SUNOCO PIPELINE
An ENERGY TRANSFER Partnership

525 FRITZTOWN ROAD
SINKING SPRING, PA 19608

11010 - 14-INCH TWIN OAKS TO NEWARK TWIN-NWRK INVESTIGATIONS

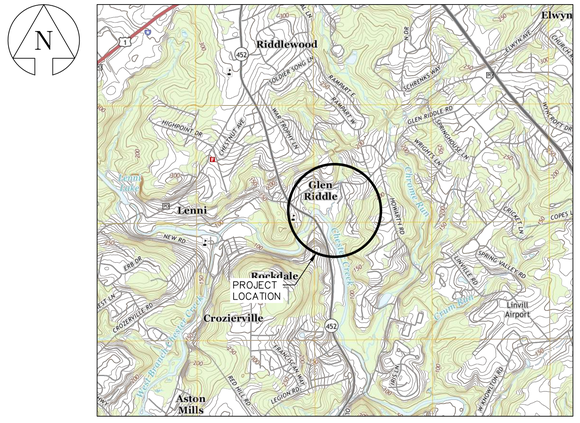
DIG 4 PIPELINE REPAIR
MIDDLETOWN TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA

CIVIL CONSTRUCTION PLANS
ISSUED FOR PERMIT

AED Energy Services Powered by ARG™

AED ES PROJECT NO. 44-44116

MARCH 2025



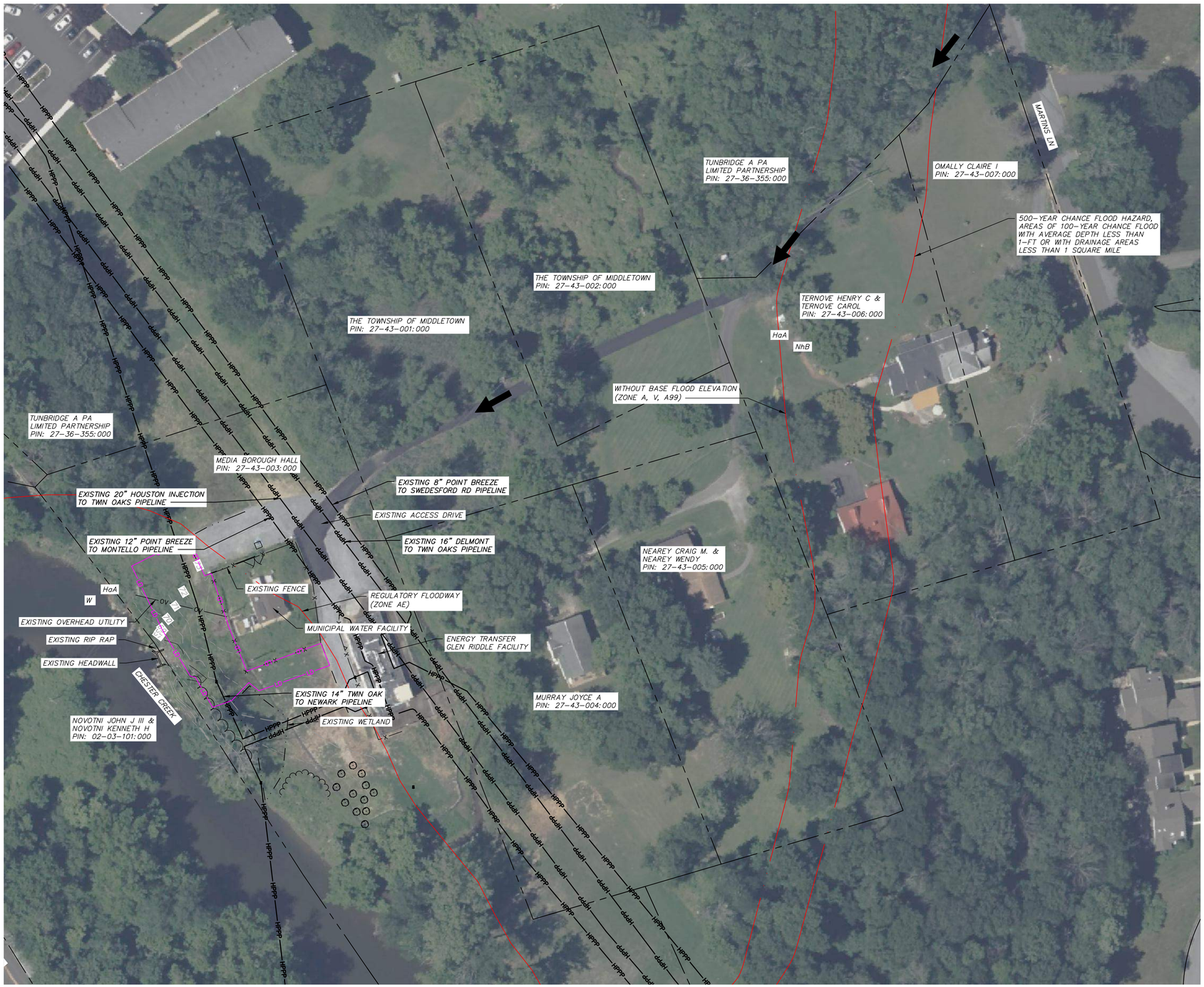
PROJECT LOCATION MAP
SCALE: 1"=2,000'
MAP REFERENCES: USGS MEDIA, PA (2016)

INDEX OF DRAWINGS

Approved by PA DEP, A. Nassani, and Abe Koul 4/3/2025

811 Know what's below. Call before you dig.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
SAMUEL PHILIP GILBERT
ENGINEER
No. 079930
3/7/25



ACCESS AND OVERALL SITE PLAN
SCALE: 1"=40'

GENERAL NOTES:

1. THE CONTRACTOR SHALL CONTACT PENNSYLVANIA 811. AT 811 OR 1-800-272-1000 AT LEAST THREE (3) WORKING DAYS PRIOR TO ANY EARTH DISTURBANCE.
2. THE CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING BURIED UTILITIES, BOTH HORIZONTALLY AND VERTICALLY, PRIOR TO CONSTRUCTION.
3. THE PLANS ARE BASED ON THE FOLLOWING:
   a. TOPOGRAPHIC SURVEY PERFORMED BY AEDES IN FEBURARY, 2025.
   b. NO BOUNDARY SURVEY WAS PERFORMED AS A PART OF THIS PROJECT. PROPERTY LINES BASED ON COUNTY GIS DATA.
   c. EXISTING SUNOCO RIGHT-OF-WAY IS ASSUMED TO BE 30 FEET TOTAL WIDTH..
4. THE PROJECT IS LOCATED IN PENNSYLVANIA STATE PLANE SOUTH, US FOOT, NAD83. THE VERTICAL DATUM IS NAVD88.
5. THE CONTRACTOR SHALL USE TIMBER MATS TO PREVENT RUTTING AND TO PROTECT EXISTING BURIED UTILITIES AS NECESSARY.
6. LIMIT OF DISTURBANCE AREAS:
   - TOTAL LOD = 6,972 S.F. (0.160 AC±)
7. WORK AREA SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS WITH REGARDS TO LAND COVER AND GRADES.
8. AT NO TIME SHALL WORK CAUSE SEDIMENT TO ENTER A SURFACE WATER BODY OR ALLOW EXCESSIVE EROSION.
9. WORK TO BE CONDUCTED IN DRY CONDITIONS TO THE EXTENT POSSIBLE.
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11. THE RECEIVING WATER IS CHESTER CREEK. IT HAS A DESIGNATED USE OF TROUT STOCK FISHES (TSF) AND NO EXISTING USE.

LEGEND

SYMBOL	DESCRIPTION
HPPP HPPP	EXISTING ENERGY TRANSFER PIPELINE
70	MAJOR CONTOUR
71	MINOR CONTOUR
	EXISTING ENERGY TRANSFER RIGHT-OF-WAY
	TOP OF BANK
	BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
x x x	EXISTING FENCE
ø	UTILITY POLE
OV OV	OVERHEAD ELECTRIC
	EXISTING PROPERTY LINE
	ACCESS ARROW
	FEMA FLOOD HAZARD AREA LIMITS

GRAPHIC SCALE
1"=40' 40' 0 40' 80'

NOTES/REFERENCE DRAWINGS

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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — SAMUEL PHILIP GILBERT — ENGINEER — No. 079930 — 3/7/25

AED Energy Services Powered by ARG™

THE LOCATION OF THE PIPELINE FACILITIES AS SHOWN HEREON MUST BE CONSIDERED AS APPROXIMATE ONLY. BEFORE DIGGING OR FOR AN EXACT LOCATION PLEASE CONTACT YOUR STATES UNDERGROUND UTILITY LOCATION SERVICE.

