

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

REGIONAL ENERGY ACCESS EXPANSION PROJECT COMPRESSOR STATION 515

BUCK TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

APRIL 2021

PROJECT OWNER/APPLICANT

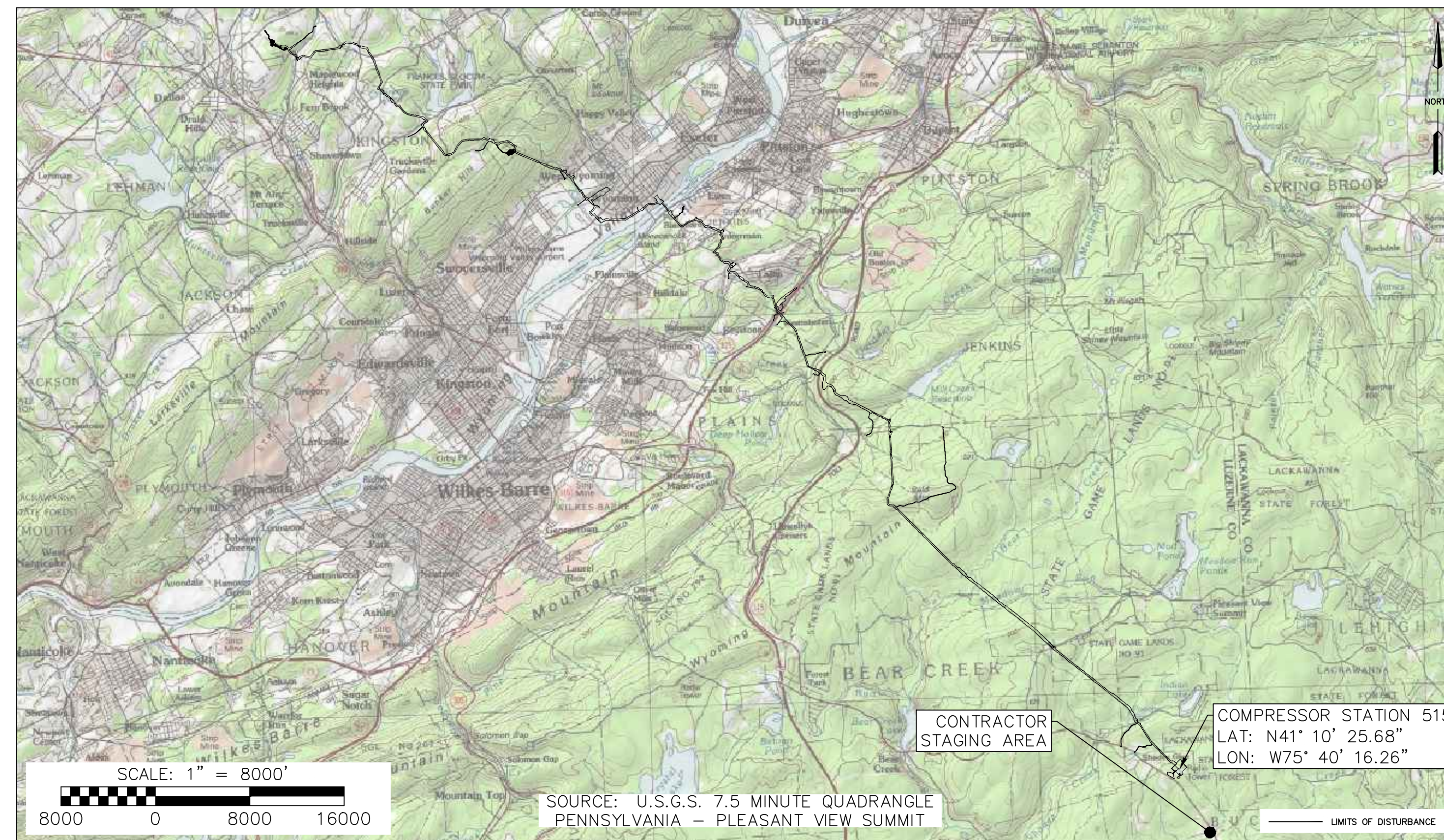
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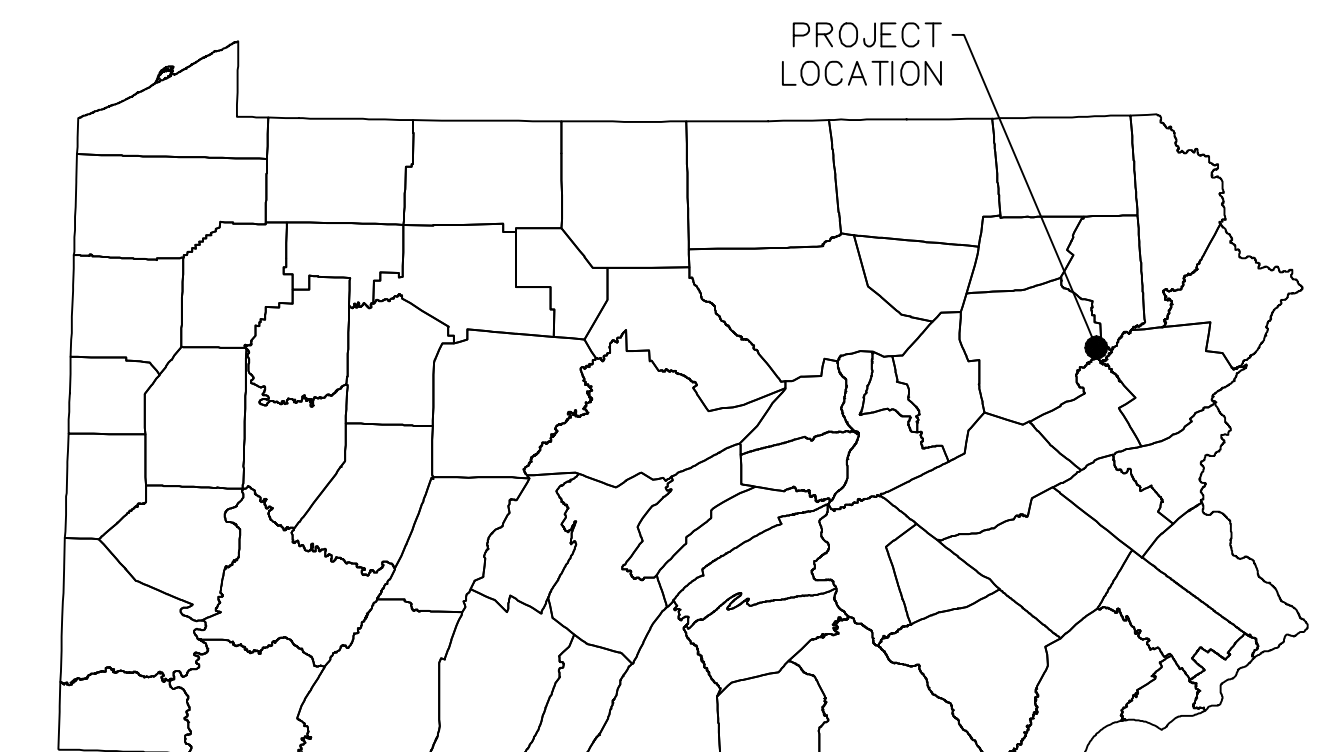
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LOCATION MAP



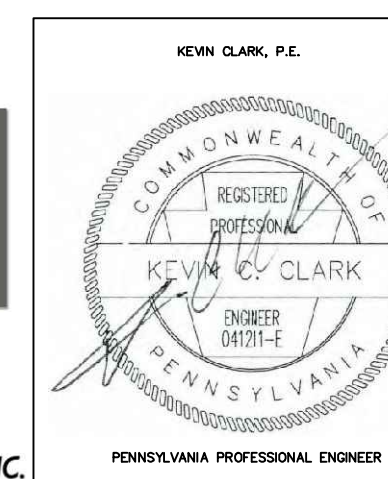
VICINITY MAP
N.T.S.

SHEET INDEX	
SHEET NUMBER	DRAWING TITLE
1 OF 6	COVER
2 OF 6	EXISTING CONDITIONS PLAN
3 OF 6	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
4 OF 6	NOTES
5-6 OF 6	DETAILS

RECEIVING WATERS			
NAME	DESIGNATED USE	EXISTING USE	PFBC CLASSIFICATION
TRIB 04285 SHADES CREEK	HQ-CWF, MF	-	NATURALLY PRODUCING WILD TROUT STREAM
STONY RUN	HQ-CWF, MF	-	NATURALLY PRODUCING WILD TROUT STREAM

Call before you dig.
1-800-242-1776 or **811**

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.

