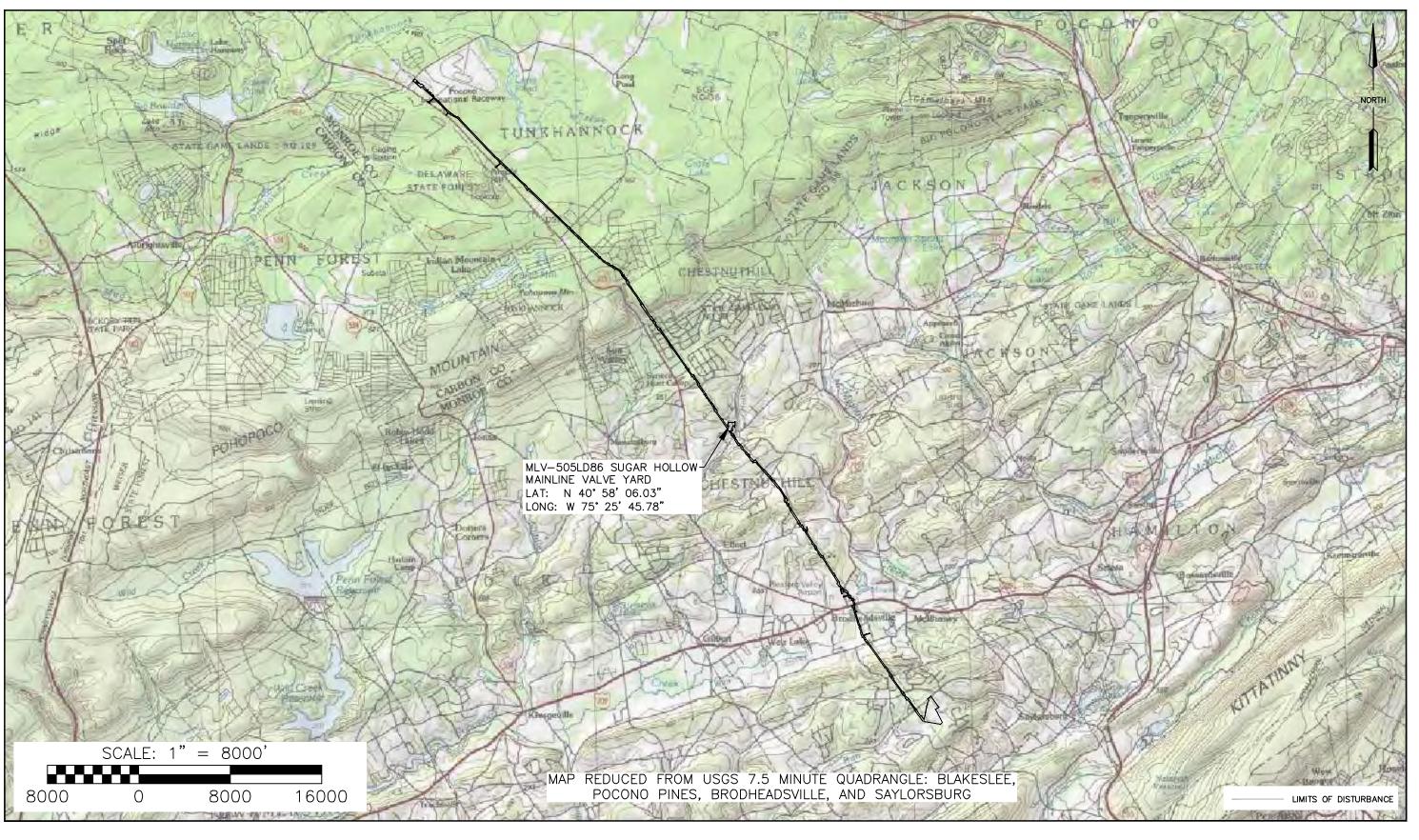
MLV-505LD86 SUGAR HOLLOW MAINLINE VALVE YARD CHESTNUTHILL TOWNSHIP, MONROE COUNTY, PENNSYLVANIA



PROJECT OWNER/APPLICANT

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC 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

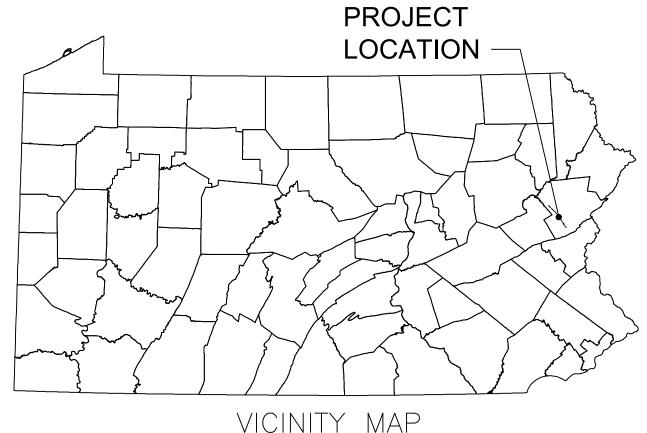


PENNSYLVANIA ACT 287 (1974) AS AMENDED BY PENNSYLVANIA LESS THAN THREE (3) WORKING DAYS AND NO MORE THAN (10) WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL, BLAST OR DEMOLISH.





NO.	DATE	BY	
1 2	06/29/21 03/01/22	RHM	REVISED PER PADEP CO RESPONSE TO PADEP TE



/	l	IN	I		I	IV
		Ν	٠	Τ	.S	•

SHEET INDEX					
SHEET NUMBER	DRAWING TITLE				
1 OF 8	COVER SHEET				
2 OF 8	EXISTING CONDITIONS PLAN SHEET 1				
3 OF 8	EXISTING CONDITIONS PLAN SHEET 2				
4 OF 8	PROPOSED CONDITIONS PLAN SHEET 1				
5 OF 8	PROPOSED CONDITIONS PLAN SHEET 2				
6 OF 8	NOTES				
7 OF 8	DETAILS SHEET 1				
8 OF 8	DETAILS SHEET 2				

NAME	DESIGNATED USE EXISTING USE		PFBC CLASSIFICATION	
SUGAR HOLLOW CREEK	CWF	HQ-CWF, MF	CLASS A TROUT STREAM	

W	illa	ms

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC REGIONAL ENERGY ACCESS EXPANSION PROJECT

MMENTS.	
ECHNICAL DEFICIENCY LETTER	

DESCRIPTION

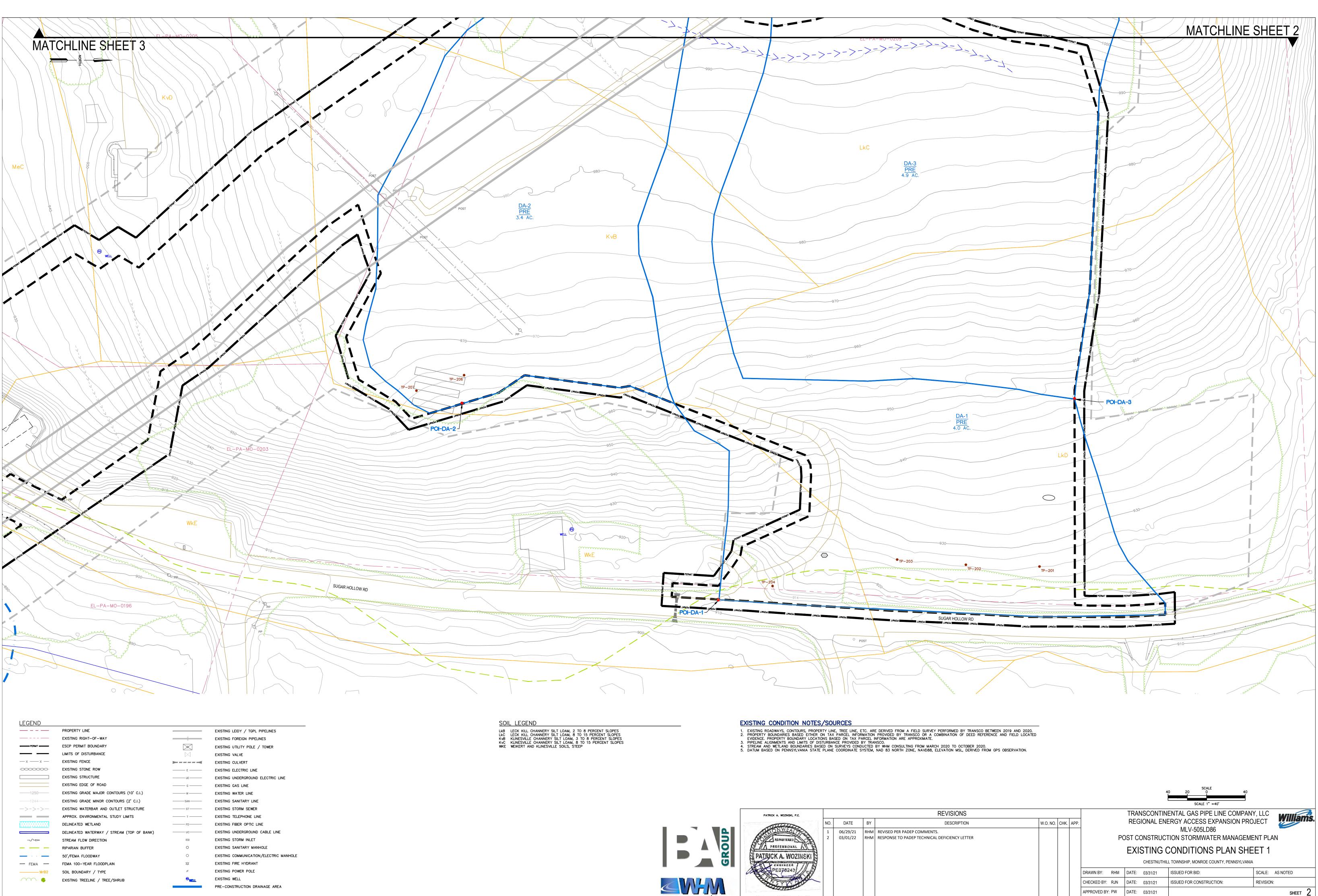
W.O. NO. CHK. APP.

