TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
SOIL EROSION & SEDIMENT CONTROL PLAN

REGIONAL ENERGY ACCESS EXPANSION PROJECT
COMPRESSOR STATION 515

BUCK TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

APRIL 2021
REVISED MARCH 2022

PROJECT OWNER/APPLICANT

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
2800 POST OAK BLVD, LEVEL 11
HOUSTON, TX 77056
CONTACT: JOSEPH DEAN, MANAGER PERMITTING

PLAN PREPARER / ENGINEER

WHM CONSULTING, LLC
366 WALKER DRIVE SUITE 300
STATE COLLEGE, PA 16801
PH: (814) 689-1650
CONTACT: RYAN NELSON, PROJECT MANAGER

BAI GROUP, LLC
366 WALKER DRIVE SUITE 300
STATE COLLEGE, PA 16801
PH: (814) 238-2060
CONTACT: PATRICK WOZINSKI, P.E. PROJECT ENGINEER

PROJECT INFORMATION

ESCP PERMIT BOUNDARY
(INCLUDES REGIONAL ENERGY LATERAL): 931.98 Ac.

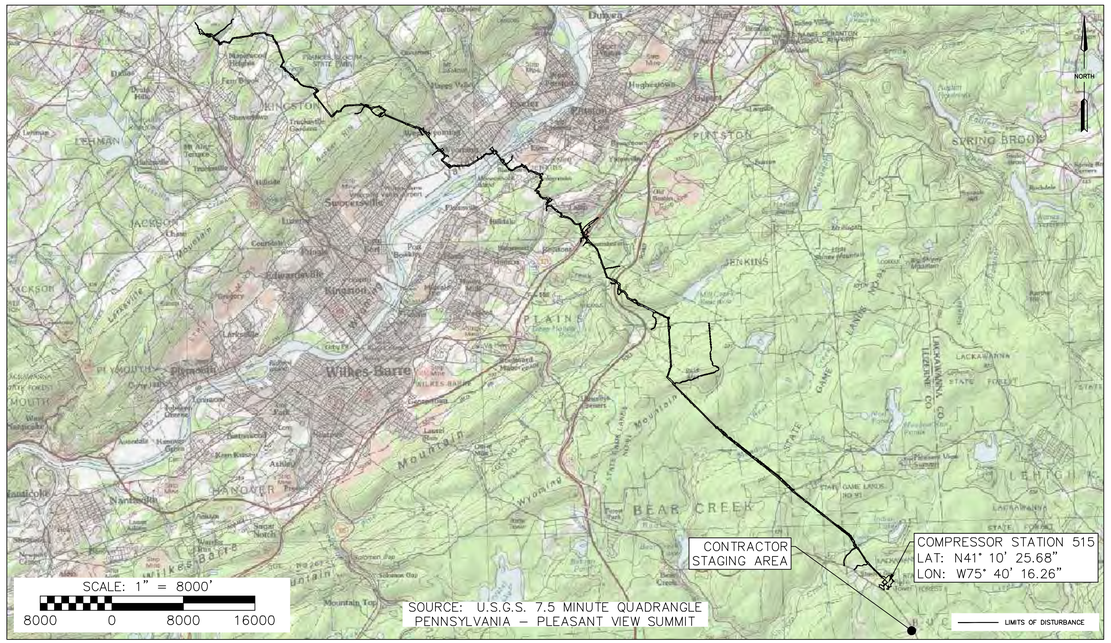
LIMIT OF DISTURBANCE: 24.83 Ac.

PROJECT DESCRIPTION

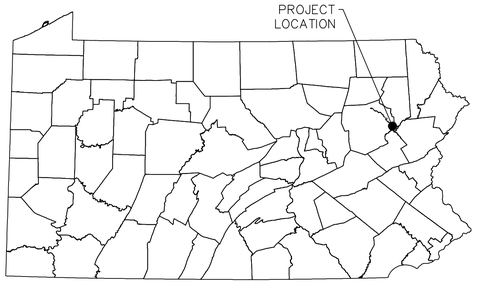
PROJECT DESCRIPTION: TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC (TRANSCO), INDIRECTLY OWNED BY THE WILLIAMS COMPANIES, INC. (WILLIAMS) IS SEEKING AUTHORIZATION FROM THE FEDERAL ENERGY REGULATORY COMMISSION (FERC) UNDER SECTION 7(C) OF THE NATURAL GAS ACT TO CONSTRUCT, OWN, OPERATE, AND MAINTAIN THE PROPOSED PROJECT FACILITIES ASSOCIATED WITH THE REGIONAL ENERGY ACCESS EXPANSION PROJECT (PROJECT). THE PROJECT IS AN EXPANSION OF TRANSCO'S EXISTING NATURAL GAS TRANSMISSION SYSTEM THAT WILL ENABLE TRANSCO TO PROVIDE AN INCREMENTAL 829,400 DEKATHERMS PER DAY (DTH/D) OF YEAR-ROUND FIRM TRANSPORTATION CAPACITY FROM THE MARCELLUS SHALE PRODUCTION AREA IN NORTHEASTERN PENNSYLVANIA TO MULTIPLE DELIVERY POINTS ALONG TRANSCO'S LEIDY LINE IN PA AND MAINLINE IN PA, NJ, AND MD.

THE EXISTING COMPRESSOR STATION 515 COMPONENT OF THE PROJECT IS LOCATED AT THE EASTERN TERMINUS OF THE REGIONAL ENERGY LATERAL IN BUCK TOWNSHIP, LUZERNE COUNTY. PROPOSED AT THIS FACILITY IS THE ADDITION OF TWO GAS-FIRED TURBINE DRIVEN COMPRESSOR UNITS WITH 63,742 NOMINAL HP AT ISO CONDITIONS AND MODIFICATION OF THREE EXISTING COMPRESSORS TO SUPPORT THE PROJECT AND TO ACCOMMODATE THE ABANDONMENT AND REPLACEMENT OF APPROXIMATELY 17,000 HP FROM FIVE EXISTING GAS-FIRED RECIPROCATING ENGINE DRIVEN COMPRESSORS AND INCREASE THE CERTIFICATED STATION COMPRESSION BY 46,742 HP. ONE MAINLINE VALVE WILL BE INSTALLED AT THIS FACILITY (MLV515RA10).

SUBJECT TO FERC'S CERTIFICATION OF THE PROJECT AND RECEIPT OF THE NECESSARY PERMITS AND AUTHORIZATIONS, TRANSCO ANTICIPATES CONSTRUCTION OF THE PROJECT TO START IN SECOND QUARTER 2023 TO MEET A PROPOSED IN-SERVICE DATE OF FOURTH QUARTER 2024.



LOCATION MAP



VICINITY MAP
N.T.S.

SHEET INDEX	
SHEET NUMBER	DRAWING TITLE
1 OF 10	COVER
2 OF 10	EXISTING CONDITIONS PLAN 1
3 OF 10	EXISTING CONDITIONS PLAN 2
4 OF 10	EROSION & SEDIMENT CONTROL PLAN 1
5 OF 10	EROSION & SEDIMENT CONTROL PLAN 2
6-7 OF 10	NOTES
8-10 OF 10	DETAILS

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

E&S BMP LEGEND		
DESCRIPTION	SYMBOL	SHEET NUMBER
CONSTRUCTION ENTRANCE	CE	9
TYPICAL SOIL STOCKPILE	TTS	9
COMPOST FILTER SOCK	CFS	8
GRAVEL PAD		9
ACCESS ROAD CULVERT DETAIL	RC	8
COMPOST SOCK CONCRETE WASHOUT INSTALLATION		9
TRENCH DRAIN	TD	10
CULVERT INLET PROTECTION STONE	IP	10
CFS SEDIMENT TRAP		8
ROCK FILTER		9

(XXX) INDICATES SOIL EROSION CONTROL MEASURE DETAIL

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

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

BAI GROUP
WHM consulting, INC. designs, permits, resolutions

PATRICK A. WOZINSKI, P.E.
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
PATRICK A. WOZINSKI
PE076243
PENNSYLVANIA PROFESSIONAL ENGINEER

REVISIONS						
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2	03/01/22	RHM	RESPONSE TO PADEP TECHNICAL DEFICIENCY LETTER			

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COVER

BUCK TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

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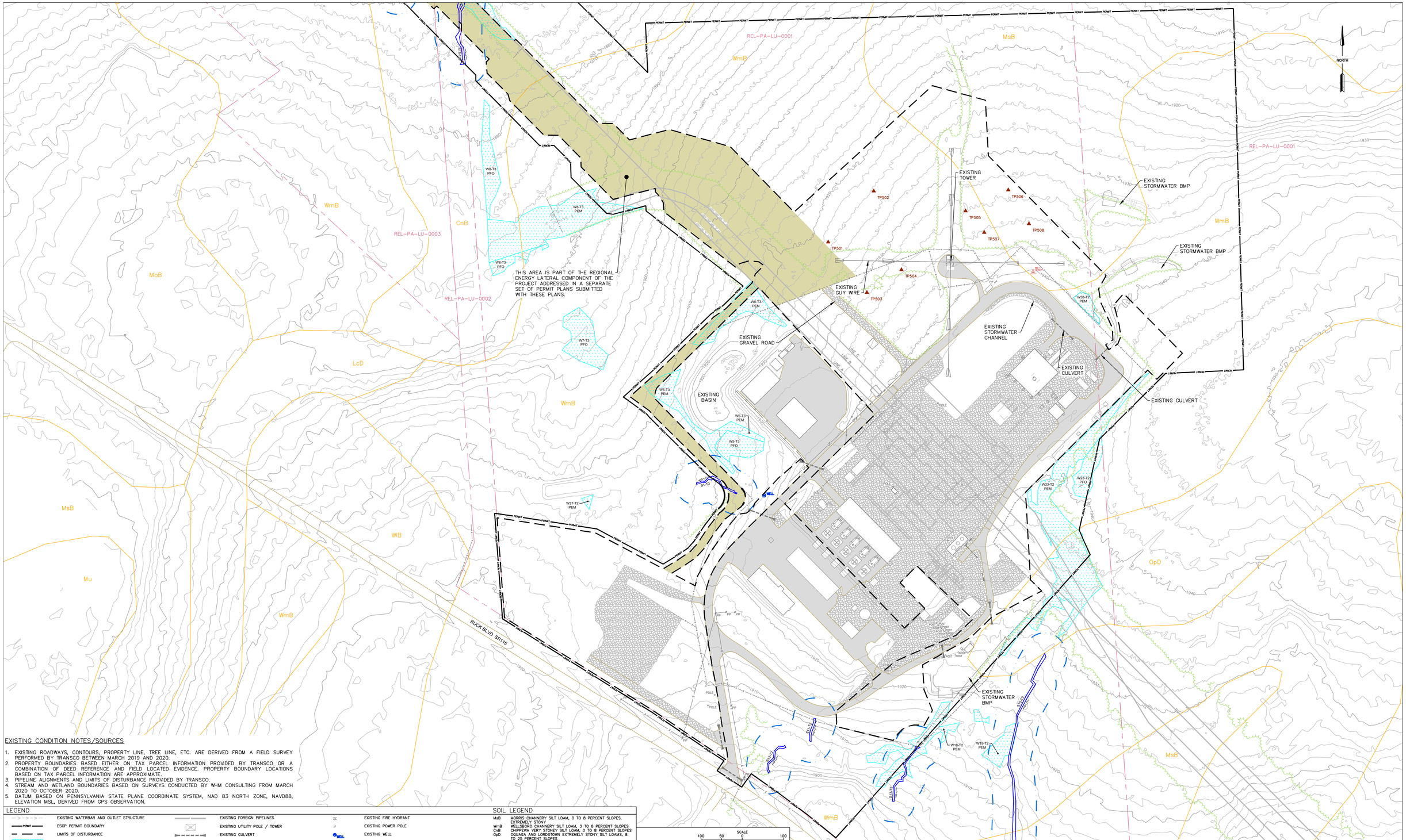
WO: 1222639	RID: 305	DRAWING NUMBER: 26-1000-70-28-D	SHEET 1 OF 10



EXISTING CONDITION NOTES/SOURCES

1. EXISTING ROADWAYS, CONTOURS, PROPERTY LINE, TREE LINE, ETC. ARE DERIVED FROM A FIELD SURVEY PERFORMED BY TRANSCO BETWEEN MARCH 2019 AND 2020.
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LEGEND

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- LIMITS OF DISTURBANCE
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- FEMA 100-YEAR FLOODPLAIN
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- EXISTING GRAVEL AREAS
- EXISTING PAVEMENT
- TP500 TEST PIT/INFILTRATION TEST LOCATION (2020)

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MrB	MORRIS CHANNERY SILT LOAM, 0 TO 8 PERCENT SLOPES, EXTREMELY STONY
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OpD	OQUAGA AND LORDSTOWN EXTREMELY STONY SILT LOAMS, 8 TO 25 PERCENT SLOPES

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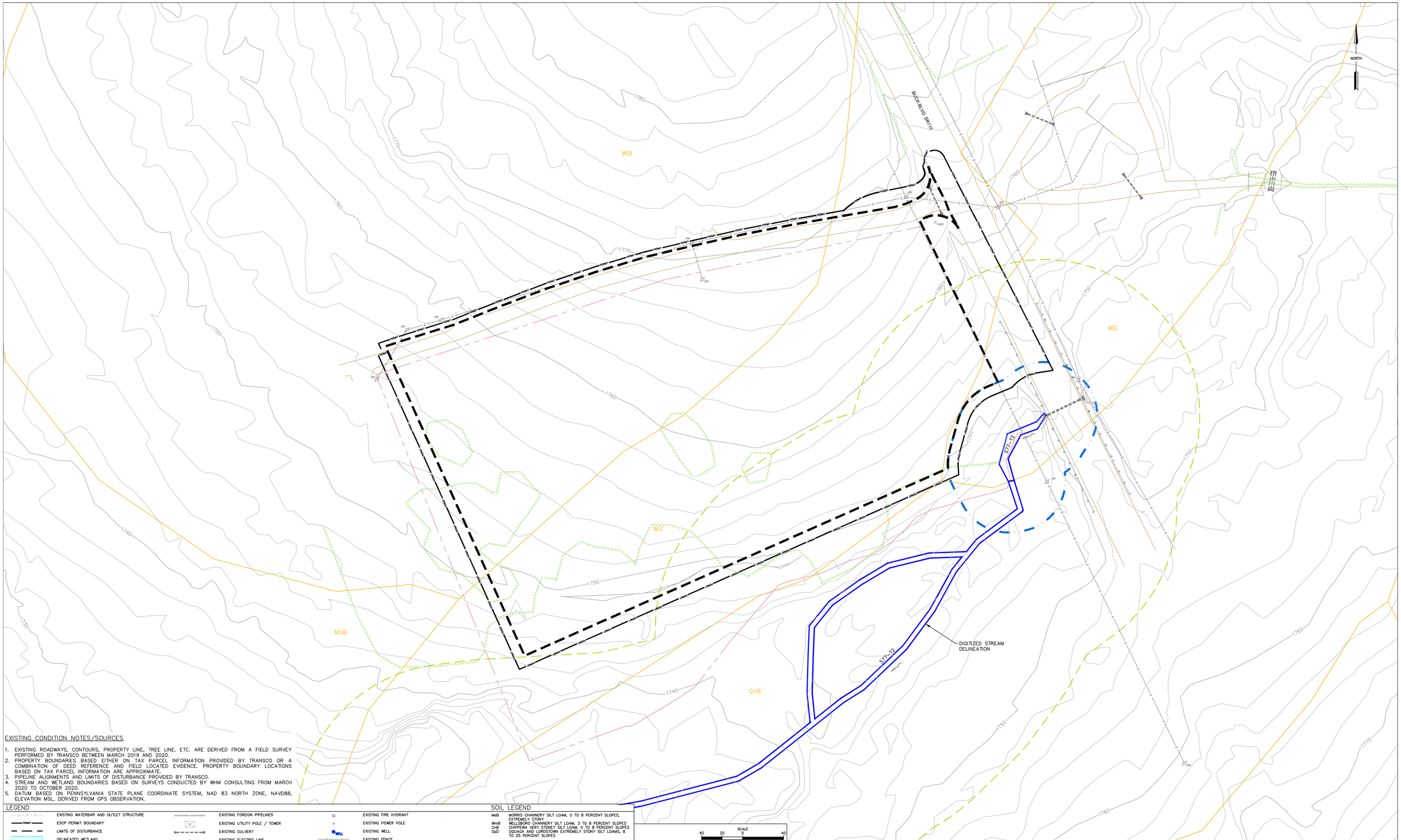

