

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
STORMWATER MANAGEMENT PLAN

SOUTHEAST SUPPLY ENHANCEMENT PROJECT
EDEN-MLV-03

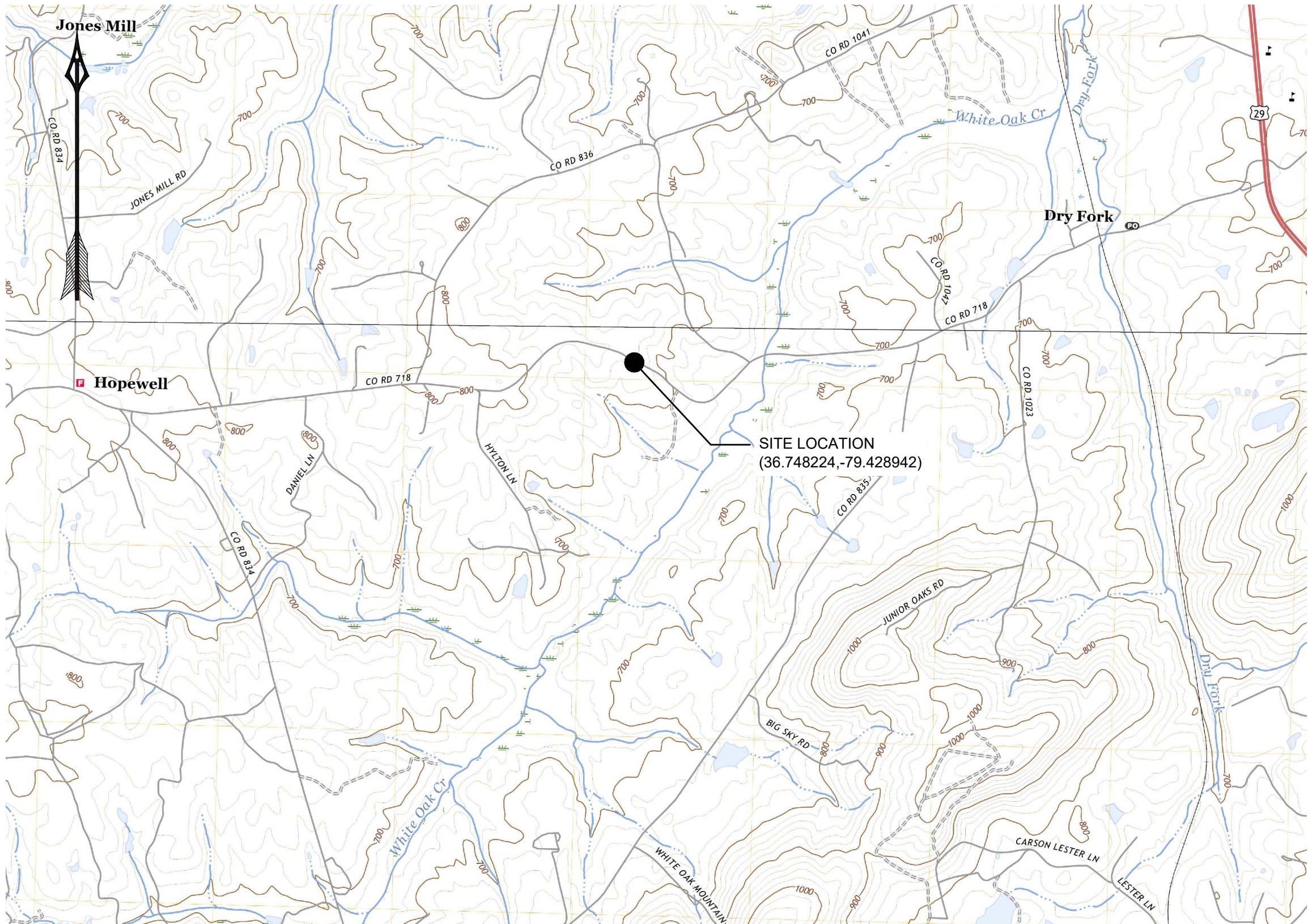
PITTSYLVANIA COUNTY, VIRGINIA
JUNE 2025

PROJECT OWNER/APPLICANT

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

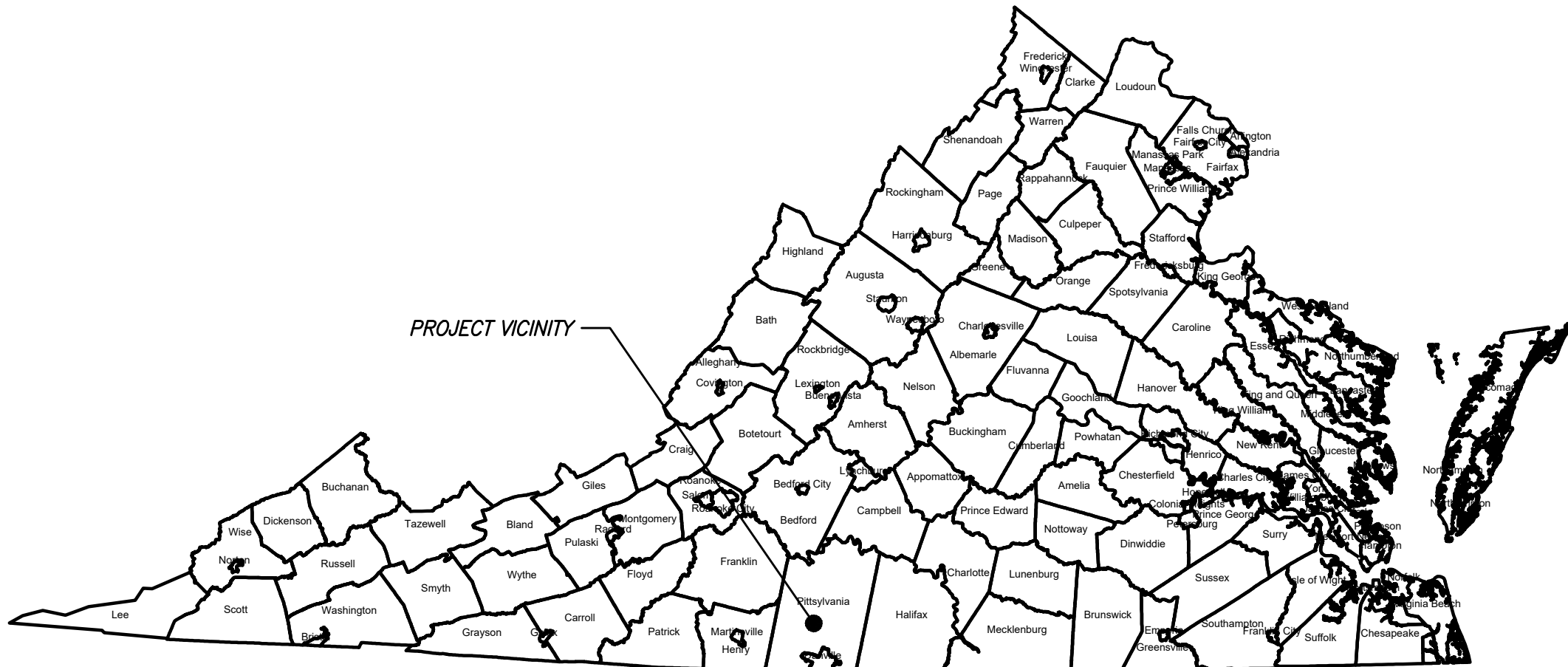
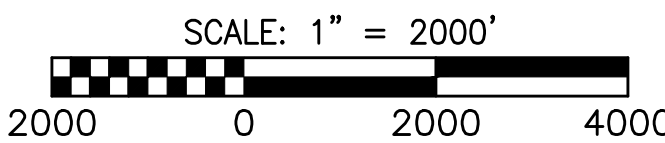
PLAN PREPARER/ENGINEER

GAI CONSULTANTS, INC.
4701 COX ROAD, SUITE 125
GLEN ALLEN, VA 23060
PH: (804)270-9357
CONTACT: R. CRAIG MURPHY, P.E.



MAP REFERENCE: 7.5' TOPOGRAPHIC QUADRANGLES:
MOUNT HERMON AND CHATHAM, VIRGINIA (BOTH 2022)

LOCATION MAP



PROJECT VICINITY MAP
N.T.S

SHEET INDEX

SHEET NUMBER	DRAWING TITLE
1 OF 8	COVER SHEET
2 OF 8	EXISTING CONDITIONS
3 OF 8	STORMWATER MANAGEMENT PLAN
4 - 7 OF 8	DETAILS
8 OF 8	NARRATIVE

REFERENCES:

- EXISTING CONTOURS PROVIDED BY TRANSCO FEBRUARY 19, 2024.
- AERIAL IMAGERY PROVIDED BY TRANSCO FEBRUARY 13, 2024.
- HORIZONTAL DATUM BASED ON VIRGINIA STATE PLANE, SOUTH FEET, NAD83.
- VERTICAL DATUM BASED ON NORTH AMERICAN DATUM OF 1988, NAVD88.
- ENVIRONMENTAL DELINEATIONS PERFORMED BY WETLAND STUDIES AND SOLUTIONS, INC. MAY 14, 2024.

NOTE:

- E&S CONTROLS SHOWN ON THIS DRAWING PACKAGE ARE IN ACCORDANCE WITH THE VADEQ REQUIREMENTS AND ARE BASED ON THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK, VERSION 1.1 TO SATISFY THE MINIMUM REQUIREMENTS OF E&S CONTROL. THE DRAWINGS ARE NOT INTENDED TO ACT AS CONSTRUCTION DRAWINGS, PROVIDE INSTALLATION INSTRUCTION, OR WARRANT THE SITE CONDITIONS. ADJUSTMENTS (INCLUDING LOCATION) AND/OR ADDITIONS TO PROPOSED CONTROLS MAY BE REQUIRED DURING CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR ALL MEANS, METHODS, PROCEDURES, SEQUENCING, AND TECHNIQUES INVOLVED WITH ALL CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MAINTAINING AND PRESERVING THE INTEGRITY OF ALL ENVIRONMENTAL FEATURES AS DESCRIBED ELSEWHERE AND/OR ALL AREAS THAT ARE NOT SUPPOSED TO BE DISTURBED (E.G. WORK OUTSIDE THE LIMITS OF DISTURBANCE).
- PRIOR TO ANY EARTH DISTURBANCE ACTIVITIES, CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING THAT CONDITIONS MATCH THOSE DEPICTED ON THE PLANS AND NOTIFYING TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC (TRANSCO'S) DESIGNATED REPRESENTATIVE OF ANY DISCREPANCIES (E.G. TOPOGRAPHY, DELINEATED WETLANDS/WATERBODIES, ACCESS ROADS, AND POINTS OF INGRESS AND EGRESS.)
- THESE DRAWINGS HAVE BEEN PREPARED BASED ON GAI'S SCOPE OF SERVICES FOR SUBMISSION TO PERMITTING AGENCIES ONLY. GAI'S SCOPE OF SERVICES DID NOT INCLUDE UTILITY LOCATING SERVICES NOR COORDINATION WITH UTILITY LOCATING SOURCES, SUCH AS THE VIRGINIA ONE CALL, THAT MAY HAVE INFORMATION AVAILABLE ON THE LOCATION OF UTILITIES, PIPELINES OR OTHER BURIED STRUCTURES. ANY UTILITIES IDENTIFIED ARE FOR INFORMATIONAL PURPOSES ONLY AND SHALL BE VERIFIED BY THE CONTRACTOR.
- ALL REFUELING, REPAIR, AND CHANGING OF EQUIPMENT AND VEHICLE FLUIDS SHALL BE CONDUCTED IN A MANNER TO REDUCE THE POTENTIAL FOR CONTAMINATION OF RESOURCES.