REVISIONS

COVER SHEET									
	CHESTNUTHILL TOWNSHIP, MONROE COUNTY, PENNSYLVANIA								
DRAWN BY: RHM DATE: 03/31/21			03/31/21	ISSUED FOF	R BID:	SCALE:	AS NOTED		
CHECKED BY:	RJN	DATE:	03/31/21	ISSUED FOF	ISSUED FOR CONSTRUCTION:		N:		
APPROVED BY: PW DATE: 03/31/21					SHEET	1			
WO: 1222637		RID: 108	3	DRAWING NUMBER:	26-1000-70-28-D		OF	8	

MLV-505LD86

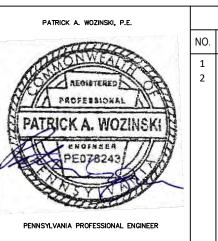
POST CONSTRUCTION STORMWATER MANAGEMENT PLAN



EGEND			
	PROPERTY LINE		EXISTING LEIDY / TGPL PIPELINE
	EXISTING RIGHT-OF-WAY		EXISTING FOREIGN PIPELINES
PERMIT	ESCP PERMIT BOUNDARY	\searrow	EXISTING UTILITY POLE / TOWER
	LIMITS OF DISTURBANCE		EXISTING VALVE
- x x	EXISTING FENCE		EXISTING CULVERT
· 0000000	EXISTING STONE ROW	— Е — —	EXISTING ELECTRIC LINE
	EXISTING STRUCTURE	UE	EXISTING UNDERGROUND ELECTRI
	EXISTING EDGE OF ROAD	G	EXISTING GAS LINE
1250	EXISTING GRADE MAJOR CONTOURS (10' C.I.)	W	EXISTING WATER LINE
	EXISTING GRADE MINOR CONTOURS (2' C.I.)		EXISTING SANITARY LINE
->->->-	EXISTING WATERBAR AND OUTLET STRUCTURE	ST	EXISTING STORM SEWER
_	APPROX. ENVIRONMENTAL STUDY LIMITS	— т —	EXISTING TELEPHONE LINE
	DELINEATED WETLAND	F0	EXISTING FIBER OPTIC LINE
	DELINEATED WATERWAY / STREAM (TOP OF BANK)	UC	EXISTING UNDERGROUND CABLE
-~->	STREAM FLOW DIRECTION	222	EXISTING STORM INLET
	RIPARIAN BUFFER	0	EXISTING SANITARY MANHOLE
	50'/FEMA FLOODWAY	0	EXISTING COMMUNICATION/ELECT
- FEMA	FEMA 100-YEAR FLOODPLAIN	×74	EXISTING FIRE HYDRANT
MrB2	SOIL BOUNDARY / TYPE	ø	EXISTING POWER POLE
m. 🍵	EXISTING TREELINE / TREE/SHRUB	© _{WELL}	EXISTING WELL
	· ·		PRE-CONSTRUCTION DRAINAGE

SOIL	L LE	GE	ND						
LkB	LECK								
LkC	LECK	KILL	CHAN	INERY	SILT	LOAN	1, 8	то	15
КvВ	KLINE	SVILL	E CH	ANNER	Y SIL	T LO	٩M,	31	Ю





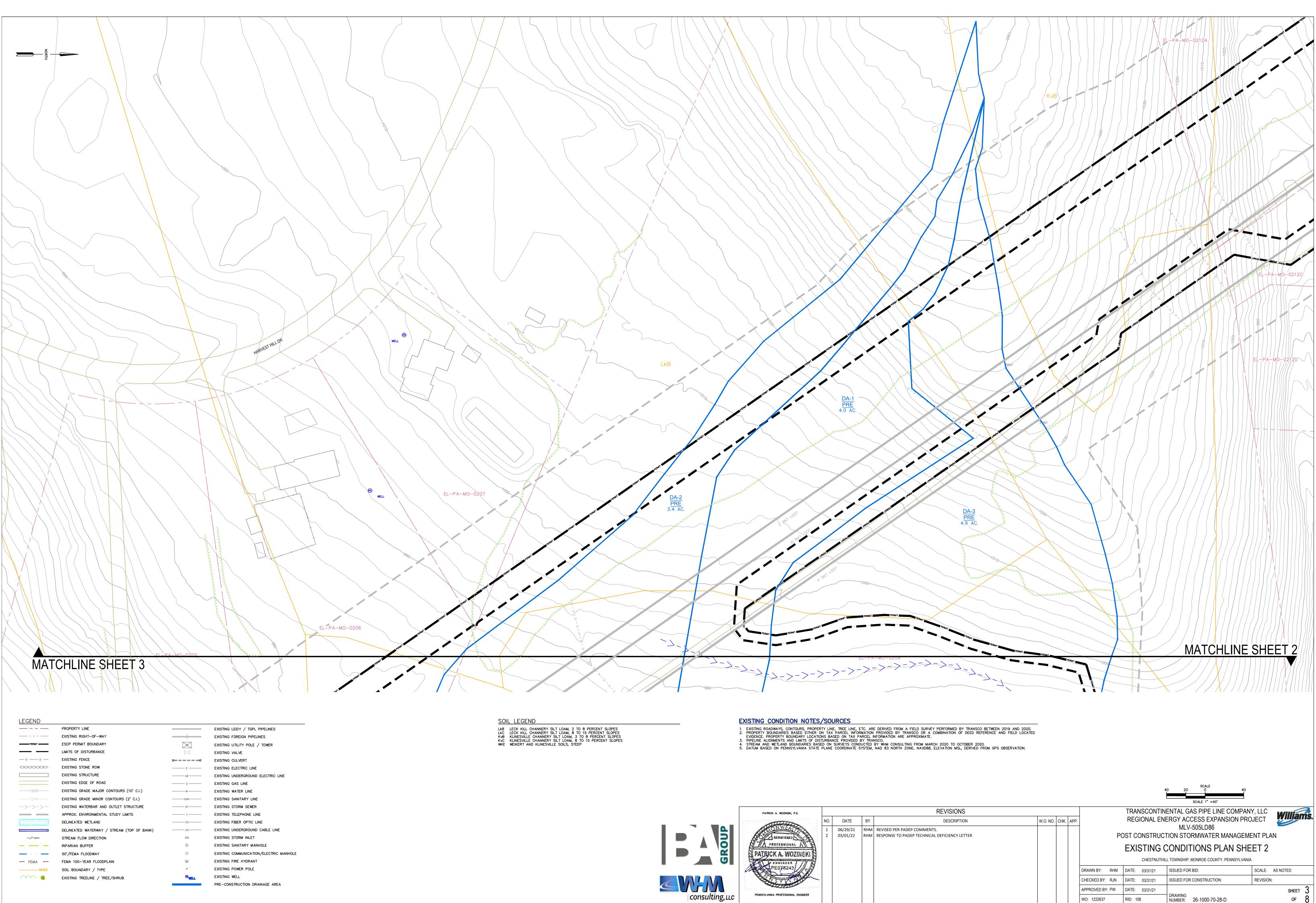
NO.	DATE	BY	
1 2	06/29/21 03/01/22	RHM RHM	REVISED PER PADEP COMN RESPONSE TO PADEP TECH

DRAWING NUMBER: 26-1000-70-28-D

WO: 1222637

RID: 108

of **8**



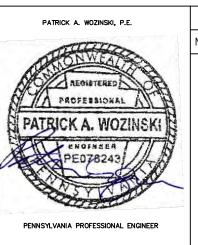
LEGEND
PERMIT
x x
•
·····
-~->
· · ·
FEMA

PROPERTY LINE	
EXISTING RIGHT-OF-WAY	
ESCP PERMIT BOUNDARY	
LIMITS OF DISTURBANCE	\sim
EXISTING FENCE	>
EXISTING STONE ROW	——— E
EXISTING STRUCTURE	UE
EXISTING EDGE OF ROAD	G
EXISTING GRADE MAJOR CONTOURS (10' C.I.)	W
EXISTING GRADE MINOR CONTOURS (2' C.I.)	SAM
EXISTING WATERBAR AND OUTLET STRUCTURE	ST
APPROX. ENVIRONMENTAL STUDY LIMITS	— т
DELINEATED WETLAND	F0
DELINEATED WATERWAY / STREAM (TOP OF BANK)	uc
STREAM FLOW DIRECTION	222
RIPARIAN BUFFER	0
50'/FEMA FLOODWAY	0
FEMA 100-YEAR FLOODPLAIN	22
SOIL BOUNDARY / TYPE	,ø
EXISTING TREELINE / TREE/SHRUB	8

EXISTING	LEIDY / TGPL PIPELINES
EXISTING	FOREIGN PIPELINES
EXISTING	UTILITY POLE / TOWER
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 MAI
EXISTING	FIRE HYDRANT
EXISTING	POWER POLE
EXISTING	WELL
PRE-CON	ISTRUCTION DRAINAGE AREA

