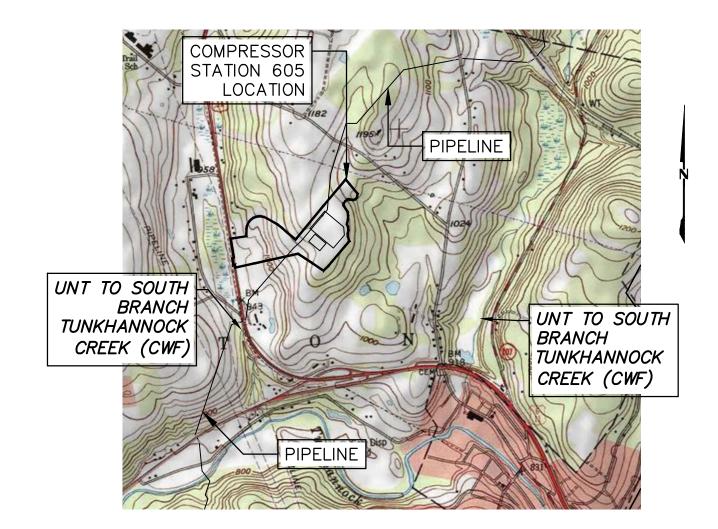
ATLANTIC SUNRISE PROJECT PROPOSED 30" NATURAL GAS PIPELINE

POST CONSTRUCTION STORMWATER MANAGEMENT PLANS FOR COMPRESSOR STATION 605

PHASE 1

CLINTON TOWNSHIP WYOMING COUNTY

PENNSYLVANIA

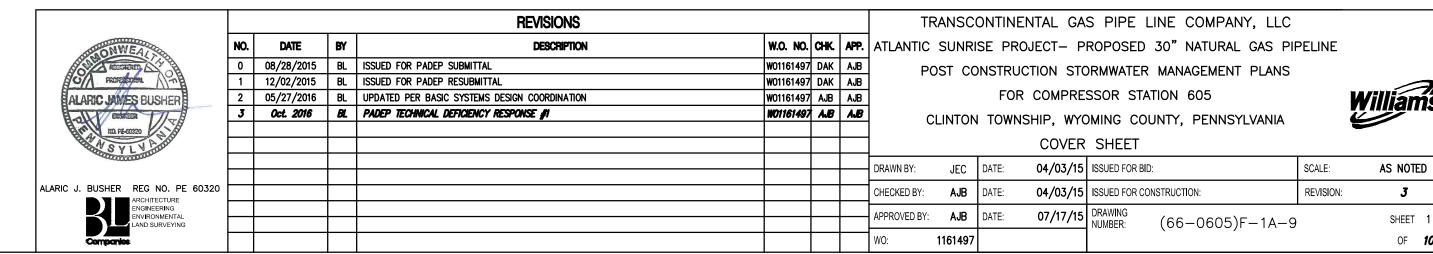


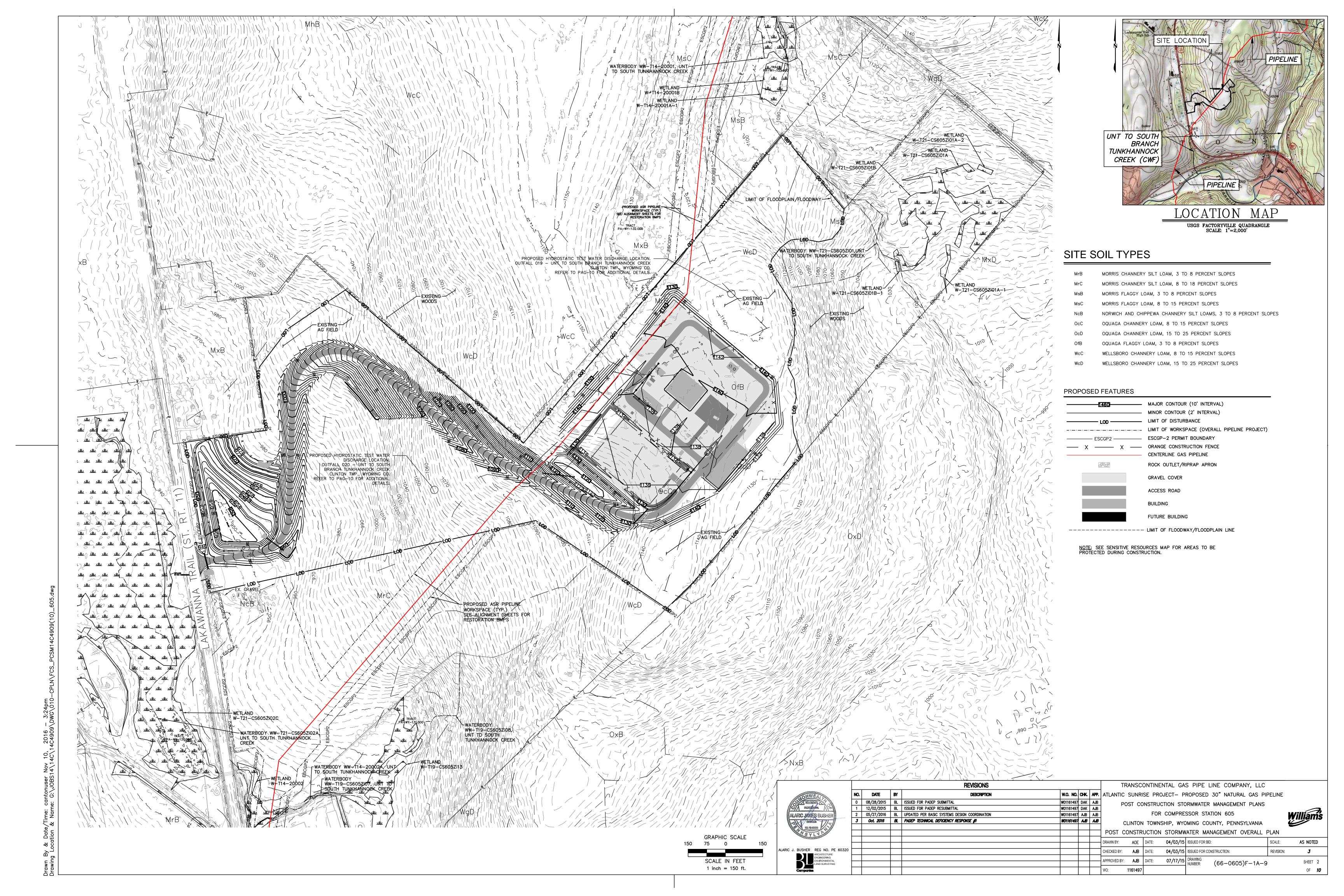
VICINITY MAP

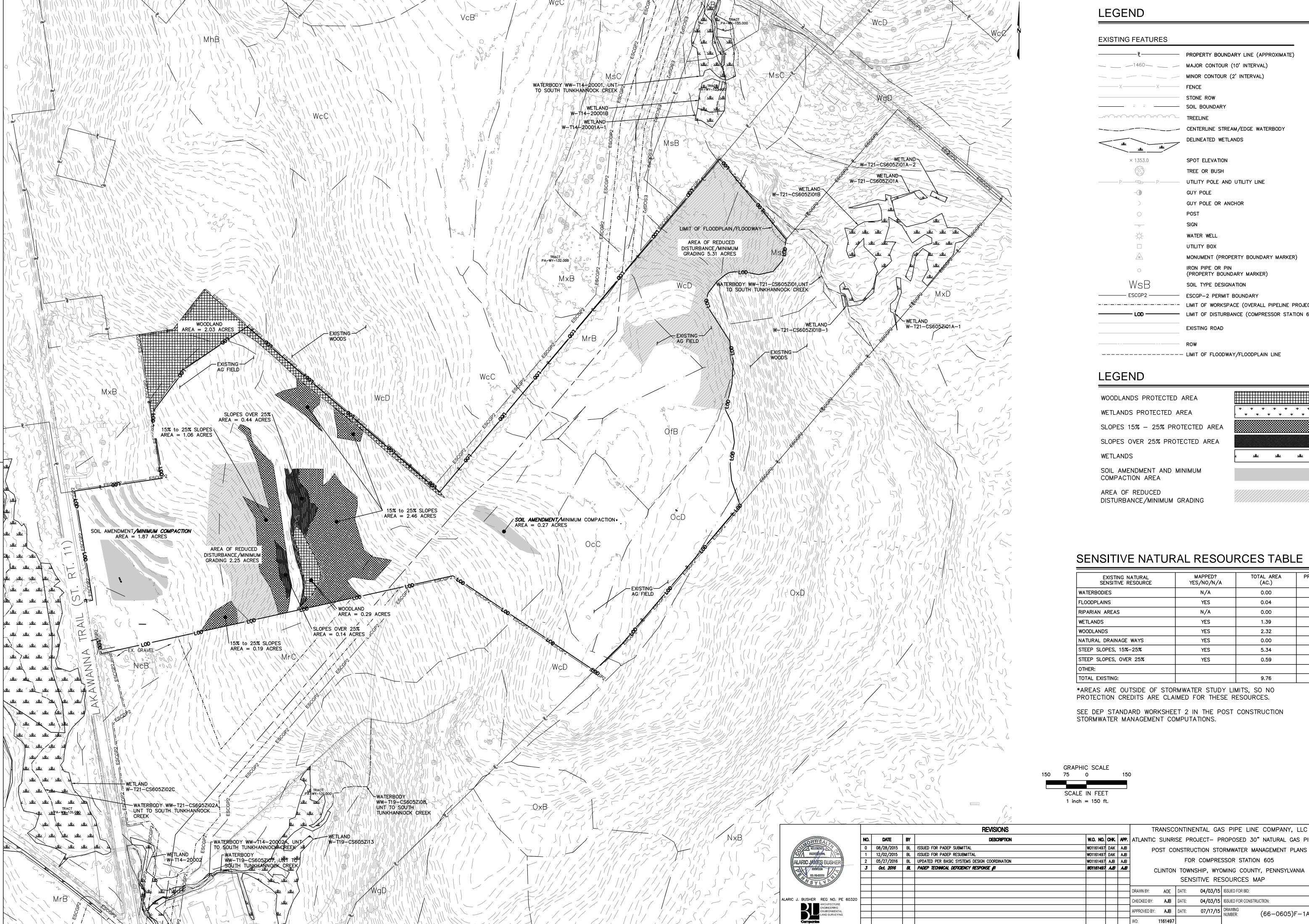
FACILITY NAME & TYPE	DRAWING NO.	SHEET NO.	DRAWING NAME
	(66-0605)F-1A-9	1 of 10	COVER SHEET
	(66-0605)F-1A-9	2 of 10	POST CONSTRUCTION STORMWATER MANAGEMENT OVERALL PLAN
	(66-0605)F-1A-9	3 of 10	SENSITIVE RESOURCES MAP
CS-605	(66-0605)F-1A-9	4 of 10	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
COMPRESSOR	(66-0605)F-1A-9	5 of 10	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
STATION	(66-0605)F-1A-9	6 of 10	PCSM NOTES AND DETAILS
	(66-0605)F-1A-9	7 of 10	PCSM NOTES AND DETAILS
	(66-0605)F-1A-9	8 of 10	PCSM NOTES AND DETAILS
	(66-0605)F-1A-9	9 of 10	PCSM NOTES AND DETAILS
	(66-0605)F-1A-9	10 of 10	INFILTRATION BASIN 1 INSET

PENNSYLVANIA ACT 287 (1974)
AS AMENDED BY PENNSYLVANIA
ACT 199 (2004) REQUIRES NO
LESS THAN THREE (3) WORKING
DAYS AND NO MORE THAN (10)
WORKING DAYS NOTICE TO
UTILITIES BEFORE YOU EXCAVATE,
DRILL, BLAST OR DEMOLISH.









PROPERTY BOUNDARY LINE (APPROXIMATE) MAJOR CONTOUR (10' INTERVAL) MINOR CONTOUR (2' INTERVAL) CENTERLINE STREAM/EDGE WATERBODY DELINEATED WETLANDS UTILITY POLE AND UTILITY LINE GUY POLE OR ANCHOR MONUMENT (PROPERTY BOUNDARY MARKER) (PROPERTY BOUNDARY MARKER) SOIL TYPE DESIGNATION ESCGP2 ESCGP-2 PERMIT BOUNDARY ----- LIMIT OF WORKSPACE (OVERALL PIPELINE PROJECT) LIMIT OF DISTURBANCE (COMPRESSOR STATION 605)

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SENSITIVE NATURAL RESOURCES TABLE

EXISTING NATURAL SENSITIVE RESOURCE	MAPPED? YES/NO/N/A	TOTAL AREA (AC.)	PROTECTED AREA (AC.)
WATERBODIES	N/A	0.00	0.00
FLOODPLAINS	YES	0.04	0.00*
RIPARIAN AREAS	N/A	0.00	0.00
WETLANDS	YES	1.39	0.00*
WOODLANDS	YES	2.32	2.32
NATURAL DRAINAGE WAYS	YES	0.00	0.00
STEEP SLOPES, 15%-25%	YES	5.34	3.71
STEEP SLOPES, OVER 25%	YES	0.59	0.58
OTHER:			
TOTAL EXISTING:		9.76	6.61

*AREAS ARE OUTSIDE OF STORMWATER STUDY LIMITS, SO NO

PROTECTION CREDITS ARE CLAIMED FOR THESE RESOURCES.