AED ES PROJECT No.: 44-44116

REV	DESCRIPTION	BY	DATE	CHK'D	APP'D

FACILITY CODE OR ACCOUNT NO:
CONSTRUCTION YEAR:

	BY	DATE
DRAWN	CNN	02/2025
CHECK	SPG	02/2025
APPROVED	WKS	02/2025

SCALE: AS NOTED

SUNOCO PIPELINE™ An ENERGY TRANSFER Partnership

ENERGY TRANSFER
11010 - 14-INCH TWIN OAKS TO NEWARK
TWIN-NWRK INVESTIGATIONS
DIG 4 PIPELINE REPAIR
ACCESS AND OVERALL SITE PLAN

MIDDLETOWN TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA

AFE NO.
OLD DRAWING NO.
DRAWING NO. 44-44116-D4-101
REV. NO. -

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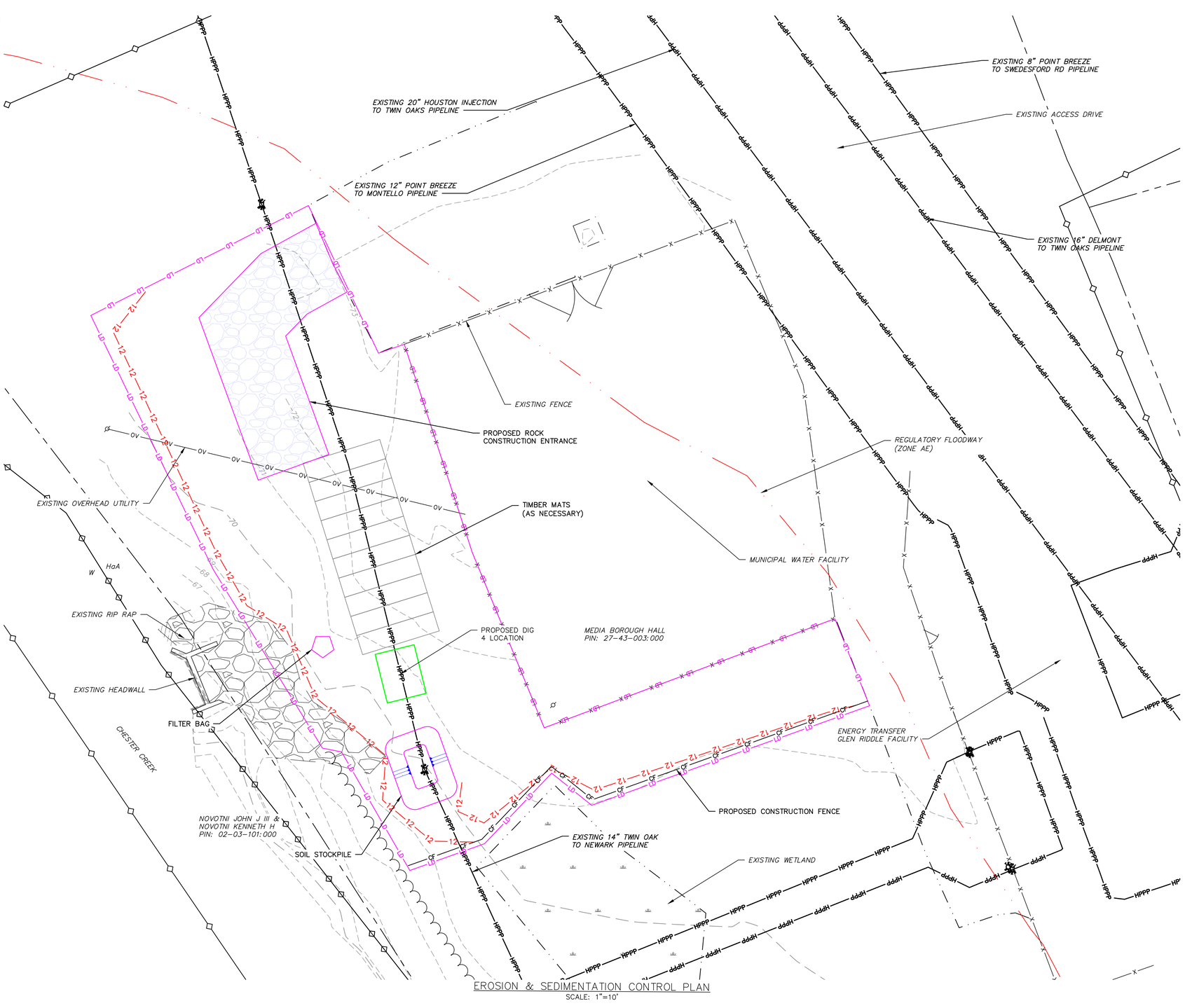

EROSION & SEDIMENTATION CONTROL PLAN
SCALE: 1"=10'

GENERAL NOTES:

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X X X	EXISTING FENCE
	UTILITY POLE
OV OV	OVERHEAD ELECTRIC
	EXISTING PROPERTY LINE
	WETLAND BOUNDARY
Mu DcA	SOIL TYPE BOUNDARY
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	TEMPORARY EQUIPMENT CROSSING
LD LD LD	LIMIT OF DISTURBANCE
12 12 12 12	12" COMPOST FILTER SOCK
	AREA OF EXCAVATION FOR PIPE WORK
	FILTER BAG
	TEMPORARY SOIL STOCKPILE
	FEMA FLOOD HAZARD AREA LIMITS

GRAPHIC SCALE
1"=10' 10' 5' 0 10' 20'

NOTES/REFERENCE DRAWINGS

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER SAMUEL PHILIP GILBERT No. 079930 3/7/25

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ENERGY TRANSFER
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TWIN-NWRK INVESTIGATIONS
DIG 4 PIPELINE REPAIR
EROSION AND SEDIMENTATION CONTROL PLAN
MIDDLETOWN TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA

AFE NO.
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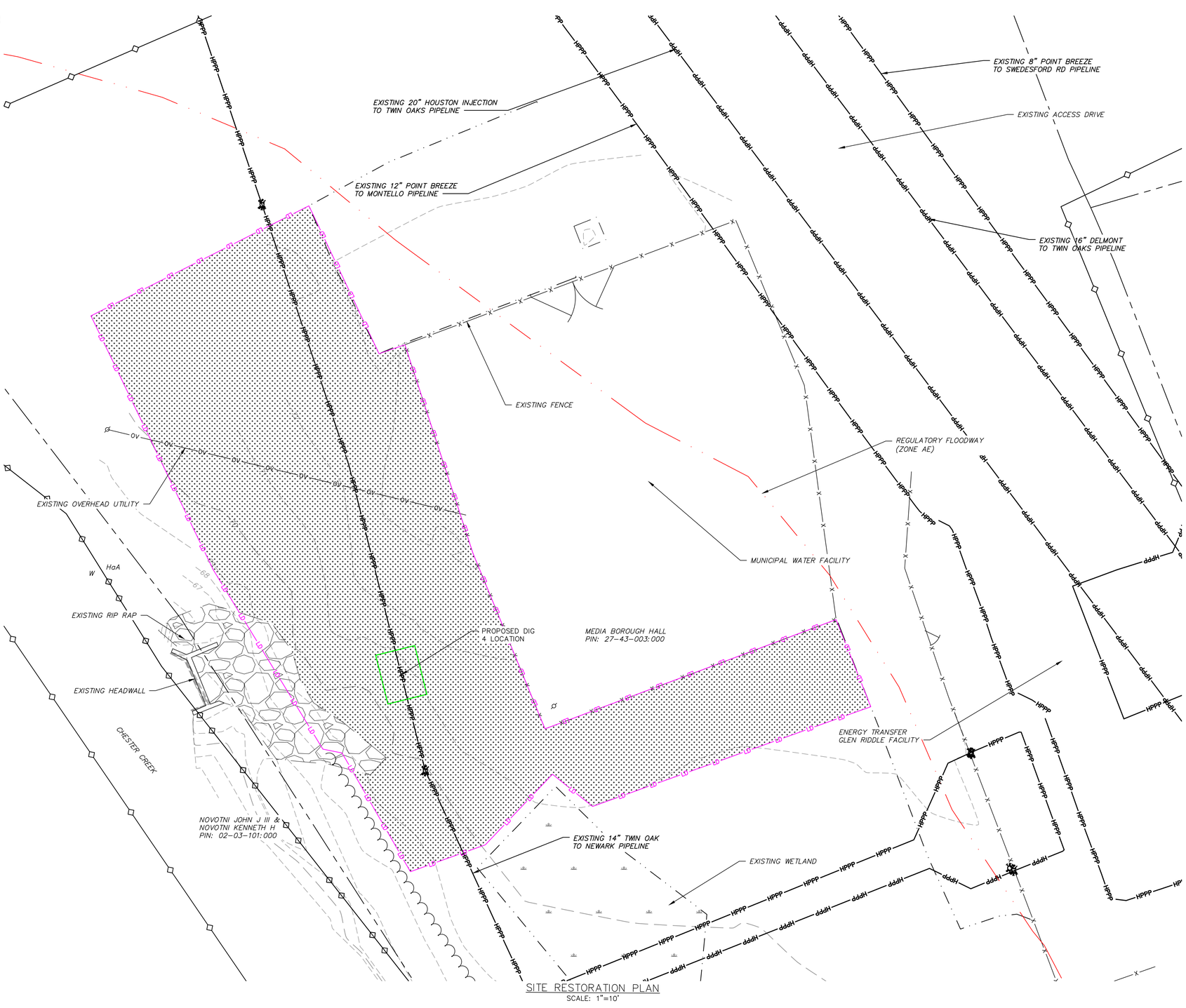

SITE RESTORATION PLAN
SCALE: 1"=10'

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Mu DcA	SOIL TYPE BOUNDARY
	PROPOSED EROSION CONTROL BLANKET
LD LD LD	LIMIT OF DISTURBANCE

GRAPHIC SCALE
1"=10'
10' 5' 0 10' 20'

