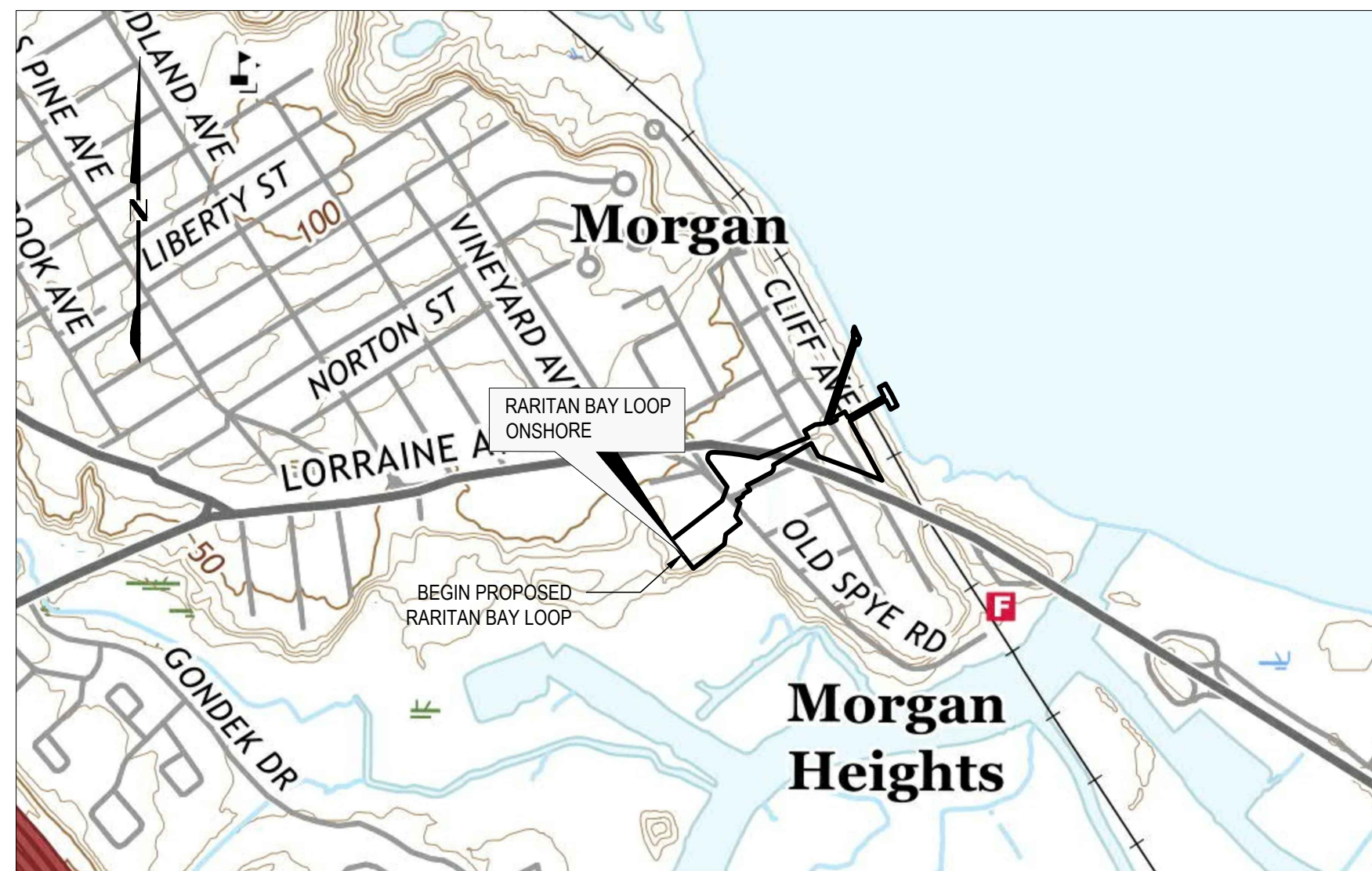
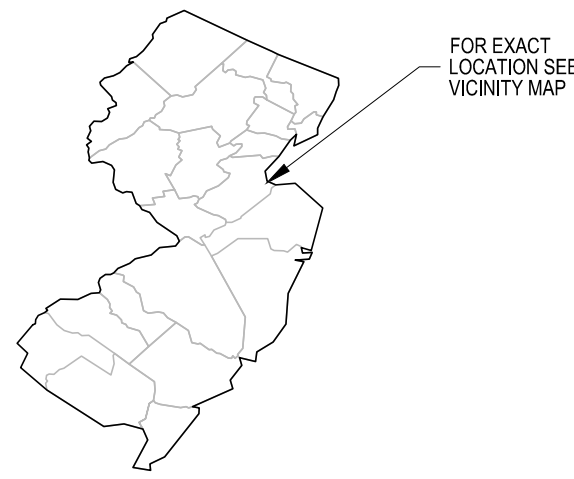


# SOIL EROSION AND SEDIMENT CONTROL PLAN NORTHEAST SUPPLY ENHANCEMENT PROJECT PROPOSED 26" RARITAN BAY LOOP - ONSHORE 0.26 MI. - M.P. 11.90 TO M.P. 12.16 MIDDLESEX COUNTY, NEW JERSEY



VICINITY MAP

N.T.S.



STATE OF  
NEW JERSEY

## OWNER / APPLICANT

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC  
(TRANSCO)  
P.O. BOX 1396  
2800 POST OAK BLVD.  
HOUSTON, TX 77056

CONTACT: KAREN OLSON  
PERMIT AGENT  
(713) 215-4232

## PLAN PREPARER

AECOM CORPORATION  
625 WEST RIDGE PIKE, STE. E-100  
CONSHOHOCKEN, PA 19428

CONTACT: KEVIN MCKEON, PE  
(610) 832-7366

## PROJECT DESCRIPTION

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC. (TRANSCO) IS EXPANDING SEGMENTS OF ITS INTERSTATE NATURAL GAS PIPELINE SYSTEM TO PROVIDE ADDITIONAL FIRM TRANSPORTATION SERVICE CAPACITY. THE NEW PIPELINE WILL PROVIDE TRANSPORTATION OF ADDITIONAL GAS QUANTITIES TO CUSTOMERS IN THE REGION.

THIS EROSION AND SEDIMENT CONTROL PLAN COVERS THE LAND DISTURBANCE NECESSARY FOR CONSTRUCTION OF THE ONSHORE PORTION OF THE "RARITAN BAY LOOP", CONSISTING OF 0.16 MILES OF 26" PIPELINE IN MIDDLESEX COUNTY, NEW JERSEY. THE ONSHORE PORTION OF THE RARITAN BAY LOOP WILL BEGIN AT M.P. 12.00 AND END AT M.P. 12.16. THE PIPELINE CONSTRUCTION IS SCHEDULED TO BEGIN IN THE FIRST QUARTER OF 2019 AND END IN THE SECOND QUARTER OF 2020.

THE PROJECT WORK WILL CONSIST OF UNLOADING AND STORING PIPE IN THE PROJECT VICINITY AS IT IS RECEIVED FROM THE PIPE MILL; CLEARING AND GRADING THE PIPELINE RIGHT-OF-WAY; HAULING PIPE TO THE RIGHT-OF-WAY; WELDING, COATING, AND INSPECTING THE PIPELINE; EXCAVATING THE TRENCH; LOWERING THE PIPELINE IN PLACE; BACKFILLING THE EXCAVATIONS; PERFORMING A HYDROSTATIC PRESSURE TEST ON THE COMPLETED PIPELINE; AND RESTORING THE RIGHT-OF-WAY AND DISTURBED AREAS. THE PROJECT WILL REQUIRE TEMPORARY FACILITIES TO BE ESTABLISHED FOR THE DURATION OF THE PROJECT FOR USE AS A COMPANY INSPECTION OFFICE, CONTRACTOR OFFICE, VEHICLE PARKING, EQUIPMENT PARKING AND MAINTENANCE YARD, PIPE STORAGE YARDS AND CONSTRUCTION ACCESS ROADS.

THE AREA ALONG THE PROPOSED PIPELINE WILL NOT BE ALTERED BY THE ADDITION OF THE PIPELINE. AREAS WITHIN TRANSCO PROPERTIES WILL BE RESTORED TO PRECONSTRUCTION CONDITIONS. THE PROJECT AREA TERRAIN IS SLIGHTLY HILLY. ELEVATIONS RANGE FROM ZERO TO 50 FT.

THE ADJACENT LANDS ARE MOSTLY RESIDENTIAL. LOCATIONS EAST (DOWNSTREAM) OF MP 12.00 WILL BE INSTALLED USING THE HORIZONTAL DIRECTIONAL DRILLING METHOD. SURFACE DISTURBANCE WILL NOT BE REQUIRED EXCEPT AT THE 26" PIPELINE AND CP POWER CABLE HDD ENTRY POINTS. OTHER ONSHORE WORKSPACE AREAS WILL BE USED TO SUPPORT FOOT TRAFFIC ASSOCIATED WITH INSTALLING TEMPORARY TRACKING WIRES.

ALL DISTURBED WILL BE RESTORED TO PRE-CONSTRUCTION CONTOURS, VEGETATION AND DRAINAGE PATTERNS. FINAL DRAINAGE PATTERNS WILL FOLLOW NATURAL COURSES. LAND ACQUIRED FOR TEMPORARY USE WILL BE STABILIZED ACCORDING TO THIS PLAN AND RETURNED TO LAND OWNER CONTROL. THIS PROJECT DOES NOT INCLUDE CONSTRUCTION OF NEW BUILDINGS OR IMPROVISED GROUND COVER.

THIS EXPANSION PROJECT IS REGULATED BY THE U.S. DEPARTMENT OF ENERGY, FEDERAL ENERGY REGULATORY COMMISSION (FERC), IN ADDITION TO STATE AND LOCAL REQUIREMENTS. THIS EROSION AND SEDIMENT CONTROL PLAN INCLUDES MITIGATION MEASURES FOR PIPELINE CONSTRUCTION SPECIFIED BY THE FERC IN ITS PLAN AND PROCEDURES DOCUMENTS. UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN MAY 2013 AND WETLAND AND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES, MAY 2013.

DISTURBED AREA	
AREA DESCRIPTION	ACREAGE
SHEET 02	4.36
TOTAL DISTURBED AREA	4.36 ACRES

SHEET INDEX	
DESCRIPTION	SHEET NUMBER
COVER SHEET	01
EROSION CONTROL PLANS	02
EROSION CONTROL MEASURES	03-08
EROSION CONTROL NOTES	09-12

## MATERIAL SUMMARY

ITEM	QUANTITY	UNIT	DESCRIPTION
CE	3	EA.	CONSTRUCTION ENTRANCE
SB	1460	LIN. FT.	SEDIMENT BARRIER
SAF	136	LIN. FT.	SAFETY FENCE
TP	0	EA.	TRENCH PLUG / BREAKER
DT	0	EA.	DIVERSION TERRACE
ECB	864	SQ. YD.	EROSION CONTROL BLANKET

## NOTE:

QUANTITIES ARE FOR THE SOIL EROSION CONTROL MEASURE ITEMS LISTED. QUANTITIES FOR ALL OTHER ITEMS, INCLUDING BUT NOT LIMITED TO DIVERSIONS, STREAM CROSSINGS, TEMPORARY CULVERT CROSSINGS, MINOR & INTERMEDIATE WATERBODY CROSSINGS, TRENCH PLUGS AND HYDROSTATIC DEWATERING STRUCTURES, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

## SEQUENCE OF OPERATIONS FOR TRENCHLESS PIPE INSTALLATIONS

TRENCHLESS PIPE INSTALLATIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH A DETAILED WORKPLAN PREPARED BY THE TRENCHLESS SPECIALTY CONTRACTOR AND APPROVED BY TRANSCO. TECHNOLOGIES FOR TRENCHLESS PIPE INSTALLATIONS INCLUDE AUGER BORE, GUIDED AUGER BORE, HORIZONTAL DIRECTIONAL DRILLING, MICRO-TUNNELING AND DIRECT PIPE. THE FOLLOWING IS A TYPICAL SEQUENCE OF OPERATIONS INTENDED FOR INFORMATIONAL PURPOSES:

- SURVEY AND LAYOUT THE WORKSPACE AT THE ENTRY AND EXIT PIT LOCATIONS OF THE TRENCHLESS PIPE INSTALLATION.
- INSTALL E&S BMP MEASURES ALONG THE WORKSPACE PERIMETER AT THE ENTRY AND EXIT PIT LOCATIONS PER THE APPROVED E&S CONTROL PLAN.
- MOBILIZE TRENCHLESS INSTALLATION EQUIPMENT, CREW AND MATERIALS TO WORKSITE.
- SET-UP AND POSITION TRENCHLESS INSTALLATION EQUIPMENT AS INDICATED IN THE TRANSCO-APPROVED WORKPLAN.
- COMPLETE THE TRENCHLESS PIPE INSTALLATION. DURING INSTALLATION, OBTAIN ACCURATE AS-BUILT ALIGNMENT AND PROFILE OF THE INSTALLED PIPE.
- MANAGE AND DISPOSE OF SOIL/ROCK CUTTINGS AND ANY SPENT/ EXCESS DRILLING FLUIDS GENERATED BY THE TRENCHLESS INSTALLATION PER THE TRANSCO-APPROVED WORK PLAN.
- CONNECT INSTALLED TRENCHLESS PIPE TO PIPE INSTALLED BY OPEN TRENCH METHODS AT THE ENTRY AND EXIT PITS.
- BACKFILL AND GRADE THE ENTRY AND EXIT PITS.
- DEMOLISH TRENCHLESS INSTALLATION EQUIPMENT, CREW AND EXCESS MATERIALS.
- RESTORE WORKSPACE AT ENTRY AND EXIT PIT LOCATIONS PER THE APPROVED E&S CONTROL PLAN.
- RECORD ALL AS-BUILT INFORMATION NECESSARY TO COMPLETE DETAILED RECORD DRAWINGS OF THE TRENCHLESS PIPE INSTALLATION.

## SEQUENCE OF CONSTRUCTION - PIPELINE

THE 26" PIPE AND CP POWER CABLES WILL BE INSTALLED USING THE HDD METHOD. FACILITIES WORK WILL BE COMPLETED WITHIN THE TRANSCO PROPERTIES, INCLUDING PIPING IN THE 26" HDD ENTRY AND SOME CABLE TRENCHING IN THE EXISTING METER STATION PROPERTY.

ROAD AND WATERBODY CROSSINGS MAY BE CONDUCTED BY SEPARATE CREWS, IN PARALLEL WITH MAIN LINE CREWS.

UPON COMPLETION OR TEMPORARY CESSATION OF EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE WHERE CESSATION OF EARTH DISTURBANCE WILL EXCEED 60 DAYS, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION.

## SOIL EROSION AND SEDIMENT CONTROL NOTES - FREEHOLD SOIL CONSERVATION DISTRICT

- THE FREEHOLD SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY SOIL DISTURBING ACTIVITY.
- ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES ARE TO BE INSTALLED PRIOR TO SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
- ANY CHANGES TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLANS WILL REQUIRE THE SUBMISSION OF REVISED SOIL EROSION AND SEDIMENT CONTROL PLANS TO THE DISTRICT FOR RE-CERTIFICATION. THE REVISED PLANS MUST MEET ALL CURRENT STATE SOIL EROSION AND SEDIMENT CONTROL STANDARDS.
- N.J.S.A 4:24-39 ET. SEQ. REQUIRES THAT NO CERTIFICATES OF OCCUPANCY BE ISSUED BEFORE THE DISTRICT DETERMINES THAT A PROJECT OR PORTION THEREOF IS IN FULL COMPLIANCE WITH THE CERTIFIED PLAN AND STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY AND A REPORT OF COMPLIANCE HAS BEEN ISSUED. UPON WRITTEN REQUEST FROM THE APPLICANT, THE DISTRICT MAY ISSUE A REPORT OF COMPLIANCE WITH CONDITIONS ON A LOT-BY-LOT OR SECTION-BY-SECTION BASIS, PROVIDED THAT THE PROJECT OR PORTION THEREOF IS IN SATISFACTORY COMPLIANCE WITH THE SEQUENCE OF DEVELOPMENT AND TEMPORARY MEASURES FOR SOIL EROSION AND SEDIMENT CONTROL HAVE BEEN IMPLEMENTED, INCLUDING PROVISIONS FOR STABILIZATION AND SITE WORK.
- ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN SIXTY (60) DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF 2 TO 2 1/2 TONS PER ACRE, ACCORDING TO THE STANDARD FOR STABILIZATION WITH MULCH ONLY.
- IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION (I.E. SOIL STOCKPILES, STEEP SLOPES AND ROADWAY EMBANKMENTS) WILL RECEIVE TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AND A MULCH ANCHOR, IN ACCORDANCE WITH STATE STANDARDS.
- A SUB-BASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS TO STABILIZE STREETS, ROADS, DRIVEWAYS, AND PARKING AREAS. IN AREAS WHERE NO UTILITIES ARE PRESENT, THE SUB-BASE SHALL BE INSTALLED WITHIN FIFTEEN (15) DAYS OF THE PRELIMINARY GRADING.
- THE STANDARD FOR STABILIZED CONSTRUCTION ACCESS REQUIRES THE INSTALLATION OF A PAD OF CLEAN CRUSHED STONE AT POINTS WHERE TRAFFIC WILL BE ACCESSING THE CONSTRUCTION SITE. AFTER INTERIOR ROADWAYS ARE PAVED, INDIVIDUAL LOTS REQUIRE A STABILIZED CONSTRUCTION ACCESS CONSISTING OF ONE INCH TO TWO INCH (1" - 2") STONE FOR A MINIMUM LENGTH OF TEN FEET (10') EQUAL TO THE LOT ENTRANCE WIDTH. ALL OTHER ACCESS POINTS SHALL BE BLOCKED OFF.
- ALL SOIL WASHED, DROPPED, SPILLED, OR TRACKED OUTSIDE THE LIMIT OF DISTURBANCE OR ONTO PUBLIC RIGHT-OF-WAYS WILL BE REMOVED IMMEDIATELY.
- PERMANENT VEGETATION IS TO BE SEEDED OR SODDED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING.
- AT THE TIME THAT SITE PREPARATION FOR PERMANENT VEGETATIVE STABILIZATION IS GOING TO BE ACCOMPLISHED, ANY SOIL THAT WILL NOT PROVIDE A SUITABLE ENVIRONMENT TO SUPPORT ADEQUATE VEGETATIVE GROUND COVER SHALL BE REMOVED OR TREATED IN SUCH A WAY THAT IT WILL PERMANENTLY ADJUST THE SOIL CONDITIONS AND RENDER IT SUITABLE FOR VEGETATIVE GROUND COVER. IF THE REMOVAL OR TREATMENT OF THE SOIL WILL NOT PROVIDE SUITABLE CONDITIONS, NON-VEGETATIVE MEANS OF PERMANENT GROUND STABILIZATION WILL HAVE TO BE EMPLOYED.
- IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, ANY SOIL HAVING A PH OF 4 OR LESS OR CONTAINING IRON SULFIDES SHALL BE ULTIMATELY PLACED OR BURIED WITH LIMESTONE APPLIED AT THE RATE OF 10 TONS/ACRE, (OR 450 LBS/1,000 SQ FT OF SURFACE AREA) AND COVERED WITH A MINIMUM OF 12" OF SETTLED SOIL WITH A PH OF 5 OR MORE, OR 24" WHERE TREES OR SHRUBS ARE TO BE PLANTED.
- CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL. UNFILTERED DEWATERING IS NOT PERMITTED. NECESSARY PRECAUTIONS MUST BE TAKEN DURING ALL DEWATERING OPERATIONS TO MINIMIZE SEDIMENT TRANSFER. ANY DEWATERING METHODS USED MUST BE IN ACCORDANCE WITH THE STANDARD FOR DEWATERING.
- SHOULD THE CONTROL OF DUST AT THE SITE BE NECESSARY, THE SITE WILL BE SPRINKLED UNTIL THE SURFACE IS WET, TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED OR MULCH SHALL BE APPLIED AS REQUIRED BY THE STANDARD FOR DUST CONTROL.
- STOCKPILE AND STAGING LOCATIONS ESTABLISHED IN THE FIELD SHALL BE PLACED WITHIN THE LIMIT OF DISTURBANCE ACCORDING TO THE CERTIFIED PLAN. STAGING AND STOCKPILES NOT LOCATED WITHIN THE LIMIT OF DISTURBANCE WILL REQUIRE CERTIFICATION OF A REVISED SOIL EROSION AND SEDIMENT CONTROL PLAN. CERTIFICATION OF A NEW SOIL EROSION AND SEDIMENT CONTROL PLAN MAY BE REQUIRED FOR THESE ACTIVITIES IF AN AREA GREATER THAN 5,000 SQUARE FEET IS DISTURBED.
- ALL SOIL STOCKPILES ARE TO BE TEMPORARILY STABILIZED IN ACCORDANCE WITH SOIL EROSION AND SEDIMENT CONTROL NOTE #6.
- THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR ANY EROSION OR SEDIMENTATION THAT MAY OCCUR BELOW STORMWATER OUTFALLS OR OFFSITE AS A RESULT OF CONSTRUCTION OF THE PROJECT.

## ACIDIC SOIL NOTES

### 1. ACID PRODUCING SOILS CONTROL PLAN

- CONTRACTOR SHALL LIMIT THE EXCAVATION AREA AND EXPOSURE TIME WHEN HIGH ACID-PRODUCING SOILS ARE ENCOUNTERED.
- CONTRACTOR SHALL SEPARATELY STORE TOPSOIL STRIPPED FROM THE SITE FROM TEMPORARILY STOCKPILED HIGH ACID-PRODUCING SOILS.
- CONTRACTOR SHALL STOCKPILE HIGH ACID-PRODUCING SOILS ON LEVEL GROUND TO MINIMIZE ITS MOVEMENT, ESPECIALLY WHEN THIS MATERIAL HAS A HIGH CLAY CONTENT.
- CONTRACTOR SHALL COVER TEMPORARILY STOCKPILED HIGH ACID-PRODUCING SOIL MATERIAL TO BE EXPOSED MORE THAN 48 DAYS WITH PROPERLY ANCHORED, HEAVY-GRADE SHEETS OF POLYETHYLENE, WHERE POSSIBLE. IF NOT POSSIBLE, STOCKPILES SHALL BE COVERED WITH A MINIMUM OF 3 TO 6 INCHES OF WOOD CHIPS TO MINIMIZE EROSION OF THE STOCKPILE. IN ADDITION, CONTRACTOR SHALL INSTALL SILT FENCE AT THE TOE OF STOCKPILE SLOPE TO CONTAIN MOVEMENT OF MATERIAL. CONTRACTOR SHALL NOT APPLY TOPSOIL TO THE HIGH ACID-PRODUCING SOIL STOCKPILES TO PREVENT TOPSOIL CONTAMINATION.
- CONTRACTOR SHALL ULTIMATELY DISPOSE OF HIGH ACID-PRODUCING SOILS WITH A PH OF 4 OR LESS, OR CONTAINING IRON SULFIDE (INCLUDING BORROW FROM CUTS) BY PLACING OR BURYING THE MATERIAL COMBINED WITH LIMESTONE AT THE RATE OF 10 TONS PER ACRE (OR 450 POUNDS PER 1,000 SQUARE FEET OF SURFACE AREA) AND COVERING THE MIXTURE WITH A MINIMUM OF 12 INCHES OF SETTLED SOIL WITH A PH OF 5 OR MORE EXCEPT AS FOLLOWS:
  - IN THE AREAS WHERE TREES OR SHRUBS ARE TO BE PLANTED, CONTRACTOR SHALL COVER THE LIMESTONE/SOIL MIXTURE WITH A MINIMUM OF 24 INCHES OF SOIL WITH A PH OF 5 OR MORE.
  - CONTRACTOR SHALL NOT LOCATE ANY DISPOSAL AREA WITHIN 24 INCHES OF ANY SURFACE OF A SLOPE OR BANK, SUCH AS BERMS, STREAM BANKS, DITCHES AND OTHERS TO PREVENT POTENTIAL LATERAL LEACHING DAMAGES.
- AT THE END OF EACH DAY, CONTRACTOR SHALL CLEAN ALL EQUIPMENT USED TO HANDLE HIGH ACID-PRODUCING SOILS TO PREVENT SPREADING OF HIGH-ACID MATERIALS TO OTHER PARTS OF THE SITE, INTO STREAMS OR STORMWATER CONVEYANCES AND TO PROTECT MACHINERY FROM ACCELERATED RUSTING.
- CONTRACTOR SHALL PROVIDE AND INSTALL NON-VEGETATIVE EROSION CONTROLS (STONE TRACKING PADS, STRATEGICALLY PLACED LIMESTONE CHECK DAMS, SILT FENCES, WOOD CHIPS) TO LIMIT THE MOVEMENT OF HIGH ACID-PRODUCING SOILS FROM AROUND, OR OFF SITE.
- FOLLOWING BURIAL OR REMOVAL OF HIGH ACID-PRODUCING SOILS, TOP SOILING, AND SEEDING OF THE SITE, COMPANY SHALL MONITOR THE SITE FOR APPROXIMATELY 6 TO 12 MONTHS TO ASSURE THERE IS ADEQUATE STABILIZATION AND THAT NO HIGH-ACID SOIL PROBLEMS EMERGE. CONTRACTOR SHALL CORRECT ANY PROBLEM THAT ARE DISCOVERED WITHIN THIS TIME PERIOD.
- IF PROBLEMS OCCUR WHERE HIGH ACID-PRODUCING SOILS HAVE BEEN PLACED OR BURIED, COMPANY SHALL MONITOR THESE AREAS FOR AT LEAST 2 YEARS TO ASSURE THERE IS NO MIGRATION OF POTENTIAL ACID LEACHATE.

- MAKE NOTIFICATIONS ACCORDING TO PERMIT REQUIREMENTS.
- PERFORM TREE CLEARING (BE AWARE OF SEASONAL LIMITATIONS).
- SURVEY AND STAKE PIPELINE CENTERLINE AND WORK AREA LIMITS.
- HOLD PRE-CONSTRUCTION CONFERENCE WITH ENVIRONMENTAL INSPECTORS. CONTRACTOR TO PROVIDE PROPOSED SEQUENCE OF EARTH DISTURBANCE, WITH TIMELINES BY MILE POST.
- INSTALL CONSTRUCTION ENTRANCES.
- INSTALL BRIDGE EQUIPMENT CROSSINGS AND SILT FENCE AT WATERBODY CROSSINGS AS INDICATED ON THE PLANS.
- DEWATER PIPELINE AND COMPLETE FINAL TIE-INS.
- AFTER SITE IS PERMANENTLY STABILIZED AND UPON CONSERVATION DISTRICT APPROVAL OF STABILIZATION AND REVEGETATION, REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AND STABILIZE AREA DISTURBED BY REMOVAL.
- PURGE AND PACK PIPELINE WITH NATURAL GAS.
- PLACE PIPELINE IN SERVICE.

THE FOLLOWING STEPS APPLY TO EACH PROJECT SEGMENT, AS IT IS CONSTRUCTED.

- CLEAR AND GRUB FOR INSTALLATION OF PERIMETER CONTROLS (SAFETY FENCE, SILT FENCE AND SEDIMENT BARRIER HOOK OUTLET STRUCTURES).
- INSTALL PERIMETER CONTROLS (SAFETY FENCE, SILT FENCE AND SEDIMENT BARRIER HOOK OUTLET STRUCTURES)
- COMPLETE SITE CLEARING AND GRUBBING.
- STRIP TOPSOIL FROM DESIGNATED AREAS.
- ROUGH GRADE RIGHT-OF-WAY.
- INSTALL DIVERSION TERRACES, DIVERSION BERMS, BYPASS FLUMES, ROCK OUTLET PROTECTION, AND SEDIMENT BARRIER HOOK OUTLET STRUCTURES AS INDICATED ON THE PLANS.
- HAUL PIPE TO RIGHT-OF-WAY.
- EXCAVATE TRENCH, INSTALL TEMPORARY TRENCH PLUGS (SOFT PLUGS CONSISTING OF EXCAVATED MATERIAL) AT EACH DIVERSION TERRACE.
- BEND PIPE, PLACE ON SUPPORTS, ALIGN AND WELD PIPE.
- PERFORM NDT INSPECTION OF WELDS AND APPLY COATING TO WELD AREA.
- INSPECT PIPE COATING, REMOVE SOFT PLUGS AND LOWER PIPE IN PLACE.
- INSTALL PERMANENT TRENCH PLUGS, PAD PIPE, AND BACKFILL TRENCH.
- FINAL GRADE RIGHT-OF-WAY AFTER BACKFILL OF TRENCH.
- RETURN TOPSOIL TO DESIGNATED AREAS.
- COMPLETE FINAL STABILIZATION, INCLUDING SOIL TREATMENT, SEEDBED PREPARATION, SEED APPLICATION AND MULCHING.
- PERFORM HYDROSTATIC PRESSURE TEST OF PIPELINE.

FREEHOLD SOIL CONSERVATION DISTRICT - 4000 KOZLOSKI ROAD, FREEHOLD, NJ 07728-5033, (732) 683-8500, FAX (732) 683-9140, EMAIL: INFO@FREEHOLDSCD.ORG



NEW JERSEY  
PROFESSIONAL ENGINEER NO G232586

REVISIONS						
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK	APP.
0	06/15/17	ERL	SUBMITTED TO FREEHOLD SOIL CONSERVATION DISTRICT	60515775	PPH	KDM
1	06/15/18	SMR	SUBMITTED TO NJDEP	60515775	PPH	PPH

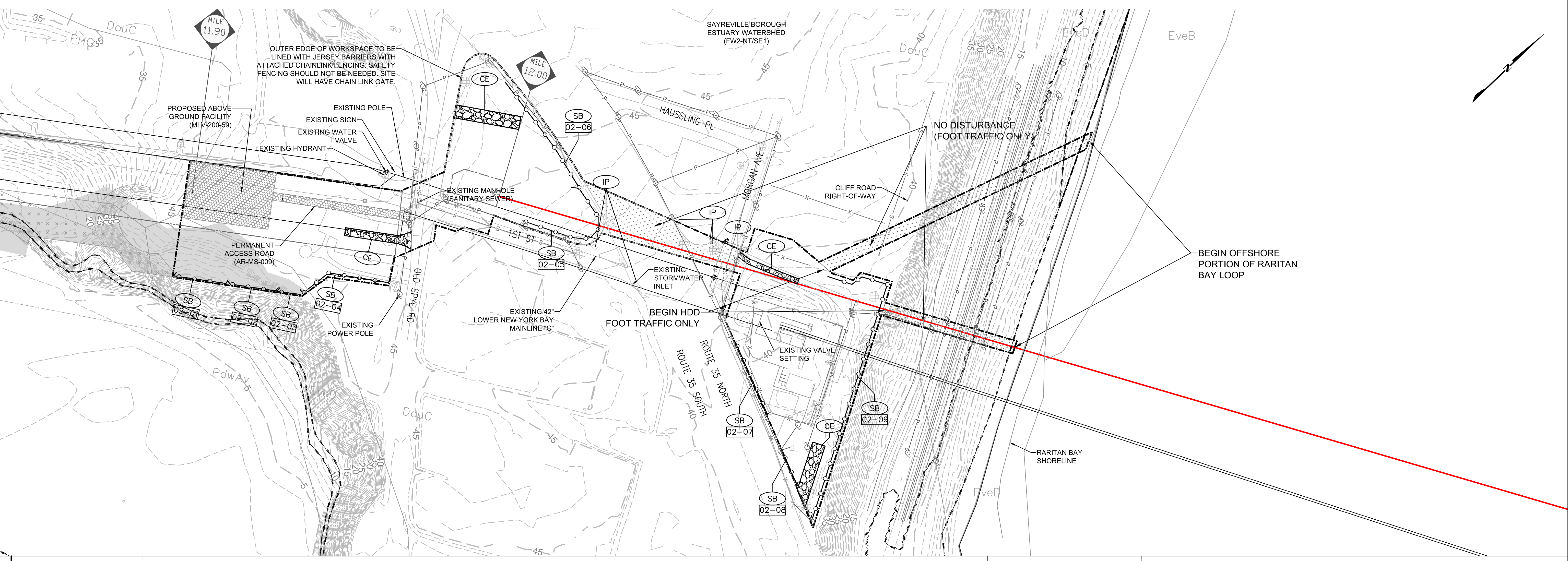
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.  
SOIL EROSION & SEDIMENT CONTROL PLAN  
NORTHEAST SUPPLY ENHANCEMENT PROJECT  
PROPOSED 26" RARITAN BAY LOOP - ONSHORE  
0.16 MI. - M.P. 12.00 TO M.P. 12.16  
MIDDLESEX COUNTY, NEW JERSEY



DRAWN BY: ERL	DATE: 06/15/17	ISSUED FOR BID: TBD	SCALE: NTS
CHECKED BY: PPH	DATE: 06/15/17	ISSUED FOR CONSTRUCTION: TBD	REVISION: 1
APPROVED BY: KDM	DATE: 06/15/17	DRAWING NUMBER: 26-0100-80-28-D	SHEET 01
WO: 60515775			OF 12



Drawn By: Date/Time: hasep, May 30, 2018 4:08pm  
 Drawing Location & Name: S:\Projects\ENV\60515775\_NISE\400-CAD\Raritan Onshore E&S\02 - Raritan E&S\_Plan\_Sheet.dwg



PHG	DouC	EveD	EveB
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**GENERAL NOTES**

- THE TOPOGRAPHIC FEATURES SHOWN WERE COMPILED FROM FIELD SURVEY MEASUREMENTS AND ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988.
- BEARINGS SHOWN ARE GRID BEARINGS AND REFER TO THE NEW JERSEY STATE PLANE COORDINATE SYSTEM, NAD 83.
- ANY DISTURBANCE IN A WATERBODY OR WETLANDS SHALL CONFORM WITH THE WATERBODY AND WETLAND CONSTRUCTION AND MITIGATION PROCEDURES.
- CONSTRUCTION AND RESTORATION SHALL CONFORM TO THE UPLAND EROSION CONTROL, REVEGETATION AND MITIGATION PLAN.
- CONTRACTOR SHALL LIMIT EQUIPMENT TRAVERSING THROUGH THE RESIDENTIAL ZONES.
- WATER SHALL BE APPLIED TO WORK AREA SURFACE TO CONTROL DUST. THE APPLICATION SHALL BE PERIODICALLY APPLIED AS NEEDED.
- TOTAL DISTURBED AREA THIS SHEET IS 4.36 AC/ 189848.74 S.F.
- TOTAL LENGTH OF SAFETY FENCE THIS SHEET IS 136 L.F.
- TOTAL LENGTH OF SEDIMENT BARRIER THIS SHEET IS 1459.72 L.F.
- TOTAL LENGTH OF REINFORCED SEDIMENT BARRIER THIS SHEET IS NA L.F.
- TOTAL LENGTH OF FILTER SOCK THIS SHEET IS NA L.F.

