

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

BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET

EAST CAMERON, COAL, RALPHO
TOWNSHIPS

NORTHUMBERLAND COUNTY

BMP DETAIL SUMMARY

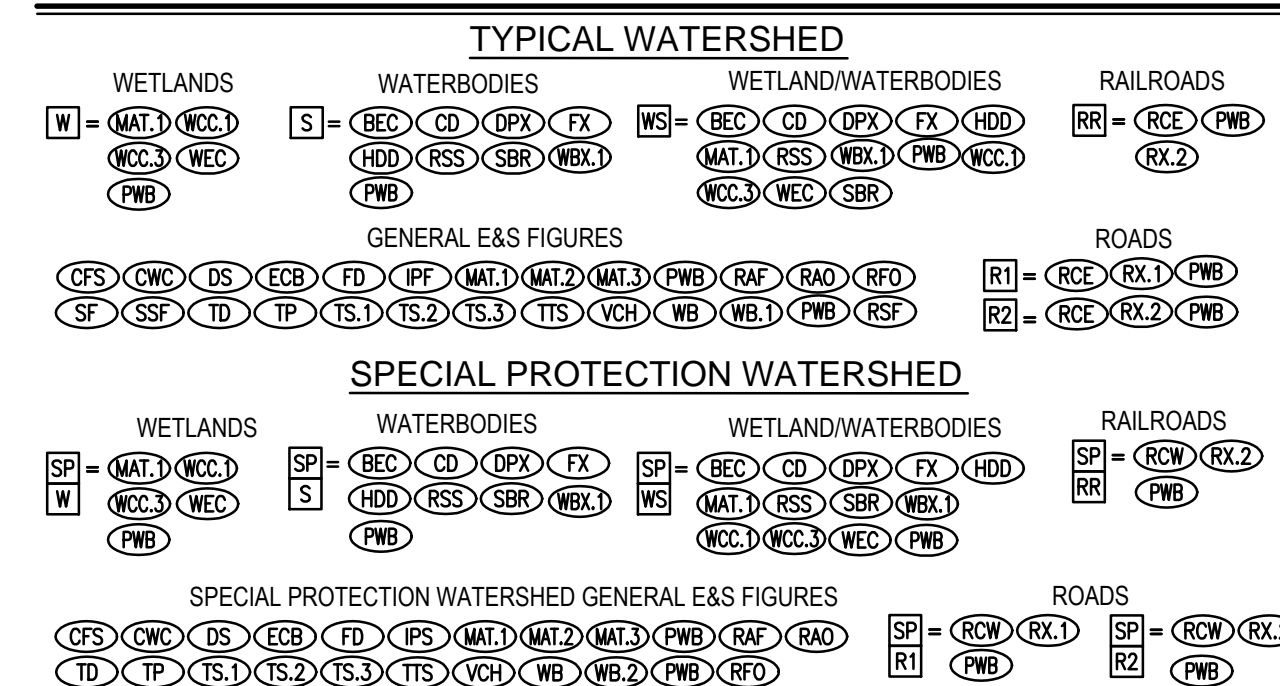
FIGURE	FIGURE TITLE	SHEET NO.
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BBD	BROAD-BASED DIP	
BEC	BRIDGE EQUIPMENT CROSSING	
CD	COFFERDAM STREAM CROSSING	
CDM	CHECK DAM	2
CFS	COMPOST FILTER SOCK	
CS	CLEANOUT STAKE	
CST	COMPOST SOCK SEDIMENT TRAP	
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DPX	DAM AND PUMP STREAM CROSSING	
DS	HYDROSTATIC DEWATERING STRUCTURE	
ECB	EROSION CONTROL BLANKET	
FD	FILTER SOCK DIVERSION	4
FEN	CONSTRUCTION FENCE	
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DETAILS THAT ARE NOT UTILIZED IN THIS COUNTY ARE STRUCK THROUGH IN THIS TABLE. THESE DETAILS ARE ALSO CROSSED OUT WITH A NOTE THAT READS "DETAILS ARE NOT UTILIZED IN THIS COUNTY" ON THEIR RESPECTIVE SHEET.

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E&S DETAIL GROUP LEGEND FOR PIPELINE CROSSINGS



DETAILS IN THIS LEGEND ARE NOT COMPREHENSIVE AND ONLY REFER TO BMPs RELATED TO PIPELINE CROSSINGS. ADDITIONAL BMPs ARE PROVIDED FOR ACCESS ROADS.
E&S DETAIL GROUP LEGEND IS ALSO PROVIDED ON THE PIPELINE E&S PLANS. LEGEND IS SHOWN HERE FOR COORDINATION PURPOSES.



REVISIONS				W.O. NO.		CHK.	APP.
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	
0	08/26/2015	BL	ISSUED FOR PADEP SUBMITTAL	W0572385	JLK	SMK	
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W0572385	JLK	SMK	
2	02/04/2016	BL	ISSUED FOR PADEP RESUBMITTAL	W0572385	JLK	SMK	
3	3/26/2016	BL	ISSUED FOR PADEP RESUBMITTAL	W0572385	JLK	AJB	
4	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0572385	JLK	AJB	
5	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0572385	JLK	AJB	
6	AUG. 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #3	W0572385	JLK	AJB	

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC ATLANTIC SUNRISE PROJECT PROPOSED 42" CENTRAL PENN LINE SOUTH PENNSYLVANIA BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET NORTHUMBERLAND COUNTY, PENNSYLVANIA							
COVER SHEET							
DRAWN BY:	ELZ	DATE:	05/15/15	ISSUED FOR:	CONSTRUCTION	SCALE:	
CHECKED BY:	JLK	DATE:	07/02/15	ISSUED FOR:	CONSTRUCTION	REVISION:	6
APPROVED BY:	SMK	DATE:	07/08/15	DRAWING NUMBER:	24-1600-70-28-A/LL113_9-BMP	SHEET	1
W.O.:						OF	1



STANDARD EROSION & SEDIMENTATION CONTROL PLAN NOTES

- ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
- AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
- 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 UTILITIES.
- ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
- AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
- CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPs SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
- AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
- TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.
- IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
- ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENTS' SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
- ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
- ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
- VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY NOR EXIT DIRECTLY FROM LIMIT OF DISTURBANCE TO PUBLIC ROADS WITHOUT PASSING OVER A ROCK CONSTRUCTION ENTRANCE.
- UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPs SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPs AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPs FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPs, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
- A LOG SHOWING DATES THAT E&S BMPs WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
- SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEEPED INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
- ALL SEDIMENT REMOVED FROM BMPs SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
- AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES --- 6 TO 12 INCHES ON COMPACTED SOILS --- PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
- ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
- ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
- FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
- FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
- FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
- SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
- IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS DURING NON-GERMINATING MONTHS. MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN, AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
- PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
- E&S BMPs SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
- UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPs.
- AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPs MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPs. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPs SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
- UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
- FAILURE TO CORRECTLY INSTALL E&S BMPs, FAILURE TO PREVENT SEDIMENT--LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPs MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO \$10,000 PER DAY IN CIVIL PENALTIES, UP TO \$10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO \$25,000 IN Misdemeanor CRIMINAL PENALTIES FOR EACH VIOLATION.
- CONCRETE WASH WATER SHALL BE HANDLED IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. IN NO CASE SHALL IT BE ALLOWED TO ENTER ANY SURFACE WATERS OR GROUNDWATER SYSTEMS.
- ALL SWALES SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
- UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE SWALE SHALL BE IMMEDIATELY BACKFILLED AND THE SWALE RESTORED TO ITS ORIGINAL CROSS-SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE SWALE SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
- SWALES HAVING RIPRAP, RENO MATRESS, OR GABION LININGS MUST BE SUFFICIENTLY OVER-EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.
- SEDIMENT BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
- SEDIMENT BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
- ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, LOCAL CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.
- UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS-BUILT (RECORD DRAWING) FOR ANY SEDIMENT BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
- EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER, WITHIN 100' OF A STREAM OR WETLAND IN A HIGH QUALITY OR EXCEPTIONAL VALUE WATERSHED, WITHIN 50' OF A STREAM OR WETLAND IN A NON-HIGH QUALITY OR EXCEPTIONAL VALUE WATERSHED, AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
- FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN MAXIMUM 9 INCH LAYERED LIFTS AT 95% DENSITY.
- IN AREAS OF TOPSOIL SEGREGATION, THE TOPSOIL SHALL BE DECOMPACTED TO A MINIMUM DEPTH OF 16" (24" IN HEAVILY COMPACTED AREAS) USING APPROPRIATE AGRICULTURAL RIPPER EQUIPMENT (I.E., PARABOLIC OR BENT OFF-SET) PRIOR TO THE RESTORATION OF THE TOPSOIL. AREAS TO BE REVEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILLOUT SLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.

GENERAL EROSION & SEDIMENT CONTROL NOTES

- INSPECT SNOW PLACEMENT AREAS DURING THE THAW CYCLE. INSTALL EROSION & SEDIMENT CONTROL BMPs DURING QUICK THAWS AND WHEN SNOW MELT RUNOFF IS CONCENTRATED OR IS CAUSING EROSION.
- DISCHARGING SEDIMENT LADEN WATER WHICH WILL CAUSE OR CONTRIBUTE TO THE DEGRADATION OF A BENEFICIAL USE OF A WATER OF THE STATE FROM THE CONSTRUCTION SITE, A DEWATERING SITE, OR SEDIMENT BASIN/TRAP INTO ANY WATER BODY OR STORM DRAIN WITHOUT FILTRATION OR EQUIVALENT TREATMENT IS PROHIBITED.
- DISCHARGES ORIGINATING FROM OFF-SITE SOURCES, WHICH FLOW THROUGH OR ACROSS THE AREAS DISTURBED BY CONSTRUCTION, SHALL BE DIVERTED AROUND THE ACTIVE CONSTRUCTION AREA WHENEVER POSSIBLE.
- STAGING AREAS, ASSEMBLY AREAS, TEMPORARY EQUIPMENT AND NON-HAZARDOUS MATERIAL STORAGE AREAS SHALL BE LOCATED OUTSIDE THE 100-YR FLOOD ZONE. HAZARDOUS MATERIAL STORAGE AREAS SHALL BE LOCATED AT LEAST 100 FEET BACK FROM SURFACE WATER BODIES.
- ALL EXCAVATED MATERIALS THAT WILL NOT BE USED ON THE SITE CANNOT BE STORED IN THE FLOODPLAIN AND MUST BE HAULED TO A DISPOSAL SITE LOCATED OUTSIDE OF THE FLOODPLAIN.
- CONSTRUCTION STAGING AREAS SHALL BE LOCATED A MINIMUM OF 50 FEET AWAY FROM THE EDGE OF A WETLAND.
- MEASURES SHALL BE TAKEN TO PREVENT TRENCHES FROM DRAINING A WETLAND OR CHANGING ITS HYDROLOGY.
- IT IS DESIRED THAT THE AMOUNT AND DURATION OF OPEN TRENCH BE MINIMIZED DURING THE PROJECT.
- IF TOPSOIL PILES ARE EXPOSED FOR GREATER THAN 4 DAYS, THEY SHALL BE SEEDED WITH AN ANNUAL SEED MIXTURE AND MULCHED WITH STRAW.
- NO EROSION CONTROL BLANKET SHALL BE INSTALLED IN AGRICULTURAL AREAS EXCEPT AS REQUIRED TO CONSTRUCT THE TEMPORARY FLUME CROSSINGS.
- HYDRAULICALLY APPLIED EROSION CONTROL BLANKETS MAY BE USED IN LIEU OF EROSION CONTROL BLANKETS WITH PRIOR APPROVAL FROM THE COUNTY CONSERVATION DISTRICT.
- LOCATION AND SPACING OF THE WATERBARS ARE SHOWN ON THE PLAN. WATERBARS MAY BE ADJUSTED IN THE FIELD DUE TO ACTUAL SITE CONDITIONS. HOWEVER INSTALLATION AND SPACING MUST CONFORM TO THE DETAILS PROVIDED AND APPROVAL MUST BE OBTAINED FROM THE LOCAL CONSERVATION DISTRICT OR PA DEP.
- SEDIMENT REMOVED FROM PUBLIC ROADS OR BMPs WILL BE REUSED ON SITE OR DISPOSED OF AT A SITE WITH AN EROSION AND SEDIMENT CONTROL PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR DEP.
- CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SOIL EROSION AND SEDIMENT CONTROL NARRATIVE AND ENVIRONMENTAL CONSTRUCTION PLAN.
- CONTRACTOR SHALL MINIMIZE THE TOTAL AREA OF DISTURBANCE.
- UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OF AN ACTIVITY WHERE A CESSATION OF EARTH DISTURBANCE ACTIVITIES WILL EXCEED 4 DAYS, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED, OR OTHERWISE PROTECTED FROM ACCELERATED E&S DURING 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 E&S, OR AN ACCEPTABLE BMP WHICH TEMPORARILY MINIMIZES ACCELERATED E&S. TEMPORARY STABILIZATION WILL NOT OCCUR ON ACTIVE VEHICULAR TRAVEL WAYS WITHIN THE ROW. THE ON-SITE ENVIRONMENTAL INSPECTOR WILL LOG ACTIVITY WITHIN THE PROJECT LIMITS OF DISTURBANCE AND NOTIFY THE CONTRACTOR OF AREAS REQUIRING TEMPORARY STABILIZATION.
- IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BMPs TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL COUNTY CONSERVATION DISTRICT AND/OR PADEP.
- MAINTAIN TEMPORARY SOIL STOCKPILES.
- NO EARTH DISTURBANCE ACTIVITIES WITHIN 50 FEET OF STREAM SWALES WILL BE PERFORMED UNTIL MATERIALS NEEDED TO COMPLETE THE CROSSING ARE AT THE NEAREST AVAILABLE LOCATION.
- THE CONTRACTOR IS REQUIRED TO PROVIDE CONTINUOUS MAINTENANCE OF ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES WITHIN DISTURBED AREAS.
- IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE LONGER THAN 4 DAYS IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL SUCH INACTIVE DISTURBED AREAS.
- DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN, AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
- FOLLOW THE CONSTRUCTION/EROSION CONTROL IMPLEMENTATION PLAN AS OUTLINED ON THE DRAWINGS.
- THE STAGING OF EARTHMOVING ACTIVITIES FOR THIS PROJECT IS A GENERAL DESCRIPTION OF THE WORK REQUIRED. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH PROJECT OWNER STANDARDS, THE PADEP REGULATIONS, AND ALL OTHER APPLICABLE FEDERAL, STATE OR LOCAL REQUIREMENTS.
- SCHEDULE WORK TO BE PERFORMED IN A MANNER THAT MINIMIZES THE LENGTH OF TIME THAT BARE SOIL WILL BE EXPOSED TO THE ELEMENTS.
- ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THIS SEQUENCE. EACH STAGE SHALL BE COMPLETED AND IMMEDIATELY STABILIZED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING, GRUBBING AND TOPSOIL STRIPPING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE. IMPLEMENT EROSION CONTROL MEASURES AS SPECIFIED. HOWEVER, THE CONTRACTOR MAY INSERT ADDITIONAL CONSTRUCTION PHASES IN ORDER TO EXPEDITE HIS WORK WHILE MAINTAINING THE SAME LEVEL OF PROTECTION. ANY DEVIATION FROM THE FOLLOWING SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL COUNTY CONSERVATION DISTRICT. CONSTRUCTION MUST BE IN ACCORDANCE WITH THE SEQUENCE OF BMP INSTALLATION INDICATED ON SITE SPECIFIC DETAIL SHEETS. THIS SEQUENCE IS DESIGNED TO MINIMIZE SOIL EROSION AND SEDIMENTATION. THE CONTRACTOR MAY DEVIATE SLIGHTLY FROM THE STAGING OF PERMANENT SITE IMPROVEMENTS, BUT NO DEVIATION FROM THE RELATIVE ORDER OF EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE LOCAL COUNTY CONSERVATION DISTRICT OR PADEP.
- THE FLOODWAY/FLOODPLAIN LINE SHOWN ON THE PLANS WAS DEVELOPED FROM AVAILABLE FEMA FLOODWAY MAPPING, FEMA FLOODPLAIN MAPPING, AND THE PA CHAPTER 105 FLOODWAY DEFINITION.
- ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL COUNTY CONSERVATION DISTRICT OR DEP AND BE FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL OF ANY EXCESS MATERIAL AND TO DEVELOP A PLAN THAT MEETS THE CONDITIONS OF CHAPTER 102, NPDES PERMIT CONDITIONS, AND/OR OTHER STATE AND FEDERAL REGULATIONS.
- ALL COMPOST FILTER SOCK SHOWN AT ROAD CROSSINGS IS INTENDED FOR USE DURING RESTORATION ACTIVITIES.

