SOIL EROSION AND SEDIMENT CONTROL PLAN
NORTHEAST SUPPLY ENHANCEMENT PROJECT
COMPRESSOR STATION NO. 206
TRAP ROCK ACCESS ROAD
FRANKLIN TOWNSHIP, SOMERSET COUNTY, NEW JERSEY

OWNER / APPLICANT

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.
(TRANSCO)
P.O. BOX 1396
2800 POST OAK BLVD.
HOUSTON, TX 77056

CONTACT: KAREN OLSON
PERMIT AGENT
(713) 215-4232

PLAN PREPARER

AECOM
625 WEST RIDGE PIKE, SUITE E-100
CONSHOHOCKEN, PA 19428

CONTACT: PETER HAAS, P.E.
PROJECT ENGINEER
(610) 832-8832

CERTIFYING ENGINEER: KEVIN MCKEON, P.E.

PROJECT DESCRIPTION

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC (TRANSCO) IS PROPOSING TO CONSTRUCT ITS COMPRESSOR STATION (CS 206) IN FRANKLIN TOWNSHIP, SOMERSET COUNTY, NEW JERSEY. THE PROJECT WILL INVOLVE THE CONSTRUCTION OF SMALL BUILDINGS, GRAVEL ACCESS ROAD AND PARKING AREAS, EQUIPMENT PADS, AND THE INSTALLATION OF TWO GAS PIPELINES (A SUCTION LINE AND A GAS DISCHARGE LINE) TO CONNECT THE PROPOSED COMPRESSOR STATION TO THE EXISTING NATURAL GAS TRANSMISSION LINE.

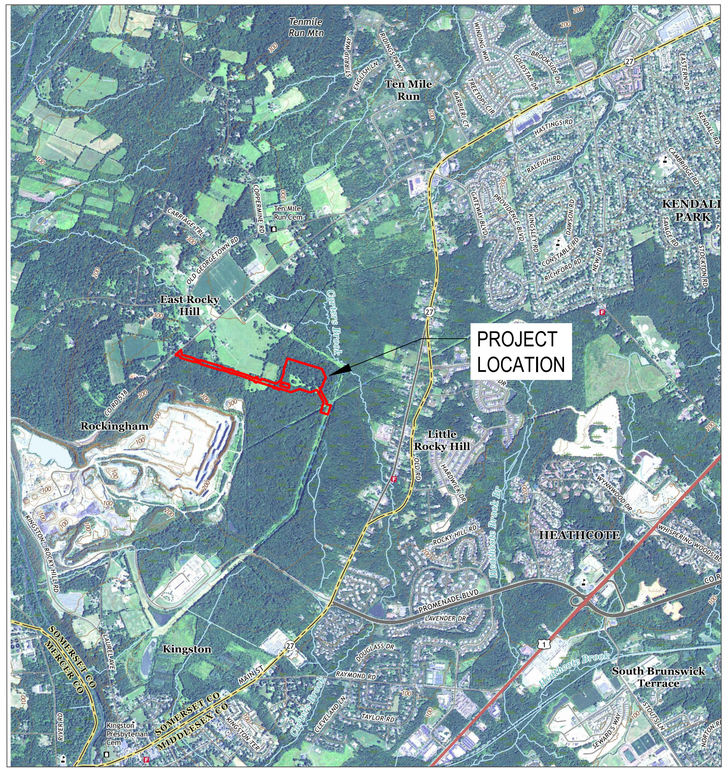
THESE DRAWINGS SHOW THE SITE GRADING AND TEMPORARY EROSION & SEDIMENT CONTROL MEASURES PLANNED IN CONJUNCTION WITH CS206, IN ACCORDANCE WITH N.J.A.C 7:8 (STORMWATER MANAGEMENT) SUBCHAPTER 5.
THIS EXPANSION PROJECT IS REGULATED BY THE U.S. DEPARTMENT OF ENERGY, FEDERAL ENERGY REGULATORY COMMISSION (FERC), IN ADDITION TO STATE AND LOCAL REQUIREMENTS, THIS EROSION AND SEDIMENT CONTROL PLAN INCLUDES MITIGATION MEASURES FOR PIPELINE CONSTRUCTION SPECIFIED BY FERC IN ITS PLAN AND PROCEDURES DOCUMENTS, UPLAND EROSION CONTROL REVEGETATION AND MAINTENANCE PLAN, MAY 2013 AND WETLAND AND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES, MAY 2013.

