

COLUMBIA COUNTY

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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 CRITICAL STAGES 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 DEPARTMENT'S 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, REGROADING, 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, SUPPANCE, 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 REGULATIONS.~~
- ~~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 FIELD SOCK SHOWN AT ROAD CROSSINGS IS INTENDED FOR USE DURING RESTORATION ACTIVITIES.

EXISTING CONDITIONS NOTES

- EXISTING TOPOGRAPHY IS BASED UPON THE FOLLOWING:
 - PHOTOGRAMMETRIC 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--PERMITEES 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 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 DEAM 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 TARPALIN 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 DIKE OR BERM CONTAINERS WHICH ARE CLEARLY LABELED. PETROLEUM STORAGE 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.

 SUZANNE KING REG. NO. PE 082757 	REVISIONS									TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC			
	NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	ATLANTIC SUNRISE PROJECT					
	0	08/28/2015	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				
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PIPELINE BMP INSTALLATION SEQUENCE

- DUE TO THE LENGTH OF THE PROJECT (IN MILES) IT IS ANTICIPATED THAT THE CONTRACTOR WILL CONSTRUCT THE PROJECT IN DISCRETE SEGMENTS. TYPICALLY USING WATERBODIES AND ROAD CROSSINGS AS BREAK POINTS. IN ADDITION, IT IS EXPECTED THAT MULTIPLE SEGMENTS WILL BE IN CONSTRUCTION AT ONE TIME, SOME BEING CLEARED AND PREPARED, SOME IN ACTIVE PIPELINE CONSTRUCTION AND SOME IN RESTORATION.
- ROAD AND WATERBODY CROSSINGS MAY BE CONDUCTED BY SEPARATE CREWS, IN PARALLEL, WITH MAIN LINE CREWS. SEE 'PIPELINE WORK SEQUENCE IN WETLANDS' AND 'PIPELINE WORK SEQUENCE AT STREAM CROSSINGS' FOR APPLICABLE WETLAND AND STREAM CROSSINGS.
- 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.
 - 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.
 - HOLD PRE-CONSTRUCTION CONFERENCE WITH THE ENVIRONMENTAL INSPECTORS, LOCAL COUNTY CONSERVATION DISTRICT (CCD), PADEP, AND DESIGN ENGINEER.
 - LOCATE STAGING AREAS AND ACCESS POINTS INCLUDING CONSTRUCTION ENTRANCES.
 - FIELD LOCATE AND STAKE THE LOD.
 - LOCATE, STAKE AND/OR INSTALL ORANGE CONSTRUCTION FENCE AROUND SPECIAL AREAS OF CONCERN (I.E. WETLANDS, STREAMS, CULTURAL RESOURCES. .)
 - PERFORM NON-MECHANIZED TREE CUTTING WHERE REQUIRED.
 - INSTALL CONSTRUCTION ENTRANCES.
 - INSTALL BRIDGE EQUIPMENT CROSSINGS, TIMBER MATTING CONSTRUCTION, TIMBER MATTING AIR BRIDGES, AND SEDIMENT BARRIER AT WATERBODY CROSSINGS AS INDICATED ON THE PLANS.
 - 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.
 - REMOVE BRUSH, INCLUDING STUMPS, ONLY IN AREAS NECESSARY TO EFFECTIVELY INSTALL PERIMETER SEDIMENT BARRIERS, UPSLOPE TEMPORARY FILTER SOCK DIVERSIONS AND TEMPORARY DIVERSION SWALES. LEVEL SIDE CUTS REQUIRED TO GRANT ACCESS FOR VEHICLES AND WORKERS TO SAFELY PERFORM THE INSTALLATION OF SEDIMENT BARRIERS AS SHOWN ON THE E&SC PLANS.
 - INSTALL PERIMETER CONTROLS (SEDIMENT BARRIERS). ACCESS REQUIREMENTS FOR PERIMETER CONTROLS ALONG PRIVATE DRIVES WITHIN THE LOD SHALL BE IN ACCORDANCE WITH THE LANDOWNER AGREEMENTS.
 - INSTALL PERMANENT AND TEMPORARY ACCESS ROADS AND ASSOCIATED BMPS (VEGETATED ROADSIDE DITCHES, DITCH RELIEF CULVERTS, AND RIPRAP OUTLET PROTECTION). SEE ACCESS ROAD SEQUENCE OF CONSTRUCTION FOR SPECIFIC CONSTRUCTION STEPS ASSOCIATED WITH ROAD CONSTRUCTION (PROVIDED IN SECTION 2 OF THE ESCGP-2 NOI). SPECIFIC ACCESS ROAD CONSTRUCTION SEQUENCE NOTES ARE INCLUDED IN THE ACCESS ROAD E&S PLAN SETS.
 - THE COMPLIANCE MANAGER SHALL PROVIDE PADEP AT LEAST THREE DAYS' NOTICE PRIOR TO BULK EARTH DISTURBANCE AND UPON COMPLETED INSTALLATION OF PERIMETER EROSION CONTROLS.
 - HAVE SURVEY CREWS LOCATE AND RE-STAKE AS NEEDED, IF ANY STAKES ARE DAMAGED, IN ALL SPECIAL AREAS OF CONCERN (I.E., WETLANDS, STREAMS, ETC.)
 - 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 EROSION AND SEDIMENTATION BMP WHICH TEMPORARILY MINIMIZES ACCELERATED EROSION AND SEDIMENTATION. TEMPORARY STABILIZATION WILL NOT OCCUR ON ACTIVE VEHICULAR TRAVEL WAYS WITHIN THE ROW.
 - PROCEED WITH MAJOR CLEARING AND GRUBBING.
 - BEGIN CONSTRUCTION STAKING FOR TEMPORARY GRADING.
 - CLEAR, GRUB, AND CONSTRUCT STREAM AND WETLAND CROSSINGS IN ACCORDANCE WITH CHAPTER 105, SECTION 404, 401, AND RELATED PERMITS. INSTALL STREAM FLUMES, AND/OR DAM AND PUMP AS SPECIFIED IN CHAPTER 105 PERMIT DOCUMENTS FOR CROSSING OF STREAM AND WETLAND AREAS. CONTRACTOR SHALL PLACE PIPE, INSTALL TRENCH PLUGS, BACKFILL TRENCH, AND TEMPORARILY STABILIZE WITHIN 48 HOURS OF EXCAVATING TRENCH IN RESOURCE CROSSING LOCATIONS.
 - INSTALL CLEAN WATER CROSSINGS, INCLUDING TEMPORARY SLOPE PIPES, LEVEL SPREADERS, AND RIP RAP APRON ENERGY DISSIPATERS.
 - AS THE GRUBBING OPERATION COMMENCES, INSTALL ROCK FILTERS AND WATERBARS ALONG THE PIPELINE ALIGNMENT.
 - STRIP AND STOCKPILE TOPSOIL; INSTALL SEDIMENT BARRIERS AROUND STOCKPILES.
 - HAUL PIPE TO RIGHT-OF-WAY. BEND, PLACE ON SUPPORTS, ALIGN, AND WELD. LAY PIPE IN DITCH.
 - CONTRACTOR SHALL PLACE PIPE AND INSTALL TRENCH PLUGS.
 - PERFORM NON-DESTRUCTIVE TESTING (NDT) INSPECTION OF WELDS AND APPLY COATING TO WELD AREA.
 - BACKFILL PIPE TRENCH WITHIN 30 DAYS OF EXCAVATING, REPAIR PERMANENT WATERBARS, REMOVE TEMPORARY WATERBARS, RETURN TEMPORARILY GRADED AREAS TO PRE-DEVELOPMENT GRADE, REPAIR/INSTALL EROSION CONTROL BLANKET AS NEEDED, REPLACE TOPSOIL AND IMMEDIATELY SEED AND STABILIZE DISTURBED AREAS (SLOPES, DITCHES AND CHANNELS) AS THEY ARE RETURNED TO FINAL GRADE. REFER TO PLANTING PLANS AND RIPARIAN BUFFER PLANTINGS, AS APPLICABLE, IN THE BMP PLAN SET AND E&S NARRATIVE. ANY AREA THAT USED STONE AND/OR TIMBER MATS FOR TEMPORARY STABILIZATION AND/OR ACCESS WILL BE COMPLETELY REMOVED. DECOMPACT SOILS IN ACCORDANCE WITH THE ENVIRONMENTAL CONSTRUCTION PLAN (ECP) (SECTION 4 OF THE NOI). THE SUBSOIL WILL BE FRACTURED BY DEEP RIPPING TO A DEPTH OF NOT LESS THAN 16 INCHES BELOW THE SURFACE OF THE SUBSOIL WITH THE APPROPRIATE AGRICULTURAL RIPPER (I.E., PARABOLIC OR BENT OFF-SET). SUBSURFACE FEATURES (I.E., DRAIN TILES, OTHER UTILITIES) MAY WARRANT SHALLOWER DEPTH. IF SUBSURFACE FEATURES ARE WITHIN 16 INCHES OF THE SURFACE DEEP RIPPING WILL OCCUR TO A DEPTH NOT TO EXCEED 4 INCHES OF THE EXPECTED DEPTH OF THE SUBSURFACE FEATUER. IN AREAS OF MAJOR COMPACTION (I.E., HEAVY TRAFFIC AREAS NOT PROTECTED BY TIMBER MATS), SUBSOIL WILL BE FRACTURED BY DEEP RIPPING TO A DEPTH OF NOT LESS THAN 24 INCHES BELOW THE SURFACE OF THE SUBSOIL. RE-ESTABLISH PRECONSTRUCTION CONTOURS, AND REPLACE TOPSOIL TO A MINIMUM OF 4-8 INCHES DEEP AND SEED AND MULCH AREAS. VEHICULAR TRAFFIC SHOULD BE RESTRICTED FROM AREAS TO PREVENT SOIL COMPACTION.
 - TRANSOCO WILL COMPLETE UPLAND FINAL GRADING, TOPSOIL REPLACEMENT, INSTALLATION OF PERMANENT E&S MEASURES WITHIN 20 DAYS AFTER BACKFILLING THE TRENCH IN ALL AREAS EXCEPT RESIDENTIAL AREAS, WHICH WILL BE COMPLETED WITHIN 10 DAYS.
 - PERFORM HYDROSTATIC PRESSURE TEST OF PIPELINE.
 - DEWATER PIPELINE UTILIZING APPROPRIATE BMPS, COMPLETE FINAL TIE-INS, AND DRY PIPELINE.
 - AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS. WHEN CONTROLS ARE TO BE REMOVED IN AGRICULTURAL NON-SENSITIVE AREAS (STREAMS/WETLANDS), AGRICULTURAL LANDOWNERS SHALL MAINTAIN AGRICULTURAL BMPS PER PADEP REGULATIONS.
 - UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE PERMITTEE AND/OR OPERATORS SHALL CONTACT THE LOCAL CCD AND/OR PADEP FOR AN INSPECTION PRIOR TO THE REMOVAL OF THE E&SC BMPS. REMOVAL OF TEMPORARY WETLAND AND STREAM CROSSINGS, TEMPORARY BMPS INCLUDING SEDIMENT BARRIERS, TEMPORARY FILTER SOCK DIVERSION SWALES, TEMPORARY CLEAN WATER DIVERSION SWALES (AND ASSOCIATED GRADING), CLEAN WATER CROSSING OUTFALL PROTECTION AND LEVEL SPREADERS, ROCK FILTERS, AND TEMPORARY WATERBARS ALONG THE ALIGNMENT.
 - ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 100 FEET OF A HQ/EV SURFACE WATER AND WITHIN 50 FEET OF NON-HQ/EV SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
 - COMPLETE SITE RESTORATION AND STABILIZATION, INCLUDING SOIL AERATION, SOIL TREATMENT, SEED APPLICATION AND MULCHING IN AREAS DISTURBED BY E&SC BMP REMOVAL. INSTALL RIPARIAN BUFFER PLANTINGS PER THE RIPARIAN BUFFER PLANTING PLANS.
 - REMOVE AND PROPERLY DISPOSE OF/RECYCLE E&SC BMPS. REMOVE STAKES AND ORANGE CONSTRUCTION FENCE. REPAIR AND PERMANENTLY STABILIZE AREAS DISTURBED DURING E&SC BMP REMOVAL.

