HILDEBRANDT TIE-IN/ MLV-515RA40 AND LOWER DEMUNDS REL TIE-IN SITE PLAN DALLAS TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

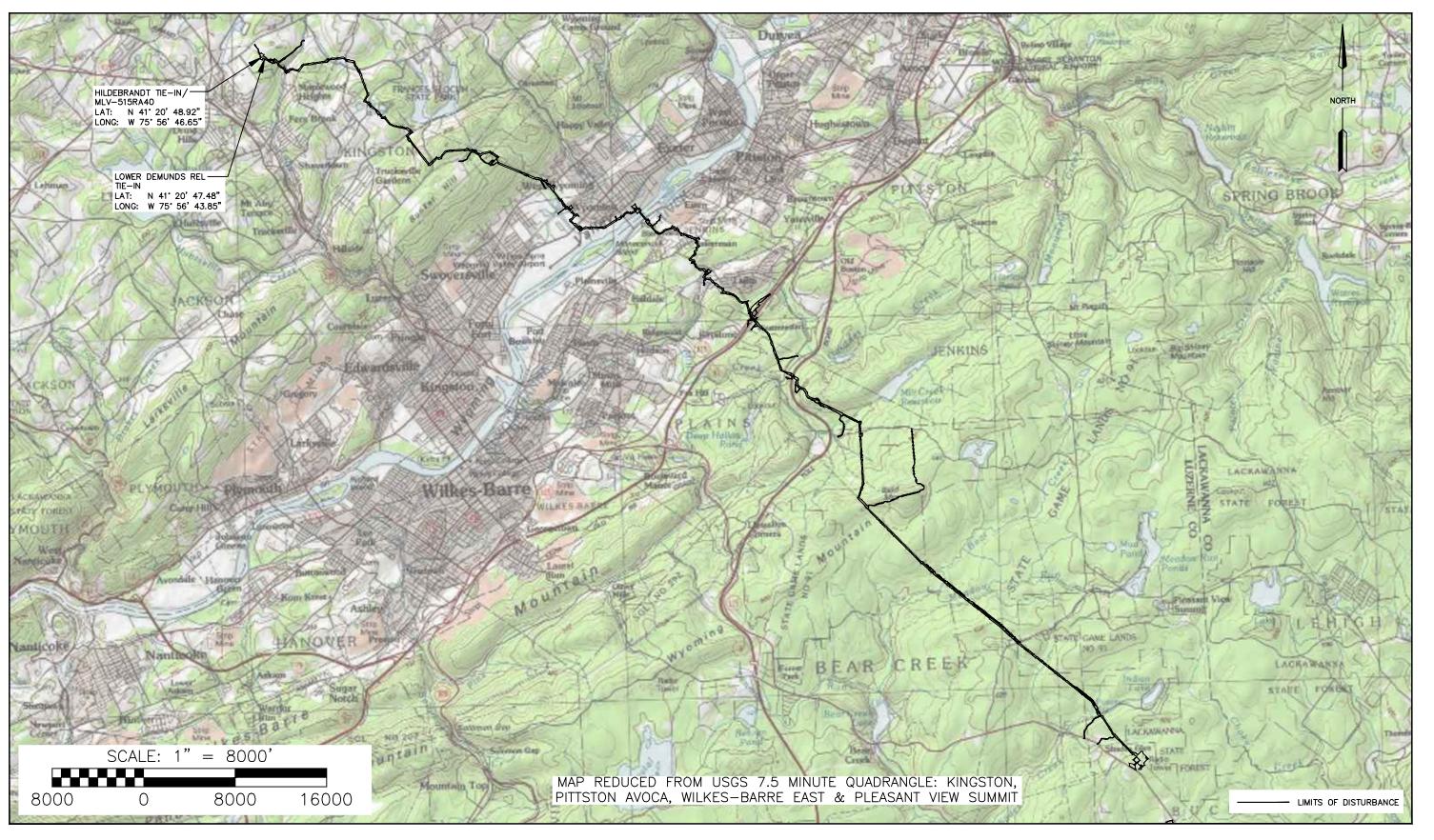
PROJECT OWNER/APPLICANT

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC PARK PLACE CORPORATE CENTER TWO, 2800 POST OAK BLVD, LEVEL 11 HOUSTON, TX 77056 CONTACT: JOSEPH DEAN, MANAGER PERMITTING

PLAN PREPARER / ENGINEER

WHM CONSULTING, LLC 366 WALKER DRIVE SUITE 300 STATE COLLEGE, PA 16801 PH: (814) 689-1650 CONTACT: RYAN NELSON, PROJECT MANAGER

BAI GROUP, LLC. 366 WALKER DRIVE SUITE 300 STATE COLLEGE, PA 16801 PH: (814) 238-2060 CONTACT: PATRICK WOZINSKI, P.E. PROJECT ENGINEER



TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

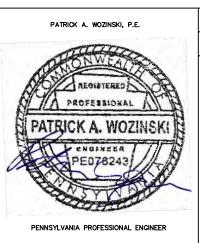
> **APRIL 2021 REVISED MARCH 2022**

> > LOCATION MAP

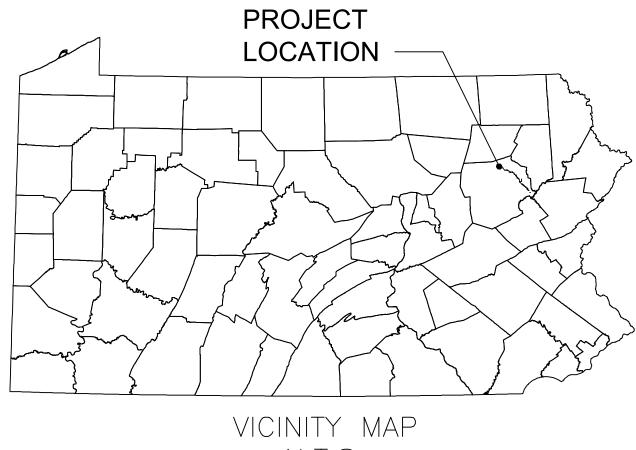


PENNSYLVANIA ACT 287 (1974) AS AMENDED BY PENNSYLVANIA LESS THAN THREE (3) WORKING DAYS AND NO MORE THAN (10) WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL, BLAST OR DEMOLISH.





	NO.	DATE	BY	
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SHEET INDEX				
SHEET NUMBER	DRAWING TITLE			
1 OF 5	COVER SHEET			
2 OF 5	EXISTING CONDITIONS PLAN			
3 OF 5	PROPOSED CONDITIONS PLAN			
4 OF 5	NOTES			
5 OF 5	DETAILS			

RECEIVING WATERS				
NAME	DESIGNATED USE	EXISTING USE	PFBC CLASSIFICATION	STREAM RESTRICTIONS
TROUT BROOK, TRIBUTARY 63042 TO TOBY CREEK	CWF	N/A	NATURALLY REPRODUCING TROUT	N/A

REVISIONS DESCRIPTION OMMENTS. ECHNICAL DEFICIENCY LETTER

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC	Williar
REGIONAL ENERGY ACCESS EXPANSION PROJECT	
HILDEBRANDT TIE-IN/MLV-515RA40 AND LOWER DEMUNDS REL TIE-IN	SITE PLA
POST CONSTRUCTION STORMWATER MANAGEMENT PLAN	
COVER SHEET	

COVER SHEET DALLAS TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

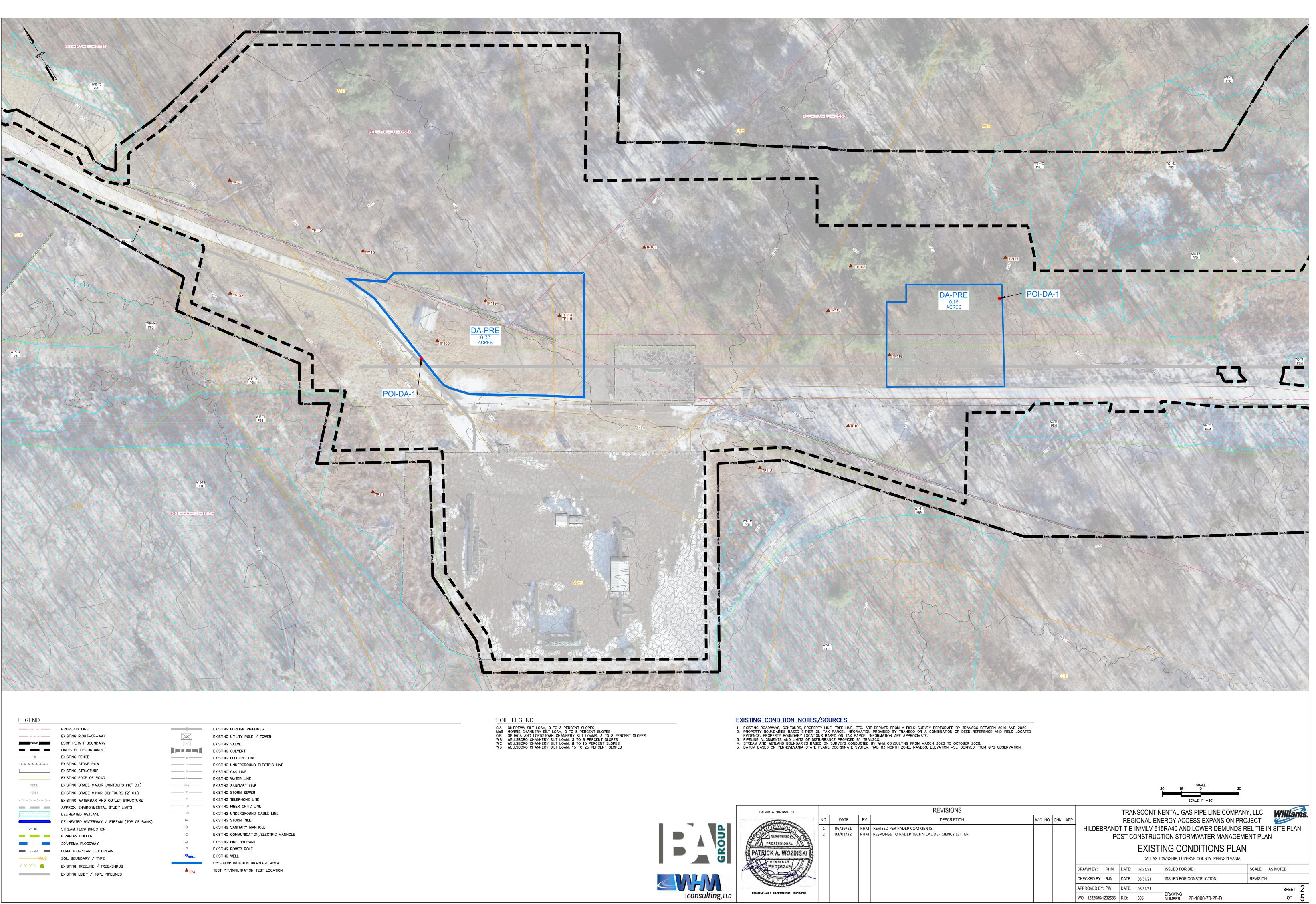
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APPROVED BY:	PW	DATE:	03/31/21		
WO: 1232585/1	232586	RID:	305	DRAWING NUMBER:	26-1000-70-28-0