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R. CRAIG MURPHY, P.E.		REVISIONS				TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC SOUTHEAST SUPPLY ENHANCEMENT PROJECT EDEN-MLV-03 STORMWATER MANAGEMENT PLAN	
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	PITTSYLVANIA COUNTY, VIRGINIA COVER SHEET DRAWN BY: JAB DATE: 5-30-25 ISSUED FOR BID: SCALE: AS NOTED CHECKED BY: JML DATE: 5-30-25 ISSUED FOR CONSTRUCTION: REVISION: APPROVED BY: RCM DATE: 5-30-25 DRAWING NUMBER: VA-EDEN-MLV-03-001 SHEET 1 OF 8
RICHARD C. MURPHY Lic. No. 041898 06/09/20							
PROFESSIONAL ENGINEER							



LEGEND

_____ 1400	EXISTING CONTOUR (INDEX)
_____	EXISTING CONTOUR (INTERMEDIATE)
■ ■ ■ ■ ■ ■ ■ ■ ■ ■	LIMITS OF DISTURBANCE
_____	ENVIRONMENTAL SERVICE CORRIDOR
~~~~~	EXISTING TREELINE/TREE/SHRUB
_____	EXISTING TGPL PIPELINE
_____ FO _____	EXISTING FIBER OPTIC LINE
_____	EXISTING EDGE OF ROAD
◄ ◄ ◄ ◄ ◄ ◄ ◄ ◄	EXISTING CULVERT
_____ W _____	EXISTING WATER LINE
_____ UC _____	EXISTING UNDERGROUND CABLE LINE
_____ E _____	EXISTING ELECTRIC LINE
— X — X — X — X —	EXISTING FENCE
_____	PROPERTY LINE
_____	EXISTING DITCH LINE



REVISIONS						
NO	DATE	BY	DESCRIPTION	W.O. NO	CHK.	AP.

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC  
SOUTHEAST SUPPLY ENHANCEMENT PROJECT  
EDEN-MLV-03  
STORMWATER MANAGEMENT PLAN

# EXISTING CONDITIONS

PITTSYLVANIA COUNTY, VIRGINIA

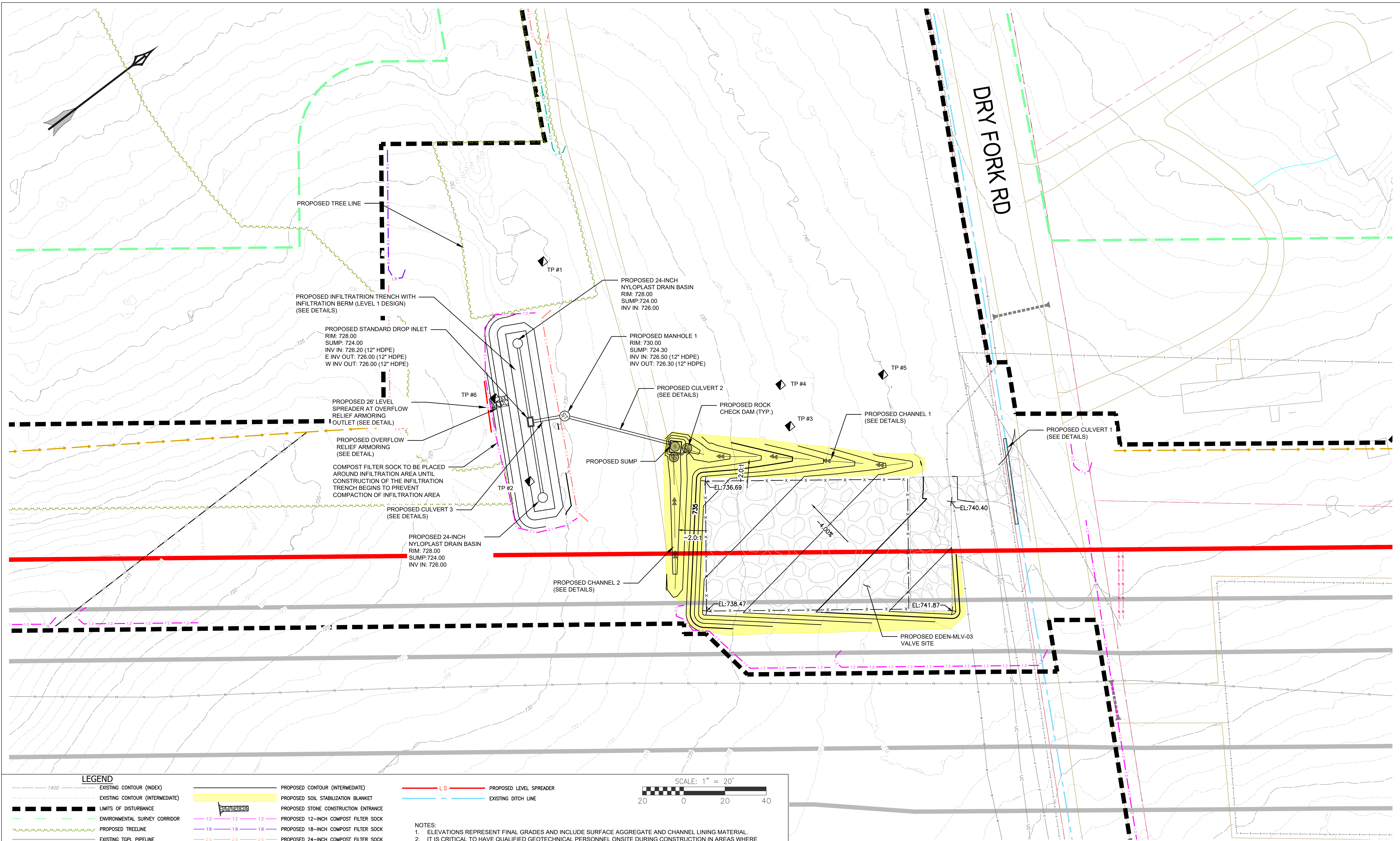
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DATE:	5-30-25	ISSUED FOR CONSTRUCTION:	REVISION:	

DATE:	5-30-25	DRAWING NUMBER:	VA-EDEN-MLV-03-002
RID: 500			

SHEET  
OF

2  
8





**LEGEND**

1400

EXISTING CONTOUR (INDEX)

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EXISTING CONTOUR (INTERMEDIATE)

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LIMITS OF DISTURBANCE

---

ENVIRONMENTAL SURVEY CORRIDOR

---

PROPOSED TREELINE

---

EXISTING TGPL PIPELINE

---

EXISTING FIBER OPTIC LINE

---

EXISTING EDGE OF ROAD

---

EXISTING CULVERT

---

EXISTING WATER LINE

---

EXISTING UNDERGROUND CABLE LINE

---

EXISTING ELECTRIC LINE

---

EXISTING FENCE

---

PROPERTY LINE

---

PROPOSED PIPELINE

1400

PROPOSED CONTOUR (INDEX)

---

PROPOSED CONTOUR (INTERMEDIATE)

---

PROPOSED SOIL STABILIZATION BLANKET

---

PROPOSED 12-INCH COMPOST FILTER SOCK

---

PROPOSED 18-INCH COMPOST FILTER SOCK

---

PROPOSED 24-INCH COMPOST FILTER SOCK

---

PROPOSED 32-INCH COMPOST FILTER SOCK

---

PROPOSED CLEAN WATER DIVERSION DIKE

---

PROPOSED CLEAN WATER DIVERSION SLOPE DRAIN

---

PROPOSED VEGETATED CHANNEL

---

PROPOSED SUMP

---

PROPOSED ROCK CHECK DAM

---

PROPOSED GRAVEL

---

SOIL TEST PIT LOCATION

---

PROPOSED FENCE

---

PROPOSED OVERFLOW RELIEF

---

PROPOSED LEVEL SPREADER

---

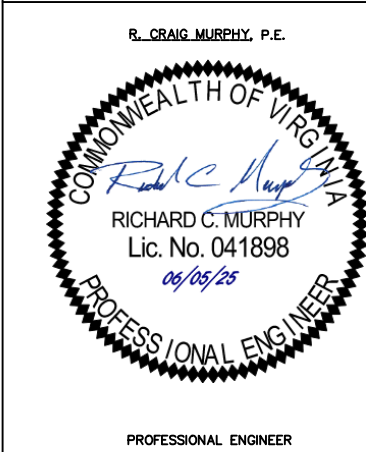
EXISTING DITCH LINE

NOTES:

- ELEVATIONS REPRESENT FINAL GRADES AND INCLUDE SURFACE AGGREGATE AND CHANNEL LINING MATERIAL.
- IT IS CRITICAL TO HAVE QUALIFIED GEOTECHNICAL PERSONNEL ONSITE DURING CONSTRUCTION IN AREAS WHERE GEOTECHNICAL IMPROVEMENTS AND/OR DRAINAGE BMPs ARE PROPOSED.