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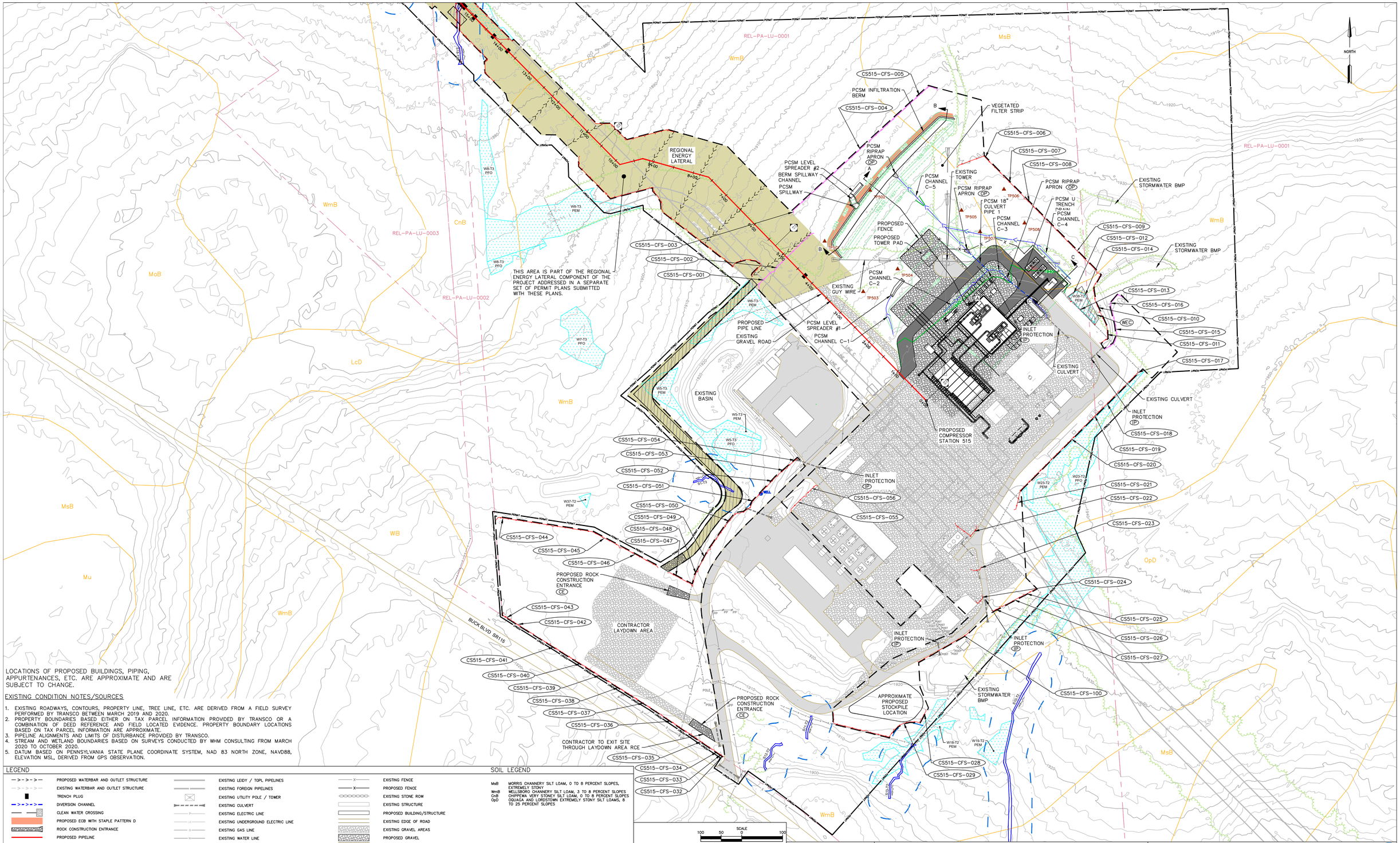

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SCALE

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2. **COMPOST FILTER SOCK LAYOUT MAY BE FIELD ADJUSTED TO CONFORM TO ACTUAL FIELD CONDITIONS PROVIDED THE INTENT OF THE DESIGN IS MAINTAINED.**

BAI GROUP

W-M consulting, INC. designs, permits, resolutions

PATRICK A. WOZINSKI, P.E.

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER PATRICK A. WOZINSKI PE076243

PENNSYLVANIA PROFESSIONAL ENGINEER

REVISIONS

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EROSION & SEDIMENT CONTROL PLAN 1

BUCK TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

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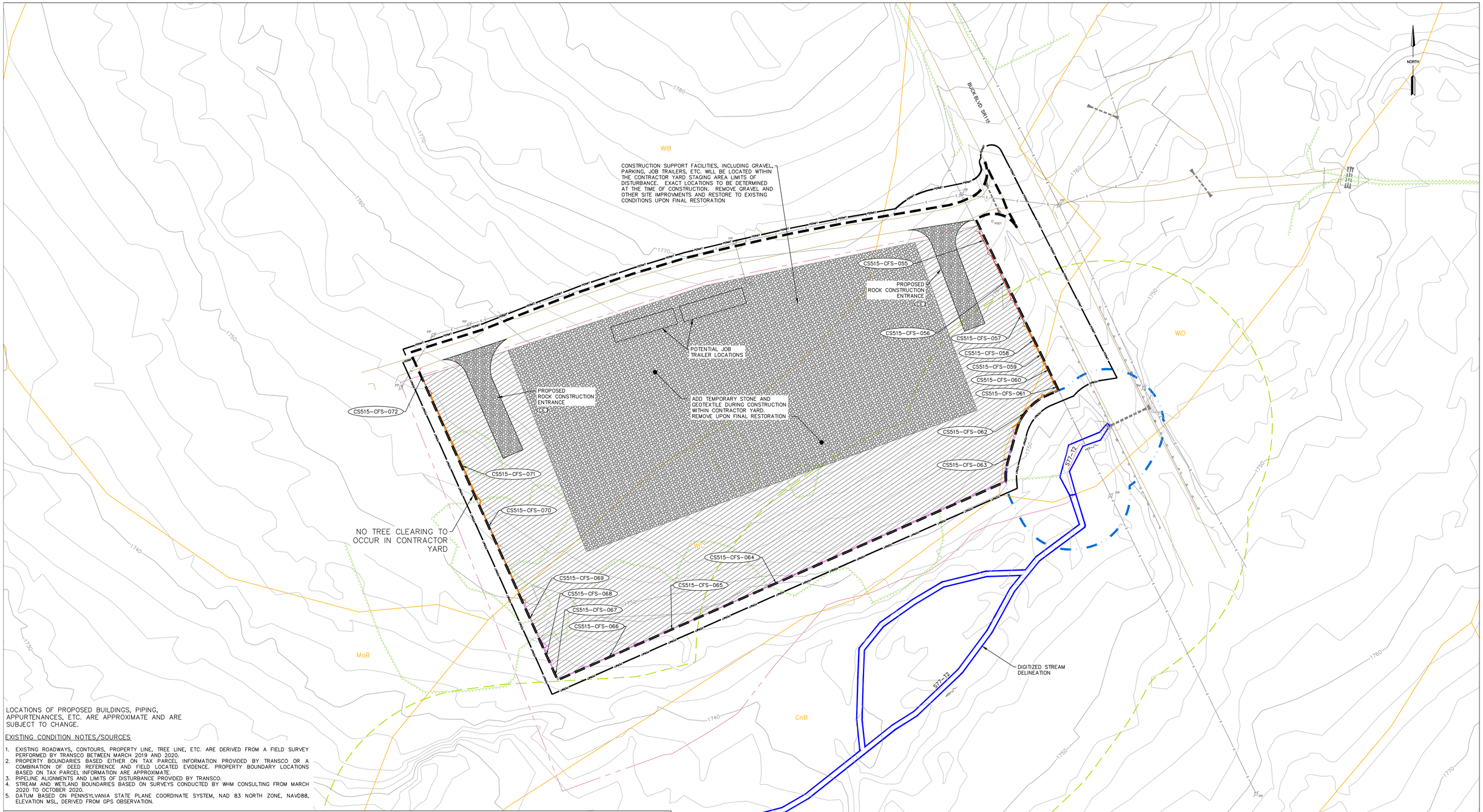

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SCALE
40 20 0 40
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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
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REVISIONS

NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
1	06/29/21	RHM	REVISED PER PADEP COMMENTS.			
2	03/01/22	RHM	RESPONSE TO PADEP TECHNICAL DEFICIENCY LETTER			

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
REGIONAL ENERGY ACCESS EXPANSION PROJECT
COMPRESSOR STATION 515
SOIL EROSION & SEDIMENT CONTROL PLAN

Williams.

EROSION & SEDIMENT CONTROL PLAN 2

BUCK TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

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STANDARD EROSION AND SEDIMENT POLLUTION CONTROL NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL COUNTY CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL COUNTY CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS IN THE AMOUNT NECESSARY TO COMPLETE THE FINISHED GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER. STOCKPILES SHALL BE LOCATED WITHIN THE LIMIT OF DISTURBANCE (LOD). FILTER SOCK OR SILT FENCE SHALL BE PLACED DOWNGRADIENT OF STOCKPILES.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL COUNTY CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY NOR EXIT DIRECTLY FROM LOTS AND ONTO ROADS AS IDENTIFIED ON THE PLANS.
15. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGARDING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
16. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
17. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE AS NEEDED AND BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
18. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
19. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES ON COMPACTED SOILS PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
20. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
21. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
22. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
23. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
24. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
25. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
26. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
27. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
28. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
29. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
30. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
31. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
32. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL COUNTY CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
33. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.
34. CONCRETE WASH WATER SHALL BE HANDLED IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. IN NO CASE SHALL IT BE ALLOWED TO ENTER ANY SURFACE WATERS OR GROUNDWATER SYSTEMS.
35. ALL E&S CONVEYANCE CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
36. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE E&S CONVEYANCE CHANNELS SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS-SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
37. E&S CONVEYANCE CHANNELS HAVING RIPRAP, RENO MATTRESS, OR GABION LININGS MUST BE SUFFICIENTLY OVER-EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.
38. SEDIMENT BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
39. SEDIMENT BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
40. ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, LOCAL COUNTY CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.
41. UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS-BUILT (RECORD DRAWING) FOR ANY SEDIMENT BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL COUNTY CONSERVATION DISTRICT OR THE DEPARTMENT.
42. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER, WITHIN 100' OF A STREAM OR WETLAND IN A HIGH QUALITY OR EXCEPTIONAL VALUE WATERSHED, WITHIN 50' OF A STREAM OR WETLAND IN A NON-HIGH QUALITY OR EXCEPTIONAL VALUE WATERSHED, AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
43. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS.