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SCALE: AS NOTED **REVISION:**

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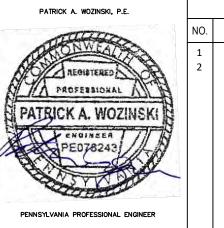
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PROPERTY LINE	
EXISTING RIGHT-OF-WAY	
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LIMITS OF DISTURBANCE	
EXISTING FENCE	_
EXISTING STONE ROW	_
EXISTING STRUCTURE	_
EXISTING EDGE OF ROAD	_
EXISTING GRADE MAJOR CONTOURS (10' C.I.)	_
EXISTING GRADE MINOR CONTOURS (2' C.I.)	_
EXISTING WATERBAR AND OUTLET STRUCTURE	_
APPROX. ENVIRONMENTAL STUDY LIMITS	_
DELINEATED WETLAND	_
DELINEATED WATERWAY / STREAM (TOP OF BANK)	
STREAM FLOW DIRECTION	
RIPARIAN BUFFER	
50'/FEMA FLOODWAY	
FEMA 100-YEAR FLOODPLAIN	
SOIL BOUNDARY / TYPE	
EXISTING TREELINE / TREE/SHRUB	
EXISTING LEIDY / TGPL PIPELINES	

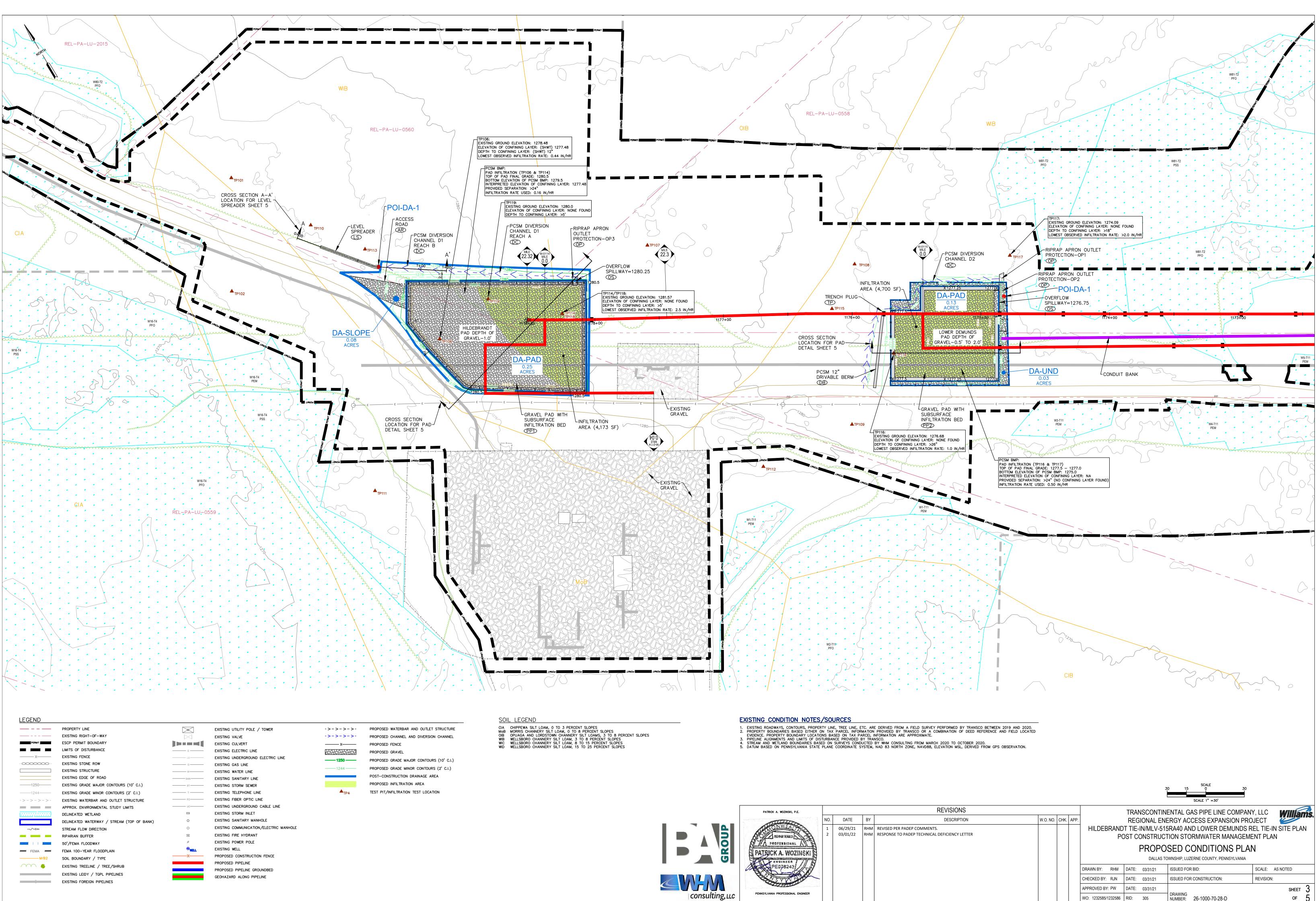
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EXISTING	FOREIGN PIPELINES
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EXISTING	VALVE
EXISTING	CULVERT
EXISTING	ELECTRIC LINE
EXISTING	UNDERGROUND ELECTRIC LINE
EXISTING	GAS LINE
EXISTING	WATER LINE
EXISTING	SANITARY LINE
EXISTING	STORM SEWER
EXISTING	TELEPHONE LINE
EXISTING	FIBER OPTIC LINE
EXISTING	UNDERGROUND CABLE LINE
EXISTING	STORM INLET
EXISTING	SANITARY MANHOLE
EXISTING	COMMUNICATION/ELECTRIC MANHOLE
EXISTING	FIRE HYDRANT
EXISTING	POWER POLE
EXISTING	WELL
PRE-CON	ISTRUCTION DRAINAGE AREA
TEST PIT	/INFILTRATION TEST LOCATION



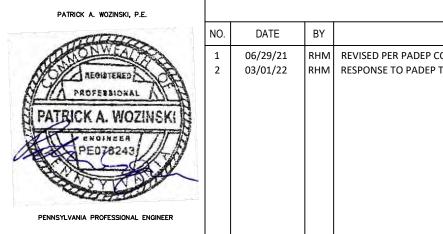


DATE	BY	
06/29/21 03/01/22	RHM RHM	REVISED PER PADEP COMN RESPONSE TO PADEP TECH



LEGEND					
	PROPERTY LINE	\bowtie	EXISTING UTILITY POLE / TOWER	->->->->-	PROPOSED WATERBAR AND OUTLET STR
	EXISTING RIGHT-OF-WAY		EXISTING VALVE	->->->->-	PROPOSED CHANNEL AND DIVERSION CH
PERMIT	ESCP PERMIT BOUNDARY		EXISTING CULVERT	x	PROPOSED FENCE
	LIMITS OF DISTURBANCE	E	EXISTING ELECTRIC LINE		PROPOSED GRAVEL
X	EXISTING FENCE	UE	EXISTING UNDERGROUND ELECTRIC LINE		PROPOSED GRADE MAJOR CONTOURS (10
· 00000000 ·	EXISTING STONE ROW	G	EXISTING GAS LINE		
	EXISTING STRUCTURE		EXISTING WATER LINE	1244	PROPOSED GRADE MINOR CONTOURS (2'
	EXISTING EDGE OF ROAD		EXISTING SANITARY LINE		POST-CONSTRUCTION DRAINAGE AREA
	EXISTING GRADE MAJOR CONTOURS (10' C.I.)	ST	EXISTING STORM SEWER		PROPOSED INFILTRATION AREA
	EXISTING GRADE MINOR CONTOURS (2' C.I.)	тт	EXISTING TELEPHONE LINE	ATP4	TEST PIT/INFILTRATION TEST LOCATION
->->->->-	EXISTING WATERBAR AND OUTLET STRUCTURE	FO	EXISTING FIBER OPTIC LINE		
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	DELINEATED WETLAND	22	EXISTING STORM INLET		
	DELINEATED WATERWAY / STREAM (TOP OF BANK)	0	EXISTING SANITARY MANHOLE		
-~->	STREAM FLOW DIRECTION	0	EXISTING COMMUNICATION/ELECTRIC MANHOLE		
_	RIPARIAN BUFFER	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	EXISTING FIRE HYDRANT		
	50'/FEMA FLOODWAY	ø	EXISTING POWER POLE		
FEMA	FEMA 100-YEAR FLOODPLAIN	®WELL	EXISTING WELL		
	SOIL BOUNDARY / TYPE	——————————————————————————————————————	PROPOSED CONSTRUCTION FENCE		
	EXISTING TREELINE / TREE/SHRUB		PROPOSED PIPELINE		
	, ,		PROPOSED PIPELINE GROUNDBED		
	EXISTING LEIDY / TGPL PIPELINES		GEOHAZARD ALONG PIPELINE		
	EXISTING FOREIGN PIPELINES				





RESOLUTION TO SOIL LIMITATIONS

ROADWAY CONSTRUCTION.

FOR TRENCHING.

TRANSCO PROPOSES THE FOLLOWING RESOLUTIONS TO COMPENSATE FOR SOIL LIMITATIONS SUMMARIZED IN TABLE 3 BELOW: . TO OFFSET THE CAVING OF CUTBANKS, TRENCHING OPERATIONS WILL BE CONDUCTED IN ACCORDANCE WITH THE OSHA TECHNICAL MANUAL

- 2. PREVENTATIVE COATINGS SHALL BE USED TO PREVENT CORROSION OF CONCRETE AND/ OR STEEL.
- WHEN BEDROCK IS ENCOUNTERED IT WILL BE REMOVED BY MECHANICAL METHODS OR BLASTING. BLASTING WILL CONFORM WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS. THIS IS NOT ANTICIPATED.
- . PRECAUTIONS WILL BE TAKEN TO PREVENT SLOPE FAILURE WHEN WORKING WITHIN LOW STRENGTH SOILS BY FLATTENING CUT / FILL SLOPES NOT OVERLOADING, MAINTAINING LATERAL SUPPORT, AND PREVENTING SATURATION OF SOILS. USE OF THESE SOILS WILL BE AVOIDED FOR
- 5. FOR SOILS PRONE TO FLOODING, SLOW PERCOLATION, PONDING WETNESS, HAVE A SEASONAL HIGH WATER TABLE, OR ARE HYDRIC, EXCAVATIONS IN SOILS THAT HAVE THESE CHARACTERISTICS WILL LIKELY ENCOUNTER WATER, DEWATER WITH APPROPRIATE MEANS SUCH AS PUMP WATER FILTER BAGS, SEDIMENT TRAPS, ETC.
- . SOILS THAT HAVE THE POTENTIAL TO SWELL, SHRINK, OR HEAVE DUE TO FROST ACTION MAY CAUSE DAMAGE TO ROADWAYS OR PADS WHERE FOUNDATIONS ARE CRITICAL REMOVAL AND REPLACEMENT OF SOILS WITH SUITABLE MATERIAL MAY BE REQUIRED.
- IN SOILS THAT ARE A POOR SOURCE OF TOPSOIL, DROUGHTY OR PRONE TO WETNESS, SOIL TESTING IS ENCOURAGED TO DETERMINE THE APPROPRIATE APPLICATIONS OF SOIL AMENDMENTS TO PROMOTE GROWTH. SOILS ONSITE THAT ARE FAIR SOURCES OF TOPSOIL, WILL BE IDENTIFIED, STRIPPED AND STOCKPILED FOR USE DURING RESTORATION.
- 8. FOR THOSE SOILS THAT ARE EASILY ERODIBLE, PROVIDE PROTECTIVE LINING, SEEDING AND MULCHING, EROSION CONTROL BLANKETS (ROLLS OR HYDRAULICALLY APPLIED), TRACKING SLOPES, UPSTREAM DIVERSIONS, WATERBARS, ETC., TO MINIMIZE EROSION OF THE SOILS.