SCALE IN FEET: 0, 75, 150, 225

**CALL BEFORE YOU DIG**  
 1-800-272-1000  
 IT'S THE LAW  
 NEW JERSEY ONE CALL Dig Safety

**CONSTRUCTION LEGEND**

STND - STANDARD CONSTRUCTION RIGHT OF WAY CLEARING AND GRADING. CLEAR VEGETATION AND PERFORM GRADING ONLY WITHIN CERTIFICATED AND STAKED CONSTRUCTION LIMITS.

DRY - WATERBODY CONSTRUCTION RIGHT-OF-WAY CLEARING AND GRADING. CUT VEGETATION OFF AT GROUND LEVEL. LEAVING ROOT SYSTEMS IN PLACE AND REMOVE VEGETATION FOR DISPOSAL. LIMIT PULLING TREES, STUMPS AND GRADING ACTIVITIES TO DIRECTLY OVER TRENCH LINE.

WET - WETLAND CONSTRUCTION RIGHT OF WAY CLEARING AND GRADING. CUT VEGETATION OFF AT GROUND LEVEL. LEAVING ROOT SYSTEMS IN PLACE AND REMOVE VEGETATION FOR DISPOSAL. LIMIT PULLING TREE STUMPS AND GRADING ACTIVITIES DIRECTLY OVER TRENCH LINE.

RES - RESIDENTIAL CONSTRUCTION RIGHT OF WAY CLEARING AND GRADING. DO NOT COMMENCE CLEARING AND GRADING UNTIL AFTER PIPELINE IS READY TO BE INSTALLED. BACKFILL AND RESTORE DISTURBED AREAS AS SOON AS POSSIBLE.

TS1 - STRIP TOPSOIL FROM THE TRENCH LINE AND SUBSOIL STORAGE AREAS. PREVENT TOPSOIL AND SUBSOIL FROM MIXING.

TSW - SEGREGATE THE TOP ONE-FOOT OF TOPSOIL FROM THE TRENCH LINE. EXCEPT IN AREAS WHERE STANDING WATER OR SATURATED SOILS ARE PRESENT.

BORE - SHORT REACH TRENCHLESS TECHNOLOGY BELOW ROADS. EXCAVATE A PIT ON EITHER SIDE OF PROPOSED BORE. SEGREGATE TOPSOIL BORE BETWEEN PITS AND PULL PIPE THROUGH BORE HOLE. CONNECT PIPE TO PIPELINE OR CAP FOR LATER CONNECTION. CLOSE PITS, PLACE TOPSOIL, AND RE-VEGETATE.

HDD - (HORIZONTAL DIRECTIONAL DRILL) - LONG REACH TRENCHLESS TECHNOLOGY BELOW SENSITIVE AREAS. EXCAVATE A PIT (LAUNCHING OR RECEIVING) ON EITHER SIDE OF PROPOSED HOLE. SEGREGATE TOPSOIL, DRILL BETWEEN PITS AND PULL PIPE THROUGH HOLE. CONNECT PIPE TO PIPELINE OR CAP FOR LATER CONNECTION. CLOSE PITS, PLACE TOPSOIL, AND RE-VEGETATE.

**EROSION CONTROL LEGEND**

150 - EXISTING MAJOR CONTOUR  
 - - - - - EXISTING MINOR CONTOUR  
 - - - - - STREAM CENTERLINE  
 [Symbol] WETLAND  
 [Symbol] TREE LINE  
 [Symbol] TREE  
 [Symbol] WATER WELL  
 [Symbol] PARCEL LINE  
 [Symbol] EXISTING ACCESS ROADS  
 [Symbol] FENCE LINE  
 [Symbol] EXISTING OVERHEAD POWER LINE  
 [Symbol] EXISTING PIPELINE  
 [Symbol] PROPOSED PIPELINE  
 [Symbol] EXISTING RIGHT OF WAY  
 [Symbol] NEW RIGHT OF WAY  
 [Symbol] ACIDIC SOIL TYPE BOUNDARY  
 [Symbol] FEMA FLOOD HAZARD ZONES  
 [Symbol] SOIL TYPE BOUNDARY  
 [Symbol] SOIL TYPE

[Symbol] LIMIT OF DISTURBANCE  
 [Symbol] SAFETY FENCE  
 [Symbol] SEDIMENT BARRIER (SILT FENCE)  
 [Symbol] COMPOST FILTER SOCK SEDIMENT TRAP  
 [Symbol] DIVERSION TERRACE  
 [Symbol] TRENCH PLUG  
 [Symbol] DIVERSION BERM  
 [Symbol] FLUME PIPE AND RIPRAP APRON  
 [Symbol] CONSTRUCTION ENTRANCE  
 [Symbol] EROSION CONTROL BLANKET  
 [Symbol] TIMBER MATTING  
 [Symbol] TREE CLEARING AREA  
 [Symbol] WATERSHED DIVIDE BOUNDARY  
 [Symbol] EROSION CONTROL MEASURE  
 [Symbol] EROSION CONTROL MEASURE NUMBER  
 [Symbol] TOP SOIL SEGREGATION  
 [Symbol] PROPOSED STONE  
 [Symbol] HDD FOOT TRAFFIC ONLY AREA

**PROJECT SPECIFIC NOTES**

- EROSION CONTROL MEASURE AS DEPICTED IN THESE PLANS ARE INTENDED AS GUIDELINES AND MAY BE ADJUSTED BY WILLIAMS ENVIRONMENTAL INSPECTORS TO MEET ACTUAL FIELD CONDITIONS.
- COMPANY ENVIRONMENTAL INSPECTOR SHALL DETERMINE LOCATION WHERE HYDROSTATIC DEWATERING STRUCTURE (DS.2) IS TO BE LOCATED.
- CONTRACTOR SHALL BE REQUIRED TO KEEP ROADS WHERE CONSTRUCTION SPREAD WILL ENTER AND EXIT PROJECT CORRIDOR OR CLEAN OR CONSTRUCTION RELATED DEBRIS AT ALL TIMES.
- ALL WATERBODY CROSSINGS TO BE INSTALLED USING THE FOLLOWING METHODS:  
 DRY OPEN CUT METHOD (DAM & PUMP OR FLUME) OR HORIZONTAL DIRECTIONAL DRILLING (HDD).
- TREE LINE DATA IS SUBJECT TO CHANGE BASED ON POTENTIAL PRE-CONSTRUCTION SURVEYS.

KEVIN MCKEON, P.E.

REVISIONS					
NO	DATE	BY	DESCRIPTION	W.O. NO.	CHK APP.
0	06/15/17	ERL	SUBMITTED TO FREEHOLD SOIL CONSERVATION DISTRICT	60515775	PPH KDM
1	06/05/18	SMR	SUBMITTED TO NJDEP	60515775	PPH PPH

NEW JERSEY PROFESSIONAL ENGINEER NO GE32586

**SOIL LEGEND**

DouC DOWNER-URBAN LAND COMPLEX, 5 TO 10 PERCENT SLOPES  
 EveB EVESBORO SAND, 0 TO 15 PERCENT SLOPES  
 EveD EVESBORO SAND, 10 TO 15 PERCENT SLOPES  
 PHG PITS, SAND AND GRAVEL

**EROSION CONTROL TYPICAL LAYOUT**

LIMITS OF DISTURBANCE

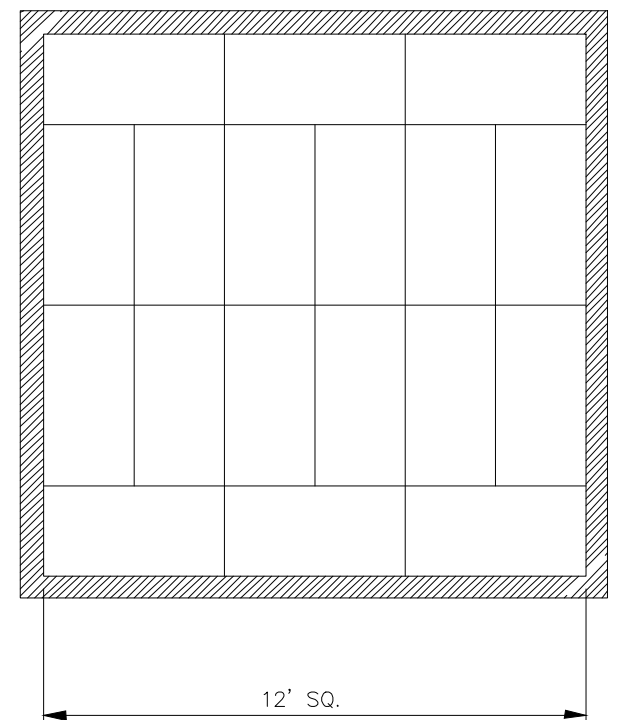
1. UNLESS NOTED OTHERWISE, ALL SAFETY FENCES, SEDIMENT BARRIERS AND/OR REINFORCED SEDIMENT SHALL BE LOCATED ON THE LIMITS OF DISTURBANCE

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.  
 SOIL EROSION & SEDIMENT CONTROL PLAN  
 NORTHEAST SUPPLY ENHANCEMENT PROJECT  
 PROPOSED 26" RARITAN BAY LOOP - ONSHORE  
 0.16 MI. - M.P. 12.00 TO M.P. 12.16  
 MIDDLESEX COUNTY, NEW JERSEY

**Williams**  
 GAS PIPELINE

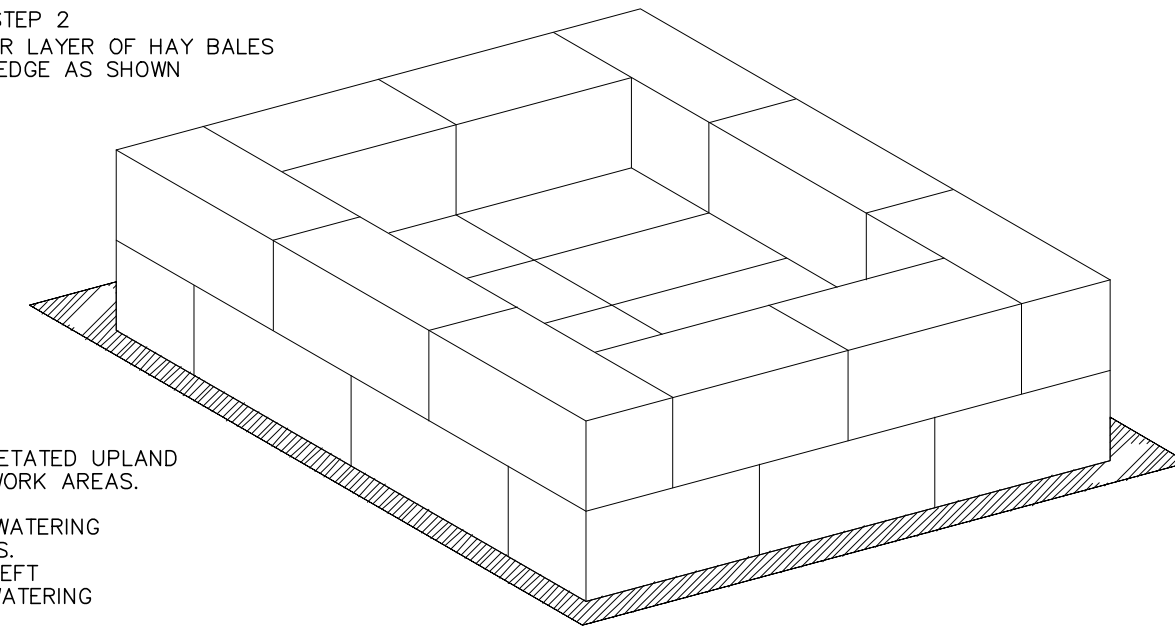
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APPROVED BY: KDM	DATE: 06/15/17	DRAWING NUMBER: 26-0100-80-28-D	SHEET 02
WO: 60515775			OF 12



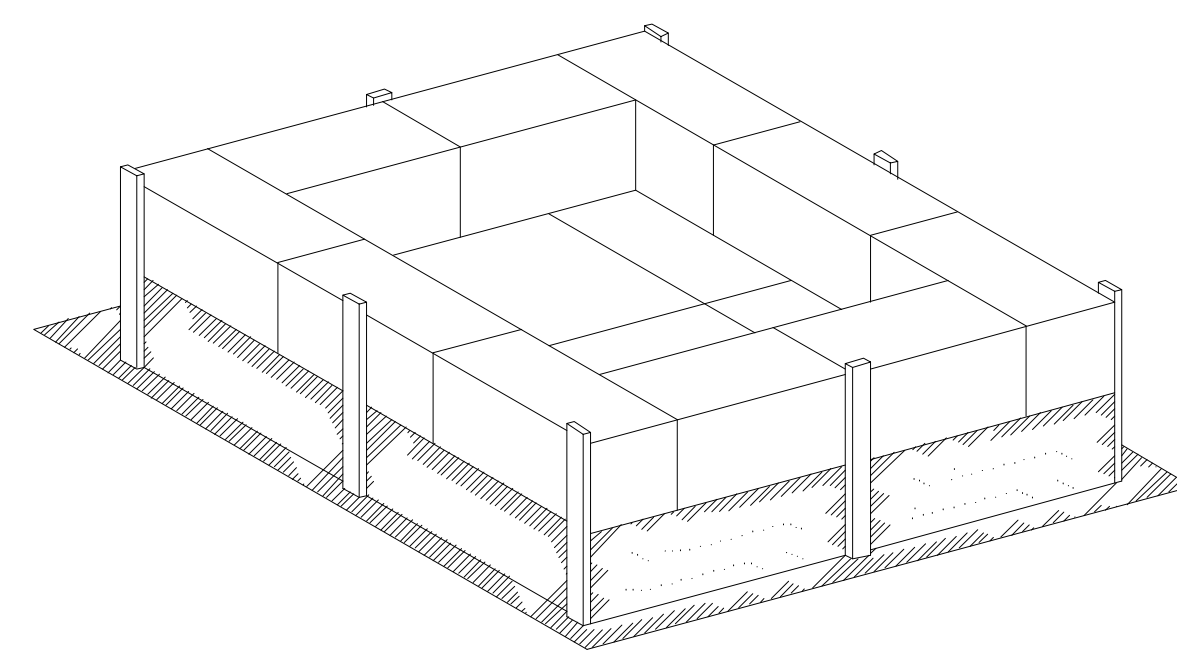


STEP 1  
ARRANGE HAY BALES OVER GEOTEXTILE FABRIC ON LEVEL LAND TIGHTLY PACKED AS SHOWN TO COVER AN AREA APPROXIMATELY 12' x 12'

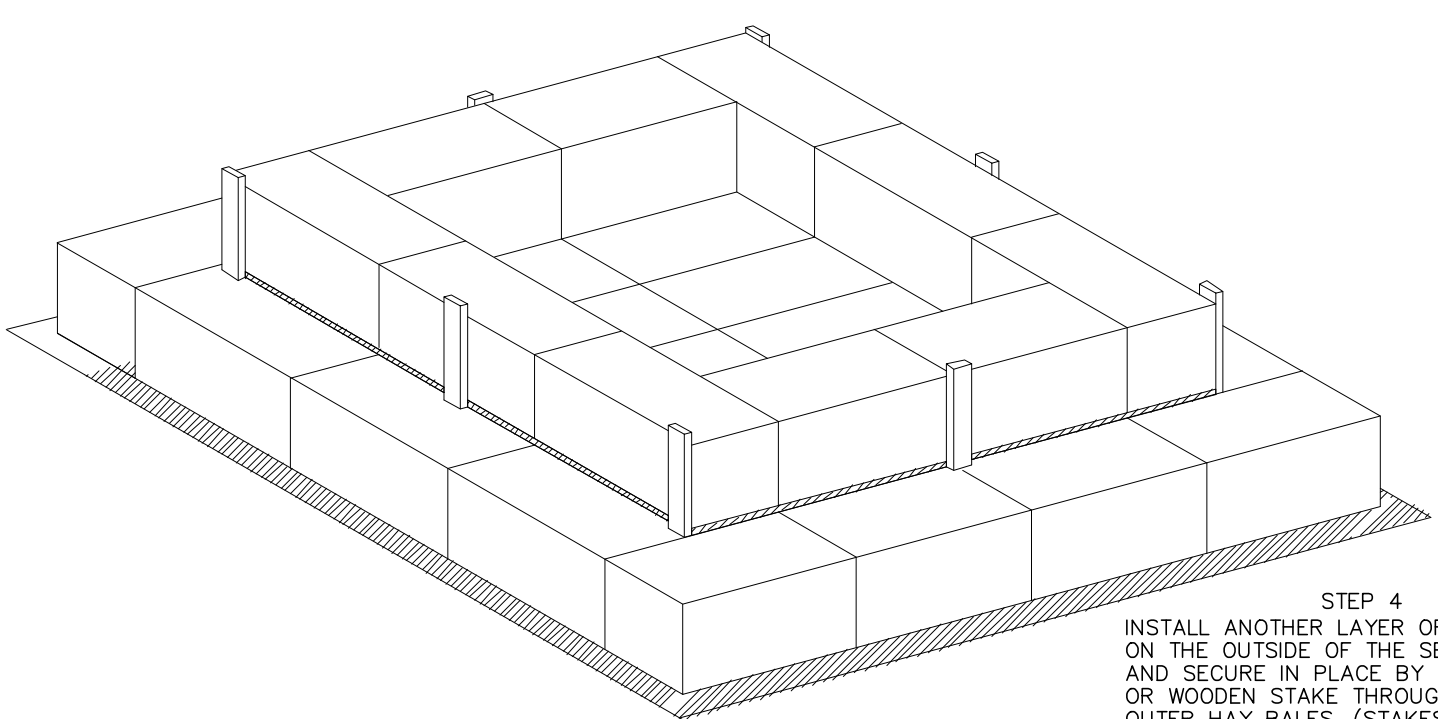
STEP 2  
INSTALL ANOTHER LAYER OF HAY BALES ON THE OUTER EDGE AS SHOWN



- NOTES:
- WHERE POSSIBLE STRUCTURE SHALL BE PLACED ON A LEVEL, WELL VEGETATED UPLAND SITE SUCH THAT WATER WILL FLOW AWAY FROM STRUCTURE AND ANY WORK AREAS.
  - CONTRACTOR SHALL PROPERLY REMOVE AND PROPERLY DISPOSE OF DEWATERING STRUCTURE IMMEDIATELY UPON COMPLETION OF DEWATERING OPERATIONS. UNDER NO CIRCUMSTANCES SHALL USED DEWATERING STRUCTURES BE LEFT IN PLACE FOR A PERIOD OF TIME GREATER THAN 48 HOURS AFTER DEWATERING OPERATIONS ARE COMPLETE.
  - STRUCTURE SHOULD BE POSITIONED SUCH THAT WATER WILL NOT FLOW INTO ANY WETLANDS OR WATERBODIES.



STEP 3  
INSTALL SEDIMENT BARRIER, IF REQUIRED BY COMPANY REPRESENTATIVE, AROUND ENTIRE HAY BALE STRUCTURE AS SHOWN

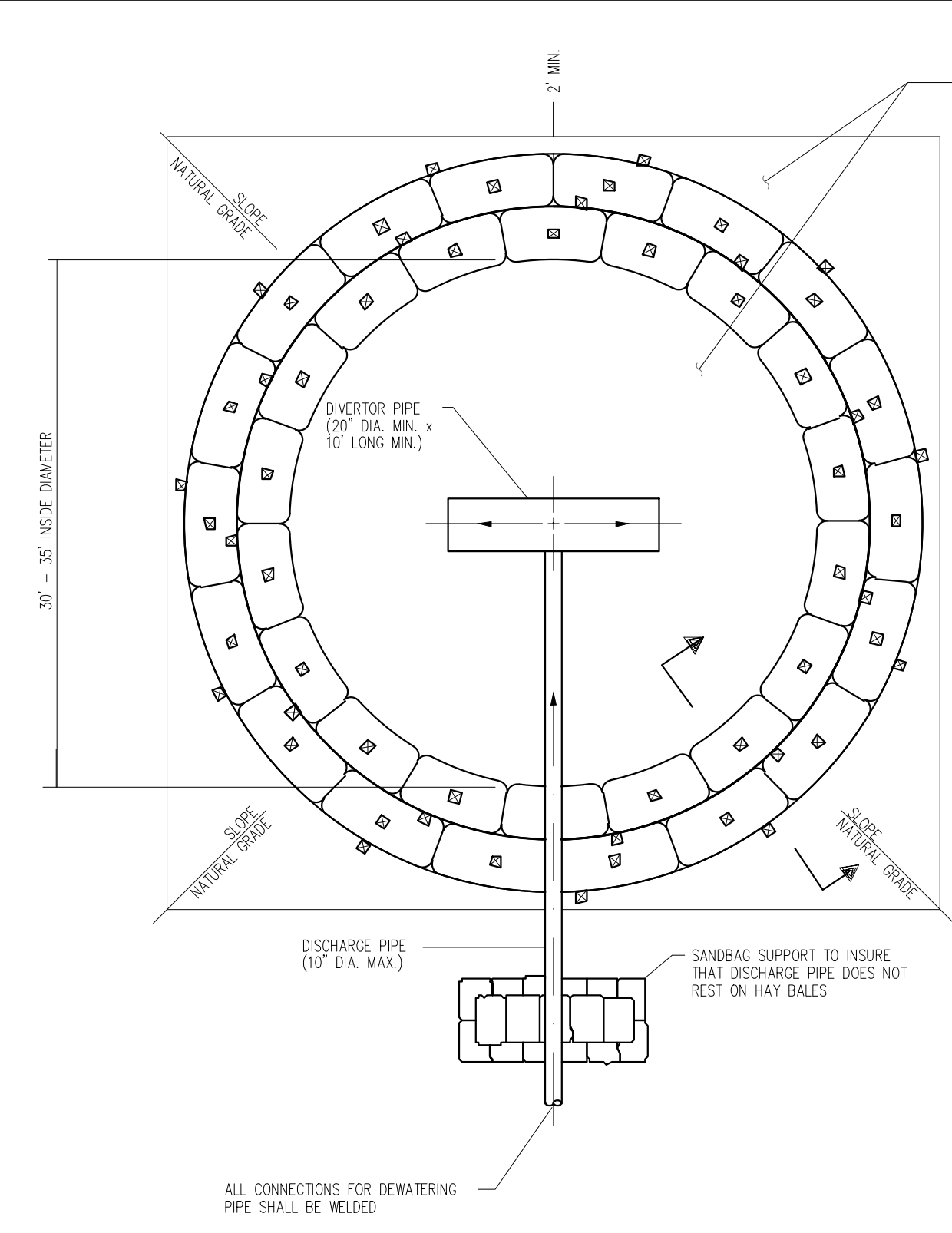


STEP 4  
INSTALL ANOTHER LAYER OF HAY BALES ON THE OUTSIDE OF THE SEDIMENT BARRIER AND SECURE IN PLACE BY DRIVING REBAR OR WOODEN STAKE THROUGH EACH OF THE OUTER HAY BALES. (STAKES NOT SHOWN FOR CLARITY PURPOSES)

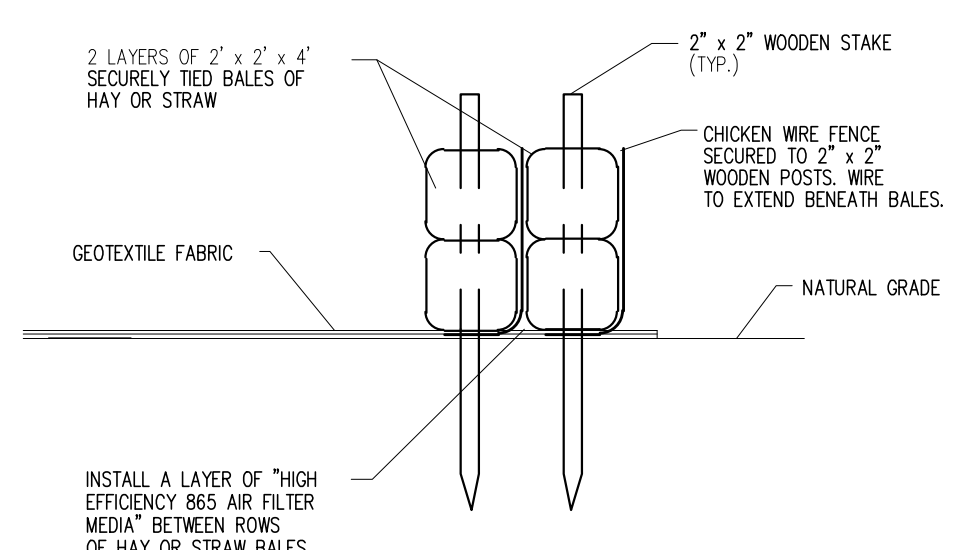
DEWATERING STRUCTURE  
TEMPORARY EROSION CONTROL MEASURE (DS.1)

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

NEW JERSEY  
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC  
STANDARD ENVIRONMENTAL DETAIL  
Williams GAS PIPELINE  
(DS.1) DEWATERING STRUCTURE



PLAN VIEW  
SCALE: N.T.S.



SECTION  
SCALE: N.T.S.

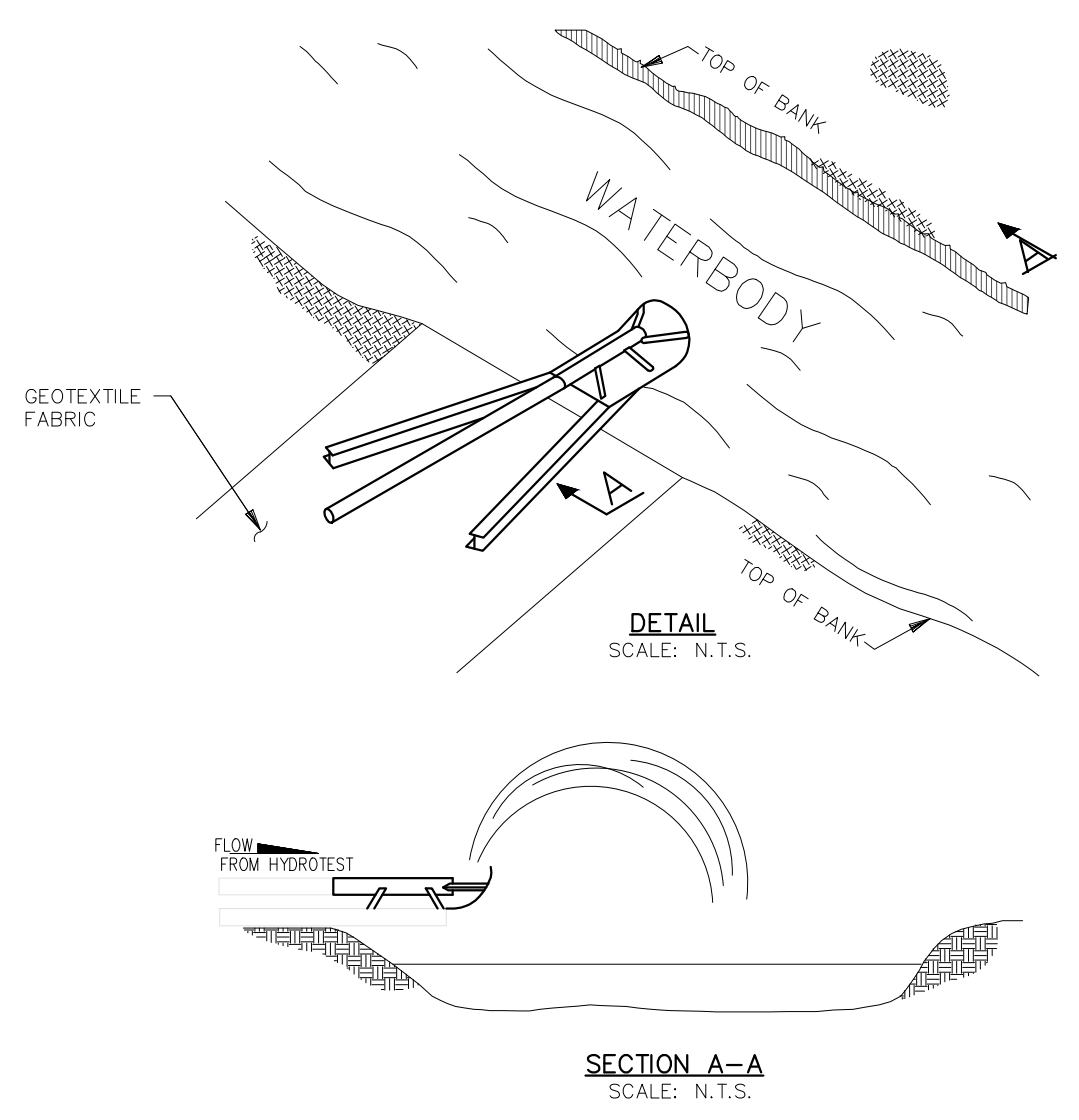
- NOTE:  
STAKES SECURING "HIGH EFFICIENCY 865 AIR FILTER MEDIA" AND CHICKEN WIRE FENCE ARE NOT SHOWN FOR CLARITY PURPOSES.

- NOTES:
- STRUCTURE SHALL BE PLACED ON A LEVEL WELL VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM STRUCTURE AND ANY WORK AREAS.
  - FLOW RATES THROUGH DISCHARGE AND DIVERTOR PIPES SHALL BE SUCH THAT STRUCTURE WILL NOT OVERFLOW.
  - WHERE CONDITIONS WARRANT A 30' x 30' RECTANGULAR STRUCTURE MAY BE SUBSTITUTED FOR THE CIRCULAR CONFIGURATION SHOWN.
  - DIMENSIONS SHOWN ARE THE MINIMUM ACCEPTABLE VALUES AND MAY BE VARIED DEPENDING UPON SPECIFIC LOCATION.
  - CONTRACTOR SHALL PROPERLY REMOVE AND DISPOSE OF DEWATERING STRUCTURE IMMEDIATELY UPON COMPLETION OF DEWATERING OPERATIONS. UNDER NO CIRCUMSTANCES SHALL USED DEWATERING STRUCTURES BE LEFT IN PLACE FOR A PERIOD OF TIME GREATER THAN 48 HOURS AFTER DEWATERING OPERATIONS ARE COMPLETE.
  - "HIGH EFFICIENCY 865 AIR FILTER MEDIA" CAN BE PURCHASED FROM THE FOLLOWING:  
UNITED AIR FILTER COMPANY  
1000 WEST PALMER STREET  
CHARLOTTE, NORTH CAROLINA 28234  
(704) 334-5311

HYDROSTATIC DEWATERING STRUCTURE  
TEMPORARY EROSION CONTROL MEASURE (DS.2)

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

NEW JERSEY  
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC  
STANDARD ENVIRONMENTAL DETAIL  
Williams GAS PIPELINE  
(DS.2) HYDROSTATIC DEWATERING STRUCTURE



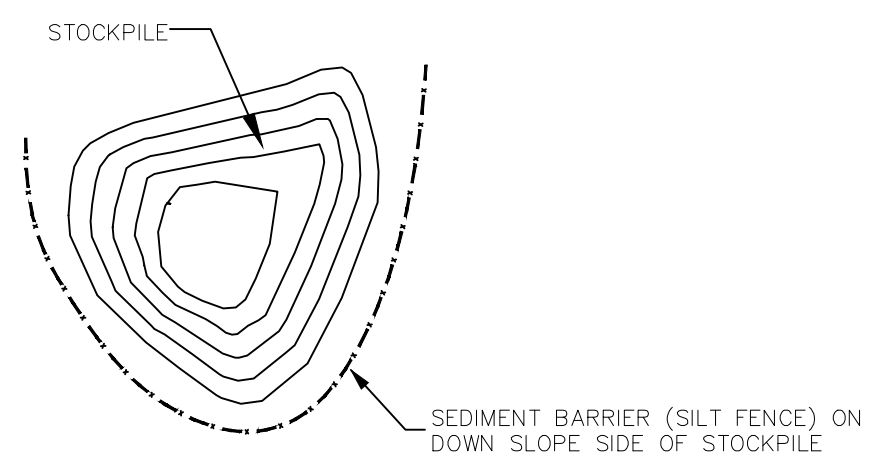
SECTION A-A  
SCALE: N.T.S.