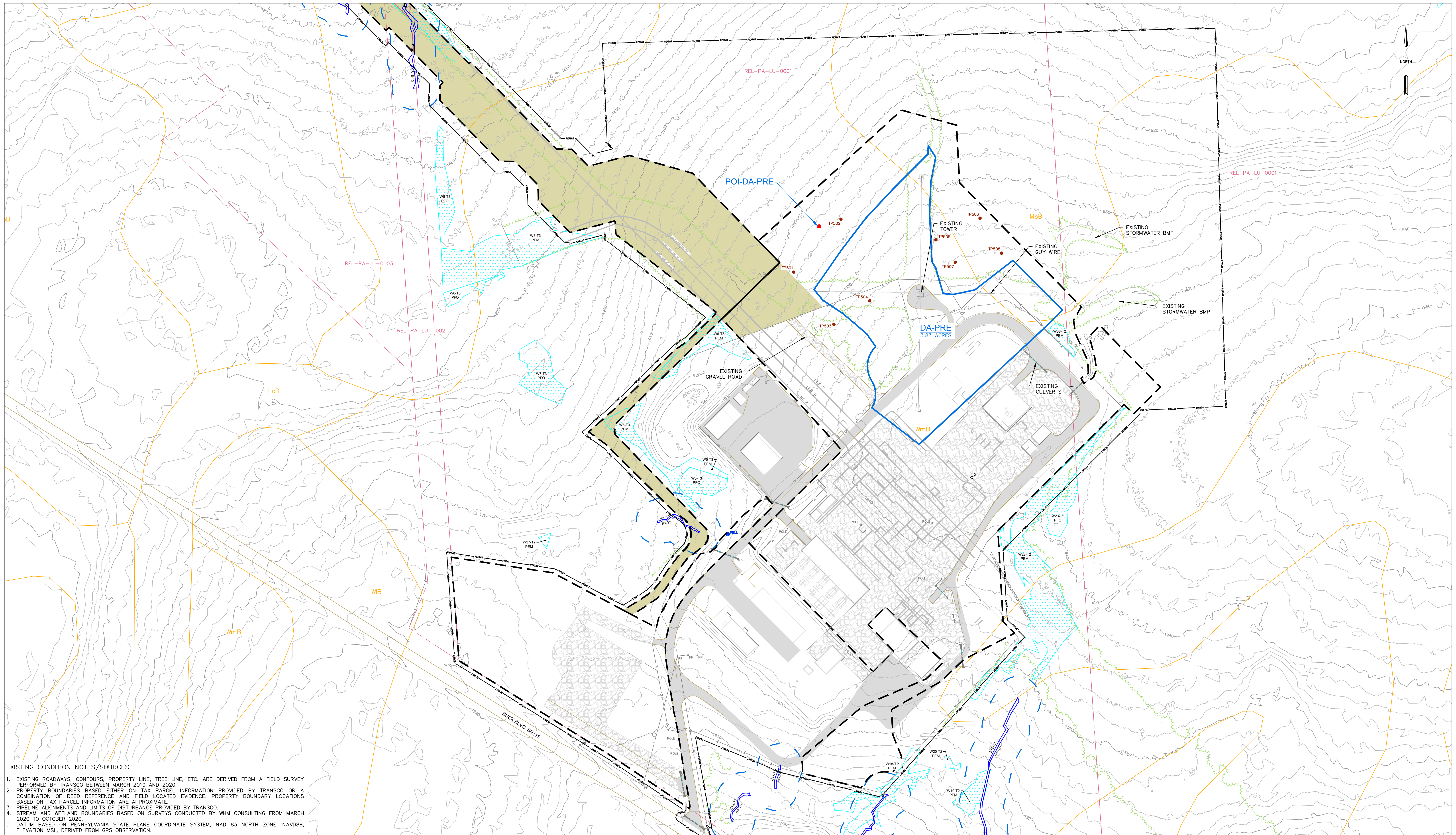


REVISIONS						
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
1	06/29/21	RHM	REVISED PER PADEP COMMENTS.			

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
REGIONAL ENERGY ACCESS EXPANSION PROJECT
COMPRESSOR STATION 515
POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
COVER

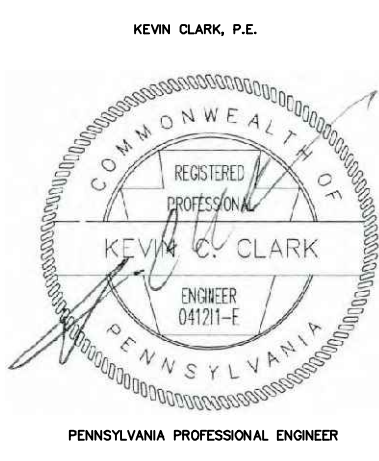
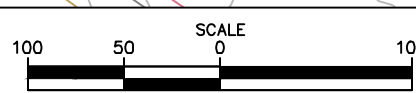


DRAWN BY: DRV	DATE: 03/31/21	ISSUED FOR BID:	SCALE: AS NOTED
CHECKED BY: RJN	DATE: 03/31/21	ISSUED FOR CONSTRUCTION:	REVISION:
APPROVED BY: KCC	DATE: 03/31/21	DRAWING NUMBER: 26-1000-70-28-D	SHEET 1 OF 6



- EXISTING CONDITION NOTES/SOURCES**
- EXISTING ROADWAYS, CONTOURS, PROPERTY LINE, TREE LINE, ETC. ARE DERIVED FROM A FIELD SURVEY PERFORMED BY TRANSCO BETWEEN MARCH 2019 AND 2020.
 - PROPERTY BOUNDARIES BASED EITHER ON TAX PARCEL INFORMATION PROVIDED BY TRANSCO OR A COMBINATION OF DEED REFERENCE AND FIELD LOCATED EVIDENCE. PROPERTY BOUNDARY LOCATIONS BASED ON TAX PARCEL INFORMATION ARE APPROXIMATE.
 - PIPELINE ALIGNMENTS AND LIMITS OF DISTURBANCE PROVIDED BY TRANSCO.
 - STREAM AND WETLAND BOUNDARIES BASED ON SURVEYS CONDUCTED BY WHM CONSULTING FROM MARCH 2020 TO OCTOBER 2020.
 - DATUM BASED ON PENNSYLVANIA STATE PLANE COORDINATE SYSTEM, NAD 83 NORTH ZONE, NAVD88, ELEVATION MSL, DERIVED FROM GPS OBSERVATION.

LEGEND		SOIL LEGEND	
	EXISTING WATERBAR AND OUTLET STRUCTURE		MsB MORRIS CHANNERY SILT LOAM, 0 TO 8 PERCENT SLOPES, EXTREMELY STONY
	ESOP PERMIT BOUNDARY		WbB WELLSBORO CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES, CHIPPENAW VERY STONEY SILT LOAM, 0 TO 8 PERCENT SLOPES
	LIMITS OF DISTURBANCE		DsB DOLGOC AND LORISTOWN EXTREMELY STONEY SILT LOAMS, 8 TO 25 PERCENT SLOPES
	APPROX. ENVIRONMENTAL STUDY LIMITS		EXISTING FIRE HYDRANT
	DELINEATED WETLAND		EXISTING POWER POLE
	DELINEATED WATERWAY / STREAM (TOP OF BANK)		EXISTING WELL
	STREAM FLOW DIRECTION		EXISTING EASEMENT
	RIPIARIAN BUFFER		EXISTING RIGHT-OF-WAY
	50'/FEMA FLOODWAY		EXISTING FENCE
	FEMA 100-YEAR FLOODPLAIN		EXISTING STONE ROW
	SOIL BOUNDARY / TYPE		EXISTING STRUCTURE
	EXISTING TREELINE / TREE/SHRUB		EXISTING EDGE OF ROAD
	PROPERTY LINE		EXISTING GRAVEL AREAS
	EXISTING LEIDY / TOPLI PIPELINES		EXISTING PAVEMENT
	EXISTING GRADE MAJOR CONTOURS (10' C.L.)		TEST PIT/INFILTRATION TEST LOCATION (2020)
	EXISTING GRADE MINOR CONTOURS (2' C.L.)		



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TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
 REGIONAL ENERGY ACCESS EXPANSION PROJECT
 COMPRESSOR STATION 515
 POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
 EXISTING CONDITIONS
 BUCK TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

DRAWN BY: DRV	DATE: 03/31/21	ISSUED FOR BID:	SCALE: AS NOTED
CHECKED BY: RUN	DATE: 03/31/21	ISSUED FOR CONSTRUCTION:	REVISION:
APPROVED BY: KCC	DATE: 03/31/21	DRAWING NUMBER: 26-1000-70-28-D	SHEET 2 OF 6
WO: 1211227	RID: 304		

RESOLUTION TO 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.
 - 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 SOIL 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 ROADWAY CONSTRUCTION.
 - FOR SOILS PRONE TO FLOODING, SLOW PERCOLATION, PONDING WETNESS, HAVE A SEASONAL HIGH WATER TABLE, OR ARE HYDROIC EXCAVATIONS 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.
 - 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 LIMITS OF DISTURBANCE	
SOIL MAPPING UNIT	SOIL SERIES
Msb	MORRIS CHANNERY SILT LOAM, 0 TO 8 PERCENT SLOPES, EXTREMELY STONY
OpD	OQUAGA AND LORDSTOWN EXTREMELY STONY SILT LOAMS, 8 TO 25 PERCENT SLOPES
Whb	WELLSBORO CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES
Wic	WELLSBORO CHANNERY SILT LOAM, 8 TO 15 PERCENT SLOPES
Wid	WELLSBORO CHANNERY SILT LOAM, 15 TO 25 PERCENT SLOPES
Whb	WELLSBORO CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES, EXTREMELY STONY

TABLE 3--LIMITATIONS OF PENNSYLVANIA SOILS PERTAINING TO EARTH DISTURBANCE PROJECTS (EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMP) MANUAL-- TECHNICAL GUIDANCE NUMBER 363-3134-008/PAGE 401)

SOIL NAME	SOIL WITH SLOPE CLASS	CUTBANKS CAVE	CORROSIVE TO CONCRETE/STEEL	DROUGHTY	EASILY ERODIBLE	FLOODING	DEPTH TO SATURATION/SEASONAL HIGH WATER TABLE	HYDROIC/INCLUSIONS	LOW STRENGTH/LANDSLIDE PRONE	SLOW PERCOLATION	PIPING	POOR SOURCE OF TOPSOIL	FROST ACTION	SHRINK - SWELL	POTENTIAL SNRKHOLE	PONDING	WETNESS
MORRIS	Msb	X	C/S	X	X		X	X	X	X		X	X				X
OQUAGA	OpD	X	C	X	X			X		X			X				
WELLSBORO	Whb, Wic, Wid, Whb	X	C/S	X	X		X	X	X	X			X				X

CHARACTERIZATIONS OF EARTH DISTURBANCE ACTIVITIES, INCLUDING PAST, PRESENT AND PROPOSED LAND USES

THE LIMIT OF DISTURBANCE (LOD) FOR COMPRESSOR STATION 515 WILL BE APPROXIMATELY 24.83 ACRES. CONSTRUCTION ACTIVITIES AT COMPRESSOR STATION 515 WILL INVOLVE THE INSTALLATION A GRAVEL PAD, SEVERAL BUILDINGS, A NEW COMMUNICATIONS TOWER, PROPOSED BMPs AND OTHER COMPRESSOR STATION MODIFICATIONS. TRANSCO WILL USE AND IMPLEMENT THE PROPOSED MEASURES AND DETAILS TO CONTROL SOIL EROSION AND OFF-SITE SEDIMENTATION DURING CONSTRUCTION. USING DATA TAKEN FROM GOOGLE EARTH AND MULTI-RESOLUTION LAND CHARACTERISTICS (MRLC) CONSORTIUM WEBSITE (HTTPS://WWW.MRLC.GOV/VIEWER/), IT APPEARS THAT LAND USE FOR THE PAST FEW DECADES HAS BEEN A COMPRESSOR STATION SITE. THE CONTRACTOR WILL CONSTRUCT STORMWATER BMPs TO MITIGATE THE INCREASE IN VOLUME AND PEAK RATES ASSOCIATED WITH CONSTRUCTION. THE PROPOSED BMPs ARE DESIGNED TO STORE THE NET INCREASE IN VOLUME BETWEEN THE PRE- AND POST-DEVELOPMENT 2-YEAR STORM EVENTS. REFER TO THE STORMWATER BMP SIZING CALCULATIONS IN THE PCSM NARRATIVE FOR ADDITIONAL INFORMATION.