TEMPORARY AND PERMANENT STABILIZATION

- TEMPORARY STABILIZATION

TEMPORARY SEEDING WITH STRAW MULCH COVER FOR INTERIM STABILIZATION IS A TYPE OF BMP THAT CAN USUALLY BE PROVIDED WHERE THE EARTH DISTURBANCE ACTIVITY TEMPORARILY CEASES (I.E. 4 DAYS OR MORE) UNLESS DIRECTED BY THE PROJECT OWNER, PADEP, OR CONSERVATION DISTRICT.

THE INSTALLATION OF AN EROSION CONTROL BLANKET OR APPLICATION OF STRAW MULCH UPON SEEDED CAN BE UTILIZED TO PROTECT THE SEEDBED UNTIL VEGETATION IS ESTABLISHED.
- PERMANENT STABILIZATION

UPON COMPLETION OF ANY EARTH DISTURBANCE ACTIVITY, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED, OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION.

EROSION & SEDIMENTATION CONTROLS SHALL BE LEFT IN PLACE UNTIL SUCH TIME AS THE DISTURBED AREAS HAVE PERMANENT STABILIZATION. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

WHEN EROSION & SEDIMENTATION CONTROLS ARE TO BE REMOVED IN AGRICULTURAL NON-SENSITIVE AREAS (STREAMS/WETLANDS), AGRICULTURAL LANDOWNERS SHALL MAINTAIN AGRICULTURAL BMPS PER PADEP REGULATIONS.
- STABILIZATION DURING NON-GROWING SEASONS

WHEN UTILITY CONSTRUCTION MUST BE DONE AND IS COMPLETED DURING A NON-GROWING SEASON, INTERIM STABILIZATION BMPS MUST BE IMPLEMENTED AND ADEQUATELY MAINTAINED. THE APPLICATION OF STRAW MULCH AT THE RATE OF 3.0 TONS PER ACRE IS REQUIRED. THE BMPS SHOULD BE INSPECTED WEEKLY (UNLESS SNOW COVERED) AND AFTER EACH RUNOFF EVENT TO IDENTIFY AREAS THAT BECOME BARE.

BARE AREAS SHOULD BE COVERED WITH A PROPERLY INSTALLED EROSION CONTROL BLANKET. ALL TEMPORARY EROSION AND SEDIMENT POLLUTION CONTROLS MUST BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED.
- WHERE REQUIRED, STRAW MULCH MUST BE APPLIED AT A MINIMUM OF 3.0 TONS PER ACRE.
- STRAW MULCH SHALL BE APPLIED IN LONG STRANDS, NOT FINELY CHOPPED OR BROKEN.
- PRIOR TO ANY SEEDING, LIME, OR FERTILIZATION APPLICATION, A SOIL TEST SHALL BE PERFORMED TO DETERMINE THE pH FACTOR. ADDITIONAL LIME AND FERTILIZER MAY BE REQUIRED. NO LIME OR FERTILIZERS SHALL BE USED IN WETLAND AREAS.
- LIME, FERTILIZE, SEED, AND MULCH DISTURBED AREAS PER THE EROSION AND SEDIMENT CONTROL PLANS. IN AREAS OF STEEP SLOPES OR OBVIOUS AREAS WHERE POTENTIAL EROSION MAY OCCUR, AND EROSION CONTROL MAT OR FLEXIBLE GROWTH MEDIUM (FGM) SHALL BE USED. FGM SHALL BE APPLIED PER MANUFACTURER SPECIFICATIONS. NO LIME OR FERTILIZERS SHALL BE USED IN WETLAND OR STREAM AREAS.
- WATERBARS WITHIN AGRICULTURAL OR RESIDENTIAL AREAS SHALL BE USED AS TEMPORARY FEATURES. WATERBARS MAY BE REMOVED WHEN THE TRIBUTARY DRAINAGE AREA IS AT LEAST 70% STABILIZED WITH PERENNIAL VEGETATION AS PER PA CHAPTER 102.22.

PIPELINE WORK SEQUENCE IN WETLANDS

- FOR WORK IN WETLANDS, THE FOLLOWING STEPS SHALL BE INSERTED IN THE GENERAL PIPELINE CONSTRUCTION SEQUENCE ABOVE:
- INSTALL ORANGE FLAGGING AROUND PERIMETER OF WETLAND AND SEDIMENT BARRIERS ALONG THE LIMITS OF DISTURBANCE.
 - LOCATE STAGING AREAS AT LEAST 50 FEET FROM THE EDGE OF THE WETLAND.
 - INSTALL SEDIMENT BARRIERS DOWN SLOPE OF THESE AREAS.
 - INSTALL CONSTRUCTION ENTRANCE AS SHOWN ON THE PLANS.
 - MATS, PADS, OR SIMILAR DEVICES SHALL BE USED DURING THE CROSSINGS OF WETLANDS. ORIGINAL GRADES THROUGH WETLANDS MUST BE RESTORED AFTER TRENCHING AND BACKFILLING. ANY EXCESS FILL MATERIALS MUST BE REMOVED FROM THE WETLAND AND NOT SPREAD ON-SITE.
 - SOIL EXCAVATED FROM WETLAND AREAS SHALL BE CAREFULLY REMOVED WITH THE ROOTS INTACT. THIS SOIL SHOULD BE PLACED IN A SEPARATE STOCKPILE TO BE REUSED DURING THE WETLAND SURFACE RESTITUTION.
 - DEWATER WORK AREA; WATER FROM THE EXCAVATION SHALL BE PUMPED TO A SEDIMENT TRAP OR A FILTER BAG.
 - INSTALL PIPE.
 - INSTALL TRENCH PLUGS IN WETLAND AREAS PER THE E&S PLAN TO PREVENT THE TRENCH FROM DRAINING THE WETLAND OR CHANGING ITS MICROHYDROLOGY.
 - BACKFILL PIPE TRENCH. BACKFILL THE TOP 12-INCHES OF THE EXCAVATED TRENCH WITH THE STOCKPILED WETLAND SOIL TO MATCH ORIGINAL SURFACE GRADES.
 - COMPACT BACKFILL AND GRADE THE SURFACE OF THE TRENCH AREA TO ALLOW FOR POSITIVE DRAINAGE TO SOIL E&SCS AND TO PREPARE DISTURBED AREAS FOR PERMANENT TRENCH RESTORATION.
 - MAINTAIN ALL E&SC DEVICES UNTIL SITE WORK IS COMPLETE AND A MINIMUM UNIFORM 70 PERCENT PERENNIAL VEGETATIVE COVER IS ESTABLISHED.
 - REMOVE ALL SOIL AND E&SC MEASURES UPON ESTABLISHMENT OF A MINIMUM UNIFORM 70 PERCENT PERENNIAL VEGETATIVE COVER OVER THE DISTURBED AREA. REGRADE AND REVEGETATE AREAS DISTURBED DURING THE REMOVAL OF THE SOIL E&SCS.

PIPELINE WORK SEQUENCE AT STREAM CROSSINGS

- FOR STREAM CROSSINGS, THE FOLLOWING STEPS SHALL BE INSERTED IN THE GENERAL PIPELINE CONSTRUCTION SEQUENCE ABOVE:
- AFTER INSTALLATION OF SEDIMENTATION BMPS, INSTALL BYPASS HOSE, PUMP, OR COFFERDAM AS DESCRIBED IN STREAM CROSSING DETAILS AROUND THE WORK AREA.
 - DEWATER WORK AREA. WATER FROM THE EXCAVATION SHALL BE PUMPED TO A SEDIMENT FILTER BAG. WHERE POSSIBLE, EXCAVATION SHALL BE FROM THE TOP OF THE STREAM BANK.
 - STABILIZE CHANNEL EXCAVATION AND STREAM BANKS PRIOR TO REDIRECTING STREAM FLOW WITHIN 24 HOURS OF CROSSING BEING DONE FOR ALL STREAMS SMALLER THAN 10 FEET AND 48 HOURS FOR STREAMS LARGER THAN 10 FEET WIDE.
 - REMOVE BYPASS HOSE, PUMP, AND TEMPORARY DAM AS NEEDED.