COMPRESSOR STATION SEQUENCE OF CONSTRUCTION

1. AT LEAST 10 WORKING DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE CONTRACTOR SHALL INITIATE THE PENNSYLVANIA ONE-CALL COMPLEX TICKET. THE PENNSYLVANIA ONE CALL SYSTEM CAN BE REACHED AT 1-800-242-1776.
2. A PRECONSTRUCTION CONFERENCE IS REQUIRED AS SPECIFIED IN 25 PA CODE § 102.5(E) 7 DAYS PRIOR TO THE STARTING OF EARTH DISTURBANCE ACTIVITIES. THE PURPOSE OF THIS CONFERENCE IS TO REVIEW ALL PERMITTEE, CO-PERMITTEES, OPERATORS, CONSULTANTS, THE DEP INSPECTORS AND LICENSED PROFESSIONALS OR THE DESIGNEES WHO WILL BE RESPONSIBLE FOR THE CRITICAL STAGES OF THE APPROVED PCSM/RESTORATION PLAN.
3. INSTALL ORANGE CONSTRUCTION FENCE AROUND AREAS TO BE PROTECTED.
4. LOCATE STAGING AREAS, ACCESS POINTS AND LIMITS OF DISTURBANCE
5. INSTALL ROCK CONSTRUCTION ENTRANCE
6. CLEAR AND GRUB AREAS NECESSARY TO INSTALL PERIMETER CONTROLS
7. INSTALL SEDIMENT BARRIERS (COMPOST FILTER SOCKS) AS SHOWN ON THE E&S PLAN
8. BEGIN CONSTRUCTION STAKING FOR GRADING
9. BEGIN GRADING AND STRIP AND STOCKPILE TOPSOIL WITHIN THE AREA OF IMPROVEMENTS AND INSTALL SEDIMENT BARRIERS AROUND STOCKPILES
10. PREPARE GRADING FOR INSTALLATION OF NEW TOWER.
11. GRADE THE COMPRESSOR STATION PAD, ROADWAY, TOWER PAD, AND VALVE SITE*
    a. INSTALL TIMBER MAT WHERE HEAVY EQUIPMENT WILL BE UTILIZED WITHIN THE LIMITS OF THE INFILTRATION BERM AND IN WETLAND AREAS.
12. ESTABLISH FINAL GRADE
13. STABILIZE SIDE SLOPES
14. CONSTRUCT THE INFILTRATION BERM AND VEGETATED FILTER STRIP IN ACCORDANCE WITH THE PLANS:*
    a. COMPLETE SITE GRADING AND STABILIZE WITHIN THE LIMIT OF DISTURBANCE EXCEPT WHERE THE INFILTRATION BERM WILL BE CONSTRUCTED. MAKE EVERY EFFORT TO MINIMIZE BERM FOOTPRINT AND NECESSARY ZONE OF DISTURBANCE (INCLUDING BOTH REMOVAL OF EXISTING VEGETATION AND DISTURBANCE OF EMPTY SOIL) IN ORDER TO MAXIMIZE INFILTRATION.
    b. LIGHTLY SCARIFY THE SOIL IN THE AREA OF THE PROPOSED BERM BEFORE DELIVERING SOIL TO SITE.
    c. UTILIZE SUITABLE FILL MATERIAL TO MAKE UP THE MAJOR PORTION OF THE BERM. SOIL SHOULD BE ADDED IN 8-INCH LIFTS AND COMPACTED AFTER EACH ADDITION ACCORDING TO DESIGN SPECIFICATIONS. THE SLOPE AND SHAPE OF THE BERM SHOULD BE GRADED OUT AS SOIL IS ADDED.
    d. PROTECT THE SURFACE PONDING AREA AT THE BASE OF THE BERM AND IN THE FILTER STRIP AREA FROM COMPACTION. IF COMPACTION OF THIS AREA DOES OCCUR, SCARIFY THE SOIL TO A DEPTH OF AT LEAST 8 INCHES.
    e. CONSTRUCT LEVEL SPREADER AND SPILLWAY CHANNEL. STABILIZE SPILLWAY CHANNEL WITH SPECIFIED CHANNEL LINING.
    f. COMPLETE FINAL GRADING OF THE BERM AND FILTER STRIP AFTER THE TOP LAYER OF SOIL IS ADDED. TAMP SOIL DOWN LIGHTLY AND SMOOTH SIDES OF THE BERM. THE CREST AND BASE OF THE BERM SHOULD BE AT LEVEL GRADE.
    g. PLANT BERM AND FILTER STRIP WITH TURF, MEADOW PLANTS, SHRUBS OR TREES, AS DESIRED.
    h. MULCH PLANTED AND DISTURBED AREAS WITH COMPOST MULCH TO PREVENT EROSION WHILE PLANTS BECOME ESTABLISHED.
15. STARTING DOWNSTREAM AT THE INFILTRATION BERM, CONSTRUCT PCSM CHANNEL C5, C4, CULVERT 1, PCSM CHANNELS C1, TRENCH DRAIN AND LEVEL SPREADER, C2, AND C3 AS SHOWN. STABILIZE THE PCSM CHANNELS WITH THE SPECIFIED CHANNEL LININGS.*
16. SURFACE STABILIZATION, APPLY ANY PERMANENT STABILIZATION MEASURES IMMEDIATELY TO ANY DISTURBED AREAS WHERE WORK HAS REACHED FINAL GRADE.
17. AFTER FINAL GRADING AND TOPSOIL PLACEMENT IS COMPLETED DISTURBED AREAS SHALL BE FERTILIZED, SEEDED AND MULCHED. SEED MIXTURES, FERTILIZER AND MULCH APPLICATION RATES AND DATES SHALL CONFORM TO THE TABLES PROVIDED ON THE PCSM/SR PLANS AND DETAIL SHEETS.
18. AFTER SEEDING, FERTILIZING AND MULCHING IS COMPLETE, INSTALL EROSION CONTROL BLANKETS AS REQUIRED OR ORDERED OR ON SLOPES OF 3:1 OR GREATER.
19. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES, REMOVAL OF ALL TEMPORARY BMPS AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATORS SHALL CONTACT THE LOCAL CCD FOR A FINAL INSPECTION.*
20. REMOVE AND PROPERLY DISPOSE OF/RECYCLE E&SC BMPS. REMOVE STAKES AND ORANGE CONSTRUCTION FENCE. REPAIR AND PERMANENTLY STABILIZE AREAS DISTURBED DURING E&SC BMP REMOVAL.
21. SUBMIT NOTICE OF TERMINATION ONCE THE PROJECT IS COMPLETE AND PERMANENTLY STABILIZED.

**PORTIONS OF THE BMP INSTALLATION SEQUENCE DENOTED WITH AN ASTERISK (*) ABOVE ARE CRITICAL STAGES AS DISCUSSED ON THIS SHEET.*

THERMAL IMPACTS

DUE TO THE OVERALL NATURE OF THE PROJECT, THERMAL IMPACTS TO SURFACE WATERS ARE NOT ANTICIPATED. THE PRIMARY MEANS TO ADDRESS THERMAL IMPACTS ON THIS PROJECT IS TO LIMIT THE SIZE AND DURATION OF EXPOSED EARTH.

STORMWATER RUNOFF ASSOCIATED WITH THE EXPANSION OF THE COMPRESSOR FACILITY WILL BE ROUTED THROUGH THE STORMWATER BMP'S DESIGNED TO RETAIN AND INFILTRATE THE FIRST SURGE OF WATER FROM THE SITE. THE FIRST SURGE OF WATER WILL BE THE WARMEST WATER FOR THE DURATION OF THE STORM EVENT AND WILL QUICKLY COOL AS THE STORM EVENT PROGRESSES. THE BMPS ARE DESIGNED TO CAPTURE AND INFILTRATE THIS WARMEST SURGE OF STORMWATER. BASED ON ROUTING CALCULATIONS, STORMWATER IS NOT DISCHARGED FROM THE BMPS FOR THE FIRST 12 HOURS DURING A 100-YEAR/24-HOUR STORM EVENT. THE RETENTION PERIOD IS LONGER FOR LESS INTENSE STORMS. THEREFORE, AS A RESULT OF THESE MEASURES, NO SIGNIFICANT THERMAL IMPACT TO THE RECEIVING WATERS IS ANTICIPATED.

PCSM CRITICAL STAGES

CRITICAL POINTS REQUIRING VISITS BY THE LICENSED PROFESSIONAL OR DELEGATE ARE AS FOLLOWS:

1. FOLLOWING INSTALLATION OF THE PAD SUBGRADE TO ENSURE STORMWATER FLOW IS DIRECTED TO THE INFILTRATION BMPS.
2. PRIOR TO CONSTRUCTION TO ENSURE THE AREA OF THE INFILTRATION BERM AND VEGETATED FILTER STRIP HAS NOT BEEN IMPACTED BY CONSTRUCTION ACTIVITIES.
3. DURING CONSTRUCTION OF THE INFILTRATION BERM AND VEGETATED FILTER STRIP TO ENSURE COMPLIANCE WITH CONSTRUCTION REQUIREMENTS.
4. FOLLOWING FINAL GRADING AND SEEDING OF THE PCSM CHANNELS, INFILTRATION BERM AND VEGETATED FILTER STRIP IN ORDER TO CONFIRM THEY HAVE BEEN CONSTRUCTED ACCORDING TO THE PLAN DETAILS FOR PROPER COLLECTION, INFILTRATION, AND CONVEYANCE OF RUNOFF. PERIODIC ASSESSMENTS WILL NEED TO BE MADE TO ENSURE THAT ACCUMULATED SEDIMENT SHOULD BE CLEANED OUT SO THE CHANNELS AND BERM MAINTAIN NECESSARY DESIGN VOLUME.
5. FOR FINAL INSPECTION OF CONSTRUCTED BMPS.
6. AT THE ESTABLISHMENT OF HARD SURFACE STABILIZATION OR 70% VEGETATION COVERS TO ALLOW REMOVAL OF E&S CONTROLS.

RESPONSIBILITIES FOR FILL MATERIALS

IF THE SITE WILL NEED TO HAVE FILL IMPORTED FROM AN OFF SITE LOCATION, THE RESPONSIBILITY FOR PERFORMING ENVIRONMENTAL DUE DILIGENCE AND THE DETERMINATION OF CLEAN FILL WILL IN MOST CASES RESIDE WITH THE OPERATOR.

IF THE SITE WILL HAVE EXCESS FILL THAT WILL NEED TO BE EXPORTED TO AN OFF SITE LOCATION, THE RESPONSIBILITY OF CLEAN FILL DETERMINATION AND ENVIRONMENTAL DUE DILIGENCE RESTS ON THE APPLICANT.

IF ALL CUT AND FILL MATERIALS WILL BE USED ON THE SITE, A CLEAN FILL DETERMINATION IS NOT REQUIRED BY THE OPERATOR UNLESS THERE IS A BELIEF THAT A SPILL OR RELEASE OF A REGULATED SUBSTANCE OCCURRED ON SITE.

APPLICANTS AND/OR OPERATORS MUST USE ENVIRONMENTAL DUE DILIGENCE TO ENSURE THAT THE FILL MATERIAL ASSOCIATED WITH THIS PROJECT QUALIFIES AS CLEAN FILL. DEFINITIONS OF CLEAN FILL AND ENVIRONMENTAL DUE DILIGENCE ARE PROVIDED BELOW. ALL FILL MATERIAL MUST BE USED IN ACCORDANCE WITH THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL," DOCUMENT NUMBER 258 2182 773. A COPY OF THIS POLICY IS AVAILABLE ONLINE AT WWW.DEPWEB.STATE.PA.US.

CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE TERM "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE.)

ENVIRONMENTAL DUE DILIGENCE: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL."

FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE DEPARTMENT'S MUNICIPAL OR RESIDUAL WASTE REGULATIONS BASED ON 25 PA. CODE CHAPTERS 287 RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE.

CONTRACTOR YARD SEQUENCE OF CONSTRUCTION

1. AT LEAST 10 WORKING DAYS AHEAD OF STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE CONTRACTOR SHALL INITIATE THE PENNSYLVANIA ONE-CALL COMPLEX TICKET. THE PENNSYLVANIA ONE CALL SYSTEM CAN BE REACHED AT 1-800-242-1776.
2. A PRECONSTRUCTION CONFERENCE IS REQUIRED AS SPECIFIED IN 25 PA. CODE § 102.5(E) 7 DAYS PRIOR TO THE STARTING OF EARTH DISTURBANCE ACTIVITIES. THE PURPOSE OF THIS CONFERENCE IS TO REVIEW ALL PERMITTEE, CO-PERMITTEES, OPERATORS, CONSULTANTS, THE DEP INSPECTORS AND LICENSED PROFESSIONALS OR THE DESIGNEES WHO WILL BE RESPONSIBLE FOR THE CRITICAL STAGES OF THE APPROVED PCSM/RESTORATION PLAN..
3. LOCATE STAGING AREAS AND ACCESS POINTS INCLUDING CONSTRUCTION ENTRANCES.
4. INSTALL CONSTRUCTION ENTRANCE.
5. REMOVE BRUSH TO EFFECTIVELY INSTALL PERIMETER CONTROLS, LEVEL SIDE CUTS TO GRANT ACCESS FOR VEHICLES AND WORKERS TO SAFELY PERFORM THE INSTALLATION OF SEDIMENT BARRIERS ON THE SITE AS SHOWN ON THE CONSTRUCTION DRAWINGS.
6. INSTALL PERIMETER COMPOST FILTER SOCKS AS DESIGNATED ON THE PLANS.
7. PROCEED WITH CLEARING AND GRUBBING THE REST OF THE SITE.
8. BEGIN GRADING AND STRIP AND STOCKPILE TOPSOIL WITHIN THE DESIGNATED AREA AND INSTALL SEDIMENT BARRIERS AROUND STOCKPILES IF APPLICABLE.
9. IF APPLICABLE, INSTALL ORANGE SECURITY FENCE. THE NECESSITY OF A SECURITY FENCE WILL BE AT THE DISCRETION OF THE CONTRACTOR.
10. BEGIN CONSTRUCTION STAKING FOR LAYOUT OF TEMPORARY GRAVEL SURFACE.
11. STABILIZE THE SITE WITH GEOTEXTILE AND GRAVEL SURFACING WITHIN LIMITS OF DISTURBANCE (PORTION OF THE SITE OR ENTIRE SITE).
12. UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OF AN ACTIVITY WHERE THE CESSATION OF EARTH DISTURBANCE ACTIVITIES WILL EXCEED FOUR DAYS, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED, OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES. FOR AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OF AN ACTIVITY TO BE CONSIDERED TEMPORARILY STABILIZED, THE DISTURBED AREAS SHALL BE COVERED WITH ONE OF THE FOLLOWING: A MINIMUM UNIFORM COVERAGE OF MULCH AND SEED, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION, OR AN ACCEPTABLE BMP, WHICH TEMPORARILY MINIMIZES ACCELERATED EROSION AND SEDIMENTATION. TEMPORARY STABILIZATION WILL NOT OCCUR ON ACTIVE VEHICULAR TRAVEL WAYS WITHIN THE RIGHT OF WAY. THE ON-SITE ENVIRONMENTAL INSPECTOR WILL LOG DAILY ACTIVITY WITHIN THE LIMITS OF DISTURBANCE AND NOTIFY THE CONTRACTOR OF AREAS REQUIRING TEMPORARY STABILIZATION (I.E., AREAS WHERE WORK HAS CEASED FOR AT LEAST FOUR DAYS).
13. ONCE THE SITE IS DEEMED NO LONGER NECESSARY; REMOVE ALL GRAVEL AND GEOTEXTILE FABRIC FROM THE SITE. BMPS WILL REMAIN IN PLACE AND FUNCTIONAL.
14. SCARIFY TO DE-COMPACT RESTORATION AREAS. SPREAD THE TOPSOIL FROM THE STOCKPILES THROUGHOUT THE SITE AND GRADE SITE TO MATCH PRE-DEVELOPED GRADE. IMMEDIATELY FERTILIZE, SEED AND STABILIZE AREAS AT FINISHED GRADE. MAINTAIN E&SC CONTROL DEVICES UNTIL SITE WORK IS COMPLETE AND SITE IS STABILIZED. WITH THE EXCEPTION OF AGRICULTURAL USE AREAS, AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS MINIMUM UNIFORM 70% PERENNIAL VEGETATION COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS. WHEN E&S CONTROLS ARE TO BE REMOVED IN AGRICULTURAL NON-SENSITIVE AREAS (STREAMS/WETLANDS), AGRICULTURAL LANDOWNERS SHALL MAINTAIN AGRICULTURAL BMPS PER PADEP REGULATIONS.
15. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS. WHEN CONTROLS ARE TO BE REMOVED IN AGRICULTURAL NON-SENSITIVE AREAS (STREAMS/WETLANDS), AGRICULTURAL LANDOWNERS SHALL MAINTAIN AGRICULTURAL BMPS PER PADEP REGULATIONS.
16. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATORS SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO THE REMOVAL OF THE E&S BMPS.*
17. REMOVE AND PROPERLY DISPOSE OF/RECYCLE E&SC BMPS. REMOVE STAKES AND ORANGE CONSTRUCTION FENCE. REPAIR AND PERMANENTLY STABILIZE AREAS DISTURBED DURING E&SC BMP REMOVAL.

**PORTIONS OF THE BMP INSTALLATION SEQUENCE DENOTED WITH AN ASTERISK (*) ABOVE ARE CRITICAL STAGES AS DISCUSSED ON THIS SHEET.*

BAI GROUP

WHM consulting, INC. designs, permits, resolutions

PATRICK A. WOZINSKI, P.E.

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL PATRICK A. WOZINSKI ENGINEER PE078243

PENNSYLVANIA PROFESSIONAL ENGINEER

REVISIONS

NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
1	06/29/21	RHM	REVISED PER PADEP COMMENTS.			
2	03/01/22	RHM	RESPONSE TO PADEP TECHNICAL DEFICIENCY LETTER			

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
REGIONAL ENERGY ACCESS EXPANSION PROJECT
COMPRESSOR STATION 515
SOIL EROSION & SEDIMENT CONTROL PLAN

Williams.

