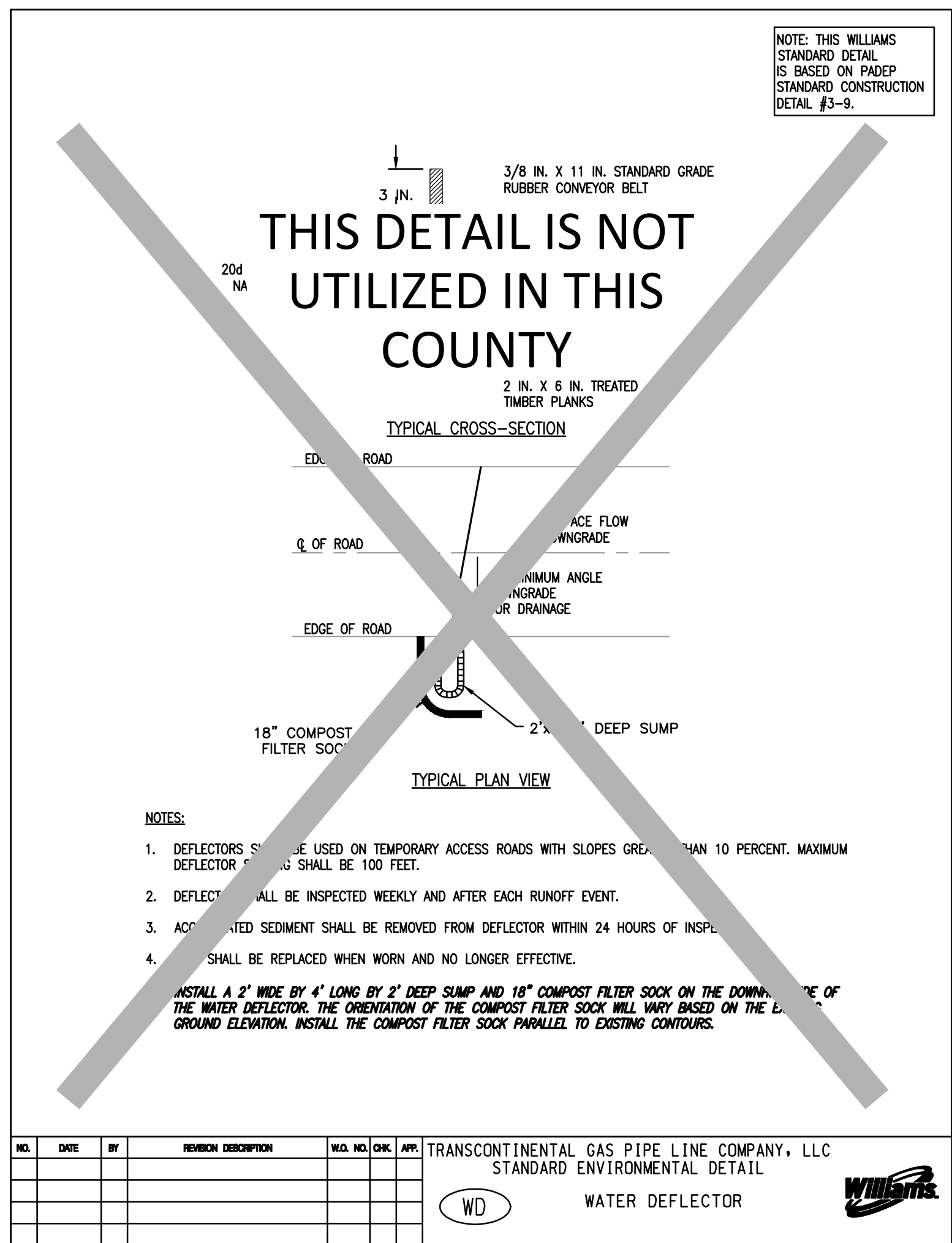
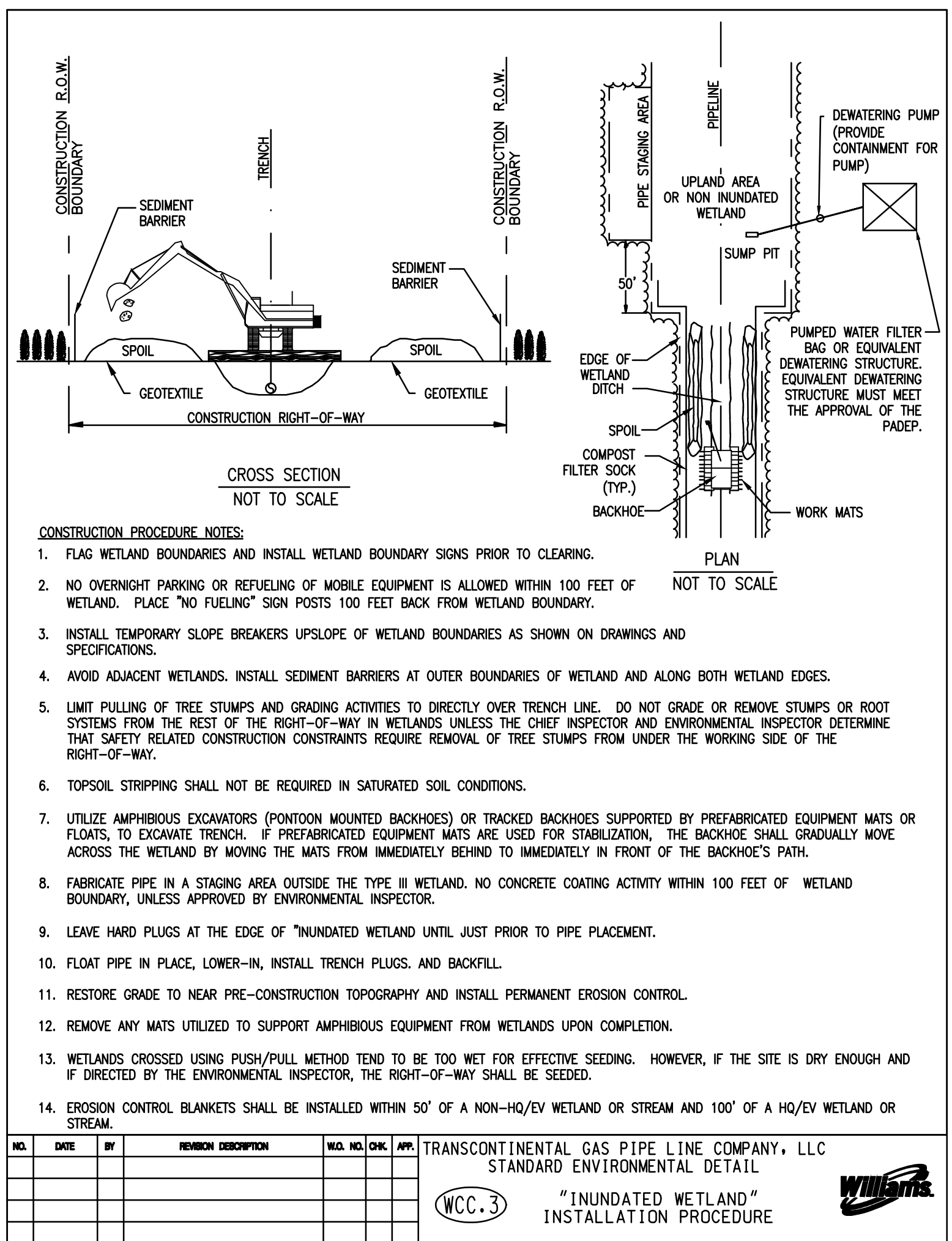
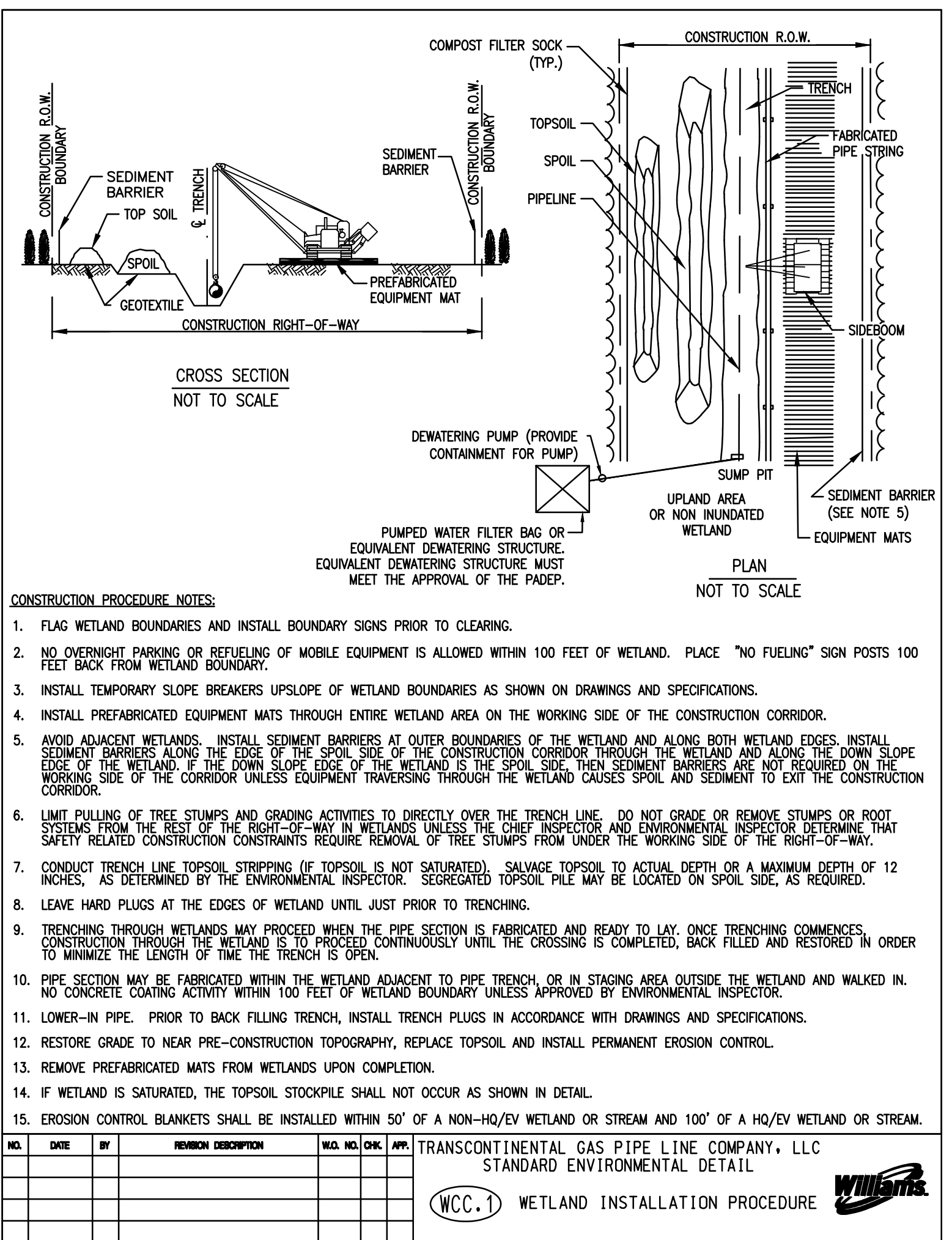
NO.	DATE	BY	REVISION DESCRIPTION	NO.	NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL				
			(CWC) CLEAN WATER CROSSING				