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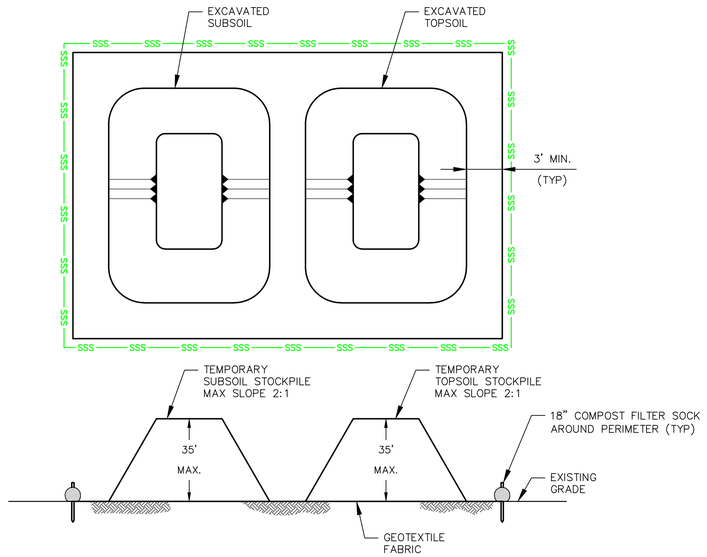
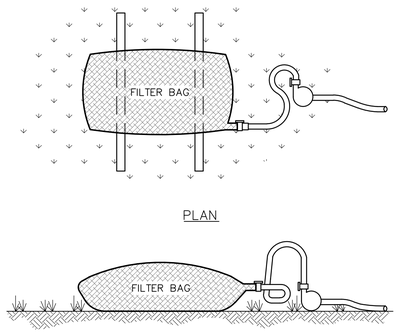


TEMPORARY SOIL STOCKPILE DETAIL

NO SCALE

NOTES:

1. TOPSOIL AND SUBSOIL MUST BE KEPT IN SEPARATE STOCKPILES.
2. EXCAVATED TOPSOIL (WITH THE VEGETATIVE ROOT MASS) SHALL BE CAREFULLY REMOVED AND STOCKPILED SEPARATELY FROM THE SUBSOIL (UNLESS THERE IS STANDING WATER OR THE SOIL IS TOO SATURATED TO SEGREGATE).
3. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20' FOR 2:1 SLOPES OR 30' FOR 3:1 SLOPES, BENCHING MUST BE PROVIDED.
4. TOPSOIL STOCKPILES SHALL BE STABILIZED PER COUNTY SOIL CONSERVATION DISTRICT REQUIREMENTS.



SEDIMENT FILTER BAG FOR PUMPED WATER

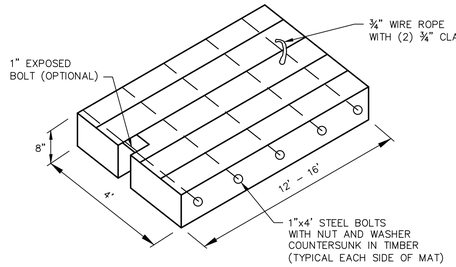
NOT TO SCALE

NOTES

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

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

2. A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE ON SITE 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.
3. BAGS SHALL BE LOCATED IN WELL VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND AN EROSION RESISTANT FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5% FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.
4. A DOWNSLOPE SEDIMENT BARRIER IS NOT REQUIRED FOR MOST INSTALLATIONS. HOWEVER, COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.
5. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.
6. THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 OF THE MAXIMUM RATE SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.
7. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

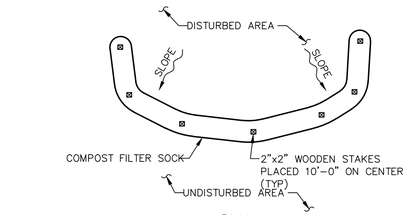


TYPICAL TIMBER MAT DETAIL

NO SCALE

NOTES:

1. MATS ARE BUILT WITH WIRE ROPE TYPICAL EACH END OR EXPOSED BOLT TYPICAL EACH END FOR HANDLING, CONSTRUCTED OF ROUGH CUT HARDWOOD.
2. TIMBER MATS SHALL BE USED IN SOFT AREAS ALONG THE PIPELINE ROUTE AS NEEDED.
3. CONTRACTOR TO PLACE GEOTEXTILE FABRIC (TENCATE MIRAFI 500X OR EQUIVALENT) UNDER TIMBER MATS.



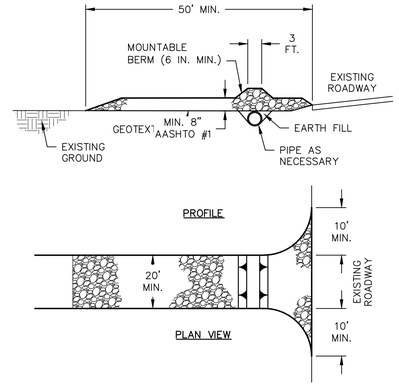
SECTION

COMPOST FILTER SOCK

NOT TO SCALE

NOTES

1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PADEP EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PADEP EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING 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.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE COMPOST FILTER SOCK.
5. COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS, PHOTODEGRADABLE SOCKS SHALL BE REPLACED AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE COMPOST FILTER SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IF THE SOCK IS LEFT IN PLACE THEN THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.



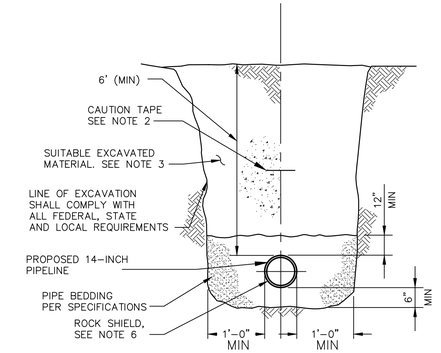
* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

1. REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
2. RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
3. MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.
4. MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE

NO SCALE



TYPICAL PIPE TRENCH (UNPAVED AREAS)

NO SCALE

NOTES:

1. THE PIPELINE SHALL BE ADEQUATELY SUPPORTED IN THE DITCH WITH SPANS NOT GREATER THAN 25 FEET PRIOR TO BACKFILLING.
2. CAUTION TAPE SHALL BE INSTALLED AT DEPTH OF 2 FEET BELOW THE SURFACE.
3. THE OWNER'S REPRESENTATIVE WILL DETERMINE IF THE BACKFILL IS SUITABLE MATERIAL.
4. LIFTS NOT TO EXCEED 6-INCHES, FOR DEPTHS 0 TO 2 FEET, COMPACT TO 85% SPD. FOR DEPTHS BELOW 2FEET, COMPACT TO 90% SPD.
5. PIPELINE SHALL TYPICALLY HAVE A MINIMUN OF 4' OF COVER.

TABLE 4.1 COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS					
MATERAL TYPE	3 mil HDPE	5 mil HDPE	5 mil HDPE	MULTI-FILAMENT POLYPROPYLENE (MFPP)	HEAVY DUTY MULTI-FILAMENT POLYPROPYLENE (HDMFPP)
MATERIAL CHARACTERISTICS	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE	BIO-DEGRADABLE	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE
SOCK DIAMETERS	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
MESH OPENING	3/8"	3/8"	3/8"	3/8"	1/8"
TENSILE STRENGTH		26 PSI	26 PSI	44 PSI	202 PSI
ULTRAVIOLET STABILITY % ORIGINAL STRENGTH (ASTM G-155)	23% AT 1000 HR.	23% AT 1000 HR.		100% AT 1000 HR.	100% AT 1000 HR.
MINIMUM FUNCTIONAL LONGEVITY	6 MONTHS	9 MONTHS	6 MONTHS	1 YEAR	2 YEARS
TWO-PLY SYSTEMS					
INNER CONTAINMENT NETTING	HDPE BIAXIAL NET				
	CONTINUOUSLY WOUND				
	FUSION-WELDED JUNCTURES				
	3/4" X 3/4" MAX. APERTURE SIZE				
OUTER FILTRATION MESH	COMPOSITE POLYPROPYLENE FABRIC (WOVEN LAYER AND NON-WOVEN FLEECE MECHANICALLY FUSED VIA NEDDLE PUNCH)				
	3/16" MAX. APERTURE SIZE				
SOCK FABRICS COMPOSED OF BURLAP MAY BE USED ON PROJECTS LASTING 6 MONTHS OR LESS.					

TABLE 4.2	
COMPOST STANDARDS	
ORGANIC MATTER CONTENT	25% – 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5 – 8.5
MOISTURE CONTENT	30% – 60%
PARTICLE SIZE	30%-50% PASS THROUGH ⅜" SIEVE
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

FILTREXX & JMD

NOTES/REFERENCE DRAWINGS

811 Know what's below. Call before you dig.

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER SAMUEL PHILIP GILBERT No. 079930 — 7/11/25

AED Energy Services Powered by ARG™

THE LOCATION OF THE PIPELINE FACILITIES AS SHOWN HEREON MUST BE CONSIDERED AS APPROXIMATE ONLY. BEFORE DIGGING OR FOR AN EXACT LOCATION PLEASE CONTACT YOUR STATES UNDERGROUND UTILITY LOCATION SERVICE.

