TETRA TECH

PITT-08-15-025

August 26, 2015

Project Number 112IC05958

RECEIVED
AUG 27 2015
BY_____

East Goshen Township
1580 Paoli Pike
West Chester, PA 19380

Reference: Sunoco Pipeline, L.P. (SPLP)
Pennsylvania Pipeline Project

To Whom It May Concern:

This municipal notice, under the requirements of Acts 14, 67, 68, and 127, is to inform you that our client, Sunoco Pipeline, L.P. (SPLP), is applying for coverage under the Erosion and Sediment Control General Permit (ESCGP-2) for Earth Disturbance Associated with Oil and Gas Exploration, Production, Processing or Treatment Operations or Transmission Facilities.

Project Name: Pennsylvania Pipeline Project

Applicant Name: Sunoco Pipeline, L.P.
525 Fritztown Road
Sinking Spring, PA 19608

Project Description: Sunoco Pipeline, L.P. (SPLP) proposes to construct and operate the Pennsylvania Pipeline Project that would expand existing pipeline systems to provide natural gas liquid (NGL) transportation of up to 350,000 barrels per day. The project involves the installation of approximately two parallel pipelines within a 306-mile, 50-foot-wide right-of-way (ROW) from Houston, Washington County, Pennsylvania (PA) to SPLP's Marcus Hook facility in Delaware County, PA with the purpose of interconnecting with existing SPLP Mariner East pipelines. A 20-inch diameter pipeline would be installed within the ROW from Houston to Marcus Hook (306 miles) and a second, up to 20-inch diameter pipeline, will also be installed in the same ROW. The second line is proposed to be installed from SPLP's Delmont Station, Westmoreland County, PA to the Marcus Hook facility, paralleling the initial line for approximately 255 miles. The pipeline will traverse through 11 townships in Chester County: East Goshen, East Nantmeal, East Whiteland, Elverson, Upper Uwchlan, Uwchlan, Wallace, West Goshen, West Nantmeal, West Whiteland, and Westtown Townships. In addition, temporary use areas or extra workspaces will be required at some stream and road/railroad crossings; these will typically expand the construction ROW by 25 feet where needed. Construction activities will involve clearing and grubbing within the ROW, trenching, boring, pipe installation, and site restoration. Existing access roads will be used during construction. Erosion and sediment controls will be in place prior to and during earth disturbance activities, and until the project areas are permanently stabilized.

Site Location: Project crosses through the central portion of East Goshen Township from West Goshen Township to Westtown Township.

Tetra Tech
661 Andersen Drive, Pittsburgh, PA 15220-2700
Tel 412.921.7090 Fax 412.921.4040 www.tetratech.com

Enclosed is a copy of the Notice of Intent (NOI) application for an ESCGP-2 and figures of the proposed pipeline route. Please submit any comments concerning this project within 30 days from date of receipt of this letter to:

Pennsylvania Department of Environmental Protection (PA DEP)
2 East Main Street
Norristown, PA 19401
Phone: (484) 250-5900

Should you have questions regarding this correspondence, please do not hesitate to contact me at 412.921.8163 or via e-mail at Robert.Simcik@tetratech.com.

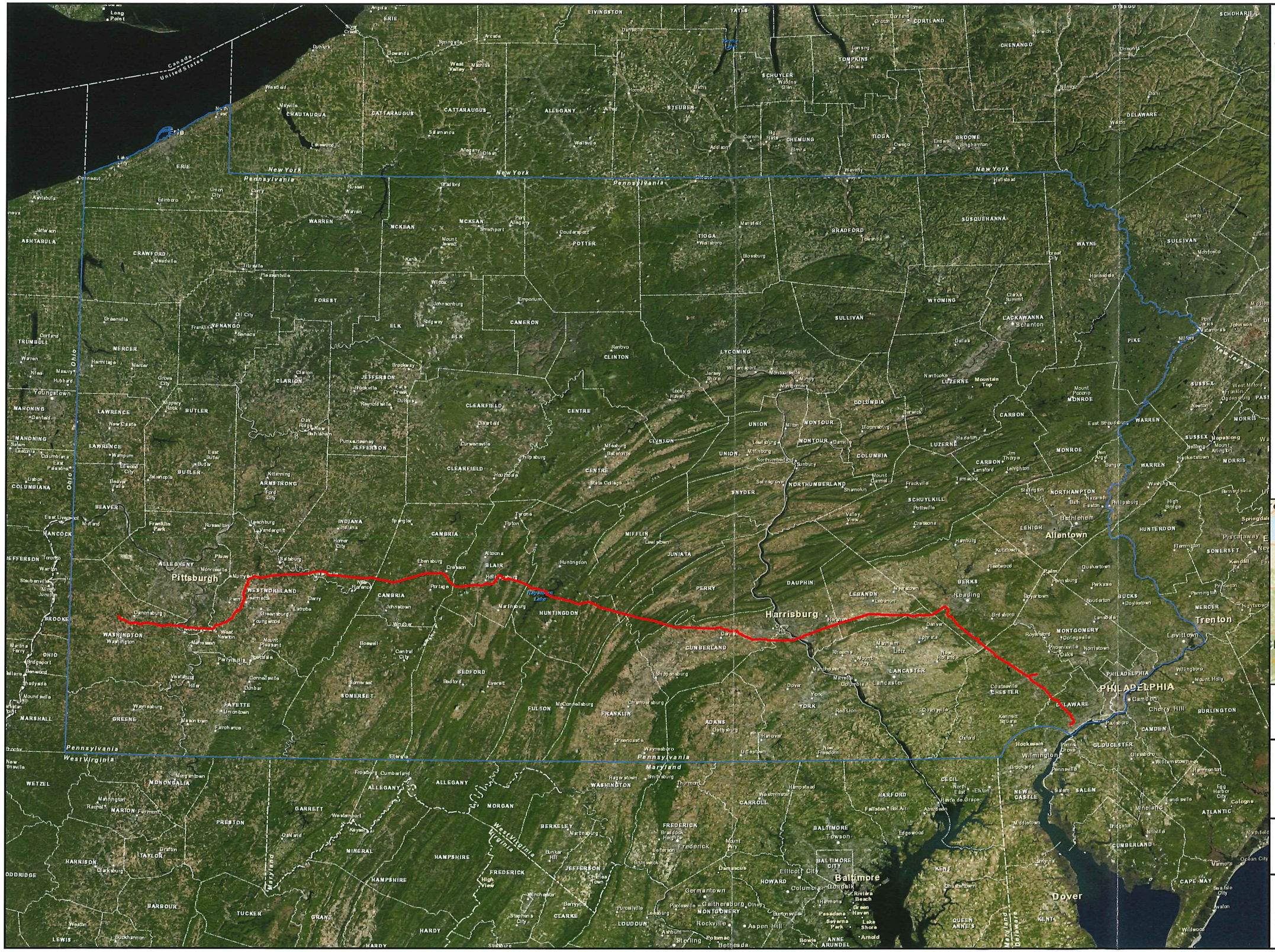
Sincerely,

Robert F. Simcik, P.E.
E&S Task Manager

RFS/clm

Enclosure: Site Location Maps; Notice of Intent; E&S/SR Plan Sheets

cc: File 112IC05958



Legend

- Alignment Centerline
- Pennsylvania State Border

Sheet Identifier

N

0 12.5 25 Miles

0 20.05 40.1 Kilometers

PROJECT LOCATION MAP
FIGURE 1
PENNSYLVANIA PIPELINE PROJECT
AUGUST 19, ALIGNMENT
SUNOCO LOGISTICS, L.P.
STATE OF PENNSYLVANIA

TETRA TECH

Notes:
Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

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Legend

- Alignment Centerline
- County Boundary
- Township Boundary

Sheet Identifier

N

Feet: 0 — 3,500 — 7,000

Meters: 0 — 1,066.8 — 2,133.6

PROJECT LOCATION MAP
EAST GOSHEN TOWNSHIP
FIGURE 3 -77
PENNSYLVANIA PIPELINE PROJECT
AUGUST 19, 2015 ALIGNMENT
SUNOCO LOGISTICS, L.P.
CHESTER COUNTY, PA

TETRA TECH

Notes:
Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

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8000-PM-OOGM0005 Rev. 1/2014
Notice of Intent

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF WATER MANAGEMENT
OFFICE OF OIL AND GAS MANAGEMENT

OFFICIAL USE ONLY
ID # _____
Date Received _____

NOTICE OF INTENT (NOI) FOR COVERAGE UNDER THE EROSION AND SEDIMENT CONTROL GENERAL PERMIT (ESCGP-2) FOR EARTH DISTURBANCE ASSOCIATED WITH OIL AND GAS EXPLORATION, PRODUCTION, PROCESSING, OR TREATMENT OPERATIONS OR TRANSMISSION FACILITIES

READ THE INSTRUCTIONS PROVIDED IN THIS PERMIT APPLICATION PACKAGE BEFORE COMPLETING THIS FORM.
PLEASE PRINT OR TYPE INFORMATION IN BLACK OR BLUE INK.

SECTION A. APPLICANT INFORMATION

APPLICATION TYPE NEW ☒ RENEWAL ☐ MAJOR MODIFICATIONS ☐ EXPEDITED ☐ PHASED ☐

Applicant's Last Name (If applicable)	First Name	MI	Phone (610) 216-0583 (cell)
Gordon	Matthew	L	FAX
Organization Name or Registered Fictitious Name			Phone (610) 670-3284 (office)
Sunoco Pipeline, L.P.			FAX
Mailing Address	City	State	ZIP + 4
535 Fritztown Road	Sinking Spring	PA	19608
Email Address mlgordon@sunocologistics.com			
Co-Applicant's Last Name (If applicable)	First Name	MI	Phone
			FAX
Organization Name or Registered Fictitious Name			Phone
			FAX
Mailing Address	City	State	ZIP + 4
Email Address			

SECTION B. SITE INFORMATION

Site Name		
Pennsylvania Pipeline Project		
Site Location		
Chester and Delaware Counties		
Site Location – City	State	ZIP+4
Elverson Township, Chester County to Upper Chichester Township, Delaware County	PA	

Detailed Written Directions to Site
See Directions in Attachment 1

County	Municipality	City	Boro	Twp.
Chester and Delaware	See Municipalities Table in Attachment 2	☐	☐	☒

SECTION C. PROJECT INFORMATION

1. Total Project Area/Project Site (Ac):	267	Total Disturbed Area (Ac):	267

2. Project Name Pennsylvania Pipeline Project

3. Project Type (Check all that apply)

☐ Oil/Gas Well ☒ Transmission Facility ☐ Gathering Facility ☐ Processing Facility ☐ Treatment Facility
☐ Centralized Fresh Water Impoundment ☐ Centralized Wastewater Impoundment ☐ Water Pipeline
☐ Ground/Surface Water Withdrawal Site ☐ Other

If Oil/Gas well, is the well conventional or unconventional? ☐ Conventional ☐ Unconventional

Project Description

Sunoco Pipeline, L.P. (SPLP) proposes to construct and operate the Pennsylvania Pipeline Project that would expand existing pipeline systems to provide natural gas liquid (NGL) transportation of up to 350,000 barrels per day. The project involves the installation of approximately two parallel pipelines within a 306-mile, 50-foot-wide right-of-way (ROW) from Houston, Washington County, Pennsylvania (PA) to SPLP's Marcus Hook facility in Delaware County, PA with the purpose of interconnecting with existing SPLP Mariner East pipelines. A 20-inch diameter pipeline would be installed within the ROW from Houston to Marcus Hook (306 miles) and a second, up to 20-inch diameter pipeline, will also be installed in the same ROW. The second line is proposed to be installed from SPLP's Delmont Station, Westmoreland County, PA to the Marcus Hook facility, paralleling the initial line for approximately 255 miles. Construction activities will involve clearing and grubbing, trenching, pipe installation, site restoration, and access road construction/improvement. Erosion and sediment controls will be in place during earth disturbance activities. Following completion of pipeline installation, the area will be returned to the general grade present prior to pipeline installation in order to maintain preconstruction elevations and drainage patterns. Disturbed areas will be seeded and mulched. Erosion and sedimentation devices will be maintained until site work is complete and revegetation is successful.

The project will be constructed for XXX miles in the PADEP South East Region. The project disturbance by county is as follows:

Chester County: 184 Acres
Delaware County: 83 Acres

4. Please provide the latitude and longitude coordinates for the center of the project. The coordinates should be in degrees, minutes seconds (DD MM SS.SS) and North American Datum 1983. For linear projects provide the project's termini.

Latitude 40° degrees 9' minutes 20.15" seconds Longitude -75° degrees 50' minutes 34.44" seconds

Latitude 39° degrees 50' minutes 40.48" seconds Longitude -75° degrees 25' minutes 7.23" seconds

Horizontal Collection Method: ☐ GPS ☒ Interpolated from U.S.G.S. Topographic Map ☐ DEP's eMAP

5. U.S.G.S. 7.5 min. Quad Map Name Elverson, Pottstown, Downingtown, Washington, Malvern, West Chester, Media, Marcus Hook, and Bridgeport (Include a copy of the project area on the 7.5 min quad map)

6. Will the project be conducted as a phased permit project? ☒ Yes ☐ No

If Yes, Include Master Site Plan Estimated Timetable for Phased Projects. ☐ Additional sheet(s) attached.

Phase No. or Name	Description	Total Area	Disturbed Area	Start Date	End Date
1	Installation of pipeline			May 2016	April 2017
2	Construction of Twin Oaks station expansion			August 2016	August 2017

7. List existing and previous land use for a minimum of the previous 5 years. Forested/ agricultural/ rural residential

8. Other Pollutants: Will the stormwater discharge contain pollutional substances other than sediment? ☐ Yes ☒ No
If yes, explain and provide any available quantitative data.

9. Will fuels, chemicals, solvents, other hazardous waste or materials be used or stored on site during earth disturbance activities?
Yes ☒ No ☐ **(If yes, a PPC Plan must be maintained on site during earth disturbance.)**

10. Does the project have the potential to discharge to siltation-impaired waters?
Yes ☒ No ☐ **(If yes, show how the project will not result in a net change in volume, rate or water quality. See section G below.)**

11. Has the project site been investigated to identify naturally occurring geologic formations or soil types that may cause pollution when disturbed?
Yes ☒ No ☐
Have naturally occurring geologic formations or soil types that may cause pollution when disturbed been identified?
Yes ☒ No ☐ **(If yes, BMPs to avoid or minimize the potential pollution must be utilized.)**

12. Has the project site been analyzed to determine potential thermal impacts to surface waters of the Commonwealth?
Yes ☒ No ☐
Have potential thermal impacts to surface water of the Commonwealth from earth disturbance activity been identified?
Yes ☒ No ☐ **(If yes, BMPs to avoid, minimize or mitigated the thermal pollution must be utilized.)**

13. Have the E&S Plan and PCSM/SR Plan been planned, designed and implemented to be consistent?
Yes ☒ No ☐

14. Have existing and/or proposed Riparian Forest Buffers been identified?
Yes ☒ N/A ☐ **(If not, they must be shown on the plans.)**

15. Is a riparian buffer waiver being requested?
Yes ☒ No ☐
If yes, the applicant requesting a waiver must submit a written request that demonstrates that reasonable alternatives will meet the requirements of 25 Pa. Code § 102.14 and to demonstrate that any existing riparian buffer will remain undisturbed to the extent practicable.

16. Have antidegradation implementation requirements for special protection waters been addressed?
Yes ☒ No ☐ **(If no, antidegradation requirements must be included in the plan.)** N/A ☐

17. Has the seasonal high groundwater level been identified at all excavation locations for pits and impoundments other than those which will contain top-hole water, fresh water and uncontaminated drill cuttings?
Yes ☐ No ☒ N/A ☐ **(If no, be advised that a 20-inch separation between the seasonal high groundwater and the bottom of all pits and impoundments containing pollutional substances is required.)**

18. Receiving Water/Watershed Name	Name of Municipal or Private Separate Storm Sewer Operator
See Table in Attachment 3. Chapter 93, Designated Use and Existing Use Stream Classification ☒ High Quality ☒ Exceptional Value ☒ Other WWF, CWF, TSF ☒ Siltation-impaired Secondary Receiving Water	See Table in Attachment 4

19. Is an Expedited Review being requested? Yes ☐ No ☒
If yes, be advised that the Expedited Review is not available for all projects. Refer to the "Expedited Review Process" Item 8, Page 17 of the ESCGP-2 Instructions to determine if your project is eligible.

SECTION D. EROSION AND SEDIMENT CONTROL PLAN BMPS
See the attached Instructions on how to complete this section.

Erosion and Sediment Control Plan BMPs should be designed to minimize accelerated erosion and sedimentation through limiting the extent and duration of earth disturbance, protection of existing drainage and vegetation, limiting soil compaction and controlling the generation of increased runoff. The Department recommends the use of the Erosion and Sediment Control BMP Manual to achieve this goal. The E&S Plan must meet the requirements of Pa. Code § 102.4(b) and submitted with the NOI.

1. E & S Plan

The E & S Plan must satisfy at least one of subparagraph A or B below.

Provide a brief summary of proposed BMPs and their performance to manage E & S for the project. If E & S BMPs and their application do not follow the guidelines referenced in the Pa. Erosion and Sediment Pollution Control Program Manual, provide documentation to demonstrate performance equivalent to, or better than, the BMPs in the Manual.

Compost Filter Socks - This temporary sedimentation control measure consists of wood or metal posts driven through a compost filled mesh tube. Filter socks will be located as needed on side-slope and down-slope boundaries of disturbed areas. Compost filter socks will be sized using the DEP Construction Detail.

Tarpaulin Covers - Tarpaulin covers may be used, as necessary, to protect topsoil storage stockpiles from wind and precipitation erosion. Stockpile slopes will be 2:1 or less. A minimal amount of soil will be stockpiled so that the height of the stockpile is less than 35 feet.

Rock Construction Entrance – Temporary access routes will be established on and proximate to the site to facilitate construction activities. The use of access routes will help confine truck and equipment traffic to specific corridors thus minimizing land disturbance and protecting vegetation. Site traffic during wet weather will be limited. No vehicles will be permitted in streams or rivers.

Wash Racks – Wash racks will be used at rock construction entrances and will be designed to accommodate anticipated vehicular traffic. A water supply will be made available at wash racks to wash the wheels of vehicles exiting the site.

Pumped Water Filter Bag – Pumped water filter bags may be used to filter water pumped from disturbed areas prior to discharging to surface waters. Compost filter socks shall be installed within 50 feet of any receiving surface water or where grassy area is not available.

Erosion Control Blanket - A manufactured erosion control blanket shall be installed on all slopes 3:1 (H:V) or steeper and within 100 feet of stream banks, where applicable. The blanket shall be biodegradable but capable of providing protection for two growing seasons. Straw or similar fiber material shall be placed between two biodegradable nets. The top net shall be heavyweight and UV stabilized; the bottom net shall be a lightweight netting. Erosion control blankets shall be anchored and stapled in place in accordance with the manufacturer's recommendations and the detail on the construction drawings. For slopes between 3:1 and 1:1 (H:V) use erosion control blanket SC 150 as manufactured by North American Green or Owner approved equal material or equal method.

Waterbars – Waterbars shall be installed across the right-of-way on all slopes greater than 5%. Waterbars should be constructed at a slope of 2% and discharge to a well-vegetated area. Waterbars should not discharge into an open trench. Waterbars should be oriented so that the discharge does not flow back onto the right-of-way. Obstructions (e.g. compost filter socks etc.) should not be placed in any waterbars. Where needed, they should be located below the discharge end of the waterbar.

Trench Plugs - To be used to prevent piping along the pipeline.

A. ☒ E & S plan is designed using BMPs in the Pennsylvania Erosion & Sedimentation Pollution Control Manual (ESPC) (Technical Guidance #3632134-008/March 2012)

OR

B. ☐ E & S plan is designed using an alternative BMP or design standard

2. Riparian Buffer Information

A. Will you be protecting, converting or establishing a riparian buffer or a riparian forest buffer as a part of this project?

Protect ☒ Yes ☐ No Convert ☒ Yes ☐ No Establish ☐ Yes ☒ No

B. Will you be protecting, converting or establishing a voluntary riparian forest buffer as part of this project?

☐ Yes ☒ No

C. Are you proposing to conduct oil and gas activities for which site reclamation or restoration is required as part of the Chapter 78 permit authorization in a high quality or exceptional value watershed that is currently attaining its designated use and within 150 ft of a perennial or intermittent river, stream or creek or lake, pond or reservoir?

☐ Yes ☒ No If yes, provide a demonstration that any existing riparian buffer is undisturbed to the extent practicable.

D. If the regulations require a riparian buffer or riparian forest buffer and you are not providing one, list the waiver provisions in the Chapter 102 regulations, Section 102.14(d)(2)(i)-(vi), that you are requesting and provide additional documentation to demonstrate reasonable alternatives for compliance with 102.14 requirements and to demonstrate that any existing reparian buffer will remain undisturbed to the extent practicable.

This project qualifies for an exception of the riparian forest buffer requirement under Chapter 102.14(d)(1)(ix). Existing riparian forest buffers within the project area are identified on the E&S plan drawings in Attachment 2 of the E&S Plan. Existing riparian forest buffers will be protected to the extent practicable by minimizing the limit of disturbance at stream crossings. In addition to the exception, we are requesting a waiver under 102.14(d)(2)(ii) for areas within 150' of surface waters that are outside of the Chapter 105 permit area.

All disturbance activities, including those which impact riparian forest buffers, have been reduced to the extent practicable. The limit of disturbance has been reduced to 50 feet wide at all stream crossings within the riparian forest buffer area where possible. In areas where it is not practicable to reduce the LOD throughout the entire extent of the riparian forest buffer, the LOD has been reduced to 50 feet wide surrounding the stream channel. The operations within the LOD near stream crossings typically includes a topsoil stockpile, a stockpile for pipe trench excavation material, a pipe trench, a travel lane, a work area for equipment operation and pipeline welding outside the trench, and an area to install the erosion control BMPs. In addition, site conditions such as steep slopes, varying depths of topsoil, and other on-site conditions limit the amount of work area. Reducing the LOD to a greater extent could potentially result in unsafe working conditions and would hinder the ability to complete the stream crossing within the required time frame of 24 hours or less. Workspaces that provide additional space for stream crossing activities have been placed outside of riparian forest buffers where possible.

Note: If the proposed activity protects, converts or establishes a riparian or riparian forest buffer a Buffer Management Plan is required in the PCSM Plan.

3. Thermal Impacts Analysis

Please explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

Potential thermal impacts to surface waters will be minimized by minimizing clearing and retaining existing vegetation where possible. The disturbed areas will be reseeded as soon as practicable following construction

SECTION E. SITE RESTORATION (SR) PLAN BMPS

See the attached Instructions on how to complete this section.

If this section is not applicable to your project, please indicate by checking this box: N/A ☐

For earth disturbance projects involving oil and gas activities authorized by Chapter 78 (well pads) or pipelines and other similar utility infrastructure provide the information outlined below. If your project includes both oil and gas activities authorized by Chapter 78 (well pads) or pipelines and other similar utility infrastructure and other activities requiring Post Construction Stormwater Management, provide the information outlined in this Section as well as Section F.

Site Restoration BMPs should be designed to use natural measures to eliminate pollution, infiltrate runoff, not require extensive construction/maintenance activity, promote pollutant reduction, and preserve the integrity of stream channels. The Department recommends the use of PA Stormwater BMP manual to achieve this goal. The SR Plan must meet the requirements of Pa Code § 102.8(n) and be submitted with the NOI.

1. **Site Restoration Plan Information –** The Site Restoration Plan should be designed to maximize volume reduction technologies, eliminate (where possible) or minimize point source discharges to surface waters, preserve the integrity of stream channels, and protect the physical, biological and chemical qualities of the receiving surface water.

Design standards applied to develop the Site Restoration Plan. Check those that apply.

☒ Act 167 Plan – The attached SR Plan is consistent with an applicable approved Act 167 Plan.

Complete the following for all approved Act 167 Stormwater Management Plans. (Use additional sheets if necessary)

Act 167 Plan Name	Date Adopted	Consistency Letter Included	☐
See Table in Attachment 5		Verification Report Included	☒

NOTE: *A consistency letter is not required if a verification report is provided. Please see NOI Instructions.* The Site Restoration Plan must satisfy either sub paragraph A, B, **or** C below. Check those that apply.

A. ☒ Act 167 Plan approvals on or after January 2005 - The attached PCSM Plan, in its entirety, is consistent with all requirements pertaining to rate, volume, and water quality from an Act 167 Stormwater Management Plan approved by DEP on or after January 2005. Letter A must be checked if a current, DEP approved Act 167 plan exists.

B. ☒ The PCSM meets the standard design criteria from the PA Stormwater BMP Manual. For projects involving oil and gas activities authorized by a permit issued under Chapter 78 (well pads) or pipelines and other similar utility infrastructure, post construction stormwater management requirements are met for all areas that are restored to preconstruction conditions or to a condition of meadow in good condition or better.

C. ☐ Alternative Design Standard – The attached PCSM Plan was developed using approaches other than 102.8(g)(2). Demonstrate/explain in the space provided below how this standard will be either more protective than what is required in 102.8(g)(2) or will maintain and protect existing water quality and existing and designated uses.