BMP DESCRIPTION NARRATIVE

CHANNELS, CULVERTS AND AN INFILTRATION BERM WILL BE INSTALLED ACROSS THE DEVELOPED AREA TO CONVEY 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 1-, 2-, 10-, 25-, 50-, AND 100-YEAR STORM EVENTS. CHANNELS WILL BE CONSTRUCTED TO DIRECT THE MAJORITY OF RUNOFF FROM THE DEVELOPED AREA TO THE INFILTRATION BERM.

BMP INSTALLATION SEQUENCE

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.
- SELECT PLANTS THAT ARE WELL ADAPTED TO THE SPECIFIC SITE CONDITIONS. MEADOW PLANTS MUST BE ABLE TO OUT COMPETE WEED SPECIES IN THE FIRST FEW YEARS AS THEY BECOME ESTABLISHED.
- ALL TEMPORARY EAS BMPs WILL BE REMOVED FOLLOWING SITE STABILIZATION. DO NOT REMOVE OTHER EROSION AND SEDIMENT CONTROL MEASURES UNTIL SITE IS FULLY STABILIZED.
- INSTALL BMPs AS FOLLOWS:
 - CONSTRUCT CHANNELS AND CULVERTS AS SHOWN IN THE PLAN.
 - STABILIZE THE CHANNELS WITH SPECIFIED CHANNEL LININGS.
- INFILTRATION BERM
 - 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 EXISTING VEGETATION AND DISTURBANCE OF EMPTY SOIL).
 - LIGHTLY SCARIFY THE SOIL IN THE AREA OF THE PROPOSED BERM BEFORE DELIVERING SOIL TO SITE.
 - BRING IN 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.
 - 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.
 - 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.
 - PLANT BERM WITH TURF, MEADOW PLANTS, SHRUBS OR TREES, AS DESIRED.
 - MULCH PLANTED AND DISTURBED AREAS WITH COMPOST MULCH TO PREVENT EROSION WHILE PLANTS BECOME ESTABLISHED.
- ALL INSTALLED BMPs WILL BE MONITORED UNTIL FINAL SITE STABILIZATION IS ACHIEVED.
- FOLLOW LONG TERM OPERATION AND MAINTENANCE GUIDELINES DISCUSSED BELOW.

SEEDING AND MULCHING:

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.

TEMPORARY VEGETATION

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.

SOIL AMENDMENT	TABLE 11.2 SOIL AMENDMENT APPLICATION RATE EQUIVALENTS			NOTES
	PERMANENT SEEDING APPLICATION RATE			
	PER ACRE	PER 1,000 SF	PER 1,000 SY	
AGRICULTURAL LIME	6 TONS	20 LBS.	2,480 LBS.	OR AS PER SOIL TEST; MAY NOT BE REQ. IN AGRICULTURAL FIELDS
10-20-20 FERTILIZER	1,000 LBS.	25 LBS.	210 LBS.	OR AS PER SOIL TEST; MAY NOT BE REQ. IN AGRICULTURAL FIELDS
TEMPORARY SEEDING APPLICATION RATE				
AGRICULTURAL LIME	1 TON	4 LBS.	410 LBS.	TYP. NOT REQ. FOR TOPSOIL STOCKPILES
10-10-10 FERTILIZER	500 LBS.	12.5 LBS.	100 LBS.	TYP. NOT REQ. FOR TOPSOIL STOCKPILES

ADAPTED FROM PENN STATE, "EROSION CONTROL AND CONSERVATION PLANTINGS ON NONCROPLAND"

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												
Species	Growth Habit	Tolerates					Minimum Seed Specifications ³					
		Wet Soil	Dry Site	Low Fertility	Acid Soil (pH 5.5-5.2)	Purity (%)	Ready Germ (%)	Hard Seed (%)	Total Germ (%)	Seeds/lb (1,000s)		
Deertongue	bunch	yes	yes	yes	yes	95	75		75	250		
Weeping lovegrass	bunch	no	yes	yes	yes	97	75		75	1,500		
Switchgrass ⁴	bunch	yes	yes	yes	yes			(60 PLS)		390		
Big bluestem	bunch	no	yes	yes	yes			(60 PLS)		150		
Cool-Season Grasses												
Tall Fescue	bunch	yes	no	yes	no	95	80		80	227		
Redtop	sod	yes	no	yes	yes	92	80		80	5,000		
Fine fescues	sod	no	no	yes	no	95	80		80	400		
Perennial ryegrass	bunch	yes	no	no	no	95	85		85	227		
Annual ryegrass	bunch	yes	no	yes	no	95	85		85	227		
Kentucky bluegrass	sod	no	no	no	no	95	75		75	2,200		
Reed canarygrass	sod	yes	yes	yes	no	95	70		70	520		
Orchardgrass	bunch	yes	yes	yes	yes	95	80		80	654		
Timothy	bunch	yes	no	yes	yes	95	80		80	1,230		
Smooth bromegrass	sod	no	yes	yes	no	95	80		80	136		
Legumes												
Crownvetch	sod	no	yes	yes	no	98	40	30	65	120		
Birdsfoot trefoil ⁵	bunch	yes	no	yes	yes	98	60	20	80	400		
Flatpea	sod	no	no	yes	yes	98	55	20	75	10		
Serecia lespedeza	bunch	no	no	yes	yes	98	60	20	80	335		
Cereals												
Winter wheat	bunch	no	no	no	no	98	85		85	15		
Winter rye	bunch	no	no	yes	yes	98	85		85	18		
Spring oats	bunch	no	no	no	no	98	85		85	13		
Sundangrass	bunch	no	yes	no	no	98	85		85	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.
- ONCE ESTABLISHED, PLANS MAY GROW AT A SOMEWHAT LOWER pH, BUT COVER GENERALLY IS ONLY ADEQUATE AT pH 6.0 OR ABOVE.
- MINIMUM SEED LOTS ARE TRULY MINIMUM, AND SEED LOTS TO BE USED FOR REVEGETATION PURPOSES SHOULD EQUAL OR EXCEED THESE STANDARDS. THIS SEEDING GRADE SHOULD BE 75% OR BETTER. CROWN VETCH SHOULD HAVE AT LEAST 40% READILY GERMINABLE SEED AND 30% HARD SEED. COMMONLY, SEED LOTS ARE AVAILABLE THAT EQUAL OR EXCEED MINIMUM SPECIFICATIONS. REMEMBER THAT DISTURBED SITES ARE ADVERSE FOR PLAN 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.
- SWITCHGRASS SEED IS SOLD ONLY IN THE BASIS OF PLS.
- NEED SPECIFIC LEGUME INOCULANT. INOCULANT SUITABLE FOR GARDEN PEAS AND SWEETPEAS USUALLY IS SATISFACTORY FOR FLATPEA.
- BIRDSFOOT TREFOL IS ADAPTED OVER THE ENTIRE STATE, EXCEPT IN THE EXTREME SOUTHEAST WHERE CROWN AND ROOT ROOTS MAY INJURE STANDS.

PERCENTAGE OF MIX COMPOSITION	SCIENTIFIC NAME	COMMON NAME
30.0%	PANICUM CLANDESTINUM	DEERTONGUE
20.0%	ELYMUS VIRGINICUS	VIRGINIA WILD RYE
11.8%	ANDROPOGON GERARDII	BIG BLUESTEM
10.5%	SORGHASTRUM NUTANS	INDIAN GRASS
5.0%	PANICUM VIRGATULUM	SWITCHGRASS
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%	ASCLERAS INCARNATA	SWAMP MILKWEED
0.7%	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER
0.7%	ASTER UMBELLATUS	FLAT TOPPED WHITE ASTER
0.7%	EUPATORIUM PERFOOLIATUM	BONESET
0.5%	AGRO STIS PERENNANS	AUTUMN BENTGRASS
0.5%	HELENIUM AUTUMNALE	COMMON SNEEZEWEED
0.5%	MO NARDA FISTULOSA	WILD BERGAMOT
0.5%	VERNO NIA NO VERO RACENIS	NEW YORK IRONWEED
0.4%	PHYCNANTHEMUM TENUIFOLIUM	NARROWLEAF MOUNTAINMINT
0.4%	SOLIDAGO PATULA	ROUGHLEAF GOLDENROD
0.3%	EUPATORIUM FISTULOSUM	JOE PYE WEED
0.3%	LOBELIA SIPHILITICA	GREAT BLUE LOBELIA
0.2%	ASTER PUNICUS	PURPLESTEM ASTER

- SEEDING RATE: 20 LBS/ACRE WITH A COVER CROP AT 30 LBS/ACRE.
- THIS SEED MIX IS TO BE USED TO REVEGETATE WORKSPACE WITHIN THE DESIGNATED 150' RIPARIAN BUFFER AREA. WHERE SLOPES ARE LESS THAN 10% IF THE SLOPE EXCEEDS 10% A STANDARD UPLAND ROW MIX SHOULD BE USED.
- AN ALTERNATIVE SEED MIXTURE THAT CONTAINS SIMILAR SPECIES IS ACCEPTABLE.