AED ES PROJECT No.: 44-44116

REV	DESCRIPTION	BY	DATE	CHK'D	APP'D

FACILITY CODE OR ACCOUNT NO:
CONSTRUCTION YEAR:

	BY	DATE
DRAWN	CNN	02/2025
CHECK	SPG	02/2025
APPROVED	WKS	02/2025

SCALE: AS NOTED

SUNOCO PIPELINE An ENERGY TRANSFER Partnership

ENERGY TRANSFER
11010 – 14-INCH TWIN OAKS TO NEWARK
TWIN-NWRK INVESTIGATIONS
DIG 4 PIPELINE REPAIR
EROSION AND SEDIMENTATION CONTROL DETAILS

MIDDLETOWN TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA

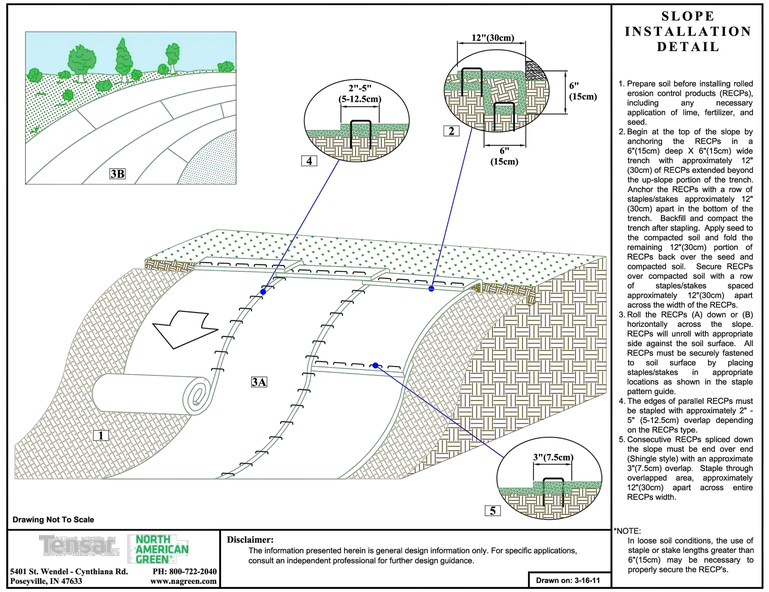
AFE NO.

OLD DRAWING NO.

DRAWING NO. 44-44116-D4-104

REV. NO. -

FILENAME: S:\Projects\444116 ET TWIN To NWRK Investigations\90_CAD Models And Sheets\04_C_Civil\Dig 4\44-44116-D4-1_rev.dwg PLOTTED: 3/7/2025 1:55:02 PM PLOTTED BY: ----



Drawing Not To Scale

Tensar NORTH AMERICAN GREEN
5401 St. Wendel - Cynthiana Rd. Poseyville, IN 47633 PH: 800-722-2040 www.nagreen.com

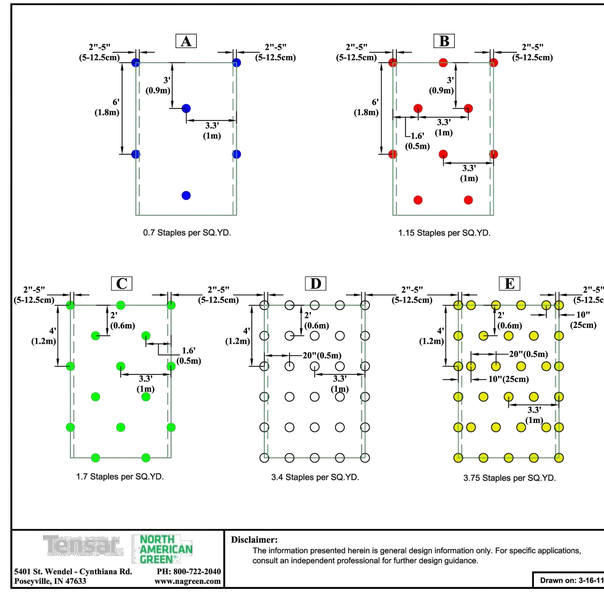
Disclaimer:
The information presented herein is general design information only. For specific applications, consult an independent professional for further design guidance.

Drawn on: 3-16-11

SLOPE INSTALLATION DETAIL

1. Prepare soil before installing rolled erosion control products (RECPs), including any necessary application of lime, fertilizer, and seed.
2. Begin at the top of the slope by anchoring the RECPs in a 6"(15cm) deep X 6"(15cm) wide trench with approximately 12" (30cm) of RECPs extended beyond the up-slope portion of the trench. Anchor the RECPs with a row of staples/stakes approximately 12" (30cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to the compacted soil and fold the remaining 12"(30cm) portion of RECPs back over the seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes spaced approximately 12"(30cm) apart across the width of the RECPs.
3. Roll the RECPs (A) down or (B) horizontally across the slope. RECPs will unroll with appropriate side against the soil surface. All RECPs must be securely fastened to soil surface by placing staples/stakes in appropriate locations as shown in the staple pattern guide.
4. The edges of parallel RECPs must be stapled with approximately 2" - 5" (5-12.5cm) overlap depending on the RECPs type.
5. Consecutive RECPs spliced down the slope must be end over end (Shingle style) with an approximate 3"(7.5cm) overlap. Staple through overlapped area, approximately 12"(30cm) apart across entire RECPs width.

*NOTE:
In loose soil conditions, the use of staple or stake lengths greater than 6"(15cm) may be necessary to properly secure the RECP's.



STAPLE PATTERN GUIDE

- 4:1 Slopes (A)
- 3:1 Slopes (B)
- 2:1 Slopes (C)
- 1:1 & Steeper Slopes (D)
- Medium/High Flow Channel (D)
- High Flow Channel And Shoreline (E)

NOTES:

* Use ECMDS® for more accurate staple pattern selection.

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Disclaimer:
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Drawn on: 3-16-11

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TABLE 11.4
Recommended Seed Mixtures

Mixture Number	Species	Seeding Rate - Pure Live Seed [1] Most Sites	Adverse Sites
1 [2]	Spring oats (spring), or	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	60	75
	Fine fescue, or	35	40
	Kentucky bluegrass, plus	25	30
	Redtop[4], or	3	3
	Perennial ryegrass	15	20
3	Birdsfoot trefoil, plus	6	10
	Tall fescue	30	35
4	Birdsfoot trefoil, plus	6	10
	Reed canarygrass	10	15
5 [8]	Crownvetch, plus	10	15
	Tall fescue, or	20	25
	Perennial ryegrass	20	25
6 [5,8]	Crownvetch, plus	10	15
	Annual ryegrass	20	25
7 [8]	Birdsfoot trefoil, plus	6	10
	Crownvetch, plus	10	15
	Tall fescue	20	30
8	Flatpea, plus	20	30
	Tall fescue, or	20	30
	Perennial ryegrass	20	25
9 [6]	Serecia lespedeza, plus	10	20
	Tall fescue, plus	20	25
	Redtop[4]	3	3
10	Tall fescue, plus	40	60
	Fine fescue	10	15
11	Deertongue, plus	15	20
	Birdsfoot trefoil	6	10
12 [7]	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

Penn State, "Erosion Control and Conservation Plantings on Noncropland"

1. PLS is the product of the percentage of pure seed times percentage germination divided by 100. For example, to secure the actual planting rate for switchgrass, divide 12 pounds PLS shown on the seed tag. Thus, if the PLS content of a given seed lot is 35%, divide 12 PLS by 0.35 to obtain 34.3 pounds of seed required to plant one acre. All mixtures in this table are shown in terms of PLS.
2. If high-quality seed is used, for most sites seed spring oats at a rate of 2 bushels per acre, winter wheat at 11.5 bushels per acre, and winter rye at 1 bushel per acre. If germination is below 90%, increase these suggested seeding rates by 0.5 bushel per acre.
3. This mixture is suitable for frequent mowing. Do not cut shorter than 4 inches.
4. Keep seeding rate to that recommended in table. These species have many seeds per pound and are very competitive. To seed small quantities of small seeds such as weeping lovegrass and redtop, dilute with dry sawdust, sand, rice hulls, buckwheat hulls, etc.
5. Use for highway slopes and similar sites where the desired species after establishment is crownvetch.
6. Use only in extreme southeastern or extreme southwestern Pennsylvania. *Serecia lespedeza* is not well adapted to most of PA.
7. Do not mow shorter than 9 to 10 inches.
8. 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.