- INLET PROTECTION SHALL BE PROVIDED AT INSTALLED INLETS UNTIL THE UPSLOPE AREAS TO THE INLETS HAVE BEEN RESTORED.
- ROADSIDE DITCHES ARE TO BE RESTORED FOLLOWING COMPLETION OF CONSTRUCTION.

SCALE: 1" = 20'

20 0 20 40



REVISIONS				
NO.	DATE	BY	DESCRIPTION	

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC

SOUTHEAST SUPPLY ENHANCEMENT PROJECT

EDEN-MLV-03

STORMWATER MANAGEMENT PLAN

PITTSYLVANIA COUNTY, VIRGINIA

DRAWN BY: JAB

CHECKED BY: JML

APPROVED BY: RCM

W/O: C1009554

DATE: 5-30-25

DATE: 5-30-25

DATE: 5-30-25

RID: 500

ISSUED FOR BID:

ISSUED FOR CONSTRUCTION:

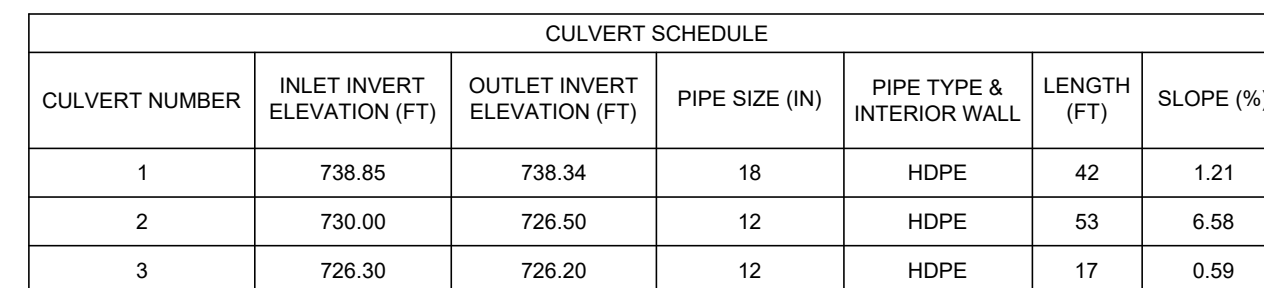
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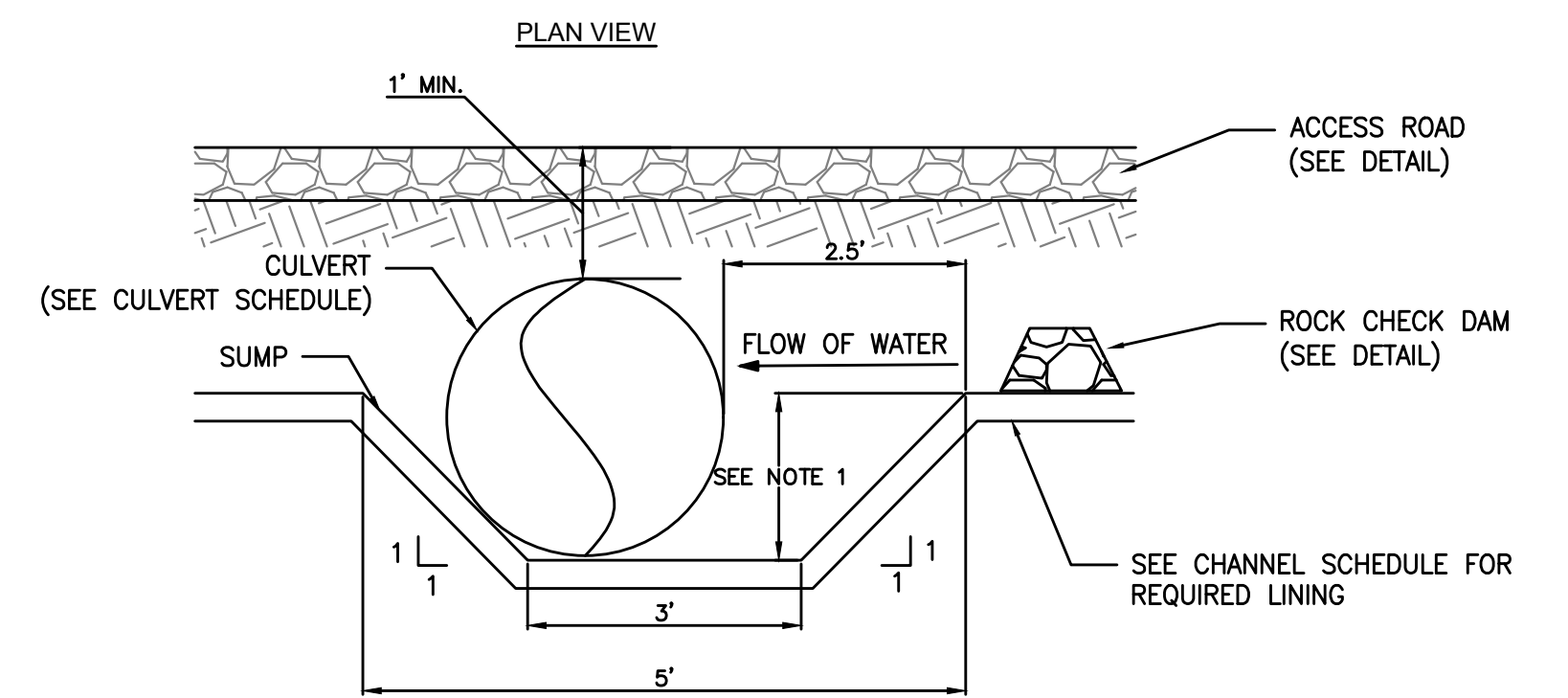
REVISION:

SHEET 3 OF 8





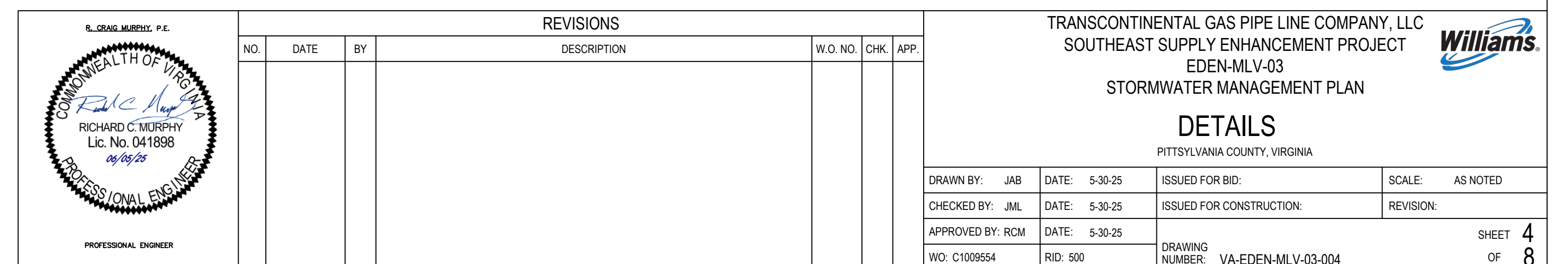
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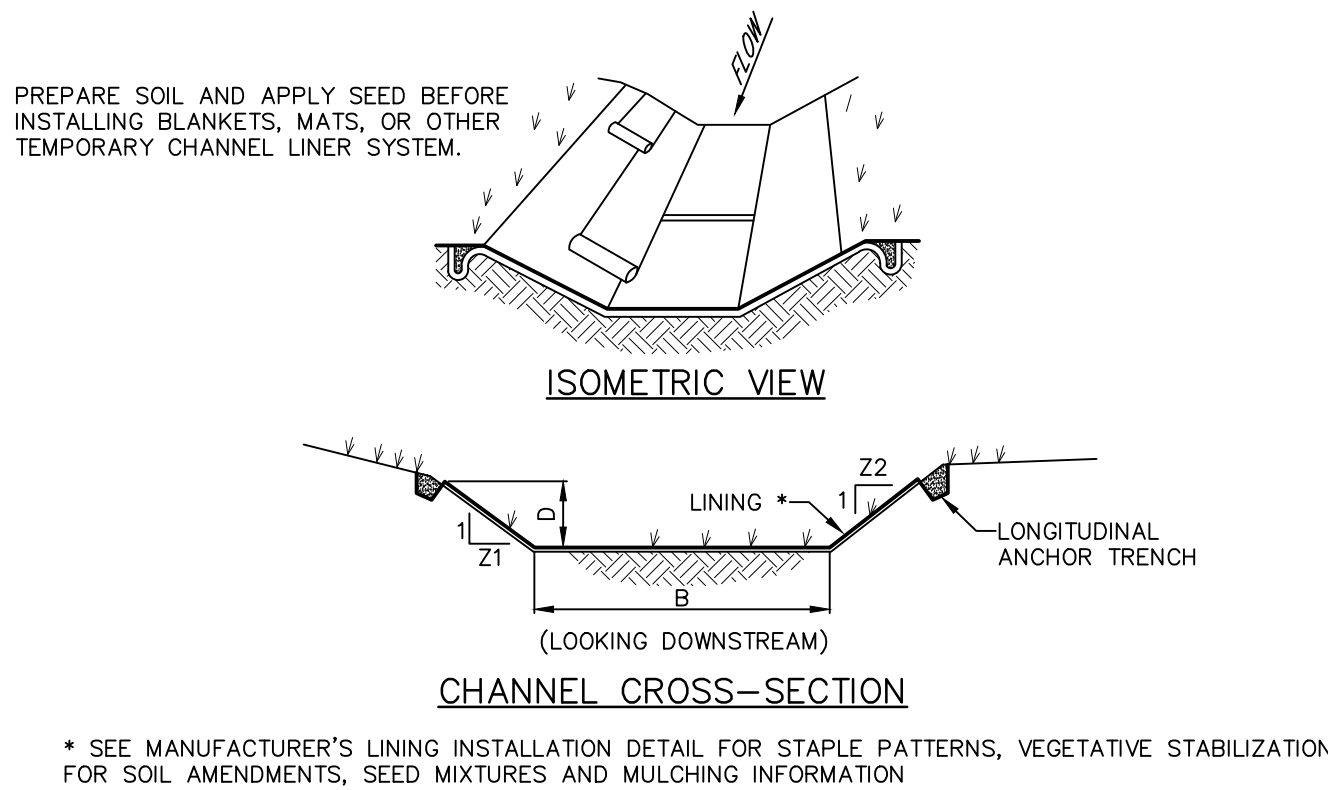
N.T.S



### LEVEL SPREADER DETAIL







CHANNEL NO.	BOTTOM WIDTH B (FT)	DEPTH D (FT)	TOP WIDTH W (FT)	Z1 (FT)	Z2 (FT)	TEMPORARY LINER	PERMANENT LINER
1	2	1	8	3	3	NAG SC250	VEGETATIVE
2	2	1	8	3	3	NAG SC250	VEGETATIVE

NOTES:

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

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

OPERATIONS AND MAINTENANCE CONSIDERATIONS:

RESEED AND ADD REINFORCEMENT PLANTING TO MAINTAIN 90% TURF COVER YEARLY.

REMOVE ANY ACCUMULATED SAND OR SEDIMENT DEPOSITS.

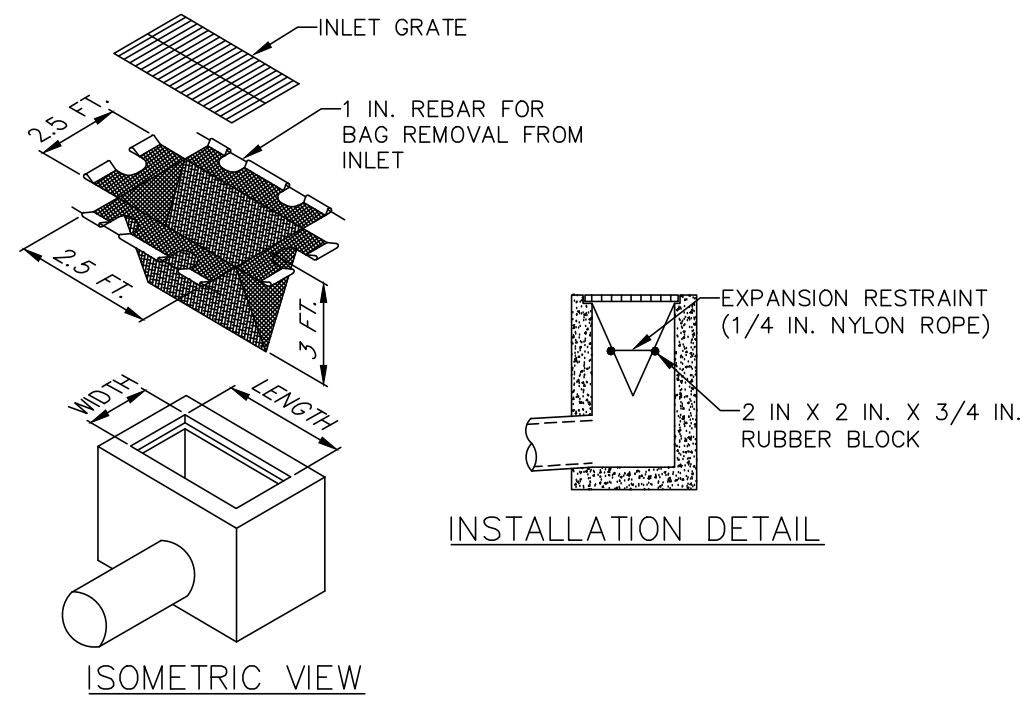
EXAMINE CHANNEL BOTTOM FOR EVIDENCE OF EROSION, BRAIDING, EXCESSIVE PONDING, OR DEAD GRASS. REPAIR AREAS OF OBSERVED DAMAGE; RESEED AND MULCH.

INSPECT SIDE SLOPES AND GRASS FILTER STRIPS FOR EVIDENCE OF ANY RILL OR GULLY EROSION, AND REPAIR AS NECESSARY.

IMMEDIATELY STABILIZE ANY BARE SOIL OR SEDIMENT SOURCES IN THE CONTRIBUTING DRAINAGE AREA.

GRASS-LINED CHANNEL

NOT TO SCALE



NOTES:

MAXIMUM DRAINAGE AREA = 1/2 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

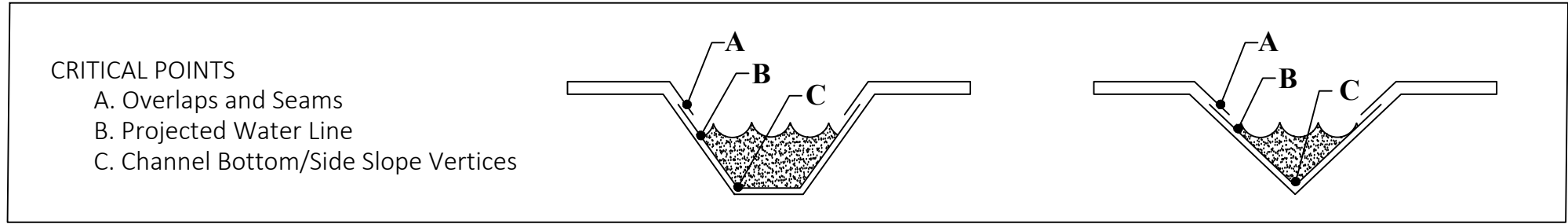
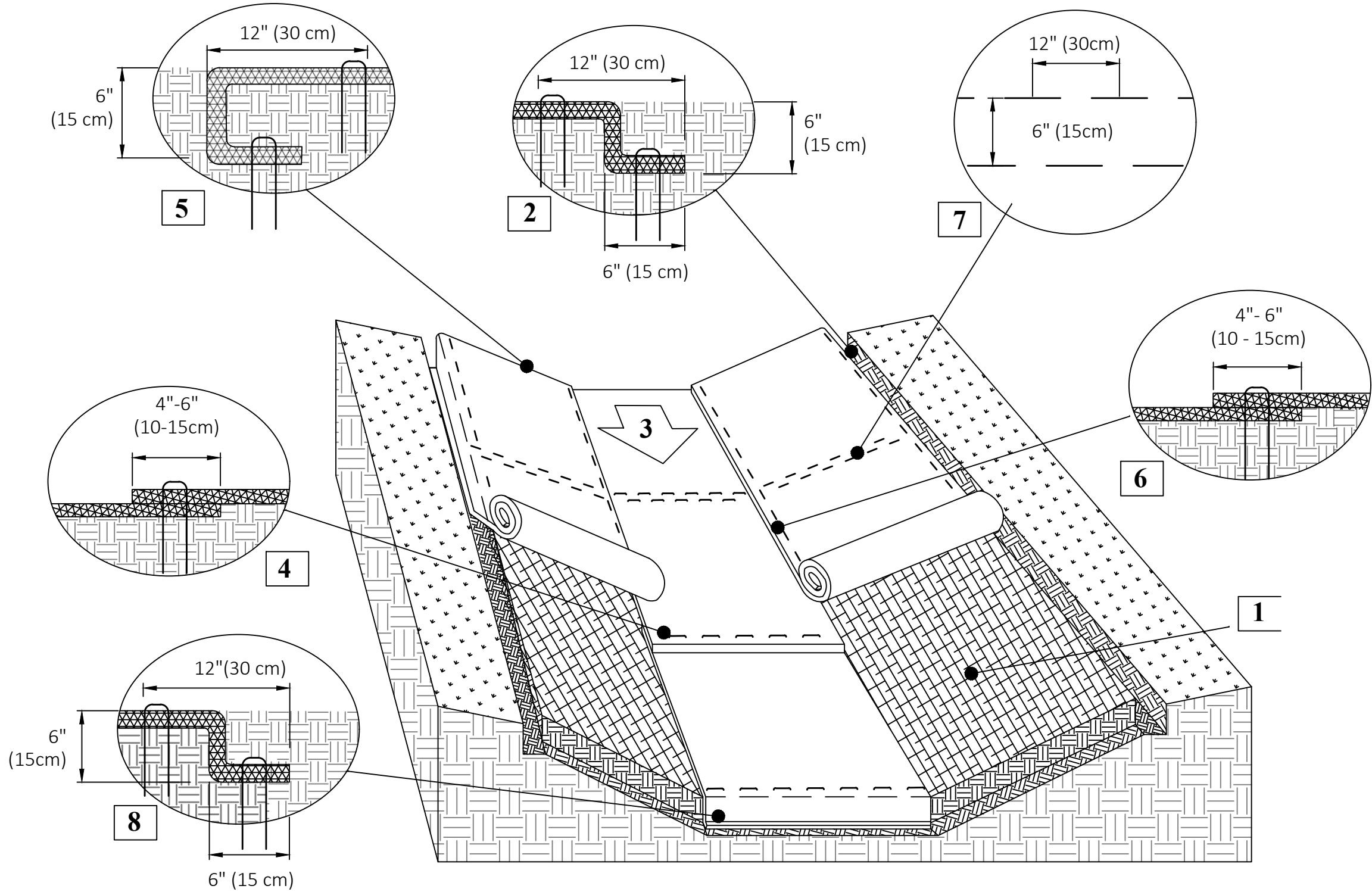
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SEVE.

INLET FILTER BAGS SHALL BE INSPECTED PER THE INSPECTION SCHEDULE IN THE BMP MAINTENANCE SCHEDULE. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

FILTER BAG INLET PROTECTION

TURF REINFORCED MAT (TRM)  
NORTH AMERICAN GREEN SC-250



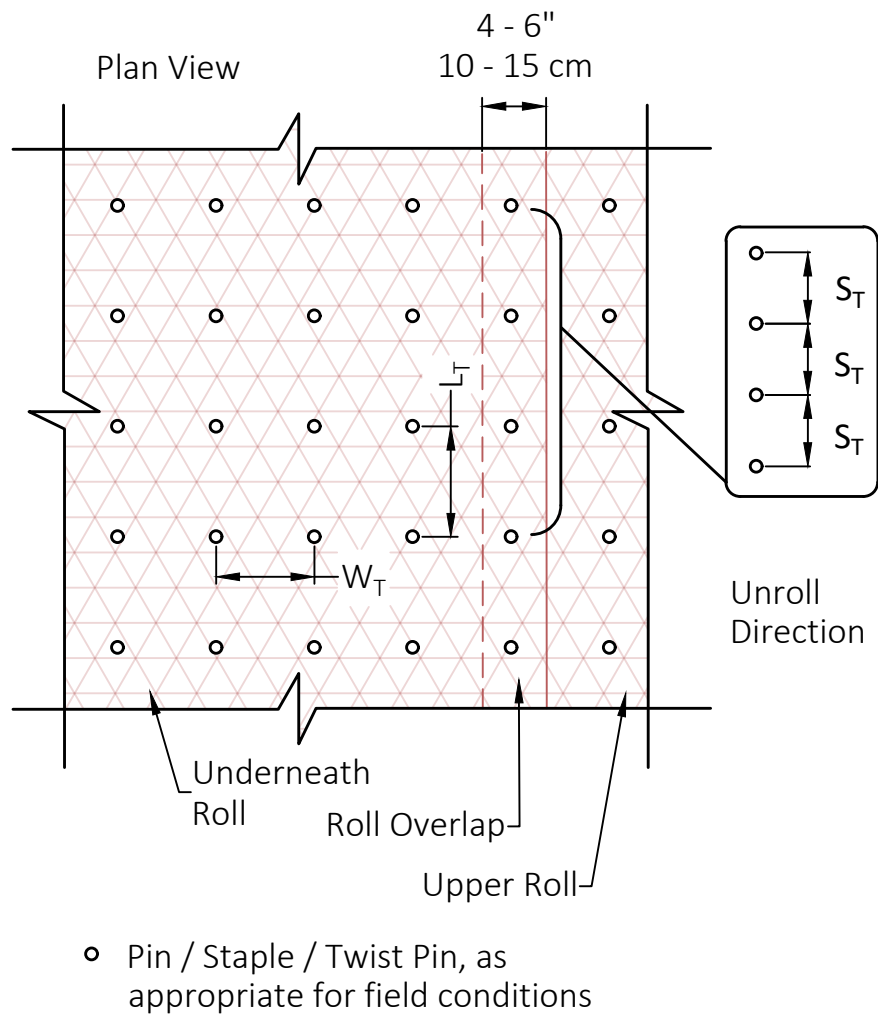
NOTES:

*Horizontal staple spacing should be altered if necessary to allow staples to secure the critical points along the channel surface.

Instructions

1. Prepare soil before installing rolled erosion control products (RECPs), including any necessary application of lime, fertilizer, and seed. Ground surface must be free of debris, rocks, clay clods and raked smooth sufficient to allow intimate contact of the RECP with the soil over the entirety of the installation.
2. Begin at the top of the channel by anchoring the RECPs in a 6" (15 cm) deep X 6" (15 cm) wide trench with approximately 12" (30 cm) of RECPs extended beyond the up-slope portion of the trench. Use ShoreMax mat at the channel/culvert outlet as supplemental scour protection as needed. Anchor the RECPs with a row of staples/stakes/pins across the width of the RECPs.