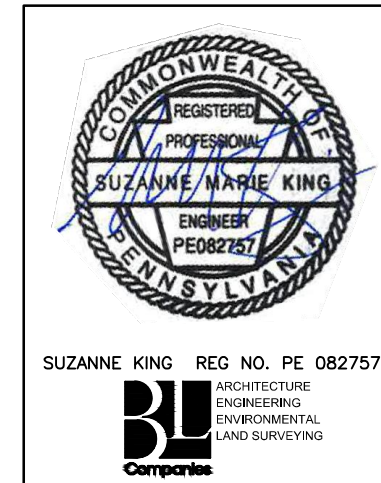
REVISIONS							
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	
0	08/26/2015	BL	ISSUED FOR PADEP SUBMITTAL	W0572385	JLK	SMK	
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W0572385	JLK	SMK	
2	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0572385	JLK	SMK	
3	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE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

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC ATLANTIC SUNRISE PROJECT							
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	2
W.O.:						OF	11





Drawn By & Date/Time: CScanzello Jul 27, 2017 - 4:36pm
 Drawing Location & Name: G:\JOBS\14\14C\14C4909\DWG\BMPs&DETAILS\PL_DNT14C4909(20N)_NO-BMP-11.dwg



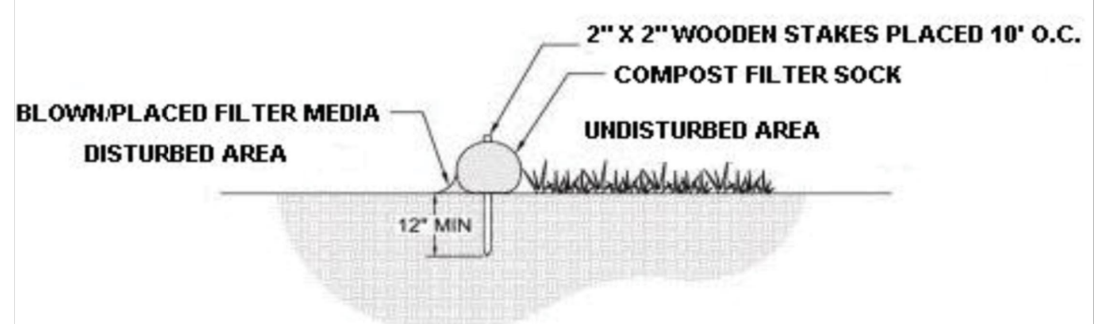
REVISIONS							
NO.	DATE	BY	DESCRIPTION	W.D.	NO.	CHK.	APP.
0	08/26/2015	BL	ISSUED FOR PADEP SUBMITTAL	W0572385	JLK	SMK	
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W0572385	JLK	SMK	
2	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0572385	JLK	SMK	
3	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #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			
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:	ISSUED FOR CONSTRUCTION	REVISION:	4
DRAWING NUMBER:	ASR-BMP	SHEET:	11
		OF:	11



TABLE 1: SEDIMENT BARRIER SUMMARY

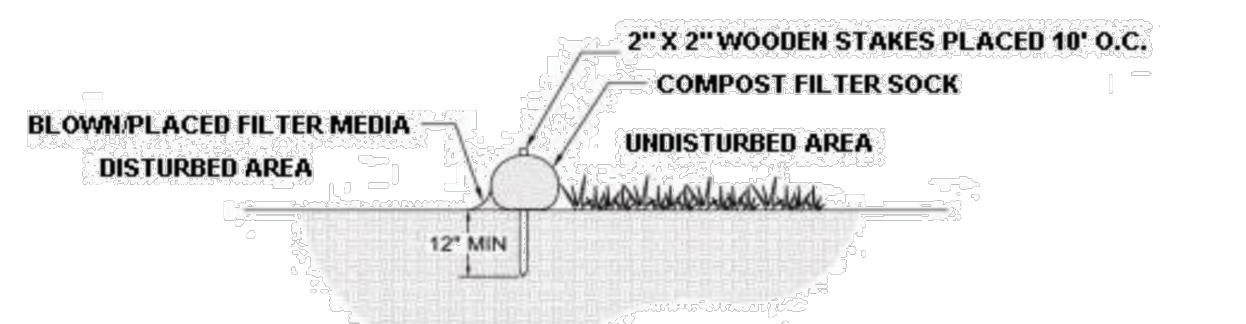
E&S WORKSHEET #1
Compost Filter Sock
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE
 LOCATION: EAST CAMERON TOWNSHIP, NORTHUMBERLAND COUNTY
 PREPARED BY: ESS DATE: 03/20/2017
 CHECKED BY: AJB DATE: 04/13/2017



MILEPOST NO.	Dia. In.	LOCATION			SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
		BEGIN STA.	END STA.	TYPE		
M-0247	24	39+50	to 21+00		41	64
	24	4367+50	to 4393+20		22	50
83	24	4393+25	to 4402+50		12	88
	12	4402+50	to 4403+50	Stream	13	100
	24	4403+50	to 4404+75		14	85
	12	4404+75	to 4405+25	Wetland	2	170
	24	4405+25	to 4414+00		14	85
	12	4414+00	to 4414+00	Road	10	101
	12	4414+00	to 4419+35		12	115
	18	4419+35	to 4419+35	Road	32	45
	24	4419+35	to 4450+30		45	25
84	32	4450+30	to 4453+90		7	420
	12	4453+90	to 4457+00		11	120
	12	4457+00	to 4457+00	Road	23	400
	24	4457+00	to 4470+25		8	85
M-0252 & M-0323	18	0+00	to 6+50		20	100
	12	4+75	to 6+25	Road	12	50
	12	4477+75	to 4480+00		12	100
	24	4480+00	to 4487+00		14	100
85	12	4487+50	to 4487+50	Road	8	60
	12	4487+50	to 4493+00		6	120
	12	4493+20	to 4493+20	Road	15	10
	12	4494+00	to 4495+75		6	120
	12	4496+00	to 4496+00	Road	20	20
	24	4496+00	to 4500+75		6	120
	12	4501+20	to 4501+20	Road	20	20
	24	4501+25	to 4504+25		6	120
	12	4504+50	to 4508+00		6	120
	12	4508+30	to 4508+30	Road	2	150
	12	4508+50	to 4510+25		6	120
	12	4510+50	to 4510+50	Road	6	150
	12	4510+50	to 4511+50		5	106
	12	4511+50	to 4511+50	Stream	5	106
	24	4512+00	to 4521+50		5	106
	12	4521+50	to 4521+50	Road	2	320
M-0340	12	4521+50	to 0+75		2	320

