

# EROSION & SEDIMENT CONTROL PLAN

## PENNSYLVANIA PIPELINE PROJECT HOUSTON INJECTION STATION CHARTIERS TOWNSHIP, WASHINGTON COUNTY, PENNSYLVANIA NOVEMBER 2016

DRAWING INDEX	
SHEET No.	DRAWING TITLE
C-1	GENERAL NOTES & LEGEND
C-2	EROSION & SEDIMENT CONTROL PLAN
C-3	EROSION & SEDIMENT CONTROL NOTES
C-4	EROSION & SEDIMENT CONTROL DETAILS

PREPARED BY:

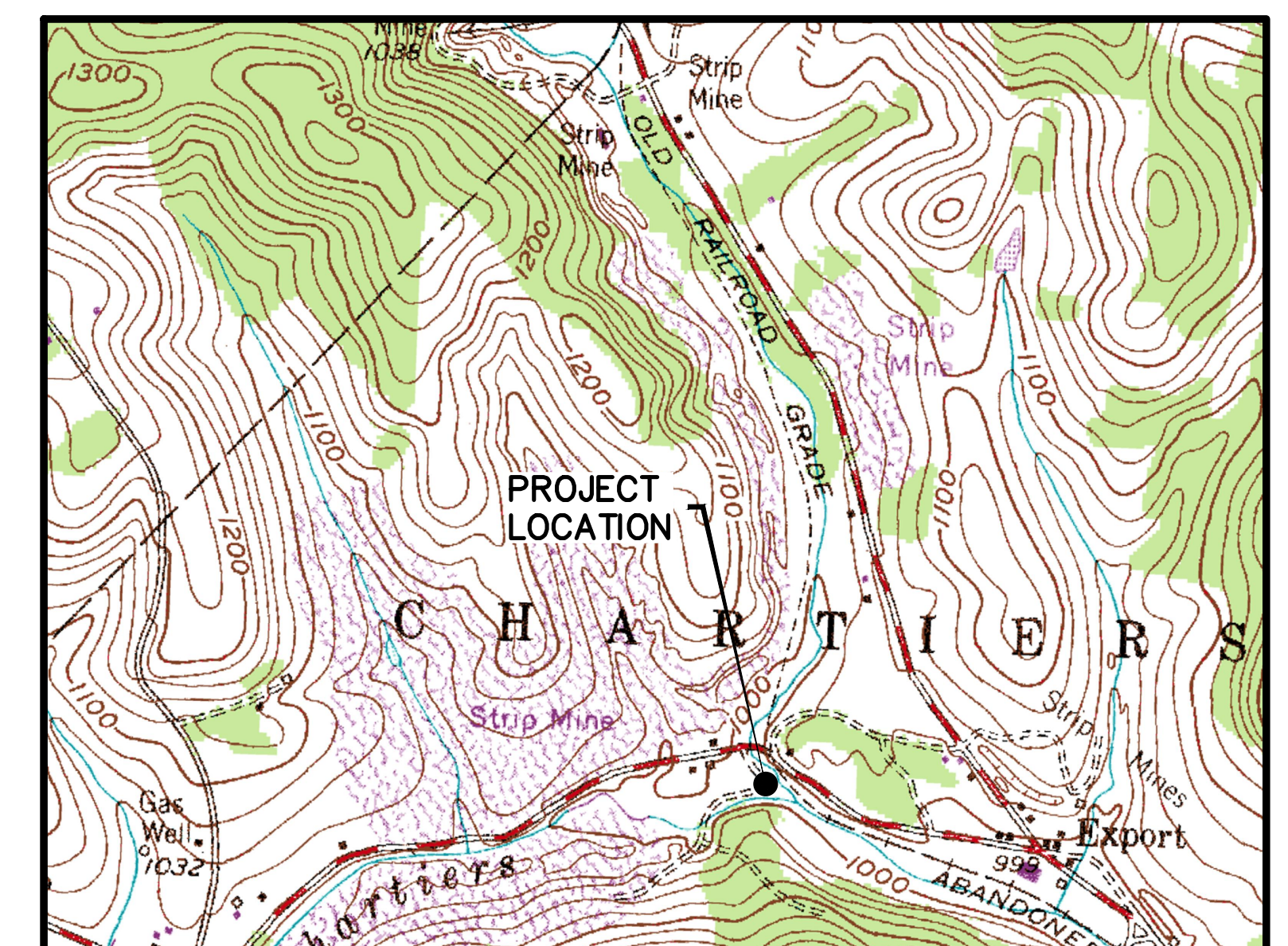


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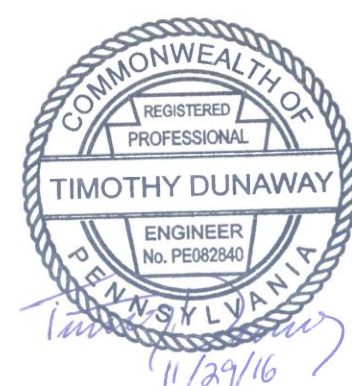
PREPARED FOR:

SUNOCO PIPELINE L.P.  
SINKING SPRING, PENNSYLVANIA 19608



LOCATION MAP  
HOUSTON INJECTION STATION  
CHARTIERS TOWNSHIP, WASHINGTON COUNTY, PENNSYLVANIA

0 1000 2000  
SCALE IN FEET



NOTE: A GEOTECHNICAL REPORT IS BEING PREPARED SEPARATELY FROM THIS PLAN. THE CERTIFYING ENGINEER OF THIS PLAN HAS NOT ASSESSED AND DOES NOT CERTIFY THE GEOTECHNICAL FEATURES OF THIS PLAN, INCLUDING FOUNDATION DESIGN AND SLOPE STABILITY.