MAINTENANCE PROGRAM

- THE FOLLOWING INSPECTION AND MAINTENANCE PRACTICES WILL BE USED TO MAINTAIN EROSION AND SEDIMENT CONTROLS AND STABILIZATION MEASURES. REFER TO BMP DETAILS FOR SPECIFIC OPERATION AND MAINTENANCE REQUIREMENTS.
- ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSPECTED ONCE EVERY SEVEN DAYS AND AFTER EACH RUNOFF EVENT. A WRITTEN REPORT MUST ALSO BE COMPLETED DOCUMENTING EACH INSPECTION AND, IF NECESSARY, ANY REPAIR, REPLACEMENT OR MAINTENANCE ACTIVITY.
 - ALL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER; IF REPAIRS OR ADDITIONAL MEASURES ARE FOUND TO BE NECESSARY, THEY WILL BE INITIATED WITHIN 24 HOURS OF THE INSPECTION REPORT.
 - BUILT UP SEDIMENT WILL BE REMOVED FROM PERIMETER BMPS WHEN IT HAS REACHED ONE-THIRD THE HEIGHT OF THE BMP.
 - PERIMETER BMPS WILL BE INSPECTED FOR DEPTH OF SEDIMENT, DAMAGE, ETC., TO ENSURE THE MEASURE IS IN PROPER WORKING ORDER, AND THAT ANY POSTS/WOOD STAKES ARE SECURELY IN THE GROUND.
 - TEMPORARY SEDIMENT TRAPS, IF PRESENT, WILL BE INSPECTED FOR DEPTH OF SEDIMENT, AND BUILT UP SEDIMENT WILL BE REMOVED WHEN IT REACHES THE DESIGN CLEANOUT DEPTH.
 - TEMPORARY AND PERMANENT SEEDING, AND OTHER STABILIZATION MEASURES, WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND HEALTHY GROWTH.
 - A MAINTENANCE INSPECTION REPORT WILL BE MADE AFTER EACH INSPECTION. COPIES OF THE REPORT FORMS TO BE COMPLETED BY THE INSPECTOR ARE INCLUDED IN THIS ESCP.
 - THE INSPECTOR WILL IMPLEMENT INSPECTION AND MAINTENANCE PRACTICES NECESSARY FOR KEEPING THE EROSION AND SEDIMENT CONTROLS THAT ARE USED ON THE SITE IN GOOD WORKING ORDER. THE INSPECTOR WILL ALSO BE TRAINED IN THE COMPLETION OF, INITIATION OF ACTIONS REQUIRED BY, AND THE FILING OF THE INSPECTION FORMS.
 - DISTURBED AREAS AND MATERIALS STORAGE AREAS WILL BE INSPECTED FOR EVIDENCE OF OR POTENTIAL FOR POLLUTANTS ENTERING THE STORMWATER.
- A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN(S) WILL BE AVAILABLE ON THE SITE AT ALL TIMES.
- ONCE ANY EROSION CONTROL MEASURES ARE INSTALLED, THE MAINTENANCE AND INSPECTION PROCEDURES ABOVE SHALL BEGIN. THE CONTRACTOR SHOULD BE AWARE THAT THE INSPECTION FORMS BECOME AN INTEGRAL PART OF THE ESCP AND SHALL BE MADE READILY AVAILABLE TO THE GOVERNMENT INSPECTION OFFICIALS, THE PROJECT OWNER'S ENGINEER, AND THE PROJECT OWNER FOR REVIEW UPON REQUEST DURING VISITS TO THE PROJECT SITE.
- INSPECTORS SHOULD BE KNOWLEDGEABLE IN THE PRINCIPLES AND PRACTICE OF EROSION AND SEDIMENT CONTROLS AND POSSESS THE SKILLS TO ASSESS CONDITIONS AT THE CONSTRUCTION SITE THAT COULD IMPACT STORMWATER QUALITY AND TO ASSESS THE EFFECTIVENESS OF ANY SEDIMENT AND EROSION CONTROL MEASURES SELECTED TO CONTROL THE QUALITY OF STORMWATER DISCHARGES FROM THE CONSTRUCTION SITE. THEY SHOULD ALSO HAVE READ AND UNDERSTOOD ALL PORTIONS OF THIS ESCP, INCLUDING THE ESCGP-2.
- THE INDIVIDUAL(S) RESPONSIBLE FOR POST-STORM AND STORM EVENT BMP INSPECTIONS, AND THE QUALIFIED PERSON(S) ASSIGNED RESPONSIBILITY TO ENSURE FULL COMPLIANCE WITH THE PERMIT AND IMPLEMENTATION OF ALL ELEMENTS OF THE ESCP, INCLUDING THE PREPARATION OF THE ANNUAL COMPLIANCE EVALUATION AND THE ELIMINATION OF ALL UNAUTHORIZED DISCHARGES ARE:

NAME: _____

PHONE NUMBER: _____ EMERGENCY PHONE #: _____

COMPANY: _____




RESPONSIBILITIES: _____

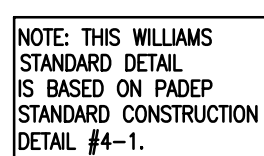
NAME: _____

PHONE NUMBER: _____ EMERGENCY PHONE #: _____

COMPANY: _____

RESPONSIBILITIES: _____

 SUZANNE KING REG NO. PE 082757 		REVISONS				TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC ATLANTIC SUNRISE PROJECT PENNSYLVANIA BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET 	
		NO.	DATE	BY	DESCRIPTION		
0	08/28/2015	BL	ISSUED FOR PADEP SUBMITTAL	W0572385	JLK	SMK	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 2 OF 3 W.O:
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	



PLAN VIEW

Place Fence on Existing Contour.

Extend End of Fence at least 8 Feet Upslope at 45 Degrees to Main Fence Alignment.

ILLUSTRATION
PA DEP

[illegible]

1 OF 3

Material Type	3 mil HDPE	3 mil HDPE	3 mil HDPE	Multi-Filament Polypropylene (MFPP)	Heavy Duty Multi-Filament Polypropylene (HDMFPP)
Material Characteristics	Photo-degradable	Photo-degradable	Bio-degradable	Photo-degradable	Photo-degradable
Sock Diameters	12" 18"	12" 18" 24" 30"	12" 18" 24" 30"	12" 18" 24" 32"	12" 18" 24" 30"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
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					
Inner Containment Netting	HDPE biaxial net				
	Continuously wound				
	Fusion-welded junctures				
Outer Filtration Mesh	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				
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

1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 1. COMPOST SHALL MEET THE STANDARDS OF TABLE 2. (SEE SHEET 2 OF 3 OF THIS DETAIL).
2. 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 A 45 DEGREES TO THE MAIN SOCK ALIGNMENT. MAXIMUM SOCK 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.
3. 37.5% OF FILTERED SOLIDS SHALL BE REMOVED.
4. 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.
5. SOCKS SHALL BE INSPECTED BEFORE AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. UPON COMPLETION OF THE USE OF THE SOCKS, THE SOCKS 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.
8. SOCKS SHALL BE INSTALLED PARALLEL TO THE CONTOURS, TYPICALLY, IN AREAS WHERE THE SLOPE OF THE CATCHMENT AREA IS LESS THAN FIVE PERCENT. SOCKS MAY BE INSTALLED AS NECESSARY TO MINIMIZE THE NUMBER OF SEPARATE SOCK SEGMENTS ALONG THE EDGE OF DISTURBANCE.

NO.	DATE	BY	REVISION DESCRIPTION	M.O.D. NO.	CNK.	APP.

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
STANDARD ENVIRONMENTAL DETAIL


(CFS)
COMPOST FILTER SOCK

2 OF 3

2 OF 3

Figure 1 is a line graph titled "Maximum Slope Length (ft) versus Slope (%)" showing the relationship between the maximum slope length in feet and the slope percentage for various maximum slope lengths in inches and millimeters. The x-axis represents the slope percentage, ranging from 0 to 50. The y-axis represents the maximum slope length in feet, ranging from 0 to 1400. Five curves are plotted, each corresponding to a different maximum slope length in inches and millimeters: 8 in (200 mm), 12 in (300 mm), 18 in (450 mm), 24 in (600 mm), and 32 in (800 mm). The curves show that as the slope percentage increases, the maximum slope length in feet also increases, with the rate of increase being more pronounced at higher slope percentages. The curves are labeled with their respective values in inches and millimeters.

Slope (%)	8 in (200 mm)	12 in (300 mm)	18 in (450 mm)	24 in (600 mm)	32 in (800 mm)
0	0	0	0	0	0
10	~100	~150	~200	~250	~300
20	~150	~250	~350	~450	~550
30	~200	~350	~500	~650	~800
40	~250	~450	~650	~850	~1050
50	~300	~550	~800	~1050	~1300

NOTE: 8" diameter socks should only be used to control small ($\leq \frac{1}{2}$ acre) disturbed areas on individual house lots).

NO.	DATE	BY	REVISION DESCRIPTION	NO.	CHK	APP.

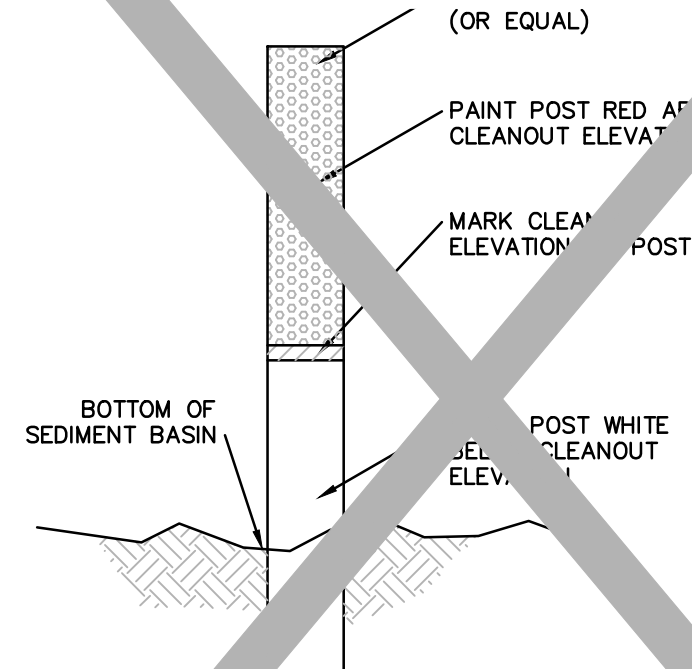
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
STANDARD ENVIRONMENTAL DETAIL

(CFS) COMPOST FILTER SOCK

3 OF 3



3 OF 3



NO.	DATE	BY	REVISION DESCRIPTION	M.D.	C.N.C.	APP.