- NOTES:
- CONTRACTOR TO POSITION SPLASH PLATE SUCH THAT THE DISCHARGE WATER SPRAYS OUT TOWARDS THE MIDDLE OF THE RECEIVING WATERBODY.
  - SPLASH PLATE TO BE POSITIONED SUCH THAT NO SOIL EROSION OCCURS.
  - CONTRACTOR SHALL INSTALL GEOTEXTILE FABRIC BENEATH THE SPLASH PLATE STRUCTURE TO PREVENT DISTURBANCE TO THE WATERBODY BANK.

SPLASH PLATE HYDROSTATIC DEWATERING STRUCTURE  
TEMPORARY EROSION CONTROL MEASURE (DS.4)

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

NEW JERSEY  
TRANSCONTINENTAL GAS PIPE LINE CORPORATION  
STANDARD ENVIRONMENTAL DETAIL  
Williams GAS PIPELINE  
(DS.4) SPLASH PLATE HYDROSTATIC DEWATERING STRUCTURE



- NOTES:
- MAXIMUM STOCKPILE HEIGHT IS 35 FEET.
  - STOCKPILE SLOPES MUST BE NO STEEPER THAN 2H:1V.
  - LOCATION OF STOCKPILE TO BE DETERMINED AT TIME OF CONSTRUCTION. STOCKPILES WILL BE STABILIZED IN ACCORDANCE WITH SOIL EROSION AND SEDIMENT CONTROL STANDARDS OF NEW JERSEY.

TYPICAL TOPSOIL STOCKPILE  
TEMPORARY EROSION CONTROL MEASURE

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

NEW JERSEY  
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC  
STANDARD ENVIRONMENTAL DETAIL  
Williams GAS PIPELINE  
TYPICAL TOPSOIL STOCKPILE

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Drawing Location & Name: S:\Projects\ENV\60515775\_NESE\_ML\_ES\400-Technical\400-CAD\Raritan Onshore E&S\03 - Raritan Detail Sheets.dwg



KEVIN MCKEON, P.E.  
NEW JERSEY  
PROFESSIONAL ENGINEER NO GE32586

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0	06/15/17	ERL	SUBMITTED TO FREEHOLD SOIL CONSERVATION DISTRICT	60515775	PPH	KDM
1	06/15/18	SMR	SUBMITTED TO NJDEP	60515775	PPH	PPH

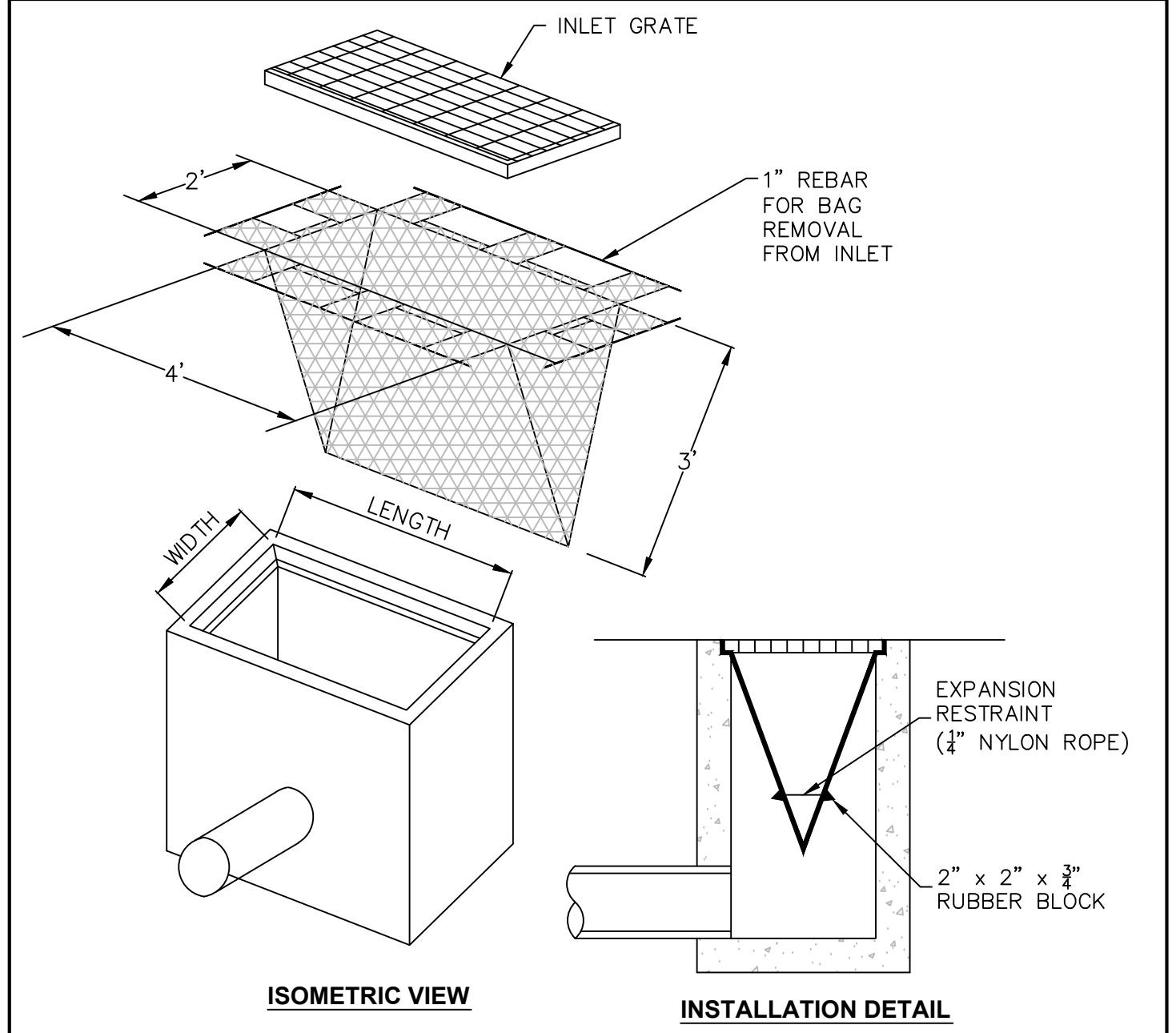
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.  
SOIL EROSION & SEDIMENT CONTROL PLAN  
NORTHEAST SUPPLY ENHANCEMENT PROJECT  
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MIDDLESEX COUNTY, NEW JERSEY

Williams GAS PIPELINE

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APPROVED BY: KDM	DATE: 06/15/17	DRAWING NUMBER: 26-0100-80-28-D	SHEET 03 OF 12
W.O. 60515775			



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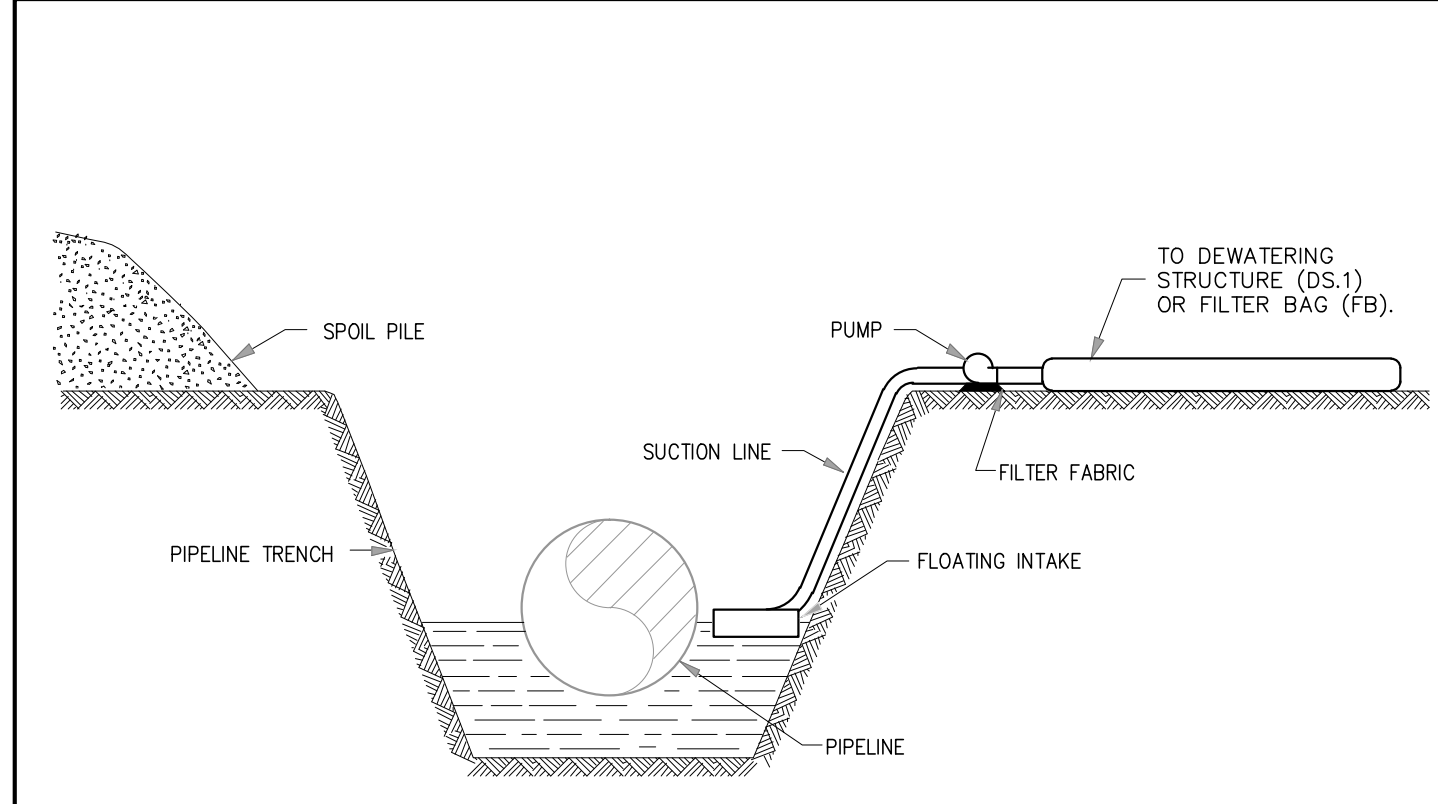


- NOTES:**
- AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.
  - INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

**FILTER BAG INLET PROTECTION**  
NOT TO SCALE (IP)

NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO./CHK./APP.

NEW JERSEY  
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC  
STANDARD ENVIRONMENTAL DETAIL  
GAS PIPELINE  
(IP) INLET PROTECTION

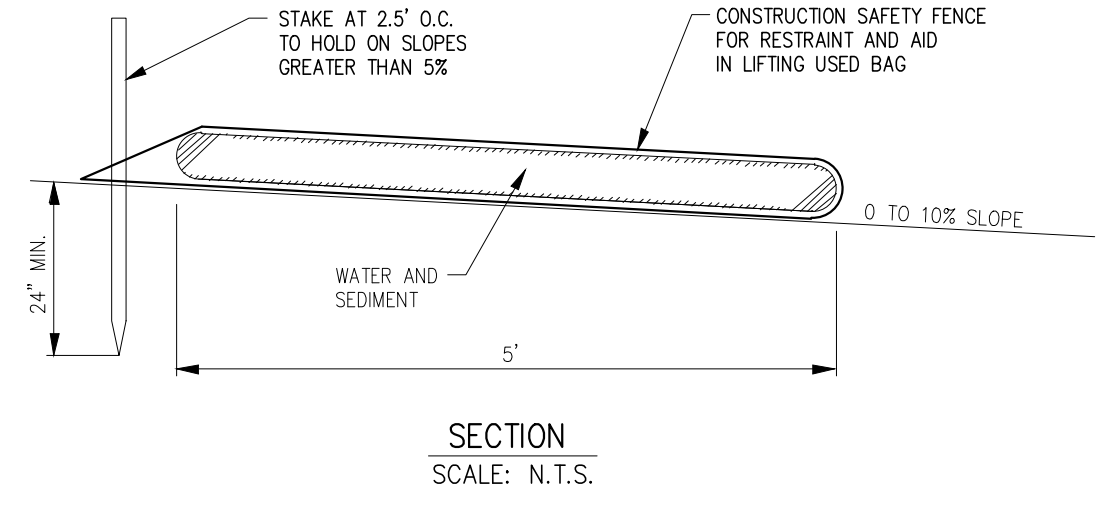
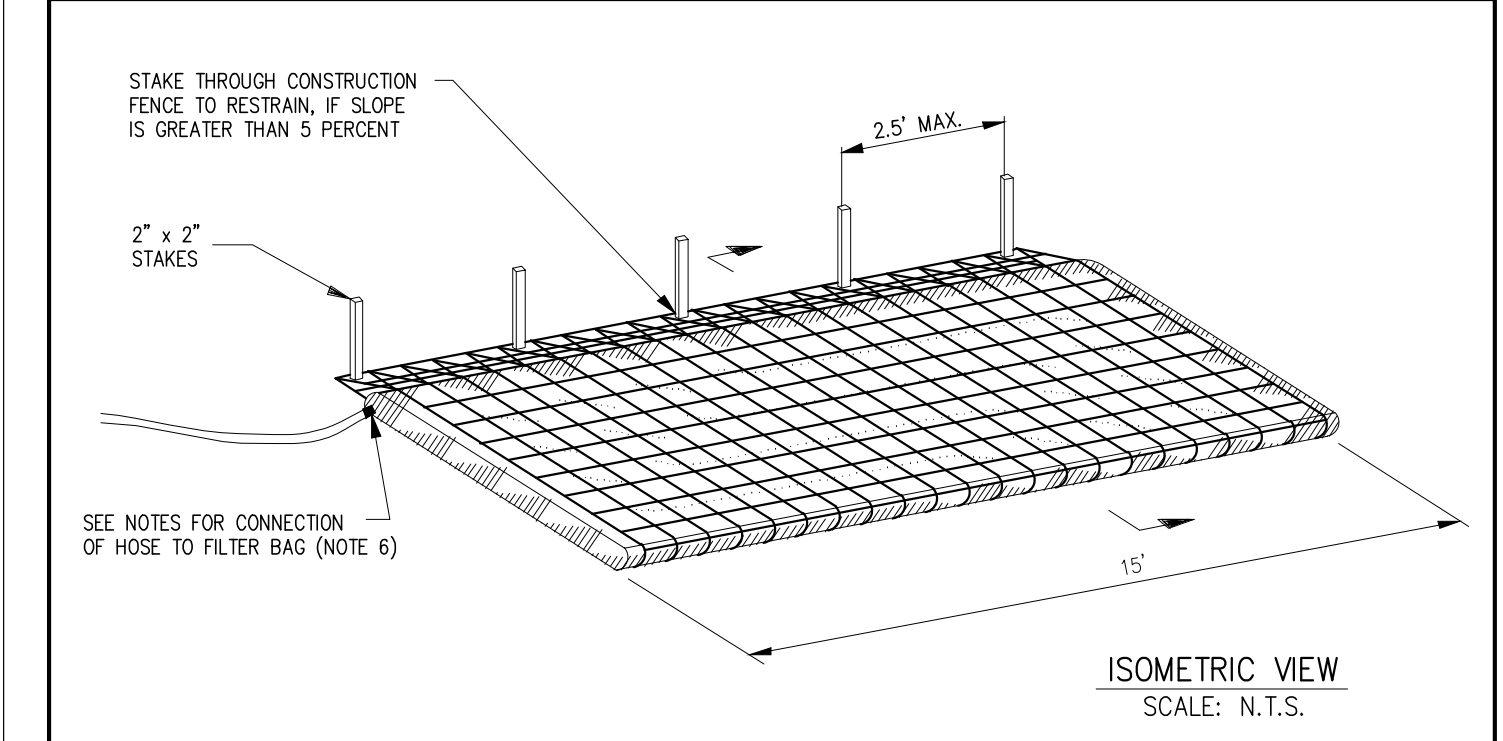


- NOTES:**
- WATER PUMPED OUT OF TRENCH SHALL NOT BE DISCHARGED INTO WATERWAYS. WATER SHALL BE DISCHARGED INTO A FILTER BAG OR DEWATERING STRUCTURE.
  - PUMP SHALL BE CONTROLLED SO THAT DISCHARGE DOES NOT OVERFLOW DEWATERING STRUCTURE.
  - PUMP SUCTION HOSE MUST NOT BE ALLOWED TO COME IN CONTACT WITH TRENCH BOTTOM. PROVISIONS MUST BE MADE TO ELEVATE THE SUCTION HOSE TO AT LEAST ONE FOOT ABOVE THE BOTTOM OF THE PIPE TRENCH UNTIL BOTTOM DEWATERING IS NECESSARY.
  - DEWATERING SHALL NOT OCCUR DURING TIMES OF HEAVY RAINFALL EXCEPT AS REQUIRED TO PREVENT FLOODING OF CONSTRUCTION EQUIPMENT LOCATED IN BORE PITS AND TRENCHES.
  - PUMPS UTILIZED DURING DEWATERING SHALL BE PLACED WITHIN SECONDARY CONTAINMENT IF POSITIONED WITHIN 100 FEET OF A WETLAND OR WATERBODY.

**TRENCH DEWATERING**  
TEMPORARY EROSION CONTROL MEASURE (TD)

NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO./CHK./APP.

NEW JERSEY  
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC  
STANDARD ENVIRONMENTAL DETAIL  
GAS PIPELINE  
(TD) TRENCH DEWATERING

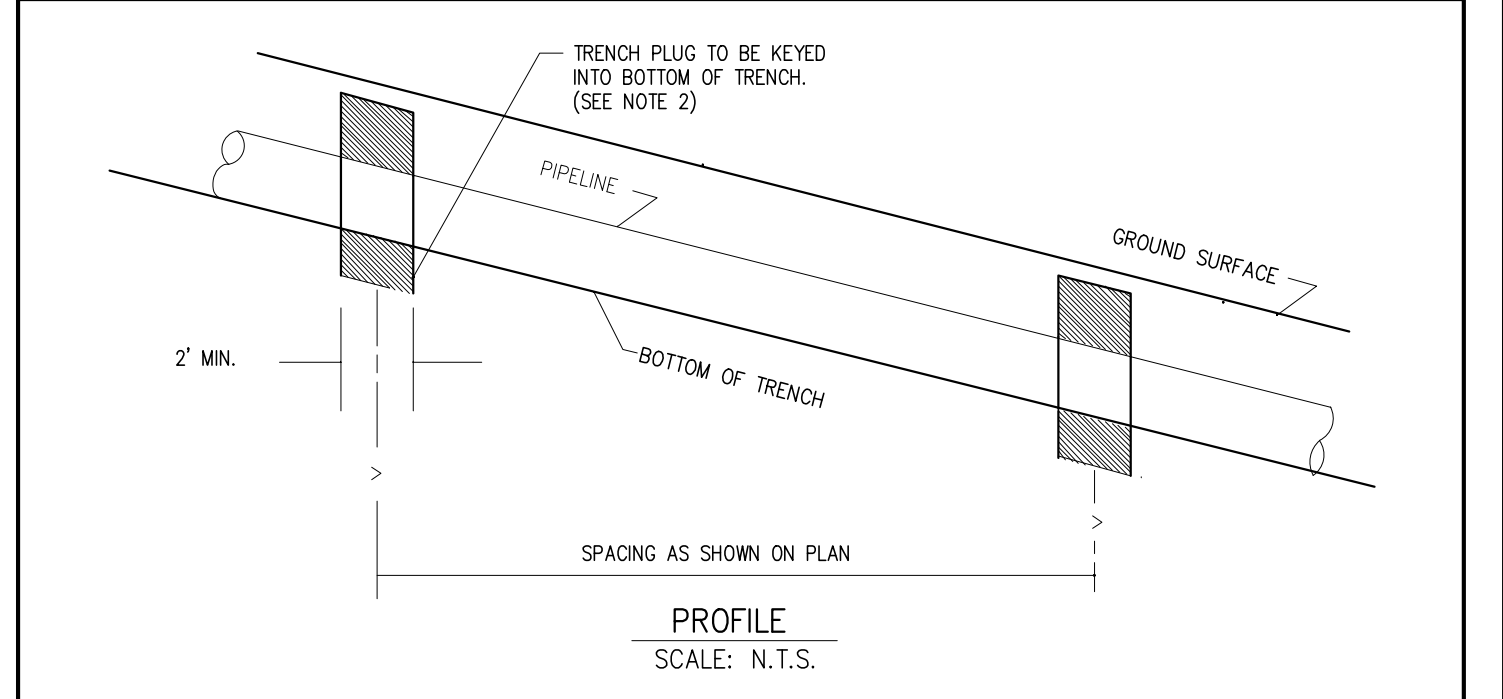


- NOTES:**
- FILTER BAG SHALL BE PLACED ON A SLOPING OR LEVEL, WELL VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM DEVICE, ANY WORK AREAS AND RECEIVING WATERS.
  - THE FILTER BAG MUST BE STAKED IN PLACE IF THE FILTER BAG IS PLACED ON A SLOPE GREATER THAN 5 PERCENT.
  - FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM.
  - CONTRACTOR SHALL PROPERLY REMOVE AND PROPERLY DISPOSE OF USED FILTER BAGS IMMEDIATELY UPON COMPLETION OF DEWATERING OPERATIONS. UNDER NO CIRCUMSTANCES SHALL USED FILTER BAGS BE LEFT IN PLACE FOR A PERIOD OF TIME GREATER THAN 48 HOURS AFTER DEWATERING OPERATIONS ARE COMPLETE.
  - SEDIMENT FROM BAG SHALL BE SPREAD IN AN UPLAND AREA WITHIN THE CONSTRUCTION CORRIDOR AND THE AREA SHALL BE STABILIZED AND REVEGETATED.
  - TO ATTACH HOSE, CUT OPEN CORNER OF FILTER BAG, GATHER UP MATERIAL AND CLAMP TO A SHORT SECTION OF STEEL PIPE. CLAMP HOSE TO OTHER END OF PIPE. BOTH CONNECTIONS SHALL BE WATERTIGHT.
  - CONTRACTOR SHALL ONLY INSTALL ONE DEWATERING HOSE PER FILTER BAG.

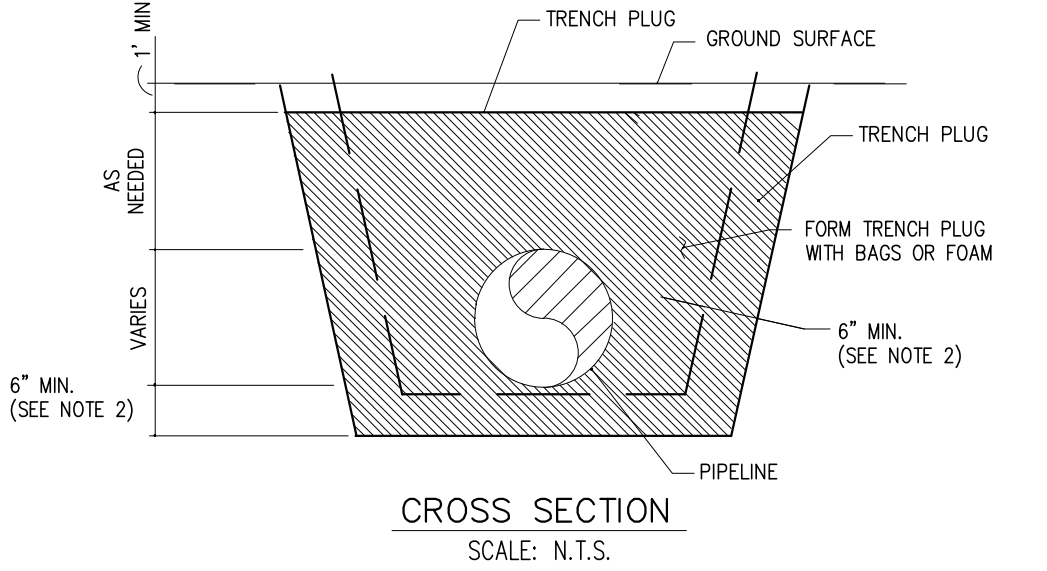
**FILTER BAG**  
TEMPORARY EROSION CONTROL MEASURE (FB)

NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO./CHK./APP.

NEW JERSEY  
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC  
STANDARD ENVIRONMENTAL DETAIL  
GAS PIPELINE  
(FB) FILTER BAG



TRENCH PLUG TYPES	
PLUG DESCRIPTION	PLUG MATERIAL
SACK	1/2 CU. FT. SACKS OF WELL SIFTED SOIL OR SAND
FOAM	2-4 PCF URETHANE (FOAMED IN PLACE)



- NOTES:**
- TOP SOIL SHALL NOT BE USED IN TRENCH PLUGS.
  - TRENCH PLUG SHALL BE KEYPED TO SIDES AND BOTTOM OF TRENCH.
  - TRENCH PLUGS SHALL BE INSTALLED AT THE BANKS OF ALL WATERBODIES AND AT THE BOUNDARIES OF ALL WETLAND CROSSINGS AND AS INDICATED ON THE CONSTRUCTION DRAWINGS IMMEDIATELY AFTER TRENCH EXCAVATION. THE PLUGS MAY BE TEMPORARILY REMOVED DURING PIPE PLACEMENT, BUT THEN REPLACED.
  - TRENCH PLUGS SHALL BE LEFT IN PLACE WHEN THE TRENCH IS BACKFILLED.
  - IF FOAM TRENCH PLUGS USED, PIPE TO BE PLACED ON CRADLE OF EARTH-FILLED SACKS, MINIMUM 2 WIDE.

**TRENCH PLUG/BREAKER**  
TEMPORARY AND PERMANENT EROSION CONTROL MEASURE (TP)

NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO./CHK./APP.

NEW JERSEY  
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC  
STANDARD ENVIRONMENTAL DETAIL  
GAS PIPELINE  
(TP) TRENCH PLUG/BREAKER



KEVIN MCKEON, P.E.  
NEW JERSEY  
PROFESSIONAL ENGINEER NO GE32586

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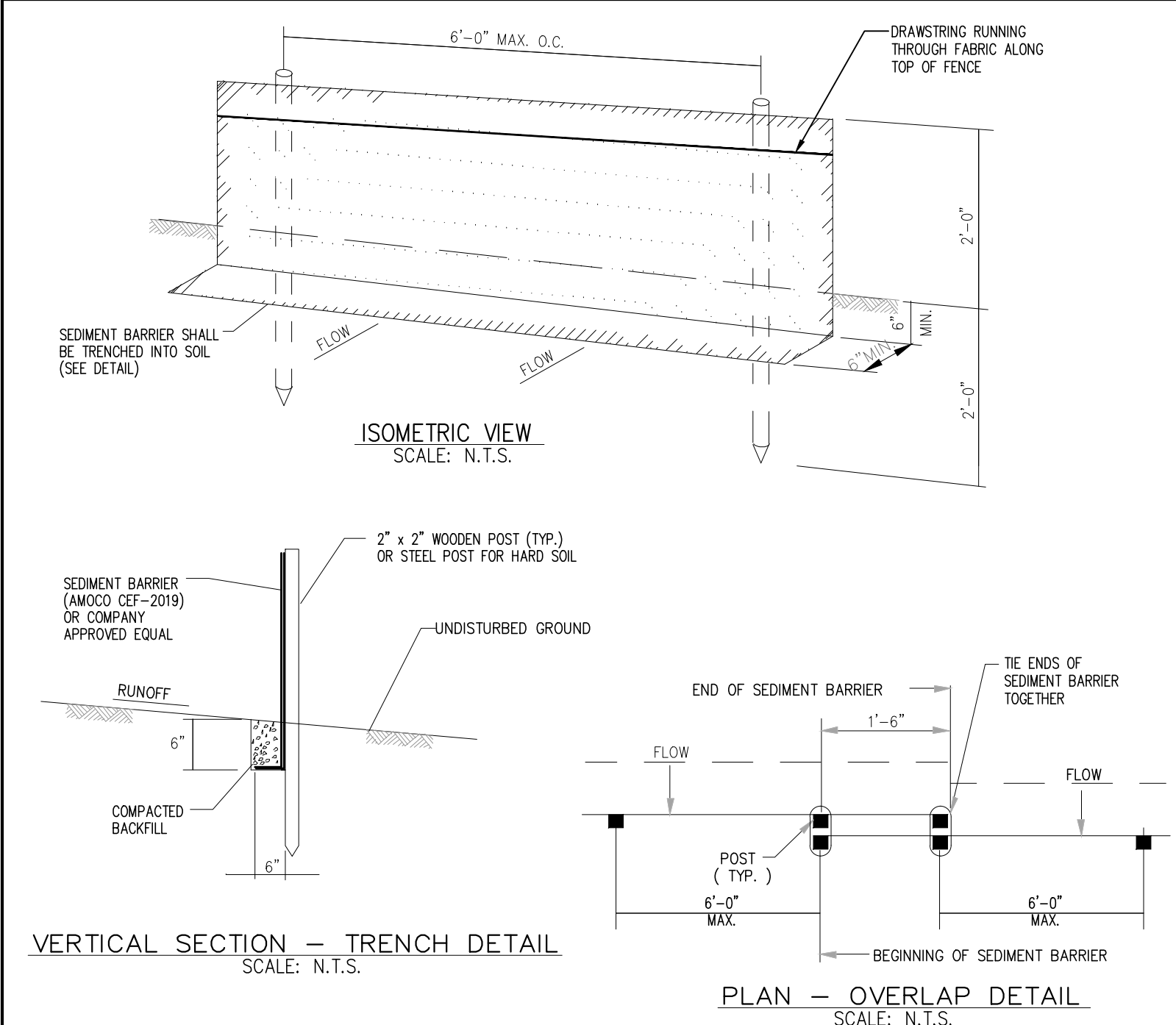
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.  
SOIL EROSION & SEDIMENT CONTROL PLAN  
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PROPOSED 26" RARITAN BAY LOOP - ONSHORE  
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William's GAS PIPELINE

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APPROVED BY: KDM	DATE: 06/15/17	DRAWING NUMBER: 26-0100-80-28-D	SHEET 04 OF 12
W.O. 60515775			



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- NOTES:
1. SEDIMENT BARRIER SHALL BE INSTALLED TO FILTER SEDIMENT FROM SURFACE RUNOFF.
  2. INSTALLATIONS SHALL BE PERIODICALLY CHECKED, THE SEDIMENT SHALL BE REMOVED WHEN IT REACHES 15\"/>
  - 3. SEDIMENT BARRIER SHALL BE LEFT IN PLACE UNTIL PERMANENT VEGETATIVE COVER IS ESTABLISHED.
  - 4. SEDIMENT BARRIER SHALL BE REPLACED WHENEVER IT HAS DETERIORATED TO SUCH AN EXTENT THAT IT REDUCES THE EFFECTIVENESS OF THE SEDIMENT BARRIER.
  - 5. AREA DISTURBED AS A RESULT OF REMOVING THE SEDIMENT BARRIER SHALL BE RE-STABILIZED BY BACKFILLING, COMPACTING, AND SEEDING IN ACCORDANCE WITH THE REVEGETATION PLAN.
  - 6. SEDIMENT BARRIER SHALL BE PLACED TO FOLLOW (RUN PARALLEL TO) THE CONTOURS.
  - 7. ON UPSLOPE INSTALLATIONS, BOTH ENDS OF THE SEDIMENT BARRIER SHALL BE TURNED AND EXTENDED UPSLOPE.
  - 8. SEDIMENT BARRIER SHALL BE INSPECTED WEEKLY AND AFTER EACH RAIN EVENT.