EXISTING CONDITIONS NOTES

- EXISTING TOPOGRAPHY IS BASED UPON THE FOLLOWING:
 - PHOTOGAMMETRIC SURVEY PROVIDED BY AEROMETRIC/QUANTUM AERIAL, BASED UPON DIGITAL AERIAL IMAGERY ACQUIRED MARCH THROUGH NOVEMBER OF 2012 AND APRIL OF 2013, AND COMPILED TO NATIONAL MAP ACCURACY STANDARDS FOR SCALE 1"=100' AND 2' CONTOUR INTERVAL.
 - SUPPLEMENTAL FIELD SURVEY DATA PROVIDED BY WILLIAMS SURVEY FOR AREAS WITHIN THE PROPOSED ACCESS ROADS CORRIDORS AND PROPOSED FACILITIES.
- NORTH ARROW AND COORDINATES ARE BASED UPON UNIVERSAL TRANSVERSE MERCATOR WITH NORTH AMERICAN DATUM OF 1983, ZONE 18, U.S. FOOT, CENTRAL MERIDIAN 75° WEST (UTM83-18P).
- ELEVATIONS ARE BASED UPON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- WETLAND AND WATERBODY DELINEATIONS ARE BASED ON ENVIRONMENTAL SURVEY DATA PROVIDED BY E&E AND ARE LIMITED TO THE AREAS WITHIN OR IN CLOSE PROXIMITY TO THE ACCESS ROADS CORRIDORS, PROPOSED FACILITIES, AND PIPELINES.
- APPROXIMATE PROPERTY LINES ARE BASED UPON DIGITAL MAPPING PROVIDED BY WILLIAMS SURVEY AND ARE DEPICTED FOR GENERAL INFORMATION ONLY.
- LAND OWNER IDENTIFICATION IS BASED ON INFORMATION PROVIDED BY WILLIAMS SURVEY AND IS FOR GENERAL INFORMATION ONLY.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY WILLIAMS AND ITS ENGINEER OF ANY CONDITIONS THAT VARY FROM WHAT IS DEPICTED ON THIS PLAN.

THERMAL IMPACT ANALYSIS

IN ORDER TO AVOID THERMAL IMPACTS, THE LIMIT OF DISTURBANCE WITHIN THE PIPELINE RIGHT-OF-WAY HAS BEEN MINIMIZED TO THE MAXIMUM EXTENT PRACTICABLE. ADDITIONALLY, ALL DISTURBED AREA WILL BE RESTORED TO AN EXISTING, VEGETATIVE CONDITION FOLLOWING CONSTRUCTION.

THE FOLLOWING PROVISIONS RELATED TO THERMAL IMPACTS BY ACCESS ROADS ARE INCLUDED IN THE E&SC ACCESS ROAD PLANS:

- THE MINIMUM PERMANENT CHANGES IN LAND COVER, NECESSARY TO CONSTRUCT THE REQUIRED FACILITIES ARE BEING PROPOSED.
- RUNOFF FROM THE PERMANENT IMPERVIOUS AREA WILL BE COLLECTED AS PART OF THE POST CONSTRUCTION STORMWATER MANAGEMENT / SITE RESTORATION (PCSM/SR) PLAN AND ROUTED TO PCSM/SR BMPs. IN ADDITION, IMPERVIOUS AREAS WILL BE GRAVEL INSTEAD OF ASPHALT WHEREVER PRACTICAL.
- THE REMOVAL OF VEGETATION, ESPECIALLY TREE COVER, WILL BE LIMITED TO ONLY THAT NECESSARY FOR CONSTRUCTION.
- THE IMPACTS TO EXISTING RIPARIAN CORRIDORS WILL BE LIMITED TO ONLY THAT NECESSARY FOR CONSTRUCTION.
- THE AMOUNT OF IMPERVIOUS SURFACES WILL BE LIMITED TO ONLY THAT NECESSARY TO SUPPORT THE CONSTRUCTION OF THE PIPELINE AND/OR OPERATION OF THE PIPELINE.
- ALL DISTURBED AREAS WILL BE RESTORED TO AN EXISTING, VEGETATIVE CONDITION FOLLOWING CONSTRUCTION AND IN ACCORDANCE WITH CHAPTER 102 AND ESCOP-2 PERMIT REQUIREMENTS FOR LINEAR OIL AND GAS PROJECTS.

NOTICES TO CONTRACTOR

- THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO STARTING WORK.
- THE CONTRACTOR SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED.
- WATERBARS IN AGRICULTURAL/FARM FIELDS ARE TEMPORARY AND SHALL BE REMOVED AND RESTABILIZED UPON ESTABLISHMENT OF A UNIFORM 70 PERCENT PERMANENT VEGETATIVE COVER WITHIN THE UPSLOPE TRIBUTARY DRAINAGE AREA PER PA CHAPTER 102.22.
- ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE COORDINATED WITH THE AGENCY HAVING JURISDICTION.
- FURNISH & INSTALL SWALES WHENEVER CONCENTRATED FLOWS HAVE THE POTENTIAL TO RUN ONTO OR THROUGH THE CONSTRUCTION AREA. DIRECT THE SWALE DISCHARGE TO A RIP RAP ENERGY DISSIPATER AND VEGETATED AREA.
- THE CONTRACTORS SHALL BE ADDED AS CO-PERMITTEES TO THE ESCOP-2 PERMIT.

RECEIVING WATERCOURSE - CHAPTER 93 DESIGNATION

REFER TO THE PIPELINE AND ACCESS ROAD PLANS FOR THE LOCATION, NAME AND CHAPTER 93 WATERCOURSE DESIGNATIONS. A SUMMARY TABLE OF THE WATERBODIES CROSSED BY THE PIPELINE AND CHAPTER 93 DESIGNATIONS ARE PROVIDED IN THE COUNTY-SPECIFIC TABLES INCLUDED AT THE END OF THIS PLAN SET.

RECYCLING AND DISPOSAL METHODS

THE RESTORATION OF THE PIPELINE RIGHT-OF-WAY WILL REQUIRE THE REMOVAL OF THE TEMPORARY MATERIALS. THE TEMPORARY MATERIALS INCLUDE, BUT MAY NOT BE LIMITED TO, STONE SURFACES AND ASSOCIATED GEOTEXTILES. THE CONTRACTORS ARE REQUIRED TO DISPOSE OF THE MATERIALS AT SUITABLE DISPOSALS OR RECYCLING SITES AND IN COMPLIANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

CONTRACTORS ARE REQUIRED TO INVENTORY AND MANAGE THEIR CONSTRUCTION SITE MATERIALS. THE GOAL IS TO BE AWARE OF THE MATERIALS ON-SITE, ENSURE THEY ARE PROPERLY MAINTAINED, USED, AND DISPOSED OF, AND TO MAKE SURE THE MATERIALS ARE NOT EXPOSED TO STORMWATER.

MATERIALS COVERED

THE FOLLOWING MATERIALS OR SUBSTANCES ARE EXPECTED TO BE PRESENT ON-SITE DURING CONSTRUCTION (NOTE: THIS LIST IS NOT AN ALL-INCLUSIVE LIST AND THE MATERIALS MANAGEMENT PLAN CAN BE MODIFIED TO ADDRESS ADDITIONAL MATERIALS USED ON-SITE):

- ACIDS
- DETERGENTS
- FERTILIZERS (NITROGEN/PHOSPHORUS)
- HYDROSEEDING MIXTURES
- PETROLEUM BASED PRODUCTS
- SANITARY WASTES
- SOIL STABILIZATION ADDITIVES
- SOLDER
- SOLVENTS
- OTHER (LIST HERE): _____

THESE MATERIALS MUST BE STORED AS APPROPRIATE AND SHALL NOT CONTACT STORM OR NON-STORMWATER DISCHARGES. CONTRACTOR SHALL PROVIDE A WEATHER PROOF CONTAINER TO STORE CHEMICALS OR ERODIBLE SUBSTANCES THAT MUST BE KEPT ON THE SITE. CONTRACTOR IS RESPONSIBLE FOR READING, MAINTAINING, AND MAKING EMPLOYEES AND SUBCONTRACTORS AWARE OF MATERIAL SAFETY DATA SHEETS (MSDSs).

MATERIAL MANAGEMENT PRACTICES

THE FOLLOWING ARE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORMWATER RUNOFF.

1. GOOD HOUSEKEEPING PRACTICES

THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ON SITE DURING CONSTRUCTION:

- STORE ONLY ENOUGH MATERIAL REQUIRED TO DO THE JOB.
- STORE MATERIALS IN A NEAT, ORDERLY MANNER.
- STORE CHEMICALS IN WATERTIGHT CONTAINERS OR IN A STORAGE SHED, UNDER A ROOF, COMPLETELY ENCLOSED, WITH APPROPRIATE SECONDARY CONTAINMENT TO PREVENT SPILL OR LEAKAGE. DRIP PANS SHALL BE PROVIDED UNDER DISPENSERS.
- SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
- MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.
- INSPECTIONS WILL BE PERFORMED TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS.
- COVER AND BERM LOOSE STOCKPILED CONSTRUCTION MATERIALS THAT ARE NOT ACTIVELY BEING USED (I.E. SOIL, SPOILS, AGGREGATE, ETC.).
- MINIMIZE EXPOSURE OF CONSTRUCTION MATERIALS TO PRECIPITATION.
- MINIMIZE THE POTENTIAL FOR OFF-SITE TRACKING OF LOOSE CONSTRUCTION AND LANDSCAPE MATERIALS.

2. HAZARDOUS PRODUCTS

THESE PRACTICES WILL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS. MSDSS FOR EACH SUBSTANCE WITH HAZARDOUS PROPERTIES THAT IS USED ON THE JOB SITE(S) WILL BE OBTAINED AND USED FOR THE PROPER MANAGEMENT OF POTENTIAL WASTES THAT MAY RESULT FROM THESE PRODUCTS. A MSDS WILL BE POSTED IN THE IMMEDIATE AREA WHERE SUCH PRODUCT IS STORED AND/OR USED AND ANOTHER COPY OF EACH MSDS WILL BE MAINTAINED IN A FILE AT THE JOB SITE CONSTRUCTION TRAILER OFFICE. EACH EMPLOYEE WHO MUST HANDLE A SUBSTANCE WITH HAZARDOUS PROPERTIES WILL BE INSTRUCTED ON THE USE OF MSDS AND THE SPECIFIC INFORMATION IN THE APPLICABLE MSDS FOR THE PRODUCT HE/SHE IS USING, PARTICULARLY REGARDING SPILL CONTROL TECHNIQUES.

- PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS WITH THE ORIGINAL LABELS IN LEGIBLE CONDITION.
- ORIGINAL LABELS AND MSDSS WILL BE PRODUCED AND USED FOR EACH MATERIAL.
- IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURER'S OR LOCAL/STATE/FEDERAL RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

3. HAZARDOUS WASTES

ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF BY THE CONTRACTOR IN THE MANNER SPECIFIED BY LOCAL, STATE, AND/OR FEDERAL REGULATIONS AND BY THE MANUFACTURER OF SUCH PRODUCTS. SITE PERSONNEL WILL BE INSTRUCTED.

4. CONCRETE AND OTHER WASH WATERS

PREVENT DISPOSAL OF RINSE, WASH WATERS, OR MATERIALS ON IMPERVIOUS OR PEROVIOUS SURFACES, INTO STREAMS, WETLANDS OR OTHER WATER BODIES.

CONCRETE TRUCKS WILL BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON THE SITE, BUT ONLY IN EITHER (1) SPECIFICALLY DESIGNATED DIKED AREAS WHICH HAVE BEEN PREPARED TO PREVENT CONTACT BETWEEN THE CONCRETE AND/OR WASHOUT AND SOIL AND STORMWATER HAVING THE POTENTIAL TO BE DISCHARGED FROM THE SITE OR (2) IN LOCATIONS WHERE WASTE CONCRETE CAN BE POURED INTO FORMS TO MAKE RIPRAP OR OTHER USEFUL CONCRETE PRODUCTS.

THE HARDENED RESIDUE FROM THE CONCRETE WASHOUT DIKED AREAS WILL BE DISPOSED OF IN THE SAME MANNER AS OTHER NON-HAZARDOUS CONSTRUCTION WASTE MATERIALS OR MAY BE BROKEN UP AND USED ON THE SITE AS DEEMED APPROPRIATE BY THE CONTRACTOR AND GEOTECHNICAL ENGINEER. THE CONTRACTOR WILL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.

ALL CONCRETE WASHOUT AREAS WILL BE LOCATED IN AN AREA WHERE THE LIKELIHOOD OF THE AREA CONTRIBUTING TO STORMWATER DISCHARGE IS NEGLIGIBLE. IF REQUIRED, ADDITIONAL BMPs MUST BE IMPLEMENTED TO PREVENT CONCRETE WASTES FROM CONTRIBUTING TO STORMWATER DISCHARGES. THE LOCATION OF THE CONCRETE WASHOUT AREA(S) MUST BE IDENTIFIED, BY THE CONTRACTOR/JOB SITE SUPERINTENDENT, ON THE JOB SITE COPY OF THE EROSION AND SEDIMENT CONTROL PLAN(S) IN THIS ESCP.

5. SANITARY WASTES

ALL SANITARY WASTE UNITS WILL BE LOCATED IN AN AREA WHERE THE LIKELIHOOD OF THE UNIT CONTRIBUTING TO STORMWATER DISCHARGES IS NEGLIGIBLE. ADDITIONAL BMPs MUST BE IMPLEMENTED, SUCH AS CONTAINMENT TRAYS (PROVIDED BY THE RENTAL COMPANY) OR SPECIAL CONTAINMENT CREATED WITH 2"x4" LUMBER, IMPERVIOUS PLASTIC, AND GRAVEL. THE LOCATION OF THE SANITARY WASTE UNITS MUST BE IDENTIFIED ON THE JOB SITE COPY OF THE EROSION AND SEDIMENT CONTROL PLAN(S), IN THIS ESCP, BY THE CONTRACTOR/JOB SITE SUPERINTENDENT.

6. SOLID AND CONSTRUCTION WASTES

ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL COMPLY WITH ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS. THE DUMPSTER/CONTAINER LIDS SHALL BE CLOSED AT THE END OF EVERY BUSINESS DAY AND DURING RAIN EVENTS. APPROPRIATE MEASURES SHALL BE TAKEN TO PREVENT DISCHARGES FROM WASTE DISPOSAL CONTAINERS TO THE RECEIVING WATER.

7. CONSTRUCTION ACCESS

A STABILIZED CONSTRUCTION ENTRANCE WILL BE PROVIDED TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS. THE PAVED ROADS ADJACENT TO THE SITE ENTRANCE WILL BE INSPECTED DAILY AND SWEEP AS NECESSARY TO REMOVE ANY EXCESS MUD, DIRT, OR ROCK TRACKED FROM THE SITE. DUMP TRUCKS HAULING MATERIAL FROM THE CONSTRUCTION SITE WILL BE COVERED WITH A TARPALUN AS NECESSARY.

8. PETROLEUM PRODUCTS

ON-SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENANCE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. PETROLEUM STORAGE TANKS ON SITE WILL HAVE A DIKE OR BERM CONTAINMENT STRUCTURE CONSTRUCTED AROUND IT TO CONTAIN SPILLS WHICH MAY OCCUR (CONTAINMENT VOLUME TO BE 110% OF VOLUME STORED). THE DIKE OR BERMED AREA SHALL BE LINED WITH AN IMPERVIOUS MATERIAL SUCH AS A HEAVY DUTY PLASTIC SHEET. DRIP PANS SHALL BE PROVIDED FOR ALL DISPENSERS. ANY ASPHALT SUBSTANCES USED ON THE SITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

9. FERTILIZERS AND LANDSCAPE MATERIALS

FERTILIZERS WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO MINIMIZE THE POTENTIAL FOR EXPOSURE TO STORMWATER. STORAGE WILL BE UNDER COVER. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO MINIMIZE THE POTENTIAL FOR SPILLS. THE BIN SHALL BE LABELED APPROPRIATELY.

CONTAIN STOCKPILED MATERIALS, SUCH AS BUT NOT LIMITED TO, MULCHES, TOP SOIL, ROCKS AND GRAVEL, AND DECOMPOSED GRANITE, WHEN THEY ARE NOT ACTIVELY BEING USED.

APPLY ERODIBLE LANDSCAPE MATERIAL AT QUANTITIES AND APPLICATION RATES ACCORDING TO MANUFACTURER RECOMMENDATIONS OR BASED ON WRITTEN SPECIFICATIONS BY KNOWLEDGEABLE AND EXPERIENCED FIELD PERSONNEL. DISCONTINUE THE APPLICATION OF ANY ERODIBLE LANDSCAPE MATERIAL WITHIN TWO DAYS PRIOR TO A FORECASTED RAIN EVENT OR DURING PERIODS OF PRECIPITATION.

10. PAINTS, PAINT SOLVENTS AND CLEANING SOLVENTS

CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT IN USE. EXCESS PAINT AND SOLVENTS WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR LOCAL/STATE/FEDERAL REGULATIONS.

11. CONTAMINATED SOILS

ANY CONTAMINATED SOILS (RESULTING FROM SPILLS OF MATERIALS WITH HAZARDOUS PROPERTIES) WHICH MAY RESULT FROM CONSTRUCTION ACTIVITIES WILL BE CONTAINED AND CLEANED UP IMMEDIATELY IN ACCORDANCE WITH APPLICABLE STATE AND FEDERAL REGULATIONS.

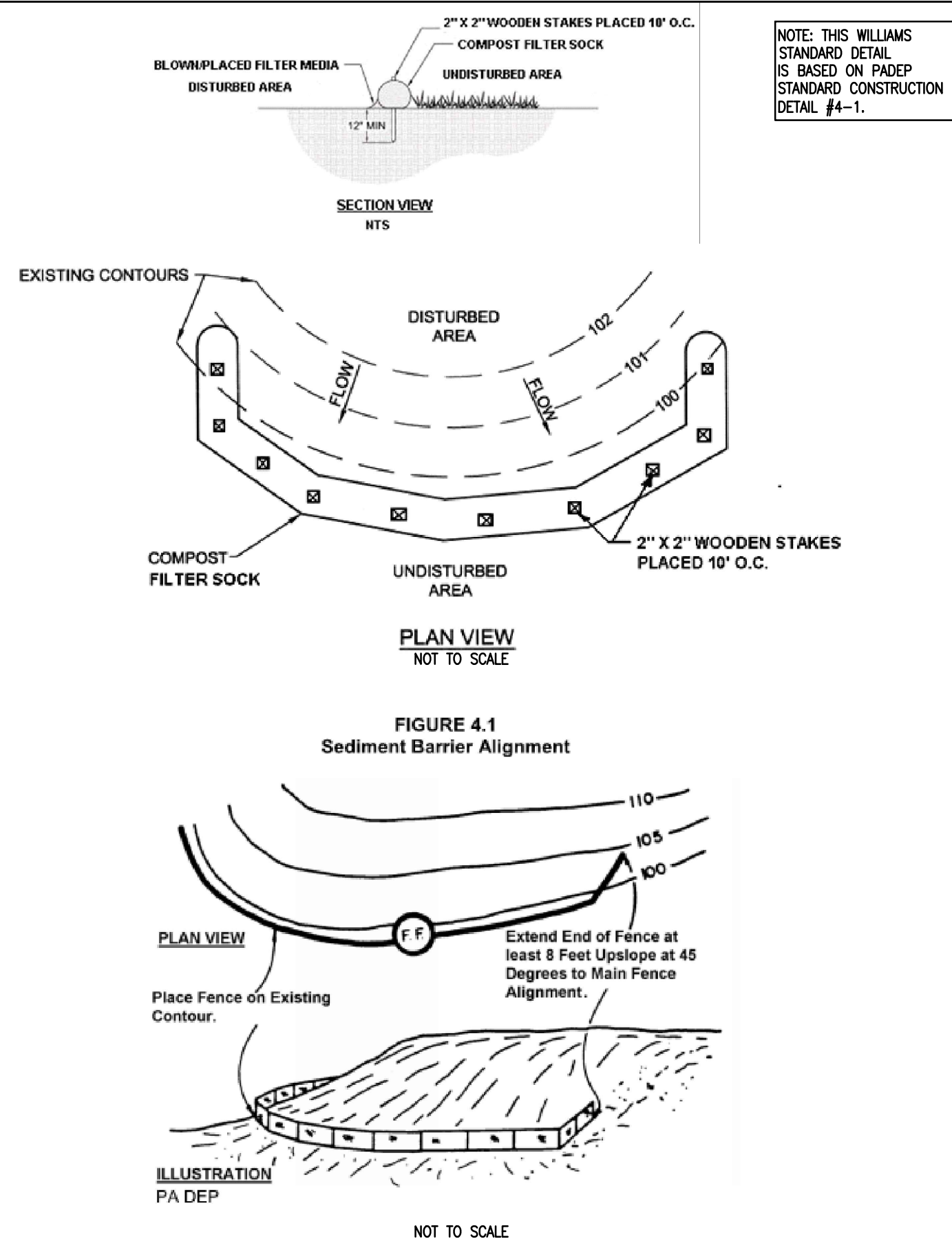
12. OFF-SITE WASTE AND BORROW AREAS

ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL COUNTY CONSERVATION DISTRICT OF PADEP FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL OF ANY EXCESS MATERIAL AND TO DEVELOP A PLAN THAT MEETS THE CONDITIONS OF CHAPTER 102, NPDES PERMIT CONDITIONS, AND/OR OTHER STATE AND FEDERAL REGULATIONS.

EARTH DISTURBANCE ACTIVITY - PAST, PRESENT, AND FUTURE LAND USES

REFER TO THE PIPELINE AND ACCESS ROAD EROSION AND SEDIMENTATION CONTROL PLANS FOR LAND USE INFORMATION.

REVISIONS						TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC	
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	ATLANTIC SUNRISE PROJECT
0	08/26/2015	BL	ISSUED FOR PADEP SUBMITTAL	W0572385	JLK	SMK	PENNSYLVANIA BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W0572385	JLK	SMK	
2	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0572385	JLK	SMK	
3	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0572385	JLK	SMK	
4	AUG. 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #3	W0572385	JLK	ASB	
							GENERAL NOTES
							DRAWN BY: ELZ DATE: 05/15/15 ISSUED FOR BID: SCALE:
							CHECKED BY: JLK DATE: 07/02/15 ISSUED FOR CONSTRUCTION: REVISION: 4
							APPROVED BY: SMK DATE: 07/08/15 DRAWING NUMBER: ASR-BMP-GN SHEET 1



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

FIGURE 4.1 Sediment Barrier Alignment

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



TABLE 4.1 COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS

Material Type	3 mil HDPE	4 mil HDPE	5 mil HDPE	Multi-Filament Polypropylene (MFPP)	Multi-Filament Polypropylene (HDMFPP)
Material Characteristics	Photo-degradable	Photo-degradable	Bio-degradable	Photo-degradable	Photo-degradable
Sock Diameters	12", 18"	12", 18", 24"	12", 18", 24", 32"	12", 18", 24", 32"	12", 18", 24", 32"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	3/8"
Tensile Strength		26 psi	26 psi	44 psi	202 psi
Ultraviolet Stability % Original Strength (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
Minimum Functional Longevity	6 months	6 months	6 months	1 year	2 years

Two-ply systems: HDPE biaxial net, Continuously wound, Fusion-welded junctures, 3/4" X 3/4" Max. aperture size. Composite Polypropylene Fabric (Woven layer and non-woven fleece mechanically fused via needle punch), 3/16" Max. aperture size.

Inner Containment Netting: HDPE biaxial net, Continuously wound, Fusion-welded junctures, 3/4" X 3/4" Max. aperture size.

