

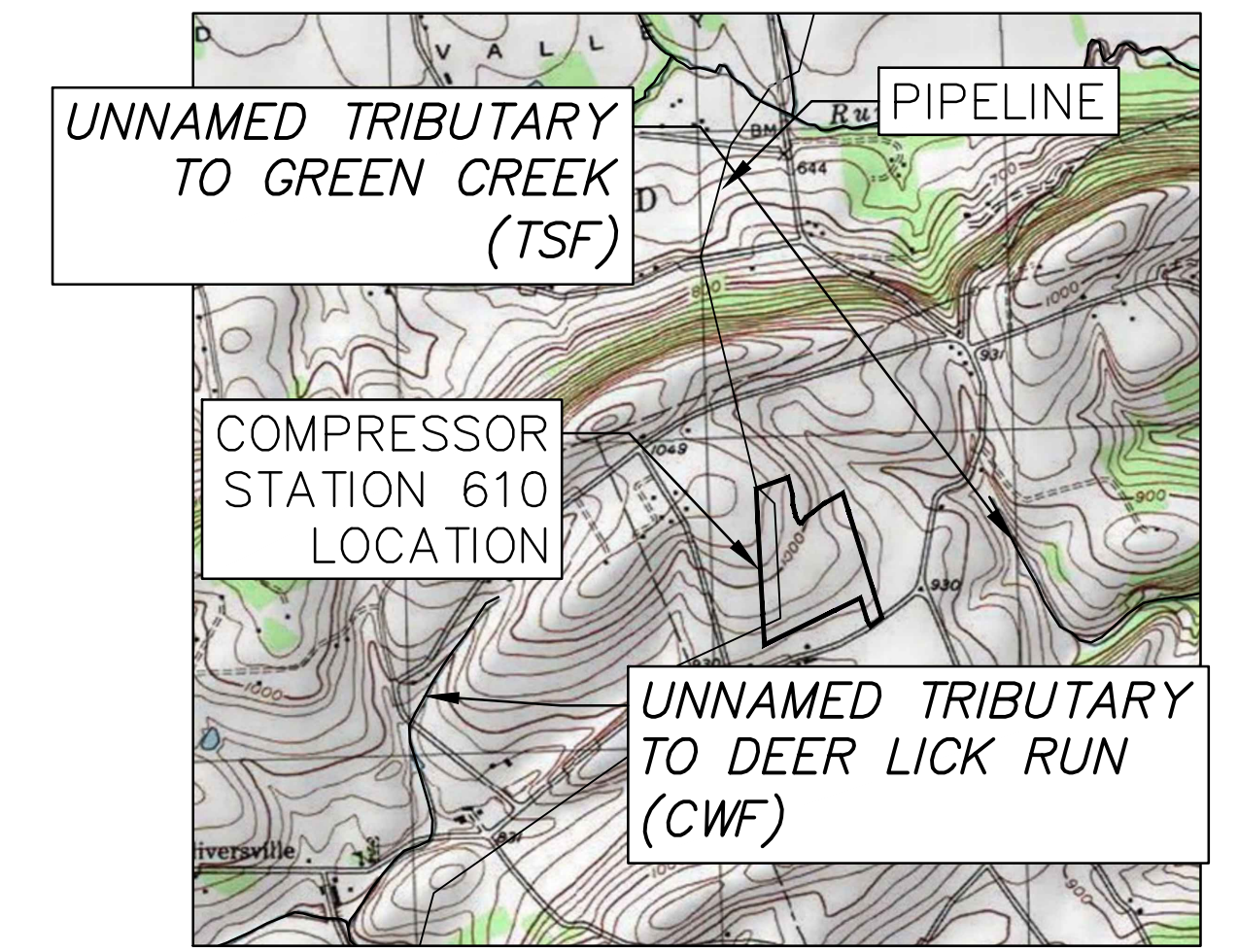
ATLANTIC SUNRISE PROJECT PROPOSED 42" NATURAL GAS PIPELINE

SOIL EROSION & SEDIMENT CONTROL AND LAYOUT PLANS FOR COMPRESSOR STATION 610

PHASE 1

ORANGE TOWNSHIP
COLUMBIA COUNTY

PENNSYLVANIA



USGS BLOOMSBURG QUADRANGLE
VICINITY MAP
SCALE: 1"=2,000'

FACILITY NAME & TYPE	DRAWING NO.	SHEET NO.	DRAWING NAME
CS-610 COMPRESSOR STATION	(66-0610)F-1A-11	1 of 13	COVER SHEET
	(66-0610)F-1A-11	2 of 13	EXISTING CONDITIONS MAP
	(66-0610)F-1A-11	3 of 13	OVERALL DRAINAGE AREA MAP
	(66-0610)F-1A-11	4 of 13	TEMPORARY BMP DRAINAGE AREA MAP
	(66-0610)F-1A-11	5 of 13	SWALE DRAINAGE AREA MAP
	(66-0610)F-1A-11	6 of 13	SOIL EROSION & SEDIMENT CONTROL PLAN
	(66-0610)F-1A-11	7 of 13	SOIL EROSION & SEDIMENT CONTROL NOTES
	(66-0610)F-1A-11	8 of 13	SOIL EROSION & SEDIMENT CONTROL NOTES
	(66-0610)F-1A-11	9 of 13	SOIL EROSION & SEDIMENT CONTROL NOTES AND DETAILS
	(66-0610)F-1A-11	10 of 13	SOIL EROSION & SEDIMENT CONTROL DETAILS
	(66-0610)F-1A-11	11 of 13	SOIL EROSION & SEDIMENT CONTROL DETAILS
	(66-0610)F-1A-11	12 of 13	SOIL EROSION & SEDIMENT CONTROL DETAILS
	(66-0610)F-1A-11	13 of 13	SOIL EROSION & SEDIMENT CONTROL DETAILS

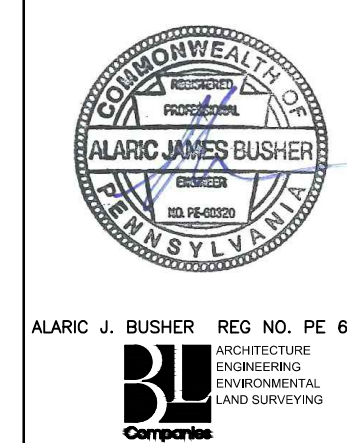
Drawn By & Date/Time: hthomas Apr. 25, 2017 - 8:29am
Drawing Location & Name: G:\08514\14C\14C4909\DWG\020-CPLS\FOS_CV14C4909(20)_EC-COL-610.dwg



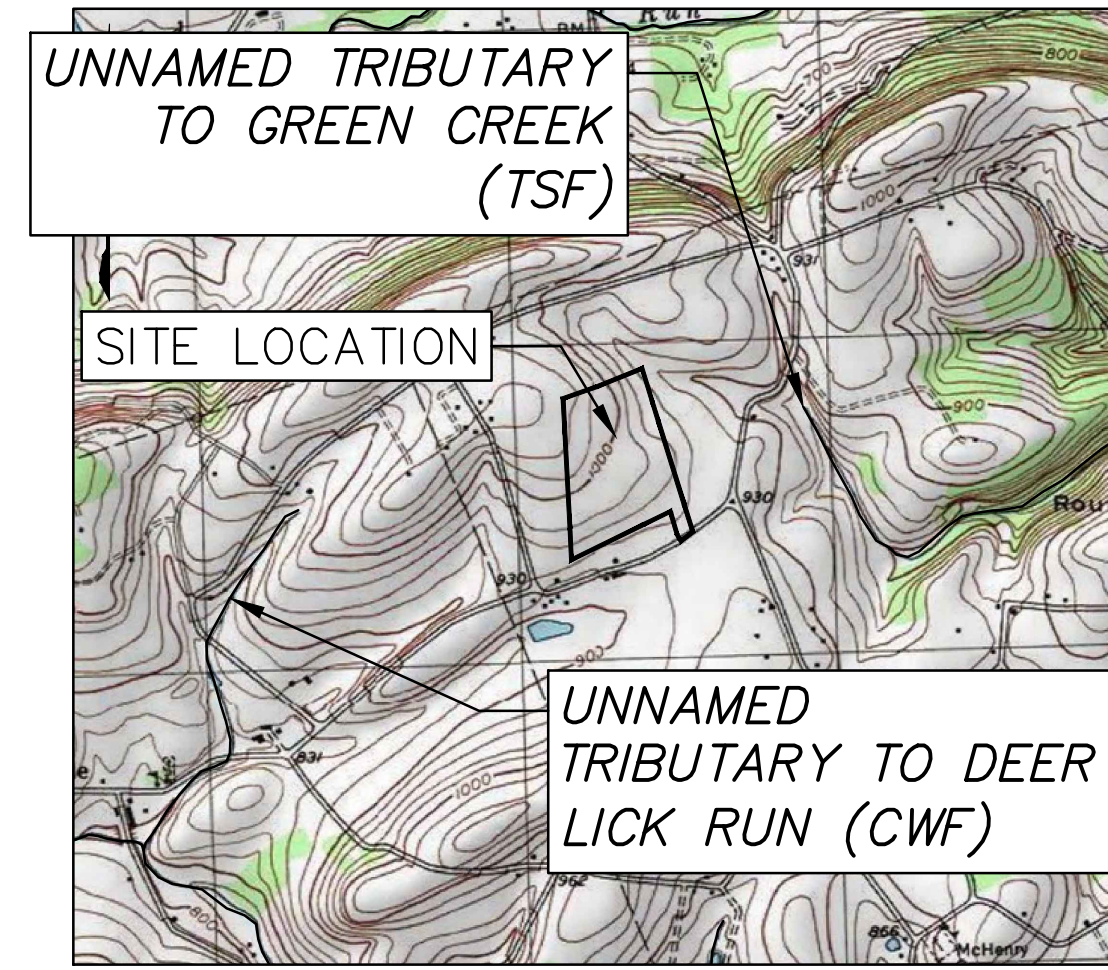
PENNSYLVANIA ACT 287 (1974)
AS AMENDED BY PENNSYLVANIA
ACT 199 (2004) REQUIRES NO
LESS THAN THREE (3) WORKING
DAYS AND NO MORE THAN (10)
WORKING DAYS NOTICE TO
UTILITIES BEFORE YOU EXCAVATE,
DRILL, BLAST OR DEMOLISH.

ENGINEER OF RECORD
BL COMPANIES
4242 CARLISLE PIKE, SUITE 260
CAMP HILL, PA 17011
P:717-651-9850
F:717-651-9858

REVISIONS							TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC							
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	ATLANTIC SUNRISE PROJECT- PROPOSED 42" NATURAL GAS PIPELINE							
0	08/26/2015	BL	ISSUED FOR PADEP SUBMITTAL	W0161505	DAK	AJB	SOIL EROSION & SEDIMENT CONTROL AND LAYOUT PLANS							
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W0161505	DAK	AJB	FOR COMPRESSOR STATION 610							
2	05/27/2016	BL	UPDATED PER BASIN SYSTEMS DESIGN COORDINATION	W0161505	AJB	AJB	ORANGE TOWNSHIP, COLUMBIA COUNTY, PENNSYLVANIA							
3	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0161505	AJB	AJB	COVER SHEET							
4	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0161505	AJB	AJB								
							DRAWN BY:	JEC	DATE:	04/03/15	ISSUED FOR BID:	SCALE:	AS NOTED	
							CHECKED BY:	AJB	DATE:	04/03/15	ISSUED FOR CONSTRUCTION:	REVISION:	4	
							APPROVED BY:	AJB	DATE:	07/17/15	DRAWING NUMBER:	(66-0610)F-1A-11	SHEET	1
							W.O.:	1161505				OF	13	



Drawn By & Date/Time: hthomas Apr 25, 2017 - 8:39am
 Drawing Location & Name: G:\JOBS\14\14C\14C4909\DWG\020-CPLS\FCS_EC14C4909(20N)_610.dwg



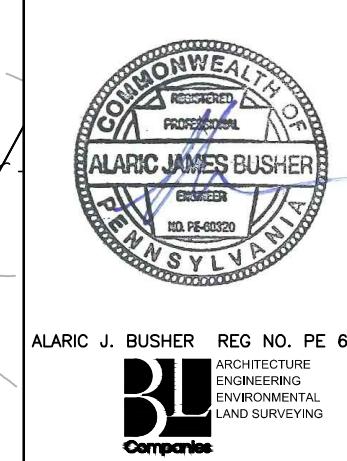
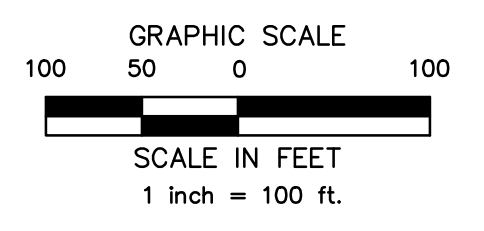
LOCATION MAP
 USGS BLOOMSBURG QUADRANGLE
 SCALE: 1"=2,000'

LEGEND

- EXISTING FEATURES**
- PROPERTY BOUNDARY LINE (APPROXIMATE)
 - MAJOR CONTOUR (10' INTERVAL)
 - MINOR CONTOUR (2' INTERVAL)
 - FENCE
 - STONE ROW
 - SOIL BOUNDARY
 - TREELINE
 - CENTERLINE STREAM/EDGE WATERBODY
 - DELINEATED WETLANDS
 - SPOT ELEVATION
 - TREE OR BUSH
 - UTILITY POLE AND UTILITY LINE
 - GUY POLE
 - GUY POLE OR ANCHOR
 - POST
 - SIGN
 - WATER WELL
 - UTILITY BOX
 - MONUMENT (PROPERTY BOUNDARY MARKER)
 - IRON PIPE OR PIN (PROPERTY BOUNDARY MARKER)
 - SOIL TYPE DESIGNATION
 - ESCGP-2 PERMIT BOUNDARY
 - LIMIT OF DISTURBANCE (COMPRESSOR STATION 610)
 - LIMIT OF WORKSPACE (OVERALL PIPELINE PROJECT)
 - EXISTING ROAD
 - ROW

SITE SOIL TYPES

- AeB2 ALLENWOOD SILT LOAM, 3 TO 12 PERCENT SLOPES
 - HhB2 HARLETON CHANNERY SILT LOAM, 3 TO 12 PERCENT SLOPES
 - HhC3 HARLETON CHANNERY SILT LOAM, 12 TO 20 PERCENT SLOPES
 - WbB2 WATSON SILT LOAM, 3 TO 8 PERCENT SLOPES
 - WcC2 WEIKERT CHANNERY SILT LOAM, 12 TO 20 PERCENT SLOPES
- * NO SOILS WITHIN SITE LOD ARE KNOWN TO PRODUCE ACIDIC STORMWATER RUNOFF.

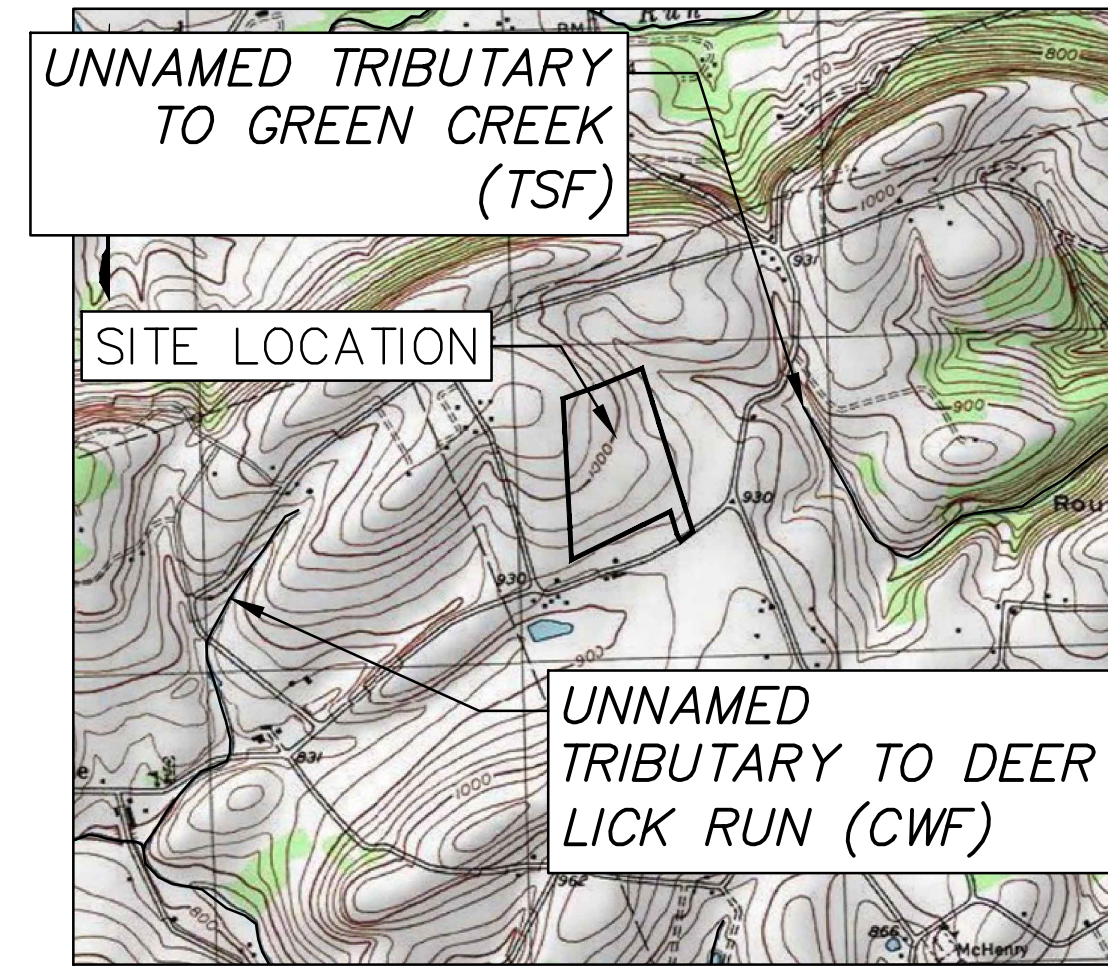
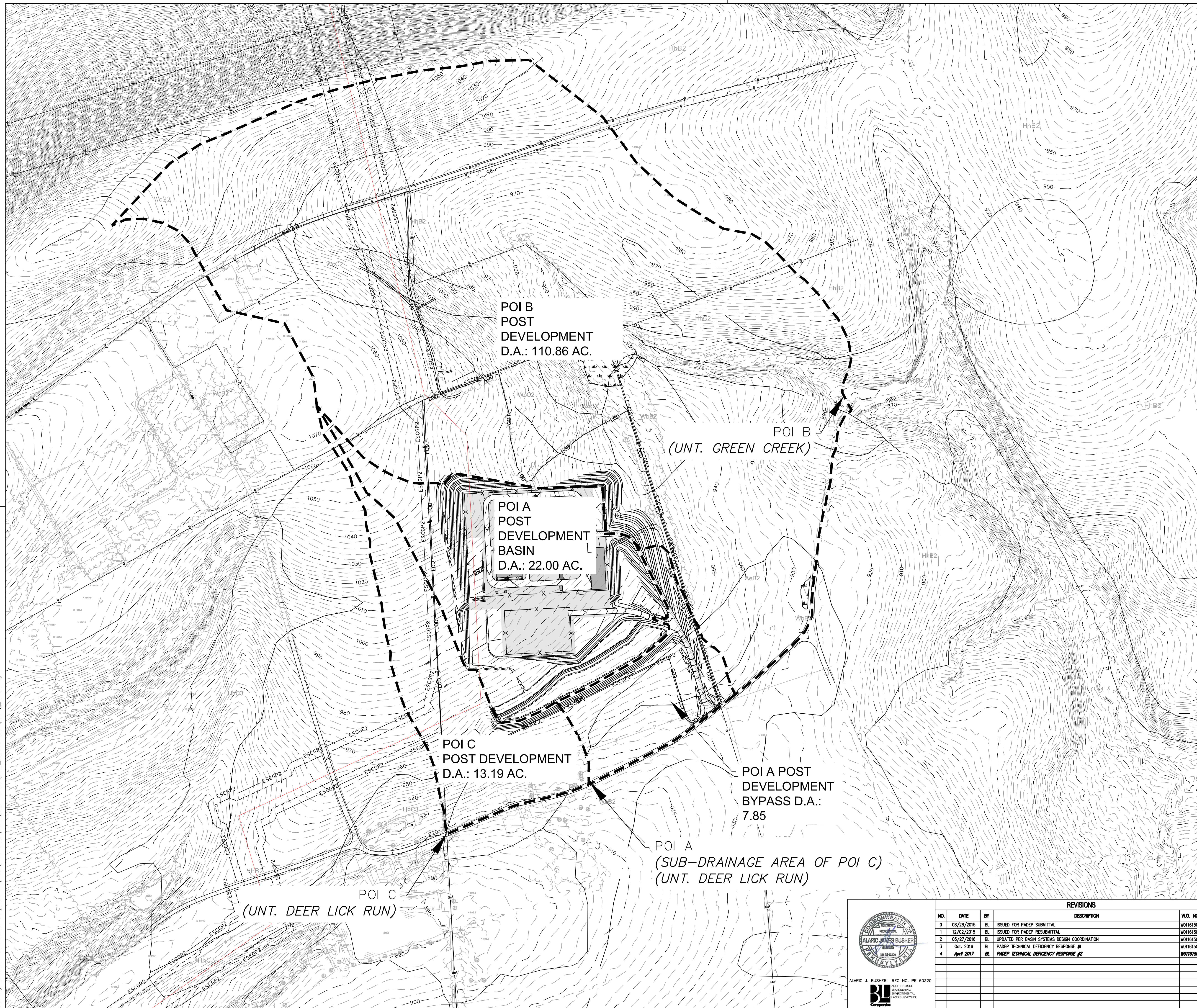


REVISIONS			
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4	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC			
ATLANTIC SUNRISE PROJECT- PROPOSED 42" NATURAL GAS PIPELINE			
SOIL EROSION & SEDIMENT CONTROL AND LAYOUT PLANS			
FOR COMPRESSOR STATION 610			
ORANGE TOWNSHIP, COLUMBIA COUNTY, PENNSYLVANIA			
EXISTING CONDITIONS MAP			
DRAWN BY:	ADE	DATE:	04/03/15
CHECKED BY:	AJB	DATE:	04/03/15
APPROVED BY:	AJB	DATE:	07/17/15
NO:	1161505	DRAWING NUMBER:	(66-0610)F-1A-11
SCALE:	AS NOTED	REVISION:	4
		SHEET 2	OF 13



Drawn By & Date/Time: hthomas Apr 27, 2017 - 6:39am
 Drawing Location & Name: G:\JOBS\14\14C\14C4909\DWG\020-CPLS\FCS_EC14C4909(20N)_610.dwg



LOCATION MAP
 USGS BLOOMSBURG QUADRANGLE
 SCALE: 1"=2,000'

LEGEND

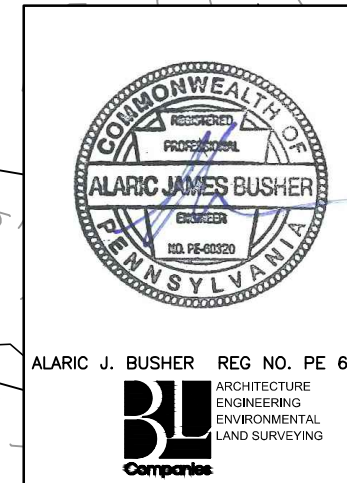
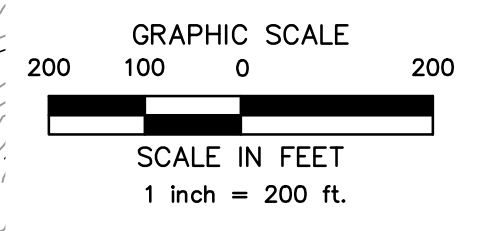
PROPOSED FEATURES

	MAJOR CONTOUR (10' INTERVAL)
	MINOR CONTOUR (2' INTERVAL)
	MINOR CONTOUR (1' INTERVAL)
	LIMIT OF DISTURBANCE (COMPRESSOR STATION 610)
	ESCP2 - 2 PERMIT BOUNDARY
	CENTERLINE GAS PIPELINE
	LIMIT OF WORKSPACE (OVERALL PIPELINE PROJECT)
	PROPOSED ACCESS ROAD
	DRAINAGE AREA BOUNDARIES

SITE SOIL TYPES

AeB2	ALLENWOOD SILT LOAM, 3 TO 12 PERCENT SLOPES
HhB2	HARLETON CHANNERY SILT LOAM, 3 TO 12 PERCENT SLOPES
HhC3	HARLETON CHANNERY SILT LOAM, 12 TO 20 PERCENT SLOPES
WbB2	WATSON SILT LOAM, 3 TO 8 PERCENT SLOPES
WcC2	WEIKERT CHANNERY SILT LOAM, 12 TO 20 PERCENT SLOPES

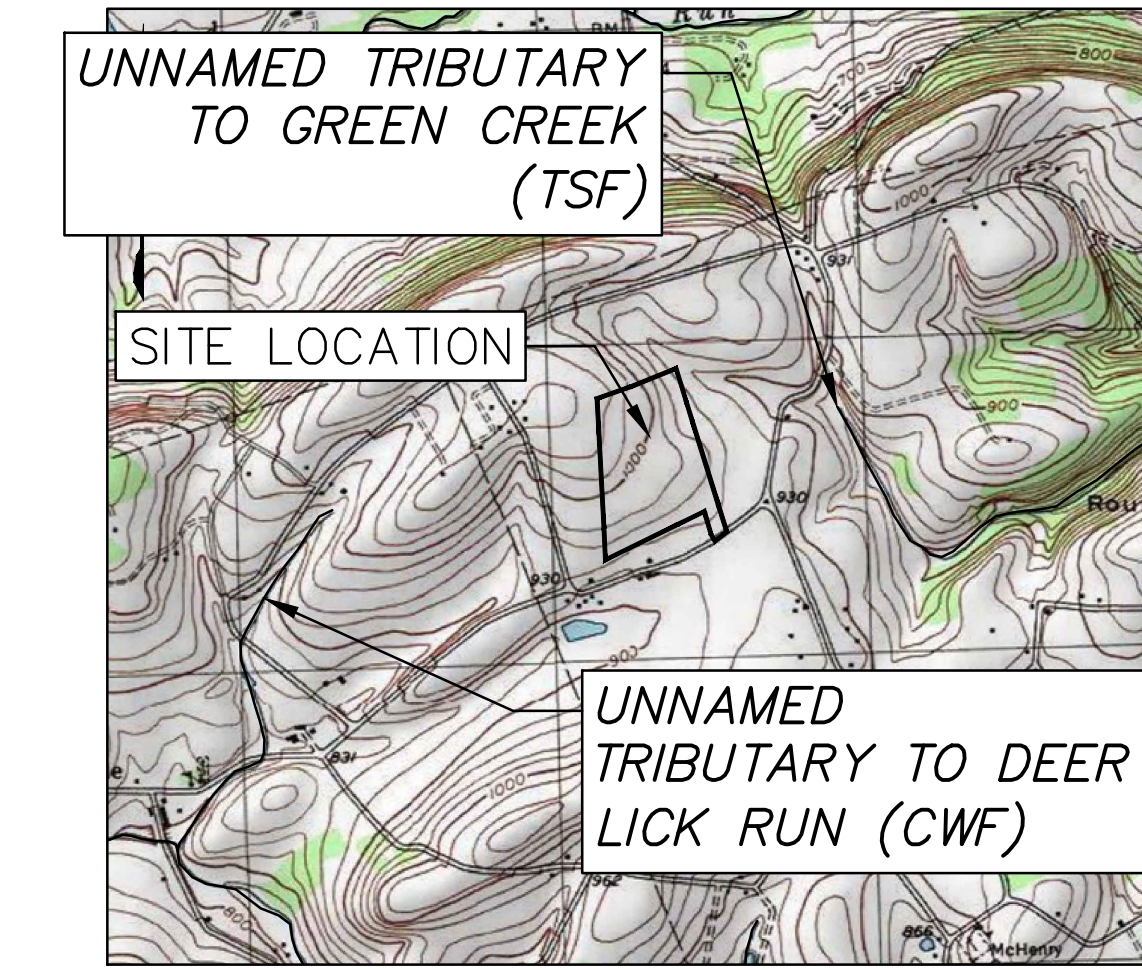
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4	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0161505	AJB	AJB