SPECIFICATIONS FOR SILT FENCE

SPECIFICATIONS	TYPE A	TYPE B	TYPE C
TENSILE STRENGTH (LBS. MIN. ASTM D-4632)	WARP-260 FILL-100	WARP-260 FILL-100	WARP-260 FILL-100
ELONGATION (% MAX.) (ASTM D-4632)	40	40	40
AOS (APPARENT OPENING SIZE) MAX. SIEVE SIZE (ASTM D-4751)	NO. 30	NO. 30	NO. 30
FLOW RATE (GAL./MIN./SQ. FT.) (GOT-87)	70	25	25
ULTRAVIOLET STABILITY <sup>2</sup> (ASTM D-4632 AFTER 300 HOURS WEATHERING IN ACCORDANCE WITH ASTM D-4355)	80	80	80
BURSTING STRENGTH (PSI MIN.) (ASTM D-3786 DIAPHRAGM BURSTING STRENGTH TESTER)	175	175	175
MINIMUM FABRIC WIDTH (INCHES)	36	36	22

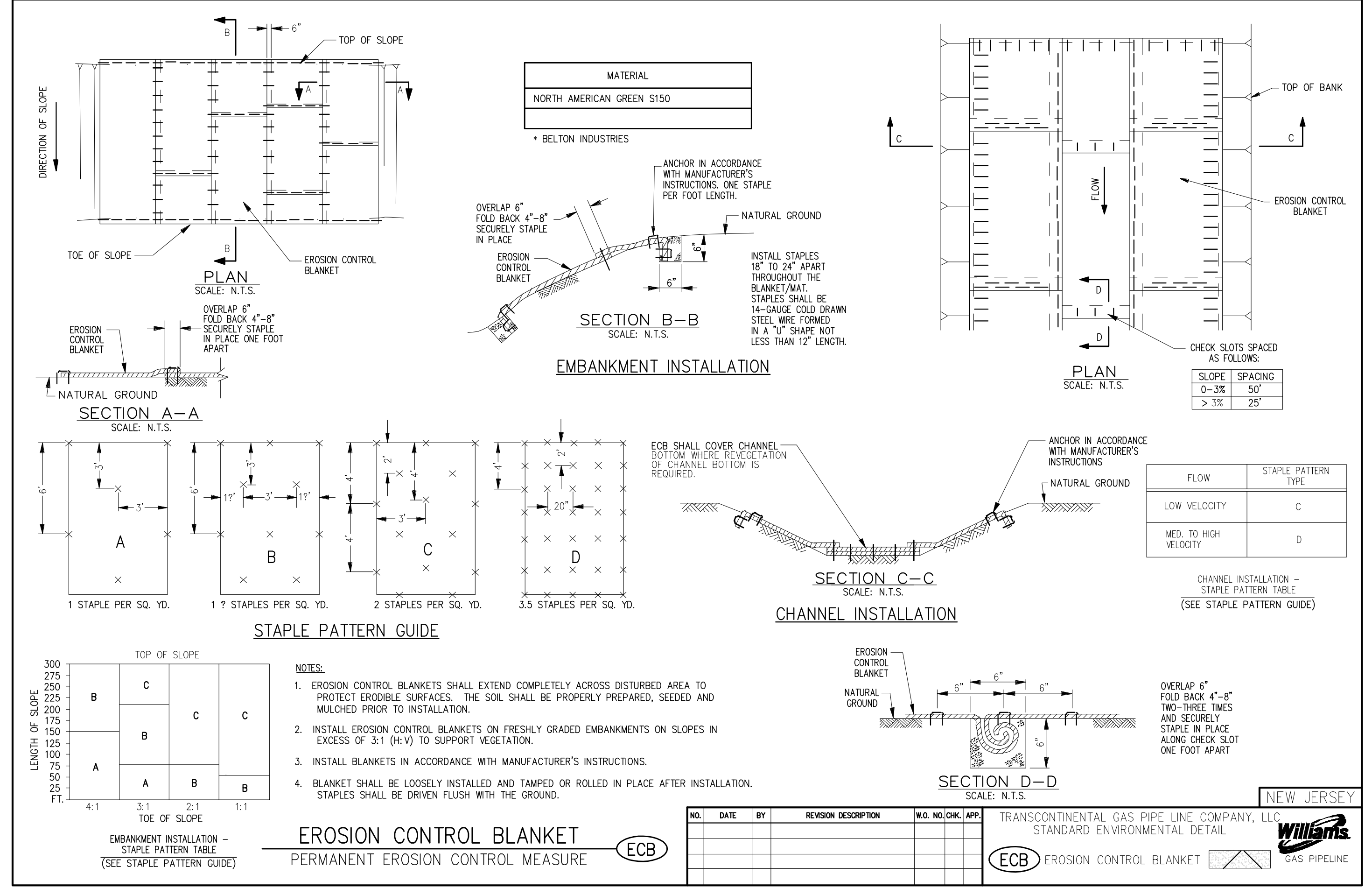
SLOPE LIMITATIONS FOR SILT FENCE

LAND SLOPE (PERCENT)	MAXIMUM SLOPE LENGTH ABOVE FENCE (FEET)
V 2	100
2 TO 5	75
5 TO 10	50
10 TO 20*	25
V 20	15

\* IN AREAS WHERE THE SLOPE IS GREATER THAN 10%, A FLAT AREA LENGTH OF 10 FEET BETWEEN THE TOE OF THE SLOPE TO THE FENCE SHOULD BE PROVIDED.

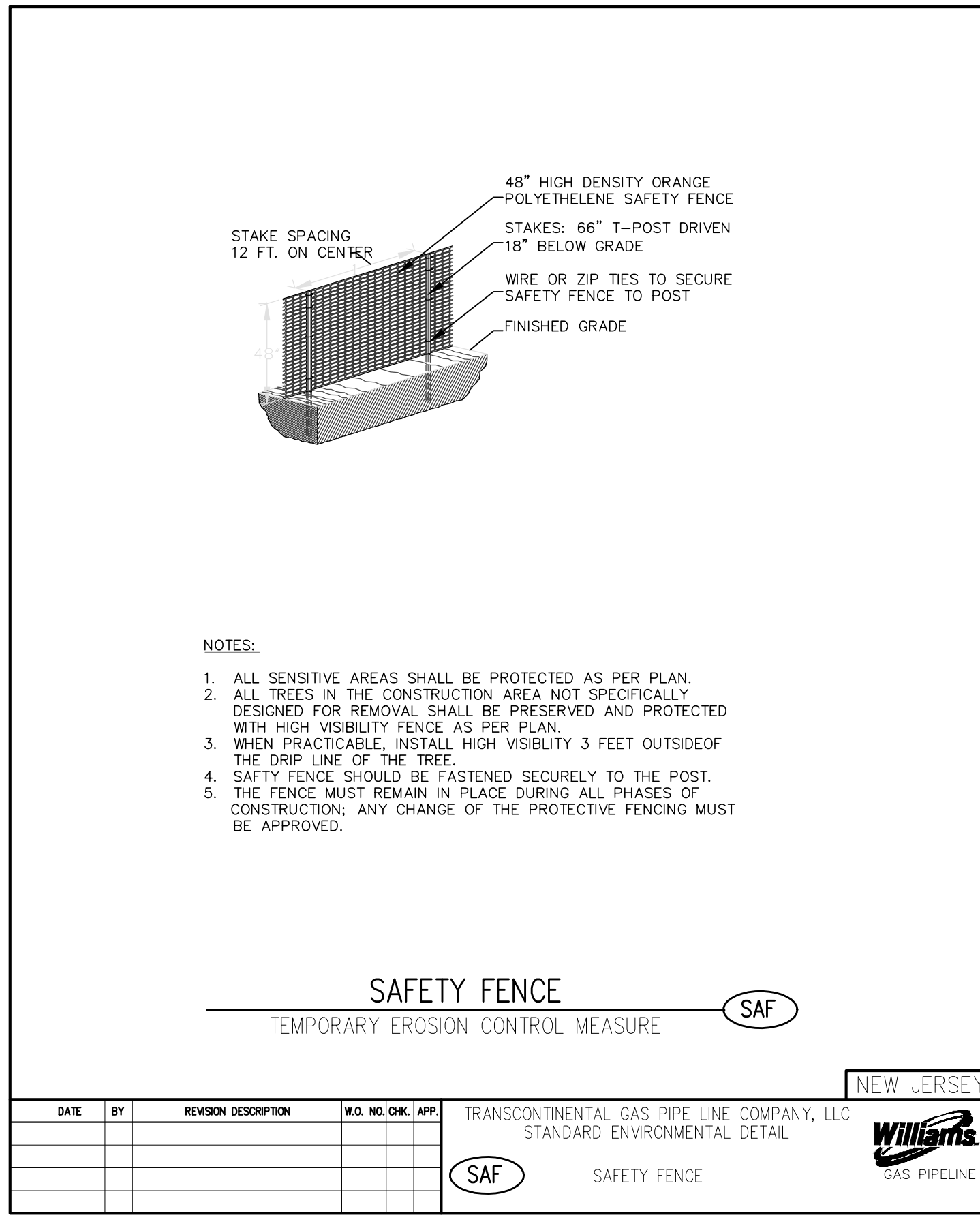
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.
1	11-07-11	DPE	REVISE TO MATCH NJDEP REQUIREMENTS 1093153			DPE JAC

**SEDIMENT BARRIER**  
 TEMPORARY EROSION CONTROL MEASURE



**EROSION CONTROL BLANKET**  
 PERMANENT EROSION CONTROL MEASURE

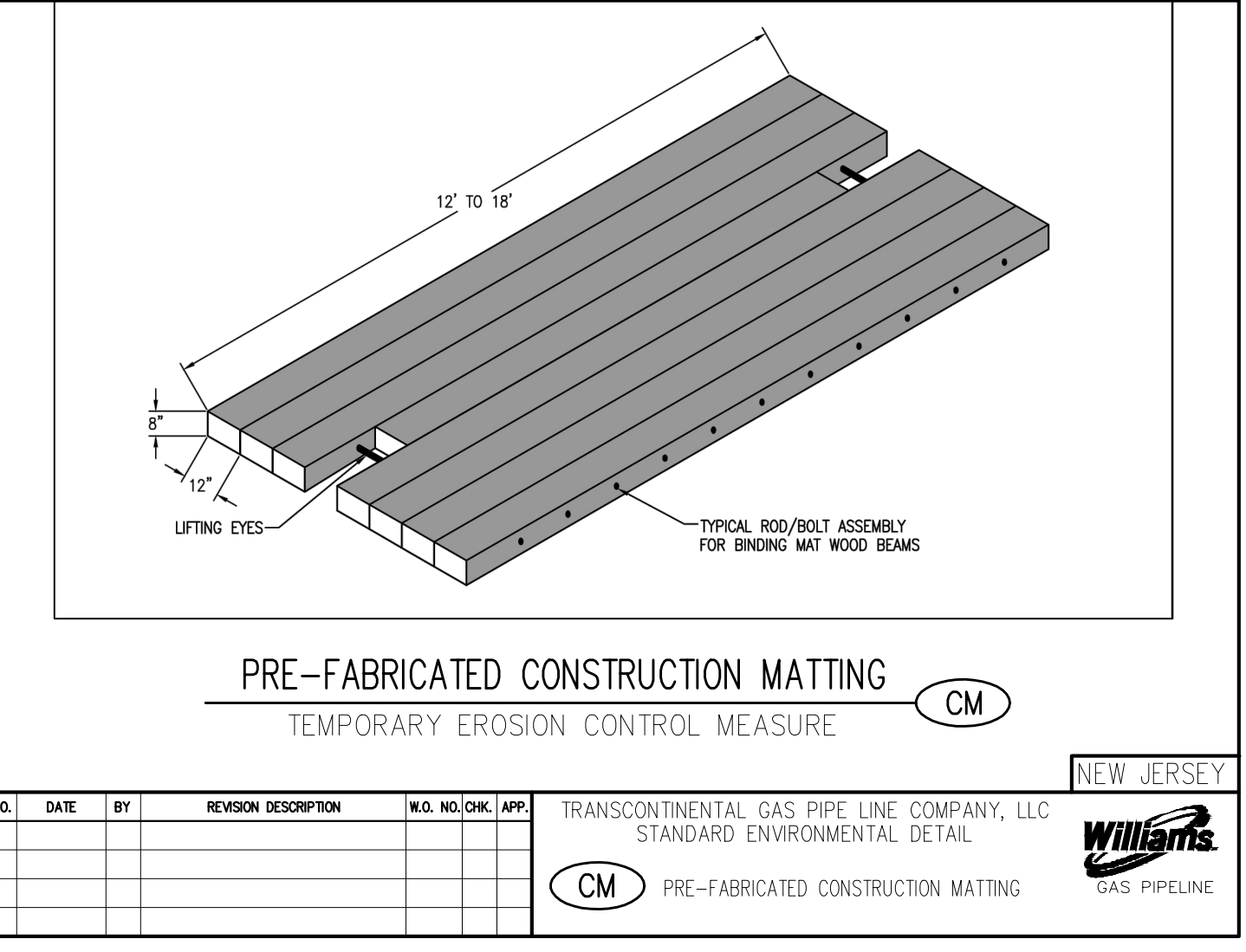
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.



- NOTES:
1. ALL SENSITIVE AREAS SHALL BE PROTECTED AS PER PLAN.
  2. ALL TREES IN THE CONSTRUCTION AREA NOT SPECIFICALLY DESIGNED FOR REMOVAL SHALL BE PRESERVED AND PROTECTED WITH HIGH VISIBILITY FENCE AS PER PLAN.
  3. WHEN PRACTICABLE, INSTALL HIGH VISIBILITY 3 FEET OUTSIDE OF THE DRIP LINE OF THE TREE.
  4. SAFETY FENCE SHOULD BE FASTENED SECURELY TO THE POST. THE FENCE MUST REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION; ANY CHANGE OF THE PROTECTIVE FENCING MUST BE APPROVED.

**SAFETY FENCE**  
 TEMPORARY EROSION CONTROL MEASURE

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



**PRE-FABRICATED CONSTRUCTION MATTING**  
 TEMPORARY EROSION CONTROL MEASURE

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NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
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1	06/15/18	SMR	SUBMITTED TO NJDEP	60515775	PPH	PPH

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.  
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William's  
 GAS PIPELINE

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APPROVED BY: KDM	DATE: 06/15/17	DRAWING NUMBER: 26-0100-80-28-D	SHEET 05
WO: 60515775			OF 12

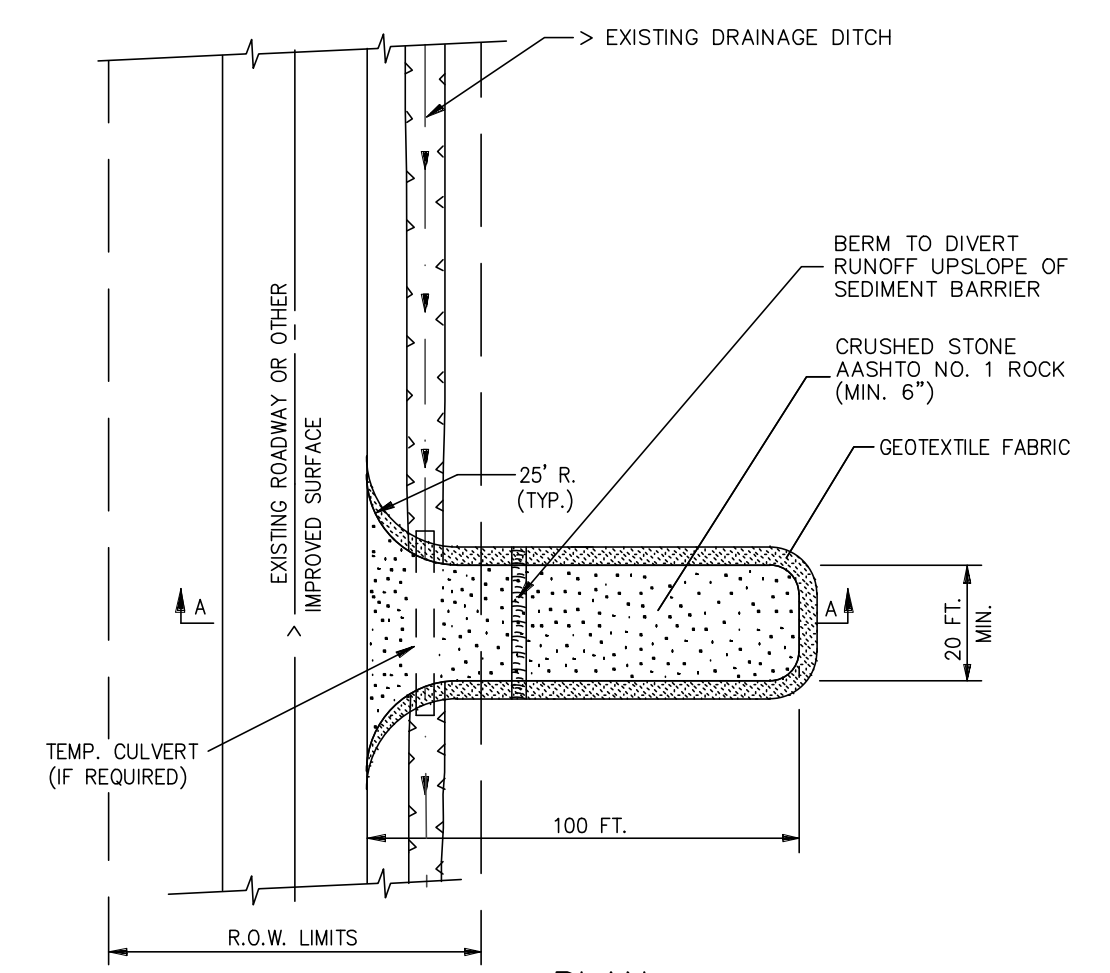


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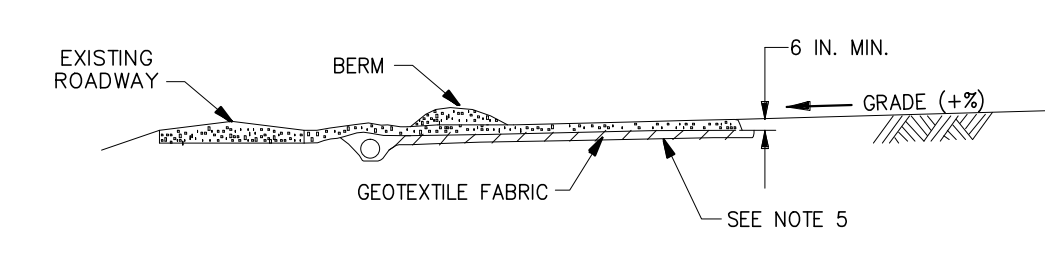
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PLAN  
SCALE: N.T.S.



SECTION A-A  
SCALE: N.T.S.

- NOTES:
1. STABILIZED ENTRANCE SHALL BE INSTALLED WHERE EQUIPMENT ENTERS AND EXITS CONSTRUCTION SITES ONTO PAVED ROADWAY OR OTHER IMPROVED SURFACE.
  2. LOCATE ALL ROADWAY CROSSINGS AND ENTRANCES TO ENSURE SAFE AND ACCESSIBLE CONDITIONS THROUGHOUT THE CONSTRUCTION PHASE.
  3. THE ENTRANCE SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION IN A CONDITION WHICH WILL MINIMIZE TRACKING OF SEDIMENT ONTO A PUBLIC ROADWAY.
  4. ALL SEDIMENT TRACKED ONTO PAVEMENT SHALL BE REMOVED IMMEDIATELY BY SWEEPING OR SCRAPING.
  5. TOP SOIL SHALL BE REMOVED TO A MINIMUM DEPTH OF 6 INCHES PRIOR TO PLACEMENT OF GEOTEXTILE FABRIC AND STONE.
  6. WHERE DRAINAGE DITCH EXISTS, CONTRACTOR SHALL PROVIDE AND INSTALL A FLUME PIPE IN ORDER TO PREVENT IMPEDEMENT OF WATER FLOW.
  7. THE CONSTRUCTION ENTRANCE SHALL BE REMOVED AND AREA RESTORED AS PART OF FINAL GRADING AND CLEAN UP. REMOVAL IS NOT CONTINGENT UPON ESTABLISHMENT OF PERMANENT VEGETATION.

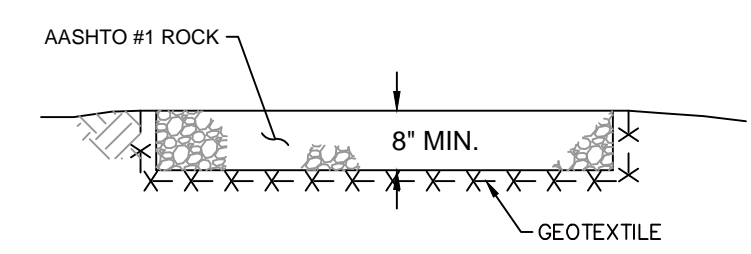
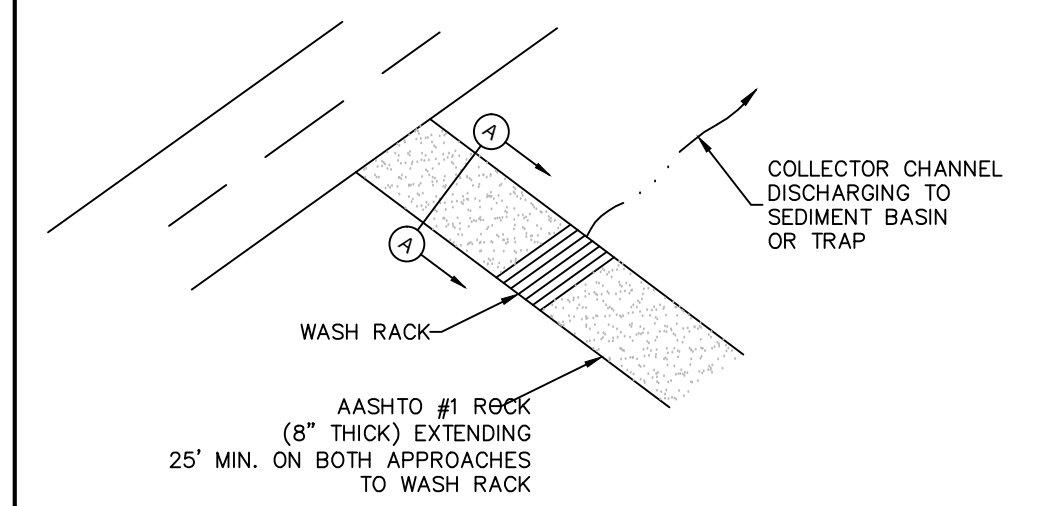
CONSTRUCTION ENTRANCE  
TEMPORARY EROSION CONTROL MEASURE



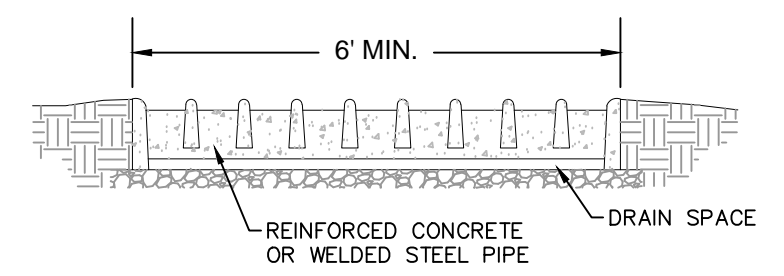
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TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC  
STANDARD ENVIRONMENTAL DETAIL  
CE CONSTRUCTION ENTRANCE



SECTION A-A



- NOTE:
- 1) WASH RACK SHALL BE 20 FEET (MIN.) WIDE OR TOTAL WIDTH OF ACCESS, WHICHEVER IS GREATER.
  - 2) WASH RACK SHALL BE CONSTRUCTED TO ACCOMMODATE ANTICIPATED CONSTRUCTION VEHICULAR TRAFFIC.
  - 3) A WATER SUPPLY SHALL BE MADE AVAILABLE TO WASH THE WHEELS OF ALL VEHICLES EXITING THE SITE.
  - 4) MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. DRAIN SPACE UNDER WASH RACK SHALL BE KEPT OPEN AT ALL TIMES. DAMAGE TO THE WASH RACK SHALL BE REPAIRED PRIOR TO FURTHER USE OF THE RACK. ALL SEDIMENT DEPOSITED ON ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. WASHING THE ROADWAYS OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.
  - 5) IF ROCK CONSTRUCTION ENTRANCES ARE NOT 100 FEET IN LENGTH, THEN WASH RACKS MUST BE UTILIZED.

WASH RACK  
TEMPORARY EROSION CONTROL MEASURE



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TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC  
STANDARD ENVIRONMENTAL DETAIL  
WR WASH RACK



KEVIN MCKEON, P.E.  
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PROFESSIONAL ENGINEER NO GE32586

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1	06/15/18	SMR	SUBMITTED TO NJDEP	60515775	PPH	PPH

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.  
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NORTHEAST SUPPLY ENHANCEMENT PROJECT  
PROPOSED 26" RARITAN BAY LOOP - ONSHORE  
0.16 MI. - M.P. 12.00 TO M.P. 12.16  
MIDDLESEX COUNTY, NEW JERSEY

William's GAS PIPELINE

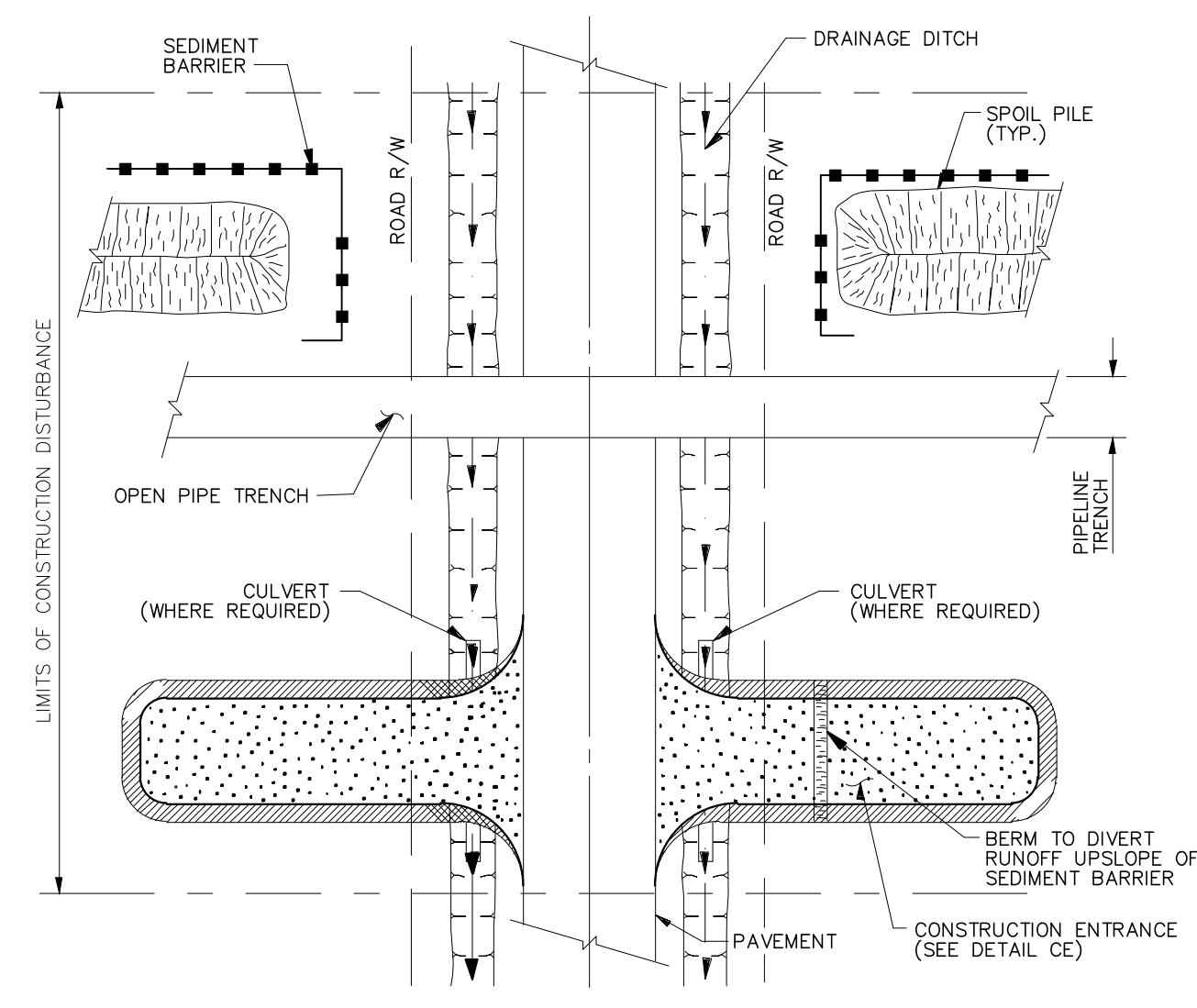
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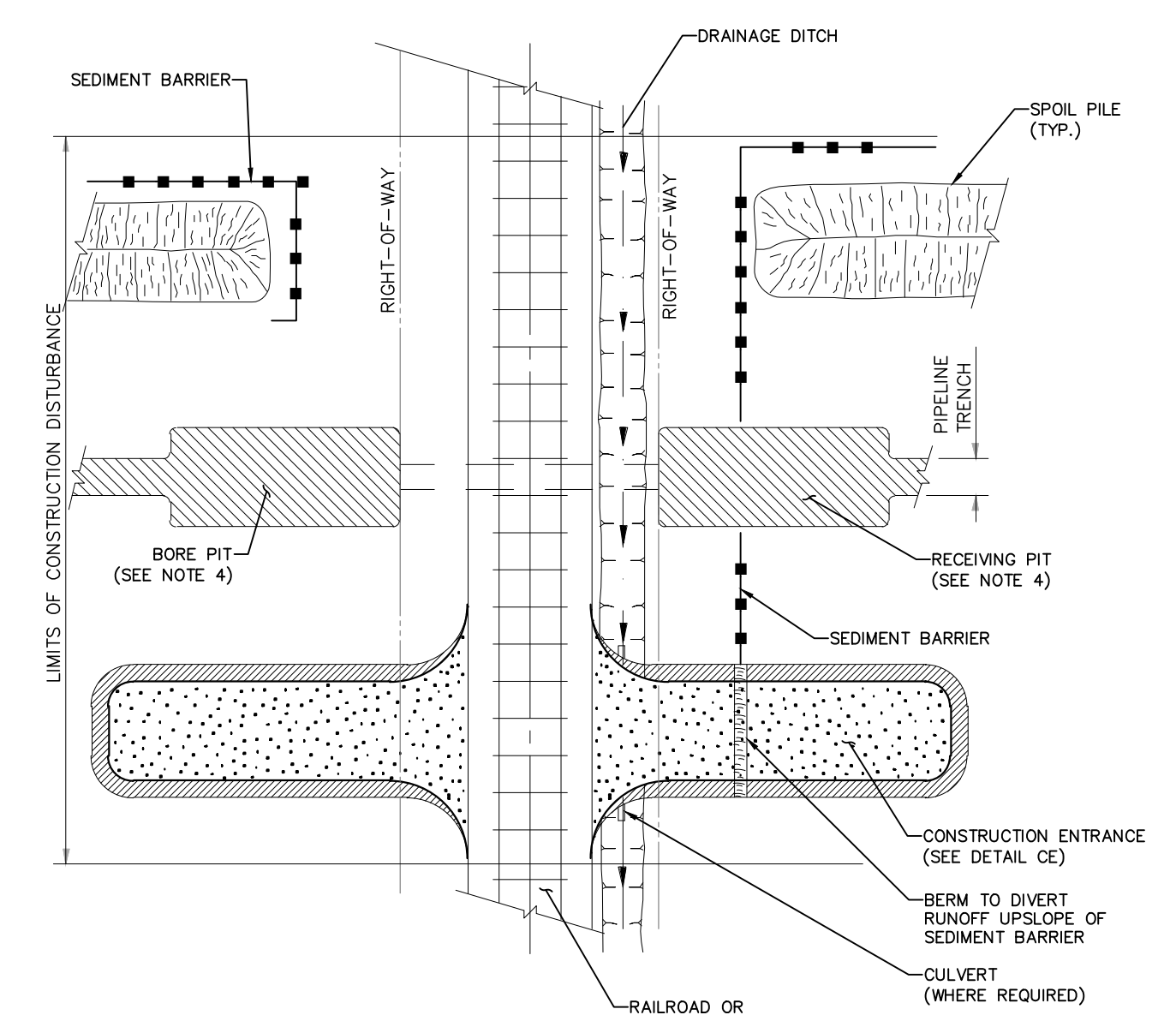
- NOTES:
1. SEDIMENT BARRIER SHALL BE INSTALLED AT THE BASE OF SLOPES ADJACENT TO ROAD CROSSINGS WHERE VEGETATION IS DISTURBED, TO INTERCEPT SURFACE RUNOFF.
  2. PROTECTION FOR SPOIL PILES SHALL BE INSTALLED ONLY WHERE SEDIMENT BARRIERS ACROSS THE ENTIRE DISTURBED AREA ARE NOT REQUIRED.
  3. SEDIMENT BARRIERS SHALL REMAIN IN PLACE UNTIL PERMANENT REVEGETATION IS ESTABLISHED.
  4. CULVERTS TO BE SIZED AND PLACED WHERE REQUIRED TO MAINTAIN WATER FLOW.
  5. CONTRACTOR SHALL BE REQUIRED TO KEEP THE ROAD CLEAN OF DEBRIS AT ALL TIMES.
  6. CONTRACTOR MAY ELECT TO UTILIZE SHEET PILING IN ORDER TO STABILIZE PIPE TRENCH.
  7. CONTRACTOR MAY ELECT TO UTILIZE WELL-POINTS IN ORDER TO REDUCE THE WATER TABLE PRIOR TO COMMENCING EXCAVATION.
  8. DEPENDING ON TOPOGRAPHY AND STATE REQUIREMENTS, SEDIMENT BARRIER MAY BE REQUIRED ACROSS THE ENTIRE CONSTRUCTION RIGHT-OF-WAY AT THE EDGE OF ROAD. IN ADDITION TO THIS DETAIL, REFER TO THE ENVIRONMENTAL ALIGNMENT DRAWINGS FOR PLACEMENT OF SEDIMENT BARRIERS.
  9. CONSTRUCTION ENTRANCE NEEDED AS SHOWN ON SPECIFIC PLAN.