3. Roll center RECPs in direction of water flow in bottom of channel. RECPs will unroll with appropriate side against the soil surface. All RECPs must be securely fastened to soil surface by placing staples/stakes/pins in appropriate locations as shown in the staple pattern guide.
4. Place consecutive RECPs end-over-end (Shingle style) with a 4"-6" (10 - 15 cm) overlap. Use a double row of staples staggered 4" apart and 4" on center to secure RECPs.
5. Full length edge of RECPs at top of side slopes must be anchored with a row of staples/stakes/pins spaced at  $S_T$  apart in a 6" (15 cm) deep X 6"(15 cm) wide trench. Backfill and compact the trench after stapling.
6. Adjacent RECPs must be overlapped approximately 4"- 6" (10 - 15 cm) and secured with staples/stakes/pins at  $S_T$ .
7. In high flow channel applications a staple check slot is recommended at 30 to 40 foot (9 -12m) intervals. Use a double row of staples staggered 6" (15 cm) apart and 12" (30 cm) on center over entire width of the channel.
8. The terminal end of the RECPs must be anchored with a row of staples/stakes/pins spaced at  $S_T$  apart in a 6" (15 cm) deep X 6" (15 cm) wide trench. Backfill and compact the trench after stapling.
9. Fasteners should provide a minimum of twenty pounds of pullout resistance. Six-inch (10 cm) X one-inch (2.5 cm) eleven gauge staples are typically adequate. In loose soils, longer staples may be necessary, twist pins can provide the greatest pullout resistance. In hard or rocky soils, straight pins may be used where staples or twist pins are refused, provided the minimum pullout requirements are met. Bio-degradable fasteners shall not be used with VMMax (TRM) or TMax (HPTRM) materials.

Staple Pattern Guide



	Staple Pattern
Dimension	E
$W_T$	20" (50 cm)
$L_T$	20" (50 cm)
$S_T$	18" (45 cm)
Nominal Frequency	3.8 / SY

R. CRAIG MURPHY, P.E.

COMMONWEALTH OF VIRGINIA

RICHARD C. MURPHY

Lic. No. 041898

09/05/25

PROFESSIONAL ENGINEER

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

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC

SOUTHEAST SUPPLY ENHANCEMENT PROJECT

EDEN-MLV-03

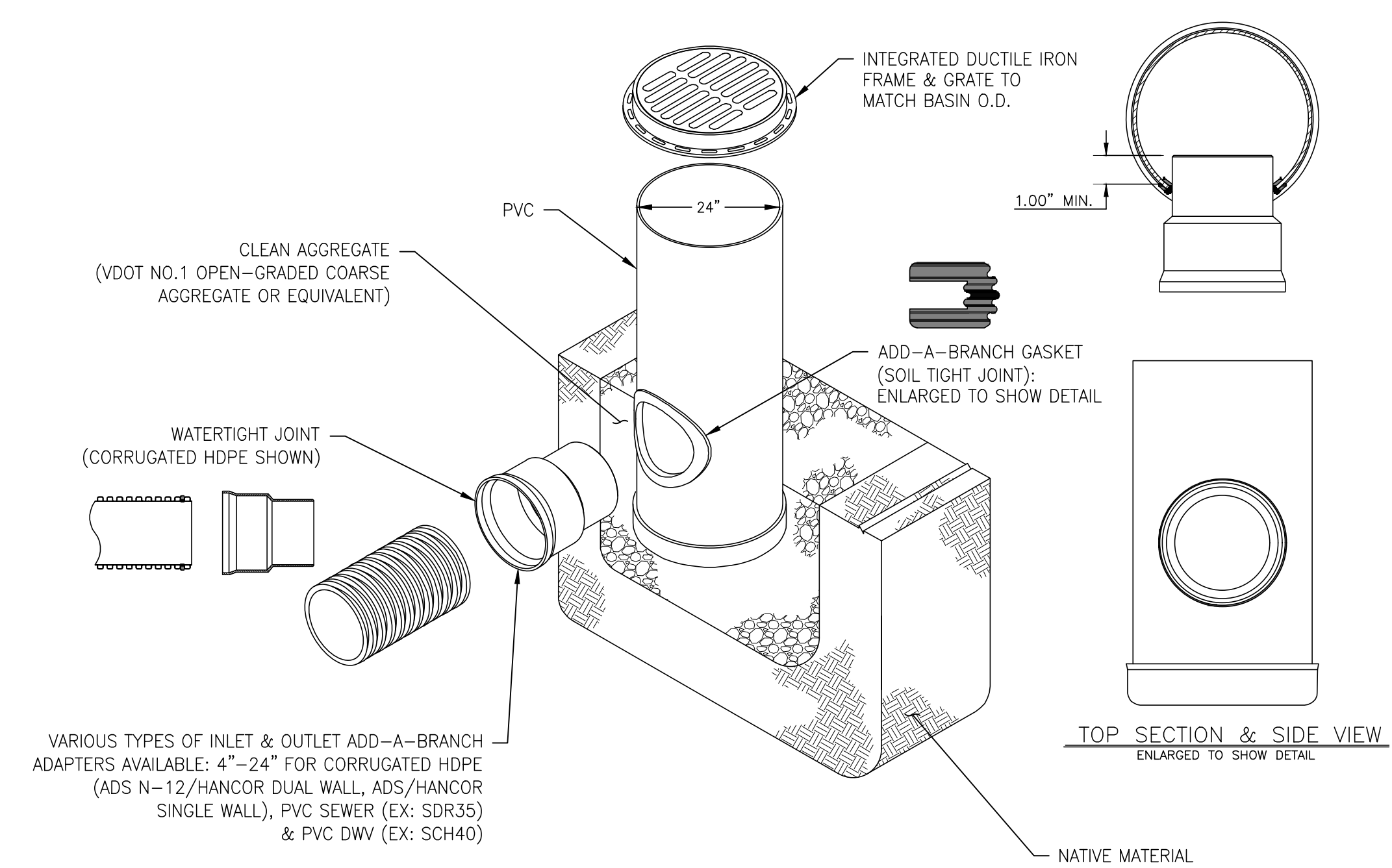
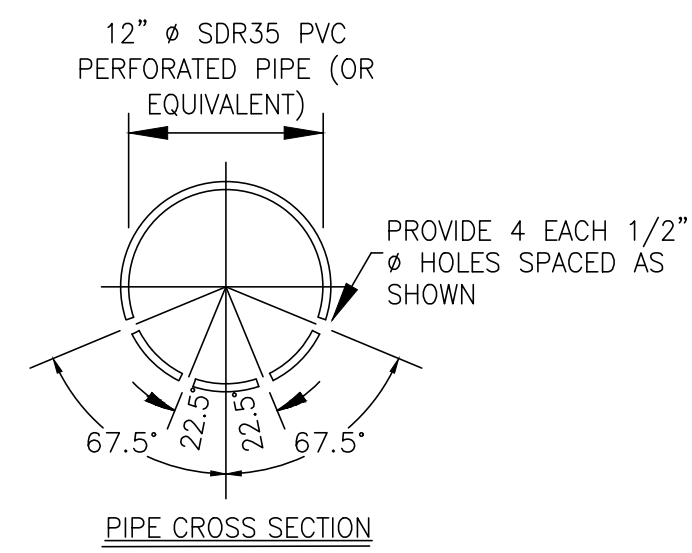
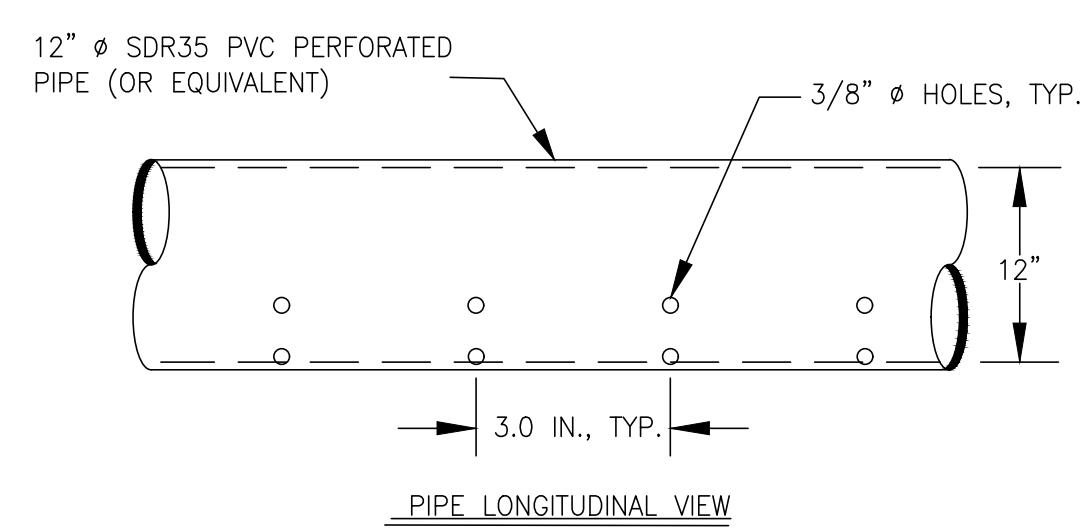
STORMWATER MANAGEMENT PLAN

DETAILS

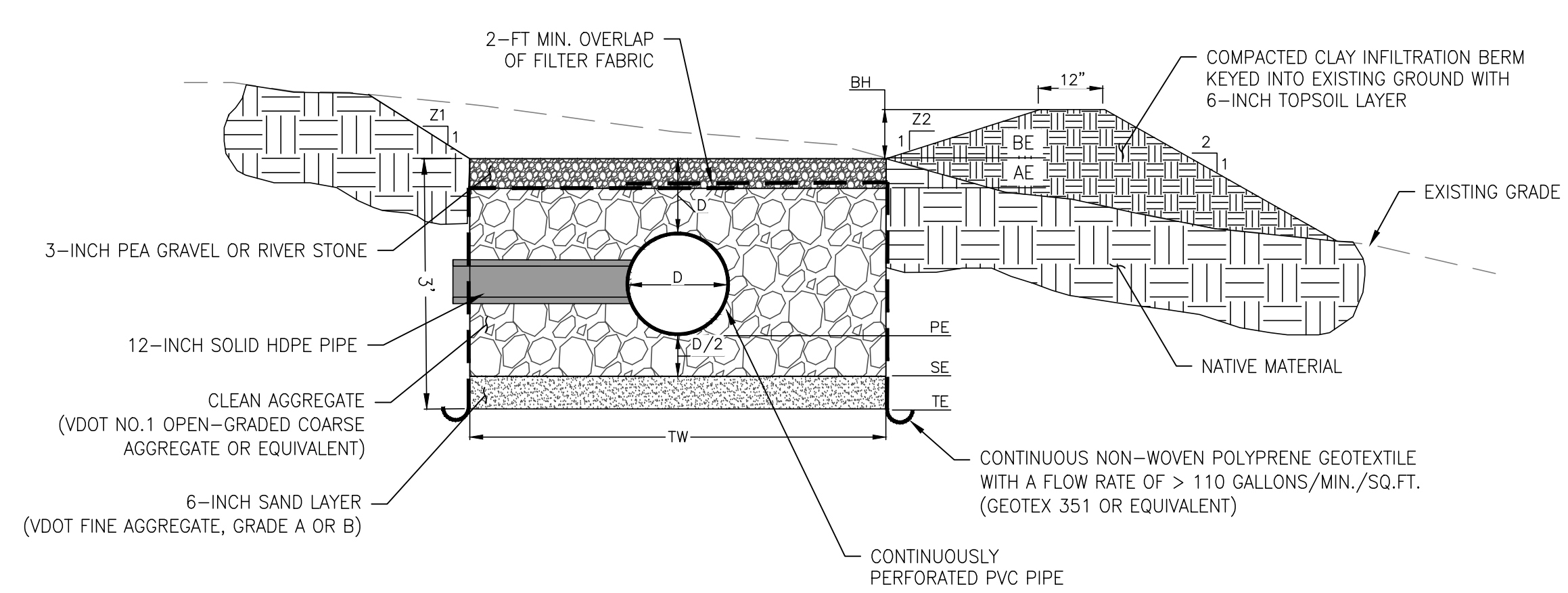
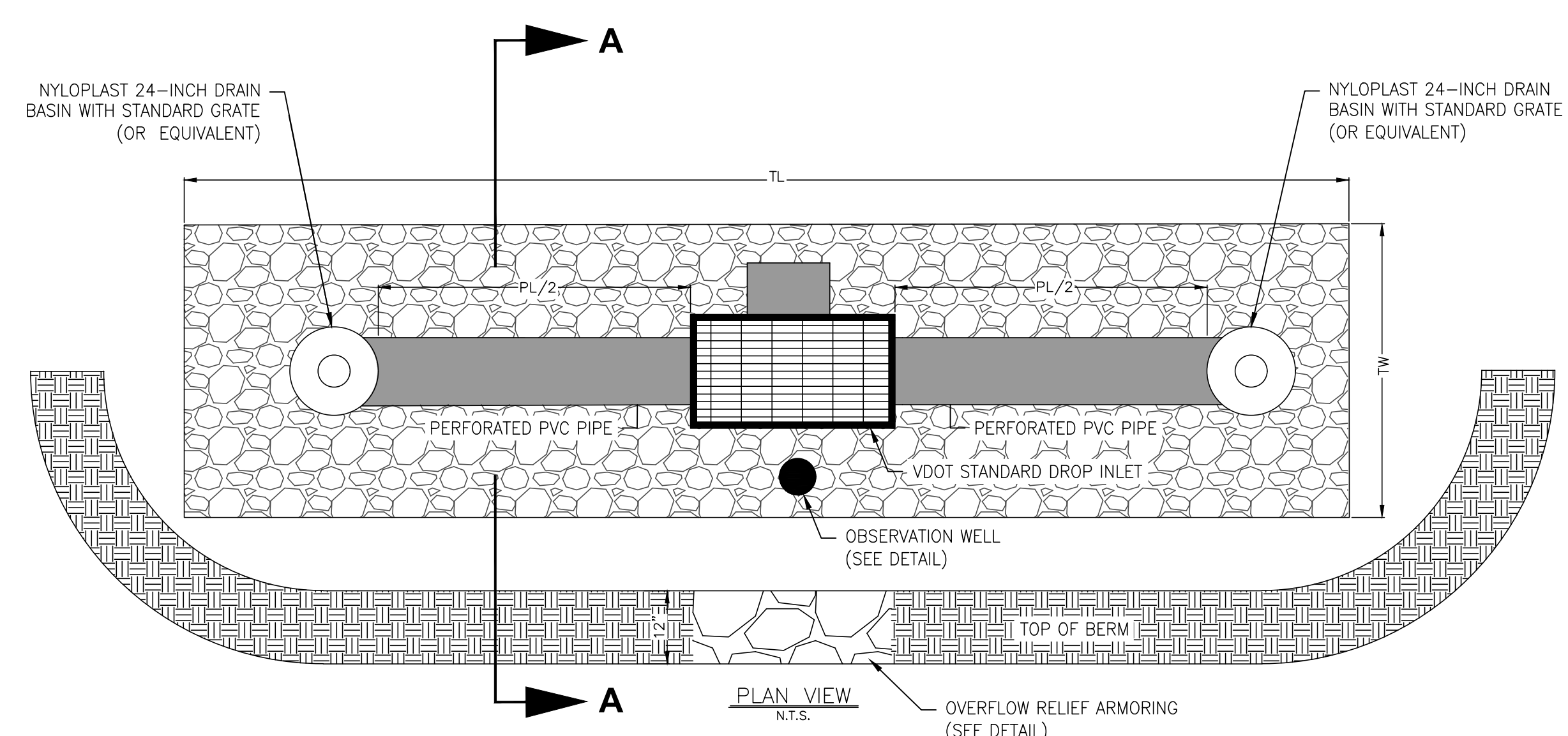
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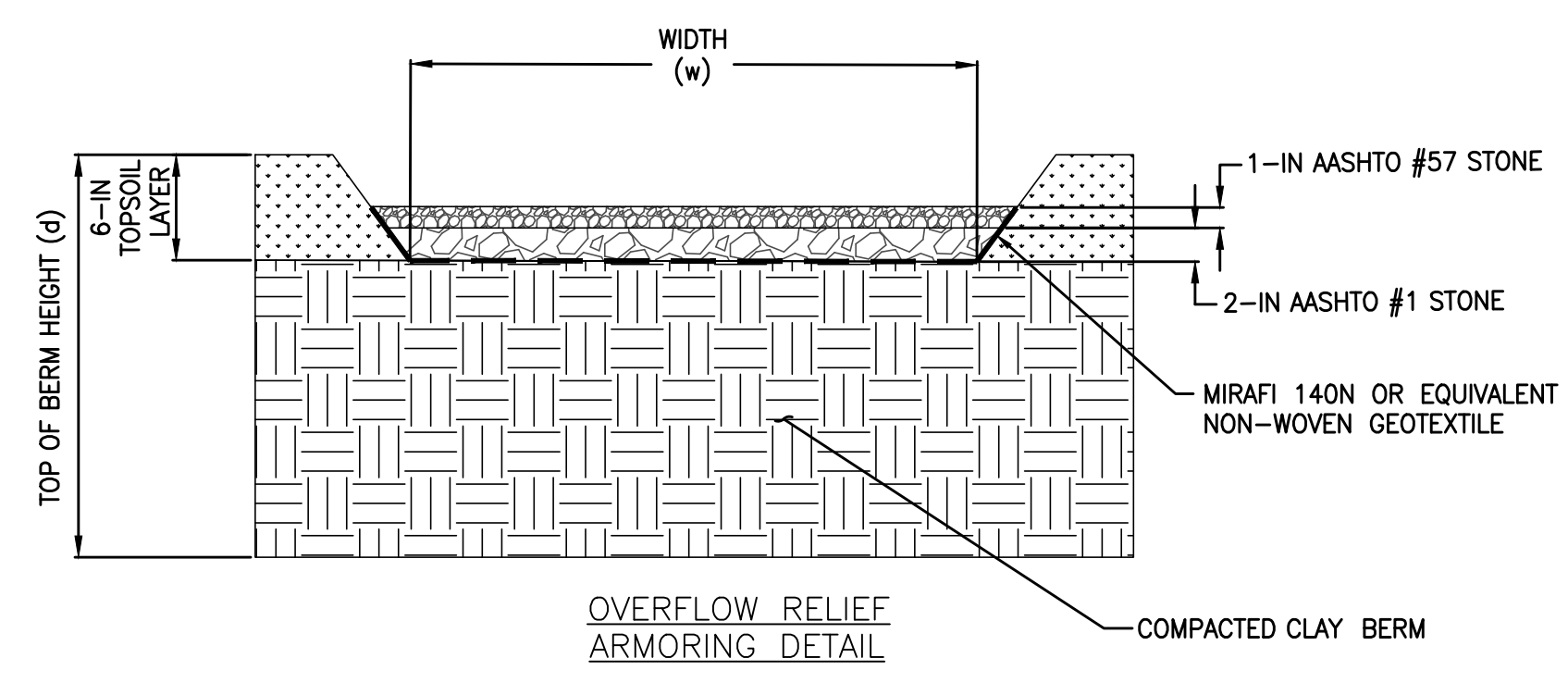
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DRAIN BASIN DETAIL  
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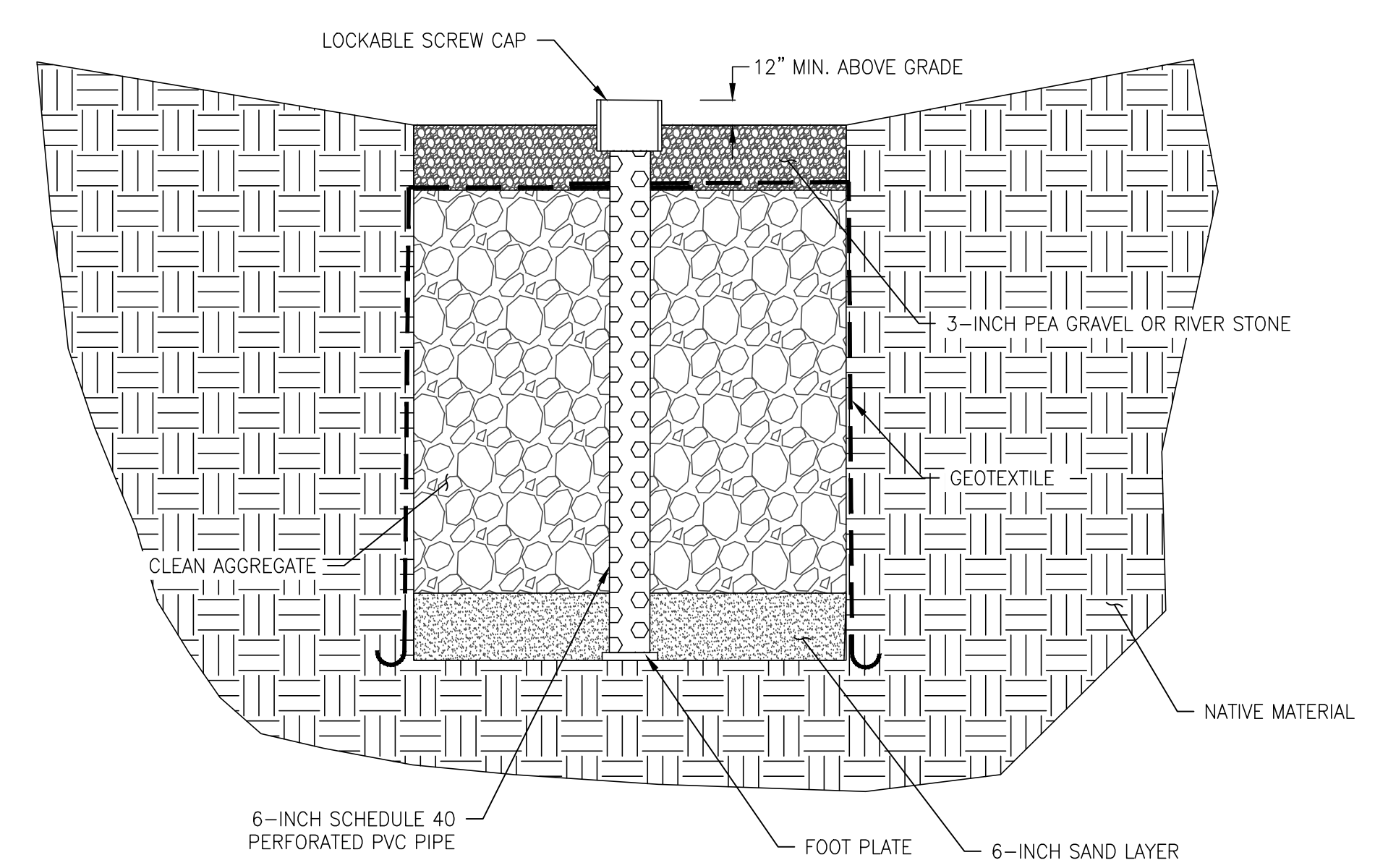
SECTION A-A  
N.T.S.

BERM				TRENCH				PIPE			
BOTTOM ELEV. (BE) (FT)	HEIGHT (BH) (FT)	Z1	Z2	TRENCH ELEV. (TE) (FT)	TRENCH WIDTH (TW) (FT)	TRENCH LENGTH (TL) (FT)	SAND ELEV. (SE) (FT)	AGGREGATE ELEV. (AE) (FT)	DIA (D) (IN)	PIPE INV. ELEV. (PE) (FT)	PIPE LENGTH (PL) (FT)
728.0	1.5	4	4	725.0	10	87	725.5	727.75	12	726.0	77

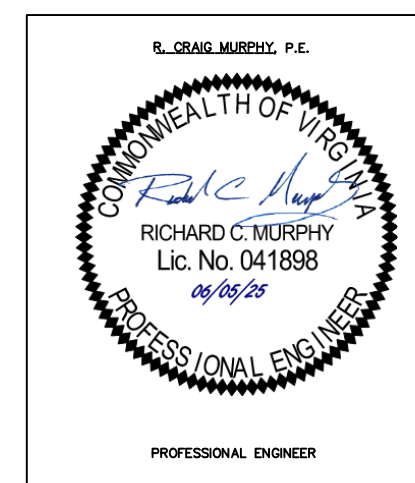
INFILTRATION BERM WITH  
INFILTRATION TRENCH (LEVEL 1 DESIGN) DETAIL