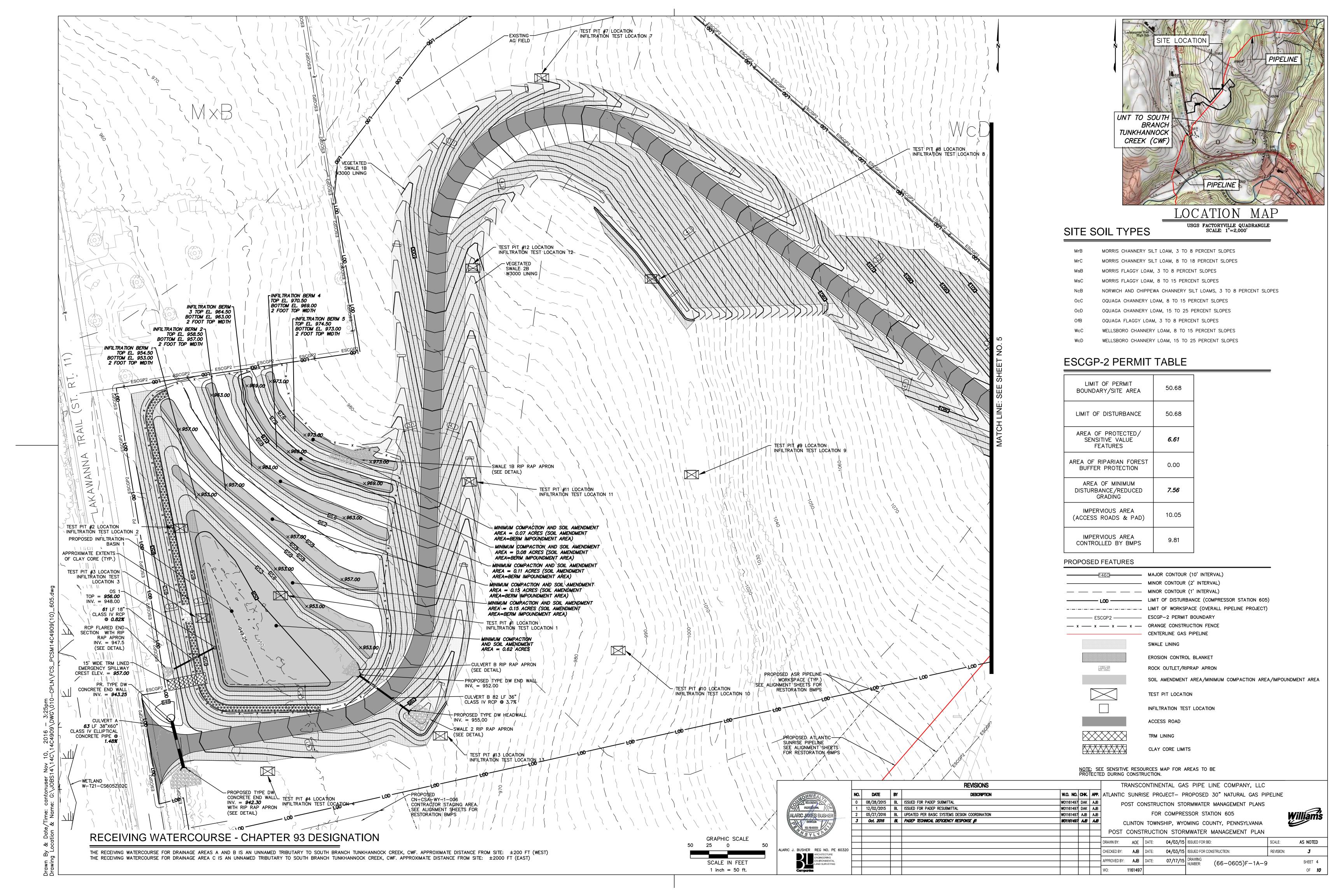
SEE DEP STANDARD WORKSHEET 2 IN THE POST CONSTRUCTION

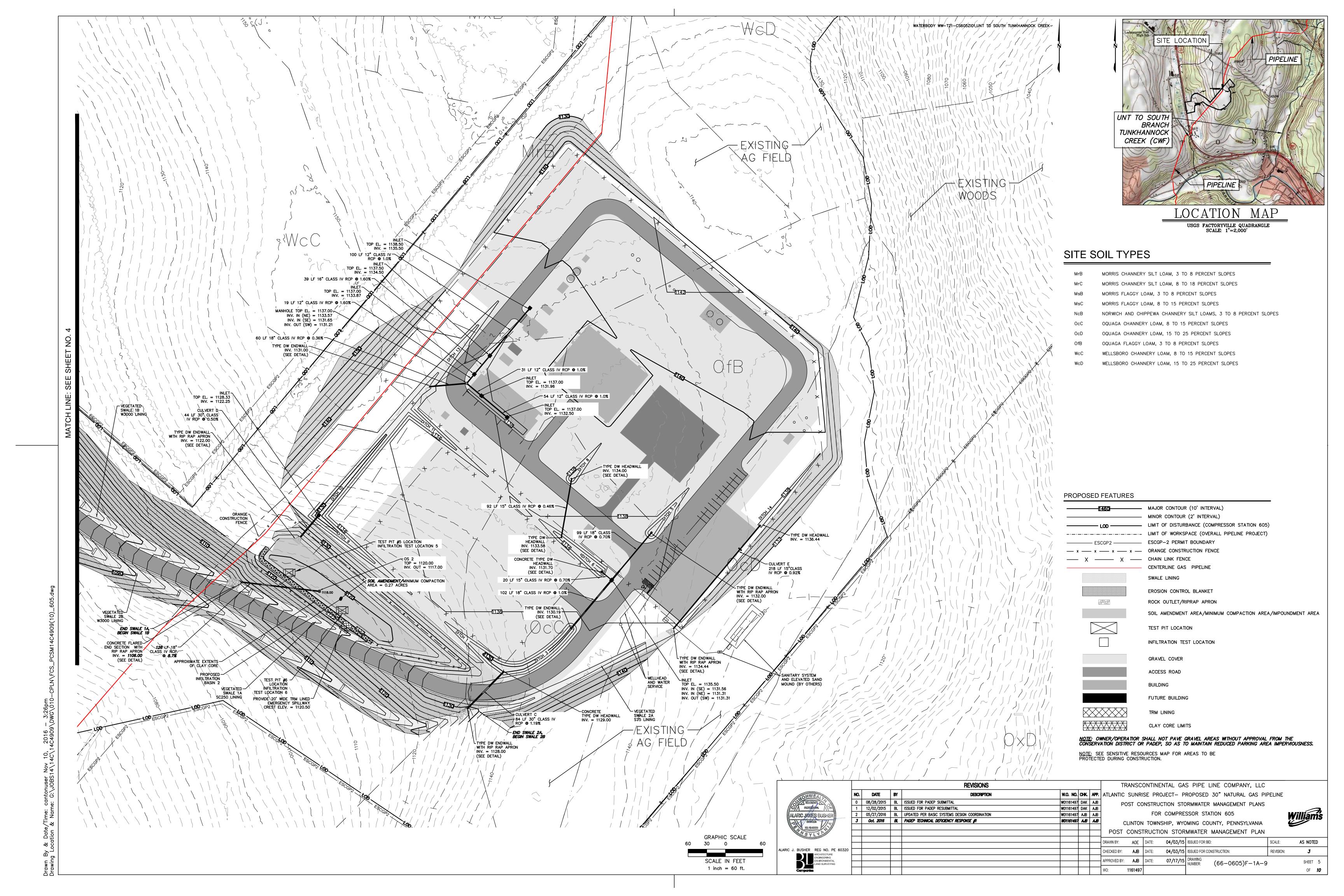
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC W.O. NO. CHK. APP. ATLANTIC SUNRISE PROJECT- PROPOSED 30" NATURAL GAS PIPELINE

FOR COMPRESSOR STATION 605

CLINTON TOWNSHIP, WYOMING COUNTY, PENNSYLVANIA SENSITIVE RESOURCES MAP

	AOE	DATE:	04/03/15	ISSUED FOR BID):	SCALE:	as note	:D
′ :	AJB	DATE:	04/03/15	ISSUED FOR CO	NSTRUCTION:	REVISION:	<i>3</i>	
3Y:	AJB	DATE:	07/17/15	DRAWING NUMBER:	(66-0605)F-1A	_9	SHEET	3
	1161497				` ,		OF	10





UPON PERMANENT STABILIZATION OF THE EARTH DISTURBANCE ACTIVITY UNDER \$ 102,22(A)(2) (RELATING TO PERMANENT STABILIZATION), AND INSTALLATION OF BMPS IN ACCORDANCE WITH AN APPROVED PLAN PREPARED AND IMPLEMENTED IN ACCORDANCE WITH §§ 102.4 AND 102.8 (RELATING TO EROSION AND SEDIMENT CONTROL REQUIREMENTS; AND PCSM REQUIREMENTS), THE PERMITTEE OR CO-PERMITTEE SHALL SUBMIT A NOTICE OF TERMINATION TO THE DEPARTMENT OR CONSERVATION DISTRICT.

- THE NOTICE OF TERMINATION MUST INCLUDE: (1) THE FACILITY NAME, ADDRESS AND LOCATION. (2) THE OPERATOR NAME AND ADDRESS.
- (3) THE PERMIT NUMBER.
- (4) THE REASON FOR PERMIT TERMINATION. (5) IDENTIFICATION OF THE PERSONS WHO HAVE AGREED TO AND WILL BE RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS IN ACCORDANCE WITH \$ 102.8(M) AND PROOF OF COMPLIANCE WITH \$

PCSM REQUIREMENTS

PCSM REPORTING AND RECORD KEEPING: THE PCSM PLAN, INSPECTION REPORTS AND MONITORING RECORDS SHALL BE AVAILABLE FOR REVIEW AND INSPECTION BY THE DEPARTMENT OR THE CONSERVATION DISTRICT.

<u>LICENSED PROFESSIONAL OVERSIGHT OF CRITICAL STAGES:</u> A LICENSED PROFESSIONAL OR A DESIGNEE SHALL BE PRESENT ONSITE AND BE RESPONSIBLE DURING CRITICAL STAGES OF IMPLEMENTATION OF THE APPROVED PCSM PLAN. THE CRITICAL STAGES MAY INCLUDE THE INSTALLATION OF UNDERGROUND TREATMENT OR STORAGE BMPS, STRUCTURALLY ENGINEERED BMPS, OR OTHER BMPS AS DEEMED APPROPRIATE BY THE DEPARTMENT OR THE CONSERVATION DISTRICT.

FINAL CERTIFICATION: THE PERMITTEE SHALL INCLUDE WITH THE NOTICE OF TERMINATION "RECORD DRAWINGS" WITH A FINAL CERTIFICATION STATEMENT FROM A LICENSED PROFESSIONAL, WHICH READS AS FOLLOWS: I (NAME) DO HEREBY CERTIFY PURSUANT TO THE PENALTIES OF 18 PA.C.S.A. \$ 4904 TO THE BEST OF MY KNOWLEDGE. INFORMATION AND BELIEF, THAT THE ACCOMPANYING RECORD DRAWINGS ACCURATELY REFLECT THE AS-BUILT CONDITIONS, ARE TRUE AND CORRECT, AND ARE IN CONFORMANCE WITH CHAPTER 102 OF THE RULES AND REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THAT THE PROJECT SITE WAS CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PCSM PLAN, ALL APPROVED PLAN CHANGES AND ACCEPTED CONSTRUCTION PRACTICES."

(1) THE PERMITTEE SHALL RETAIN A COPY OF THE RECORD DRAWINGS AS A PART OF THE APPROVED PCSM PLAN. (2) THE PERMITTEE SHALL PROVIDE A COPY OF THE RECORD DRAWINGS AS A PART OF THE APPROVED PCSM PLAN TO THE PERSON IDENTIFIED IN THIS SECTION AS BEING RESPONSIBLE FOR THE LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS.

PCSM LONG TERM OPERATIONS AND MAINTENANCE REQUIREMENTS

UNTIL THE PERMITTEE OR CO-PERMITTEE HAS RECEIVED WRITTEN APPROVAL OF A NOTICE OF TERMINATION, THE PERMITTEE OR CO-PERMITTEE WILL REMAIN RESPONSIBLE FOR COMPLIANCE WITH THE PERMIT TERMS AND CONDITIONS INCLUDING LONG-TERM OPERATION AND MAINTENANCE OF ALL PCSM BMPS ON THE PROJECT SITE AND IS RESPONSIBLE FOR VIOLATIONS OCCURRING ON THE PROJECT SITE. THE DEPARTMENT OR CONSERVATION DISTRICT WILL CONDUCT A FINAL INSPECTION AND APPROVE OR DENY THE NOTICE OF TERMINATION WITHIN 30 DAYS.

THE PERMITTEE OR CO-PERMITTEE SHALL BE RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPS UNLESS A DIFFERENT PERSON IS IDENTIFIED IN THE NOTICE OF TERMINATION AND HAS AGREED TO LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPS.

FOR ANY PROPERTY CONTAINING A PCSM BMP, THE PERMITTEE OR CO-PERMITTEE SHALL RECORD AN INSTRUMENT WITH THE RECORDER OF DEEDS WHICH WILL ASSURE DISCLOSURE OF THE PCSM BMP AND THE RELATED OBLIGATIONS IN THE ORDINARY COURSE OF A TITLE SEARCH OF THE SUBJECT PROPERTY. THE RECORDED INSTRUMENT MUST IDENTIFY THE PCSM BMP. PROVIDE FOR NECESSARY ACCESS RELATED TO LONG-TERM OPERATION AND MAINTENANCE FOR PCSM BMPS AND PROVIDE NOTICE THAT THE RESPONSIBILITY FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMP IS A COVENANT THAT RUNS WITH THE LAND THAT IS BINDING UPON AND ENFORCEABLE BY SUBSEQUENT GRANTEES, AND PROVIDE PROOF OF FILING WITH THE NOTICE OF TERMINATION UNDER § 102.7(B)(5) (RELATING TO PERMIT TERMINATION

THE PERSON RESPONSIBLE FOR PERFORMING LONG-TERM OPERATION AND MAINTENANCE MAY ENTER INTO AN AGREEMENT WITH ANOTHER PERSON INCLUDING A CONSERVATION DISTRICT, NONPROFIT ORGANIZATION, MUNICIPALITY, AUTHORITY, PRIVATE CORPORATION OR OTHER PERSON, TO TRANSFER THE RESPONSIBILITY FOR PCSM BMPS OR TO PERFORM LONG-TERM OPERATION AND MAINTENANCE AND PROVIDE NOTICE THEREOF TO THE DEPARTMENT.

A PERMITTEE OR CO-PERMITTEE THAT FAILS TO TRANSFER LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMP OR OTHERWISE FAILS TO COMPLY WITH THIS REQUIREMENT SHALL REMAIN JOINTLY AND SEVERALLY RESPONSIBLE WITH THE LANDOWNER FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS LOCATED ON THE PROPERTY.

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.)

CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE:

FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE STILL QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE RESIDENTIAL LIMITS IN TABLES FP-1A AND FP-1B FOUND IN THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL."

ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE FORM FP-001 TO CERTIFY THE ORIGIN OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL AND MUST BE KEPT ON SITE AND MADE AVAILABLE UPON REQUEST BY THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT. FAILURE TO PRODUCE THE FORM UPON REQUEST MAY RESULT IN THE REVOKING, SUSPENSION OR TERMINATION OF YOUR PERMIT COVERAGE. A COPY OF FORM FP-001 CAN BE FOUND AT THE END OF

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

RECYCLING AND DISPOSAL OF MATERIALS

BUILDING MATERIALS AND OTHER CONSTRUCTION SITE WASTES MUST BE PROPERLY MANAGED AND DISPOSED OF TO REDUCE POTENTIAL FOR POLLUTION TO SURFACE AND GROUND WATERS AS PER 25 PA. CODE § 102.4(B)(5)(XI). PROPER TRASH DISPOSAL, RECYCLING OF MATERIALS, PROPER MATERIALS HANDLING, AND SPILL PREVENTION AND CLEAN-UP REDUCE THE POTENTIAL FOR CONSTRUCTION SITE WASTES TO BE MOBILIZED BY STORMWATER RUNOFF AND CONVEYED TO SURFACE WATERS.