NOTES

BUCK TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

DRAWN BY: DRV	DATE: 03/31/21	ISSUED FOR BID:	SCALE: AS NOTED
CHECKED BY: RJN	DATE: 03/31/21	ISSUED FOR CONSTRUCTION:	REVISION:
APPROVED BY: PW	DATE: 03/31/21		SHEET 6
WO: 1222639	RID: 305	DRAWING NUMBER: 26-1000-70-28-D	OF 10

RESOLUTION TO SOIL LIMITATIONS

TRANSCO PROPOSES THE FOLLOWING RESOLUTIONS TO COMPENSATE FOR SOIL LIMITATIONS SUMMARIZED IN TABLE 3 ABOVE:

1. TO OFFSET THE CAVING OF CUTBANKS, TRENCHING OPERATIONS WILL BE CONDUCTED IN ACCORDANCE WITH THE OSHA TECHNICAL MANUAL FOR TRENCHING.
2. PREVENTATIVE COATINGS SHALL BE USED TO PREVENT CORROSION OF CONCRETE AND/ OR STEEL.
3. WHEN BEDROCK IS ENCOUNTERED IT WILL BE REMOVED BY MECHANICAL METHODS OR BLASTING. BLASTING WILL CONFORM WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS. THIS IS NOT ANTICIPATED.
4. PRECAUTIONS WILL BE TAKEN TO PREVENT SLOPE FAILURE WHEN WORKING WITHIN LOW STRENGTH SOILS BY FLATTENING CUT / FILL SLOPES, NOT OVERLOADING, MAINTAINING LATERAL SUPPORT, AND PREVENTING SATURATION OF SOILS. USE OF THESE SOILS WILL BE AVOIDED FOR ROADWAY CONSTRUCTION.
5. FOR SOILS PRONE TO FLOODING, SLOW PERCOLATION, PONDING WETNESS, HAVE A SEASONAL HIGH WATER TABLE, OR ARE HYDRIC, EXCAVATIONS IN SOILS THAT HAVE THESE CHARACTERISTICS WILL LIKELY ENCOUNTER WATER, DEWATER WITH APPROPRIATE MEANS SUCH AS PUMP WATER FILTER BAGS, SEDIMENT TRAPS, ETC.
6. SOILS THAT HAVE THE POTENTIAL TO SWELL, SHRINK, OR HEAVE DUE TO FROST ACTION MAY CAUSE DAMAGE TO ROADWAYS OR PADS WHERE FOUNDATIONS ARE CRITICAL REMOVAL AND REPLACEMENT OF SOILS WITH SUITABLE MATERIAL MAY BE REQUIRED.
7. IN SOILS THAT ARE A POOR SOURCE OF TOPSOIL, DROUGHTY OR PRONE TO WETNESS, SOIL TESTING IS ENCOURAGED TO DETERMINE THE APPROPRIATE APPLICATIONS OF SOIL AMENDMENTS TO PROMOTE GROWTH. SOILS ONSITE THAT ARE FAIR SOURCES OF TOPSOIL, WILL BE IDENTIFIED, STRIPPED AND STOCKPILED FOR USE DURING RESTORATION.
8. FOR THOSE SOILS THAT ARE EASILY ERODIBLE, PROVIDE PROTECTIVE LINING, SEEDING AND MULCHING, EROSION CONTROL BLANKETS (ROLLS OR HYDRAULICALLY APPLIED), TRACKING SLOPES, UPSTREAM DIVERSIONS, WATERBARS, ETC., TO MINIMIZE EROSION OF THE SOILS.

TABLE 2—SOILS MAPPING UNITS WITHIN LIMITS OF DISTURBANCE	
SOIL MAPPING UNIT	SOIL SERIES
MsB	MORRIS CHANNERY SILT LOAM, 0 TO 8 PERCENT SLOPES, EXTREMELY STONY
OpD	OQUAGA AND LORDSTOWN EXTREMELY STONY SILT LOAMS, 8 TO 25 PERCENT SLOPES
WmB	WELLSBORO CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES
WIC	WELLSBORO CHANNERY SILT LOAM, 8 TO 15 PERCENT SLOPES
WID	WELLSBORO CHANNERY SILT LOAM, 15 TO 25 PERCENT SLOPES
WmB	WELLSBORO CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES, EXTREMELY STONY

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

SOIL NAME	SOIL WITH SLOPE CLASS	CUTBANKS CAVE	CORROSIVE TO CONCRETE/STEEL	DROUGHTY	EASILY ERODIBLE	FLOODING	DEPTH TO SATURATED ZONE/ SEASONAL HIGH WATER TABLE	HYDRIC/HYDRIC INCLUSIONS	LOW STRENGTH/ LANDSLIDE PRONE	SLOW PERCOLATION	PIPING	POOR SOURCE OF TOPSOIL	FROST ACTION	SHRINK – SWELL	POTENTIAL SINKHOLE	PONDING	WETNESS
MORRIS	MsB	X	C/S	X	X		X	X	X	X		X	X				X
OQUAGA	OpD	X	C	X	X			X		X			X				
WELLSBORO	WmB, WIC, WID, WmB	X	C/S	X	X		X	X	X	X	X		X				X

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

THE LIMIT OF DISTURBANCE (LOD) FOR COMPRESSOR STATION 515 WILL BE APPROXIMATELY 24.83 ACRES. THE COMPRESSOR STATION 515 WILL INVOLVE THE INSTALLATION A GRAVEL PAD, SEVERAL BUILDINGS, A NEW COMMUNICATIONS TOWER, PROPOSED BMPS AND OTHER COMPRESSOR STATION MODIFICATIONS. TRANSCO WILL USE AND IMPLEMENT THE PRACTICES, MEASURES, AND DETAILS TO CONTROL SOIL EROSION AND OFF-SITE SEDIMENTATION DURING CONSTRUCTION. TRANSCO WILL USE AND IMPLEMENT THE PRACTICES, MEASURES, AND DETAILS TO CONTROL SOIL EROSION AND OFF-SITE SEDIMENTATION DURING CONSTRUCTION. USING DATA TAKEN FROM GOOGLE EARTH AND MULTI-RESOLUTION LAND CHARACTERISTICS (MRLC) CONSORTIUM WEBSITE (HTTPS://WWW.MRLC.GOV/VIEWER/), IT APPEARS THAT LAND USE FOR THE PAST FEW DECADES HAS BEEN UTILIZED AS A COMPRESSOR STATION SITE. THE CONTRACTOR WILL CONSTRUCT STORMWATER BMPS TO MITIGATE THE INCREASE IN VOLUME AND PEAK RATES ASSOCIATED WITH CONSTRUCTION. THE PROPOSED BMPS ARE DESIGNED TO STORE THE NET INCREASE IN VOLUME BETWEEN THE PRE- AND POST-DEVELOPMENT 2-YEAR RAIN EVENTS. REFER TO THE STORMWATER BMP SIZING CALCULATIONS IN ATTACHMENT 4 FOR ADDITIONAL INFORMATION.

TEMPORARY AND PERMANENT STABILIZATION:

1. PERMANENT STABILIZATION: UPON FINAL COMPLETION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY, THE SITE SHALL IMMEDIATELY HAVE TOPSOIL RESTORED, REPLACED, OR AMENDED WITH APPROVED SEED MIXTURES, MULCHED OR OTHERWISE PERMANENTLY STABILIZED AND PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION.

   E&S BMPS SHALL BE IMPLEMENTED AND MAINTAINED UNTIL THE PERMANENT STABILIZATION IS COMPLETED. ONCE PERMANENT STABILIZATION HAS BEEN ESTABLISHED, THE TEMPORARY E&S BMPS SHALL BE REMOVED. ANY AREAS DISTURBED IN THE ACT OF REMOVING TEMPORARY E&S BMPS SHALL BE PERMANENTLY STABILIZED UPON COMPLETION OF THE TEMPORARY E&S BMP REMOVAL ACTIVITY.

   FOR AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY TO BE CONSIDERED PERMANENTLY STABILIZED, THE DISTURBED AREAS SHALL BE COVERED WITH ONE OF THE FOLLOWING:
   - A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION.
   - AN ACCEPTABLE BMP WHICH PERMANENTLY MINIMIZES ACCELERATED EROSION AND SEDIMENTATION.

   WHEN EROSION AND SEDIMENTATION CONTROLS ARE TO BE REMOVED IN AGRICULTURAL NON-SENSITIVE AREAS (STREAMS/WETLANDS), AGRICULTURAL LANDOWNERS SHALL MAINTAIN AGRICULTURAL BMPS PER PADEP REGULATIONS.
2. TEMPORARY STABILIZATION: UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY WHERE A CESSATION OF EARTH DISTURBANCE ACTIVITIES WILL EXCEED 4 DAYS (INCLUDING AGRICULTURAL AREAS), THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED, OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES.

   FOR AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY TO BE CONSIDERED TEMPORARILY STABILIZED, THE DISTURBED AREAS SHALL BE COVERED WITH ONE OF THE FOLLOWING:
   - A MINIMUM UNIFORM COVERAGE OF MULCH AND SEED, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION.
   - AN ACCEPTABLE BMP WHICH TEMPORARILY MINIMIZES ACCELERATED EROSION AND SEDIMENTATION.
3. STABILIZATION DURING NON-GROWING SEASONS

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

   BARE AREAS SHALL BE COVERED WITH A PROPERLY INSTALLED EROSION CONTROL BLANKET. ALL TEMPORARY EROSION AND SEDIMENT POLLUTION CONTROLS MUST BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED.
4. WETLAND STABILIZATION. TEMPORARY COVER FOR WETLANDS AREAS WILL INCLUDE THE FOLLOWING NURSE CROPS: GRAIN RYE (1 SEP TO 30 APR; 30 LBS/ACRE), JAPANESE MILLET (1 MAY TO 31 AUG; 10 LBS/ACRE), OR BARNYARD GRASS (1 MAY TO 31 AUG; 10 LBS/ACRE). DO NOT LIME, FERTILIZE OR MULCH WETLAND AREAS. PERMANENT WETLAND MIX IS ERNST 122 FACW MEADOW MIX AT 20 LB/ACRE.
5. RIPARIAN BUFFER STABILIZATION – TEMPORARY COVER FOR RIPARIAN AREAS TO INCLUDE THE FOLLOWING NURSE CROPS: DRY SITES – GRAIN OATS, JAN 1–AUG 1; OR, GRAIN RYE, AUG 1–JAN 1; MOIST SITES – GRAIN RYE YEAR-ROUND. PERMANENT COVER FOR RIPARIAN AREAS WILL INCLUDE 20LBS/ACRE OF ERNST 178 RIPARIAN BUFFER MIX. WHERE SLOPES EXCEED 10% THE PERMANENT MIX SHALL BE AN APPROVED SLOPE SEED MIXTURE. EROSION CONTROL BLANKET IS TO BE UTILIZED ALONG STREAM BANKS, AS OUTLINED IN THE ECB DETAIL. ADD LIME AND FERTILIZER AS OUTLINED IN TABLE 11.2.

LAWN AND TURFGRASS MIX OPTION		
APPLICATION RATE – 75–150LBS/ACRE OR 3–5LBS/1000SQFT OF ERNMX-113		
COMMERCIAL CONSERVATION MIX (ERNMX-181)		
PERCENT	SCIENTIFIC NAME	COMMON NAME
25.00	FESTUCA RUBRA	CREEPING RED FESCUE
25.00	LOLIUM MULTIFLORUM	ANNUAL RYEGRASS
25.00	LOLIUM PERENNE	'BLACKSTONE' PERENNIAL RYEGRASS
25.00	LOLIUM PERENNE	'CONFETTI III' PERENNIAL RYEGRASS

* OR EQUIVALENT MIXTURE. FOR USE IN HIGH-TRAFFIC AREAS IN LAWN/TURFGRASS SETTINGS

SEEDING AND MULCHING:

THE CONSTRUCTION SITE SHOULD BE STABILIZED AS SOON AS POSSIBLE AFTER CONSTRUCTION IS COMPLETED. ESTABLISHMENT OF TEMPORARY COVER MUST TAKE PLACE WITHIN 4 DAYS OF CESSATION OF WORK. TEMPORARY EROSION AND SEDIMENTATION CONTROL BMPS CAN BE REMOVED WHEN THE SITE MEETS FINAL STABILIZATION. FINAL STABILIZATION MEANS THAT ALL SOIL-DISTURBING ACTIVITIES ARE COMPLETED, AND THAT A PERMANENT VEGETATIVE COVER WITH A DENSITY OF 70% OR GREATER HAS BEEN ESTABLISHED OR THAT HARD COVER SUCH AS PAVEMENT OR BUILDINGS HAS STABILIZED THE SURFACE. IT SHOULD BE NOTED THAT THE 70% REQUIREMENT REFERS TO THE TOTAL AREA VEGETATED AND NOT JUST A PERCENT OF THE SITE. NO HAY OR STRAW MULCH SHALL BE PLACED ON WATERBODY BANKS. AT A MINIMUM, ALL WATERBODY BANKS SHALL BE COVERED WITH EROSION CONTROL BLANKET. IN ADDITION, ONLY STRAW MULCH SHALL BE USED IN AREAS ADJACENT TO WETLANDS.

TEMPORARY REVEGETATION

AFTER GRADING AND EXCAVATION IS COMPLETED WITHIN AN AREA, VEGETATION WILL BE SOWN PROMPTLY AFTER CEASING EARTHWORK IN THOSE AREAS. HAY, STRAW MULCH, OR OTHER SIMILAR MATERIAL WILL BE APPLIED TO NEWLY SEEDED AREAS TO PROTECT AGAINST EROSION UNTIL THE VEGETATION IS ESTABLISHED. HAY, STRAW MULCH, OR OTHER SIMILAR MATERIAL SHALL BE APPLIED AT A RATE OF AT LEAST 3 TONS PER ACRE. EROSION CONTROL BLANKET SHALL BE USED ON STREAM BANKS. NO HAY OR STRAW, MULCH OR BLANKET SHALL BE UTILIZED IN WETLAND AREAS.

PERMANENT SEEDING AND MULCHING

TOPSOIL WILL BE REPLACED PRIOR TO STABILIZATION. DISTURBED AREAS SHALL BE SEEDED WITH A MIXTURE AS OUTLINED IN THE DETAILS PAGES OF THE EROSION AND SEDIMENT CONTROL PLAN SET. APPLY LIME AND FERTILIZER IN ACCORDANCE WITH SOIL TEST RECOMMENDATIONS OR AS OUTLINED IN THE BELOW TABLE. HAY, STRAW MULCH, OR OTHER SIMILAR MATERIAL SHALL BE APPLIED AT A RATE OF AT LEAST 3 TONS PER ACRE.