**NOTES:**

1. TOPOGRAPHIC MAPPING AND FEATURES COMPILED FROM WWW.PASDA.PSU.EDU.
2. 100-YEAR FEMA FLOODPLAINS FROM WWW.PASDA.PSU.EDU.
3. BOUNDARY AND ADJACENT PROPERTY LINES FROM TRICO SURVEYING & MAPPING, INC.
4. THE PROJECT TAKES PLACE WITHIN CHARTIERS TOWNSHIP, WASHINGTON COUNTY, PENNSYLVANIA.
5. USE COMPOST FILTER SOCK AS REQUIRED TO PREVENT RUNOFF FROM SPOIL AREA.
6. THE RIGHTS-OF-WAYS AND EASEMENTS SHOWN ON THIS PLAN ARE THE RESPONSIBILITY OF SUNOCO PIPELINE L.P. TO SECURE WITH THE INDIVIDUAL PROPERTY OWNER. THE RIGHTS-OF-WAY AND EASEMENTS SHOWN ON THIS PERMIT DRAWING REPRESENT THE BEST AVAILABLE PROPERTY INFORMATION AS PROVIDED TO TETRA TECH, INC. BY SUNOCO PIPELINE L.P. THE RIGHTS-OF-WAY AND EASEMENTS SHALL BE VERIFIED AND LOCATED IN THE FIELD BY SUNOCO PIPELINE L.P.
7. PAST AND PRESENT LAND USE CONSISTS OF MEADOW, WOODED AND RESIDENTIAL AREAS. POST CONSTRUCTION LAND USE WILL BE A MAINTAINED GRAVEL PAD, ACCESS ROAD, AND VEGETATED RIGHT-OF-WAY.
8. COMPOST FILTER SOCK INSTALLATION TO BE ADJUSTED AS NEEDED TO ACCOMMODATE ACTUAL CONTOURS IDENTIFIED IN FIELD DURING VARIOUS PHASE OF THE PROJECT.
9. THE PROPOSED FACILITIES ARE LOCATED WITHIN A FEMA ZONE A FLOODPLAIN. A FLOODPLAIN ANALYSIS OF THE PROJECT SHOWED THAT THE PROJECT RESULTS IN NO SIGNIFICANT INCREASE IN THE BASE FLOOD ELEVATION (<0.04 FT). THE PROPOSED PDC AND PROPANE TANK ARE LOCATED OUTSIDE OF THE PROPOSED MODELED 100-YEAR FLOODPLAIN.

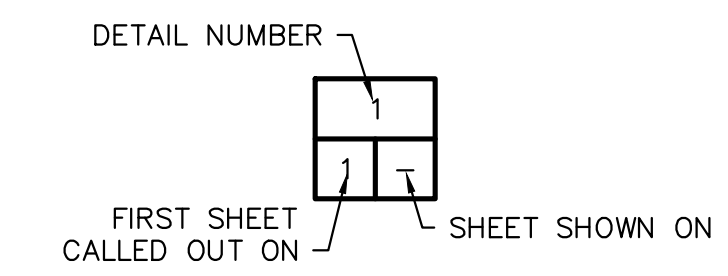
**PROJECT DESCRIPTION:**

THE PROJECT INVOLVES CONSTRUCTION OF THE INJECTION STATION, WHICH WILL BE CONNECTED TO A PROPOSED SUNOCO PENNSYLVANIA PIPELINE PROJECT. CONSTRUCTION ACTIVITIES WILL INVOLVE INSTALLATION OF A ROCK CONSTRUCTION ENTRANCE, CLEARING AND GRUBBING, FACILITY INSTALLATION, AND SITE RESTORATION. FACILITY WILL BE CONSTRUCTED WITHIN AN LOD OF APPROXIMATELY 2.7 ACRES IN WASHINGTON COUNTY.

**LEGEND**

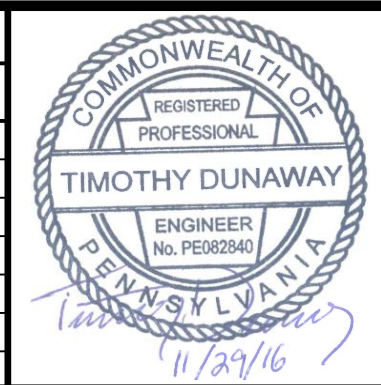
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING STORM PIPE
- EXISTING TREE LINE
- EXISTING FENCELINE
- EXISTING STREAM
- EXISTING ELECTRIC OVERHEAD
- EXISTING ELECTRIC UNDERGROUND
- EXISTING LIGHT POLE
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING SANITARY SEWER LINE
- PROPERTY LINE
- PARCEL SETBACK
- PROPOSED FENCE LINE
- PROPOSED GEOWEB INFILTRATION/STORAGE AREA
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- UTILITY POLE
- EXISTING WETLAND
- 100-YEAR FLOODWAY
- REVISED 100-YEAR FLOODPLAIN (BASED ON HYDRAULIC MODELING)
- 100-YEAR FEMA FLOODPLAIN
- EXISTING SEPTIC FIELD
- ORANGE CONSTRUCTION FENCE / LIMIT OF DISTURBANCE
- ROCK CONSTRUCTION ENTRANCE WITH WASH RACKS
- EROSION CONTROL BLANKET
- 12" COMPOST FILTER SOCK
- 18" COMPOST FILTER SOCK
- LIMIT OF DISTURBANCE/PERMIT BOUNDARY
- SOIL STOCKPILE -SEE NOTE 7 UNDER STANDARD EROSION & SEDIMENT CONTROL NOTES ON SHEET C-5
- SOIL TYPE

**DETAIL INDICATOR**



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NO.	BY	DATE	REMARKS
1	TD	11/30/18	REVISED FOR DEP TECHNICAL COMMENTS



SUNOCO PIPELINE L.P.  
SINKING SPRING, PENNSYLVANIA  
HOUSTON INJECTION STATION

ESCGP-2 EROSION & SEDIMENT CONTROL PLAN  
GENERAL NOTES & LEGEND

DATE:	11/2/16
PROJECT NO.:	PB-00136
DESIGNED BY:	TD
DRAWN BY:	BH
CHECKED BY:	US
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<b>C-1</b>	
SHEET	1 OF 4



**STANDARD EROSION AND SEDIMENT 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, AND A REPRESENTATIVE FROM THE LOCAL PADEP OR CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
- AT LEAST 3 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM AT 1-800-242-1776 FOR BURIED UTILITIES LOCATIONS.
- 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.
- CLEARING, GRUBBING, AND TOPSOIL STRIPPED 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 THE 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 UNFORSEEN 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 PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
- 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, SHOVELLED, OR SWEEPED INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
- ALL SEDIMENT REMOVED FROM BMPs SHALL BE PLACED WITHIN THE RIGHT-OF-WAY EXCEPT IN WETLAND AREAS OR AS OTHERWISE DESCRIBED IN 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.
- 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 PA DEP OR THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPs.
- UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE PA DEP OR LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
- UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS-SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
- 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.
- IF EARTH DISTURBANCE ACTIVITIES ARE TO CEASE FOR MORE THAN 4 DAYS, THE OPERATOR SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS WHICH ARE AT FINISHED GRADE OR WHICH WILL NOT BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS. ACCESS AREAS THAT CONTINUE TO BE DISTURBED WILL BE STABILIZED ONCE ACTIVITY IS COMPLETE.
- AT STREAM CROSSINGS, 50' BUFFER AREAS SHOULD BE MAINTAINED. ON BUFFERS, CLEARING, SOD DISTURBANCES, EXCAVATION, AND EQUIPMENT TRAFFIC SHOULD BE MINIMIZED. ACTIVITIES SUCH AS STACKING LOGS, BURNING CLEARED BRUSH, DISCHARGING RAINWATER FROM TRENCHES, WELDING PIPE SECTIONS, REFUELING AND MAINTAINING EQUIPMENT SHOULD BE ACCOMPLISHED OUTSIDE OF BUFFERS.
- MULCH WITH NETTING OR EROSION CONTROL BLANKETS MUST BE INSTALLED ON ALL SLOPES 3:1 AND STEEPER AND WITHIN 100' OF SPECIAL PROTECTION WATERS OR 50' OF SURFACE WATERS.
- THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., AND 287.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THE SITE.