UNDER NO CIRCUMSTANCES MAY EROSION CONTROL BMPS BE USED FOR TEMPORARY STORAGE OF DEMOLITION MATERIALS

WHEREVER HEAVY EQUIPMENT WILL BE USED DURING CONSTRUCTION OF THE CUTS AND FILLS OR PROPOSED BUILDINGS, A POLLUTION PREVENTION AND CONTINGENCY (PPC) PLAN MUST BE AVAILABLE ON SITE. THE APPLICANT MUST PREPARE AND IMPLEMENT A PPC PLAN WHEN STORING, USING OR TRANSPORTING MATERIALS INCLUDING: FUELS, CHEMICALS, SOLVENTS, PESTICIDES, FERTILIZERS, LIME, PETROCHEMICALS, WASTEWATER, WASH WATER, CORE DRILLING WASTEWATER, CEMENT, SANITARY WASTES, SOLID WASTES, OR HAZARDOUS MATERIALS ONTO, ON, OR FROM THE PROJECT SITE DURING EARTH DISTURBANCE ACTIVITIES. THE PPC PLAN MUST BE AVAILABLE UPON REQUEST BY THE DEPARTMENT OR CONSERVATION DISTRICT. GUIDANCE FOR DEVELOPMENT OF A PPC PLAN CAN BE FOUND IN "GUIDELINES FOR THE DEVELOPMENT AND IMPLEMENTATION OF ENVIRONMENTAL EMERGENCY RESPONSE PLANS" (DOCUMENT #400-2200-001), WHICH CAN BE FOUND IN THE DEPARTMENT'S ELIBRARY AT <u>WWW.DEPWEB.STATE.PA.US.</u>

SILT, SEDIMENT, TRASH, CONSTRUCTION WASTES AND ALL OTHER WASTES GENERATED DURING OPERATION AND MAINTENANCE ACTIVITIES SHALL BE PROPERLY MANAGED AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.

ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS MUST BE FOLLOWED IN THE USE, HANDLING, AND DISPOSAL OF POTENTIALLY HAZARDOUS MATERIALS.

RESPONSIBLE PARTY

OPERATION AND MAINTENANCE SHALL BE THE RESPONSIBILITY OF WILLIAMS (APPLICANT).

OPERATIONS AND MAINTENANCE PROGRAM PERMANENT STORMWATER FACILITIES

THE PERMIT APPLICANT SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF PERMANENT STORMWATER FACILITIES LOCATED ON THE SUBJECT PROPERTIES. PERMANENT MAINTENANCE OF THE STORM SYSTEM AFTER ACCEPTANCE WILL PRIMARILY CONSIST OF ROUTINE CLEANING OF ACCUMULATED SEDIMENT AND DEBRIS BY FACILITY STAFF OR PRIVATE CONTRACTORS. THE SPECIFIC MAINTENANCE STEPS AND SCHEDULE ARE LISTED BELOW:

VEGETATED SWALES WITH EARTHEN CHECK DAMS VEGETATED SWALES WITH EARTHEN CHECK DAMS ARE TO BE INSPECTED ANNUALLY FOR SEDIMENT, BUILD-UP, EROSION DEBRIS, AND DAMAGE DUE TO TRAFFIC. DITCHES SHOULD BE MAINTAINED TO ENSURE THAT THE SPECIFIED DESIGN DIMENSIONS AND VEGETATIVE LINING ARE AVAILABLE AT ALL TIMES. NO MORE THAN ONE—THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 3 AND 6 INCHÈS UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY. ANY LITTER, DEBRIS, SEDIMENT, VEGETATION, OR OTHER ITEMS REMOVED DURING MAINTENANCE ACTIVITIES WILL BE DISPOSED OF IN A MANNER CONSISTENT WITH THE ESCGP—2

2. DETENTION/INFILTRATION BASIN INSPECT DETENTION/INFILTRATION FACILITY ANNUALLY AND INSPECT SOIL, REPAIR ERODED AREAS AND REMOVE LITTER AND DEBRIS AS NEEDED. INSPECT TWICE A YEAR FOR SEDIMENT BUILDUP, EROSION AND VEGETATIVE

CONDITIONS. REMOVE AND REPLACE DEAD AND DISEASED VEGETATION. ANY LITTER, DEBRIS, SEDIMENT, VEGETATION, OR OTHER ITEMS REMOVED DURING MAINTENANCE ACTIVITIES WILL BE DISPOSED OF IN A MANNER CONSISTENT WITH THE ESCGP-2 REQUIREMENTS. COMPACTION OF THE BASIN BOTTOM SHALL BE PREVENTED.

ALL BERMS MUST BE KEPT FREE OF OF OBSTRUCTIONS SUCH AS FILL, FALLEN LEAVES & WOODY DEBRIS, ACCUMULATED SEDIMENT, AND CONSTRUCTION MATERIAL/WASTES. ANY DISTURBANCE TO THE BERM SHALL BE IMMEDIATELY REPAIRED AND STABILIZED. COMPACTION OF THE BERM BOTTOM SHALL BE PREVENTED.

PROTECT SENSITIVE/SPECIAL VALUE FEATURES PROTECTED AREAS SHALL REMAIN UNDISTURBED AFTER CONSTRUCTION ACTIVITIES CEASE. ORANGE CONSTRUCTION FENCE WILL BE USED TO PROTECT SPECIAL VALUE/SENSITIVE AREAS DURING CONSTRUCTION.

 PROTECTED AREAS — RESTRICT VEHICLE ACCESS, DO NOT CLEAR VEGETATION. AVOID EARTH DISTURBANCE. MINIMUM DISTURBANCE AREAS - RESTRICT VEHICLE ACCESS.

SOIL AMENDMENT AND RESTORATION RESTRICT VEHICLE ACCESS. MONITOR WATER DRAW DOWN TIME IN INFILTRATION AREAS AND REPLACE AMENDED SOILS IF DEWATERING TIME INCREASES TO MORE THAN 3 DAYS. MAINTAIN INFILTRATION AREAS AS INDICATED ON THE POST CONSTRUCTION STORMWATER MANAGEMENT PLANS.

REDUCE PARKING AREA IMPERVIOUSNESS GRAVEL AREAS WILL BE MAINTAINED IN GOOD CONDITION AND WILL NOT BE PAVED WITHOUT OBTAINING PRIOR APPROVAL FROM THE DEP OR THE COUNTY CONSERVATION DISTRICT.

8. REFER TO THE TABLES BELOW FOR THE OPERATION AND MAINTENANCE OF POST CONSTRUCTION BEST MANAGEMENT

ANNUAL CERTIFICATION OF MAINTENANCE PROCEDURES THE FACILITY SHALL MAINTAIN A CHECKLIST WHENEVER THE STORM SYSTEM IS INSPECTED AND CLEANED. AN ANNUAL LIST OF INSPECTIONS AND MAJOR CLEANING OPERATIONS AND REPAIRS (PUMPING, SWEEPING PARKING LOTS, CLEANING CATCH BASIN SUMPS ETC.) SHALL BE MAINTAINED. THE LOCAL CCD OR ENFORCEMENT OFFICIALS SHALL HAVE ACCESS TO THOSE RECORDS.

COMPLIANCE WITH ESCGP-2 REQUIREMENTS AND RECORD KEEPING FOR PERMANENT STORMWATER DISCHARGE AND MAINTENANCE AND OTHER APPLICABLE ESCGP-2 AND DEP REQUIREMENTS REGARDING DISCHARGES.

VEGETATED SWALES WITH CH	ECK DAMS
OPERATION & MAINTENANCE PR	ROCEDURES
ACTIVITY	SCHEDULE
PLANT ALTERNATIVE GRASS SPECIES IN THE EVENT OF UNSUCCESSFUL ESTABLISHMENT. RESEED BARE AREAS; ROTOTILL OR CULTIVATE THE SURFACE OF THE SAND/SOIL BED OF DRY SWALES IF THE SWALE DOES NOT DRAW DOWN WITHIN 48 HOURS. WATER DURING DRY PERIODS, FERTILIZE, AND APPLY PESTICIDES WHEN NECESSARY. REMOVE SEDIMENT BUILD—UP WITHIN THE BOTTOM OF THE SWALE ONCE IT HAS ACCUMULATED TO 25% OF THE ORIGINAL DESIGN VOLUME, OR ONCE IT HAS COVERED VEGETATION.	AS NEEDED
INSPECT AND CORRECT EROSION PROBLEMS, DAMAGE TO VEGETATION, DAMAGE TO CHECK DAMS, AND SEDIMENT AND DEBRIS ACCUMULATION. INSPECT GRASS ALONG SIDE SLOPES FOR EROSION, RILLS, OR GULLIES, & CORRECT. MOW AND TRIM VEGETATION TO ENSURE SAFETY, PROPER SWALE OPERATION, OR TO SUPPRESS WEEDS AND INVASIVE VEGETATION. INSPECT FOR POOLS OF STANDING WATER; DEWATER & DISCHARGE TO AN APPROVED LOCATION, RESTORE TO DESIGN GRADE. INSPECT FOR UNIFORMITY IN CROSS—SECTION & LONGITUDINAL SLOPE, CORRECT AS NEEDED. INSPECT SWALE INLET AND OUTLET FOR SIGNS OF EROSION OR BLOCKAGE, CORRECT AS NEEDED.	ANNUAL
INSPECT SWALE IMMEDIATELY AFTER SPRING MELT. REMOVE RESIDUALS AND REPLACE DAMAGED VEGETATION. IF ROADSIDE OR PARKING LOT RUNOFF IS DIRECTED TO THE SWALE, MULCHING &/OR SOIL AERATION MAY BE REQUIRED IN THE SPRING TO RESTORE SOIL STRUCTURE & MOISTURE CAPACITY & TO REDUCE THE IMPACT OF DEICING AGENTS. USE NONTOXIC, ORGANIC DEICING AGENTS. PLANT SALT TOLERANT VEGETATION IN SWALES.	ANNUAL - SPRING

SENSITIVE/SPECIAL VALUE FEATURES			
OPERATION & MAINTENANCE P	ROCEDURES		
ACTIVITY	SCHEDULE		
REPLANT SUITABLE SPECIES IN THE EVENT OF DEAD OR DYING VEGETATION. RESEED BARE AREAS AND INSTALL APPROPRIATE EROSION CONTROLS WHEN SOIL IS EXPOSED.	AS NEEDED		
INSPECT AND ENSURE PROTECTED AREAS REMAIN UNDISTURBED AFTER CONSTRUCTION ACTIVITIES CEASE.	BIANNUALLY		

MINIMIZE SOIL COMPACTION			
OPERATION & MAINTENANCE PROCEDURES			
ACTIVITY SCHEDULE			
RESTRICT VEHICLE ACCESS. AVOID EARTH DISTURBANCES. DO NOT CLEAR VEGETATION	AT ALL TIMES		

INFILTRATION BASINS				
OPERATION & MAINTENANCE P	ROCEDURES			
ACTIVITY	SCHEDULE			
INSPECT AND CORRECT EROSION PROBLEMS, DAMAGE TO VEGETATION, AND SEDIMENT AND DEBRIS ACCUMULATION. INSPECT GRASS ALONG SIDE SLOPES FOR EROSION, RILLS, OR GULLIES, & CORRECT. MOW AND TRIM VEGETATION TO ENSURE SAFETY, PROPER SWALE OPERATION, OR TO SUPPRESS WEEDS AND INVASIVE VEGETATION. INSPECT FOR POOLS OF STANDING WATER; DEWATER & DISCHARGE TO AN APPROVED LOCATION, RESTORE TO DESIGN GRADE. INSPECT FOR UNIFORMITY IN CROSS—SECTION & LONGITUDINAL SLOPE, CORRECT AS NEEDED. INSPECT SWALE INLET AND OUTLET FOR SIGNS OF EROSION OR BLOCKAGE, CORRECT AS NEEDED. IF DRAWDOWN TIMES EXCEED 72 HOURS, INITIATE CORRECTIVE ACTIONS.	ANNUAL			
INSPECT OUTLET CONTROL DEVICES AFTER EVERY MAJOR RAINFALL EVENT (>1 IN.) TO ENSURE FREE FLOW.	AS NEEDED			
INSPECT SOIL & REPAIR ERODED AREAS, REMOVE LITTER AND DEBRIS	AS NEEDED			
INSPECT FOR SEDIMENT BUILDUP, EROSION, VEGETATIVE CONDITIONS, REMOVE & REPLACE DEAD & DISEASED VEGETATION.	TWICE PER YEAR			
GENERAL MAINTENANCE NOTES: 1. WHILE VEGETATION IS BEING ESTABLE PRUNING AND WEEDING MAY BE RE 2. DURING PERIODS OF EXTENDED DROWN BIORETENTION AREAS MAY REQUIRE	QUIRED. DUGHT,			

INFILTRATION BERMS/ RETENTIVE GRADING				
OPERATION & MAINTENANCE PROCEDURES				
ACTIVITY	SCHEDULE			
REGULARLY INSPECT TO ENSURE THEY ARE INFILTRATING; MONITOR DRAWDOWN TIME AFTER MAJOR STORM EVENTS. IF DRAWDOWN TIMES EXCEED 72 HOURS, INITIATE CORRECTIVE ACTIONS.	AS NEEDED			
INSPECT STRUCTURAL COMPONENTS, SUCH AS INLET STRUCTURES TO ENSURE PROPER FUNCTIONALITY	AS NEEDED			
IF PLANTED IN MEADOW, MOW AND REMOVE CLIPPINGS.	ANNUAL			
AVOID RUNNING HEAVY EQUIPMENT OVER THE INFILTRATION AREA AT THE BASE OF THE BERMS. THE CREST OF THE BERM MAY BE USED AS ACCESS FOR HEAVY EQUIPMENT WHEN NECESSARY TO LIMIT DISTURBANCE.	AS NEEDED			
REMOVE ACCUMALETED TRASH AND DEBRIS	MONTHLY			
REMOVE INVASIVE PLANTS	ANNUAL			
INSPECT FOR SIGNS OF FLOW SWALEIZATION; RESTORE LEVEL GRADIENT IMMEDIATELY AFTER DEFICIENCIES ARE OBSERVED.	AS NEEDED			

PARKING AREA IMPERVIOUSNESS				
OPERATION & MAINTENANCE P	ROCEDURES			
ACTIVITY	SCHEDULE			
NSPECT AND MAINTAIN GRAVEL AREAS	AS NEEDED			

SOIL RESTORATION NOTES

. Contractor shall verify that the amended soil provides an infiltration rate of 2.0 in/hr or greater. Contractor to conduct in—situ TESTING OF INFILTRATION RATES 2. WHERE LAYERS OF FILL THAT VARY IN GRADATION ARE ADJACENT TO EACH OTHER, A FILTER FABRIC BARRIER SHOULD BE USED TO PREVENT MIGRATION OF FINES. (I.E. WHERE A FINER GRAINED SELECT FILL IS PLACE ON TOP OF, OR BELOW, AN OPEN-GRADED STONE FILL.)

AMENDED SOIL MIX SHALL CONSIST OF 33% ORGANIC MATTER (COMPOST) AND 67% SOIL BASE (TOPSOIL). SOIL SHALL HAVE A CLAY CONTENT OF LESS THAN 10% AND BE FREE OF TOXIC SUBSTANCES. CONSTRUCT ONLY AFTER UPSTREAM AREAS HAVE BEEN STABILIZED OR DIVERT RUNOFF DURING CONSTRUCTION

EXCAVATE TO PROPOSED INVERT ELEVATION AND SCARIFY EXISTING SOILS, DO NOT COMPACT IN-SITU SOILS.

BACKFILL WITH AMENDED SOIL, LIGHT HAND TAMPING IS ACCEPTABLE. OVERFILL AS REQUIRED TO ACCOUNT FOR SETTLEMENT. 7. UPON COMPLETION, SEED AND MULCH THE INVERT USING THE DETENTION BASIN FLOOD SEED MIXTURE: ERNMX—122 (FACW WETLAND MEADOW MIX) AT 1/2 POUND PER 1,000 SQUARE FEET ERNMX-131 (OBL WETLAND MIX) AT 1/2 POUND PER 1,000 SQUARE FEET.