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.DEP.WEB.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 TEST RESULTS OF THE FILL MAY HAVE BEEN SUBJECT 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

THERMAL IMPACTS TO SURFACE WATERS ARE NOT ANTICIPATED. MOST OF THE STORMWATER WILL BE ROUTED THROUGH THE STORMWATER BMP 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 RETAINED IN THE BMPs FOR A PERIOD OF 12 HOURS BEFORE BEING DISCHARGED DURING A 100-YEAR/24-HOUR STORM EVENT. THIS 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.

ANTI-DEGRADATION REQUIREMENTS

EXISTING COMPRESSOR STATION 515 IS LOCATED WITHIN A HO-CWF WATERSHED. THEREFORE IMPACTS TO A HO-CWF WATERSHED ARE UNAVOIDABLE. TRANSCO DETERMINED THERE ARE NO COST-EFFECTIVE AND ENVIRONMENTALLY SOUND VIABLE NON-DISCHARGE ALTERNATIVES FOR THE PROJECT.

EARTH 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. WHERE POSSIBLE, THE LOD WAS DECREASED TO AVOID ADDITIONAL DISTURBANCE TO THE EXTENT PRACTICAL.

ANTI-DEGRADATION BEST AVAILABLE COMBINATION OF TECHNOLOGIES (ABACT) STANDARDS HAVE BEEN PROPOSED FOR COMPRESSOR STATION 515 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 COMPRESSOR STATION 515 IS LOCATED IN HO WATERSHEDS AND CONSTRUCTION ACTIVITIES IN THESE AREAS WILL RESULT IN INCREASED DISCHARGE OF STORMWATER TO SURFACE WATERS WHICH WILL BE MITIGATED BY THE IMPLEMENTATION OF POST CONSTRUCTION STORMWATER MANAGEMENT (PCSM) BMPs. 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 COMPRESSOR STATION 515 IS LOCATED WITHIN A SMALL PORTION OF A NON-FORESTED RIPARIAN BUFFER OF STREAM S2-12-620A. AFTER COMPLETING THE CONSTRUCTION ACTIVITIES, THE IMPACTED RIPARIAN AREA WILL BE RESTORED BACK TO PRE-EXISTING CONTOURS AND RESEEDED WITH A RIPARIAN SEED MIX.

BECAUSE THE PROJECT IS TEMPORARY IN NATURE AND THE SITE WILL BE FULLY RESTORED TO ITS PREEXISTING CONDITION LEAVING RIPARIAN BUFFERS UNDISTURBED TO THE EXTENT PRACTICAL, IT IS ELIGIBLE FOR THE RIPARIAN BUFFER WAIVER UNDER 25 PA. CODE §102.14(D)(2)(IV). AS SUCH, A RIPARIAN BUFFER WAIVER HAS BEEN REQUESTED ALONG WITH THIS ESCP APPLICATION (SECTION 1-7).

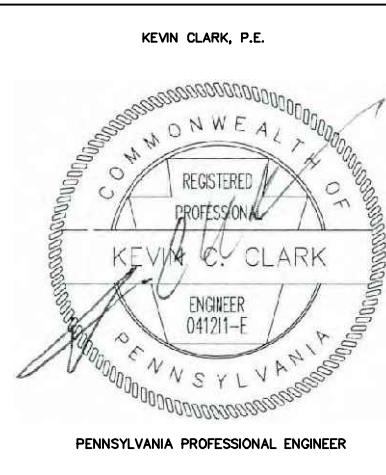
NON-STRUCTURAL AND STRUCTURAL WATER QUALITY BMP DESCRIPTION

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 AND RIPARIAN BUFFERS 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.

TEMPORARILY IMPACTED RIPARIAN BUFFER WILL BE FULLY RESTORED TO ITS PREEXISTING CONDITIONS. DISTURBED AREAS THAT ARE NOT PROPOSED TO BE IMPERVIOUS WILL BE REVEGETATED AS PER THE SEEDING AND MULCHING NOTES PROVIDED IN PCSM PLAN NOTES.

THE PCSM PLAN SHALL BE PREPARED BY A PERSON TRAINED AND EXPERIENCED IN EROSION CONTROL METHODS AND TECHNIQUES

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



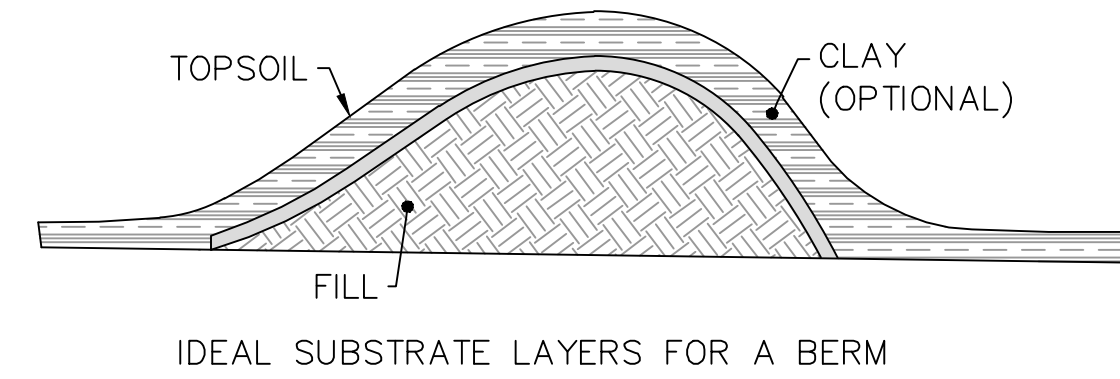
NEW CLARK, P.E.		REVISIONS			W.O. NO.	CHK	APP.
NO.	DATE	BY	DESCRIPTION				
1	06/29/21	RHM	REVISED PER PADEP COMMENTS.				

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
 REGIONAL ENERGY ACCESS EXPANSION PROJECT
 COMPRESSOR STATION 515
 POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

NOTES

BUCK TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

DRAWN BY: DRV	DATE: 03/31/21	ISSUED FOR BID:	SCALE: AS NOTED
CHECKED BY: RUN	DATE: 03/31/21	ISSUED FOR CONSTRUCTION:	REVISION:
APPROVED BY: KCC	DATE: 03/31/21	DRAWING NUMBER:	SHEET 4 OF 6
WO: 121227	RID: 304	DATE: 26-1000-70-28-D	



INFILTRATION BERM NOTES:

AN INFILTRATION BERM IS A MOUND OF COMPACTED EARTH WITH SLOPING SIDES THAT IS USUALLY LOCATED ALONG A CONTOUR ON RELATIVELY GENTLY SLOPING SITES.

MAINTAIN A MINIMUM 2-FOOT SEPARATION TO BEDROCK AND SEASONALLY HIGH WATER TABLE, PROVIDE DISTRIBUTED INFILTRATION AREA (5:1 IMPERVIOUS AREA TO INFILTRATION AREA - MAXIMUM), SITE ON NATURAL, UNCOMPACTED SOILS WITH ACCEPTABLE CAPACITY.

THE BACK OF THE BERM SHALL BE LINED WITH SC150BN LINING WITH A STAPLE D PATTERN AND SHALL EXTEND AT LEAST 10 FT BEYOND THE TOE OF THE BERM.

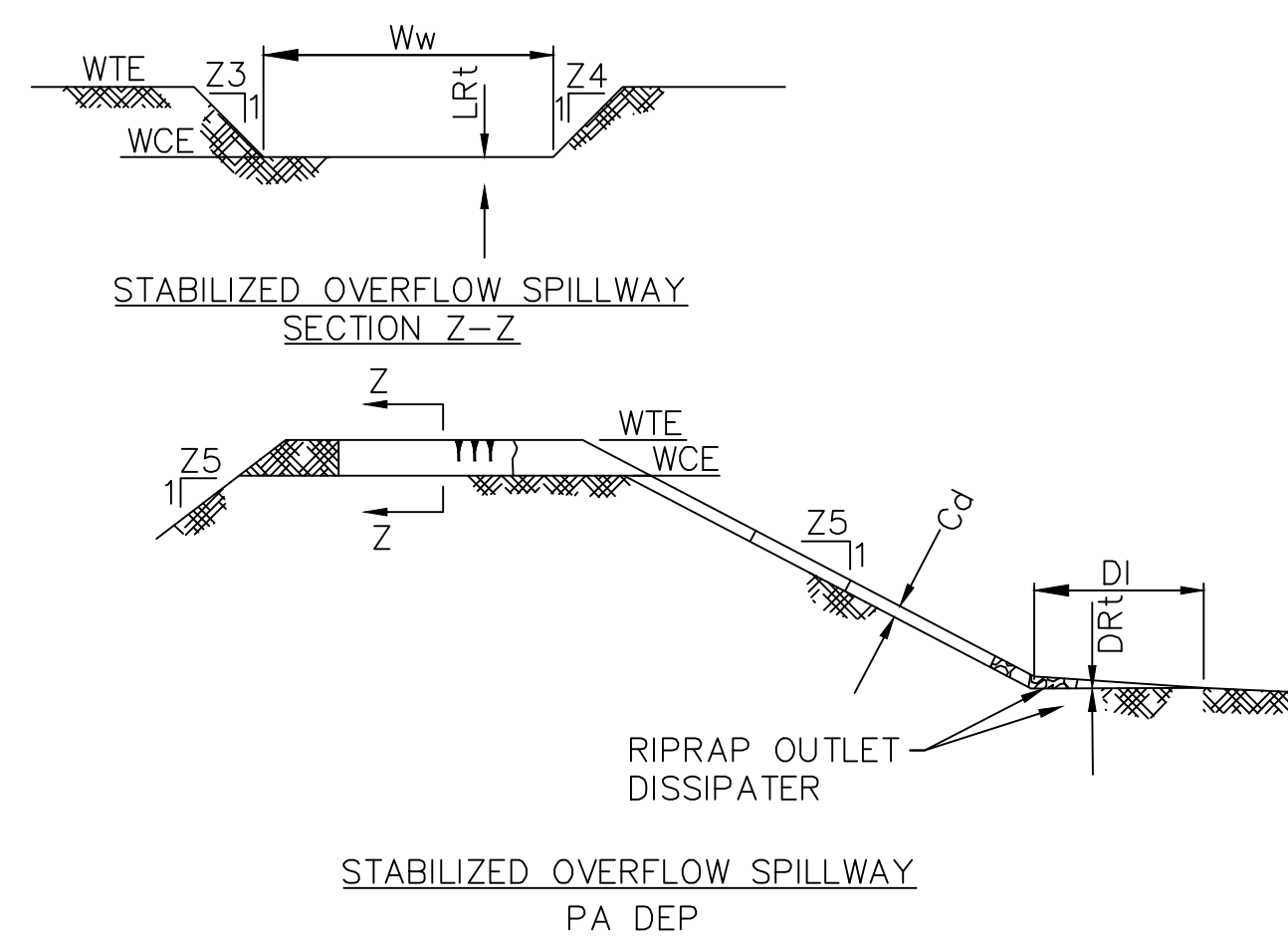
BERMS SHALL HAVE SIDE SLOPES OF 3:1.