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
STANDARD ENVIRONMENTAL DETAIL

CLEANOUT STAKE



Diagram illustrating the placement of filter media and stakes in a roadbed cross-section. The diagram shows a roadbed with a 12" depth. A layer of filter media is placed on top of the roadbed, with a 18" minimum thickness. The filter media is made of 16 gauge wire, 10" O.C. (On Center). The filter media is placed over a layer of roadbed material. The roadbed material is shown with a hatched pattern. The filter media is shown with a cross-hatched pattern. The diagram also shows a layer of 2"x2" hardwood stakes, 10" O.C., placed on top of the filter media. The stakes are placed at a 5' angle from the roadbed. The diagram is labeled with dimensions and materials: 12", WITH 16 GAUGE WIRE, 10" O.C., BLOWN/PLACED FILTER MEDIA, REMOVE BRUSH, WOODY DEBRIS, 18" MINIMUM, 2"x2" HARDWOOD STAKE, 10" O.C., STAKES 5' FROM ANGLED STAKES, UNDISTURBED GROUND, and STAKING.

NOTES:

1. EACH COMPOST FILTER SOCK (OFS) DETAIL FOR MORE INFORMATION. SOCK MATERIAL SHALL MEET THE STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.
2. COMPOST SOCK SEDIMENT TRAPS SHALL NOT EXCEED THREE SIZES IN HEIGHT AND SHALL BE STACKED IN PYRAMIDAL FORM AS SHOWN ABOVE. MINIMUM TRAP HEIGHT IS ONE 24" DIAMETER SOCK. ADDITIONAL STORAGE MAY BE PROVIDED BY MEANS OF AN EXCAVATED SUMP 12" DEEP EXTENDING 1 TO 3 FEET UPSLOPE OF THE SUMP, ALONG THE LOWER SIDE OF THE TRAP.
3. THE MAXIMUM TRIBUTARY DRAINAGE AREA SHALL NOT EXCEED 10 ACRES. SINCE COMPOST SOCKS ARE "FLOW-THROUGH," NO SPILLWAY IS REQUIRED.
4. 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 TRAPS.
5. PHOTODEGRADABLE AND BIOLOGICALLY DEGRADABLE SOCKS SHALL NOT BE USED FOR MORE THAN 1 YEAR.
6. DESIGN NOTES:
 - A. COMPOST SOCK SEDIMENT TRAP SHALL BE SIZED TO PROVIDE 2,000 CUBIC FEET OF STORAGE CAPACITY WITH 12" FREEBOARD FOR EACH ADDITIONAL TRIBUTARY TO THE TRAP.
 - B. MINIMUM SOCK WIDTH IS EQUIVALENT TO THE HEIGHT.
 - C. MAXIMUM ACCUMULATION SHALL NOT EXCEED 1/3 THE TOTAL HEIGHT OF THE TRAP.
 - D. SOCKS SHALL BE OF LARGER DIAMETER AT THE BASE OF THE TRAP AND DECREASE IN DIAMETER FOR SUCCESSIVE LAYERS INDICATED TO THE LEFT.
 - E. 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.

N.O.	DATE	BY	REVISION DESCRIPTION	N.O.	CHK.	APP.

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
STANDARD ENVIRONMENTAL DETAIL