Outer Filtration Mesh: Composite Polypropylene Fabric (Woven layer and non-woven fleece mechanically fused via needle punch), 3/16" Max. aperture size.

Sock fabrics composed of burlap may be used on projects lasting 6 months or less.

TABLE 4.2 COMPOST STANDARDS

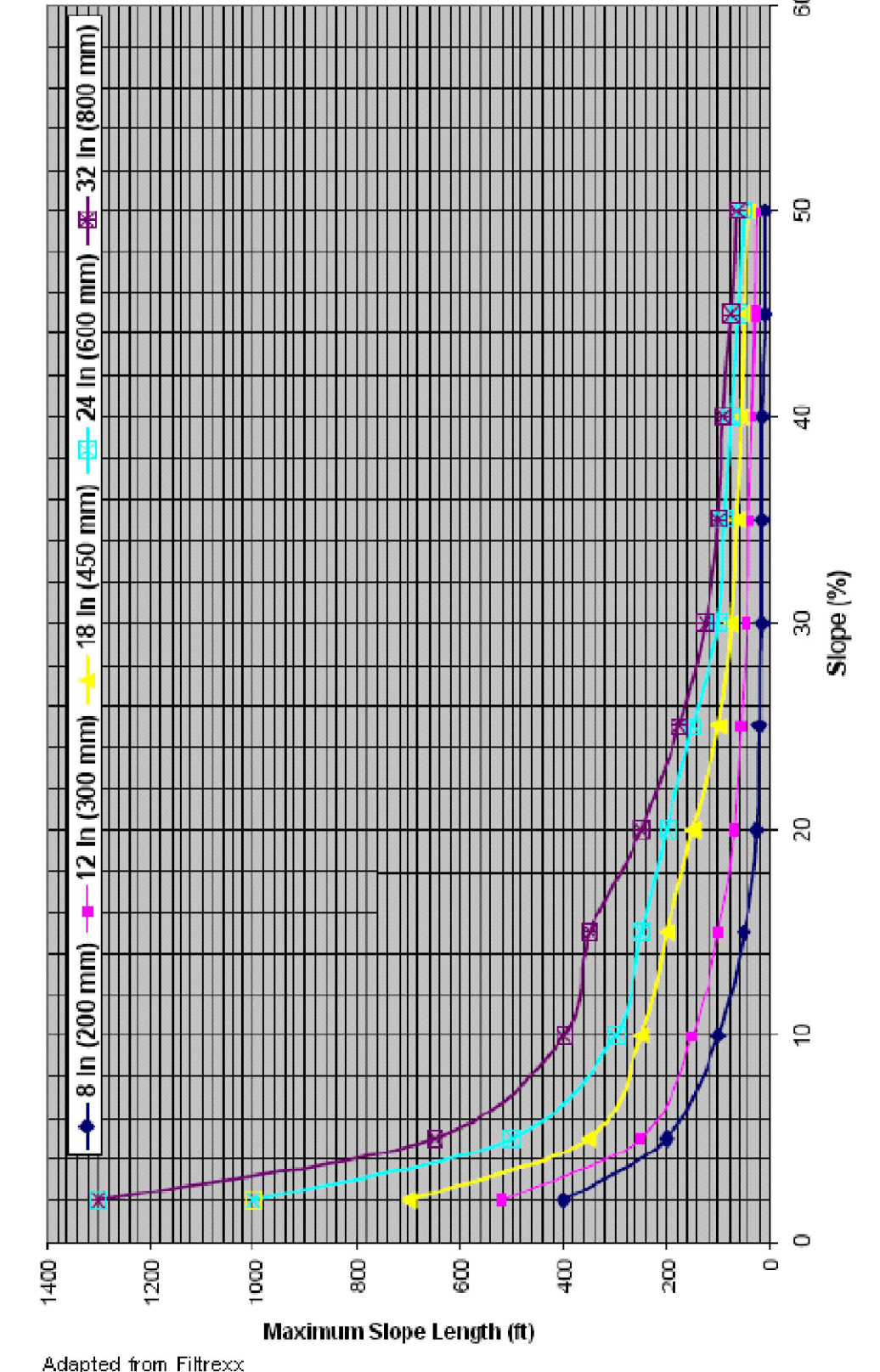
ORGANIC MATTER CONTENT	25%–100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5 – 8.5
MOISTURE CONTENT	30% – 60%
PARTICLE SIZE	30%–50% PASS THROUGH 3/8" SIEVE
SOLUBLE SALT CONCENTRATION	5.0 DS/M (MMHOS/CM) MAXIMUM

- NOTES:
- SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2. (SEE SHEET 2 OF 3 OF THIS DETAIL.)
 - COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2. (SEE SHEET 3 OF 3 OF THIS DETAIL.) STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
 - TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
 - ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
 - SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
 - BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 - UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.
 - SOCKS SHALL BE INSTALLED PARALLEL TO THE CONTOURS, TYPICALLY, IN AREAS WHERE THE SLOPE OF THE CATCHMENT AREA IS LESS THAN FIVE PERCENT, THE SOCKS MAY BE INSTALLED AS NECESSARY TO MINIMIZE THE NUMBER OF SEPARATE SOCK SEGMENTS ALONG THE EDGE OF DISTURBANCE.

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

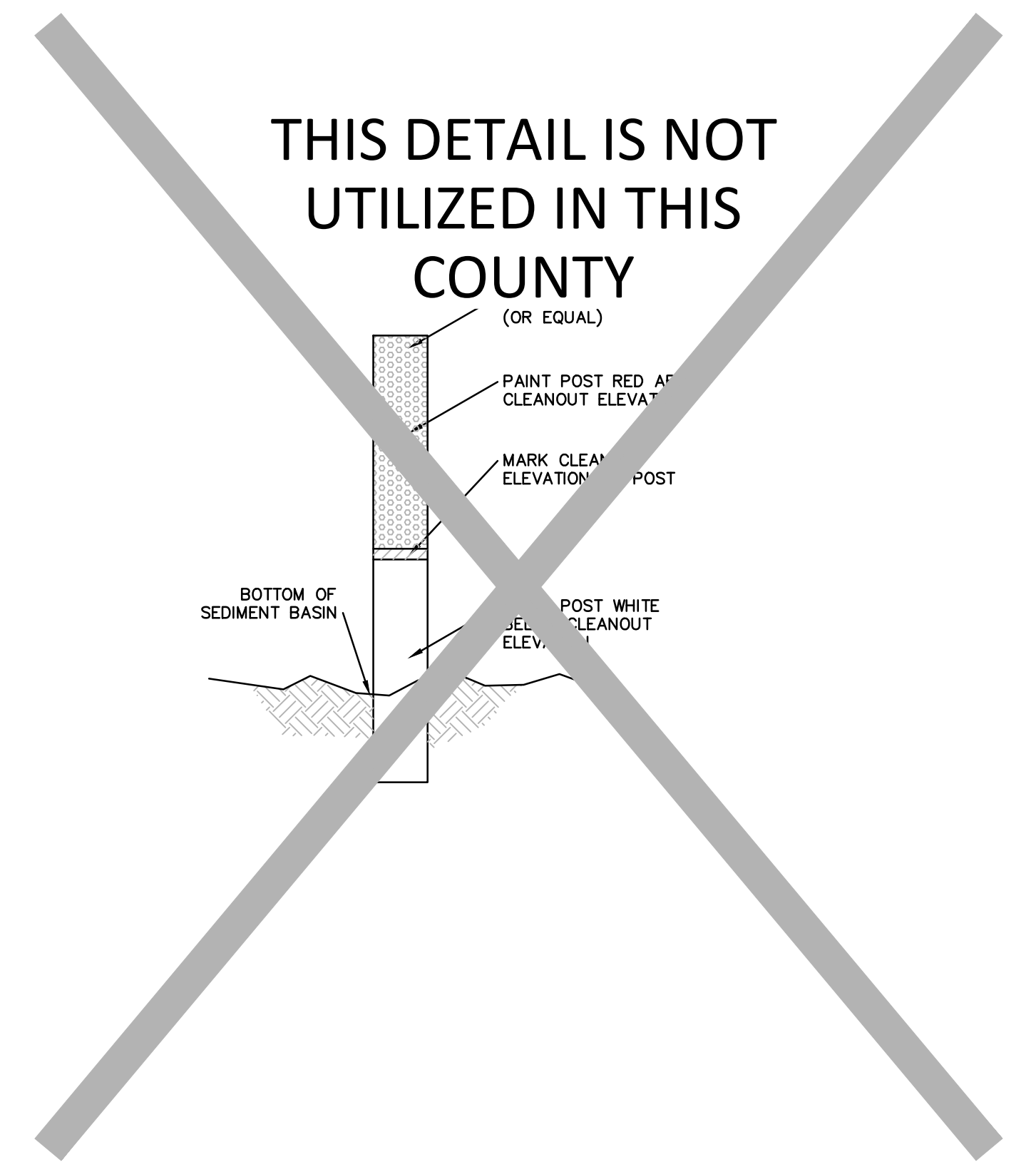


FIGURE 4.2 MAXIMUM PERMISSIBLE SLOPE LENGTH ABOVE COMPOST FILTER SOCKS



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

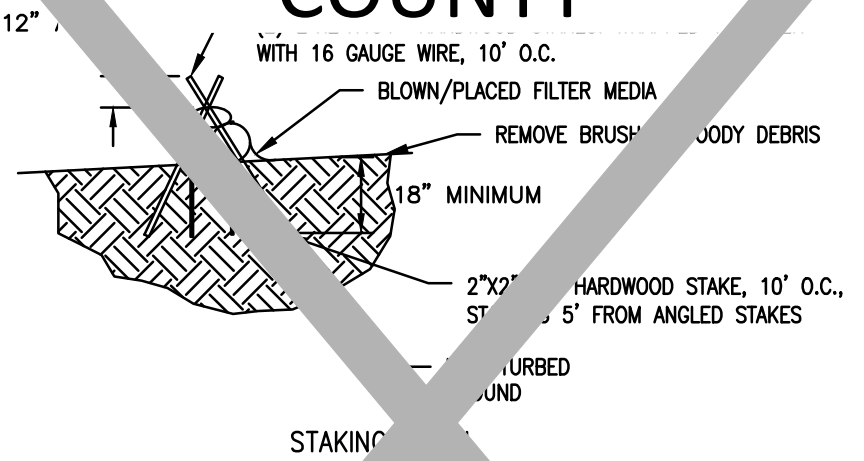
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL			
			(CFS) COMPOST FILTER SOCK			



NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL			
			(CS) CLEANOUT STAKE			



THIS DETAIL IS NOT UTILIZED IN THIS COUNTY



NOTE: THIS WILLIAMS STANDARD DETAIL IS BASED ON PA DEP STANDARD CONSTRUCTION DETAIL #3-11.

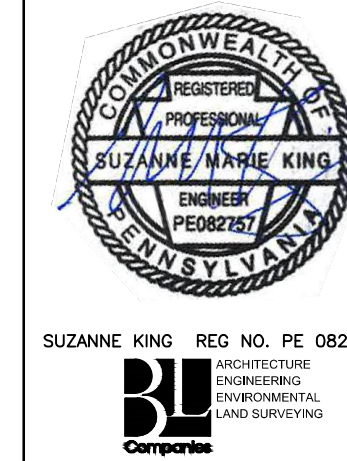
- NOTES:
- SEE COMPOST FILTER SOCK (CFS) DETAIL FOR MORE INFORMATION. SOCK MATERIAL SHALL MEET THE STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.
 - COMPOST SOCK SEDIMENT TRAPS SHALL NOT EXCEED THREE SOCKS IN HEIGHT AND SHALL BE STACKED IN PYRAMIDAL FORM AS SHOWN ABOVE. MINIMUM TRAP HEIGHT IS ONE 24" DIAMETER. ADDITIONAL STORAGE MAY BE PROVIDED BY MEANS OF AN EXCAVATED SUMP 12" DEEP EXTENDING 1 TO 3 FEET UPSLOPE OF THE SLOPE ALONG THE LOWER SIDE OF THE TRAP.
 - THE MAXIMUM TRIBUTARY DRAINAGE AREA SHALL BE 0.5 ACRES. SINCE COMPOST SOCKS ARE "FLOW-THROUGH" NO SPILLWAY IS REQUIRED.
 - COMPOST SOCK SEDIMENT TRAPS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/3 THE HEIGHT OF THE SOCKS.
 - PHOTODEGRADABLE AND BIODEGRADABLE SOCKS SHALL NOT BE USED FOR MORE THAN 1 YEAR.
 - DESIGN NOTES:
 - COMPOST SOCK SEDIMENT TRAP SHALL BE SIZED TO PROVIDE 2,000 CUBIC FEET OF STORAGE CAPACITY PER 12" FREEBOARD FOR EACH AC TRIBUTARY TO THE TRAP.
 - MINIMUM BASE WIDTH IS EQUIVALENT TO THE HEIGHT.
 - SEDIMENT ACCUMULATION SHALL NOT EXCEED 1/3 THE TOTAL HEIGHT OF THE TRAP.
 - SOCKS SHALL BE OF LARGER DIAMETER AT THE BASE OF THE TRAP AND DECREASE IN DIAMETER FOR SUCCESSIVE LAYERS AS INDICATED TO THE LEFT.
 - ENDS OF THE TRAP SHALL BE A MINIMUM OF 1 FOOT HIGHER IN ELEVATION THAN THE MID-SECTION, WHICH SHALL BE LOCATED AT THE POINT OF DISCHARGE.

NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC STANDARD ENVIRONMENTAL DETAIL			
			(CST) COMPOST SOCK SEDIMENT TRAP			



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

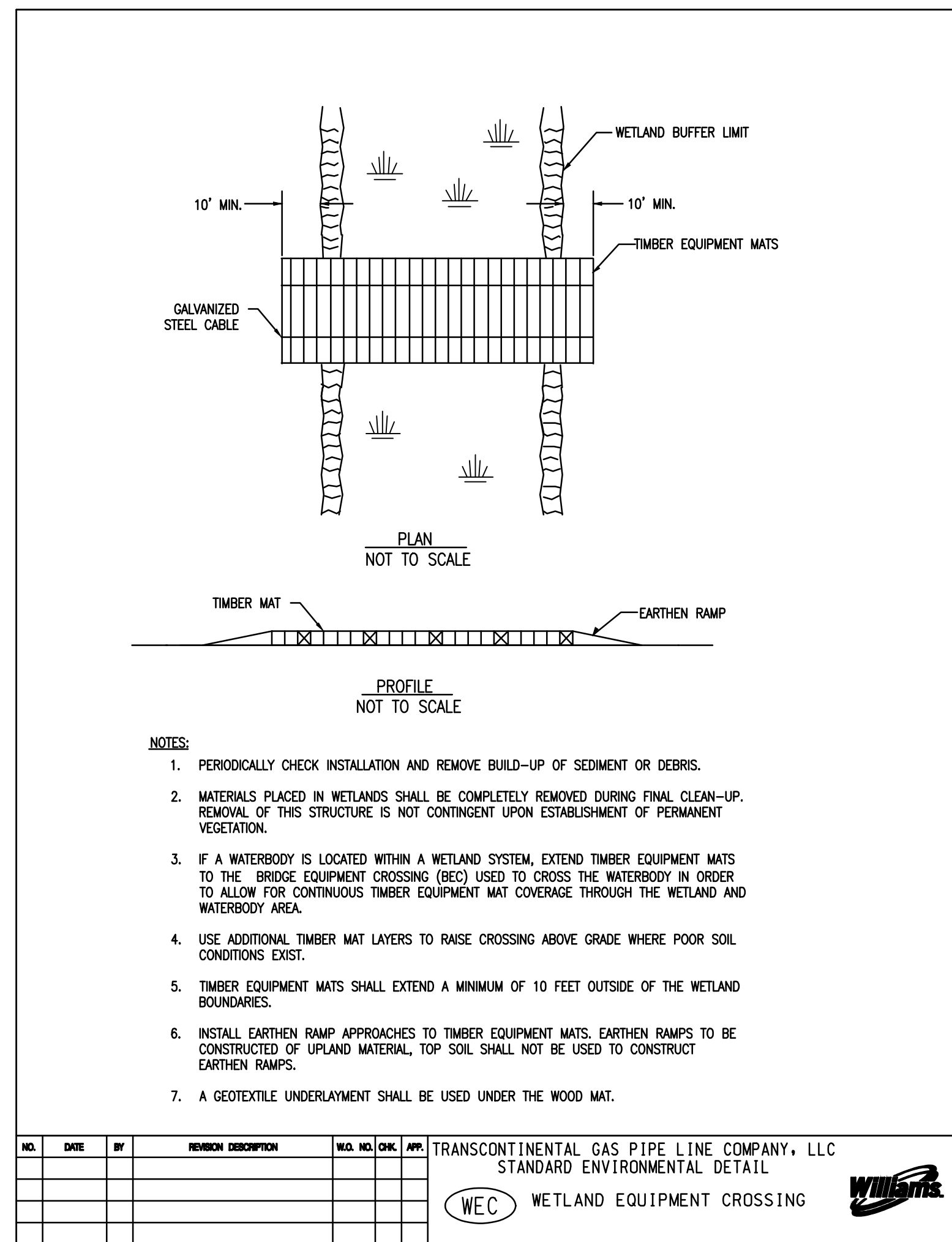
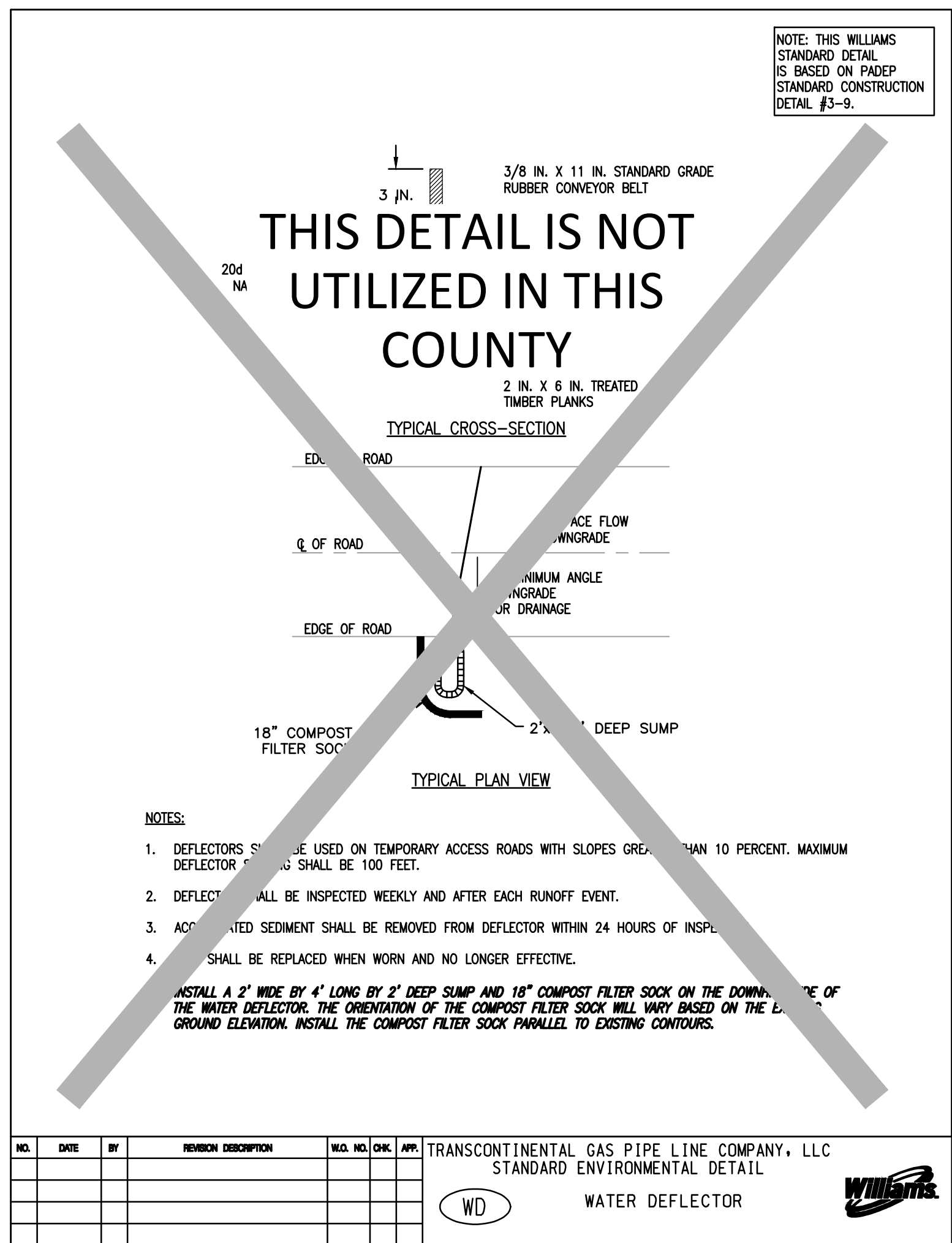
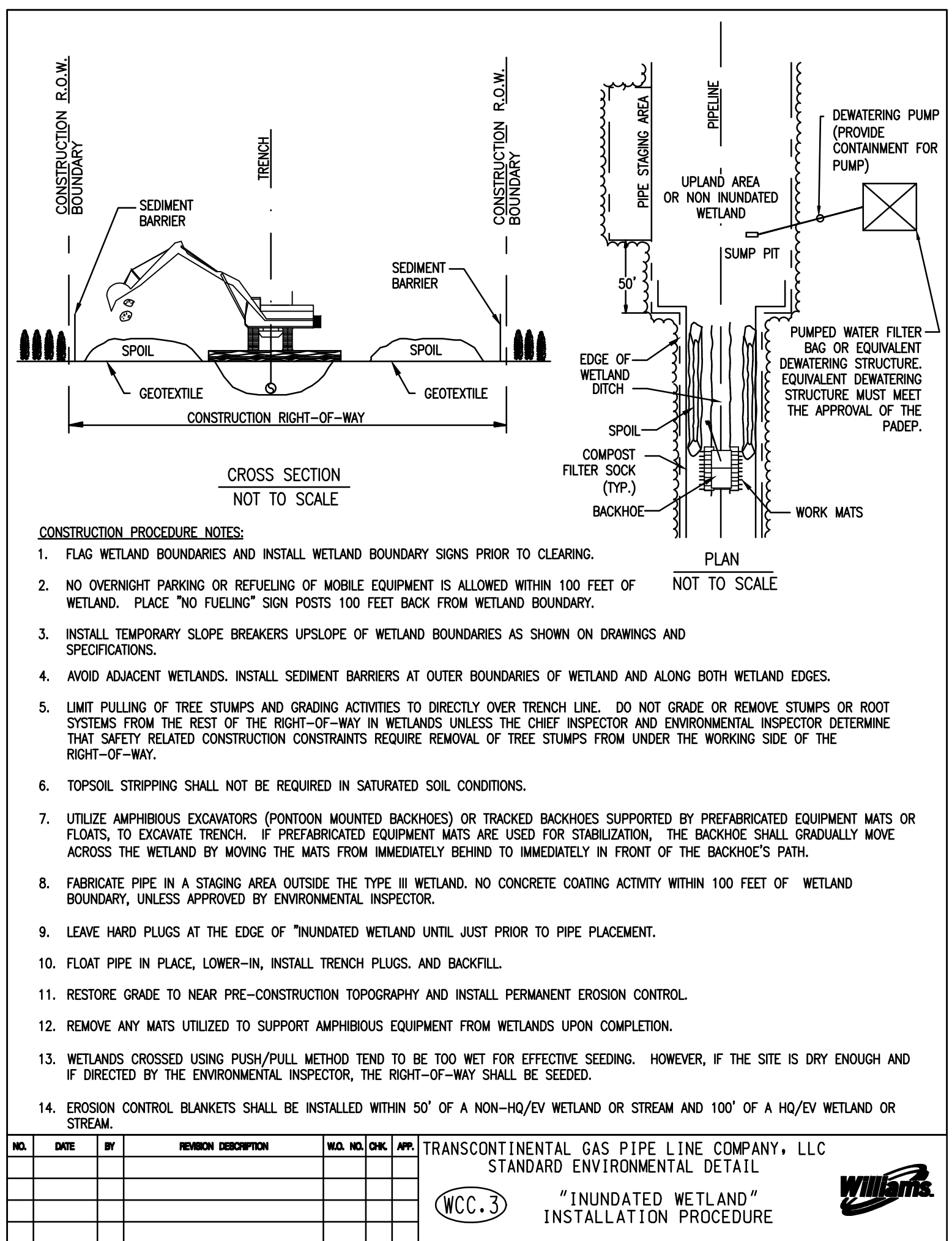
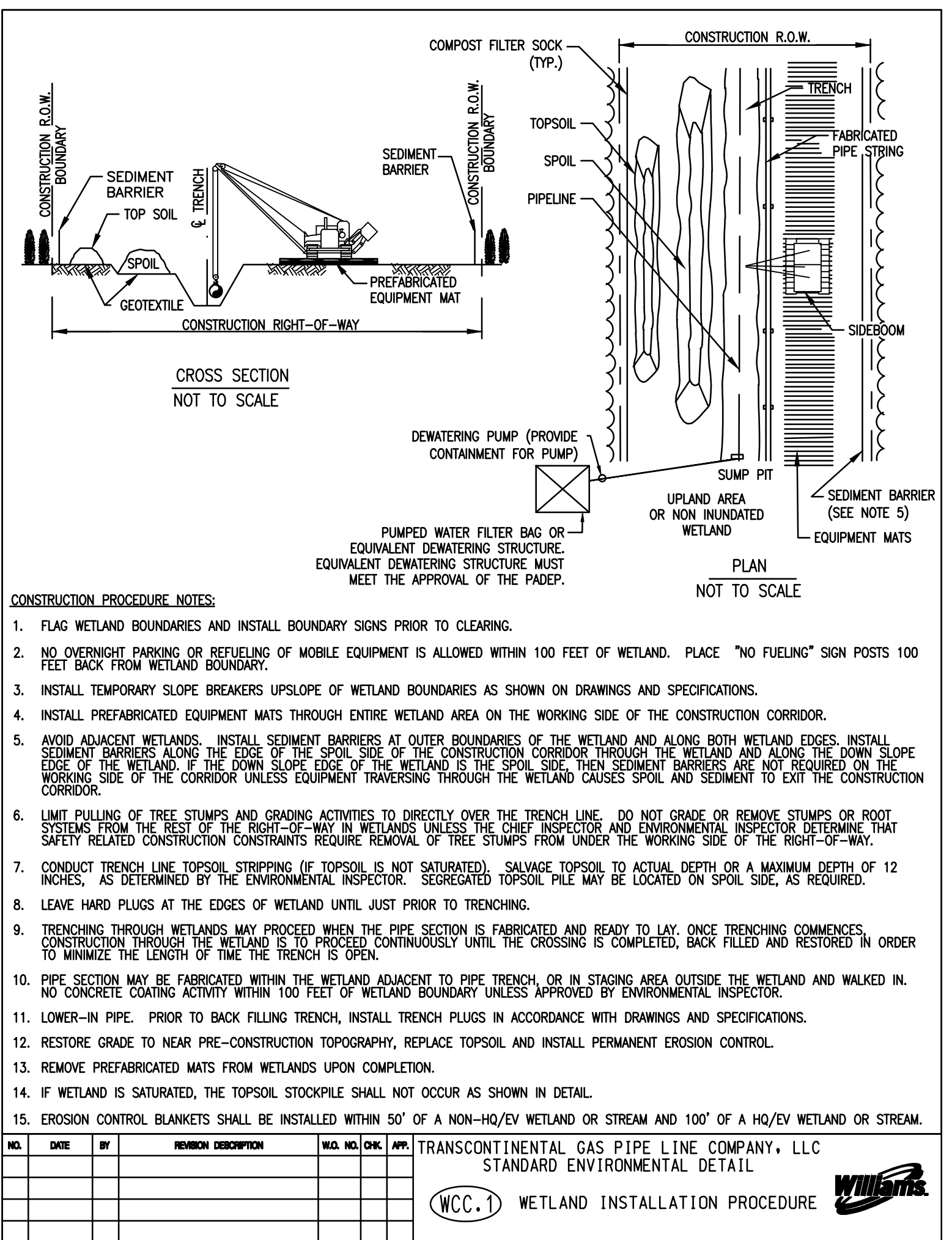
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC STANDARD ENVIRONMENTAL DETAIL			
			(CWC) CLEAN WATER CROSSING			