SOII	L LE	GE	ND
kB kC			CHANNE



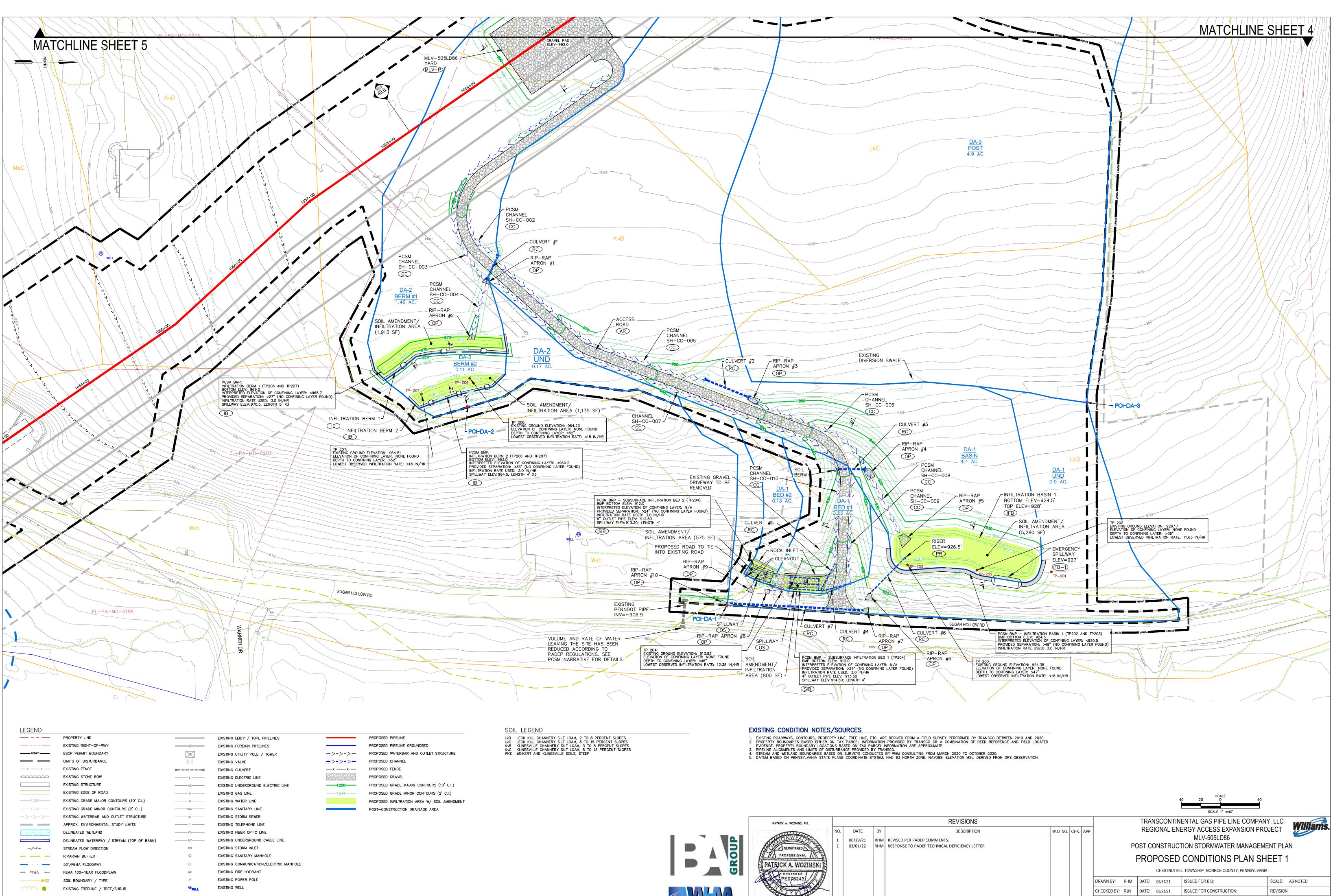


NO.	DATE	BY	
1 2	06/29/21 03/01/22	RHM RHM	REVISED PER PADEP COMM RESPONSE TO PADEP TECHN

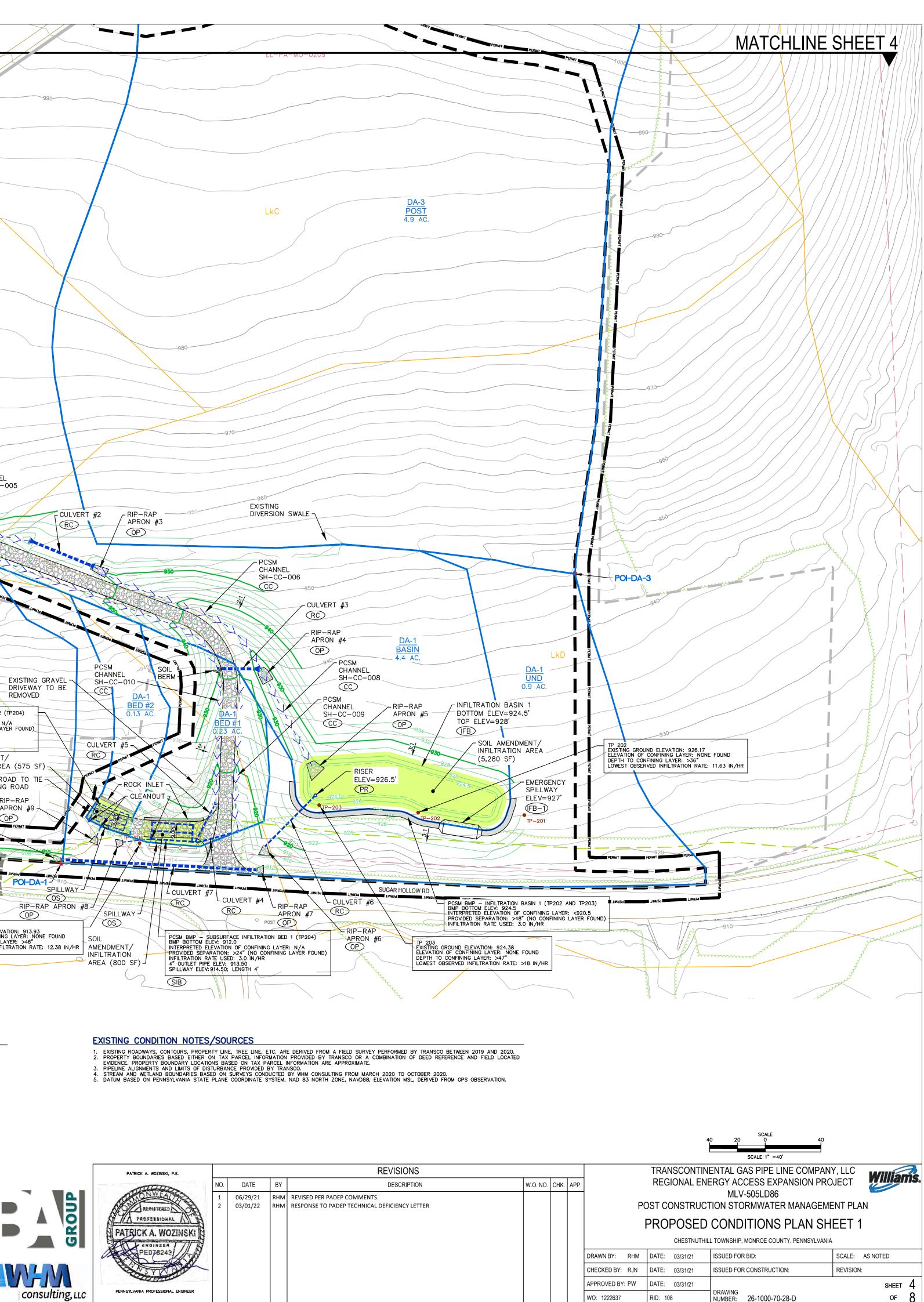
of 8

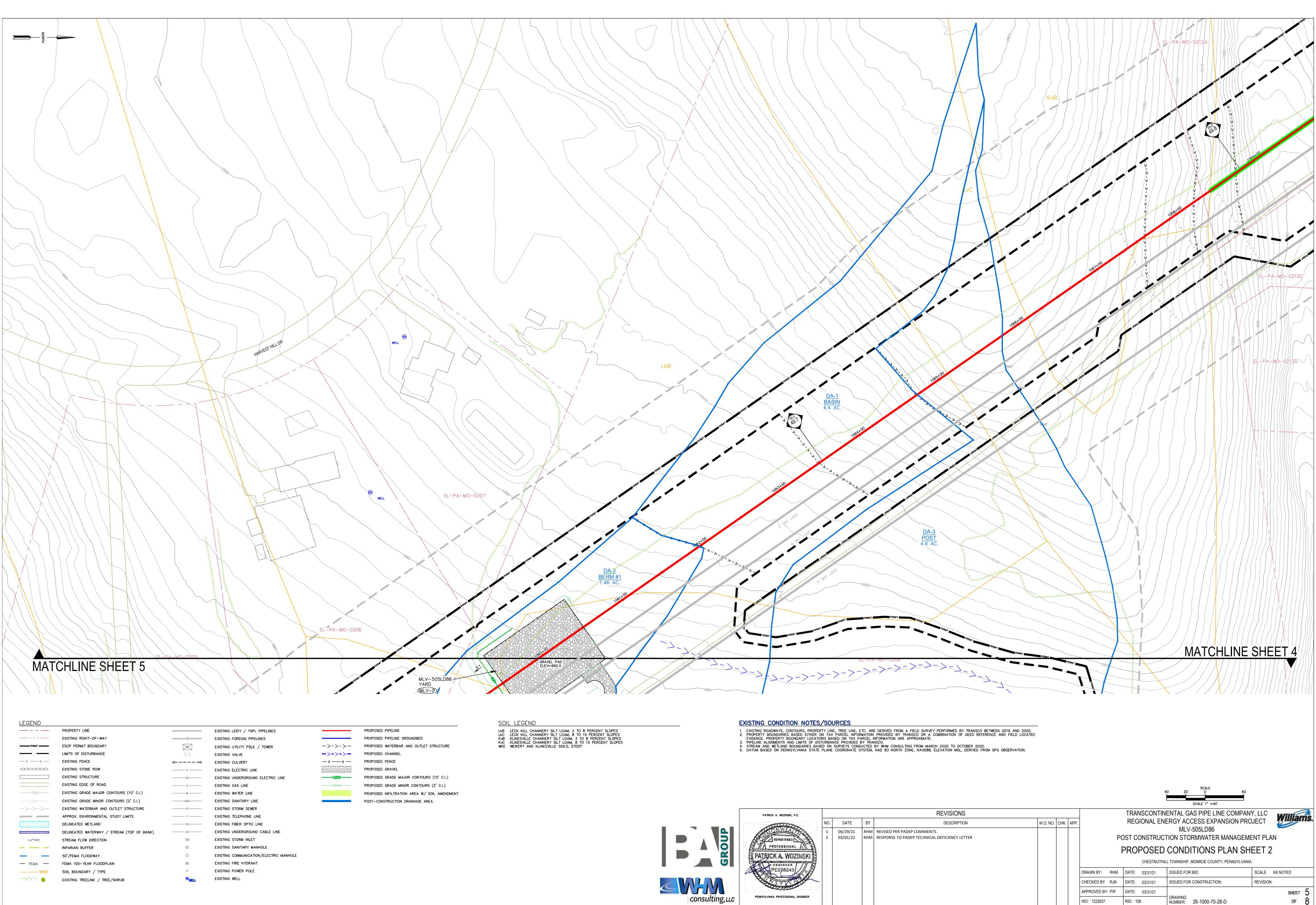
WO: 1222637

RID: 108



LEGEND					
	PROPERTY LINE		EXISTING LEIDY / TGPL PIPELINES		PROPOSED PIPELINE
	EXISTING RIGHT-OF-WAY		EXISTING FOREIGN PIPELINES		PROPOSED PIPELINE GROUNDBED
PERMIT	ESCP PERMIT BOUNDARY	\searrow	EXISTING UTILITY POLE / TOWER	->->->-	PROPOSED WATERBAR AND OUTLET STRUCT
	LIMITS OF DISTURBANCE	$\overline{\boxtimes}$	EXISTING VALVE	->->->-	PROPOSED CHANNEL
— x — x —	EXISTING FENCE		EXISTING CULVERT	— x — x —	PROPOSED FENCE
.000000000	EXISTING STONE ROW	——— E ———	EXISTING ELECTRIC LINE		PROPOSED GRAVEL
	EXISTING STRUCTURE		EXISTING UNDERGROUND ELECTRIC LINE		PROPOSED GRADE MAJOR CONTOURS (10' C
	EXISTING EDGE OF ROAD	G	EXISTING GAS LINE	1244	PROPOSED GRADE MINOR CONTOURS (2' C.I.
	EXISTING GRADE MAJOR CONTOURS (10' C.I.)	w	EXISTING WATER LINE		PROPOSED INFILTRATION AREA W/ SOIL AM
	EXISTING GRADE MINOR CONTOURS (2' C.I.)	SAN	EXISTING SANITARY LINE		POST-CONSTRUCTION DRAINAGE AREA
->->->-	EXISTING WATERBAR AND OUTLET STRUCTURE	ST	EXISTING STORM SEWER		
	APPROX. ENVIRONMENTAL STUDY LIMITS	— т —	EXISTING TELEPHONE LINE		
	DELINEATED WETLAND	F0	EXISTING FIBER OPTIC LINE		
	DELINEATED WATERWAY / STREAM (TOP OF BANK)	UC	EXISTING UNDERGROUND CABLE LINE		
-2-12	STREAM FLOW DIRECTION	22	EXISTING STORM INLET		
	RIPARIAN BUFFER	0	EXISTING SANITARY MANHOLE		
	50'/FEMA FLOODWAY	0	EXISTING COMMUNICATION/ELECTRIC MANHOLE		
— FEMA —	FEMA 100-YEAR FLOODPLAIN	25	EXISTING FIRE HYDRANT		
MrB2	SOIL BOUNDARY / TYPE	ø	EXISTING POWER POLE		





LEGEND
PERMIT
->->->-
-~->
FEMA
MrB2

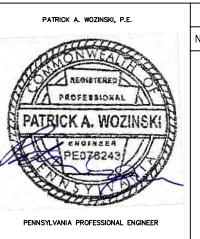
ROPERTY LINE	
XISTING RIGHT-OF-WAY	
SCP PERMIT BOUNDARY	
IMITS OF DISTURBANCE	\triangleright
XISTING FENCE	>
XISTING STONE ROW	——— E
XISTING STRUCTURE	UE
XISTING EDGE OF ROAD	G
XISTING GRADE MAJOR CONTOURS (10' C.I.)	w
XISTING GRADE MINOR CONTOURS (2' C.I.)	SA
XISTING WATERBAR AND OUTLET STRUCTURE	S1
PPROX. ENVIRONMENTAL STUDY LIMITS	— т
ELINEATED WETLAND	FC