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

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

NOTE: A COMPOST BLANKET WHICH MEETS THE STANDARDS OF THIS CHAPTER MAY BE SUBSTITUTED FOR THE SOIL AMENDMENTS SHOWN IN TABLE 11.2

TABLE 11.3

Plant Tolerances of Soil Limitation Factors

Species	Growth Habit1	Tolerates: Wet Soil	Tolerates: Dry Site	Tolerates: Low Fertility	Tolerates: Acid Soil (Ph 5-5.5)2	Minimum Seed Specifications3: Purity (%)	Ready Germ (%)	Hard Seed (%)	Total Germ (%)	Seeds/lb (1,000s)
Deertongue Weeping lovegrass	bunch bunch	yes no	yes yes	yes yes	yes yes	95 97	75 75		75 75	250 1,500
Switchgrass4 Big bluestem	bunch bunch	yes no	yes yes	yes yes	yes yes	(60 PLS) (60 PLS)				390 150
Cool-Season Grasses										
Redtop	sod	yes	yes	yes	yes	92	80		80	5,000
Fine fescues Perennial ryegrass	sod bunch	no yes	no no	yes no	no no	95 95	80 85		80 85	400 227
Annual ryegrass Kentucky bluegrass	bunch sod	yes no	no no	yes no	no no	95 85	85 75		85 75	227 2,200
Reed canarygrass Orchardgrass	sod bunch	yes yes	yes yes	yes yes	no yes	95 95	70 80		70 80	520 654
Timothy Smooth bromegrass	bunch sod	yes no	no yes	yes yes	yes no	95 95	80 80		80 80	1,230 136
Legumes5										
Birdsfoot trefoil6	bunch	yes	no	yes	yes	98	60	20	80	400
Flatpea Serecia lespedeza	sod bunch	no no	no yes	yes yes	yes yes	98 98	55 60	20 20	75 80	10 335
Cereals										
Winter wheat Winter rye	bunch bunch	no no	no no	no yes	no yes	98 98	85 85		85 85	15 18
Spring oats Sundangrass	bunch bunch	no no	no yes	no no	no no	98 98	85 85		85 85	13 55
Japanese millet	bunch	yes	no	yes	yes	98	80		80	155

[1] GROWTH HABIT REFERS TO THE ABILITY OF THE SPECIES TO EITHER FORM A DENSE SOD BY VEGETATIVE MEANS (STOLONS, RHIZOMES, OR ROOTS) OR REMAIN IN A BUNCH OR SINGLE PLANT FORM. IF SEEDED HEAVILY ENOUGH, EVEN BUNCH FORMERS CAN PRODUCE A VERY DENSE STAND. THIS IS SOMETIMES CALLED A SOD, BUT NOT IN THE SENSE OF A SOD FORMED BY VEGETATIVE MEANS.

[2] ONCE ESTABLISHED, PLANS MAY GROW AT A SOMEWHAT LOWER pH, BUT COVER GENERALLY IS ONLY ADEQUATE AT pH 6.0 OR ABOVE.

[3] MINIMUM SEED LOTS ARE TRULY MINIMUM, AND SEED LOTS TO BE USED FOR REVEGETATION PURPOSES SHOULD EQUAL OR EXCEED THESE STANDARDS. THUS, DEERTONGUE GRASS SHOULD GERMINATE 75% OR BETTER. COMMONLY, SEED LOTS ARE AVAILABLE THAT EQUAL OR EXCEED MINIMUM SPECIFICATIONS. REMEMBER THAT DISTURBED SITES ARE ADVERSE FOR PLAN ESTABLISHMENT. READY GERMINATION REFERS TO SEED THAT GERMINATES DURING THE PERIOD OF THE GERMINATION TEST AND THAT WOULD BE EXPECTED, IF CONDITIONS ARE FAVORABLE, TO GERMINATE RAPIDLY WHEN PLANTED. THE OPPOSITE OF READY GERMINATION IS DORMANT SEED, OF WHICH HARD SEED IS ONE TYPE.

[4] SWITCHGRASS SEED IS SOLD ONLY IN THE BASIS OF PLS.

[5] NEED SPECIFIC LEGUME INOCULATE. INOCULATE SUITABLE FOR GARDEN PEAS AND SWEETPEAS USUALLY IS SATISFACTORY FOR FLATPEA.

[6] BIRDSFOOT TREFOIL IS ADAPTED OVER THE ENTIRE STATE, EXCEPT IN THE EXTREME SOUTHEAST WHERE CROWN AND ROOT ROTS MAY INJURE STANDS.

STEEP SLOPE MIX OPTION		
APPLICATION RATE – 60LBS/ACRE OR 1.5LBS/1000sqft OF ERNMX-181		
NATIVE STEEP SLOPE MIX WITH ANNUAL RYEGRASS (ERNMX-181)		
PERCENT	SCIENTIFIC NAME	COMMON NAME
31.10	SORGHASTRUM NUTANS	iNDIANGRASS
20.00	LOLIUM MULTIFLORUM	ANNUAL RYEGRASS
14.00	ANDROPOGON GERADII	BIG BLUESTEM
10.00	ELYMUS VIRGINICUS	VIRGINIA WILDRYE
7.00	ELYMUS CANADENSIS	CANADA WILDRYE
4.00	AGROSTIS PERENNANS	AUTUMN BENTGRASS
3.00	PANICUM CLANDESTINUM	DEERTONGUE
1.50	ECHINACEA PURPUREA	PURPLE CONEFLOWER
1.30	CHAMAECRISTA FASCICULATA	PARTRIDGE PEA
1.20	HELIOPSIS HELIANTHOIDES	OXEYE SUNFLOWER
1.00	COREOPSIS LANCEOLATA	LANCELEAF COREOPSIS
1.00	RUDBECKIA HIRTA	BLACKEYED SUSAN
0.30	MONARDA FISTULOSA	WILD BERGAMONT
0.20	ASCLEPIAS SYRIACA	COMMON MILKWEED
0.20	SOLIDAGO RUGOSA	WRINKLELEAF GOLDENROD
0.10	ASTER LATERIFLORUS	CALICO ASTER
0.10	ASTER PILOSUS	HEATH ASTER

* OR EQUIVALENT MIXTURE

** SIMILAR MIXES WITH COVER CROP OF OATS (ERNST 181–1) OR GRAIN RYE (ERNST 181–2) OR EQUIVALENT COULD BE SUBSTITUTED.

TABLE 11.4			
Recommended Seed Mixtures			
Mixture Number	Species	Seeding Rate-Pure Live Seed[1]: Most Sites	Adverse Sites
1 [2]	Spring oats (spring), or Annual ryegrass (spring or fall), or Winter Wheat (fall), or Winter rye (fall)	64 10 90 56	96 15 120 112
2 [3]	Fine fescue, or Kentucky bluegrass, plus Redtop[4], or Perennial ryegrass	35 25 3 15	40 30 3 20
3	Birdsfoot trefoil, plus Tall fescue	6 30	10 35
11	Deertongue, plus Birdsfoot trefoil	15 6	20 10
12 [5]	Switchgrass, or big Bluestem, plus Birdsfoot trefoil	15 15 6	20 20 10
13	Orchardgrass, plus Smooth bromegrass, plus Birdsfoot trefoil	20 25 6	30 35 10

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

1. PLS IS THE PRODUCT OF THE PERCENTAGE OF PURE SEED TIMES PERCENTAGE GERMINATION DIVIDED BY 100. FOR EXAMPLE, TO SECURE THE ACTUAL PLANTING RATE FOR SWITCHGRASS, DIVIDE 12 POUNDS PLS SHOWN ON THE SEED TAG. THUS, IF THE PLS CONTENT OF A GIVEN SEED LOT IS 35%, DIVIDE 12 PLS BY 0.35 TO OBTAIN 34.3 POUNDS OF SEED REQUIRED TO PLANT ONE ACRE. ALL MIXTURES IN THIS TABLE ARE SHOWN IN TERMS OF PLS.
2. IF HIGH-QUALITY SEED IS USED, FOR MOST SITES SEED SPRING OATS AT A RATE OF 2 BUSHELS PER ACRE, WINTER WHEAT AT 11.5 BUSHELS PER ACRE, AND WINTER RYE AT 1 BUSHEL PER ACRE. IF GERMINATION IS BELOW 90%, INCREASE THESE SUGGESTED SEEDING RATES BY 0.5 BUSHEL PER ACRE.
3. THIS MIXTURE IS SUITABLE FOR FREQUENT MOWING. DO NOT CUT SHORTER THAN 4 INCHES.
4. KEEP SEEDING RATE TO THAT RECOMMENDED IN TABLE. THESE SPECIES HAVE MANY SEEDS PER POUND AND ARE VERY COMPETITIVE. TO SEED SMALL QUANTITIES OF SMALL SEEDS SUCH AS WEEPING LOVEGRASS AND REDTOP, DILUTE WITH DRY SAWDUST, SAND, RICE HULLS, BUCKWHEAT HULLS, ETC.
5. DO NOT MOW SHORTER THAN 9 TO 10 INCHES.

ERNST RIPARIAN BUFFER MIX - ERNMX 178		
PERCENTAGE OF MIX COMPOSITION	SCIENTIFIC NAME	COMMON NAME
30.0%	PANICUM CLANDESTINUM	DEERTONGUE
20.0%	ELYMUS VIRGINICUS	VIRGINIA WILDRYE
11.8%	ANDROPOGON GERARDII	BIG BLUESTEM
10.5%	SORGHASTRUM NUTANS	INDIANAGRASS
5.0%	PANICUM VIRGATUM	SWITCHGRASS
4.0%	CHAMAECRISTA FASCICULATA	PARTRIDGE PEA
4.0%	VERBENA HASTATA	BLUE VERVAIN
3.0%	JUNCUS EFFUSUS	SOFT RUSH
3.0%	RUDBECKIA HIRTA	BLACKEYED SUSAN
2.0%	HELIOPSIS HELIANTHOIDES	OXEYE SUNFLOWER
1.0%	ASCLEPIAS INCARNATA	SWAMP MILKWEED
0.7%	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER
0.7%	ASTER UMBELLATUS	FLAT TOPPED WHITE ASTER
0.7%	EUPATORIUM PERFOLIATUM	BONESET
0.5%	AGRO STIS PERENNANS	AUTUMN BENTGRASS
0.5%	HELENIUM AUTUMNALE	COMMON SNEEZEWEED
0.5%	MO NARDA FISTULOSA	WILD BERGAMOT
0.5%	VERNO NIA NO VEBO RACENSIS	NEW YORK IRONWEED
0.4%	PYCNANTHEMUM TENUIFOLIUM	NARROWLEAF MOUNTAINMINT
0.4%	SOLIDAGO PATULA	ROUGHLEAF GOLDENROD
0.3%	EUPATORIUM FISTULOSUM	JOE PYE WEED
0.3%	LOBELIA SIPHILITICA	GREAT BLUE LOBELIA
0.2%	ASTER PUNICUES	PURPLESTEM ASTER

1. SEEDING RATE: 20 LBS/ACRE WITH THE FOLLOWING NURSE CROPS: DRY SITES – GRAIN OATS, JAN 1 TO AUG 1; OR, GRAIN RYE, AUG TO JAN 1; MOIST SITES – GRAIN RYE YEAR ROUND.
2. THIS SEED MIX IS TO BE USED TO REVEGETATE WORKSPACE WITHIN THE DESIGNATED RIPARIAN BUFFER AREA WHERE SLOPES ARE LESS THAN 10%. IF THE SLOPE EXCEEDS 10%, A STANDARD UPLAND ROW MIX SHOULD BE USED.
3. AN ALTERNATIVE SEED MIXTURE THAT CONTAINS SIMILAR SPECIES IS ACCEPTABLE.

MAINTENANCE SCHEDULE			
CONTROL MEASURE	INSPECT	PROBLEMS TO LOOK FOR	POSSIBLE REMEDIES
EROSION CONTROL BLANKET	ONCE A WEEK AND AFTER EVERY RUNOFF EVENT	TORN OR LOOSE STAPLED AREAS. VEGETATION GROWTH. BLANKET DESTROYED OR DAMAGED.	REMOVE AND REPLACE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. REGRADE AND REPAIR ANY UNDERMINED OR WASHED OUT AREAS. RE-SEED.
PUMPED WATER FILTER BAG	BEFORE AND AFTER EACH USE	TORN FABRIC, TEARS OR BREACHES. SEDIMENT ESCAPING WITH PURGE WATER. MORE THAN 50% FILLED WITH SEDIMENT.	REPLACE FILTER BAG. REMOVE SEDIMENT, SPREAD OVER SITE.
ROCK CONSTRUCTION ENTRANCE	ONCE A WEEK AND AFTER EVERY RUNOFF EVENT	STONE THICKNESS NOT CONSTANTLY MAINTAINED. SEDIMENT ON PUBLIC ROADWAY.	ADD ROCK TO BRING TO SPECIFIED DIMENSIONS. SWEEP MATERIAL BACK TO PROJECT SITE. DO NOT WASH ROADWAY WITH WATER.
ROCK FILTER OUTLET	ONCE A WEEK AND AFTER EVERY RUNOFF EVENT	LINING WASHED AWAY. SEDIMENT AT 1/3 HEIGHT OF BARRIER. RUNOFF ESCAPING AROUND BARRIER. CLOGGING.	RESHAPE AS NECESSARY AND REPLACE TOP LAYER WITH CLEAN STONE. REPLACE RIPRAP WITH LARGER SIZE RIPRAP. REBUILD/EXTEND BARRIER. WASH OR REPLACE SEDIMENT LADEN STONE.
VEGETATION	ONCE A WEEK AND AFTER EVERY RUNOFF EVENT	SEDIMENT AT TOE-OF-SLOPE. RILLS & GULLIES FORMING. BARE SOIL PATCHES.	CHECK FOR TOE-OF-SLOPE DIVERSION & INSTALL, IF NEEDED. FILL RILLS AND RE-GRADE GULLIED SLOPES. RE-SEED, FERTILIZE, LIME AND RE-MULCH.
CHANNELS	ONCE A WEEK AND AFTER EVERY RUNOFF EVENT	ERODED VEGETATION / LINING, DEBRIS ACCUMULATION	REPAIR / REPLACE LINING, REMOVE DEBRIS
COMPOST FILTER SOCK	ONCE A WEEK AND AFTER EVERY RUNOFF EVENT	TORN SOCKS SEDIMENT ACCUMULATION WASHOUTS	REPLACE SOCK REMOVE ACCUMULATED SEDIMENT INCREASE SOCK SIZE
LEVEL SPREADER	QUARTERLY FOR 2 YEARS, SEMI-ANNUALLY THEREAFTER AND AFTER EVERY RAINFALL EVENT >1	RILLS AND GULLIES FORMING, LEVEL SPREADER FAILURE	STOP EROSION, REPAIR GULLIED AREAS, RETROFIT/REBUILD LEVEL SPREADER
SEDIMENTATION BASIN	ONCE A WEEK AND AFTER EVERY RUNOFF EVENT	EROSION, PIPING AND SETTLEMENT ON EMBANKMENTS, SPILLWAYS AND OUTLETS, ACCUMULATED SEDIMENT, DAMAGED INLETS, DISPLACED RIPRAP	REMOVE SEDIMENT, REPAIR SPILLWAYS/OUTLETS/INLETS, REMOVE DISPLACED RIPRAP
INLET FILTER BAG	ONCE A WEEK AND AFTER EVERY RUNOFF EVENT	REDUCED FLOW CAPACITY, ACCUMULATED SEDIMENT	CLEAN/REPLACE BAGS, REMOVE SEDIMENT

* REFER TO BMP DETAIL FOR ADDITIONAL MAINTENANCE REQUIREMENTS AND REMEDIES.

MATERIAL RECYCLING AND DISPOSAL

IF THE SITE WILL NEED TO HAVE FILL IMPORTED FROM AN OFF-SITE LOCATION, THE RESPONSIBILITY FOR PERFORMING ENVIRONMENTAL DUE DILIGENCE AND THE DETERMINATION OF CLEAN FILL WILL IN MOST CASES RESIDE WITH THE OPERATOR.