TRENCHED ROAD CROSSING  
TEMPORARY EROSION CONTROL MEASURE (RX.1)

NEW JERSEY  
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC  
STANDARD ENVIRONMENTAL DETAIL  
Williams GAS PIPELINE

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

(RX.1) TRENCHED ROAD CROSSING



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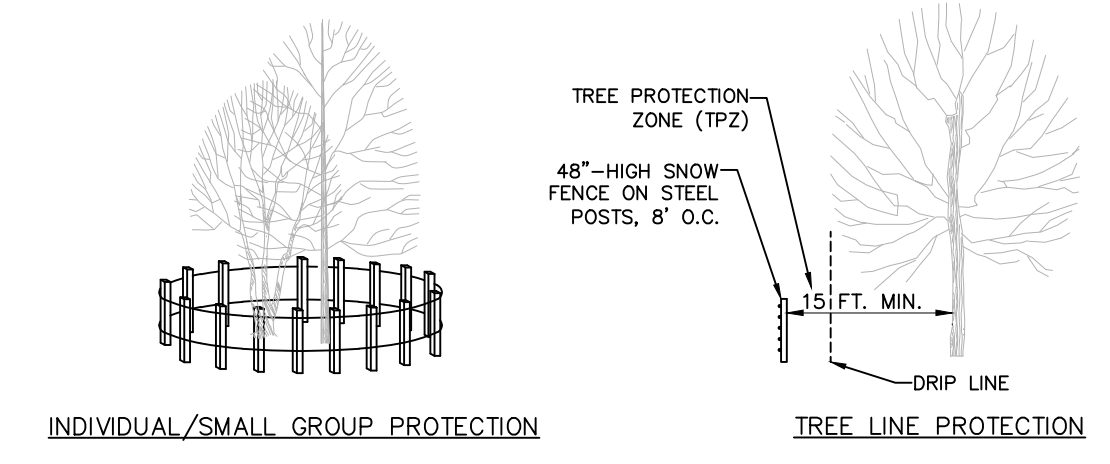
- NOTES:
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  2. PROTECTION FOR SPOIL PILES SHALL BE INSTALLED ONLY WHERE SEDIMENT BARRIERS ACROSS THE ENTIRE DISTURBED AREA ARE NOT REQUIRED.
  3. SEDIMENT BARRIERS SHALL REMAIN IN PLACE UNTIL PERMANENT REVEGETATION IS ESTABLISHED.
  4. WATER REMOVED FROM BORE PIT AND RECEIVING PIT SHALL BE FILTERED THROUGH A DEWATERING STRUCTURE OR FILTER BAG.
  5. IF WELL POINTING IS REQUIRED PRIOR TO EXCAVATING BORE PITS, CONTRACTOR SHALL CONSULT WITH COMPANY'S ENVIRONMENTAL INSPECTOR PRIOR TO COMMENCEMENT OF WORK IN ORDER TO DETERMINE PROPER DEWATERING LOCATION.
  6. CONTRACTOR SHALL BE REQUIRED TO KEEP THE ROAD CLEAN OF DEBRIS AT ALL TIMES.
  7. CONTRACTOR MAY ELECT TO UTILIZE SHEET PILING IN ORDER TO STABILIZE BORE PITS.
  8. DEPENDING ON TOPOGRAPHY AND STATE REQUIREMENTS, SEDIMENT BARRIER MAY BE REQUIRED ACROSS THE ENTIRE CONSTRUCTION RIGHT OF WAY AT THE EDGE OF ROAD. IN ADDITION TO THIS DETAIL, REFER TO THE ENVIRONMENTAL ALIGNMENT DRAWINGS FOR PLACEMENT OF SEDIMENT BARRIERS.

BORED ROAD/RAILROAD CROSSING  
TEMPORARY EROSION CONTROL MEASURE (RX.2)

NEW JERSEY  
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC  
STANDARD ENVIRONMENTAL DETAIL  
Williams GAS PIPELINE

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(RX.2) BORED ROAD/RAILROAD CROSSING



- NOTES:
1. PROTECT TREES WITHIN 25 FEET OF BUILDING SITE TO PREVENT MECHANICAL INJURY. FENCING OF OTHER BARRIERS SHOULD BE INSTALLED AT THE DRIP LINE OF THE TREE BRANCHES.
  2. TREE PROTECTION ZONE SHALL EXTEND AT LEAST 15 FT. FROM THE TRUNK OF THE TREE OR AT THE EDGE OF THE THE DRIP LINE, WHICHEVER IS GREATER.
  3. BOARDS WILL NOT BE NAILED TO TREES DURING BUILDING OPERATIONS.
  4. FEEDER ROOTS SHOULD NOT BE CUT IN AN AREA INSIDE THE DRIP LINE OF THE TREE BRANCHES.
  5. DAMAGED TRUNKS OR EXPOSED ROOTS SHOULD BE PAINTED IMMEDIATELY WITH A GOOD GRADE OF "TREE PAINT". CARE FOR SERIOUS INJURY SHOULD BE PRESCRIBED BY A PROFESSIONAL FORESTER OR LICENSED TREE EXPERT.
  6. TREE LIMB REMOVAL, WHERE NECESSARY, WILL BE DONE FLUSH TO TRUNK OR MAIN BRANCH AND THAT AREA WILL BE PAINTED WITH A GOOD GRADE OF TREE PAINT.

TREE PROTECTION (DURING CONSTRUCTION)  
TEMPORARY EROSION CONTROL MEASURE

NEW JERSEY  
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC  
STANDARD ENVIRONMENTAL DETAIL  
Williams GAS PIPELINE  
TREE PROTECTION (DURING CONSTRUCTION)

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

DUST CONTROL MATERIALS (TABLE 16-1)

MATERIAL	WATER DILUTION	TYPE OF NOZZLE	APPLY GALLONS/ACRE
ANIONIC ASPHALT EMULSION	7:1	COARSE SPRAY	1200
LATEX EMULSION	12.5:1	FINE SPRAY	235
RESIN IN WATER	4:1	FINE SPRAY	300
POLYACRYLAMIDE (PAM)- SPRAY ON POLYACRYLAMIDE (PAM)- DRY SPREAD	APPLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS.		
ACIDULATED SOY BEAN SOAP STICK	NONE	COARSE SPRAY	1200
WATER	NONE	FINE SPRAY	235



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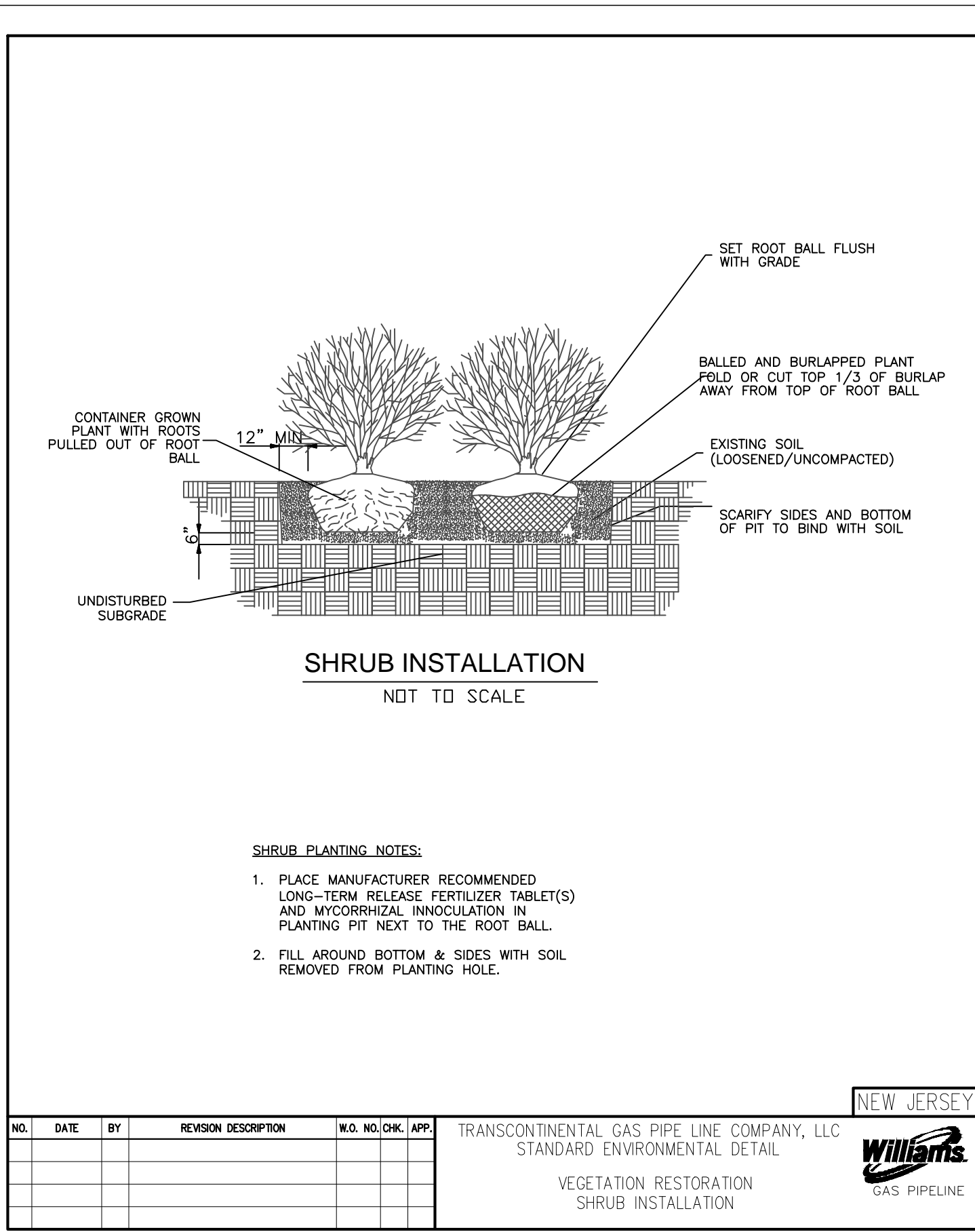
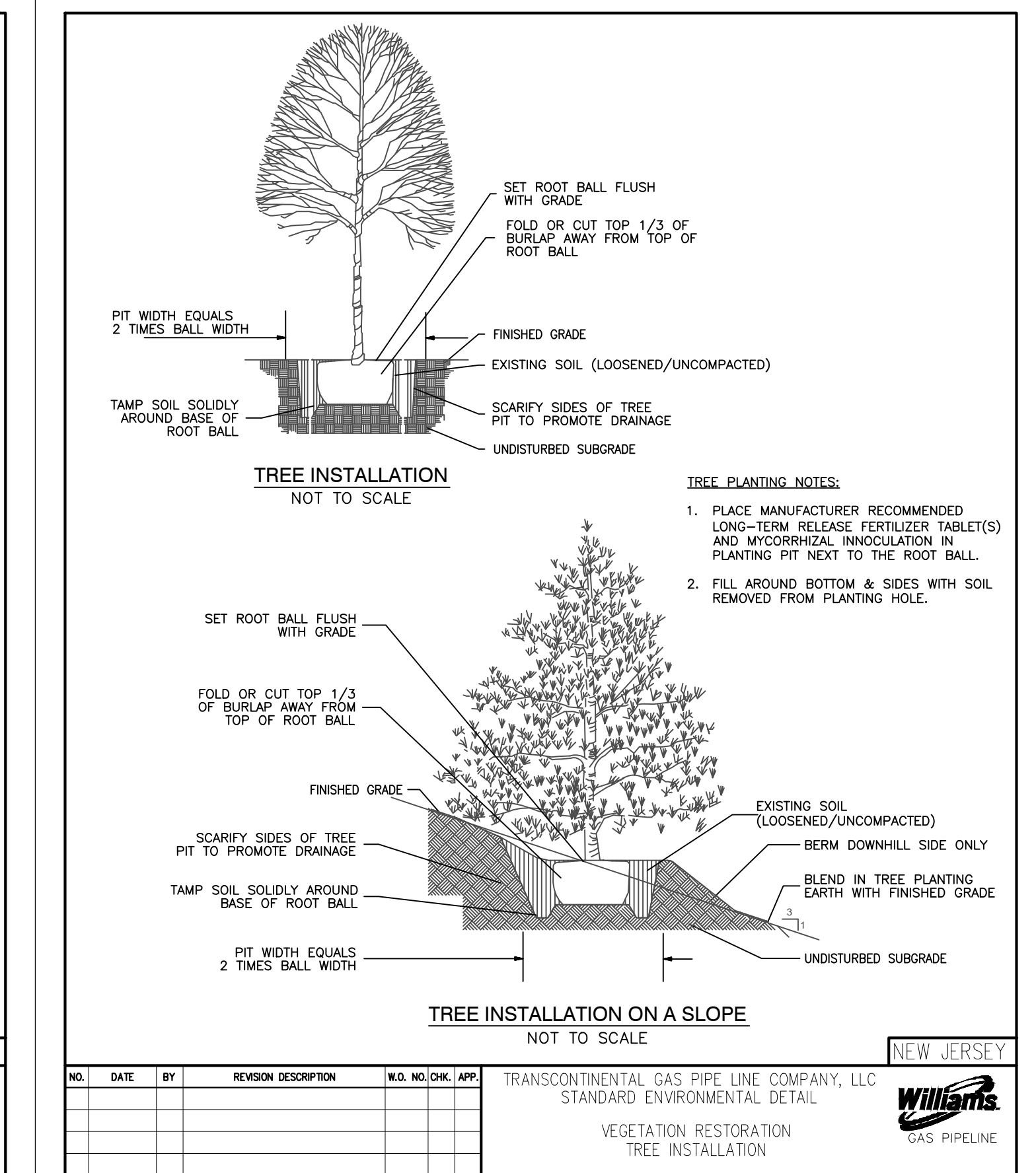
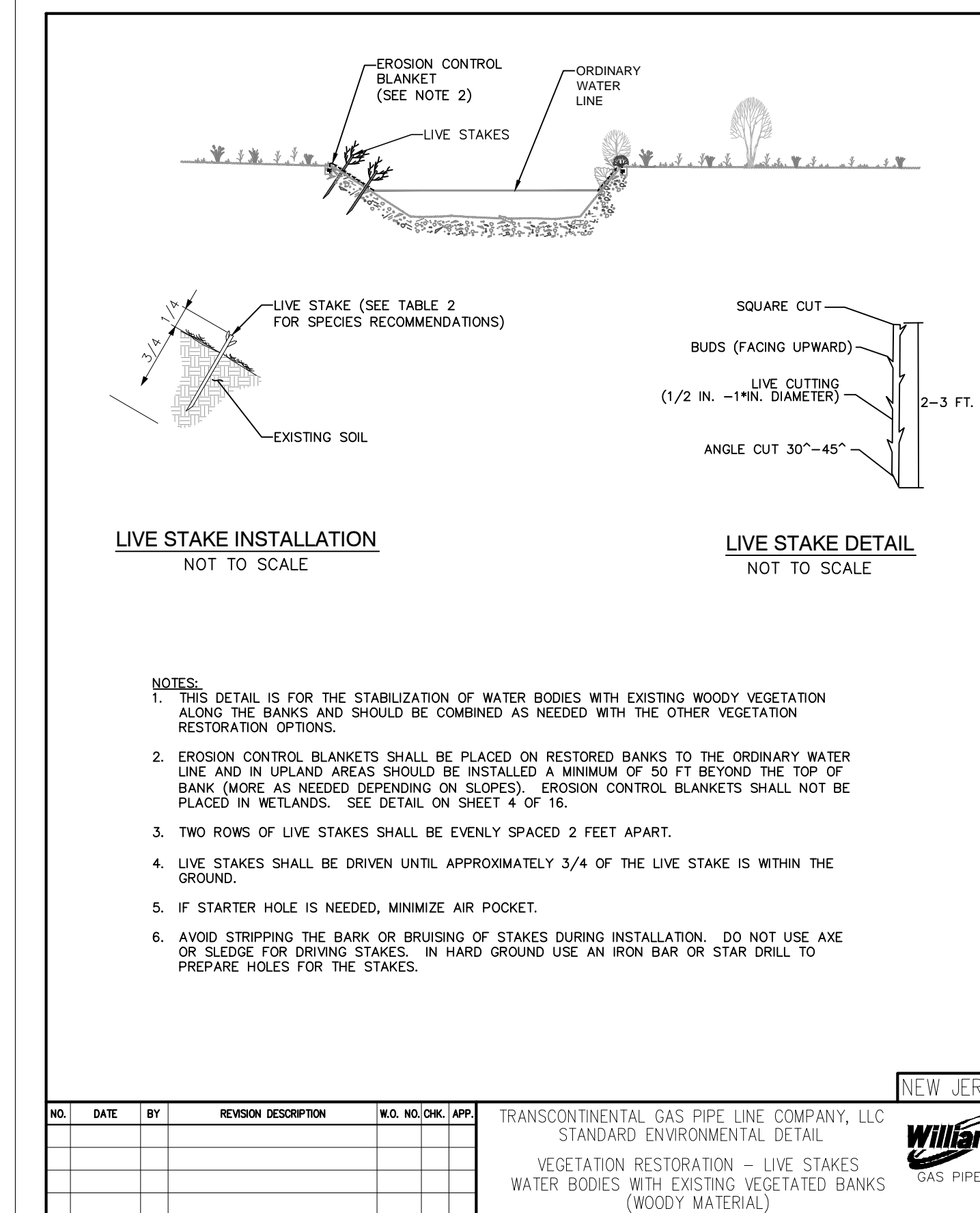
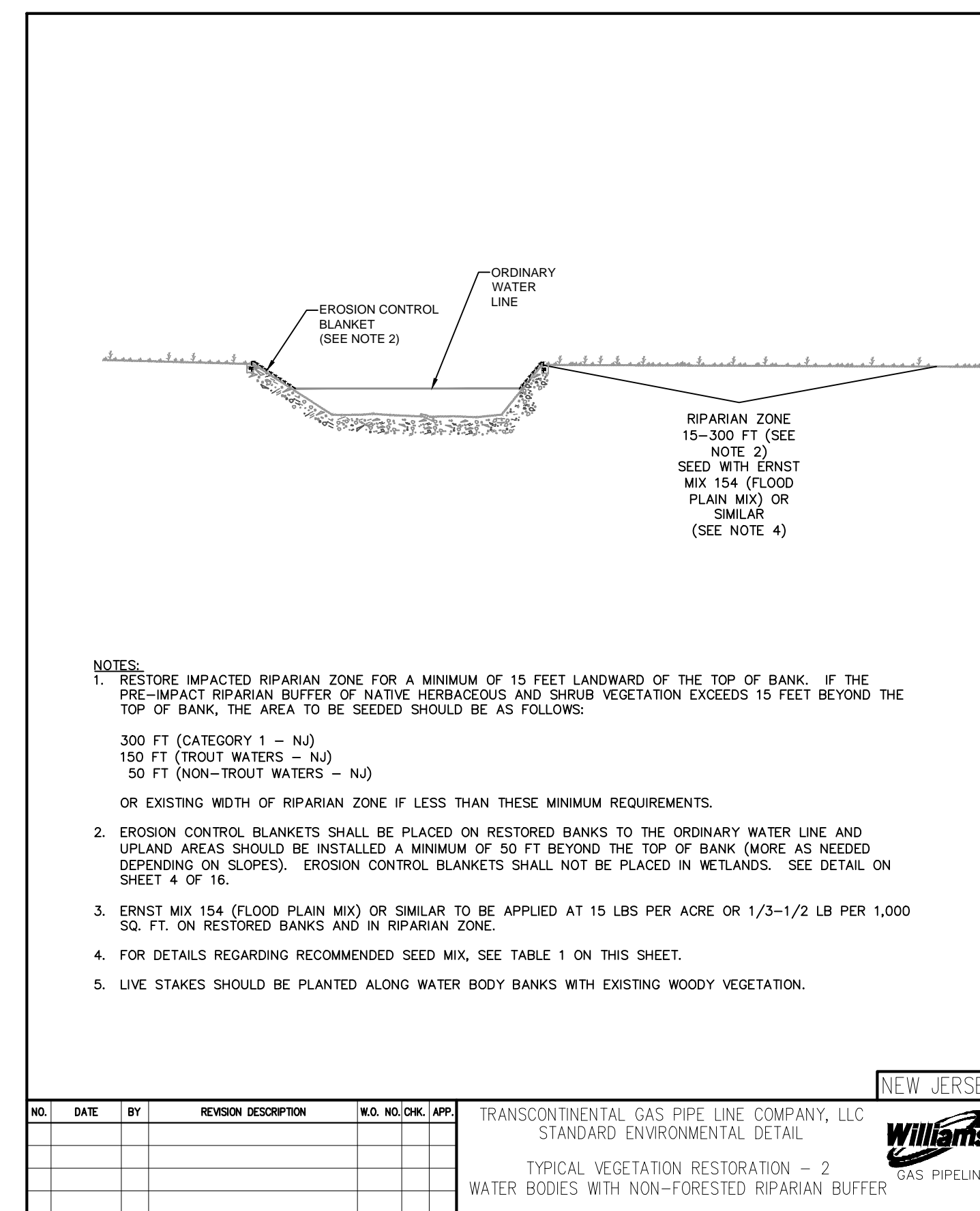
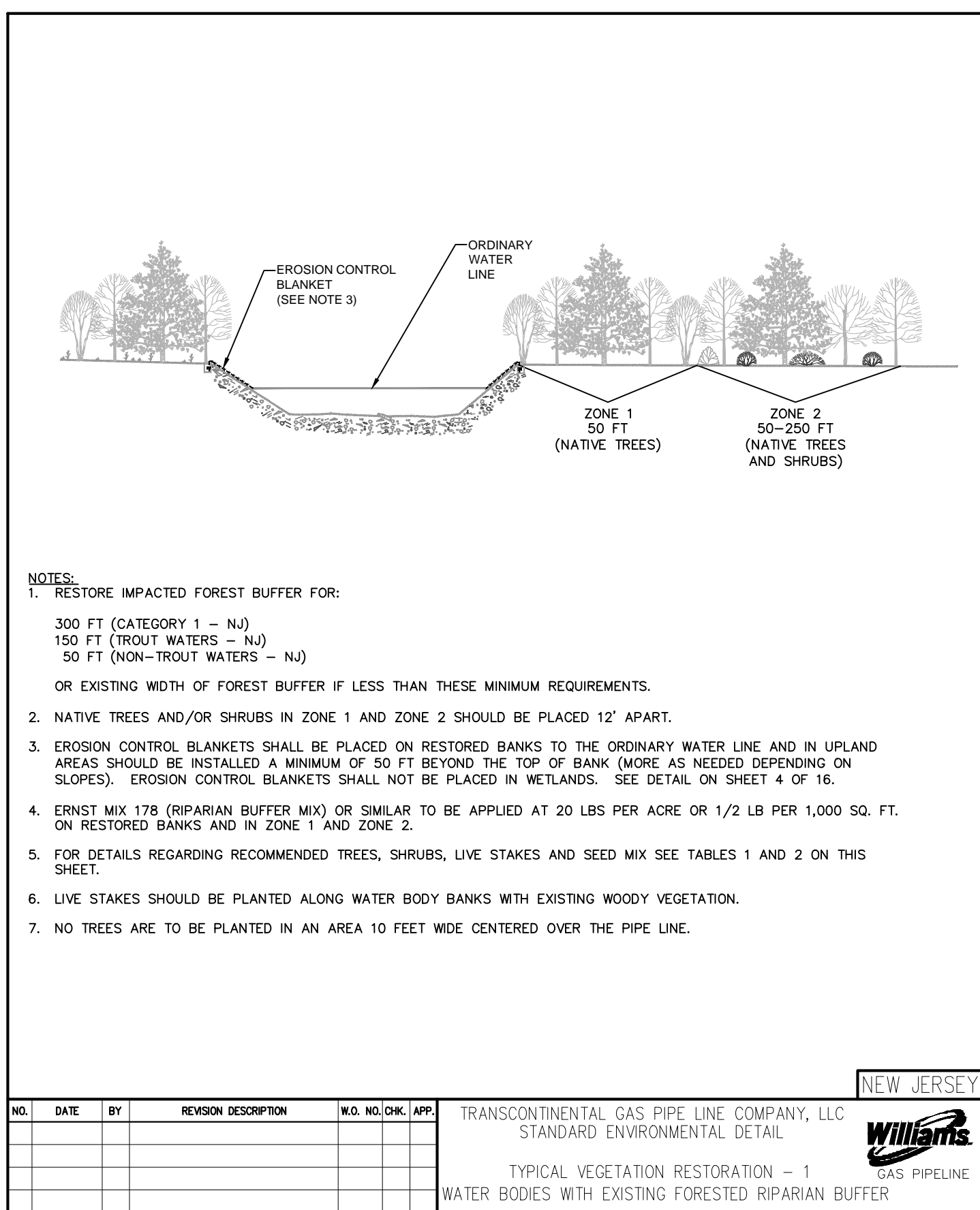
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MIDDLESEX COUNTY, NEW JERSEY

Williams GAS PIPELINE

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**TABLE 1 - RECOMMENDED SEEDING SCHEDULE**

**RIPARIAN BUFFER MIX (ERNMX-178)**  
 APPLICATION RATE: 20 LBS PER ACRE OR 1/2 LB PER 1,000 SQUARE FEET

SCIENTIFIC NAME	COMMON NAME	PERCENT COMPOSITION
PANICUM CLANDESTINUM	DEERTONGUE	13%
CAREX VULPENOIDEA	FOX SEDGE	10%
ELYMUS VIRGINICUS	VIRGINIA WILDRYE	8%
SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	8%
ELYMUS RIPARIUS	RIVERBANK WILDRYE	7%
SCORPASTRUM MUTANS	INDIANGRASS	7%
CHAMAECRISTA FASCICULATA	PARTRIDGE PEA	6%
CORNUS ANOMUM	SILKY DOGWOOD	6%
ANDROPOGON GERARDII	BIG BLUESTEM	5%
PANICUM VIRGATUM	SWITCHGRASS	4%
RUGELCKIA HIRTA	BLACKEYED SUSAN	3%
BAPTISIA AUSTRALIS	BLUE O INDOGO	3%
VERBENA HASTATA	BLUE VERVAIN	3%
VIBURNUM DENTATUM	ARROWWOOD	2%
MONARDA PUNCTATA	SPOTTED BEEBALM	2%
VERNONIA GIGANTEA	GIANT IRONWEED	2%
EUPATORIUM PERFOLIATUM	BONESET	2%
JUNCUS EFFUSUS	SOFT RUSH	2%
HELIOPSIS HELIANTHOIDES	OXEYE SUNFLOWER	2%
EUTHYMIA GRAMMIFOLIA	GRASSLEAF GOLDENROD	1%
PARTHENIUM INTEGRIFOLIUM	WILD QUININE	1%
LOBELIA SIPHILITICA	GREAT BLUE LOBELIA	1%
HELENIUM AUTUMNALE	COMMON SNEEZEWEED	1%

**FLOOD PLAIN MIX (ERNMX-154)**  
 APPLICATION RATE: 15 LBS PER ACRE OR 1/3 - 1/2 LB PER 1,000 SQUARE FEET

SCIENTIFIC NAME	COMMON NAME	PERCENT COMPOSITION
ELYMUS VIRGINICUS	VIRGINIA WILDRYE	20%
CAREX VULPENOIDEA	FOX SEDGE	20%
PANICUM CLANDESTINUM	DEERTONGUE	14%
SCORPASTRUM MUTANS	INDIANGRASS	10%
ANDROPOGON GERARDII	BIG BLUESTEM	10%
PANICUM VIRGATUM	SWITCHGRASS	5%
CAREX CRINITA	FRINGED (HOODING) SEDGE	4%
HELENIUM AUTUMNALE	COMMON SNEEZEWEED	3%
VERBENA HASTATA	BLUE VERVAIN	3%
HELIOPSIS HELIANTHOIDES	OXEYE SUNFLOWER	2%
EUPATORIUM PERFOLIATUM	BONESET	2%
ASTER FULVICUS	PURPLESTEM ASTER	2%
ASCLEPIAS INCARNATA	SWAMP MILKWEED	1%
LUDWIGIA ALTERNIFOLIA	SEEDBOX	1%
MONARDA PUNCTATA	SPOTTED BEEBALM	1%
EUTHYMIA GRAMMIFOLIA	GRASSLEAF GOLDENROD	1%

**TABLE 2 - RECOMMENDED NATIVE TREE, SHRUB AND LIVE STAKE SPECIES**

**ZONE 1 (50 FEET WIDE)**

SCIENTIFIC NAME	COMMON NAME	PLANT FORM	SPACING (FEET)	SIZE / CONTAINER
ACER SACCHARUM	SUGAR MAPLE	TREE	12	#1
BETULA ALLEGANIENSIS	YELLOW BIRCH	TREE	12	#1
BETULA LENTA	BLACK BIRCH	TREE	12	#1
LIRIODENDRON TULIPIFERA	TULIP POPLAR	TREE	12	#1
QUERCUS ALBA	WHITE OAK	TREE	12	#1
QUERCUS RUBRA	RED OAK	TREE	12	#1
QUERCUS VELUTINA	BLACK OAK	TREE	12	#1
PINUS STROBUS	WHITE PINE	TREE	12	#1
TSUGA CANADENSIS	EASTERN HEMLOCK	TREE	12	#1

**ZONE 2 (50 TO 250 FEET WIDE)**

SCIENTIFIC NAME	COMMON NAME	PLANT FORM	SPACING (FEET)	SIZE / CONTAINER
ACER SACCHARUM	SUGAR MAPLE	TREE	12	#1
BETULA ALLEGANIENSIS	YELLOW BIRCH	TREE	12	#1
BETULA LENTA	BLACK BIRCH	TREE	12	#1
LIRIODENDRON TULIPIFERA	TULIP POPLAR	TREE	12	#1
QUERCUS ALBA	WHITE OAK	TREE	12	#1
QUERCUS RUBRA	RED OAK	TREE	12	#1
QUERCUS VELUTINA	BLACK OAK	TREE	12	#1
PINUS STROBUS	WHITE PINE	TREE	12	#1
TSUGA CANADENSIS	EASTERN HEMLOCK	TREE	12	#1
CORNUS SP.	DOGWOOD	SHRUB	12	#1
GAYLUSSACIA SP.	HUCKLEBERRY	SHRUB	12	#1
KALMA LATIFOLIA	MOUNTAIN LAUREL	SHRUB	12	#1
LINDERA BENCOKI	SPIGEBUSH	SHRUB	12	#1
RHODODENDRON SP.	RHODODENDRON	SHRUB	12	#1
VACINIUM SP.	BLUEBERRY	SHRUB	12	#1
VIBURNUM SP.	ARROWWOOD	SHRUB	12	#1

**LIVE STAKES**

SCIENTIFIC NAME	COMMON NAME	PLANT FORM	SPACING (FEET)
SALIX SP.	WILLOW	LIVE STAKE	2
CORNUS SP.	DOGWOOD	LIVE STAKE	2

**NOTES:**  
 1. THE WIDTH OF ZONE 2 WILL VARY DEPENDING ON THE LOCATION OF THE WATER BODY (PA VS. NJ), THE SURFACE WATER CLASSIFICATION (SEE TABLE II.1 IN RESTORATION NARRATIVE) AND THE WIDTH OF THE EXISTING FORESTED RIPARIAN BUFFER.  
 2. IF THE EXISTING FORESTED RIPARIAN BUFFER IS LESS THAN THE MINIMUM REQUIRED WIDTH BASED ON TABLE II.1, NATIVE TREES AND SHRUBS SHOULD BE PLANTED TO THE EXTENT OF THE EXISTING FORESTED RIPARIAN BUFFER.