**TEMPORARY EROSION AND SEDIMENT CONTROLS INSPECTION AND MAINTENANCE SCHEDULE**

BMP	INSPECTION FREQUENCY	MAINTENANCE TO BE PERFORMED
COMPOST FILTER SOCK	WEEKLY AND AFTER RUNOFF EVENTS	MAINTENANCE SHALL BE PERFORMED AS NEEDED, SEDIMENT SHALL BE REMOVED ONCE IT HAS ACCUMULATED TO ONE THIRD THE ORIGINAL HEIGHT OF THE BARRIER. COMPOST FILTER SOCK SHALL BE REPLACED WHENEVER IT HAS DETERIORATED TO SUCH AN EXTENT THAT THE EFFECTIVENESS OF COMPOST FILTER SOCK IS REDUCED. COMPOST FILTER SOCKS SHALL REMAIN IN PLACE UNTIL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED. ALL SEDIMENT ACCUMULATION AT THE COMPOST FILTER SOCK SHALL BE REMOVED AND PROPERLY DISPOSED OF BEFORE THE COMPOST FILTER SOCK IS REMOVED.
ROCK CONSTRUCTION ENTRANCE	DAILY	CONTRACTOR SHALL MAINTAIN/REPLACE MATERIAL AS NEEDED THROUGHOUT CONSTRUCTION TO MAINTAIN SPECIFIED MINIMUM THICKNESS DURING USE OF ACCESS ROAD. A STOCKPILE OF ROCK WILL BE MAINTAINED ON SITE FOR THIS PURPOSE.
MULCH STABILIZATION	WEEKLY AND AFTER RUNOFF EVENTS	REPLACE MULCH AS REQUIRED, RESTORE SEEDING IN AFFECTED AREA IF NECESSARY.
TIMBER MAT	WEEKLY AND AFTER RUNOFF EVENTS	INSPECT THE TIMBER MAT FOR EROSION AND MAKE ANY NECESSARY REPAIRS.
WATERBARS	WEEKLY AND AFTER RUNOFF EVENTS	WATERBARS SHALL BE INSPECTED WEEKLY (DAILY ON ACTIVE ROADS) AND AFTER EACH RUNOFF EVENT. DAMAGED OR ERODED WATERBARS SHALL BE RESTORED TO ORIGINAL DIMENSIONS WITHIN 24 HOURS OF INSPECTION.
PUMPED WATER FILTER BAGS	DAILY	FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

\* ALL INSPECTION SHALL BE LOGGED ONTO DEP FORM 3150-FM-BWEW0083 AND KEPT ON SITE. FORM 8150-FM-BWEW0083 CAN BE FOUND IN THE CONSTRUCTION DETAILS ATTACHMENT OF E&S REPORT.

**TEMPORARY SEEDING**

TEMPORARY GRASS COVER WILL BE ESTABLISHED IN THE FOLLOWING AREAS:

- WHERE VEGETATIVE FILTERS MUST BE ESTABLISHED BELOW FILTER BAGS, A MINIMUM DISTANCE OF 10 FEET WILL BE SEEDED DOWN SLOPE OF THE TRAP OUTLET. SEED MIXTURE FOR TEMPORARY COVER WILL CONSIST OF 100% PERENNIAL RYEGRASS. SEED WILL BE APPLIED AT THE RATE OF 40 LB. PER ACRE OR AS RECOMMENDED BY A LOCAL RECOGNIZED SEED SUPPLIER AND APPROVED BY THE OWNER'S REPRESENTATIVE. PRIOR TO SEEDING, APPLY 1 TON OF AGRICULTURAL GRADE LIMESTONE PER ACRE PLUS 10-10-10 FERTILIZER AT THE RATE OF 500 LB. PER ACRE AND WORK INTO SOIL.
- WHERE SOIL STOCKPILES ARE TO BE EXPOSED FOR A PERIOD GREATER THAN FOUR (4) DAYS, THE STOCKPILE SHALL BE SEEDED.

SOIL AMENDMENT	TEMPORARY SEEDING APPLICATION RATE			NOTES
	PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YD.	
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

**MULCHING**

THE PURPOSE OF MULCH IS TO REDUCE RUNOFF AND EROSION, PREVENT SURFACE COMPACTION OR CRUSTING, CONSERVE MOISTURE, AID IN ESTABLISHING PLANT COVER, AND CONTROL WEEDS. MULCH WILL BE APPLIED ON ANY AREA SUBJECT TO EROSION, OR WHICH HAS UNFAVORABLE CONDITIONS FOR PLANT ESTABLISHMENT AND GROWTH. THE PRACTICE WILL BE USED ALONE OR IN CONJUNCTION WITH OTHER STRUCTURAL AND VEGETATIVE CONSERVATION PRACTICES, SUCH AS WATERWAYS, PONDS, SEDIMENTATION TRAPS OR CRITICAL AREA PLANTING. ON SEDIMENT PRODUCING AREAS WHERE THE PERIOD OF EXPOSURE IS LESS THAN 2 MONTHS, MULCH MATERIALS WILL BE APPLIED ACCORDING TO THE FOLLOWING GUIDELINES:

- APPLY STRAW MULCH AT THE RATE OF 3 TONS PER ACRE. CHEMICALLY TREATED OR SALTED STRAW IS NOT ACCEPTABLE AS MULCH.
- ANCHOR STRAW MULCH IMMEDIATELY AFTER APPLICATION BY AT LEAST ONE OF THE FOLLOWING METHODS.
  - "CRIMP" STRAW MULCH INTO THE SOIL USING TRACTOR DRAWN EQUIPMENT (STRAIGHT BLADED COULTER OR SIMILAR). THIS METHOD IS LIMITED TO SLOPES NO STEEPER THAN 3:1. OPERATE MACHINERY ON THE CONTOUR. CRIMPING OF HAY OR STRAW BY RUNNING IT OVER WITH TRACKED MACHINERY IS NOT RECOMMENDED.
  - UNIFORMLY APPLY ASPHALT, EITHER EMULSIFIED OR CUT-BACK, CONTAINING NO SOLVENTS OR OTHER DILUTING AGENTS TOXIC TO PLANT OR ANIMAL LIFE, AT THE RATE OF 31 GALLONS PER 1,000 SQUARE FEET.
  - USE SYNTHETIC BINDERS (CHEMICAL BINDERS) AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THAT IT IS NON-TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.
  - STAPLE LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS OVER THE MULCH ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