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC			
ATLANTIC SUNRISE PROJECT- PROPOSED 42" NATURAL GAS PIPELINE			
SOIL EROSION & SEDIMENT CONTROL AND LAYOUT PLANS			
FOR COMPRESSOR STATION 610			
ORANGE TOWNSHIP, COLUMBIA COUNTY, PENNSYLVANIA			
OVERALL DRAINAGE AREA MAP			
DRAWN BY:	AJC	DATE:	04/03/15
CHECKED BY:	AJB	DATE:	04/03/15
APPROVED BY:	AJB	DATE:	07/17/15
W.D.:	1161505	DRAWING NUMBER:	(66-0610)F-1A-11
SCALE:	AS NOTED	REVISION:	4
			SHEET 3 OF 13





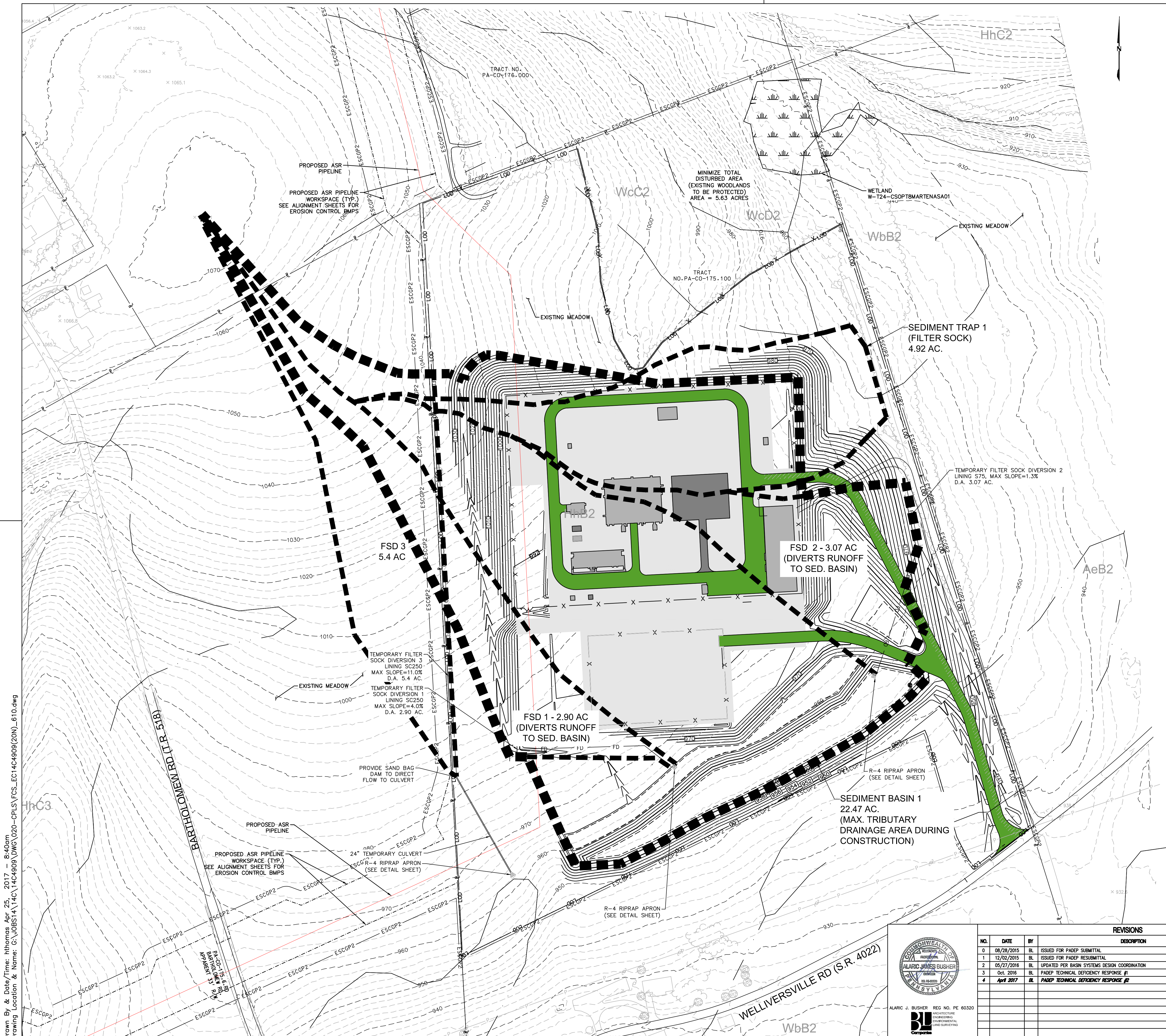
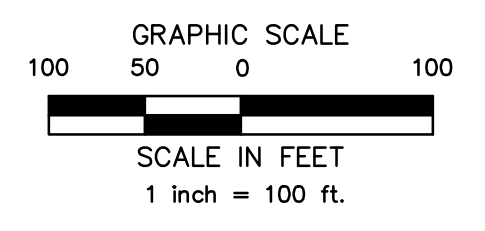
LOCATION MAP
USGS BLOOMSBURG QUADRANGLE
SCALE: 1"=2,000'

LEGEND

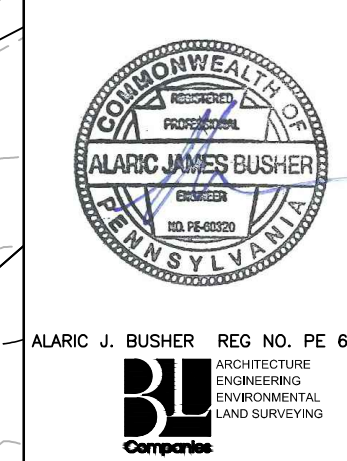
- PROPOSED FEATURES**
- MAJOR CONTOUR (10' INTERVAL)
 - MINOR CONTOUR (2' INTERVAL)
 - MINOR CONTOUR (1' INTERVAL)
 - LOD LIMIT OF DISTURBANCE (COMPRESSOR STATION 610)
 - ESCGP-2 PERMIT BOUNDARY
 - CENTERLINE GAS PIPELINE
 - LIMIT OF WORKSPACE (OVERALL PIPELINE PROJECT)
 - PROPOSED ACCESS ROAD
 - SEDIMENT BASIN DRAINAGE AREA BOUNDARIES
 - SEDIMENT TRAP/SWALE/FILTER SOCK DIVERSION DRAINAGE AREA BOUNDARIES
 - PROPOSED ACCESS ROAD
 - PROPOSED GRAVEL
 - PROPOSED BUILDING
 - FUTURE BUILDING

SITE SOIL TYPES

- AeB2 ALLENWOOD SILT LOAM, 3 TO 12 PERCENT SLOPES
 - HhB2 HARLETON CHANNERY SILT LOAM, 3 TO 12 PERCENT SLOPES
 - HhC3 HARLETON CHANNERY SILT LOAM, 12 TO 20 PERCENT SLOPES
 - WbB2 WATSON SILT LOAM, 3 TO 8 PERCENT SLOPES
 - WcC2 WEIKERT CHANNERY SILT LOAM, 12 TO 20 PERCENT SLOPES
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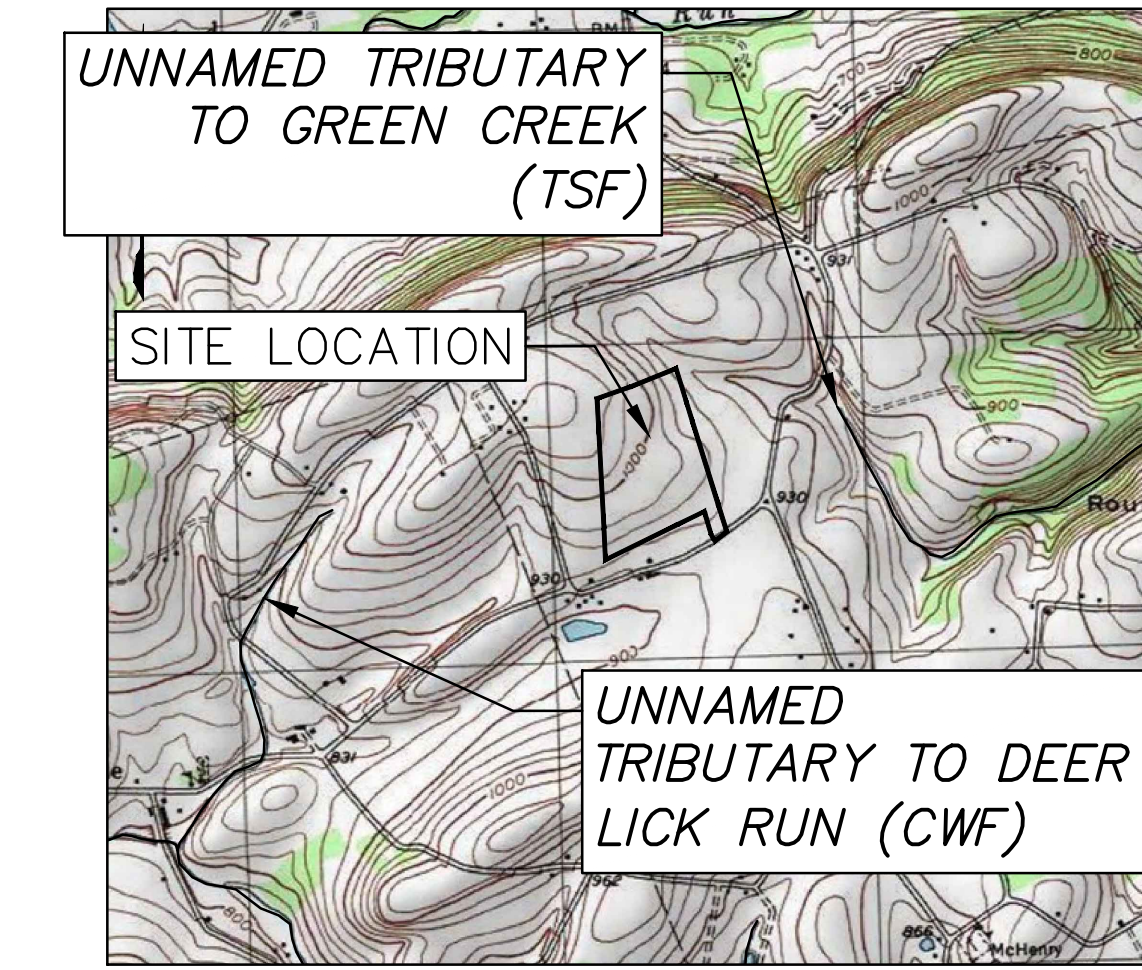
Drawn By & Date/Time: hthomas Apr 25, 2017 - 8:40am
Drawing Location & Name: G:\JOBS\14\14C\14C4909\DWG\020-CPLS\FOS_EC14C4909(20N)_610.dwg



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TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC			
ATLANTIC SUNRISE PROJECT- PROPOSED 42" NATURAL GAS PIPELINE			
SOIL EROSION & SEDIMENT CONTROL AND LAYOUT PLANS			
FOR COMPRESSOR STATION 610			
ORANGE TOWNSHIP, COLUMBIA COUNTY, PENNSYLVANIA			
TEMPORARY BMP DRAINAGE AREA MAP			
DRAWN BY:	AJB	DATE:	04/03/15
CHECKED BY:	AJB	DATE:	04/03/15
APPROVED BY:	AJB	DATE:	07/17/15
W.D.:	1161505	DRAWING NUMBER:	(66-0610)F-1A-11
SCALE:	AS NOTED	REVISION:	4
			SHEET 4 OF 13





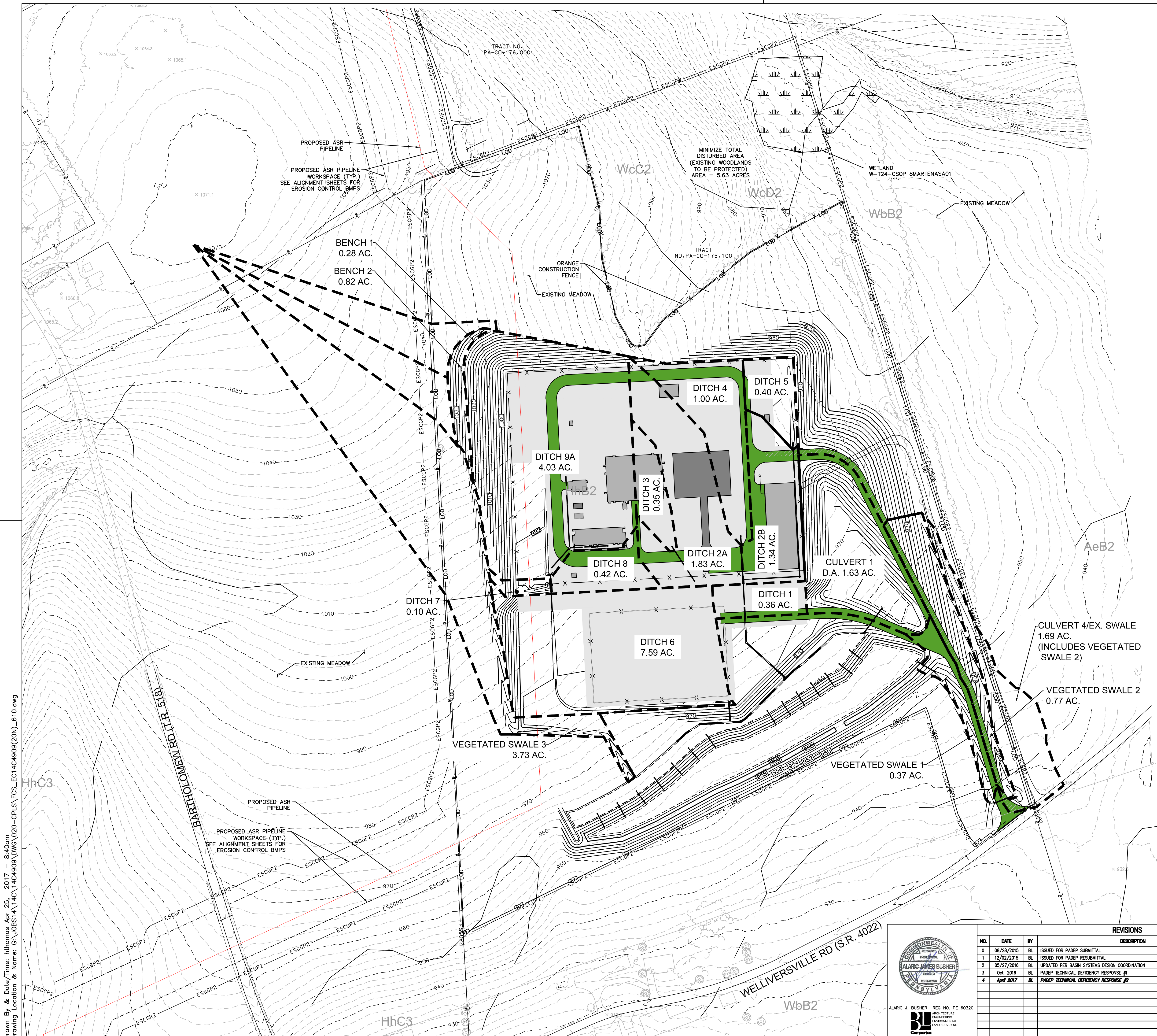
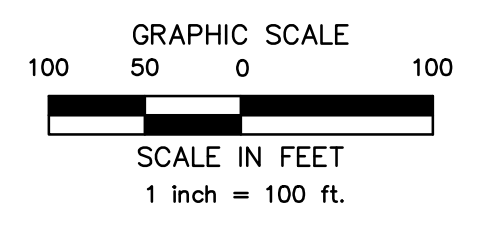
LOCATION MAP
USGS BLOOMSBURG QUADRANGLE
SCALE: 1"=2,000'

LEGEND

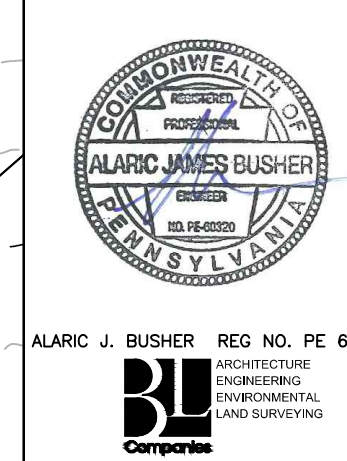
- PROPOSED FEATURES**
- MAJOR CONTOUR (10' INTERVAL)
 - MINOR CONTOUR (2' INTERVAL)
 - MINOR CONTOUR (1' INTERVAL)
 - LOD
 - ESCOP-2
 - CENTERLINE GAS PIPELINE
 - LIMIT OF WORKSPACE (OVERALL PIPELINE PROJECT)
 - PROPOSED ACCESS ROAD
 - DRAINAGE AREA BOUNDARIES
 - PROPOSED ACCESS ROAD
 - PROPOSED GRAVEL
 - PROPOSED BUILDING
 - FUTURE BUILDING

SITE SOIL TYPES

- AeB2 ALLENWOOD SILT LOAM, 3 TO 12 PERCENT SLOPES
 - HhB2 HARLETON CHANNERY SILT LOAM, 3 TO 12 PERCENT SLOPES
 - HhC3 HARLETON CHANNERY SILT LOAM, 12 TO 20 PERCENT SLOPES
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 - WcC2 WEIKERT CHANNERY SILT LOAM, 12 TO 20 PERCENT SLOPES
- * NO SOILS WITHIN SITE LOD ARE KNOWN TO PRODUCE ACIDIC STORMWATER RUNOFF.



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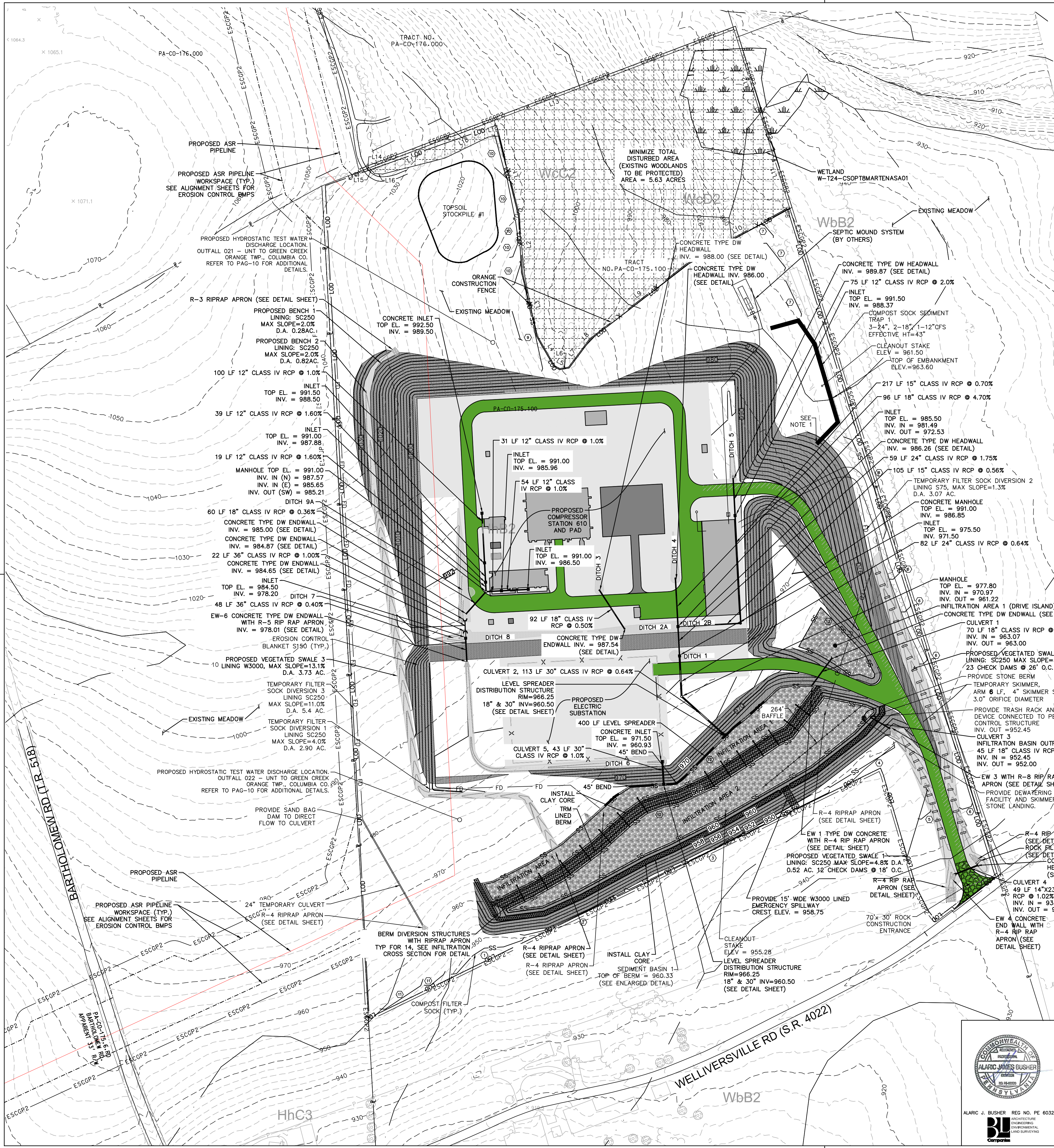


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TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC			
ATLANTIC SUNRISE PROJECT- PROPOSED 42" NATURAL GAS PIPELINE			
SOIL EROSION & SEDIMENT CONTROL AND LAYOUT PLANS			
FOR COMPRESSOR STATION 610			
ORANGE TOWNSHIP, COLUMBIA COUNTY, PENNSYLVANIA			
SWALE DRAINAGE AREA MAP			
DRAWN BY:	ADG	DATE:	04/03/15
CHECKED BY:	AJB	DATE:	04/03/15
APPROVED BY:	AJB	DATE:	07/17/15
NO:	1161505	DRAWING NUMBER:	(66-0610)F-1A-11
SCALE:	AS NOTED	REVISION:	4
			SHEET 5 OF 13



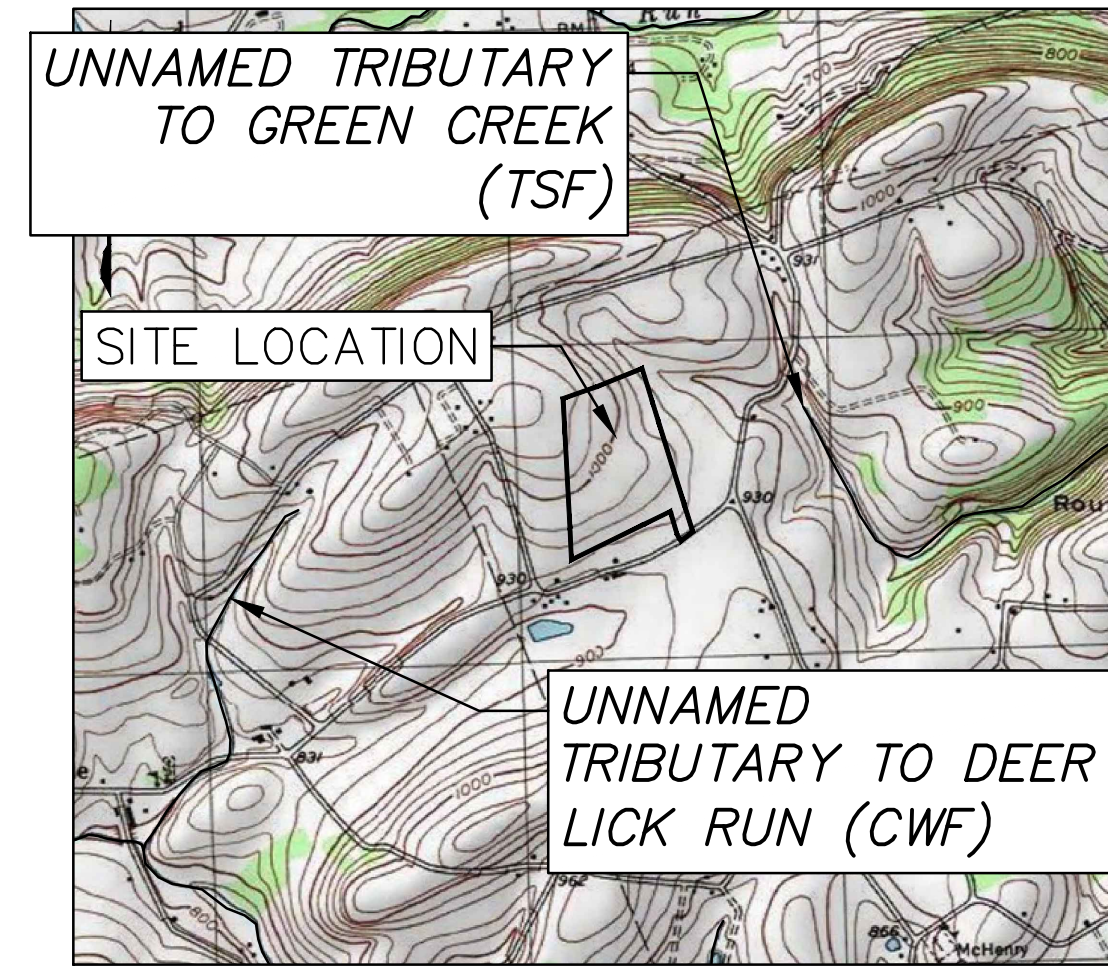
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NOTES

- ADJUST COMPOST FILTER SOCK EMBANKMENT AS NECESSARY TO TIE INTO THE NEW GROUND SURFACE AND MAINTAIN TRAP EMBANKMENT HEIGHT AS GRADING PROGRESSES. ENSURE COMPOST FILTER SOCK IS SEATED FIRMLY AGAINST THE GROUND SURFACE.