TABLE 11.3
Plant Tolerances of Soil Limitation Factors

Species	Growth Habit[1]	Tolerates: Wet Soil	Dry Site	Low Fertility	Acid Soil (pH 5-5.5)[2]	Minimum Seed Specifications[3]: Purity (%)	Ready Germ (%)	Hard Seed (%)	Total Germ (%)	Seeds/lb (1,000s)
Warm-Season Grasses										
Deertongue	bunch	yes	yes	yes	yes	95	75		75	250
Weeping lovegrass	bunch	no	yes	yes	yes	97	75		75	1,500
Switchgrass[4]	bunch	yes	yes	yes	yes	(60 PLS)				390
Big bluestem	bunch	no	yes	yes	yes	(60 PLS)				150
Cool-Season Grasses										
Tall Fescue	bunch	yes	no	yes	no	95	80		80	227
Redtop	sod	yes	yes	yes	yes	92	80		80	5,000
Fine fescues	sod	no	no	yes	no	95	80		80	400
Perennial ryegrass	bunch	yes	no	no	no	95	85		85	227
Annual ryegrass	bunch	yes	no	yes	no	95	85		85	227
Kentucky bluegrass	sod	no	no	no	no	85	75		75	2,200
Reed canarygrass	sod	yes	yes	yes	no	95	70		70	520
Orchardgrass	bunch	yes	yes	yes	yes	95	80		80	654
Timothy	bunch	yes	no	yes	yes	95	80		80	1,230
Smooth bromegrass	sod	no	yes	yes	no	95	80		80	136
Legumes[5]										
Crownvetch	sod	no	yes	yes	no	98	40	30	65	120
Birdsfoot trefoil[6]	bunch	yes	no	yes	yes	98	60	20	80	400
Flatpea	sod	no	no	yes	yes	98	55	20	75	10
Serecia lespedeza	bunch	no	yes	yes	yes	98	60	20	80	335
Cereals										
Winter wheat	bunch	no	no	no	no	98	85		85	15
Winter rye	bunch	no	no	yes	yes	98	85		85	18
Spring oats	bunch	no	no	no	no	98	85		85	13
Sundangrass	bunch	no	yes	no	no	98	85		85	55
Japanese millet	bunch	yes	no	yes	yes	98	80		80	155

[1] Growth habit refers to the ability of the species to either form a dense sod by vegetative means (stolons, rhizomes, or roots) or remain in a bunch or single plant form. If seeded heavily enough, even bunch formers can produce a very dense stand. This is sometimes called a sod, but not in the sense of a sod formed by vegetative means.

[2] Once established, plants may grow at a somewhat lower pH, but cover generally is only adequate at pH 6.0 or above.

[3] *Minimum seed lots are truly minimum, and seed lots to be used for revegetation purposes should equal or exceed these standards.* Thus, deertongue grass should germinate 75% or better. Crownvetch should have at least 40% readily germinable seed and 30% hard seed. Commonly, seed lots are available that equal or exceed minimum specifications. Remember that disturbed sites are adverse for plant establishment. Ready germination refers to seed that germinates during the period of the germination test and that would be expected, if conditions are favorable, to germinate rapidly when planted. The opposite of ready germination is dormant seed, of which hard seed is one type.

[4] Switchgrass seed is sold only on the basis of PLS.

[5] Need specific legume inoculant. Inoculant suitable for garden peas and sweetpeas usually is satisfactory for flatpea.

[6] Birdsfoot trefoil is adapted over the entire state, except in the extreme southeast where crown and root rots may injure stands.

Penn State, "Erosion Control and Conservation Plantings on Noncropland,"

TABLE 11.2
Soil Amendment Application Rate Equivalents

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

Adapted from Penn State, "Erosion Control and Conservation Plantings on Noncropland"

NOTE: A compost blanket which meets the standards of this chapter may be substituted for the soil amendments shown in Table 11.2.

TABLE 11.6
Mulch Application Rates

Mulch Type	Application Rate (Min.) Per Acre	Per 1,000 sq. ft.	Per 1,000 sq. yd.	Notes
Straw	3 tons	140 lb.	1,240 lb.	Either wheat or oat straw, free of weeds, not chopped or finely broken
Hay	3 tons	140 lb.	1,240 lb.	Timothy, mixed clover and timothy or other native forage grasses
Wood Chips	4 - 6 tons	185 - 275 lb.	1,650 - 2,500 lb.	May prevent germination of grasses and legumes
Hydromulch	1 ton	47 lb.	415	See limitations above

TABLE 11.5
Recommended Seed Mixtures for Stabilizing Disturbed Areas

Site Condition	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	1 plus	2, 3, or 4
Drainage ditches		
Shallow, less than 3 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 crownvetch[3]	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 4
Areas mowed several times per year	1 plus	2, 3, or 10
Utility Right-of-way		
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

Penn State, "Erosion Control and Conservation Plantings on Noncropland"

1. For seed mixtures 11 and 12, only use spring oats or weeping lovegrass (included in mix) as nurse crop.
2. Contact the Pennsylvania 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.

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NOTES/REFERENCE DRAWINGS

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL SAMUEL PHILIP GILBERT ENGINEER No. 079930 3/7/25

AED Energy Services Powered by ARG™

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AED ES PROJECT No.: 44-44116

REV	DESCRIPTION	BY	DATE	CHK'D	APP'D

FACILITY CODE OR ACCOUNT NO:
CONSTRUCTION YEAR:

	BY	DATE
DRAWN	CNN	02/2025
CHECK	SPG	02/2025
APPROVED	WKS	02/2025

SCALE: AS NOTED

SUNOCO PIPELINE™ An ENERGY TRANSFER Partnership

ENERGY TRANSFER
11010 – 14-INCH TWIN OAKS TO NEWARK
TWIN-NWRK INVESTIGATIONS
DIG 4 PIPELINE REPAIR
EROSION AND SEDIMENTATION CONTROL DETAILS

MIDDLETOWN TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA

AFE NO.

OLD DRAWING NO.

DRAWING NO. 44-44116-D4-105

REV. NO. -

CONSTRUCTION SEQUENCE

REMOVAL OF EXISTING GROUND COVER, EXCAVATION, AND FINAL STABILIZATION OF THE SITE WILL BE PERFORMED IN ACCORDANCE WITH CONSTRUCTION SPECIFICATIONS AND THE E&S PLANS.

THE CONTRACTOR MAY STORE EQUIPMENT AND MATERIALS WITHIN THE LOD AND ON OTHER EXISTING, STABILIZED AREAS. IF ADDITIONAL AREAS OF DISTURBANCE ARE NECESSARY TO SUPPORT CONSTRUCTION ACTIVITIES, THE E&S CONTROL PLAN SHALL BE UPDATED, AND REGULATORY APPROVAL SHALL BE REQUIRED.

ALL CONTROL MEASURES WILL BE INSTALLED, MAINTAINED, AND REMOVED IN ACCORDANCE WITH THE PROCEDURES OUTLINED IN THE "EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL," PUBLISHED BY PADEP, BUREAU OF SOIL AND WATER CONSERVATION AND CHAPTER 102 REQUIREMENTS.

THE ANTICIPATED SEQUENCE OF CONSTRUCTION IS DESCRIBED BELOW.

GENERAL RIGHT-OF-WAY PREPARATION MEASURES

1. AT LEAST 3 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM AT 811 OR 1-800-242-1776 FOR BURIED UTILITY LOCATIONS.
2. BEFORE IMPLEMENTING ANY REVISIONS TO THE APPROVED E&S CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED E&S PLAN, THE CONTRACTOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE APPROPRIATE REGULATORY ENTITIES.
3. BEFORE DISPOSING OF SOIL OR RECEIVING BORROW FOR THE SITE, THE CONTRACTOR MUST ASSURE THAT EACH SPOIL OR BORROW AREA HAS AN APPROVED EROSION AND SEDIMENTATION CONTROL PLAN, WHICH WAS DEVELOPED IN ACCORDANCE WITH PADEP CHAPTER 102 REGULATIONS.
4. THE CONTRACTOR SHALL REMOVE, RECYCLE OR DISPOSE OF ALL MATERIALS AND WASTES FROM THE REPAIR SITE IN ACCORDANCE WITH PADEP'S SOLID WASTE MANAGEMENT REGULATIONS AT PA CODE 260.1 ET. SEQ. AND 287.1 ET. SEQ. THE CONTRACTOR SHALL NOT BURY, DUMP OR DISCHARGE ANY WASTES OTHER THAN SOIL IN THOSE AREAS SO DESIGNATED BY THIS PLAN.
5. HAZARDOUS OR POLLUTANT MATERIAL STORAGE AREAS SHALL BE LOCATED AT LEAST 100 FEET BACK FROM THE TOP OF STREAM BANK OR WETLAND AREAS AS APPLICABLE.
6. SURVEYORS WILL STAKE OUT THE LIMIT OF DISTURBANCE, ROCK CONSTRUCTION ENTRANCE LOCATIONS, AND APPROXIMATE ANOMALY LOCATION.
7. INSTALL ROCK CONSTRUCTION ENTRANCE(S) AS SHOWN ON THE PLAN. (AS NECESSARY)
8. PLACE TIMBER MATS AS NEEDED TO PROTECT EXISTING BURIED UTILITIES AS DIRECTED BY SITE REPRESENTATIVES. TIMBER MATS SHALL ALSO BE USED IN THE WETLAND AREA WITHIN THE LIMIT OF DISTURBANCE.
9. INSTALL COMPOST FILTER SOCKS AND ALL OTHER PERIMETER EROSION AND SEDIMENT CONTROL MEASURES WITHIN THE PROJECT AREA AS INDICATED ON THE DRAWINGS. ONCE PERIMETER CONTROLS ARE IN PLACE, INSTALL ANY OTHER REMAINING EROSION CONTROL BMPs.
10. TOPSOIL SHALL BE SEGREGATED FROM SUBSURFACE MATERIAL DURING ANY EXCAVATION, EARTHMOVING, OR GRADING OPERATIONS.
11. WETLAND SOIL, TOPSOIL, SUBSOIL SHALL BE STOCKPILED SEPARATELY.
12. TEMPORARILY SEED AND MULCH ANY DISTURBED AREAS AND STOCKPILES. DO NOT TEMPORARILY SEED CONSTRUCTION ACCESS AREAS. CESSATION OF ACTIVITY REQUIRES IMMEDIATE STABILIZATION DUE TO THE WORK TAKING PLACE WITHIN A SPECIAL PROTECTION WATERSHED.