ANTICIPATED CONSTRUCTION & RESTORATION SCHEDULE

	START	END
CONSTRUCTION	SPRING 2020	SPRING 2021
RESTORATION	SPRING 2021	FALL 2021

SHEET INDEX

BMP INDEX

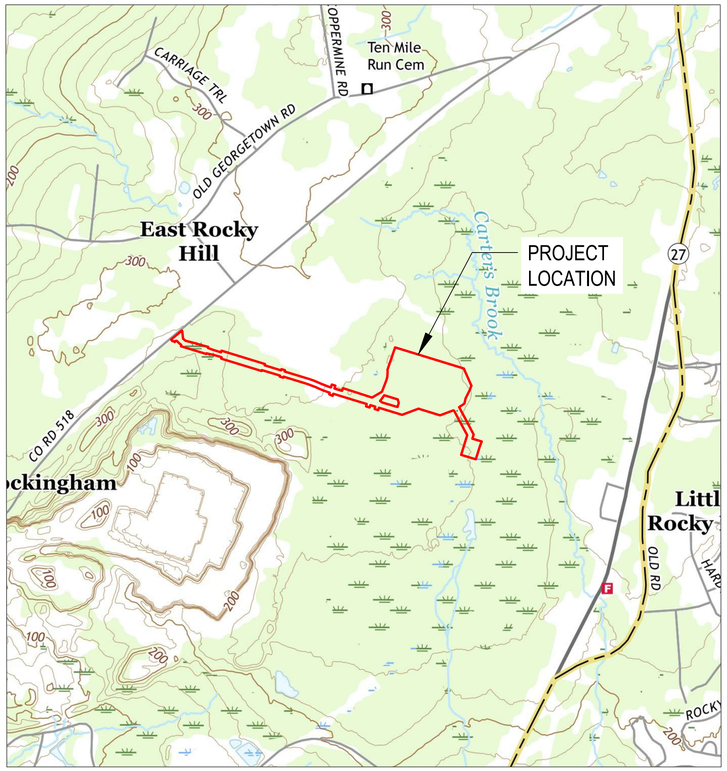


USGS AERIAL MAP

SCALE: 1 INCH=2000 FEET

0 2000 4000

MAP SOURCE
MONMOUTH JUNCTION, NJ QUADRANGLE
U.S. GEOLOGICAL SURVEY, 2016



USGS TOPOGRAPHIC MAP

SCALE: 1 INCH=1000 FEET

0 1000 2000

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MONMOUTH JUNCTION, NJ QUADRANGLE
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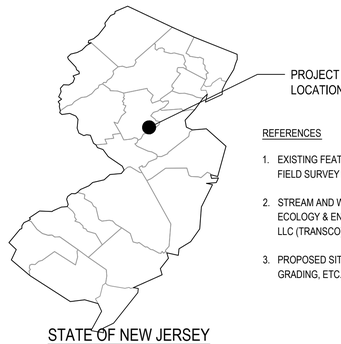

STATE OF NEW JERSEY

REFERENCES

1. EXISTING FEATURE INFORMATION (TOPOGRAPHY, PROPERTY LINES, UTILITIES, ETC.) BASED ON FIELD SURVEY PROVIDED BY TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC (TRANSCO)
2. STREAM AND WETLAND INFORMATION SHOWN BASED ON FIELD DELINEATION PERFORMED BY ECOLOGY & ENVIRONMENT AND PROVIDED BY TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC (TRANSCO).
3. PROPOSED SITE LAYOUT INFORMATION (ROADWAY, COMPRESSOR STATION FACILITIES, GRADING, ETC.) PROVIDED BY HUNT GUILLOT & ASSOCIATES (HGA).