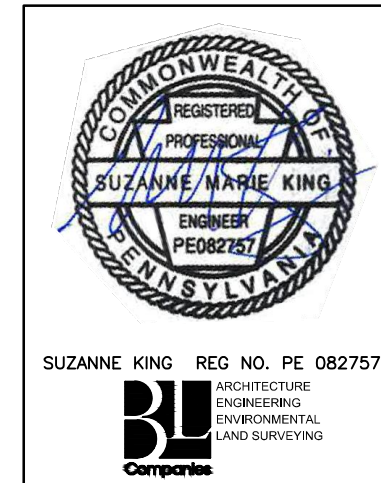
REVISIONS						
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
0	08/26/2015	BL	ISSUED FOR PA DEP SUBMITTAL	W0572385	JLK	SMK
1	12/02/2015	BL	ISSUED FOR PA DEP RESUBMITTAL	W0572385	JLK	SMK
2	Oct. 2016	BL	PA DEP TECHNICAL DEFICIENCY RESPONSE #1	W0572385	JLK	SMK
3	April 2017	BL	PA DEP TECHNICAL DEFICIENCY RESPONSE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

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC ATLANTIC SUNRISE PROJECT			
BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET			
BEST MANAGEMENT PRACTICES DETAILS			
DRAWN BY:	ELZ	DATE:	05/15/15
CHECKED BY:	JLK	DATE:	07/02/15
APPROVED BY:	SMK	DATE:	07/08/15
ISSUED FOR:	ISSUED FOR CONSTRUCTION	SCALE:	
REVISION:	4	DRAWING NUMBER:	ASR-BMP
SHEET:	2	OF:	11





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



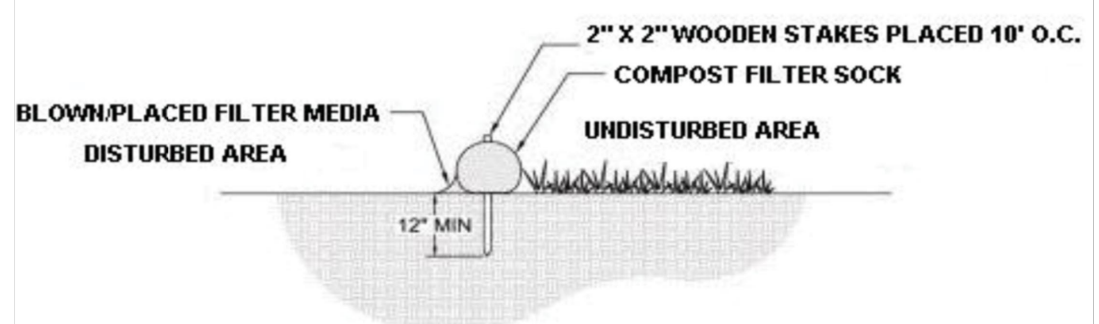
REVISIONS							
NO.	DATE	BY	DESCRIPTION	W.D.	NO.	CHK.	APP.
0	08/26/2015	BL	ISSUED FOR PADEP SUBMITTAL		W0572385	JLK	SMK
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL		W0572385	JLK	SMK
2	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1		W0572385	JLK	SMK
3	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE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

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC ATLANTIC SUNRISE PROJECT			
BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET			
BEST MANAGEMENT PRACTICES DETAILS			
DRAWN BY:	ELZ	DATE:	05/15/15
CHECKED BY:	JLK	DATE:	07/02/15
APPROVED BY:	SMK	DATE:	07/08/15
ISSUED FOR:	ISSUED FOR CONSTRUCTION	SCALE:	
REVISION:	4	DRAWING NUMBER:	ASR-BMP
SHEET:	11	OF:	11



TABLE 1: SEDIMENT BARRIER SUMMARY

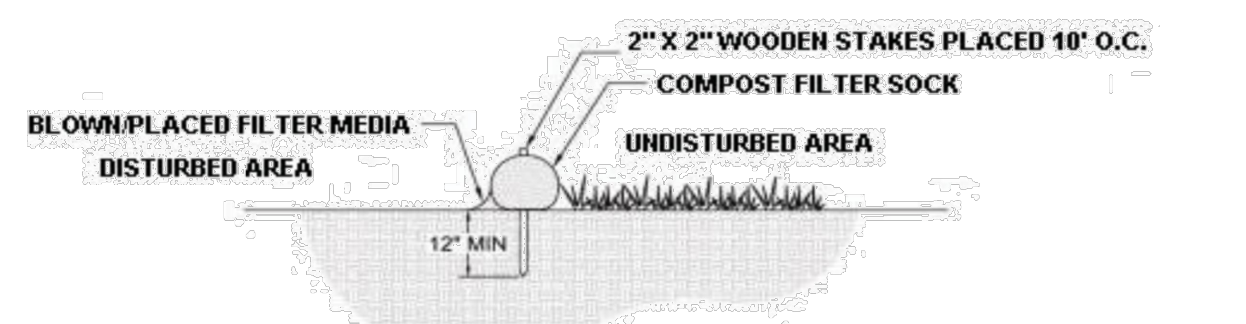
E&S WORKSHEET #1
Compost Filter Sock
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE
 LOCATION: EAST CAMERON TOWNSHIP, NORTHUMBERLAND COUNTY
 PREPARED BY: ESS DATE: 03/20/2017
 CHECKED BY: AJB DATE: 04/10/2017



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

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

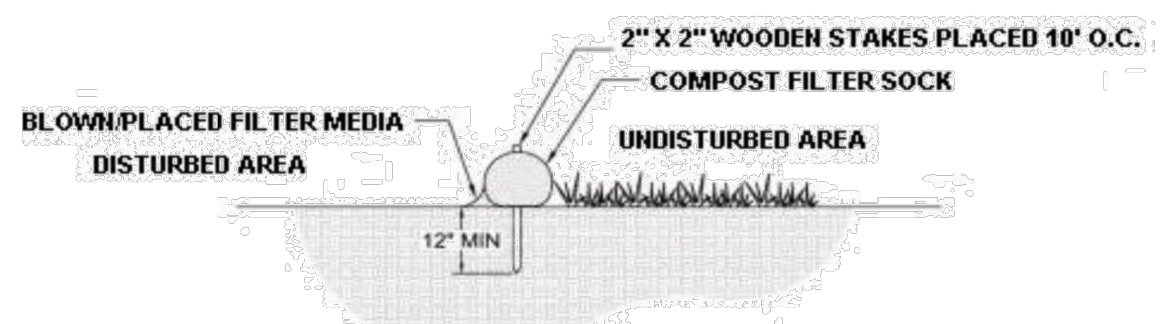
E&S WORKSHEET #1
Compost Filter Sock
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE
 LOCATION: NORTHUMBERLAND COUNTY
 PREPARED BY: ESS DATE: 03/20/2017
 CHECKED BY: AJB DATE: 04/10/2017



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

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

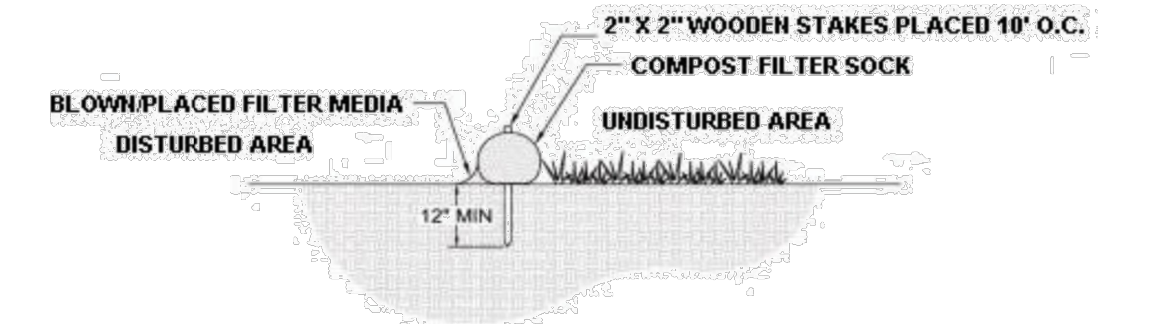
E&S WORKSHEET #1
Compost Filter Sock
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE
 LOCATION: NORTHUMBERLAND COUNTY
 PREPARED BY: ESS DATE: 03/20/2017
 CHECKED BY: AJB DATE: 04/10/2017



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

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

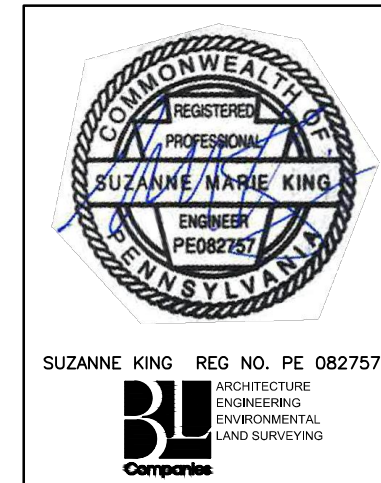
E&S WORKSHEET #1
Compost Filter Sock
 PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE
 LOCATION: NORTHUMBERLAND COUNTY
 PREPARED BY: ESS DATE: 03/20/2017
 CHECKED BY: AJB DATE: 04/10/2017



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

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

Drawn By & Date: CScanzello Jul 28, 2017 - 4:48pm
 Drawing Location & Name: G:\08514\14C\14C4909\DWG\BMPs&DETAILS\PL_DNT14C4909(20N)_NO-TB.dwg



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

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC			
ATLANTIC SUNRISE PROJECT			
PROPOSED 42" CENTRAL PENN LINE SOUTH PENNSYLVANIA BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET			
NORTHUMBERLAND COUNTY, PENNSYLVANIA			
QUANTITY, CROSSING AND ACIDIC SOIL TABLES			
DRAWN BY:	ELZ	DATE:	05/15/15
CHECKED BY:	JLK	DATE:	07/02/15
APPROVED BY:	SMK	DATE:	07/08/15
ISSUED FOR:	ISSUED FOR CONSTRUCTION	REVISION:	4
DRAWING NUMBER:			

TABLE 2: TEMPORARY CLEAN WATER DIVERSION SUMMARY

MILE POST	TEMPORARY DIVERSION SUMMARY - NORTHUMBERLAND COUNTY, PENNSYLVANIA										WATERBODY**				TEMP. PIPE (CLEAN WATER) CROSSING				
	DIVERSION ID	DIVERSION TYPE	BOTTOM WIDTH B (FT)	DEPTH D (FT)	TOP WIDTH W (FT)	Z1 (FT)	Z2 (FT)	TEMPORARY LINING	PERMANENT LINING	DISCHARGE TYPE	INITIAL WIDTH (FT)	TERMINAL WIDTH (FT)	LENGTH (FT)	RIP RAP SIZE**	RIP RAP THICKNESS (IN)	R.O.W. SLOPE (%)	Q (CFS)	TEMPORARY PIPE SIZE DIAMETER (IN)	# OF PIPES
84	84.01	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	10	35.84	18	4
	84.02	SWALE	2	2	10	2	2	P550	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	10	32.64	18	4
	84.03	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	12	34.40	18	4
	84.04	SWALE	2	2	10	2	2	W3000	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	12	31.20	18	3
85	84.05	FILTER SOCK	0	1.6	7.9	0	5	W3000	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	28	2.88	12	1
	85.01	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	3	21.92	12	4
86	86.01	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	WATERBODY	2	2	12	R-4	18	N/A	N/A	N/A	
	87	87.01	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	6	4.32	12
87	87.02A	SWALE	2	2	10	2	2	P550	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	7	4.96	12	1
	87.02B	SWALE	2	2	10	2	2	S75	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	7	7.36	12	2
	87.02C	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	5	4.96	12	1
	90	90.01A*	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	8	10.35	12
	90.01B*	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	8	4.75	12	1