IF THE SITE WILL HAVE EXCESS FILL THAT WILL NEED TO BE EXPORTED TO AN OFF-SITE LOCATION, THE RESPONSIBILITY OF CLEAN FILL DETERMINATION AND ENVIRONMENTAL DUE DILIGENCE RESTS ON THE APPLICANT.

IF ALL CUT AND FILL MATERIALS WILL BE USED ON THE SITE, A CLEAN FILL DETERMINATION IS NOT REQUIRED BY THE OPERATOR UNLESS THERE IS A BELIEF THAT A SPILL OR RELEASE OF A REGULATED SUBSTANCE OCCURRED ON SITE.

APPLICANTS AND/OR OPERATORS MUST USE ENVIRONMENTAL DUE DILIGENCE TO ENSURE THAT THE FILL MATERIAL ASSOCIATED WITH THIS PROJECT QUALIFIES AS CLEAN FILL. DEFINITIONS OF CLEAN FILL AND ENVIRONMENTAL DUE DILIGENCE ARE PROVIDED BELOW. ALL FILL MATERIAL MUST BE USED IN ACCORDANCE WITH THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL", DOCUMENT NUMBER 258 2182 773. A COPY OF THIS POLICY IS AVAILABLE ONLINE AT WWW.DEPWEB.STATE.PA.US.

CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE TERM "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE.).

ENVIRONMENTAL DUE DILIGENCE: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL".

FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE DEPARTMENT'S MUNICIPAL OR RESIDUAL WASTE REGULATIONS BASED ON 25 PA. CODE CHAPTERS 287 RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE.

THERMAL IMPACTS

THERMAL IMPACTS TO SURFACE WATERS ARE NOT ANTICIPATED. MOST OF THE STORMWATER WILL BE ROUTED THROUGH THE STORMWATER BMP DESIGNED TO RETAIN AND INFILTRATE THE FIRST SURGE OF WATER FROM THE SITE. THE FIRST SURGE OF WATER WILL BE THE WARMEST WATER FOR THE DURATION OF THE STORM EVENT AND WILL QUICKLY COOL AS THE STORM EVENT PROGRESSES. THE BMPS ARE DESIGNED TO CAPTURE AND INFILTRATE THIS WARMEST SURGE OF STORMWATER. BASED ON ROUTING CALCULATIONS, STORMWATER IS RETAINED IN THE BMPS FOR A PERIOD OF 12 HOURS BEFORE BEING DISCHARGED DURING A 100-YEAR/24-HOUR STORM EVENT. THIS RETENTION PERIOD IS LONGER FOR LESS INTENSE STORMS. THEREFORE, AS A RESULT OF THESE MEASURES, NO SIGNIFICANT THERMAL IMPACT TO THE RECEIVING WATERS IS ANTICIPATED.

ANTIDEGRADATION REQUIREMENTS

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

EARTH DISTURBANCE WILL BE MINIMIZED TO THE EXTENT PRACTICAL AND WILL BE PHASED OR SEQUENCED TO ONLY DISTURBED PORTIONS THAT ARE NECESSARY FOR THE SPECIFIC SCOPE OF WORK. WHERE POSSIBLE, THE LOD WAS DECREASED TO AVOID ADDITIONAL DISTURBANCE TO THE EXTENT PRACTICAL.

ANTI-DEGRADATION BEST AVAILABLE COMBINATION OF TECHNOLOGIES (ABACT) STANDARDS HAVE BEEN PROPOSED FOR COMPRESSOR STATION 515 BECAUSE THERE ARE NO VIABLE NON-DISCHARGE ALTERNATIVES. THE EROSION AND SEDIMENT CONTROL PLAN PREPARED FOR THE PROJECT OUTLINES A MORE STRINGENT DESIGN AND E&S BMPS THAT MEET ABACT STANDARDS.

THE COMPRESSOR STATION 515 IS LOCATED IN HQ WATERSHEDS AND CONSTRUCTION ACTIVITIES IN THESE AREAS WILL RESULT IN INCREASED DISCHARGE OF STORMWATER TO SURFACE WATERS WHICH WILL BE MITIGATED BY THE IMPLEMENTATION OF POST CONSTRUCTION STORMWATER MANAGEMENT (PCSM) BMP'S. PROPOSED PCSM BMPS ARE DESIGNED WITH STORMWATER VOLUME REDUCTION AND WATER QUALITY TREATMENT MAXIMIZED TO THE EXTENT PRACTICABLE WITHIN THE SITE CONSTRAINTS TO MAINTAIN AND PROTECT EXISTING WATER QUALITY AND EXISTING AND DESIGNATED USES.

RIPARIAN BUFFERS

NO RIPARIAN BUFFERS ARE LOCATED AT COMPRESSOR STATION 515. CS515 CONTRACTOR YARD IS LOCATED WITHIN A RIPARIAN BUFFER. NO TREE CLEARING IS PROPOSED WITHIN THE BUFFER.

NON-STRUCTURAL AND STRUCTURAL WATER QUALITY BMP DESCRIPTION

LIMIT OF DISTURBANCE WILL BE MINIMIZED TO THE MAXIMUM EXTENT POSSIBLE BY DISTURBING ONLY THOSE AREAS NECESSARY TO COMPLETE THE PROPOSED EARTHWORK AND BMP INSTALLATIONS.

SENSITIVE FEATURES SUCH AS WETLANDS AND RIPARIAN BUFFERS WILL BE PROTECTED TO THE MAXIMUM EXTENT POSSIBLE. THESE AREAS WILL BE CLEARLY DELINEATED IN THE FIELD AND PROTECTED PRIOR TO ANY CONSTRUCTION ACTIVITIES TAKING PLACE. EXISTING VEGETATION IS NOT TO BE REMOVED FROM THE PROTECTED AREA AND THE AREAS SHALL NOT BE SUBJECT TO GRADING OR MOVEMENT OF EXISTING SOILS. ANY PROTECTED AREAS THAT HAVE BEEN DISTURBED/COMPACTED DURING CONSTRUCTION WILL BE RESTORED USING SOIL AMENDMENT AND RESTORATION.

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

BA GROUP

WHM consulting, INC. designs, permits, resolutions

PATRICK A. WOZINSKI, P.E.

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL PATRICK A. WOZINSKI ENGINEER PE078243

PENNSYLVANIA PROFESSIONAL ENGINEER

REVISIONS						
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
1	06/29/21	RHM	REVISED PER PADEP COMMENTS.			
2	03/01/22	RHM	RESPONSE TO PADEP TECHNICAL DEFICIENCY LETTER			

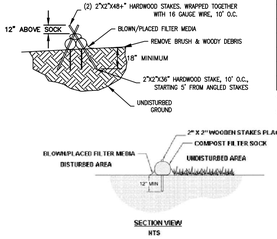
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
REGIONAL ENERGY ACCESS EXPANSION PROJECT
COMPRESSOR STATION 515
SOIL EROSION & SEDIMENT CONTROL PLAN

Williams.

NOTES

BUCK TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

DRAWN BY: DRV	DATE: 03/31/21	ISSUED FOR BID:	SCALE: AS NOTED
CHECKED BY: RJN	DATE: 03/31/21	ISSUED FOR CONSTRUCTION:	REVISION:
APPROVED BY: PW	DATE: 03/31/21	DRAWING NUMBER: 26-1000-70-28-D	SHEET 7 OF 10
WO: 1222639	RID: 305		

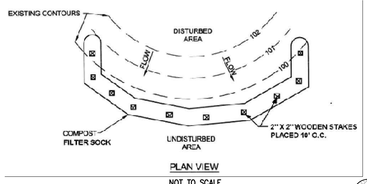


SECTION VIEW
NTS

SEDIMENT BARRIER ON PLAN	INTERCHANGEABLE WITH :
STANDARD 18" SILT FENCE	12" CFS
REINFORCED 30" SILT FENCE	12" CFS
SUPER SILT FENCE	24" CFS
12" CFS	REINFORCED 30" SILT FENCE
18" CFS*	SUPER SILT FENCE
24" CFS	SUPER SILT FENCE

*EQUIVALENCY IS IN BETWEEN REINFORCED 30" AND SSF.

SILT FENCE CANNOT BE USED IN SPECIAL PROTECTION WATERSHEDS.



PLAN VIEW

NOT TO SCALE

FIGURE 4.1
Sediment Barrier Alignment

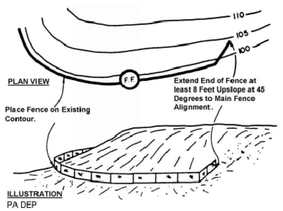
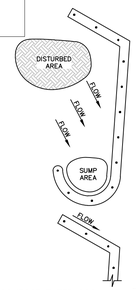


ILLUSTRATION
PA DEP

NOT TO SCALE



COMPOST FILTER SOCK WITH "J" HOOK*

NOT TO SCALE

* AMENDED DETAIL FROM PaDEP's ALTERNATIVE E&S AND PCSM BMP's LIST (10/26/21).

NOTES:

1. ALL MATERIAL TO MEET MANUFACTURER SPECIFICATIONS.
2. COMPOST FILTER SOCK FILL TO MEET APPLICATION REQUIREMENTS. THE USE OF SWITCHGRASS AS A DIRECT REPLACEMENT OR ANY COMBINATION OF COMPOST/SWITCHGRASS IS A PADEP APPROVED ALTERNATIVE E&S BMP.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY CONSTRUCTION CONTRACTOR.
4. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT.
5. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
6. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
7. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION WITH ADDITIONAL SOCK OR ROCK FILTER.
8. BIODEGRADABLE FILTER SOCK SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
9. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

10A. WHERE COMPOST FILTER SOCK CANNOT BE INSTALLED PARALLEL TO GRADE, A J-HOOK WILL BE INSTALLED TO CREATE A SUMP AREA TO PROVIDE FILTRATION AND TO REDUCE FLOW VELOCITY.

10B. J-HOOK WILL BE TURNED UPSLOPE AND EXTENDED A MINIMUM VERTICAL DISTANCE UPSLOPE EQUIVALENT TO THE COMPOST FILTER SOCK DIAMETER.

10C THE NEXT DOWNGRADIENT SECTION OF COMPOST FILTER SOCK WILL BE INSTALLED IN A MANNER TO DIRECT STORMWATER DISCHARGE FROM THE J-HOOK AWAY FROM THE PROJECT AREA.

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

MATERIAL TYPE	3 mil HDPE	5 mil HDPE	5 mil HDPE	MULTI-FILAMENT POLYPROPYLENE (MFPP)	HEAVY-DUTY MULTI-FILAMENT POLYPROPYLENE (HDMFPP)
MATERIAL CHARACTERISTICS	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE	BIO-DEGRADABLE	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE
SOCK DIAMETERS	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
MESH OPENING	3/8"	3/8"	3/8"	3/8"	1/8"
TENSILE STRENGTH		26 psi	26 psi	44 psi	202 psi
ULTRAVIOLET STABILITY % ORIGINAL STRENGTH (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
MINIMUM FUNCTIONAL LONGEVITY	6 MONTHS	9 MONTHS	6 MONTHS	1 YEAR	2 YEARS
TWO-PLY SYSTEMS					
INNER CONTAINMENT NETTING			HDPE BIAXIAL NET CONTINUOUSLY WOUND FUSION-WELDED JUNCTURES 3/4" x 3/4" MAX. APERTURE SIZE		
OUTER FILTRATION MESH			COMPOSITE POLYPROPYLENE FABRIC (WOVEN LAYER AND NON-WOVEN FLEECE MECHANICALLY FUSED VIA NEEDLE PUNCH) 3/16" MAX. APERTURE SIZE		
SOCK FABRICS COMPOSED OF BURLAP MAY BE USED ON PROJECTS LASTING 6 MONTHS OR LESS.					

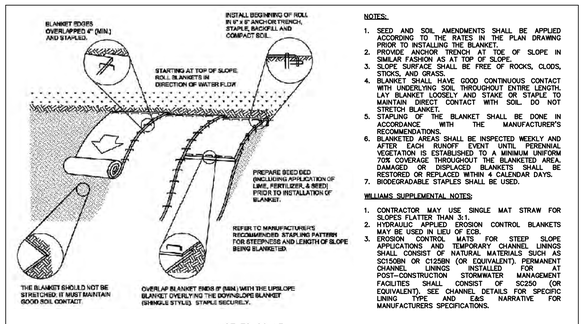
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.

TRANSCONTINENTAL GAS PIPE LINE CORPORATION
STANDARD ENVIRONMENTAL DETAIL

CFS COMPOST FILTER SOCK

Williams.