COMPOST SOCK SEDIMENT TRAP




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

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

CWC


CLEAN WATER CROSSING





SUZANNE KING REG NO. PE 08275

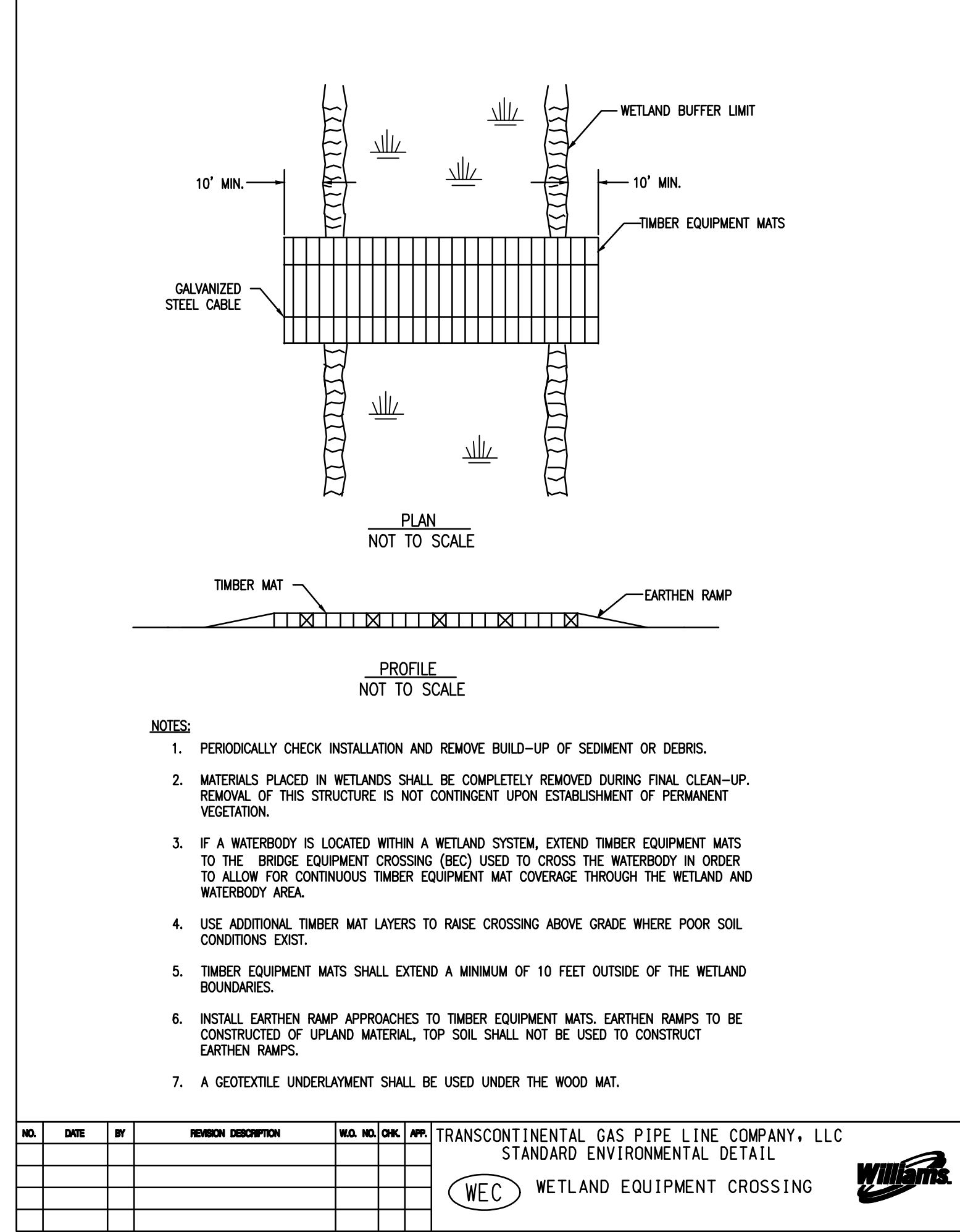
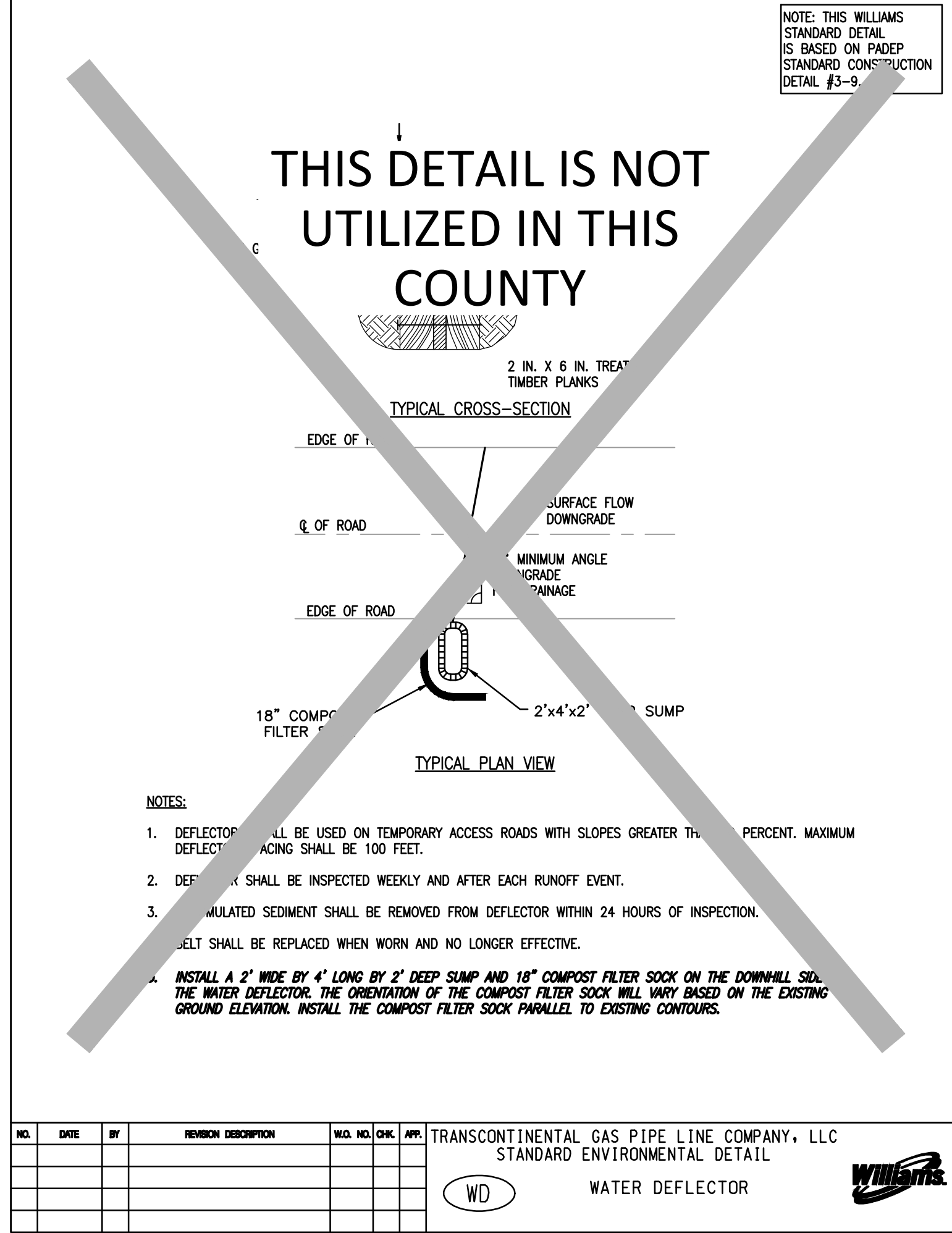
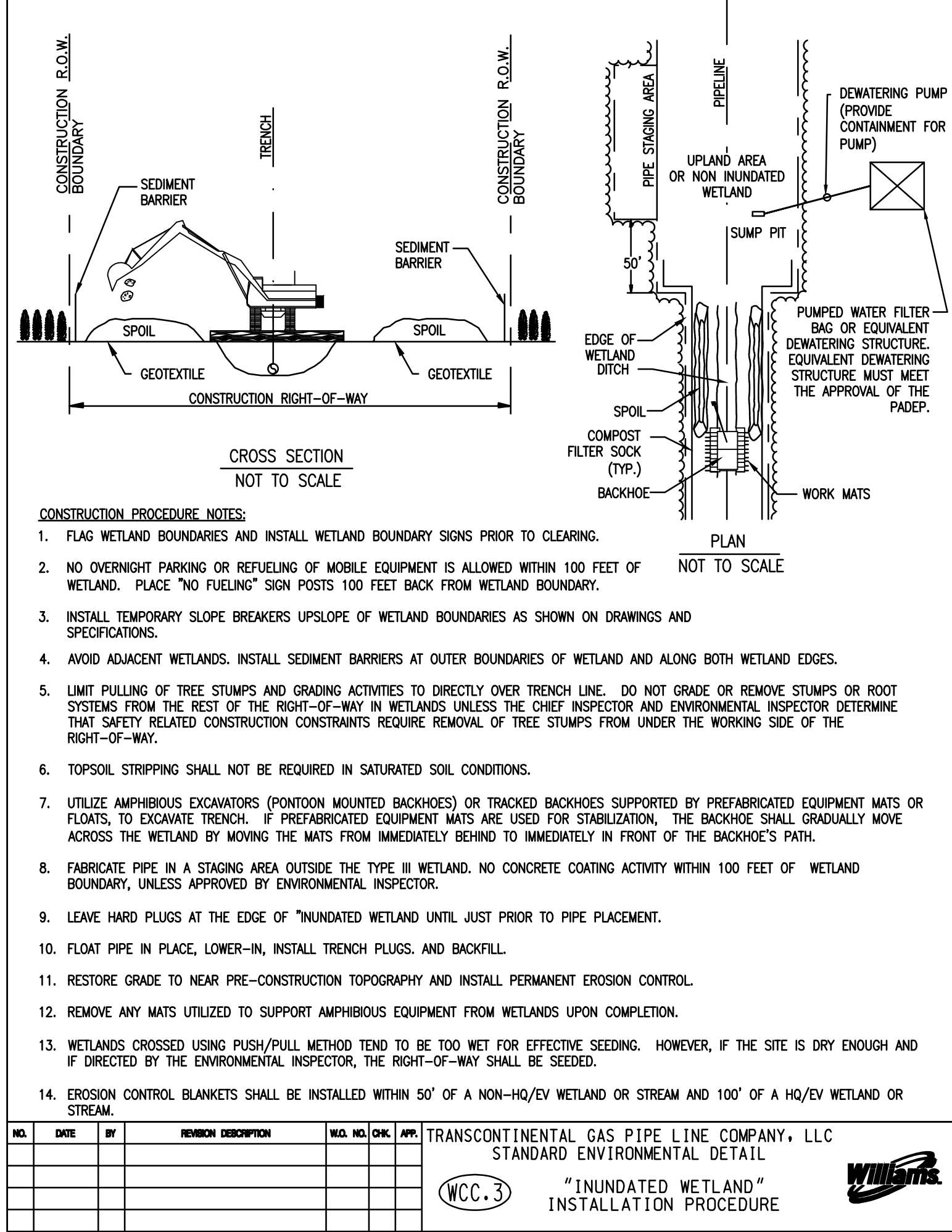
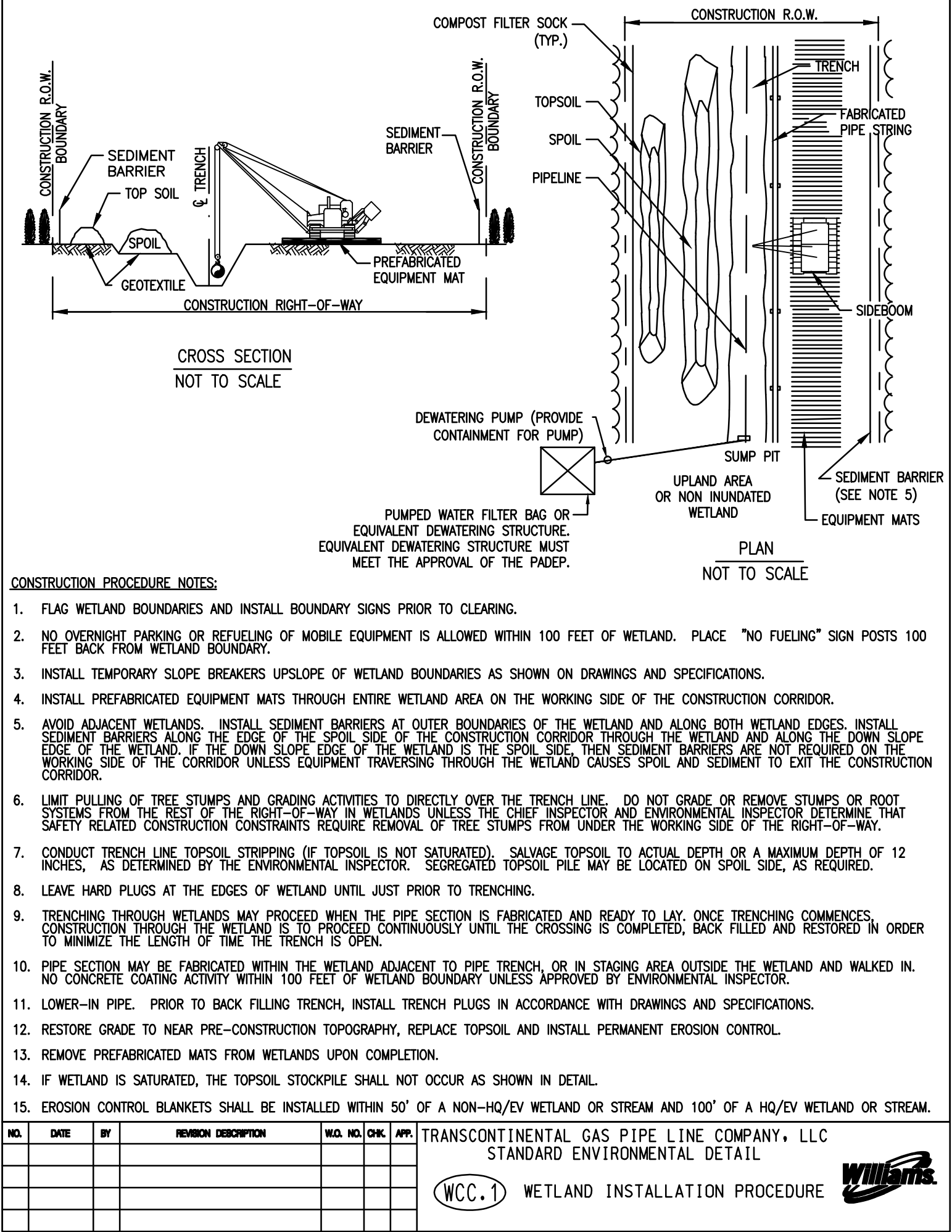
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Architecture
Engineering
Environmental
Land Surveying
Companies




REVISIONS						TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC	
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	ATLANTIC SUNRISE PROJECT
0	08/28/2015	BL	ISSUED FOR PADEP SUBMITTAL	W0572365	JLK	SMK	BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W0572365	JLK	SMK	
2	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0572365	JLK	SMK	
3	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0572365	JLK	SMK	
4	AUG. 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #3	W0572365	JLK	SMK	
							BEST MANAGEMENT PRACTICES DETAILS
							
DRAWN BY: ELZ DATE: 05/15/16 ISSUED FOR BID:						SCALE:	
CHECKED BY: JLK DATE: 07/02/15 ISSUED FOR CONSTRUCTION:						REVISION: 4	
APPROVED BY: SMK DATE: 07/08/15 DRAINING NUMBER: ASR-BMP						SHEET 2 OF 11	
W.O.:							



Williams
GAS PIPELINE

SHEET 2
OF 11



 SUZANNE KING REG. NO. PE 082757 	REVISIONS						TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC ATLANTIC SUNRISE PROJECT			
	NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	BEST MANAGEMENT PRACTICES AND QUANTITIES PLAN SET		
	0	08/28/2015	BL	ISSUED FOR PADEP SUBMITTAL	W0572385	JLK	SMK	BEST MANAGEMENT PRACTICES DETAILS		
	1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W0572385	JLK	SMK	DRAWN BY: ELZ DATE: 05/15/15 ISSUED FOR BID: SCALE:		
	2	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0572385	JLK	SMK	CHECKED BY: JLK DATE: 07/02/15 ISSUED FOR CONSTRUCTION: REVISION: 4		
	3	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0572385	JLK	SMK	APPROVED BY: SMK DATE: 07/08/15 DRAWING NUMBER: ASR-BMP SHEET 11		
	4	AUG. 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #3	W0572385	JLK	SMK	W.O.:		
								OF 11		