OVERFLOW RELIEF ARMORING SCHEDULE			
BERM LOCATION	TOP OF BERM HEIGHT (d) (FEET)	OVERFLOW CREST WIDTH (w) (FEET)	OVERFLOW CREST ELEVATION (FEET)
INFILTRATION BERM 1	1.50	5	728.80



OBSERVATION WELL



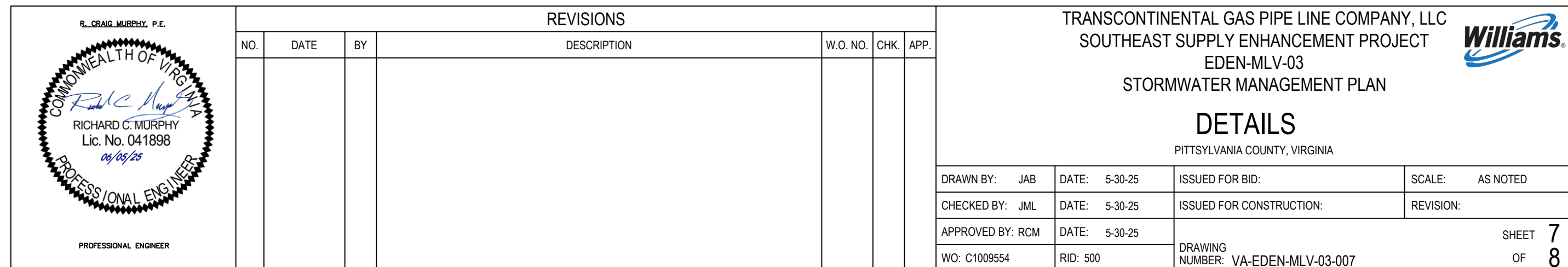
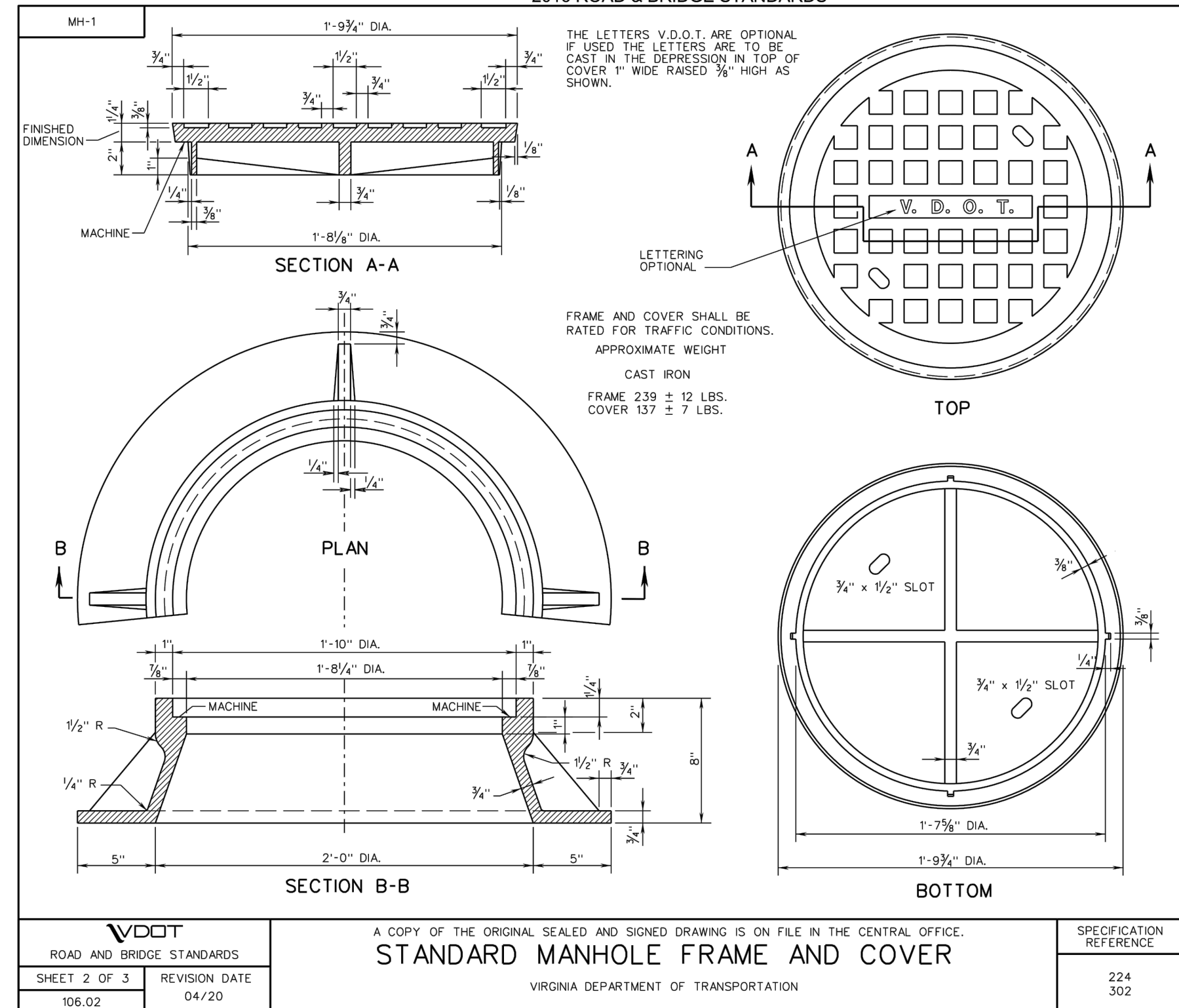
REVISIONS				W.O. NO.	CHK.	APP.
NO.	DATE	BY	DESCRIPTION			

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC  
SOUTHEAST SUPPLY ENHANCEMENT PROJECT  
EDEN-MLV-03  
STORMWATER MANAGEMENT PLAN

DETAILS  
PITTSYLVANIA COUNTY, VIRGINIA

DRAWN BY: JAB	DATE: 5-30-25	ISSUED FOR BID:	SCALE: AS NOTED
CHECKED BY: JML	DATE: 5-30-25	ISSUED FOR CONSTRUCTION:	REVISION:
APPROVED BY: RCM	DATE: 5-30-25	DRAWING NUMBER: VA-EDEN-MLV-03-006	SHEET 6 OF 8
WO: C1009554	RID: 500		







STORMWATER MANAGEMENT STANDARD NOTES

- 1.1. GENERAL
- 1.1.1. AFTER THE FACILITY HAS BEEN CONSTRUCTED, THE DEVELOPER SHALL HAVE AN AS–BUILT CERTIFICATION CONDUCTED BY A LICENSED LAND SURVEYOR OR PROFESSIONAL ENGINEER REGISTERED IN VIRGINIA.
- 1.2. NON–STRUCTURAL STORMWATER MANAGEMENT STRATEGIES
- 1.2.1. ONE NON–STRUCTURAL STORMWATER MANAGEMENT STRATEGY IS TO MINIMIZE IMPERVIOUS SURFACES. IMPERVIOUS SURFACES WERE MINIMIZED AND LIMITED TO THE SMALLEST AREA NECESSARY FOR SAFE AND PRUDENT OPERATION OF THE PROPOSED SITE. WHEREVER POSSIBLE, GRAVEL AREAS WERE INCORPORATED IN THE SITE DESIGN RATHER THAN IMPERVIOUS PAVEMENT. ADDITIONALLY, AS MUCH OF THE SITE AS POSSIBLE WILL BE REVEGETATED TO A MEADOW COVER TYPE, POST–CONSTRUCTION.
- 1.2.2. ANOTHER NON–STRUCTURAL STORMWATER MANAGEMENT STRATEGY IS TO MINIMIZE THE DECREASE IN THE TIME OF CONCENTRATION. IN GENERAL, MUCH OF THE SITE WAS MODERATELY FLATTENED COMPARED TO PRE–CONSTRUCTION CONDITIONS. THE FLATTER SLOPES HELP MITIGATE SOME OF THE TIME OF CONCENTRATION REDUCTION ASSOCIATED WITH CHANGING MUCH OF THE COVER TYPE FROM THE EXISTING FORESTED AREA AND MEADOW TO SEMI–IMPERVIOUS AND IMPERVIOUS AREAS. ADDITIONALLY, THE CHANNELS ON THE SITE ARE WIDE WITH SHALLOW LONGITUDINAL SLOPES.
- 1.2.3. MINIMIZING LAND DISTURBANCE AND SOIL COMPACTION ARE ALSO STRATEGIES THAT CAN BE USED AS A NON–STRUCTURAL STORMWATER MANAGEMENT STRATEGY. CLEARING AND GRADING WERE MINIMIZED TO THE MAXIMUM EXTENT POSSIBLE IN THE SCOPE OF THIS PROJECT. ONLY AREAS OF THE PROPERTY THAT WERE REQUIRED FOR STAGING, STOCKPILES, OR CONSTRUCTION WILL BE DISTURBED.
- 1.2.4. DUE TO THE TYPE OF CONSTRUCTION, SOIL MUST BE COMPACTED FOR THE AREA WITHIN THE VALVE SITE IN ORDER TO ENSURE STABLE GRADES. FILL AREAS WILL HAVE TO MEET COMPACTION REQUIREMENTS, BUT THE SLOPES WILL BE VERTICALLY TRACKED BEFORE SEEDING AND INSTALLATION OF THE EROSION CONTROL BLANKETS. LIGHTWEIGHT, LOW IMPACT EARTHMOVING EQUIPMENT WILL BE USED TO PERFORM FINAL GRADING IN AREAS TO BE VEGETATED.
- 1.2.5. THE CHANNELS FOR THE PROJECT ARE LINED WITH VEGETATION. VEGETATED CHANNELS PROVIDE A MODEST AMOUNT OF RUNOFF FILTERING AND VOLUME ATTENUATION IN THE STORMWATER CONVEYANCE SYSTEM, RESULTING IN THE DELIVERY OF LESS RUNOFF AND POLLUTANTS THAN A TRADITIONAL SYSTEM OF CURBS, GUTTERS, STORM DRAIN INLETS, AND PIPES.