SOCK No.	DIA (IN)	LOCATION	SLOPE (%)	SLOPE LENGTH ABOVE BARRIER (LF)
1	24	ALONG EDGE OF NW LOD, NEAR EXISTING LEIDY LINE C	5	411
2	24	ALONG EDGE OF NW LOD, NEAR EXISTING LEIDY LINE C	5	411
3	24	ALONG NORTHWESTERN LOD	5	517
4	24	ALONG NORTHWESTERN LOD	5	517
5	24	ALONG NORTHWESTERN LOD	5	517
6	12	ALONG NORTHEASTERN LOD	3	356
7	12	ALONG NORTHEASTERN LOD	2	245
8	12	ALONG NORTHEASTERN LOD	2	245
9	12	ALONG NORTHEASTERN LOD	4	129
12	12	ALONG WETLAND W38-T2 PEM PARAMETER	5	55
13	12	ALONG WETLAND W38-T2 PEM PARAMETER	5	55
14	12	ALONG WETLAND W38-T2 PEM PARAMETER	5	55
15	24	ALONG EASTERN LOD, NEAR EXISTING CULVERT OUTLET	2	770
16	24	ALONG EASTERN LOD, NEAR EXISTING CULVERT OUTLET	2	770
25	12	ALONG SOUTHEASTERN LOD, NEAR W23-T2 PEM	3	227
26	12	ALONG SOUTHEASTERN LOD, NEAR W23-T2 PEM	3	227
27	12	ALONG SOUTHEASTERN LOD, NEAR W23-T2 PEM	3	227
28	12	ALONG SOUTHERN LOD, NEAR W18-T2 PEM	7	182
29	12	ALONG SOUTHERN LOD, NEAR W18-T2 PEM	7	182
30	12	ALONG SOUTHERN LOD, NEAR W18-T2 PEM	7	182
31	12	ALONG SOUTHERN LOD, NEAR W18-T2 PEM	7	182
32	12	ALONG SOUTHERN LOD, WEST OF SITE ENTRANCE	3	61
33	12	ALONG SOUTHERN LOD, WEST OF SITE ENTRANCE	3	61
34	12	ALONG SOUTHERN LOD, WEST OF SITE ENTRANCE	3	61
35	12	ALONG SOUTHERN LOD, WEST OF SITE ENTRANCE	3	61
36	12	ALONG SOUTHERN LOD, WEST OF SITE ENTRANCE	3	61
37	12	ALONG SOUTHERN LOD, WEST OF SITE ENTRANCE	3	61
38	12	ALONG SOUTHERN LOD, WEST OF SITE ENTRANCE	5	44
39	12	ALONG SOUTHERN LOD, WEST OF SITE ENTRANCE	3	354
40	12	ALONG SOUTHERN LOD, WEST OF SITE ENTRANCE	3	354
41	12	ALONG SOUTHERN LOD, WEST OF SITE ENTRANCE	3	354
42	12	ALONG SOUTHERN LOD, WEST OF SITE ENTRANCE	3	354
43	12	ALONG SOUTHERN LOD, WEST OF SITE ENTRANCE	3	354
44	12	ALONG WESTERN LOD, NEAR CONTRACTOR LAYDOWN AREA	2	345
45	12	ALONG WESTERN LOD, NEAR CONTRACTOR LAYDOWN AREA	2	345
46	12	ALONG WESTERN LOD, NEAR CONTRACTOR LAYDOWN AREA	3	248
47	12	ALONG WESTERN LOD, NEAR CONTRACTOR LAYDOWN AREA	3	248
48	12	ALONG WESTERN LOD, ALONG EXISTING FACILITY ROAD WAY	6	52
49	12	ALONG WESTERN LOD, ALONG EXISTING FACILITY ROAD WAY	5	55
50	12	ALONG WESTERN LOD, ALONG EXISTING FACILITY ROAD WAY	11	45
51	12	ALONG WESTERN LOD, ALONG EXISTING FACILITY ROAD WAY	10	60
52	12	ALONG WESTERN LOD, ALONG EXISTING FACILITY ROAD WAY	10	60
53	12	ALONG WESTERN LOD, ALONG EXISTING FACILITY ROAD WAY	10	60
54	12	ALONG WESTERN LOD, ALONG EXISTING FACILITY ROAD WAY	10	60
55	12	ALONG EASTERN LOD	8	171
56	12	ALONG EASTERN LOD	8	171
57	12	ALONG EASTERN LOD	8	171
58	18	ALONG EASTERN LOD	8	242
59	18	ALONG EASTERN LOD	8	242
60	18	ALONG EASTERN LOD	8	242
61	18	EASTERN CORNER OF LOD, NEAR S77-T2	8	242
62	18	EASTERN CORNER OF LOD, NEAR S77-T2	8	242
63	24	ALONG SOUTHERN LOD	7	322
64	24	ALONG SOUTHERN LOD	7	322
65	24	ALONG SOUTHERN LOD	6	426
66	24	ALONG SOUTHERN LOD	6	426
67	24	SOUTHERN CORNER OF LOD	6	426
68	24	ALONG WESTERN LOD	6	426
69	24	ALONG WESTERN LOD	6	426
70	18	ALONG WESTERN LOD	6	334
71	18	ALONG WESTERN LOD	6	250
72	12	WESTERN CORNER OF LOD	6	49
100	12	ALONG SOUTHEASTERN LOD, NEAR W23-T2 PEM	6	109



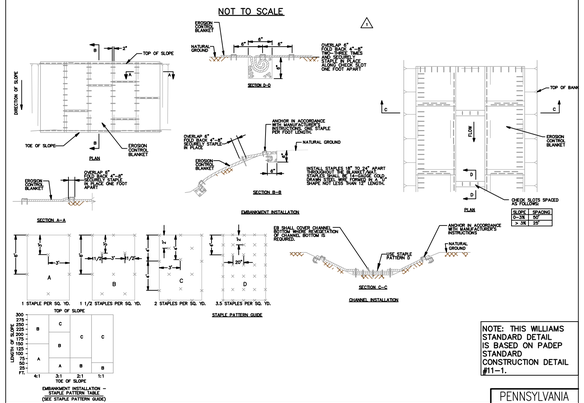
NOTES:

1. SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWING PRIOR TO INSTALLING THE BLANKET.
2. PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
3. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
4. BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
5. STAPLING OF THE BLANKET SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
6. BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.
7. BIODEGRADABLE STAPLES SHALL BE USED.

WILLIAMS SUPPLEMENTAL NOTES:

1. CONTRACTOR MAY USE SINGLE MAT STRAW FOR SLOPES FLATTER THAN 3:1.
2. HYDRAULIC APPLIED EROSION CONTROL BLANKETS MAY BE USED IN LIEU OF ECB.
3. EROSION CONTROL MATS FOR STEEP SLOPE APPLICATIONS AND TEMPORARY CHANNEL LININGS SHALL CONSIST OF NATURAL MATERIALS SUCH AS SC150BN OR C125BN (OR EQUIVALENT). PERMANENT CHANNEL LININGS INSTALLED FOR AT POST-CONSTRUCTION STORMWATER MANAGEMENT FACILITIES SHALL CONSIST SC250 (OR EQUIVALENT). SEE CHANNEL DETAILS FOR SPECIFIC LINING TYPE AND E&S NARRATIVE FOR MANUFACTURERS SPECIFICATIONS.

NOT TO SCALE



NOTE: THIS WILLIAMS STANDARD DETAIL IS BASED ON PADEP STANDARD CONSTRUCTION DETAIL #11-1.

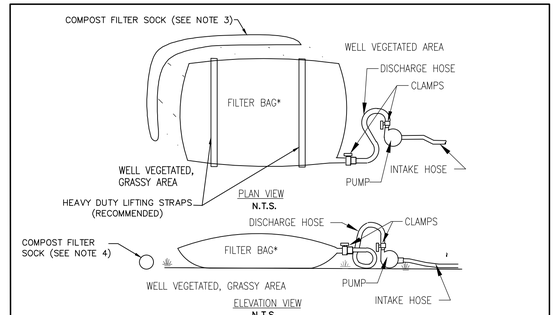
PENNSYLVANIA

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

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
STANDARD ENVIRONMENTAL DETAIL

EROSION CONTROL BLANKET ECB

Williams.



LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS MAY BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

NOTES:

1) A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES MUST BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME ½ FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS TO BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

2) BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

3) NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

4) THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

5) THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR ½ THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

6) FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

7) CONTRACTOR SHALL PROPERLY REMOVE AND PROPERLY DISPOSE OF USED FILTER BAGS UPON COMPLETION OF DEWATERING OPERATIONS.

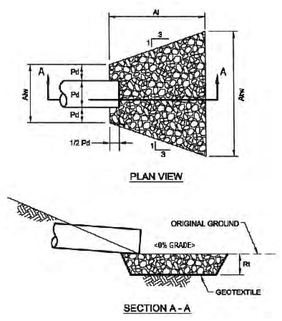
PENNSYLVANIA

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

TRANSCONTINENTAL GAS PIPE LINE CORPORATION
STANDARD ENVIRONMENTAL DETAIL

PWB PUMPED WATER FILTER BAG

Williams.



APRON No.	PIPE DIA. Do (in)	MAN "n" FOR PIPE	PIPE SLOPE (ft/ft)	Q (CFS)	V (FPS)	RIPRAP SIZE	Rt (in)	Al (ft)	Alw (ft)	Atw (ft)
CHANNEL C-5	48	0.050	0.049	7.04	2.93	R-4	18	24	12	36
CULVERT 1	18	0.012	0.008	4.51	4.51	R-4	18	12	4.5	16.5
U TRENCH DRAIN	10	0.013	0.023	0.45	3.82	R-3	9	8	2.5	10.5

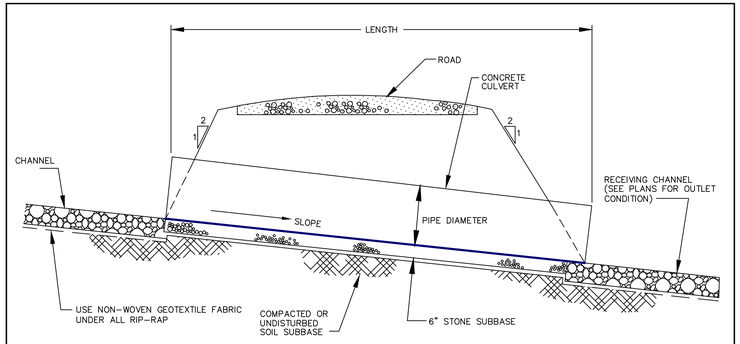
PENNSYLVANIA

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

TRANSCONTINENTAL GAS PIPE LINE CORPORATION
STANDARD ENVIRONMENTAL DETAIL

OP RIPRAP APRON OUTLET PROTECTION

Williams.



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

ID	REQ'D FLOW (cfs)	LENGTH	INV. IN (ft)	INV. OUT (ft)	SLOPE (ft/ft)	NO. OF PIPES	PIPE DIA (in)
CULVERT 1	5.0	63	1935.75	1935.44	0.005	1	18

PENNSYLVANIA

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

TRANSCONTINENTAL GAS PIPE LINE CORPORATION
STANDARD ENVIRONMENTAL DETAIL

RC TYPICAL ACCESS ROAD CULVERT

Williams.

BAI GROUP

W-M consulting, INC.
designs, permits, resolutions

PATRICK A. WOZINSKI, P.E.
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
PATRICK A. WOZINSKI
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PENNSYLVANIA PROFESSIONAL ENGINEER

REVISIONS

NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
1	06/29/21	RHM	REVISED PER PADEP COMMENTS.			
2	03/01/22	RHM	RESPONSE TO PADEP TECHNICAL DEFICIENCY LETTER			

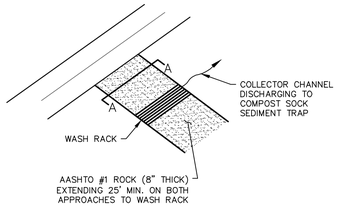
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
REGIONAL ENERGY ACCESS EXPANSION PROJECT
COMPRESSOR STATION 515
SOIL EROSION & SEDIMENT CONTROL PLAN

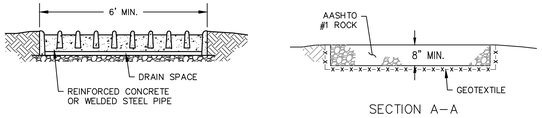
Williams.

DETAILS

BUCK TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

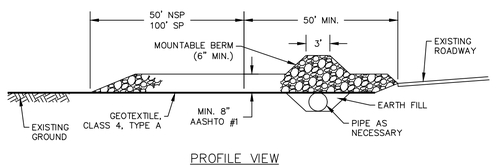
DRAWN BY: DRV	DATE: 03/31/21	ISSUED FOR BID:	SCALE: AS NOTED
CHECKED BY: RJN	DATE: 03/31/21	ISSUED FOR CONSTRUCTION:	REVISION:
APPROVED BY: PW	DATE: 03/31/21		SHEET 8 OF 10
WO: 1222639	RID: 305	DRAWING NUMBER: 26-1000-70-28-D	

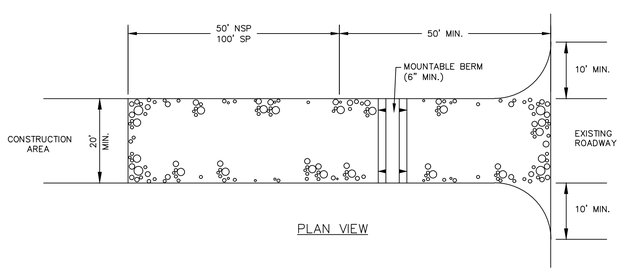




NOTES:

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.





NOTES:

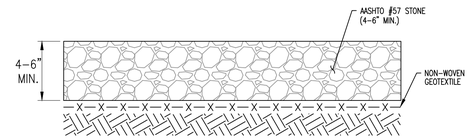
1. REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
2. MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.
3. MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.
4. STREET SWEEPING ON PAVED ROADS
   a. USE A VACUUM TRUCK SWEEPER OR SWEEPER WITH A CATCH BIN ATTACHMENT.
   b. AT A MINIMUM – ANY DAY IN WHICH CONSTRUCTION TRAFFIC IS EXITING THE ROCK CONSTRUCTION ENTRANCE, THE VACUUM TRUCK SWEEPER OR SWEEPER WITH A CATCH BIN ATTACHMENT SHALL CLEAN THE ROAD WAY AT THE END OF THE WORK DAY AND PRIOR TO ANY FORECASTED RAIN EVENT.
5. STREET SWEEPING ON DIRT OR GRAVEL SURFACE PUBLIC ROADS
   c. RIGOROUS MANUAL REMOVAL OF MUD/DIRT FROM VEHICLE/EQUIPMENT TIRES PRIOR TO EXITING CONSTRUCTION SITE, SUPPLEMENTED BY IMMEDIATE RECOVERY, BY MANUAL OR MECHANICAL MEANS, OF SOIL WHICH MAY BECOME DISCHARGED ONTO PUBLIC ROADWAYS. DUST CONTROL AND/OR COMPACTION VIA ROLLING OF THE DIRT PUBLIC ROAD SURFACE WILL BE IMPLEMENTED AS NEEDED.

PENNSYLVANIA

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

TRANSCONTINENTAL GAS PIPE LINE CORPORATION
STANDARD ENVIRONMENTAL DETAIL
CE CONSTRUCTION ENTRANCE

Williams



NOTES:

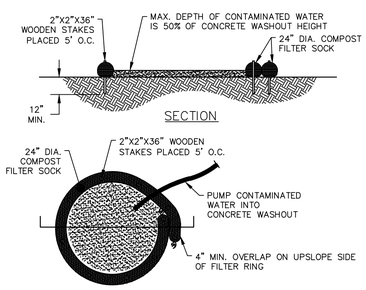
1. CROSS SECTION TO BE APPLIED TO DRY AREAS WITHOUT DRAINAGE CONCERNS.
2. EXISTING MATERIAL TO BE REMOVED AND STOCKPILED IN AN APPROVED LOCATION ONLY.
3. EXISTING DRAINAGE PATTERNS SHALL BE MAINTAINED IN ACCORDANCE WITH THE APPROVED EROSION & SEDIMENT POLLUTION CONTROL PLAN FOR THE PROJECT.
4. GRADING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

PENNSYLVANIA

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

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
STANDARD ENVIRONMENTAL DETAIL
PROPOSED GRAVEL PAD

Williams



NOTES:

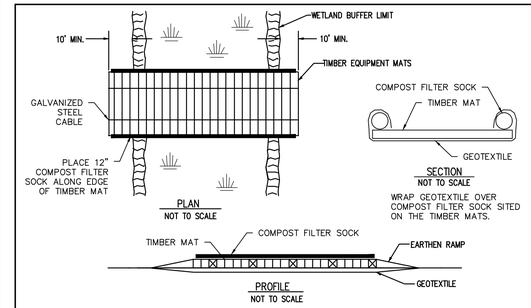
1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE.
2. 18" DIAMETER FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.
3. A SUITABLE IMPERVIOUS GEOMEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO INSTALLING THE SOCKS.
4. ALL CONCRETE WASHOUT FACILITIES SHOULD BE INSPECTED DAILY. DAMAGED OR LEAKING WASHOUTS SHOULD BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY.
5. ACCUMULATED MATERIALS SHOULD BE REMOVED WHEN THEY REACH 50% CAPACITY.
6. PLASTIC LINERS SHOULD BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY.