Line #	Length	Direction
L19	21.71	N84° 37' 25.42"E
L18	97.06	N64° 04' 05.85"E
L17	128.70	N75° 34' 52.36"E
L16	17.11	S87° 48' 44.40"E
L15	19.48	S41° 35' 10.99"E
L14	1.40	S20° 26' 09.35"E
L13	790.97	S69° 12' 12.52"W
L12	226.98	N16° 59' 05.52"W
L11	154.99	N17° 47' 52.36"W
L10	235.10	N61° 21' 53.74"E
L9	240.00	N52° 24' 27.57"E
L8	26.00	N43° 43' 02.63"E
L7	56.35	N36° 49' 67.21"E
L6	19.58	N79° 26' 45.46"E
L5	14.12	S58° 34' 59.28"E
L4	68.77	S29° 49' 33.62"E
L3	126.96	S11° 00' 11.77"E
L2	118.53	S5° 51' 42.56"E
L1	165.46	S13° 37' 15.04"E



LEGEND

- PROPOSED FEATURES**
- MAJOR CONTOUR (10' INTERVAL)
 - MINOR CONTOUR (2' INTERVAL)
 - TEMPORARY CONTOUR (2' INTERVAL)
 - LIMIT OF DISTURBANCE (COMPRESSOR STATION 610)
 - LIMIT OF WORKSPACE (OVERALL PIPELINE PROJECT)
 - ESCCP2 - ESCCP-2 PERMIT BOUNDARY
 - FD - FILTER SOCK DIVERSION
 - SS - SEDIMENT BARRIER
 - X - ORANGE CONSTRUCTION FENCE
 - CENTERLINE GAS PIPELINE
 - SWALE LINING
 - EROSION CONTROL BLANKET
 - ROCK OUTLET/RIPRAP APRON
 - INFILTRATION & RAIN GARDENS
 - PROPOSED ACCESS ROAD
 - PROPOSED GRAVEL
 - PROPOSED BUILDING
 - FUTURE BUILDING
 - SEDIMENT BARRIER DESIGNATION (SEE SHEET 11)
 - ROCK CONSTRUCTION ENTRANCE
 - BAFFLE
 - TRM LINING
 - CLAY CORE LIMITS

SITE SOIL TYPES

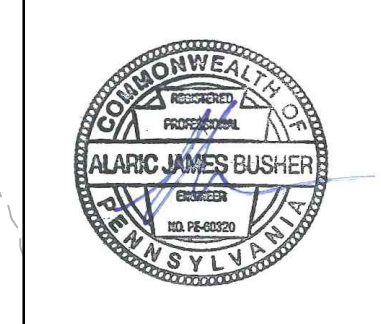
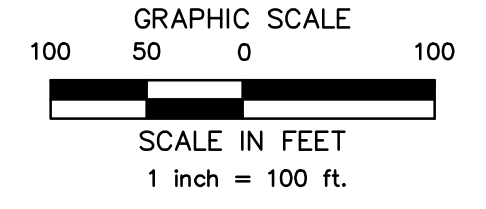
- AeB2
 - HhB2 ALLENWOOD SILT LOAM, 3 TO 12 PERCENT SLOPES
 - HhC3 HARLETON CHANNERY SILT LOAM, 3 TO 12 PERCENT SLOPES
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 - WcC2 WATSON SILT LOAM, 3 TO 8 PERCENT SLOPES
 - WEIKERT CHANNERY SILT LOAM, 12 TO 20 PERCENT SLOPES
- * NO SOILS WITHIN SITE LOD ARE KNOWN TO PRODUCE ACIDIC STORMWATER RUNOFF.

LIMIT OF DISTURBANCE

AREA OF THE LIMIT OF DISTURBANCE IS:
 ±1,468,580 SF / 33.7 AC.

RECEIVING WATERCOURSE - CHAPTER 93 DESIGNATION

THE RECEIVING WATERCOURSES ARE UNNAMED TRIBUTARIES TO DEER LICK RUN, CWF, AND GREEN CREEK, TSF.
 APPROXIMATE DISTANCE FROM SITE TO UNNAMED TRIBUTARY TO DEER LICK RUN (WEST): ±2,900 FT (WEST)
 APPROXIMATE DISTANCE FROM SITE TO UNNAMED TRIBUTARY TO GREEN CREEK (EAST): ±1,500 FT (EAST)



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TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC			
ATLANTIC SUNRISE PROJECT- PROPOSED 42" NATURAL GAS PIPELINE			
SOIL EROSION & SEDIMENT CONTROL AND LAYOUT PLANS			
FOR COMPRESSOR STATION 610			
ORANGE TOWNSHIP, COLUMBIA COUNTY, PENNSYLVANIA			
SOIL EROSION & SEDIMENT CONTROL PLAN			
DRAWN BY:	ADE	DATE:	04/03/15
CHECKED BY:	AJB	DATE:	04/03/15
APPROVED BY:	AJB	DATE:	07/17/15
NO:	1161505	SCALE:	AS NOTED
ISSUED FOR:	ISSUED FOR CONSTRUCTION	REVISION:	4
DRAWING NUMBER:	(66-0610)F-1A-11	SHEET:	6
		OF:	13



STANDARD EROSION & SEDIMENTATION CONTROL PLAN NOTES

- ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
- AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
- AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
- ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
- AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
- CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPs SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
- AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
- TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAP(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.
- IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
- ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET. SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
- ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP--001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
- ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
- VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY NOR EXIT DIRECTLY FROM LIMIT OF DISTURBANCE TO PUBLIC ROADS WITHOUT PASSING OVER A ROCK CONSTRUCTION ENTRANCE.
- UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPs SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPs AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY, IF THE E&S BMPs FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPs, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
- A LOG SHOWING DATES THAT E&S BMPs WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
- SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEEP INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
- ALL SEDIMENT REMOVED FROM BMPs SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
- AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES --- 6 TO 12 INCHES ON COMPACTED SOILS --- PRIOR TO PLACEMENT OF TOPSOIL AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
- ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
- ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
- FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
- FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
- FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
- SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
- 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.
- IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
- PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
- E&S BMPs SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
- UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPs.
- AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPs MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPs. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPs SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
- UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
- FAILURE TO CORRECTLY INSTALL E&S BMPs, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPs MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO \$10,000 PER DAY IN CIVIL PENALTIES, UP TO \$10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO \$25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.
- CONCRETE WASH WATER SHALL BE HANDLED IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. IN NO CASE SHALL IT BE ALLOWED TO ENTER ANY SURFACE WATERS OR GROUNDWATER SYSTEMS.
- ALL SWALES SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
- UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE SWALE SHALL BE IMMEDIATELY BACKFILLED AND THE SWALE RESTORED TO ITS ORIGINAL CROSS-SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE SWALE SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
- SWALES HAVING RIPRAP, RENO MATRESS, OR CARBON LININGS MUST BE SUFFICIENTLY OVER-EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.
- SEDIMENT BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
- SEDIMENT BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
- ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, LOCAL CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.
- UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS-BUILT (RECORD DRAWING) FOR ANY SEDIMENT BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
- EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
- FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN MAXIMUM 9 INCH LAYERED LIFTS AT 95% DENSITY.

GENERAL EROSION & SEDIMENT CONTROL NOTES

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

NOTICES TO CONTRACTOR

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

MAINTENANCE PROGRAM

THE FOLLOWING INSPECTION AND MAINTENANCE PRACTICES WILL BE USED TO MAINTAIN EROSION AND SEDIMENT CONTROLS AND STABILIZATION MEASURES:

- ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSPECTED ONCE EVERY SEVEN DAYS AND AFTER EACH RUNOFF EVENT. A WRITTEN REPORT MUST ALSO BE COMPLETED DOCUMENTING EACH INSPECTION AND, IF NECESSARY, ANY REPAIR, REPLACEMENT OR MAINTENANCE ACTIVITY.
- ALL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER; IF REPAIRS OR ADDITIONAL MEASURES ARE FOUND TO BE NECESSARY, THEY WILL BE INITIATED WITHIN 24 HOURS OF THE INSPECTION REPORT.
- BUILT UP SEDIMENT WILL BE REMOVED FROM PERIMETER BMPs WHEN IT HAS REACHED ONE-THIRD THE HEIGHT OF THE BMP.
- PERIMETER BMPs WILL BE INSPECTED FOR DEPTH OF SEDIMENT, DAMAGE, ETC., TO ENSURE THE MEASURE IS IN PROPER WORKING ORDER, AND THAT ANY POSTS/WOOD STAKES ARE SECURELY IN THE GROUND.
- TEMPORARY SEDIMENT TRAPS, IF PRESENT, WILL BE INSPECTED FOR DEPTH OF SEDIMENT, AND BUILT UP SEDIMENT WILL BE REMOVED WHEN IT REACHES THE DESIGN CLEANOUT DEPTH.
- TEMPORARY AND PERMANENT SEEDING, AND OTHER STABILIZATION MEASURES, WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND HEALTHY GROWTH.
- A MAINTENANCE INSPECTION REPORT WILL BE MADE AFTER EACH INSPECTION. COPIES OF THE REPORT FORMS TO BE COMPLETED BY THE INSPECTOR ARE INCLUDED IN THIS ESCP.
- THE INSPECTOR WILL IMPLEMENT INSPECTION AND MAINTENANCE PRACTICES NECESSARY FOR KEEPING THE EROSION AND SEDIMENT CONTROLS THAT ARE USED ON THE SITE IN GOOD WORKING ORDER. THE INSPECTOR WILL ALSO BE TRAINED IN THE COMPLETION OF, INITIATION OF ACTIONS REQUIRED BY, AND THE FILING OF THE INSPECTION FORMS.
- DISTURBED AREAS AND MATERIALS STORAGE AREAS WILL BE INSPECTED FOR EVIDENCE OF OR POTENTIAL FOR POLLUTANTS ENTERING THE STORMWATER.

A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN(S) WILL BE AVAILABLE ON THE SITE AT ALL TIMES.

ONCE ANY EROSION CONTROL MEASURES ARE INSTALLED, THE MAINTENANCE AND INSPECTION PROCEDURES ABOVE SHALL BEGIN. THE CONTRACTOR SHOULD BE AWARE THAT THE INSPECTION FORMS BECOME AN INTEGRAL PART OF THE ESCP AND SHALL BE MADE READILY AVAILABLE TO THE GOVERNMENT INSPECTION OFFICIALS, THE PROJECT OWNER'S ENGINEER, AND THE PROJECT OWNER FOR REVIEW UPON REQUEST DURING VISITS TO THE PROJECT SITE.

INSPECTORS SHOULD BE KNOWLEDGEABLE IN THE PRINCIPLES AND PRACTICE OF EROSION AND SEDIMENT CONTROLS AND POSSESS THE SKILLS TO ASSESS CONDITIONS AT THE CONSTRUCTION SITE THAT COULD IMPACT STORMWATER QUALITY AND TO ASSESS THE EFFECTIVENESS OF ANY SEDIMENT AND EROSION CONTROL MEASURES SELECTED TO CONTROL THE QUALITY OF STORMWATER DISCHARGES FROM THE CONSTRUCTION SITE. THEY SHOULD ALSO HAVE READ AND UNDERSTOOD ALL PORTIONS OF THIS ESCP, INCLUDING THE ESCOP--2.

THE INDIVIDUAL(S) RESPONSIBLE FOR POST-STORM AND STORM EVENT BMP INSPECTIONS, AND THE QUALIFIED PERSON(S) ASSIGNED RESPONSIBILITY TO ENSURE FULL COMPLIANCE WITH THE PERMIT AND IMPLEMENTATION OF ALL ELEMENTS OF THE ESCP, INCLUDING THE PREPARATION OF THE ANNUAL COMPLIANCE EVALUATION AND THE ELIMINATION OF ALL UNAUTHORIZED DISCHARGES ARE:

NAME: _____
 PHONE NUMBER: _____ EMERGENCY PHONE #: _____
 COMPANY: _____
 RESPONSIBILITIES: _____
 NAME: _____
 PHONE NUMBER: _____ EMERGENCY PHONE #: _____
 COMPANY: _____
 RESPONSIBILITIES: _____

RECYCLING AND DISPOSAL METHODS

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

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

MATERIALS COVERED

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

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

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

MATERIAL MANAGEMENT PRACTICES

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

1. GOOD HOUSEKEEPING PRACTICES

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

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

2. HAZARDOUS PRODUCTS

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

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

3. HAZARDOUS WASTES

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

4. CONCRETE AND OTHER WASH WATERS

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

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

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

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

5. SANITARY WASTES

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

6. SOLID AND CONSTRUCTION WASTES

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

7. CONSTRUCTION ACCESS

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

8. PETROLEUM PRODUCTS

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

9. FERTILIZERS AND LANDSCAPE MATERIALS

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

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

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

10. PAINTS, PAINT SOLVENTS AND CLEANING SOLVENTS

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

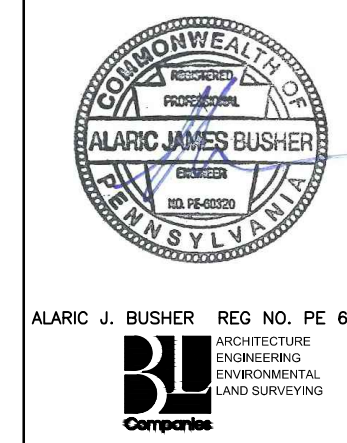
11. CONTAMINATED SOILS

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

12. OFF-SITE WASTE AND BORROW AREAS

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

REVISIONS							TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC						
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	ATLANTIC SUNRISE PROJECT- PROPOSED 42" NATURAL GAS PIPELINE						
0	08/26/2015	BL	ISSUED FOR PADEP SUBMITTAL	W0161505	DAK	AJB	SOIL EROSION & SEDIMENT CONTROL AND LAYOUT PLANS						
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W0161505	DAK	AJB	FOR COMPRESSOR STATION 610						
2	05/27/2016	BL	UPDATED PER BASIN SYSTEMS DESIGN COORDINATION	W0161505	AJB	AJB	ORANGE TOWNSHIP, COLUMBIA COUNTY, PENNSYLVANIA						
3	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0161505	AJB	AJB	SOIL EROSION & SEDIMENT CONTROL NOTES						
4	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0161505	AJB	AJB							
							DRAWN BY:	ADE	DATE:	04/03/15	ISSUED FOR BID:	SCALE:	AS NOTED
							CHECKED BY:	AJB	DATE:	04/03/15	ISSUED FOR CONSTRUCTION:	REVISION:	4
							APPROVED BY:	AJB	DATE:	07/17/15	DRAWING NUMBER:	(66-0610)F-1A-11	SHEET 7
							NO.:	1161505					OF 13



RIP RAP GRADATION, FILTER BLANKET, MAXIMUM VELOCITIES

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

Adapted from PennDOT Pub. 406, Section 703.2(c), Table C

ADAPTED FROM PENNDOT PUB. 406, SECTION 703.2 (c), TABLE C.

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

LIMING AND FERTILIZER RATES

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

PA DEP TABLE 11.2

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

SLOPE SEED MIX

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

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

ROW SEED MIX

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

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

SPECIES TYPE AND SEASON OF PLANTING

Species Type and Season of Planting	
Cover Crops¹	
Cool Season - Spring	March 1 to June 1
Warm Season	June 1 to August 15
Cool Season - Fall	August 15 - October 15
Permanent Crop²	
Spring	April 20 to June 15
Late Fall (dormant)	October 10 - March 1

NOTES:
1. SEEDING DATES FOR COVER CROPS ARE BASED ON DATES REFERENCED BY CLARK, 2002.
2. SEEDING DATES FOR PERMANENT CROPS ARE BASED ON DATES REFERENCED BY LANDSHOOT, 1997 AND DELONG AND BRITTINGHAM, 2002.

SEED AFTER OCTOBER 10 WHEN GROUND TEMPERATURES AT A DEPTH OF 4 INCHES ARE 45 F OR LOWER AND COOLER AIR TEMPERATURES ARE FORECASTED.

DORMANT SEEDING CAN OCCUR UNTIL SOIL IS FROZEN AND ADEQUATE PENETRATION OF THE DRILL SEEDER DOES NOT OCCUR.

COVER CROP SEED MIXES

Cover Crop Seed Mixes				
Warm Season				
Common Name	Crop Type	# PLS/acre	PLS/sq ft	% of Mix
Pearl Millet	Grass	6.9	12.6	70
Sunn Hemp	Legume	10.5	3.6	20
Nitro Radishes	Brassicac	3.1	1.8	10
Total	--	20.5	18.0	100
Cool Season				
Annual ryegrass	Grass	8.0	35.1	65
Red Clover	Legume	3.2	13.5	25
Nitro Radishes	Brassicac	9.4	5.4	10
Total	--	20.6	54.0	100

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

TEMPORARY SEED MIX

TEMPORARY SEEDING SHALL CONSIST OF ANNUAL RYEGRASS (100 PERCENT BY WEIGHT), OR EQUIVALENT, AND SHALL BE PLACED AT THE RATE OF 5 POUNDS PER 1,000 SQUARE YARDS. TEMPORARY SEEDING SHALL BE APPLIED TO THOSE AREAS THAT ARE A POTENTIAL EROSION PROBLEM DURING CONSTRUCTION AND TO THOSE AREAS EXPOSED FOR LONGER THAN 20 CALENDAR DAYS. IF CONDITIONS DO NOT PERMIT TEMPORARY SEEDING, MULCHING SHALL BE EMPLOYED. ADDITIONALLY, NITROGEN FERTILIZER (50-50-50) @ ONE (1) TON PER ACRE, AGRICULTURAL LIME @ ONE (1) TON PER ACRE, AND STRAW MULCH @ THREE (3) TONS PER ACRE, STRAW MULCH SHALL BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN.

PERMANENT SEED MIXTURES COOL & WARM SEASON GRASSES

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

PASTURES

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

SLOPING/FORESTED LAND

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

DROUGHT/ROCKY SITES

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

NON-AGRICULTURAL MEADOWS

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

NATIVE NON-NATIVE FOOD PLOT MIX

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

STORM BASIN MIX

Common Name	Scientific Name	# PLS/acre	PLS/sq ft	% of Mix
Orchardgrass	Dactylis glomerata	0.8	12.0	20%
Timothy	Phleum pratense	0.4	12.0	20%
Switchgrass	Panicum virgatum	1.0	9.0	15%
Virginia Wildrye	Elymus virginicus	7.1	12.0	20%
Fox Sedge	Carex vulpinoidea	0.3	9.0	15%
Oxeye Sunflower	heliopsis	1.3	3.0	5%
Swamp Milkweed	Asclepias incarnata	1.7	3.0	5%
Total	--	12.6	60.0	100%

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

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

BRASSICA MIX

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

SITE SOIL TYPES AND LIMITATIONS

MAP UNIT NAME	MAP UNIT DESIGNATION	SLOPES	SOIL NAME	CUTBANKS CAVE	CORROSIVE TO CONCRETE/STEEL	DROUGHTY	EASILY ERODIBLE	FLOODING	HIGH WATER TABLE	HYDRIC/HYDRIC INCLUSIONS	LOW STRENGTH	SLOW PERCOLATION	PIPING	POOR SOURCE OF TOPSOIL	FROST ACTION	SHRINK-SWELL	POTENTIAL SINKHOLE	PONDING	WETNESS
ALLENWOOD SILT LOAM	AeB2	3-12%	ALLENWOOD	X	C/S				X	X	X	X	X	X	X				
HARLETON CHANNERY SILT LOAM	HhC3	12-20%	HARLETON	X	C	X				X	X	X	X	X					
	HhB2	3-12%		X	C	X					X	X	X	X	X				
WATSON SILT LOAM	WbB2	3-8%	WATSON	X	C/S	X			X	X	X	X	X	X	X				
WEIKERT CHANNERY SILT LOAM	WcC2	12-20%	WEIKERT	X	C/S	X			X	X	X	X	X	X	X				

SOILS LIMITATIONS AND RESOLUTIONS

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

MULCH

- MULCHES SHOULD BE APPLIED AT THE RATES SHOWN IN TABLE 11.6
- STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN. A TRACTOR-DRAWN IMPLEMENT MAY BE USED TO "CRIMP" THE STRAW OR H

THERMAL IMPACT ANALYSIS

IN ORDER TO PREVENT AN INCREASE IN STREAM TEMPERATURE, THIS SITE WILL INCORPORATE THE FOLLOWING BMP'S TO ADDRESS POTENTIAL THERMAL IMPACTS. GRAVEL WILL PRIMARILY BE USED IN LIEU OF ASPHALT FOR PAD CONSTRUCTION TO PREVENT THE COLLECTION AND SUBSEQUENT HEATING OF STORMWATER ON THE SURFACE OF THESE AREAS. THE RECEIVING WATERS FOR THE SITE ARE 1,500' ± FROM THE SITE. VEGETATED SWALE WITH CHECK DAMS AND AN INFILTRATION BASIN WILL BE PROVIDED TO CAPTURE AND AID IN THE INFILTRATION OF THE NET RUNOFF VOLUME INCREASE ASSOCIATED WITH THE TRANSITION FROM PRE-DEVELOPMENT CONDITIONS TO POST-DEVELOPMENT CONDITIONS.

THERMAL IMPACTS ASSOCIATED WITH CPL NORTH, CPL SOUTH, AND ASSOCIATED FACILITIES WILL BE AVOIDED TO THE MAXIMUM EXTENT PRACTICABLE. THE FOLLOWING PROVISIONS RELATED TO THERMAL IMPACTS ARE INCLUDED IN THE E&S PLAN WITHIN SECTION 2 OF THE ESCGP-2 NOI:

- THE MINIMUM PERMANENT CHANGES IN LAND COVER, NECESSARY TO CONSTRUCT THE REQUIRED FACILITIES ARE BEING PROPOSED.
- RUNOFF FROM THE PERMANENT IMPERVIOUS AREAS WILL BE COLLECTED AS PART OF THE POST CONSTRUCTION STORMWATER MANAGEMENT/SITE RESTORATION (PCSM/SR) PLAN AND ROUTED TO PCSM/SR BMP'S. IN ADDITION, IMPERVIOUS AREAS WILL BE GRAVEL INSTEAD OF ASPHALT WHEREVER PRACTICAL.
- PCSM/SR BMP'S INCORPORATE THE USE OF INFILTRATION FACILITIES SUCH AS BASINS AND VEGETATED SWALES WITH EARTHEN CHECK DAMS.
- THE REMOVAL OF VEGETATION, ESPECIALLY TREE COVER, WILL BE LIMITED TO ONLY THAT NECESSARY FOR CONSTRUCTION.
- THE AMOUNT OF IMPERVIOUS SURFACES WILL BE LIMITED TO ONLY THAT NECESSARY TO SUPPORT THE CONSTRUCTION OF THIS FACILITY.