2. Riparian Buffer Information

A. Will you be protecting, converting or establishing a riparian buffer or a riparian forest buffer as part of this activity?
Protect ☒ Yes ☐ No Convert ☒ Yes ☐ No Establish ☐ Yes ☒ No

B. Will you be protecting, converting or establishing a voluntary riparian forest buffer as part of this activity?
☐ Yes ☒ No

C. Are you proposing to conduct oil and gas activities for which site reclamation or restoration is required under a permit issued under the auhtority of the 2012 Oil and Gas Act and Chapter 78 in a high quality or exceptional value watershed that is currently attaining its designated use and within 150 ft of a perennial or intermittent river, stream or creek or lake, pond or reservoir?

☐ Yes ☒ No If yes, provide a demonstration that any existing riparian buffer is undisturbed to the extent practicable.

D. If the regulations require a riparian buffer or riparian forest buffer and you are **not** providing one, list below the waiver provisions in the Chapter 102 regulations, Section 102.14(d)(i)-(vi), that you are requesting and provide additional documentation to demonstrate reasonable alternatives for compliance with 102.14 requirements and to demonstrate that any existing reparian buffer will remain undisturbed to the extent practicable.

This project qualifies for an exception of the riparian forest buffer requirement under Chapter 102.14(d)(1)(ix). Existing riparian forest buffers within the project area are identified on the E&S plan drawings in Attachment 2 of the E&S Plan. Existing riparian forest buffers will be protected to the extent practicable by minimizing the limit of disturbance at stream crossings. In addition to the exception, we are requesting a waiver under 102.14(d)(2)(ii) for areas within 150' of surface waters that are outside of the Chapter 105 permit area.

All disturbance activities, including those which impact riparian forest buffers, have been reduced to the extent practicable. The limit of disturbance has been reduced to 50 feet wide at all stream crossings within the riparian forest buffer area where possible. In areas where it is not practicable to reduce the LOD throughout the entire extent of the riparian forest buffer, the LOD has been reduced to 50 feet wide surrounding the stream channel. The operations within the LOD near stream crossings typically includes a topsoil stockpile, a stockpile for pipe trench excavation material, a pipe trench, a travel lane, a work area for equipment operation and pipeline welding outside the trench, and an area to install the erosion control BMPs. In addition, site conditions such as steep slopes, varying depths of topsoil, and other on-site conditions limit the amount of work area. Reducing the LOD to a greater extent could potentially result in unsafe working conditions and would hinder the ability to complete the stream crossing within the required time frame of 24 hours or less. Workspaces that provide additional space for stream crossing activities have been placed outside of riparian forest buffers where possible.

Note: If the proposed activity protects, converts or establishes a riparian or riparian forest buffer a Buffer Management Plan is required in the PCSM Plan.

3. SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA
See Attachment D in the Instructions on how to Complete This Section

This section does not need to be completed for areas of projects involving oil and gas activities authorized by Chapter 78 (well pads) or pipelines and other similar utility infrastructure which will be restored to meadow in good condition or better or existing conditions.

Watershed Name: N/A - Restoring pipeline right of way to a meadow condition. See Section F for stormwater management calculations associated with the permanent access roads and block valves.

Design storm frequency _____ Rainfall amount _____ inches	Pre-construction	Post Construction	Net Change
Impervious area (acres)			
Volume of stormwater runoff (acre-feet) without planned stormwater BMPs			
Volume of stormwater runoff (acre-feet) with planned stormwater BMPs			
Stormwater discharge rate for the design frequency storm	Pre-construction	Post Construction	Net Change
1) 2-Year/24-Hour			
2) 10-Year/24-Hour			
3) 50-year/24-Hour			
4) 100-year/24-Hour			

4. SUMMARY DESCRIPTION OF SITE RESTORATION BMPs

In the lists below, check the BMPs identified in the Post Construction Stormwater Management Plan. The primary function(s) of the BMP listed in the functions column (infiltration/recharge; detention/retention; water quality). Additional functions may be added if applicable to that BMP. List the stormwater volume and area of runoff to be treated by each BMP type when calculations are required. If any BMP in the Site Restoration Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
Site Restoration ☒ Restore Site to Meadow in Good Condition or Better, or Existing Conditions	Infiltration/Recharge Detention/WQ Treatment	_____	_____
Bio-infiltration areas ☐ Infiltration Trench ☐ Infiltration Bed ☐ Infiltrated Basin	Infiltration/Recharge	_____ _____ _____	_____ _____ _____
Natural Area Conservation ☐ Streamside Buffer Zone ☐ Wetland Buffer Zone ☐ Sensitive Area Buffer Zone ☒ Pre-Construction Drainage Pattern Intact	Infiltration/Recharge	_____ _____ _____ _____	_____ _____ _____ _____
Stormwater Retention ☐ Constructed Wetlands ☐ Wet Ponds ☐ Retention Basin	Detention/Retention	_____ _____ _____	_____ _____ _____
Sediment and Pollutant Removal ☐ Vegetated Filter Strips ☐ Detention Basins	Water Quality Treatment	_____ _____	_____ _____

Access Road Design ☐ Road Crowning ☐ Ditches ☒ Turnouts ☐ Culverts ☐ Roadside Vegetated Filter Strips	Infiltration/Recharge	____ ____ ____ ____ ____	____ ____ ____ ____ ____
Stormwater Energy Dissipaters ☐ Level Spreaders ☐ Riprap Aprons ☐ Upslope Diversions ☐ _____	Infiltration/Recharge	____ ____ ____ ____	____ ____ ____ ____

5. Off-site Discharge Analysis.

Does the activity propose any off-site discharges to areas other than surface waters? ☐ Yes ☒ No

If yes, it is the applicant's responsibility to ensure that they have legal authority for any off-site discharge.

The Applicant must provide a demonstration in both the E&S and Site Restoration Plans that the discharge will not cause erosion, damage, or a nuisance to off-site properties.

6. Thermal Impact Analysis.

Explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

Potential themal impacts to surface waters will be minimized by minimizing clearing and retaining existing vegetation where possible. Permanent seeding will occur as soon as practicable during germinating months.

SECTION F. POST CONSTRUCTION STORMWATER MANAGEMENT (PCSM) PLAN BMPS

See the attached Instructions on how to complete this section.

If this section is not applicable to your project, please indicate by checking this box: N/A ☐

For earth disturbance projects requiring post construction stormwater management, provide the information outlined below. If your project includes both oil and gas activities authorized under a well permit issued under the 2012 Oil and Gas Act and Chapter 78 (well pads) or pipelines and other similar utility infrastructure and other activities requiring Post Construction Stormwater Management, provide the information outlined in this Section as well as Section E.

Post Construction Stormwater Management BMPs should be designed to use natural measures to eliminate pollution, infiltrate runoff, not require extensive construction/maintenance activity, promote pollutant reduction, and preserve the integrity of stream channels. The Department recommends the use of PA Stormwater BMP manual to achieve this goal. If PCSM BMPS and their application do not follow the guidelines referenced in the PA Stormwater BMP Manual, provide documentation to demonstrate performance equivalent to, or better than, the BMPs in the Manual.

1. **Post Construction Stormwater Management Plan Information** – The Post Construction Stormwater Management Plan must meet the requirements in 25 Pa. Code §102.8 and should be designed to maximize volume reduction technologies, eliminate (where possible) or minimize point source discharges to surface waters, preserve the integrity of stream channels, and protect the physical, biological and chemical qualities of the receiving surface water.

   Design standards applied to develop the Post Construction Stormwater Management Plan. Check those that apply.

   ☒ Act 167 Plan – The attached PCSM Plan is consistent with an applicable approved Act 167 Plan.

   Complete the following for all approved Act 167 Stormwater Management Plans. (Use additional sheets if necessary)

Act 167 Plan Name	Date Adopted	Consistency Letter Included ☐
		Verification Report Included ☒

   NOTE: A consistency letter is not required if a verification report is provided. Please see NOI Instructions.

   The PCSM Plan must satisfy either subparagraph A, B, **or** C below. Check those that apply. If a current, DEP approved Act 167 Plan exists, letter A must be checked.

   A. ☒ Act 167 Plan approvals on or after January 2005 - The attached PCSM Plan, in its entirety, is consistent with all requirements pertaining to rate, volume, and water quality from an Act 167 Stormwater Management Plan approved by DEP on or after January 2005.

   B. ☒ The PCSM meets the standard design criteria from 102.8(g)(2) and (3) the PA Stormwater BMP Manual. [Note: PCSM plans have to meet both the volume and rate requirements in the regulations, which are provided in these 2 sections].

   C. ☐ Alternative Design Standard – The attached PCSM Plan was developed using alternative approaches as provided in 102.8(g)(2)(iv) and 102.(g)(3)(iii). Demonstrate/explain in the space provided below how this standard will be either more protective than what is required in 102.8(g)(2) and 102.8(g)(3) or will maintain and protect existing water quality and existing and designated uses.

2. **Riparian Buffer Information**

   A. Will you be protecting, converting or establishing a riparian buffer or a riparian forest buffer as part of this activity?
   Protect ☒ Yes ☐ No Convert ☒ Yes ☐ No Establish ☐ Yes ☒ No

   B. Will you be protecting, converting or establishing a voluntary riparian forest buffer as part of this activity?
   ☐ Yes ☒ No

   C. Are you proposing to conduct oil and gas activities for which site reclamation or restoration is is required under a well permit issued under the authority of the 2012 Oil and Gas Act and Chapter 78 and in a high quality or exceptional value watershed that is currently attaining its designated use and within 150 ft of a perennial or intermittent river, stream or creek or lake, pond or reservoir?

   ☐ Yes ☒ No If yes, provide a demonstration that any existing riparian buffer is undisturbed to the extent practicable.

   D. If the regulations require a riparian buffer or riparian forest buffer and you are not providing one, list below the waiver provisions in the Chapter 102 regulations, Section 102.14(d)(i)-(vi), that you are requesting and provide additional documentation to demonstrate reasonable alternatives for compliance with 102.14 requirements and to demonstrate that any existing reparian buffer will remain undisturbed to the extent practicable.

This project qualifies for an exception of the riparian forest buffer requirement under Chapter 102.14(d)(1)(ix). Existing riparian forest buffers within the project area are identified on the E&S plan drawings in Attachment 2 of the E&S Plan. Existing riparian forest buffers will be protected to the extent practicable by minimizing the limit of disturbance at stream crossings. In addition to the exception, we are requesting a waiver under 102.14(d)(2)(ii) for areas within 150' of surface waters that are outside of the Chapter 105 permit area.

All disturbance activities, including those which impact riparian forest buffers, have been reduced to the extent practicable. The limit of disturbance has been reduced to 50 feet wide at all stream crossings within the riparian forest buffer area where possible. In areas where it is not practicable to reduce the LOD throughout the entire extent of the riparian forest buffer, the LOD has been reduced to 50 feet wide surrounding the stream channel. The operations within the LOD near stream crossings typically includes a topsoil stockpile, a stockpile for pipe trench excavation material, a pipe trench, a travel lane, a work area for equipment operation and pipeline welding outside the trench, and an area to install the erosion control BMPs. In addition, site conditions such as steep slopes, varying depths of topsoil, and other on-site conditions limit the amount of work area. Reducing the LOD to a greater extent could potentially result in unsafe working conditions and would hinder the ability to complete the stream crossing within the required time frame of 24 hours or less. Workspaces that provide additional space for stream crossing activities have been placed outside of riparian forest buffers where possible

Note: If the proposed activity protects, converts or establishes a riparian or riparian forest buffer a Buffer Management Plan is required in the PCSM Plan.

3. SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA
See Attachment D in the Instructions on how to Complete This Section

Watershed Name: Exton Junction - Chester County

Design storm frequency 2-yr Rainfall amount 3.30 inches	Pre-construction	Post Construction	Net Change
Impervious area (acres)	0	0.17	0.17
Volume of stormwater runoff (acre-feet) without planned stormwater BMPs	0.02	0.03	0.01
Volume of stormwater runoff (acre-feet) with planned stormwater BMPs		0.02	0
Stormwater discharge rate for the design frequency storm			
1) 2-Year/24-Hour	1.83	1.83	0
2) 10-Year/24-Hour	4.45	4.45	0
3) 50-year/24-Hour	7.54	7.54	0
4) 100-year/24-Hour	9.31	9.31	0

4. SUMMARY DESCRIPTION OF POST CONSTRUCTION STORMWATER BMPs

In the lists below, check the BMPs identified in the Post Construction Stormwater Management Plan. The primary function(s) of the BMP listed in the functions column (infiltration/recharge; detention/retention; water quality). Additional functions may be added if applicable to that BMP. List the stormwater volume and area of runoff to be treated by each BMP type when calculations are required. If any BMP in the Site Restoration Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
Bio-infiltration areas ☐ Infiltration Trench ☐ Infiltration Bed ☐ Infiltrated Basin	Infiltration/Recharge	 ____ ____ ____	 ____ ____ ____
Natural Area Conservation ☐ Streamside Buffer Zone ☐ Wetland Buffer Zone ☐ Sensitive Area Buffer Zone ☐ Pre-Construction Drainage Pattern Intact	Infiltration/Recharge	 ____ ____ ____ ____	 ____ ____ ____ ____
Stormwater Retention ☐ Constructed Wetlands ☐ Wet Ponds ☐ Retention Basin	Detention/Retention	 ____ ____ ____	 ____ ____ ____
Sediment and Pollutant Removal ☐ Vegetated Filter Strips ☐ Compost Filter Sock ☐ Detention Basins	Water Quality Treatment	 ____ ____ ____	 ____ ____ ____

Access Road Design ☐ Road Crowning ☐ Ditches ☐ Turnouts ☐ Culverts ☐ Roadside Vegetated Filter Strips	Infiltration/Recharge	____ ____ ____ ____ ____	____ ____ ____ ____ ____
Stormwater Energy Dissipaters ☐ Level Spreaders ☐ Riprap Aprons ☐ Upslope Diversions ☒ Infiltration berm	Infiltration/Recharge	____ ____ ____ 0.44	____ ____ ____ 523

5. Off-site Discharge Analysis.

Does the activity propose any off-site discharges to areas other than surface waters? ☐ Yes ☒ No

If yes, it is the applicant's responsibility to ensure that they have legal authority for any off-site discharge.

The Applicant must provide a demonstration in both the E&S and PCSM Plans that the discharge will not cause erosion, damage, or nuisance to off-site properties.

6. Thermal Impact Analysis.

Explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

Potential themal impacts to surface waters will be minimized by minimizing clearing and retaining existing vegetation where possible. Permanent seeding will occur as soon as practicable during germinating months.

7. Critical PCSM Plan stages.

Identify and list critical stages of implementation of the PCSM Plan for which a licensed professional or designee shall be present on site.

A licensed professional or designee shall be present on site for the construction of the infiltration berm.

3. SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA
See Attachment D in the Instructions on how to Complete This Section

Watershed Name: Boot Road - Chester County

Design storm frequency 2-yr Rainfall amount 3.30 inches	Pre-construction	Post Construction	Net Change
Impervious area (acres)	0	0.12	0.12
Volume of stormwater runoff (acre-feet) without planned stormwater BMPs	0.05	0.06	0.01
Volume of stormwater runoff (acre-feet) with planned stormwater BMPs		0.05	0
Stormwater discharge rate for the design frequency storm			
1) 2-Year/24-Hour	4.82	4.82	0
2) 10-Year/24-Hour	11.69	11.69	0
3) 50-year/24-Hour	19.83	19.83	0
4) 100-year/24-Hour	24.45	24.45	0

4. SUMMARY DESCRIPTION OF POST CONSTRUCTION STORMWATER BMPs

In the lists below, check the BMPs identified in the Post Construction Stormwater Management Plan. The primary function(s) of the BMP listed in the functions column (infiltration/recharge; detention/retention; water quality). Additional functions may be added if applicable to that BMP. List the stormwater volume and area of runoff to be treated by each BMP type when calculations are required. If any BMP in the Site Restoration Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
Bio-infiltration areas ☐ Infiltration Trench ☐ Infiltration Bed ☐ Infiltrated Basin	Infiltration/Recharge	 ____ ____ ____	 ____ ____ ____
Natural Area Conservation ☐ Streamside Buffer Zone ☐ Wetland Buffer Zone ☐ Sensitive Area Buffer Zone ☐ Pre-Construction Drainage Pattern Intact	Infiltration/Recharge	 ____ ____ ____ ____	 ____ ____ ____ ____
Stormwater Retention ☐ Constructed Wetlands ☐ Wet Ponds ☐ Retention Basin	Detention/Retention	 ____ ____ ____	 ____ ____ ____
Sediment and Pollutant Removal ☐ Vegetated Filter Strips ☐ Compost Filter Sock ☐ Detention Basins	Water Quality Treatment	 ____ ____ ____	 ____ ____ ____

Access Road Design ☐ Road Crowning ☐ Ditches ☐ Turnouts ☐ Culverts ☐ Roadside Vegetated Filter Strips	Infiltration/Recharge	 ____ ____ ____ ____ ____	 ____ ____ ____ ____ ____
Stormwater Energy Dissipaters ☐ Level Spreaders ☐ Riprap Aprons ☐ Upslope Diversions ☒ Infiltration Berm	Infiltration/Recharge	 ____ ____ ____ 920	 ____ ____ ____ 1.06

5. Off-site Discharge Analysis.

Does the activity propose any off-site discharges to areas other than surface waters? ☐ Yes ☒ No

If yes, it is the applicant's responsibility to ensure that they have legal authority for any off-site discharge.

The Applicant must provide a demonstration in both the E&S and PCSM Plans that the discharge will not cause erosion, damage, or nuisance to off-site properties.

6. Thermal Impact Analysis.

Explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

Potential themal impacts to surface waters will be minimized by minimizing clearing and retaining existing vegetation where possible. Permanent seeding will occur as soon as practicable during germinating months

7. Critical PCSM Plan stages.

Identify and list critical stages of implementation of the PCSM Plan for which a licensed professional or designee shall be present on site.

A licensed professional or designee shall be present on site for the construction of the infiltration berm.

3. SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA
See Attachment D in the Instructions on how to Complete This Section

Watershed Name: Walnut Bank - Chester County

Design storm frequency 2-yr Rainfall amount 3.30 inches	Pre-construction	Post Construction	Net Change
Impervious area (acres)	0	0.23	0.23
Volume of stormwater runoff (acre-feet) without planned stormwater BMPs	.002	0.028	0.026
Volume of stormwater runoff (acre-feet) with planned stormwater BMPs		0.002	0
Stormwater discharge rate for the design frequency storm			
1) 2-Year/24-Hour	0	0	0
2) 10-Year/24-Hour	0.09	0.09	0
3) 50-year/24-Hour	1.97	1.97	0
4) 100-year/24-Hour	3.51	4.82	0

4. SUMMARY DESCRIPTION OF POST CONSTRUCTION STORMWATER BMPs

In the lists below, check the BMPs identified in the Post Construction Stormwater Management Plan. The primary function(s) of the BMP listed in the functions column (infiltration/recharge; detention/retention; water quality). Additional functions may be added if applicable to that BMP. List the stormwater volume and area of runoff to be treated by each BMP type when calculations are required. If any BMP in the Site Restoration Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
Bio-infiltration areas ☐ Infiltration Trench ☐ Infiltration Bed ☐ Infiltrated Basin	Infiltration/Recharge	____ ____ ____	____ ____ ____
Natural Area Conservation ☐ Streamside Buffer Zone ☐ Wetland Buffer Zone ☐ Sensitive Area Buffer Zone ☐ Pre-Construction Drainage Pattern Intact	Infiltration/Recharge	____ ____ ____ ____	____ ____ ____ ____
Stormwater Retention ☐ Constructed Wetlands ☐ Wet Ponds ☐ Retention Basin	Detention/Retention	____ ____ ____	____ ____ ____
Sediment and Pollutant Removal ☐ Vegetated Filter Strips ☐ Compost Filter Sock ☐ Detention Basins	Water Quality Treatment	____ ____ ____	____ ____ ____

Access Road Design ☐ Road Crowning ☐ Ditches ☐ Turnouts ☐ Culverts ☐ Roadside Vegetated Filter Strips	Infiltration/Recharge	____ ____ ____ ____ ____	____ ____ ____ ____ ____
Stormwater Energy Dissipaters ☐ Level Spreaders ☐ Riprap Aprons ☐ Upslope Diversions ☒ Infiltration berm	Infiltration/Recharge	____ ____ ____ 0.94	____ ____ ____ 1120

5. Off-site Discharge Analysis.

Does the activity propose any off-site discharges to areas other than surface waters? ☐ Yes ☒ No

If yes, it is the applicant's responsibility to ensure that they have legal authority for any off-site discharge.

The Applicant must provide a demonstration in both the E&S and PCSM Plans that the discharge will not cause erosion, damage, or nuisance to off-site properties.

6. Thermal Impact Analysis.

Explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

Potential themal impacts to surface waters will be minimized by minimizing clearing and retaining existing vegetation where possible. Permanent seeding will occur as soon as practicable during germinating months.

7. Critical PCSM Plan stages.

Identify and list critical stages of implementation of the PCSM Plan for which a licensed professional or designee shall be present on site.

A licensed professional or designee shall be present on site for the construction of the infiltration berm.

3. SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA
See Attachment D in the Instructions on how to Complete This Section

Watershed Name: Glen Mills - Chester County

Design storm frequency 2-yr Rainfall amount 3.30 inches	Pre-construction	Post Construction	Net Change
Impervious area (acres)	0	0.19	0.19
Volume of stormwater runoff (acre-feet) without planned stormwater BMPs	0.04	0.06	0.02
Volume of stormwater runoff (acre-feet) with planned stormwater BMPs		0.04	0
Stormwater discharge rate for the design frequency storm			
1) 2-Year/24-Hour	1.38	1.38	0
2) 10-Year/24-Hour	4.16	4.16	0
3) 50-year/24-Hour	7.66	7.66	0
4) 100-year/24-Hour	9.72	9.72	0

4. SUMMARY DESCRIPTION OF POST CONSTRUCTION STORMWATER BMPs

In the lists below, check the BMPs identified in the Post Construction Stormwater Management Plan. The primary function(s) of the BMP listed in the functions column (infiltration/recharge; detention/retention; water quality). Additional functions may be added if applicable to that BMP. List the stormwater volume and area of runoff to be treated by each BMP type when calculations are required. If any BMP in the Site Restoration Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
Bio-infiltration areas ☐ Infiltration Trench ☐ Infiltration Bed ☐ Infiltrated Basin	Infiltration/Recharge	____ ____ ____	____ ____ ____
Natural Area Conservation ☐ Streamside Buffer Zone ☐ Wetland Buffer Zone ☐ Sensitive Area Buffer Zone ☐ Pre-Construction Drainage Pattern Intact	Infiltration/Recharge	____ ____ ____ ____	____ ____ ____ ____
Stormwater Retention ☐ Constructed Wetlands ☐ Wet Ponds ☐ Retention Basin	Detention/Retention	____ ____ ____	____ ____ ____
Sediment and Pollutant Removal ☐ Vegetated Filter Strips ☐ Compost Filter Sock ☐ Detention Basins	Water Quality Treatment	____ ____ ____	____ ____ ____

Access Road Design ☐ Road Crowning ☐ Ditches ☐ Turnouts ☐ Culverts ☐ Roadside Vegetated Filter Strips	Infiltration/Recharge	____ ____ ____ ____ ____	____ ____ ____ ____ ____
Stormwater Energy Dissipaters ☐ Level Spreaders ☐ Riprap Aprons ☐ Upslope Diversions ☒ Infiltration Berm	Infiltration/Recharge	____ ____ ____ 0.98	____ ____ ____ 958

5. Off-site Discharge Analysis.

Does the activity propose any off-site discharges to areas other than surface waters? ☐ Yes ☒ No

If yes, it is the applicant's responsibility to ensure that they have legal authority for any off-site discharge.

The Applicant must provide a demonstration in both the E&S and PCSM Plans that the discharge will not cause erosion, damage, or nuisance to off-site properties.

6. Thermal Impact Analysis.

Explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

Potential themal impacts to surface waters will be minimized by minimizing clearing and retaining existing vegetation where possible. Permanent seeding will occur as soon as practicable during germinating months.

7. Critical PCSM Plan stages.

Identify and list critical stages of implementation of the PCSM Plan for which a licensed professional or designee shall be present on site.

A licensed professional or designee shall be present on site for the construction of the infiltration berm.

3. SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA
See Attachment D in the Instructions on how to Complete This Section

Watershed Name: West Baltimore Pike - Delaware County

Design storm frequency 2-yr Rainfall amount 3.30 inches	Pre-construction	Post Construction	Net Change
Impervious area (acres)	0		
Volume of stormwater runoff (acre-feet) without planned stormwater BMPs	0.22	0.23	0.01
Volume of stormwater runoff (acre-feet) with planned stormwater BMPs		0.22	0
Stormwater discharge rate for the design frequency storm			
1) 2-Year/24-Hour	11.02	11.02	0
2) 10-Year/24-Hour	24.10	24.10	0
3) 50-year/24-Hour	41.34	41.34	0
4) 100-year/24-Hour	49.82	49.82	0

4. SUMMARY DESCRIPTION OF POST CONSTRUCTION STORMWATER BMPs

In the lists below, check the BMPs identified in the Post Construction Stormwater Management Plan. The primary function(s) of the BMP listed in the functions column (infiltration/recharge; detention/retention; water quality). Additional functions may be added if applicable to that BMP. List the stormwater volume and area of runoff to be treated by each BMP type when calculations are required. If any BMP in the Site Restoration Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
Bio-infiltration areas ☐ Infiltration Trench ☐ Infiltration Bed ☐ Infiltrated Basin	Infiltration/Recharge	____ ____ ____	____ ____ ____
Natural Area Conservation ☐ Streamside Buffer Zone ☐ Wetland Buffer Zone ☐ Sensitive Area Buffer Zone ☐ Pre-Construction Drainage Pattern Intact	Infiltration/Recharge	____ ____ ____ ____	____ ____ ____ ____
Stormwater Retention ☐ Constructed Wetlands ☐ Wet Ponds ☐ Retention Basin	Detention/Retention	____ ____ ____	____ ____ ____
Sediment and Pollutant Removal ☐ Vegetated Filter Strips ☐ Compost Filter Sock ☐ Detention Basins	Water Quality Treatment	____ ____ ____	____ ____ ____

Access Road Design ☐ Road Crowning ☐ Ditches ☐ Turnouts ☐ Culverts ☐ Roadside Vegetated Filter Strips	Infiltration/Recharge	____ ____ ____ ____ ____	____ ____ ____ ____ ____
Stormwater Energy Dissipaters ☐ Level Spreaders ☐ Riprap Aprons ☐ Upslope Diversions ☒ Infiltration Berm	Infiltration/Recharge	____ ____ ____ 1.91	____ ____ ____ 178

5. Off-site Discharge Analysis.

Does the activity propose any off-site discharges to areas other than surface waters? ☐ Yes ☒ No

If yes, it is the applicant's responsibility to ensure that they have legal authority for any off-site discharge.

The Applicant must provide a demonstration in both the E&S and PCSM Plans that the discharge will not cause erosion, damage, or nuisance to off-site properties.

6. Thermal Impact Analysis.

Explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

Potential themal impacts to surface waters will be minimized by minimizing clearing and retaining existing vegetation where possible. Permanent seeding will occur as soon as practicable during germinating months

7. Critical PCSM Plan stages.

Identify and list critical stages of implementation of the PCSM Plan for which a licensed professional or designee shall be present on site.

A licensed professional or designee shall be present on site for the construction of the infiltration berm.

SECTION G. ANTIDEGRADATION ANALYSIS

This section must be completed where earth disturbance activities will be conducted in special protection or siltation-impaired watersheds.

Part 1 NONDISCHARGE ALTERNATIVES EVALUATION

The applicant must consider and describe any and all nondischarge alternatives for the entire project area which are environmentally sound and will:

- Minimize accelerated erosion and sedimentation during the earth disturbance activity
- Achieve no net change from pre-development to post-development volume, rate and concentration of pollutants in water quality

E & S Plan	*Official Use Only*	PCSM/Site Restoration Plan	*Official Use Only*
Check off the environmentally sound nondischarge Best Management Practices (BMPs) listed below to be used prior to, during, and after earth disturbance activities that have been incorporated into your E & S Plan based on your site analysis. For non-discharge BMPs not checked, provide an explanation of why they were not utilized. Also for BMPs checked, provide an explanation of why they were utilized. (Provide your analysis and attach additional sheets if necessary) The best possible pipeline route was selected based on landowner agreements, and minimization of environmental impacts, and engineering/constructibiliy factors. The project's disturbed area will be limited to the area required for construction, and the duration of construction will be minimized to the extent practicable. Riparian forest buffers will be protected to the extent practicable during construcion activities at stream crossings.		Check off the environmentally sound nondischarge Best Management Practices (BMPs) listed below to be used after construction that have been incorporated into your PCSM/SR Plan based on your site analysis. For non-discharge BMPs not checked, provide an explanation of why they were not utilized. Also for BMPs checked, provide an explanation of why they were utilized. (Provide your analysis and attach additional sheets if necessary) The best possible pipeline route was selected based on landowner agreements, and minimization of environmental impacts, and engineering/constructibility factors. The pipeline right of way will be restored to a meadow condition at original contours to maintain the pre-construction drainage patterns. Riparian forest buffers will be protected to the extent practicable.	
Nondischarge BMPs ☐ Alternative Siting ☐ Alternative location ☐ Alternative configuration ☐ Alternative location of discharge ☒ Limited Disturbed Area ☒ Limiting Extent & Duration of Disturbance (Phasing, Sequencing) ☐ Riparian Buffers (150 ft. min.) ☐ Riparian Forest Buffer (150 ft. min.) ☐ Other _____		**Nondischarge BMPs** ☐ Alternative Siting ☐ Alternative location ☐ Alternative configuration ☐ Alternative location of discharge ☐ Low Impact Development (LID / BSD) ☐ Riparian Buffers (150 ft. min.) ☐ Riparian Forest Buffer (150 ft. min.) ☐ Infiltration ☐ Water Reuse ☒ Other re-construction drainage pattern intact within the right of way	

Will the non-discharge alternative BMPs eliminate the net change in rate, volume and quality during and after construction?

☐ Yes ☒ No

If yes, antidegradation analysis is complete.
If no, proceed to Part 2.

PART 2 ANTIDEGRADATION BEST AVAILABLE COMBINATION OF TECHNOLOGIES (ABACT)

If the net change in stormwater discharge from or after construction is not fully managed by nondischarge BMPs, the applicant must utilize ABACT BMPs to manage the difference. The Applicant must specify whether the discharge will occur during construction, post-construction or both, and identify the technologies that will be used to ensure that the discharge will be a non-degrading discharge. ABACT BMPs include but are not limited to:

E & S Plan	*Official Use Only*	PCSM/Site Restoration Plan	*Official Use Only*
☒ **Treatment BMPs:** ☐ Sediment basin with skimmer ☐ Sediment basin ratio of 4:1 or greater (flow length to basin width) ☐ Sediment basin with 4-7 day detention ☐ Flocculants ☒ Compost Filter Socks ☐ Compost Filter Sock Sediment Basin ☒ RCE w/ Wash Rack ☐ **Land disposal:** ☐ Vegetated filters ☐ Riparian buffers <150ft. ☐ Riparian Forest Buffer <150ft. ☐ Immediate stabilization ☒ **Pollution prevention:** ☒ PPC Plans ☐ Street sweeping ☐ Channels, collectors and diversions lined with permanent vegetation, rock, geotextile or other non-erosive materials ☐ **Stormwater reuse technologies:** ☐ Sediment basin water for dust control ☐ Sediment basin water for irrigation ☒ **Other** Rock construction entrances with wash racks, compost filter socks, erosion control blanket placed within 100-feet of streams		☐ **Treatment BMPs:** ☒ Infiltration Practices ☐ Wet ponds ☐ Created wetland treatment systems ☐ Vegetated swales ☐ Manufactured devices ☐ Bio-retention/infiltration ☐ Green Roofs ☐ **Land disposal:** ☐ Vegetated filters ☐ Riparian Buffers <150ft. ☐ Riparian Forest Buffer <150ft. ☐ Disconnection of roof drainage ☐ Bio-retention/bio-infiltration ☒ **Pollution prevention:** ☐ Street sweeping ☐ Nutrient, pesticide, herbicide or other chemical application plan alternatives ☒ PPC Plans ☐ Non-structural Practices ☒ Restoration BMPs ☐ **Stormwater reuse technologies:** ☐ Divert rainwater into impoundment ☐ Underground storage ☐ Spray/Drip Irrigation ☐ **Other** _____	

SECTION H. COMPLIANCE REVIEW

Is the applicant in violation of any existing permit, regulation, order, or schedule of compliance issued by the Department within the last 5 years?

☒ Yes ☐ No

If yes, provide the permit number or facility name, a brief description of the violation, the compliance schedule (including dates and steps to achieve compliance) and the current compliance status. (Attach additional information on a separate sheets, when necessary)

Notices of Violations attached in formal application

SECTION I. CERTIFICATION BY PERSON PREPARING APPLICATION

I do hereby certify to the best of my knowledge, information, and belief, that the Erosion and Sediment Control and PCSM/Site Restoration Plans are true and correct, represent actual field conditions, and are in accordance with the 25 Pa. Code Chapters 78 and 102 of the Department's rules and regulations. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Print Name Robert F. Simcik, P.E.	Signature	Professional Seal
Company Tetra Tech		
Address 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220		
Phone (412) 921-8163		
Most Recent DEP Training Attended Location Greensburg, PA Date 04/03/2014		
e-Mail Address robert.simcik@tetratech.com		

EXPEDITED REVIEW PROCESS

In addition to the certification required above applicants using the expedited permit review process must attach an E&S and PCSM/Site Restoration Plans developed and sealed by a licensed professional engineer, surveyor or professional geologist. The plans shall contain the following certification:

I do hereby certify to the best of my knowledge, information, and belief, that the E & S Control and SR/PCSM BMPs are true and correct, represent actual field conditions and are in accordance with the 25 Pa. Code Chapters 78 and 102 of the Department's rules and regulations. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SECTION J. APPLICANT CERTIFICATION

Applicant Certification. I certify under penalty of law that this document and all attachments were prepared by me or under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. The responsible official's signature also verifies that the activity is eligible to participate in the permit, and that the applicant agrees to abide by the terms and conditions of the permit. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Matthew L. Gordon - Project Manager - Sunoco
Print Name and Title of Applicant

_____
Print Name and Title of Co-Applicant (if applicable)

_____
Signature of Applicant

_____
Signature of Co-Applicant

_____
Date Application Signed

_____
Date Application Signed

Notarization

Sworn to and subscribed to before me this

_____ day of _____, 20_____

_____
Notary Public

AFFIX SEAL

Commonwealth of Pennsylvania

County of _____

My Commission expires _____

SECTION K. CONTACT FOR ADDITIONAL INFORMATION				
Contact's Last Name	First Name	MI	Phone	(412) 921-8163
Simcik	Robert	F	FAX	
Mailing Address	City		State	ZIP + 4
661 Andersen Drive, Foster Plaza 7	Pittsburgh		PA	15220
e-Mail Address robert.simcik@tetratech.com				

ATTACHMENT 1:

Site Directions

Detailed Written Directions to the Site

Chester County

From the DEP South East Regional Office to Exton Junction Block Valve site (approximately 500 Lancaster Pike, Exton, PA 19341)

Head northwest on E Main St toward Swede St (0.3 mi). Turn left onto Markley St (0.1 mi). Continue onto US-202 S/William F. Dannehower Memorial Bridge (14.3 mi). Take the US-30 W exit toward Downingtown/Coatesville (0.2 mi). Keep left, follow signs for US-30 E/US-30 BUS/Exton/Frazer (0.3 mi). Turn right onto US-30 BUS/Lancaster Pike/Lincoln Hwy E. The drive for the Exton Junction Block Valve (500 Lancaster Pike) will be on the left approximately 1.6 miles down the road.

Delaware County

From the DEP South East Regional Office to West Baltimore Pike Block Valve site (approximately 219 Lenni Road, Glen Riddle, PA 19063)

Head southeast on E Main St toward Strawberry Alley (1.6 mi). Continue onto E Ridge Pike (0.2 mi). Continue onto E Main St (0.2 mi). Continue onto Ridge Pike (0.7 mi). Slight right to merge onto I-476 S (0.2 mi). Merge onto I-476 S (13.2 mi). Take exit 5 to merge onto U.S. 1 S/Media Bypass (0.7 mi). Merge onto U.S. 1 S/Media Bypass (3.3 mi). U.S. 1 S/Media Bypass turns slightly right and becomes U.S. 1 S/W Baltimore Pike (1.0 mi). Turn left onto PA-452 S (0.6 mi). Slight right onto Lenni Rd. The entrance to the West Baltimore Pike Block Valve site will be on the right approximately 500 feet down the road.

ATTACHMENT 2:

Municipalities Table

Municipalities

Pennsylvania Pipeline Project

SouthEast Region

County	Muncipality
Chester	Elverson
	West Nantmeal
	East Nantmeal
	Wallace
	Upper Uwchlan
	Uwchlan
	West Whiteland
	East Whiteland
	West Goshen
	East Goshen
	Westtown
Delaware	Thornbury
	Edgmont
	Middletown
	Aston
	Brookhaven
	Chester
	Upper Chichester

ATTACHMENT 3:

Water/Watershed Table

Receiving Waters Table

Pennsylvania Pipeline Project

Southeast Region

Stream Name	County	Township	Chapter 93 Designated Use	Chapter 93 Code	Siltation Impaired
South Branch French Creek	Chester	West Nantmeal	EXCEPTIONAL VALUE	EV	No
UNT to Marsh Creek	Chester	West Nantmeal	HIGH QUALITY-TROUT STOCKING	HQ	No
Marsh Creek	Chester	Upper Uwchlan	HIGH QUALITY-TROUT STOCKING	HQ	No
Black Horse Creek	Chester	Upper Uwchlan	HIGH QUALITY-TROUT STOCKING	HQ	No
Shamona Creek	Chester	Uwchlan	HIGH QUALITY-TROUT STOCKING	HQ	Yes
UNT to Shamona Creek	Chester	Uwchlan	HIGH QUALITY-TROUT STOCKING	HQ	Yes
UNT to Valley Creek	Chester	Uwchlan	COLD WATER FISHES	CWF	Yes
Valley Creek	Chester	West Whiteland	COLD WATER FISHES	CWF	Yes
East Branch Chester Creek	Chester	West Goshen	TROUT STOCKING	TSF	Yes
Rocky Run	Delaware	Middletown	HIGH QUALITY-COLD WATER FISHES	HQ	Yes
UNT to Rocky Run	Delaware	Middletown	HIGH QUALITY-COLD WATER FISHES	HQ	Yes
UNT to Chester Creek	Delaware	Middletown	TROUT STOCKING	TSF	Yes
Chrome Run	Delaware	Middletown	TROUT STOCKING	TSF	Yes
Crum Run	Delaware	Middletown	TROUT STOCKING	TSF	Yes
Chester Creek	Delaware	Middletown	TROUT STOCKING	TSF	Yes
Chester Creek	Delaware	Aston	WARM WATER FISHES	WWF	Yes
UNT to Baldwin Run	Delaware	Chester	WARM WATER FISHES	WWF	Yes
Baldwin Run	Delaware	Chester	WARM WATER FISHES	WWF	Yes

ATTACHMENT 4:

Storm Sewer Operator Table

Municipal Separate Storm Sewer Operators

Pennsylvania Pipeline Project

Southeast Region

MUNICIPALITY	TYPE	COUNTY	STATUS	PERMIT NUMBER	APPROVED
WEST WHITELAND	Township	Chester	Individual	PAI130530	2/18/2004
EAST GOSHEN	Township	Chester	Individual	PAI130520	2/23/2004
WEST GOSHEN	Township	Chester	Individual	PAI130532	2/13/2004
UPPER UWCHLAN	Township	Chester	Individual	PAI130527	2/19/2004
UWCHLAN	Township	Chester	Individual	PAI130505	2/19/2004
WALLACE	Township	Chester	Individual	PAI130529	2/18/2004
WESTTOWN	Township	Chester	Individual	PAI130528	2/23/2004
BROOKHAVEN	Borough	Delaware	General	PAG130125	2/10/2004
ASTON	Township	Delaware	General	PAG130122	2/23/2004
MIDDLETOWN	Township	Delaware	Individual	PAI130510	2/4/2004
THORNBURY	Township	Delaware	Individual	PAI130517	2/27/2004
EDGMONT	Township	Delaware	Individual	PAI130522	2/23/2004
UPPER CHICHESTER	Township	Delaware	General	PAG130082	1/28/2004
CHESTER	Township	Delaware	General	PAG130089	1/31/2004

ATTACHMENT 5:

Act 167 Tracking Table

ACT 167 PLAN TRACKING TABLE
Pennsylvania Pipeline Project
South East Region

County	Countywide Act 167 Plan?	Name of Adopted Plan	Date Approved	Municipalities That Have Enacted the Plan
Chester	Yes	County-wide Act 167 Stormwater Management Plan for Chester County, PA	July 2, 2013	All Municipalities
		Chester Creek Act 167 Plan - Volume I and Volume II	March 13, 2003	West Whiteland, East Goshen, Westtown, Thornbury
		Conestoga River Act 167 Plan	October 24, 2005	Elverson, West Nantmeal
Delaware	No	Chester Creek Act 167 Plan - Volume I and Volume II	March 13, 2003	Thornbury, Edgmont, Chester, Aston, Middletown, Brookhaven
		Ridley Creek Act 167 Plan	1988	Edgmont, Thornbury

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 6

CHESTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN

DRAFT

AUGUST 2015

DRAWING INDEX	
SHEET No.	DRAWING TITLE
ES-0.01	EROSION & SEDIMENT CONTROL PLAN GENERAL NOTES & LEGEND
ES-0.02	SITE RESTORATION PLAN GENERAL NOTES & LEGEND
ES-0.03	STREAM AND WETLAND CROSSING TABLE
ES-0.04	KEY PLAN (SHEET 1 OF 2)
ES-0.05	KEY PLAN (SHEET 2 OF 2)
ES-0.06	EROSION & SEDIMENT CONTROL NOTES
ES-0.07	SEEDING SPECIFICATIONS
ES-0.08	EROSION & SEDIMENT CONTROL & SITE RESTORATION DETAILS (SHEET 1 OF 3)
ES-0.09	EROSION & SEDIMENT CONTROL & SITE RESTORATION DETAILS (SHEET 2 OF 3)
ES-0.10	EROSION & SEDIMENT CONTROL & SITE RESTORATION DETAILS (SHEET 3 OF 3)
ES-0.11	STREAM CROSSING DETAILS
ES-6.01 TO ES-6.82	EROSION & SEDIMENT CONTROL & SITE RESTORATION PLANS

PREPARED BY:

TETRA TECH

complex world | CLEAR SOLUTIONS™

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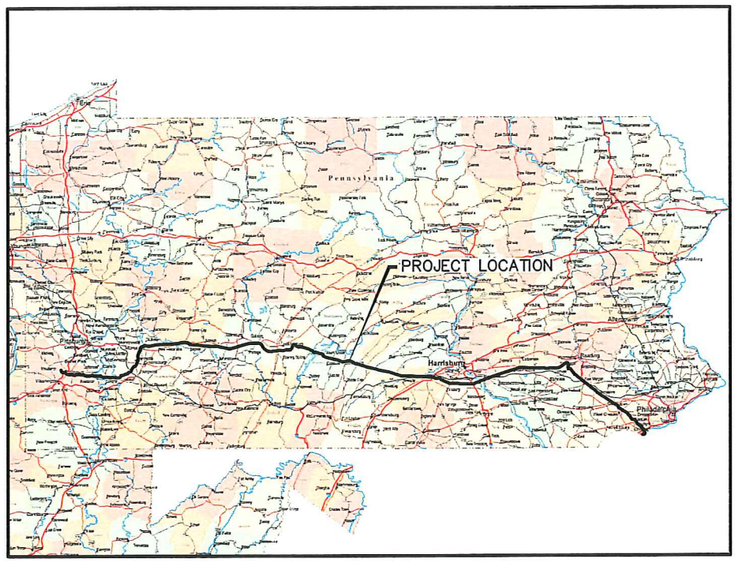
PREPARED FOR:

SUNOCO PIPELINE L.P.
SINKING SPRINGS, PENNSYLVANIA



LOCATION MAP
PENNSYLVANIA PIPELINE PROJECT
HOUSTON, PENNSYLVANIA TO MARCUS HOOK, PENNSYLVANIA

NOTES:

1. TOPOGRAPHIC MAPPING AND FEATURES COMPILED FROM WWW.PASDA.PSU.EDU.
2. THE PROJECT TAKES PLACE WITHIN CHESTER COUNTY, PENNSYLVANIA.
3. TOWNSHIP BOUNDARIES TAKEN FROM WWW.PASDA.PSU.EDU.
4. 100-YEAR FEMA FLOODPLAINS FROM WWW.PASDA.PSU.EDU.
5. SEE SHEET ES-0.03 FOR STREAM AND WETLAND CROSSING TABLE.
6. PIPELINE LOCATION AND RIGHT-OF-WAY FROM SUNOCO PIPELINE L.P.
7. USE COMPOST FILTER SOCK AS REQUIRED TO PREVENT RUNOFF FROM SPOIL AREA.
8. GENERAL LOCATION AND SPACING FOR 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 DETAIL PROVIDED ON THE PLAN SHEET ES-0.08.
9. AT ALL STREAM CROSSINGS, RUNOFF MUST BE DIRECTED TO A SEDIMENT REMOVAL AREA (i.e. COMPOST FILTER SOCKS).
10. 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.
11. GENERAL SOIL STOCKPILE LOCATIONS ARE SHOWN. ALONG THE ALIGNMENT, TOPSOIL WILL BE PUSHED TO ONE SIDE OF THE RIGHT OF WAY. THE TOPSOIL WILL BE PUSHED BACK DURING SITE RESTORATION.
12. PAST AND PRESENT LAND USE CONSISTS OF AGRICULTURAL, FORESTED AND RESIDENTIAL AREAS. POST CONSTRUCTION LAND USE WILL BE A MAINTAINED, VEGETATED RIGHT-OF-WAY.
13. ACCUMULATED SEDIMENT ON TIMBER MATS WILL BE REMOVED BY HAND AND PLACED IN THE SOIL STOCKPILES.
14. COMPOST FILTER SOCK INSTALLATION TO BE ADJUSTED AS NEEDED TO ACCOMMODATE ACTUAL CONTOURS IDENTIFIED IN FIELD DURING VARIOUS PHASES OF THE PROJECT.
15. CONSTRUCTION IS RESTRICTED IN STOCKED TROUT STREAMS FROM MARCH 1 THROUGH JUNE 15, WILD TROUT STREAMS FROM OCTOBER 1 THROUGH DECEMBER 31 AND LAKE ERIE TRIBUTARIES FROM SEPTEMBER 1 THROUGH DECEMBER 1 UNLESS APPROVAL IS OBTAINED FROM THE FISH AND BOAT COMMISSION'S DIVISION OF ENVIRONMENTAL SERVICES.

DRAWINGS BY TOWNSHIP

COUNTY	TOWNHIP	PLAN SHEETS
CHESTER	ELVERSON	ES-6.01 TO ES-6.04
	WEST NANTMEAL	ES-6.04 TO ES-6.08
	EAST NANTMEAL	ES-6.08 TO ES-6.13 & ES-6.17 TO ES-[illegible]
	WALLACE	ES-6.13 TO ES-6.18
	UPPER UWCHLAN	ES-6.21 TO ES-6.33
	UWCHLAN	ES-6.33 TO ES-6.42
	WEST WHITELAND	ES-6.43 TO ES-6.53 & ES-6.75 TO ES-6.82
	WEST GOSHEN	ES-6.54 TO ES-6.55
	EAST GOSHEN	ES-6.55 TO ES-6.68
	WESTTOWN	ES-6.68 TO ES-6.73
	WILLISTOWN	ES-6.73 TO ES-6.73

LIMIT OF DISTURBANCE/PROJECT AREA TABLE

	LIMIT OF DISTURBANCE	PROJECT AREA
CHESTER COUNTY	184 ACRES	184 ACRES

LEGEND

- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING TREE LINE
- EXISTING FENCELINE
- EXISTING STREAM WITH FLOW DIRECTION
- EXISTING WATERSHED BOUNDARY
- EXISTING ELECTRIC OVERHEAD
- EXISTING ELECTRIC UNDERGROUND
- EXISTING LIGHT POLE
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING DOMINION GAS LINE
- EXISTING SANITARY SEWER LINE
- EXISTING BUILDING
- PROPERTY LINE
- COUNTY BOUNDARY
- TOWNSHIP BOUNDARY
- 100-YEAR FLOODWAY
- 100-YEAR FEMA FLOODPLAIN
- WATERSHED BOUNDARY
- ORANGE CONSTRUCTION FENCE
- EXISTING PEM WETLAND
- EXISTING PFO WETLAND
- EXISTING PSS WETLAND
- PROPOSED PIPE LOCATION
- PROPOSED RIGHT-OF-WAY
- RIPARIAN FOREST BUFFER
- LIMIT OF DISTURBANCE/AREA TO BE RESTORED
- AASHTO #1 ROCK CONSTRUCTION ENTRANCE — 1 / 0.08
- AASHTO #1 ROCK CONSTRUCTION ENTRANCE WITH WASH RACKS — 2 / 0.08
- AGGREGATE STOCKPILE
- WATER BAR — 3 / 0.08
- EROSION CONTROL BLANKET — 4 / 0.08
- 12" COMPOST FILTER SOCK
- 18" COMPOST FILTER SOCK — 5 / 0.08
- 24" COMPOST FILTER SOCK
- COMPOST SOCK SEDIMENT TRAP — 6 / 0.08
- SILT FENCE — 7 / 0.09
- SUPER SILT FENCE — 8 / 0.09
- REINFORCED SILT FENCE — 9 / 0.09
- TRENCH PLUGS — 10 / 0.09
- TIMBER MATS/ TEMPORARY EQUIPMENT BRIDGE — 11 / 0.09
- WATER DEFLECTOR — 12 / 0.10
- SOIL STOCKPILE -SEE NOTE 7 UNDER STANDARD EROSION & SEDIMENT CONTROL NOTES ON SHEET ES-0.06

DETAIL INDICATOR

DETAIL NUMBER

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REVISIONS

NO.	BY	DATE	REMARKS

SUNOCO PIPELINE L.P.
PHILADELPHIA, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 6

2-20" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CHESTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL PLAN
GENERAL NOTES & LEGEND

DATE:	8/28/15
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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ES-0.01

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NOTES FOR SITE RESTORATION:

1. TOPOGRAPHIC MAPPING AND FEATURES COMPILED FROM WWW.PASDA.PSU.EDU.
2. THE PROJECT TAKES PLACE WITHIN CHESTER COUNTY, PENNSYLVANIA.
3. TOWNSHIP BOUNDARIES TAKEN FROM WWW.PASDA.PSU.EDU.
4. 100-YEAR FEMA FLOODPLAINS FROM WWW.PASDA.PSU.EDU.
5. SEE SHEET ES-0.03 FOR STREAM AND WETLAND CROSSING TABLE.
6. PIPELINE LOCATION AND RIGHT-OF-WAY FROM SUNOCO PIPELINE L.P.
7. USE COMPOST FILTER SOCK AS REQUIRED TO PREVENT RUNOFF FROM SPOIL AREA.
8. AT ALL STREAM CROSSINGS, RUNOFF MUST BE DIRECTED TO A SEDIMENT REMOVAL AREA (i.e. COMPOST FILTER SOCKS).
9. 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.
10. PAST AND PRESENT LAND USE CONSISTS OF AGRICULTURAL, FORESTED AND RESIDENTIAL AREAS. POST CONSTRUCTION LAND USE WILL BE A MAINTAINED, VEGETATED RIGHT-OF-WAY.
11. DRAWINGS REPRESENT THE FINAL PLAN FOR CONSTRUCTION.
12. THE EROSION & SEDIMENT CONTROL PLAN AND SITE RESTORATION PLAN, INSPECTION REPORTS, AND MONITORING REPORTS MUST BE AVAILABLE FOR REVIEW AND INSPECTION BY THE DEPARTMENT OR CONSERVATION DISTRICT.