- 1.3. STRUCTURAL STORMWATER MANAGEMENT PRACTICES
- 1.3.1. INLETS AND MANHOLES — INLETS WILL BE INSTALLED TO COLLECT STORM RUNOFF AND THEN CONVEY THE WATER TO THE INFILTRATION TRENCH. MANHOLE WILL BE USED AS AN OPENING TO MAKE CONNECTIONS AND PERFORM INSPECTIONS.
- 1.3.2. CULVERTS — CULVERTS WILL BE INSTALLED AS SHOWN ON DRAWINGS. CIRCULAR CULVERTS WILL BE INSTALLED TO CONVEY STORMWATER RUNOFF.
- 1.3.3. CHANNELS — GRASS CHANNELS CAN PROVIDE A MODEST AMOUNT OF RUNOFF FILTERING AND VOLUME ATTENUATION WITHIN THE STORMWATER CONVEYANCE SYSTEM, RESULTING IN THE DELIVERY OF LESS RUNOFF AND POLLUTANTS THAN A TRADITIONAL SYSTEM OF CURBS, GUTTERS, STORM DRAIN INLETS, AND PIPES. GRASS CHANNELS HAVE BEEN INTEGRATED INTO THE DESIGN OF THE VALVE SITE WHERE FEASIBLE TO MEET WATER QUALITY REQUIREMENTS.
- 1.3.4. INFILTRATION TRENCH – AN INFILTRATION TRENCH IS A “LEAKY” PIPE IN A STONE FILLED TRENCH WITH A LEVEL BOTTOM.
- 1.3.5. LEVEL SPREADER – A PERMANENT LEVEL SPREADER WILL BE INSTALLED AT THE OUTLET OF THE OVERFLOW RELIEF ARMORING. A LEVEL SPREADER IS A FLOW CONTROL MEASURE THAT RECEIVES CONCENTRATED POTENTIALLY EROSION INFLOW, AND CONVERTS TO A SHEET SLOW CONDITION BY DISCHARGING ACROSS A HORIZONTAL LEVEL WEIR ONTO AREAS OF UNDISTURBED SOIL THAT IS STABILIZED BY EXISTING VEGETATION OR INTO ANOTHER STRUCTURAL BMP.

CONSTRUCTION SEQUENCE

1. FLAG THE LIMITS OF DISTURBANCE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN PRIOR TO A PRE–CONSTRUCTION MEETING WITH CERTIFIED PERSONNEL AS IT PERTAINS TO THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSM) REGULATIONS. A PRE–CONSTRUCTION MEETING WITH THE CONTRACTOR, PROJECT MANAGER, AND CERTIFIED EROSION AND SEDIMENT CONTROL INSPECTOR WILL BE SCHEDULED BY WILLIAMS.
2. DURING THE PRE–CONSTRUCTION MEETING, THE CERTIFIED EROSION AND SEDIMENT CONTROL INSPECTOR SHALL CHECK THE FLAGGING DESIGNATING THE LIMITS OF DISTURBANCE.
3. INSTALL EROSION AND SEDIMENT CONTROLS PER THE APPROVED EROSION AND SEDIMENT CONTROL PLAN. COMPOST FILTER SOCK SHALL BE PLACED AROUND THE INFILTRATION TRENCH PRIOR TO STARTING CONSTRUCTION OF THE INFILTRATION TRENCH TO PREVENT COMPACTION OF THE INFILTRATION AREA DURING OTHER STAGES OF CONSTRUCTION OF THE PROJECT.
4. CLEAR, GRUB AND REMOVE VEGETATION AS INDICATED IN THE EROSION AND SEDIMENT CONTROL PLAN ONCE ALL EROSION CONTROL DEVICES ARE FUNCTIONING AND IN PLACE.
5. PLACE AS NEEDED TEMPORARY TOPSOIL STOCKPILE AND PROTECT WITH COMPOST FILTER SOCK AND TEMPORARY SEEDING.
6. FILL THE SITE PER THE GRADING SHOWN ON THE STORMWATER MANAGEMENT PLAN. ENSURE SURFACE ROUGHENING IS APPLIED TO 3:1 AND GREATER FILL SLOPES.
7. APPLY TEMPORARY SEEDING TO ANY DISTURBED AREAS THAT REMAIN DORMONT FOR MORE THAN SEVEN (7) DAYS.
8. PERFORM FINAL SITE GRADING AS SHOWN ON PLANS.
9. ONCE UPSLOPE AREAS ARE STABILIZED, THE INFILTRATION TRENCH SHOULD BE INSTALLED ACCORDING TO THE CONSTRUCTION SEQUENCE.
10. PLACE GEOTEXTILE ON THE ACCESS ROAD AND PAD SITE SUBGRADE AND INSTALL BASE LAYER OF AGGREGATE.
11. NO EROSION AND SEDIMENT CONTROL DEVICES SHALL BE REMOVED UNTIL THE SITE IS DEEMED STABILIZED AND PER THE APPROVAL OF THE CERTIFIED EROSION AND SEDIMENT CONTROL INSPECTOR.