MULCHED AREAS WILL BE CHECKED PERIODICALLY AND AFTER EACH RUNOFF EVENT (E.G. RAIN, SNOWMELT, ETC.) FOR DAMAGE UNTIL THE DESIRED PURPOSE OF THE MULCHING IS ACHIEVED. DAMAGED PORTIONS OF THE MULCH OF TIE-DOWN MATERIAL WILL BE REPAIRED UPON DISCOVERY.

**CONSTRUCTION SEQUENCE**

A GENERALIZED CONSTRUCTION SEQUENCE IS PROVIDED BELOW. THE CONSTRUCTION SEQUENCE IS INTENDED TO PROVIDE A GENERAL COURSE OF ACTION IN ORDER TO CONFORM TO THE APPLICABLE REGULATORY AGENCY REQUIREMENTS FOR TEMPORARY AND PERMANENT SOIL E&SCS. NECESSARY COMPONENTS FOR PROPER AND COMPLETE EXECUTION OF WORK PERTAINING TO THIS PLAN, WHETHER SPECIFICALLY MENTIONED OR NOT, ARE TO BE PERFORMED BY THE CONTRACTOR. IT IS NOT INTENDED THAT THE DRAWINGS AND THIS REPORT SHOW DETAILED INFORMATION ON METHODS AND MATERIALS. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS LISTED IN THIS SECTION, AND SHALL COMPLY WITH THE PA E&S MANUAL. THE CONTRACTOR MAY BE REQUIRED TO ALTER CONTROLS BASED ON EFFECTIVENESS OF CONTROLS OR DIFFERING CONDITIONS ENCOUNTERED IN THE FIELD.

A PRECONSTRUCTION MEETING IS REQUIRED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY. THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS; THE E&SCP PREPARER, AND A REPRESENTATIVE FROM THE LOCAL PADEP OR CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING AT LEAST SEVEN DAYS PRIOR TO CONSTRUCTION COMMENCEMENT.

- LOCATE STAGING AREAS AND ACCESS POINTS INCLUDING CONSTRUCTION ENTRANCES. INSTALL CFS DOWNSLOPE OF THESE AREAS. THIS SITE IS LOCATED IN A SILTATION IMPAIRED WATERSHED, THEREFORE ABACT BMPs WILL BE USED.
- INSTALL ROCK CONSTRUCTION ENTRANCES AS NEEDED. REFER TO THE ROCK CONSTRUCTION ENTRANCE DETAIL ON DRAWINGS FOR SUGGESTED DIMENSIONS. A WASH RACK OR ABACT EQUIVALENT FOR HQ AND/OR SILTATION WATERS MUST BE IMPLEMENTED TO MINIMIZE ADDITIONAL SEDIMENT TO HQ AND/OR SILTATION IMPAIRED WATERSHEDS.
- CONSTRUCT THE PROPOSED ACCESS ROAD AND IMPLEMENT TEMPORARY IMPROVEMENTS TO ACCESS ROADS AS NEEDED.
- LOCATE AND SURVEY ALL SPECIAL AREAS OF CONCERN (WETLANDS). PROTECT AREAS OF CONCERN NEAR THE LIMIT OF DISTURBANCE WITH ORANGE CONSTRUCTION FENCE.
- FLAG PROJECT LIMITS OF DISTURBANCE AND CLEAR VEGETATION WITHIN THE GRADING BOUNDARY LIMITS.
- INSTALL CFS ALONG THE PERIMETERS OF THE SITE AS SHOWN ON THE CONSTRUCTION DRAWINGS. SILT FENCE IS NOT AN ALTERNATIVE BMP IN HQ/EV OR SILTATION IMPAIRED WATERSHEDS. INSTALLATIONS SIZING AND SPACING MUST CONFORM TO THE CHART AND DETAILS PROVIDED ON THE E&SCP DETAIL SHEET.
- STRIP TOPSOIL FROM PAD AND ACCESS ROAD AREA (WHERE REQUIRED) AND STOCKPILE WITHIN THE LOD IN ACCORDANCE WITH THE DETAILS PROVIDED. (IN WETLANDS, AGRICULTURAL AND RESIDENTIAL AREAS ADDITIONAL TOPSOIL STRIPPING AND STOCKPILING MAY BE REQUIRED).
- MINIMIZE TOTAL AREA OF DISTURBANCE. MAINTAIN TEMPORARY SOIL STOCKPILES WITHIN EXISTING SOIL EROSION AND SEDIMENT CONTROLS.
- COMPLETE CLEARING AND GRUBBING OF SLOPE, PAD AREA.
- GRADE SURFACE TO FINISHED GRADE ELEVATIONS.
- INSTALL ECB ON ALL SLOPES 3:1 OR STEEPER AND WITHIN 100 FEET OF RECEIVING WATERS. LOCATIONS ARE SHOWN ON PLAN SHEETS.
- CONTACT THE DESIGN ENGINEER (TETRA TECH) TO OVERSEE AND APPROVE INSTALLATION OF ALL PCSM BMPs SPECIFICALLY: GEOWEB.
- STABILIZE ALL DISTURBED WITHIN 24 HOURS.
- MAINTAIN E&SC DEVICES UNTIL SITE WORK IS COMPLETE AND A UNIFORM 70 PERCENT PERENNIAL VEGETATIVE COVER IS ESTABLISHED. REMOVE E&SC MEASURES UPON ESTABLISHMENT OF A UNIFORM 70 PERCENT VEGETATIVE COVER OVER THE DISTURBED AREA. RE-GRADE AND REVEGETATE AREAS DISTURBED DURING THE REMOVAL OF THE SOIL E&SCS.