SITE RESTORATION SCHEDULE:

1. AGRICULTURAL LIME APPLICATION RATES WILL BE DETERMINED BY FIELD PH TESTING. TESTING WILL BE PERFORMED AT A RATE OF 1 TEST/ACRE (MIN). IN ABSENCE OF FIELD TESTING, APPLY AT 6 TONS/ACRE.
2. APPLY 10-20-20 FERTILIZER AT THE RATE OF 1,000 LB/ACRE, OR AT A RATE DETERMINED BY FIELD TESTING.
3. WORK IN LIME AND FERTILIZER TO A DEPTH OF 4 IN. USING SUITABLE EQUIPMENT.
4. SEED PER PERMANENT SEED MIXTURE.
5. STRAW MULCH SHALL BE APPLIED AT THE RATE OF THREE TONS PER ACRE. CHEMICALLY TREATED OR SALTED STRAW IS NOT ACCEPTABLE AS MULCH.

SITE RESTORATION:

FOLLOWING COMPLETION OF PIPELINE INSTALLATION AND TRENCH BACKFILLING, THE AREA SHALL BE RETURNED TO THE GENERAL GRADE PRESENT PRIOR TO PIPELINE INSTALLATION IN ORDER TO MAINTAIN PRECONSTRUCTION DRAINAGE PATTERNS. GROUNDS DISTURBED BY ANY OF THE OPERATIONS NECESSARY TO COMPLETE THE WORK FOR THIS PROJECT ARE TO BE PERMANENTLY SEEDED, OR IF SPECIFIED, SODDED, UNLESS OCCUPIED BY STRUCTURES, PAVED, OR DESIGNATED AS A PERMANENT ACCESS ROAD. A TEMPORARY CESSATION OF EARTH DISTURBANCE ACTIVITIES THAT LASTS FOUR DAYS OR LONGER REQUIRES TEMPORARY STABILIZATION. DISTURBED AREAS, WHICH ARE AT FINAL GRADE, SHALL BE SEEDED AND MULCHED IMMEDIATELY, WITH THE EXCEPTION OF THE PERMANENT ACCESS ROADS. IF SEEDING CANNOT BE COMPLETED IMMEDIATELY AFTER THE AREA REACHES FINAL GRADE DUE TO WEATHER CONDITIONS, THE DISTURBED AREA SHALL BE STABILIZED AND MULCHED WITH STRAW AT THE RATE OF THREE TONS PER ACRE. THIS STRAW SHALL BE ANCHORED USING A METHOD DESCRIBED UNDER MULCHING OF THIS NARRATIVE. TEMPORARY ACCESS ROADS WILL BE RESTORED TO A VEGETATED CONDITION FOLLOWING CONSTRUCTION. THE PROPOSED PERMANENT ACCESS ROADS WILL REMAIN IN PLACE FOLLOWING CONSTRUCTION. AN INFILTRATION BERM OR SOIL AMENDMENTS WILL BE SHOWN ON THE PLAN SHEETS TO ACCOUNT FOR THE INCREASE IN STORM WATER RUNOFF. AS A RESULT OF APPLYING THE SOIL AMENDMENT OR INFILTRATION BERM AND RESTORING THE RIGHT OF WAY TO A MEADOW CONDITION, THERE WILL BE NO INCREASE IN STORMWATER RUNOFF RATES OR VOLUMES.

CONSTRUCTION SEQUENCE FOR POST CONSTRUCTION STORMWATER MANAGEMENT CONTROLS:

REFER TO THE PLAN DRAWINGS FOR THE LOCATION OF THE PROPOSED WORK AND THE ASSOCIATED STORMWATER CONTROLS. 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 RESTORATION AND POST-CONSTRUCTION STORMWATER MANAGEMENT OF THE SITE. NECESSARY PARTS 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. 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 PADEP OR APPLICABLE COUNTY CONSERVATION DISTRICT, CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, AND THE PLAN PREPARER MUST BE INVITED TO THIS MEETING AT LEAST SEVEN DAYS IN ADVANCE.

INFILTRATION BERM

1. INSTALL TEMPORARY SEDIMENT AND EROSION CONTROL BMPS AS PER THE PENNSYLVANIA EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL.
2. COMPLETE SITE GRADING AND STABILIZE WITHIN THE LIMIT OF DISTURBANCE EXCEPT WHERE THE INFILTRATION BERM WILL BE CONSTRUCTED; MAKE EVERY EFFORT TO MINIMIZE BERM FOOTPRINT AND NECESSARY ZONE OF DISTURBANCE (INCLUDING BOTH REMOVAL OF EXISTING VEGETATION AND DISTURBANCE OF EMPTY SOIL) IN ORDER TO MAXIMIZE INFILTRATION.
3. LIGHTLY SCARIFY THE SOIL IN THE AREA OF THE PROPOSED BE[illegible] FORE DELIVERING SOIL TO SITE.
4. BRING IN FILL MATERIAL TO MAKE UP THE MAJOR PO[illegible]ION OF THE BER[illegible] SOIL SHOULD BE ADDED IN 8-INCH LIFTS AND COMPA[illegible]TED AFT[illegible] EACH ADDITION [illegible]CCORDING TO DESIGN SPECIFICATIONS. THE SLOPE AND [illegible]PE OF T[illegible] SHOULD B[illegible] GRADED OUT AS SOIL IS ADDED.
5. PROTECT THE SURFACE [illegible]NDING [illegible]EA A[illegible] THE [illegible]E O[illegible] THE BERM FROM COMPACTION. IF COMPACTION OF THI[illegible] AREA DO[illegible] OCC[illegible] TO A DEPTH OF AT LEAST 8-INCHES.
6. COMPLE[illegible] FINAL GR[illegible]DING OF THE [illegible]RM AFTER THE TOP LAYER OF SOIL IS ADDED. TAMP SO[illegible] DOWN LIG[illegible]LY [illegible]D SMOOT[illegible] SIDES OF THE BERM. THE CREST AND BASE OF THE BERM [illegible]HOULD BE [illegible]T L[illegible]EL GRADE.
7. PLANT BER[illegible] WITH [illegible], MEADOW PLANTS, SHRUBS OR TREES, AS DESIRED.
8. MULCH PLAN[illegible] AND DISTURBED AREAS WITH COMPOST MULCH TO PREVENT EROSION WHILE PLANTS BECOME ESTABLISHED.

SOIL AMENDMENTS:

1. GRADE SURFACE TO FINISHED GRADE ELEVATIONS AS SOON AS PRACTICABLE FOLLOWING COMPLETION OF PIPE INSTALLATION.
2. IN THE DESIGNATED SOIL AMENDMENT AREA, TILL THE GROUND AND MIX IN THE COMPOST AT A RATIO OF 2:1 (SOIL: COMPOST) TO A DEPTH OF 20 INCHES.
3. IMMEDIATELY SEED AND MULCH DISTURBED AREAS ONCE FINAL GRADE IS ESTABLISHED IN ACCORDANCE WITH THE PERMANENT SEEDING SCHEDULE OR PREPARE FOR PAVING IN ROADWAY AREAS.
4. MAINTAIN EROSION AND SEDIMENTATION CONTROL DEVICES UNTIL SITE WORK IS COMPLETE AND A UNIFORM 70% PERENNIAL VEGETATIVE COVER IS ESTABLISHED.

LONG TERM INSPECTIONS AND MAINTENANCE FOR SITE RESTORATION AND PCSM CONTROLS:

LONG TERM MAINTENANCE OF THE PROJECT WILL INCLUDE PERIODIC VISUAL INSPECTIONS FOR SUFFICIENT VEGETATIVE GROWTH AND COVER. INSUFFICIENT VEGETATIVE COVER IS DEFINED AS ANY AREA NOT ACHIEVING A UNIFORM 70% PERENNIAL VEGETATIVE COVER. BARE SPOTS AND AREAS WITH INSUFFICIENT VEGETATIVE COVER WILL BE RESEEDED AND MULCHED WITHIN 24 HOURS OF DISCOVERY. RESTORATION AREAS WILL BE INSPECTED FOR SIGNS OF EROSION, ESPECIALLY ON STEEP SLOPES. CORRECTIVE MEASURES WILL BE TAKEN, AS NEEDED. IF THERE IS EVIDENCE OF TRENCH SETTLING, THE AREA WILL BE REGRADED TO MAINTAIN PRE-CONSTRUCTION DRAINAGE PATTERNS, MULCHED, AND SEEDED.

THE PROPOSED, PERMANENT ACCESS ROAD WHICH WILL REMAIN AS A PERMANENT GRAVEL DRIVE SHALL BE INSPECTED PERIODICALLY. AGGREGATE WILL BE APPLIED TO THE PERMANENT ACCESS ROAD AS NEEDED TO MAINTAIN AN ADEQUATE THICKNESS. THE INFILTRATION BERM SHALL BE INSPECTED REGULARLY TO ENSURE IT IS INFILTRATING PROPERLY AND NOT CLOGGED WITH SEDIMENT. VEGETATION OVER THE BERM SHALL BE MAINTAINED AS NECESSARY, WHICH MAY REQUIRE ANNUAL MULCHING. ROUTINELY REMOVE ACCUMULATED DEBRIS AND INVASIVE PLANTS AS NEEDED. INSPECT FOR SIGNS OF FLOW CHANNELIZATION AND RESTORE LEVEL GRADIENT IMMEDIATELY AFTER ANY DEFICIENCIES ARE OBSERVED. THE SOIL AMENDMENT AREAS WILL BE INSPECTED BIANNUALLY TO VERIFY THEIR EFFECTIVENESS. TRAFFIC WILL NOT BE PERMITTED TO DRIVE OFF OF THE AGGREGATE ACCESS ROADS AND INTO THE SOIL AMENDMENT AREAS. IF THE AREAS APPEAR TO BE COMPACTED OR INEFFECTIVE DURING AN INSPECTION, ADDITIONAL SOIL AND COMPOST WILL BE APPLIED.

A WRITTEN REPORT IS REQUIRED FOR EACH INSPECTION AND FOR EACH REPAIR OR MAINTENANCE ACTIVITY, AND THE REPORT SHOULD SPECIFY HOW TO ACCESS THE SITE. SUNOCO PIPELINE L.P. IS RESPONSIBLE FOR MAINTAINING THE RIGHT OF WAY UNDER THE PROVISIONS OF THIS PERMIT.

LEGEND

SOIL AMENDMENTS — 13 / 0.10

INFILTRATION BERM — 14 / 0.10

DETAIL INDICATOR

DETAIL NUMBER

SHEET SHOWN ON

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REVISIONS

NO.	BY	DATE	REMARKS

SUNOCO PIPELINE L.P.
PHILADELPHIA, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 6

2-20" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CHESTER COUNTY CONSERVATION DISTRICT
SITE RESTORATION PLAN
GENERAL NOTES & LEGEND

DATE:	8/28/15
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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ES-0.02

SHEET 0.02 OF 93

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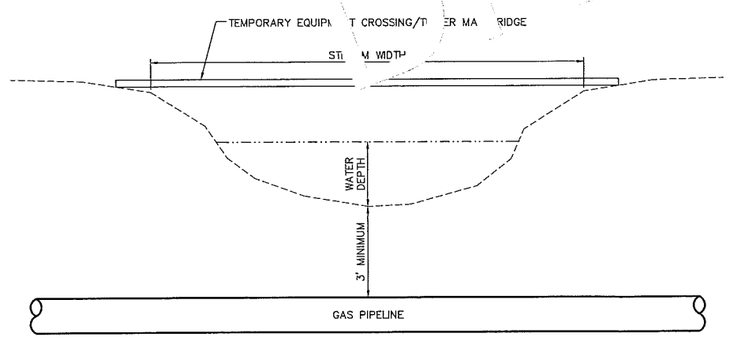
NEED STREAM AND WETLAND TABLE

DRAFT



TYPICAL STREAM CROSSING CROSS-SECTION
NOT TO SCALE

TETRA TECH
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REVISIONS

NO.	BY	DATE	REMARKS

SUNOCO PIPELINE L.P.
PHILADELPHIA, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 6

2–20" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CHESTER COUNTY CONSERVATION DISTRICT
STREAM & WETLAND CROSSING TABLES

DATE:	8/28/15
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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ES–0.03
SHEET 0.03 OF 93

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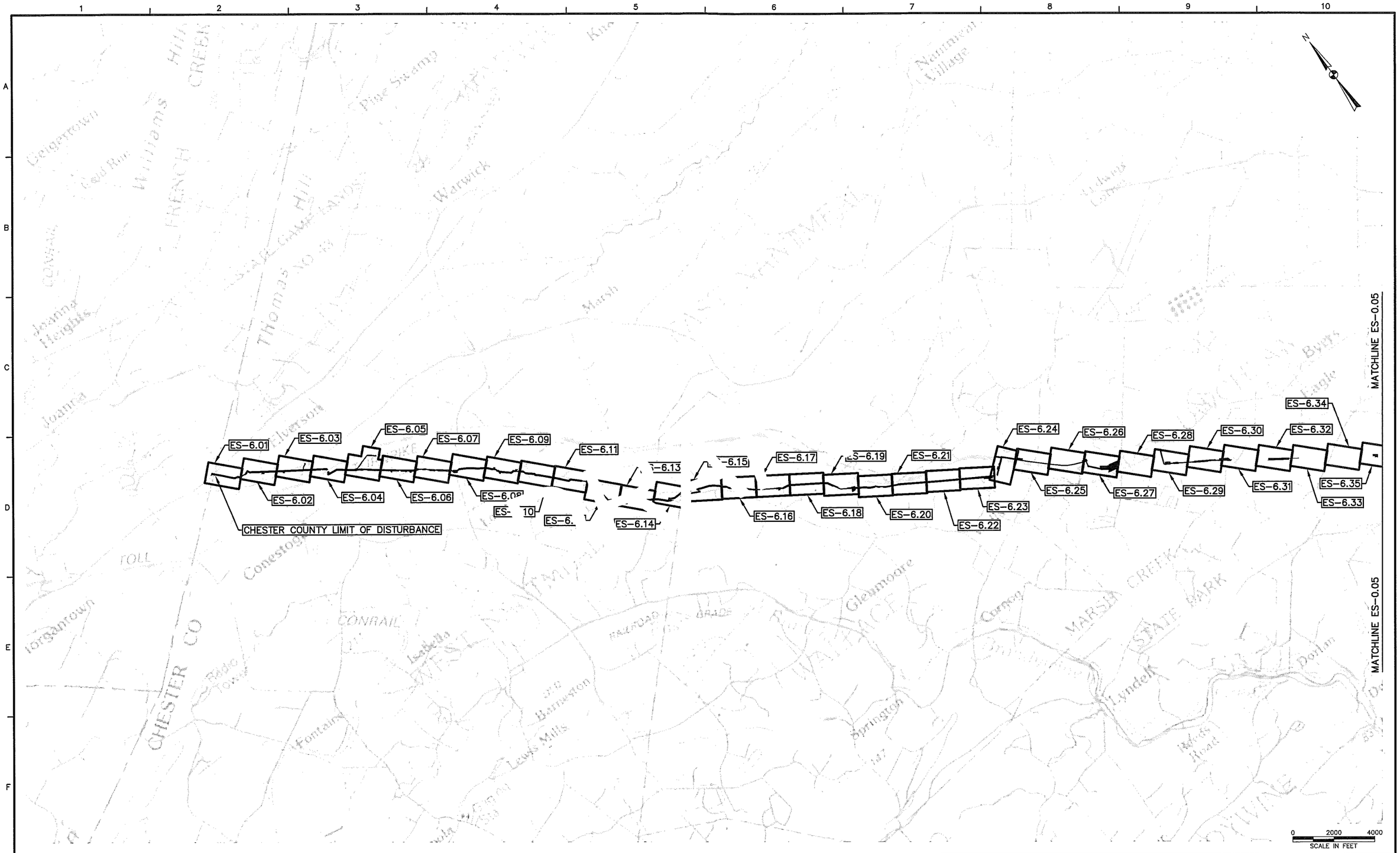

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2-20" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CHESTER COUNTY CONSERVATION DISTRICT
KEY PLAN
SHEET 1 OF 2

DATE:	8/28/15
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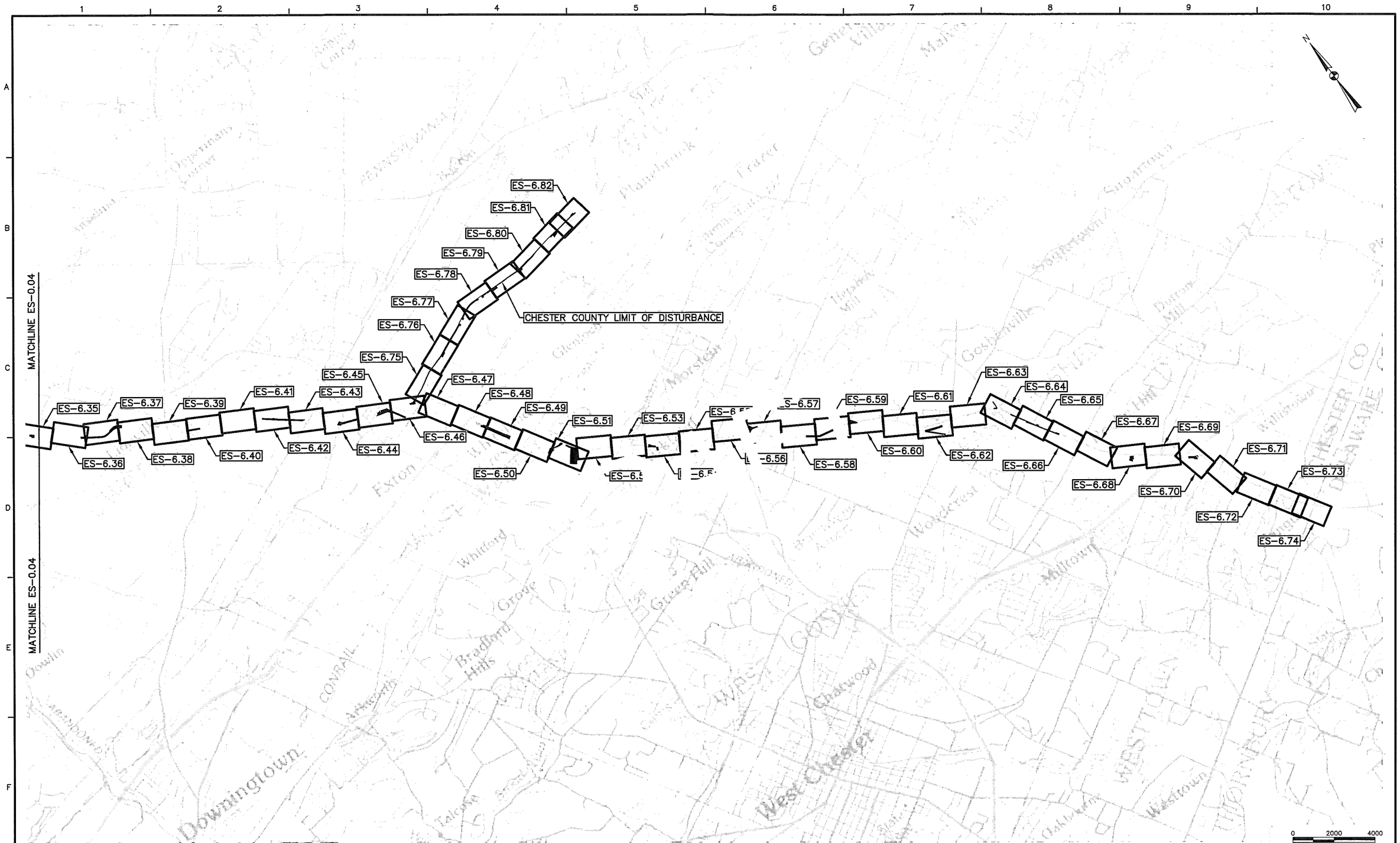

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CONSTRUCTION SPREAD 6

2-20" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CHESTER COUNTY CONSERVATION DISTRICT
KEY PLAN
SHEET 2 OF 2

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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.
SILT FENCE	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. SILT FENCE SHALL BE REPLACED WHENEVER IT HAS DETERIORATED TO SUCH AN EXTENT THAT THE EFFECTIVENESS OF SILT FENCE IS REDUCED. SILT FENCE SHALL REMAIN IN PLACE UNTIL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED. ALL SEDIMENT ACCUMULATION AT THE SILT FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF BEFORE THE SILT FENCE IS REMOVED.

STANDARD EROSION AND SEDIMENT CONTROL PLAN NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, 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.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(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.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. 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.
15. 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.
16. 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 SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
17. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
18. 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.
19. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SUPPAGE, 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.
20. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
21. 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.
22. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT [illegible] INCORPORATED INTO FILLS.
23. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
24. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SH[illegible]E HANDLED IN ACCORDA[illegible] WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DR[illegible] OR OTHER APPROVED ME[illegible]D.
25. ALL GRADED AREAS SHALL BE PERMANENTLY [illegible]IZED IMMED[illegible] REACHING FINISH GRADE. CUT SLOPES IN COMPETENT BEDROC[illegible] [illegible]OCK FILLS [illegible] BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFA[illegible] WA[illegible] OR AS O[illegible]RWISE SHOWN ON THE PLA[illegible] DRAWINGS, SHALL BE P[illegible] ACCORDING [illegible] THE [illegible]NDARDS [illegible] THIS PLAN.
26. IMMEDIATELY AF[illegible] EARTH DISTU[illegible]NCE AC[illegible]IES [illegible] ANY [illegible]A OR SUBAREA OF THE PROJECT, THE O[illegible]ATOR SHALL [illegible]BILIZE AL[illegible]ED [illegible]S. L[illegible]NG NON-GERMINATING [illegible] MULCH [illegible] PROTECTI[illegible]LANKETING [illegible]ALL BE APPL[illegible]S DESCRIBED IN THE PLAN. [illegible]EAS [illegible]AT FI[illegible]ED [illegible] WHICH WILL [illegible] REACTIVATED [illegible]THIN 1 YEAR, MAY BE STABILIZED IN ACCOR[illegible]CE W[illegible]Y STABI[illegible]TION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE RE[illegible]VATE [illegible]THIN 1 YE[illegible] [illegible]ALL [illegible] STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATI[illegible]PECI[illegible]TIONS.
[illegible] PERMANENT [illegible]BILIZA[illegible] IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE [illegible]COVER OR O[illegible]R PERM[illegible]NT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST [illegible]ACCELERATE[illegible]ROSION. [illegible]UT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO [illegible]LUMPING [illegible]ING, OR OTHER MOVEMENTS.
28. [illegible]UMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE [illegible]ERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
29. 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.
30. 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.
31. 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.
32. 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.
33. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODYDEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
34. 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.
35. 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.

CONSTRUCTION SEQUENCE:

REFER TO THE E&SC PLAN DRAWINGS FOR THE LOCATION OF THE PROPOSED WORK AND THE ASSOCIATED BMPS. 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 EROSION AND SEDIMENTATION CONTROLS. NECESSARY PARTS 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. 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&S PLAN PREPARER, AND A REPRESENTATIVE FROM THE LOCAL PADEP OR CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING AT LEAST SEVEN DAYS IN ADVANCE.