Table 2 — Soils mapping units within the LOD							
Soil Mapping Unit	Soil Series						
OIB	Oquaga and Lordstown channery silt loams, 3 to 8 percent slopes						
WIB	Wellsboro channery silt loam, 3 to 8 percent slopes						

Control Best Management Practice (BMP) Manual – Technical Guidance Number 363-3134-008/Page 401)																	
SOIL NAME	SOIL WITH SLOPE CLASS	CUTBANKS CAVE	CORROSIVE TO CONCRETE\STEEL	DROUGHTY	EAS ILY ERODIBLE	FLOODING	DEPTH TO SATURATED ZONE/ SEASONAL HIGH WATER TABLE	HYDRIC/ HYDRIC INCLUSIONS	LOW STRENGTH / LANDSLIDE PRONE	SLOW PERCOLATION	DNIdId	POOR SOURCE OF TOPSOIL	FROST ACTION	SHRINK - SWELL	POTENTIAL SINKHOLE	PONDING	WETNESS
Oquaga	OB,OpB	Х	с	X	Х			X		Х			Х				
Wellsboro	WIB	Х	C/S	Х	Х		Х	Х	Х	Х	Х		Х				Х

Table 3 – Limitations of Pennsylvania Soils Pertaining to Earth Disturbance Projects (Erosion and Sediment

CHARACTERIZATIONS OF EARTH DISTURBANCE ACTIVITIES, INCLUDING PAST, PRESENT AND PROPOSED LAND USES - HILDEBRANDT $\underline{\text{TIE}-\text{IN}/\text{MLV}-515\text{RA40}}$

USING DATA TAKEN FROM GOOGLE EARTH AND MULTI-RESOLUTION LAND CHARACTERISTICS (MRLC) CONSORTIUM WEBSITE (HTTPS: //WWW.MRLC.GOV/VIEWER/). LAND USE FOR THE PAST 20 YEARS HAS BEEN UTILITY LINE RIGHT-OF-WAY. BASED ON SURROUNDING LAND CHÁRACTERISTICS, LAND USÉ WITHIN THE PAST 50 YEARS WOULD HAVE BEEN FORESTED LAND OR MEADOW. THE CONSTRUCTION OF THE GRAVEL PAD WILL INCREASE THE VOLUME OF STORMWATER RUNOFF DUE TO THE INCREASE IN THE TYPE AND SIZE OF IMPERVIOUS AREA. THE CONTRACTOR WILL INSTALL STORMWATER BMP'S TO MITIGATE THE INCREASE IN VOLUME AND PEAK RATES ASSOCIATED WITH CONSTRUCTION. THE PROPOSED BMP'S ARE DESIGNED TO INFILTRATE THE NET INCREASE IN VOLUME BETWEEN THE PRE- AND POST-DEVELOPMENT 2-YEAR, 24-HOUR RAINFALL EVENTS WITHIN THE PERMIT APPLICATION.

BMP DESCRIPTION NARRATIVE - HILDEBRANDT TIE-IN/MLV-515RA40

THE HILDEBRANDT TIE—IN/MLV—515RA40 TIE—IN IS RECEIPT INTERCONNECT PROPOSED IN DALLAS TOWNSHIP, LUZERNE COUNTY, AT THE TERMINUS OF THE REGIONAL ENERGY LATERAL AT MILEPOST 22.34. PROPOSED IS THE INSTALLATION OF NEW ABOVEGROUND TIE-IN PIPING VALVES. AND ABOVEGROUND PIPING FOR AN ANNUBAR METER, AND INSTALL MLV-515RA04 AND ASSOCIATED PIG TRAP. THE FACILITY WILL INCLUDE A 10,822 SF GRAVEL PAD. UPSLOPE STORMWATER WILL BE COLLECTED BY A PCSM DIVERSION CHANNEL AND CONVEYED AWAY FROM THE VALVE PAD. STORMWATER MANAGEMENT WILL BE ACCOMPLISHED BY INFILTRATION WITHIN THE PAD AREA ITSELF. THE PAD WILL BE BERMED AROUND THE EXTERIOR TO RETAIN STORMWATER FOR INFILTRATION. AN OVERFLOW SPILLWAY WILL BE USED TO DISCHARGE EXCESS FLOW TO THE PCSM DIVERSION CHANNEL AND SUBSEQUENTLY TO A LEVEL SPREADER.

THE GRAVEL VALVE PAD WILL FEATURE EARTHEN BERMS TO CONTAIN STORMWATER RUNOFF, 12 INCHES OF AGGREGATE TO ACT AS A DETENTION STRUCTURE FOR STORMWATER, AND AN INFILTRATION SUBGRADE AREA. EXCESS STORMWATER RUNOFF FROM THE VALVE YARD PAD WILL BE CONVEYED VIA A SPILLWAY TO PCSM DIVERSION CHANNEL D1. THE VALVE YARD PAD WILL MITIGATE THE NET INCREASE IN STORMWATER RUNOFF VOLUME FOR THE 2-YEAR, 24-HOUR PRE-POST STORM EVENT BY INFILTRATION AND EVAPOTRANSPIRATION. FURTHER, THE PCSM BMP WILL MITIGATE PEAK RATE INCREASES FOR THE 2-, 10, 50, AND 100-YEAR, 24-HOUR STORM EVENTS.

BMP INSTALLATION SEQUENCE - HILDEBRANDT TIE-IN/MLV-515RA40

THE PCSM BMPS SHOULD BE INSTALLED IN A MANNER DESIGNED TO:

- . PROTECT BMP AREAS ASSOCIATED WITH INFILTRATION FROM COMPACTION PRIOR TO AND DURING INSTALLATION. . MAINTAIN PROPER EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.
- 5. PCSM DIVERSION CHANNEL D1*
- a. CONSTRUCT PCSM DIVERSION CHANNEL AND LEVEL SPREADER AS SHOWN IN THE PLAN. INSTALL OUTLET PROTECTION AS REQUIRED. b. STABILIZE THE CHANNEL WITH SPECIFIED CHANNEL LININGS. 4. VALVE YARD GRAVEL PAD WITH SUBSURFACE INFILTRATION BED*
- a. INSTALL ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS b PREPARE SITE FOR GRADING AND PERIMETER BERM CONSTRUCTION
- ALL EXISTING VEGETATION SHOULD REMAIN IF FEASIBLE AND SHOULD ONLY BE REMOVED IF NECESSARY FOR CONSTRUCTION.
- CARE SHOULD BE TAKEN TO PREVENT COMPACTION OF THE PAD BOTTOM.
- IF EXCAVATION IS REQUIRED, CLEAR THE AREA TO BE EXCAVATED OF ALL VEGETATION. REMOVE ALL TREE ROOTS, ROCKS, AND BOULDERS ONLY IN EXCAVATION AREA C. GRADE SUBSOIL IN BOTTOM OF PAD, TAKING CARE TO PREVENT COMPACTION. DECOMPACT SUBSOIL TO ACHIEVE DESIGN INFILTRATION RATES. ENSURE FLOWS ARE DIRECTED TO THE OUTLET STRUCTURE. COMPACT SURROUNDING PERIMETER BERM AREAS AND AROUND OUTLET STRUCTURE.
- d. APPLY GEOTEXTILES AND OTHER EROSION-CONTROL MEASURES.
- e. PLACE AGGREGATE FINAL COVER TO ACHIEVE FINAL GRADE ON VALVE YARD PAD. SEED, PLANT AND MULCH ACCORDING TO PLANTING PLAN ALL TEMPORARY E&S BMPS WILL BE REMOVED FOLLOWING SITE STABILIZATION. OTHER EROSION AND SEDIMENT CONTROL MEASURES ARE NOT TO BE REMOVED UNTIL THE SITE IS FULLY STABILIZED.
- . ALL INSTALLED BMPS WILL BE MONITORED UNTIL FINAL SITE STABILIZATION IS ACHIEVED.*

7. LONG TERM OPERATION AND MAINTENANCE GUIDELINES DISCUSSED BELOW SHALL BE FOLLOWED. *PORTIONS OF THE BMP INSTALLATION SEQUENCE DENOTED WITH AN ASTERISK (*) ABOVE ARE CRITICAL STAGES AS DISCUSSED IN SECTION BELOW

PCSM CRITICAL STAGES - HILDEBRANDT TIE-IN/MLV-515RA40

- CRITICAL POINTS REQUIRING VISITS BY THE LICENSED PROFESSIONAL OR DELEGATE ARE AS FOLLOWS:
- UPON COMMENCEMENT OF CONSTRUCTION ACTIVITIES TO ASCERTAIN THE VALVE YARD PAD AREA HAS BEEN FLAGGED AND FENCE ERECTED TO PREVENT ACCESS TO THE AREA.
- AT COMPLETION OF PCSM DIVERSION CHANNEL TO ENSURE IT HAS BEEN CONSTRUCTED TO THE PROPOSED LINES AND GRADES. THE SPECIFIED LINING MATERIALS HAVE BEEN INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS, AND IF APPLICABLE, VEGETATION HAS BEEN ESTABLISHED.
- AT THE BEGINNING OF CONSTRUCTION OF THE VALVE YARD PAD TO ENSURE THE INFILTRATION AREA HAS NOT BEEN COMPACTED BY CONSTRUCTION ACTIVITIES.
- . DURING CONSTRUCTION OF THE VALVE YARD PAD THE LICENSED PROFESSIONAL WILL OBSERVE THAT THE BMP IS CONSTRUCTED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
- FOLLOWING INSTALLATION OF THE VALVE YARD PAD SUBGRADE TO ENSURE STORMWATER FLOW IS DIRECTED TO THE OUTLET STRUCTURE. 6. FOR FINAL INSPECTION OF CONSTRUCTED BMPS.
- 7. AT THE ESTABLISHMENT OF HARD SURFACE STABILIZATION OR 70% VEGETATION COVERS TO ALLOW REMOVAL OF E&S CONTROLS.