AMENDED SOIL PARAMETERS				
SOIL TEXTURE	IDEAL BULK DENSITIES g/cm³	BULK DENSITIES THAT MAY AFFECT ROOT GROWTH g/cm ³	BULK DENSITIES THAT RESTRICT ROOT GROWTH g/cm³	
SANDS, LOAMY SANDS	< 1.60	1.69	1.80	
SANDY LOAMS, LOAMS	< 1.40	1.63	1.80	
SANDY CLAY LOAMS, LOAMS, CLAY LOAMS	< 1.40	1.60	1.75	
SILT, SILT LOAMS	< 1.30	1.60	1.75	
SOIL LOAMS, SILTY CLAY LOAMS	< 1.10	1.55	1.65	
SANDY CLAYS, SILTY CLAYS, SOME CLAY LOAMS (35-45% CLAY)	< 1.10	1.49	1.58	
CLAYS (> 45% CLAY)	< 1.10	1.39	1.47	

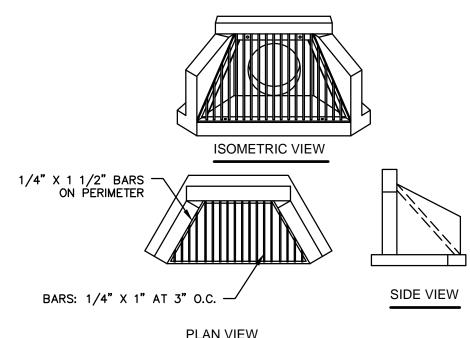
GENERAL LANDSCAPE NOTES

- . <u>GUARANTEE</u>; GUARANTEE ALL PLANTS AND LAWNS FOR A MINIMUM OF 1 YEAR TO BE ALIVE AND IN VIGOROUS GROWING CONDITION AT THE END OF THE GUARANTEE PERIOD. THE GUARANTEE PERIOD FOR ALL PLANTS SHALL BEGIN UPON APPROVAL AS SPECIFIED UNDER SUBSTANTIAL COMPLETION. PLANT MATERIALS AND LAWNS APPROVED IN THE SPRING SHALL BE ALIVE AND IN SATISFACTORY GROWTH ON JUNE 1 OF THE FOLLOWING YEAR; PLANTING DONE IN LATE FALL (AFTER NOVEMBER 1ST) SHALL BE MAINTAINED AND GUARANTEED UNTIL THE SPRING'S LEAFING AFTER THE SECOND YEAR. <u>REPLACEMENTS:</u> ALL PLANTS SHALL BE FREE OF DEAD OR DYING BRANCHES AND BRANCH TIPS, AND SHALL BEAR FOLIAGE OF A NORMAL DENSITY, SIZE AND COLOR. PROMPTLY REMOVE DEAD, UNSIGHTLY, UNHEALTHY, OR EXCESSIVELY PRUNED PLANTS. THESE AND ANY PLANTS MISSING DUE TO THE CONTRACTOR'S NEGLIGENCE, SHALL BE REPLACED OR ADDED WITH THE SAME KIND AND SIZE AS ORIGINALLY SPECIFIED AS SOON AS CONDITIONS PERMIT. METHOD OF REPLACEMENT SHALL BE THE SAME AS SPECIFIED FOR THE ORIGINAL PLANTING WITH REPLACEMENTS MATCHING ADJACENT SPECIMENS OF THE SAME SPECIES. REPLACEMENTS SHALL BE MADE AS MANY TIMES AS NECESSARY TO ENSURE HEALTHY PLANTS AND THEY SHALL BE MAINTAINED AND GUARANTEED. REPLACEMENTS SHALL BE MADE AT THE CONTRACTOR'S EXPENSE AND SHALL BE GUARANTEED FOR TWO FULL YEARS FROM TIME OF REPLACEMENT. PLANTS SHALL BE OTHERWISE PROTECTED AND MAINTAINED, INCLUDING, BUT NOT LIMITED TO WATER AND SHADE. ANY PLANTS DEEMED NOT IN SATISFACTORY HEALTH OF CONDITION AT THE TIME OF PLANTING SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.
- 2. THE CONTRACTOR SHALL SUPPLY ALL LABOR AND MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE WORK SHOWN ON THE DRAWINGS AND LISTED IN THE PLANT SCHEDULE.
- 3. UTILITY LOCATIONS SHOWN IN THE DRAWINGS ARE APPROXIMATE. EXERCISE CARE WHEN DIGGING IN AREAS OF POTENTIAL CONFLICT WITH UNDERGROUND OR OVERHEAD UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE DUE TO CONTRACTOR'S NEGLIGENCE AND SHALL REPLACE OR REPAIR ANY DAMAGE AT CONTRACTOR'S EXPENSE.
- 4. FOR ALL PLANTING AND LAWN AREAS, CONTRACTOR SHALL EXCAVATE EXISTING SOIL TO PROVIDE A MINIMUM OF 4" OF PLANTING TOPSOIL MIX FROM FINISHED PLANTING ELEVATION. CONTRACTOR SHALL SUBMIT TOPSOIL TO A CERTIFIED TESTING LABORATORY TO DETERMINE pH, FERTILITY, ORGANIC CONTENT AND MECHANICAL COMPOSITION. THE CONTRACTOR SHALL SUBMIT THE TEST RESULTS FROM REGIONAL EXTENSION OFFICE OF USDA TO THE OWNER OR LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL. CONTRACTOR SHALL INCORPORATE AMENDMENTS FOR GOOD PLANT GROWTH AND PROPER SOIL ACIDITY RECOMMENDED FROM THE TOPSOIL TEST AT NO INCREASE IN CONTRACT PRICE.
- 5. ALL LANDSCAPING SHALL BE PERPETUALLY MAINTAINED BY THE PROPERTY OWNER. ANY LANDSCAPING NEEDED TO MEET AN ORDINANCE REQUIREMENT THAT DIES, IS REMOVED, OR IS SEVERELY DAMAGED SHALL BE REPLACED BY THE CURRENT PROPERTY OWNER AS SOON AS IS PRACTICAL CONSIDERING GROWING SEASONS, WITHIN A MAXIMUM OF 150 DAYS.
- 6. AT ALL TIMES, THE SITE SHALL BE KEPT NEAT AND SHALL BE KEPT FREE OF DEBRIS LEFT FROM THE PLANTING OPERATION.
- 7. ALL DISTURBED LANDSCAPE AREAS ARE TO BE RESEEDED.
- 8. DURING THE CONSTRUCTION AND GURANTEE PERIOD, WATER LAWN AT THE MINIMUM RATE OF 1 INCH (25 MM) PER WEEK. MOW LAWNS AS SOON AS THERE IS ENOUGH TOP GROWTH TO CUT WITH MOWER SET AT SPECIFIED HEIGHT FOR PRINCIPAL SPECIES PLANTED. REPEAT MOWING AS REQUIRED TO MAINTAIN SPECIFIED HEIGHT WITHOUT CUTTING MORE THAN 40 PERCENT OF GRASS HEIGHT. REMOVE NO MORE THAN 40 PERCENT OF GRASS-LEAF GROWTH IN INITIAL OR SUBSEQUENT MOWINGS. DO NOT DELAY MOWING UNTIL GRASS BLADES BEND OVER AND BECOME MATTED. DO NOT MOW WHEN GRASS IS WET.
- 9. ALL DISTURBED AREAS WITHIN 50' OF A STREAM CROSSING (WHERE THE STREAM WIDTH IS LESS THAN OR EQUAL 10') SHALL BE STABILIZED WITHIN 24 HOURS OF COMPLETING CONSTRUCTION AT THE CROSSING.
- 10. ALL DISTURBED AREAS WITHIN 50' OF A STREAM CROSSING (WHERE THE STREAM WIDTH > 10') SHALL BE STABILIZED WITHIN 48 HOURS OF COMPLETING CONSTRUCTION AT THE CROSSING.

SOIL AMENDMENT & RESTORATION				
OPERATION & MAINTENANCE PROCEDURES				
ΑСΠΝΤΥ	SCHEDULE			
RESTRICT VEHICLE ACCESS	AT ALL TIMES			
ENSURE THAT INFILTRATION AREAS DEWATER BETWEEN STORMS. REPLACE AMENDED SOILS IF DEWATERING TIME INCREASES TO MORE THAN THREE DAYS.	ANNUAL			
INSPECT AND MAINTAIN INFILTRATION AREAS	AS NEEDED			
GENERAL MAINTENANCE NOTES: THE SOU RESTORATION PROCESS MAY	NEED TO BE			

REPEATED OVER TIME, DUE TO COMPACTION BY USE

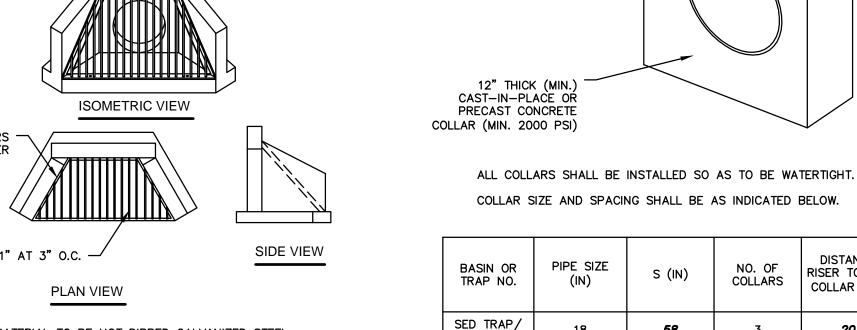
AND/OR SETTLING.



- 1. TRASH RACK MATERIAL TO BE HOT DIPPED GALVANIZED STEEL.
- 2. ATTACH TRASH RACK TO HEADWALL WITH 3/8" DIA. S.S. ANCHOR BOLTS.
- 3. HINGED VERSION AVAILABLE.

TYPE DW ENDWALL WITH TRASHRACK

N.T.S



CONCRETE ANTI-SEEP COLLAR FOR

PERMANENT BASINS OR TRAPS DETAIL

COLLARS

| | /// -

PLAN VIEW

SECTION A-A

(SEE TABLE A FOR DIMENSIONS NOT INDICATED)

FRONT ELEVATION VIEW

TYPE DW ENDWALL

1. ALL ENDWALLS AND HEADWALLS SHALL HAVE A TRASH SCREEN (SEE DETAIL)

L_D-W ---

- (3) #4 BARS

(SEE TABLE A FOR DIMENSIONS NOT INDICATED)

N.T.S

NOTES:

PROVIDE

WATERTIGHT

CONNECTION

BASIN 1

BASIN 2

 A_D-W

TABLE A

48" 54" 60" 72"

4.6' 4.25' 5.8' 4.6' 6.3' 5.8'

6.9' 6.9'

7.5' 8.0'

8.1' 9.2'

-CONCRETE SHALL BE

-EXPOSED EDGES SHALL BE

CHAMFERED ONE (1) INCH

CLASS "AA"

9.2' 11.5' 15"

N.T.S PADEP-7-16

CHECKED BY:

NWEALTH	NO.	DATE	BY	
RECORDED, AT	0	08/28/2015	BL	ISSUED
BU-U RESIDENT	1	12/02/2015	BL	ISSUED
MES BUSHER	2	05/27/2016	BL	UPDATE
ERSMEER NO. PE-60320	3	Oct. 2016	BL	PADEP
SYLVA				

REVISIONS						Т	
NO.	DATE	BY	DESCRIPTION	W.O. NO.	снк.	APP.	ATLANTIC
0	08/28/2015	BL	ISSUED FOR PADEP SUBMITTAL	W01161497	DAK	AJB	Р
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W01161497	DAK	AJB	'
2	05/27/2016	BL	UPDATED PER BASIC SYSTEMS DESIGN COORDINATION	W01161497	AJB	AJB	
3	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W01161497	AJB	AJB	
							`
							DRAWN BY:
							DIVATRIA DI.

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC TLANTIC SUNRISE PROJECT- PROPOSED 30" NATURAL GAS PIPELINE POST CONSTRUCTION STORMWATER MANAGEMENT PLANS

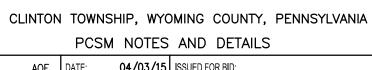
DISTANCE

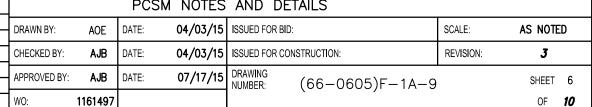
RISER TO 1ST

COLLAR (FT)

SPACING

FOR COMPRESSOR STATION 605





RIP RAP GRADATION, FILTER BLANKET, MAXIMUM VELOCITIES

Riprap Gradation, Filter Blanket Requirements, Maximum Velocities							
	100	Percent P	assing (Squar	e Openings)			
Class, Size NO.							
Rock Size (Inches)	R-8	R-7	R-6	R-5	R-4	R-3	
42	100						
30		100					
24	15-50		100				
18		15-50		100			
15	0-15						
12		0-15	15-50		100		
9				15-50			
6			0-15		15-50	100	
4				0-15			
3					0-15	15-50	
2						0-15	
Nominal Placement Thickness (inches)	63	45	36	27	18	9	
Filter Stone ¹	AASHTO #1	AASHTO #1	AASHTO #1	AASHTO #3	AASHTO#3	AASHTO #57	
V _{max} (ft/sec)	17.0	14.5 08, Section 703.2	13.0	11.5	9.0	6.5	

ADAPTED FROM PENNDOT PUB. 408, SECTION 703.2 (c), TABLE C.

1. THIS IS A GENERAL STANDARD. SOIL CONDITIONS AT EACH SITE SHOULD BE ANALYZED TO DETERMINE ACTUAL FILTER SIZE. A SUITABLE WOVEN OR NON-WOVEN GEOTEXTILE UNDERLAYMENT, USED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, MAY BE SUBSTITUTED FOR THE FILTER STONE FOR GRADIENTS < 10%.