**UPLANDS PLANT SPECIES SEED MIX AND COMPOSITION FOR RESTORATION ACTIVITIES (PERMANENT REVEGETATION) (COVERS AREAS OF UPLAND IMPACTS)**

SPECIES	APPLICATION RATES (LBS/AC)	APPLICATION DATES
TURF TYPE TALL FESCUE (BLEND OF 3 CULTIVARS)	200	MARCH 1 - AUGUST 14
CREeping RED FESCUE	200	AUGUST 15 - OCTOBER 15
FERTILIZER/SOIL SUPPLEMENT: AGRICULTURAL GRADE LIMESTONE	IN ACCORDANCE WITH SOIL TEST RESULTS	PRIOR TO SEEDING
FERTILIZER	500 (11 LBS/1000 SQ. FT.) OF 10-10-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS SOIL TEST INDICATES OTHERWISE AND INCORPORATED INTO THE SURFACE 4 INCHES	PRIOR TO SEEDING

**UPLANDS PLANT SPECIES SEED MIX AND COMPOSITION FOR RESTORATION ACTIVITIES (TEMPORARY REVEGETATION) (COVERS AREAS OF UPLAND IMPACTS)**

SPECIES	APPLICATION RATES (LBS/AC)	APPLICATION DATES
PERENNIAL RYEGRASS	100	MARCH 1 - OCTOBER 1
WINTER CEREAL RYE	112	AUGUST 1 - NOVEMBER 15
FERTILIZER/SOIL SUPPLEMENT: AGRICULTURAL GRADE LIMESTONE	IN ACCORDANCE WITH SOIL TEST RESULTS	PRIOR TO SEEDING
FERTILIZER	500 (11 LBS/1000 SQ. FT.) OF 10-10-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS SOIL TEST INDICATES OTHERWISE AND INCORPORATED INTO THE SURFACE 4 INCHES	PRIOR TO SEEDING

**NOTES:**  
 1. NO HAY OR STRAW MULCH SHALL BE PLACED ON WATERBODY BANKS. AT A MINIMUM, ALL WATERBODY BANKS SHALL BE COVERED WITH AN EROSION CONTROL BLANKET. IN ADDITION, ONLY STRAW MULCH (AND NOT HAY MULCH) SHALL BE USED IN AREAS ADJACENT TO WETLANDS.  
 2. IF A TEMPORARY SEED MIX IS UTILIZED PRIOR TO A PERMANENT SEED MIX, A PERMANENT SEED MIX SHALL BE APPLIED THE FOLLOWING GROWING SEASON.

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TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC  
 STANDARD ENVIRONMENTAL DETAIL

VEGETATION RESTORATION  
 SHRUB INSTALLATION

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

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC  
 STANDARD ENVIRONMENTAL DETAIL

VEGETATION RESTORATION - 2  
 WATER BODIES WITH NON-FORESTED RIPARIAN BUFFER

KEVIN MCKEON, P.E.

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REVISIONS

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Williams GAS PIPELINE

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NEW JERSEY  
 PROFESSIONAL ENGINEER NO. G232586



# WETLAND AND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES

## I. APPLICABILITY

A. THE INTENT OF THESE PROCEDURES IS TO ASSIST PROJECT SPONSORS BY IDENTIFYING BASELINE MITIGATION MEASURES FOR MINIMIZING THE EXTENT AND DURATION OF PROJECT-RELATED DISTURBANCE ON WETLANDS AND WATERBODIES. PROJECT SPONSORS SHALL SPECIFY IN THEIR APPLICATIONS FOR A NEW FERC AUTHORIZATION, AND IN PRIOR NOTICE AND ADVANCE NOTICE FILINGS, ANY INDIVIDUAL MEASURES IN THESE PROCEDURES THEY CONSIDER UNNECESSARY, TECHNICALLY INFEASIBLE, OR UNSUITABLE DUE TO LOCAL CONDITIONS AND FULLY DESCRIBE ANY ALTERNATIVE MEASURES THEY WOULD USE. PROJECT SPONSORS SHALL ALSO EXPLAIN HOW THOSE ALTERNATIVE MEASURES WOULD ACHIEVE A COMPARABLE LEVEL OF MITIGATION. ONCE A PROJECT IS AUTHORIZED, PROJECT SPONSORS CAN REQUEST FURTHER CHANGES AS VARIANCES TO THE MEASURES IN THESE PROCEDURES (OR THE APPLICANT'S APPROVED PROCEDURES). THE DIRECTOR OF THE OFFICE OF ENERGY PROJECTS (DIRECTOR) WILL CONSIDER APPROVAL OF VARIANCES UPON THE PROJECT SPONSOR'S WRITTEN REQUEST, IF THE DIRECTOR AGREES THAT A VARIANCE:

1. PROVIDES EQUAL OR BETTER ENVIRONMENTAL PROTECTION;
2. IS NECESSARY BECAUSE A PORTION OF THESE PROCEDURES IS INFEASIBLE OR UNWORKABLE BASED ON PROJECT-SPECIFIC CONDITIONS; OR
3. IS SPECIFICALLY REQUIRED IN WRITING BY ANOTHER FEDERAL, STATE, OR NATIVE AMERICAN LAND MANAGEMENT AGENCY FOR THE PORTION OF THE PROJECT ON ITS LAND OR UNDER ITS JURISDICTION.

SPONSORS OF PROJECTS PLANNED FOR CONSTRUCTION UNDER THE AUTOMATIC AUTHORIZATION PROVISIONS IN THE FERC'S REGULATIONS MUST RECEIVE WRITTEN APPROVAL FOR ANY VARIANCES IN ADVANCE OF CONSTRUCTION.

PROJECT-RELATED IMPACTS ON NON-WETLAND AREAS ARE ADDRESSED IN THE STAFFS UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN (PLAN).

## B. DEFINITIONS

1. "WATERBODY" INCLUDES ANY NATURAL OR ARTIFICIAL STREAM, RIVER, OR DRAINAGE WITH PERCEPTIBLE FLOW AT THE TIME OF CROSSING, AND OTHER PERMANENT WATERBODIES SUCH AS PONDS AND LAKES:

- A. "MINOR WATERBODY" INCLUDES ALL WATERBODIES LESS THAN OR EQUAL TO 10 FEET WIDE AT THE WATER'S EDGE AT THE TIME OF CROSSING;
- B. "INTERMEDIATE WATERBODY" INCLUDES ALL WATERBODIES GREATER THAN 10 FEET WIDE BUT LESS THAN OR EQUAL TO 100 FEET WIDE AT THE WATER'S EDGE AT THE TIME OF CROSSING; AND
- C. "MAJOR WATERBODY" INCLUDES ALL WATERBODIES GREATER THAN 100 FEET WIDE AT THE WATER'S EDGE AT THE TIME OF CROSSING.

2. "WETLAND" INCLUDES ANY AREA THAT IS NOT IN ACTIVELY CULTIVATED OR ROTATED CROPLAND AND THAT SATISFIES THE REQUIREMENTS OF THE CURRENT FEDERAL METHODOLOGY FOR IDENTIFYING AND DELINEATING WETLANDS.

E. HAZARDOUS MATERIALS, INCLUDING CHEMICALS, FUELS, AND LUBRICATING OILS, ARE NOT STORED WITHIN 100 FEET OF A WETLAND, WATERBODY, OR DESIGNATED MUNICIPAL WATERSHED AREA, UNLESS THE LOCATION IS DESIGNATED FOR SUCH USE BY AN APPROPRIATE GOVERNMENTAL AUTHORITY. THIS APPLIES TO STORAGE OF THESE MATERIALS AND DOES NOT APPLY TO NORMAL OPERATION OR USE OF EQUIPMENT IN THESE AREAS;

F. CONCRETE COATING ACTIVITIES ARE NOT PERFORMED WITHIN 100 FEET OF A WETLAND OR WATERBODY BOUNDARY, UNLESS THE LOCATION IS AN EXISTING INDUSTRIAL SITE DESIGNATED FOR SUCH USE. THESE ACTIVITIES CAN OCCUR CLOSER ONLY IF THE ENVIRONMENTAL INSPECTOR DETERMINES THAT THERE IS NO REASONABLE ALTERNATIVE, AND THE PROJECT SPONSOR AND ITS CONTRACTORS HAVE TAKEN APPROPRIATE STEPS (INCLUDING SECONDARY CONTAINMENT STRUCTURES) TO PREVENT SPILLS AND PROVIDE FOR PROMPT CLEANUP IN THE EVENT OF A SPILL;

G. PUMPS OPERATING WITHIN 100 FEET OF A WATERBODY OR WETLAND BOUNDARY UTILIZE APPROPRIATE SECONDARY CONTAINMENT SYSTEMS TO PREVENT SPILLS; AND

H. BULK STORAGE OF HAZARDOUS MATERIALS, INCLUDING CHEMICALS, FUELS, AND LUBRICATING OILS HAVE APPROPRIATE SECONDARY CONTAINMENT SYSTEMS TO PREVENT SPILLS.

2. THE PROJECT SPONSOR AND ITS CONTRACTORS MUST STRUCTURE THEIR OPERATIONS IN A MANNER THAT PROVIDES FOR THE PROMPT AND EFFECTIVE CLEANUP OF SPILLS OF FUEL AND OTHER HAZARDOUS MATERIALS. AT A MINIMUM, THE PROJECT SPONSOR AND ITS CONTRACTORS MUST:

- A. ENSURE THAT EACH CONSTRUCTION CREW (INCLUDING CLEANUP CREWS) HAS ON HAND SUFFICIENT SUPPLIES OF ABSORBENT AND BARRIER MATERIALS TO ALLOW THE RAPID CONTAINMENT AND RECOVERY OF SPILLED MATERIALS AND KNOWS THE PROCEDURE FOR REPORTING SPILLS AND UNANTICIPATED DISCOVERIES OF CONTAMINATION;
- B. ENSURE THAT EACH CONSTRUCTION CREW HAS ON HAND SUFFICIENT TOOLS AND MATERIAL TO STOP LEAKS;
- C. KNOW THE CONTACT NAMES AND TELEPHONE NUMBERS FOR ALL LOCAL, STATE, AND FEDERAL AGENCIES (INCLUDING, IF NECESSARY, THE U. S. COAST GUARD AND THE NATIONAL RESPONSE CENTER) THAT MUST BE NOTIFIED OF A SPILL; AND
- D. FOLLOW THE REQUIREMENTS OF THOSE AGENCIES IN CLEANING UP THE SPILL, IN EXCAVATING AND DISPOSING OF SOILS OR OTHER MATERIALS CONTAMINATED BY A SPILL, AND IN COLLECTING AND DISPOSING OF WASTE GENERATED DURING SPILL CLEANUP.

## B. AGENCY COORDINATION

THE PROJECT SPONSOR MUST COORDINATE WITH THE APPROPRIATE LOCAL, STATE, AND FEDERAL AGENCIES AS OUTLINED IN THESE PROCEDURES AND IN THE FERC'S ORDERS.

## II. PRECONSTRUCTION FILING

A. THE FOLLOWING INFORMATION MUST BE FILED WITH THE SECRETARY OF THE FERC (SECRETARY) PRIOR TO THE BEGINNING OF CONSTRUCTION, FOR THE REVIEW AND WRITTEN APPROVAL BY THE DIRECTOR:

1. SITE-SPECIFIC JUSTIFICATIONS FOR EXTRA WORK AREAS THAT WOULD BE CLOSER THAN 50 FEET FROM A WATERBODY OR WETLAND; AND
2. SITE-SPECIFIC JUSTIFICATIONS FOR THE USE OF A CONSTRUCTION RIGHT-OF-WAY GREATER THAN 75-FOOT-WIDE IN WETLANDS.

B. THE FOLLOWING INFORMATION MUST BE FILED WITH THE SECRETARY PRIOR TO THE BEGINNING OF CONSTRUCTION. THESE FILING REQUIREMENTS DO NOT APPLY TO PROJECTS CONSTRUCTED UNDER THE AUTOMATIC AUTHORIZATION PROVISIONS IN THE FERC'S REGULATIONS:

1. SPILL PREVENTION AND RESPONSE PROCEDURES SPECIFIED IN SECTION IV.A;
2. A SCHEDULE IDENTIFYING WHEN TRENCHING OR BLASTING WILL OCCUR WITHIN EACH WATERBODY GREATER THAN 10 FEET WIDE, WITHIN ANY DESIGNATED COLDWATER FISHERY, AND WITHIN ANY WATERBODY IDENTIFIED AS HABITAT FOR FEDERALLY-LISTED THREATENED OR ENDANGERED SPECIES. THE PROJECT SPONSOR WILL REVISE THE SCHEDULE AS NECESSARY TO PROVIDE FERC STAFF AT LEAST 14 DAYS ADVANCE NOTICE. CHANGES WITHIN THIS LAST 14-DAY PERIOD MUST PROVIDE FOR AT LEAST 48 HOURS ADVANCE NOTICE.
3. PLANS FOR HORIZONTAL DIRECTIONAL DRILLS (HDD) UNDER WETLANDS OR WATERBODIES, SPECIFIED IN SECTION V.B.6.D;
4. SITE-SPECIFIC PLANS FOR MAJOR WATERBODY CROSSINGS, DESCRIBED IN SECTION V.B.9;
5. A WETLAND DELINEATION REPORT AS DESCRIBED IN SECTION VI.A.1, IF APPLICABLE; AND
6. THE HYDROSTATIC TESTING INFORMATION SPECIFIED IN SECTION VII.B.3

## III. ENVIRONMENTAL INSPECTORS

A. AT LEAST ONE ENVIRONMENTAL INSPECTOR HAVING KNOWLEDGE OF THE WETLAND AND WATERBODY CONDITIONS IN THE PROJECT AREA IS REQUIRED FOR EACH CONSTRUCTION SPREAD. THE NUMBER AND EXPERIENCE OF ENVIRONMENTAL INSPECTORS ASSIGNED TO EACH CONSTRUCTION SPREAD SHALL BE APPROPRIATE FOR THE LENGTH OF THE CONSTRUCTION SPREAD AND THE NUMBER/SIGNIFICANCE OF RESOURCES AFFECTED.

B. THE ENVIRONMENTAL INSPECTOR'S RESPONSIBILITIES ARE OUTLINED IN THE UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN (PLAN).

## IV. PRECONSTRUCTION PLANNING

A. THE PROJECT SPONSOR SHALL DEVELOP PROJECT-SPECIFIC SPILL PREVENTION AND RESPONSE PROCEDURES THAT MEET APPLICABLE REQUIREMENTS OF STATE AND FEDERAL AGENCIES. A COPY MUST BE FILED WITH THE SECRETARY PRIOR TO CONSTRUCTION AND MADE AVAILABLE IN THE FIELD ON EACH CONSTRUCTION SPREAD. THIS FILING REQUIREMENT DOES NOT APPLY TO PROJECTS CONSTRUCTED UNDER THE AUTOMATIC AUTHORIZATION PROVISIONS IN THE FERC'S REGULATIONS.

1. IT SHALL BE THE RESPONSIBILITY OF THE PROJECT SPONSOR AND ITS CONTRACTORS TO STRUCTURE THEIR OPERATIONS IN A MANNER THAT REDUCES THE RISK OF SPILLS OR THE ACCIDENTAL EXPOSURE OF FUELS OR HAZARDOUS MATERIALS TO WATERBODIES OR WETLANDS. THE PROJECT SPONSOR AND ITS CONTRACTORS MUST, AT A MINIMUM, ENSURE THAT:

- A. ALL EMPLOYEES HANDLING FUELS AND OTHER HAZARDOUS MATERIALS ARE PROPERLY TRAINED;
- B. ALL EQUIPMENT IS IN GOOD OPERATING ORDER AND INSPECTED ON A REGULAR BASIS;
- C. FUEL TRUCKS TRANSPORTING FUEL TO ON-SITE EQUIPMENT TRAVEL ONLY ON APPROVED ACCESS ROADS;
- D. ALL EQUIPMENT IS PARKED OVERNIGHT AND/OR FUELED AT LEAST 100 FEET FROM A WATERBODY OR IN AN UPLAND AREA AT LEAST 100 FEET FROM A WETLAND BOUNDARY. THESE ACTIVITIES CAN OCCUR CLOSER ONLY IF THE ENVIRONMENTAL INSPECTOR DETERMINES THAT THERE IS NO REASONABLE ALTERNATIVE, AND THE PROJECT SPONSOR AND ITS CONTRACTORS HAVE TAKEN APPROPRIATE STEPS (INCLUDING SECONDARY CONTAINMENT STRUCTURES) TO PREVENT SPILLS AND PROVIDE FOR PROMPT CLEANUP IN THE EVENT OF A SPILL;

## 4. SPOIL PILE PLACEMENT AND CONTROL

A. ALL SPOIL FROM MINOR AND INTERMEDIATE WATERBODY CROSSINGS, AND UPLAND SPOIL FROM MAJOR WATERBODY CROSSINGS, MUST BE PLACED IN THE CONSTRUCTION RIGHT-OF-WAY AT LEAST 10 FEET FROM THE WATER'S EDGE OR IN ADDITIONAL EXTRA WORK AREAS AS DESCRIBED IN SECTION V.B.2.

B. USE SEDIMENT BARRIERS TO PREVENT THE FLOW OF SPOIL OR SILT-LADEN WATER INTO ANY WATERBODY.

## 5. EQUIPMENT BRIDGES

A. ONLY CLEARING EQUIPMENT AND EQUIPMENT NECESSARY FOR INSTALLATION OF EQUIPMENT BRIDGES MAY CROSS WATERBODIES PRIOR TO BRIDGE INSTALLATION. LIMIT THE NUMBER OF SUCH CROSSINGS OF EACH WATERBODY TO ONE PER PIECE OF CLEARING EQUIPMENT.

B. CONSTRUCT AND MAINTAIN EQUIPMENT BRIDGES TO ALLOW UNRESTRICTED FLOW AND TO PREVENT SOIL FROM ENTERING THE WATERBODY. EXAMPLES OF SUCH BRIDGES INCLUDE:

- (1) EQUIPMENT PADS AND CULVERT(S);
- (2) EQUIPMENT PADS OR RAILROAD CAR BRIDGES WITHOUT CULVERTS;
- (3) CLEAN ROCK FILL AND CULVERT(S); AND
- (4) FLEX-FLOAT OR PORTABLE BRIDGES.

ADDITIONAL OPTIONS FOR EQUIPMENT BRIDGES MAY BE UTILIZED THAT ACHIEVE THE PERFORMANCE OBJECTIVES NOTED ABOVE. DO NOT USE SOIL TO CONSTRUCT OR STABILIZE EQUIPMENT BRIDGES.

C. DESIGN AND MAINTAIN EACH EQUIPMENT BRIDGE TO WITHSTAND AND PASS THE HIGHEST FLOW EXPECTED TO OCCUR WHILE THE BRIDGE IS IN PLACE. ALIGN CULVERTS TO PREVENT BANK EROSION OR STREAMBED SCOUR. IF NECESSARY, INSTALL ENERGY DISSIPATING DEVICES DOWNSTREAM OF THE CULVERTS.

D. DESIGN AND MAINTAIN EQUIPMENT BRIDGES TO PREVENT SOIL FROM ENTERING THE WATERBODY.

E. REMOVE TEMPORARY EQUIPMENT BRIDGES AS SOON AS PRACTICABLE AFTER PERMANENT SEEDING.

F. IF THERE WILL BE MORE THAN 1 MONTH BETWEEN FINAL CLEANUP AND THE BEGINNING OF PERMANENT SEEDING AND REASONABLE ALTERNATIVE ACCESS TO THE RIGHT-OF-WAY IS AVAILABLE, REMOVE TEMPORARY EQUIPMENT BRIDGES AS SOON AS PRACTICABLE AFTER FINAL CLEANUP.

G. OBTAIN ANY NECESSARY APPROVAL FROM THE CODE, OR THE APPROPRIATE STATE AGENCY FOR PERMANENT BRIDGES.

## 6. DRY-DITCH CROSSING METHODS

A. UNLESS APPROVED OTHERWISE BY THE APPROPRIATE FEDERAL OR STATE AGENCY, INSTALL THE PIPELINE USING ONE OF THE DRY-DITCH METHODS OUTLINED BELOW FOR CROSSINGS OF WATERBODIES UP TO 30 FEET WIDE (AT THE WATER'S EDGE AT THE TIME OF CONSTRUCTION) THAT ARE STATE-DESIGNATED AS EITHER COLDWATER OR SIGNIFICANT COOLWATER OR WARMWATER FISHERIES, OR FEDERALLY-DESIGNATED AS CRITICAL HABITAT.

B. DAM AND PUMP

(1) THE DAM-AND-PUMP METHOD MAY BE USED WITHOUT PRIOR APPROVAL FOR CROSSINGS OF WATERBODIES WHERE PUMPS CAN ADEQUATELY TRANSFER STREAMFLOW VOLUMES AROUND THE WORK AREA, AND THERE ARE NO CONCERNS ABOUT SENSITIVE SPECIES PASSAGE.

(2) IMPLEMENTATION OF THE DAM-AND-PUMP CROSSING METHOD MUST MEET THE FOLLOWING PERFORMANCE CRITERIA:

- (I) USE SUFFICIENT PUMPS, INCLUDING ON-SITE BACKUP PUMPS, TO MAINTAIN DOWNSTREAM FLOWS;
- (II) CONSTRUCT DAMS WITH MATERIALS THAT PREVENT SEDIMENT AND OTHER POLLUTANTS FROM ENTERING THE WATERBODY (E.G., SANDBAGS OR CLEAN GRAVEL WITH PLASTIC LINER);
- (III) SCREEN PUMP INTAKES TO MINIMIZE ENTRAINMENT OF FISH;
- (IV) PREVENT STREAMBED SCOUR AT PUMP DISCHARGE; AND
- (V) CONTINUOUSLY MONITOR THE DAM AND PUMPS TO ENSURE PROPER OPERATION THROUGHOUT THE WATERBODY CROSSING.

## C. FLUME CROSSING

THE FLUME CROSSING METHOD REQUIRES IMPLEMENTATION OF THE FOLLOWING

- (1) INSTALL FLUME PIPE AFTER BLASTING (IF NECESSARY), BUT BEFORE ANY TRENCHING;
- (2) USE SAND BAG OR SAND BAG AND PLASTIC SHEETING DIVERSION STRUCTURE OR EQUIVALENT TO DEVELOP AN EFFECTIVE SEAL AND TO DIVERT STREAM FLOW THROUGH THE FLUME PIPE (SOME MODIFICATIONS TO THE STREAM BOTTOM MAY BE REQUIRED TO ACHIEVE AN EFFECTIVE SEAL);
- (3) PROPERLY ALIGN FLUME PIPE(S) TO PREVENT BANK EROSION AND STREAMBED SCOUR;
- (4) DO NOT REMOVE FLUME PIPE DURING TRENCHING, PIPELAYING, OR BACKFILLING ACTIVITIES, OR INITIAL STREAMBED RESTORATION EFFORTS; AND
- (5) REMOVE ALL FLUME PIPES AND DAMS THAT ARE NOT ALSO PART OF THE EQUIPMENT BRIDGE AS SOON AS FINAL CLEANUP OF THE STREAM BED AND BANK IS COMPLETE.

D. HORIZONTAL DIRECTIONAL DRILL FOR EACH WATERBODY OR WETLAND THAT WOULD BE CROSSED USING THE HDD METHOD, FILE WITH THE SECRETARY FOR THE REVIEW AND WRITTEN APPROVAL BY THE DIRECTOR, A PLAN THAT INCLUDES:

- (1) SITE-SPECIFIC CONSTRUCTION DIAGRAMS THAT SHOW THE LOCATION OF MUD PITS, PIPE ASSEMBLY AREAS, AND ALL AREAS TO BE DISTURBED OR CLEARED FOR CONSTRUCTION;
- (2) JUSTIFICATION THAT DISTURBED AREAS ARE LIMITED TO THE MINIMUM NEEDED TO CONSTRUCT THE CROSSING;
- (3) IDENTIFICATION OF ANY ABOVEGROUND DISTURBANCE OR CLEARING BETWEEN THE HDD ENTRY AND EXIT WORKSPACES DURING CONSTRUCTION;
- (4) A DESCRIPTION OF HOW AN INADVERTENT RELEASE OF DRILLING MUD WOULD BE CONTAINED AND CLEARED UP; AND

(5) A CONTINGENCY PLAN FOR CROSSING THE WATERBODY OR WETLAND IN THE EVENT THE HDD IS UNSUCCESSFUL AND HOW THE ABANDONED DRILL HOLE WOULD BE SEALED, IF NECESSARY.

THE REQUIREMENT TO FILE HDD PLANS DOES NOT APPLY TO PROJECTS CONSTRUCTED UNDER THE AUTOMATIC AUTHORIZATION PROVISIONS IN THE FERC'S REGULATIONS.

## 7. CROSSINGS OF MINOR WATERBODIES

WHERE A DRY-DITCH CROSSING IS NOT REQUIRED, MINOR WATERBODIES MAY BE CROSSED USING THE OPEN-CUT CROSSING METHOD, WITH THE FOLLOWING RESTRICTIONS:

- A. EXCEPT FOR BLASTING AND OTHER ROCK BREAKING MEASURES, COMPLETE INSTREAM CONSTRUCTION ACTIVITIES (INCLUDING TRENCHING, PIPE INSTALLATION, BACKFILL, AND RESTORATION OF THE STREAMBED CONTOURS) WITHIN 24 HOURS. STREAMBANKS AND UNCONSOLIDATED STREAMBEDS MAY REQUIRE ADDITIONAL RESTORATION AFTER THIS PERIOD;
- B. LIMIT USE OF EQUIPMENT OPERATING IN THE WATERBODY TO THAT NEEDED TO CONSTRUCT THE CROSSING; AND
- C. EQUIPMENT BRIDGES ARE NOT REQUIRED AT MINOR WATERBODIES THAT DO NOT HAVE A STATE-DESIGNATED FISHERY CLASSIFICATION OR PROTECTED STATUS (E.G., AGRICULTURAL OR INTERMITTENT DRAINAGE DITCHES), HOWEVER, IF AN EQUIPMENT BRIDGE IS USED IT MUST BE CONSTRUCTED AS DESCRIBED IN SECTION V.B.5.

## 8. CROSSINGS OF INTERMEDIATE WATERBODIES

WHERE A DRY-DITCH CROSSING IS NOT REQUIRED, INTERMEDIATE WATERBODIES MAY BE CROSSED USING THE OPEN-CUT CROSSING METHOD, WITH THE FOLLOWING RESTRICTIONS:

- A. COMPLETE INSTREAM CONSTRUCTION ACTIVITIES (NOT INCLUDING BLASTING AND OTHER ROCK BREAKING MEASURES) WITHIN 48 HOURS. UNLESS SITE-SPECIFIC CONDITIONS MAKE COMPLETION WITHIN 48 HOURS INFEASIBLE;
- B. LIMIT USE OF EQUIPMENT OPERATING IN THE WATERBODY TO THAT NEEDED TO CONSTRUCT THE CROSSING; AND
- C. ALL OTHER CONSTRUCTION EQUIPMENT MUST CROSS ON AN EQUIPMENT BRIDGE AS SPECIFIED IN SECTION V.B.5.

## 9. CROSSINGS OF MAJOR WATERBODIES

BEFORE CONSTRUCTION, THE PROJECT SPONSOR SHALL FILE WITH THE SECRETARY FOR THE REVIEW AND WRITTEN APPROVAL BY THE DIRECTOR A DETAILED, SITE-SPECIFIC CONSTRUCTION PLAN AND SCALED DRAWINGS IDENTIFYING ALL AREAS TO BE DISTURBED BY CONSTRUCTION FOR EACH MAJOR WATERBODY CROSSING (THE SCALED DRAWINGS ARE NOT REQUIRED FOR ANY OFFSHORE PORTIONS OF PIPELINE PROJECTS). THIS PLAN MUST BE DEVELOPED IN CONSULTATION WITH THE APPROPRIATE STATE AND FEDERAL AGENCIES AND SHALL INCLUDE EXTRA WORK AREAS, SPOIL STORAGE AREAS, SEDIMENT CONTROL STRUCTURES, ETC., AS WELL AS MITIGATION FOR NAVIGATIONAL ISSUES. THE REQUIREMENT TO FILE MAJOR WATERBODY CROSSING PLANS DOES NOT APPLY TO PROJECTS CONSTRUCTED UNDER THE AUTOMATIC AUTHORIZATION PROVISIONS OF THE FERC'S REGULATIONS. THE ENVIRONMENTAL INSPECTOR MAY ADJUST THE FINAL PLACEMENT OF THE EROSION AND SEDIMENT CONTROL STRUCTURES IN THE FIELD TO MAXIMIZE EFFECTIVENESS.

10. TEMPORARY EROSION AND SEDIMENT CONTROL  
INSTALL SEDIMENT BARRIERS (AS DEFINED IN SECTION IV.F.3.A OF THE PLAN) IMMEDIATELY AFTER INITIAL DISTURBANCE OF THE WATERBODY OR ADJACENT UPLAND. SEDIMENT BARRIERS MUST BE PROPERLY MAINTAINED THROUGHOUT CONSTRUCTION AND REINSTALLED AS NECESSARY (SUCH AS AFTER BACKFILLING OF THE TRENCH) UNTIL REPLACED BY PERMANENT EROSION CONTROLS OR RESTORATION OF ADJACENT UPLAND AREAS IS COMPLETE. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE ADDRESSED IN MORE DETAIL IN THE PLAN; HOWEVER, THE FOLLOWING SPECIFIC MEASURES MUST BE IMPLEMENTED AT STREAM CROSSINGS:

- A. INSTALL SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION RIGHT-OF-WAY AT ALL WATERBODY CROSSINGS, WHERE NECESSARY TO PREVENT THE FLOW OF SEDIMENTS INTO THE WATERBODY. REMOVABLE SEDIMENT BARRIERS (OR DRIVEABLE BERMS) MUST BE INSTALLED ACROSS THE TRAVEL LANE. THESE REMOVABLE SEDIMENT BARRIERS CAN BE REMOVED DURING THE CONSTRUCTION DAY, BUT MUST BE RE-INSTALLED AFTER CONSTRUCTION HAS STOPPED FOR THE DAY AND/OR WHEN HEAVY PRECIPITATION IS IMMINENT;
- B. WHERE WATERBODIES ARE ADJACENT TO THE CONSTRUCTION RIGHT-OF-WAY AND THE RIGHT-OF-WAY SLOPES TOWARD THE WATERBODY, INSTALL SEDIMENT BARRIERS ALONG THE EDGE OF THE CONSTRUCTION RIGHT-OF-WAY AS NECESSARY TO CONTAIN SPOIL WITHIN THE CONSTRUCTION RIGHT-OF-WAY AND PREVENT SEDIMENT FLOW INTO THE WATERBODY; AND
- C. USE TEMPORARY TRENCH PLUGS AT ALL WATERBODY CROSSINGS, AS NECESSARY, TO PREVENT DIVERSION OF WATER INTO UPLAND PORTIONS OF THE PIPELINE TRENCH AND TO KEEP ANY ACCUMULATED TRENCH WATER OUT OF THE WATERBODY.

## 11. TRENCH DEWATERING

DEWATER THE TRENCH (EITHER ON OR OFF THE CONSTRUCTION RIGHT-OF-WAY) IN A MANNER THAT DOES NOT CAUSE EROSION AND DOES NOT RESULT IN SILT-LADEN WATER FLOWING INTO ANY WATERBODY. REMOVE THE DEWATERING STRUCTURES AS SOON AS PRACTICABLE AFTER THE COMPLETION OF DEWATERING ACTIVITIES.

## C. RESTORATION

1. USE CLEAN GRAVEL OR NATIVE Cobbles FOR THE UPPER 1 FOOT OF TRENCH BACKFILL IN ALL WATERBODIES THAT CONTAIN COLDWATER FISHERIES.
2. FOR OPEN-CUT CROSSINGS, STABILIZE WATERBODY BANKS AND INSTALL TEMPORARY SEDIMENT BARRIERS WITHIN 24 HOURS OF COMPLETING INSTREAM CONSTRUCTION ACTIVITIES. FOR DRY-DITCH CROSSINGS, COMPLETE STREAMBED AND BANK STABILIZATION BEFORE RETURNING FLOW TO THE WATERBODY CHANNEL.
3. RETURN ALL WATERBODY BANKS TO PRECONSTRUCTION CONTOURS OR TO A STABLE ANGLE OF REPOSE AS APPROVED BY THE ENVIRONMENTAL INSPECTOR.
4. INSTALL EROSION CONTROL FABRIC OR A FUNCTIONAL EQUIVALENT ON WATERBODY BANKS AT THE TIME OF FINAL BANK RECONTOURING. DO NOT USE SYNTHETIC MONOFLAMENT MESHNETTED EROSION CONTROL MATERIALS IN AREAS DESIGNATED AS SENSITIVE WILDLIFE HABITAT UNLESS THE PRODUCT IS SPECIFICALLY DESIGNED TO MINIMIZE HARM TO WILDLIFE. ANCHOR EROSION CONTROL FABRIC WITH STAPLES OR OTHER APPROPRIATE DEVICES.
5. APPLICATION OF RIPRAP FOR BANK STABILIZATION MUST COMPLY WITH COE, OR ITS DELEGATED AGENCY, PERMIT TERMS AND CONDITIONS.