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

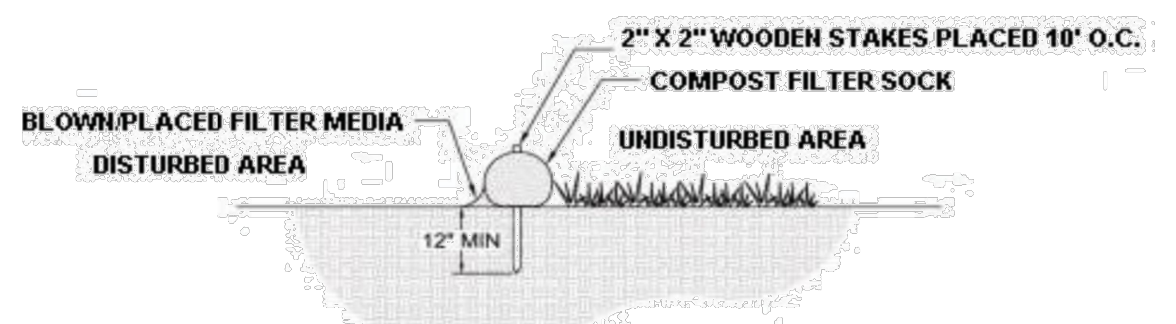
E&S WORKSHEET #1
Compost Filter Sock
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE
 LOCATION: NORTHUMBERLAND COUNTY
 PREPARED BY: ESS DATE: 03/20/2017
 CHECKED BY: AJB DATE: 04/13/2017



MILEPOST NO.	Dia. In.	LOCATION			SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
		BEGIN STA.	END STA.	TYPE		
M-0240	12	4525+25	to 3+00	Road	20	25
	32	1+00	to 3+00	Road	31	94
	24	2+25	to 3+25		37	83
	24	3+50	to 3+50	Road	50	37
	24	3+50	to 4+50		54	43
	32	5+00	to 6+50	Road	50	55
	24	5+50	to 6+50		20	25
	18	6+50	to 7+25	Road	40	40
	18	7+25	to 8+00		40	40
	12	8+00	to 8+75	Road	7	50
	12	8+75	to 9+75		7	50
	12	10+00	to 10+75	Road	18	37
	24	10+50	to 11+50	Stream	60	36
	12	11+25	to 12+00		10	150
	18	12+25	to 16+00		17	85
	18	16+00	to 16+50	Road	40	50
	24	16+00	to 19+24		17	85
86	24	4546+50	to 4555+50		17	85
	32	4551+50	to 4555+50	Road	40	50
	24	4555+75	to 4558+00		17	85
	24	4558+00	to 4561+50	Road	40	55
	24	4559+50	to 4560+00		17	85
	24	4561+50	to 4571+50		17	85
M-0235	12	4571+75	to 4+50	Road/Stream	4	70
	24	4572+75	to 4+00		4	70
M-0372	24	4+50	to 3+50		15	224
	12	3+50	to 4+25	Road	9	45
	12	4+25	to 6+00		8	177
	18	6+00	to 7+25	Stream	15	122
	24	7+50	to 10+50		39	56
	18	11+00	to 13+00		62	31
	24	14+00	to 14+75		82	36
	12	15+50	to 20+00		28	40

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

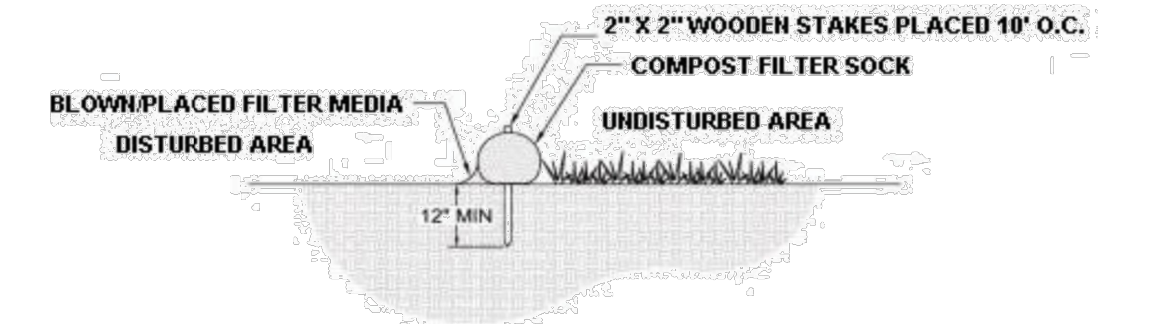
E&S WORKSHEET #1
Compost Filter Sock
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE
 LOCATION: NORTHUMBERLAND COUNTY
 PREPARED BY: ESS DATE: 03/20/2017
 CHECKED BY: AJB DATE: 04/13/2017



MILEPOST NO.	Dia. In.	LOCATION			SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
		BEGIN STA.	END STA.	TYPE		
M-0372	18	20+00	to 29+00		14	117
	12	23+00	to 28+00	Road	3	117
	12	23+50	to 28+25	Road	10	108
	12	24+00	to 29+00	Road	13	118
	24	27+50	to 34+00		13	100
	24	34+00	to 34+00	Road	50	40
	24	34+00	to 37+25		13	100
	18	37+00	to 37+25	Road	24	65
	24	37+25	to 45+00		7	125
	18	45+00	to 48+25		4	420
	24	48+25	to 58+75		10	150
	24	59+00	to 59+00	Road	28	100
	24	59+25	to 61+00		10	150
	18	60+50	to 60+50	Stream	24	91
	18	61+00	to 61+00	Road	30	50
	24	61+00	to 65+75		10	150
	18	65+75	to 65+75	Road	30	55
	24	4639+00	to 4646+50		10	150
88	24	4647+00	to 4647+50	Road	27	111
	24	4646+50	to 4648+75		27	111
	24	4648+75	to 4650+75		6	320
	24	4650+75	to 4753+50		5	175
	18	4653+50	to 4653+50	Road	31	51
	24	4754+50	to 4754+50		5	175
	24	4754+50	to 4761+00		5	175
	18	4661+30	to 4661+30	Road	14	120
	24	4761+25	to 4763+50		5	175
	24	4664+75	to 4664+75	Road	26	100
	24	4765+00	to 4769+00		5	175
	18	4670+30	to 4670+30	Road	15	125
	24	4670+25	to 4672+00		20	65
89	24	4672+00	to 4682+00		20	65
	12	4682+50	to 4682+50	Road	15	100
	24	4682+50	to 4688+00		20	65
	12	4689+00	to 4691+50	Wetland	20	65
	24	4692+50	to 4694+25		20	65

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

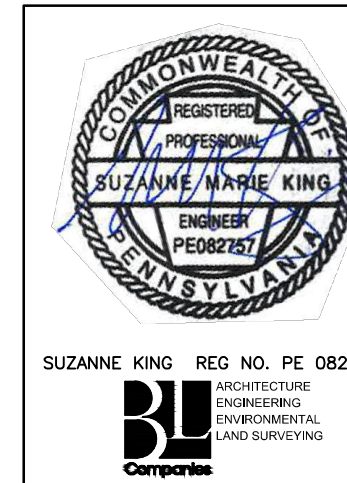
E&S WORKSHEET #1
Compost Filter Sock
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE
 LOCATION: NORTHUMBERLAND COUNTY
 PREPARED BY: ESS DATE: 03/20/2017
 CHECKED BY: AJB DATE: 04/13/2017