CHARACTERIZATIONS OF EARTH DISTURBANCE ACTIVITIES, INCLUDING PAST, PRESENT AND PROPOSED LAND USES - LOWER DEMUNDS REL TIE-IN

USING DATA TAKEN FROM GOOGLE EARTH AND MULTI-RESOLUTION LAND CHARACTERISTICS (MRLC) CONSORTIUM WEBSITE (HTTPS://WWW.MRLC.GOV/VIEWER/), LAND USE FOR THE PAST 20 YEARS HAS BEEN UTILITY LINE RIGHT-OF-WAY. BASED ON SURROUNDING LAND CHARACTERISTICS, LAND USE WITHIN THE PAST 50 YEARS WOULD HAVE BEEN FORESTED LAND OR MEADOW. THE CONSTRUCTION OF THE GRAVEL PAD WILL INCREASE THE VOLUME OF STORMWATER RUNOFF DUE TO THE INCREASE IN THE TYPE AND SIZE OF IMPERVIOUS AREA. THE CONTRACTOR WILL INSTALL STORMWATER BMP'S TO MITIGATE THE INCREASE IN VOLUME AND PEAK RATES ASSOCIATED WITH CONSTRUCTION. THE PROPOSED BMP'S ARE DESIGNED TO INFILTRATE THE NET INCREASE IN VOLUME BETWEEN THE PRE- AND POST-DEVELOPMENT 2-YEAR, 24-HOUR RAINFALL EVENTS WITHIN THE PERMIT APPLICATION.

BMP DESCRIPTION NARRATIVE - LOWER DEMUNDS REL TIE-IN

THE LOWER DEMUNDS REL TIE-IN IS A RECEIPT INTERCONNECT PROPOSED IN DALLAS TOWNSHIP, LUZERNE COUNTY NEAR THE TERMINUS OF THE REGIONAL ENERGY LATERAL AT MILEPOST 22.1. PROPOSED IS THE INSTALLATION OF APPROXIMATELY 400 FEET OF NEW 20-INCH-DIAMETER TIE-IN PIPING FROM TRANSCO'S EXISTING LEIDY LINE A TIE-IN SITE TO THE NEW PROPOSED REL PIPELINE TIE-IN SITE, VALVES, AND NEW ABOVEGROUND TIE—IN PIPING FOR AN ANNUBAR METER. THE FACILITY WILL INCLUDE A 5,755 SF GRAVEL PAD. UPSLOPE STORMWATER WILL BE COLLECTED BY A PCSM DIVERSION BERM AND PCSM CHANNEL AND CONVEYED AWAY FROM THE VALVE PAD. STORMWATER MANAGEMENT WILL BE ACCOMPLISHED BY INFILTRATION WITHIN THE PAD AREA ITSELF. THE PAD WILL BE BERMED AROUND THE EXTERIOR TO RETAIN STORMWATER FOR INFILTRATION. AN OVERFLOW SPILLWAY WILL BE USED TO DISCHARGE EXCESS FLOW TO A LEVEL SPREADER.

THE GRAVEL VALVE PAD WILL FEATURE EARTHEN BERMS TO CONTAIN STORMWATER RUNOFF, 12 INCHES OF AGGREGATE TO ACT AS A DETENTION STRUCTURE FOR STORMWATER, AND AN INFILTRATION SUBGRADE AREA. EXCESS STORMWATER RUNOFF FROM THE VALVE YARD PAD WILL BE CONVEYED VIA A SPILLWAY TO A LEVEL SPREADER. THE VALVE YARD PAD WILL MITIGATE THE NET INCREASE IN STORMWATER RUNOFF VOLUME FOR THE 2-YEAR, 24-HOUR PRE-POST STORM EVENT BY INFILTRATION AND EVAPOTRANSPIRATION. FURTHER, THE PCSM BMP WILL MITIGATE PEAK RATE INCREASES FOR THE 2-, 10, 50, AND 100-YEAR, 24-HOUR STORM EVENTS.

BMP INSTALLATION SEQUENCE - LOWER DEMUNDS REL TIE-IN

THE PCSM BMPS SHOULD BE INSTALLED IN A MANNER DESIGNED TO:

	PROTECT BMP AREAS ASSOCIATED
2.	MAINTAIN PROPER EROSION AND SE
5.	PCSM DIVERSION BERM/CHANNEL
	a. CONSTRUCT PCSM DIVERSION BI

- b. STABILIZE THE BERM/CHANNEL WITH SPECIFIED CHANNEL LININGS. 4. VALVE YARD GRAVEL PAD WITH SUBSURFACE INFILTRATION BED*
- DINSTALL ALL TEMPORARY FROSION AND SEDIMENTATION CONTROLS b. PREPARE SITE FOR GRADING AND PERIMETER BERM CONSTRUCTION.
- CARE SHOULD BE TAKEN TO PREVENT COMPACTION OF THE PAD BOTTOM.
- BOULDERS ONLY IN EXCAVATION AREA.
- OUTLET STRUCTURE. d. APPLY GEOTEXTILES AND OTHER EROSION-CONTROL MEASURES.
 - f. SEED, PLANT AND MULCH ACCORDING TO PLANTING PLAN
 - TO BE REMOVED UNTIL THE SITE IS FULLY STABILIZED. 6. ALL INSTALLED BMPS WILL BE MONITORED UNTIL FINAL SITE STABILIZATION IS ACHIEVED.*
 - IN SECTION BELOW.

<u>PCSM CRITICAL STAGES – LOWER DEMUNDS REL TIE-IN</u>

- TO PREVENT ACCESS TO THE AREA.
- APPLICABLE, VEGETATION HAS BEEN ESTABLISHED.
- CONSTRUCTION ACTIVITIES.
- ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
- 6. FOR FINAL INSPECTION OF CONSTRUCTED BMPS.

SEEDING AND MULCHING:

WETLANDS.

TEMPORARY REVEGETATION

AFTER GRADING AND EXCAVATION IS COMPLETED WITHIN AN AREA, VEGETATION WILL BE SOWN PROMPTLY AFTER CEASING EARTHWORK IN THOSE AREAS. HAY, STRAW MULCH, OR OTHER SIMILAR MATERIAL WILL BE APPLIED TO NEWLY SEEDED AREAS TO PROTECT AGAINST EROSION UNTIL THE VEGETATION IS ESTABLISHED. HAY, STRAW MULCH, OR OTHER SIMILAR MATERIAL SHALL BE APPLIED AT A RATE OF AT LEAST 3 TONS PER ACRE. EROSION CONTROL BLANKET SHALL BE USED ON STREAM BANKS. NO HAY OR STRAW, MULCH OR BLANKET SHALL BE UTILIZED IN WETLAND AREAS.

PERMANENT SEEDING AND MULCHING PER ACRE.

12022-02020-02020	Perm	1 Salar		
Soil Amendment	Per Acre	Per 1,000 sq. ft.	Per 1,000 sq. yd.	Notes
Agricultural lime	6 tons	240 lb.	2,480 lb.	Or as per soil test; may not be required in agricultural fields
10-20-20 fertilizer	1,000 lb.	25 lb.	210 lb.	Or as per soil test; may not be required in agricultural fields
	Temp	orary Seeding Appl	ication Rate	
Agricultural lime	1 ton	40 lb.	410 lb.	Typically not required for topsoil stockpiles
10-10-10 fertilizer	500 lb.	12.5 lb.	100 lb.	Typically not required for topsoil stockpiles

Adapted from Penn State, "Erosion Control and Conservation Plantings on Noncropland"

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WITH INFILTRATION FROM COMPACTION PRIOR TO AND DURING INSTALLATION. EDIMENT CONTROL MEASURES DURING CONSTRUCTION.

a. CONSTRUCT PCSM DIVERSION BERM/CHANNEL AS SHOWN IN THE PLAN. INSTALL OUTLET PROTECTION AS REQUIRED.

ALL EXISTING VEGETATION SHOULD REMAIN IF FEASIBLE AND SHOULD ONLY BE REMOVED IF NECESSARY FOR CONSTRUCTION.

• IF EXCAVATION IS REQUIRED, CLEAR THE AREA TO BE EXCAVATED OF ALL VEGETATION. REMOVE ALL TREE ROOTS, ROCKS, AND C. GRADE SUBSOIL IN BOTTOM OF PAD, TAKING CARE TO PREVENT COMPACTION. DECOMPACT SUBSOIL TO ACHIEVE DESIGN INFILTRATION RATES. ENSURE FLOWS ARE DIRECTED TO THE OUTLET STRUCTURE. COMPACT SURROUNDING PERIMETER BERM AREAS AND AROUND

e. PLACE AGGREGATE FINAL COVER TO ACHIEVE FINAL GRADE ON VALVE YARD PAD. 5. ALL TEMPORARY E&S BMPS WILL BE REMOVED FOLLOWING SITE STABILIZATION. OTHER EROSION AND SEDIMENT CONTROL MEASURES ARE NOT

7. LONG TERM OPERATION AND MAINTENANCE GUIDELINES DISCUSSED BELOW SHALL BE FOLLOWED.

PORTIONS OF THE BMP INSTALLATION SEQUENCE DENOTED WITH AN ASTERISK () ABOVE ARE CRITICAL STAGES AS DISCUSSED

CRITICAL POINTS REQUIRING VISITS BY THE LICENSED PROFESSIONAL OR DELEGATE ARE AS FOLLOWS:

1. UPON COMMENCEMENT OF CONSTRUCTION ACTIVITIES TO ASCERTAIN THE VALVE YARD PAD AREA HAS BEEN FLAGGED AND FENCE ERECTED 2. AT COMPLETION OF PCSM DIVERSION BERM/CHANNEL TO ENSURE IT HAS BEEN CONSTRUCTED TO THE PROPOSED LINES AND GRADES, THI SPECIFIED LINING MATERIALS HAVE BEEN INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS, AND II 3. AT THE BEGINNING OF CONSTRUCTION OF THE VALVE YARD PAD TO ENSURE THE INFILTRATION AREA HAS NOT BEEN COMPACTED BY 4. DURING CONSTRUCTION OF THE VALVE YARD PAD THE LICENSED PROFESSIONAL WILL OBSERVE THAT THE BMP IS CONSTRUCTED IN 5. FOLLOWING INSTALLATION OF THE VALVE YARD PAD SUBGRADE TO ENSURE STORMWATER FLOW IS DIRECTED TO THE OUTLET STRUCTURE. 7. AT THE ESTABLISHMENT OF HARD SURFACE STABILIZATION OR 70% VEGETATION COVERS TO ALLOW REMOVAL OF E&S CONTROLS.