SEQUENCE OF CONSTRUCTION

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED SE&SC 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 SEVEN (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 SE&SC 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 PRE-CONSTRUCTION MEETING.
3. MAKE NOTIFICATIONS ACCORDING TO PERMIT REQUIREMENTS.
4. HOLD PRE-CONSTRUCTION MEETING WITH ENVIRONMENTAL INSPECTOR.
5. INSTALL STABILIZED CONSTRUCTION ENTRANCES AND OTHER TEMPORARY PERIMETER EROSION CONTROL MEASURES (I.E. SEDIMENT BARRIER) AS INDICATED ON THE SE&SC PLANS AND DETAILS PRIOR TO EARTH DISTURBING ACTIVITIES.
6. CONSTRUCT THE SEDIMENT BASIN, INCLUDING OUTLET STRUCTURE, OUTLET PROTECTION AND EMERGENCY SPILLWAY AS INDICATED ON THE SE&SC PLANS AND DETAILS. CARE SHOULD BE TAKEN TO AVOID COMPACTION OF THE BASIN BOTTOM. REFER TO THE 'BASIN COMPACTION NOTES'. DO NOT INSTALL THE SAND MEDIA IN THE BASIN BOTTOM AT THIS TIME.
7. REMOVE TOPSOIL FROM VEGETATED AREAS TO BE DISTURBED DURING EXCAVATION AND STOCKPILE IN STOCKPILE AREA.
8. COMPLETE WORK ACTIVITIES ASSOCIATED WITH CONSTRUCTION OF COMPRESSOR STATION, ACCESS ROAD, LOOP ROAD, VALVES AND PIPING, VEGETATED SWALES ETC.
9. RETURN TOPSOIL TO DESIGNATED AREAS.
10. COMPLETE FINAL STABILIZATION INCLUDING SOIL TREATMENT, SEEDBED PREPARATION, SEED APPLICATION AND MULCHING.
11. AFTER FINAL STABILIZATION IS COMPLETED BY REVEGETATION AND OTHER PERMANENT STABILIZATION MEASURES, AS APPLICABLE, CONSTRUCT DETENTION BASINS #1 AND #2, CLEAN OUT THE SEDIMENT BASIN AND CONVERT TO AN INFILTRATION BASIN BY INSTALLING SAND MEDIA IN THE BASIN BOTTOM.
12. REMOVE ALL TEMPORARY SOIL EROSION AND SEDIMENT CONTROLS AND CLEAN UP PROJECT SITE.
13. SUBMIT A COMPLETED NOTICE OF TERMINATION TO THE CONSERVATION DISTRICT.

MAINTENANCE

ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAINFALL. THE SEDIMENT BARRIER SHALL BE CHECKED REGULARLY FOR UNDERMINING, AND DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT DEPOSITION IS HALF WAY TO THE TOP OF THE BARRIER.
THE SEEDED AREAS SHALL BE CHECKED TO ENSURE THAT THE DEVELOPMENT OF A GOOD VEGETATIVE STAND AND GROWTH CONTINUES. THE AREAS SHALL BE FERTILIZED AND RESEEDED AS NEEDED.

DISTURBED AREA

AREA DESCRIPTION	ACREAGE
COMPRESSOR STATION 206	25.0 ACRES

KEVIN McKEON, P.E.

NEW JERSEY
PROFESSIONAL ENGINEER NO GE32586

AECOM
625 WEST RIDGE PIKE, SUITE E-100
CONSHOHOCKEN, PA 19428
(610) 832-3500

REVISIONS

NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
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TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.
SOIL EROSION & SEDIMENT CONTROL PLAN
NORTHEAST SUPLPLY ENHANCEMENT PROJECT
COMPRESSOR STATION NO. 206 - TRAP ROCK ACCESS ROAD
COVER SHEET
FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

Williams GAS PIPELINE

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APPROVED BY: KDM	DATE: 06/15/17	DRAWING NUMBER:	SHEET 1 OF 13
WO: 1185732			