ELINEATED WATERWAY / STREAM (TOP OF BANK)	UC
TREAM FLOW DIRECTION	EZ
IPARIAN BUFFER	0
0'/FEMA FLOODWAY	С
EMA 100-YEAR FLOODPLAIN	2
OIL BOUNDARY / TYPE	ø
XISTING TREELINE / TREE/SHRUB	6

-	EXISTING	LEIDY / TGPL PIPELIN
-	EXISTING	FOREIGN PIPELINES
	EXISTING	UTILITY POLE / TOWER
	EXISTING	VALVE
◀	EXISTING	CULVERT
_	EXISTING	ELECTRIC LINE
_	EXISTING	UNDERGROUND ELECTR
_	EXISTING	GAS LINE
_	EXISTING	WATER LINE
_	EXISTING	SANITARY LINE
_	EXISTING	STORM SEWER
_	EXISTING	TELEPHONE LINE
_	EXISTING	FIBER OPTIC LINE
_	EXISTING	UNDERGROUND CABLE
	EXISTING	STORM INLET
	EXISTING	SANITARY MANHOLE
	EXISTING	COMMUNICATION/ELEC
	EXISTING	FIRE HYDRANT
	EXISTING	POWER POLE

->->-
->->->-
—x —

	PR
>->->-	PR
>->->-	PR
x — x —	PR
	PR
	PR
	PR





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

of 8

WO: 1222637

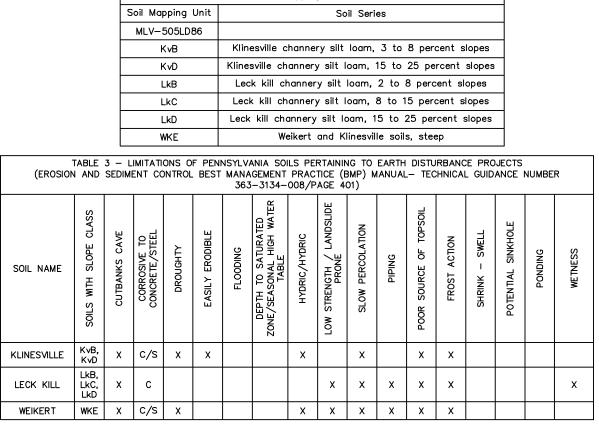
RID: 108

RESOLUTION OF SOIL LIMITATIONS

TRANSCO PROPOSES THE FOLLOWING RESOLUTIONS TO COMPENSATE FOR SOIL LIMITATIONS SUMMARIZED IN TABLE 3 ABOVE:

- TO OFFSET THE CAVING OF CUTBANKS, TRENCHING OPERATIONS WILL BE CONDUCTED IN ACCORDANCE WITH THE OSHA TECHNICAL MANUAL FOR TRENCHING. 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 OPERATIONS WILL CONFORM WITH LOCAL, STATE, AND FEDERAL REGULATIONS
- 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. LOW STRENGTH SOILS WILL NOT BE USED FOR ROADWAY CONSTRUCTION. EXCAVATION IN SOILS PRONE TO FLOODING, SLOW PERCOLATION, PONDING, WETNESS, LOCATED IN A SEASONAL HIGH WATER TABLE, OR WHICH ARE HYDRIC, WILL LIKELY ENCOUNTER WATER, COMPENSATION WILL INVOLVE DEWATERING 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, COMPENSATION MAY REQUIRE REMOVAL AND REPLACEMENT OF SOILS WITH SUITABLE MATERIAL. IN CIRCUMSTANCES WHERE SOILS APPEAR TO BE A POOR SOURCE OF TOPSOIL, DROUGHTY OR PRONE TO WETNESS, SOIL TESTING WILL BE PERFORMED 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.
- B. IN ORDER TO MINIMIZE EROSION OF SOILS THAT ARE EASILY ERODIBLE, COMPENSATION MAY INVOLVE PROVIDING A PROTECTIVE LINING, TO APPLY SEED, MULCH, EROSION CONTROL BLANKETS (EITHER IN ROLLS OR HYDRAULICALLY APPLIED), TRACKING SLOPES, UPSTREAM DIVERSIONS, WATERBARS, ETC. TO MINIMIZE SOIL EROSION.