COMPRESSOR STATION SEQUENCE OF CONSTRUCTION

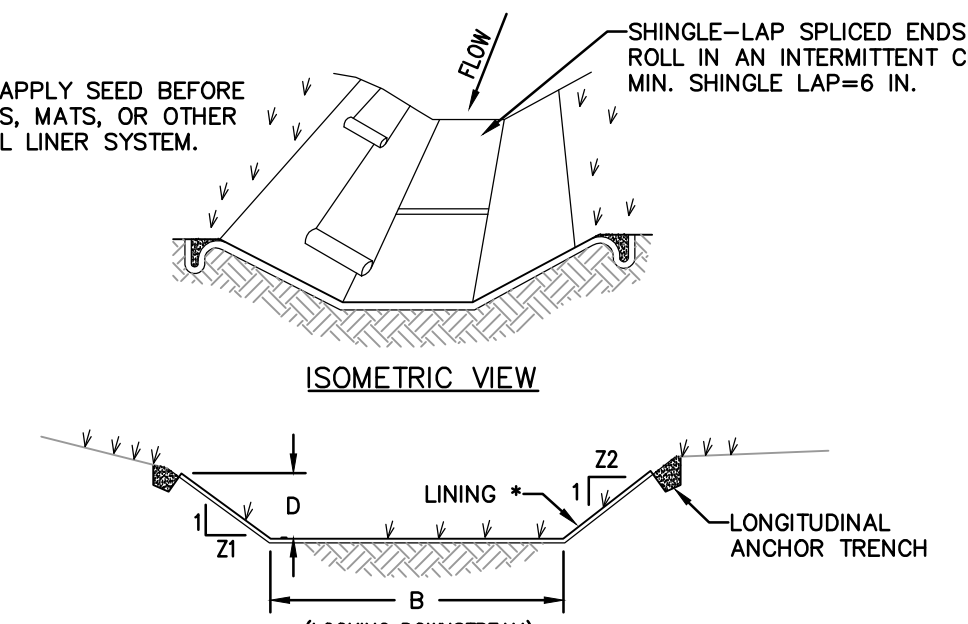
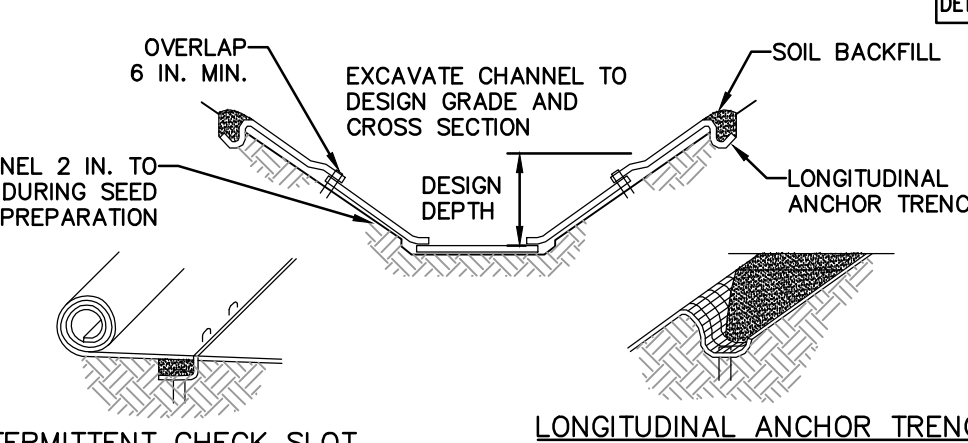
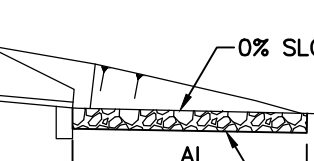
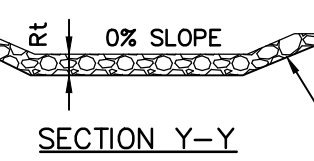
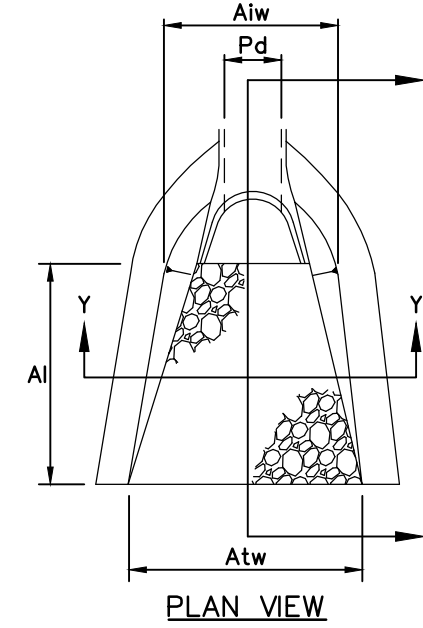
- AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, ENVIRONMENTAL INSPECTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
- AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
- INSTALL ORANGE CONSTRUCTION FENCE AROUND AREAS TO BE PROTECTED.
- LOCATE STAGING AREAS AND ACCESS POINTS INCLUDING CONSTRUCTION ENTRANCES. FIELD LOCATE LIMITS OF DISTURBANCE.
- INSTALL ROCK CONSTRUCTION ENTRANCES (RCE'S).
- 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.
- THE COMPLIANCE MANAGER SHALL PROVIDE PADEP AND CDD AT LEAST THREE DAYS' NOTICE PRIOR TO BULK EARTH DISTURBANCE AND UPON COMPLETED INSTALLATION OF PERIMETER EROSION CONTROLS.
- INSTALL COMPOST FILTER SOCK 2,3, AND 4, INSTALL SWALE 1, IMMEDIATELY SEED AND STABILIZE.
- INSTALL SEDIMENT BASIN 1 BERM INCLUDING CLAY CORE, OUTFALL STRUCTURE, APRON, AND ANTISEEP COLLARS IMMEDIATELY AFTER INSTALLING COMPOST FILTER SOCK 2, 3 AND 4 PRIOR TO ANY OTHER DISTURBANCE ON SITE. EXCAVATE TEMPORARY SWALES TO ALLOW FOR THE DISCHARGE OF THE PAD CULVERTS INTO THE BASIN.
- INSTALL CFS SEDIMENT TRAP.
- INSTALL REMAINDER OF SEDIMENT BASIN 1 INCLUDING SLOPE LINERS, CLEANOUT STAKE, AND ASSOCIATED IMPROVEMENTS.
- INSTALL FILTER SOCK DIVERSIONS 1 AND 2 ONLY AFTER BASIN IS COMPLETED.
- INSTALL VEGETATED ROADSIDE SWALES, CULVERTS AND RIPRAP OUTLET PROTECTION.
- INSTALL EARTHEN CHECK DAMS AND DRAINAGE CHANNEL APRONS AS SOON AS SWALE GRADING IS COMPLETE.
- BEGIN CONSTRUCTION STAKING FOR GRADING.
- BEGIN GRADING AND STRIP AND STOCKPILE TOPSOIL WITHIN THE AREA OF IMPROVEMENTS AND INSTALL SEDIMENT BARRIERS AROUND STOCKPILES.
- UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OF AN ACTIVITY WHERE THE CESSATION OF EARTH DISTURBANCE ACTIVITIES WILL EXCEED FOUR DAYS, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED, OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES. FOR AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OF AN ACTIVITY TO BE CONSIDERED TEMPORARILY STABILIZED, THE DISTURBED AREAS SHALL BE COVERED WITH ONE OF THE FOLLOWING: A MINIMUM UNIFORM COVERAGE OF MULCH AND SEED, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION, OR AN ACCEPTABLE BMP WHICH TEMPORARILY MINIMIZES ACCELERATED EROSION AND SEDIMENTATION. TEMPORARY STABILIZATION WILL NOT OCCUR ON ACTIVE VEHICULAR TRAVEL WAYS WITHIN THE ROW. THE ON-SITE ENVIRONMENTAL INSPECTOR WILL LOG DAILY ACTIVITY WITHIN THE LOD AND NOTIFY THE CONTRACTOR OF AREAS REQUIRING TEMPORARY STABILIZATION (I.E., AREAS WHERE WORK HAS CEASED FOR AT LEAST FOUR DAYS).
- GRADE THE COMPRESSOR STATION PADS AND ACCESS ROADS, INCLUDING STORMWATER RUNOFF CONVEYANCE FEATURES AS SHOWN ON THE E&S AND PCSM/SR PLANS (SECTIONS 2 AND 3 OF THE ESCGP-2 NOI).
- IMMEDIATELY STABILIZE SLOPE SLOPES WITH EROSION CONTROL MATTING WHEN SLOPES ARE 3:1 OR GREATER. SEE PCSM/SR PLANS AND DETAIL SHEETS, AS PROVIDED IN SECTION 3 OF THE ESCGP-2 NOI, (PATTERNS DIFFER BY SLOPE CATEGORY), INSTALL RIP RAP SLOPE STABILIZATION WHERE SHOWN ON THE PCSM/SR PLANS.
- REMOVE FSD 2. MAINTAIN DRAINAGE TO THE SEDIMENT BASIN WHILE PLACING FILL.
- CONSTRUCT FACILITY INCLUDING ACCESS ROADS.
- ESTABLISH FINAL GRADE.
- SPREAD TOPSOIL.
- SURFACE STABILIZATION, APPLY PERMANENT STABILIZATION MEASURES IMMEDIATELY TO ANY DISTURBED AREAS WHERE WORK HAS REACHED FINAL GRADE.
- UPON COMPLETION OF ALL EARTHWORK ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATORS SHALL CONTACT THE LOCAL CDD FOR AN INSPECTION PRIOR TO THE REMOVAL/CONVERSION OF THE E&S BMP'S.
- REMOVE COMPOST FILTER SOCK SEDIMENT TRAP AND IMMEDIATELY SEED AND STABILIZE LANDSCAPE RESTORATION AREAS.
- INSTALL VEGETATED SWALE 3. REMOVE FSD 1.
- AFTER ALL UPSLOPE DISTURBED AREAS ARE STABILIZED, REMOVE ACCUMULATED SEDIMENTS AND RAISE BASIN BOTTOM TO FINAL GRADE. CONVERT SEDIMENT BASIN TO PROPOSED INFILTRATION BASIN, INCLUDING CONSTRUCTION OF BERM, BERM DIVERSION PIPING, LEVEL SPREADER AND INFILTRATION AREA LOCATED WITHIN DRIVE ISLAND AND PLACE ENGINEERED SOIL. REMOVE TEMPORARY SKIMMER FROM PERMANENT OUTLET STRUCTURE AND INSTALL WATERTIGHT PLUG IN ORIFICE. REMOVE TEMPORARY PLATE OVER PERMANENT ORIFICE IN OUTLET STRUCTURE AND INSTALL TOP GRATE.
- ALL MATERIAL REMOVED FROM TEMPORARY BASINS, TRAPS AND INFILTRATION BERMS TO BE REMOVED FROM SITE.
- AFTER FINISH GRADING AND TOPSOIL PLACEMENT IS COMPLETED, DISTURBED AREAS SHALL BE FERTILIZED, SEEDED, AND MULCHED. SEED MIXTURES, FERTILIZER AND MULCH APPLICATIONS RATES AND DATES SHALL CONFORM TO THE TABLES PROVIDED ON THE PCSM/SR PLANS AND DETAIL SHEETS (SECTION 3 OF THE ESCGP-2 NOI), LAND OWNER AGREEMENTS AND/OR THE ECP (SECTION 4 OF THE ESCGP-2 NOI).
- AFTER SEEDING, FERTILIZING AND MULCHING IS COMPLETE, INSTALL ECBS AS REQUIRED OR ORDERED OR ON SLOPES OF 3:1 OR GREATER.
- AFTER THE SITE IS PERMANENTLY STABILIZED AND UPON PADEP OR LOCAL CDD AND OWNER APPROVAL OF STABILIZATION AND RE-VEGETATION, REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AND STABILIZE AREAS DISTURBED BY REMOVAL. COMPLETE SITE STABILIZATION, INCLUDING SEED APPLICATION, ECB AND MULCHING.
- UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATORS SHALL CONTACT THE LOCAL CDD FOR A FINAL INSPECTION.
- MAINTAIN E&S BMP'S UNTIL THE WORK IS COMPLETE AND UNIFORM 70% PERENNIAL VEGETATIVE COVER IS ESTABLISHED.
- REMOVE AND PROPERLY DISPOSE/RECYCLE E&S BMP'S. REMOVE ORANGE CONSTRUCTION FENCE. REPAIR AND PERMANENTLY STABILIZE AREAS DISTURBED DURING E&S BMP REMOVAL. UPON ESTABLISHMENT OF UNIFORM 70% VEGETATIVE COVER.

ACID-PRODUCING SOILS AND BEDROCK CONTROL PLAN

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

ACID-PRODUCING SOILS AND BEDROCK CONTROL PLAN:

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



PREPARE SOIL AND APPLY SEED BEFORE INSTALLING BLANKETS, MATS, OR OTHER TEMPORARY CHANNEL LINER SYSTEM.

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

NOTES:

ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF SWALE IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.

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

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

OUTLET NO.	PIPE DIA PD (IN)	RIPRAP		APRON		
		SIZE (R-...)	THICK. Rt (IN)	LENGTH AI (FT)	INITIAL WIDTH AIw (FT)	TERMINAL WIDTH (Atw) (FT)
EW-1	18	4	18	8	5	13
EW-3	18	5	27	15	5	20
EW-4	14"x23"	4	18	8	5	13
EW-6	36	5	27	14	9	23

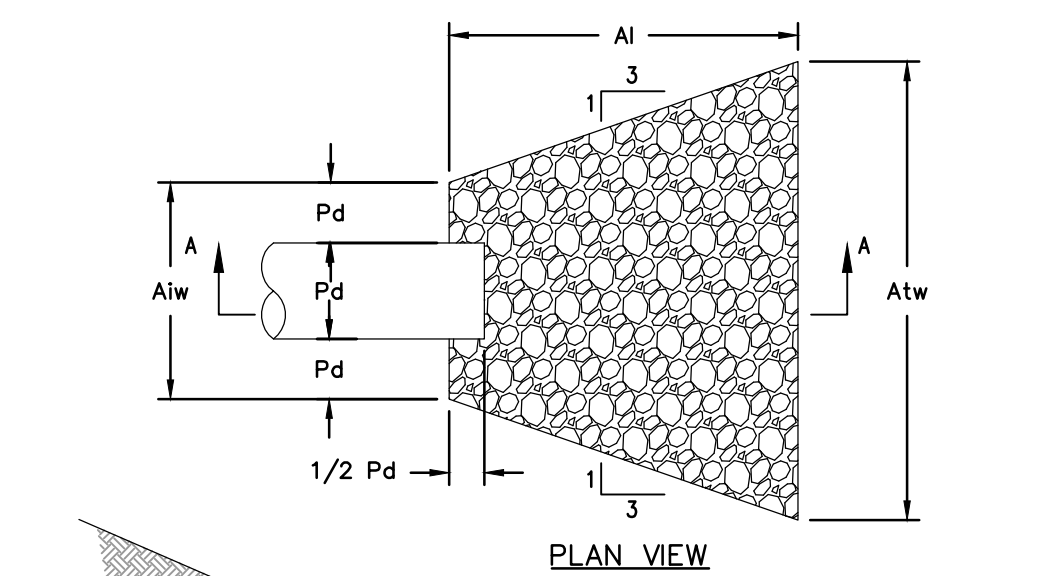
NOTES:

ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING SWALES.

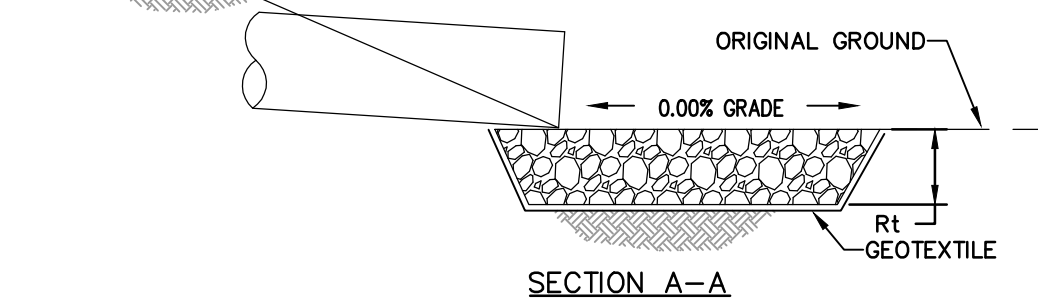
ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

RIP-RAP APRON AT PIPE OUTLET WITH FLARED END SECTION OR ENDWALL

N.T.S



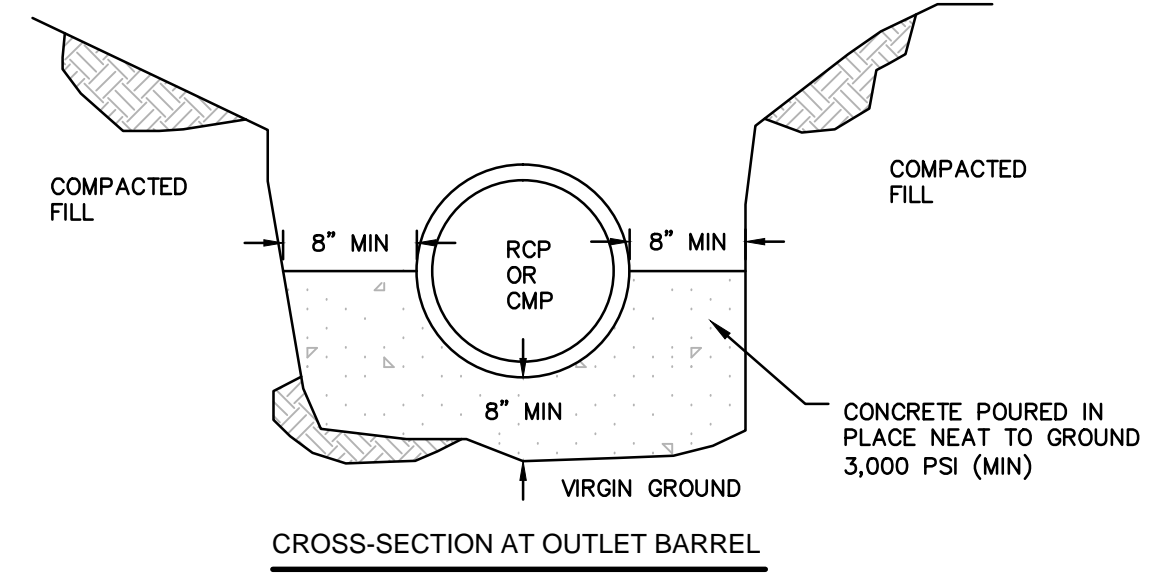
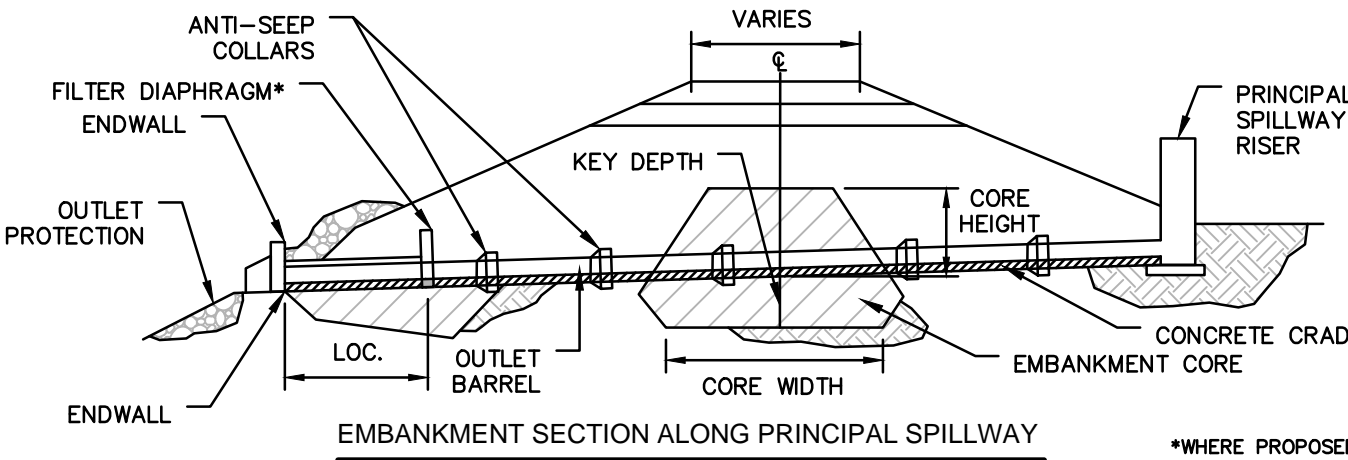
NOTE: THIS WILLIAMS STANDARD DETAIL IS BASED ON PADEP STANDARD CONSTRUCTION DETAIL #9-2.



OUTLET NO.	PIPE DIA PD (IN)	RIPRAP		APRON		
		SIZE (R-...)	THICK. Rt (IN)	LENGTH AI (FT)	INITIAL WIDTH AIw (FT)	TERMINAL WIDTH Atw (FT)
* ALL INFORMATION CAN BE FOUND ON ACCESS ROAD AND EROSION AND SEDIMENT CONTROL PLANS. REFER TO NOTES 4 AND 5 FOR DIMENSION LOCATIONS.						

NOTES:

- ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN ON THE PLANS. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.
- ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.
- EXTEND RIPRAP ON BACK SIDE OF APRON TO AT LEAST 1/2 DEPTH OF PIPE ON BOTH SIDES TO PREVENT SCOUR AROUND THE PIPE.
- FOR APRONS ON ACCESS ROADS, THE DIMENSIONS FOR THE APRONS ARE GIVEN AS FOLLOWS: L x D x W/W WHERE: L = LENGTH OF APRON OR "A" AS SHOWN IN THE PLAN VIEW ABOVE
D = DEPTH OF RIP RAP OR "R" AS SHOWN IN THE SECTION ABOVE
W/W = WIDTH OF SHORT END OF APRON/WIDTH OF LONG END OF APRON OR "AIw"/"Atw" AS SHOWN IN THE PLAN VIEW ABOVE
- FOR APRON ON SWALES AND FLUME CROSSINGS, THE DIMENSIONS FOR THE APRONS ARE AS FOLLOWS: DIMENSIONS LOCATED ON TABLE 2: TEMPORARY CLEAN WATER DIVERSION SUMMARY:
 - RIP RAP SIZE (R-...) UNDER WATERBODY
 - APRON INITIAL WIDTH AND TERMINAL WIDTH IS TWO FEET FOR FILTER SOCK DIVERSIONS AND SWALES.
 - RIP RAP THICKNESS (Rt)
 - APRON LENGTH (A)



NOTE: A CONCRETE CRADLE MAY BE USED IN CONJUNCTION WITH ANTI-SEEP COLLARS AND/OR FILTER DIAPHRAGM.

ANTI-SEEP COLLAR NUMBER, SIZE AND SPACING SHALL BE AS SHOWN ELSEWHERE IN PLAN.

FILTER DIAPHRAGM LOCATION (LOC.) SHALL BE AS SHOWN IN FIGURE 7.8 FOUND IN PENNSYLVANIA DEP EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL.

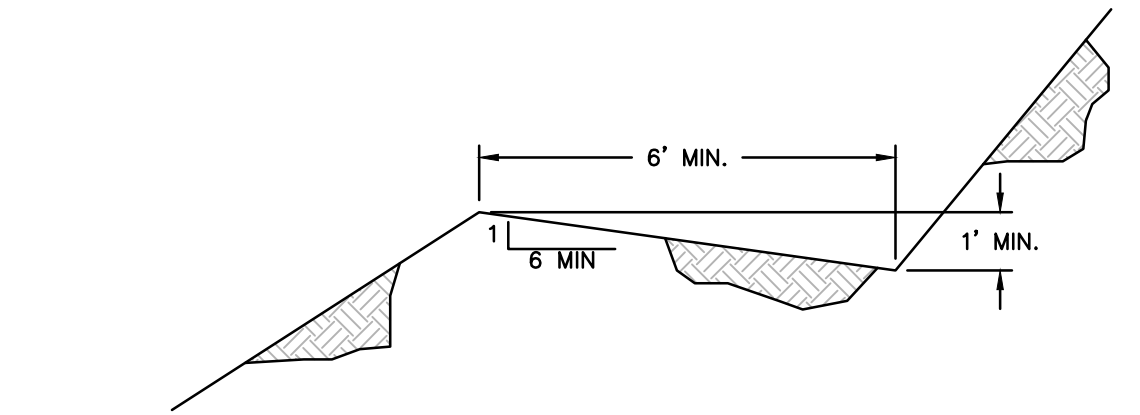
PA DEP 7-17 CONCRETE CRADLE FOR BASIN OR TRAP OUTLET BARREL DETAIL

N.T.S

VEGETATED SWALE

N.T.S

SWALE NO.	BOTTOM WIDTH B (FT)	DEPTH D (FT)	SWALE SUMMARY TABLE		TEMPORARY LINING*	PERMANENT LINING	
			Z1 (FT)	Z2 (FT)			
VEGETATED SWALE 1	2.0	2.0	10.0	2.0	2.0	SC250	GRASS/SC250
VEGETATED SWALE 2	2.0	2.0	14.0	3.0	3.0	SC250	GRASS/SC250
VEGETATED SWALE 3	2	2	14	3	3	W3000	GRASS/W3000
FSD 1	0.0	1.6	22.0	0.0	11.0	SC250	GRASS/SC250
FSD 2	0.0	1.6	35.0	0.0	17.5	S75	GRASS
FSD 3	0.0	1.6	22.0	0.0	11.0	SC250	GRASS/SC250
BENCH 1	0.0	1	6.0	3.0	6.0	SC250	GRASS/SC250
BENCH 2	0.0	1	6.0	3.0	6.0	SC250	GRASS/SC250



BENCHES SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT.

BENCHES SHALL BE MAINTAINED TO DESIGN DIMENSIONS AT ALL TIMES.

NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION.

BENCH DETAIL

N.T.S PADEP-6-6

INTERIM AND PERMANENT STABILIZATION

- INTERIM STABILIZATION

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

THE INSTALLATION OF AN EROSION CONTROL BLANKET OR APPLICATION OF STRAW MULCH UPON SEEDED AREAS ARE BOTH CONSIDERED TO BE INTERIM STABILIZATION BMP'S TO PROTECT THE SEEDED UNTIL VEGETATION IS ESTABLISHED.
- PERMANENT STABILIZATION

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

THE INSTALLATION OF PAVEMENT, ROCK RIP RAP, OR CABIONS ARE SOME EXAMPLES OF STABILIZATION. THE STANDARD FOR VEGETATIVE COVER AS STABILIZATION IS PERENNIAL VEGETATION THAT IS ESTABLISHED WITH A UNIFORM COVERAGE DENSITY OF 70% ACROSS THE DISTURBED AREA. THE APPLICATION OF LIME, FERTILIZERS, SEED, AND MULCH IS USUALLY DONE TO ACHIEVE PERMANENT STABILIZATION. THE MULCH IS CONSIDERED TO BE AN INTERIM STABILIZATION MEASURE TO ASSIST IN THE ESTABLISHMENT OF THE PERMANENT VEGETATIVE COVER.
- STABILIZATION DURING NON-GROWING SEASONS

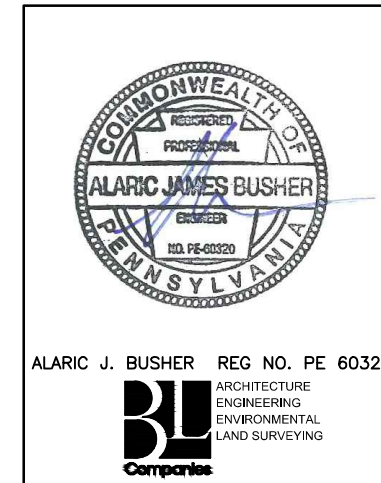
WHEN UTILITY CONSTRUCTION MUST BE DONE AND IS COMPLETED DURING A NON-GROWING SEASON, INTERIM STABILIZATION BMP'S MUST BE IMPLEMENTED AND ADEQUATELY MAINTAINED. THE APPLICATION OF STRAW MULCH AT THE RATE OF 3.0 TONS PER ACRE IS REQUIRED. THE BMP'S SHOULD BE INSPECTED WEEKLY (UNLESS SNOW COVERED) AND AFTER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

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

OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP		APRON		
		SIZE (R-...)	THICK. Rt (IN)	LENGTH AI (FT)	INITIAL WIDTH AIw (FT)	TERMINAL WIDTH (Atw) (FT)
VEGETATED SWALE 1	NA	3	9	8	13	13
VEGETATED SWALE 2	NA	3	9	6	9	9
VEGETATED SWALE 3	NA	4	18	12	9	18
BENCH 1	NA	3	9	6	9	9
BERM DIVERSION	12	3	9	6	3	9
CULVERT 2	30	5	27	16	8	24
CULVERT 5	30	5	27	16	8	24
FSD 1	12	4	18	8	3	11
FSD 2	12	4	18	8	3	11
FSD 3	18	4	18	10	5	15

RIP-RAP APRON AT PIPE OUTLET WITHOUT FLARED END SECTION

N.T.S

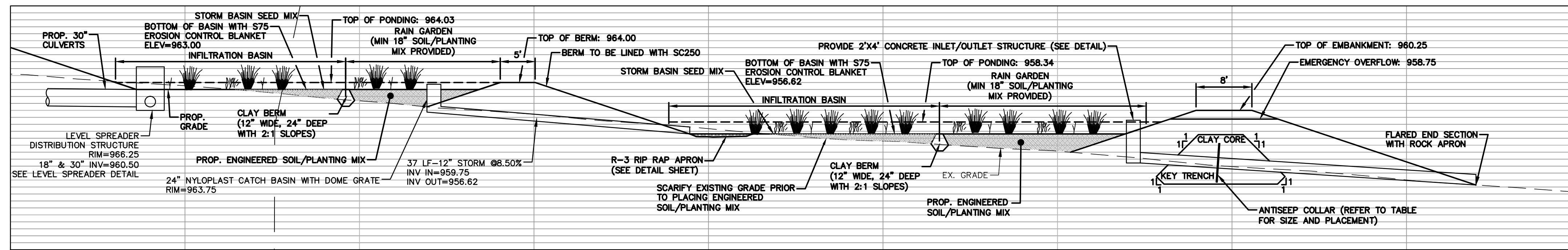


REVISIONS			
NO.	DATE	BY	DESCRIPTION
0	08/26/2015	BL	ISSUED FOR PADEP SUBMITTAL
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL
2	05/27/2016	BL	UPDATED PER BASIN SYSTEMS DESIGN COORDINATION
3	04/10/2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1
4	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC			
ATLANTIC SUNRISE PROJECT- PROPOSED 42" NATURAL GAS PIPELINE			
SOIL EROSION & SEDIMENT CONTROL AND LAYOUT PLANS			
FOR COMPRESSOR STATION 610			
ORANGE TOWNSHIP, COLUMBIA COUNTY, PENNSYLVANIA			
SOIL EROSION & SEDIMENT CONTROL NOTES AND DETAILS			
DRAWN BY:	ADE	DATE:	04/03/15
CHECKED BY:	AJB	DATE:	04/03/15
APPROVED BY:	AJB	DATE:	07/17/15
NO.	1161505	DATE:	04/03/15

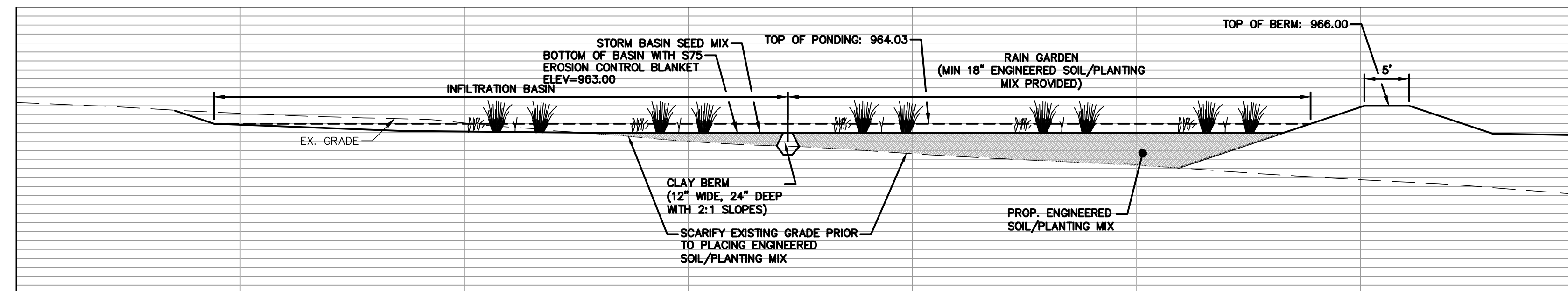


Drawn By & Date/Time: hthomas Apr 25, 2017 8:41am
 Drawing Location & Name: G:\0851\14C\1404909\DWG\020-CPLS\FCS_EC14C4909(20N)_610.dwg



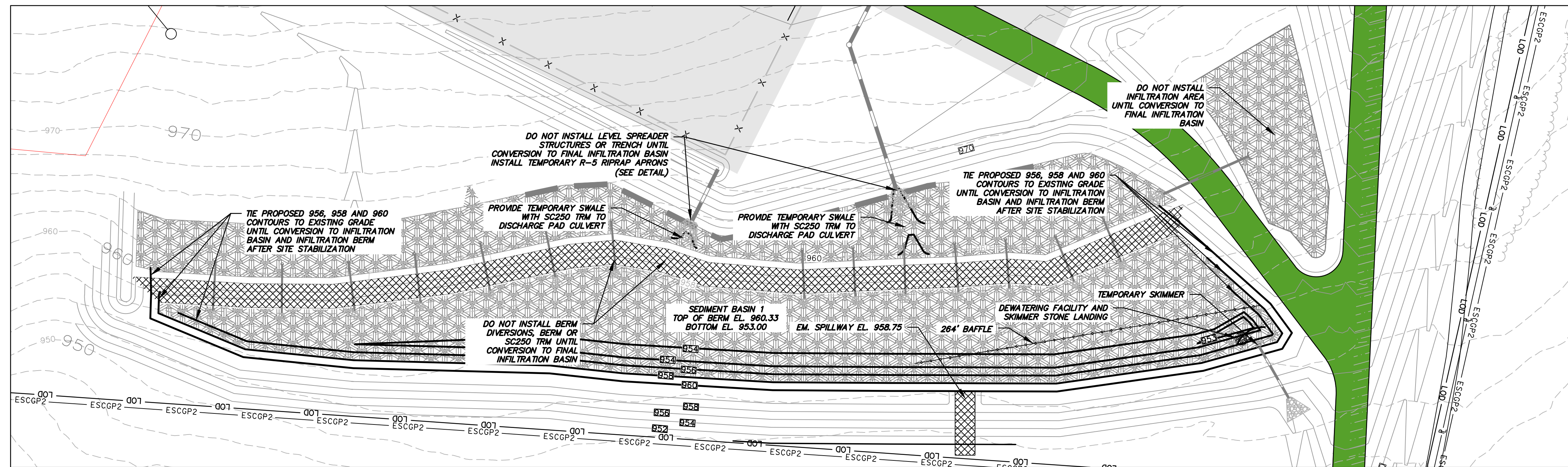
**INFILTRATION AREA 1 & 2 CROSS SECTION
(MAIN BASIN)**

N.T.S.
 NOTE:
 1. CLAY CORE SHALL BE COMPOSED OF CL, CH, MH OR CL-ML SOILS WITH A PERMEABILITY LESS THAN OR EQUAL TO 1.0×10^{-5} CM/S. MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 95% MAXIMUM DENSITY PER ASTM-D 1557; WITHIN $\pm 3\%$ OPTIMUM MOISTURE CONTENT.