Drawn By & Date/Time: haasp Jan 10, 2020 - 12:56pm
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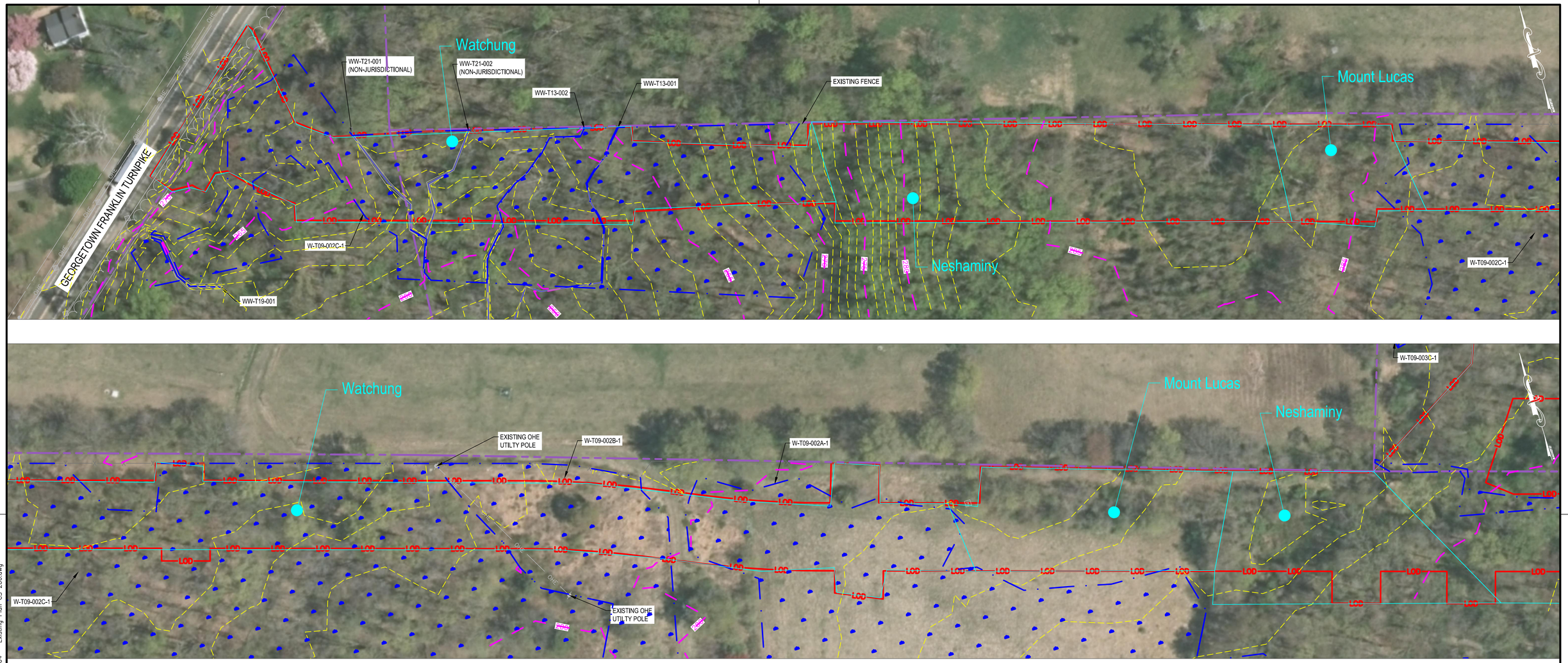

LEGEND

EXISTING FEATURES

- 265 — EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- STREAM CENTERLINE
- WETLAND
- PARCEL LINE
- EXISTING ACCESS ROADS
- EXISTING FENCE
- OHE — EXISTING OVERHEAD POWER LINE
- EXISTING PIPELINE
- EXISTING RIGHT OF WAY
- SOIL TYPE BOUNDARY
- WasA — SOIL TYPE

PROPOSED FEATURES

- LOD — LIMIT OF DISTURBANCE

NOTES:

1. THIS BASE MAP WAS PREPARED ON AERIAL TOPOGRAPHY AND ACTUAL FIELD SURVEY PROVIDED BY WILLIAMS AND ARE REFERENCED TO THE NEW JERSEY STATE PLANE DATUM.
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3. PROPOSED COMPRESSOR STATION SITE WILL BE STABILIZED WITH CLEAN CRUSHED ROCK (GRAVEL).