Table 2 - Soils mapping units within the LOD



CHARACTERISTICS OF EARTH DISTURBANCE ACTIVITY, INCLUDING PAST, PRESENT, AND PROPOSED LAND USES AND PROPOSED ALTERATIONS TO THE AREA

TRANSCO WILL BE INSTALLING MLV-505LD86 NEAR THE EFFORT LOOP PIPELINE AS A MEANS TO ISOLATE GAS FLOWS. PIG LAUNCHERS/RECEIVERS, VALVES AND OTHER ANCILLARY FACILITIES WILL BE LOCATED AT THIS MLV FACILITY. THE WORK AND DISTURBED AREAS ARE LOCATED WITHIN TRANSCO PROPERTY, EXISTING EASEMENTS, OR LEGALLY OBTAINED WORKSPACE WHERE THE PAST, PRESENT, AND PROPOSED LAND USE IS PRIMARILY AN EXISTING PIPELINE ROW. DISTURBED AREAS WITHIN THE TEMPORARY WORKSPACES WILL BE RESTORED TO THE ORIGINAL CONTOURS. USING DATA TAKEN FROM GOOGLE EARTH AND MULTI-RESOLUTION LAND CHARACTERISTICS (MRLC) CONSORTIUM WEBSITE (HTTPS: //WWW.MRLC.GOV/VIEWER/), IT APPEARS THAT A MAJOR PORTION OF THE EFFORT LOOP MLV WAS EXISTING AND MAINTAINED GAS PIPELINE RIGHT-OF-WAY FOR THE PAST 20 YEARS AND WILL CONTINUE TO BE AN EXISTING AND MAINTAINED GAS PIPELINE RIGHT-OF-WAY ONCE THE PROJECT IS COMPLETE. ALONG THE EDGES OF THE ROW LAND USE IS PRIMARILY FORESTED. BASED ON THE URROUNDING LAND CHARACTERISTICS, LAND USE PRIOR TO ROW CONSTRUCTION WITHIN THE PAST 50 YEARS WOULD LIKELY HAVE BEEN EITHER FORESTED LAND OR MEADOW. A GRAVEL PAD AND ACCESS ROAD WILL BE CONSTRUCTED AT THE EFFORT LOOP MLV SITE. THE CONTRACTOR WILL CONSTRUCT STORMWATER BEST MANAGEMENT PRACTICES (BMPS) TO MITIGATE THE INCREASE IN VOLUME AND PEAK RATES ASSOCIATED WITH CONSTRUCTION. THE PROPOSED BMPS ARE DESIGNED TO EVAPORATE AND INFILTRATE THE NET INCREASE IN VOLUME BETWEEN THE PRE-AND POST-DEVELOPMENT 2-YEAR RAIN EVENTS.

BMP DESCRIPTION NARRATIVE

CONVEYANCE BMPS, TWO INFILTRATION BERMS, TWO SUBSURFACE INFILTRATION BEDS AND AN INFILTRATION BASIN WILL BE INSTALLED ACROSS THE DEVELOPED AREA TO MANAGE THE NET INCREASE IN VOLUME BETWEEN THE PRE- AND POST-DEVELOPMENT 2-YEAR STORM EVENTS AND MITIGATE THE INCREASE (PRE-POST DEVELOPMENT) IN PEAK RUNOFF FOR THE 2-, 10-, 25-, 50-, AND 100-YEAR STORM EVENTS. A SUMMARY OF THE PROPOSED BMP'S IS INCLUDED BELOW:

- · CHANNELS AND CULVERTS TO COLLECT AND CONVEY RUNOFF TO THE PROPOSED STORMWATER INFILTRATION BMP'S. • TWO INFILTRATION BERMS WITH A HEIGHT OF 2 FEET AND OVERALL LENGTHS OF 112 AND 188 FEET, RESPECTIVELY.
- TWO SUBSURFACE INFILTRATION BEDS LOCATED UNDER THE PROPOSED DRIVEWAY WITH A 4" OR 6" DISCHARGE PIPE AND A 2' OVERFLOW SPILLWAY. • AN INFILTRATION BASIN WITH A DEPTH OF 3.5 FEET, 3:1 INSIDE SLOPES, 2:1 OUTSIDE SLOPES, A RISER PRINCIPAL SPILLWAY AND AN EMBANKMENT EMERGENCY SPILLWAY.

TEMPORARY WORKSPACE ASSOCIATED WITH MLV505LD86 IS PARTIALLY LOCATED WITHIN THE FORESTED RIPARIAN BUFFER OF SUGAR HOLLOW CREEK. AFTER COMPLETING CONSTRUCTION ACTIVITIES, THE AREA WILL BE RESTORED TO A HERBACEOUS STATE, AS THE FORESTED PORTION OF THE RIPARIAN BUFFER WILL NOT BE REPLANTED. THIS AREA IS LOCATED WITHIN THE LINE-OF-SIGHT FOR THE VALVE SETTING PERMANENT ACCESS ROAD THAT JOINS SUGAR HOLLOW ROAD, A STATE ROAD, AND MUST REMAIN NON-FORESTED TO MAINTAIN LINE-OF-SIGHT FOR PA DEPARTMENT OF TRANSPORTATION REQUIREMENTS TO ABATE A SUBSTANTIAL THREAT TO PUBLIC HEALTH OR SAFETY.

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

- 1. PROTECT BMP AREAS ASSOCIATED WITH INFILTRATION FROM COMPACTION PRIOR TO AND DURING INSTALLATION.
- 2. MAINTAIN PROPER EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.
- 3. AS AREAS ARE COMPLETED, SEED AND MULCH IN ACCORDANCE WITH THE SECTION BELOW.
- 4. DO NOT REMOVE EROSION AND SEDIMENT CONTROL MEASURES UNTIL SITE IS FULLY STABILIZED.
- 5. INSTALL BMPS AS FOLLOWS:

INFILTRATION BERMS*

- a. COMPLETE SITE GRADING AND STABILIZE WITHIN THE LIMIT OF DISTURBANCE EXCEPT WHERE THE INFILTRATION BERMS WILL BE CONSTRUCTED. MAKE EVERY EFFORT TO MINIMIZE BERM FOOTPRINT AND NECESSARY ZONE OF DISTURBANCE (INCLUDING BOTH REMOVAL OF EXITING VEGETATION AND DISTURBANCE OF EMPTY SOIL).
- b.MAINTAIN COMPOST FILTER SOCK SEDIMENT TRAP #13 UNTIL INFILTRATION BERMS ARE COMPLETED. C. INFILTRATION BERM CONSTRUCTION SHOULD BEGIN WITH THE CONSTRUCTION OF BERM #2 AND PROCEED UN AN UPGRADIENT MANNER TO BFRM #1.
- d.LIGHTLY SCARIFY THE SOIL IN THE AREA OF THE PROPOSED BERM BEFORE PLACEMENT OF BERM FILL. DECOMPACT SUBGRADE AS NECESSARY TO A DEPTH OF 2' IF SUBGRADE HAS BEEN OVERCOMPACTED. LIMIT CONSTRUCTION EQUIPMENT ONLY TO THE BERM FOOTPRINT.
- e. UTILIZE SUITABLE FILL MATERIAL TO MAKE UP THE MAJOR PORTION OF THE BERM. SOIL SHOULD BE ADDED IN 8-INCH LIFTS AND COMPACTED AFTER EACH ADDITION ACCORDING TO DESIGN SPECIFICATIONS. THE SLOPE AND SHAPE OF THE BERM SHOULD BE GRADED OUT
- AS SOIL IS ADDED. f. PROTECT THE SURFACE PONDING AREA AT THE BASE OF THE BERM FROM COMPACTION. IF COMPACTION OF THIS AREA DOES OCCUR, SCARIFY THE SOIL TO A DEPTH OF AT LEAST 8 INCHES. q.INSTALL SOIL AMENDMENT ACCORDING TO DETAIL.
- h.COMPLETE FINAL GRADING OF THE BERM AFTER THE TOP LAYER OF SOIL IS ADDED. TAMP SOIL DOWN LIGHTLY AND SMOOTH SIDES OF THE BERM. THE CREST AND BASE OF THE BERM SHOULD BE AT LEVEL GRADE. INSTALL EROSION CONTROL BLANKET AS SPECIFIED. i. PLANT BERM WITH TURF, MEADOW PLANTS, SHRUBS OR TREES, AS DESIRED.
- j. MULCH PLANTED AND DISTURBED AREAS WITH COMPOST MULCH TO PREVENT EROSION WHILE PLANTS BECOME ESTABLISHED. k.FOLLOWING BERM CONSTRUCTION, REMOVE COMPOST FILTER SOCK SEDIMENT TRAP #13 AND ESTABLISH PCSM CHANNEL C-4 INTO THE BERM AREA.

INFILTRATION BASIN

- a.PROTECT INFILTRATION BASIN AREA FROM COMPACTION PRIOR TO INSTALLATION. b.DEWATER SEDIMENT TRAP AS NECESSARY USING PUMP WATER FILTER BAGS. FILTER BAGS WILL BE WITHIN THE DRAINAGE AREA OF EXISTING PERIMETER COMPOST FILTER SOCK.
- C. REMOVE SEDIMENT ACCUMULATED WITHIN THE BASIN DURING ITS USE AS A SEDIMENT TRAP. d.CONVERT TEMPORARY SEDIMENT TRAP OUTLET CONTROL STRUCTURE TO THE PERMANENT OUTLET STRUCTURE FOR THE INFILTRATION BASIN. PLUG PERFORATIONS USING SHRINK-PROOF, WATER-PROOF SEALANT.
- e. COMPLETE INFILTRATION TESTING OF THE BASIN SUBGRADE TO CONFIRM THAT INFILTRATION RATES MEET THE DESIGN ASSUMPTIONS. INFILTRATION TESTING MAY ALSO BE REQUIRED FOLLOWING INSTALLATION OF SOIL AMENDMENTS.
- f. INSTALL SOIL AMENDMENT ACCORDING TO DETAIL. g.DO NOT REMOVE INLET PROTECTION OR OTHER EROSION AND SEDIMENT CONTROL MEASURES UNTIL SITE IS FULLY STABILIZED.

SUBSURFACE INFILTRATION BED*

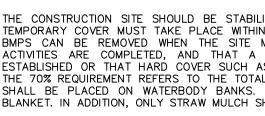
- a.PROTECT INFILTRATION BED AREA FROM COMPACTION PRIOR TO INSTALLATION.
- b.EXCAVATE INFILTRATION BEDS AND INSTALL SOIL AMENDMENT ACCORDING TO THE DETAIL. C.INSTALL UPSTREAM AND DOWNSTREAM CONTROL STRUCTURES, CLEANOUTS, PERFORATED PIPING, AND ALL OTHER NECESSARY STORMWATER STRUCTURES.
- d.INSTALL GEOTEXTILE IN ACCORDANCE WITH THE MANUFACTURER'S STANDARDS AND RECOMMENDATIONS. e. CLEAN-WASHED, UNIFORMLY GRADED AGGREGATE SHOULD BE PLACED IN THE BED IN MAXIMUM 8-INCH LIFTS. LIGHTLY COMPACT EACH LAYER, KEEPING CONSTRUCTION EQUIPMENT OFF THE BED BOTTOM AS MUCH AS POSSIBLE.