PENNSYLVANIA

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

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
STANDARD ENVIRONMENTAL DETAIL
COMPOST SOCK CONCRETE WASHOUT INSTALLATION

Williams



NOTES:

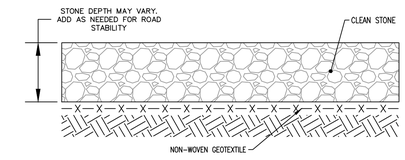
1. PERIODICALLY CHECK INSTALLATION AND REMOVE BUILD–UP OF SEDIMENT OR DEBRIS.
2. MATERIALS PLACED IN WETLANDS SHALL BE COMPLETELY REMOVED DURING FINAL CLEAN–UP. REMOVAL OF THIS STRUCTURE IS NOT CONTINGENT UPON ESTABLISHMENT OF PERMANENT VEGETATION.
3. IF A WATERBODY IS LOCATED WITHIN A WETLAND SYSTEM, EXTEND TIMBER EQUIPMENT MATS TO THE BRIDGE EQUIPMENT CROSSING (BEC) USED TO CROSS THE WATERBODY IN ORDER TO ALLOW FOR CONTINUOUS TIMBER EQUIPMENT MAT COVERAGE THROUGH THE WETLAND AND WATERBODY AREA.
4. USE ADDITIONAL TIMBER MAT LAYERS TO RAISE CROSSING ABOVE GRADE WHERE POOR SOIL CONDITIONS EXIST.
5. TIMBER EQUIPMENT MATS SHALL EXTEND A MINIMUM OF 10 FEET OUTSIDE OF THE WETLAND BOUNDARIES.
6. INSTALL EARTHEN RAMP APPROACHES TO TIMBER EQUIPMENT MATS. EARTHEN RAMPS TO BE CONSTRUCTED OF UPLAND MATERIAL, TOP SOIL SHALL NOT BE USED TO CONSTRUCT EARTHEN RAMPS.
7. A GEOTEXTILE UNDERLAYMENT SHALL BE USED UNDER THE WOOD MAT.
8. 12" COMPOST FILTER SOCK TO BE PLACED ALONG THE EDGE OF THE TIMBER MAT.

PENNSYLVANIA

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

TRANSCONTINENTAL GAS PIPE LINE CORPORATION
STANDARD ENVIRONMENTAL DETAIL
WEC WETLAND EQUIPMENT CROSSING

Williams GAS PIPELINE



NOTES:

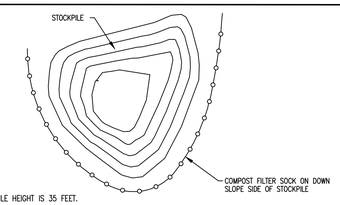
1. CROSS SECTION TO BE APPLIED TO DRY AREAS WITHOUT DRAINAGE CONCERNS.
2. EXISTING MATERIAL TO BE REMOVED AND STOCKPILED IN AN APPROVED LOCATION ONLY.
3. EXISTING DRAINAGE PATTERNS SHALL BE MAINTAINED IN ACCORDANCE WITH THE APPROVED EROSION & SEDIMENT POLLUTION CONTROL PLAN FOR THE PROJECT.
4. GRADING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

PENNSYLVANIA

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

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
STANDARD ENVIRONMENTAL DETAIL
AR PERMANENT/TEMPORARY STONE ACCESS ROAD

Williams



NOTES:

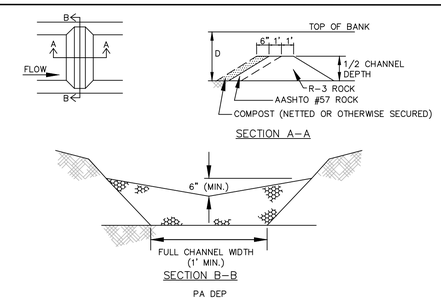
1. MAXIMUM STOCKPILE HEIGHT IS 35 FEET.
2. STOCKPILE SLOPES MUST BE NO STEEPER THAN 2H:1V.
3. STOCKPILE LOCATIONS SHOWN ON THE PLANS ARE ILLUSTRATIVE AND MAY VARY IN LOCATION AS CONSTRUCTION PROCEEDS.
4. STOCKPILE IS TO BE STABILIZED IN ACCORDANCE WITH TEMPORARY SEEDING SPECIFICATIONS AND MULCH IS TO BE MAINTAINED UNTIL THE STOCKPILE IS STABILIZED.
5. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT.

PENNSYLVANIA

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

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
STANDARD ENVIRONMENTAL DETAIL
TTS TYPICAL TOPSOIL STOCKPILE

Williams



NOTES:

1. SEDIMENT SHALL BE REMOVED WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF THE HEIGHT OF THE STONE BERM.
2. COARSE AGGREGATE SHALL BE AASHTO #57.

PENNSYLVANIA

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

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
STANDARD ENVIRONMENTAL DETAIL
IP CULVERT INLET PROTECTION STONE

Williams

BAI GROUP

WHM consulting, INC. designs, permits, resolutions

PATRICK A. WOZINSKI, P.E.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
PATRICK A. WOZINSKI
ENGINEER
PE076243

PENNSYLVANIA PROFESSIONAL ENGINEER

REVISIONS

NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
1	06/29/21	RHM	REVISED PER PADEP COMMENTS.			
2	03/01/22	RHM	RESPONSE TO PADEP TECHNICAL DEFICIENCY LETTER			

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
REGIONAL ENERGY ACCESS EXPANSION PROJECT
COMPRESSOR STATION 515
SOIL EROSION & SEDIMENT CONTROL PLAN

Williams

DETAILS

BUCK TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

DRAWN BY: DRV	DATE: 03/31/21	ISSUED FOR BID:		SCALE: AS NOTED	
CHECKED BY: RJN	DATE: 03/31/21	ISSUED FOR CONSTRUCTION:		REVISION:	
APPROVED BY: PW	DATE: 03/31/21			SHEET 9	
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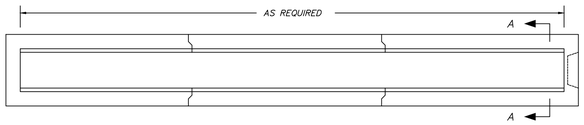
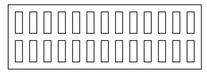
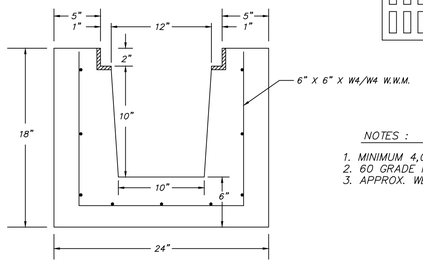


PLAN VIEW





SECTION A–A

NOTES :

1. MINIMUM 4,000 PSI CONCRETE @ 28 DAYS
2. 60 GRADE REINFORCEMENT
3. APPROX. WEIGHT = 325 LBS/LIN.FT.

ID	REQ'D FLOW (cfs)	LENGTH	INV. IN (ft)	INV. OUT (ft)	SLOPE (ft/ft)	NO. OF PIPES	PIPE DIA (in)
TRENCH DRAIN	0.45	70	1941.0	1939.40	0.023	1	10"X10"

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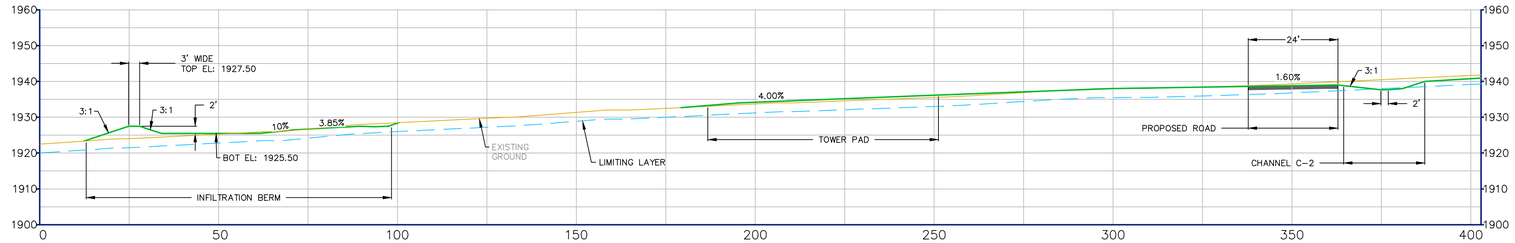
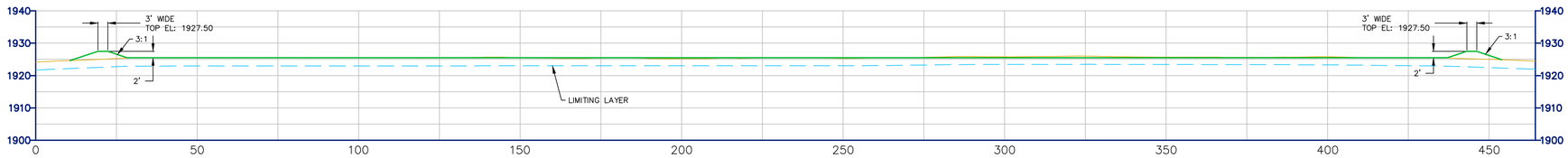
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.

TRANSCONTINENTAL GAS PIPE LINE CORPORATION
STANDARD ENVIRONMENTAL DETAIL
TRENCH DRAIN

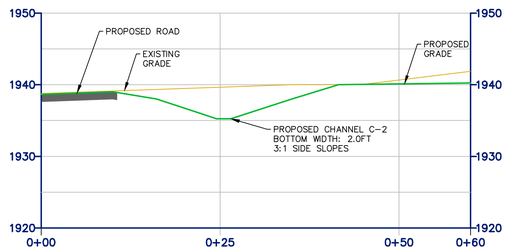
Williams



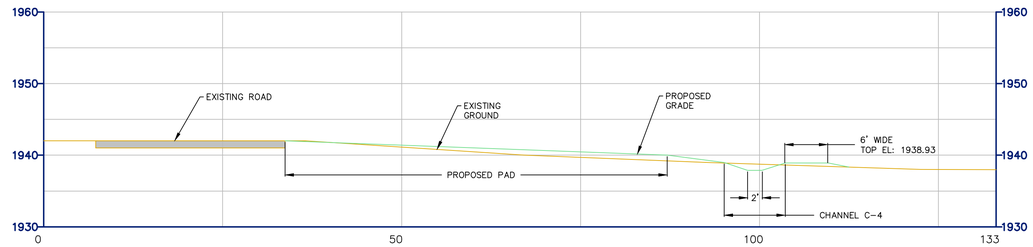
SECTION A–A
SCALE: 1"=20'



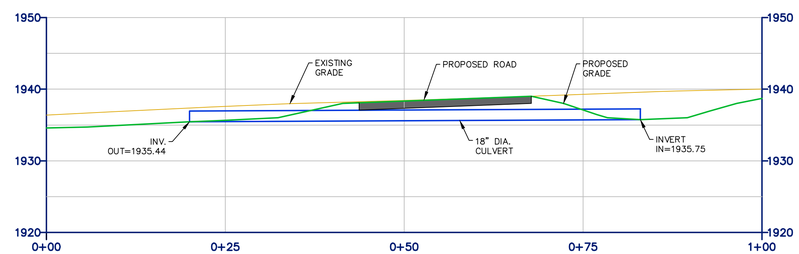
SECTION B–B
SCALE: 1"=20'



CHANNEL C–2 SECTION
SCALE: 1"=10'

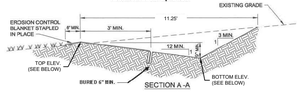


PAD SECTION C–C
SCALE: 1"=10'

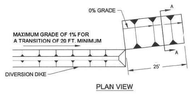


CULVERT PIPE 1 SECTION
SCALE: 1"=10'

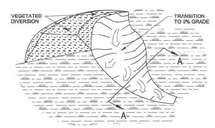
STANDARD CONSTRUCTION DETAIL # 9-5
Earthen Level Spreader



Adapted from North Carolina DENR



PLAN VIEW



ISOMETRIC VIEW

Adapted from EPA-625/3-76-006

353-2134-008 / March 31, 2012 / Page 254

ID	TOP ELEV. (ft)	BOTTOM ELEV. (ft)
LEVEL SPREADER # 1	1934.50	1933.75
LEVEL SPREADER # 2	1922.30	1921.55

NOTES:

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

OPERATION & MAINTENANCE:

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

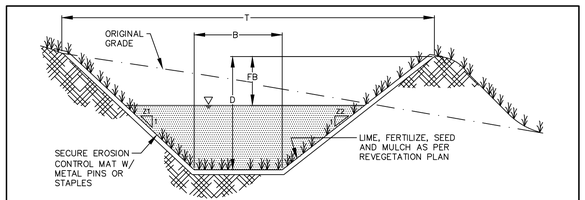
PERMANENT STORMWATER MEASURE

PENNSYLVANIA

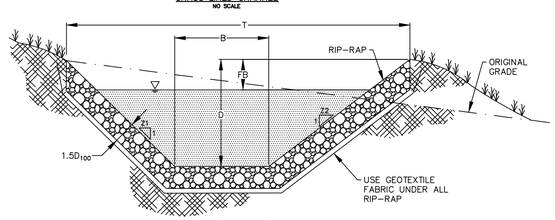
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.

TRANSCONTINENTAL GAS PIPE LINE CORPORATION
PROJECT SPECIFIC DETAIL
LS LEVEL SPREADER

Williams GAS PIPELINE



GRASS LINED CHANNEL
NO SCALE



ROCK LINED CHANNEL
NO SCALE

CHANNEL I.D.	LENGTH (ft)	SLOPE (%)	BASE WIDTH (ft)	DEPTH (ft)	SIDE SLOPES (Z1/Z2)	TOP WIDTH (ft)	LINING	OUTLET
C–1	100	4.1	4.0	1.25	3/3	11.50	GRASS	LEVEL SPREADER #1
C–2	150	1.3	2.0	1.00	3/3	8.00	R–3 RIP–RAP	CULVERT 1
C–3	60	5.7	2.0	1.00	3/3	8.00	R–3 RIP–RAP	CULVERT 1
C–4	346	1.7	2.0	1.25	3/3	9.50	GRASS	CHANNEL C–5
C–5	258	4.1	2.0	1.25	3/3	11.50	GRASS	INFILTRATION BERM

PENNSYLVANIA

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

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
STANDARD ENVIRONMENTAL DETAIL
CC TYPICAL CHANNEL

Williams

BAI GROUP

WHM consulting, INC.
designs, permits, resolutions

PATRICK A. WOZINSKI, P.E.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
PATRICK A. WOZINSKI
PE076243

PENNSYLVANIA PROFESSIONAL ENGINEER

REVISIONS

NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
1	06/29/21	RHM	REVISED PER PADEP COMMENTS.			
2	03/01/22	RHM	RESPONSE TO PADEP TECHNICAL DEFICIENCY LETTER			

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
REGIONAL ENERGY ACCESS EXPANSION PROJECT
COMPRESSOR STATION 515
SOIL EROSION & SEDIMENT CONTROL PLAN

Williams

DETAILS

BUCK TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

DRAWN BY: DRV	DATE: 03/31/21	ISSUED FOR BID:	SCALE: AS NOTED		
CHECKED BY: RJN	DATE: 03/31/21	ISSUED FOR CONSTRUCTION:	REVISION:		
APPROVED BY: PW	DATE: 03/31/21	DRAWING NUMBER: 26-1000-70-28-D	SHEET 10 OF 10		
WO: 1222639	RID: 305				