**INFILTRATION AREA 1 CROSS SECTION
(LOCATED IN DRIVE ISLAND)**

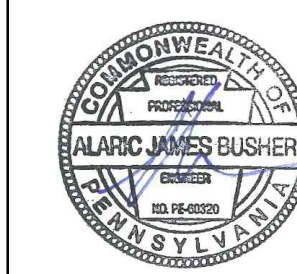
N.T.S.



SEDIMENT BASIN 1 ENLARGEMENT

SCALE: 1" = 50'

INFILTRATION & RAIN GARDENS WITH S75 EROSION CONTROL BLANKET

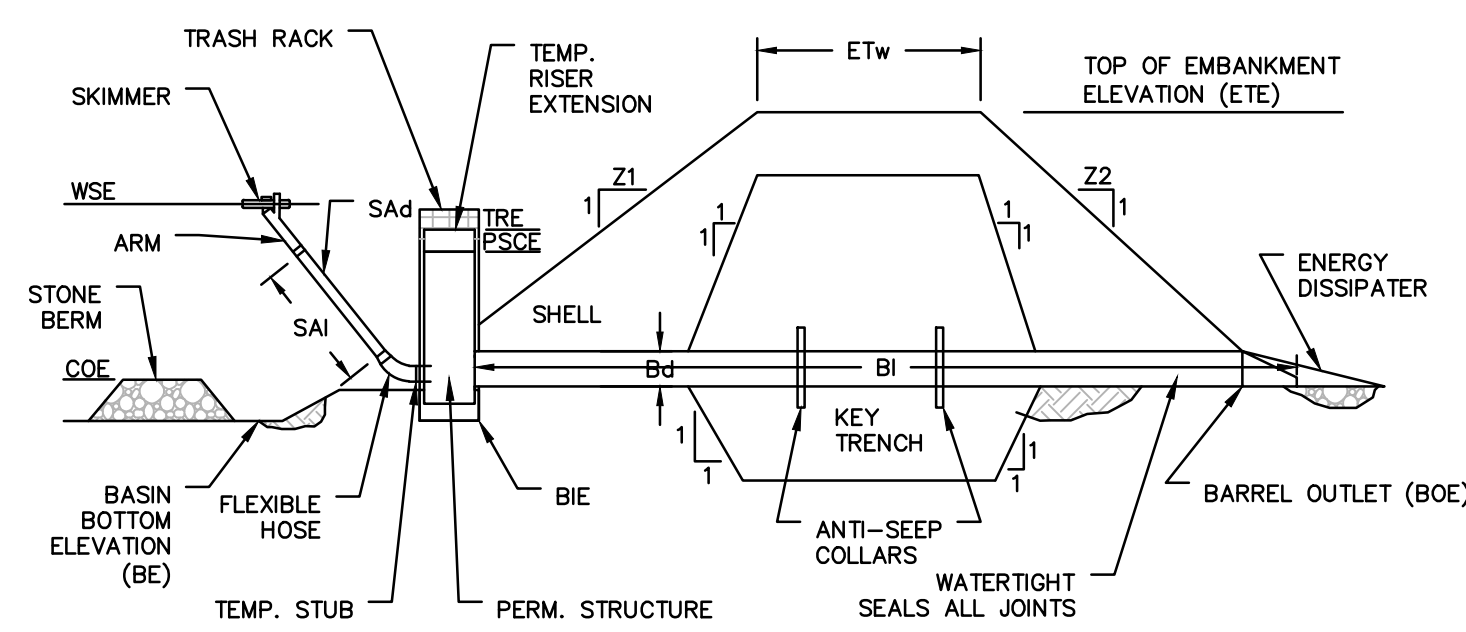


ALARIC J. BUSHER REG. NO. PE 60320
 ARCHITECTURE
 ENGINEERING
 ENVIRONMENTAL
 LAND SURVEYING
 COMPANIES

REVISIONS						
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
0	08/26/2015	BL	ISSUED FOR PADEP SUBMITTAL	W0161505	DAK	AJB
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W0161505	DAK	AJB
2	05/27/2016	BL	UPDATED PER BASIN SYSTEMS DESIGN COORDINATION	W0161505	DAK	AJB
3	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0161505	AJB	AJB
4	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0161505	AJB	AJB

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC			
ATLANTIC SUNRISE PROJECT- PROPOSED 42" NATURAL GAS PIPELINE			
SOIL EROSION & SEDIMENT CONTROL AND LAYOUT PLANS			
FOR COMPRESSOR STATION 610			
ORANGE TOWNSHIP, COLUMBIA COUNTY, PENNSYLVANIA			
SOIL EROSION & SEDIMENT CONTROL DETAILS			
DRAWN BY:	AJB	DATE:	04/03/15
CHECKED BY:	AJB	DATE:	04/03/15
APPROVED BY:	AJB	DATE:	07/17/15
W.O. NUMBER:	1161505	ISSUED FOR:	ISSUED FOR CONSTRUCTION
SCALE:	AS NOTED	REVISION:	4
DRAWING NUMBER:	(66-0610)F-1A-11	SHEET:	10
		OF:	13





BASIN NO.	Z1 (FT)	Z2 (FT)	TEMP RISER EXT. ELEV. TRE (FT)	EMBANKMENT			CLEAN OUT ELEV. COE (FT)	BOTTOM ELEV. BE (FT)
				TOP ELEV. ETE (FT)	TOP WIDTH ETW (FT)	KEY TRENCH DEPTH (FT)		
1	3	3	958.59	960.33	8	4	955.28	953.00

SKIMMER			OUTLET BARREL				
DIA Sd (IN)	LENGTH SAI (FT)	MAT'L	DIA Bd (FT)	INLET ELEV. BIE (FT)	MAT'L	LENGTH BI (FT)	OUTLET ELEV. BOE (FT)
4	5.0	PVC	18	952.45	RCP	45	952.00

SEDIMENT BASINS INCLUDING ALL APPURTENANT WORKS, SHALL BE CONSTRUCTED TO THE DETAIL AND DIMENSIONS SHOWN ON THE E&S PLAN DRAWINGS.

AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO A DEPTH OF TWO FEET PRIOR TO ANY PLACEMENT AND COMPACTION OF EARTHEN FILL. IN ORDER TO FACILITATE MAINTENANCE AND RESTORATION, THE POOL AREA SHALL BE CLEARED OF ALL BRUSH, TREES, AND OBJECTIONABLE MATERIAL. FILL MATERIAL FOR THE EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN LAYERED LIFTS OF NOT MORE THAN 6" TO 9". THE MAXIMUM ROCK SIZE SHALL BE NO GREATER THAN 2/3 THE LIFT THICKNESS.

UPON COMPLETION, THE EMBANKMENT SHALL BE SEEDED, MULCHED, BLANKETED OR OTHERWISE STABILIZED ACCORDING TO THE SPECIFICATIONS OF THE E&S PLAN DRAWINGS. TREES SHALL NOT BE PLANTED ON THE EMBANKMENT.

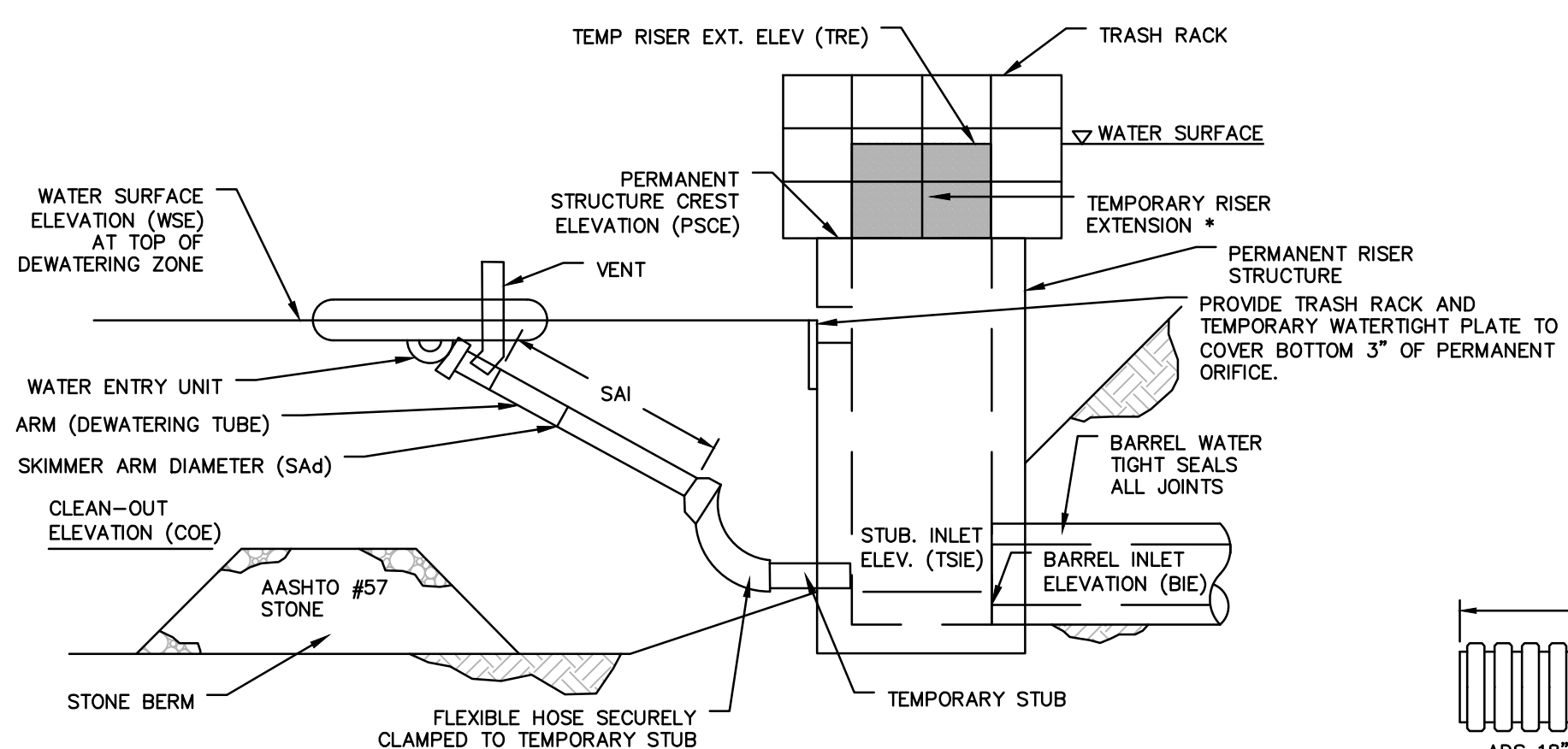
INSPECT ALL SEDIMENT BASINS ON AT LEAST A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. PROVIDE ACCESS FOR SEDIMENT REMOVAL AND OTHER REQUIRED MAINTENANCE ACTIVITIES. A CLEAN OUT STAKE SHALL BE PLACED NEAR THE CENTER OF EACH BASIN. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED THE CLEAN OUT ELEVATION ON THE STAKE AND THE BASIN RESTORED TO ITS ORIGINAL DIMENSIONS. DISPOSE OF MATERIALS REMOVED FROM THE BASIN IN THE MANNER DESCRIBED IN THE E&S PLAN.

BASIN EMBANKMENTS, SPILLWAYS, AND OUTLETS SHALL BE INSPECTED FOR EROSION, PIPING AND SETTLEMENT. NECESSARY REPAIRS SHALL BE IMMEDIATE. DISPLACED RIPRAP WITHIN THE OUTLET ENERGY DISSIPATOR SHALL BE REPLACED IMMEDIATELY.

ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISTURBED AREAS SHALL BE STABILIZED INSIDE THE BASIN BEFORE CONVERSION TO A STORMWATER MANAGEMENT FACILITY. THE DEVICE SHOWN IN STANDARD CONSTRUCTION DETAIL #7-16 (CONCRETE ANTI-SEEP COLLAR FOR PERMANENT BASINS OR TRAPS) MAY BE USED TO DEWATER SATURATED SEDIMENT PRIOR TO ITS REMOVAL. ROCK FILTERS SHALL BE ADDED AS NECESSARY.

SEDIMENT BASIN EMBANKMENT AND SPILLWAY DETAILS - SKIMMER DETAIL

N.T.S. PADEP-7-4



BASIN NO.	WATER SURFACE ELEV. WSE (FT)	SKIMMER			FLEXIBLE HOSE			
		ORIFICE DIA (IN)	HEAD (FT)	ARM DIA Sd (IN)	LENGTH SAI (FT)	MAT'L	DIA (IN)	LENGTH (FT)
1	957.68	3	0.21	4	5	PVC	4	3

TEMPORARY STUB	PERMANENT RISER	RISER EXTENSION	BARREL								
				INSIDE DIA (IN)	INVERT ELEV. TSIE (FT)	MAT'L	CREST ELEV. PSCE (FT)	FLEXIBLE HOSE LENGTH (IN)	WIDTH (IN)	CREST ELEV. TRE (FT)	HORIZ. OPENING LENGTH (IN)
4	955.28	PVC	958.59	3	4	N/A	N/A	N/A	N/A	N/A	952.45

MALL ORIFICES ON PERMANENT RISER BELOW TEMPORARY RISER EXTENSION SHALL HAVE WATER-TIGHT TEMPORARY SEALS PROVIDED. TEMPORARY STUB INVERT ELEVATION SHALL BE SET AT OR BELOW SEDIMENT CLEAN-OUT ELEVATION.

A ROPE SHALL BE ATTACHED TO THE SKIMMER ARM TO FACILITATE ACCESS TO THE SKIMMER ONCE INSTALLED. SKIMMER SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT.

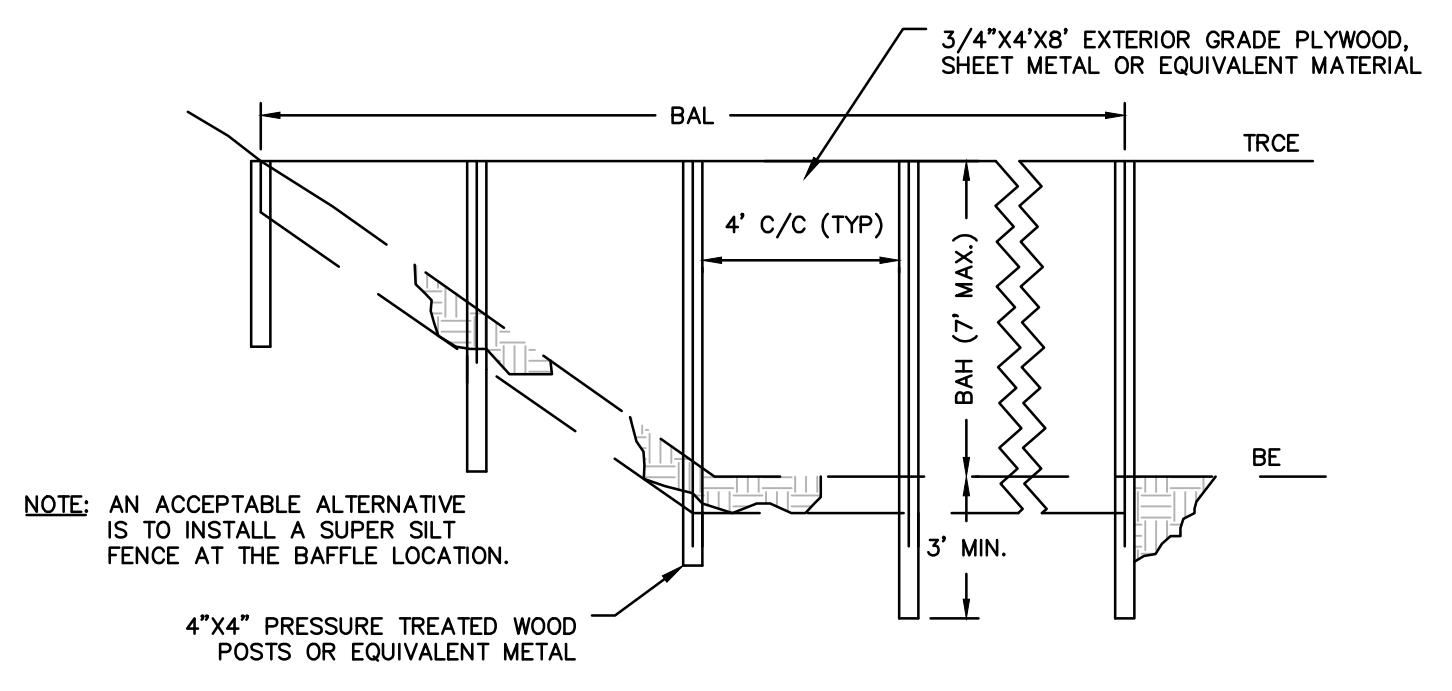
ANY MALFUNCTIONING SKIMMER SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF INSPECTION.

ICE OR SEDIMENT BUILDUP AROUND THE PRINCIPAL SPILLWAY SHALL BE REMOVED SO AS TO ALLOW THE SKIMMER TO RESPOND TO FLUCTUATING WATER ELEVATIONS.

SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE LEVEL MARKED ON THE SEDIMENT CLEAN-OUT STAKE OR THE TOP OF THE STONE BERM. SEE STANDARD CONSTRUCTION DETAIL #7-3 (SKIMMER WITH STONE LANDING BERM) FOUND IN PENNSYLVANIA DEP EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL.

SKIMMER ATTACHED TO A PERMANENT RISER DETAIL

N.T.S. PADEP-7-2



NOTE: AN ACCEPTABLE ALTERNATIVE IS TO INSTALL A SUPER SILT FENCE AT THE BAFFLE LOCATION.

IN POOLS WITH DEPTHS EXCEEDING 7', THE TOP OF THE PLYWOOD BAFFLE DOES NOT NEED TO EXTEND TO THE TEMPORARY RISER CREST. SUPER SILT FENCE BAFFLES NEED NOT EXTEND TO TRCE ELEVATION.

BASIN OR TRAP NO.	LENGTH BAL (FT)	HEIGHT BAH (FT)	CREST ELEV. TRCE (FT)	BOTTOM ELEV. BE (FT)
1	264	5.59	958.59	953.00

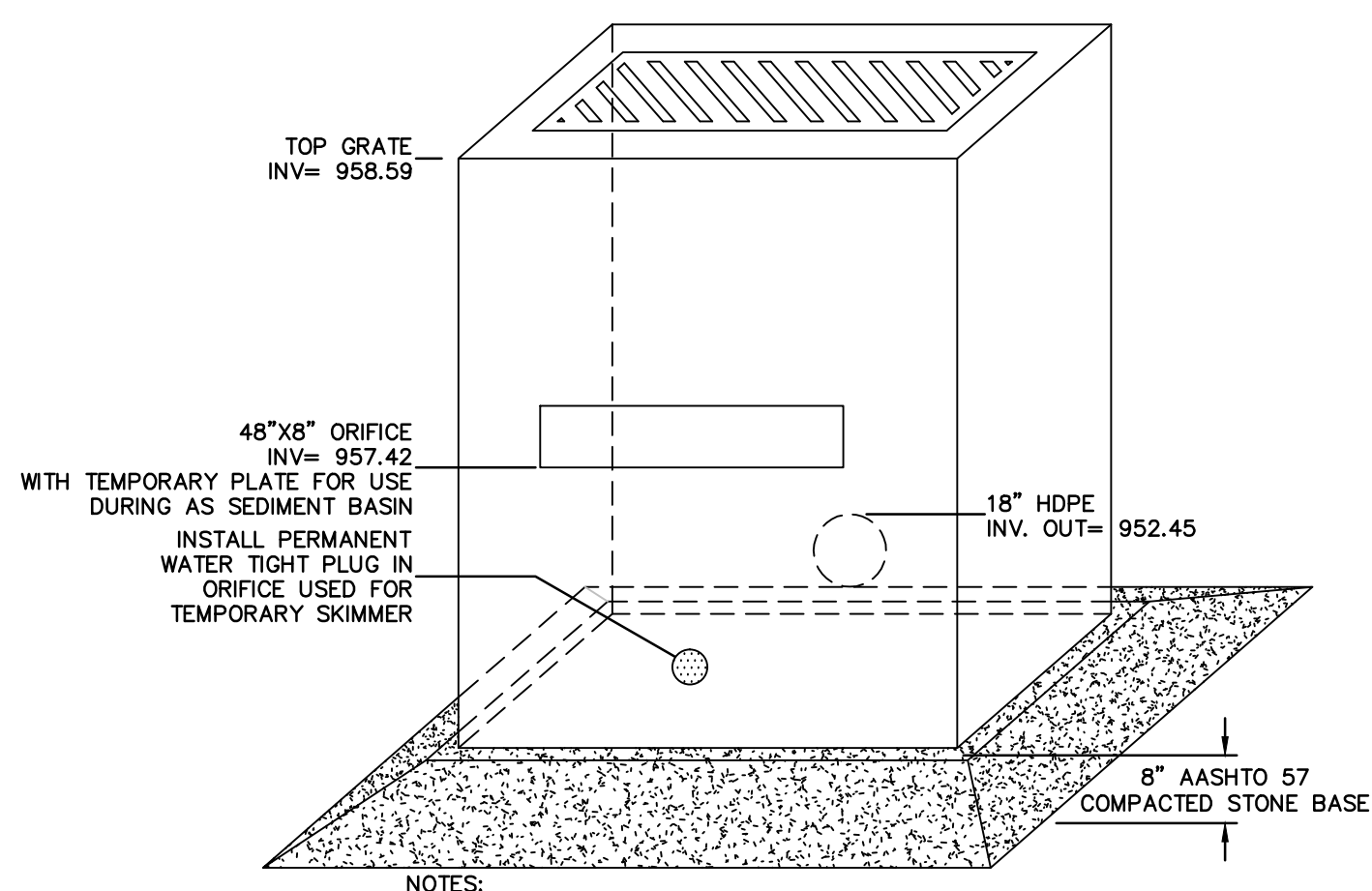
SEE APPROPRIATE BASIN DETAIL FOR PROPER LOCATION AND ORIENTATION. BAFFLES SHALL BE TIED INTO ONE SIDE OF THE BASIN UNLESS OTHERWISE SHOWN ON THE PLAN DRAWINGS.

SUBSTITUTION OF MATERIALS NOT SPECIFIED IN THIS DETAIL SHALL BE APPROVED BY THE DEPARTMENT OR THE LOCAL CONSERVATION DISTRICT BEFORE INSTALLATION.

DAMAGED OR WARPED BAFFLES SHALL BE REPLACED WITHIN 7 DAYS OF INSPECTION. BAFFLES REQUIRING SUPPORT POSTS SHALL NOT BE INSTALLED IN BASINS REQUIRING IMPERVIOUS LINERS.