THE CREST OF THE BERM SHOULD BE LOCATED NEAR ON EDGE OF THE BERM, RATHER THAN IN THE MIDDLE, TO ALLOW FOR A MORE NATURAL, ASYMMETRICAL SHAPE.

BERMS SHOULD BE VEGETATED USING SEED MIXTURE 1 PLUS 3 FROM TABLE 11.5.

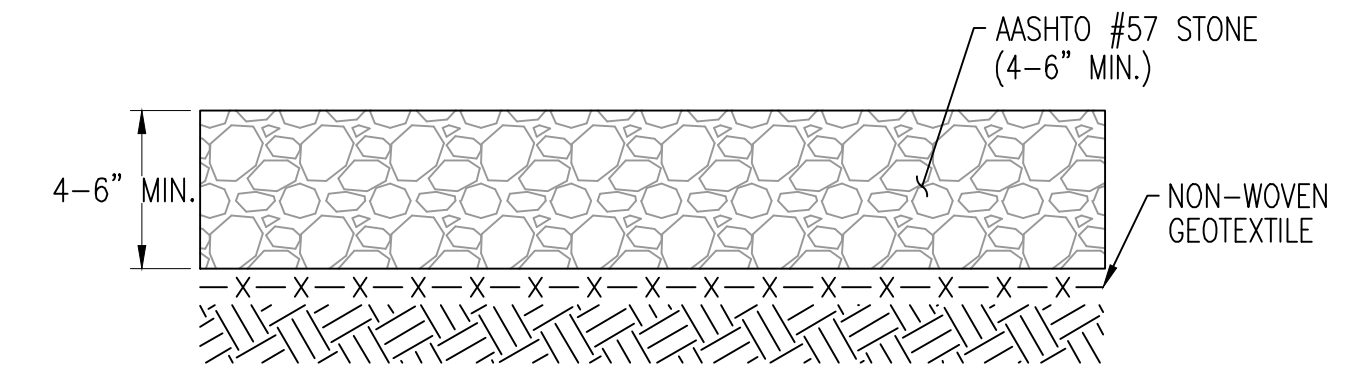
INFILTRATION BERM No.	LENGTH OF BERM (ft) (L)	HEIGHT OF BERM (ft)	BOTTOM ELEV. (ft) (B.E.)	TOP OF BERM ELEV. (ft)	SHWT BELOW GROUND (in)	BEDROCK BELOW GROUND (in)	SPILLWAY ELEV. (ft)	TOP SPILLWAY WIDTH (ft)
INFILTRATION BERM 1	420	2.00	1925.50	1927.50	24 MIN	>24	1926.62	11.5

NO. DATE BY REVISION DESCRIPTION W.O. NO. CHK. APP. TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL INFILTRATION BERM PENNSYLVANIA



BMP	WEIR		TOP ELEV. WTE (ft)	CREST ELEV. WCE (ft)	WIDTH Ww (ft)	LINING		CHANNEL		DISSIPATOR			
	Z3 (ft)	Z4 (ft)				RIPRAP SIZE (R-...)	RIPRAP THICK. LRT (in)	Z5 (ft)	DEPTH Cd (ft)	LENGTH DI (ft)	WIDTH Dw (ft)	RIPRAP SIZE (R-...)	RIPRAP THICK. DRT (in)
INFILTRATION BERM	2	2	1927.50	1926.62	8	N/A (SEE LEVEL SPREADER DETAIL)							

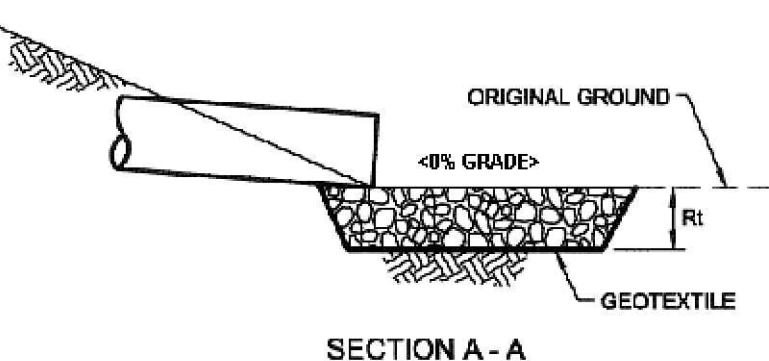
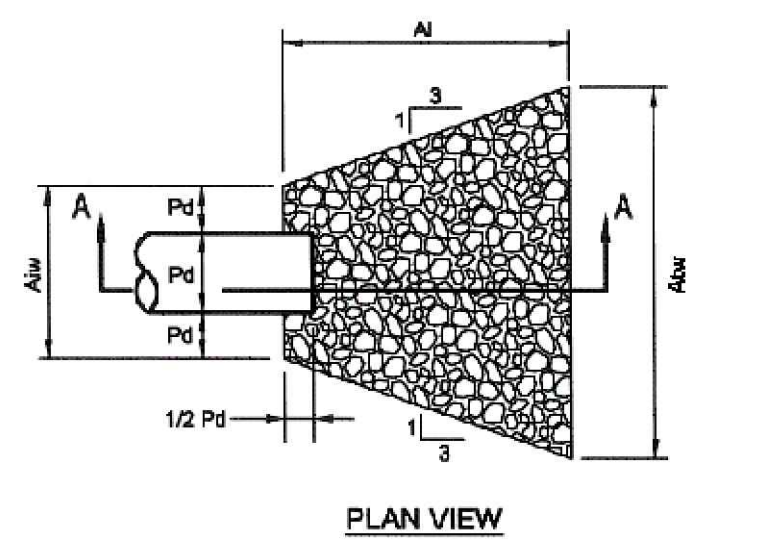
NO. DATE BY REVISION DESCRIPTION W.O. NO. CHK. APP. TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL STABILIZED OVERFLOW SPILLWAY PENNSYLVANIA



NOTES:

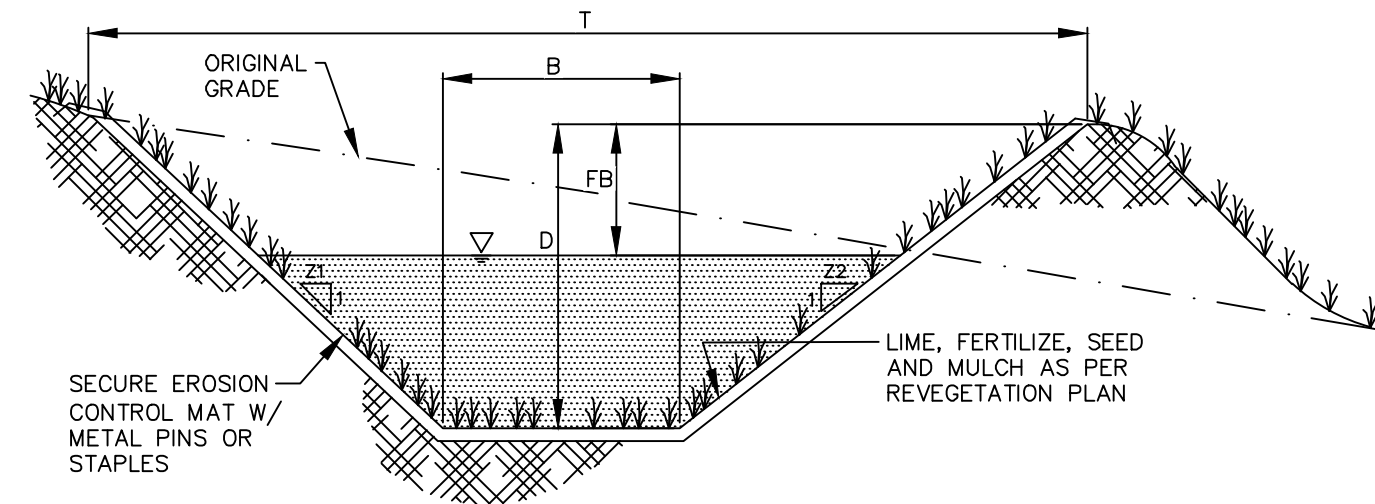
- CROSS SECTION TO BE APPLIED TO DRY AREAS WITHOUT DRAINAGE CONCERNS.
- EXISTING MATERIAL TO BE REMOVED AND STOCKPILED IN AN APPROVED LOCATION ONLY.
- EXISTING DRAINAGE PATTERNS SHALL BE MAINTAINED IN ACCORDANCE WITH THE APPROVED EROSION & SEDIMENT POLLUTION CONTROL PLAN FOR THE PROJECT.
- GRADING AND CROSS SLOPES VARY BY EXISTING CONDITIONS; SEE SPECIFIC DESIGN AND PROFILE FOR MORE DETAIL.
- WITHIN EXTENTS OF GRADING FOR PERMANENT ACCESS ROADS AND VALVE SITES, COMPACT ALL SOIL FILL/BACKFILL AND COARSE AGGREGATE WITH FINES TO 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557. CONTRACTOR SHALL UTILIZE ADEQUATELY SIZED AND CONFIGURED EQUIPMENT TO ACHIEVE SPECIFIED COMPACTION.
- AS DIRECTED BY ENGINEER AND APPROVED BY OWNER, EXCAVATE AND STABILIZE SOFT SPOTS, UNSATISFACTORY SOILS AND AREAS OF EXCESSIVE PUMPING OR RUTTING.
- PROOF-ROLLING OF SUBGRADE MAY BE REQUIRED TO DETERMINE PROPER COMPACTION BY OWNER.