1. LOCATE STAGING AREAS AND ACCESS POINTS INCLUDING CONSTRUCTION ENTRANCES. INSTALL COMPOST FILTER SOCKS DOWN SLOPE OF THESE AREAS. APPROPRIATELY SIZED SILT FENCE IS AN APPROVED ALTERNATIVE IN AREAS THAT ARE NOT SPECIAL PROTECTION WATERSHEDS.
2. INSTALL ROCK CONSTRUCTION ENTRANCES AS NEEDED. REFER TO THE ROCK CONSTRUCTION ENTRANCE DETAIL ON DRAWINGS FOR SUGGESTED DIMENSIONS.
3. CONSTRUCT THE PROPOSED ACCESS ROAD AND IMPLEMENT TEMPORARY IMPROVEMENTS TO ACCESS ROADS AS IDENTIFIED IN ACCESS ROAD SUMMARY TABLE AND DETAILED ON THE PLAN SHEETS.
4. FLAG PROJECT LIMITS OF DISTURBANCE AND CLEAR VEGETATION ALONG THE PIPELINE ROUTE.
5. WATERBARS OR APPROVED INTERCEPTOR DYKES WILL BE INSTALLED ALONG THE ALIGNMENT PRIOR TO PIPE INSTALLATION AS NEEDED BASED ON INSTALLATION RATE AND WEATHER CONDITIONS.
6. INSTALL COMPOST FILTER SOCKS ALONG THE PERIMETERS OF THE SITE AS SHOWN ON THE CONSTRUCTION DRAWINGS. INSTALLATIONS SIZING, AND SPACING MUST CONFORM TO THE CHART AND DETAILS PROVIDED ON PLAN SHEET ES-0.08.
7. STRIP TOPSOIL FROM TRENCH AREA (WHERE REQUIRED) AND STOCKPILE WITHIN THE RIGHT-OF-WAY IN ACCORDANCE WITH THE DETAILS PROVIDED. IN WETLANDS, AGRICULTURAL AREAS AND RESIDENTIAL AREAS ADDITIONAL TOPSOIL STRIPPING AND STOCKPILING MIGHT BE REQUIRED.
8. MINIMIZE TOTAL AREA OF DISTURBANCE. MAINTAIN TEMPORARY SOIL STOCKPILES WITHIN EXISTING SOIL EROSION AND SEDIMENT CONTROLS. SHOULD EXCAVATION ENTER STREAMS, FOLLOW SPECIFIC DETAILS FOR THESE AREAS SHOWN ON THE DRAWINGS AND INCLUDE THE STEPS DETAILED IN THE SPECIFIC SECTIONS BELOW.
9. INSTALL PIPE, BACKFILL, AND COVER WITH TOPSOIL (WHERE TOPSOIL WAS SEGREGATED).
10. INSTALL TRENCH PLUGS IN ACCORDANCE WITH THE DETAIL ON DRAWING ES-0.09.
11. GRADE SURFACE TO FINISHED GRADE ELEVATIONS AS SOON AS PRACTICABLE FOLLOWING COMPLETION OF PIPE INSTALLATION. REPAIR OR INSTALL WATERBARS IN ACCORDANCE WITH THE DETAIL FOR PERMANENT WATERBARS ON PLAN SHEET ES-0.08. IMMEDIATELY SEED AND MULCH DISTURBED AREAS OR PREPARE FOR PAVING IN ROADWAY AREAS.
12. INSTALL EROSION CONTROL BLANKET ON ALL SLOPES 3:1 OR STEEPER AND WITHIN 100 FEET OF SPECIAL PROTECTION WATERS OR 100 FEET OF SURFACE WATERS. LOCATIONS ARE SHOWN ON PLAN SHEETS.
13. MAINTAIN EROSION AND SEDIMENTATION CONTROL DEVICES UNTIL SITE WORK IS COMPLETE AND A UNIFORM 70% PERENNIAL VEGETATIVE COVER IS ESTABLISHED.
14. REMOVE SOIL AND EROSION SEDIMENT CONTROL MEASURES UPON ESTABLISHMENT OF A UNIFORM 70% VEGETATIVE COVER OVER THE DISTURBED AREA. RE-GRADE AND REVEGETATE AREAS DISTURBED DURING THE REMOVAL OF THE SOIL EROSION AND SEDIMENT CONTROLS.

FOR STREAM CROSSINGS THAT WILL BE OPEN CUT, THE FOLLOWING STEPS SHALL BE INSERTED IN THE GENERAL CONSTRUCTION SEQUENCE ABOVE, BASED ON THE NUMBERING PROVIDED:

8A. FOR DRY CROSSINGS INSTALL BYPASS HOSE, PUMP, OR COFFERDAM AS DESCRIBED IN STREAM CROSSING DETAILS AROUND THE WORK AREA.
8B. DEWATER WORK AREA. WATER FROM THE EXCAVATION SHALL BE PUMPED TO A SEDIMENT FILTER BAG. WHERE POSSIBLE, EXCAVATION SHALL BE FROM THE TOP OF THE STREAM BANK, WHERE TECHNICALLY FEASIBLE.
9A. STABILIZE CHANNEL EXCAVATION AND STREAM BANKS PRIOR TO REDIRECTING STREAM FLOW
9B. REMOVE BYPASS HOSE, PUMP, AND TEMPORARY DAM AS NEEDED. REPEAT STEPS 3-10 FOR EACH WORK AREA.

FOR STREAM CROSSINGS THAT WILL BE BORED, THE FOLLOWING STEPS SHALL BE INSERTED IN THE GENERAL CONSTRUCTION SEQUENCE ABOVE, BASED ON THE NUMBERING PROVIDED:

8A. INSTALL COMPOST FILTER SOCKS DOWNGRADIENT OF THE BORE PIT.
8B. EXCAVATE BORE PITS AS SHOWN IN THE TEMPORARY STREAM CROSSING DETAIL ON PLAN SHEET ES-0.11. BORE PITS WILL BE LOCATED A MINIMUM OF 50' FROM THE NEAREST TOP OF BANK, WHERE TECHNICALLY FEASIBLE.
8C. BORE BENEATH STREAMS WHERE INDICATED ON THE CONSTRUCTION DRAWINGS USING A HORIZONTAL DIRECTIONAL BORING MACHINE.
8D. BACKFILL BORE PITS.

IF WORKING WITHIN A WETLAND AREA, FOLLOW THE GENERALIZED CONSTRUCTION SEQUENCE BELOW:

1. LOCATE STAGING AREAS AND ACCESS POINTS. STAGING AREAS SHOULD BE LOCATED AT LEAST 50 FEET FROM THE EDGE OF THE WETLAND. INSTALL SEDIMENT BARRIERS DOWN SLOPE OF THESE AREAS.
2. INSTALL ROCK CONSTRUCTION ENTRANCE AS NEEDED. REFER TO THE ROCK CONSTRUCTION ENTRANCE DETAIL ON DRAWINGS FOR SUGGESTED DIMENSIONS.
3. INSTALL ORANGE FLAGGING AROUND PERIMETER OF WETLAND AND SEDIMENT BARRIERS ALONG THE PERIMETERS OF THE SITE AS SHOWN ON THE CONSTRUCTION DRAWINGS.
4. MATS, PADS, OR SIMILAR DEVICES SHALL BE USED DURING THE CROSSINGS OF WETLANDS. ORIGINAL GRADES THROUGH WETLANDS MUST BE RESTORED AFTER TRENCHING AND BACKFILLING. ANY EXCESS FILL MATERIALS MUST BE REMOVED FROM THE WETLAND AND NOT SPREAD ON-SITE.
5. SOIL EXCAVATED FROM WETLAND AREAS SHALL BE CAREFULLY REMOVED WITH THE ROOTS INTACT. THIS SOIL SHOULD BE PLACED IN A SEPARATE STOCKPILE TO BE REUSED DURING THE WETLAND SURFACE RESTITUTION.
6. DEWATER WORK AREA; WATER FROM THE EXCAVATION SHALL BE PUMPED TO A SEDIMENT TRAP OR A FILTER BAG.
7. INSTALL PIPE.
8. INSTALL TRENCH PLUGS IN WETLAND AREAS TO PREVENT THE TRENCH FROM DRAINING THE WETLAND OR CHANGING ITS HYDROLOGY.
9. BACKFILL PIPE TRENCH. BACKFILL THE TOP 12-INCHES OF THE EXCAVATED TRENCH WITH THE STOCKPILED WETLAND SOIL TO MATCH ORIGINAL SURFACE GRADES.
10. COMPACT BACKFILL AND GRADE THE SURFACE OF THE TRENCH AREA TO ALLOW FOR POSITIVE DRAINAGE TO SOIL EROSION AND SEDIMENT CONTROLS AND TO PREPARE DISTURBED AREAS FOR PERMANENT TRENCH RESTORATION.
11. MAINTAIN ALL EROSION AND SEDIMENTATION CONTROL DEVICES UNTIL SITE WORK IS COMPLETE AND A UNIFORM 70% PERENNIAL VEGETATIVE COVER IS ESTABLISHED.
12. REMOVE ALL SOIL AND EROSION SEDIMENT CONTROL MEASURES UPON ESTABLISHMENT OF A UNIFORM 70% VEGETATIVE COVER OVER THE DISTURBED AREA. RE-GRADE AND REVEGETATE AREAS DISTURBED DURING THE REMOVAL OF THE SOIL EROSION AND SEDIMENT CONTROLS.

FOR TEMPORARY EQUIPMENT STREAM AND WETLAND CROSSINGS, FOLLOW THE GENERALIZED CONSTRUCTION SEQUENCE BELOW:

9A. INSTALL TEMPORARY CROSSINGS OF WETLANDS AND STREAMS IN ACCORDANCE E&:S DETAILS ON SHEETS ES-0.08 AND ES-0.10. ACCESS INTO WETLANDS WITH KNOWN BOG TURTLE HABITAT IS NOT PERMITTED.
9B. TEMPORARY STREAM CROSSINGS SHALL BE INSPECTED ON A DAILY BASIS. DAMAGED CROSSINGS SHALL BE REPAIRED WITHIN 24 HOURS OF THE INSPECTION AND BEFORE ANY SUBSEQUENT USE. SEDIMENT DEPOSITS ON THE CROSSING OR ITS APPROACHES SHALL BE REMOVED WITHIN 24 HOURS OF THE INSPECTION.
9C. AS SOON AS THE TEMPORARY CROSSING IS NO LONGER NEEDED, REMOVE TEMPORARY EQUIPMENT CROSSING. ALL MATERIALS SHALL BE DISPOSED OF PROPERLY AND DISTURBED AREAS STABILIZED. REMOVE ALL SOIL AND EROSION SEDIMENT CONTROL MEASURES UPON ESTABLISHMENT OF A UNIFORM 70% VEGETATION COVER OVER THE DISTURBED AREA.

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REVISIONS

NO.	BY	DATE	REMARKS

SUNOCO PIPELINE L.P.
PHILADELPHIA, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 6

2-20" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CHESTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL NOTES

DATE:	8/28/15
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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TEMPORARY SEEDING

TEMPORARY GRASS COVER SHALL BE ESTABLISHED IN THE FOLLOWING AREAS:

1. WHERE SOIL STOCKPILES ARE TO BE EXPOSED FOR A PERIOD GREATER THAN FOUR (4) DAYS, THE STOCKPILE SHALL BE SEEDED.
2. WHERE VEGETATIVE FILTERS MUST BE ESTABLISHED BELOW FILTER BAGS, A MINIMUM DISTANCE OF 10 FT SHALL BE SEEDED DOWN SLOPE OF THE TRAP OUTLET.

TEMPORARY COVER

SEED MIXTURE FOR TEMPORARY COVER SHALL CONSIST OF 100% ANNUAL RYEGRASS. SEED SHALL BE APPLIED AT THE RATE OF 40 LB/ACRE OR AS RECOMMENDED BY A LOCAL RECOGNIZED SEED SUPPLIER 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.

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 SHALL BE APPLIED ON ANY AREA SUBJECT TO EROSION, OR WHICH HAS UNFAVORABLE CONDITIONS FOR PLANT ESTABLISHMENT AND GROWTH. THE PRACTICE MAY 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 TWO (2) MONTHS, MULCH MATERIALS SHALL BE APPLIED ACCORDING TO THE FOLLOWING GUIDELINES:

1. STRAW MULCH SHALL BE APPLIED AT THE RATE OF THREE TONS PER ACRE. CHEMICALLY TREATED OR SALTED STRAW IS NOT ACCEPTABLE AS MULCH.
2. STRAW MULCH SHALL BE ANCHORED IMMEDIATELY AFTER APPLICATION BY AT LEAST ONE OF THE FOLLOWING METHODS.
   A. "CRIMPED" INTO THE SOIL USING TRACTOR DRAWN EQUIPMENT (STRAIGHT BLADED COULTER OR SIMILAR). THIS METHOD IS LIMITED TO SLOPES NO STEEPER THAN 3:1. MACHINERY SHOULD BE OPERATED ON THE CONTOUR. (CRIMPING OF HAY OR STRAW BY RUNNING IT OVER WITH TRACKED MACHINERY IS NOT RECOMMENDED)
   B. ASPHALT, EITHER EMULSIFIED OR CUT-BACK, CONTAINING NO SOLVENTS OR OTHER DILUTING AGENTS TOXIC TO PLANT OR ANIMAL LIFE, UNIFORMLY APPLIED AT THE RATE OF 31 GALLONS PER 1000 FT2.
   C. SYNTHETIC BINDERS (CHEMICAL BINDERS) MAY BE USED 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.
   D. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

MULCHED AREAS SHALL 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 OR TIE-DOWN MATERIAL SHALL BE REPAIRED UPON DISCOVERY.

REVEGETATION

LIMING RATES

MINIMUM 6 TONS PER ACRE AT 100% EFFECTIVE NEUTRALIZING VALUE (% ENV), UNLESS THE SOIL TEST DETERMINES THAT A LESSER AMOUNT IS NEEDED. TO DETERMINE THE ACTUAL AMOUNT OF REGULAR LIME TO APPLY, DIVIDE THE AMOUNT CALLED FOR BY THE SOIL TEST BY THE % ENV FOR THE PRODUCT USED. FOR EXAMPLE, IF 6 TONS PER ACRE IS NEEDED AND THE ENV FOR THE LIME USED IS 88%, DIVIDE 6 BY 0.88 RESULTING IN 6.8 TONS NEEDING TO BE APPLIED.
FOR DOLOMITIC LIME, WHICH HAS A SIGNIFICANT AMOUNT OF MAGNESIUM IN IT, DIVIDE THE AMOUNT CALLED FOR BY THE SOIL TEST BY THE % CALCIUM CARBONATE EQUIVALENT (% CCE) LISTED FOR THE PRODUCT INSTEAD OF THE % ENV. THE % CCE MAY BE ABOVE 100% WHICH ACCOUNTS FOR THE FACT THAT MAGNESIUM HAS A GREATER EFFECT PER POUND THAN THE CALCIUM IN REGULAR LIME.
NOTE: WHEN A SOIL TEST REQUIRES MORE THAN 8,000 POUNDS OF LIME PER ACRE, THE LIME MUST BE MIXED INTO THE TOP 6 INCHES OF SOIL.

FERTILIZATION RATES

APPLY 10-20-20 AT 600 POUNDS/ACRE, IF TOP DRESSED OR 1,000 POUNDS/AC, IF INCORPORATED, UNLESS THE SOIL TEST DETERMINES THAT THE RATE CAN BE LESS THAN THESE MINIMUMS.

SOIL AMENDMENT APPLICATION RATE EQUIVALENTS

SOIL AMENDMENT	PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YDS.	NOTES
PERMANENT SEEDING APPLICATION RATE				
AGRICULTURAL LIME	6 TONS	240 LBS.	2,480 LBS.	OR AS PER SOIL TEST; MAY NOT BE REQUIRED IN AGRICULTURAL FIELDS
10-20-20 FERTILIZER	1,000 LBS.	25 LBS.	210 LBS.	OR AS PER SOIL TEST; MAY NOT BE REQUIRED IN AGRICULTURAL FIELDS

RECOMMENDED SEED MIXTURES

MIXTURE NO.	SPECIES	SEEDING RATES - PLS(1) MOST SITES	SEEDING RATES - PLS(1) ADVERSE SITES
1 (2)	SPRING OATS (SPRING), OR 64 96	64	96
	ANNUAL RYEGRASS (SPRING OR FALL), OR	10	15
	WINTER WHEAT (FALL), OR	90	120
	WINTER RYE (FALL)	56	112
2 (3)	TALL FESCUE, OR 75	60	75
	FINE FESCUE, OR 40	35	40
	KENTUCKY BLUEGRASS, PLUS 25 30	25	30
	REDTOP(4), OR	3	3
	PERENNIAL RYEGRASS	15	[illegible]
3	BIRDSFOOT TREFOIL, PLUS 6 10	6	[illegible]
	TALL FESCUE	30	35
4	BIRDSFOOT TREFOIL, PLUS	[illegible]	10
	REED CANARYGRASS	[illegible]	15
5 (5)	CROWNVETCH, PLUS	1[illegible]	15
	TALL FESCUE, OR	20	25
	PERENNIAL RYEGRASS	20	25
6 (5,6)	CROW[illegible], PLUS	10	15
	[illegible]RASS	20	25
7 (5)	[illegible]OSFOOT TRE[illegible], PLUS	20	30
	CROWNVETC[illegible]LUS	[illegible]	30
	TALL F[illegible]UE	[illegible]	25
	F[illegible] PLUS	2[illegible]	30
	[illegible]E FESC[illegible]R	20	30
	[illegible]ENNIAL RYE[illegible]	20	25
[illegible] (7)	SER[illegible]A LESPEDEZA, [illegible]	10	20
	[illegible] FESCUE, PLUS	20	25
	[illegible]EDTOP(4)	3	3
	TALL FESCUE, PLUS	40	60
	FINE FESCUE	10	15
	DEERTONGUE, PLUS	15	20
	BIRDSFOOT TREFOIL	6	10
12(8)	SWITCHGRASS, OR	15	20
	BIG BLUESTEM, PLUS	15	20
	BIRDSFOOT TREFOIL	6	10
13	ORCHARDGRASS, OR	20	30
	SMOOTH BROMEGRASS, PLUS	25	35
	BIRDSFOOT TREFOIL	6	10

NOTES:

1. PURE LIVE SEED (PLS) IS THE PRODUCT OF THE PERCENTAGE OF PURE SEED TIMES PERCENTAGE GERMINATION DIVIDED BY 100. FOR EXAMPLE, TO SECURE THE ACTUAL PLANTING RATE FOR SWITCHGRASS, DIVIDE 12 POUNDS PLS SHOWN ON THE SEED TAG. THUS, IF THE PLS CONTENT OF A GIVEN SEED LOT IS 35 PERCENT, DIVIDE 12 PLS BY 0.35 TO OBTAIN 34.3 POUNDS OF SEED REQUIRED TO PLANT ONE-ACRE. ALL MIXTURES IN THIS TABLE ARE SHOWN IN TERMS OF PLS.
2. IF HIGH-QUALITY SEED IS USED, FOR MOST SITES SEED SPRING OATS AT A RATE OF TWO BUSHELS PER ACRE, WINTER WHEAT AT 11.5 BUSHELS PER ACRE, AND WINTER RYE AT ONE BUSHEL PER ACRE. IF GERMINATION IS BELOW 90 PERCENT, INCREASE THESE SUGGESTED SEEDING RATES BY 0.5 BUSHEL PER ACRE.
3. THIS MIXTURE IS SUITABLE FOR FREQUENT MOWING. DO NOT CUT SHORTER THAN FOUR INCHES.
4. KEEP SEEDING RATE TO THAT RECOMMENDED IN TABLE. THESE SPECIES HAVE MANY SEEDS PER POUND AND ARE VERY COMPETITIVE. TO SEED SMALL QUANTITIES OF SMALL SEEDS SUCH AS WEEPING LOVEGRASS AND REDTOP, DILUTE WITH DRY SAWDUST, SAND, RICE HULLS, BUCKWHEAT HULLS, ETC.
5. SEED MIXTURES CONTAINING CROWN VETCH SHOULD NOT BE USED IN AREAS ADJACENT TO WETLANDS OR STREAM CHANNELS DUE TO THE INVASIVE NATURE OF THIS SPECIES.
6. USE FOR HIGHWAY SLOPES AND SIMILAR SITES WHERE THE DESIRED SPECIES AFTER ESTABLISHMENT IS CROWNVETCH.
7. USE ONLY IN EXTREME SOUTHEASTERN OR EXTREME SOUTHWESTERN PA. SERECIA LESPEDEZA IS NOT WELL ADAPTED TO MOST OF PA.
8. DO NOT MOW SHORTER THAN NINE TO 10 INCHES.

SITE CONDITIONS	NURSE CROP	SEED MIXTURE (SELECT ONE MIXTURE)
SLOPES AND BANKS (NOT MOWED)		
WELL-DRAINED	1 PLUS	3, 5, 8, OR 12 (1)
VARIABLE DRAINAGE	1 PLUS	3 OR 7
SLOPES AND BANKS (MOWED)		
WELL-DRAINED	1 PLUS	2 OR 10
SLOPES AND BANKS (GRAZED/HAY)		
WELL-DRAINED	1 PLUS	2,3, OR 13
GULLIES AND ERODED AREAS	1 PLUS	3, 5, 7, OR 12 (1)
EROSION CONTROL FACILITIES (BMPS)		
SOD WATERWAYS, SPILLWAYS, FREQUENT WATER FLOW AREAS DRAINAGE DITCHES	1 PLUS	2, 3, OR 4
SHALLOW, LESS THAN THREE FEET DEEP	1 PLUS	2, 3, OR 4
DEEP, NOT MOWED	1 PLUS	5 OR 7
POND BANKS, DIKES, LEVEES, DAMS, DIVERSION CHANNELS, AND OCCASIONAL WATER FLOW AREAS		
MOWED AREAS	1 PLUS	2 OR 3
NON-MOWED AREAS	1 PLUS	5 OR 7
FOR HAY OR SILAGE ON DIVERSION CHANNELS AND OCCASIONAL WATER FLOW AREAS	1 PLUS	3 OR 13
HIGHWAYS (2)		
NON-MOWED AREAS		
PURE CROWNVETCH3	1 PLUS	5 OR 6
WELL-DRAINED	1 PLUS	5, 7, 8, 9, OR 10
VARIABLE DRAINED	1 PLUS	3 OR 7
POORLY DRAINED	1 PLUS	3 OR 9
AREAS MOWED SEVERAL TIMES PER YEAR	1 PLUS	2, 3, OR 10
UTILITY ROW		
WELL-DRAINED	1 PLUS	5, 8, OR 12 (1)
VARIABLE DRAINED	1 PLUS	3 OR 7
WELL-DRAINED AREAS FOR GRAZING/HAY	1 PLUS	2, 3, OR 13
EFFLUENT DISPOSAL AREAS	1 PLUS	3 OR 4
SANITARY LANDFILLS	1 PLUS	3, 5, 7, 11 (1), OR 12 (1)
SURFACE MINES		
SPOILS, MINE WASTES, FLY ASH, SLAG, SETTLING BASIN RESIDUES AND OTHER SEVERELY DISTURBED AREAS (LIME TO SOIL TEST)	1 PLUS	3, 4, 5, 7, 8, 9,11 (1) OR 12(1)
SEVERELY DISTURBED AREAS FOR GRAZING/HAY	1 PLUS	3 OR 13

NOTES:

1. FOR SEED MIXTURES 11 AND 12, ONLY USE SPRING OATS OR WEEPING LOVEGRASS (INCLUDED IN MIX) AS NURSE CROP.
2. CONTACT THE PA DEPARTMENT OF TRANSPORTATION DISTRICT ROADSIDE SPECIALIST FOR SPECIFIC SUGGESTIONS ON TREATMENT TECHNIQUES AND MANAGEMENT PRACTICES.
3. SEED MIXTURES CONTAINING CROWN VETCH SHOULD NOT BE USED IN AREAS ADJACENT TO WETLANDS OR STREAM CHANNELS DUE TO THE INVASIVE NATURE OF THIS SPECIES.

MULCH APPLICATION RATES

MULCH TABLE	APPLICATION RATE (MINIMUM) PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YDS.	NOTES
STRAW	3 TONS	140 LBS.	1,240 LBS.	EITHER WHEAT OR OAT STRAW, FREE OF WEEDS, NOT CHOPPED OR FINELY BROKEN
HAY	3 TONS	140 LBS.	1,240 LBS.	TIMOTHY, MIXED CLOVER AND TIMOTHY OR OTHER NATIVE FORAGE GRASSES
WOODCHIPS	4 TO 6 TONS	185 TO 275 LBS.	1,650 TO 2,500 LBS.	MAY PREVENT GERMINATION OF GRASSES AND LEGUMES
HYDROMULCH	1 TON	47 LBS.	415 LS.	SEE LIMITATIONS ABOVE

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REVISIONS

NO.	BY	DATE	REMARKS

SUNOCO PIPELINE L.P.
PHILADELPHIA, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 6

2-20" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CHESTER COUNTY CONSERVATION DISTRICT
SEEDING SPECIFICATIONS

DATE:	8/28/15
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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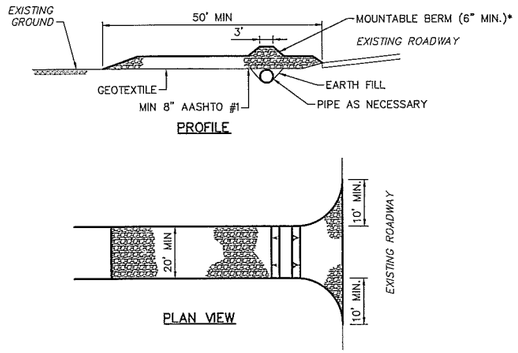


* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

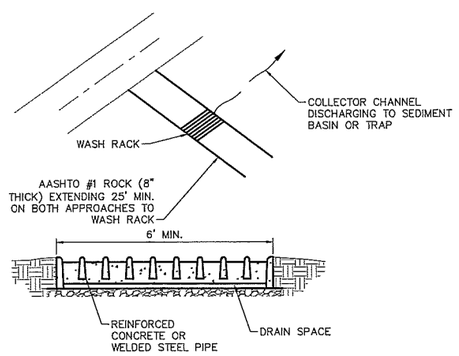
REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTION 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 THE 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.