**REVEGETATION**

THE SITE PREPARATION AND ESTABLISHMENT OF PERMANENT COVER WILL BE CONDUCTED ACCORDING TO THE FOLLOWING GUIDELINES:

- INSTALL NEEDED SURFACE WATER CONTROL MEASURES.
- HYDROSEED OR FOLLOW STEPS 3 THROUGH 6 BELOW.
- PERFORM ALL CULTURAL OPERATIONS AT RIGHT ANGLES TO THE SLOPE.
- DETERMINE AGRICULTURAL LIME APPLICATION RATES BY FIELD PH TESTING. PERFORM TESTING AT A RATE OF 1 TEST PER ACRE (MIN.). IN THE ABSENCE OF TESTING, APPLY AT 6 TONS PER ACRE.
- APPLY DRY 10-20-20 FORMULATION OF FERTILIZER AT THE RATE OF 678 LBS. PER ACRE OR AT A RATE DETERMINED BY FIELD TESTING.
- WORK IN LIME AND FERTILIZER TO A DEPTH OF 4 INCHES USING SUITABLE EQUIPMENT.
- SEED MIXTURE - THE SEED MIXTURE WILL BE:

PENNDOT FORMULA W							
SCIENTIFIC NAME	COMMON NAME	REQUIRED VARIETIES	% BY WEIGHT	MINIMUM % PURITY	MINIMUM % GERMINATION	MAX % WEED	SEEDING RATE (LBS/1000 SF)
FESTUCA ARUNDINACEA	TALL FESUCE	KENTUCKY 31	70	98	85	0.15	7.5
LOTUS CORNICULATUS	BIRDSFOOT TREFLOIL	A MIXTURE OF 50% VIKING & 50% OF EITHER EMPIRE, NORCEN, OR LEO	20	98	80*	0.10	2.0
AGROSTIS ALBA	REDTOP		10	92	80	0.15	1.0

(\*) MINIMUM 20% HARDSEED AND 60% NORMAL SPROUTS

- IF NOT HYDROSEEDING, APPLY MULCH.



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REVISIONS			REMARKS
NO.	BY	DATE	
1	TD	11/30/18	REVISED FOR DEP TECHNICAL COMMENTS

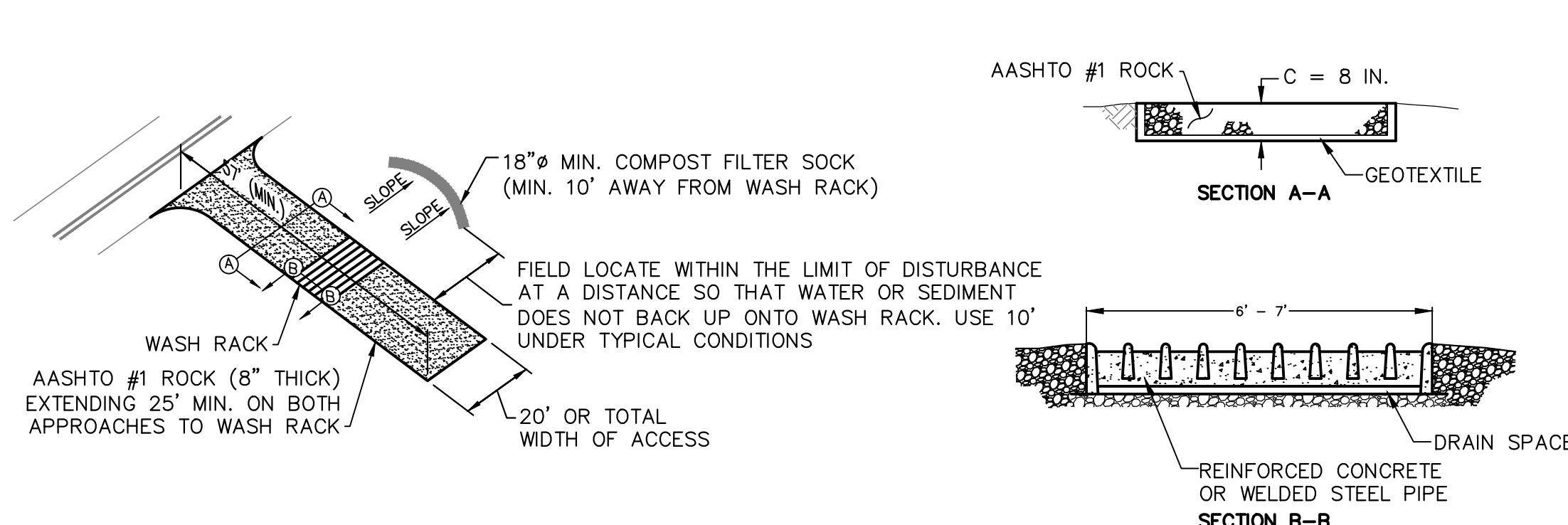


SUNOCO PIPELINE L.P.  
SINKING SPRING, PENNSYLVANIA  
HOUSTON INJECTION STATION

ESCGP-2 EROSION & SEDIMENT CONTROL PLAN

EROSION & SEDIMENT CONTROL NOTES

DATE:	11/2/16
PROJECT NO.:	PB-00136
DESIGNED BY:	RS
DRAWN BY:	BH
CHECKED BY:	RS
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<b>C-3</b>	
SHEET	3 OF 4



NOTE: WASH RACK ONLY REQUIRED IN HQ, EV, AND SILTATION IMPAIRED WATERSHED AREAS. TYPICAL ROCK CONSTRUCTION ENTRANCE ACCEPTABLE IN ALL OTHER AREAS.