NO. DATE BY REVISION DESCRIPTION W.O. NO. CHK. APP. TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL PROPOSED GRAVEL PAD PENNSYLVANIA



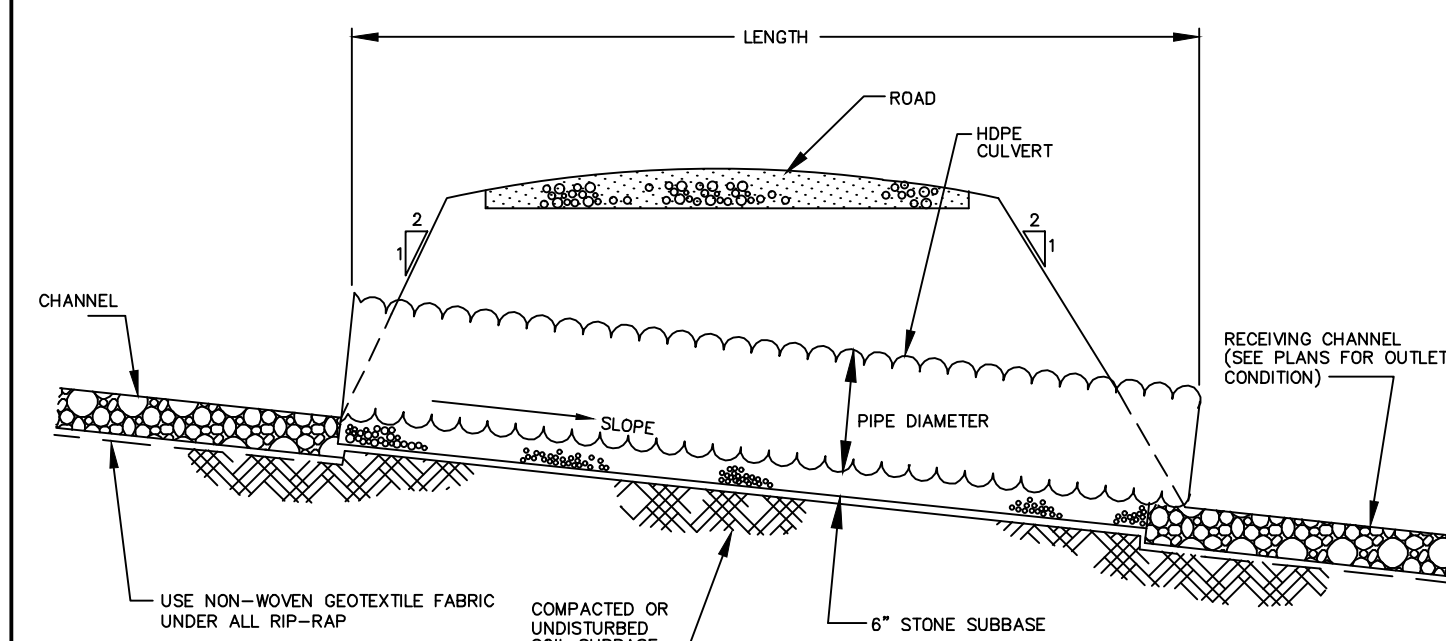
APRON No.	PIPE DIA. Do (in)	MAN FOR PIPE	PIPE SLOPE (ft/ft)	Q (CFS)	V (FPS)	RIPRAP SIZE	Rt (in)	At (ft)	Atw (ft)	Atw (ft)
C-1	24	0.035	0.035	4.70	3.45	R-3	9	8	6	14.5
C-2	24	0.035	0.017	6.38	2.88	R-3	9	8	6	14.5
C-3	24	0.035	0.014	3.22	2.24	R-3	9	8	6	14.5
C-4	48	0.035	0.038	12.94	4.77	R-3	9	24	12	36.0
C-5	24	0.035	0.014	2.88	2.32	R-3	9	8	6	14.5
CULVERT 1	18	0.012	0.010	12.94	7.29	R-4	18	12	4.5	16.5
CULVERT 2	18	0.012	0.010	2.94	4.71	R-3	9	8	4.5	12.5
TRENCH DRAIN	12	0.012	0.010	1.22	4.98	R-3	9	8	3	11.0

NO. DATE BY REVISION DESCRIPTION W.O. NO. CHK. APP. TRANSCONTINENTAL GAS PIPE LINE CORPORATION STANDARD ENVIRONMENTAL DETAIL RIPRAP APRON OUTLET PROTECTION PENNSYLVANIA



CHANNEL I.D.	LENGTH (ft)	SLOPE (%)	BASE WIDTH (ft)	DEPTH (ft)	SIDE SLOPES (Z1/Z2)	TOP WIDTH (ft)	LINING	OUTLET
C-1	140	3.5	2.0	1.17	3/3	9.02	GRASS	CULVERT 1
C-2	180	1.7	2.0	1.33	3/3	9.98	GRASS	CULVERT 1
C-3	180	1.4	2.0	1.17	3/3	9.02	GRASS	CULVERT 2
C-4	240	3.8	4.0	1.17	3/3	11.02	GRASS	INFILTRATION BERM
C-5	30	1.4	2.0	1.17	3/3	9.02	GRASS	CHANNEL C-4
BERM SPILLWAY	30	1.0	6.0	1.50	3/3	15.00	GRASS	LEVEL SPREADER

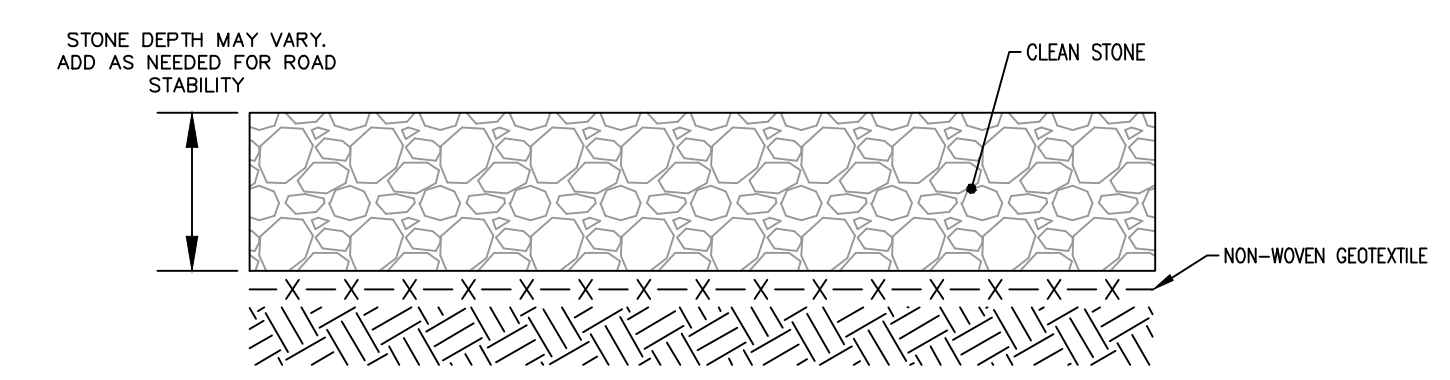
NO. DATE BY REVISION DESCRIPTION W.O. NO. CHK. APP. TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL TYPICAL CHANNEL PENNSYLVANIA



- NOTES:**
- BARRELS SHALL BE PLACED AT THE MINIMUM SLOPE INDICATED FOR THE CHANNEL.
 - AN ADDITIONAL 0.5 OF FREEBOARD SHALL BE PROVIDED IN THE CHANNEL ON THE INVERT SIDE OF THE CULVERT.
 - IF MULTIPLE BARRELS ARE USED, THEY SHALL BE PLACED SUCH THAT THERE IS A MINIMUM OF 1 BARREL WIDTH BETWEEN.
 - CORRUGATED METAL OR HDPE MAY BE USED UPON EVALUATION BY AN ENGINEER.