CHANNELS/CULVERTS

- a. CONSTRUCT PCSM CHANNELS C-5 AND C-6 AS SHOWN IN THE PLAN. **b.STABILIZE THE CHANNELS WITH SPECIFIED CHANNEL LININGS.** c.INSTALL CULVERTS AS SHOWN ON THE PLAN.
- 6. SEDIMENT THAT ENTERS BMPS DURING CONSTRUCTION IS TO BE REMOVED WITHIN 24 HOURS.
- 7. SEED AND STABILIZE REMAINING TOPSOIL AS PER SEEDING AND MULCHING SPECIFICATIONS.
- 8. FOLLOW LONG TERM OPERATION AND MAINTENANCE GUIDELINES.

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

SEEDING AND MULCHING:



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

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 PER ACRE.

100.50.0000	Perm	1.000				
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		

		Tolerates					Minimum Seed Specifications'			
Species	Growth Habit ¹	Wet Soil	Dry Site	Low Fertility	Acid Soil (pH 5-5.5) ²	Purity (%)	Ready Germ (%)	Hard Seed (%)	Total Germ (%)	Seeds/lb (1,000s)
Warm-Season Grass	ses									
Deertongue Weeping lovegrass	bunch bunch	yes no	yes yes	yes yes	yes yes	95 97	75 75		75 75	250 1,500
Switchgrass ⁴ Big bluestem	bunch bunch	yes no	yes yes	yes yes	yes yes			PLS) PLS)		390 150
Cool-Season Grass	es							an a		
Redtop	sod	yes	yes	yes	yes	92	80		80	5,000
Fine fescues Perennial ryegrass	sod bunch	no yes	no no	yes no	no no	95 95	80 85		80 85	400 227
Annual ryegrass Kentucky bluegrass	bunch sod	yes no	no no	yes no	no no	95 85	85 75		85 75	227 2,200
Reed canarygrass Orchardgrass	sod bunch	yes yes	yes yes	yes yes	no yes	95 95	70 80		70 80	520 654
Timothy Smooth bromegrass	bunch sod	yes no	no yes	yes yes	yes no	95 95	80 80		80 80	1,230 136
Legumes ⁶										
Birdsfoot trefoil ⁶	bunch	yes	no	yes	yes	98	60	20	80	400
Flatpea Serecia lespedeza	sod bunch	no no	no yes	yes yes	yes yes	98 98	55 60	20 20	75 80	10 335
Cereals				μ)						
Winter wheat Winter rye	bunch bunch	no no	no no	no yes	no yes	98 98	85 85		85 85	15 18
Spring oats Sundangrass	bunch bunch	no no	no yes	no no	no no	98 98	85 85		85 85	13 55
Japanese millet	bunch	yes	no	yes	yes	98	80		80	155

Growth habit refers to the ability of the species to either form a dense sod by vegetative means (stolons, rhizomes, or roots) or remain in a bunch or single plant form. If seeded heavily enough, even bunch formers can produce a very dense stand. This is sometimes called a sod, but not in the sense of a sod formed by vegetative means.

- pH 6.0 or above.
- equal or exceed these standards. Thus, deertongue grass should germinate 75% or better.
- ⁴ Switchgrass seed is sold only on the basis of PLS.
- satisfactory for flatpea.
- root rots may injure stands.

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

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 WETLANDS.

TABLE 11.2 Soil Amendment Application Rate Equivalents

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

TABLE 11.3 Plant Tolerances of Soil Limitation Factors

² Once established, plants may grow at a somewhat lower pH, but cover generally is only adequate at

³ Minimum seed lots are truly minimum, and seed lots to be used for revegetation purposes should

Commonly, seed lots are available that equal or exceed minimum specifications. Remember that disturbed sites are adverse for plant establishment. Ready germination refers to seed that germinates during the period of the germination test and that would be expected, if conditions are favorable, to germinate rapidly when planted. The opposite of ready germination is dormant seed, of which hard seed is one type.

 $^\circ$ Need specific legume inoculant. Inoculant suitable for garden peas and sweetpeas usually is

^a Birdsfoot trefoil is adapted over the entire state, except in the extreme southeast where crown and

ERNST RIPARIAN BUFFER MIX - ERNMX 178

PERCENTAGE OF MIX COMPOSITION	SCIENTIFICNAME	COMMON NAME		
30.0%	PANICUM CLANDESTINUM	DEERTONGUE		
20.0%	ELYMUS VIRGINICUS	VIRGINIA WILDRYE		
11.8%	ANDROPOGON GERARDII	BIG BLUESTEM		
10.5%	SORGHASTRUM NUTANS	INDIANAGRASS		
5.0%	PANICUM VIRGATUM	SWTCHGRASS		
4.0%	CHAMAECRISTA FASCICULATA	PARTRIDGE PEA		
4.0%	VERBENA HASTATA	BLUE VERVAIN		
3.0%	JUNCUS EFFUSUS	SOFT RUSH		
3.0%	RUDBECKIA HIRTA	BLACKEYED SUSAN		
2.0%	HELIOPSIS HELIANTHOIDES	OXEYE SUNFLOWER		
1.0%	ASCLEPIAS INCARNATA	SWAMP MILKWEED		
0.7%	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER		
0.7%	ASTER UMBELLATUS	FLAT TOPPED WHITE ASTER		
0.7%	EUPATORIUM PERFOLIATUM	BONESET		
0.5%	AGROSTIS PERENNANS	AUTUMN BENTGRASS		
0.5%	HELENIUM AUTUMNALE	COMMON SNEEZEWEED		
0.5%	MONARDA FISTULOSA	WILD BERGAMOT		
0.5%	VERNONIA NO VEBORACENSIS	NEW YORK IRONWEED		
0.4%	PYCNANTHEMUM TENUIFOLIUM	NARROWLEAF MOUNTAINMIN		
0.4%	SOLIDAGO PATULA	ROUGHLEAF GOLDENROD		
0.3%	EUPATORIUM FISTULOSUM	JOE PYE WEED		
0.3%	LOBELIA SIPHILITICA	GREAT BLUE LOBELIA		
0.2%				

0.2% ASTER PUNICEUS PURPLESTEM ASTER 1. SEEDING RATE: 20 LBS/ACRE WTH THE FOLLOWING NURSE CROPS: DRY SITES GRAIN OATS, JAN 1 - AUG 1; OR, GRAIN RYE, AUG 1 - JAN 1; MOIST SITES - GRAIN RYE YEAR ROUND.

2. THIS SEED MIX IS TO BE USED TO REVEGETATE WORKSPACE WITHIN THE

DESIGNATED 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					
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 OF

- 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.

PCSM CRITICAL STAGES

- CRITICAL POINTS REQUIRING VISITS BY THE LICENSED PROFESSIONAL OR DELEGATE ARE AS FOLLOWS:
- 1. PRIOR TO CONSTRUCTION TO ENSURE THE AREAS OF THE INFILTRATION BERMS, INFILTRATION BASIN AND SUBSURFACE INFILTRATION BEDS HAVE BEEN PROPERLY SECURED WITH FENCING OR OTHER METHODS TO PREVENT COMPACTION OF THE INFILTRATION AREAS.
- 2. FOR THE FINAL GRADING OF THE ACCESS ROAD, ENSURING IT IS CONSTRUCTED ACCORDING TO THE PLAN DETAILS FOR PROPER CONVEYANCE OF RUNOFF.
- 3. FOLLOWING FINAL GRADING AND SEEDING OF THE CHANNELS IN ORDER TO CONFIRM THEY HAVE BEEN CONSTRUCTED ACCORDING TO THE PLAN DETAILS FOR PROPER COLLECTION AND CONVEYANCE OF RUNOFF. PERIODIC ASSESSMENTS WILL NEED TO BE MADE TO ENSURE ACCUMULATED SEDIMENT HAVE BEEN CLEANED OUT, SO THE CHANNELS MAINTAIN THE NECESSARY DESIGN VOLUMES.
- 4. AT THE START OF CONSTRUCTION OF THE INFILTRATION BERMS, INFILTRATION BASIN AND SUBSURFACE INFILTRATION BEDS TO ASCERTAIN THE INFILTRATION AREAS HAVE NOT BEEN COMPACTED.
- 5. DURING THE LAYOUT AND EXCAVATION OF THE OUTLET CONTROL STRUCTURES FOR THE INFILTRATION BASIN AND BEDS, THE PROFESSIONAL OR DELEGATE WILL ENSURE SIZING, MATERIALS SPECIFICATIONS, AND CONSTRUCTION PROCEDURES ARE FOLLOWED TO ENABLE PROPER STORAGE IN THE BASIN. 6. FOLLOWING FINAL GRADING AND SEEDING OF THE INFILTRATION BERMS, INFILTRATION BASIN AND SUBSURFACE INFILTRATION BEDS IN
- ORDER TO CONFIRM THEY HAVE BEEN CONSTRUCTED ACCORDING TO THE PLAN DETAILS FOR PROPER COLLECTION, INFILTRATION, AND CONVEYANCE OF RUNOFF. PERIODIC ASSESSMENT WILL NEED TO BE MADE TO ENSURE THAT ACCUMULATED SEDIMENT HAVE BEEN CLEANED OUT SO THE BMPS MAINTAIN THE NECESSARY DESIGN VOLUMES. 7. FOR FINAL INSPECTION OF CONSTRUCTED CHANNELS, CULVERTS, BERMS, BASIN AND BEDS.
- 8. AT THE ESTABLISHMENT OF HARD SURFACE STABILIZATION OR 70% VEGETATION COVERS TO ALLOW REMOVAL OF E&S CONTROLS. 9. FOLLOWING CONSTRUCTION, THE LICENSED PROFESSIONAL SHALL PREPARE A WRITTEN REPORT INCLUDING PHOTOGRAPHS DOCUMENTING THE VARIOUS CRITICAL STAGE INSPECTIONS FOR THE PROJECT. THIS REPORT SHALL BE AVAILABLE TO THE MCCD UPON REQUEST.