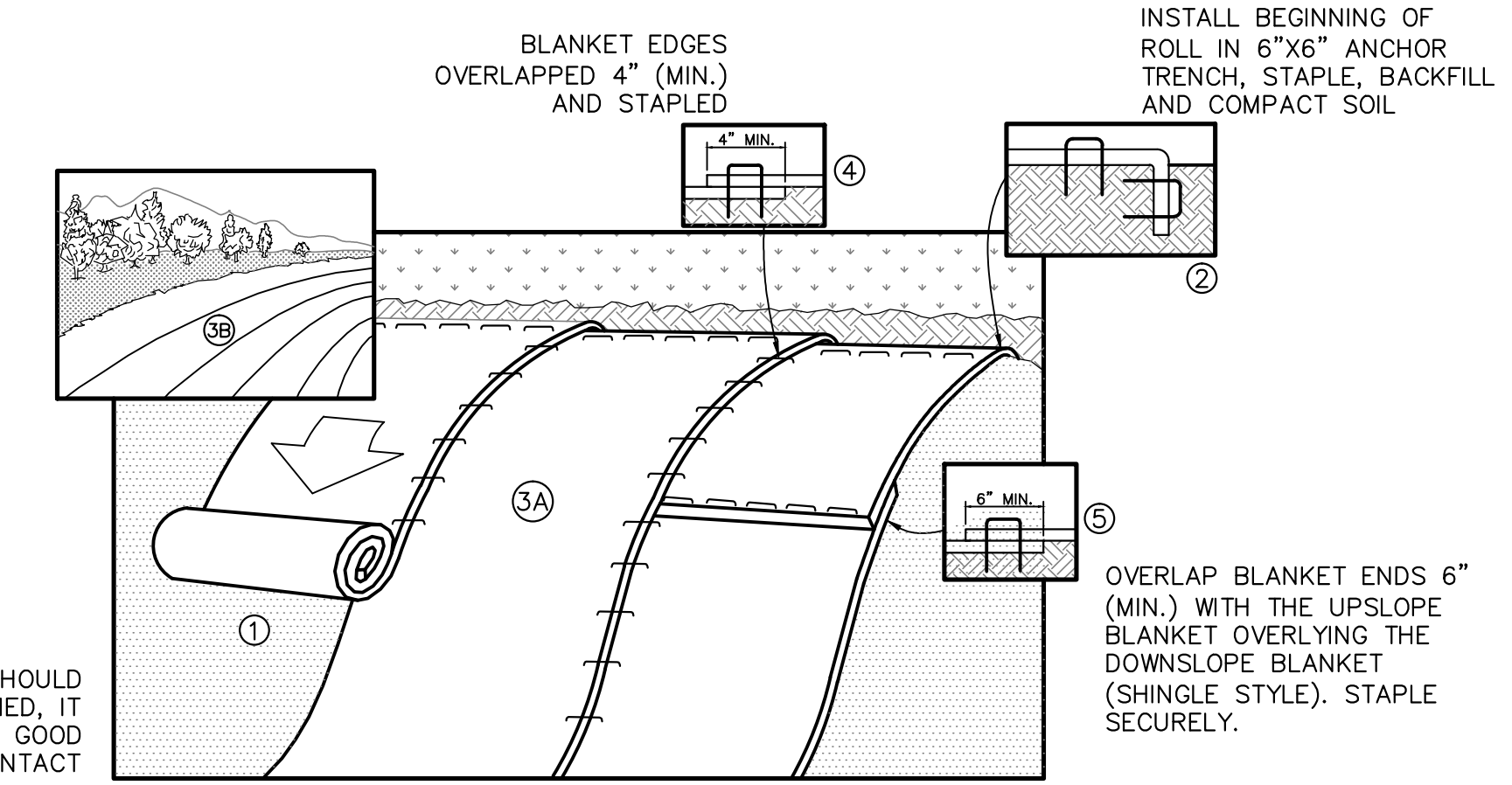
REASONABLE METHODS WHICH ARE SANCTIONED BY THE PADEP AS ALTERNATIVES TO INSTALLATION OF TIRE WASH STATIONS ON PUBLIC ROAD ACCESS POINTS FOR GATHERING PIPELINE PROJECTS IN EV/HQ/SILTATION IMPAIRED WATERSHEDS INCLUDE:

1. FOR PAVED SURFACE PUBLIC ROADS: USE OF A VACUUM TRUCK SWEEPER OR SWEEPER WITH A CATCH BIN ATTACHMENT.
2. FOR DIRT OR GRAVEL SURFACE PUBLIC ROADS: RIGOROUS MANUAL REMOVAL OF MUD/DIRT FROM VEHICLE/EQUIPMENT TIRES PRIOR TO EXITING CONSTRUCTION SITE, SUPPLEMENTED BY IMMEDIATE RECOVER, BY MANUAL OR MECHANICAL MEANS, OF SOIL WHICH MAY BECOME DISCHARGED ONTO PUBLIC ROADWAYS. DUST CONTROL AND/OR COMPACTION VIA ROLLING OF THE DIRT PUBLIC ROAD SURFACE WILL BE IMPLEMENTED AS NEEDED.

A PREDICATE FOR UTILIZING ALTERNATIVE 1 AND 2 ABOVE IS THAT THE ROCK PAD CONSTRUCTION ENTRANCE MUST BE EXTENDED TO A MINIMUM TOTAL LENGTH OF 100 FEET AND MUST BE CONSTANTLY MAINTAINED INCLUDING STRUCTURE THICKNESS TO INSURE ITS EFFECTIVENESS REMAINS INTACT AT ALL TIMES.