MILEPOST NO.	Dia. In.	LOCATION			SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
		BEGIN STA.	END STA.	TYPE		
89	12	4694+25	to 4694+50	Stream	20	65
	24	4694+50	to 4703+25		20	65
	12	4703+50	to 4703+50	Wetland/Road	6	61
	12	4704+75	to 4704+75	Waterbody	6	61
	12	4705+75	to 4705+25	Wetland	6	61
	12	4703+50	to 4706+00		20	65
	24	4706+00	to 4735+75		20	65
	12	4734+75	to 4734+75	Road	22	50
	24	4735+75	to 4739+75		26	112
	24	4739+75	to 4739+75	Road	50	50
	24	4739+75	to 4743+00		45	50
	24	4743+00	to 4743+00	Road	31	60
90	24	4743+00	to 4753+75		30	100
	12	4752+75	to 4752+75	Road	9	26
	24	4752+75	to 4760+50		10	123
	12	4761+00	to 4764+50	Road	2	220
	24	4764+00	to 4762+50		5	298
	12	4768+00	to 4768+00	Road	6	85
M-0167	12	4768+50	to 6+00		7	130
	12	6+00	to 14+50		8	150
	32	14+50	to 14+75	Road	11	241
	32	14+50	to 4790+25		7	493
	12	4790+25	to 4795+00		4	140
	24	4795+00	to 4803+50		3	176
91	12	4803+50	to 4804+50	Stream	5	145
ALIGNMENT EXITS NORTHUMBERLAND COUNTY AND RE-ENTERS AT APPROX. STA 4844+25						
	12	4844+50	to 4845+50	Stream	5	129
	24	4845+75	to 4857+00		27	100
92	24	4857+00	to 4861+50		15	154
M-0271/ M-0437	24	4861+50	to 1+75		35	50
	12	1+50	to 2+75	Stream/Wetland	42	172

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

Drawn By & Date/Time: CScanzello Jul 28, 2017 - 4:48pm
 Drawing Location & Name: G:\08514\14C\14C4909\DWG\BMPs&DETAILS\PL_DNT14C4909(20N)_NO-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			
NORTHUMBERLAND COUNTY, PENNSYLVANIA			
QUANTITY, CROSSING AND ACIDIC SOIL TABLES			
DRAWN BY:	ELZ	DATE:	05/15/15
CHECKED BY:	JLK	DATE:	07/02/15
APPROVED BY:	SMK	DATE:	07/08/15
ISSUED FOR:	ISSUED FOR CONSTRUCTION	REVISION:	4
DRAW			

TABLE 2: TEMPORARY CLEAN WATER DIVERSION SUMMARY

MILE POST	TEMPORARY DIVERSION SUMMARY - NORTHUMBERLAND COUNTY, PENNSYLVANIA										WATERBODY**				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
84	84.01	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	10	35.84	18	4
	84.02	SWALE	2	2	10	2	2	P550	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	10	32.64	18	4
	84.03	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	12	34.40	18	4
	84.04	SWALE	2	2	10	2	2	W3000	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	12	31.20	18	3
85	84.05	FILTER SOCK	0	1.6	7.9	0	5	W3000	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	28	2.88	12	1
	85.01	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	3	21.92	12	4
86	86.01	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	WATERBODY	2	2	12	R-4	18	N/A	N/A	N/A	
	87	87.01	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	6	4.32	12
87	87.02A	SWALE	2	2	10	2	2	P550	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	7	4.96	12	1
	87.02B	SWALE	2	2	10	2	2	S75	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	7	7.36	12	2
	87.02C	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	5	4.96	12	1
	90	90.01A*	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	8	10.35	12
	90.01B*	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	8	4.73	12	1

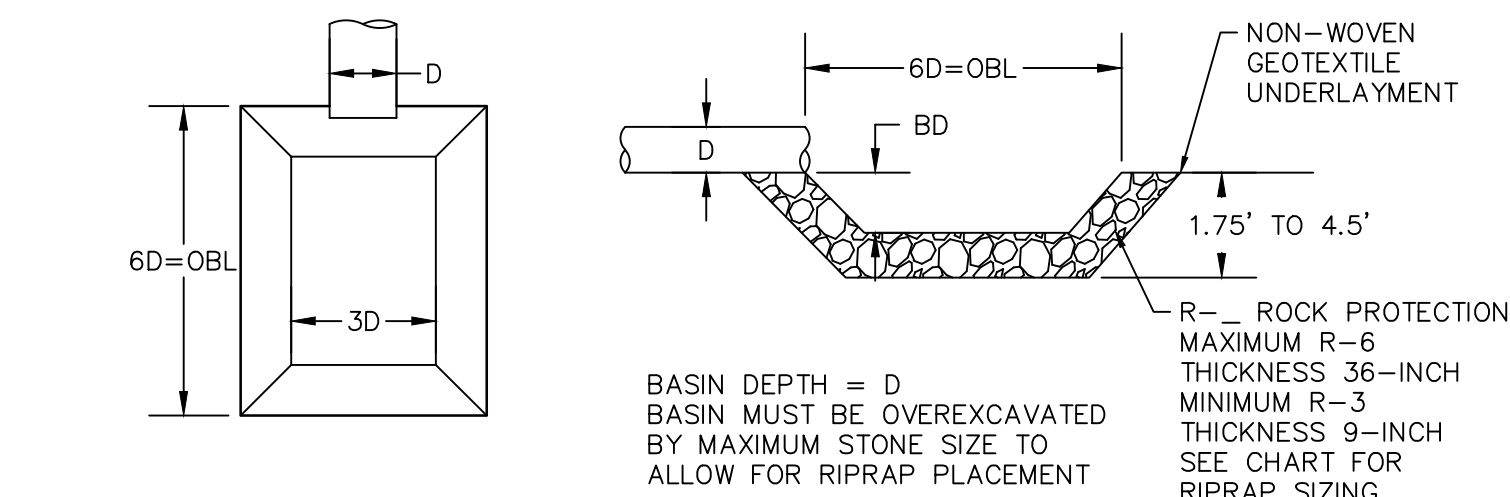
* High Quality or Exceptional Value Watershed
 ** Diversion End Treatment to Stream or Wetland
 *** Sizing was determined using maximum allowable velocity outlined in Table 6.6 of the PA DEP Erosion and Sediment Pollution Control Program Manual, dated March 2012
 Drainage Area > 5 acres due to valley/drainage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

Northumberland County
 Temporary Perforated Pipe Level Spreader Calculations

MILE POST	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
84	84.01	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	10	35.84	18	4
84	84.02	SWALE	2	2	10	2	2	P550	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	10	32.64	18	4
84	84.03	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	12	34.40	18	4
84	84.04	SWALE	2	2	10	2	2	W3000	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	12	31.20	18	3
85	84.05	FILTER SOCK	0	1.6	7.9	0	5	W3000	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	28	2.88	12	1
85	85.01	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	3	21.92	12	4
86	86.01	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	WATERBODY	2	2	12	R-4	18	N/A	N/A	N/A	
87	87.01	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	6	4.32	12	1
87	87.02A	SWALE	2	2	10	2	2	P550	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	7	4.96	12	1
87	87.02B	SWALE	2	2	10	2	2	S75	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	7	7.36	12	2
87	87.02C	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	5	4.96	12	1
90	90.01A*	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	8	10.35	12	2
90	90.01B*	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	8	4.73	12	1

* HIGH QUALITY OR EXCEPTIONAL VALUE WATERSHED

- NOTE:
 1. FLOWS HIGHLIGHTED YELLOW HAVE MORE THAN ONE PIPE, AND THEREFORE, THE FLOW HAS BEEN DIVIDED ACCORDINGLY.
 2. "N/A" DENOTES LEVEL SPREADER DISCHARGES TO EXISTING DRAINAGE PATH.
 3. DESIGN AND CALCULATIONS PROVIDED BY STV ENERGY SERVICES, INC.



PIPE DIAMETER (D)	BASIN LENGTH (6D)	BASIN INSIDE WIDTH (3D)	BASIN DEPTH (BD)
12"	6'	3'	1'
18"	9'	4.5'	1.5'

PIPE DIAMETER (D)	BASIN LENGTH (6D)	BASIN INSIDE WIDTH (3D)	BASIN DEPTH (BD)
12"	6'	*	1'
18"	9'	*	1.5'