LONG TERM OPERATION AND MAINTENANCE SCHEDULE

5 DO NOT MOW SHORTER THAN 9 TO 10 INCHES

PCSM 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, OVERGROWN VEGETATION, AND OTHER BLOCKAGES. CHANNELS SHOULD BE CLEANED WHENEVER TOTAL CHANNEL 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 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 ANNUALLY 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.

MAINTENANCE ACTIVITIES ON THE INFILTRATION BERMS, INFILTRATION BEDS, AND BASIN SHOULD BE DONE TWICE ANNUALLY AND WITHIN 72 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.

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.



PATRICK A. WOZINSKI, P.E.				
ALLERA	NO.	DATE	BY	
CHONWERD S	1	06/29/21	RHM	REVISED PER PAI
ALCONTRED A	2	03/01/22	RHM	RESPONSE TO PA
A PROFESSIONAL ANTH				
PATRICK A. WOZINSKI				
FENDINEER TIT				
PEOPOZAS T				
PENNSYLVANIA PROFESSIONAL ENGINEER				

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.

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

IF THE SITE WILL HAVE EXCESS FILL THAT WILL NEED TO BE EXPORTED TO AN OFF-SITE LOCATION, THE RESPONSIBILITY OF CLEAN FILL

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.

THERMAL IMPACTS

DUE TO THE OVERALL NATURE OF THE PROJECT, THERMAL IMPACTS TO SURFACE WATERS ARE NOT ANTICIPATED. THE PIPELINE INSTALLATION ACTIVITIES WILL PRIMARILY TAKE PLACE WITHIN AN EXISTING CLEARED AND MAINTAINED PIPELINE RIGHT-OF-WAY. THERE WILL BE NO INCREASE IN STORMWATER DISCHARGE. THE PRIMARY MEANS TO ADDRESS THERMAL IMPACTS ON THIS PROJECT IS TO LIMIT THE SIZE AND DURATION OF EXPOSED EARTH. REVEGETATION PROCEDURES AND THE SEQUENCE OF CONSTRUCTION OUTLINE DISTURBED AREAS BEING IMMEDIATELY REVEGETATED.

STORMWATER RUNOFF ASSOCIATED WITH THE INSTALLATION OF THE MLV'S 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

TRANSCO EVALUATED THE FEASIBILITY OF NON-DISCHARGE ALTERNATIVES THAT WOULD BE LOCATED OUTSIDE OF EXCEPTIONAL VALUE (EV) OR HIGH-QUALITY (HQ) WATERSHEDS. HYDRAULIC MODELS WERE ANALYZED FROM AN EFFICIENCY AND EFFECTIVENESS POINT OF VIEW TO CONFIRM AND MINIMIZE THE NECESSARY PIPELINE LENGTHS AND DIAMETERS TO MEET THE PROJECT PURPOSE AND NEED. THE HYDRAULIC MODEL DETERMINED THE SIZING OF THE MLV-505LD86 SITE ON THE EFFORT LOOP PIPELINE. IN ORDER FOR THE PROJECT TO MEET THE REQUIRED PURPOSE AND NEED. SITING THE EFFORT LOOP PIPELINE OUTSIDE OF EV AND HQ WATERSHEDS. IS NOT FEASIBLE.

THEREFORE, TRANSCO DETERMINED THAT THERE ARE NO COST-EFFECTIVE AND ENVIRONMENTAL SOUND VIABLE NON-DISCHARGE ALTERNATIVES FOR THE PROJECT. TRANSCO HAS MINIMIZED PROJECT IMPACTS TO EV AND HQ WATERSHEDS THROUGH THE USE OF CO-LOCATION WITH EXISTING PIPELINES AND PROTECTING RIPARIAN BUFFERS WITHIN THE PROJECT WORKSPACE, FARTH DISTURBANCE WILL BE MINIMIZED TO THE EXTENT PRACTICAL AND WILL BE PHASED OR SEQUENCED TO ONLY DISTURBED PORTIONS THAT ARE NECESSARY FOR THE SPECIFIC SCOPE OF WORK. WHEREVER POSSIBLE, THE LOD WAS DECREASED TO AVOID DISTURBING ADDITIONAL GROUND AND WILL BE KEPT TO THE MINIMUM WIDTH AND DEPTH NECESSARY TO SAFELY COMPLETE CONSTRUCTION ACTIVITIES.

ANTI-DEGRADATION BEST AVAILABLE COMBINATION OF TECHNOLOGIES (ABACT) STANDARDS HAVE BEEN PROPOSED FOR THE MLV-505LD86 SITE BECAUSE THERE ARE NO VIABLE NON-DISCHARGE ALTERNATIVES. THE EROSION AND SEDIMENT CONTROL PLAN PREPARED FOR THE PROJECT OUTLINES A MORE STRINGENT DESIGN AND E&S BMPS THAT MEET ABACT STANDARDS.

THE MLV-505LD86 SITE WILL RESULT IN INCREASED DISCHARGE OF STORMWATER TO SURFACE WATERS WHICH WILL BE MITIGATED BY THE IMPLEMENTATION OF POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM) BMP'S. PROPOSED PCSM BMPS ARE DESIGNED WITH STORMWATER VOLUME REDUCTION AND WATER QUALITY TREATMENT MAXIMIZED TO THE EXTENT PRACTICABLE WITHIN THE SITE CONSTRAINTS TO MAINTAIN AND PROTECT EXISTING WATER QUALITY AND EXISTING AND DESIGNATED USES.

RIPARIAN BUFFERS

TEMPORARY WORKSPACE ASSOCIATED WITH MLV505LD86 IS PARTIALLY LOCATED WITHIN THE FORESTED RIPARIAN BUFFER OF SUGAR HOLLOW CREEK. AFTER COMPLETING CONSTRUCTION ACTIVITIES, THE AREA WILL BE RESTORED TO A HERBACEOUS STATE, AS THE FORESTED PORTION OF THE RIPARIAN BUFFER WILL NOT BE REPLANTED. THIS AREA IS LOCATED WITHIN THE LINE-OF-SIGHT FOR THE VALVE SETTING PERMANENT ACCESS ROAD THAT JOINS SUGAR HOLLOW ROAD, A STATE ROAD, AND MUST REMAIN NON-FORESTED TO MAINTAIN LINE-OF-SIGHT FOR PA DEPARTMENT OF TRANSPORTATION REQUIREMENTS TO ABATE A SUBSTANTIAL THREAT TO PUBLIC HEALTH OR

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 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. 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 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 THE PERMIT APPLICATION.

REVISIONS

DESCRIPTION DEP COMMENTS ADEP TECHNICAL DEFICIENCY LETTER

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC	Nillian	2
W.O. NO. CHK. APP. REGIONAL ENERGY ACCESS EXPANSION PROJECT	Tillai	
POST CONSTRUCTION STORMWATER MANAGEMENT PLAN		
NOTES		
CHESTNUTHILL TOWNSHIP, MONROE COUNTY, PENNSYLVANIA		
DRAWN BY: RHM DATE: 03/31/21 ISSUED FOR BID: SCALE: AS I	NOTED	
CHECKED BY: RJN DATE: 03/31/21 ISSUED FOR CONSTRUCTION: REVISION:		
APPROVED BY: PW DATE: 03/31/21	SHEET	6