INFILTRATION TRENCH CONSTRUCTION SEQUENCE

1. REMOVE PREVIOUSLY INSTALLED COMPOST FILTER SOCK AROUND THE INFILTRATION AREA OF THE INFILTRATION TRENCH AS SHOWN ON THEE PLANS IN ORDER TO ALLOW WORK TO PROCEED. COMPLETE SITE GRADING AND STABILIZE WITHIN THE LIMITS OF DISTURBANCE EXCEPT IN LOCATION WHERE INFILTRATION TRENCH WILL BE CONSTRUCTED, AND MAKE EVERY EFFORT TO MINIMIZE THE DISTURBED FOOTPRINT WHILE CONSTRUCTING THE INFILTRATION TRENCH, INCLUDING THE REMOVAL OF EXISTING VEGETATION AND THE DISTURBANCE OF EMPTY SOIL. EQUIPMENT USE ON THE INFILTRATION AREA SHALL BE MINIMIZED TO THE GREATEST EXTENT PRACTICAL.
2. INSTALL INFILTRATION TRENCH DURING LATER PHASES OF SITE CONSTRUCTION TO PREVENT SEDIMENTATION AND/OR DAMAGE FROM CONSTRUCTION ACTIVITY. AFTER INSTALLATION, PREVENT SEDIMENT LADEN WATER FROM ENTERING INLETS AND PIPES.
3. EXCAVATE INFILTRATION TRENCH BOTTOM TO A UNIFORM, LEVEL UNCOMPACTED SUBGRADE FREE FROM ROCKS AND DEBRIS. DO NOT COMPACT SUBGRADE.
4. INSTALL THE DROP INLET STRUCTURE PER THE DETAIL.
5. PLACE NON–WOVEN GEOTEXTILE ALONG THE SIDES OF THE TRENCH. GEOTEXTILE ROLLS SHOULD OVERLAP BY A MINIMUM OF 2 FEET WITHIN THE TRENCH. FOLD BACK AND SECURE EXCESS GEOTEXTILE DURING STONE PLACEMENT. GEOTEXTILE IS NOT BE PLACED ON THE BOTTOM OF THE TRENCH.
6. SCARIFY THE BOTTOM OF THE INFILTRATION AREA AND SPREAD SIX–INCH LAYER OF SAND AT BOTTOM OF TRENCH.
7. ANCHOR THE OBSERVATION WELL(S).
8. PLACE CLEAN AGGREGATE IN 8–INCH LIFTS, LIGHTLY COMPACTING BETWEEN LIFTS.
9. INSTALL PERFORATED PIPES AND DRAIN BASINS AS INDICATED ON THE PLANS. BACKFILL WITH CLEAN AGGREGATE IN 8–INCH LIFTS, LIGHTLY COMPACTING BETWEEN LIFTS.
10. FOLD AND SECURE NON–WOVEN GEOTEXTILE OVER INFILTRATION TRENCH, WITH A MINIMUM OVERLAP OF 2 FEET.
11. PLACE 3–INCH LAYER OF PEA GRAVEL OR RIVER STONE AS INDICATED ON PLANS.
12. BRING IN FILL MATERIAL TO MAKE UP MAJOR PORTION OF THE BERM. SOIL SHOULD BE ADDED IN 8–INCH LIFTS AND COMPACTED AFTER EACH ADDITION. THE SLOPE AND SHAPE OF THE BERM SHOULD BE GRADED OUT AS SOIL IS ADDED.
13. COMPLETE FINAL GRADING OF THE BERM AFTER THE TOP LAYER OF SOIL IS ADDED. TAMP SOIL DOWN LIGHTLY AND SMOOTH SIDES OF THE BERM. THE CREST AND THE BASE OF THE BERM SHOULD BE AT LEVEL GRADE.
14. INSTALL THE OVERFLOW RELIEF ARMORING AT THE LOW POINT IN THE BERM. THE OVERFLOW RELIEF IS TO BE CONSTRUCTED AT THE HEIGHT PROVIDED IN THE DETAIL. THE OVERFLOW RELIEF ARMORING SHALL BE AT THE WIDTH SHOWN IN THE DETAIL, AND THE DIFFERENCE IN THE BERM HEIGHT AND OVERFLOW HEIGHT SHALL BE FILLED WITH 2–INCHES OF AASHTO #1 STONE AND CHOCKED WITH 1–INCH OF AASHTO #57 STONE. THE STONE SHALL BE UNDERLAID WITH GEOTEXTILE FABRIC TO PROVIDE SEPARATION FROM THE BERM SOIL. THE OUTSIDE FACE OF THE BERM SHALL BE PROTECTED WITH A LAYER OF THE AASHTO #1 STONE TO THE TOE OF BERM.
15. INSTALL LEVEL SPREADER AT THE OUTLET OF THE OVERFLOW RELIEF PER THE DETAIL.
16. DO NOTE REMOVE INLET PROTECTION OR OTHER EROSION AND SEDIMENT CONTROL MEASURES UNTIL THE SITE IS FULLY STABILIZED.
17. ANY SEDIMENT THAT ENTERS INLETS DURING CONSTRUCTION IS TO BE REMOVED WITHIN 24 HOURS.