ID	REQ'D FLOW (cfs)	LENGTH	INV. IN (ft)	INV. OUT (ft)	SLOPE (ft/ft)	NO. OF PIPES	PIPE DIA (in)
CULVERT 1	10.25	50	1934.93	1934.50	0.01	1	18
CULVERT 2	2.94	80	1935.50	1935.00	0.01	1	18

NO. DATE BY REVISION DESCRIPTION W.O. NO. CHK. APP. TRANSCONTINENTAL GAS PIPE LINE CORPORATION STANDARD ENVIRONMENTAL DETAIL TYPICAL ACCESS ROAD CULVERT PENNSYLVANIA



NOTES:

- CROSS SECTION TO BE APPLIED TO DRY AREAS WITHOUT DRAINAGE CONCERNS.
- EXISTING MATERIAL TO BE REMOVED AND STOCKPILED IN AN APPROVED LOCATION ONLY.
- EXISTING DRAINAGE PATTERNS SHALL BE MAINTAINED IN ACCORDANCE WITH THE APPROVED EROSION & SEDIMENT POLLUTION CONTROL PLAN FOR THE PROJECT.
- GRADING AND CROSS SLOPES VARY BY EXISTING CONDITIONS; SEE SPECIFIC DESIGN AND PROFILE FOR MORE DETAIL.
- WITHIN EXTENTS OF GRADING FOR PERMANENT ACCESS ROADS AND VALVE SITES, COMPACT ALL SOIL FILL/BACKFILL AND COARSE AGGREGATE WITH FINES TO 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557. CONTRACTOR SHALL UTILIZE ADEQUATELY SIZED AND CONFIGURED EQUIPMENT TO ACHIEVE SPECIFIED COMPACTION.
- AS DIRECTED BY ENGINEER AND APPROVED BY OWNER, EXCAVATE AND STABILIZE SOFT SPOTS, UNSATISFACTORY SOILS AND AREAS OF EXCESSIVE PUMPING OR RUTTING.
- PROOF-ROLLING OF SUBGRADE MAY BE REQUIRED TO DETERMINE PROPER COMPACTION BY OWNER.
- TEMPORARILY WIDENED ROAD SHOULD FOLLOW THE SAME SPECIFICATION FOR WIDENED ROADS. THE EXISTING ROAD SHALL BE MAINTAINED.
- ROADS FOR TEMPORARY CONSTRUCTION USE WILL BE MAINTAINED AND RESTORED TO THEIR PREVIOUS CONDITIONS IN ACCORDANCE WITH CHAPTER 102 ROAD MAINTENANCE ACTIVITIES. PLAN VIEW ACCESS ROAD CALLOUTS IDENTIFY THE PROPOSED ROAD MAINTENANCE ACTIVITY FOR THE PROJECT (I.E. MAINTENANCE ONLY, TEMPORARY WIDENING, ETC.).

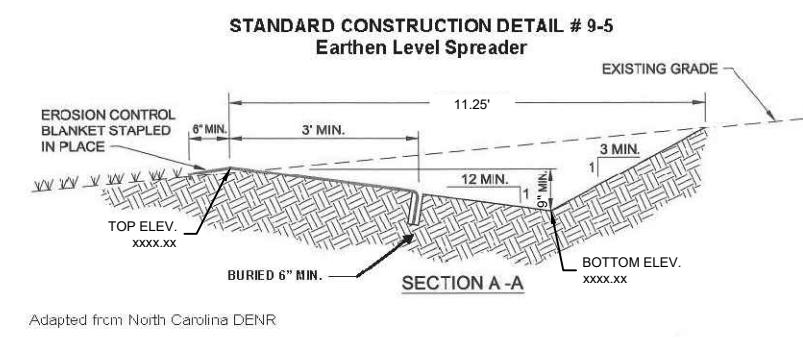
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REVISIONS

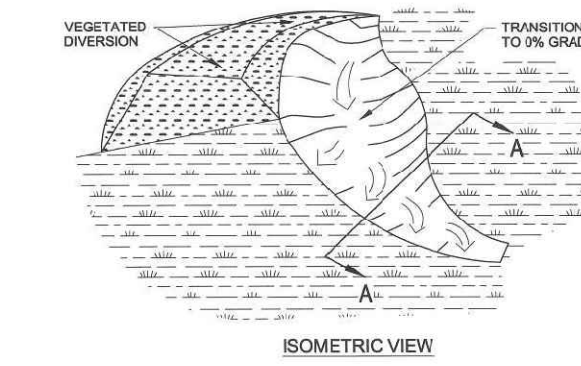
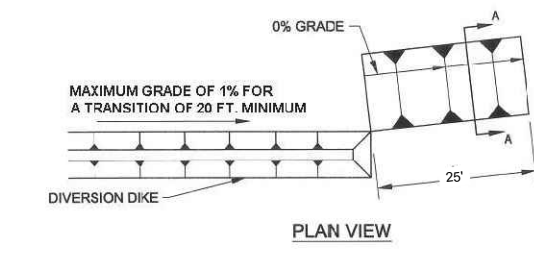
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
1	06/29/21	RHM	REVISED PER PADEP COMMENTS.			

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
REGIONAL ENERGY ACCESS EXPANSION PROJECT
COMPRESSOR STATION 515
POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
DETAILS
BUCK TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

DRAWN BY: DRV	DATE: 03/31/21	ISSUED FOR BID:	SCALE: AS NOTED
CHECKED BY: RJN	DATE: 03/31/21	ISSUED FOR CONSTRUCTION:	REVISION:
APPROVED BY: KCC	DATE: 03/31/21	DRAWING NUMBER: 26-1000-70-28-D	SHEET 5 OF 6



Adapted from North Carolina DCR



Adapted from EPA-823-G-008

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NOTES:

1. LEVEL SPREADER SHALL BE CONSTRUCTED AND MAINTAINED LEVEL. SMALL VARIATIONS IN HEIGHT ON THE DOWNSTREAM LIP SHALL BE LESS THAN 0.05% SLOPE ALONG THE WEIR.
2. VARIATIONS IN EXISTING GROUND ELEVATION SHALL BE LESS THAN 4 INCHES.
3. CLEAR DEBRIS (I.E. EARTH, WOOD, AND OTHER ORGANIC MATTER) LOCATED WITHIN 15 FEET DOWN SLOPE OF THE LEVEL SPREADER THAT MAY ACCUMULATE.
4. TO PRESERVE INFILTRATION CAPACITY, THE UNDERLYING SOILS SHOULD REMAIN UNDISTURBED, UNCOMPACTED, AND PROTECTED FROM HEAVY EQUIPMENT.

OPERATION & MAINTENANCE:

1. LEVEL SPREADER SHALL BE MONITORED FOR 2 YEARS ON A QUARTERLY BASIS AND SEMI-ANNUALLY THEREAFTER.
2. INSPECTIONS SHALL BE MADE FOLLOWING RAINFALL EVENTS EXCEEDING 1 INCH.
3. MONITORING INCLUDES BOTH THE LEVEL SPREADER AND THE DOWN SLOPE AREA UP TO AND INCLUDING THE RECEIVING STREAM.

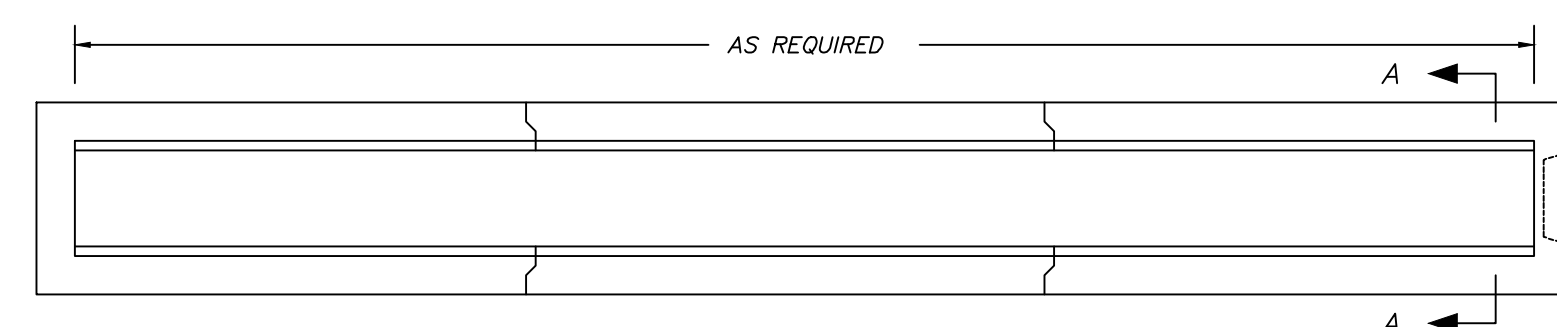
LEVEL SPREADER (LS)
PERMANENT STORMWATER MEASURE

NO.	DATE	BY	REVISION DESCRIPTION	NO.	CHK.	APP.

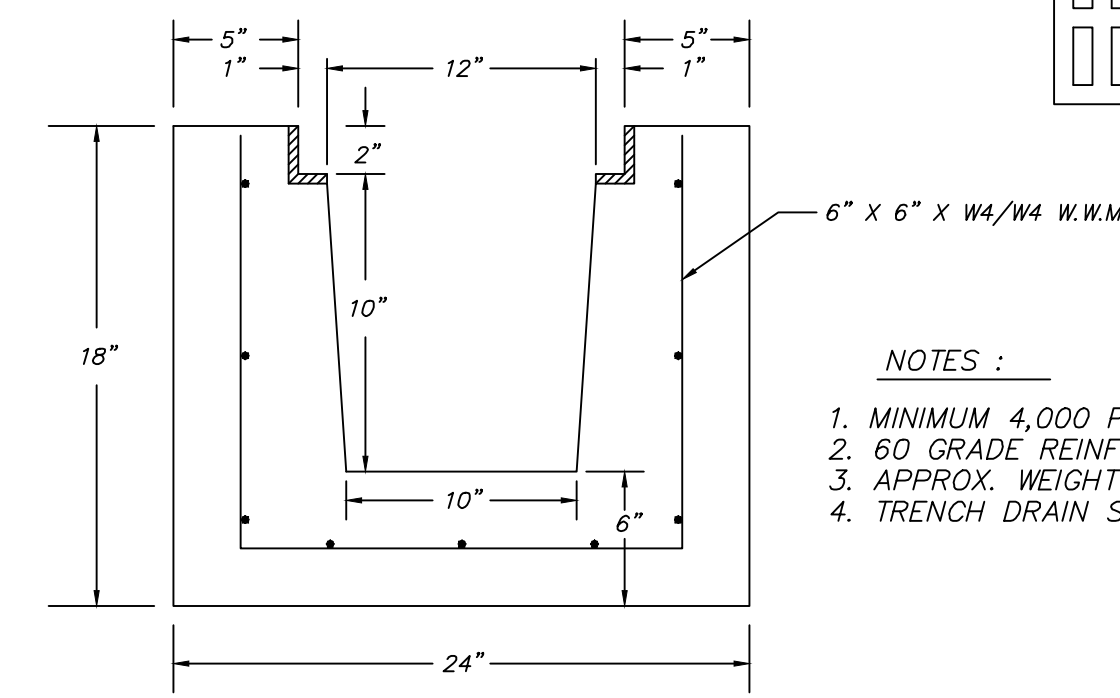
TRANSCONTINENTAL GAS PIPE LINE CORPORATION
PROJECT SPECIFIC DETAIL

LS LEVEL SPREADER

PENNSYLVANIA
Williams
GAS PIPELINE



PLAN VIEW



SECTION A-A

NOTES :