ROCK CONSTRUCTION ENTRANCE (1 / 0.08)
NOT TO SCALE



NOTES:

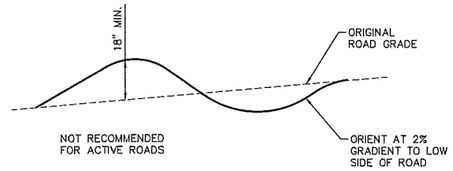
WASH RACK SHALL BE 20 FEET (MIN.) WIDE OR TOTAL WIDTH OF ACCESS.

WASH RACK SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE ANTICIPATED CONSTRUCTION VEHICULAR TRAFFIC.

A WATER SUPPLY SHALL BE MADE AVAILABLE TO WASH THE WHEELS OF ALL VEHICLES EXITING THE SITE.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. DRAIN SPACE UNDER WASH RACK SHALL BE KEPT OPEN AT ALL TIMES. DAMAGE TO THE WASH RACK SHALL BE REPAIRED PRIOR TO FURTHER USE OF THE RACK. ALL SEDIMENT DEPOSITED ON ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE WITH WASH RACK (2 / 0.08)
NOT TO SCALE



MAXIMUM SPACING FOR WATERBAR'S	
% SLOPE	SPACING (FT)
<5	250
5–15	150
15–30	100
>30	50

NOTES:

WATERBARS SHALL DISCHARGE TO A STABLE AREA.

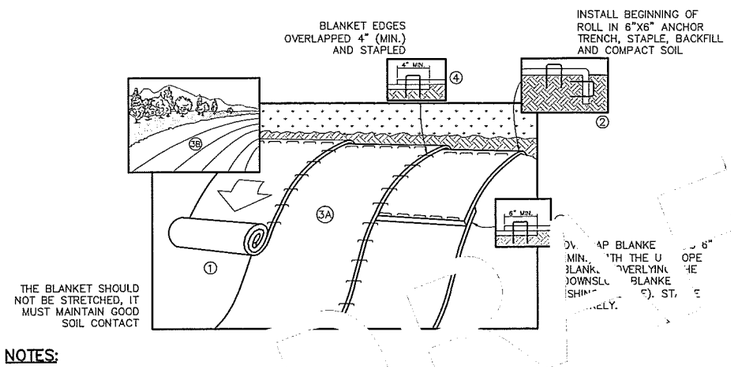
WATERBARS SHALL BE INSPECTED WEEKLY (DAILY ON ACTIVE ROADS) AND AFTER EACH RUNOFF EVENT. DAMAGED OR ERODED WATERBARS SHALL BE RESTORED TO ORIGINAL DIMENSIONS WITHIN 24 HOURS OF INSPECTION.

MAINTENANCE OF WATERBARS SHALL BE PROVIDED UNTIL ROADWAY, SKIDTRAIL, OR RIGHT-OF-WAY HAS ACHIEVED PERMANENT STABILIZATION.

WATERVARS ON RETIRED ROADWAYS, SKIDTRAILS, AND RIGHT-OF-WAYS SHALL BE LEFT IN PLACE AFTER PERMANENT STABILIZATION HAS BEEN ACHIEVED.

SEE PA DEP EROSION CONTROL MANUAL TABLE 3.1 FOR WATERBAR SPACING.

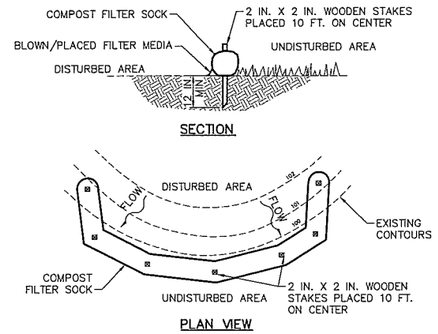
WATERBAR (3 / 0.08)
NOT TO SCALE



NOTES:

1. SEED AND SOIL AMENDMENTS SHALL BE AP[illegible]D ACCORDING [illegible] THE R[illegible]S IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.
2. PROVIDE ANCHOR TRENCH AT TOE OF SLOPE [illegible] IMILAR FAS[illegible] AS AT TOP OF SLOPE
3. SLOPE SURFACE SHALL BE FREE OF ROCKS, CL[illegible] AND GRASS.
4. BLANKET SHALL HAVE GOOD CONTINUOUS CONTA[illegible] 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 (4 / 0.08)
NOT TO SCALE



MAXIMUM SLOPE LENGTHS FOR COMPOST FILTER SOCK			
% SLOPE	12" DIAMETER	18" DIAMETER	24" DIAMETER
2 (OR LESS)	520	700	1000
5	250	340	500
10	150	250	300
15	100	200	250
20	70	140	200
25	50	100	140
30	45	70	100
35	40	60	90
40	35	45	60
45	30	40	50
50	20	30	40

NOTES:

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE EPA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXITING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

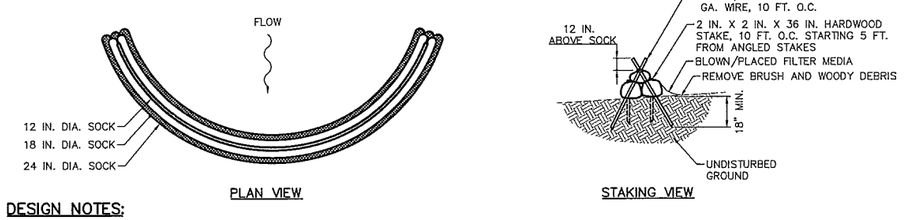
ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES ½ THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

COMPOST FILTER SOCK 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 COMPOST 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 VEGETATION OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

COMPOST FILTER SOCK (5 / 0.08)
NOT TO SCALE



DESIGN NOTES:

1. COMPOST SEDIMENT TRAP SHALL BE SIZED TO PROVIDE 2000 CUBIC FEET OF STORAGE CAPACITY FOR EACH ACRE TRIBUTARY TO THE TRAP.
2. MINIMUM BASE WIDTH IS EQUAL TO THE HEIGHT.
3. SEDIMENT ACCUMULATION SHALL NOT EXCEED ⅓ THE TOTAL HEIGHT OF THE TRAP.
4. SOCKS SHALL BE OF LARGER DIAMETER AT THE BASE OF THE TRAP AND DECREASE IN DIAMETER FOR SUCCESSIVE LAYERS AS SHOWN ON THE PLAN VIEW.
5. 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.

NOTES:

SOCK MATERIAL SHALL MEET THE STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

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" DIAMETER SOCK. ADDITIONAL STORAGE MAY BE PROVIDED BY MEANS OF AN EXCAVATED SUMP 12" DEEP EXTENDING 1 TO 3 FEET UPSLOPE OF THE SOCKS ALONG THE LOWER SIDE OF THE TRAP.

COMPOST SOCK SEDIMENT TRAPS SHALL PROVIDE 2,000 CUBIC FEET STORAGE CAPACITY WITH 12" FREEBOARD FOR EACH TRIBUTARY DRAINAGE ACRE. (SEE MANUFACTURER FOR ANTICIPATED SETTLEMENT.)

THE MAXIMUM TRIBUTARY DRAINAGE AREA IS 5.0 ACRES. SINCE COMPOST SOCKS ARE "FLOW-THROUGH," NO SPILLWAY IS REQUIRED.

COMPOST SOCK SEDIMENT TRAPS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. SEDIMENT SHALL BE REMOVED WHEN IT REACHES ⅓ THE HEIGHT OF THE SOCKS.

PHOTODEGRADABLE AND BIODEGRADABLE SOCKS SHALL NOT BE USED FOR MORE THAN 1 EYAR.

COMPOST SOCK SEDIMENT TRAP (6 / 0.08)
NOT TO SCALE

TETRA TECH
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REVISIONS

NO.	BY	DATE	REMARKS

SUNOCO PIPELINE L.P.
PHILADELPHIA, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 6

2–20" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CHESTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION DETAILS
SHEET 1 OF 3

DATE:	8/28/15
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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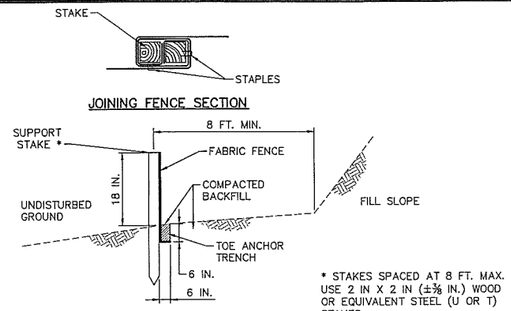
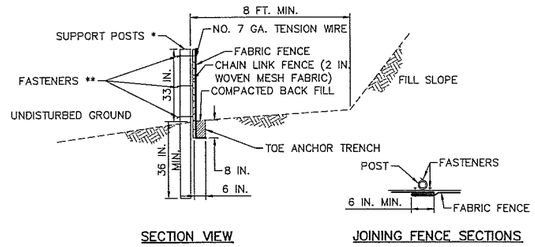
ES–0.08
SHEET 0.08 OF 93

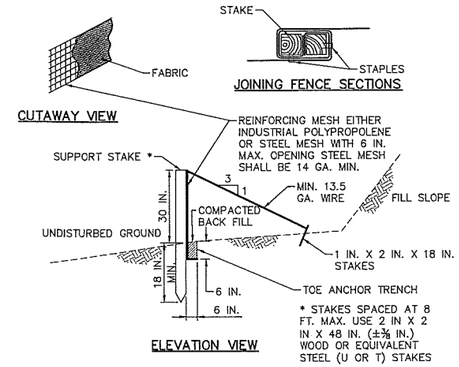


* STAKES SPACED AT 8 FT. MAX. USE 2 IN X 2 IN (±⅜ IN.) WOOD OR EQUIVALENT STEEL (U OR T) STAKES.

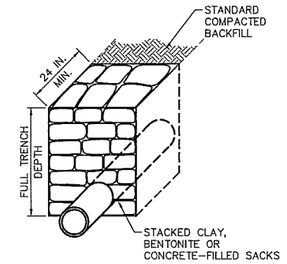


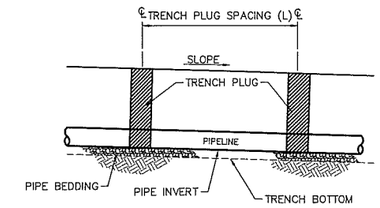
* POSTS SPACED AT 10 FT. MAX. USE 2–1/2 IN. DIA HEAVY DUTY GALVANIZED OR ALUMINUM POSTS.

** CHAIN LINK TO POST FASTENERS SPACED AT 14 IN. MAX. USE NO. 9 GA. ALUMINUM WIRE OR NO. 9 GALVANIZED STEEL WIRE. FABRIC TO SHAIN FASTENERS SPACED AT 24 IN. MAX. ON CENTER.



* STAKES SPACED AT 8 FT. MAX. USE 2 IN X 2 IN X 48 IN. (±⅜ IN.) WOOD OR EQUIVALENT STEEL (U OR T) STAKES





NOTES:

FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE 4.3 OF THE PA DEP EROSION CONTROL MANUAL.

FABRIC WIDTH SHALL BE 30 IN. MINIMUM. STAKES SHALL BE HARDWOOD OR EQUIVALENT STEEL (U OR T) STAKES.

SILT FENCE SHALL BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE.

ANY SECTION OF SILT FENCE WHICH HAS BEEN UNDERMINED OR TOPPED SHALL BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET (STANDARD CONSTRUCTION DETAIL # 4–6).

FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

SILT FENCE IS NOT TO BE USED IN HQ, EV, OR SILTATION IMPAIRED WATERSHEDS.

STANDARD SILT FENCE (18" HIGH) (7 / 0.09)
NOT TO SCALE

NOTES:

FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE 4.3 OF THE PA DEP EROSION CONTROL MANUAL.

FABRIC WIDTH SHALL BE 42. IN. MINIMUM.

POSTS SHALL BE INSTALLED USING A POSTHOLE DRILL.

CHAIN LINK SHALL BE GALVANIZED NO. 11.5 GA. STEEL WIRE WITH 2–1/4 IN. OPENING, NO. 11 GA. ALUMINUM COATED STEEL WIRE IN ACCORDANCE WITH ASTM–A–491, OR GALVANIZED NO. 9 GA. STEEL WIRE TOP AND BOTTOM WITH GALVANIZED NO. 11 GA. STEEL INTERMEDIATE WIRES. NO. 7 GAGE TENSION WIRE TO BE INSTALLED HORIZONTALLY THROUGH HOLES AT TOP AND BOTTOM OF CHAIN–LINK FENCE OR ATTACHED WITH HOG RINGS AT 5 FT MAX. CENTERS.

SILT FENCE SHALL BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE.

FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

SILT FENCE IS NOT TO BE USED IN HQ, EV, OR SILTATION IMPAIRED WATERSHEDS.

SUPER SILT FENCE (8 / 0.09)
NOT TO SCALE

NOTES:

FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE 4.3 OF THE PA DEP EROSION CONTROL MANUAL.

FABRIC WIDTH SHALL BE 42 IN. MINIMUM. STAKES SHALL BE HARDWOOD OR EQUIVALENT STEEL (U OR T) STAKES. AN 18 IN. SUPPORT STAKE SHALL BE DRIVEN 12 IN. MINIMUM INTO UNDISTURBED GROUND.

SILT FENCE SHALL BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE.

ANY SECTION OF SILT FENCE WHICH HAS BEEN UNDERMINED OR TOPPED SHALL BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET (STANDARD CONSTRUCTION DETAIL # 4–6).

FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

SILT FENCE IS NOT TO BE USED IN HQ, EV, OR SILTATION IMPAIRED WATERSHEDS.

REINFORCED SILT FENCE (30" HIGH) (9 / 0.09)
NOT TO SCALE

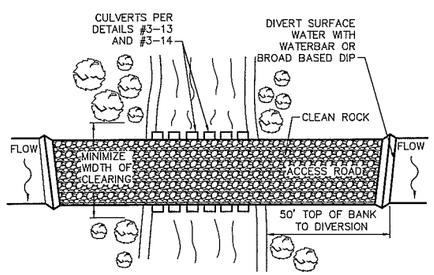
REQUIRED SPACING & MATERIALS FOR TRENCH PLUGS		
TRENCH SLOPE (%)	SPACING L (FT)	PLUG MATERIAL
<5	1,000	* CLAY, BENTONITE OR CONCRETE–FILLED SACKS
5–15	500	* CLAY, BENTONITE OR CONCRETE–FILLED SACKS
15–25	300	* CLAY, BENTONITE OR CONCRETE–FILLED SACKS
25–35	200	* CLAY, BENTONITE OR CONCRETE–FILLED SACKS
35–100	100	* CLAY, BENTONITE OR CONCRETE–FILLED SACKS
>100	50	CEMENT BAGS (WETTED) OR MORTARED STONE

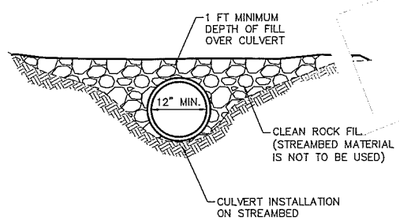
* TOP SOIL MAY NOT BE USED TO FILL SACKS

NOTES:

IMPERVIOUS TRENCH PLUGS ARE REQUIRED FOR ALL STREAM, RIVER, WETLAND, OR OTHER WATERBODY CROSSINGS.

TRENCH PLUG INSTALLATION (10 / 0.09)
NOT TO SCALE





NOTES:

WATERBARS AND BROAD–BASED DIPS SHALL DISCHARGE TO SEDIMENT REMOVAL FACILITY.

CLEAN ROCK SHALL CONFORM TO CHAPTER 105 PERMITTING REQUIREMENTS.

FOLLOW PERMIT CONDITIONS REGARDING REMOVAL OF CROSSING

NOTES:

PROVIDE 50' STABILIZED ACCESS TO CROSSING ON BOTH SIDES OF STREAM CHANNEL (SEE STANDARD CONSTRUCTION DETAIL #3–12).

PIPES SHALL EXTEND BEYOND THE TOE OF THE ROADWAY.

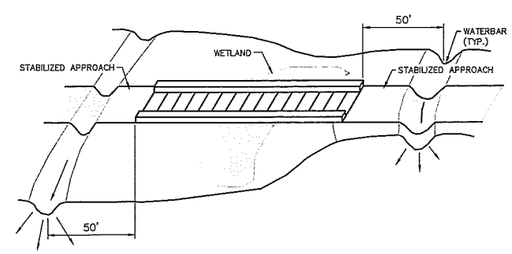
RUNOFF FROM THE ROADWAY SHALL BE DIVERTED OFF THE ROADWAY AND INTO A SEDIMENT REMOVAL BMP BEFORE IT REACHES THE ROCK APPROACH TO THE CROSSING.

MAINTENANCE:

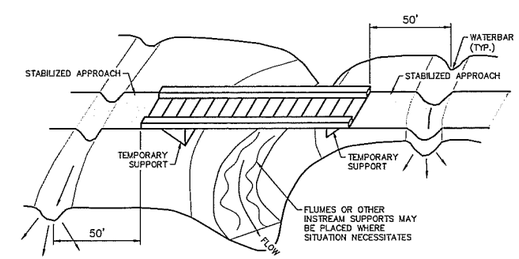
1. TEMPORARY STREAM CROSSINGS SHALL BE INSPECTED ON A DAILY BASIS.
2. DAMAGED CROSSINGS SHALL BE REPAIRED WITHIN 24 HOURS OF THE INSPECTION AND BEFORE ANY SUBSEQUENT USE.
3. SEDIMENT DEPOSITS ON THE CROSSING OR ITS APPROACHES SHALL BE REMOVED WITHIN 24 HOURS OF THE INSPECTION.

AS SOON AS THE TEMPORARY CROSSING IS NO LONGER NEEDED, IT SHALL BE REMOVED. ALL MATERIALS SHALL BE DISPOSED OF PROPERLY AND DISTURBED AREAS STABILIZED.

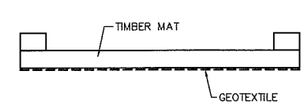
TEMPORARY STREAM CROSSING – CULVERT (11 / 0.09)
NOT TO SCALE



TEMPORARY WETLAND CROSSING
NOT TO SCALE



TEMPORARY STREAM CROSSING
NOT TO SCALE



SECTION A–A
NOT TO SCALE

TIMBER MAT CROSSING DETAIL (11 / 0.09)
NOT TO SCALE

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REVISIONS

NO.	BY	DATE	REMARKS

SUNOCO PIPELINE L.P.
PHILADELPHIA, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 6

2–20" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CHESTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION DETAILS
SHEET 2 OF 3

DATE:	8/28/15
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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ES–0.09

SHEET 0.09 OF 93

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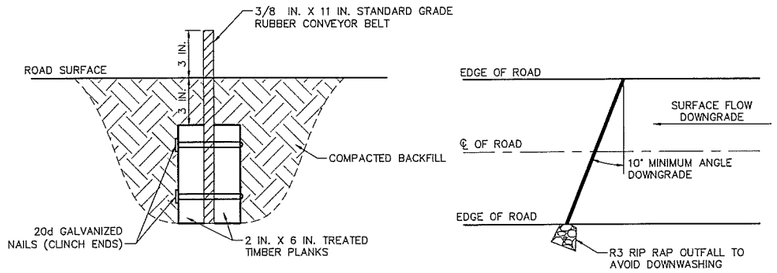
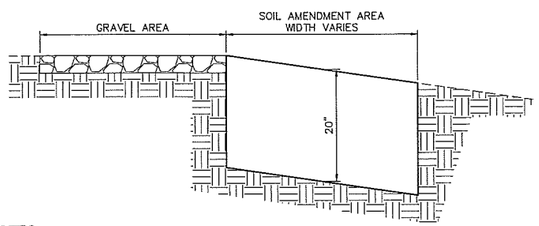


NOTE:
1. DEFLECTOR SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT.
2. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM DEFLECTOR WITHIN 24 HOURS OF INSPECTION.
3. BELT SHALL BE REPLACED WHEN WORN AND NO LONGER EFFECTIVE.
4. MAXIMUM SPACING OF DEFLECTORS SHALL BE AS SHOWN IN TABLE.

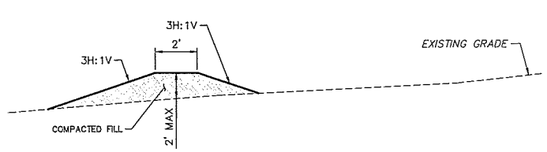
ROAD GRADE (PERCENT)	SPACING BETWEEN DIPS, CULVERTS,OR DEFLECTORS (FEET)
<2	300
3	235
4	200
5	180
6	165
7	155
8	150
9	145
10	140

WATER DEFLECTOR (12 / 0.10)
NOT TO SCALE



NOTES:
1. SOIL AMENDMENT MEDIAN SHOULD CONSIST OF SOIL AND COMPOST AT A RATIO OF 2:1 (SOIL:COMPOST).
2. SOIL AMENDMENT SHOULD NOT BE USED ON SLOPES GREATER THAN 30%.
3. COMPOST CAN BE SUBSTITUTED WITH MULCH, MANURE, SAND, OR ON-SITE SOILS WITH AT LEAST 5% ORGANIC CONTENT.
4. SOIL AMENDMENT AREA TO BE INSTALLED ON DOWN GRADIENT SIDE OF ROAD.
5. NO VEHICULAR TRAFFIC WILL BE PERMITTED TO DRIVE IN THE SOIL AMENDMENT AREA TO MINIMIZE THE POSSIBILITY OF COMPACTION
6. THE SOIL AMENDMENT AREA WILL BE INSPECTED BIANNUALLY TO VERIFY ITS EFFECTIVENESS.
7. ALL CONSTRUCTION SHOULD BE COMPLETED AND STABILIZED BEFORE BEGINNING SOIL RESTORATION.

SOIL AMENDMENT DETAIL (13 / 0.10)
NOT TO SCALE



INFILTRATION BERM DETAIL (14 / 0.10)
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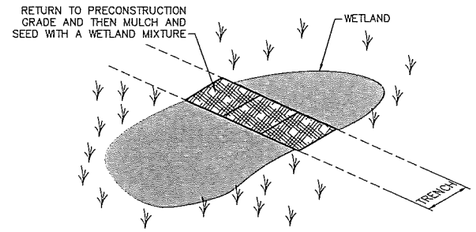
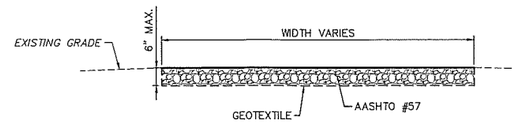
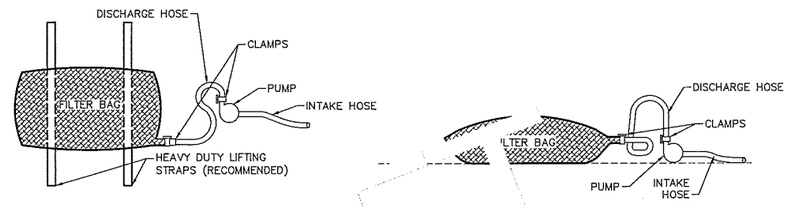


TYPICAL WETLAND RESTORATAION
SCALE: NOT TO SCALE



TYPICAL AGGREGATE ACCESS ROAD DETAIL
NOT TO SCALE



PLAN VIEW ELE TION VIEW

NOTES:

E FILTER GS Sh BE MADE ROM NON-WOVEN GEOTEXTILE MATERIA WN WITH IGH STR H, DOU STITCHED "U" TYPE SEAMS. THEY SH BE CAP E G PAR ES LARGER THAN 150 MICRONS HIGH VOL ER BA HALL MADE FROM WOVEN GEOTE S THAT M THE FOLLOW STANDARDS:

OPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE ENGTH	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-3751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME ½ FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL 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 NO POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACE DON 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 PLACE UNDER THE GAB TO REDUCE SLOPE STEEPNESS.

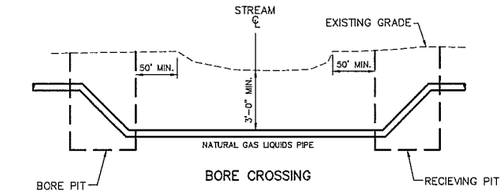
NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

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 OR THSI PURPOSE.