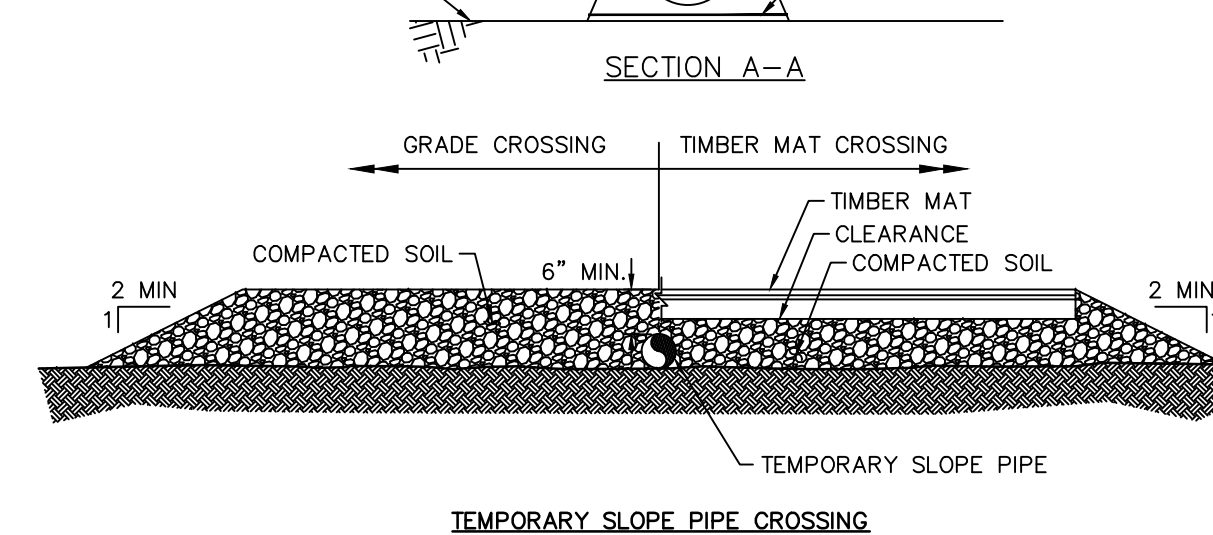
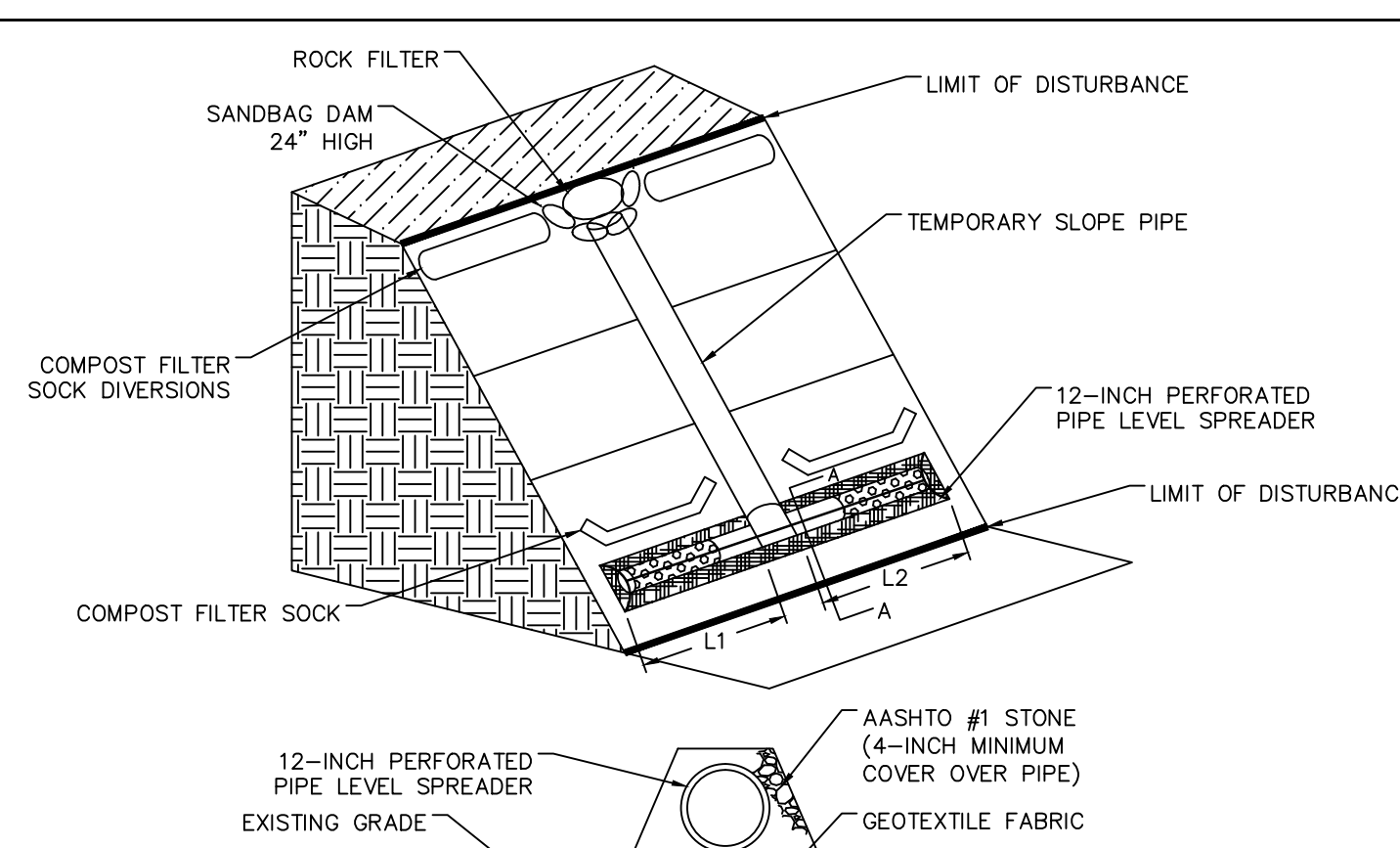
* BASIN INSIDE WIDTH IS 3 X DIAMETER(FT) X # OF PIPES

STANDARD CONSTRUCTION DETAIL #8-6
 SEDIMENT TRAP OUTLET BASIN DETAIL
 NO SCALE

NOTES:

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

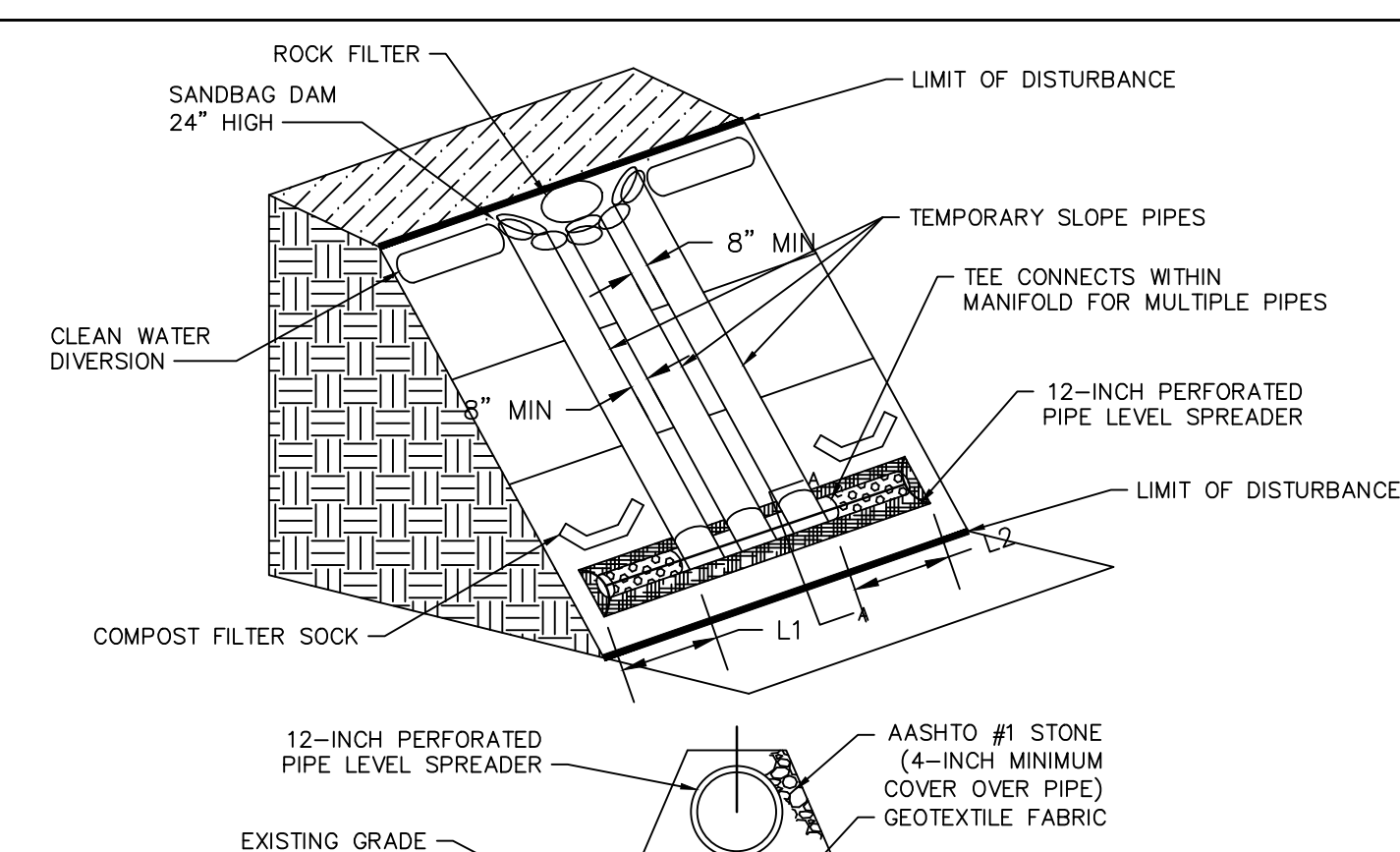
NO.	DATE	BY	REVISION DESCRIPTION	NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC STANDARD ENVIRONMENTAL DETAIL			
			CWC CLEAN WATER CROSSING (OUTLET BASIN DETAIL)			
			STANDARD CONSTRUCTION DETAIL #8-6			