PIPELINE REPAIR

1. VERIFY LOCATION AND DEPTH OF EXISTING PIPELINE.
2. EXCAVATE APPROXIMATELY 8' X 10' PIT, ENSURING TO LOCATE KNOWN WELDS AND/OR ANOMALY. HAND DIGGING AS NECESSARY AROUND EXISTING PIPELINE.
3. DE-WATER AS NECESSARY, UTILIZING A PUMPED WATER FILTER BAG SURROUNDED BY COMPOST FILTER SOCK.
4. EXPOSE PIPELINE, SUPPORT AS NECESSARY IN EXCAVATION.
5. INSPECT PIPELINE AND LOCATE SLEEVE.
6. MAKE APPROPRIATE REPAIRS OF PIPELINE.
7. BACKFILL EXCAVATION AND COMPACT. BACKFILL CAN BE SUITABLE NATIVE MATERIAL. BACKFILL SHOULD BE FREE OF DEBRIS, ROCKS, AND ORGANIC MATTER.

RESTORATION AND POST CONSTRUCTION MEASURES

1. TOPSOIL WILL BE GRADED BACK TO ORIGINAL LOCATION AND THE SITE WILL BE RETURNED TO EXISTING CONDITIONS. WETLAND SOILS SHALL BE REPLACED.
2. ALL DISTURBED AREAS SHALL BE RETURNED TO EXISTING GRADE, PERMANENTLY SEEDED AND MULCHED.
3. UPON STABILIZATION, REMOVE ALL PERIMETER SILT SOCKS AND ALL OTHER EROSION CONTROL MEASURES.
4. PERMANENTLY SEED AND MULCH ALL REMAINING DISTURBED AREAS.
5. ALL TEMPORARY ROCK CONSTRUCTION ENTRANCES SHALL BE REMOVED AND IMMEDIATELY PERMANENTLY SEEDED AND MULCHED. ANY AREAS OF SETTLEMENT, WASHOUT, OR ACCELERATED EROSION SHALL BE REPAIRED.
6. ANY EXISTING DRIVEWAYS/ACCESS RAMPS USED SHALL BE CHECKED FOR ANY DAMAGES AND LEFT IN AT LEAST EXISTING CONDITIONS.

TEMPORARY CONTROL MEASURES

THE TEMPORARY CONTROL MEASURES AND FACILITIES FOR USE DURING CONSTRUCTION AND EARTHMOVING ACTIVITIES ARE DISCUSSED BELOW. REFER TO THE E&S CONTROL PLAN DRAWINGS (BOUND SEPARATELY) PREPARED BY AED ES.

THE TYPE OF MEASURES EMPLOYED PREVENTS EXCESSIVE E&S AND FACILITATES CONSTRUCTION BY PROVIDING MEANS OF MANAGING EROSION AND SEDIMENT POLLUTION CONTROL. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN A MANNER THAT MINIMIZES EROSION AND WATER/AIR POLLUTION. STATE, COUNTY, AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT SHALL BE FOLLOWED.

COMPOST FILTER SOCKS

COMPOST FILTER SOCKS WILL BE PLACED ON THE DOWNGRADE SIDE OF SLOPES AND DISTURBED AREAS. THE DIAMETER OF THE FILTER SOCK IS DIFFERENT DEPENDING ON THE SLOPE OF THE LAND AND THE MAXIMUM UPSLOPE LENGTH. WOODEN POSTS WILL BE INSTALLED THROUGH THE FILTER SOCKS TWELVE INCHES BELOW GRADE AND MUST BE AT LEAST THIRTY-SIX INCHES HIGH. STAKES WILL BE 10 FEET ON CENTER. ENDS OF THE FILTER SOCK SHOULD EXTEND UPSLOPE AT 45 DEGREES. SEE APPENDICES FOR COMPOST FILTER SOCK SIZE CALCULATIONS. COMPOST SHALL MEET PADEP OR PENNDOT STANDARDS.

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVE GROUND HEIGHT OF THE SOCK AND DISPOSED OF PROPERLY WITHIN THE LIMIT OF DISTURBANCE. SOCKS SHOULD 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.

PUMPED WATER FILTER BAGS

PUMPED WATER FILTER BAGS ARE USED TO FILTER WATER THAT IS PUMPED FROM BELOW GRADE AREAS AS NECESSARY. GEOTEXTILE FABRIC-FILTER BAGS WILL BE PLACED ON A LEVEL, STABILIZED AREA. SILT FENCE SHALL BE PLACED ENTIRELY AROUND THE FILTER BAG. HOSES WILL BE WIRED TO THE ENTRANCE OF THE BAG TO SECURE IT IN PLACE. FILTER BAGS SHALL NOT BE PLACED ON SLOPES EXCEEDING 5%. IF A FILTER BAG IS REQUIRED ON SLOPES GREATER THAN 5%, NON-ERODIBLE MATERIAL MAY BE PLACED UNDER THE BAG, SUCH AS CLEAN STONE OR WOOD CHIPS, TO REDUCE STEEPNESS.

BAGS WILL BE REPLACED WHEN THEY REACH 1/2 CAPACITY. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

DUST CONTROL

AREAS SUBJECT TO BLOWING DUST SHALL BE CONTROLLED BY SPRINKLING WITH WATER UNTIL THE SURFACE IS DAMP.

ROCK CONSTRUCTION ENTRANCES

ROCK CONSTRUCTION ENTRANCES SHOULD BE USED WHEREVER IT IS ANTICIPATED THAT CONSTRUCTION TRAFFIC WILL EXIT THE PROJECT SITE ONTO ANY STABILIZED ROADWAY. CONSTRUCTION TRAFFIC ACCESS SHOULD BE LIMITED TO CONSTRUCTION ENTRANCES TO THE GREATEST EXTENT FEASIBLE. CONSTRUCTION ENTRANCES WILL BE CONSTRUCTED OF EIGHT INCHES OF AASHTO #1 STONE OVER GEOTEXTILE FABRIC (AMOCO WOVEN FABRIC TYPE 2002 OR EQUIVALENT) AND WILL BE LOCATED AS DESIGNATED ON THE CONSTRUCTION PLAN DRAWINGS. REFER TO DRAWING DETAIL SHEETS FOR ADDITIONAL NOTES AND DIMENSIONS.

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCES. ROCK CONSTRUCTION ENTRANCES THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF CONSTRUCTION ENTRANCE UNTIL CONDITION IS ALLEVIATED OR USE A WASH RACK. CONSTRUCTION ENTRANCES WILL BE CLEANED EVERY WORKING DAY.

TEMPORARY SEEDING:

UPON CESSATION OF WORK FOR FOUR (4) DAYS, TEMPORARILY SEED AND STABILIZED DISTURBANCE IN ACCORDANCE WITH THE PADEP EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE (BMP) MANUAL (MARCH 2012 ED) OR PENNDOT PUBLICATION 408, FORMULA E. STOCKPILES SHALL ALSO BE SEEDED.

PENNDOT FORMULA E:

SPECIES: ANNUAL RYEGRASS (LOLIUM MULTIFLORUM)

% BY WEIGHT: 100

MINIMUM PURITY: 98

MINIMUM GERMINATION: 90

MAX % WEED SEED: 0.15

SEEDING RATE (LB/1000YD^2): 10

SEEDING DATES: MARCH 15TH TO JUNE 1ST & AUGUST 1ST TO OCTOBER 15TH

MULCHES: FREE FROM FOREIGN MATERIAL COARSE STEMS, MOLD, SUBSTANCES TOXIC TO PLANT GROWTH, AND MATURE SEED BEARING STALKS OR ROOTS OF PROHIBITED AND NOXIOUS WEEDS, AS DEFINED BY LAW. PLACE HAY OR STRAW UNIFORMLY, IN A CONTINUOUS BLANKET, AT A MINIMUM RATE OF 1,200 POUNDS PER 1,000 SQUARE YARDS.

DURING NON-GERMINATING PERIODS, TEMPORARY SEED AND MULCH MUST BE APPLIED AT THE RECOMMENDED RATES OVER THE DISTURBED AREA. THE DISTURBED AREA WILL NOT BE PERMANENTLY SEEDED UNTIL THE BEGINNING OF THE RECOMMENDED GERMINATION PERIOD. AT THAT TIME, THE DISTURBED AREA WILL BE PERMANENTLY SEEDED AND RE-MULCHED.

PERMANENT CONTROL MEASURES

THE PURPOSE OF THE PERMANENT CONTROL MEASURES AND FACILITIES IS TO PREVENT EROSION OF THE PROJECT SITE AFTER CONSTRUCTION IS COMPLETE. THE CONTROL MEASURES TO BE UTILIZED FOR ALL AREAS INCLUDE EROSION CONTROL BLANKET, PERMANENT SEEDING, TRENCH PLUGS, AND CHANNEL STABILIZATION. THE LOCATIONS OF THE MEASURES AND FACILITIES ARE DEPICTED ON THE E&S CONTROL PLAN DRAWINGS.