6. UNLESS OTHERWISE SPECIFIED BY STATE PERMIT, LIMIT THE USE OF RIPRAP TO AREAS WHERE FLOW CONDITIONS PRECLUDE EFFECTIVE VEGETATIVE STABILIZATION TECHNIQUES SUCH AS SEEDING AND EROSION CONTROL FABRIC.

7. REVEGETATE DISTURBED RIPARIAN AREAS WITH NATIVE SPECIES OF CONSERVATION GRASSES, LEGUMES, AND WOODY SPECIES, SIMILAR IN DENSITY TO ADJACENT UNDISTURBED LANDS.

8. INSTALL A PERMANENT SLOPE BREAKER ACROSS THE CONSTRUCTION RIGHT-OF-WAY AT THE BASE OF SLOPES GREATER THAN 5 PERCENT THAT ARE LESS THAN 50 FEET FROM THE WATERBODY, OR AS NEEDED TO PREVENT SEDIMENT TRANSPORT INTO THE WATERBODY. IN ADDITION, INSTALL SEDIMENT BARRIERS AS OUTLINED IN THE PLAN.

9. IN SOME AREAS, WITH THE APPROVAL OF THE ENVIRONMENTAL INSPECTOR, AN EARTHEN BERM MAY BE SUITABLE AS A SEDIMENT BARRIER ADJACENT TO THE WATERBODY.

10. SECTIONS V.C.3 THROUGH V.C.7 ABOVE ALSO APPLY TO THOSE PERENNIAL OR INTERMITTENT STREAMS NOT FLOWING AT THE TIME OF CONSTRUCTION.

## D. POST-CONSTRUCTION MAINTENANCE

1. LIMIT ROUTINE VEGETATION MOWING OR CLEARING ADJACENT TO WATERBODIES TO ALLOW A RIPARIAN STRIP AT LEAST 25 FEET WIDE, AS MEASURED FROM THE WATERBODY'S MEAN HIGH WATER MARK, TO PERMANENTLY REVEGETATE WITH NATIVE PLANT SPECIES ACROSS THE ENTIRE CONSTRUCTION RIGHT-OF-WAY. HOWEVER, TO FACILITATE PERIODIC CORROSION/LEAK SURVEYS, A CORRIDOR CENTERED ON THE PIPELINE AND UP TO 10 FEET WIDE MAY BE CLEARED AT A FREQUENCY NECESSARY TO MAINTAIN THE 10-FOOT CORRIDOR IN AN HERBACEOUS STATE. IN ADDITION, TREES THAT ARE LOCATED WITHIN 15 FEET OF THE PIPELINE THAT HAVE ROOTS THAT COULD COMPROMISE THE INTEGRITY OF THE PIPELINE COATING MAY BE CUT AND REMOVED FROM THE PERMANENT RIGHT-OF-WAY. DO NOT CONDUCT ANY ROUTINE VEGETATION MOWING OR CLEARING IN RIPARIAN AREAS THAT ARE BETWEEN HDD ENTRY AND EXIT POINTS.
2. DO NOT USE HERBICIDES OR PESTICIDES IN OR WITHIN 100 FEET OF A WATERBODY EXCEPT AS ALLOWED BY THE APPROPRIATE LAND MANAGEMENT OR STATE AGENCY.
3. TIME OF YEAR RESTRICTIONS SPECIFIED IN SECTION VI.A.5 OF THE PLAN (APRIL 15 - AUGUST 1 OF ANY YEAR) APPLY TO ROUTINE MOWING AND CLEARING OF RIPARIAN AREAS.

THIS EXPANSION PROJECT IS REGULATED BY THE U.S. DEPARTMENT OF ENERGY, FEDERAL ENERGY REGULATORY COMMISSION (FERC), IN ADDITION TO STATE AND LOCAL REQUIREMENTS. THIS EROSION AND SEDIMENT CONTROL PLAN INCLUDES THESE MITIGATION MEASURES FOR PIPELINE CONSTRUCTION SPECIFIED BY THE FERC IN ITS PLAN AND PROCEDURES DOCUMENTS, UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN MAY 2013 AND WETLAND AND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES, MAY 2013.



KEVIN MCKEON, P.E.  
NEW JERSEY  
PROFESSIONAL ENGINEER NO.GE23586

REVISIONS						
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK	APP.
0	06/15/17	ERL	SUBMITTED TO FREEHOLD SOIL CONSERVATION DISTRICT	60515775	PPH	KDM
1	06/15/18	SMR	SUBMITTED TO NJDEP	60515775	PPH	PPH

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.  
SOIL EROSION & SEDIMENT CONTROL PLAN  
NORTHEAST SUPPLY ENHANCEMENT PROJECT  
PROPOSED 26" RARITAN BAY LOOP - ONSHORE  
0.16 MI. - M.P. 12.00 TO M.P. 12.16  
MIDDLESEX COUNTY, NEW JERSEY



DRAWN BY: ERL	DATE: 06/15/17	ISSUED FOR BID: TBD	SCALE: NTS
CHECKED BY: PPH	DATE: 06/15/17	ISSUED FOR CONSTRUCTION: TBD	REVISION: 1
APPROVED BY: KDM	DATE: 06/15/17	DRAWING NUMBER: 26-0100-80-2-D	SHEET 09 OF 12
NO: 60515775			



WETLAND AND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES (CONTD)

VI. WETLAND CROSSINGS

A. GENERAL

1. THE PROJECT SPONSOR SHALL CONDUCT A WETLAND DELINEATION USING THE CURRENT FEDERAL METHODOLOGY AND FILE A WETLAND DELINEATION REPORT WITH THE SECRETARY BEFORE CONSTRUCTION. THE REQUIREMENT TO FILE A WETLAND DELINEATION REPORT DOES NOT APPLY TO PROJECTS CONSTRUCTED UNDER THE AUTOMATIC AUTHORIZATION PROVISIONS IN THE FERCS REGULATIONS.

THIS REPORT SHALL IDENTIFY:

- A. BY MILEPOST ALL WETLANDS THAT WOULD BE AFFECTED;
- B. THE NATIONAL WETLANDS INVENTORY (NWI) CLASSIFICATION FOR EACH WETLAND;
- C. THE CROSSING LENGTH OF EACH WETLAND IN FEET, AND
- D. THE AREA OF PERMANENT AND TEMPORARY DISTURBANCE THAT WOULD OCCUR IN EACH WETLAND BY NWI CLASSIFICATION TYPE.

THE REQUIREMENTS OUTLINED IN THIS SECTION DO NOT APPLY TO WETLANDS IN ACTIVELY CULTIVATED OR ROTATED CROPLAND. STANDARD UPLAND PROTECTIVE MEASURES, INCLUDING WORKSPACE AND TOPSOILING REQUIREMENTS, APPLY TO THESE AGRICULTURAL WETLANDS.

2. ROUTE THE PIPELINE TO AVOID WETLAND AREAS TO THE MAXIMUM EXTENT POSSIBLE. IF A WETLAND CANNOT BE AVOIDED OR CROSSED BY FOLLOWING AN EXISTING RIGHT-OF-WAY, ROUTE THE NEW PIPELINE IN A MANNER THAT MINIMIZES DISTURBANCE TO WETLANDS. WHERE LOOPING AN EXISTING PIPELINE, OVERLAP THE EXISTING PIPELINE RIGHT-OF-WAY WITH THE NEW CONSTRUCTION RIGHT-OF-WAY. IN ADDITION, LOCATE THE LOOP LINE NO MORE THAN 25 FEET AWAY FROM THE EXISTING PIPELINE UNLESS SITE-SPECIFIC CONSTRAINTS WOULD ADVERSELY AFFECT THE STABILITY OF THE EXISTING PIPELINE.

3. LIMIT THE WIDTH OF THE CONSTRUCTION RIGHT-OF-WAY TO 75 FEET OR LESS. PRIOR WRITTEN APPROVAL OF THE DIRECTOR IS REQUIRED WHERE TOPOGRAPHIC CONDITIONS OR SOIL LIMITATIONS REQUIRE THAT THE CONSTRUCTION RIGHT-OF-WAY WIDTH WITHIN THE BOUNDARIES OF A FEDERALLY DELINEATED WETLAND BE EXPANDED BEYOND 75 FEET. EARLY IN THE PLANNING PROCESS THE PROJECT SPONSOR IS ENCOURAGED TO IDENTIFY SITE-SPECIFIC AREAS WHERE EXCESSIVELY WIDE TRENCHES COULD OCCUR AND/OR WHERE SPOIL PILES COULD BE DIFFICULT TO MAINTAIN BECAUSE EXISTING SOILS LACK ADEQUATE UNCONFINED COMPRESSIVE STRENGTH.

4. WETLAND BOUNDARIES AND BUFFERS MUST BE CLEARLY MARKED IN THE FIELD WITH SIGNS AND/OR HIGHLY VISIBLE FLAGGING UNTIL CONSTRUCTION-RELATED GROUND DISTURBING ACTIVITIES ARE COMPLETE.

5. IMPLEMENT THE MEASURES OF SECTIONS V AND VI IN THE EVENT A WATERBODY CROSSING IS LOCATED WITHIN OR ADJACENT TO A WETLAND CROSSING. IF ALL MEASURES OF SECTIONS V AND VI CANNOT BE MET, THE PROJECT SPONSOR MUST FILE WITH THE SECRETARY A SITE-SPECIFIC CROSSING PLAN FOR REVIEW AND WRITTEN APPROVAL BY THE DIRECTOR BEFORE CONSTRUCTION. THIS CROSSING PLAN SHALL ADDRESS AT A MINIMUM:

- A. SPOIL CONTROL;
- B. EQUIPMENT BRIDGES;
- C. RESTORATION OF WATERBODY BANKS AND WETLAND HYDROLOGY;
- D. TIMING OF THE WATERBODY CROSSING;
- E. METHOD OF CROSSING; AND
- F. SIZE AND LOCATION OF ALL EXTRA WORK AREAS.

6. DO NOT LOCATE ABOVEGROUND FACILITIES IN ANY WETLAND, EXCEPT WHERE THE LOCATION OF SUCH FACILITIES OUTSIDE OF WETLANDS WOULD PROHIBIT COMPLIANCE WITH U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS.

B. INSTALLATION

1. EXTRA WORK AREAS AND ACCESS ROADS

A. LOCATE ALL EXTRA WORK AREAS (SUCH AS STAGING AREAS AND ADDITIONAL SPOIL STORAGE AREAS) AT LEAST 50 FEET AWAY FROM WETLAND BOUNDARIES, EXCEPT WHERE THE ADJACENT UPLAND CONSISTS OF CULTIVATED OR ROTATED CROPLAND OR OTHER DISTURBED LAND.

B. THE PROJECT SPONSOR SHALL FILE WITH THE SECRETARY FOR REVIEW AND WRITTEN APPROVAL BY THE DIRECTOR, SITE-SPECIFIC JUSTIFICATION FOR EACH EXTRA WORK AREA WITH A LESS THAN 50-FOOT SETBACK FROM WETLAND BOUNDARIES, EXCEPT WHERE ADJACENT UPLAND CONSISTS OF CULTIVATED OR ROTATED CROPLAND OR OTHER DISTURBED LAND. THE JUSTIFICATION MUST SPECIFY THE SITE-SPECIFIC CONDITIONS THAT WILL NOT PERMIT A 50-FOOT SETBACK AND MEASURES TO ENSURE THE WETLAND IS ADEQUATELY PROTECTED.

C. THE CONSTRUCTION RIGHT-OF-WAY MAY BE USED FOR ACCESS WHEN THE WETLAND SOIL IS FIRM ENOUGH TO AVOID RUTTING OR THE CONSTRUCTION RIGHT-OF-WAY HAS BEEN APPROPRIATELY STABILIZED TO AVOID RUTTING (E.G., WITH TIMBER RIPRAP, PREFABRICATED EQUIPMENT MATS, OR TERRA MATS). IN WETLANDS THAT CANNOT BE APPROPRIATELY STABILIZED, ALL CONSTRUCTION EQUIPMENT OTHER THAN THAT NEEDED TO INSTALL THE WETLAND CROSSING SHALL USE ACCESS ROADS LOCATED IN UPLAND AREAS. WHERE ACCESS ROADS IN UPLAND AREAS DO NOT PROVIDE REASONABLE ACCESS, LIMIT ALL OTHER CONSTRUCTION EQUIPMENT TO ONE PASS THROUGH THE WETLAND USING THE CONSTRUCTION RIGHT-OF-WAY.

D. THE ONLY ACCESS ROADS, OTHER THAN THE CONSTRUCTION RIGHT-OF-WAY, THAT CAN BE USED IN WETLANDS ARE THOSE EXISTING ROADS THAT CAN BE USED WITH NO MODIFICATIONS OR IMPROVEMENTS, OTHER THAN ROUTINE REPAIR, AND NO IMPACT ON THE WETLAND.

2. CROSSING PROCEDURES

- A. COMPLY WITH COE, OR ITS DELEGATED AGENCY, PERMIT TERMS AND CONDITIONS.
- B. ASSEMBLE THE PIPELINE IN AN UPLAND AREA UNLESS THE WETLAND IS DRY ENOUGH TO ADEQUATELY SUPPORT SKIDS AND PIPE.
- C. USE "PUSH-PULL" OR "FLOAT" TECHNIQUES TO PLACE THE PIPE IN THE TRENCH WHERE WATER AND OTHER SITE CONDITIONS ALLOW.
- D. MINIMIZE THE LENGTH OF TIME THAT TOPSOIL IS SEGREGATED AND THE TRENCH IS OPEN. DO NOT TRENCH THE WETLAND UNTIL THE PIPELINE IS ASSEMBLED AND READY FOR LOWERING IN.
- E. LIMIT CONSTRUCTION EQUIPMENT OPERATING IN WETLAND AREAS TO THAT NEEDED TO CLEAR THE CONSTRUCTION RIGHT-OF-WAY, DIG THE TRENCH, FABRICATE AND INSTALL THE PIPELINE, BACKFILL THE TRENCH, AND RESTORE THE CONSTRUCTION RIGHT-OF-WAY.

F. CUT VEGETATION JUST ABOVE GROUND LEVEL, LEAVING EXISTING ROOT SYSTEMS IN PLACE, AND REMOVE IT FROM THE WETLAND FOR DISPOSAL. THE PROJECT SPONSOR CAN BURN WOODY DEBRIS IN WETLANDS. IF APPROVED BY THE COE AND IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS, ENSURING THAT ALL REMAINING WOODY DEBRIS IS REMOVED FOR DISPOSAL.

G. LIMIT PULLING OF TREE STUMPS AND GRADING ACTIVITIES TO DIRECTLY OVER THE TRENCHLINE. DO NOT GRADE OR REMOVE STUMPS OR ROOT SYSTEMS FROM THE REST OF THE CONSTRUCTION RIGHT-OF-WAY IN WETLANDS UNLESS THE CHIEF INSPECTOR AND ENVIRONMENTAL INSPECTOR DETERMINE THAT SAFETY-RELATED CONSTRUCTION CONSTRAINTS REQUIRE GRADING OR THE REMOVAL OF TREE STUMPS FROM UNDER THE WORKING SIDE OF THE CONSTRUCTION RIGHT-OF-WAY.

H. SEGREGATE THE TOP 1 FOOT OF TOPSOIL FROM THE AREA DISTURBED BY TRENCHING, EXCEPT IN AREAS WHERE STANDING WATER IS PRESENT OR SOILS ARE SATURATED. IMMEDIATELY AFTER BACKFILLING IS COMPLETE, RESTORE THE SEGREGATED TOPSOIL TO ITS ORIGINAL LOCATION.

I. DO NOT USE ROCK, SOIL IMPORTED FROM OUTSIDE THE WETLAND, TREE STUMPS, OR BRUSH RIPRAP TO SUPPORT EQUIPMENT ON THE CONSTRUCTION RIGHT-OF-WAY.

J. IF STANDING WATER OR SATURATED SOILS ARE PRESENT, OR IF CONSTRUCTION EQUIPMENT CAUSES RUTS OR MIXING OF THE TOPSOIL AND SUBSOIL IN WETLANDS, USE LOW-GROUND-WEIGHT CONSTRUCTION EQUIPMENT, OR OPERATE NORMAL EQUIPMENT ON TIMBER RIPRAP, PREFABRICATED EQUIPMENT MATS, OR TERRA MATS.

K. REMOVE ALL PROJECT-RELATED MATERIAL USED TO SUPPORT EQUIPMENT ON THE CONSTRUCTION RIGHT-OF-WAY UPON COMPLETION OF CONSTRUCTION.

3. TEMPORARY SEDIMENT CONTROL

INSTALL SEDIMENT BARRIERS (AS DEFINED IN SECTION IV.F.3.A OF THE PLAN) IMMEDIATELY AFTER INITIAL DISTURBANCE OF THE WETLAND OR ADJACENT UPLAND. SEDIMENT BARRIERS MUST BE PROPERLY MAINTAINED THROUGHOUT CONSTRUCTION AND REINSTALLED AS NECESSARY (SUCH AS AFTER BACKFILLING OF THE TRENCH), EXCEPT AS NOTED BELOW IN SECTION VI.B.3.C, MAINTAIN SEDIMENT BARRIERS UNTIL REPLACED BY PERMANENT EROSION CONTROLS OR RESTORATION OF ADJACENT UPLAND AREAS IS COMPLETE. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE ADDRESSED IN MORE DETAIL IN THE PLAN.

A. INSTALL SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION RIGHT-OF-WAY IMMEDIATELY UP/SLOPE OF THE WETLAND BOUNDARY AT ALL WETLAND CROSSINGS WHERE NECESSARY TO PREVENT SEDIMENT FLOW INTO THE WETLAND.

B. WHERE WETLANDS ARE ADJACENT TO THE CONSTRUCTION RIGHT-OF-WAY AND THE RIGHT-OF-WAY SLOPES TOWARD THE WETLAND, INSTALL SEDIMENT BARRIERS ALONG THE EDGE OF THE CONSTRUCTION RIGHT-OF-WAY AS NECESSARY TO CONTAIN SPOIL WITHIN THE CONSTRUCTION RIGHT-OF-WAY AND PREVENT SEDIMENT FLOW INTO THE WETLAND.

C. INSTALL SEDIMENT BARRIERS ALONG THE EDGE OF THE CONSTRUCTION RIGHT-OF-WAY AS NECESSARY TO CONTAIN SPOIL AND SEDIMENT WITHIN THE CONSTRUCTION RIGHT-OF-WAY THROUGH WETLANDS. REMOVE THESE SEDIMENT BARRIERS DURING RIGHT-OF-WAY CLEANUP.

4. TRENCH DEWATERING

DEWATER THE TRENCH (EITHER ON OR OFF THE CONSTRUCTION RIGHT-OF-WAY) IN A MANNER THAT DOES NOT CAUSE EROSION AND DOES NOT RESULT IN SILT-LADEN WATER FLOWING INTO ANY WETLAND. REMOVE THE DEWATERING STRUCTURES AS SOON AS PRACTICABLE AFTER THE COMPLETION OF DEWATERING ACTIVITIES.

C. RESTORATION

1. WHERE THE PIPELINE TRENCH MAY DRAIN A WETLAND, CONSTRUCT TRENCH BREAKERS AT THE WETLAND BOUNDARIES AND/OR SEAL THE TRENCH BOTTOM AS NECESSARY TO MAINTAIN THE ORIGINAL WETLAND HYDROLOGY.

2. RESTORE PRE-CONSTRUCTION WETLAND CONTOURS TO MAINTAIN THE ORIGINAL WETLAND HYDROLOGY.

3. FOR EACH WETLAND CROSSED, INSTALL A TRENCH BREAKER AT THE BASE OF SLOPES NEAR THE BOUNDARY BETWEEN THE WETLAND AND ADJACENT UPLAND AREAS. INSTALL A PERMANENT SLOPE BREAKER ACROSS THE CONSTRUCTION RIGHT-OF-WAY AT THE BASE OF SLOPES GREATER THAN 5 PERCENT WHERE THE BASE OF THE SLOPE IS LESS THAN 50 FEET FROM THE WETLAND, OR AS NEEDED TO PREVENT SEDIMENT TRANSPORT INTO THE WETLAND. IN ADDITION, INSTALL SEDIMENT BARRIERS AS OUTLINED IN THE PLAN, IN SOME AREAS, WITH THE APPROVAL OF THE ENVIRONMENTAL INSPECTOR, AN EARTHEN BERM MAY BE SUITABLE AS A SEDIMENT BARRIER ADJACENT TO THE WETLAND.

4. DO NOT USE FERTILIZER, LIME, OR MULCH UNLESS REQUIRED IN WRITING BY THE APPROPRIATE FEDERAL OR STATE AGENCY.

5. CONSULT WITH THE APPROPRIATE FEDERAL OR STATE AGENCIES TO DEVELOP A PROJECT-SPECIFIC WETLAND RESTORATION PLAN. THE RESTORATION PLAN SHALL INCLUDE MEASURES FOR RE-ESTABLISHING HERBACEOUS AND/OR WOODY SPECIES, CONTROLLING THE INVASION AND SPREAD OF INVASIVE SPECIES AND NOXIOUS WEEDS (E.G., PURPLE LOOSESTRAFE AND PHRAGMITES), AND MONITORING THE SUCCESS OF THE REVEGETATION AND WEED CONTROL EFFORTS. PROVIDE THIS PLAN TO THE FERCS STAFF UPON REQUEST.

6. UNTIL A PROJECT-SPECIFIC WETLAND RESTORATION PLAN IS DEVELOPED AND/OR IMPLEMENTED, TEMPORARILY REVEGETATE THE CONSTRUCTION RIGHT-OF-WAY WITH ANNUAL RYEGRASS AT A RATE OF 40 POUNDS/ACRE (UNLESS STANDING WATER IS PRESENT).

7. ENSURE THAT ALL DISTURBED AREAS SUCCESSFULLY REVEGETATE WITH WETLAND HERBACEOUS AND/OR WOODY PLANT SPECIES.

8. REMOVE TEMPORARY SEDIMENT BARRIERS LOCATED AT THE BOUNDARY BETWEEN WETLAND AND ADJACENT UPLAND AREAS AFTER REVEGETATION AND STABILIZATION OF ADJACENT UPLAND AREAS ARE JUDGED TO BE SUCCESSFUL AS SPECIFIED IN SECTION VII.A.4 OF THE PLAN.

D. POST-CONSTRUCTION MAINTENANCE AND REPORTING

1. DO NOT CONDUCT ROUTINE VEGETATION MOWING OR CLEARING OVER THE FULL WIDTH OF THE PERMANENT RIGHT-OF-WAY IN WETLANDS. HOWEVER, TO FACILITATE PERIODIC CORROSION/LEAK SURVEYS, A CORRIDOR CENTERED ON THE PIPELINE AND UP TO 10 FEET WIDE MAY BE CLEARED AT A FREQUENCY NECESSARY TO MAINTAIN THE 10-FOOT CORRIDOR IN AN HERBACEOUS STATE. IN ADDITION, TREES WITHIN 15 FEET OF THE PIPELINE WITH ROOTS THAT COULD COMPROMISE THE INTEGRITY OF PIPELINE COATING MAY BE SELECTIVELY CUT AND REMOVED FROM THE PERMANENT RIGHT-OF-WAY. DO NOT CONDUCT ANY ROUTINE VEGETATION MOWING OR CLEARING IN WETLANDS THAT ARE

BETWEEN HDD ENTRY AND EXIT POINTS.

2. DO NOT USE HERBICIDES OR PESTICIDES IN OR WITHIN 100 FEET OF A WETLAND, EXCEPT AS ALLOWED BY THE APPROPRIATE FEDERAL OR STATE AGENCY.

3. TIME OF YEAR RESTRICTIONS SPECIFIED IN SECTION VII.A.5 OF THE PLAN (APRIL 15 - AUGUST 1 OF ANY YEAR) APPLY TO ROUTINE MOWING AND CLEARING OF WETLAND AREAS.

4. MONITOR AND RECORD THE SUCCESS OF WETLAND REVEGETATION ANNUALLY UNTIL WETLAND REVEGETATION IS SUCCESSFUL.

5. WETLAND REVEGETATION SHALL BE CONSIDERED SUCCESSFUL IF ALL OF THE FOLLOWING CRITERIA ARE SATISFIED:

- A. THE AFFECTED WETLAND SATISFIES THE CURRENT FEDERAL DEFINITION FOR A WETLAND (I.E. SOILS, HYDROLOGY, AND VEGETATION);
- B. VEGETATION IS AT LEAST 80 PERCENT OF EITHER THE COVER DOCUMENTED FOR THE WETLAND PRIOR TO CONSTRUCTION, OR AT LEAST 80 PERCENT OF THE COVER IN ADJACENT WETLAND AREAS THAT WERE NOT DISTURBED BY CONSTRUCTION;
- C. IF NATURAL RATHER THAN ACTIVE REVEGETATION WAS USED, THE PLANT SPECIES COMPOSITION IS CONSISTENT WITH EARLY SUCCESSIONAL WETLAND PLANT COMMUNITIES IN THE AFFECTED ECOREGION; AND
- D. INVASIVE SPECIES AND NOXIOUS WEEDS ARE ABSENT, UNLESS THEY ARE ABUNDANT IN ADJACENT AREAS THAT WERE NOT DISTURBED BY CONSTRUCTION.

6. WITHIN 3 YEARS AFTER CONSTRUCTION, FILE A REPORT WITH THE SECRETARY IDENTIFYING THE STATUS OF THE WETLAND REVEGETATION EFFORTS AND DOCUMENTING SUCCESS AS DEFINED IN SECTION VI.D.5. ABOVE. THE REQUIREMENT TO FILE WETLAND RESTORATION REPORTS WITH THE SECRETARY DOES NOT APPLY TO PROJECTS CONSTRUCTED UNDER THE AUTOMATIC AUTHORIZATION, PRIOR NOTICE, OR ADVANCE NOTICE PROVISIONS IN THE FERCS REGULATIONS.

FOR ANY WETLAND WHERE REVEGETATION IS NOT SUCCESSFUL AT THE END OF 3 YEARS AFTER CONSTRUCTION, DEVELOP AND IMPLEMENT (IN CONSULTATION WITH A PROFESSIONAL WETLAND ECOLOGIST) A REMEDIAL REVEGETATION PLAN TO ACTIVELY REVEGETATE WETLANDS. CONTINUE REVEGETATION EFFORTS AND FILE A REPORT ANNUALLY DOCUMENTING PROGRESS IN THESE WETLANDS UNTIL WETLAND REVEGETATION IS SUCCESSFUL.

VII. HYDROSTATIC TESTING

A. NOTIFICATION PROCEDURES AND PERMITS

- 1. APPLY FOR STATE-ISSUED WATER WITHDRAWAL PERMITS, AS REQUIRED.
- 2. APPLY FOR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) OR STATE-ISSUED DISCHARGE PERMITS, AS REQUIRED.
- 3. NOTIFY APPROPRIATE STATE AGENCIES OF INTENT TO USE SPECIFIC SOURCES AT LEAST 48 HOURS BEFORE TESTING ACTIVITIES UNLESS THEY WAIVE THIS REQUIREMENT IN WRITING.

B. GENERAL

- 1. PERFORM 100 PERCENT RADIOGRAPHIC INSPECTION OF ALL PIPELINE SECTION WELDS OR HYDROTEST THE PIPELINE SECTIONS, BEFORE INSTALLATION UNDER WATERBODIES OR WETLANDS.
- 2. IF PUMPS USED FOR HYDROSTATIC TESTING ARE WITHIN 100 FEET OF ANY WATERBODY OR WETLAND, ADDRESS SECONDARY CONTAINMENT AND REFUELING OF THESE PUMPS IN THE PROJECT'S SPILL PREVENTION AND RESPONSE PROCEDURES.
- 3. THE PROJECT SPONSOR SHALL FILE WITH THE SECRETARY BEFORE CONSTRUCTION A LIST IDENTIFYING THE LOCATION OF ALL WATERBODIES PROPOSED FOR USE AS A HYDROSTATIC TEST WATER SOURCE OR DISCHARGE LOCATION. THIS FILING REQUIREMENT DOES NOT APPLY TO PROJECTS CONSTRUCTED UNDER THE AUTOMATIC AUTHORIZATION PROVISIONS OF THE FERCS REGULATIONS.

C. INTAKE SOURCE AND RATE

- 1. SCREEN THE INTAKE HOSE TO MINIMIZE THE POTENTIAL FOR ENTRAINMENT OF FISH.
- 2. DO NOT USE STATE-DESIGNATED EXCEPTIONAL VALUE WATERS, WATERBODIES WHICH PROVIDE HABITAT FOR FEDERALLY LISTED THREATENED OR ENDANGERED SPECIES, OR WATERBODIES DESIGNATED AS PUBLIC WATER SUPPLIES, UNLESS APPROPRIATE FEDERAL, STATE, AND/OR LOCAL PERMITTING AGENCIES GRANT WRITTEN PERMISSION.
- 3. MAINTAIN ADEQUATE FLOW RATES TO PROTECT AQUATIC LIFE, PROVIDE FOR ALL WATERBODY USES, AND PROVIDE FOR DOWNSTREAM WITHDRAWALS OF WATER BY EXISTING USERS.
- 4. LOCATE HYDROSTATIC TEST MANIFOLDS OUTSIDE WETLANDS AND RIPARIAN AREAS TO THE MAXIMUM EXTENT PRACTICABLE.

D. DISCHARGE LOCATION, METHOD, AND RATE


- 1. REGULATE DISCHARGE RATE, USE ENERGY DISSIPATION DEVICE(S), AND INSTALL SEDIMENT BARRIERS, AS NECESSARY, TO PREVENT EROSION, STREAMBED SCOUR, SUSPENSION OF SEDIMENTS, OR EXCESSIVE STREAMFLOW.
- 2. DO NOT DISCHARGE INTO STATE-DESIGNATED EXCEPTIONAL VALUE WATERS, WATERBODIES WHICH PROVIDE HABITAT FOR FEDERALLY LISTED THREATENED OR ENDANGERED SPECIES, OR WATERBODIES DESIGNATED AS PUBLIC WATER SUPPLIES, UNLESS APPROPRIATE FEDERAL, STATE, AND LOCAL PERMITTING AGENCIES GRANT WRITTEN PERMISSION.

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THIS EXPANSION PROJECT IS REGULATED BY THE U.S. DEPARTMENT OF ENERGY, FEDERAL ENERGY REGULATORY COMMISSION (FERC), IN ADDITION TO STATE AND LOCAL REQUIREMENTS. THIS EROSION AND SEDIMENT CONTROL PLAN INCLUDES THESE MITIGATION MEASURES FOR PIPELINE CONSTRUCTION SPECIFIED BY THE FERCS IN ITS PLAN AND PROCEDURES DOCUMENTS, UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN MAY 2013 AND WETLAND AND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES, MAY 2013.

NO.		DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
0	06/15/17	ERL	SUBMITTED TO FREEHOLD SOIL CONSERVATION DISTRICT	60515775	PPH	KDM	
1	06/15/18	SMR	SUBMITTED TO NJDEP	60515775	PPH	PPH	

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC. SOIL EROSION & SEDIMENT CONTROL PLAN NORTHEAST SUPPLY ENHANCEMENT PROJECT PROPOSED 26" RARITAN BAY LOOP - ONSHORE 0.16 MI. - M.P. 12.00 TO M.P. 12.16 MIDDLESEX COUNTY, NEW JERSEY				
DRAWN BY: ERL CHECKED BY: PPH APPROVED BY: KDM WO: 60515775	DATE: 06/15/17 DATE: 06/15/17 DATE: 06/15/17	ISSUED FOR BID: TBD ISSUED FOR CONSTRUCTION: TBD DRAWING NUMBER: 26-0100-80-28-D	SCALE: NTS REVISION: 1	

		NEW JERSEY PROFESSIONAL ENGINEER NO. G232586
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UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN

I. APPLICABILITY

A. THE INTENT OF THIS PLAN IS TO ASSIST PROJECT SPONSORS BY IDENTIFYING BASELINE MITIGATION MEASURES FOR MINIMIZING EROSION AND ENHANCING REVEGETATION. PROJECT SPONSORS SHALL SPECIFY IN THEIR APPLICATIONS FOR A NEW FERC AUTHORIZATION AND IN PRIOR NOTICE AND ADVANCE NOTICE FILINGS, ANY INDIVIDUAL MEASURES IN THIS PLAN THEY CONSIDER UNNECESSARY, TECHNICALLY INFEASIBLE, OR UNSUITABLE DUE TO LOCAL CONDITIONS AND FULLY DESCRIBE ANY ALTERNATIVE MEASURES THEY WOULD USE. PROJECT SPONSORS SHALL ALSO EXPLAIN HOW THOSE ALTERNATIVE MEASURES WOULD ACHIEVE A COMPARABLE LEVEL OF MITIGATION.