BAFFLE

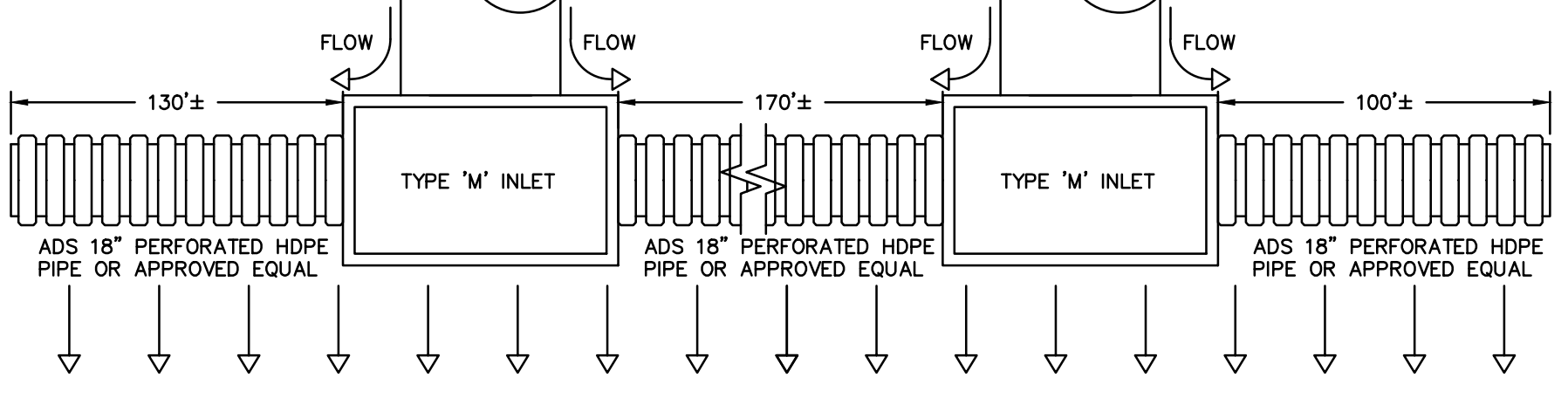
N.T.S. PADEP-7-14



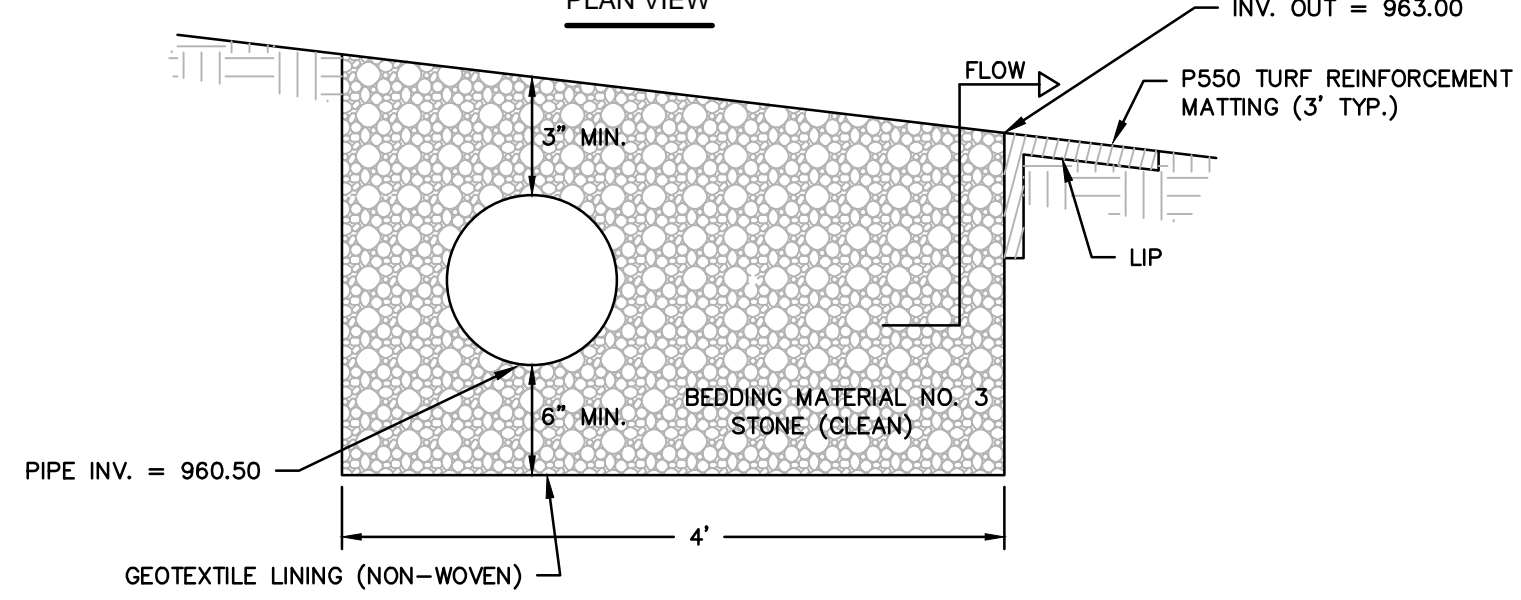
- THE PROPOSED OUTLET STRUCTURE SHALL BE A TYPE 'M' INLET IN ACCORDANCE WITH PENNDOT PUBLICATION 408, SECTION 605 AND STANDARDS FOR ROADWAY CONSTRUCTION, RC-34.
- OUTLET STRUCTURE SHALL CONTAIN A TRASH RACK.
- FILL INLET BOX WITH 6" OF CONCRETE BELOW INVERT.

INFILTRATION AREA PERMANENT OUTLET STRUCTURE

N.T.S.



PLAN VIEW

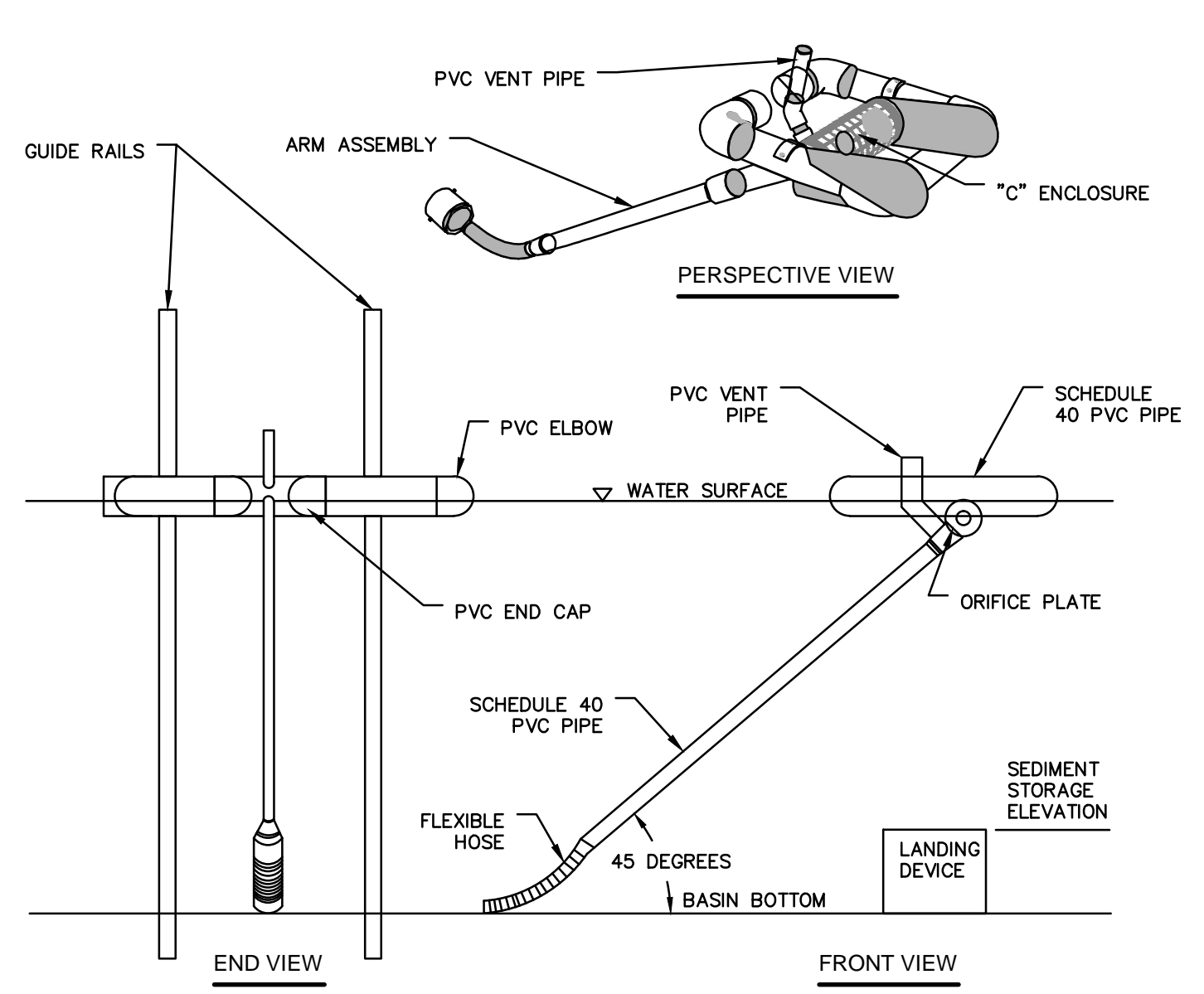


PROFILE VIEW

LEVEL SPREADER WITH SUBSURFACE DISCHARGE

N.T.S.

LEVEL SPREADER SUMMARY TABLE			
LEVEL SPREADER NO.	LENGTH (L) (FT)	PIPE INVERT	SPREADER INVERT OUT
BASIN 1	400	960.50	963.00



BASIN NO.	WATER SURFACE ELEVATION (FT)	ARM LENGTH (FT)	ARM DIA. (IN)	ORIFICE SIZE* (IN)	TOP OF LANDING DEVICE ELEV. (FT)	FLEXIBLE HOSE LENGTH (IN)	FLEXIBLE HOSE ATTACHMENT ELEV. (FT)
1	957.68	5	4	3	955.28	3	955.28

*MUST BE EQUAL TO OR LESS THAN ARM DIAMETER. A ROPE SHALL BE ATTACHED TO THE SKIMMER ARM TO FACILITATE ACCESS TO THE SKIMMER ONCE INSTALLED. SKIMMER SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT.

ANY MALFUNCTIONING SKIMMER SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF INSPECTION.

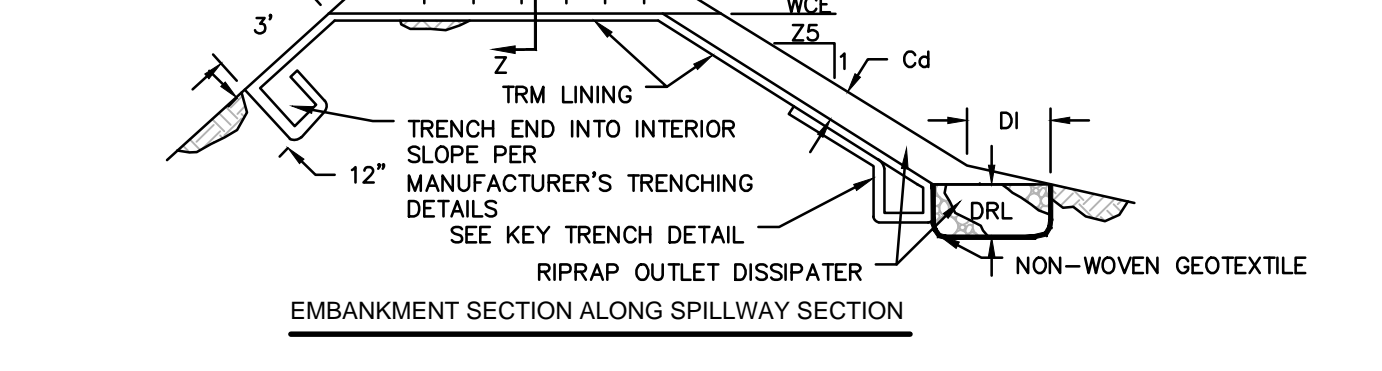
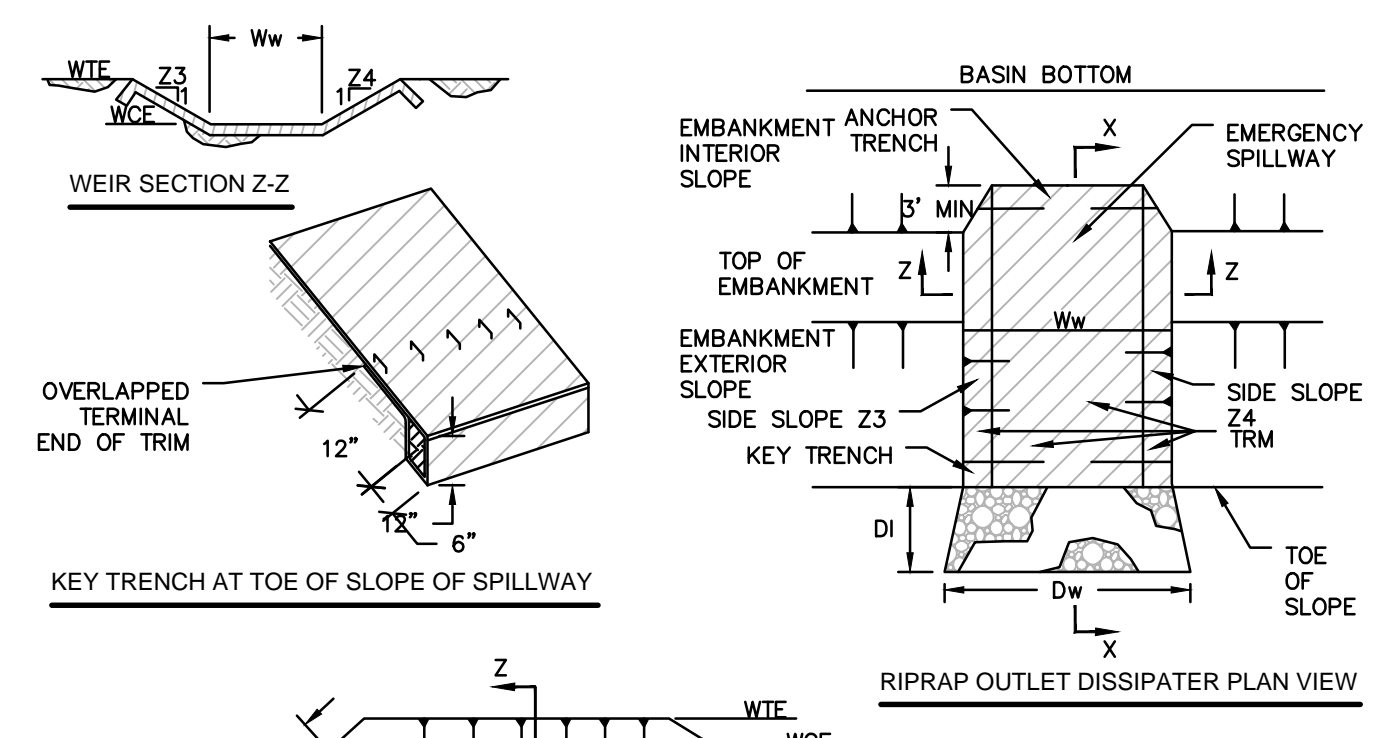
ICE OR SEDIMENT BUILDUP AROUND THE PRINCIPAL SPILLWAY SHALL BE REMOVED SO AS TO ALLOW THE SKIMMER TO RESPOND TO FLUCTUATING WATER ELEVATIONS.

SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE LEVEL MARKED ON THE SEDIMENT CLEAN-OUT STAKE OR THE TOP OF THE LANDING DEVICE.

A SEMI-CIRCULAR LANDING ZONE MAY BE SUBSTITUTED FOR THE GUIDE RAILS (PADEP #7-3 SKIMMER WITH STONE LANDING BERM, FOUND IN PENNSYLVANIA DEP EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL.)

SKIMMER DETAIL

N.T.S. PADEP-7-1



BASIN NO.	Z3 (FT)	Z4 (FT)	WEIR TOP ELEV. WTE (FT)	CREST ELEV. WCE (FT)	WIDTH Ww (FT)	TRM TYPE	STAPLE PATTERN	Z5 (FT)	DEPTH Dd (FT)	LENGTH DI (FT)	WIDTH Dd (FT)	RIPRAP SIZE (R-...)	RIPRAP THICK. DRT (IN)
2	3	3	960.33	958.75	15	W3000	NA	N/A	1.25	SEE APRON TABLE			

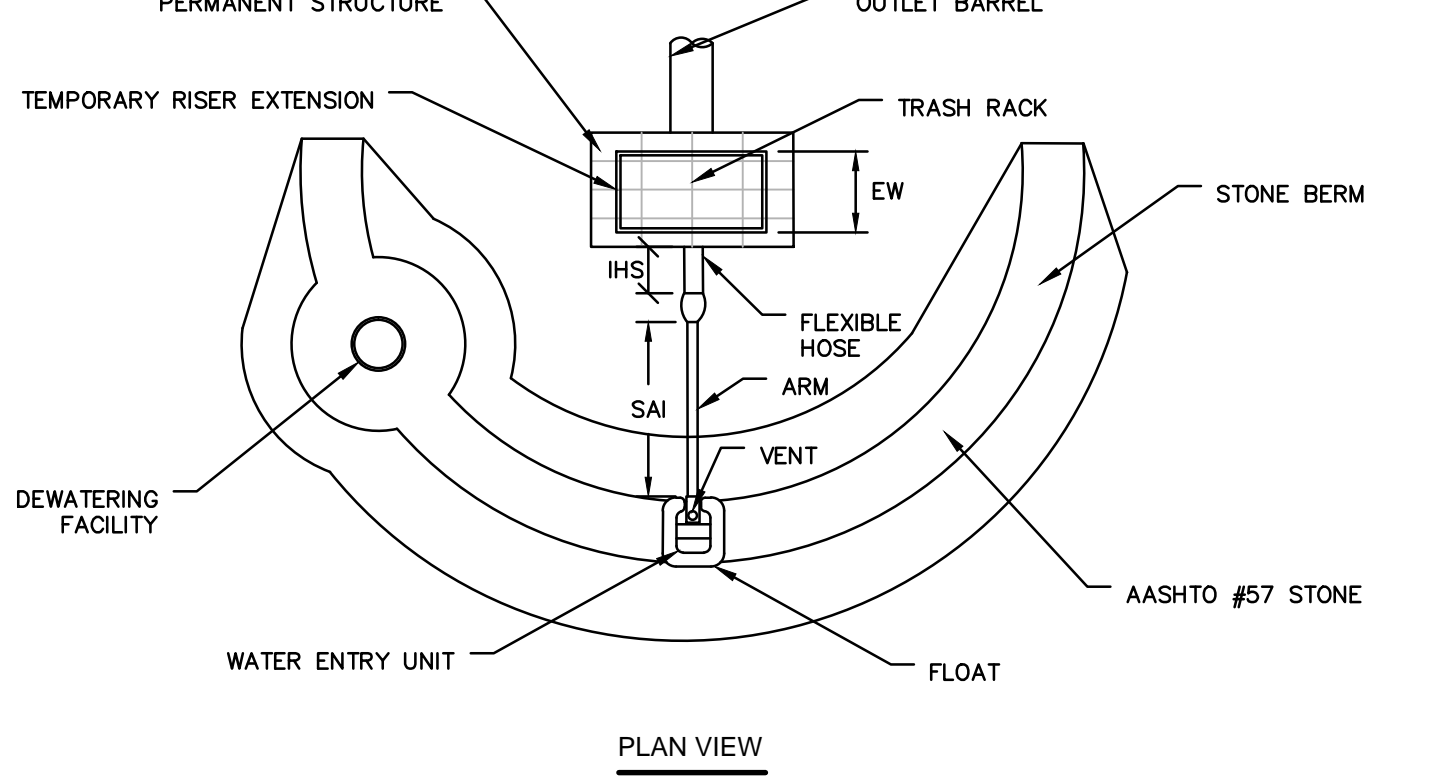
HEAVY EQUIPMENT SHALL NOT CROSS OVER SPILLWAY WITHOUT PRECAUTIONS TAKEN TO PROTECT TRM LINING. DISPLACED LINER WITHIN THE SPILLWAY AND/OR OUTLET SWALE SHALL BE REPLACED IMMEDIATELY.

RIPRAP AT TOE OF EMBANKMENT SHALL BE EXTENDED A SUFFICIENT LENGTH IN BOTH DIRECTIONS TO PREVENT SCOUR.

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

BASIN EMERGENCY SPILLWAY WITH TRM LINING

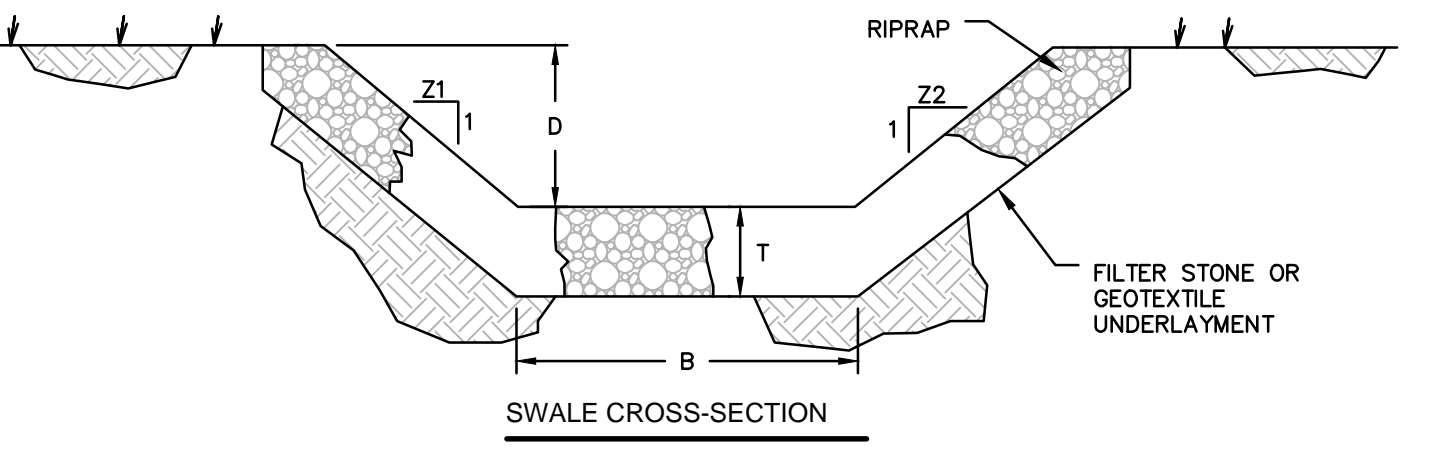
N.T.S. PADEP-7-13



NO GUIDE RAILS SHALL BE REQUIRED IN THIS INSTALLATION. THIS DETAIL SHALL BE USED IN CONJUNCTION WITH STANDARD CONSTRUCTION DETAILS #7-2 (SKIMMER ATTACHED TO A PERMANENT RISER) AND #7-4 (SEDIMENT BASIN EMBANKMENT AND SPILLWAY DETAILS - SKIMMER)

SKIMMER WITH STONE LANDING BERM DETAIL

N.T.S. PADEP-7-3



SWALE CROSS-SECTION

SWALE	STATIONS	B	D	Z1	Z2	RIPRAP GRADATION	T	UNDERLAYMENT	UNDERLAYMENT THICKNESS
DITCH 1	NA	2	2	2	2	R-4	18	GEOTEXTILE	NA
DITCH 2A	NA	2	2	2	2	R-4	18	GEOTEXTILE	NA
DITCH 2B	NA	2	2	2	2	R-4	18	GEOTEXTILE	NA
DITCH 3	NA	2	2	2	2	R-4	18	GEOTEXTILE	NA
DITCH 4	NA	2	2	2	2	R-4	18	GEOTEXTILE	NA
DITCH 5	NA	2	2	2	2	R-4	18	GEOTEXTILE	NA
DITCH 6	NA	2	2	2	2	R-4	18	GEOTEXTILE	NA
DITCH 7	NA	2	2	2	2	R-4	18	GEOTEXTILE	NA
DITCH 8	NA	2	2	2	2	R-4	18	GEOTEXTILE	NA
DITCH 9A	NA	2	2	2	2	R-4	18	GEOTEXTILE	NA

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

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

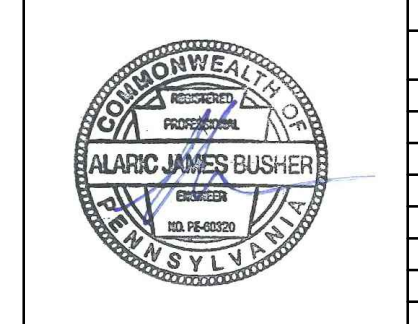
SWALE DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. SWALE SHALL BE CLEANED WHENEVER TOTAL SWALE DEPTH IS REDUCED BY 25% AT ANY LOCATION. SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO SWALE WITHOUT FURTHER DAMAGE.

DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY. THE MINIMUM ROCK THICKNESS (T) SHALL BE 1.5 TIMES THE MAX. ROCK SIZE.

RIPRAP SWALE DETAIL

N.T.S. PADEP-6-3

Drawn By & Date/Time: hthomas Apr 25, 2017 - 8:41am Drawing Location & Name: G:\JOBS\14\14C4909\DWG\020-CPLS\FCS_EC14C4909(20N)_L610.dwg



ALARIC J. BUSHER REG. NO. PE 60320

REVISIONS			
NO.	DATE	BY	DESCRIPTION
0	08/26/2015	BL	ISSUED FOR PADEP SUBMITTAL
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL
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 FOR COMPRESSOR STATION 610
 ORANGE TOWNSHIP, COLUMBIA COUNTY, PENNSYLVANIA
 SOIL EROSION & SEDIMENT CONTROL DETAILS

WILLIAMS

DRAWN BY: ADE DATE: 04/03/15 ISSUED FOR BID: SCALE: AS NOTED
 CHECKED BY: AJB DATE: 04/03/15 ISSUED FOR CONSTRUCTION: REVISION: 4
 APPROVED BY: AJB DATE: 07/17/15 DRAWING NUMBER: (66-0610)F-1A-11 SHEET 11 OF 13

FILTER SOCK MEDIA STANDARDS

WOOD CHIP FILTER MEDIA STANDARD SPECIFICATIONS FOR WOOD CHIP FILTER SOCKS

- WOOD CHIPS USED FOR FILTER SOCKS SHALL BE WEED FREE AND DERIVED FROM CHOPPED TREE MATERIAL.
- PARTICLE SIZE - LESS THAN OR EQUAL TO 5 IN WITH 95% PASSING A 2 IN (50MM) SIEVE AND LESS THAN 30% PASSING A 1 IN (25MM) SIEVE.
- WOOD CHIPS SHALL NOT INCLUDE PAINTED, CRESOTED, PRESSURE TREATED, OR ANY OTHER COATED OR EMBEDDED WOOD MATERIAL AND SHALL BE FREE OF INERT OR FOREIGN MAN MADE MATERIALS.
- A SAMPLE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO BEING USED AND MUST COMPLY WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

GROWING MEDIA STANDARD SPECIFICATIONS FOR FILTER SOCK DIVERSIONS

MATERIAL
COMPOSTED PRODUCTS USED FOR FILTER SOCK DIVERSION SHALL BE WEED FREE AND DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER. THE COMPOSTED PRODUCTS SHALL BE PRODUCED USING AN AEROBIC COMPOSTING PROCESS MEETING USEPA CFR 503 REGULATIONS (IN CANADA: M.O.E. 101, C.C.M.E. TYPE "A" AND TYPE "AA" REGULATIONS), INCLUDING TIME AND TEMPERATURE DATA INDICATING EFFECTIVE WEED SEED, PATHOGEN AND INSECT LARVAE KILL. THE COMPOSTED PRODUCTS SHALL BE FREE OF ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH. NON-COMPOSTED PRODUCTS WILL NOT BE ACCEPTED. TEST METHODS FOR THE ITEMS BELOW SHOULD FOLLOW USCC TMECC GUIDELINES FOR LABORATORY PROCEDURES:

SECTION

- PH - 5.0-8.0 IN ACCORDANCE WITH TMECC 04.11-A, "ELECTROMETRIC PH DETERMINATIONS FOR COMPOST"
- MOISTURE CONTENT OF LESS THAN 60% IN ACCORDANCE WITH STANDARDIZED TEST METHODS FOR MOISTURE DETERMINATION.
- COMPOST MATERIAL TO BE USED IN FILTER SOCK DIVERSION AND WHERE SEEDING AND/OR LIVE STAKES ARE SPECIFIED; ON LOW GRADE SLOPES WHERE VEGETATION ESTABLISHMENT IS THE PRIORITY; OR WHERE RAINWATER ABSORPTION, WATER HOLDING CAPACITY, RUNOFF REDUCTION AND INFILTRATION ARE THE PRIORITY SHALL MEET THE FOLLOWING PARTICLE SIZE DISTRIBUTION:
PARTICLE SIZES - 100% PASSING A 2 IN (50MM) SIEVE, 99% PASSING A 1 IN (25MM) SIEVE, MINIMUM OF 60% PASSING A 1/2 IN (12.5MM) SIEVE IN ACCORDANCE WITH TMECC 02.02-B, "SAMPLE SIEVING FOR AGGREGATE SIZE CLASSIFICATION".
- MATERIAL SHALL BE RELATIVELY FREE (<1% BY DRY WEIGHT) OF INERT OR FOREIGN MAN MADE MATERIALS.
- A SAMPLE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO BEING USED AND MUST COMPLY WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

OPTION A: EROSION CONTROL

FOR VEGETATED APPLICATIONS WHERE SLOPE GRADES ARE GREATER THAN 3:1, WHERE SHEET RUNOFF RATE OR VELOCITY MAY BE HIGH, OR RAINFALL RATE/INTENSITY MAY BE HIGH.