LONG TERM INSPECTIONS AND MAINTENANCE

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.

THE AGGREGATE VALVE SITE PAD AND PERMANENT ACCESS ROAD SHALL BE INSPECTED PERIODICALLY. AGGREGATE WILL BE APPLIED TO THE PERMANENT PAD AND ACCESS ROAD AS NEEDED TO MAINTAIN AN ADEQUATE THICKNESS.

THE INFILTRATION TRENCH SHALL BE INSPECTED AT LEAST TWO TIMES PER YEAR TO ENSURE THEY ARE INFILTRATING PROPERLY AND NOT CLOGGED WITH SEDIMENT. VEGETATION OVER THE BERM SHALL BE MAINTAINED AS NECESSARY, WHICH MAY REQUIRE ANNUAL MULCHING AND ROUTINELY REMOVE ACCUMULATED DEBRIS, TRASH AND INVASIVE PLANTS AS NEEDED. INSPECT FOR SIGNS OF FLOW CHANNELIZATION AND RESTORE LEVEL GRADIENT IMMEDIATELY AFTER ANY DEFICIENCIES ARE OBSERVED. RIPRAP APRON AT DIVERSION BERM OUTLET SHALL BE INSPECTED PER THE SCHEDULE IN THE BMP MAINTENANCE SCHEDULE AND CLEANED OF DEBRIS, AS NECESSARY. DISPLACED RIPRAP SHALL BE REPLACED IMMEDIATELY UPON DISCOVERY.

INFILTRATION TRENCH INLETS SHOULD BE INSPECTED AND CLEANED AT LEAST THREE TIMES PER YEAR. THE PEA GRAVEL COVER ALONG THE SURFACE OF THE INFILTRATION TRENCH SHOULD BE MAINTAINED IN GOOD CONDITION, AND ADDITIONAL PEA GRAVEL SHALL BE PLACED IN ANY BARE SPOTS AS SOON AS POSSIBLE. VEHICLES SHOULD NOT BE PARKED OR DRIVEN ON AN INFILTRATION TRENCH. IF THE INFILTRATION TRENCH IS FOUND TO NOT BE DEWATERING WITHIN 72 HOURS, CORRECTIVE ACTIONS SHALL BE TAKEN TO ASSURE THE BMP MEETS DEWATERING REQUIREMENTS.

CHECK OBSERVATION WELLS 3 DAYS AFTER A STORM EVENT IN EXCESS OF 0.50–INCH IN DEPTH. STANDING WATER OBSERVED IN THE WELL AFTER 3 DAYS IS A CLEAR INDICATION OF CLOGGING.

CULVERTS SHALL BE INSPECTED PER THE SCHEDULE IN THE BMP MAINTENANCE SCHEDULE. DAMAGED OR NON–FUNCTIONING CULVERTS SHALL BE REPAIRED BY THE END OF THE WORKDAY. ACCUMULATED SEDIMENT SHALL BE REMOVED WITHIN 24 HOURS OF INSPECTION.

CHANNELS SHALL BE INSPECTED PER THE SCHEDULE IN THE BMP MAINTENANCE SCHEDULE. IF THE LINING OF THE CHANNEL BECOMES DAMAGED OR DISLODGED, THE CONTRACTOR SHALL REPAIR ANY EROSION PRESENT IN THE CHANNEL AND REPLACE THE LINING IMMEDIATELY. ANY SEDIMENT PRESENT IN THE CHANNEL SHALL BE REMOVED WITHIN 24 HOURS OF INSPECTION.

ROCK CHECK DAMS IN CHANNELS SHALL BE INSPECTED PER THE SCHEDULE IN THE BMP MAINTENANCE SCHEDULE. ANY SEDIMENT GATHERED BEHIND THE CHECK DAM SHALL BE REMOVED WITHIN 24 HOURS OF INSPECTION.

<div><div><div>RL CRAIG MURPHY, P.E.</div><div><div>COMMONWEALTH OF VIRGINIA</div><div><div>Richard C. Murphy</div><div>RICHARD C. MURPHY</div><div>Lic. No. 041898</div><div>09/05/25</div></div></div><div>PROFESSIONAL ENGINEER</div></div></div>	REVISIONS						TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC SOUTHEAST SUPPLY ENHANCEMENT PROJECT EDEN-MLV-03 STORMWATER MANAGEMENT PLAN				
	NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK	APP	NARRATIVE			
								PITTSYLVANIA COUNTY, VIRGINIA			
	DRAWN BY: JAB		DATE: 5-30-25		ISSUED FOR BID:		SCALE: AS NOTED				
	CHECKED BY: JML		DATE: 5-30-25		ISSUED FOR CONSTRUCTION:		REVISION:				
APPROVED BY: RCM		DATE: 5-30-25		DRAWING NUMBER: C1009554		RID: 500		SHEET 8 OF 8			