II. SUPERVISION AND INSPECTION

A. ENVIRONMENTAL INSPECTION
1. AT LEAST ONE ENVIRONMENTAL INSPECTOR IS REQUIRED FOR EACH CONSTRUCTION SPREAD DURING CONSTRUCTION AND RESTORATION (AS DEFINED BY SECTION V), THE NUMBER AND EXPERIENCE OF ENVIRONMENTAL INSPECTORS ASSIGNED TO EACH CONSTRUCTION SPREAD SHALL BE APPROPRIATE FOR THE LENGTH OF THE CONSTRUCTION SPREAD AND THE NUMBER/SIGNIFICANCE OF RESOURCES AFFECTED.
2. ENVIRONMENTAL INSPECTORS SHALL HAVE PEER STATUS WITH ALL OTHER ACTIVITY INSPECTORS.
3. ENVIRONMENTAL INSPECTORS SHALL HAVE THE AUTHORITY TO STOP ACTIVITIES THAT VIOLATE THE ENVIRONMENTAL CONDITIONS OF THE FERCS ORDERS, STIPULATIONS OF OTHER ENVIRONMENTAL PERMITS OR APPROVALS, OR LANDOWNER EASEMENT AGREEMENTS, AND TO ORDER APPROPRIATE CORRECTIVE ACTION.

III. PRECONSTRUCTION PLANNING

THE PROJECT SPONSOR SHALL DO THE FOLLOWING BEFORE CONSTRUCTION:
A. CONSTRUCTION WORK AREAS
1. IDENTIFY ALL CONSTRUCTION WORK AREAS (E.G., CONSTRUCTION RIGHT-OF-WAY, EXTRA WORK SPACE AREAS, PIPE STORAGE AND CONTRACTOR YARDS, BORROW AND DISPOSAL AREAS, ACCESS ROADS) THAT WOULD BE NEEDED FOR SAFE CONSTRUCTION. THE PROJECT SPONSOR MUST ENSURE THAT APPROPRIATE CULTURAL RESOURCES AND BIOLOGICAL SURVEYS ARE CONDUCTED, AS DETERMINED NECESSARY BY THE APPROPRIATE FEDERAL AND STATE AGENCIES.

E. DISPOSAL PLANNING

DETERMINE METHODS AND LOCATIONS FOR THE REGULAR COLLECTION, CONTAINMENT, AND DISPOSAL OF EXCESS CONSTRUCTION MATERIALS AND DEBRIS (E.G., TIMBER, SLASH, MATS, GARBAGE, DRILL CUTTINGS AND FLUIDS, EXCESS ROCK) THROUGHOUT THE CONSTRUCTION PROCESS. DISPOSAL OF MATERIALS FOR BENEFICIAL REUSE MUST NOT RESULT IN ADVERSE ENVIRONMENTAL IMPACT AND IS SUBJECT TO COMPLIANCE WITH ALL APPLICABLE SURVEY, LANDOWNER OR LAND MANAGEMENT AGENCY APPROVAL, AND PERMIT REQUIREMENTS.
F. AGENCY COORDINATION
THE PROJECT SPONSOR MUST COORDINATE WITH THE APPROPRIATE LOCAL, STATE, AND FEDERAL AGENCIES AS OUTLINED IN THIS PLAN AND/OR REQUIRED BY THE FERCS ORDERS.

G. SPILL PREVENTION AND RESPONSE PROCEDURES

THE PROJECT SPONSOR SHALL DEVELOP PROJECT-SPECIFIC SPILL PREVENTION AND RESPONSE PROCEDURES, AS SPECIFIED IN SECTION IV OF THE STAFFS PROCEDURES. A COPY MUST BE FILED WITH THE SECRETARY OF THE FERC (SECRETARY) PRIOR TO CONSTRUCTION AND MADE AVAILABLE IN THE FIELD ON EACH CONSTRUCTION SPREAD. THE FILING REQUIREMENT DOES NOT APPLY TO PROJECTS CONSTRUCTED UNDER THE AUTOMATIC AUTHORIZATION PROVISIONS IN THE FERCS REGULATIONS.
H. RESIDENTIAL CONSTRUCTION
FOR ALL PROPERTIES WITH RESIDENCES LOCATED WITHIN 50 FEET OF CONSTRUCTION WORK AREAS, PROJECT SPONSORS SHALL AVOID REMOVAL OF MATURE TREES AND LANDSCAPING WITHIN THE CONSTRUCTION WORK AREA UNLESS NECESSARY FOR SAFE OPERATION OF CONSTRUCTION EQUIPMENT, OR AS SPECIFIED IN LANDOWNER AGREEMENTS.

IV. INSTALLATION

A. APPROVED AREAS OF DISTURBANCE
1. PROJECT-RELATED GROUND DISTURBANCE SHALL BE LIMITED TO THE CONSTRUCTION RIGHT-OF-WAY, EXTRA WORK SPACE AREAS, PIPE STORAGE YARDS, BORROW AND DISPOSAL AREAS, ACCESS ROADS, AND OTHER AREAS APPROVED IN THE FERCS ORDERS. ANY PROJECT-RELATED GROUND DISTURBING ACTIVITIES OUTSIDE THESE AREAS WILL REQUIRE PRIOR DIRECTOR APPROVAL. THIS REQUIREMENT DOES NOT APPLY TO ACTIVITIES NEEDED TO COMPLY WITH THE PLAN AND PROCEDURES (I.E., SLOPE BREAKERS, ENERGY-DISSIPATING DEVICES, DEWATERING STRUCTURES, DRAIN TILE SYSTEM REPAIRS) OR MINOR FIELD REALIGNMENTS AND WORKSPACE SHIFTS PER LANDOWNER NEEDS AND REQUIREMENTS THAT DO NOT AFFECT OTHER LANDOWNERS OR SENSITIVE ENVIRONMENTAL RESOURCE AREAS. ALL CONSTRUCTION OR RESTORATION ACTIVITIES OUTSIDE OF AUTHORIZED AREAS ARE SUBJECT TO ALL APPLICABLE SURVEY AND PERMIT REQUIREMENTS, AND LANDOWNER EASEMENT AGREEMENTS.

E. ROAD CROSSINGS AND ACCESS POINTS

1. MAINTAIN SAFE AND ACCESSIBLE CONDITIONS AT ALL ROAD CROSSINGS AND ACCESS POINTS DURING CONSTRUCTION.
2. IF CRUSHED STONE ACCESS PADS ARE USED IN RESIDENTIAL OR AGRICULTURAL AREAS, PLACE THE STONE ON SYNTHETIC FABRIC TO FACILITATE REMOVAL.
3. MINIMIZE THE USE OF TRACKED EQUIPMENT ON PUBLIC ROADWAYS. REMOVE ANY SOIL OR GRAVEL SPILLED OR TRACKED ONTO ROADWAYS DAILY OR MORE FREQUENT AS NECESSARY TO MAINTAIN SAFE ROAD CONDITIONS. REPAIR ANY DAMAGES TO ROADWAY SURFACES, SHOULDERS, AND BAR DITCHES.
F. TEMPORARY EROSION CONTROL
INSTALL TEMPORARY EROSION CONTROLS IMMEDIATELY AFTER INITIAL DISTURBANCE OF THE SOIL. TEMPORARY EROSION CONTROLS MUST BE PROPERLY MAINTAINED THROUGHOUT CONSTRUCTION (ON A DAILY BASIS) AND REINSTALLED AS NECESSARY (SUCH AS AFTER BACKFILLING OF THE TRENCH) UNTIL REPLACED BY PERMANENT EROSION CONTROLS OR RESTORATION IS COMPLETE.

4. MULCH

A. APPLY MULCH ON ALL SLOPES (EXCEPT IN CULTIVATED CROPLAND) CONCURRENT WITH OR IMMEDIATELY AFTER SEEDING, WHERE NECESSARY TO STABILIZE THE SOIL SURFACE AND TO REDUCE WIND AND WATER EROSION. SPREAD MULCH UNIFORMLY OVER THE AREA TO COVER AT LEAST 75 PERCENT OF THE GROUND SURFACE AT A RATE OF 2 TONS/ACRE OF STRAW OR ITS EQUIVALENT, UNLESS THE LOCAL SOIL CONSERVATION AUTHORITY, LANDOWNER, OR LAND MANAGING AGENCY APPROVES OTHERWISE IN WRITING.
B. MULCH CAN CONSIST OF WEEP-FREE STRAW OR HAY, WOOD FIBER HYDROMULCH, EROSION CONTROL FABRIC, OR SOME FUNCTIONAL EQUIVALENT.
C. MULCH ALL DISTURBED UPLAND AREAS (EXCEPT CULTIVATED CROPLAND) BEFORE SEEDING IF:
(1) FINAL GRADING AND INSTALLATION OF PERMANENT EROSION CONTROL MEASURES WILL NOT BE COMPLETED IN AN AREA WITHIN 20 DAYS AFTER THE TRENCH IN THAT AREA IS BACKFILLED (10 DAYS IN RESIDENTIAL AREAS), AS REQUIRED IN SECTION V.A.1. OR
(2) CONSTRUCTION OR RESTORATION ACTIVITY IS INTERRUPTED FOR EXTENDED PERIODS, SUCH AS WHEN SEEDING CANNOT BE COMPLETED DUE TO SEEDING PERIOD RESTRICTIONS.

V. RESTORATION

A. CLEANUP
1. COMMENCE CLEANUP OPERATIONS IMMEDIATELY FOLLOWING BACKFILL OPERATIONS. COMPLETE FINAL GRADING, TOPSOIL REPLACEMENT, AND INSTALLATION OF PERMANENT EROSION CONTROL STRUCTURES WITHIN 20 DAYS AFTER BACKFILLING THE TRENCH (10 DAYS IN RESIDENTIAL AREAS), IF SEASONAL OR OTHER WEATHER CONDITIONS PREVENT COMPLIANCE WITH THESE TIME FRAMES. MAINTAIN TEMPORARY EROSION CONTROLS (I.E., TEMPORARY SLOPE BREAKERS, SEDIMENT BARRIERS, AND MULCH) UNTIL CONDITIONS ALLOW COMPLETION OF CLEANUP.
IF CONSTRUCTION OR RESTORATION UNEXPECTEDLY CONTINUES INTO THE WINTER SEASON WHEN CONDITIONS COULD DELAY SUCCESSFUL DECOMPACTION, TOPSOIL REPLACEMENT, OR SEEDING UNTIL THE FOLLOWING SPRING, FILE WITH THE SECRETARY FOR THE REVIEW AND WRITTEN APPROVAL OF THE DIRECTOR. A WINTER CONSTRUCTION PLAN (AS SPECIFIED IN SECTION III), THIS FILING REQUIREMENT DOES NOT APPLY TO PROJECTS CONSTRUCTED UNDER THE AUTOMATIC AUTHORIZATION PROVISIONS OF THE FERCS REGULATIONS.
2. A TRAVEL LANE MAY BE LEFT OPEN TEMPORARILY TO ALLOW ACCESS BY CONSTRUCTION TRAFFIC IF THE TEMPORARY EROSION CONTROL STRUCTURES ARE INSTALLED AS SPECIFIED IN SECTION IV.F. AND INSPECTED AND MAINTAINED AS SPECIFIED IN SECTIONS III.B.12 THROUGH 14. WHEN ACCESS IS NO LONGER REQUIRED THE TRAVEL LANE MUST BE REMOVED AND THE RIGHT-OF-WAY RESTORED.
3. ROCK EXCAVATED FROM THE TRENCH MAY BE USED TO BACKFILL THE TRENCH ONLY TO THE TOP OF THE EXISTING BEDROCK PROFILE. ROCK THAT IS NOT RETURNED TO THE TRENCH SHALL BE CONSIDERED CONSTRUCTION DEBRIS. UNLESS APPROVED FOR USE AS MULCH OR FOR SOME OTHER USE ON THE

CONSTRUCTION WORK AREAS BY THE LANDOWNER OR LAND MANAGING AGENCY.
4. REMOVE EXCESS ROCK FROM AT LEAST THE TOP 12 INCHES OF SOIL IN ALL CULTIVATED OR ROTATED CROPLAND, MANAGED PASTURES, HAYFIELDS, AND RESIDENTIAL AREAS, AS WELL AS OTHER AREAS AT THE LANDOWNERS REQUEST. THE SIZE, DENSITY, AND DISTRIBUTION OF ROCK ON THE CONSTRUCTION WORK AREA SHALL BE SIMILAR TO ADJACENT AREAS NOT DISTURBED BY CONSTRUCTION. THE LANDOWNER OR LAND MANAGEMENT AGENCY MAY APPROVE OTHER PROVISIONS IN WRITING.
5. GRADE THE CONSTRUCTION RIGHT-OF-WAY TO RESTORE PRE-CONSTRUCTION CONTOURS AND LEAVE THE SOIL IN THE PROPER CONDITION FOR PLANTING.
6. REMOVE CONSTRUCTION DEBRIS FROM ALL CONSTRUCTION WORK AREAS UNLESS THE LANDOWNER OR LAND MANAGING AGENCY APPROVES LEAVING MATERIALS ONSITE FOR BENEFICIAL REUSE, STABILIZATION, OR HABITAT RESTORATION.
7. REMOVE TEMPORARY SEDIMENT BARRIERS WHEN REPLACED BY PERMANENT EROSION CONTROL MEASURES OR WHEN REVEGETATION IS SUCCESSFUL.

B. PERMANENT EROSION CONTROL DEVICES
1. TRENCH BREAKERS
A. TRENCH BREAKERS ARE INTENDED TO SLOW THE FLOW OF SUBSURFACE WATER ALONG THE TRENCH. TRENCH BREAKERS MAY BE CONSTRUCTED OF MATERIALS SUCH AS SAND BAGS OR POLYURETHANE FOAM. DO NOT USE TOPSOIL IN TRENCH BREAKERS.
B. AN ENGINEER OR SIMILARLY QUALIFIED PROFESSIONAL SHALL DETERMINE THE NEED FOR AND SPACING OF TRENCH BREAKERS. OTHERWISE, TRENCH BREAKERS SHALL BE INSTALLED AT THE SAME SPACING AS AND UPSLOPE OF PERMANENT SLOPE BREAKERS.
C. IN AGRICULTURAL FIELDS AND RESIDENTIAL AREAS WHERE SLOPE BREAKERS ARE NOT TYPICALLY REQUIRED, INSTALL TRENCH BREAKERS AT THE SAME SPACING AS IF PERMANENT SLOPE BREAKERS WERE REQUIRED.
D. AT A MINIMUM, INSTALL A TRENCH BREAKER AT THE BASE OF SLOPES GREATER THAN 5 PERCENT WHERE THE BASE OF THE SLOPE IS LESS THAN 50 FEET FROM A WATERBODY OR WETLAND AND WHERE NEEDED TO AVOID DRAINING A WATERBODY OR WETLAND. INSTALL TRENCH BREAKERS AT WETLAND BOUNDARIES, AS SPECIFIED IN THE PROCEDURES. DO NOT INSTALL TRENCH BREAKERS WITHIN A WETLAND.

2. PERMANENT SLOPE BREAKERS
A. PERMANENT SLOPE BREAKERS ARE INTENDED TO REDUCE RUNOFF VELOCITY, DIVERT WATER OFF THE CONSTRUCTION RIGHT-OF-WAY, AND PREVENT SEDIMENT DEPOSITION INTO SENSITIVE RESOURCES. PERMANENT SLOPE BREAKERS MAY BE CONSTRUCTED OF MATERIALS SUCH AS SOIL, STONE, OR SOME FUNCTIONAL EQUIVALENT.
B. CONSTRUCT AND MAINTAIN PERMANENT SLOPE BREAKERS IN ALL AREAS, EXCEPT CULTIVATED AREAS AND LAWNS, UNLESS REQUESTED BY THE LANDOWNER, USING SPACING RECOMMENDATIONS OBTAINED FROM THE LOCAL SOIL CONSERVATION AUTHORITY OR LAND MANAGING AGENCY. IN THE ABSENCE OF WRITTEN RECOMMENDATIONS, USE THE FOLLOWING SPACING UNLESS CLOSER SPACING IS NECESSARY TO AVOID EXCESSIVE EROSION ON THE CONSTRUCTION RIGHT-OF-WAY:
SLOPE (%) SPAACING (FEET)
5 -15 300
>15-30 200
>30 100
C. CONSTRUCT SLOPE BREAKERS TO DIVERT SURFACE FLOW TO A STABLE AREA WITHOUT CAUSING WATER TO POOL OR ERODE BEHIND THE BREAKER. IN THE ABSENCE OF A STABLE AREA, CONSTRUCT APPROPRIATE ENERGY-DISSIPATING DEVICES AT THE END OF THE BREAKER.
D. SLOPE BREAKERS MAY EXTEND SLIGHTLY (ABOUT 4 FEET) BEYOND THE EDGE OF THE CONSTRUCTION RIGHT-OF-WAY TO EFFECTIVELY DRAIN WATER OFF THE DISTURBED AREA, WHERE SLOPE BREAKERS EXTEND BEYOND THE EDGE OF THE CONSTRUCTION RIGHT-OF-WAY, THEY ARE SUBJECT TO COMPLIANCE WITH ALL APPLICABLE SURVEY REQUIREMENTS.

C. SOIL COMPACTION MITIGATION
1. TEST TOPSOIL AND SUBSOIL FOR COMPACTION AT REGULAR INTERVALS IN AGRICULTURAL AND RESIDENTIAL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES. CONDUCT TESTS ON THE SAME SOIL TYPE UNDER SIMILAR MOISTURE CONDITIONS IN UNDISTURBED AREAS TO APPROXIMATE PRECONSTRUCTION CONDITIONS. USE PENETROMETERS OR OTHER APPROPRIATE DEVICES TO CONDUCT TESTS.
2. PLOW SEVERELY COMPACTED AGRICULTURAL AREAS WITH A PARAPLOW OR OTHER DEEP TILLAGE IMPLEMENT. IN AREAS WHERE TOPSOIL HAS BEEN SEGREGATED, PLOW THE SUBSOIL BEFORE REPLACING THE SEGREGATED TOPSOIL.
IF SUBSEQUENT CONSTRUCTION AND CLEANUP ACTIVITIES RESULT IN FURTHER COMPACTION, CONDUCT ADDITIONAL TILLING.
3. PERFORM APPROPRIATE SOIL COMPACTION MITIGATION IN SEVERELY COMPACTED RESIDENTIAL AREAS.
D. REVEGETATION
1. GENERAL
A. THE PROJECT SPONSOR IS RESPONSIBLE FOR ENSURING SUCCESSFUL REVEGETATION OF SOILS DISTURBED BY PROJECT-RELATED ACTIVITIES, EXCEPT AS NOTED IN SECTION V.I.1.B.
B. RESTORE ALL TURF, ORNAMENTAL SHRUBS, AND SPECIALIZED LANDSCAPING IN ACCORDANCE WITH THE LANDOWNER'S REQUEST, OR COMPENSATE THE LANDOWNER. RESTORATION WORK MUST BE PERFORMED BY PERSONNEL FAMILIAR WITH LOCAL HORTICULTURAL AND TURF ESTABLISHMENT PRACTICES.
2. SOIL ADDITIVES
FERTILIZE AND ADD SOIL PH MODIFIERS IN ACCORDANCE WITH WRITTEN RECOMMENDATIONS OBTAINED FROM THE LOCAL SOIL CONSERVATION AUTHORITY, LAND MANAGEMENT AGENCIES, OR LANDOWNER. INCORPORATE RECOMMENDED SOIL PH MODIFIER AND FERTILIZER INTO THE TOP 2 INCHES OF SOIL AS SOON AS PRACTICABLE AFTER APPLICATION.
3. SEEDING REQUIREMENTS
A. PREPARE A SEEDBED IN DISTURBED AREAS TO A DEPTH OF 3 TO 4 INCHES USING APPROPRIATE EQUIPMENT TO PROVIDE A FIRM SEEDBED, WHEN HYDROSEEDING, SCARIFY THE SEEDBED TO FACILITATE LODGING AND GERMINATION OF SEED.
B. SEED DISTURBED AREAS IN ACCORDANCE WITH WRITTEN RECOMMENDATIONS FOR SEED MIXES, RATES, AND DATES OBTAINED FROM THE LOCAL SOIL CONSERVATION AUTHORITY OR THE REQUEST OF THE LANDOWNER OR LAND MANAGEMENT AGENCY. SEEDING IS NOT REQUIRED IN CULTIVATED CROPLANDS UNLESS REQUESTED BY THE LANDOWNER.
C. PERFORM SEEDING OF PERMANENT VEGETATION WITHIN THE RECOMMENDED SEEDING DATES. IF SEEDING CANNOT BE DONE WITHIN THOSE DATES, USE APPROPRIATE TEMPORARY EROSION CONTROL MEASURES DISCUSSED IN SECTION IV.F AND PERFORM SEEDING OF PERMANENT VEGETATION AT THE BEGINNING OF THE NEXT RECOMMENDED SEEDING SEASON. DORMANT SEEDING OR TEMPORARY SEEDING OF ANNUAL SPECIES MAY ALSO BE USED, IF NECESSARY, TO ESTABLISH COVER, AS APPROVED BY THE ENVIRONMENTAL INSPECTOR. LAWNS MAY BE SEEDDED ON A SCHEDULE ESTABLISHED WITH THE LANDOWNER.
D. IN THE ABSENCE OF WRITTEN RECOMMENDATIONS FROM THE LOCAL SOIL CONSERVATION AUTHORITIES, SEED ALL DISTURBED SOILS WITHIN 4 WORKING DAYS OF FINAL GRADING, WEATHER AND SOIL CONDITIONS PERMITTING, SUBJECT TO THE SPECIFICATIONS IN SECTION V.D.3.A THROUGH V.D.3.C.
E. BASE SEEDING RATES ON PURE LIVE SEED. USE SEED WITHIN 12 MONTHS OF SEED TESTING.
F. TREAT LEGUME SEED WITH AN INOCULANT SPECIFIC TO THE SPECIES USING THE MANUFACTURERS RECOMMENDED RATE OF INOCULANT APPROPRIATE FOR THE SEEDING METHOD (BROADCAST, DRILL, OR HYDRO).
G. IN THE ABSENCE OF WRITTEN RECOMMENDATIONS FROM THE LOCAL SOIL CONSERVATION AUTHORITIES, LANDOWNER, OR LAND MANAGING AGENCY TO THE CONTRARY, A SEED DRILL EQUIPPED WITH A CULTIPACKER IS PREFERRED FOR SEED APPLICATION. BROADCAST OR HYDROSEEDING CAN BE USED IN LIEU OF DRILLING AT DOUBLE THE RECOMMENDED SEEDING RATES. WHERE SEED IS BROADCAST, FIRM THE SEEDBED WITH A CULTIPACKER OR ROLLER AFTER SEEDING. IN ROCKY SOILS OR WHERE SITE CONDITIONS MAY LIMIT THE EFFECTIVENESS OF THIS

EQUIPMENT, OTHER ALTERNATIVES MAY BE APPROPRIATE (E.G., USE OF A CHAIN DRAG) TO LIGHTLY COVER SEED AFTER APPLICATION, AS APPROVED BY THE ENVIRONMENTAL INSPECTOR.
VI. OFF-ROAD VEHICLE CONTROL
TO EACH OWNER OR MANAGER OF FORESTED LANDS, OFFER TO INSTALL AND MAINTAIN MEASURES TO CONTROL UNAUTHORIZED VEHICLE ACCESS TO THE RIGHT-OF-WAY. THESE MEASURES MAY INCLUDE:
A. SIGNS
B. FENCES WITH LOCKING GATES
C. SLASH AND TIMBER BARRIERS, PIPE BARRIERS, OR A LINE OF BOULDERS ACROSS THE RIGHT-OF-WAY, AND
D. CONIFERS OR OTHER APPROPRIATE TREES OR SHRUBS ACROSS THE RIGHT-OF-WAY.
VII. POST-CONSTRUCTION ACTIVITIES AND REPORTING
A. MONITORING AND MAINTENANCE
1. CONDUCT FOLLOW-UP INSPECTIONS OF ALL DISTURBED AREAS, AS NECESSARY, TO DETERMINE THE SUCCESS OF REVEGETATION AND ADDRESS LANDOWNER CONCERNS. AT A MINIMUM, CONDUCT INSPECTIONS AFTER THE FIRST AND SECOND GROWING SEASONS.
2. REVEGETATION IN NON-AGRICULTURAL AREAS SHALL BE CONSIDERED SUCCESSFUL IF UPON VISUAL SURVEY THE DENSITY AND COVER OF NON-NUISANCE VEGETATION ARE SIMILAR IN DENSITY AND COVER TO ADJACENT UNDISTURBED LANDS. IN AGRICULTURAL AREAS, REVEGETATION SHALL BE CONSIDERED SUCCESSFUL WHEN UPON VISUAL SURVEY, CROP GROWTH AND VIGOR ARE SIMILAR TO ADJACENT UNDISTURBED PORTIONS OF THE SAME FIELD, UNLESS THE EASEMENT AGREEMENT SPECIFIES OTHERWISE. CONTINUE REVEGETATION EFFORTS UNTIL REVEGETATION IS SUCCESSFUL.
3. MONITOR AND CORRECT PROBLEMS WITH DRAINAGE AND IRRIGATION SYSTEMS RESULTING FROM PIPELINE CONSTRUCTION IN AGRICULTURAL AREAS UNTIL RESTORATION IS SUCCESSFUL.
4. RESTORATION SHALL BE CONSIDERED SUCCESSFUL IF THE RIGHT-OF-WAY SURFACE CONDITION IS SIMILAR TO ADJACENT UNDISTURBED LANDS, CONSTRUCTION DEBRIS IS REMOVED (UNLESS OTHERWISE APPROVED BY THE LANDOWNER OR LAND MANAGING AGENCY PER SECTION V.A.6), REVEGETATION IS SUCCESSFUL, AND PROPER DRAINAGE HAS BEEN RESTORED.
5. ROUTINE VEGETATION MOWING OR CLEARING OVER THE FULL WIDTH OF THE PERMANENT RIGHT-OF-WAY IN UPLANDS SHALL NOT BE DONE MORE FREQUENTLY THAN EVERY 3 YEARS. HOWEVER, TO FACILITATE PERIODIC CORROSION/LEAK SURVEYS, A CORRIDOR NOT EXCEEDING 10 FEET IN WIDTH CENTERED ON THE PIPELINE MAY BE CLEARED AT A FREQUENCY NECESSARY TO MAINTAIN THE 10-FOOT CORRIDOR IN AN HERBACEOUS STATE. IN NO CASE SHALL ROUTINE VEGETATION MOWING OR CLEARING OCCUR DURING THE MIGRATORY BIRD NESTING SEASON BETWEEN APRIL 15 AND AUGUST 1 OF ANY YEAR UNLESS SPECIFICALLY APPROVED IN WRITING BY THE RESPONSIBLE LAND MANAGEMENT AGENCY OR THE U.S. FISH AND WILDLIFE SERVICE.
6. EFFORTS TO CONTROL UNAUTHORIZED OFF-ROAD VEHICLE USE, IN COOPERATION WITH THE LANDOWNER, SHALL CONTINUE THROUGHOUT THE LIFE OF THE PROJECT. MAINTAIN SIGNS, GATES, AND PERMANENT ACCESS ROADS AS NECESSARY.
B. REPORTING
1. THE PROJECT SPONSOR SHALL MAINTAIN RECORDS THAT IDENTIFY BY MILEPOST:
A. METHOD OF APPLICATION, APPLICATION RATE, AND TYPE OF FERTILIZER, PH MODIFYING AGENT, SEED, AND MULCH USED;
B. ACREAGE TREATED;
C. DATES OF BACKFILLING AND SEEDING;
D. NAMES OF LANDOWNERS REQUESTING SPECIAL SEEDING TREATMENT AND A DESCRIPTION OF THE FOLLOW-UP ACTIONS;
E. THE LOCATION OF ANY SUBSURFACE DRAINAGE REPAIRS OR IMPROVEMENTS MADE DURING RESTORATION; AND
F. ANY PROBLEM AREAS AND HOW THEY WERE ADDRESSED.
2. THE PROJECT SPONSOR SHALL FILE WITH THE SECRETARY QUARTERLY ACTIVITY REPORTS DOCUMENTING THE RESULTS OF FOLLOW-UP INSPECTIONS REQUIRED BY SECTION VII.A.1; ANY PROBLEM AREAS, INCLUDING THOSE IDENTIFIED BY THE LANDOWNER; AND CORRECTIVE ACTIONS TAKEN FOR AT LEAST 2 YEARS FOLLOWING CONSTRUCTION. THE REQUIREMENT TO FILE QUARTERLY ACTIVITY REPORTS WITH THE SECRETARY DOES NOT APPLY TO PROJECTS CONSTRUCTED UNDER THE AUTOMATIC AUTHORIZATION. PRIOR NOTICE, OR ADVANCED NOTICE PROVISIONS IN THE FERCS REGULATIONS.

THIS EXPANSION PROJECT IS REGULATED BY THE U.S. DEPARTMENT OF ENERGY. FEDERAL ENERGY REGULATORY COMMISSION (FERC), IN ADDITION TO STATE AND LOCAL REQUIREMENTS. THIS EROSION AND SEDIMENT CONTROL PLAN INCLUDES THESE MITIGATION MEASURES FOR PIPELINE CONSTRUCTION SPECIFIED BY THE FERCS IN ITS PLAN AND PROCEDURES DOCUMENTS, UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN MAY 2013 AND WETLAND AND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES, MAY 2013.

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KEVIN MCKEON, P.E.
NEW JERSEY
PROFESSIONAL ENGINEER NO GE32586

Table with 7 columns: NO, DATE, BY, DESCRIPTION, W.O. NO, CHK, APP. Contains revision history for the plan.

Project information for TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC. SOIL EROSION & SEDIMENT CONTROL PLAN. Includes contact info for Williams Gas Pipeline and drawing details.





UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN (CONT'D)

VII. POST-CONSTRUCTION ACTIVITIES AND REPORTING

A. MONITORING AND MAINTENANCE

1. CONDUCT FOLLOW-UP INSPECTIONS OF ALL DISTURBED AREAS, AS NECESSARY, TO DETERMINE THE SUCCESS OF REVEGETATION AND ADDRESS LANDOWNER CONCERNS. AT A MINIMUM, CONDUCT INSPECTIONS AFTER THE FIRST AND SECOND GROWING SEASONS.
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B. REPORTING

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  - A. METHOD OF APPLICATION, APPLICATION RATE, AND TYPE OF FERTILIZER, PH MODIFYING AGENT, SEED, AND MULCH USED;
  - B. ACREAGE TREATED;
  - C. DATES OF BACKFILLING AND SEEDING;
  - D. NAMES OF LANDOWNERS REQUESTING SPECIAL SEEDING TREATMENT AND A DESCRIPTION OF THE FOLLOW-UP ACTIONS;
  - E. THE LOCATION OF ANY SUBSURFACE DRAINAGE REPAIRS OR IMPROVEMENTS MADE DURING RESTORATION; AND
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KEVIN MCKEON, P.E.  
NEW JERSEY  
PROFESSIONAL ENGINEER NO GE32586

REVISIONS						
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
0	06/15/17	ERL	SUBMITTED TO FREEHOLD SOIL CONSERVATION DISTRICT	60515775	PPH	KDM
1	06/15/18	SMR	SUBMITTED TO NJDEP	60515775	PPH	PPH

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.  
SOIL EROSION & SEDIMENT CONTROL PLAN  
NORTHEAST SUPPLY ENHANCEMENT PROJECT  
PROPOSED 26" RARITAN BAY LOOP - ONSHORE  
0.16 MI. - M.P. 12.00 TO M.P. 12.16  
MIDDLESEX COUNTY, NEW JERSEY

DRAWN BY: ERL	DATE: 06/15/17	ISSUED FOR BID: TBD	SCALE: NTS
CHECKED BY: PPH	DATE: 06/15/17	ISSUED FOR CONSTRUCTION: TBD	REVISION: 1
APPROVED BY: KDM	DATE: 06/15/17	DRAWING NUMBER: 26-0100-80-28-D	SHEET 12 OF 12
IWO: 60515775			