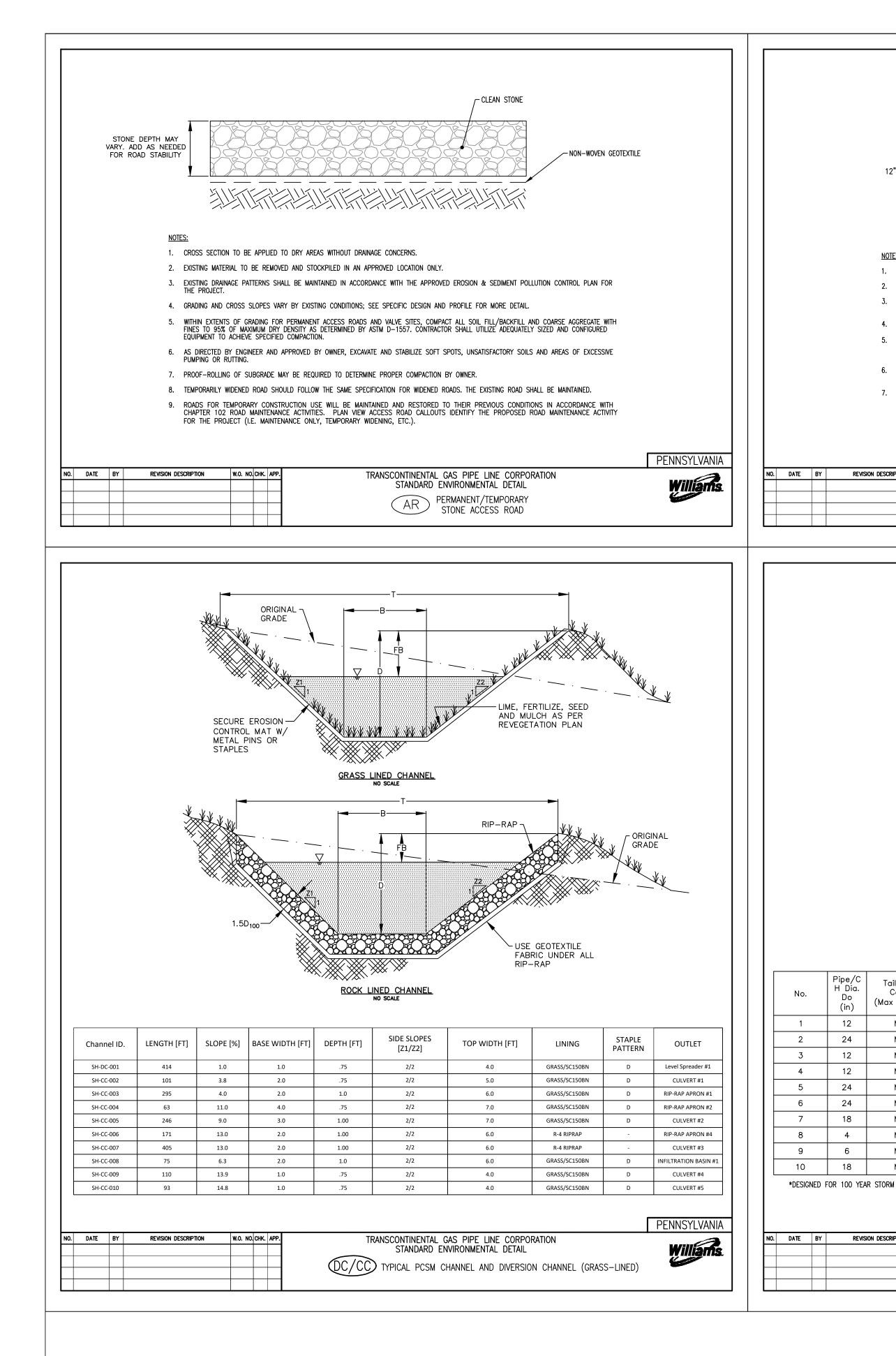
NUMBER: 26-1000-70-28-D

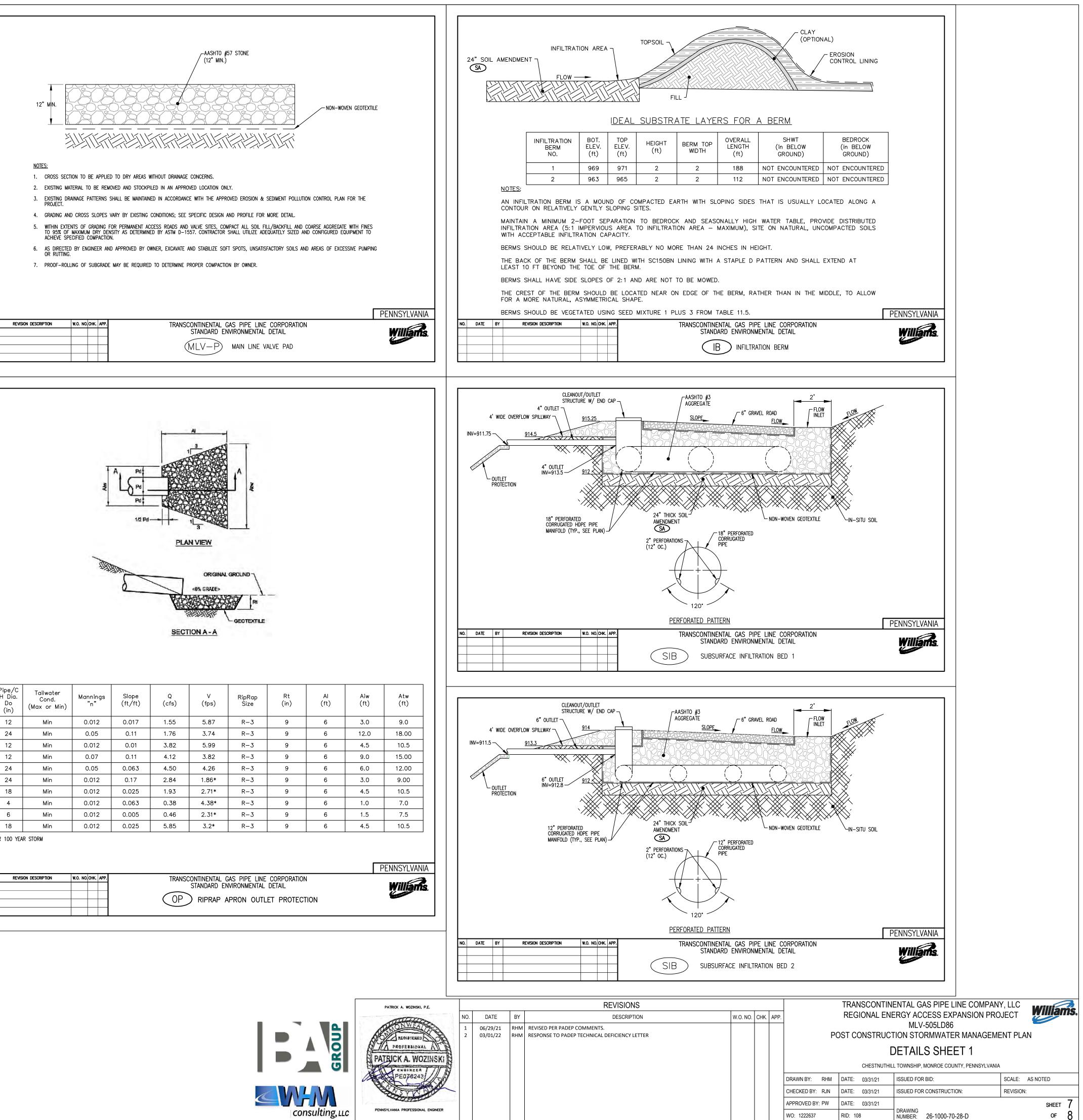
OF

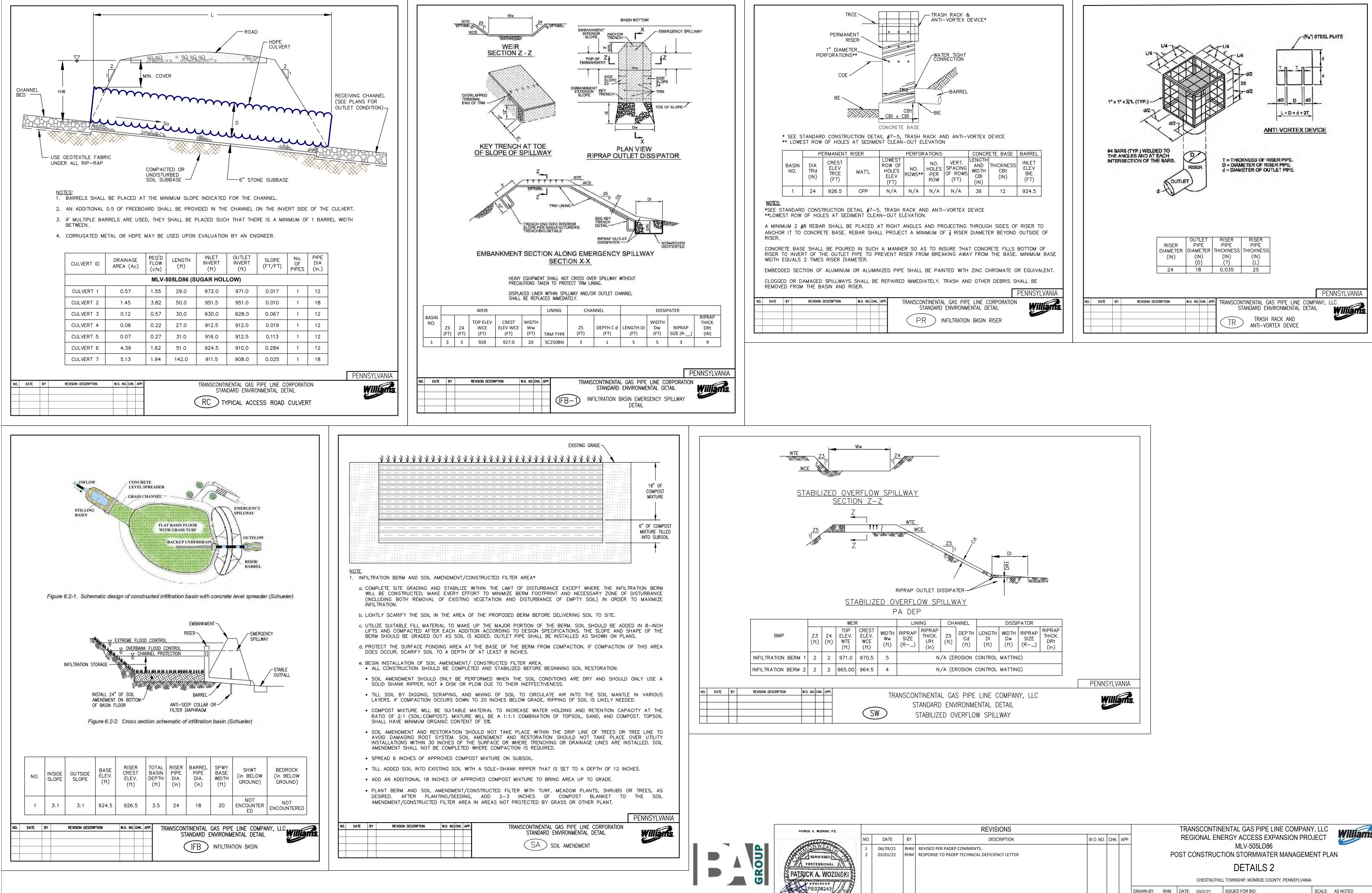
WO: 1222637

RID: 108

2			
2			
Г			
)			
,			
•			
-			
-			







PENNSYLVANIA PROFESSIONAL ENGINEER

consulting, LLC

REVISIONS						TRAN	SCONTIN	ENTAL GAS PIPE LINE COMPAN	Y, LLC
DESCRIPTION	W.O. NO.	CHK.	APP.			REG	IONAL EN	ERGY ACCESS EXPANSION PRO	JECT
ENTS. JICAL DEFICIENCY LETTER				MLV-505LD86 POST CONSTRUCTION STORMWATER MANAGEMENT PLAN					
				DETAILS 2					
					CHESTNUTHILL TOWNSHIP, MONROE 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		SHEET 8
				WO: 1222637		RID: 10	8	DRAWING NUMBER: 26-1000-70-28-D	OF 8