LIMING AND FERTILIZER RATES

Soil Amendment	Perma Per Acre	nent Seeding App Per 1,000 sq. ft.					
Soil Amendment	Per Acre	Per 1 000 ea ft	Permanent Seeding Application Rate				
		1 61 1,000 30.16.	Per 1,000 sq. yd.	Notes			
				Or as per soil test; may not be			
Agricultural lime	6 tons	240 lb.	2,480 lb.	required in agricultural fields			
10-10-20 fertilizer	1,000 lb.	25 lb.	210 lb.	Or as per soil test; may not be required in agricultural fields			
	Tempo	rary Seeding App	lication Rate				
Agricultural lime	1 ton	40 lb.	410 lb.	Typically not required for topsoil stockpiles			
10-10-10 fertilizer	500 lb.	12.5 l b.	100 lb.	Typically not required for topsoil stockpiles			

PA DEP TABLE 11.2

1 NO LIME AND/OR FERTILIZER MAY BE APPLIED IN WETLANDS.

SLOPE SEED MIX

Common Name	Scientific Name	# PLS/ acre	PLS/sq ft	% of Mix
Big Bluestem	Andropogon gerardii	2.0	6.0	10
Little Bluestem	Schizachyrium scoparium	1.0	6.0	10
Switchgrass	Panicum virgatum	1.3	12.0	20
Timothy	Phleum prantense	0.4	12.0	20
Virginia Wildrye	Elymus virginicus	4.4	7.5	13
Deertongue	Dichanthelium clandestinum	0.7	6.0	10
Blackeyed Susan	Rudbeckia hirta	0.1	3.0	5
White Clover	Trifolium repens	0.2	3.0	5
Oxeye Sunflower	Heliopsis helianthoides	0.6	1.5	3
Partridge Pea	Chamaecrista fasciculata	1.1	1.5	3
Purple Coneflower	Echinacea purpurea	0.6	1.5	3
Total		12.3	60.0	100.00

1 PLS IS ROUNDED TO THE NEAREST TENTH OF A POUND. PLS = PURE LIVE SEED

ROW SEED MIX

Common Name	Scientific Name	# PLS/	PLS/sq ft	% of Mix
Red Top	Agrostis gigantea	0.1	12.0	20
Timothy	Phleum prantense	0.4	12.0	20
Tall Fescue	Festuca arundinacea	1.7	9.0	15
Annual Rygrass	Lolium perenne multiflorum	1.7	9.0	15
Italian Ryegrass	Festulium	1.7	9.0	15
Alsike Clover	Trifolium hybridum	0.2	3.0	5
White Clover	Trifolium repens	0.2	3.0	5
Ladino White Clover	Trifolium repens latum	0.2	3.0	5
Total		6.2	60.0	100

SPECIES TYPE AND SEASON OF PLANTING

Species Type a	nd Season of Planting	NOTES:
Cov	ver Crops ¹	1. SEEDING DATES FOR COVER CROPS ARE BASED ON DATES REFERENCED BY CLARK,
Cool Season - Spring	March 1 to June 1	
Varm Season	June 1 to August 15	2. SEEDING DATES FOR PERMANENT CROPS
Cool Season - Fall	August 15 - October 15	ARE BASED ON DATES REFERENCED BY
Perm	anent Crop ²	LANDSHOOT, 1997 AND DELONG AND BRITTINGHAM, 2002.
pring April 20 to June 15		SEED AFTER OCTOBER 10 WHEN GROUND
ate Fall (dormant)	October 10 - March 1	TEMPERATURES AT A DEPTH OF 4 INCHES

DEPTH OF 4 INCHES ARE 45 F OR LOWER AND COOLER AIR TEMPERATURES ARE FORECASTED.

DORMANT SEEDING CAN OCCUR UNTIL SOIL IS FROZEN AND ADEQUATE PENETRATION

OF THE DRILL SEEDER DOES NOT OCCUR.

COVER CROP SEED MIXES

	Cover Cro	p Seed Mix	kes				
	Warm Season						
Common Nama	Crop	# PLS/	DIC/ca ft				
Common Name	Туре	acre	PLS/sq ft	% of Mix			
Pearl Millett	Grass	6.9	12.6	70			
Sunn Hemp	Legume	10.5	3.6	20			
Nitro Radishes	Brassicas	3.1	1.8	10			
Total		20.5	18.0	100			
	Cool	Season					
Annual ryegrass	Grass	8.0	35.1	65			
Red Clover	Legume	3.2	13.5	25			
Nitro Radishes	Brassicas	9.4	5.4	10			
Total		20.6	54.0	100			

1 PLS IS ROUNDED TO THE NEAREST TENTH OF A POUND. PLS = PURE LIVE SEED

1 PLS IS ROUNDED TO THE NEAREST TENTH OF A POUND. PLS = PURE LIVE SEED

PERMANENT SEED MIXTURES COOL & WARM SEASON GRASSES

HAYFIELDS

Common Nomo	Coiontifia Nama	#	PLS/sq	% of
Common Name	Scientific Name	PLS/acre	ft	Mix
Orchardgrass	Dactylis glomerata	4.0	60.0	40
Timothy	Phleum pratense	2.0	60.0	40
Ladino White Clover	Trifolium repens latum	0.8	15.0	10
Red Clover	Trifolium pratense	2.4	15.0	10
Total		9.2	150.0	100
PASTURES				

PASTURES

Camana an Nama	Coiomtifia Nama	#	PLS/sq	% of
Common Name	Scientific Name	PLS/acre	ft	Mix
Timothy	Phleum pratense	0.5	15.0	25%
Perennial Ryegrass	Lolium perenne	2.3	12.0	20%
Red Top	Agrostis gigantea	0.1	9.0	15%
Italian Ryegrass	Festulolium	1.7	9.0	15%
Alsike Clover	Trifolium hybridum	0.6	9.0	15%
Ladino White Clover	Trifolium repens latum	0.3	6.0	10%
Total		5.5	60.0	100%

SLOPING/FORESTED LAND

Camara an Maraa	Caiamtifia Nama	#	PLS/sq	% of
Common Name	Scientific Name	PLS/acre	ft	Mix
Sideoats Grama	Bouteloua curtipendula	1.4	6.0	10%
Little Bluestem	Schizachyrium scoparium	1.0	6.0	10%
Switchgrass	Panicum virgatum	1.3	12.0	20%
Timothy	Phleum pratense	0.4	12.0	20%
Virginia Wildrye	Elymus virginicus	4.24	7.2	12%
Deertongue	Dichanthelium clandestinum	0.7	6.0	10%
Blackeyed Susan	Rudbeckia hirta	0.1	2.4	4%
White Clover	Trifolium repens	0.1	2.4	4%
Oxeye Sunflower	Heliopsis helianthoides	0.8	1.8	3%
Partridge Pea	Chamaecrista fasciculata	1.7	2.4	4%
Purple Coneflower	Echinacea purpurea	0.7	1.8	3%
Total		12.3	60.0	100%

DROUGHT/ROCKY SITES

Company on Nights	Caiantifia Nama	#	PLS/sq	% of
Common Name	Scientific Name	PLS/acre	ft	Mix
Little Bluestem	Schizachyrium scoparium	1.5	9.0	15%
Timothy	Phleum pratense	0.3	9.0	15%
Prairie Junegrass	Koeleria macrantha	0.1	6.0	10%
Deertongue	Dichanthelium clandestinum	1.0	9.0	15%
Sideoats Grama	Bouteloua curtipendula	2.7	12.0	20%
Virginia Wildrye	Elymus virginicus	3.5	6.0	10%
Partridge Pea	Chamaecrista fasciculata	2.1	3.0	5%
Ladino White Clover	Trifolium repens latum	0.2	3.0	5%
Lanceleaf Coreopsis	Coreopsis lanceolata	0.6	3.0	5%
Total		12.0	60.0	100%

NON-AGRICULTURAL MEADOWS

Common Name	Scientific Name	# PLS/acre	PLS/sq	% of
Common Name	Scientific Name		ft	Mix
Virginia Wildrye	Elymus virginicus	5.3	9.0	15%
Little Bluestem	Schizachyrium scoparium	1.5	9.0	15%
Sideoats Grama	Bouteloua curtipendula	2.1	9.0	15%
Deertongue	Dichanthelium clandestinum	1.0	9.0	15%
Partridge Pea	Chamaecrista fasciculata	4.2	6.0	10%
Oxeye Sunflower	Heliopsis helianthoides	1.3	3.0	5%
Lanceleaf Coreopsis	Coreopsis lanceolata	1.2	6.0	10%
Blackeyed Susan	Rudbeckia hirta	0.1	3.0	5%
Butterfly Milkweed	Asclepias tuberosa	5.2	6.0	10%
Total		21.8	60.0	100%

NATIVE NON-NATIVE FOOD PLOT MIX

Camara an Nama	Scientific Name	#	PLS/sq	% of
Common Name	Scientific Name	PLS/acre	ft	Mix
Timothy	Phleum pratense	0.4	12.0	20%
Upland Bent Grass	Agrostis perennans	0.1	9.0	15%
Virginia Wildrye	Elymus virginicus	5.3	9.0	15%
White Clover	Trifolium repens	0.5	9.0	15%
Ladino White Clover	Trifolium repens latum	0.7	12.0	20%
Crimson Clover	Trifolium incarnatum	3.5	9.0	15%
Total		10.4	60.0	100%
·	·			

STORM BASIN MIX

Common Name	Scientific Name	12.0	20%	
Orchardgrass	Dactylis glomerata	12.0	20%	
Timothy	Phleum pratense	0.4	9.0	15%
Switchgrass	Panicum virgatum	1.0	12.0	20%
Virginia Wildrye	Elymus virginicus	7.1	9.0	15%
Fox Sedge	Carex vulpinoidea	0.3	3.0	5%
Oxeye Sunflower	Heliopsis helianthoides	1.3	3.0	5%
Swamp Milkweed	Asclepias incarnata	1.7	60.0	100%
Total		12.6	12.0	20%

POLLINATOR MIX (TO BE ADDED TO ANY MIX UPON LANDOWNER REQUEST)

Camana an Nama	Coiontifia Nama	#	PLS/sq	% of
Common Name	Scientific Name	PLS/acre	ft	Mix
Butterfly Milkweed	Asclepias tuberosa	2.6	3.0	15%
Purple Coneflower	Echinacea purpurea	1.1	3.0	15%
Dense Blazing Star	Liatris spicata	0.7	2.0	10%
anceleaf Coreopsis	Coreopsis lanceolata	0.4	2.0	10%
Blackeyed Susan	Rudbeckia hirta	0.1	3.0	15%
Oxeye Sunflower	Heliopsis	1.3	3.0	15%
Wild Bergamot	Monarda fistulosa	0.1	2.0	10%
Hoary Mountainmint	Pycnanthemum	0.0	2.0	10%
Гotal		6.3	20.0	100%

BRASSICA MIX

Common Name	Scientific Name	#	PLS/sq	% of
Common Name	Scientific Name	PLS/acre	ft	Mix
Bonar (Rape)	Brassica napus	2.7	6.6	33%
Turnip	Brassica rapa	12.9	6.6	33%
Nitro Radish	Raphanus	11.8	6.8	34%
Total		27.4	20.0	100%

SITE SOIL TYPES AND LIMITATIONS

MAP UNIT NAME	MAP UNIT DESIGNATION	SLOPES	SOIL NAME	CUTBANKS CAVE	CORROSIVE TO CONCRETE/STEEL	DROUGHTY	EASILY ERODIBLE	FLOODING	HIGH WATER TABLE	HYDRIC/HYDRIC INCLUSIONS	LOW STRENGTH	SLOW PERCOLATION	PIPING	POOR SOURCE OF TOPSOIL	FROST ACTION	SHRINK-SWELL	POTENTIAL SINKHOLE	PONDING	WETNESS
MORRIS FLAGGY SILT LOAM	MsB	3-8%	MORRIS -	Х	c/s	Х	Х		Х	Х	х	Х	Х		Х				Х
	MsC	8-15%		x	c/s	X	x		X	x	×	x	x		×				×
	MrB	3-8%		х	c/s	x	х		х	х	х	х	х		х				х
MORRIS CHANNERY SILT LOAM	MrC	8-18%		х	c/s	x	х		х	х	х	х	х		х				×
NORWICH AND CHIPPEWA SOILS	NcB	3-8%	NORWICH AND CHIPPEWA	х	c/s	х	х		х	х	х	х		х	х			х	x
OOLAGA GUANNERY LOAM	OcC	8-15%		х	c/s	х	х			х		х			х			x	x
OQUAGA CHANNERY LOAM	OcD	15-25%	OQUAGA	х	c/s	×	х			х		х			х			x	×
OQUAGA FLAGGY LOAM	OfB	3–8%		х	c/s	×	х			х		х			х			×	х
WELL CROPO CHANNERY LOAD	WcC	8-15%	WELL SDODO	x	c/s	×	х		×	х	×	х	х		х				х
WELLSBORO CHANNERY LOAM	WcD	15-25%	- WELLSBORO	х	c/s	Х	х		х	х	х	х	х		х				х

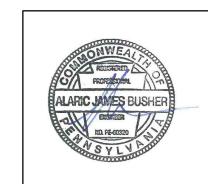
SOILS LIMITATIONS AND RESOLUTIONS

LIMITATION	RESOLUTION
CUTBANKS CAVE	EXCAVATIONS WILL BE PROPERLY SUPPORTED BY SHEETING AND SHORING TO PREVENT CAVES.
CORROSIVE TO CONCRETE/STEEL	NO CONCRETE OR STEEL PIPING IS PROPOSED WITHOUT APPROPRIATE TREATMENT OR PROTECTION.
DROUGHTY	EXISTING SUITABLE TOPSOIL AND SOIL AMENDMENTS WILL BE USED DURING CONSTRUCTION.
EASILY ERODIBLE	TEMPORARY AND PERMANENT EROSION CONTROL BMPS WILL BE EMPLOYED THROUGHOUT THE SITE.
FLOODING	ENSURE THAT THE SITE HAS PROPER DRAINAGE.
HIGH WATER TABLE	A GEOTECHNICAL INVESTIGATION WAS CONDUCTED TO MINIMIZE CONFLICTS WITH SATURATED ZONES.
HYDRIC/HYDRIC INCLUSIONS	A WETLAND INVESTIGATION WAS COMPLETED TO DETERMINE IF WETLANDS ARE PRESENT IN THE DEVELOPMENT AREA.
LOW STRENGTH	A MAXIMUM OF 3:1 SLOPES ARE PROPOSED.
SLOW PERCOLATION	FIELD INVESTIGATIONS OF PERCOLATION RATES AT THE INFILTRATION AREAS WERE PERFORMED TO VERIFY THE SOILS PERCOLATION CAPACITY.
PIPING	WATERTIGHT PIPE, ANTISEEP COLLARS, CLAY CORES THROUGH BASIN BERMS, AND CONCRETE ENDWALLS WILL BE USED TO MINIMIZE THE DANGER OF PIPING.
POOR SOURCE OF TOPSOIL	EXISTING TOPSOIL, WHICH HAS PROVEN TO BE SUITABLE, WILL BE REUSED ON THE SITE.
FROST ACTION	PAVEMENT SUBBASE WILL BE PROVED TO MINIMIZE FROST AFFECTS.
SHRINK-SWELL	STONE BASE WILL BE PROVED TO PREVENT SHRINK-SWELL FROM EFFECTING PAVEMENT.
POTENTIAL SINKHOLE	GEOTECHNICAL ENGINEER OF RECORD RECOMMENDATIONS WILL BE FOLLOWED FOR ANY POTENTIAL OCCURRENCES.
PONDING	SURFACE GRADING AND DRAINAGE FACILITIES WILL BE PROVIDED TO MINIMIZE PONDING AFFECTS.
WETNESS	WET WEATHER CONSTRUCTION RECOMMENDATIONS, PER THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS, WILL BE EMPLOYED TO MINIMIZE THE AFFECTS OF WETNESS DURING CONSTRUCTION, SURFACE GRADING. SURFACE GRADING AND DRAINAGE WILL BE PROVIDED TO MINIMIZE WETNESS AFFECTS AFTER CONSTRUCTION.