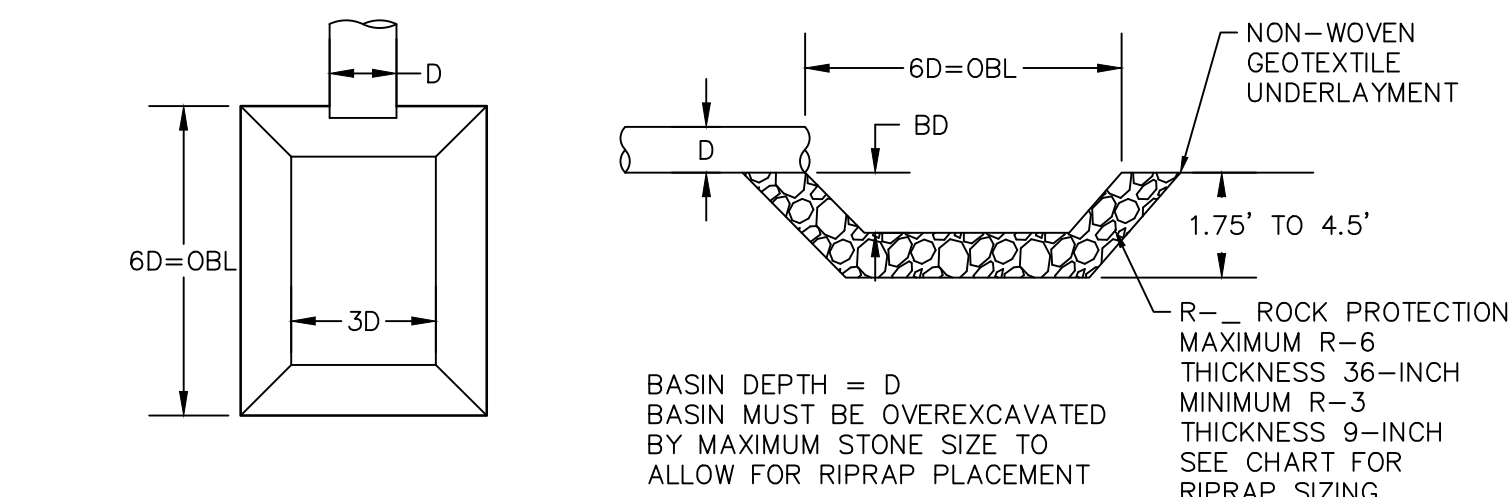
* High Quality or Exceptional Value Watershed
 ** Diversion End Treatment to Stream or Wetland
 *** Sizing was determined using maximum allowable velocity outlined in Table 6.6 of the PA DEP Erosion and Sediment Pollution Control Program Manual, dated March 2012
 Drainage Area > 5 acres due to valley/drainage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

Northumberland County
 Temporary Perforated Pipe Level Spreader Calculations

MILE POST	DIVERSION ID	DIVERSION TYPE	BOTTOM WIDTH B (FT)	DEPTH D (FT)	TOP WIDTH W (FT)	Z1 (FT)	Z2 (FT)	TEMPORARY LINING	PERMANENT LINING	DISCHARGE TYPE	INITIAL WIDTH (FT)	TERMINAL WIDTH (FT)	LENGTH (FT)	RIP RAP SIZE**	RIP RAP THICKNESS (IN)	R.O.W. SLOPE (%)	Q (CFS)	TEMPORARY PIPE SIZE DIAMETER (IN)	# OF PIPES
84	84.01	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	10	35.84	18	4
84	84.02	SWALE	2	2	10	2	2	P550	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	10	32.64	18	4
84	84.03	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	12	34.40	18	4
84	84.04	SWALE	2	2	10	2	2	W3000	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	12	31.20	18	3
85	84.05	FILTER SOCK	0	1.6	7.9	0	5	W3000	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	28	2.88	12	1
85	85.01	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	3	21.92	12	4
86	86.01	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	WATERBODY	2	2	12	R-4	18	N/A	N/A	N/A	
87	87.01	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	6	4.32	12	1
87	87.02A	SWALE	2	2	10	2	2	P550	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	7	4.96	12	1
87	87.02B	SWALE	2	2	10	2	2	S75	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	7	7.36	12	2
87	87.02C	SWALE	2	2	10	2	2	SC250	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	5	4.96	12	1
90	90.01A*	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	8	10.35	12	2
90	90.01B*	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	8	4.75	12	1

* HIGH QUALITY OR EXCEPTIONAL VALUE WATERSHED

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



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

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

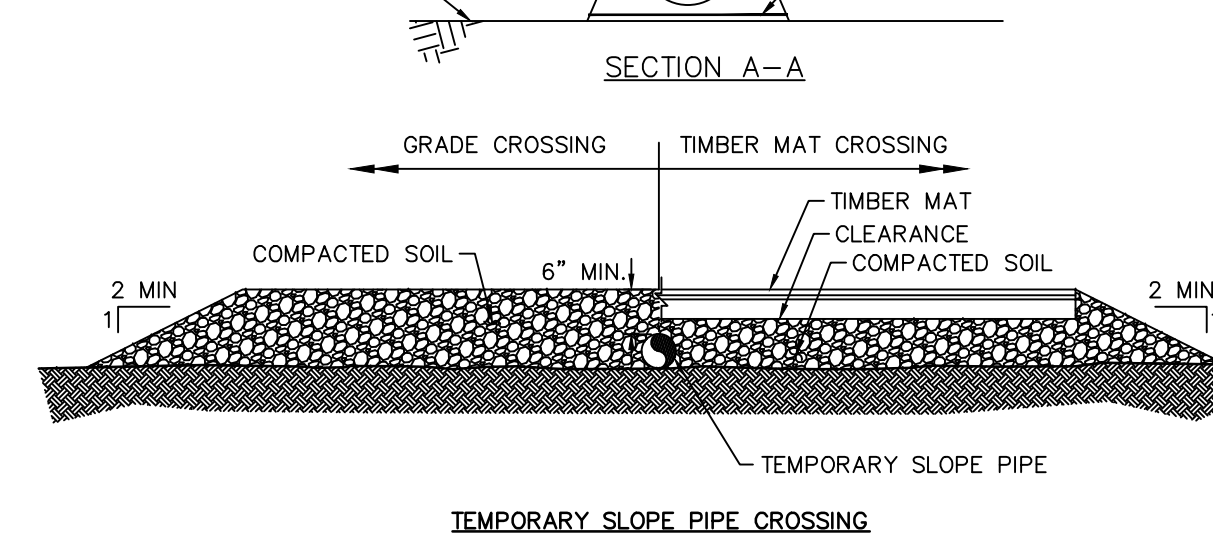
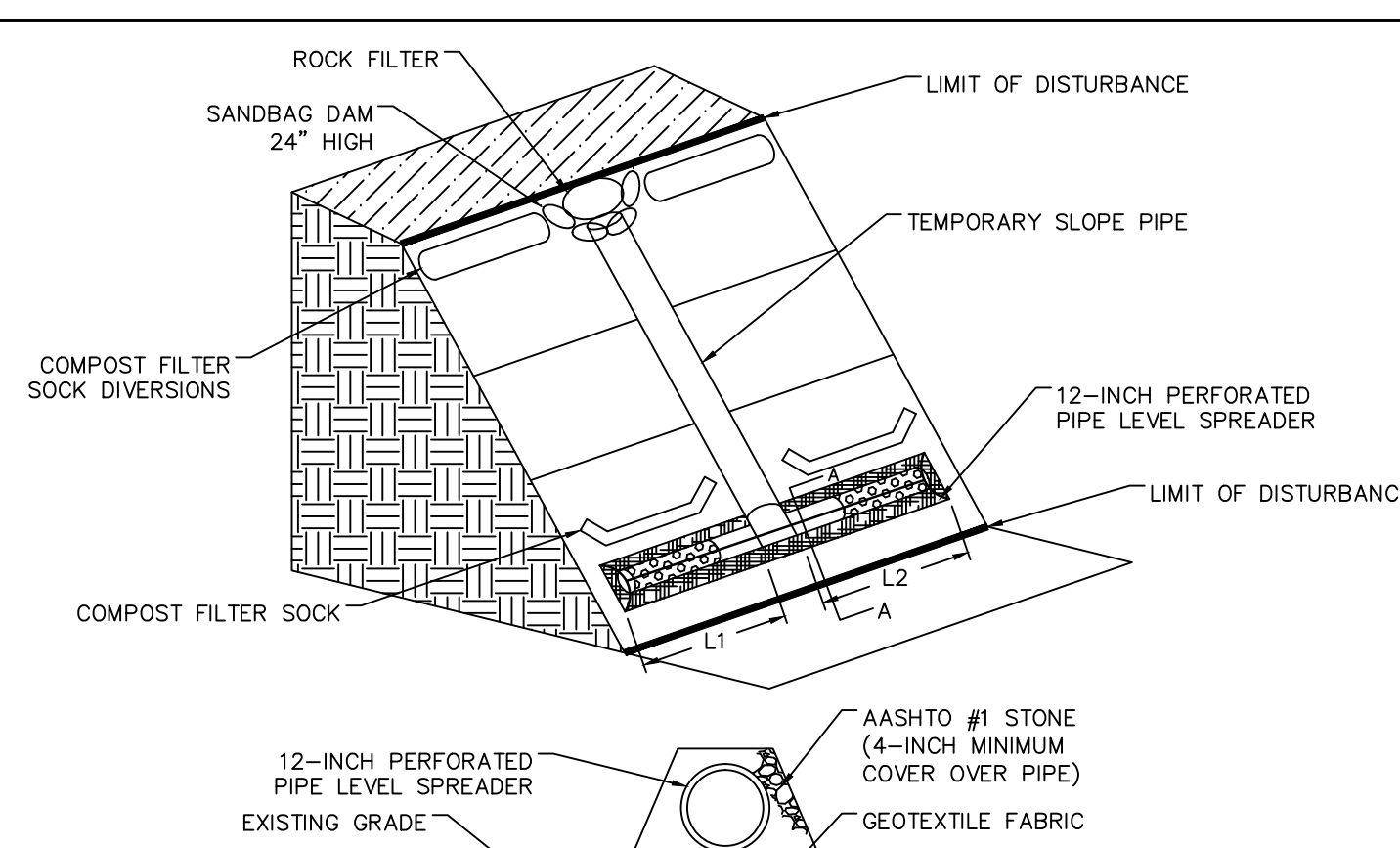
* BASIN INSIDE WIDTH IS 3 X DIAMETER(FT) X # OF PIPES

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

NOTES:

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

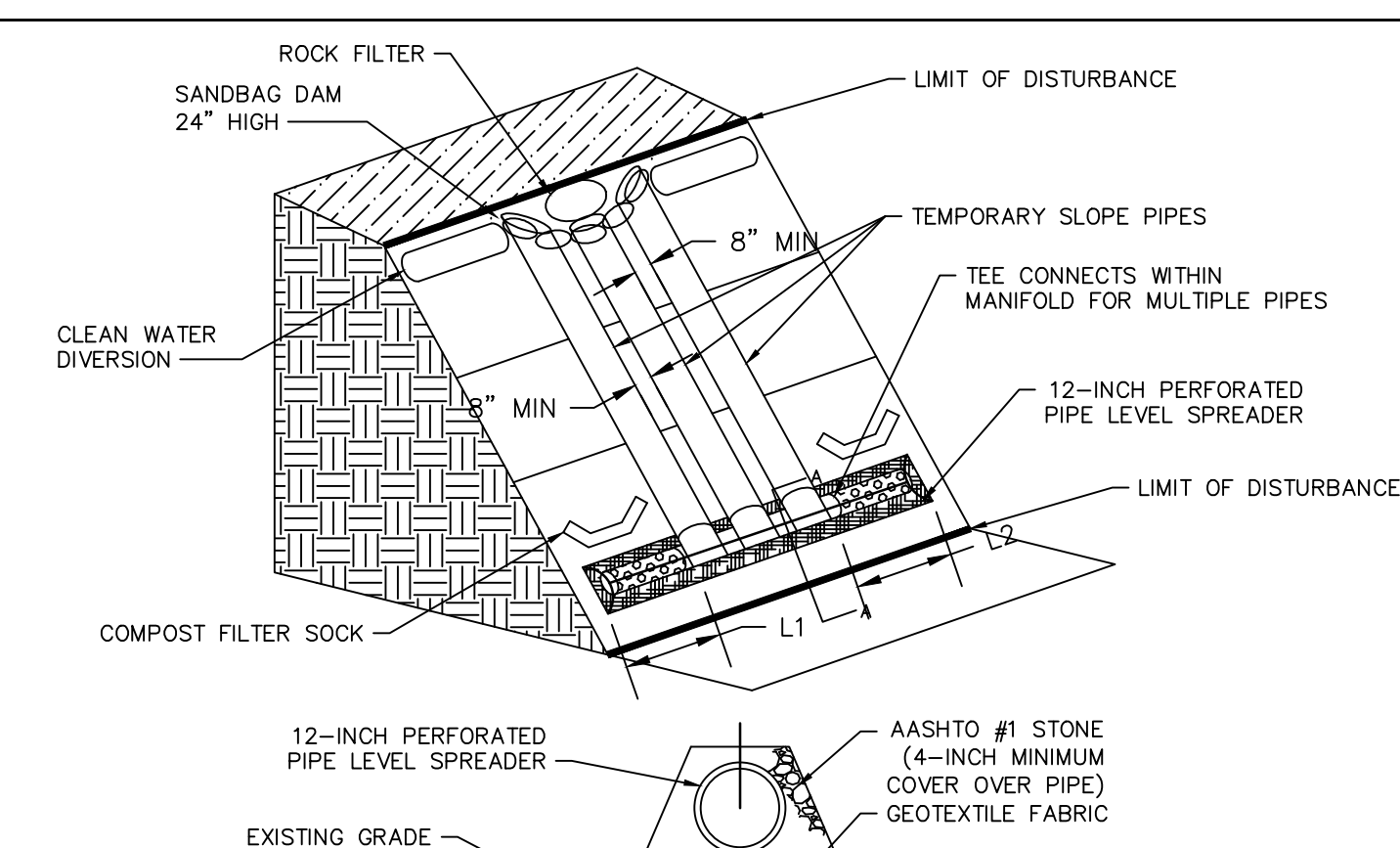
NO.	DATE	BY	REVISION DESCRIPTION	NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC STANDARD ENVIRONMENTAL DETAIL			
			CWC CLEAN WATER CROSSING (OUTLET BASIN DETAIL)			
			STANDARD CONSTRUCTION DETAIL #8-6			