SOIL LEGEND:

MuA	MOUNT LUCAS SILT LOAMS
NehB	NESHAMINY SILT LOAMS
WasA	WATCHUNG SILT LOAM

50' 25' 0' 50'
SCALE: 1"= 50'

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TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.
SOIL EROSION & SEDIMENT CONTROL PLAN
NORTHEAST SUPLPLY ENHANCEMENT PROJECT
COMPRESSOR STATION NO. 206 - TRAP ROCK ACCESS ROAD
EXISTING CONDITIONS AND SOILS MAP (1 OF 3)
FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

Williams GAS PIPELINE

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LEGEND

EXISTING FEATURES

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- STREAM CENTERLINE
- WETLAND
- PARCEL LINE
- EXISTING ACCESS ROADS
- EXISTING FENCE
- OHE — EXISTING OVERHEAD POWER LINE
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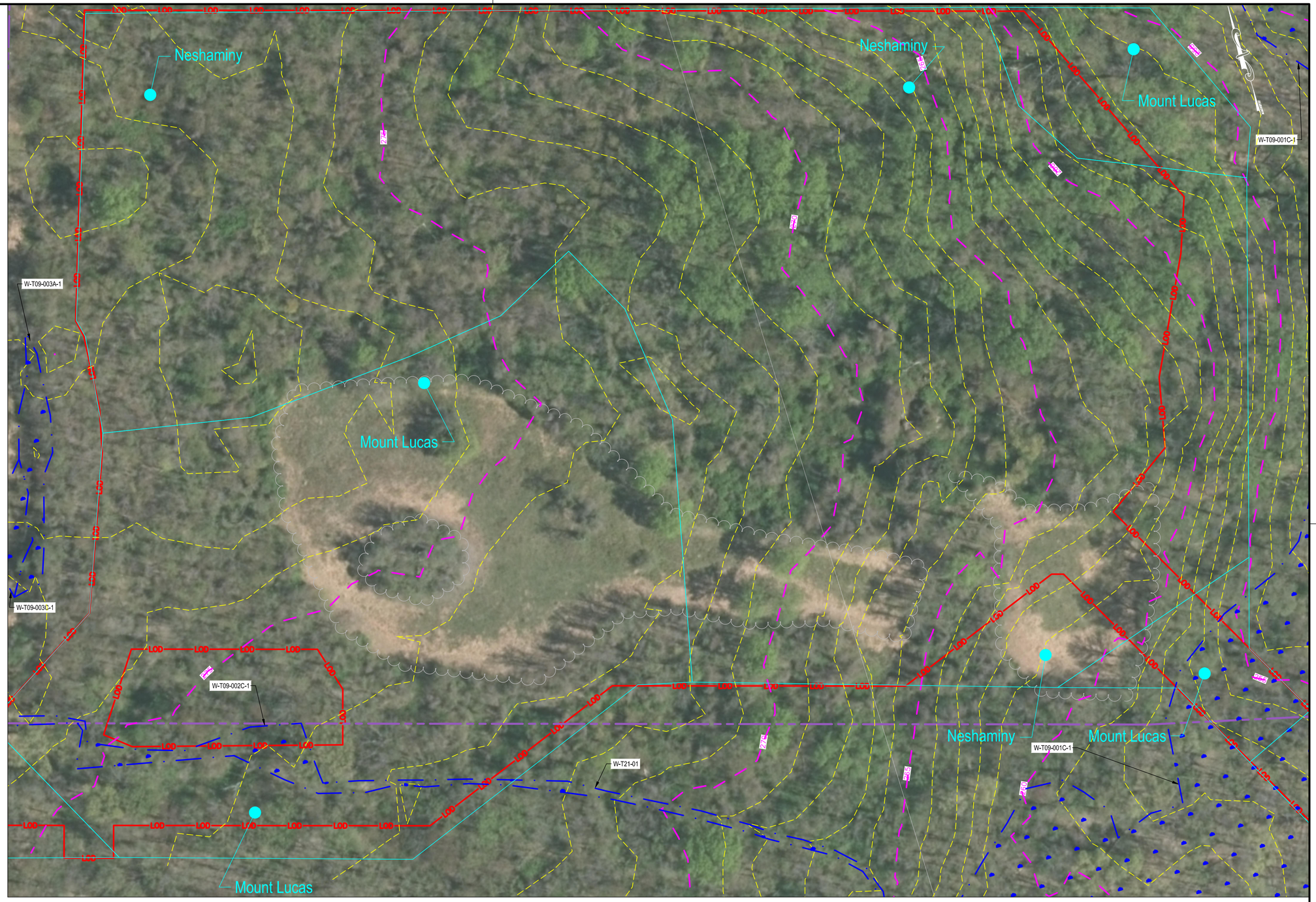
- EXISTING RIGHT OF WAY
- SOIL TYPE BOUNDARY
- WasA — SOIL TYPE