PERMANENT SEEDING:

DISTURBED WORK SHALL BE PERMANENTLY STABILIZED IN ACCORDANCE WITH THE PADEP EROSION AND SEDIMENT POLLUTION CONTROL MANUAL (MARCH, 2012 ED.) OR PENNDOT PUBLICATION 408. REFER TO THE FOLLOWING TABLES FROM THE ABOVE-REFERENCED PADEP MANUAL FOR ALL APPROPRIATE SEEDING INFORMATION.

ACCORDING TO DEP TABLE 11.5:

APPLICATION: UTILITY RIGHT-OF-WAY

DRAINAGE CLASS: WELL DRAINED

SEED MIX: 1 PLUS 8 (DEP TABLE 11.4) OR APPROVED EQUAL FROM TABLES USING PURE LIVE SEED, EXCLUDING TALL FESCUE. NOTE THAT CROWNVETCH SHOULD NOT BE USED ADJACENT TO WETLANDS.

THE CONTRACTOR SHALL AVOID RUNNING HEAVY EQUIPMENT OVER THE RESTORED AREAS.

THE CONTENT OF THE COMPOST FILTER SOCKS MAY BE DISPERSED ON SITE WHEN THE FILTER SOCKS ARE NO LONGER REQUIRED SO LONG AS IT IS WITHIN THE LOD AND DOES NOT INTERFERE WITH DRAINAGE.

EROSION CONTROL BLANKET

EROSION CONTROL BLANKET (ECB) WILL BE INSTALLED, AS SHOWN ON THE DRAWINGS. GENERALLY, ECB SHALL BE INSTALLED ON SLOPES GREATER THAN 3:1, WITHIN 50 FEET OF SURFACE WATERS, AND WITHIN 100 FEET OF SURFACE WATERS IN SPECIAL PROTECTION WATERSHEDS. SEE APPENDICES FOR FURTHER DETAILS.

MAINTENANCE OF CONTROL FACILITIES

ALL TEMPORARY CONTROL MEASURES, AS DESCRIBED IN THIS REPORT, AND AS NOTED AND DETAILED IN THE E&S CONTROL PLANS, WILL BE INSTALLED, MAINTAINED AND REMOVED IN ACCORDANCE WITH THE PROCEDURES OUTLINED IN THE PADEP EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE (BMP) MANUAL (MARCH, 2012 ED).

CONTROL MEASURES AND FACILITIES, BOTH TEMPORARY AND PERMANENT, WILL BE MAINTAINED DURING THE PROGRESS OF THE WORK. THIS WILL BE PERFORMED BY IMPLEMENTING A PROGRAM OF PROPER DISPOSAL OF MATERIALS AND FREQUENT REMOVAL OF MATERIALS ACCUMULATED AT THE CONTROL FACILITIES. TEMPORARY CONTROL MEASURES WILL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS ACHIEVED.

MATERIALS NOT USED IN CONSTRUCTION WILL BE REMOVED FROM THE SITE AS EARLY AS POSSIBLE. ANY SOILS REMOVED FROM THE SITE MUST BE TRANSPORTED TO A SITE THAT HAS AN ADEQUATE AND IMPLEMENTED EROSION AND SEDIMENT POLLUTION CONTROL PLAN. DEWATERED SEDIMENT CLEANED FROM COMPOST FILTER SOCK AND PUMPED WATER FILTER BAGS WILL BE DISPOSED ON SITE AND WILL BE REUSED IN FINAL GRADING OPERATIONS, OR DISPOSED OF AT A LOCATION WITH AN APPROVED E&S CONTROL PLAN.

MAINTENANCE WILL INCLUDE THE INSPECTION OF EROSION AND SEDIMENT CONTROL FACILITIES AFTER ANY MEASURABLE STORM EVENT AND ON A WEEKLY BASIS. FACILITIES WILL BE CLEANED, REPAIRED OR REPLACED AS NEEDED FOLLOWING THE NOTES ON THE DETAILS. SEE BMP LIST FOR ADDITIONAL ROUTINE MAINTENANCE REQUIREMENTS.

SOIL TYPES

DELAWARE COUNTY, PENNSYLVANIA

MAP UNIT: HAA--HATBORO SILT LOAM, 0 TO 3 PERCENT SLOPES, FREQUENTLY FLOODED

COMPONENT: HATBORO, FREQUENTLY FLOODED (95%)

THE HATBORO, FREQUENTLY FLOODED COMPONENT MAKES UP 95 PERCENT OF THE MAP UNIT. SLOPES ARE 0 TO 3 PERCENT. THIS COMPONENT IS ON FLOOD PLAINS ON NORTHERN PIEDMONTS. THE PARENT MATERIAL CONSISTS OF LOAMY ALLUVIUM DERIVED FROM SCHIST AND/OR PHYLLITE AND/OR QUARTZITE AND/OR GREENSTONE. DEPTH TO A ROOT RESTRICTIVE LAYER IS GREATER THAN 60 INCHES. THE NATURAL DRAINAGE CLASS IS POORLY DRAINED. WATER MOVEMENT IN THE MOST RESTRICTIVE LAYER IS MODERATELY LOW. AVAILABLE WATER TO A DEPTH OF 60 INCHES (OR RESTRICTED DEPTH) IS HIGH. SHRINK-SWELL POTENTIAL IS LOW. THIS SOIL IS FREQUENTLY FLOODED. IT IS NOT PONDED. A SEASONAL ZONE OF WATER SATURATION IS AT 11 INCHES DURING JANUARY, FEBRUARY, MARCH, APRIL, MAY, JUNE, JULY, AUGUST, SEPTEMBER, OCTOBER, NOVEMBER, DECEMBER. ORGANIC MATTER CONTENT IN THE SURFACE HORIZON IS ABOUT 3 PERCENT. THIS COMPONENT IS IN THE F148XY030PA HYDRIC, PIEDMONT - FELSIC, RIPARIAN ZONE, SWAMP MEADOW-SHRUB-FOREST ECOLOGICAL SITE. NONIRRIGATED LAND CAPABILITY CLASSIFICATION IS 5W. THIS SOIL MEETS HYDRIC CRITERIA.

COMPONENT: GLENVILLE (5%)

GENERATED BRIEF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR SOIL COMPONENTS. THE GLENVILLE SOIL IS A MINOR COMPONENT.

SOIL LIMITATION RESOLUTIONS

DUST

DISTURBED WORKSPACE WILL BE MINIMIZED AND IF CONSTRUCTION TAKES PLACE DURING SIGNIFICANT DRY PERIODS, HEAVILY TRAVELED AREAS WILL BE SPRINKLED WITH WATER TO DAMPEN THE SURFACE. ALTERNATIVE METHODS, SUCH AS MULCHING, CAN BE USED IN CERTAIN AREAS.

UNSTABLE EXCAVATION WALLS

THE INSTABILITY OF STEEP EXCAVATION OF SIDE SLOPES AND WALLS IS ANTICIPATED DUE TO THE COMPOSITION OF THE SOILS WITHIN THE PROJECT AREA. TRENCH BOXES AND SLOPING-BACK OF THE TRENCH WALLS WILL BE PERFORMED AT THE DISCRETION OF THE CONTRACTOR IN ACCORDANCE WITH OSHA REGULATIONS.

PONDING/FLOODING

FOR AREAS SUSCEPTIBLE TO PONDING/FLOODING DURING CONSTRUCTION, WORK SHALL BE DONE IN OPTIMAL DRY CONDITIONS. IF ADDITIONAL STABILIZATION IS NECESSARY, STONE OR TIMBER MATS MAY BE USED TO CROSS THE WET AREAS. THE CONTRACTOR SHALL ENSURE THAT THE E&S PLANS ARE FOLLOWED FOR ANY AND ALL WETLAND CROSSINGS TO ENSURE PROPER BMP'S ARE UTILIZED.

SHALLOW DEPTH TO SATURATED ZONE

EXCAVATION SHALL BE DEWATERED AS NECESSARY USING PUMPED WATER FILTER BAGS SURROUNDED BY COMPOST FILTER SOCKS ON A FLAT, VEGETATED AREA. THE DOWN SLOPE SIDE OF THE DEWATERING SITES WILL BE LOCATED AN AMPLE DISTANCE FROM DRAINAGE CHANNELS TO ALLOW NATURAL FILTERING OF THE WATER BY THE EXISTING VEGETATION.

HYDRIC SOILS

ACCORDING TO THE NATIONAL TECHNICAL COMMITTEE FOR HYDRIC SOILS (NTCHS), SOIL IS CLASSIFIED AS BEING HYDRIC IF IT FORMED UNDER CONDITIONS OF SATURATION, FLOODING, OR PONDING LONG ENOUGH DURING THE GROWING SEASON TO DEVELOP ANAEROBIC CONDITIONS IN THE UPPER PART. UNDER NATURAL CONDITIONS, THESE SOILS ARE EITHER SATURATED OR INUNDATED LONG ENOUGH DURING THE GROWING SEASON TO SUPPORT THE GROWTH AND REPRODUCTION OF HYDROPHYTIC VEGETATION.

THE HATBORO COMPONENT OF THE HATBORO SILT LOAM (HAA) IS CONSIDERED TO BE HYDRIC.

AEDES DELINEATED WETLANDS IN THE VICINITY OF THE PROJECT AREA IN FEBRUARY 2025.