NOTES:

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

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



TEMPORARY MULTIPLE PIPE LEVEL SPREADER DETAIL
 NO SCALE

NOTES:

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

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

TABLE 3: WATERBODIES CROSSED BY CPLS PIPELINE AND ACCESS ROADS IN NORTHUMBERLAND COUNTY

Waterbody ID	Waterbody Name	Milepost	County	Township	Stream Type	State Water Quality Use Classification - Designated Use	State Fishery Classification	Crossing Method	Crossing Window
WW-T44-10002C	UNT to Mahanoy Creek (WW-T44-10002C)	83.38	Northumberland	East Cameron	Perennial	WWF, MF	None	Flume	None
WW-T01-10001	Mahanoy Creek (WW-T01-10001)	83.39	Northumberland	East Cameron	Perennial	WWF, MF	None	Flume	None
WW-T04-10002	UNT to Shamokin Creek (WW-T04-10002)	85.45	Northumberland	Coal	Intermittent	WWF, MF	None	Dam-and-Pump	None
WW-T04-10001	Shamokin Creek (WW-T04-10001)	MOC-0240.0.20	Northumberland	Coal	Perennial	WWF, MF	None	Dam-and-Pump	None
WW-T18-10002	Quaker Run (WW-T18-10002)	86.60	Northumberland	Coal	Perennial	CWF, MF	None	Flume	None
WW-T68-11001B	UNT to Quaker Run (WW-T68-11001B)	M-03720.11	Northumberland	Coal	Ephemeral	CWF, MF	None	Flume	None
WW-T68-11001	UNT to Quaker Run (WW-T68-11001)	M-03720.13	Northumberland	Coal	Intermittent	CWF, MF	None	Dam-and-Pump	None
WW-T58-11001	Coal Run (WW-T58-11001)	MOC-0235.1.15	Northumberland	Coal	Intermittent	CWF, MF	None	Dam-and-Pump	None
WW-T44-11002	UNT to South Branch Roaring Creek (WW-T44-11002)	88.89	Northumberland	Coal	Perennial	HQ-CWF, MF	Approved Trout Waters, Wild Trout Waters	N/A	January 1 through September 30
WW-T47-11002	South Branch Roaring Creek (WW-T47-11002)	91.76	Northumberland	Ralpho	Perennial	HQ-CWF, MF	Class A Wild Trout Waters	Dam-and-Pump	April 2 through September 30
WW-T44-11001A	UNT to South Branch Roaring Creek (WW-T44-11001A)	M-04370.03	Northumberland	Ralpho	Intermittent	HQ-CWF, MF	Class A Wild Trout Waters	Dam-and-Pump	April 2 through September 30

Access Roads

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

Key:

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

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

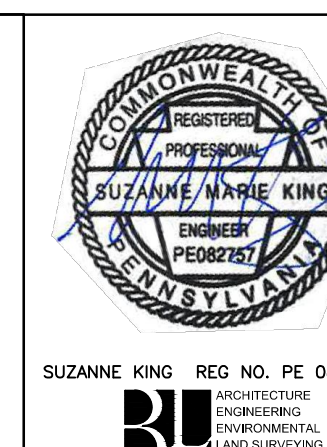
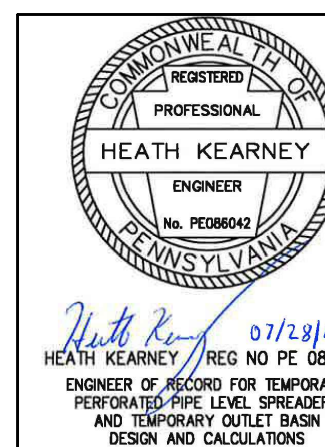
Wetland ID	Milepost	County	Township	Wetland Classes Impacted
W-T44-11001C	88.83	Northumberland	Coal	PFO
W-T44-11001A / W-T44-11001A-2	89.08	Northumberland	Coal	PEM
W-T18-10001	83.43	Northumberland	East-Cameron	PEM
W-T49-11001	91.77	Northumberland	Ralpho	PEM
W-T49-11003	M-0437.0.05	Northumberland	Ralpho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

Access Roads

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

Key:

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



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

NO.	DATE	BY	REVISION DESCRIPTION	NO.	CHK.	APP.
			TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC ATLANTIC SUNRISE PROJECT PROPOSED 42" CENTRAL PENN LINE SOUTH PENNSYLVANIA BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET NORTHUMBERLAND COUNTY, PENNSYLVANIA QUANTITY, CROSSING AND ACIDIC SOIL TABLES			
			DRAWN BY: ELZ DATE: 05/15/15 ISSUED FOR BID: SCALE:			
			CHECKED BY: JLK DATE: 07/02/15 ISSUED FOR CONSTRUCTION: REVISION: 4			
			APPROVED BY: SMK DATE: 07/08/15 DRAWING NUMBER: SHEET 2			
			NO.:			224-1600-70-28-A/L111

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

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

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

TABLE 7: RESOURCE SPECIFIC AVOIDANCE AND MINIMIZATION MEASURES

Resource Type (Stream or Wetland)	Resource Name	Resource ID	MP	Chapter 93 Classification, Wetland Classification	Stream Type (Perennial, Intermittent, Ephemeral)	Stream Trout Status (Class A Wild Trout, Wild Trout, Trout Stocked)	Cowardin Classification	Limits of Disturbance (LOD) Adjustments (Supporting Information for Technical Deficiencies #29 and #51)	Field Routing Adjustments within 600-foot Wide Corridor (Supporting Information for Technical Deficiency #15)*	Stream Bank Stabilization BMP	Width of Erosion Control Blanket Required for Stream Bank Stabilization (ft)
Stream	UNT to Mahany Creek (WW-T44-1000C)	WW-T44-1000C	83.37	WWF, MF	Perennial	None	R3	LOD has been reduced to 90' to minimize impacts to WW-T44-1000C.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T44-1000C, and to avoid residences east of the LOD.	SBR with SC150 fabric	50
Stream	Mahany Creek (WW-T01-10001)	WW-T01-10001	83.39	WWF, MF	Perennial	None	R3	Full construction ROW width is needed to safely and efficiently cross this wide stream.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T01-10001, and to avoid residences east of the LOD.	SBR with SC150 fabric	50
Wetland	N/A	W-T18-10001	83.42	None	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T18-10001.	The pipeline was routed at this location to provide a perpendicular crossing of wetland W-T18-10001. Avoidance of this wetland was not feasible due to the linear nature of the wetland, extending east and west beyond the routing corridor.	N/A	N/A
Stream	UNT to Shamokin Creek (WW-T68-10002)	WW-T68-10002	85.20	WWF, MF	Ephemeral	None	R6	LOD reduced to 35' to accommodate an equipment bridge crossing of the stream.	The access road was routed to cross this stream along an existing dirt/gravel road. The bridge equipment crossing will minimize stream impacts.	N/A	N/A
Wetland	N/A	W-T58-10001	85.24	None	N/A	N/A	PEM	LOD reduction not practicable to minimize impacts at this location as the wetland is present within the existing roadway.	The access road was routed to cross this wetland along an existing dirt/gravel road. Deviating from the existing road to avoid the wetland would require additional tree clearing.	N/A	N/A
Stream	UNT to Shamokin Creek (WW-T68-10001)	WW-T68-10001	85.26	WWF, MF	Ephemeral	None	R6	LOD reduced to 20' to accommodate an equipment bridge crossing of this stream.	The access road was routed to cross this stream along an existing dirt/gravel road. The bridge equipment crossing will minimize stream impacts.	N/A	N/A
Stream	UNT to Shamokin Creek (WW-T04-10002)	WW-T04-10002	85.45	WWF, MF	Intermittent	None	R4	LOD has been reduced to 90' to minimize impacts to WW-T04-10002.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T04-10002.	SBR with SC150 fabric	50
Stream	Shamokin Creek (WW-T04-10001)	WW-T04-10001	M-0240 0.20	WWF, MF	Perennial	None	R3	Full construction ROW width needed to accommodate P's located on either side of this wide crossing, and due to adjacent steep topography and railroad crossing.	The pipeline was routed at this location to facilitate a crossing of the adjacent state highway and railroad, while avoiding a residence on the south side of the routing corridor.	SBR with SC150 fabric	50
Stream	Quaker Run (WW-T18-10002)	WW-T18-10002	85.60	CWF, MF	Perennial	None	R3	LOD has been reduced to 90' to minimize impacts to WW-T18-10002.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T18-10002 and the adjacent road.	SBR with SC150 fabric	50
Wetland	N/A	W-T56-10001A-1	M-0235 0.35	None	N/A	N/A	PEM	LOD has been modified to eliminate impacts to W-T56-10001A-1.	This feature is no longer impacted based on LOD reductions.	N/A	N/A
Stream	Coal Run (WW-T58-11001A)	WW-T58-11001A	M-0235 0.94	CWF, MF	Ephemeral	None	R6	LOD has been reduced to avoid impacting the stream reach which runs parallel to the existing access road.	No changes were made to this crossing during field routing. This stream parallels and then crosses an existing dirt/gravel road through a culvert. During field routing it was determined that the project access road width could be reduced to avoid impacting the stream where it parallels the existing road.	N/A	N/A
Stream	UNT to Quaker Run (WW-T68-11001B)	WW-T68-11001B	M-0372 0.11	CWF, MF	Ephemeral	None	R6	LOD has been reduced to 90' to minimize impacts to WW-T68-11001B.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T68-11001B.	SBR with SC150 fabric	50
Stream	UNT to Quaker Run (WW-T68-11001)	WW-T68-11001	M-0372 0.13	CWF, MF	Intermittent	None	R4	LOD has been reduced to 90' to minimize impacts to WW-T68-11001.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T68-11001.	SBR with SC150 fabric	50
Stream	UNT to Quaker Run (WW-T68-11001A)	WW-T68-11001A	M-0372 0.13	CWF, MF	Ephemeral	None	R6	LOD has been modified to eliminate impacts to W-T68-11001A.	This feature is no longer impacted based on LOD reductions.	SBR with SC150 fabric	50
Stream	Coal Run (WW-T58-11001)	WW-T58-11001	M-0235 1.15	CWF, MF	Intermittent	None	R4	LOD has been reduced to 90' to minimize impacts to WW-T58-11001.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T58-11001.	SBR with SC150 fabric	50
Wetland	N/A	W-T44-11001C	88.83	EV	N/A	N/A	PF0	LOD has been reduced to 75' to minimize impacts to W-T44-11001C.	The pipeline was routed at this location to cross the narrowest section of the wetland, and along the wetland margin.	N/A	N/A
Stream	UNT to South Branch Roaring Creek (WW-T44-11002)	WW-T44-11002	88.89	HQ-CWF, MF	Perennial	Approved Trout Waters, Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T44-11002.	The pipeline was routed at this location to avoid side slope construction.	SBR with SC150 fabric	50
Wetland	N/A	W-T44-11001A-2	89.08	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T44-11001A-2.	The pipeline was routed at this location to avoid side slope construction.	N/A	N/A
Wetland	N/A	W-T44-11001A	89.10	EV	N/A	N/A	PEM	This wetland encroaches within the western portion of the LOD only, and this portion of the LOD was reduced by 10' to minimize impacts to W-T44-11001A.	The pipeline was routed at this location to avoid side slope construction.	N/A	N/A
Stream	South Branch Roaring Creek (WW-T47-11002)	WW-T47-11002	91.76	HQ-CWF, MF	Perennial	Class A Wild Trout Waters	R3	Full construction ROW width needed due to steep terrain immediately north of crossing and adjacent stream/road crossing to the south.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T47-11002.	SBR with SC150 fabric	50
Wetland	N/A	W-T49-11001	91.77	EV	N/A	N/A	PEM	W-T49-11001 does not extend across the full width of the LOD. Since the wetland width within the LOD is less than 75', the FERC Procedures do not require LOD reduction. In addition, an LOD reduction at this location would only be possible in the adjacent upland area and would not result in minimization of wetland impacts.	The pipeline was routed at this location to cross the narrowest section of the wetland, and along the wetland margin.	N/A	N/A
Stream	UNT to South Branch Roaring Creek (WW-T44-11001A)	WW-T44-11001A	M-0271 0.03	HQ-CWF, MF	Intermittent	Class A Wild Trout Waters	R4	Full construction ROW width needed due to steep terrain immediately north of crossing and adjacent road/stream/wetland crossing.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T44-11001A.	SBR with SC150 fabric	50
Wetland	N/A	W-T49-11003	M-0271 0.05	EV	N/A	N/A	PEM	LOD reduced to 90' to minimize impacts to W-T49-11003. Further LOD reduction was not possible due to the adjacent stream and road crossing, as well as steep terrain immediately east of the stream crossing. The additional workspace will be used for equipment crossing and spoil storage to accommodate a safe and efficient wetland crossing.	The pipeline was routed at this location to cross the narrowest section of the wetland.	N/A	N/A

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

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

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