MULCH

- 1. MULCHES SHOULD BE APPLIED AT THE RATES SHOWN IN TABLE 11.6
- 2. STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN. A TRACTOR-DRAWN IMPLEMENT MAY BE USED TO "CRIMP" THE STRAW OR HAY INTO THE SOIL - ABOUT 3 INCHES. THIS METHOD SHOULD BE LIMITED TO SLOPES NO STEEPER THAN 3H: 1V. THE MACHINERY SHOULD BE OPERATED ON THE CONTOUR. CRIMPING OF HAY OR STRAW BY RUNNING OVER IT WITH TRACKED MACHINERY IS NOT RECOMMENDED.
- 3. POLYMERIC AND GUM TACKIFIERS MIXED AND APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS MAY BE USED TO TACK MULCH. AVOID APPLICATION DURING RAIN AND ON WINDY DAYS. A 24-HOUR CURING PERIOD AND A SOIL TEMPERATURE HIGHER THAN 45°F ARE TYPICALLY REQUIRED. APPLICATION SHOULD GENERALLY BE HEAVIEST AT EDGES OF SEEDED AREAS AND AT CRESTS OF RIDGES AND BANKS TO PREVENT LOSS BY WIND. THE REMAINDER OF THE AREA SHOULD HAVE BINDER APPLIED UNIFORMLY. BINDERS MAY BE APPLIED AFTER MULCH IS SPREAD OR SPRAYED INTO THE MULCH AS IT IS BEING BLOWN ONTO THE SOIL. APPLYING STRAW AND BINDER TOGETHER IS
- 4. SYNTHETIC BINDERS, OR CHEMICAL BINDERS, MAY BE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THEY ARE NON-TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.
- 5. MULCH ON SLOPES 8% OR STEEPER SHOULD BE HELD IN PLACE WITH NETTING. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- 6. SHREDDED PAPER HYDROMULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5%. WOOD FIBER HYDROMULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED A TACKIFIER IS USED. THE APPLICATION RATE FOR ANY HYDROMULCH SHOULD BE 2,000 LB/ACRE AT A MINIMUM.
- 7. HYDRAULICALLY APPLIED BLANKETS CAN BE AN EFFECTIVE METHOD OF STABILIZING STEEP SLOPES WHEN USED PROPERLY. THEY MAKE USE OF A CROSS-LINKED HYDROCOLLOID TACKIFIER TO BOND THERMALLY PROCESSED WOOD FIVERS. APPLICATION RATES VARY ACCORDING TO SITE CONDITIONS. IN ANY CASE, MANUFACTURER'S RECOMMENDATIONS SHOULD BE FOLLOWED. SHOULD NOT BE USED IN AREAS OF CONCENTRATED FLOW (E.G. SWALES).
- 8. NO MULCH MAY BE APPLIED IN WETLANDS.

WE TEANDS.												
TABLE 11.6												
		MULCH APF	PLICATION RATES	5								
MULCH	AP	PLICATION RATE	(MIN.)									
TYPE	PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YD.	NOTES								
STRAW	3 TONS	140 LB.	1,240 LB.	EITHER WHEAT OR OAT STRAW, FREE OF WEEDS, NOT CHOPPED OR FINELY BROKEN								
WOOD CHIPS	4-6 TONS	185-275 LB.	1,650-2,500 LB.	MAY PRVENT GERMINATION OF GRASSES AND LEGUMES								
HYDRO- MULCH	1 TON	47 LB.	415 LB.	SEE LIMITATIONS ABOVE								
HYDRAULICALLY APPLIED BLANKETS	3,000 LB. 4,000 LB.	N/A N/A	N/A N/A	SLOPES UP TO 3H:1V SLOPES STEEPER THAN 3H:1V								

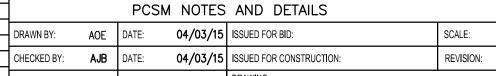


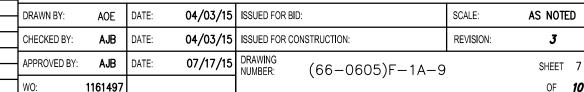
	REVISIONS									
NO.	DATE	BY	DESCRIPTION	W.O. NO.	СНК.	APP.	A			
0	08/28/2015	BL	ISSUED FOR PADEP SUBMITTAL	W01161497	DAK	AJB	ĺ			
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W01161497	DAK	AJB				
2	05/27/2016	BL	UPDATED PER BASIC SYSTEMS DESIGN COORDINATION	W01161497	AJB	AJB	ĺ			
3	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W01161497	AJB	AJB	ĺ			
_							\vdash			

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC ATLANTIC SUNRISE PROJECT- PROPOSED 30" NATURAL GAS PIPELINE

POST CONSTRUCTION STORMWATER MANAGEMENT PLANS

FOR COMPRESSOR STATION 605 CLINTON TOWNSHIP, WYOMING COUNTY, PENNSYLVANIA





THE LAND USES AND AQUATIC FEATURES FOUND WITHIN THE PROJECT AREA OCCUR ON MIXED HARDWOOD UPLAND FOREST. AND SHALLOW FORESTED WETLANDS. ACCORDING TO THE IMAGERY PROVIDED BY THE PENNSYLVANIA GEOLOGICAL SURVEY, THE LAND USES WITHIN THE PROJECT AREA REMAINED SIMILAR BETWEEN 1939 AND 1967. THE LAND USES ON THE 1939 AERIALS WERE PRIMARILY COMPOSED OF MIXED HARDWOOD UPLAND FOREST. FUTURE LAND USE WOULD INVOLVE THE INSTALLATION OF THE COMPRESSOR STATION PAD AND ACCESS ROADS.

THERMAL IMPACT ANALYSIS

IN ORDER TO PREVENT AN INCREASE IN STREAM TEMPERATURE, CONSTRUCTION OF THESE FACILITY WILL INCORPORATE THE FOLLOWING BMP'S TO ADDRESS POTENTIAL THERMAL IMPACTS. GRAVEL WILL PRIMARILY BE USED IN LIEU OF ASPHALT FOR ACCESS ROAD AND PAD CONSTRUCTION TO PREVENT THE COLLECTION AND SUBSEQUENT HEATING OF STORMWATER ON THE SURFACE OF THESE AREAS. NO TREE REMOVAL IS PROPOSED AS PART OF THE METER STATION WORK. THE RECIEVING WATERS FOR THE SITE ARE 900' ± FROM THE SITE. VEGETATED SWALES AND INFILTRATION BASINS WILL BE PROVIDED TO CAPTURE AND AID IN THE INFILTRATION OF THE NET RUNOFF VOLUME INCREASE ASSOCIATED WITH THE TRANSITION FROM PRE-DEVELOPMENT CONDITIONS TO POST-DEVELOPMENT CONDITIONS.

CRITICAL STAGES OF CONSTRUCTION

- THE FOLLOWING ARE CRITICAL STAGES OF CONSTRUCTION:
- INSTALLATION OF SEDIMENT BASIN.
- 2. INSTALLATION OF VEGETATED SWALES. INSTALLATION OF INFILTRATION BERMS.
- 4. CONVERSION SEDIMENT BASIN TO STORMWATER BASIN 1.
- 5. INSTALLATION OF STORMWATER BASIN 2
- SOIL AMENDMENT

COMPRESSOR STATION SEQUENCE OF CONSTRUCTION

- 1. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, ENVIRONMENTAL INSPECTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
- 2. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES. OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND
- 3. HOLD PRE-CONSTRUCTION CONFERENCE WITH THE ENVIRONMENTAL INSPECTORS, LOCAL COUNTY CONSERVATION DISTRICT (CCD), PADEP. AND DESIGN ENGINEER.
- 4. INSTALL ORANGE CONSTRUCTION FENCE AROUND AREAS TO BE PROTECTED. 5. LOCATE STAGING AREAS AND ACCESS POINTS INCLUDING CONSTRUCTION ENTRANCES. FIELD LOCATE LIMITS OF DISTURBANCE.
- 6. INSTALL ROCK CONSTRUCTION ENTRANCES (RCES). REMOVE BRUSH TO EFFECTIVELY INSTALL PERIMETER CONTROLS, LEVEL SIDE CUTS TO GRANT ACCESS FOR VEHICLES AND WORKERS
- TO SAFELY PERFORM THE INSTALLATION OF SEDIMENT BARRIERS ON THE SITE AS SHOWN ON THE CONSTRUCTION DRAWINGS. 8. THE COMPLIANCE MANAGER SHALL PROVIDE PADEP AND CCD AT LEAST THREE DAYS' NOTICE PRIOR TO BULK EARTH DISTURBANCE AND UPON COMPLETED INSTALLATION OF PERIMETER EROSION CONTROLS.
- 9. * INSTALL SEDIMENT BASIN. INCLUDING CLAY CORE, ANTISEEP COLLARS, SLOPE LINERS, CLEANOUT STAKE, AND ASSOCIATED IMPROVEMENTS.
- 10. INSTALL VEGETATED ROADSIDE SWALES, CULVERTS AND RIPRAP OUTLET PROTECTION. ROUGH GRADE ACCESS ROADS. 11. UPON GRADING INFILTRATION BASIN 2, INSTALL ORANGE CONSTRUCTION FENCE TO PREVENT DAMAGE. DO NOT INSTALL OS 2. INSTALL
- COMPOST FILTER SOCKS AT INTERIOR TOE OF SLOPE TO MINIMIZE SILTATION OF BASIN BOTTOM. 12. * INSTALL DRAINAGE CHANNEL APRONS AS SOON AS SWALE GRADING IS COMPLETE.
- 13. BEGIN CONSTRUCTION STAKING FOR GRADING. 14. BEGIN GRADING AND STRIP AND STOCKPILE TOPSOIL WITHIN THE AREA OF IMPROVEMENTS AND INSTALL SEDIMENT BARRIERS AROUND STOCKPILES.
- 15. UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OF AN ACTIVITY WHERE THE CESSATION OF EARTH DISTURBANCE ACTIVITIES WILL EXCEED FOUR DAYS, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED, OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES. FOR AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OF AN ACTIVITY TO BE CONSIDERED TEMPORARILY STABILIZED, THE DISTURBED AREAS SHALL BE COVERED WITH ONE OF THE FOLLOWING: A MINIMUM UNIFORM COVERAGE OF MULCH AND SEED, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION, OR AN ACCEPTABLE BMP WHICH TEMPORARILY MINIMIZES ACCELERATED EROSION AND SEDIMENTATION. TEMPORARY STABILIZATION WILL NOT OCCUR ON ACTIVE VEHICULAR TRAVEL WAYS WITHIN THE ROW. THE ON-SITE ENVIRONMENTAL INSPECTOR WILL LOG DAILY ACTIVITY WITHIN THE LOD AND NOTIFY THE CONTRACTOR OF AREAS
- REQUIRING TEMPORARY STABILIZATION (I.E., AREAS WHERE WORK HAS CEASED FOR AT LEAST FOUR DAYS). 16. GRADE THE COMPRESSOR STATION PADS, INCLUDING STORMWATER RUNOFF CONVEYANCE FEATURES AS SHOWN ON THE E&SC AND
- PCSM/SR PLANS (SECTIONS 2 AND 3 OF THE ESCGP-2 NOI). 17. IMMEDIATELY STABILIZE SIDE SLOPES WITH EROSION CONTROL MATTING WHEN SLOPES ARE 3:1 OR GREATER. SEE PCSM/SR PLANS AND DETAIL SHEETS, AS PROVIDED IN SECTION 3 OF THE ESCGP-2 NOI, (PATTERNS DIFFER BY SLOPE CATEGORY). INSTALL RIP RAP SLOPE STABILIZATION WHERE SHOWN ON THE PCSM/SR PLANS.
- 18. ESTABLISH FINAL GRADE. 19. SURFACE STABILIZATION, APPLY PERMANENT STABILIZATION MEASURES IMMEDIATELY TO ANY DISTURBED AREAS WHERE WORK HAS
- REACHED FINAL GRADE. 20. UPON COMPLETION OF ALL EARTHWORK ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS. THE OWNER AND FOR
- OPERATORS SHALL CONTACT THE LOCAL CCD FOR AN INSPECTION PRIOR TO THE REMOVAL/CONVERSION OF THE E&SC BMPS. 21.* AFTER ALL UPSLOPE DISTURBED AREAS ARE STABILIZED, CONVERT SEDIMENT BASIN TO PROPOSED STORMWATER MANAGEMENT
- BASIN 1 INCLUDING INFILTRATION BERMS AND AMENDED SOIL 22.* INSTALL OS-2. INSTALL AMENDED SOILS. REINSTALL COMPOST FILTER SOCK IN INTERIOR TOE OF SLOPE TO PROTECT AMENDED
- SOIL FROM SILTATION. 23. AFTER FINISH GRADING AND TOPSOIL PLACEMENT IS COMPLETED, DISTURBED AREAS SHALL BE FERTILIZED, SEEDED, AND MULCHED. SEED MIXTURES, FERTILIZER AND MULCH APPLICATIONS RATES AND DATES SHALL CONFORM TO THE TABLES PROVIDED ON THE PCSM/SR PLANS AND DETAIL SHEETS (SECTION 3 OF THE ESCGP-2 NOI), LAND OWNER AGREEMENTS AND/OR THE ECP (SECTION 4
- 24. AFTER SEEDING, FERTILIZING AND MULCHING IS COMPLETE, INSTALL EROSION CONTROL BLANKETS AS REQUIRED OR ORDERED OR ON
- SLOPES OF THAN 3:1 OR GREATER. 25. AFTER THE SITE IS PERMANENTLY STABILIZED AND UPON PADEP OR LOCAL CCD AND OWNER APPROVAL OF STABILIZATION AND RE-VEGETATION, REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AND STABILIZE AREAS DISTURBED BY REMOVAL
- 26.* COMPLETE SITE STABILIZATION, INCLUDING SOIL AMENDMENT, SEED APPLICATION, EROSION CONTROL BLANKET INSTALLING IN BASIN, AND MULCHING
- 27. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATORS SHALL CONTACT THE LOCAL CCD FOR A FINAL INSPECTION.
- 28. MAIŃTAIN E&SC BMPS UNTIL SITE WORK IS COMPLETE AND UNIFORM 70% PERENNIAL VEGETATIVE COVER IS ESTABLISHED. 29. REMOVE AND PROPERLY DISPOSE/RECYCLE E&SC BMPS. REMOVE ORANGE CONSTRUCTION FENCE. REPAIR AND PERMANENTLY STABILIZE AREAS DISTURBED DURING E&SC BMP REMOVAL UPON ESTABLISHMENT OF UNIFORM 70% VEGETATIVE COVER.
- * INDICATES A CRITICAL STAGE OF PCSM INSTALLATION TO BE OBSERVED BY A LICENSED PROFESSIONAL OR DESIGNEE. CONTRACTOR TO PROVIDE THREE WORKING DAYS' NOTICE TO DESIGN ENGINEER.