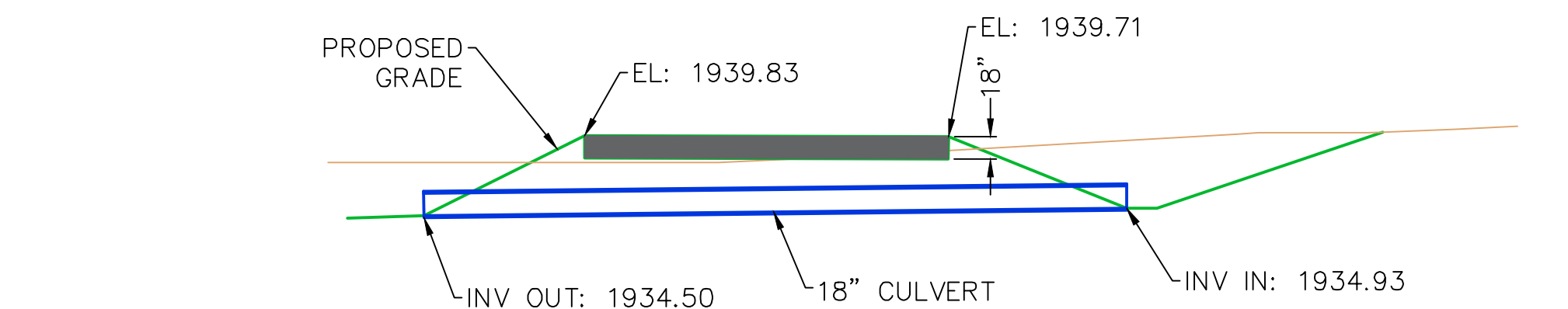
1. MINIMUM 4,000 PSI CONCRETE @ 28 DAYS
2. 60 GRADE REINFORCEMENT
3. APPROX. WEIGHT = 325 LBS/LIN.FT.
4. TRENCH DRAIN SHALL HAVE A MIN. H20 LOAD CAPACITY

ID	REQ'D FLOW (cfs)	LENGTH	INV. IN (ft)	INV. OUT (ft)	SLOPE (ft/ft)	NO. OF PIPES	PIPE DIA (in)
TRENCH DRAIN	1.22	50	1941.0	1940.50	0.01	1	10"X10"

NO.	DATE	BY	REVISION DESCRIPTION	NO.	CHK.	APP.

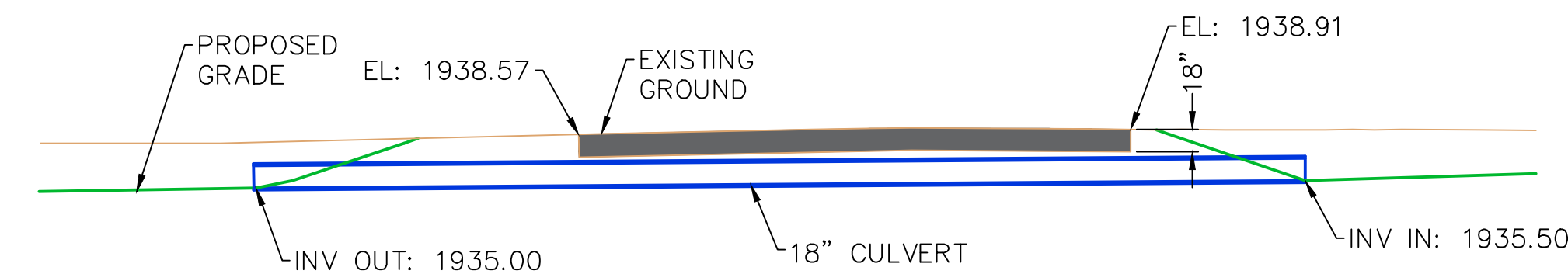
TRANSCONTINENTAL GAS PIPE LINE CORPORATION
STANDARD ENVIRONMENTAL DETAIL
TRENCH DRAIN

PENNSYLVANIA
Williams



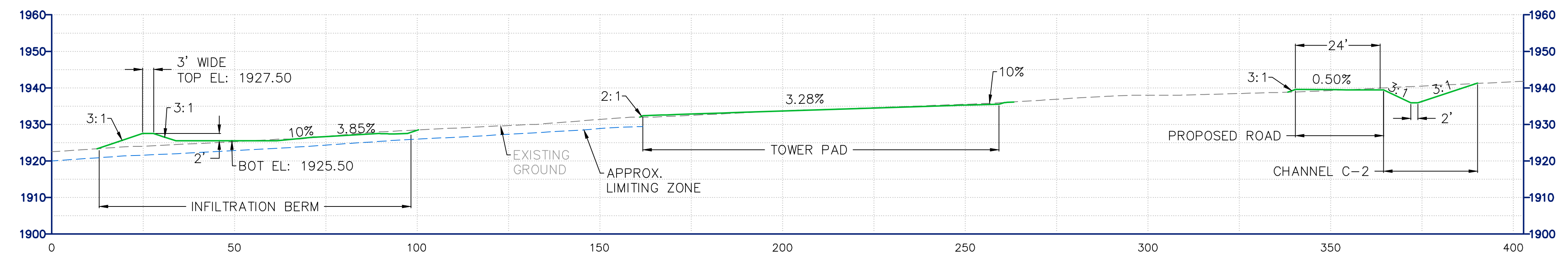
CULVERT PIPE 1 SECTION

SCALE: 1"=10'



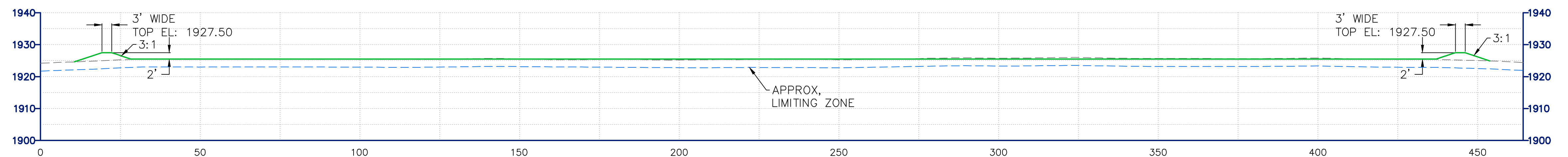
CULVERT PIPE 2 SECTION

SCALE: 1"=10'



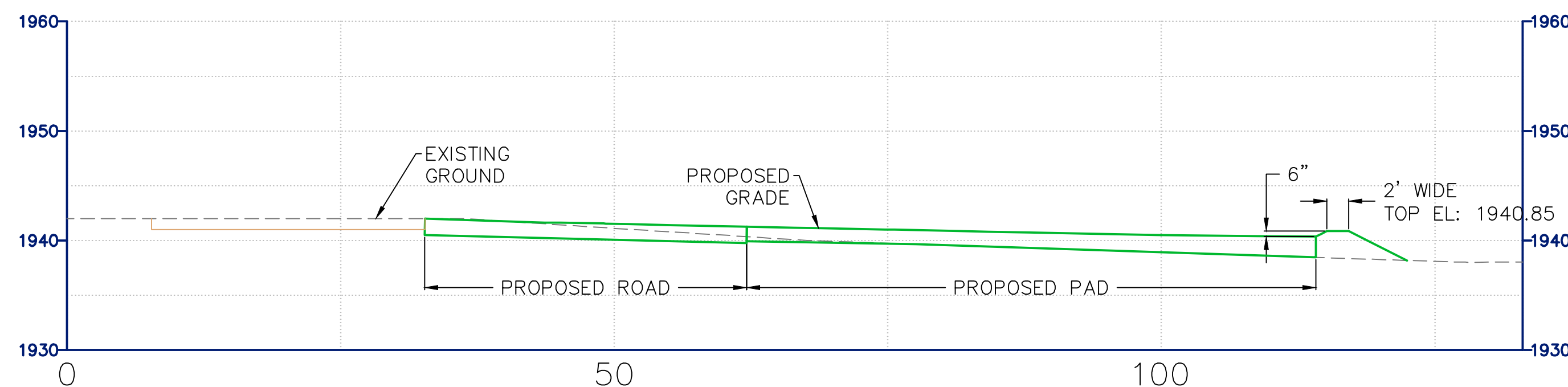
SECTION A-A

SCALE: 1"=20'



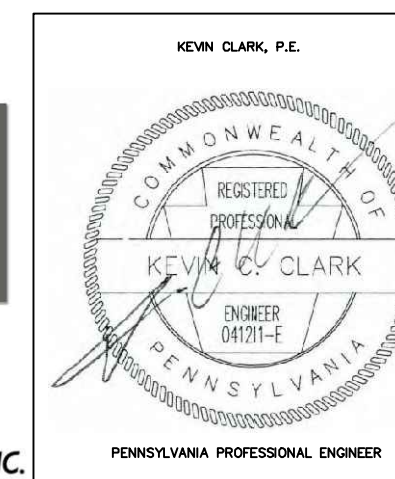
SECTION B-B

SCALE: 1"=20'



PAD SECTION C-C

SCALE: 1"=10'



NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
1	06/29/21	RHM	REVISED PER PADEP COMMENTS.			

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC REGIONAL ENERGY ACCESS EXPANSION PROJECT COMPRESSOR STATION 515 POST CONSTRUCTION STORMWATER MANAGEMENT PLAN DETAILS BUCK TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA			
DRAWN BY: DRV	DATE: 03/31/21	ISSUED FOR BID:	SCALE: AS NOTED
CHECKED BY: RJN	DATE: 03/31/21	ISSUED FOR CONSTRUCTION:	REVISION:
APPROVED BY: KCC	DATE: 03/31/21	DRAWING NUMBER: 26-1000-70-28-D	SHEET 6 OF 6