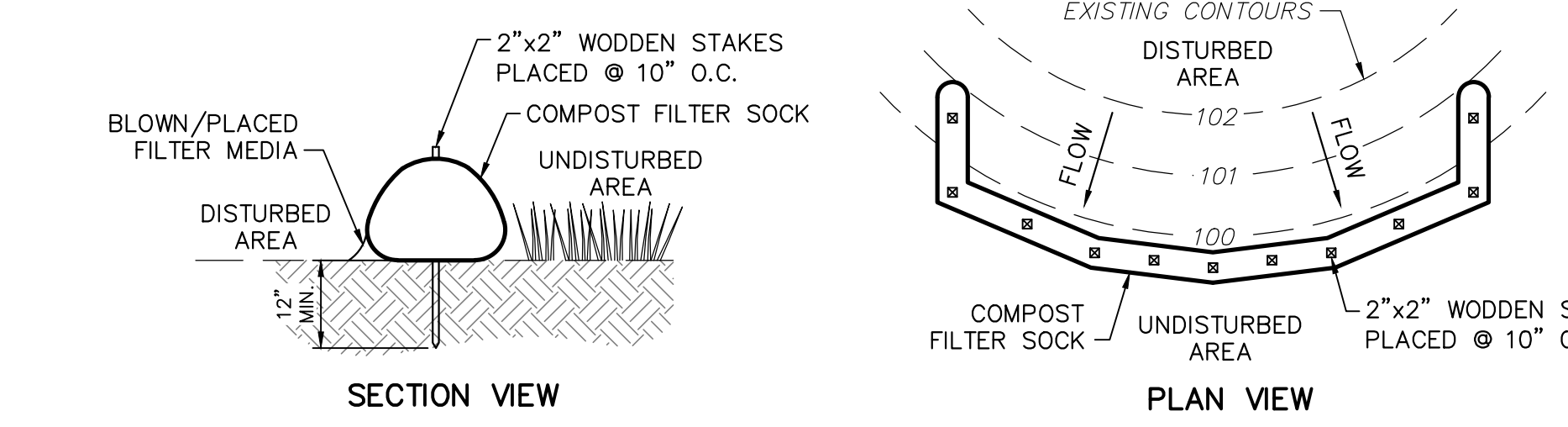
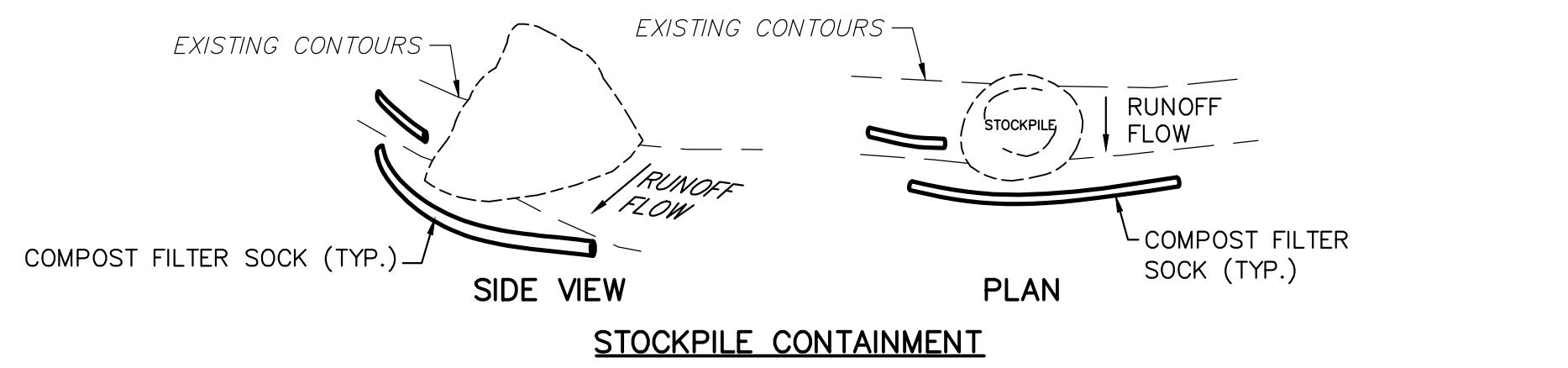
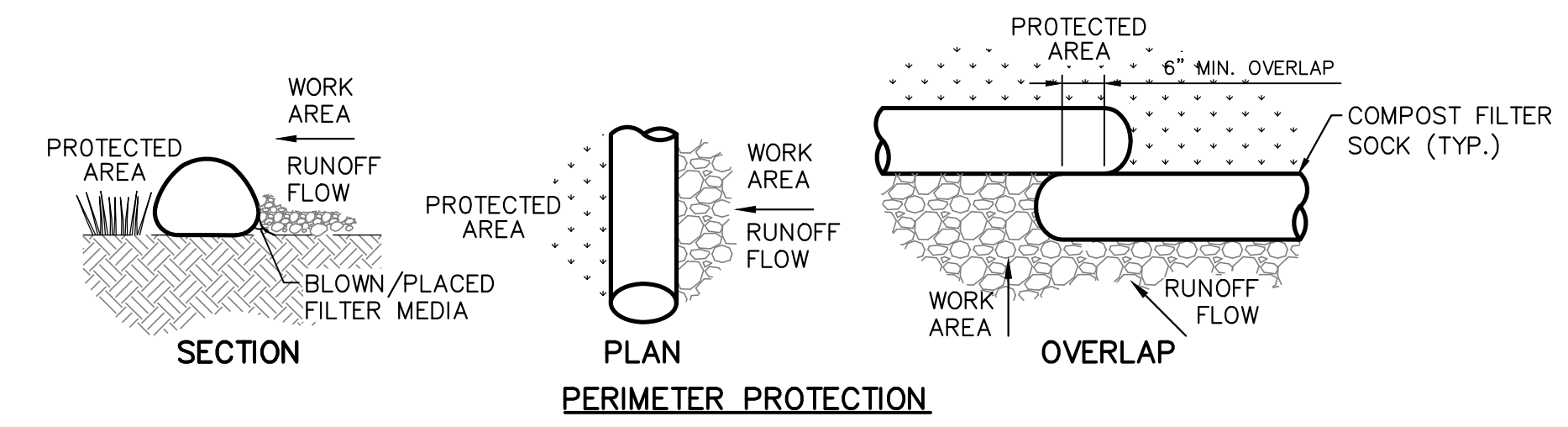
FREQUENCY OF MECHANICAL AND/OR MANUAL CONTROLS WILL BE DEPENDENT UPON CONSTRUCTION TRAFFIC INTENSITY, WEATHER AND SOIL MOISTURE CONDITIONS. AT A MINIMUM FOR PAVED ROADS - ANY DAY IN WHICH CONSTRUCTION TRAFFIC IS EXITING THE ROCK CONSTRUCTION ENTRANCE, THE VACUUM TRUCK SWEEPER OR SWEEPER WITH A CATCH BIN ATTACHMENT SHALL CLEAN THE ROADWAY AT THE END OF THE WORK DAY AND PRIOR TO ANY FORECASTED RAIN EVENT. THE REQUIREMENT IS TO NOT INTRODUCE SEDIMENT LOAD FROM CONSTRUCTION TRAFFIC ONTO PUBLIC ROAD SURFACES AND INTO ROAD DITCHES WHICH WILL FLOW INTO THE EV/HQ WATER RESOURCES WHICH ARE THE SUBJECT OF THE INCREASED PROTECTION MEASURES.

**AASHTO #1 ROCK CONSTRUCTION ENTRANCE** 1  
NOT TO SCALE 2 4



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

**EROSION CONTROL BLANKET - SLOPE INSTALLATION** 2  
NOT TO SCALE 2 4



COMPOST STANDARDS	
ORGANIC MATTER CONTENT	80%-100% (DRY WEIGHT BASIS)
ORGANIC	FIBROUS & ELONGATED
pH	5.5-8.0
MOISTURE CONTENT	35%-55%
PARTICLE SIZE	98% PASS THROUGH 1" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 ds/m MAXIMUM

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 SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2 IN ATTACHMENT 3.