THE CONSTRUCTION SITE SHOULD BE STABILIZED AS SOON AS POSSIBLE AFTER CONSTRUCTION IS COMPLETED. ESTABLISHMENT OF TEMPORARY COVER MUST TAKE PLACE WITHIN 4 DAYS OF CESSATION OF WORK. TEMPORARY EROSION AND SEDIMENTATION CONTROL BMPS CAN BE REMOVED WHEN THE SITE MEETS FINAL STABILIZATION. FINAL STABILIZATION MEANS THAT ALL SOIL-DISTURBING ACTIVITIES ARE COMPLETED, AND THAT A PERMANENT VEGETATIVE COVER WITH A DENSITY OF 70% OR GREATER HAS BEEN ESTABLISHED OR THAT HARD COVER SUCH AS PAVEMENT OR BUILDINGS HAS STABILIZED THE SURFACE. IT SHOULD BE NOTED THAT THE 70% REQUIREMENT REFERS TO THE TOTAL AREA VEGETATED AND NOT JUST A PERCENT OF THE SITE. NO HAY OR STRAW MULCH SHALL BE PLACED ON WATERBODY BANKS. AT A MINIMUM, ALL WATERBODY BANKS SHALL BE COVERED WITH EROSION CONTROL BLANKET. IN ADDITION, ONLY STRAW MULCH SHALL BE USED IN AREAS ADJACENT TO

TOPSOIL WILL BE REPLACED PRIOR TO STABILIZATION. DISTURBED AREAS SHALL BE SEEDED WITH A MIXTURE AS OUTLINED IN THE DETAILS PAGES OF THE EROSION AND SEDIMENT CONTROL PLAN SET. APPLY LIME AND FERTILIZER IN ACCORDANCE WITH SOIL TEST RECOMMENDATIONS OR AS OUTLINED IN THE BELOW TABLE. HAY, STRAW MULCH, OR OTHER SIMILAR MATERIAL SHALL BE APPLIED AT A RATE OF AT LEAST 3 TONS

TABLE 11.2

NOTE: A compost blanket which meets the standards of this chapter may be substituted for the soil amendments shown in Table 11.2.

	ERNST RIPARIAN BUFFER MIX - E	RNMX 178
AGE OF	SCIENTIFIC NAME	COMMON NAME
1%	PANICUM CLANDESTINUM	DEERTONGUE
1%	ELYMUS VIRGINICUS	VIRGINIA WILDRYE
%	ANDROPOGON GERARDII	BIG BLUESTEM
%	SORGHASTRUM NUTANS	INDIANAGRASS
%	PANICUM VIRGATUM	SWITCHGRASS
%	CHAMAECRISTA FASCICULATA	PARTRIDGE PEA
%	VERBENA HASTATA	BLUE VERVAIN
%	JUNCUS EFFUSUS	SOFT RUSH
%	RUDBECKIA HIRTA	BLACKEYED SUSAN
%	HELIOPSIS HELIANTHOIDES	OXEYE SUNFLOWER
%	ASCLEPIAS INCARNATA	SWAMP MILKWEED
%	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER
%	ASTER UMBELLATUS	FLAT TOPPED WHITE ASTER
%	EUPATORIUM PERFOLIATUM	BONESET
%	AGROSTIS PERENNANS	AUTUMN BENTGRASS
%	HELENIUM AUTUMNALE	COMMON SNEEZEWEED
%	MONARDA FISTULOSA	WILD BERGAMOT
%	VERNONIA NO VEBORACENSIS	NEW YORK IRONWEED
%	PYCNANTHEMUM TENUIFOLIUM	NARROWLEAF MOUNTAINMINT
%	SOLIDAGO PATULA	ROUGHLEAF GOLDENROD
%	EUPATORIUM FISTULOSUM	JOE PYE WEED
%	LOBELIA SIPHILITICA	GREAT BLUE LOBELIA
%	ASTER PUNICEUS	PURPLESTEM ASTER

ING RATE: 20 LBS/ACRE WITH THE FOLLOWING NURSE CROPS: DRY SITES -DATS, JAN 1 - AUG 1; OR; GRAIN RYE, AUG 1 - JAN 1; MOIST SITES - GRAIN RYE OUND.

SEED MIX IS TO BE USED TO REVEGETATE WORKSPACE WITHIN THE ATED RIPARIAN BUFFER AREA WHERE SLOPES ARE LESS THAN 10%. IF THE SLOPE EXCEEDS 10%, A STANDARD UPLAND ROW MIX SHOULD BE USED.

	TABLE 11.4							
Recommended Seed Mixtures								
Mixture		Seeding Rate	Pure Live Seed ¹					
Number	Species	Most Sites	Adverse Sites					
1 ²	Spring oats (spring), or	64	96					
	Annual ryegrass (spring or fall), or	10	15					
	Winter Wheat (fall), or	90	120					
	Winter rye (fall)	56	112					
2 ³	Fine fescue, or	35	40					
	Kentucky bluegrass, plus	25	30					
	Redtop ⁴ , or	3	3					
	Perennial ryegrass	15	20					
3	Birdsfoot trefoil, plus	6	10					
	Tall fescue	30	35					
11	Deertongue, plus	15	20					
	Birdsfoot trefoil	6	10					
12 ⁵	Switchgrass, or	15	20					
	big Bluestem, plus	15	20					
	Birdsfoot trefoil	6	10					
13	Orchardgrass, plus	20	30					
	Smooth bromegrass, plus	25	35					
	Birdsfoot trefoil	6	10					

PENN STATE, "EROSION CONTROL AND CONSERVATION PLANTINGS ON NONCROPLAND" 1. PLS IS THE PRODUCT OF THE PERCENTAGE OF PURE SEED TIMES PERCENTAGE GERMINATION DIVIDED BY 100. FOR EXAMPLE. TO SECURE THE ACTUAL PLANTING RATE FOR SWITCHGRASS. DIVIDE 12 POUNDS PLS SHOWN ON THE SEED TAG. THUS, IF THE PLS CONTENT OF A GIVEN SEED LOT IS 35%, DIVIDE 12 PLS BY 0.35 TO OBTAIN 34.3 POUNDS OF SEED REQUIRED TO PLANT ONE ACRE. ALL MIXTURES IN THIS TABLE ARE SHOWN IN TERMS

2. IF HIGH-QUALITY SEED IS USED, FOR MOST SITES SEED SPRING OATS AT A RATE OF 2 BUSHELS PER ACRE, WINTER WHEAT AT 11.5 BUSHELS PER ACRE, AND WINTER RYE AT 1 BUSHEL PER ACRE. IF GERMINATION IS BELOW 90%, INCREASE THESE SUGGESTED SEEDING RATES BY 0.5 BUSHEL PER ACRE.

3. THIS MIXTURE IS SUITABLE FOR FREQUENT MOWING. DO NOT CUT SHORTER THAN 4 INCHES. 4. KEEP SEEDING RATE TO THAT RECOMMENDED IN TABLE. THESE SPECIES HAVE MANY SEEDS PER POUND AND ARE VERY COMPETITIVE. TO SEED SMALL QUANTITIES OF SMALL SEEDS SUCH AS WEEPING LOVEGRASS AND REDTOP, DILUTE WITH DRY SAWDUST, SAND, RICE HULLS, BUCKWHEAT HULLS, ETC. 5. DO NOT MOW SHORTER THAN 9 TO 10 INCHES.

TABLE 11.5 Recommended Seed Mixtures for Stabilizing Disturbed Areas

	Nurse	Seed Mixture
Site Condition	Crop	(Select one mixture)
Slopes and Banks (not mowed)	•	=======================================
Well-drained	1 plus	12 ¹
Slopes and Banks (mowed)		
Well-drained	1 plus	2
Slopes and Banks (grazed/hay)		
Well-drained	1 plus	2, 13
Gullies and Eroded Areas	1 plus	12 ¹
Erosion Control Facilities (BMPs)		
Sod waterways, spillways, frequent water flow areas	1 plus	2,
Drainage ditches		
Shallow, less than 3 feet deep	1 plus	2,
Deep, not mowed	1 plus	
Pond banks, dikes, levees, dams, diversion channels,		
And occasional water flow areas		
Mowed areas	1 plus	2
Non-mowed areas	1 plus	
For hay or silage on diversion channels and		
occasional water flow areas	1 plus	13
Highways ^z		
Non-mowed areas		
Areas mowed several times per year	1 plus	2,
Utility Right-of-way		101
Well-drained	1 plus	12 ¹
Mall drained prope for graning they	1	0 12
Well-drained areas for grazing/hay	1 plus	2, 13
Sanitary Landfills	1 plus	11 ¹ , or 12 ¹
Surface mines		
Spoils, mine wastes, fly ash, slag, settling basin		
Residues and other severely disturbed areas	1 plus	11 ¹ , or 12 ¹
(lime to soil test)		
Severely disturbed areas for grazing/hay	1 plus	13
Penn State, "Erosion Control and Conservation Plantings of		

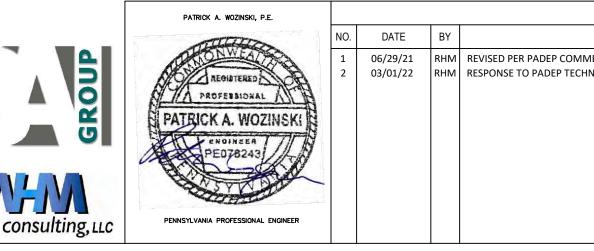
For seed mixtures 11 and 12, only use spring oats or weeping lovegrass (included in mix) as nurse crop. Contact the Pennsylvania Department of Transportation district roadside specialist for specific suggestions on treatment techniques and management practices.

	STEEP SLOPE MIX OPTION								
APPLICATION	RATE – 60LBS/ACRE OR 1.5LBS/100	0sqft OF ERNMX-181							
NATIVE ST	NATIVE STEEP SLOPE MIX WITH ANNUAL RYEGRASS (ERNMX-181)								
PERCENT	SCIENTIFIC NAME	COMMON NAME							
31.10	SORGHASTRUM NUTANS	indiangrass							
20.00	LOLIUM MULTIFLORUM	ANNUAL RYEGRASS							
14.00	ANDROPOGON GERADII	BIG BLUESTEM							
10.00	ELYMUS VIRGINICUS	VIRGINIA WILDRYE							
7.00	ELYMUS CANADENSIS	CANADA WILDRYE							
4.00	AGROSTIS PERENNANS	AUTUMN BENTGRASS							
3.00	PANICUM CLANDESTINUM	DEERTONGUE							
1.50	ECHINACEA PURPUREA	PURPLE CONEFLOWER							
1.30	CHAMAECRISTA FASCICULATA	PARTRIDGE PEA							
1.20	HELIOPSIS HELIANTHOIDES	OXEYE SUNFLOWER							
1.00	COREOPSIS LANCEOLATA	LANCELEAF COREOPSIS							
1.00	RUDBECKIA HIRTA	BLACKEYED SUSAN							
0.30	MONARDA FISTULOSA	WILD BERGAMONT							
0.20	ASCLEPIAS SYRIACA	COMMON MILKWEED							
0.20	SOLIDAGO RUGOSA	WRINKLELEAF GOLDENROD							
0.10	ASTER LATERIFLORUS	CALICO ASTER							
0.10	ASTER PILOSUS	HEATH ASTER							
* OR EQUIVALENT	MIXTURE								