PROPOSED FEATURES

- LOD — LIMIT OF DISTURBANCE



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SOIL EROSION & SEDIMENT CONTROL PLAN
NORTHEAST SUPLPLY ENHANCEMENT PROJECT
COMPRESSOR STATION NO. 206 - TRAP ROCK ACCESS ROAD
EXISTING CONDITIONS AND SOILS MAP (2 OF 3)
FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

Williams. GAS PIPELINE

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W.O. 1185732			

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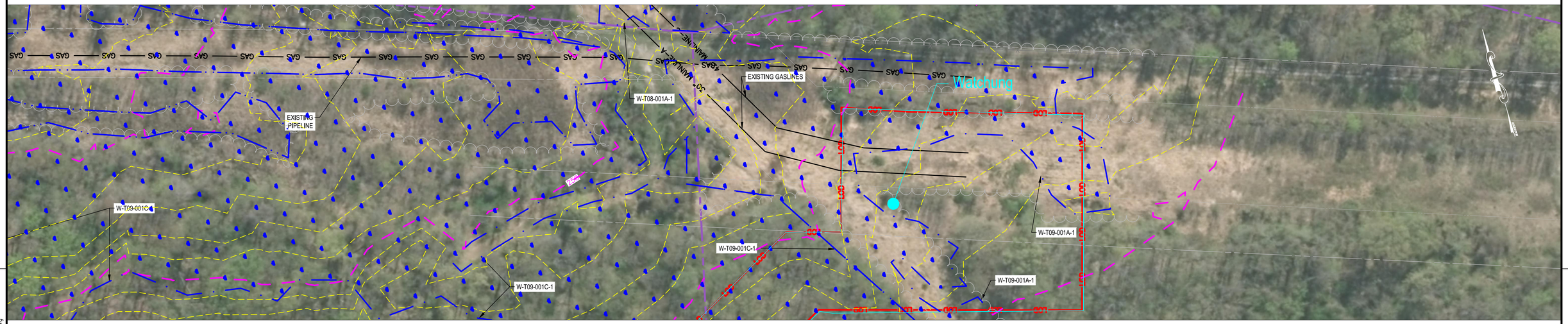

LEGEND

EXISTING FEATURES

- 265 — EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- STREAM CENTERLINE
- WETLAND
- PARCEL LINE
- EXISTING ACCESS ROADS
- X — EXISTING FENCE
- OHE — EXISTING OVERHEAD POWER LINE
- EXISTING PIPELINE
- EXISTING RIGHT OF WAY
- SOIL TYPE BOUNDARY
- WasA — SOIL TYPE

PROPOSED FEATURES

- LOD — LIMIT OF DISTURBANCE

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FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