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)	Wetland (Cowardin Classification)	Limits of Disturbance (LOD) Adjustments (Supporting Information for Technical Deficiency #29)	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)
Wetland	N/A	W-T02-15001A/ W-T02-15001C	0.20	None	N/A	N/A	PEM, PFO	LOD has been reduced to 75' to minimize impacts to W-T02-15001.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this wetland.	N/A	N/A
Stream	UNT to Fishing Creek	WW-T91-15001	0.21	CWF, MF	Perennial	Wild Trout Waters	R3	WW-T91-15001 encroaches within the southern margin of the LOD. The LOD at this location was reduced to 75 feet to minimize impacts to the adjacent wetland W-T02-15001A. Further 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 in this location to parallel existing ROW and to avoid crossing the stream channel with the pipeline.	SBR with SC150 fabric	50
Wetland	N/A	W-T02-15002	0.55	None	N/A	N/A	PEM	The LOD has been modified to eliminate impacts to W-T02-15002.	This feature is no longer impacted based on LOD reductions.	N/A	N/A
Wetland	N/A	W-T02-15003A/ W-T02-15003C	0.59	EV	N/A	N/A	PEM, PFO	LOD has been reduced to 80' to minimize impacts to W-T02-15003. Further LOD reduction was not possible due to the adjacent stream.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this wetland.	N/A	N/A
Stream	UNT to Fishing Creek	WW-T02-15002	0.59	CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T02-15002.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with SC150 fabric	50
Wetland	N/A	W-T02-15004A/ W-T02-15004C	M-0155 0.08	None	N/A	N/A	PEM, PFO	LOD has been reduced to 75' to minimize impacts to W-T02-15004. The LOD reduction also results in the elimination of impacts to the forested portion of the wetland (W-T02-15004C).	The pipeline was routed in this location to parallel an existing pipeline ROW. The route was adjusted in the field to crossover the existing pipeline in order to cross the wetland at a perpendicular angle and to avoid the forested portion of the wetland (W-T02-15004C).	N/A	50
Stream	UNT to Fishing Creek (WW-T02-15004)	WW-T02-15004	M-0155 0.10	CWF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 85' to minimize impacts to WW-T02-15004.	The pipeline was routed in this location to parallel an existing pipeline ROW. The route was adjusted in the field to crossover the existing pipeline in order to cross the stream at a perpendicular angle in an area where the riparian corridor has been partially cleared by the existing pipeline.	SBR with SC150 fabric	50
Wetland	N/A	W-T02-15005	1.12	None	N/A	N/A	PEM	W-T02-15005 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 crossover the existing pipeline from the north to the south side. The crossover was necessary to align the pipeline for a perpendicular crossing of stream WW-T02-15007. Workspace requirements for the crossover make avoidance of W-T02-15005 infeasible. Additionally, the crossover location was selected to avoid impact to stream WW-T91-15003.	N/A	N/A
Stream	UNT to Fishing Creek	WW-T02-15006	1.16	CWF, MF	Perennial	Wild Trout Waters	R3	Per justification provided for wetland W-T02-15006 crossing, LOD reduction not possible at this crossing.	The pipeline was routed at this location to avoid impacts to stream WW-T91-15003 and avoid impacts to the forested portions of wetland W-T02-15006. The pipeline was also routed to maintain collocation with the existing pipeline.	SBR with SC150 fabric	50
Wetland	N/A	W-T02-15006A/ W-T02-15006A-1	1.17	EV	N/A	N/A	PEM	LOD was adjusted to avoid impacting the forested portion of this wetland (W-T02-15006C). Full LOD reduction to 75' was not possible because additional workspace is needed to successfully complete the road crossing of Camp Lavigne Rd. due to the confined workspace between the road and environmental features. The additional workspace will provide storage for spoil within the wetland and will result in less impact than transporting material to a stockpile area outside the wetland.	The pipeline was routed at this location to avoid impacts to stream WW-T91-15003 and avoid impacts to the forested portions of wetland W-T02-15006. The pipeline was also routed to maintain collocation with the existing pipeline.	N/A	N/A
Stream	UNT to Fishing Creek	WW-T92-15001B	1.26	CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 75' to minimize impacts to WW-T92-15001B.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with SC150 fabric	50
Wetland	N/A	W-T02-15007	1.26	EV	N/A	N/A	PFO	LOD has been reduced to 75' to minimize impacts to W-T02-15007.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this wetland.	N/A	N/A
Stream	Fishing Creek	WW-T02-15007	1.31	CWF, MF	Perennial	Approved Trout Waters; Wild Trout Waters	R3	Full ROW width needed to complete a safe and efficient crossing of this large stream.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with SC150 fabric	50
Stream	UNT to Fishing Creek	WW-T02-15008	1.99	CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T02-15008.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with SC150 fabric	50
Wetland	N/A	W-T02-15008A/ W-T02-15008B/ W-T02-15008C	2.12	None	N/A	N/A	PEM, PSS, PFO	LOD has been modified to eliminate impacts to W-T02-15008.	This feature is no longer impacted based on LOD reductions.	N/A	N/A
Stream	UNT to Coles Creek	WW-T91-15004	M-0086 0.21	CWF, MF	Intermittent	Wild Trout Waters	R4	Full ROW width needed to accommodate adjacent P's.	The pipeline was rerouted in this location to deviate from the existing ROW in order to avoid a documented population of northeastern bluntnose, a threatened species, in wetland W-T02-15008. The pipeline crosses perpendicular to stream WW-T91-15004 on a route to resume collocation with the existing pipeline.	SBR with SC150 fabric	50
Wetland	N/A	W-T02-15009A/ W-T02-15009C	2.26	None	N/A	N/A	PEM, PFO	LOD has been reduced to 75' for the portion of W-T02-15009 that crosses the full width of the LOD. Additional LOD reduction for the portion of the wetland encroaching on the northern end of the LOD would only be possible in the adjacent upland area and would not result in additional minimization of wetland impacts.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this wetland.	N/A	N/A
Stream	UNT to Coles Creek	WW-T02-15009	2.29	CWF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 75' to minimize impacts to WW-T02-15009.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with SC150 fabric	50
Stream	Hess Hollow	WW-T02-15010	2.87	HQ-CWF	Perennial	Class A Wild Trout Waters;	R3	LOD has been reduced to 75' to minimize impacts to WW-T02-15010.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with SC150 fabric	100
Stream	UNT to Hess Hollow	WW-T92-15001	2.88	HQ-CWF	Perennial	Class A Wild Trout Waters; Wild Trout Waters	R3	LOD has been reduced to 75' to minimize impacts to WW-T02-15001.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with SC150 fabric	100
Wetland	N/A	W-T02-15010A/ W-T02-15010C	2.89	EV	N/A	N/A	PEM, PFO	LOD has been reduced to 75' to minimize impacts to W-T02-15010.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this wetland.	N/A	N/A
Stream	UNT to Hess Hollow	WW-T02-15011	2.92	HQ-CWF	Perennial	Class A Wild Trout Waters; Wild Trout Waters	R3	LOD has been reduced to 75' to minimize impacts to WW-T02-15011.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.	SBR with SC150 fabric	100
Wetland	N/A	W-T02-15013A	3.33	EV	N/A	N/A	PEM	W-T02-15013A 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 in this location to parallel existing ROW and provides a perpendicular crossing of this wetland.		

E&S WORKSHEET #1

Compost Filter Sock

PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE
 LOCATION: JACKSON AND SUGARLOAF TOWNSHIPS, COLUMBIA COUNTY
 PREPARED BY: ESS DATE: 03/25/2017
 CHECKED BY: AJB DATE: 04/03/2017

MILEPOST NO.	Dia. In.	BEGIN STA.	END STA.	TYPE	SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
0	12	7+75	to 8+00	Road	2	90
12	8+00	to 8+50			2	164
12	8+50	to 12+00		Wetland/Stream	2	107
24	11+75	to 19+25			6	336
32	19+50	to 22+75			4	706
24	23+25	to 30+50			8	318
12	28+75	to 29+25		Wetland	4	80
12	30+75	to 31+75		Wetland	2	125
32	31+50	to 33+25			2	1256
24	33+50	to 40+25			2	869
24	41+50	to 44+75			5	442
M-0155	24	0+00	to 2+75		13	140
18	2+75	to 3+00			13	40
24	4+00	to 5+50		Wetland/Stream	2	56
12	4+75	to 5+50			15	31
18	5+75	to 6+25			8	40
32	6+25	to 55+00			14	260
24	55+00	to 57+25			13	256
12	57+25	to 59+25		Wetland	3	169
12	58+75	to 60+50			2	319
12	60+00	to 60+50		Road	4	143
12	60+75	to 60+75		Road	4	116
12	60+75	to 62+00		Wetland/Stream	4	109
12	62+00	to 62+00		Road	2	350
12	62+25	to 62+25		Road	2	350
12	62+25	to 63+00		Wetland/Stream	2	82
12	62+50	to 66+00			2	220
12	65+50	to 66+25		Road	2	255
12	65+75	to 67+75		Wetland/Stream/Road	2	209
12	67+75	to 78+25		Stream/Road	2	131