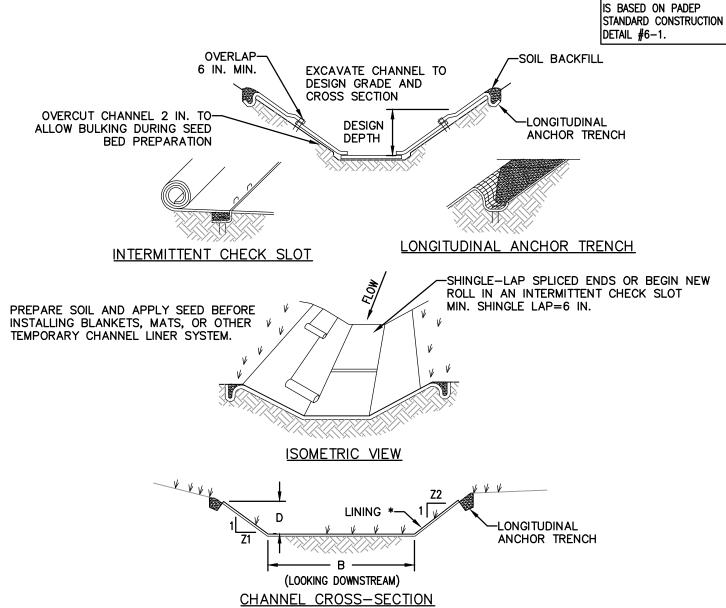
ACID-PRODUCING SOILS AND BEDROCK CONTROL PLAN

THE FOLLOWING ACID PRODUCING SOILS CONTROL PLAN WAS DEVELOPED TO IDENTIFY BMPS AND PROCEDURES FOR MINIMIZING THE POTENTIAL FOR POLLUTION ASSOCIATED WITH THE DISTURBANCE OF THE AREAS WITHIN THE PROPOSED RIGHT-OF-WAY THAT CONTAIN

ACID-PRODUCING SOILS AND BEDROCK CONTROL PLAN:

ACID-PRODUCING SOILS.

- 1. CONTRACTOR SHALL LIMIT THE EXCAVATION AREA AND EXPOSURE TIME WHEN HIGH ACID-PRODUCING SOILS ARE ENCOUNTERED.
- 2. CONTRACTOR SHALL SEPARATELY STORE TOPSOIL STRIPPED FROM THE SITE AWAY FROM TEMPORARILY STOCKPILED HIGH ACID-PRODUCING SOILS AND BEDROCK.S.
- 3. CONTRACTOR SHALL STOCKPILE HIGH ACID—PRODUCING SOILS AND BEDROCK MATERIAL ON LEVEL GROUND TO MINIMIZE ITS MOVEMENT, ESPECIALLY WHEN THESE MATERIALS HAVE A HIGH CLAY CONTENT.
- 4. CONTRACTOR SHALL COVER TEMPORARILY STOCKPILED HIGH ACID-PRODUCING SOIL AND BEDROCK MATERIAL TO BE EXPOSED MORE THAN 30 DAYS WITH PROPERLY ANCHORED, HEAVY-GRATE SHEETS OF POLYETHYLENE, WHERE POSSIBLE. IF NOT POSSIBLE STOCKPILES SHALL BE COVERED WITH A MINIMUM OF THREE TO SIX INCHES OF WOOD CHIPS TO MINIMIZE EROSION OF THE STOCKPILE. IN ADDITION, THE CONTRACTOR SHALL INSTALL SILT FENCE AT THE TOE OF THE STOCKPILE SLOPE TO CONTAIN MOVEMENT OF MATERIAL. CONTRACTOR SHALL NOT APPLY TOPSOIL TO THE HIGH ACID-PRODUCING SOIL OR BEDROCK STOCKPILES
- 5. CONTRACTOR SHALL ULTIMATELY DISPOSE OF HIGH ACID-PRODUCING SOILS OR BEDROCK WITH A PH OF FOUR OR LESS, OR CONTAINING IRON SULFIDE (INCLUDING BORROW FROM CUTS) BY PLACING THE MATERIAL COMBINED WITH LIMESTONE AT THE RATE OF 6 TONS PER ACRE (OR 275 POUNDS PER 1,000 SQUARE FEET OF SURFACE AREA) AND COVERING THE MIXTURE WITH A MINIMUM OF 12 INCHES OF SETTLED SOILS WITH A PH OF FIVE OR MORE EXCEPT AS FOLLOWS:
- A. IN THE AREAS WHERE TREES OF SHRUBS ARE TO BE PLANTED, THE CONTRACTOR SHALL COVER THE LIMESTONE/SOIL MIXTURE WITH A MINIMUM OF 24 INCHES OF SOILS WITH A PH OF FIVE OR MORE.
- B. CONTRACTOR SHALL NOT LOCATE ANY DISPOSAL AREA WITHIN 24 INCHES OF ANY SURFACE OF A SLOPE OR BANK, SUCH AS BERMS, STREAM BANKS, DITCHES, AND OTHER SURFACE WATERS TO PREVENT POTENTIAL LATERAL LEACHING DAMAGES.
- 6. AT THE END OF EACH DAY, CONTRACTOR SHALL CLEAN ALL EQUIPMENT USED TO HANDLE HIGH ACID-PRODUCING SOILS OR BEDROCK TO PREVENT SPREADING OF HIGH-ACID MATERIALS TO OTHER PARTS OF THE PROPOSED RIGHT-OF-WAY, INTO STREAMS, OR STORMWATER CONVEYANCES, AND TO PROTECT MACHINERY FROM ACCELERATED CORROSION.
- 7. CONTRACTOR SHALL PROVIDE AND INSTALL NON-VEGETATIVE EROSION CONTROLS (STONE TRACKING PADS, STRATEGICALLY-PLACE LIMESTONE CHECK DAMS, SILT FENCES, WOOD CHIPS) TO LIMIT THE MOVEMENT OF HIGH ACID-PRODUCING SOILS FROM, AROUND, OR OFF OF THE PROPOSED RIGHT-OF-WAY.
- 8. FOLLOWING THE BURIAL OR REMOVAL OF HIGH ACID-PRODUCING SOILS AND BEDROCK, TOP SOILING, AND SEEDING OF THE PROPOSED RIGHT-OF-WAY, TRANSCO SHALL MONITOR THE SITE FOR APPROXIMATELY SIX TO 12 MONTHS TO ASSURE THERE IS ADEQUATE STABILIZATION AND THAT NO HIGH-ACID SOIL OR BEDROCK PROBLEMS EMERGE. CONTRACTOR SHALL CORRECT ANY PROBLEMS THAT ARE DISCOVERED WITHIN THIS TIME PERIOD.
- 9. IF PROBLEMS OCCUR WHERE HIGH ACID-PRODUCING SOILS OR BEDROCK HAVE BEEN PLACED OR BURIED, THE APPLICANT SHALL MONITOR THESE AREAS FOR AT LEAST TWO YEARS TO ASSURE THERE IS NO MIGRATION OF POTENTIAL ACID LEACHATE.



NOTE: THIS WILLIAMS STANDARD DETAIL

* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS. VEGETATIVE STABILIZATION FOR SOIL AMENDMENTS, SEED MIXTURES AND MULCHING INFORMATION

NOTES: ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL

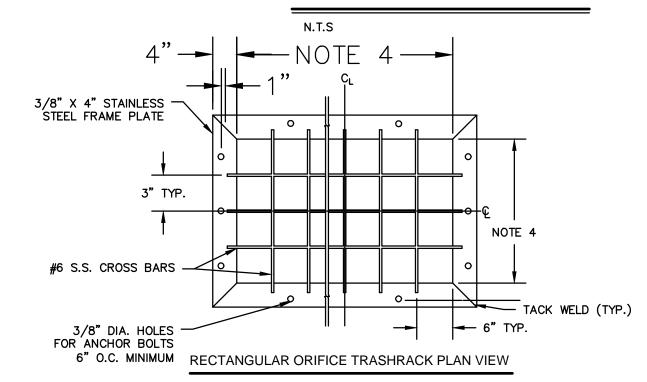
CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION. SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48

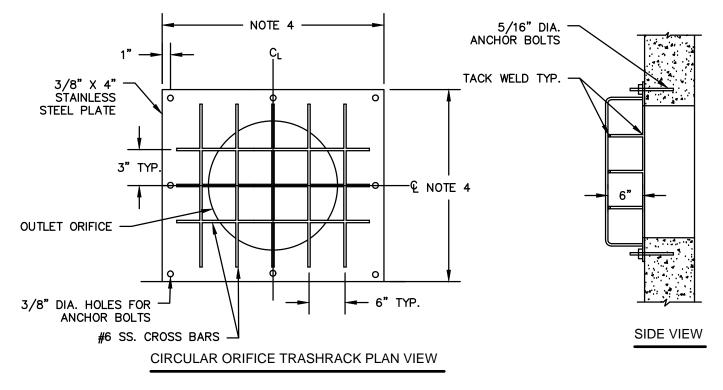
NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY

REFER TO "TABLE 2: TEMPORARY CLEAN WATER DIVERSION SUMMARY" AT THE END OF THIS PLAN SET FOR CHANNEL INFORMATION CHART FOR THE DIVERSION SWALES ALONG THE PIPELINE RIGHT OF WAY.

INFOR	INFORMATION CHART FOR THE DIVERSION SWALES ALONG THE PIPELINE RIGHT OF WAY.												
	SWALE SUMMARY TABLE												
SWALE NO.	BOTTOM WIDTH B (FT)	DEPTH D (FT)	TOP WIDTH W (FT)	Z1 (FT)	Z2 (FT)	TEMPORARY LINING*	PERMANENT LINING						
VEGETATED SWALE 1A	2.0	1.5	11.0	3.0	3.0	W3000	GRASS/W3000						
VEGETATED SWALE 1B	5.0	2.0	17.0	3.0	3.0	W3000	GRASS/W3000						
VEGETATED SWALE 2A	2.0	1.5	11.0	3.0	3.0	S75	GRASS						
VEGETATED SWALE 2B	5.0	2.0	17.0	3.0	3.0	W3000	GRASS/W3000						

VEGETATED CHANNEL

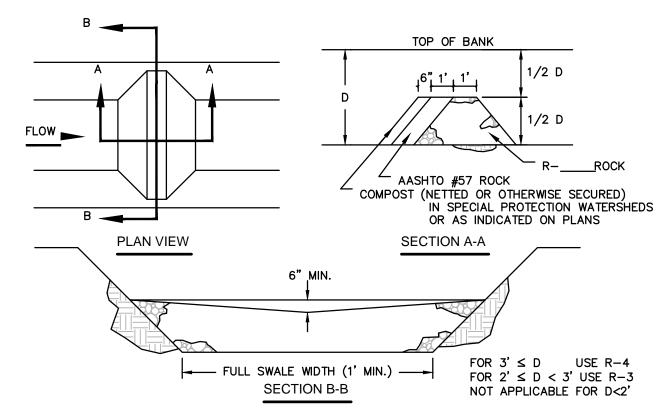




- 1. TRASH RACK MATERIAL TO BE STAINLESS STEEL.
- 2. SECURE THE TRASHRACK PLATE TO THE SIDE OF THE INLET BOX USING 5/16"0 x 2" STAINLESS STEEL BOLTS AND APPROPRIATE ANCHORS.
- 3. DURING INSTALLATION OF THE TRASH RACK PLATE, PLACE THIN LAYER OF BLACK MASTIC MATERIAL BETWEEN THE TRASHRACK PLATE AND THE INLET BOX WALL AS A GASKET TO CREATE A WATERTIGHT SEAM.
- 4. SEE PERMANENT OUTLET STRUCTURE DETAIL FOR ORIFICE PLATE DIMENSIONS.

PERMANENT OUTLET STRUCTURE TRASH RACK

N.T.S



SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTER.

IMMEDIATELY UPON STABILIZATION OF EACH SWALE, INSTALLER SHALL REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.

PADEP-4-14

NOTE: THIS WILLIAMS

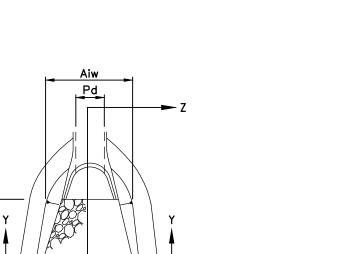
STANDARD DETAIL

DETAIL #9-1.

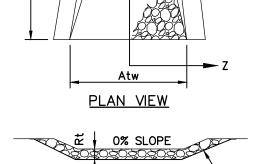
IS BASED ON PADEP

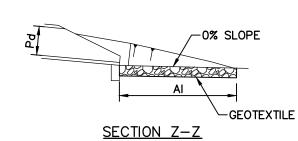
STANDARD CONSTRUCTION

ROCK FILTER



-GEOTEXTILE





SECTION Y-Y

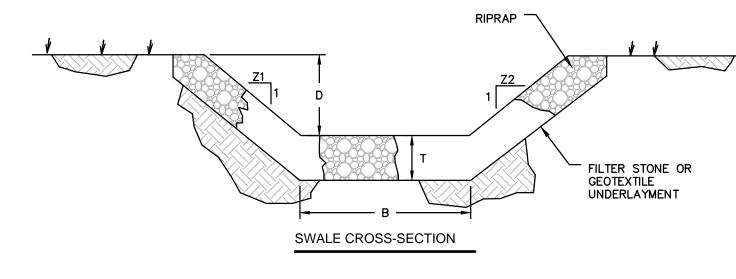
		RIP	RAP		APRON	
OUTLET NO.	PIPE DIA PD (IN)	SIZE (R)	SIZE (R) THICK. Rt (IN)		INITIAL WIDTH Aiw (FT)	TERMINAL WIDTH (Atw) (FT)
BASIN 1	18	4	18	14	5	19
BASIN 2	18	6	36	20	17	17
CULVERT A	38X60	6	36	26	15	41
CULVERT B (SWALE 2B)	36	5	24	22	9	31
CULVERT C	30	5	24	16	8	24
CULVERT D	30	4	18	16	8	24
CULVERT E	15	4	18	8	5	13

- 1. ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN ON THE PLANS. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.
- 2. ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

RIP-RAP APRON AT PIPE OUTLET WITH FLARED END SECTION

N.T.S

ALARIC JAMES BUSHE



SWALE	STATIONS	В	D	Z1	Z2	RIPRAP GRADATION	Т	UNDERLAYMENT	UNDERLAYMENT THICKNESS
DITCH 1	NA	2	3	2	2	R-4	18	GEOTEXTILE	NA
DITCH 3	NA	2	3	2	2	R-4	18	GEOTEXTILE	NA
DITCH 5	NA	2	4	2	2	R-4	18	GEOTEXTILE	NA
DITCH 6	NA	2	5	2	2	R-4	18	GEOTEXTILE	NA
DITCH 8	NA	2	4	2	2	R-4	18	GEOTEXTILE	NA
DITCH 9	NA	2	5	2	2	R-4	18	GEOTEXTILE	NA
DITCH 10	NA	2	5	2	2	R-4	18	GEOTEXTILE	NA
DITCH 11	NA	2	6	2	2	R-4	18	GEOTEXTILE	NA
DITCH 13	NA	2	5	2	2	R-4	18	GEOTEXTILE	NA
DITCH 14	NA	2	2	2	2	R-4	18	GEOTEXTILE	NA

FILTER STONE UNDERLAYMENT FOR BED SLOPES GREATER THAN OR EQUAL TO .10 FT/FT SHALL

SWALE DIMENSIONS ARE FOR THE COMPLETED SWALE AFTER ROCK PLACEMENT. SWALE MUST BE OVER-EXCAVATED A SUFFICIENT AMOUNT TO ALLOW FOR THE VOLUME OF ROCK PLACED WITHIN THE SWALE WHILE PROVIDING THE SPECIFIED FINISHED DIMENSIONS.

SWALE DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. SWALE SHALL BE CLEANED WHENEVER TOTAL SWALE DEPTH IS REDUCED BY 25% AT ANY LOCATION. SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO SWALE WITHOUT FURTHER DAMAGE

DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.

THE MINIMUM ROCK THICKNESS (T) SHALL BE 1.5 TIMES THE MAX ROCK SIZE.