** SIMILAR MIXES WITH COVER CROP OF OATS (ERNST 181-1) OR GRAIN RYE (ERNST 181-2) OR EQUIVALENT COULD BE SUBSTITUTED.

LAWN AND TURFGRASS MIX OPTION								
APPLICATION RATE - 75-150LBS/ACRE OR 3-5LBS/1000SQFT OF ERNMX-113								
COMMERCIAL CONSERVATION MIX (ERNMX-181)								
PERCENT	SCIENTIFIC NAME	COMMON NAME						
25.00	FESTUCA RUBRA	CREEPING RED FESCUE						
25.00	LOLIUM MULTIFLORUM	ANNUAL RYEGRASS						
25.00	LOLIUM PERENNE	'BLACKSTONE' PERENNIAL RYEGRASS						
25.00	LOLIUM PERENNE	CONFETTI III' PERENNIAL RYEGRASS						

* OR EQUIVALENT MIXTURE. FOR USE IN HIGH-TRAFFIC AREAS IN LAWN/TURFGRASS SETTINGS



LONG TERM OPERATION AND MAINTENANCE SCHEDULE

ALL BMPS SHOULD BE PROPERLY MAINTAINED TO ENSURE THEIR EFFECTIVENESS. SHEET FLOW CONDITIONS AND INFILTRATION MUST BE SUSTAINED THROUGHOUT THE LIFE OF THE BMP. BMPS SHOULD BE INSPECTED FOR CLOGGING FROM SEDIMENT OF DEBRIS, DAMAGE BY FOOT OR VEHICULAR TRAFFIC, AND FLOW CHANNELIZATION. INSPECTIONS SHOULD BE MADE ON A QUARTERLY BASIS FOR THE FIRST TWO YEARS FOLLOWING INSTALLATION, AND THEN TWICE PER YEAR THEREAFTER. INSPECTIONS SHOULD ALSO BE MADE AFTER EVERY STORM EVENT GREATER THAN 1 INCH DURING THE ESTABLISHMENT PERIOD.

CHANNEL LININGS SHOULD BE INSPECTED FOR SIGNS OF EROSION OR DISLODGING, AS APPLICABLE. CHANNELS SHOULD BE INSPECTED FOR DEBRIS, OVERGEDWIN VEGETATION, AND OTHER BLOCKAGES. CHANNELS SHOULD BE CLEANED WHENEVER TOTAL DEPTH IS REDUCED BY 25% AT LOCATION. VEGETATED AREAS WILL BE INSPECTED WEEKLY AND AFTER RUNOFF EVENTS UNTIL PERMANENT VEGETATION IS ACHIEVED. ONCE THE VEGETATION IS ESTABLISHED, INSPECTIONS OF HEALTH, DIVERSITY, AND DENSITY SHOULD BE PERFORMED AT LEAST TWICE PER YEAR, DURING BOTH THE GROWING AND NON-GROWING SEASON. VEGETATIVE COVER SHOULD BE SUSTAINED AT 85% AND REESTABLISHED IF DAMAGE GREATER THAN 50% IS OBSERVED. DAMAGED BMPS WILL BE REPAIRED AS SOON AS POSSIBLE UPON DISCOVERY. REPAIRS WILL BE MADE TO RESTORE TO BMPS TO THE ORIGINAL DESIGN CONDITION.

OPERATION AND MAINTENANCE GUIDELINES SHOULD BE PROVIDED TO ALL FACILITY OWNERS AND TENANTS. SEDIMENT AND DEBRIS SHOULD BE ROUTINELY REMOVED UPON OBSERVATION. IF EROSION IS OBSERVED, MEASURES SHOULD BE TAKEN TO IMPROVE THE DISPERSION METHOD TO ADDRESS THE SOURCE OF EROSION. SEDIMENT SHOULD BE REMOVED WHEN THE BMP IS THOROUGHLY DRY. TRASH AND DEBRIS REMOVED FROM THE SITE SHOULD BE DEPOSITED ONLY AT SUITABLE DISPOSAL/RECYCLING SITES AND MUST COMPLY WITH APPLICABLE LOCAL, STATE, AND FEDERAL WASTE REGULATIONS. GRASS COVER SHOULD BE MOWED WITH LOW GROUND PRESSURE EQUIPMENT AS NEEDED TO CONTROL NOXIOUS WEEDS. MOWING SHOULD BE DONE ONLY WHEN THE SOIL IS DRY IN ORDER TO PREVENT TRACKING DAMAGE TO VEGETATION, SOIL COMPACTION, AND FLOW CONCENTRATIONS. IF VEGETATIVE COVER IS NOT FULLY ESTABLISHED WITHIN THE DESIGNATED TIME, IT SHOULD BE REPLACED WITH AN ALTERNATIVE SPECIES. UNWANTED OR INVASIVE GROWTH SHOULD BE REMOVED ON AN ANNUAL BASIS.

VEGETATED AREAS WILL BE INSPECTED WEEKLY AND AFTER RUNOFF EVENTS UNTIL PERMANENT VEGETATION IS ACHIEVED. ONCE THE VEGETATION IS ESTABLISHED, INSPECTIONS OF HEALTH, DIVERSITY, AND DENSITY SHOULD BE PERFORMED AT LEAST TWICE PER YEAR, DURING BOTH THE GROWING AND NON-GROWING SEASON. VEGETATIVE COVER SHOULD BE SUSTAINED AT 85% AND REESTABLISHED IF DAMAGE GREATER THAN 50% IS OBSERVED. DAMAGED BMPS WILL BE REPAIRED AS SOON AS POSSIBLE UPON DISCOVERY. REPAIRS WILL BE MADE TO RESTORE DAMAGED BMPS TO THE ORIGINAL DESIGN CONDITION.

INFILTRATION BMP'S WILL BE INSPECTED ON A QUARTERLY BASIS FOR THE FIRST TWO YEARS FOLLOWING INSTALLATION. AND THEN TWICE PER YEAR THEREAFTER. INSPECTIONS SHOULD ALSO BE MADE AFTER EVERY STORM EVENT GREATER THAN 1 INCH DURING THE FIRST YEAR. IF STANDING WATER OR PONDING IS OBSERVED THE ROOT CAUSE WILL BE INVESTIGATED AND REMEDIAL REPAIRS UNDERTAKEN.

MAINTENANCE ACTIVITIES ON THE INFILTRATION BERMS SHOULD BE DONE ANNUALLY AND WITHIN 48 HOURS AFTER EVERY MAJOR STORM EVENT (> 1-INCH RAINFALL DEPTH). EROSION PROBLEMS, DAMAGE TO VEGETATION, SEDIMENT AND DEBRIS ACCUMULATION, UNIFORMITY OF IN CROSS-SECTION AND POOLS OF STANDING WATER SHOULD BE INSPECTED. BMP OUTLET STRUCTURES AND PROTECTION FEATURES SHOULD ALSO BE MAINTAINED IN ORDER TO ENSURE OPTIMUM PERFORMANCE. ALL RIPRAP APRONS WILL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. ANY DISPLACED RIPRAP WITHIN THE APRON MUST BE REPLACED IMMEDIATELY. OUTLET PIPES SHOULD ALSO BE INSPECTED FOLLOWING EACH RUNOFF EVENT. SEDIMENT AND DEBRIS SHOULD BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO PIPE WITHOUT FURTHER DAMAGE.

PIPELINE/VALVE YARD MAINTENANCE ACTIVITIES WHICH RESULT IN DISTURBANCE OF THE GRAVEL PAD AREAS SHALL FOLLOW THE FOLLOWING GENERAL RESTORATION ACTIVITIES:

- A. THE DISTURBED AREA SHALL BE KEPT TO THE MINIMUM NECESSARY TO ACCOMPLISH THE MAINTENANCE ACTIVITY AND COMPLY WITH SAFETY REQUIREMENTS. B. UPON COMPLETION OF THE MAINTENANCE ACTIVITY EXCAVATED AREAS SHALL BE BACKFILLED WITH THE SOIL REMOVED FROM THE WORK AREA. STONE AGGREGATE, OR OTHER BACKFILL APPROVED BY WILLIAMS. COMPACTION SHALL BE AS PERMITTED BY APPLICABLE WILLIAMS CONSTRUCTION
- AND SAFETY REQUIREMENTS WHILE MEETING INFILTRATION REQUIREMENTS NOTED BELOW. C. INFILTRATION TESTING SHALL BE PERFORMED BY OWNER'S REPRESENTATIVE ON THE BACKFILLED AREAS IN ACCORDANCE WITH PADEP'S STORMWATER BMP REQUIREMENTS. THE BACKFILLED AREA SHALL PROVIDE AN EQUIVALENT OR BETTER INFILTRATION RATE TO THAT OF THE ORIGINAL PCSM BMP DESIGN. SHOULD THE BACKFILLED AREA NOT ACHIEVE THE REQUIRED INFILTRATION RATE, REMEDIAL ACTIVITIES SUCH AS SOIL DECOMPACTION OR AMENDMENT SHALL BE PERFORMED. THE BACKFILLED AREA SHALL THEN HAVE ADDITIONAL INFILTRATION TESTING PERFORMED TO DEMONSTRATE THE REQUIRED INFILTRATION RATE IS PROVIDED.
- D. UPON BACKFILL OF ANY EXCAVATED AREA, THE GRAVEL PAD AREA SHALL BE RESTORED BY THE PLACEMENT OF EQUIVALENT STONE AGGREGATE TO THE REQUIRED THICKNESS. E. SHOULD SETTLEMENT WITHIN THE GRAVEL PAD AREA OCCUR, EQUIVALENT STONE AGGREGATE SHALL BE PLACED TO MAINTAIN THE GRADE OF THE F. SHOULD STANDING WATER BE OBSERVED ON THE GRAVEL PAD, THE CAUSE SHALL BE DETERMINED AND REPAIRS UNDERTAKEN.

TRANSCONTINENTAL GAS PIPELINE COMPANY, LLC. WILL BE RESPONSIBLE FOR THE LONG TERM OPERATION AND MAINTENANCE OF THE POST-CONSTRUCTION STORMWATER MANAGEMENT FACILITIES PROPOSED AT THE SITE.

MATERIAL RECYCLING AND DISPOSAL

IF THE SITE WILL NEED TO HAVE FILL IMPORTED FROM AN OFF-SITE LOCATION, THE RESPONSIBILITY FOR PERFORMING ENVIRONMENTAL DUE DILIGENCE AND THE DETERMINATION OF CLEAN FILL WILL IN MOST CASES RESIDE WITH THE OPERATOR.

IF THE SITE WILL HAVE EXCESS FILL THAT WILL NEED TO BE EXPORTED TO AN OFF-SITE LOCATION, THE RESPONSIBILITY OF CLEAN FILL DETERMINATION AND ENVIRONMENTAL DUE DILIGENCE RESTS ON THE APPLICANT

IF ALL CUT AND FILL MATERIALS WILL BE USED ON THE SITE, A CLEAN FILL DETERMINATION IS NOT REQUIRED BY THE OPERATOR UNLESS THERE IS A BELIEF THAT A SPILL OR RELEASE OF A REGULATED SUBSTANCE OCCURRED ON SITE.