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

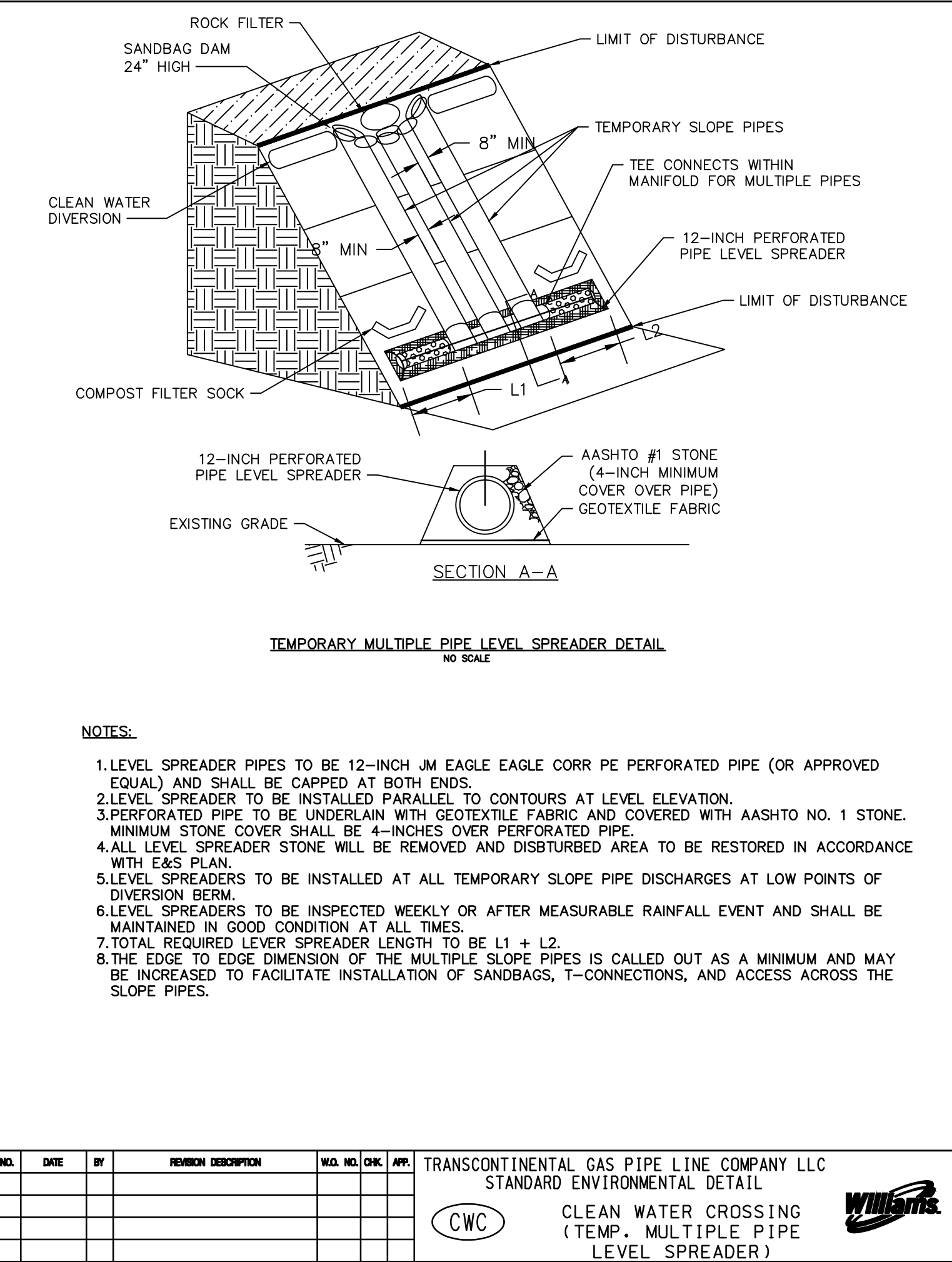
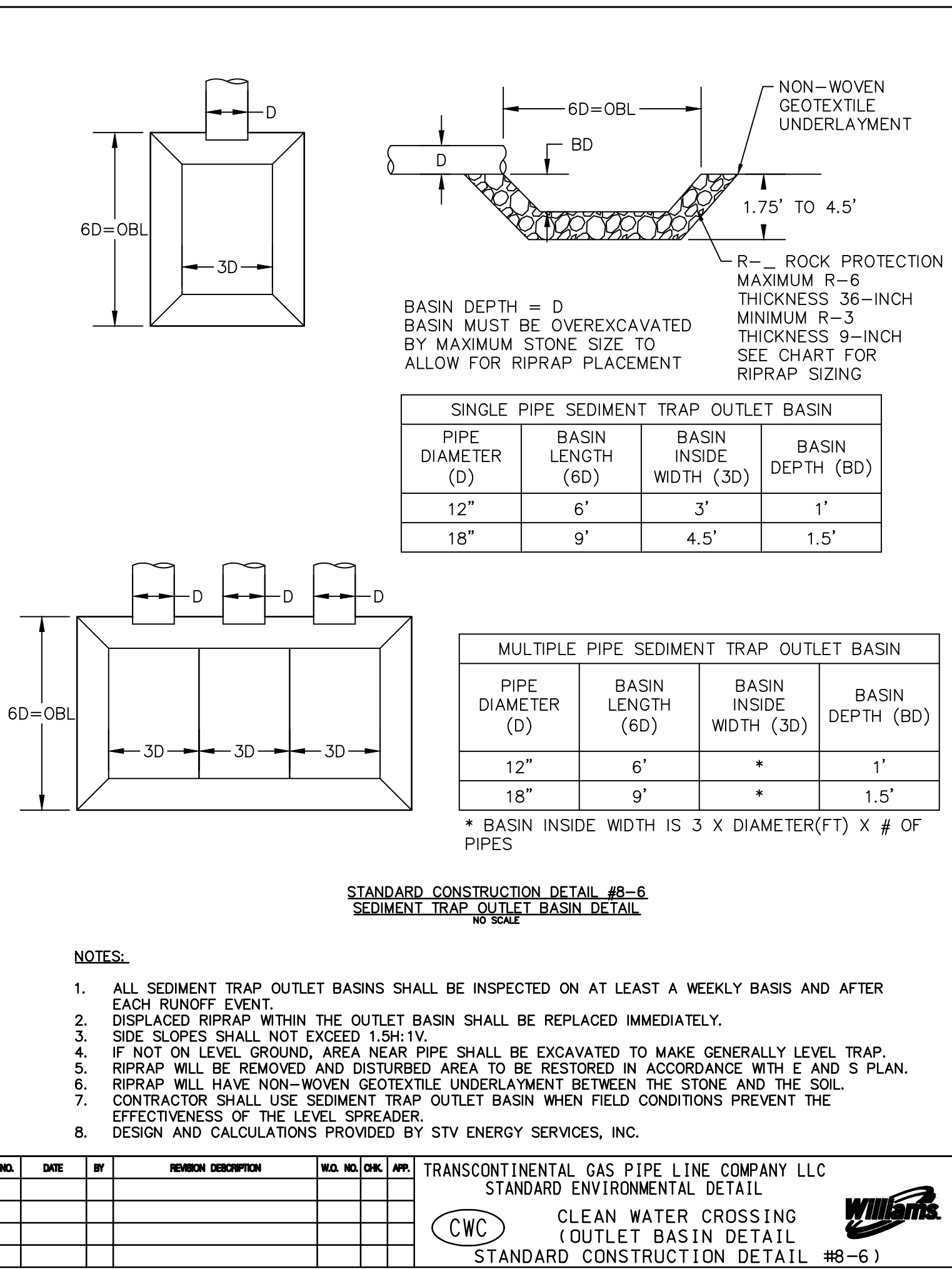
E&S WORKSHEET #1

Compost Filter Sock

PROJECT NAME: ATLANTIC SUNRISE PROPOSED GAS PIPELINE
 LOCATION: JACKSON AND SUGARLOAF TOWNSHIPS, COLUMBIA COUNTY
 PREPARED BY: ESS DATE: 03/25/2017
 CHECKED BY: AJB DATE: 04/03/2017

MILEPOST NO.	Dia. In.	BEGIN STA.	END STA.	TYPE	SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
1	12	69+75	to 75+00		2	395
12	74+75	to 79+75			2	197
12	78+00	to 82+25		Road	3	83
24	82+25	to 88+25			10	262
18	90+00	to 90+50			8	200
32	90+50	to 92+75			7	432
12	92+75	to 96+75			7	179
32	96+75	to 102+50			14	263
12	102+75	to 104+50			17	77
12	103+25	to 103+50		Road	9	88
18	104+50	to 105+25		Stream	19	84
2	24	105+25	to 107+25		21	88
M-0086	12	107+25	to 10+75		7	186
24	10+75	to 11+50		Wetland/Stream	20	170
32	11+50	to 119+75			26	145
12	119+50	to 119+50		Road	8	14
12	119+75	to 123+00		Wetland/Stream	13	86
12	129+50	to 134+25			8	115
18	135+00	to 139+00			5	344
12	139+00	to 139+75			4	224
12	139+75	to 140+25		Road	3	181
12	140+25	to 143+75			3	130
24	144+25	to 148+75			7	303
12	148+75	to 150+25		Road	3	141
18	149+00	to 151+50			21	25
18	150+25	to 154+75		Wetland/Stream	11	160
3	24	155+00	to 170+75		7	322
12	171+75	to 172+00		Road	2	173
18	174+75	to 178+00		Wetland/Stream	7	228
24	177+25	to 179+00			3	761