RIPRAP SWALE DETAIL

PADEP-6-3

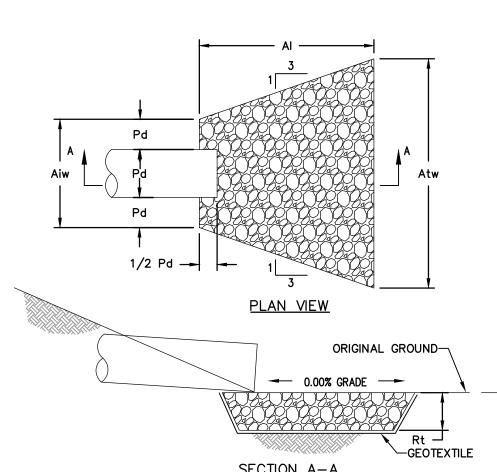
NOTE: THIS WILLIAMS

IS BASED ON PADEP

ISTANDARD CONSTRUCTION

STANDARD DETAIL

DETAIL #9-2.



SECTION A-A													
OUTLET NO.	PIPE DIA PD (IN)	RIPI	RAP	APRON									
		SIZE (R)	THICK. Rt (IN)	LENGTH AI (FT)	INITIAL WIDTH Aiw (FT)	TERMINAL WIDTH (Atw) (FT)							
EGETATED SWALE 1	N/A	5	24	20	16	16							

- 1. ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN ON THE PLANS. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.
- 2. ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.
- 3. EXTEND RIPRAP ON BACK SIDE OF APRON TO AT LEAST 1/2 DEPTH OF PIPE ON BOTH SIDES TO PREVENT SCOUR AROUND THE PIPE.
- 4. FOR APRONS ON ACCESS ROADS, THE DIMENSIONS FOR THE APRONS ARE GIVEN AS FOLLOWS: L \times D \times W/W WHERE: L = LENGTH OF APRON OR "AI" AS SHOWN IN THE PLAN VIEW ABOVED = DEPTH OF RIP RAP OR "Rt" AS SHOWN IN THE SECTION ABOVE

RIP-RAP APRON AT PIPE OUTLET

W/W = WIDTH OF SHORT END OF APRON/WIDTH OF LONG END OF APRON OR "Aiw"/"Atw" AS SHOWN IN THE PLAN VIEW ABOVE

WITHOUT FLARED END SECTION

CHECKED BY:

	REVISIONS								
	NO.	DATE	BY	DESCRIPTION	W.O. NO.	СНК.	APP.	AT	
	0	08/28/2015	BL	ISSUED FOR PADEP SUBMITTAL	W01161497	DAK	AJB	1	
À	1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W01161497	DAK	AJB		
	2	05/27/2016	BL	UPDATED PER BASIC SYSTEMS DESIGN COORDINATION	W01161497	AJB	AJB		
	3	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W01161497	AJB	AJB]	
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]	
								DRA	
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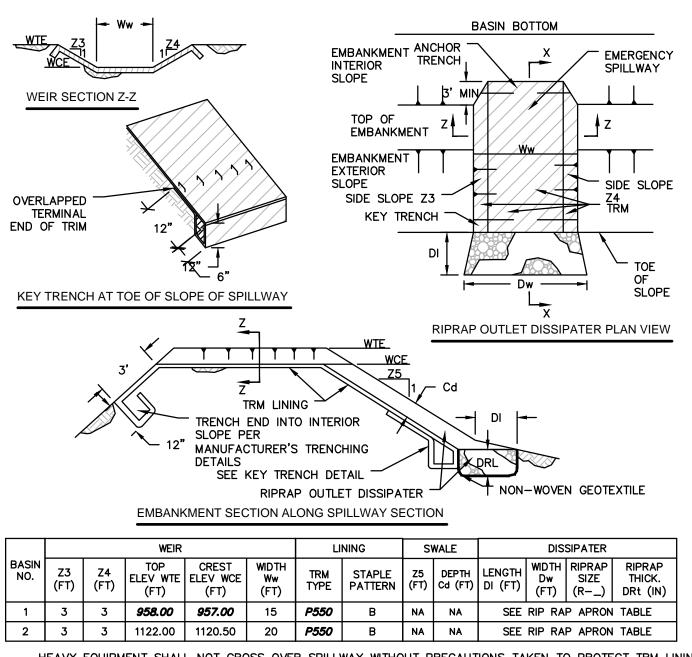
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC ATLANTIC SUNRISE PROJECT- PROPOSED 30" NATURAL GAS PIPELINE POST CONSTRUCTION STORMWATER MANAGEMENT PLANS

FOR COMPRESSOR STATION 605 CLINTON TOWNSHIP, WYOMING COUNTY, PENNSYLVANIA

PCSM NOTES AND DETAILS

RAWN BY: AOE DATE: 04/03/15 ISSUED FOR BID: as noted **04/03/15** ISSUED FOR CONSTRUCTION: REVISION: 3 07/17/15 DRAWING NUMBER: APPROVED BY: AJB DATE: (66-0605)F-1A-9





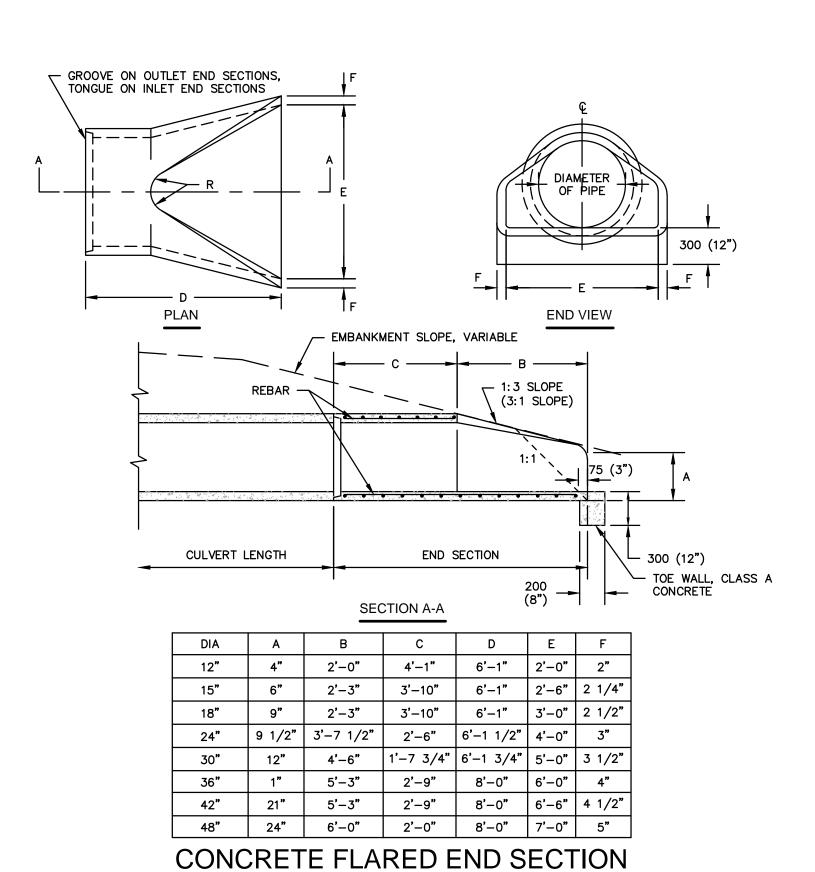
HEAVY EQUIPMENT SHALL NOT CROSS OVER SPILLWAY WITHOUT PRECAUTIONS TAKEN TO PROTECT TRM LINING.

DISPLACED LINER WITHIN THE SPILLWAY AND/OR OUTLET SWALE SHALL BE REPLACED IMMEDIATELY. RIPRAP AT TOE OF EMBANKMENT SHALL BE EXTENDED A SUFFICIENT LENGTH IN BOTH DIRECTIONS TO PREVENT

THE USE OF BAFFLES THAT REQUIRE SUPPORT POSTS ARE RESTRICTED FROM USE IN BASINS REQUIRING IMPERVIOUS LINERS.

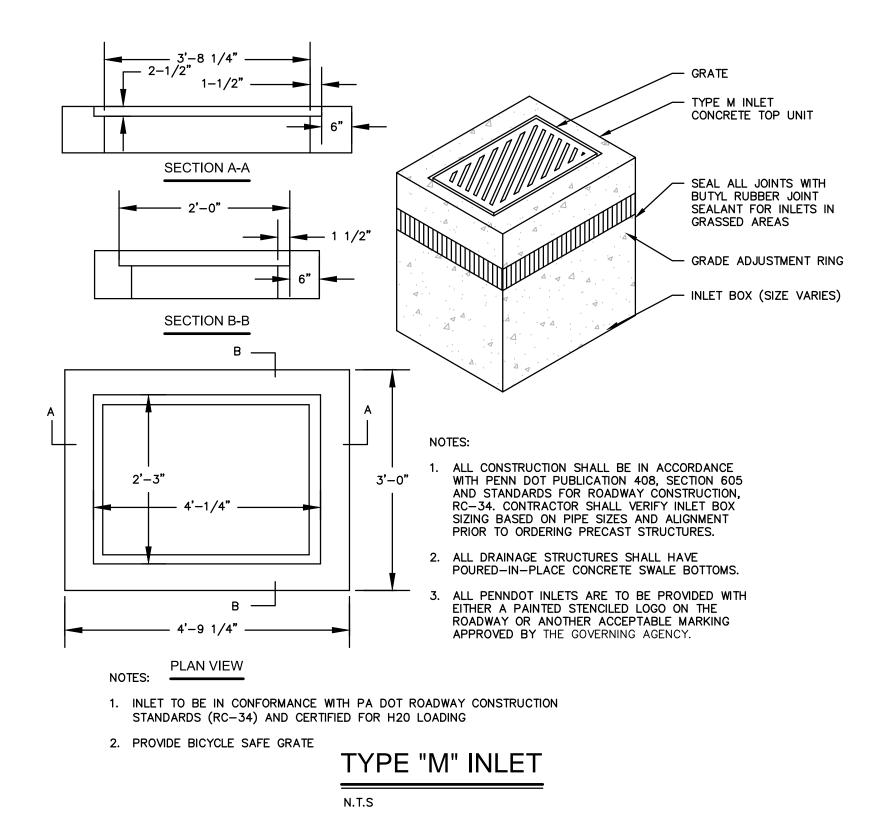
BASIN EMERGENCY SPILLWAY WITH TRM LINING

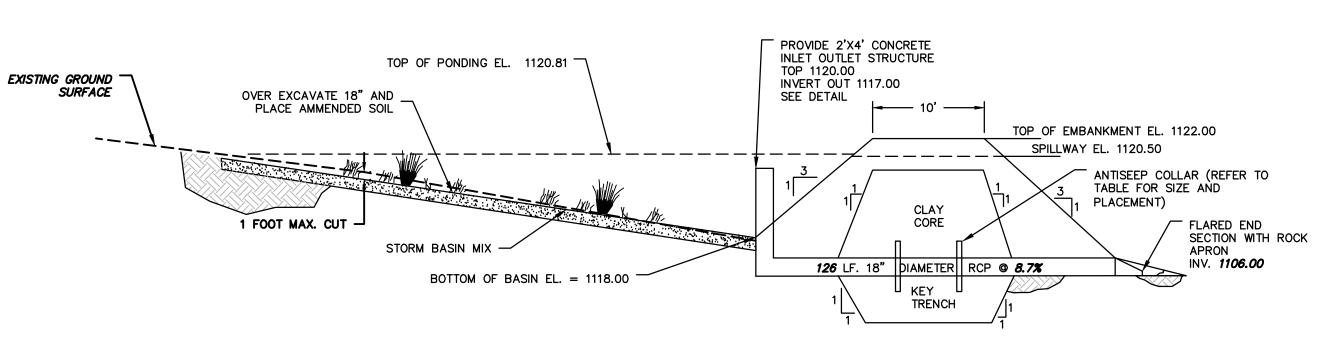
PADEP-7-13 N.T.S



(ROUND PIPE)

N.T.S



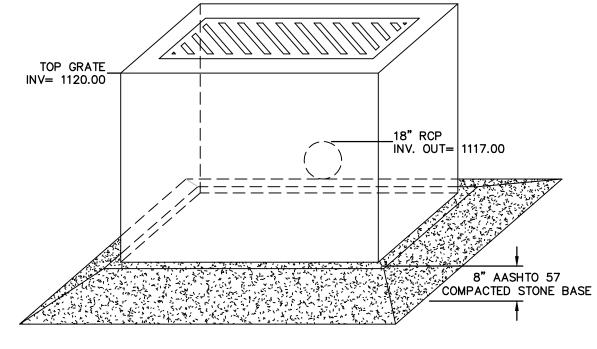


NOTE:

1. CLAY CORE SHALL BE COMPOSED OF CL, CH, MH OR CL-ML SOILS WITH A PERMEABILITY LESS THAN OR EQUAL TO 1.0×10^{-6} CM/S. MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 95% MAXIMUM DENSITY PER ASTM-D 1557; WITHIN \pm 3% OPTIMUM MOISTURE CONTENT.

INFILTRATION BASIN 2 CROSS SECTION

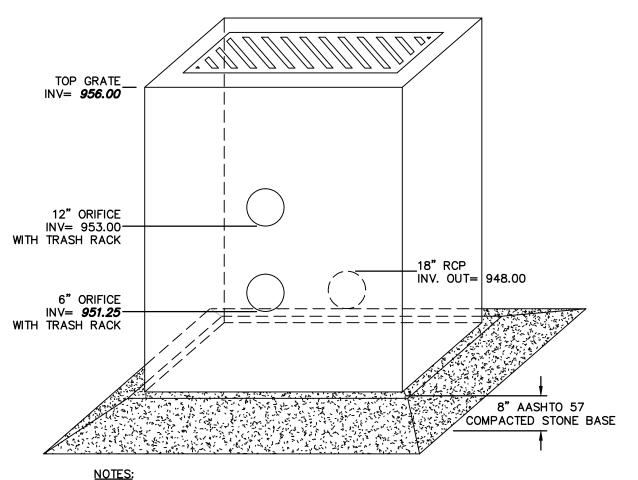
N.T.S



1. THE PROPOSED OUTLET STRUCTURE SHALL BE A TYPE "M" INLET IN ACCORDANCE WITH PENNDOT PUBLICATION 408, SECTION 605 AND STANDARDS FOR ROADWAY CONSTRUCTION, RC-34. 2. OUTLET STRUCTURE SHALL CONTAIN A TRASH RACK.

3. FILL INLET BOX WITH 1 VERTICAL FOOT OF CONCRETE BELOW INVERT OF OUTLET PIPE.

PERMANENT OUTLET STRUCTURE (BASIN 2)



1. THE PROPOSED OUTLET STRUCTURE SHALL BE A TYPE "M" INLET IN ACCORDANCE WITH PENNDOT PUBLICATION 408, SECTION 605 AND STANDARDS FOR ROADWAY CONSTRUCTION, RC-34. 2. OUTLET STRUCTURE SHALL CONTAIN A TRASH RACK. 3. FILL INLET BOX WITH 1 VERTICAL FOOT OF CONCRETE BELOW INVERT OF

INFILTRATION BASIN 1 PERMANENT OUTLET STRUCTURE

N.T.S