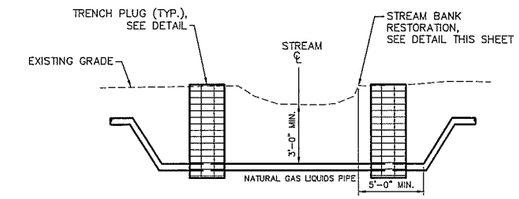
THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR ½ THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

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

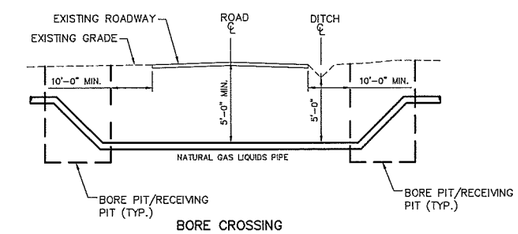


BORE CROSSING

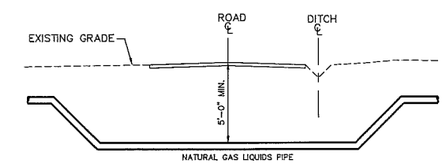


OPEN CUT

TYPICAL STREAM CROSSING
NOT TO SCALE

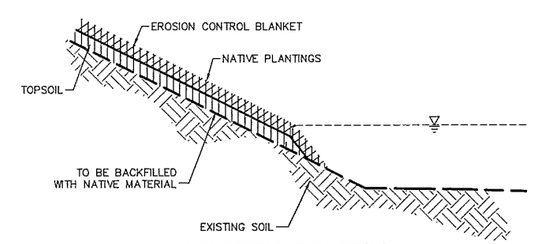


BORE CROSSING



OPEN CUT

TYPICAL ROADWAY CROSSING
NOT TO SCALE



BANK RESTORATION DETAIL
NOT TO SCALE

TETRA TECH
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REVISIONS

NO.	BY	DATE	REMARKS

SUNOCO PIPELINE L.P.
PHILADELPHIA, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 6

2-20" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CHESTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION DETAILS
SHEET 3 OF 3

DATE:	8/28/15
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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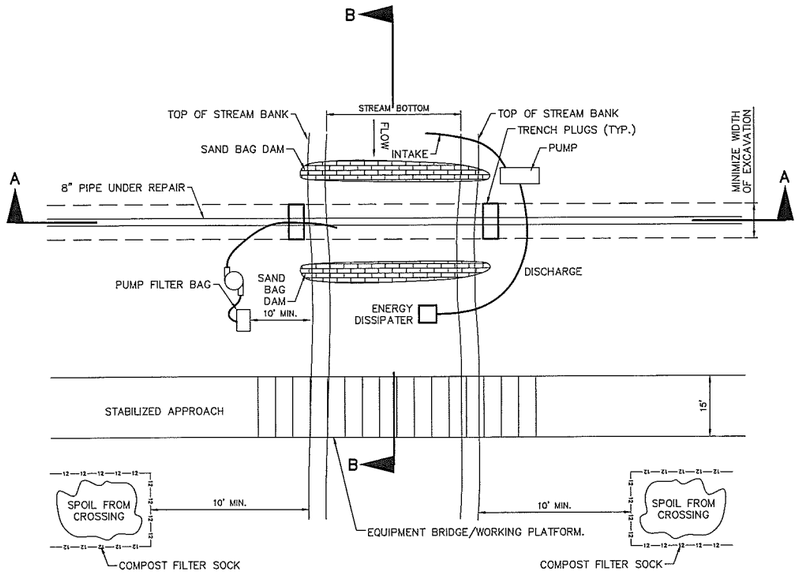
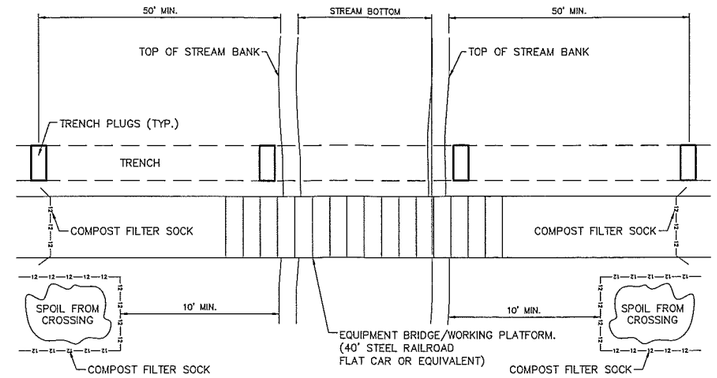
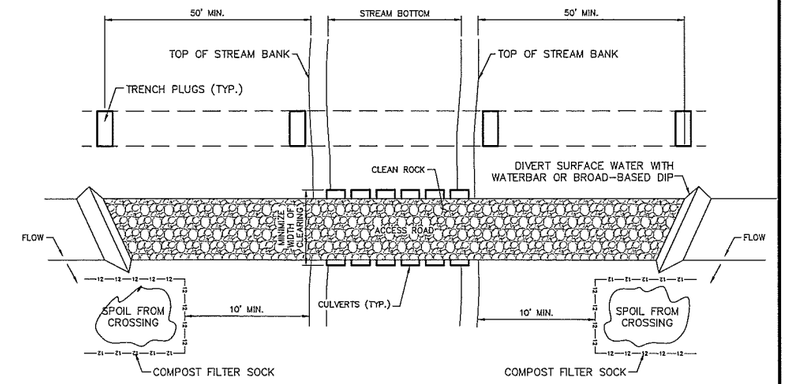
ES-0.10
SHEET 0.10 OF 93



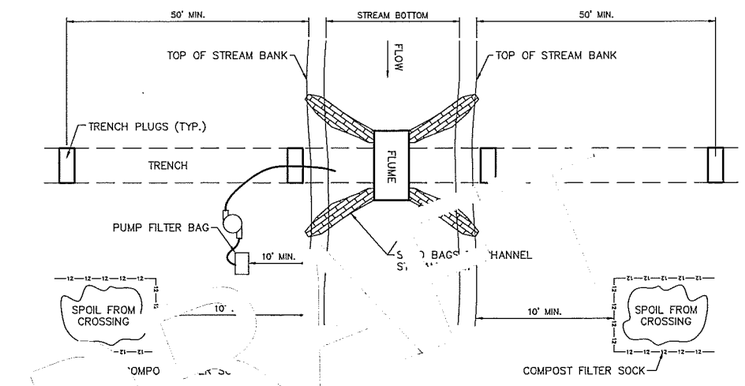
TYPICAL STREAM CROSSING – (DRY PUMP BYPASS)
NOT TO SCALE



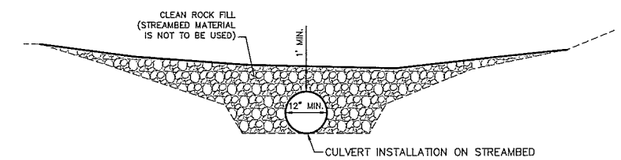
TYPICAL STREAM CROSSING – OPEN CUT
NOT TO SCALE



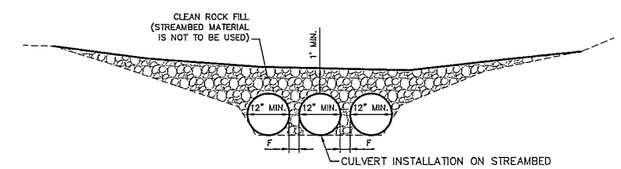
TYPICAL STREAM CROSSING – CULVERTS
NOT TO SCALE



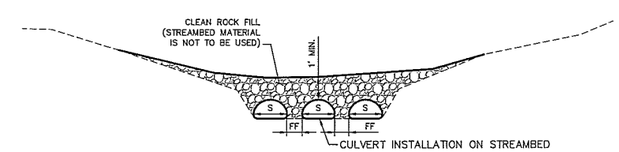
TYPICAL STREAM CROSSING – (DRY FLUMED)
NOT TO SCALE



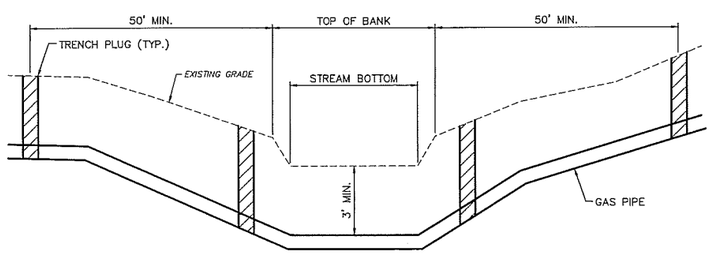
TYPICAL STREAM CROSSING – SINGLE CULVERT
NOT TO SCALE



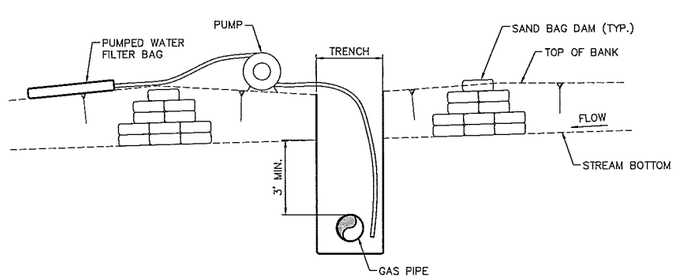
TYPICAL STREAM CROSSING – MULTIPLE CULVERTS
NOT TO SCALE



TYPICAL STREAM CROSSING – MULTIPLE SPANS



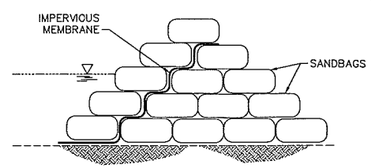
SECTION A–A



SECTION B–B

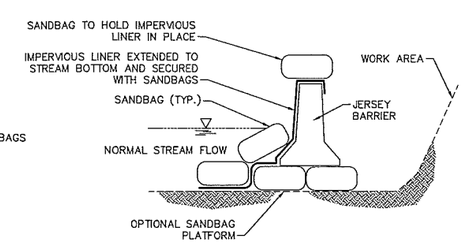
NOTES:

1. OPEN [illegible] CROSSING [illegible] THOD IS ONLY PERMITTED DURING TIMES OF NO STREAM FLOW OR RUNOFF EXISTS. DO NOT EXCAVATE TRENCH IN STREA[illegible] NTIL T[illegible] PE SEGMENT IS ASSEMBLED AND READY FOR LOWERING IN. TRENCH DEWATERING SHALL USE A FILTER BAG WHEREVER FEASIBL[illegible] UNCONTROLLED DOWNSTREAM SEDIMENTATION. LIMIT LENGTH OF TIME TO COMPLETE AND RESTORE STREAM CROSSING TO THE [illegible]UM PRACTICABLE, E.G., LESS THAN 24 HOURS. IF FLOW AND SUBSTRATE CONDITIONS ARE SUCH THAT USE OF THIS CROSSING METHOD WOULD RESULT IN SIGNIFICANT UNCONTROLLED SEDIMENT TRANSPORT TO DOWNSTREAM AREAS, CONSIDER USING A DRY FLUMED OR DRY DAM–AND–PUMP BYPASS METHOD INSTEAD OF OPEN CUT.
2. PROVIDE A 50 FOOT STABILIZED APPROACH WHICH SHOULD CONSIST OF GRAVEL (AASHTO #1 OR EQUAL) OR TIMBER MATS–AND REMOVED UPON COMPLETION.
3. NATURAL STREAM BED MATERIAL TO BE KEPT SEPARATE FROM SUBSURFACE MATERIAL.
4. EQUIPMENT AND SUPPLIES TO IMPLEMENT DRY PUMP BYPASS WHEN DOING OPEN–CUT CROSSING WILL BE ON–SITE IF STREAM FLOW OCCURS DURING IMPLEMENTATION.



2 BAG MIN. HEIGHT ABOVE NORMAL BASE FLOW

STACKED SANDBAGS OPTION



JERSEY BARRIER OPTION

SANDBAG DIVERSION DAM OR COFFERDAM
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REVISIONS

NO.	BY	DATE	REMARKS

SUNOCO PIPELINE L.P.
PHILADELPHIA, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 6

2–20" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CHESTER COUNTY CONSERVATION DISTRICT
STREAM CROSSING DETAILS

DATE:	8/28/15
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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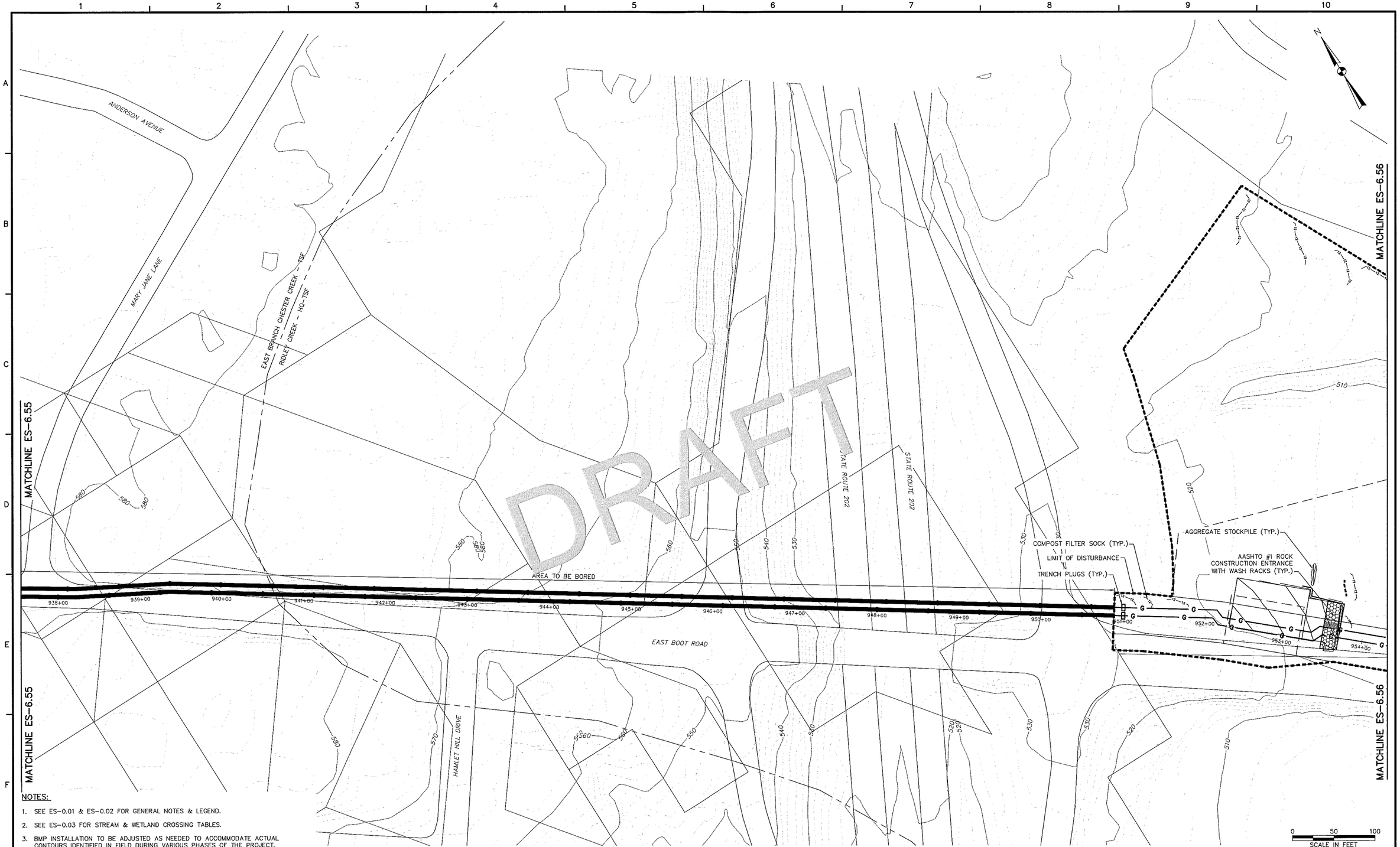
ES–0.11

SHEET 0.11 OF 93



NOTES:

1. SEE ES-0.01 & ES-0.02 FOR GENERAL NOTES & LEGEND.
2. SEE ES-0.03 FOR STREAM & WETLAND CROSSING TABLES.
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PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 6

2-20" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CHESTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
SHEET 56 OF 82

DATE:	8/28/15
PROJECT NO.:	112C05958
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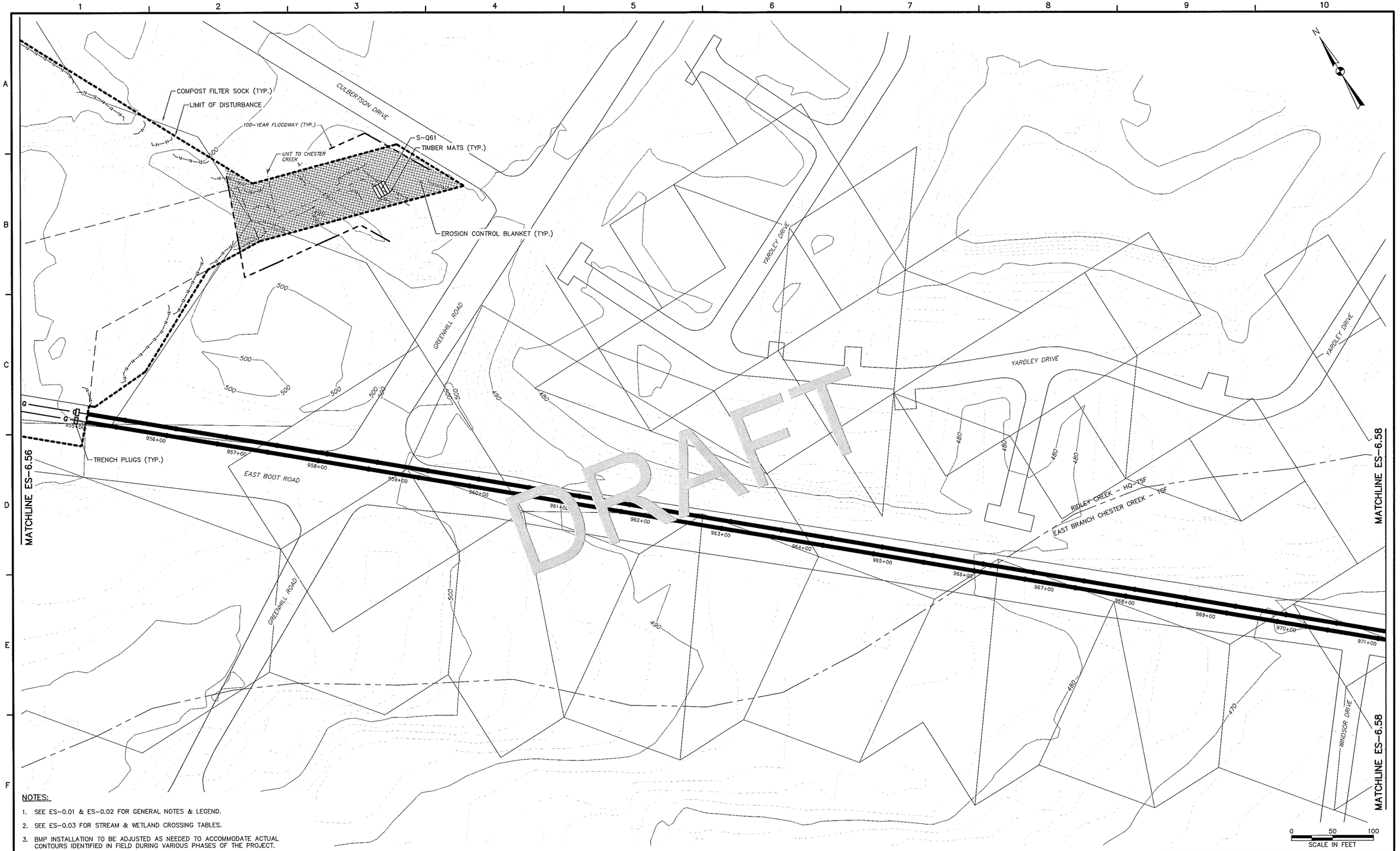

NOTES:

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PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 6

2-20" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CHESTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
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SHEET 57 OF 82

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NOTES:

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PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 6

2-20" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CHESTER COUNTY CONSERVATION DISTRICT
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SHEET 58 OF 82

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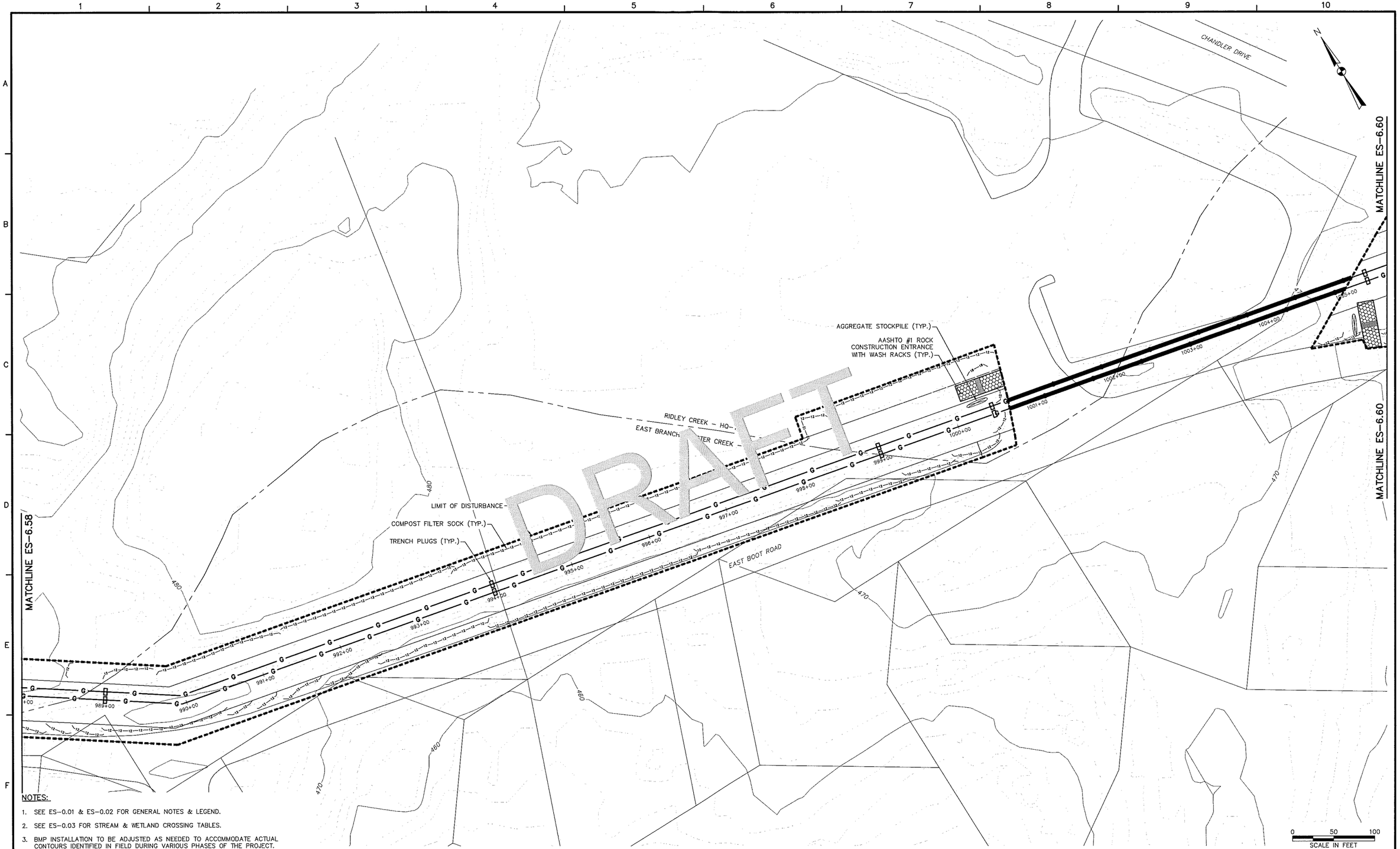

NOTES:

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PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 6

2-20" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CHESTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
SHEET 59 OF 82

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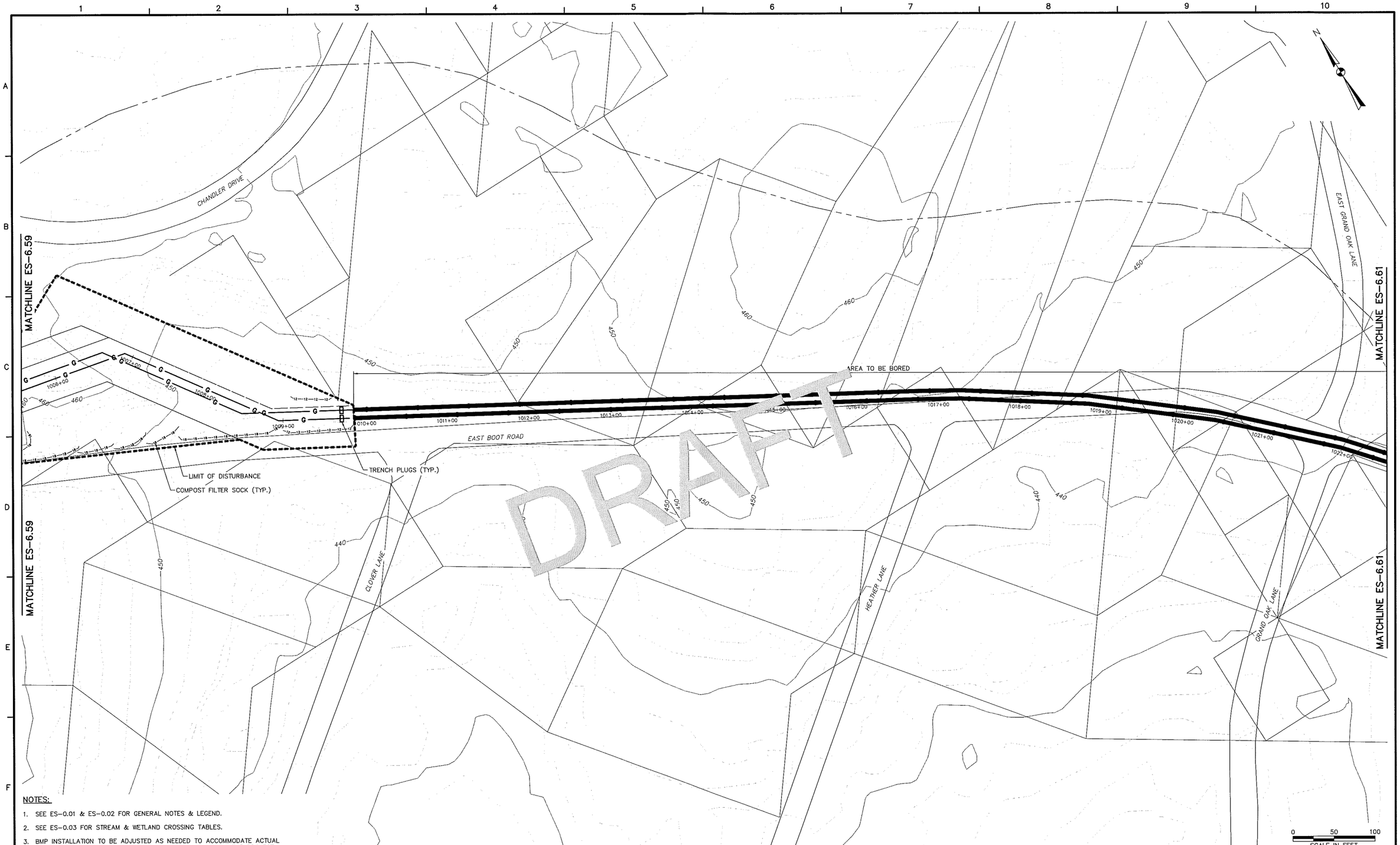