APPLICANTS AND/OR OPERATORS MUST USE ENVIRONMENTAL DUE DILIGENCE TO ENSURE THAT THE FILL MATERIAL ASSOCIATED WITH THIS PROJECT QUALIFIES AS CLEAN FILL. DEFINITIONS OF CLEAN FILL AND ENVIRONMENTAL DUE DILIGENCE ARE PROVIDED BELOW. ALL FILL MATERIAL MUST BE USED IN ACCORDANCE WITH THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL", DOCUMENT NUMBER 258 2182 773. A COPY OF THIS POLICY IS AVAILABLE ONLINE AT WWW.DEPWEB.STATE.PA.US.

CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE TERM "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE.).

ENVIRONMENTAL DUE DILIGENCE: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL".

FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE DEPARTMENT'S MUNICIPAL OR RESIDUAL WASTE REGULATIONS BASED ON 25 PA. CODE CHAPTERS 287 RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE

DUE TO THE OVERALL NATURE OF THE PROJECT. THERMAL IMPACTS TO SURFACE WATERS ARE NOT ANTICIPATED. THE PRIMARY MEANS TO ADDRESS THERMAL IMPACTS ON THIS PROJECT IS TO LIMIT THE SIZE AND DURATION OF EXPOSED EARTH.

STORMWATER RUNOFF ASSOCIATED WITH THE INSTALLATION OF THE VALVE YARDS AND TIE-IN LOCATIONS WILL BE ROUTED THROUGH THE STORMWATER BMP'S DESIGNED TO RETAIN AND INFILTRATE THE FIRST SURGE OF WATER FROM THE SITE. THE FIRST SURGE OF WATER WILL BE THE WARMEST WATER FOR THE DURATION OF THE STORM EVENT AND WILL QUICKLY COOL AS THE STORM EVENT PROGRESSES. THE BMPS ARE DESIGNED TO CAPTURE AND INFILTRATE THIS WARMEST SURGE OF STORMWATER. BASED ON ROUTING CALCULATIONS, STORMWATER IS NOT DISCHARGED FROM THE BMPS FOR THE FIRST 12 HOURS DURING A 100-YEAR/24-HOUR STORM EVENT. THE RETENTION PERIOD IS LONGER FOR LESS INTENSE STORMS. THEREFORE, AS A RESULT OF THESE MEASURES, NO SIGNIFICANT THERMAL IMPACT TO THE RECEIVING WATERS IS ANTICIPATED.

ANTIDEGRADATION REQUIREMENTS

WATERSHED IS NOT SPECIAL PROTECTION. ANTIDEGRADATION REQUIREMENTS ARE NOT REQUIRED.

RIPARIAN BUFFERS

THERMAL IMPACTS

NO EXISTING RIPARIAN BUFFERS HAVE BEEN IDENTIFIED WITHIN OR NEAR THE HILDEBRANDT TIE-IN/MLV-515RA40 AND LOWER DEMUNDS REL TIE-IN

NON-STRUCTURAL AND STRUCTURAL WATER QUALITY BMP DESCRIPTION

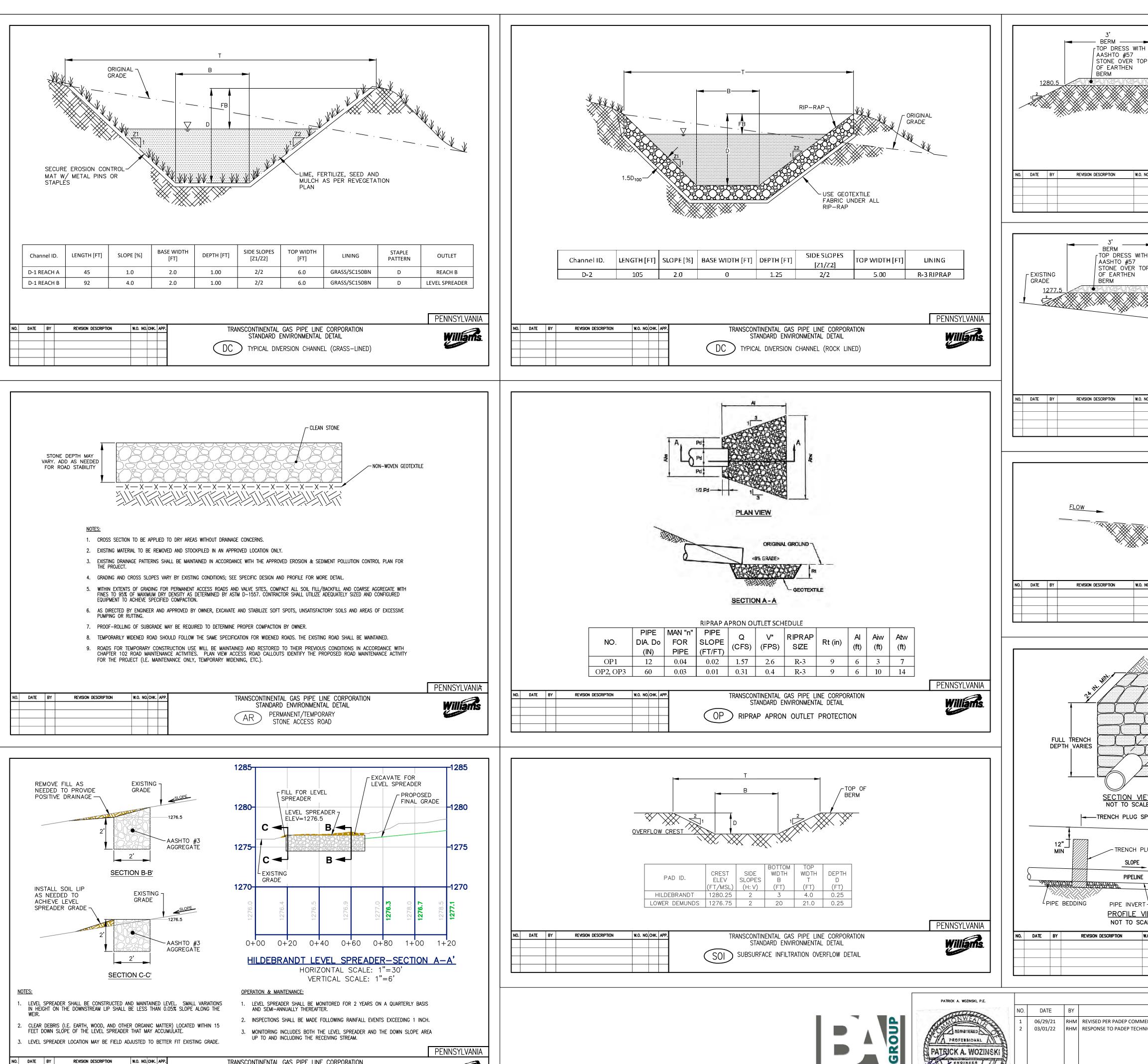
LIMIT OF DISTURBANCE WILL BE MINIMIZED TO THE MAXIMUM EXTENT POSSIBLE BY DISTURBING ONLY THOSE AREAS NECESSARY TO COMPLETE THE PROPOSED EARTHWORK AND BMP INSTALLATIONS.

SENSITIVE FEATURES SUCH AS WETLANDS WILL BE PROTECTED TO THE MAXIMUM EXTENT POSSIBLE. THESE AREAS WILL BE CLEARLY DELINEATED IN THE FIELD AND PROTECTED PRIOR TO ANY CONSTRUCTION ACTIVITIES TAKING PLACE. EXISTING VEGETATION IS NOT TO BE REMOVED FROM THE PROTECTED AREA AND THE AREAS SHALL NOT BE SUBJECT TO GRADING OR MOVEMENT OF EXISTING SOILS. ANY PROTECTED AREAS THAT HAVE BEEN DISTURBED/COMPACTED DURING CONSTRUCTION WILL BE RESTORED USING SOIL AMENDMENT AND RESTORATION.

DISTURBED AREAS THAT ARE NOT PROPOSED TO BE IMPERVIOUS WILL BE REVEGETATED AS PER THE SEEDING AND MULCHING NOTES PROVIDED IN PCSM PLAN NOTES. WHEREVER POSSIBLE, EXISTING NATURAL DRAINAGE PATTERNS WILL BE UTILIZED TO DIVERT FLOW TO THE PROPOSED BMPS. THE PCSM PLAN SHALL BE PREPARED BY A PERSON TRAINED AND EXPERIENCED IN PCSM METHODS AND TECHNIQUES

THESE PLANS AND NARRATIVE WERE PREPARED BY PATRICK A. WOZINSKI, PE (BAI GROUP, LLC) OF STATE COLLEGE, PA IN ACCORDANCE WITH THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION STORMWATER BMP MANUAL, DECEMBER 2006. PLAN PREPARER'S RESUME IS PROVIDED IN ATTACHMENT C OF THE ESCP PERMIT PACKAGE.

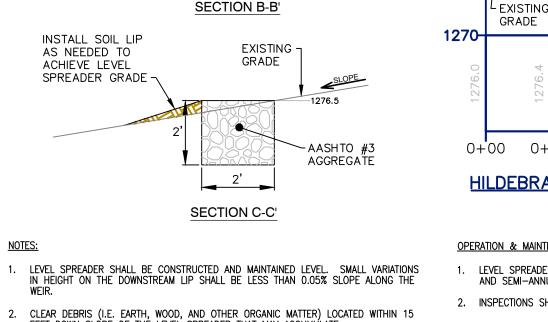
REVISIONS				TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC						
DESCRIPTION W.O. NO.					REGIONAL ENERGY ACCESS EXPANSION PROJECT					
							E-IN/MLV-515RA40 AND LOWER DEMUNDS REL TIE-IN SITE PLAN CONSTRUCTION STORMWATER MANAGEMENT PLAN			
					NOTES DALLAS TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA					
				DRAWN BY: RHM	DATE:	03/31/21	ISSUED FOR BID:	SCALE: AS NOTED		
				CHECKED BY: RJN	DATE:	03/31/21	ISSUED FOR CONSTRUCTION:	REVISION:		
				APPROVED BY: PW	DATE:	03/31/21	25.11/10/2	SHEET 4		
				WO: 1232585/1232586	RID:	305	DRAWING NUMBER: 26-1000-70-28-D	of 5		



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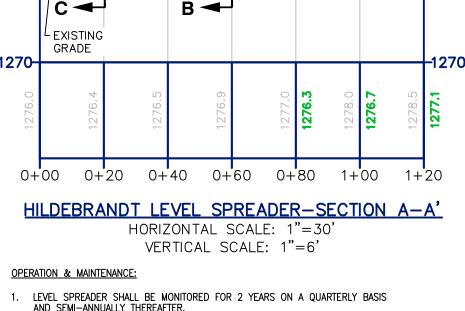
consulting, LLC



W.O. NO CHK. APP.