Reroute Area
SOURCE: Pennsylvania



**Columbia County - North
Temporary Perforated Pipe Level Spreader Calculations**

MILE POST	DIVERSION ID	NOMINAL SLOPE PIPE DIAMETER (IN)	Q (CFS)	AVAILABLE STATIC HEAD (FT)	MAJOR LOSSES (DUE TO FRICTION)	MINOR HEAD LOSSES (FT)	EFFECTIVE HEAD (FT)	LEVEL SPREADER PIPE DIAMETER (IN)	PERFORATION DIAMETER (IN)	NUMBER OF PERFORATIONS PER ROW	ORIFICE AREA PER FOOT (IN ² /FT)	ROW SPACING (IN)	ORIFICE COEFFICIENT (C)	LEVEL SPREADER CAPACITY PER FOOT OF LENGTH (CFS/FT)	REQUIRED LENGTH (FT)	NOMINAL LENGTH (FT)	OVERALL LEVEL SPREADER CAPACITY (CFS)	Downstream Slope (H/V)	Tc (min.)	Tc (sec.)	Velocity - sheetflow (ft/s)
0	0.01	12	5.92	8	1.557	0.529	5.913	12	0.375	6	4.10	1.94	0.61	0.339	17.47	20	6.78	0.06	4.683	280.963	0.356
2	2.01	12	1.6	6	0.138	0.047	5.815	12	0.375	6	4.10	1.94	0.61	0.336	4.76	5	1.68	0.14	3.842	230.500	0.434
3	3.01	12	6.72	7	1.969	0.669	4.362	12	0.375	6	4.10	1.94	0.61	0.291	23.09	25	7.28	0.08	4.378	262.698	0.381
	3.02	12	6.24	9	1.717	0.584	6.7	12	0.375	6	4.10	1.94	0.61	0.361	17.30	20	7.22	0.13	3.909	234.526	0.426
4	4.01	12	5.12	25	1.191	0.405	23.4	12	0.375	6	4.10	1.94	0.61	0.674	7.59	10	6.74	0.2	3.534	212.069	0.472
	4.02	12	5.76	17	1.48	0.503	15.02	12	0.375	6	4.10	1.94	0.61	0.540	10.66	15	8.10	0.25	3.355	201.296	0.497
	4.03A	12	4.96	13	1.123	0.382	11.5	12	0.375	6	4.10	1.94	0.61	0.473	10.50	15	7.09	0.22	3.457	207.399	0.482
	4.03B	12	5.44	13	1.332	0.453	11.22	12	0.375	6	4.10	1.94	0.61	0.467	11.65	15	7.00	0.22	3.457	207.399	0.482
	4.03C	12	7.20	13	2.237	0.761	10	12	0.375	6	4.10	1.94	0.61	0.441	16.33	20	8.82	0.2	3.534	212.069	0.472
	4.04A	12	8.00	13	2.718	0.924	9.357	12	0.375	6	4.10	1.94	0.61	0.426	18.76	20	8.53	0.2	3.534	212.069	0.472
	4.04B	12	4.00	11	0.754	0.256	9.99	12	0.375	6	4.10	1.94	0.61	0.441	9.08	10	4.41	0.19	3.577	214.626	0.466
	4.04C	12	9.20	10	3.52	1.197	5.283	12	0.375	6	4.10	1.94	0.61	0.320	28.72	30	9.61	0.16	3.724	223.420	0.448
	4.04D	12	7.84	7	2.619	0.89	3.491	12	0.375	6	4.10	1.94	0.61	0.260	30.11	35	9.11	0.15	3.780	226.814	0.441
	4.05A	12	8.00	8	2.718	0.924	4.357	12	0.375	6	4.10	1.94	0.61	0.291	27.50	30	8.73	0.13	3.909	234.526	0.426
	4.05B	12	7.52	7	2.424	0.824	3.751	12	0.375	6	4.10	1.94	0.61	0.270	27.86	30	8.10	0.12	3.983	238.553	0.418
	4.05C	12	5.92	5	1.557	0.529	2.913	12	0.375	6	4.10	1.94	0.61	0.238	24.89	25	5.95	0.11	4.064	243.861	0.410
	4.05D	12	5.12	12	1.191	0.405	10.4	12	0.375	6	4.10	1.94	0.61	0.450	11.39	15	6.74	0.08	4.378	262.698	0.381
	4.06	12	5.76	9	1.48	0.503	7.016	12	0.375	6	4.10	1.94	0.61	0.369	15.60	20	7.38	0.11	4.064	243.861	0.410

* 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.

TABLE 4: WETLANDS CROSSED BY CPLN PIPELINE IN COLUMBIA COUNTY

Wetland ID	Milepost	County	Township	Wetland Classes Impacted
W-T02-15001A	0.19	Columbia	Sugarloaf	PEM
W-T02-15001C	0.21	Columbia	Sugarloaf	PFO
W-T02-15002	0.55	Columbia	Sugarloaf	PEM
W-T02-15003C	0.59	Columbia	Sugarloaf	PFO
W-T02-15003A	0.59	Columbia	Sugarloaf	PEM
W-T02-15004A	M-0155 0.08	Columbia	Sugarloaf	PEM
W-T02-15004G	0.93	Columbia	Sugarloaf	PFO
W-T02-15005	1.12	Columbia	Sugarloaf	PEM
W-T02-15006A /W-T02-15006A-1	1.17	Columbia	Sugarloaf	PEM
W-T02-15007	1.26	Columbia	Sugarloaf	PEM
W-T02-15009C	2.29	Columbia	Sugarloaf	PFO
W-T02-15009A	2.31	Columbia	Sugarloaf	PEM
W-T02-15010C / W-T02-15010C-1 / W-T02-15010C-2	2.89	Columbia	Sugarloaf	PFO
W-T02-15010A / W-T02-15010A-1	2.90	Columbia	Sugarloaf	PEM
W-T02-15013A	3.33	Columbia	Sugarloaf	PEM
W-T02-15014C-2	3.77	Columbia	Sugarloaf	PFO
W-T02-15014A /W-T02-15014A-1 /W-T02-15014A-2	3.78	Columbia	Sugarloaf	PEM
W-T02-15015C	3.96	Columbia	Sugarloaf	PFO
W-T02-15015A	3.99	Columbia	Sugarloaf	PEM
W-T02-15012C / W-T02-15012C-2	4.15	Columbia	Sugarloaf	PFO
W-T02-15012A	4.21	Columbia	Sugarloaf	PEM
W-T02-15016C	4.66	Columbia	Sugarloaf	PFO
W-T02-15016A / W-T02-15016A-1	4.66	Columbia	Sugarloaf	PEM
W-T02-15016A	4.66	Columbia	Sugarloaf	PEM

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

TABLE 3: WATERBODIES CROSSED BY CPLN PIPELINE IN COLUMBIA 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-T35-13001	UNT to Deerlick Run(WW-T35-13001)	111.59	Columbia	Mount Pleasant	Perennial	CWF, MF	Wild Trout Waters (Under Review)	Dam-and-Pump	January 1 through September 30
WW-T91-15001	UNT to West Creek(WW-T91-15001)	0.21	Columbia	Sugarloaf	Perennial	CWF, MF	Wild Trout Waters	N/A	January 1 through September 30
WW-T02-15002	UNT to Fishing Creek(WW-T02-15002)	0.59	Columbia	Sugarloaf	Perennial	CWF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T02-15004	UNT to Fishing Creek(WW-T02-15004)	M-0155 0.10	Columbia	Sugarloaf	Intermittent	CWF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T02-15006	UNT to Fishing Creek(WW-T02-15006)	1.16	Columbia	Sugarloaf	Perennial	CWF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T92-15001B	UNT to Fishing Creek(WW-T92-15001B)	1.26	Columbia	Sugarloaf	Perennial	CWF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T02-15007	Fishing Creek(WW-T02-15007)	1.31	Columbia	Sugarloaf	Perennial	CWF, MF	Approved Trout Waters; Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T02-15008	UNT to East Branch Fishing Creek(WW-T02-15008)	1.99	Columbia	Sugarloaf	Perennial	HQ-CWF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T91-15004	UNT to Coles Creek(WW-T91-15004)	M-0086 0.21	Columbia	Sugarloaf	Intermittent	CWF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T02-15009	UNT to Coles Creek(WW-T02-15009)	2.30	Columbia	Sugarloaf	Intermittent	CWF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T02-15010	Hess Hollow(WW-T02-15010)	2.87	Columbia	Sugarloaf	Perennial	HQ-CWF	Class A Wild Trout Waters;	Dam-and-Pump	April 2 through September 30
WW-T92-15001	UNT to Hess Hollow(WW-T92-15001)	2.88	Columbia	Sugarloaf	Perennial	HQ-CWF	Class A Wild Trout Waters; Wild Trout Waters	Dam-and-Pump	April 2 through September 30
WW-T02-15011	UNT to Hess Hollow(WW-T02-15011)	2.92	Columbia	Sugarloaf	Perennial	HQ-CWF	Class A Wild Trout Waters; Wild Trout Waters	Dam-and-Pump	April 2 through September 30
WW-T02-15013	UNT to Coles Creek(WW-T02-15013)	3.35	Columbia	Sugarloaf	Perennial	CWF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T02-15014	Ashelman Run(WW-T02-15014)	3.82	Columbia	Sugarloaf	Perennial	CWF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T02-15012C	UNT to Coles Creek(WW-T02-15012C)	4.12	Columbia	Sugarloaf	Perennial	HQ-CWF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T02-15012	Coles Creek(WW-T02-15012)	4.13	Columbia	Sugarloaf	Perennial	HQ-CWF, MF	Wild Trout Waters	Dam-and-Pump	January 1 through September 30
WW-T92-15002	UNT to Coles Creek(WW-T92-15002)	4.22	Columbia	Sugarloaf	Intermittent	HQ-CWF, MF	Wild Trout Waters	N/A	January 1 through September 30
WW-T93-15001	UNT to Marsh Run(WW-T93-15001)	4.80	Columbia	Sugarloaf	Intermittent	CWF, MF	Wild Trout Waters	N/A	January 1 through September 30

Key:
CWF = Coldwater Fishes
MF = Migratory Fishes
UNT = Unnamed Tributary

TABLE 2: TEMPORARY CLEAN WATER DIVERSION SUMMARY

TEMPORARY DIVERSION SUMMARY - COLUMBIA COUNTY, PENNSYLVANIA																				
MILE POST	DIVERSION										WATERBODY**					TEMPORARY PIPE				
	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	
0	0.01	FILTER SOCK	0	1.6	7.9	0	5	C125	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	6	5.92	12	1	
2	2.01	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	7	1.6	12	1	
3	3.01	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	5	6.72	12	2	
	3.02	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	9	6.24	12	2	
4	4.01	SWALE	2	2	10	2	2	C125	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	23	5.12	12	1	
	4.02	SWALE	2	2	10	2	2	S75	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	20	5.76	12	1	
	4.03A	FILTER SOCK	0	1.6	7.1	0	4.5	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	16	4.96	12	1	
	4.03B	SWALE	2	2	10	2	2	S75	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	16	5.44	12	1	
	4.03C	SWALE	2	2	10	2	2	S75	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	15	7.20	12	2	
	4.04A	SWALE	2	2	10	2	2	S75	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	14	8.00	12	2	
	4.04B	SWALE	2	2	10	2	2	S75	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	12	4.00	12	1	
	4.04C	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	8	18.40	12	4	
	4.04D	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	11	7.84	12	2	
	4.05A	SWALE	2	2	10	2	2	S75	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	12	8.00	12	2	
	4.05B	SWALE	2	2	10	2	2	S75	UNREINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	8	7.52	12	2	
	4.05C	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	8	5.92	12	1	
	4.05D	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	8	5.12	12	1	
	4.06	SWALE	2	2	10	2	2	SC150	REINFORCED VEGETATION	TEMP. PIPE	-	-	-	-	-	7	5.76	12	1	