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2-20" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CHESTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
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SHEET 60 OF 82

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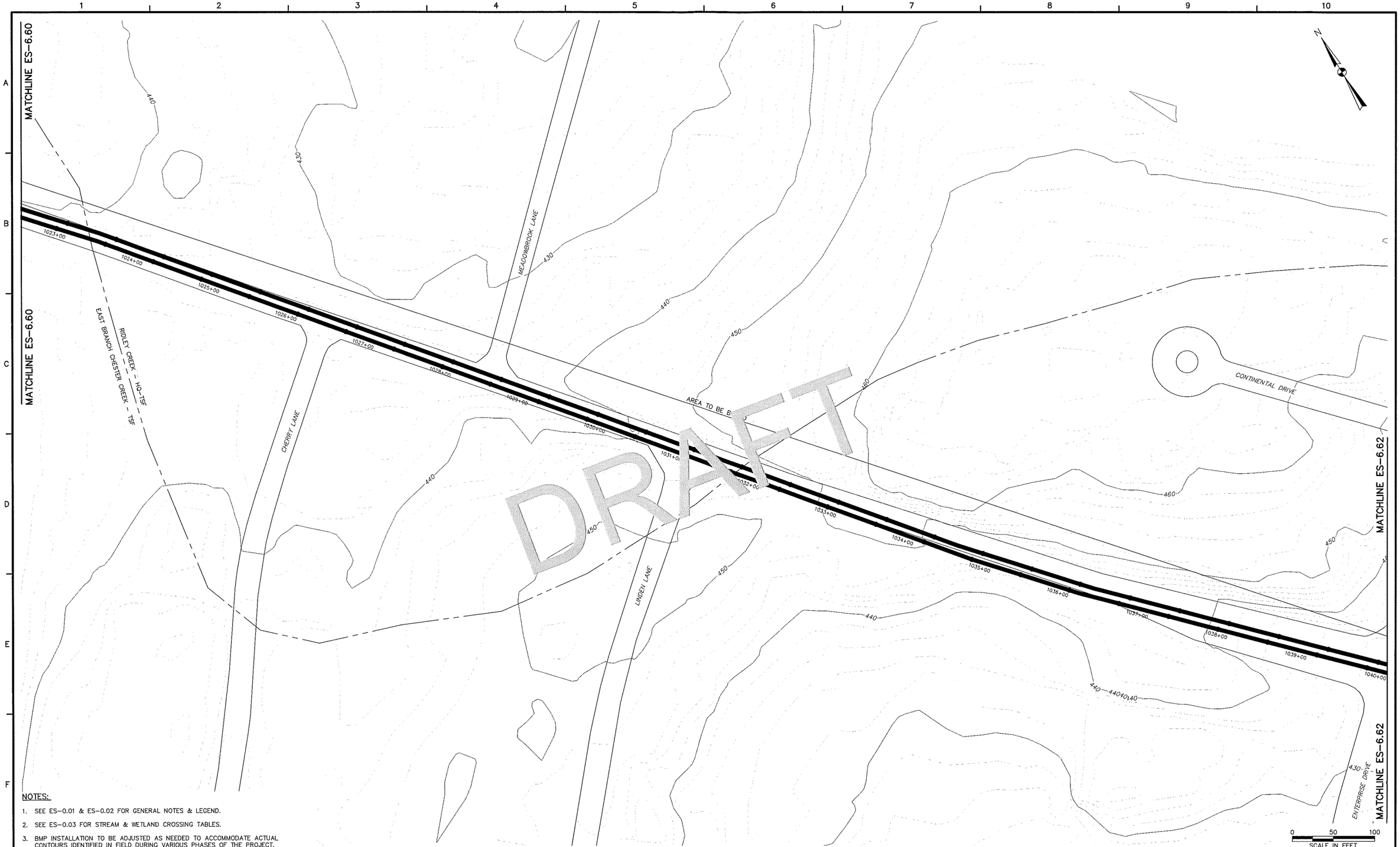

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2-20" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

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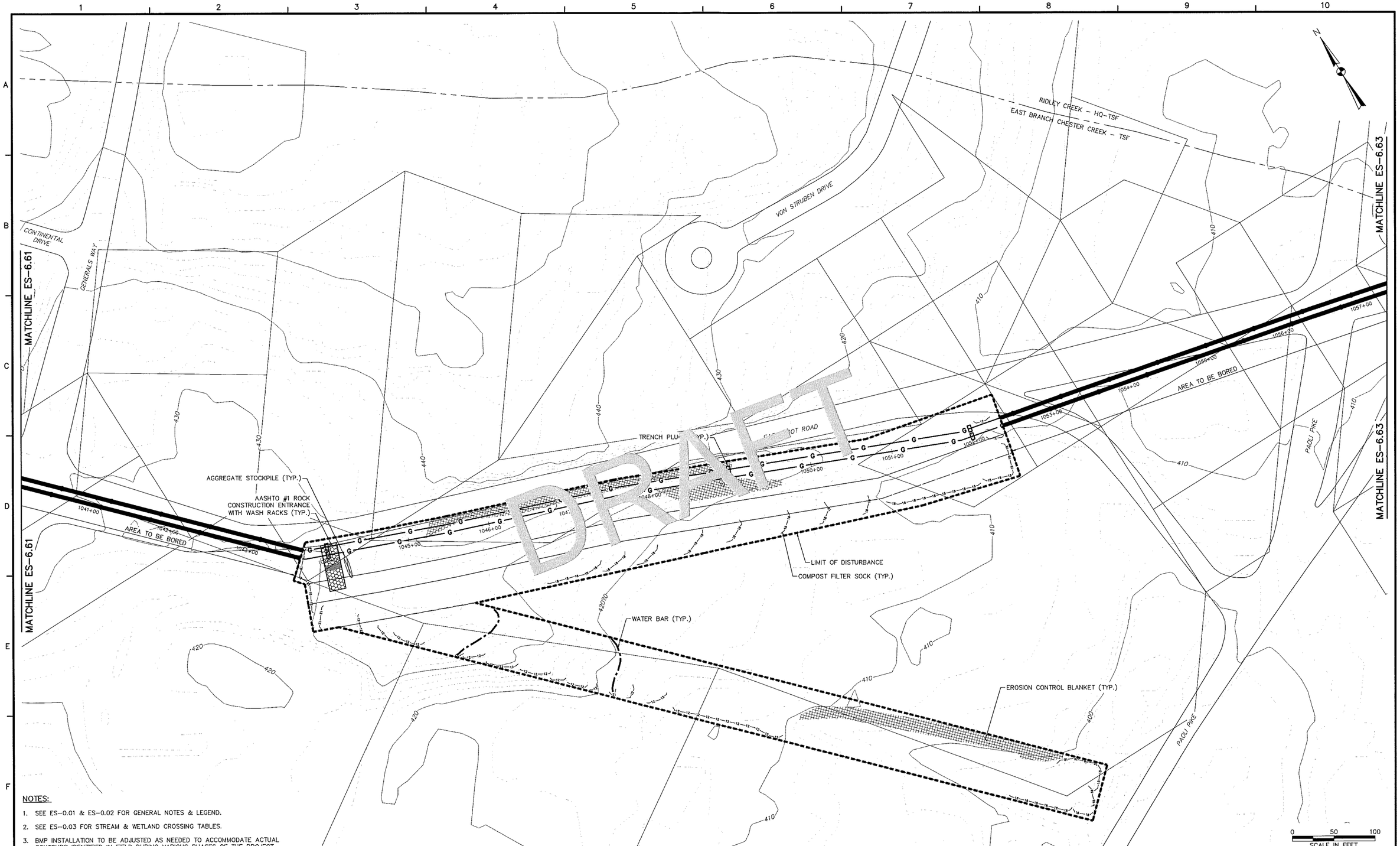

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2-20" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CHESTER COUNTY CONSERVATION DISTRICT
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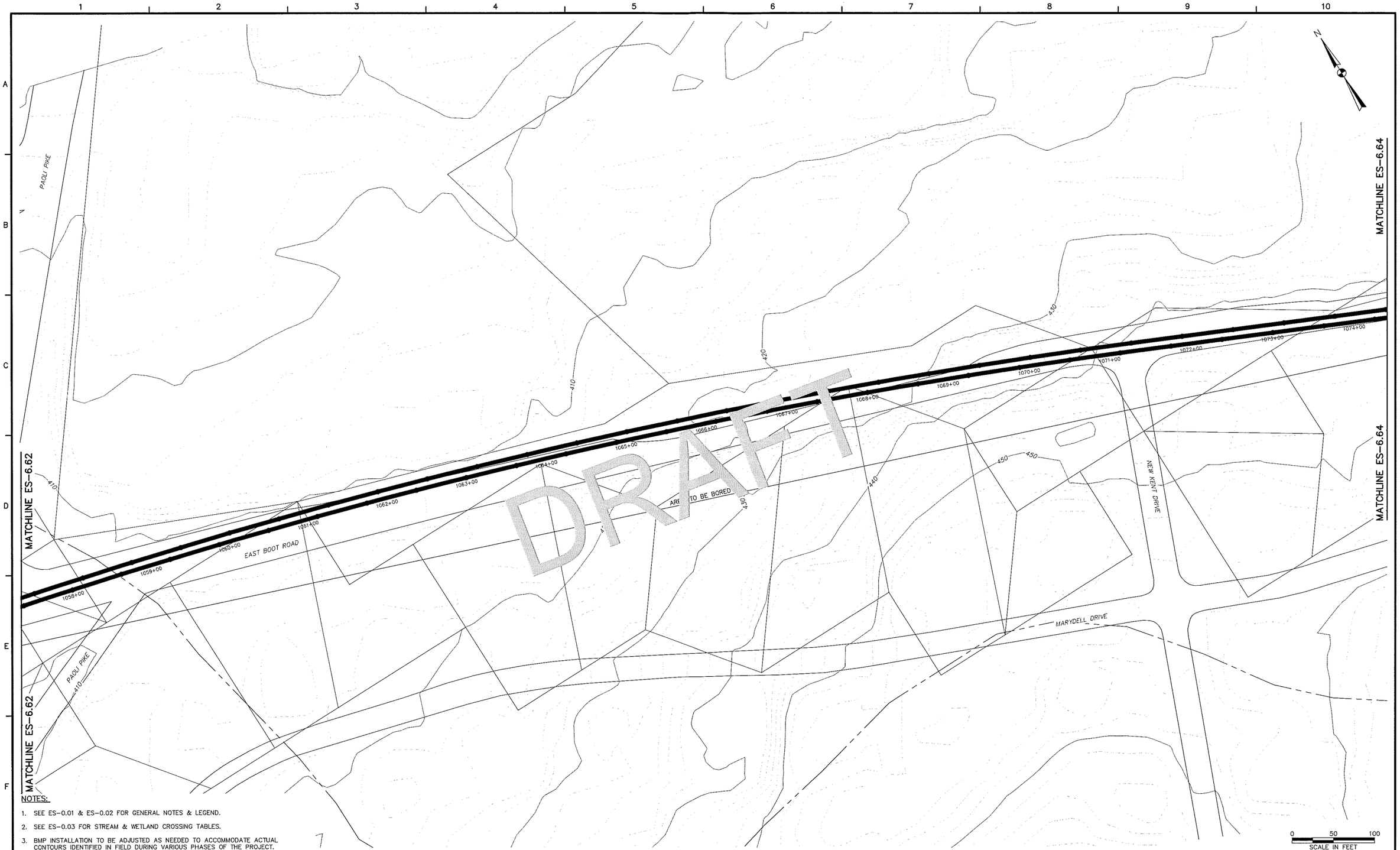

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CHESTER COUNTY CONSERVATION DISTRICT
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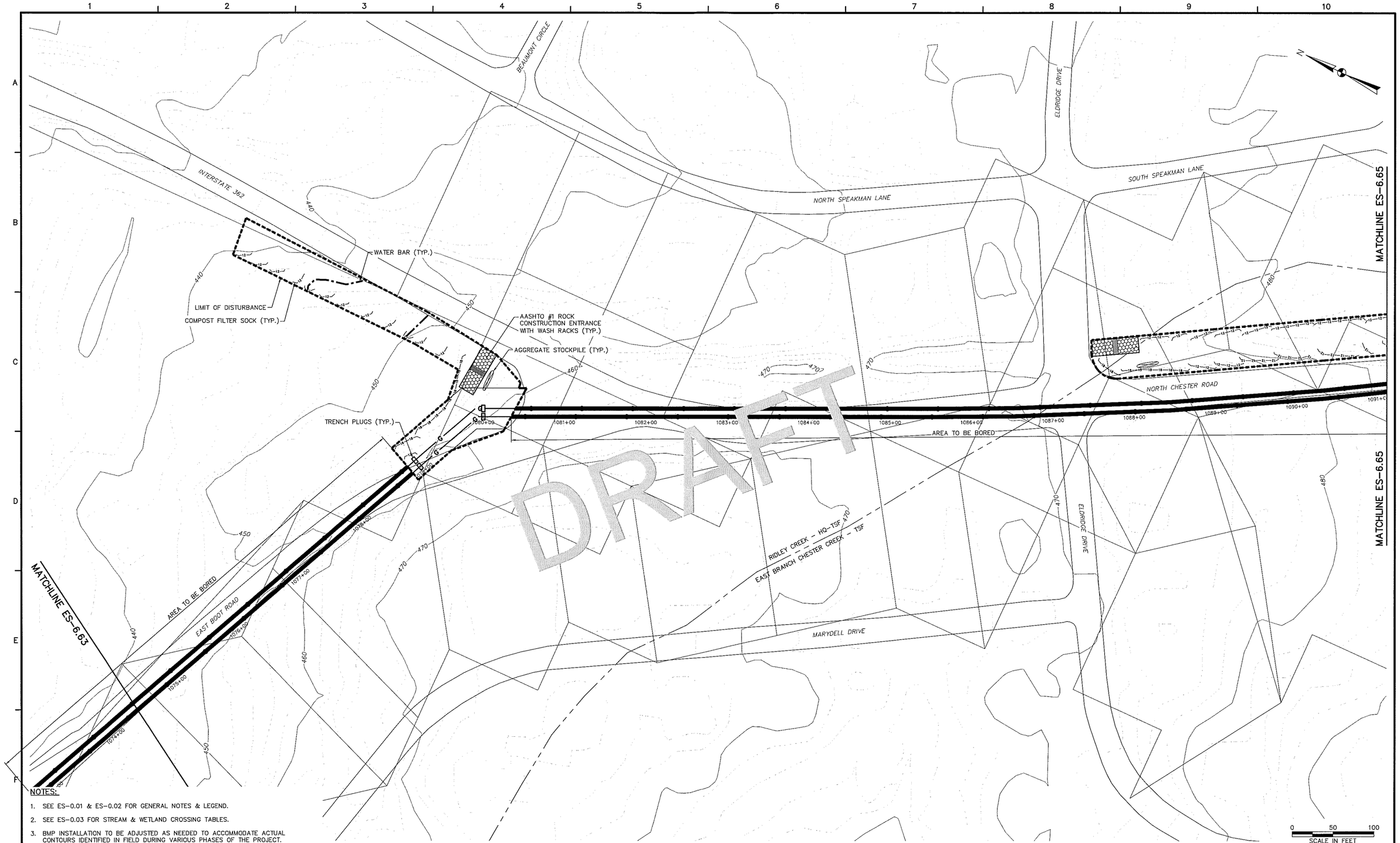

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2-20" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CHESTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
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SHEET 65 OF 82

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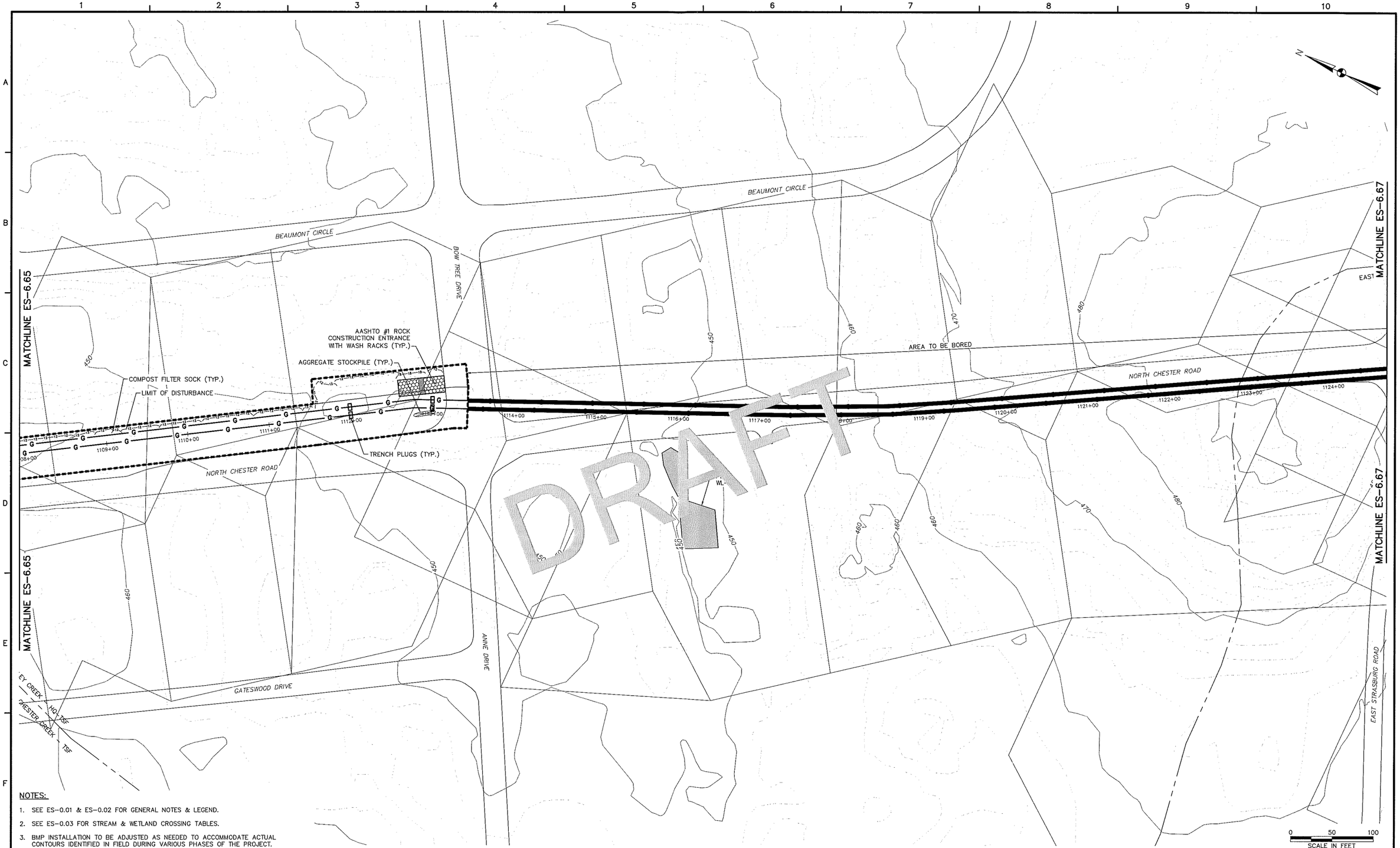

NOTES:

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CHESTER COUNTY CONSERVATION DISTRICT
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SHEET 66 OF 82

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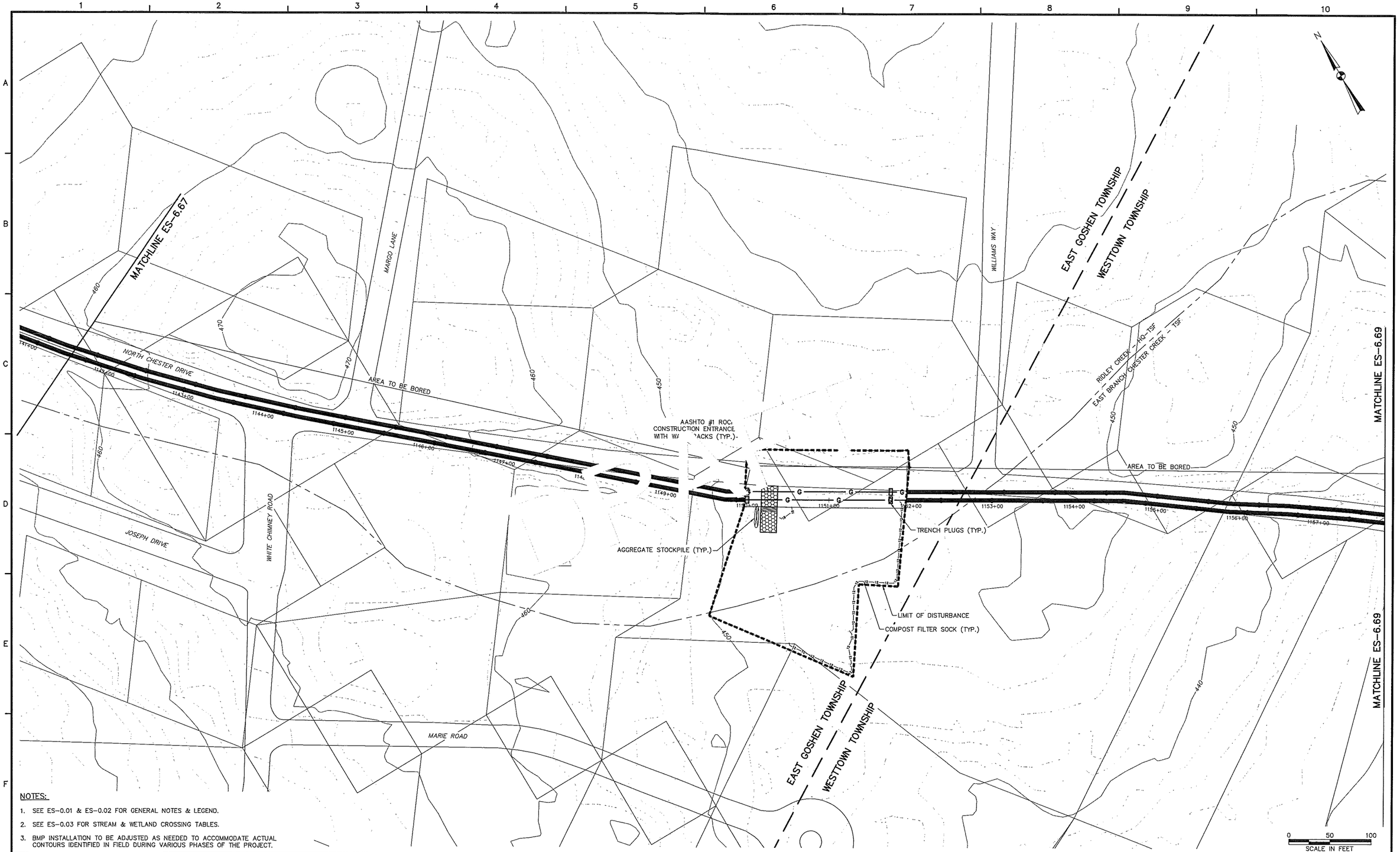

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1. SEE ES-0.01 & ES-0.02 FOR GENERAL NOTES & LEGEND.
2. SEE ES-0.03 FOR STREAM & WETLAND CROSSING TABLES.
3. BMP INSTALLATION TO BE ADJUSTED AS NEEDED TO ACCOMMODATE ACTUAL CONTOURS IDENTIFIED IN FIELD DURING VARIOUS PHASES OF THE PROJECT.

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REVISIONS

NO.	BY	DATE	REMARKS

SUNOCO PIPELINE L.P.
PHILADELPHIA, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 6

2-20" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CHESTER COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
SHEET 68 OF 82

DATE:	8/28/15
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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ES-6.68
SHEET 6.68 OF 93

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