NOTES:

- LEVEL SPREADER PIPES TO BE 12-INCH JM EAGLE EAGLE CORR PE PERFORATED PIPE (OR APPROVED EQUAL) AND SHALL BE CAPPED AT BOTH ENDS.
- LEVEL SPREADER TO BE INSTALLED PARALLEL TO CONTOURS AT LEVEL ELEVATION.
- PERFORATED PIPE TO BE UNDERLAIN WITH GEOTEXTILE FABRIC AND COVERED WITH AASHTO NO. 1 STONE. MINIMUM STONE COVER SHALL BE 4-INCHES OVER PERFORATED PIPE.
- ALL LEVEL SPREADER STONE WILL BE REMOVED AND DISTURBED AREA TO BE RESTORED IN ACCORDANCE WITH E&S PLAN.
- LEVEL SPREADERS TO BE INSTALLED AT ALL TEMPORARY SLOPE PIPE DISCHARGES AT LOW POINTS OF DIVERSION BERM.
- LEVEL SPREADERS TO BE INSPECTED WEEKLY OR AFTER MEASURABLE RAINFALL EVENT AND SHALL BE MAINTAINED IN GOOD CONDITION AT ALL TIMES.
- TOTAL REQUIRED LEVER SPREADER LENGTH TO BE L1 + L2.
- DESIGN AND CALCULATIONS PROVIDED BY STV ENERGY SERVICES, INC.

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



TEMPORARY MULTIPLE PIPE LEVEL SPREADER DETAIL
 NO SCALE

NOTES:

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

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

TABLE 3: WATERBODIES CROSSED BY CPLS PIPELINE AND ACCESS ROADS IN NORTHUMBERLAND 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-T44-10002C	UNT to Mahanoy Creek(WW-T44-10002C)	83.38	Northumberland	East Cameron	Perennial	WWF, MF	None	Flume	None
WW-T01-10001	Mahanoy Creek(WW-T01-10001)	83.39	Northumberland	East Cameron	Perennial	WWF, MF	None	Flume	None
WW-T04-10002	UNT to Shamokin Creek(WW-T04-10002)	85.45	Northumberland	Coal	Intermittent	WWF, MF	None	Dam-and-Pump	None
WW-T04-10001	Shamokin Creek(WW-T04-10001)	MOC-0240.0.20	Northumberland	Coal	Perennial	WWF, MF	None	Dam-and-Pump	None
WW-T18-10002	Quaker Run(WW-T18-10002)	86.60	Northumberland	Coal	Perennial	CWF, MF	None	Flume	None
WW-T68-11001B	UNT to Quaker Run(WW-T68-11001B)	M-03720.11	Northumberland	Coal	Ephemeral	CWF, MF	None	Flume	None
WW-T68-11001	UNT to Quaker Run(WW-T68-11001)	M-03720.13	Northumberland	Coal	Intermittent	CWF, MF	None	Dam-and-Pump	None
WW-T58-11001	Coal Run(WW-T58-11001)	MOC-0235.1.15	Northumberland	Coal	Intermittent	CWF, MF	None	Dam-and-Pump	None
WW-T44-11002	UNT to South Branch Roaring Creek(WW-T44-11002)	88.89	Northumberland	Coal	Perennial	HQ-CWF, MF	Approved Trout Waters, Wild Trout Waters	N/A	January 1 through September 30
WW-T47-11002	South Branch Roaring Creek(WW-T47-11002)	91.76	Northumberland	Ralpho	Perennial	HQ-CWF, MF	Class A Wild Trout Waters	Dam-and-Pump	April 2 through September 30
WW-T44-11001A	UNT to South Branch Roaring Creek(WW-T44-11001A)	M-04370.03	Northumberland	Ralpho	Intermittent	HQ-CWF, MF	Class A Wild Trout Waters	Dam-and-Pump	April 2 through September 30

Access Roads

Waterbody ID	Waterbody Name	Milepost	County	Township	Stream Type	State Water Quality Use Classification - Designated Use	State Fishery Classification	Crossing Method	Crossing Window
WW-T44-10003	UNT to Mahanoy Creek	AR-NO-075	Northumberland	East-Cameron	Perennial	WWF, MF	None	N/A	None
WW-T44-10002	UNT to Mahanoy Creek	AR-NO-076.1	Northumberland	East-Cameron	Perennial	WWF, MF	None	N/A	None
WW-T68-10001	UNT to Shamokin Creek	AR-NO-076.1	Northumberland	Coal	Ephemeral	WWF, MF	None	N/A	None
WW-T68-10002	UNT to Shamokin Creek	AR-NO-076.1	Northumberland	Coal	Ephemeral	WWF, MF	None	N/A	None
WW-T58-11001A	Coal-Run	AR-NO-082	Northumberland	Coal	Ephemeral	CWF, MF	None	N/A	None

Key:

- CWF = Coldwater Fishes
 MF = Migratory Fishes
 UNT = Unnamed Tributary

TABLE 4: WETLANDS CROSSED BY CPLS PIPELINE AND ACCESS ROADS IN NORTHUMBERLAND COUNTY

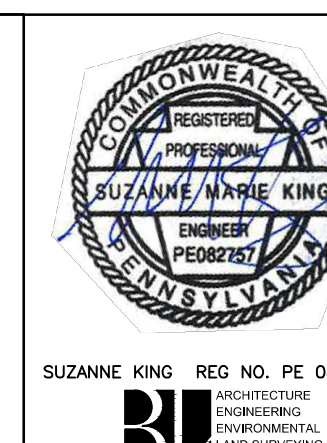
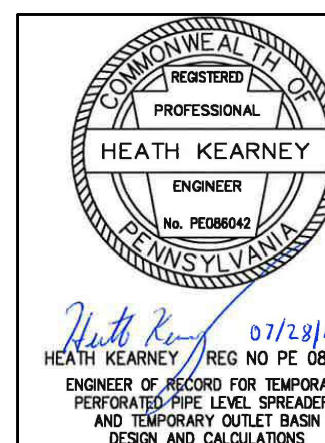
Wetland ID	Milepost	County	Township	Wetland Classes Impacted
W-T44-11001C	88.83	Northumberland	Coal	PFO
W-T44-11001A/W-T44-11001A-2	89.08	Northumberland	Coal	PEM
W-T18-10001	83.43	Northumberland	East-Cameron	PEM
W-T49-11001	91.77	Northumberland	Ralpho	PEM
W-T49-11003	M-0437.0.05	Northumberland	Ralpho	PEM

Access Roads

Waterbody ID	Waterbody Name	Milepost	County	Township	Stream Type	State Water Quality Use Classification - Designated Use	State Fishery Classification	Crossing Method	Crossing Window
W-T68-10001	AR-NO-079.1	Northumberland	Coal	PEM					

Key:

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



NO.	DATE	BY	REVISIONS DESCRIPTION	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 NORTHUMBERLAND COUNTY, PENNSYLVANIA QUANTITY, CROSSING AND ACIDIC SOIL TABLES			
DRAWN BY:	ELZ	DATE:	05/15/15
CHECKED BY:	JLK	DATE:	07/02/15
APPROVED BY:	SMK	DATE:	07/08/15
NO.		ISSUED FOR CONSTRUCTION:	
NO.		DRAWING NUMBER:	
NO.		REVISION:	