SUBSTITUTION FOR SECTION C. PARTICLE SIZE OF COMPOST FILTER SOCK DIVERSION SHALL USE THE FOLLOWING PARTICLE SIZE DISTRIBUTION SPECIFICATION: 99% PASSING A 1 IN (25MM) SIEVE, MAXIMUM OF 50% PASSING A 1/2 IN (12.5MM) SIEVE.

OPTION B: NON-VEGETATED TEMPORARY EROSION CONTROL

FOR NON-VEGETATED APPLICATIONS WHERE SLOPE GRADES ARE GREATER THAN 3:1, WHERE SHEET RUNOFF RATE OR VELOCITY MAY BE HIGH, OR RAINFALL RATE/INTENSITY MAY BE HIGH.

SUBSTITUTION FOR SECTION C. PARTICLE SIZE OF COMPOST FILTER SOCK DIVERSION SHALL USE THE FOLLOWING PARTICLE SIZE DISTRIBUTION SPECIFICATION: 99% PASSING A 3 IN (75MM) SIEVE AND A MAXIMUM OF 30% PASSING A 1/2 IN (12.5MM) SIEVE.

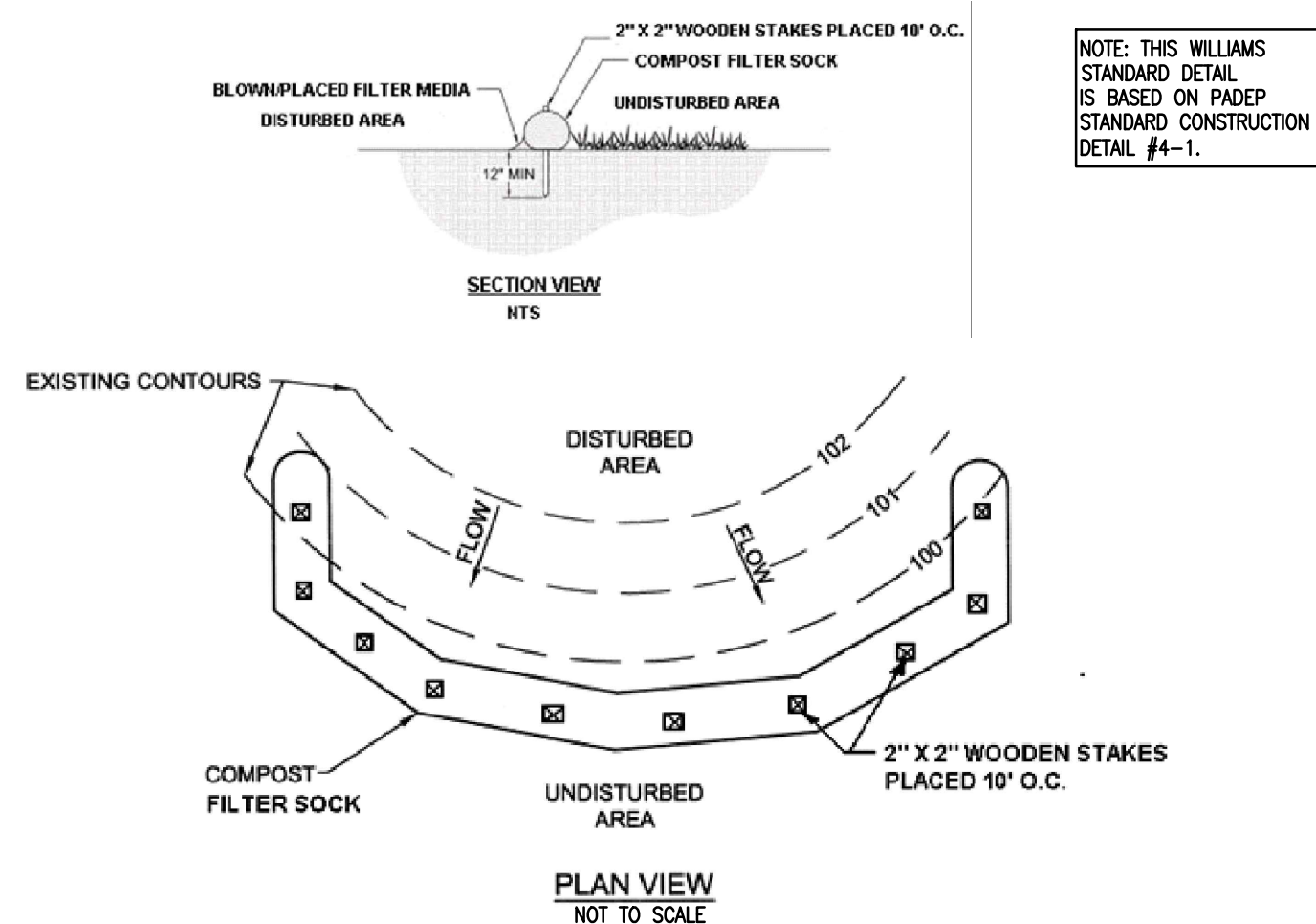


FIGURE 4.1
Sediment Barrier Alignment

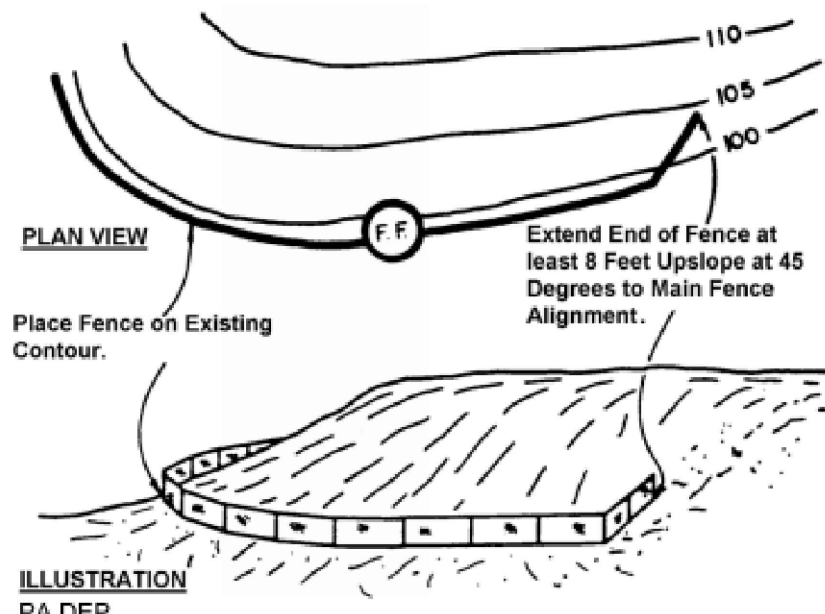
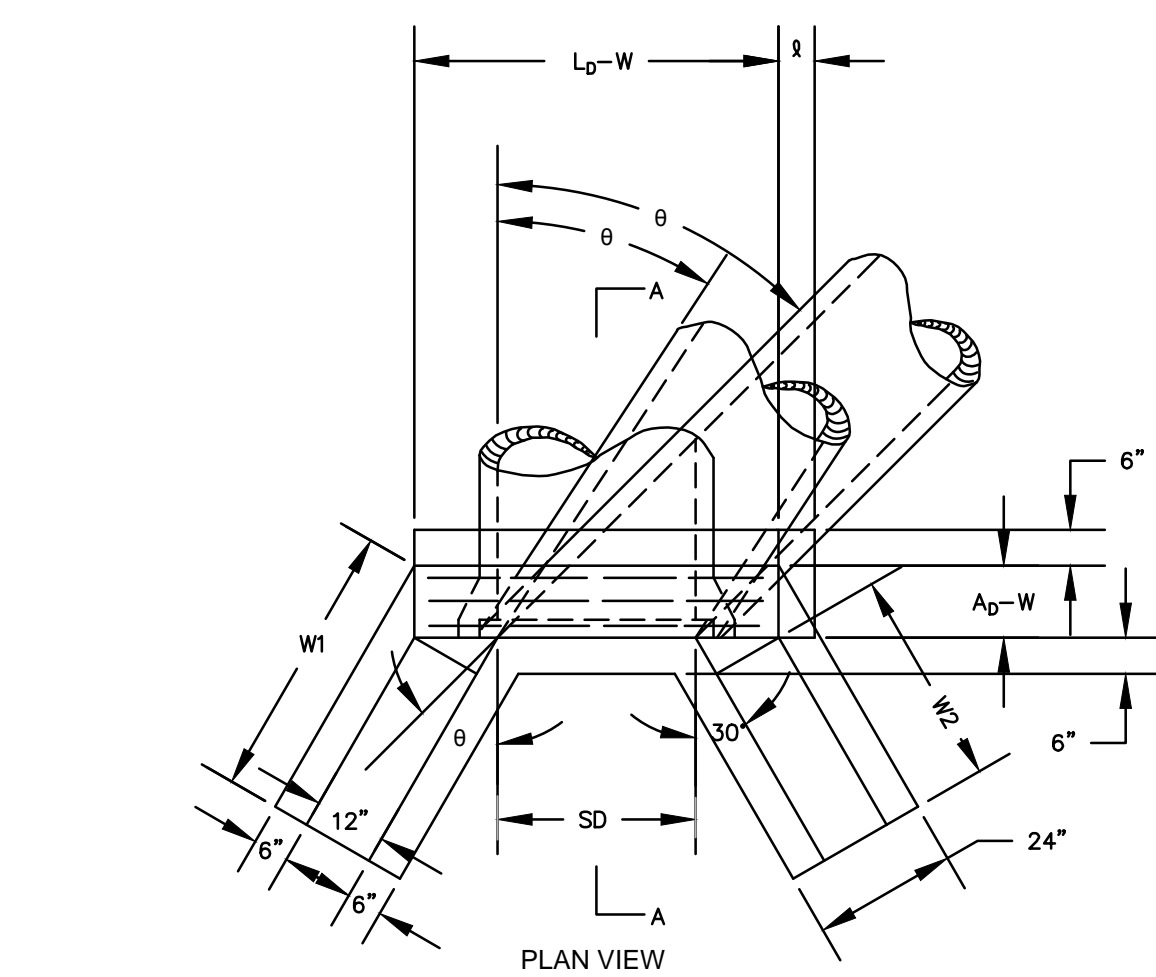


ILLUSTRATION
PA DEP

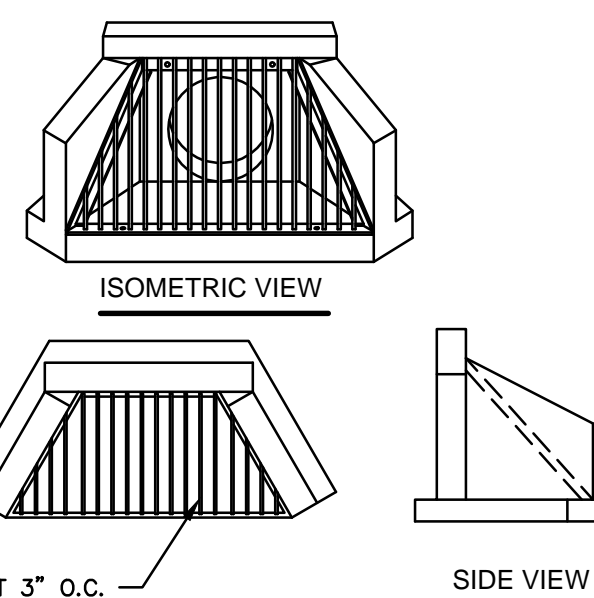
SEDIMENT BARRIER TABLE	
SEDIMENT BARRIER DESIGNATION	SEDIMENT BARRIER TYPE
1	32 INCH FILTER SOCK
2	32 INCH FILTER SOCK
3	18 INCH FILTER SOCK
4	18 INCH FILTER SOCK
5	12 INCH FILTER SOCK
6	32 INCH FILTER SOCK
7	32 INCH FILTER SOCK
8	32 INCH FILTER SOCK
9	32 INCH FILTER SOCK
10*	32 INCH FILTER SOCK
11	12 INCH FILTER SOCK
12	12 INCH FILTER SOCK

* STOCKPILE



COMPOST FILTER SOCK

N.T.S. 1 OF 3

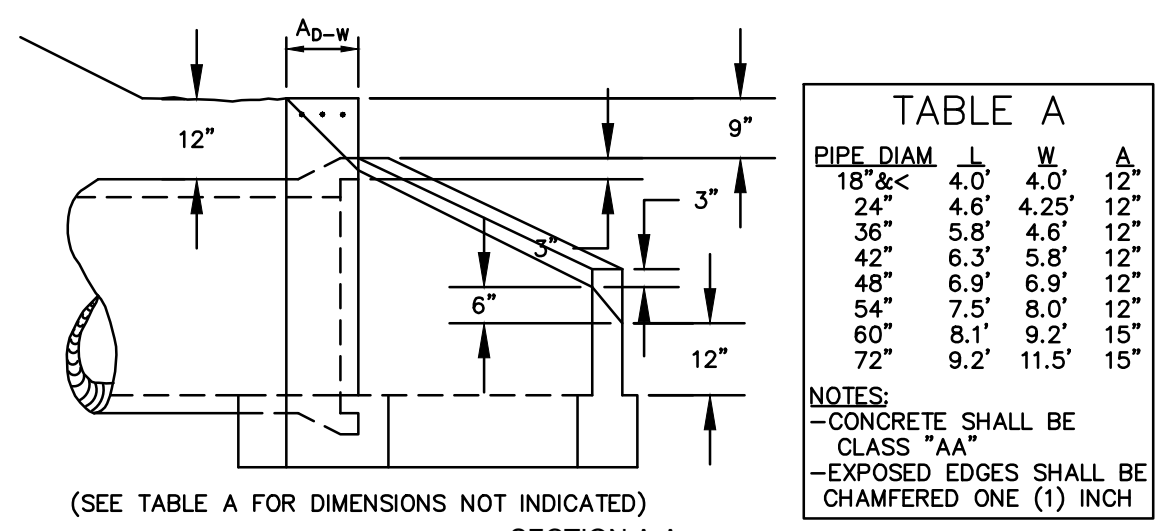


NOTES:

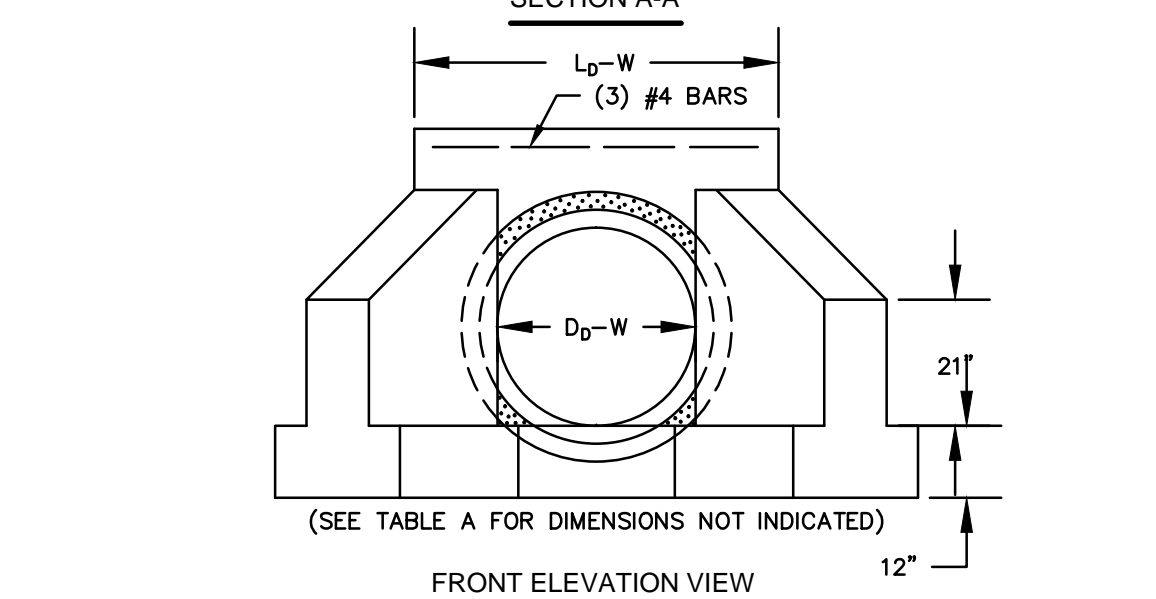
- TRASH RACK MATERIAL TO BE HOT DIPPED GALVANIZED STEEL.
- ATTACH TRASH RACK TO HEADWALL WITH 3/8" DIA. S.S. ANCHOR BOLTS.
- HINGED VERSION AVAILABLE.

TYPE DW ENDWALL WITH TRASHRACK

N.T.S.



NOTES:
-CONCRETE SHALL BE CLASS "AA"
-EXPOSED EDGES SHALL BE CHAMFERED ONE (1) INCH

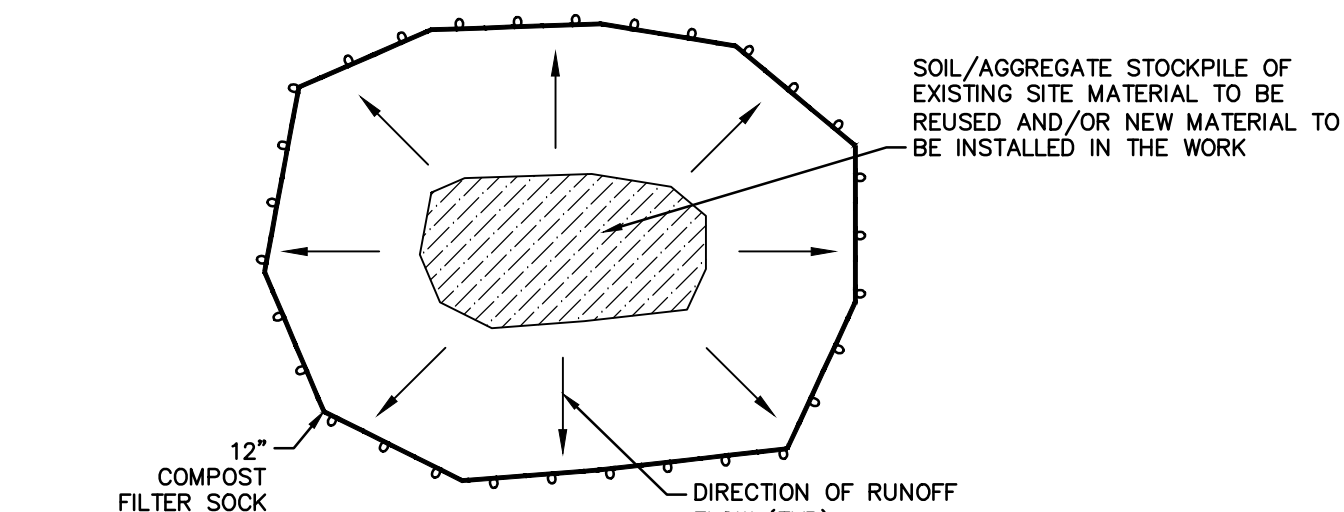


NOTES:

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

TYPE DW ENDWALL

N.T.S.



NOTES:

- ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF AT AN APPROVED FACILITY OR PERMITTED WASTE AREA.
- TOPSOIL STOCKPILE SITES TO BE SHOWN ON THE DRAWINGS
- RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITIONS AND STABILIZE AS REQUIRED.
- STOCKPILE HEIGHT SHALL NOT EXCEED 35 FEET.
- STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.

TEMPORARY TOPSOIL STOCKPILE

N.T.S.

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", 30"	12", 18", 24", 30"	12", 18", 24", 30"	12", 18", 24", 30"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
Tensile Strength		29 psi	29 psi	44 psi	202 psi
Ultraviolet Stability % Original Strength (ASTM G-155)	23% at 1000 hr	28% at 1000 hr		100% at 1000 hr	100% at 1000 hr
Minimum Functional Longevity	6 months	8 months	8 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 Composite Polypropylene Fabric (Woven layer and non-woven fleece mechanically fused via needle punch)
Outer Filtration Mesh	3/16" Max. aperture size

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

TABLE 4.2
COMPOST STANDARDS

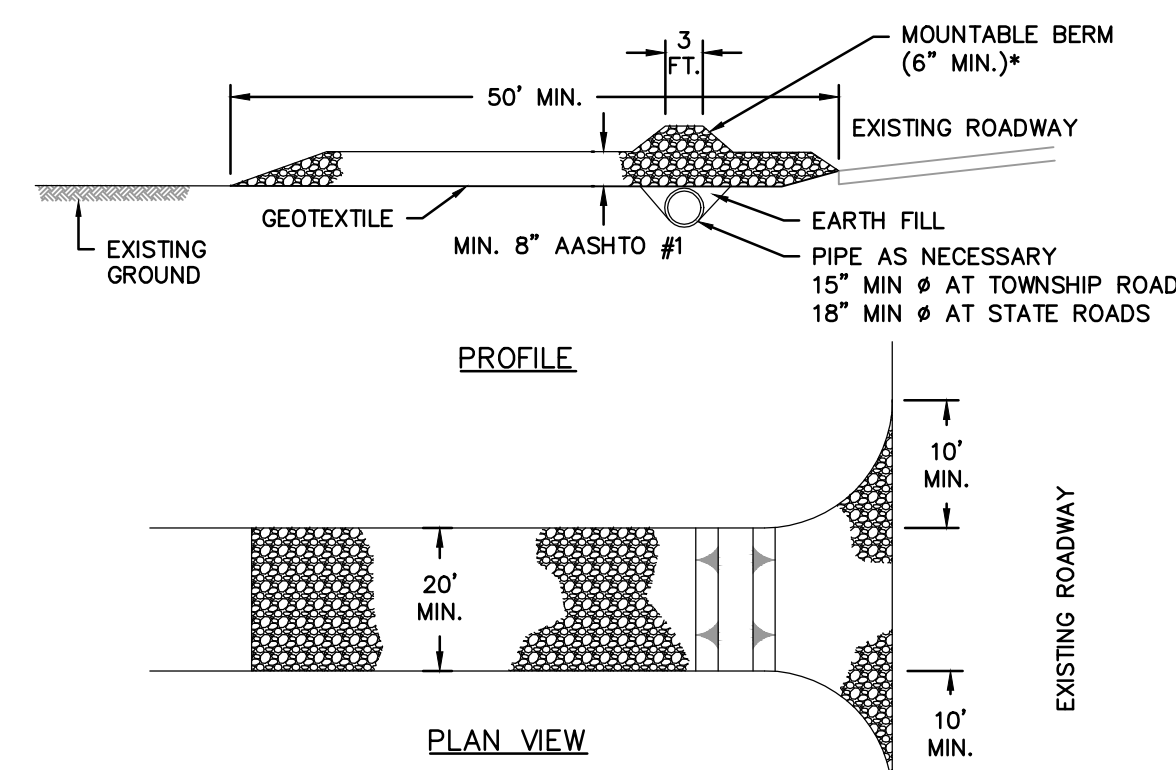
ORGANIC MATTER CONTENT	25%-100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5 - 8.5
MOISTURE CONTENT	30% - 60%
PARTICLE SIZE	30%-50% PASS THROUGH 3/8" SIEVE
SOLUBLE SALT CONCENTRATION	5.0 DS/M (MMHOS/CM) MAXIMUM

NOTES:

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

COMPOST FILTER SOCK

N.T.S. 2 OF 3



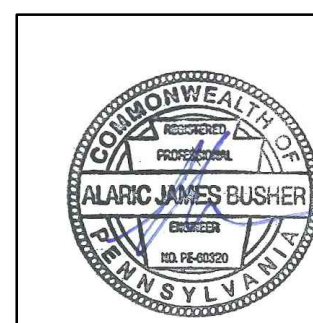
* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

- REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
- RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
- 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.
- 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.
- RCE WITH WASH RACK, SEE DETAIL ROW, TO BE INSTALLED IN, OR WITHIN 100 FEET OF, SPECIAL PROTECTION WATERSHEDS AS WELL AS WITHIN 50 FEET OF WETLANDS.
- WITHIN WETLANDS RCE AND/OR RCE WITH WASHRACK SHALL BE REPLACED WITH TIMBER MAT AND CLASS 1 GEOTEXTILE UNDERLAYMENT.

ROCK CONSTRUCTION ENTRANCE

N.T.S.