REVISION DESCRIPTION

NO. DATE BY



PENNSYLVANIA TRANSCONTINENTAL GAS PIPE LINE CORPORATION Williams. STANDARD ENVIRONMENTAL DETAIL (LS) LEVEL SPREADER

					3'	
	(SEE NOTE 1)		┌ OVERFLOW		TOP DRESS WITH AASHTO #57 STONE OVER TOP OF EARTHEN	
			5			J1
	1279.5					
		ITH AASHTO #57 AGGREGATE TO F	PROVIDE A DRIVING SURFAC	F.		
		TRANSCONTINENTAL	_ GAS PIPE LINE CORPO			PENNSYLVANIA
				. (HILDEBRAN	IDT)	Williams.
				-	BERM	
	AASHTO (SEE N	OTE 1)			AASHTO #57 STONE OVER TOP OF EARTHEN	
					1277.0	
						2
	NOTE:	1275	5.0		***	
						PENNSYLVANIA
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AXIMUM SPACING AND MATERIALS FOR TRENCH PLUGS MAXIMUM SPACING AND MATERIALS FOR TRENCH PLUGS SEE TABLE 13.1 FOR MATERIAL SEE TABLE 13.1 SEE TABLE 14.1	COMPACTED)				
AXIMUM SPACING AND MATERIALS FOR TRENCH PLUGS MAXIMUM SPACING AND MATERIALS FOR TRENCH PLUGS SEE TABLE 13.1 FOR MATERIAL SEE TABLE 13.1 SEE TABLE 14.1						
45 1,000 • GAY, BENTONE, CONCRETE FULD SACKS, OF SIMILETO FOM 15 - 25 50 • GAY, BENTONE, CONCRETE FULD SACKS, OF SIMILETO FOM 15 - 25 00 • GAY, BENTONE, CONCRETE FULD SACKS, OF SIMILETO FOM 125 - 35 AG (L) 15 - 25 300 • GAY, BENTONE, CONCRETE FULD SACKS, OF SIMILETO FOM 35 - 100 • GAY, BENTONE, CONCRETE FULD SACKS, OF SIMILETO FOM 35 - 100 AG (L) 50 • CAY, BENTONE, CONCRETE FULD SACKS, OF SIMILETO FOM 35 - 100 • CAY, BENTONE, CONCRETE FULD SACKS, OF SIMILETO FOM 35 - 100 **TOPSOL 50 • CAY, BENTONE, CONCRETE FULD SACKS, OF SIMILETO FOM 35 - 100 • CAY, BENTONE, CONCRETE FULD SACKS, OF SIMILETO FOM 35 - 100 **TOPSOL • TERNCH PLUGS SHALL BE PLACED AT EACH OF THE FOLLOWING LOCATIONS: A AT TEN (10) FEET FROM THE EOP OF EACH BANK OF A STREAM. C. AT TEPTY (10) FEET FROM THE EOP OF CACH BANK OF A STREAM. C. AT TEPTY (10) FEET FROM THE EOP OF WEITION. .0 .1 FEPTY COST FEET FROM THE EOP OF CACH BANK OF A STREAM. C. AT TEPTY (10) FEET FROM THE EOP OF CACH BANK OF A STREAM. C. AT TEPTY (10) FEET FROM THE EOP OF WEITION. .0 .1 FEPTY COST FEET FROM THE EOP OF CACH BANK OF A STREAM. C. AT TEPTY (10) FEET FROM THE EOP OF CACH BANK OF A STREAM. C. AT TEPTY (10) FEET FROM THE EOP OF WEITION. .0 .1 FEENCH PLUG. .1 FEENCH PLUG. .0 .1 FEENCH PLUG. .1 FEENCH PLUG. .0 .1 FEENCH PLUG. .1 FEENCH PLUG. <td></td> <td></td> <td>) MATERIALS FOR TRE</td> <td>NCH PLUGS</td> <td></td> <td></td>) MATERIALS FOR TRE	NCH PLUGS		
SEE TABLE 13.1 POR MATERIAL 15 - 25 200 • CLAY, BINTONITE, CONCRETE FILLD SACKS, OR SINIFETIC FOM 325 - 35 AG (U) 35 - 100 100 • CLAY, BINTONITE, CONCRETE FILLD SACKS, OR SINIFETIC FOM 300 30 *100 EUSED TO FILL SACKS. 50 • CELENT FILLD BACK, OR SINIFETIC FOM 300 • CELENT FILLD BACK, OR SINIFETIC FOM 300 *100 EUSED TO FILL SACKS. 1. TRENCH PLUGS SHALL BE PLACED AT EACH OF THE FOLLOWING LOCATIONS: A. AT TEN (10) FEET FROM THE TOP OF EACH BANK OF A STREAM. C. AT TEN (10) FEET FROM THE EDEC OF A WETLAND. 0. AT TEN (10) FEET FROM THE EDEC OF A WETLAND. .0 AT TEN (10) FEET FROM THE EDEC OF A WETLAND. 0. AT TEN (10) FEET FROM THE EDEC OF A WETLAND. 0. AT TEN (10) FEET FROM THE EDEC OF A WETLAND. .0 AT TEN (10) FEET FROM THE EDEC OF A WETLAND. 0. AT TEN (10) FEET FROM THE EDEC OF A WETLAND. 0. AT TEN (10) FEET FROM THE EDEC OF A WETLAND. .0 AT TEN (10) FEET FROM THE EDEC OF A WETLAND. 0. AT TEN (10) FEET FROM THE EDEC OF A WETLAND. 0. AT TEN (10) FEET FROM THE EDEC OF A WETLAND. .0 AT TEN (10) FEET FROM THE EDEC OF A WETLAND. 0. AT TENNED FULCE. 0. AT TENNED FULCE. .0 AT TENNED FULCE TRANSCONTINENTAL CAS PIPE LINE COMPANY, LIC 0. AT TENNED FULCE ENCOUNTER A A REAL PLUCE. .0 AT TENNED FULCE FROM THE EDECOUNTY FORMATER SEEP DURING EXCAVATION, THE PERMITTE SHALL PENNESYLVANIA .0 EEVISIONS TRANSCONTINENTAL CAS PIPE LINE COMPANY, LLC TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC .0 EEVISI				* CLA		
35 - 100 100 • CAX, BEDMORE, CONCRETE FILED SACKS, OR SYNTHETIC FOAL 106 100 50 • CEMENT FILED BASS (NETTED) OR MORTARD STONE, OR SYNTHETIC FOAL **TOPSOLL MAY NOT BE USED TO FILL SACKS. • TEN (10) FEET FOOM THE TOP OF EACH OF THE FOLLOWING LOCATIONS: • A. T TEN (10) FEET FOOM THE TOP OF EACH BANK OF A STREAM. 0. • AT TEN (10) FEET FOOM THE TOP OF EACH BANK OF A STREAM. • AT TEN (10) FEET FOOM THE EDGE OF A WETLAND. 0. • AT TEN (10) FEET FOOM THE EDGE OF A WETLAND. • AT TEN (10) FEET FOOM THE EDGE OF A WETLAND. 0. • AT TEN (10) FEET FOOM THE EDGE OF A WETLAND. • A TENNIM OF ONE (11) TENCH PLUE AT A MAXINUM SPACING OF 100 FEET BETWEEN THENCH PLUCS WITHIN A WETLAND. WETLAND. COSSINGS LESS THAN FIFTY (50) FEET TO NOT REQUIRE AN INITIENTAL TENCH PLUCS. 1. IT TENCH PLUCS. • TENCH PLUCS. 3. IF THE PERMITTEE ENCOUNTERS A GROUNDWATER SEEP DURING EXCAVATION, THE PERMITTEE SHALL PLACE A TRENCH PLUG. 1. TRENCH PLUG INSTALL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL IF THE PERMITTEE ENCOUNTERS A GROUNDWATER SEEP DURING EXCAVATION, THE PERMITTEE SHALL PLACE A TRENCH PLUG. IF THE PERMITTEE ENCOUNTERS A GROUNDWATER SEEP DURING RECOMPANY, LLC TENNICATION IF THE PERMITTEE ENCOUNTERS A GROUNDWENTAL DETAIL IF THE PERMITTEE ENCOUNTERS A GROUNDWENT FUNCTION TREAM AND LOWER PERMITTEE SHALL PLACE A TRENCH PLUG NOT TRENCONTINENTAL GAS PIPE L		15 - 25	300	* CLA	, BENTONITE, CONCRETE FILLED SACKS	, OR SYNTHETIC FOAM
		>100	50	* CLA *CEMENT FIL	, BENTONITE, CONCRETE FILLED SACKS	, OR SYNTHETIC FOAM
C. AT TEN (10) FEET FROM THE EDGE OF A WETLAND. D. AT FIFTY (50) FEET FROM THE EDGE OF A WETLAND. C. PLACE A MINIMUM OF ONE (1) TRENCH PLUG AT A MAXIMUM SPACING OF 100 FEET BETWEEN TRENCH PLUGS WITHIN A WETLAND. WETLAND CROSSINGS LESS THAN FIFTY (50) FEET TO NOT REQUIRE AN INTERNAL TRENCH PLUG. 3. IF THE PERMITTEE ENCOUNTERS A GROUNDWATER SEEP DURING EXCAVATION, THE PERMITTEE SHALL PLACE A TRENCH PLUG TEN (10) FEET FROM EACH SIDE OF THE SEEP. PENNSYLVANIA TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL WO NO. CHK APP REVISIONS DESCRIPTION WO NO. CHK APP REFICIENCY LETTER C. AT TEN (10) FEET FROM THE EDGE OWNERS A GROUNDWATER SEEP FORM EACH SIDE OF THE SEEP. C. AT TEN (10) FEET FROM THE EDGE OF A WETLAND. PENNSYLVANIA C. AT TEN (10) FEET FROM THE EDGE OF A WETLAND. PENNSYLVANIA C. AT TEN (10) FEET FROM THE EDGE OF A WETLAND. PENNSYLVANIA PROVED BY: RJN DATE: 033121 I SSUED FOR CONSTRUCTION: REVISION: APPROVED BY: RJN DATE: 033121 DRAWING C. AT TEN (10) FEET FROM THE EDGE OF A WETLAND. C. AT TEN (10) FEET FROM THE EDGE OF A WETLAND. C. AT TEN (10) FEET FROM THE EDGE OF A WETLAND. C. AT TEN (10) FEET FROM THE EDGE OF A WETLAND. C. AT TEN (10) FEET FROM THE EDGE OF A WETLAND. C. AT TENCH PLUG INSTALLATION PENNSYLVANIA DESCRIPTION C. AT TENCH PLUG INSTALLATION C. AT TENCH PLUG INSTALLATION C. AT TENCH PLUG INSTALLATION C. AT THE (10) FEET FROM THE EDGE OF A WETLAND. C. AT THE TENCH PLUG INSTALLATION C. AT THE T	NG (L)——	1. TRENCH PLUGS S A. AT TEN (10) F	HALL BE PLACED AT EET FROM THE TOP C	EACH OF THE F EACH BANK	OF A STREAM.	
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