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

MP Begin	MP End	County	Map Unit Symbol	pH	MP Begin	MP End	County	Map Unit Symbol	pH
M-0247 0.33	M-0247 0.37	NORTHUMBERLAND	DMF	4.6	M-0372 0.17	M-0372 0.34	NORTHUMBERLAND	Uh	Udortherts
M-0247 0.33	M-0247 0.35	NORTHUMBERLAND	DMF	4.6	M-0372 0.34	M-0372 0.47	NORTHUMBERLAND	HuD	4.6
M-0247 0.35	M-0247 1.18	NORTHUMBERLAND	DeF	4.6	M-0235 0.53	M-0235 0.62	NORTHUMBERLAND	HuD	4.6
82.72	82.79	NORTHUMBERLAND	DeF	4.6	M-0235 0.62	M-0235 0.74	NORTHUMBERLAND	Uh	Udortherts
82.79	83.14	NORTHUMBERLAND	HuF	4.6	M-0235 0.74	M-0235 0.82	NORTHUMBERLAND	HuD	4.6
83.14	83.32	NORTHUMBERLAND	LdD	4.6	M-0235 0.82	M-0235 0.93	NORTHUMBERLAND	HuB	4.6
83.32	83.39	NORTHUMBERLAND	AbB	5.0	M-0235 0.93	M-0235 1.06	NORTHUMBERLAND	HuD	4.6
83.39	83.40	NORTHUMBERLAND	W	Water	M-0235 1.06	M-0235 1.13	NORTHUMBERLAND	HuF	4.6
83.40	83.44	NORTHUMBERLAND	Uf	4.8	M-0235 1.13	M-0235 1.25	NORTHUMBERLAND	Uh	Udortherts
83.44	83.50	NORTHUMBERLAND	LdF	4.6	87.84	88.13	NORTHUMBERLAND	Uh	Udortherts
83.50	83.72	NORTHUMBERLAND	MkC	4.6	88.13	88.19	NORTHUMBERLAND	HuD	4.6
83.72	84.12	NORTHUMBERLAND	WkE	5.3	88.19	88.24	NORTHUMBERLAND	Uh	Udortherts
84.12	84.34	NORTHUMBERLAND	HuD	4.6	88.24	88.35	NORTHUMBERLAND	HuD	4.6
84.34	84.61	NORTHUMBERLAND	HuB	4.6	88.35	88.48	NORTHUMBERLAND	HuF	4.6
84.61	84.67	NORTHUMBERLAND	HuD	4.6	88.48	88.51	NORTHUMBERLAND	HuD	4.6
M-0252 0.00	M-0252 0.04	NORTHUMBERLAND	HuD	4.6	88.51	88.61	NORTHUMBERLAND	DeF	4.6
M-0323 0.00	M-0323 0.04	NORTHUMBERLAND	HuD	4.6	88.61	88.96	NORTHUMBERLAND	LdD	4.6
M-0323 0.04	M-0323 0.07	NORTHUMBERLAND	Uh	Udortherts	88.96	89.07	NORTHUMBERLAND	BxD	4.6
M-0323 0.07	M-0323 0.13	NORTHUMBERLAND	HuD	4.6	89.07	89.11	NORTHUMBERLAND	Smb	4.6
84.80	84.95	NORTHUMBERLAND	HuD	4.6	89.11	89.16	NORTHUMBERLAND	BxB	4.6
84.95	85.00	NORTHUMBERLAND	Uh	Udortherts	89.16	89.21	NORTHUMBERLAND	BxD	4.6
85.00	85.10	NORTHUMBERLAND	HuD	4.6	89.21	89.43	NORTHUMBERLAND	LdD	4.6
85.10	85.13	NORTHUMBERLAND	HuF	4.6	89.43	89.82	NORTHUMBERLAND	DeF	4.6
85.13	85.27	NORTHUMBERLAND	Uh	Udortherts	89.82	90.14	NORTHUMBERLAND	LdD	4.6
85.27	85.35	NORTHUMBERLAND	BxD	4.6	90.14	90.32	NORTHUMBERLAND	MkB	4.6
85.35	85.41	NORTHUMBERLAND	BxB	4.6	90.32	90.34	NORTHUMBERLAND	CaB	5.3
85.41	85.47	NORTHUMBERLAND	Smb	4.6	M-0167 0.00	M-0167 0.16	NORTHUMBERLAND	CaB	5.3
85.47	85.52	NORTHUMBERLAND	HuD	4.6	M-0167 0.16	M-0167 0.34	NORTHUMBERLAND	CaC	5.3
85.52	85.61	NORTHUMBERLAND	HuD	4.6	90.68	90.71	NORTHUMBERLAND	CaC	5.3
85.61	85.75	NORTHUMBERLAND	BxB	4.6	90.71	90.85	NORTHUMBERLAND	CaB	5.3
M-0240 0.00	M-0240 0.04	NORTHUMBERLAND	BxB	4.6	90.85	90.92	NORTHUMBERLAND	CaC	5.3
M-0240 0.04	M-0240 0.09	NORTHUMBERLAND	HuF	4.8	90.92	90.95	NORTHUMBERLAND	CaD	5.3
M-0240 0.09	M-0240 0.23	NORTHUMBERLAND	Uf	4.8	90.95	90.97	NORTHUMBERLAND	WKE	5.3
M-0240 0.23	M-0240 0.27	NORTHUMBERLAND	Du	Dumps	90.97	90.98	NORTHUMBERLAND	Ug	6.2
M-0240 0.27	M-0240 0.34	NORTHUMBERLAND	Uh	Udortherts	90.98	90.99	NORTHUMBERLAND	Ts	6.2
M-0240 0.34	M-0240 0.36	NORTHUMBERLAND	HuF	4.6	91.75	91.75	NORTHUMBERLAND	Ts	6.2
86.11	86.16	NORTHUMBERLAND	HuF	4.6	91.75	91.78	NORTHUMBERLAND	Hv	6.2
86.16	86.32	NORTHUMBERLAND	HuD	4.6	91.78	91.82	NORTHUMBERLAND	WKE	5.3
86.32	86.36	NORTHUMBERLAND	HuF	4.6	91.82	91.96	NORTHUMBERLAND	WeD	5.0
86.36	86.38	NORTHUMBERLAND	Uh	Udortherts	91.96	92.02	NORTHUMBERLAND	WeC	5.0
86.38	86.51	NORTHUMBERLAND	HuF	4.6	92.02	92.06	NORTHUMBERLAND	WeD	5.0
86.51	86.62	NORTHUMBERLAND	Uh	Udortherts	92.06	92.20	NORTHUMBERLAND	WKE	5.3
M-0235 0.00	M-0235 0.19	NORTHUMBERLAND	Uh	Udortherts	M-0271 0.00	M-0271 0.04	NORTHUMBERLAND	WKE	5.3
M-0372 0.00	M-0372 0.01	NORTHUMBERLAND	Uh	Udortherts	M-0437 0.00	M-0437 0.05	NORTHUMBERLAND	WKE	5.3
M-0372 0.01	M-0372 0.17	NORTHUMBERLAND	HuD	4.6	M-0437 0.05	M-0437 0.05	COLUMBIA	WKE	5.3