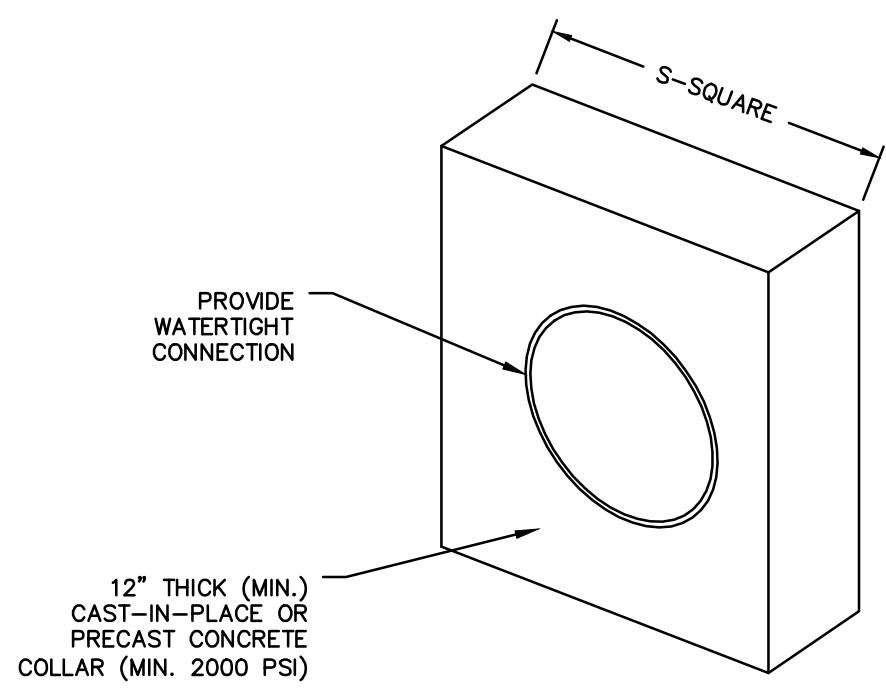


ALARIC J. BUSHER REG. NO. PE 60320

REVISIONS						
NO.	DATE	BY	DESCRIPTION	W.D. NO.	CHK.	APP.
0	08/26/2015	BL	ISSUED FOR PADEP SUBMITTAL	W0161505	DAK	AJB
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL	W0161505	DAK	AJB
2	05/27/2016	BL	UPDATED PER BASIN SYSTEMS DESIGN COORDINATION	W0161505	DAK	AJB
3	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1	W0161505	AJB	AJB
4	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2	W0161505	AJB	AJB

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC			
ATLANTIC SUNRISE PROJECT- PROPOSED 42" NATURAL GAS PIPELINE			
SOIL EROSION & SEDIMENT CONTROL AND LAYOUT PLANS			
FOR COMPRESSOR STATION 610			
ORANGE TOWNSHIP, COLUMBIA COUNTY, PENNSYLVANIA			
SOIL EROSION & SEDIMENT CONTROL DETAILS			
DRAWN BY:	ADE	DATE:	04/03/15
CHECKED BY:	AJB	DATE:	04/03/15
APPROVED BY:	AJB	DATE:	07/17/15
W.D.:	1161505	ISSUED FOR BID:	
SCALE:	AS NOTED	REVISION:	4
DRAWING NUMBER:	(66-0610)F-1A-11	SHEET:	12
		OF:	13



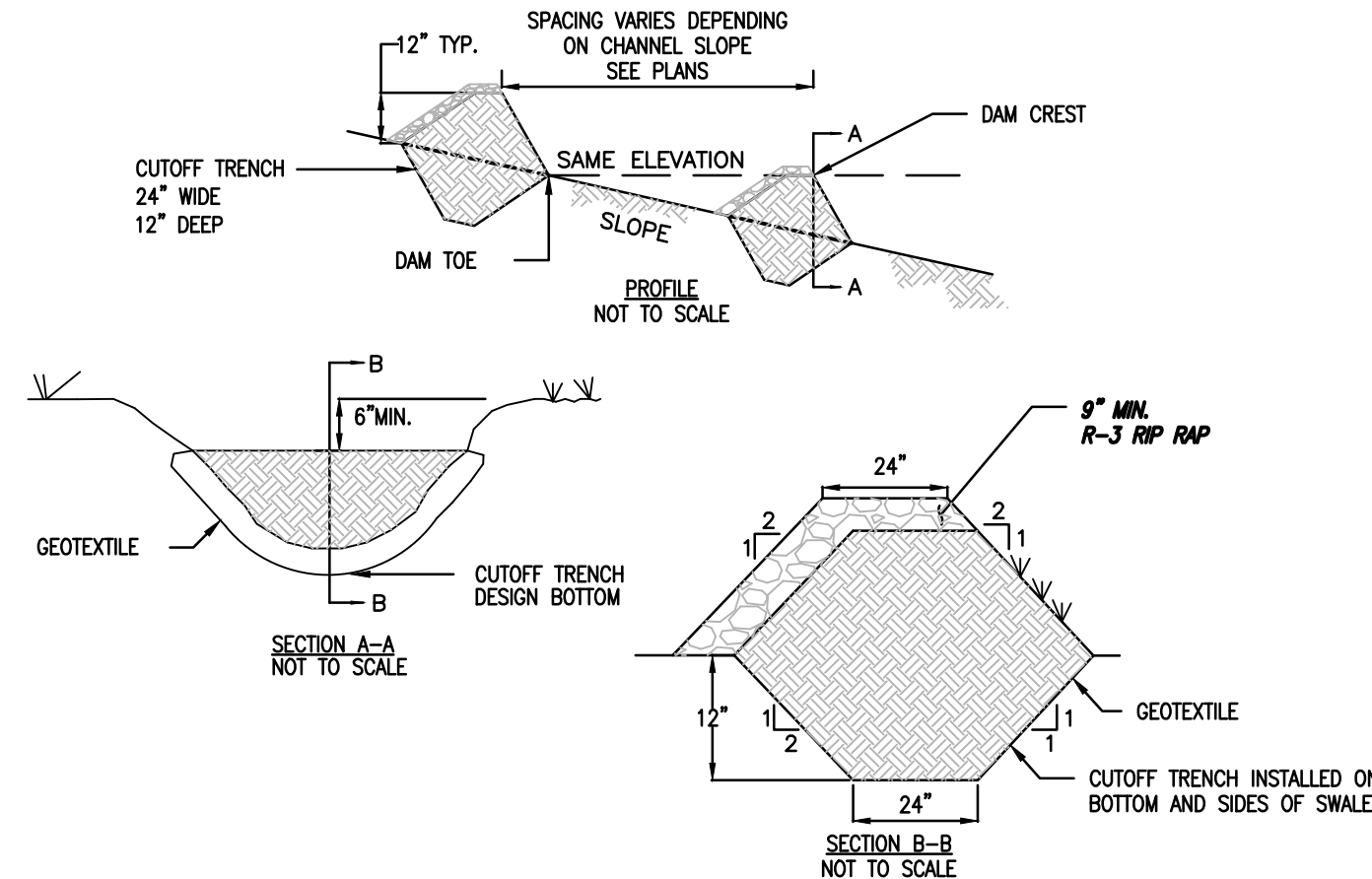


ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.
COLLAR SIZE AND SPACING SHALL BE AS INDICATED BELOW.

BASIN OR TRAP NO.	PIPE SIZE (IN)	S (IN)	NO. OF COLLARS	DISTANCE RISER TO 1ST COLLAR (FT)	COLLAR SPACING (FT)
BASIN 1	18	58	2	15	10

CONCRETE ANTI-SEEP COLLAR FOR PERMANENT BASINS OR TRAPS DETAIL

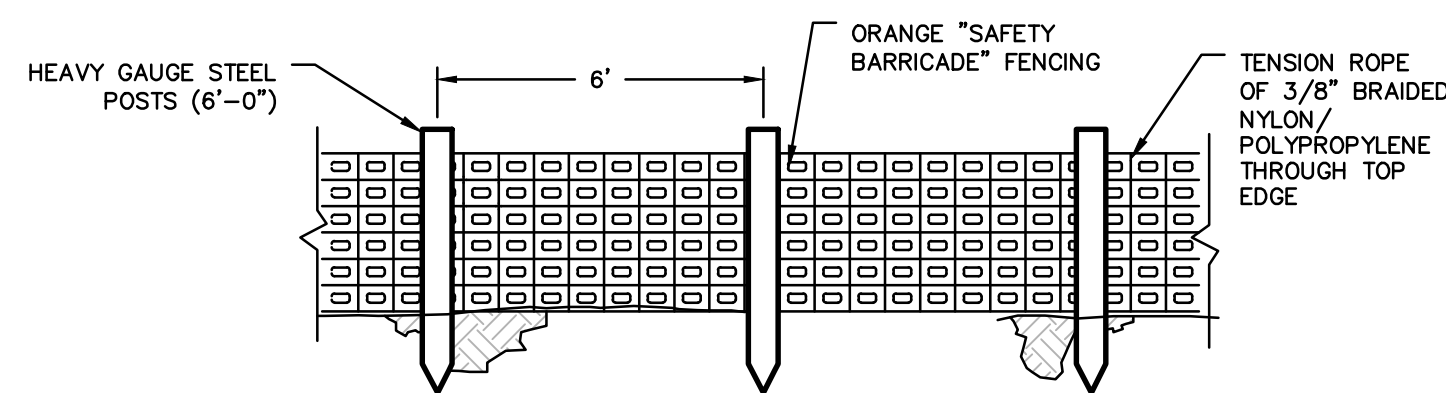
N.T.S. PADEP-7-16



- NOTES:
- CHECK DAMS ARE APPLICABLE FOR SMALL DITCHES AND SWALES AND ARE NOT TO BE USED IN LIVE FLOWING STREAMS.
 - CHECK DAMS SHALL BE INSTALLED SUCH THAT COMPLETE COVERAGE OF THE ENTIRE WIDTH OF THE DITCH OR SWALE IS ACHIEVED.
 - SEDIMENT SHALL BE REMOVED WHEN IT ACCUMULATES TO A DEPTH OF ONE-HALF THE ORIGINAL DAM HEIGHT.
 - SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
 - INSTALL A CUTOFF TRENCH A MINIMUM OF 12 INCHES INTO THE SWALE BOTTOM AND SIDES TO PREVENT CUTTING AROUND THE DAM.
 - ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRIES BEHIND CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.

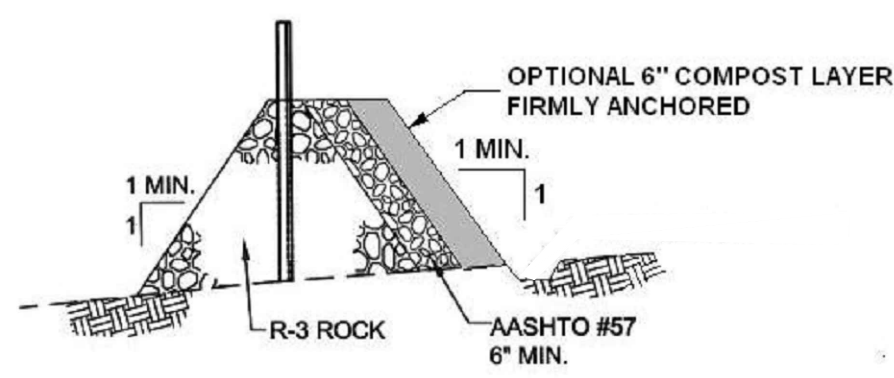
EARTHEN CHECK DAM

N.T.S.



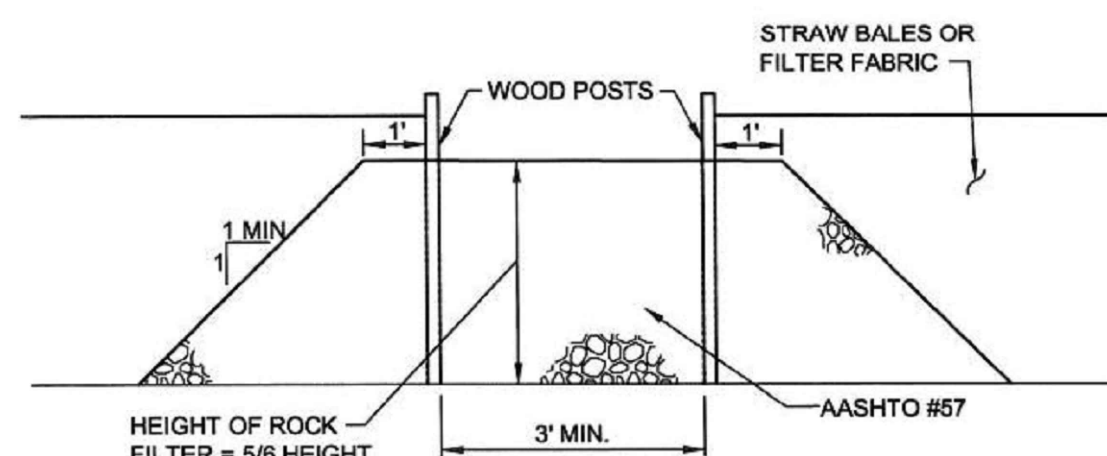
CONSTRUCTION FENCE

N.T.S.



OUTLET CROSS-SECTION

N.T.S.



UP-SLOPE FACE

N.T.S.

ADAPTED FROM MARYLAND DOE

NOTES:

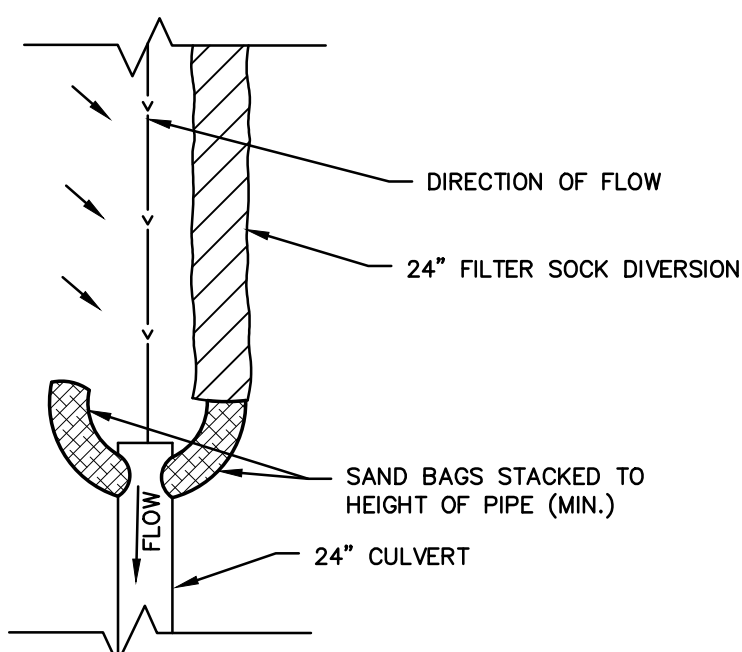
- A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A STRAW BALE BARRIER OR FILTER FABRIC FENCE HAS OCCURRED DUE TO CONCENTRATED FLOW.
- SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.

PADEP SUPPLEMENTAL NOTE:

- ANCHORED COMPOST LAYER SHALL BE USED ON UP-SLOPE FACE IN HQ AND EV WATERSHEDS.

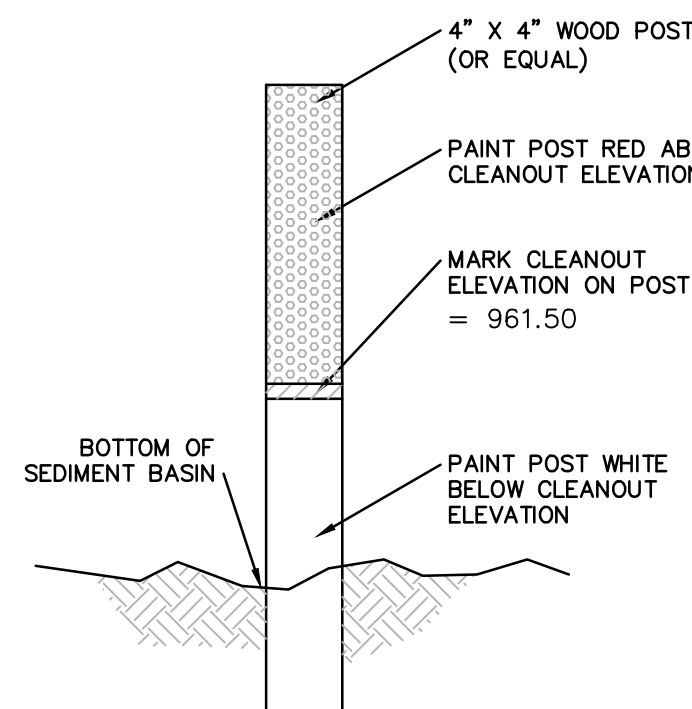
ROCK FILTER OUTLET

N.T.S.



FSD #3 TRANSITION TO CULVERT

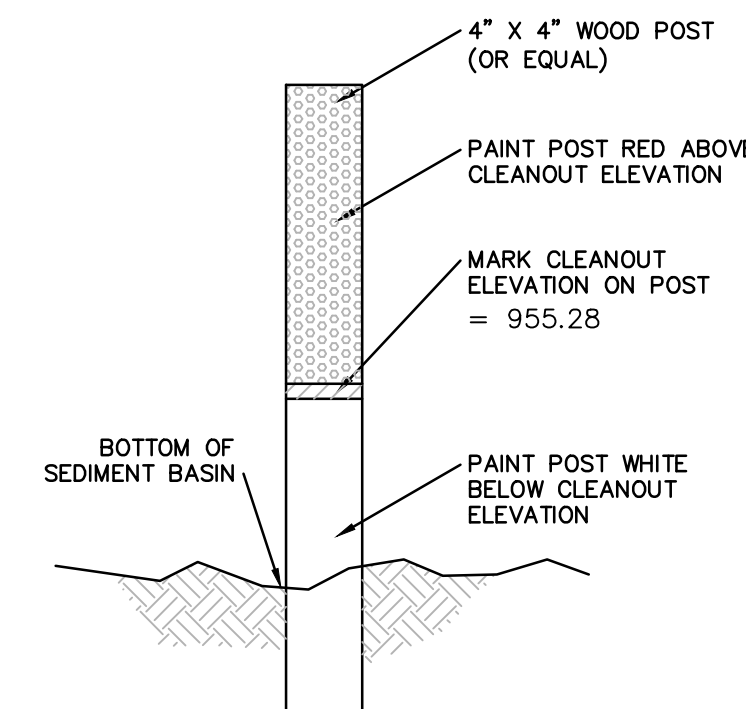
N.T.S.



SEDIMENT TRAP 1 CLEANOUT STAKE

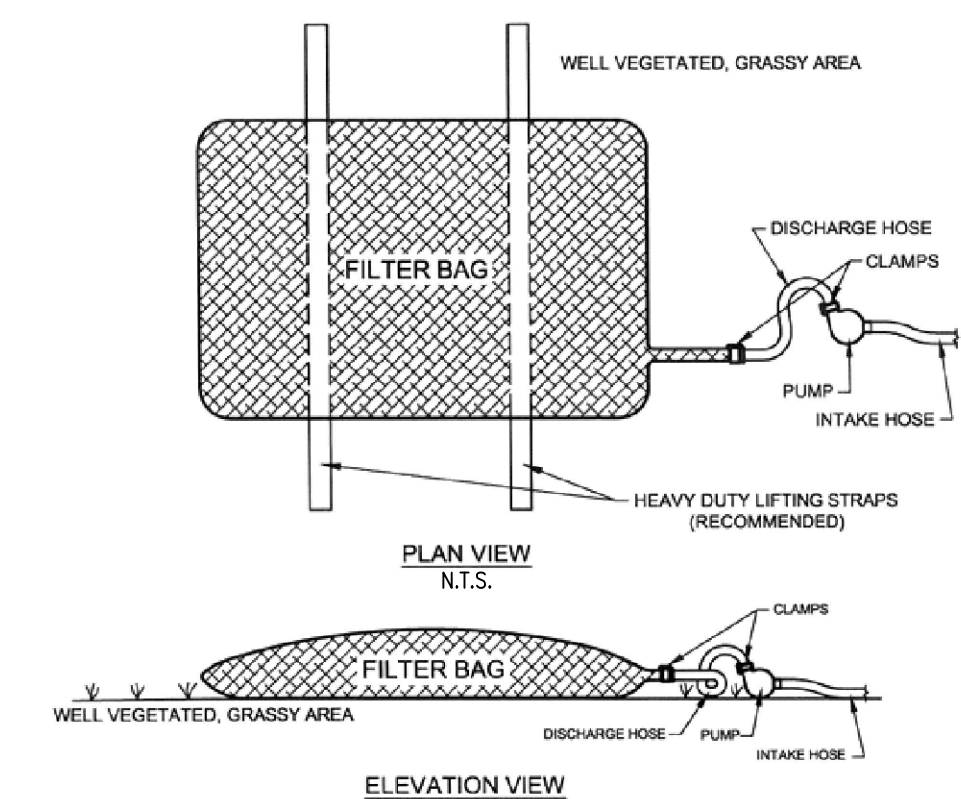
N.T.S.

- COMPOST SOCK SEDIMENT TRAP SHALL BE SIZED TO PROVIDE 2,000 CUBIC FEET OF STORAGE CAPACITY FOR EACH ACRE TRIBUTARY TO THE TRAP.
- MINIMUM BASE WIDTH IS EQUIVALENT TO THE HEIGHT.
- SEDIMENT ACCUMULATION SHALL NOT EXCEED 1/3 THE TOTAL HEIGHT OF THE TRAP.
- SOCKS SHALL BE OF LARGER DIAMETER AT THE BASE OF THE TRAP AND DECREASE IN DIAMETER FOR SUCCESSIVE LAYERS AS INDICATED TO THE LEFT.
- ENDS OF THE TRAP SHALL BE A MINIMUM OF 1 FOOT HIGHER IN ELEVATION THAN THE MID-SECTION, WHICH SHALL BE LOCATED AT THE POINT OF DISCHARGE.



SEDIMENT BASIN 1 CLEANOUT STAKE

N.T.S.



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

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES MUST BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 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.

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.

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.

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.

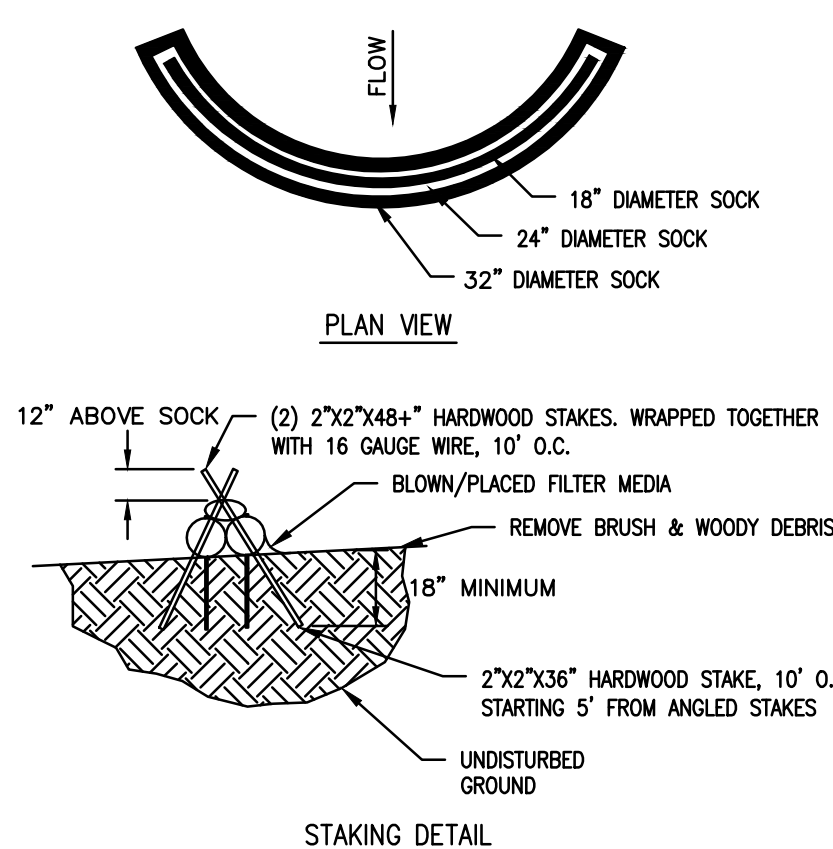
THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

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

PUMPED WATER FILTER BAG

N.T.S.

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

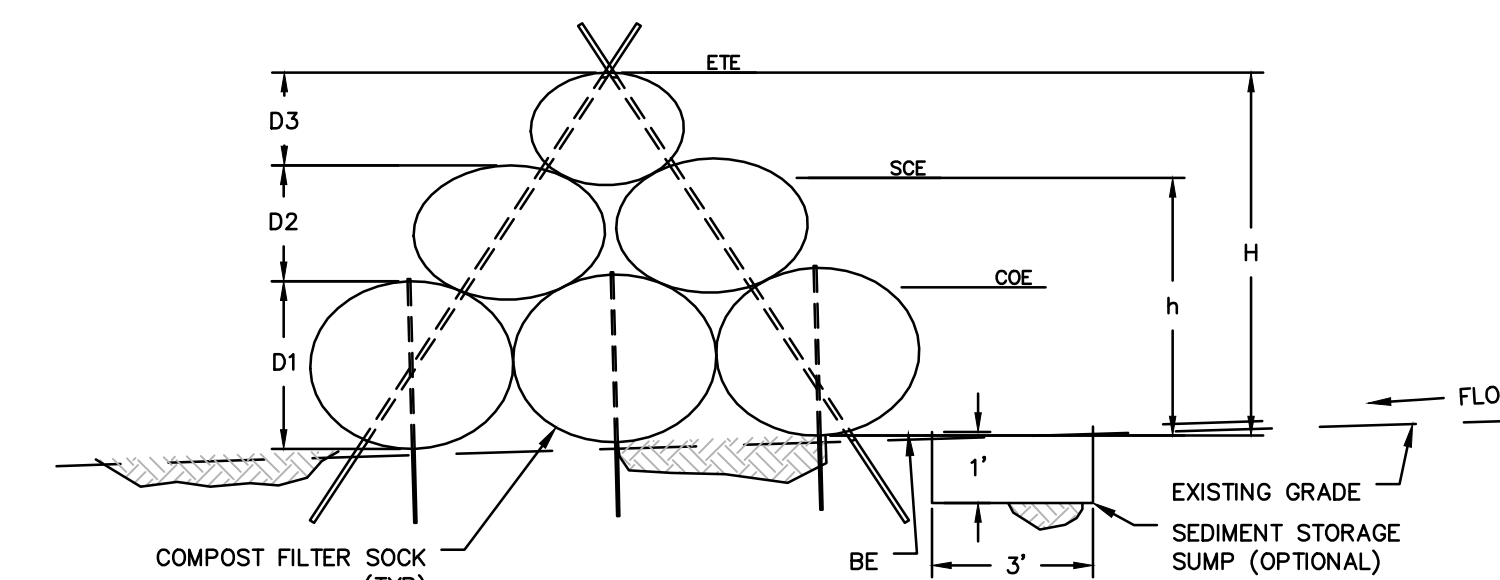


NOTES:

- SEE COMPOST FILTER SOCK (CFS) DETAIL FOR MORE INFORMATION. SOCK MATERIAL SHALL MEET THE STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.
- COMPOST SOCK SEDIMENT TRAPS SHALL NOT EXCEED THREE SOCKS IN HEIGHT AND SHALL BE STACKED IN PYRAMIDAL FORM AS SHOWN ABOVE. MINIMUM TRAP HEIGHT IS ONE 24\"/>

COMPOST SOCK SEDIMENT TRAP

N.T.S.



TRAP NO.	D1 (IN)		D2 (IN)		D3 (IN)		H	
	DESIGN	EFFECT.	DESIGN	EFFECT.	DESIGN	EFFECT.	IN.	FT
1	24	19	18	14.5	12	9.5	4.3	3.6

h (FT)	EMBANK. TOP ELEV. ETE (FT)	CLEAN OUT ELEV. COE (FT)	BOTTOM ELEV. BE (FT)	SEDIMENT STORAGE SUMP	
				DEPTH (FT)	WIDTH (FT)
2.5	963.60	961.50	960.00	NA	NA

- NOTES:
- SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.
 - PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
 - SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
 - 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.
 - STAPLING OF THE BLANKET SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
 - 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.
 - BIODEGRADABLE STAPLES SHALL BE USED.

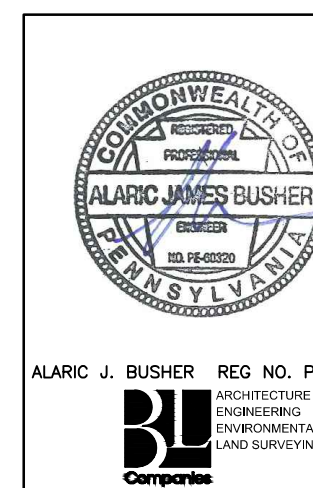
- WILLIAMS SUPPLEMENTAL NOTES:
- CONTRACTOR SHALL USE SINGLE MAT STRAW FOR SLOPES FLATTER THAN 3:1.
 - HYDRAULIC APPLIED EROSION CONTROL BLANKETS MAY BE USED IN LIEU OF ECB.

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

EROSION CONTROL BLANKET

N.T.S.

ADAPTED FROM PADEP



REVISIONS			
NO.	DATE	BY	DESCRIPTION
0	08/26/2015	BL	ISSUED FOR PADEP SUBMITTAL
1	12/02/2015	BL	ISSUED FOR PADEP RESUBMITTAL
2	05/27/2016	BL	UPDATED PER BAS SYSTEMS DESIGN COORDINATION
3	Oct. 2016	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #1
4	April 2017	BL	PADEP TECHNICAL DEFICIENCY RESPONSE #2

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC			
ATLANTIC SUNRISE PROJECT- PROPOSED 42" NATURAL GAS PIPELINE			
SOIL EROSION & SEDIMENT CONTROL AND LAYOUT PLANS			
FOR COMPRESSOR STATION 610			
ORANGE TOWNSHIP, COLUMBIA COUNTY, PENNSYLVANIA			
SOIL EROSION & SEDIMENT CONTROL DETAILS			
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CHECKED BY:	AJB	DATE:	04/03/15
APPROVED BY:	AJB	DATE:	07/17/15
ISSUED FOR:	ISSUED FOR CONSTRUCTION	SCALE:	AS NOTED
REVISION:	4	DRAWING NUMBER:	(66-0610)F-1A-11
NO:	1161505	SHEET:	13