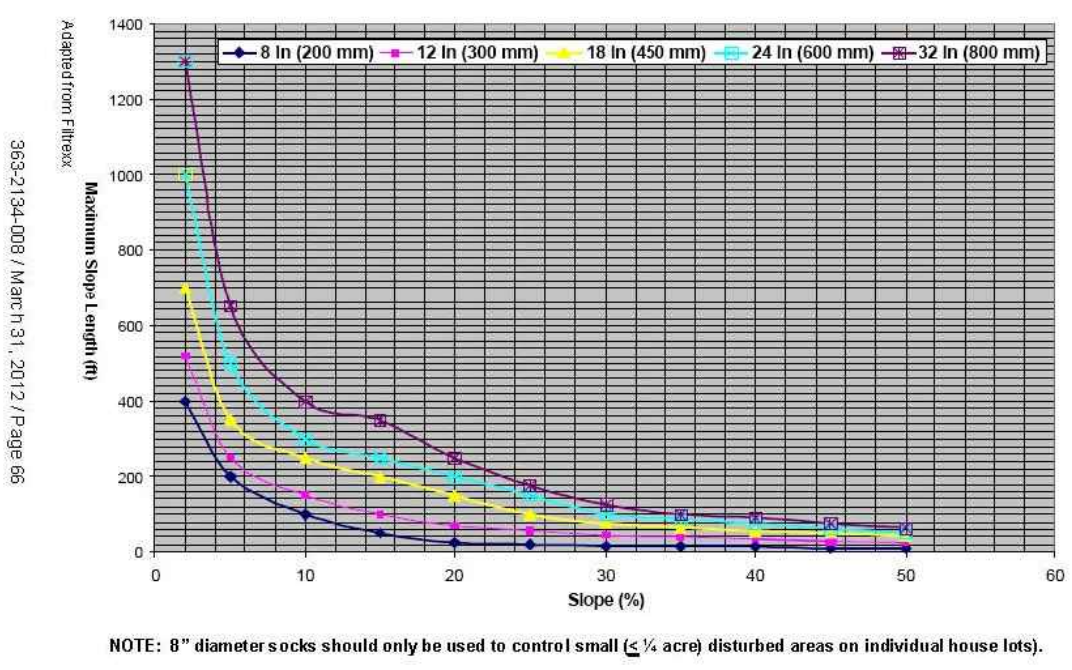
TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

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.

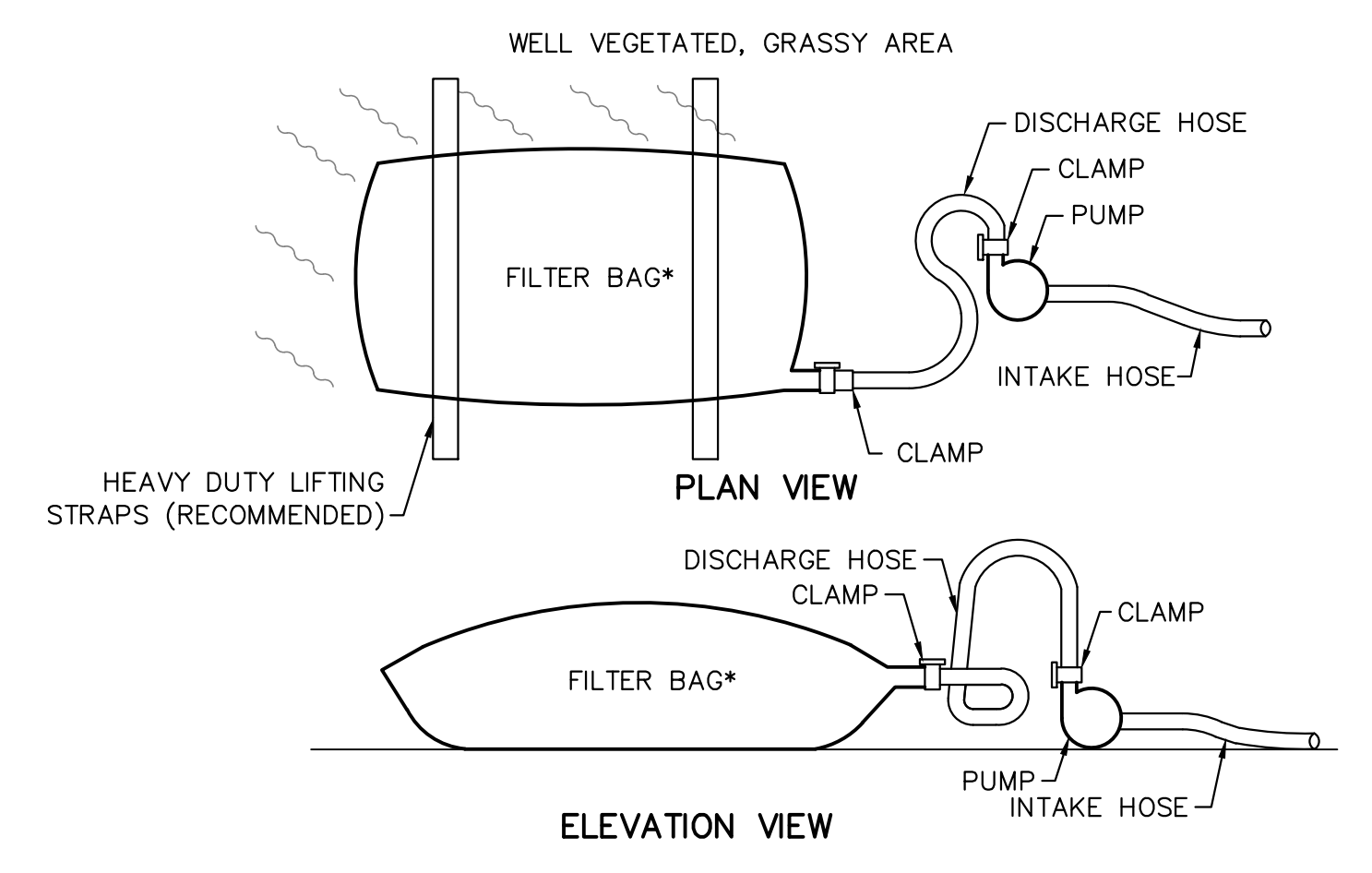
BIODEGRADABLE FILTER SOCK SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

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.

**COMPOST FILTER SOCK** 3  
NOT TO SCALE 2 4



NOTE: 8" diameter socks should only be used to control small (<1/2 acre) disturbed areas on individual house lots.



- NOTES:**
1. LOW VOLUME FILTER BAGS SHALL BE MADE OF NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE-STITCHED "J" SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL 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

2. 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. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FULL. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.
3. BAGS SHALL BE LOCATED IN WELL VEGETATED (GRASSY) AREAS, AND DISCHARGE INTO STABLE, EROSION RESISTENT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE 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.
4. 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.
5. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED.
6. THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHOULD BE FLOATING AND SCREENED.
7. 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**  
NOT TO SCALE

REVISIONS			
NO.	BY	DATE	REMARKS
1	TD	11/30/18	REVISED FOR DEP TECHNICAL COMMENTS

SUNOCO PIPELINE L.P.  
SINKING SPRING, PENNSYLVANIA  
HOUSTON INJECTION STATION

ESCGP-2 EROSION & SEDIMENT CONTROL PLAN  
EROSION & SEDIMENT CONTROL DETAILS

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<b>C-4</b>	
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