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

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 #29 and #51)	Field Routing Adjustments within 600-foot Wide Corridor (Supporting Information for Technical Deficiency #15)*	Stream Bank Stabilization BMP	Width of Erosion Control Blanket Required for Stream Bank Stabilization (ft)
Stream	UNT to Mahanoy Creek (WW-T44-1000C)	WW-T44-1000C	83.37	WWF, MF	Perennial	None	R3	LOD has been reduced to 90' to minimize impacts to WW-T44-1000C.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T44-1000C, and to avoid residences east of the LOD.	SBR with SC150 fabric	50
Stream	Mahanoy Creek (WW-T01-10001)	WW-T01-10001	83.39	WWF, MF	Perennial	None	R3	Full construction ROW width is needed to safely and efficiently cross this wide stream.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T01-10001, and to avoid residences east of the LOD.	SBR with SC150 fabric	50
Wetland	N/A	W-T18-10001	83.42	None	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T18-10001.	The pipeline was routed at this location to provide a perpendicular crossing of wetland W-T18-10001. Avoidance of this wetland was not feasible due to the linear nature of the wetland, extending east and west beyond the routing corridor.	N/A	N/A
Stream	UNT to Shamokin Creek (WW-T68-10002)	WW-T68-10002	85.20	WWF, MF	Ephemeral	None	R6	LOD reduced to 35' 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.	N/A	N/A
Wetland	N/A	W-T58-10001	85.24	None	N/A	N/A	PEM	LOD reduction not practicable to minimize impacts at this location as the wetland is present within the existing roadway.	The access road was routed to cross this wetland along an existing dirt/gravel road. Deviating from the existing road to avoid the wetland would require additional tree clearing.	N/A	N/A
Stream	UNT to Shamokin Creek (WW-T68-10001)	WW-T68-10001	85.26	WWF, MF	Ephemeral	None	R6	LOD reduced to 20' to accommodate an equipment bridge crossing of this stream.	The access road was routed to cross this stream along an existing dirt/gravel road. The bridge equipment crossing will minimize stream impacts.	N/A	N/A
Stream	UNT to Shamokin Creek (WW-T04-10002)	WW-T04-10002	85.45	WWF, MF	Intermittent	None	R4	LOD has been reduced to 90' to minimize impacts to WW-T04-10002.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T04-10002.	SBR with SC150 fabric	50
Stream	Shamokin Creek (WW-T04-10001)	WW-T04-10001	M-0240 0.20	WWF, MF	Perennial	None	R3	Full construction ROW width needed to accommodate P's located on either side of this wide crossing, and due to adjacent steep topography and railroad crossing.	The pipeline was routed at this location to facilitate a crossing of the adjacent state highway and railroad, while avoiding a residence on the south side of the routing corridor.	SBR with SC150 fabric	50
Stream	Quaker Run (WW-T18-10002)	WW-T18-10002	85.60	CWF, MF	Perennial	None	R3	LOD has been reduced to 90' to minimize impacts to WW-T18-10002.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T18-10002 and the adjacent road.	SBR with SC150 fabric	50
Wetland	N/A	W-T56-10001A-1	M-0235 0.35	None	N/A	N/A	PEM	LOD has been modified to eliminate impacts to W-T56-10001A-1.	This feature is no longer impacted based on LOD reductions.	N/A	N/A
Stream	Coal Run (WW-T58-11001A)	WW-T58-11001A	M-0235 0.94	CWF, MF	Ephemeral	None	R6	LOD has been reduced to avoid impacting the stream reach which runs parallel to the existing access road.	No changes were made to this crossing during field routing. This stream parallels and then crosses an existing dirt/gravel road through a culvert. During field routing it was determined that the project access road width could be reduced to avoid impacting the stream where it parallels the existing road.	N/A	N/A
Stream	UNT to Quaker Run (WW-T68-11001B)	WW-T68-11001B	M-0372 0.11	CWF, MF	Ephemeral	None	R6	LOD has been reduced to 90' to minimize impacts to WW-T68-11001B.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T68-11001B.	SBR with SC150 fabric	50
Stream	UNT to Quaker Run (WW-T68-11001)	WW-T68-11001	M-0372 0.13	CWF, MF	Intermittent	None	R4	LOD has been reduced to 90' to minimize impacts to WW-T68-11001.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T68-11001.	SBR with SC150 fabric	50
Stream	UNT to Quaker Run (WW-T68-11001A)	WW-T68-11001A	M-0372 0.13	CWF, MF	Ephemeral	None	R6	LOD has been modified to eliminate impacts to W-T68-11001A.	This feature is no longer impacted based on LOD reductions.	SBR with SC150 fabric	50
Stream	Coal Run (WW-T58-11001)	WW-T58-11001	M-0235 1.15	CWF, MF	Intermittent	None	R4	LOD has been reduced to 90' to minimize impacts to WW-T58-11001.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T58-11001.	SBR with SC150 fabric	50
Wetland	N/A	W-T44-11001C	88.83	EV	N/A	N/A	PFD	LOD has been reduced to 75' to minimize impacts to W-T44-11001C.	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 South Branch Roaring Creek (WW-T44-11002)	WW-T44-11002	88.89	HQ-CWF, MF	Perennial	Approved Trout Waters, Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T44-11002.	The pipeline was routed at this location to avoid side slope construction.	SBR with SC150 fabric	50
Wetland	N/A	W-T44-11001A-2	89.08	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T44-11001A-2.	The pipeline was routed at this location to avoid side slope construction.	N/A	N/A
Wetland	N/A	W-T44-11001A	89.10	EV	N/A	N/A	PEM	This wetland encroaches within the western portion of the LOD only, and this portion of the LOD was reduced by 10' to minimize impacts to W-T44-11001A.	The pipeline was routed at this location to avoid side slope construction.	N/A	N/A
Stream	South Branch Roaring Creek (WW-T47-11002)	WW-T47-11002	91.76	HQ-CWF, MF	Perennial	Class A Wild Trout Waters	R3	Full construction ROW width needed due to steep terrain immediately north of crossing and adjacent stream/road crossing to the south.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T47-11002.	SBR with SC150 fabric	50
Wetland	N/A	W-T49-11001	91.77	EV	N/A	N/A	PEM	W-T49-11001 does not extend across the full width of the LOD. Since the wetland width within the LOD is less than 75', the FERC Procedures do not require LOD reduction. In addition, an LOD reduction at this location would only be possible in the adjacent upland area and would not result in minimization of wetland impacts.	The pipeline was routed at this location to cross the narrowest section of the wetland, and along the wetland margin.	N/A	N/A
Stream	UNT to South Branch Roaring Creek (WW-T44-11001A)	WW-T44-11001A	M-0271 0.03	HQ-CWF, MF	Intermittent	Class A Wild Trout Waters	R4	Full construction ROW width needed due to steep terrain immediately north of crossing and adjacent road/stream/wetland crossing.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T44-11001A.	SBR with SC150 fabric	50
Wetland	N/A	W-T49-11003	M-0271 0.05	EV	N/A	N/A	PEM	LOD reduced to 90' to minimize impacts to W-T49-11003. Further LOD reduction was not possible due to the adjacent stream and road crossing, as well as steep terrain immediately east of the stream 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.	N/A	N/A

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

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

Pipeline Facility/ County	Mile Post with Shallow Bedrock From To		Linear Distance Crossed (miles)	Bedrock Formation	Acid Potential	Karet	Rock Type
	From	To					
CPL SOUTH							
NORTHUMBERLAND	M-0247 0.33	M-0247 0.37	0.04	Specht Kopf Formation	Typically non-acid sulfide bearing		sandstone, siltstone, and mudstone; shale; conglomerate
NORTHUMBERLAND	M-0247 0.33	M-0247 0.56	0.23				
NORTHUMBERLAND	M-0247 0.56	M-0247 1.18	0.62	Pocono Formation	Typically non-acid sulfide bearing		sandstone, siltstone, and conglomerate
NORTHUMBERLAND	82.72	83.11	0.39				
NORTHUMBERLAND	83.11	83.84	0.73	Mauch Chunk Formation	Typically non-acid sulfide bearing		shale, siltstone, and sandstone; conglomerate; limestone
NORTHUMBERLAND	83.84	84.29	0.45				
NORTHUMBERLAND	84.29	84.67	0.37	Pottsville Formation	Typically anthracite coal-bearing		sandstone, conglomerate, and shale; siltstone; claystone; limestone; coal
NORTHUMBERLAND	M-0252 0.00	M-0252 0.01	0.01				
NORTHUMBERLAND	M-0252 0.01	M-0252 0.04	0.03				
NORTHUMBERLAND	M-0323 0.00	M-0323 0.13	0.13				
NORTHUMBERLAND	84.80	84.85	0.04				
NORTHUMBERLAND	84.85	84.92	0.07				
NORTHUMBERLAND	84.92	85.10	0.18	Llewellyn Formation	Typically anthracite coal-bearing		sandstone, conglomerate, and shale; siltstone; claystone; limestone; coal
NORTHUMBERLAND	85.10	85.75	0.65				
NORTHUMBERLAND	M-0240 0.00	M-0240 0.33	0.33	Pottsville Formation	Typically anthracite coal-bearing		sandstone, siltstone, and shale; conglomerate; coal
NORTHUMBERLAND	M-0240 0.33	M-0240 0.36	0.03				
NORTHUMBERLAND	86.11	86.26	0.15	Llewellyn Formation	Typically anthracite coal-bearing		sandstone, conglomerate, and shale; siltstone; claystone; limestone; coal
NORTHUMBERLAND	86.26	86.62	0.36				
NORTHUMBERLAND	M-0235 0.00	M-0235 0.19	0.19	Llewellyn Formation	Typically anthracite coal-bearing		sandstone, siltstone, and shale; conglomerate; coal
NORTHUMBERLAND	M-0372 0.00	M-0372 0.47	0.47				
NORTHUMBERLAND	M-0235 0.53	M-0235 1.25	0.72				
NORTHUMBERLAND	87.84	88.23	0.38				
NORTHUMBERLAND	88.23	88.50	0.27	Pottsville Formation	Typically anthracite coal-bearing		sandstone, conglomerate, and shale; siltstone; claystone; limestone; coal
NORTHUMBERLAND	88.50	89.37	0.86				
NORTHUMBERLAND	89.37	89.63	0.26	Mauch Chunk Formation	Typically non-acid sulfide bearing		shale, siltstone, and sandstone;
NORTHUMBERLAND	89.63	89.73	0.10				
NORTHUMBERLAND	89.73	90.34	0.61	Specht Kopf Formation	Typically non-acid sulfide bearing		sandstone, siltstone, and mudstone; shale; conglomerate
NORTHUMBERLAND	M-0167 0.00	M-0167 0.34	0.34				
NORTHUMBERLAND	90.68	90.99	0.31	Buddys Run Member of Catskill Formation	Typically non-acid sulfide bearing		siltstone, sandstone, and mudstone
NORTHUMBERLAND	90.99	91.75	0.76				
SUBTOTAL			9.32				
NORTHUMBERLAND	91.75	91.89	0.15	Irish Valley Member of Catskill Formation	Typically non-acid sulfide bearing		siltstone, mudstone, and sandstone; conglomer