DEFINITION OF STABILIZATION

A PROJECT SITE WILL BE CONSIDERED TO BE PERMANENTLY STABILIZED WHEN TEMPORARY CONTROL MEASURES HAVE BEEN REMOVED, ALL PERMANENT CONTROL MEASURES HAVE BEEN COMPLETED AND ARE FUNCTIONAL, AND UNIFORM EROSION-RESISTANT PERENNIAL VEGETATION IS ESTABLISHED TO THE POINT WHERE THE SURFACE SOIL IS CAPABLE OF RESISTING EROSION DURING RUNOFF EVENTS. THE STANDARD FOR THIS VEGETATIVE COVER WILL BE A UNIFORM COVERAGE OR DENSITY OF 70 PERCENT (GERMINATED GRASS COVER) ACROSS THE DISTURBED AREA (PER PA CODE CHAPTER 102.22(2)(I)).

EROSION AND SEDIMENTATION CONTROL MEASURES MAINTENANCE SCHEDULE/PROCEDURES

CONTROL MEASURE	INSPECTION SCHEDULE	POTENTIAL ISSUES	TYPICAL REMEDIES
COMPOST FILTER SOCK	WEEKLY AND AFTER EACH 0.25 INCH RAINFALL EVENT	UNDERCUTTING OF BARRIER	INCREASE NUMBER OF STAKES IN AFFECTED AREA
		SEDIMENT AT 1/2 HEIGHT OF BARRIER	REMOVE SEDIMENT, PLACE ACROSS SITE AS FILL
		DAMAGED FABRIC	REPAIR/REPLACE ACCORDING TO MANUFACTURERS SPECIFICATIONS
PUMPED WATER FILTER BAG	BEFORE AND AFTER EACH USE	TORN FABRIC	REPLACE FILTER BAG
		SEDIMENT ESCAPING BAG	REPLACE FILTER BAG
		BAG FILLED 1/2 WITH SEDIMENT	REPLACE FILTER BAG
ROCK CONSTRUCTION ENTRANCE	WEEKLY AND AFTER EACH MEASURABLE RAINFALL EVENT	MISSING STONE, RUTTING	ADD ROCK TO SPECIFIED DIMENSIONS
		SEDIMENT ON ROADWAY	SWEEP DRIED MATERIAL BACK TO PROJECT SITE. DO NOT WASH WITH WATER.
TEMPORARY/PERMANENT VEGETATION	WEEKLY AND AFTER EACH MEASURABLE RAINFALL EVENT	SEDIMENT AT TOE OF SLOPE	APPLY EROSION CONTROL BLANKET AS NECESSARY
		RILLS AND GULLIES FORMING	FILL RILLS AND GULLIES. APPLY EROSION CONTROL BLANKET AS NECESSARY
		BARE PATCHES	RE-SEED PER SEEDING SPECIFICATIONS
TIMBER MATTING	BEFORE AND AFTER EACH USE	BROKEN TIMBERS	REMOVE MAT AND REPLACE WITH NEW MAT
CONSTRUCTION FENCING	WEEKLY	FALLEN FABRIC	REPLACE STAKES AS NECESSARY TO ENSURE STURDY BARRIER

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NOTES/REFERENCE DRAWINGS

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL SAMUEL PHILIP GILBERT ENGINEER No. 079930 3/7/25

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THE LOCATION OF THE PIPELINE FACILITIES AS SHOWN HEREON MUST BE CONSIDERED AS APPROXIMATE ONLY. BEFORE DIGGING OR FOR AN EXACT LOCATION PLEASE CONTACT YOUR STATES UNDERGROUND UTILITY LOCATION SERVICE.

AED ES PROJECT No.: 44-44116

REV	DESCRIPTION	BY	DATE	CHK'D	APP'D

FACILITY CODE OR ACCOUNT NO:

CONSTRUCTION YEAR:

	BY	DATE
DRAWN	CNN	02/2025
CHECK	SPG	02/2025
APPROVED	WKS	02/2025

SCALE: AS NOTED

SUNOCO PIPELINE™ An ENERGY TRANSFER Partnership

ENERGY TRANSFER
11010 - 14-INCH TWIN OAKS TO NEWARK
TWIN-NWRK INVESTIGATIONS
DIG 4 PIPELINE REPAIR
EROSION AND SEDIMENTATION CONTROL NOTES

MIDDLETOWN TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA

AFE NO.

OLD DRAWING NO.

DRAWING NO. 44-44116-D4-106

REV. NO. -

WASTE RECYCLING AND DISPOSAL

THE OPERATOR/PERMITTEE SHALL ENSURE THAT PROPER MECHANISMS ARE IN PLACE TO CONTROL WASTE MATERIALS. CONSTRUCTION WASTES INCLUDE, BUT ARE NOT LIMITED TO, EXCESS SOIL MATERIALS, BUILDING MATERIALS, SANITARY WASTES, PACKAGING MATERIALS, COATING AND ASSOCIATED PACKAGING, WELDING MATERIALS, WASTE PIPE, ETC. THAT COULD ADVERSELY IMPACT WATER QUALITY. MEASURES SHOULD BE PLANNED AND IMPLEMENTED FOR HOUSEKEEPING, MATERIALS MANAGEMENT, AND LITTER CONTROL. WHEREVER POSSIBLE, RECYCLING OF EXCESS MATERIALS IS PREFERRED, RATHER THAN DISPOSAL. OFF-SITE TRANSPORT OF MATERIALS REQUIRES THAT THE RECEIVING FACILITY HAVE ITS OWN APPROVED, ACTIVE PERMIT TO RECEIVE SUCH MATERIALS.

HAZARDOUS OR POLLUTANT MATERIALS, INCLUDING BUT NOT LIMITED TO CHEMICALS, FUELS, AND LUBRICATING OILS SHALL NOT BE STORED WITHIN 100 FEET OF A WETLAND OR WATERBODY. SUITABLE ACCUMULATED SEDIMENT SHALL BE USED ON SITE. UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LAWFUL MANNER ACCORDING TO THE PADEP'S SOLID WASTE MANAGEMENT'S REGULATIONS (PA CODE TITLE 25, CHAPTER 260.1 ET SEQ. AND 287.1 ET SEQ). THE WASTE DISPOSAL SITE MUST HAVE A SEPARATE APPROVED EROSION CONTROL PLAN.

STANDARD E&S 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 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.

3. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS.

4. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.

5. 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.

6. 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.

7. 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.

8. 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.

9. 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.

10. 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.

11. 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.

12. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH A PUMPED WATER FILTER BAG, OR EQUIVALENT SEDIMENT REMOVAL FACILITY, OVER NON-DISTURBED VEGETATED AREAS. DISCHARGE POINTS SHOULD BE ESTABLISHED TO PROVIDE FOR MAXIMUM DISTANCE TO ACTIVE WATERWAYS.

13. 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/DAILY BASIS AS INDICATED ON THE EROSION AND SEDIMENTATION CONTROL MEASURES MAINTENANCE SCHEDULE/PROCEDURES. 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.

14. 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.

15. SEDIMENT TRACKED OR CONVEYED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE REMOVED AND REDEPOSITED ONTO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY. REMOVAL CAN BE COMPLETED THROUGH USE OF MECHANICAL OR HAND TOOLS. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.

16. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.

17. 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.

18. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.

19. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.

20. 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.

21. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.

22. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.

23. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.

24. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.

25. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.

26. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.

27. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.

28. 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.

29. 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.

30. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIALS/WASTES.

31. 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.

32. 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.

33. AT NO TIME SHALL WORK CAUSE SEDIMENT TO ENTER A SURFACE WATER BODY OR ALLOW EXCESSIVE EROSION.

34. WORK TO BE CONDUCTED IN DRY CONDITIONS TO THE EXTENT POSSIBLE.

35. SEDIMENT TRACKED OR CONVEYED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE REMOVED AND REDEPOSITED INTO THE LIMIT OF DISTURBANCE BY THE END OF EACH WORKING DAY. REMOVAL CAN BE COMPLETED THROUGH USE OF MECHANICAL OR HAND TOOLS. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELLED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER. IF REMOVAL AT THE END OF EACH WORKING DAY IS NOT EFFECTIVE, STREET SWEEPING SHALL BE USED

NOTES/REFERENCE DRAWINGS

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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — SAMUEL PHILIP GILBERT — No. 079030 — 3/7/25

AED Energy Services Powered by ARG™

THE LOCATION OF THE PIPELINE FACILITIES AS SHOWN HEREON MUST BE CONSIDERED AS APPROXIMATE ONLY. BEFORE DIGGING OR FOR AN EXACT LOCATION PLEASE CONTACT YOUR STATES UNDERGROUND UTILITY LOCATION SERVICE.

AED ES PROJECT No.: 44-44116

REV	DESCRIPTION	BY	DATE	CHK'D	APP'D

FACILITY CODE OR ACCOUNT NO:

CONSTRUCTION YEAR:

	BY	DATE
DRAWN	CNN	02/2025
CHECK	SPG	02/2025
APPROVED	WKS	02/2025

SCALE: AS NOTED

SUNOCO PIPELINE™ An ENERGY TRANSFER Partnership

ENERGY TRANSFER
11010 - 14-INCH TWIN OAKS TO NEWARK
TWIN-NWRK INVESTIGATIONS
DIG 4 PIPELINE REPAIR
EROSION AND SEDIMENTATION CONTROL NOTES

MIDDLETOWN TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA

AFE NO.

OLD DRAWING NO.

DRAWING NO. 44-44116-D4-107

REV. NO. -

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