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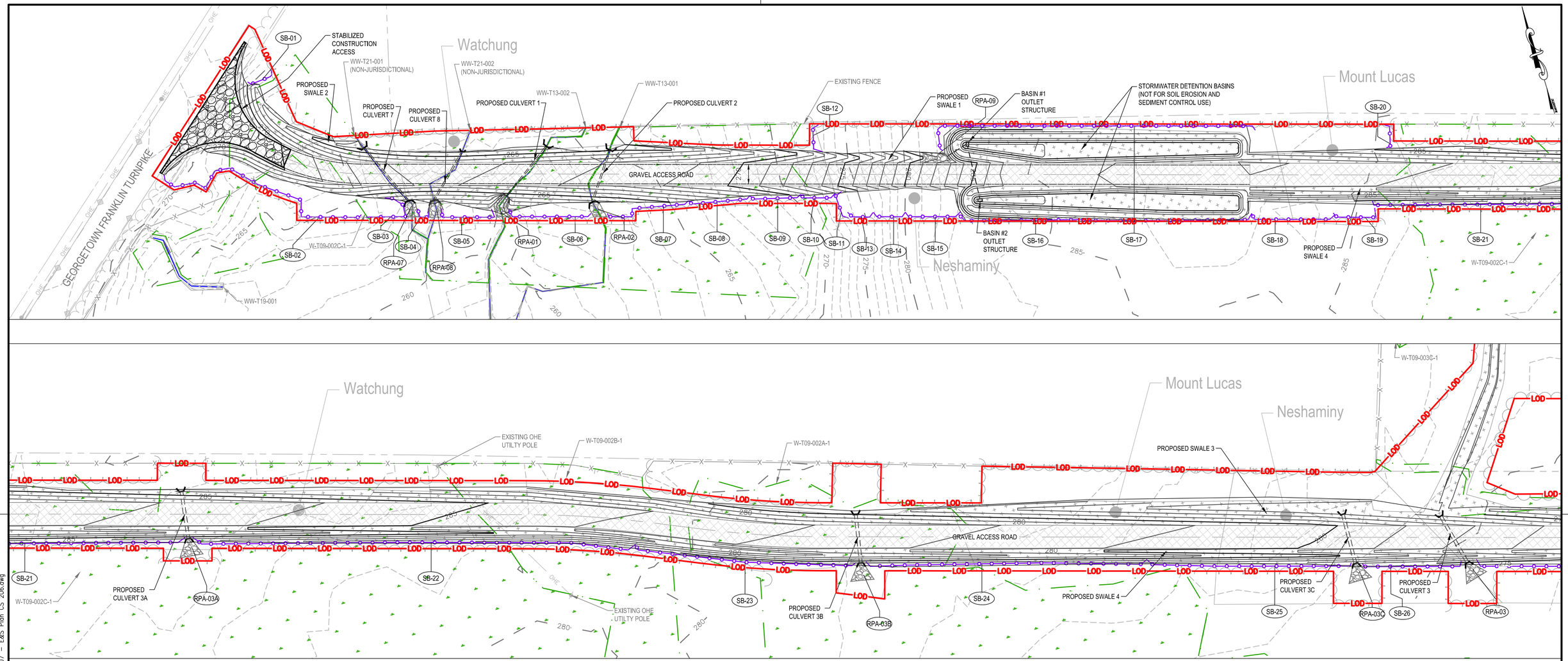

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- WETLAND
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- EXISTING RIGHT OF WAY
- SOIL TYPE BOUNDARY
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PROPOSED FEATURES

- LOD — LIMIT OF DISTURBANCE
- 265 — PROPOSED CONTOUR MAJOR
- PROPOSED CONTOUR MINOR
- PROPOSED PIPELINE
- CULVERT
- CONDUIT OUTLET PROTECTION
- X — PROPOSED FENCE
- PROPOSED TREE LINE
- EROSION CONTROL BLANKET
- PROPOSED GRAVEL
- PROPOSED CONCRETE
- SEDIMENT BARRIER (SILT FENCE)
- SSF — SSF — SEDIMENT BARRIER (SUPER SILT FENCE)
- SAF — SAF — TEMPORARY SAFETY FENCE
- STABILIZED CONSTRUCTION ACCESS
- TEMPORARY STOCKPILE
- RIPRAP SLOPE PROTECTION

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NORTHEAST SUPLPLY ENHANCEMENT PROJECT
COMPRESSOR STATION NO. 206 - TRAP ROCK ACCESS ROAD
EROSION CONTROL PLAN (1 OF 3)
FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

Williams. GAS PIPELINE

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LEGEND

EXISTING FEATURES

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- STABILIZED CONSTRUCTION ACCESS
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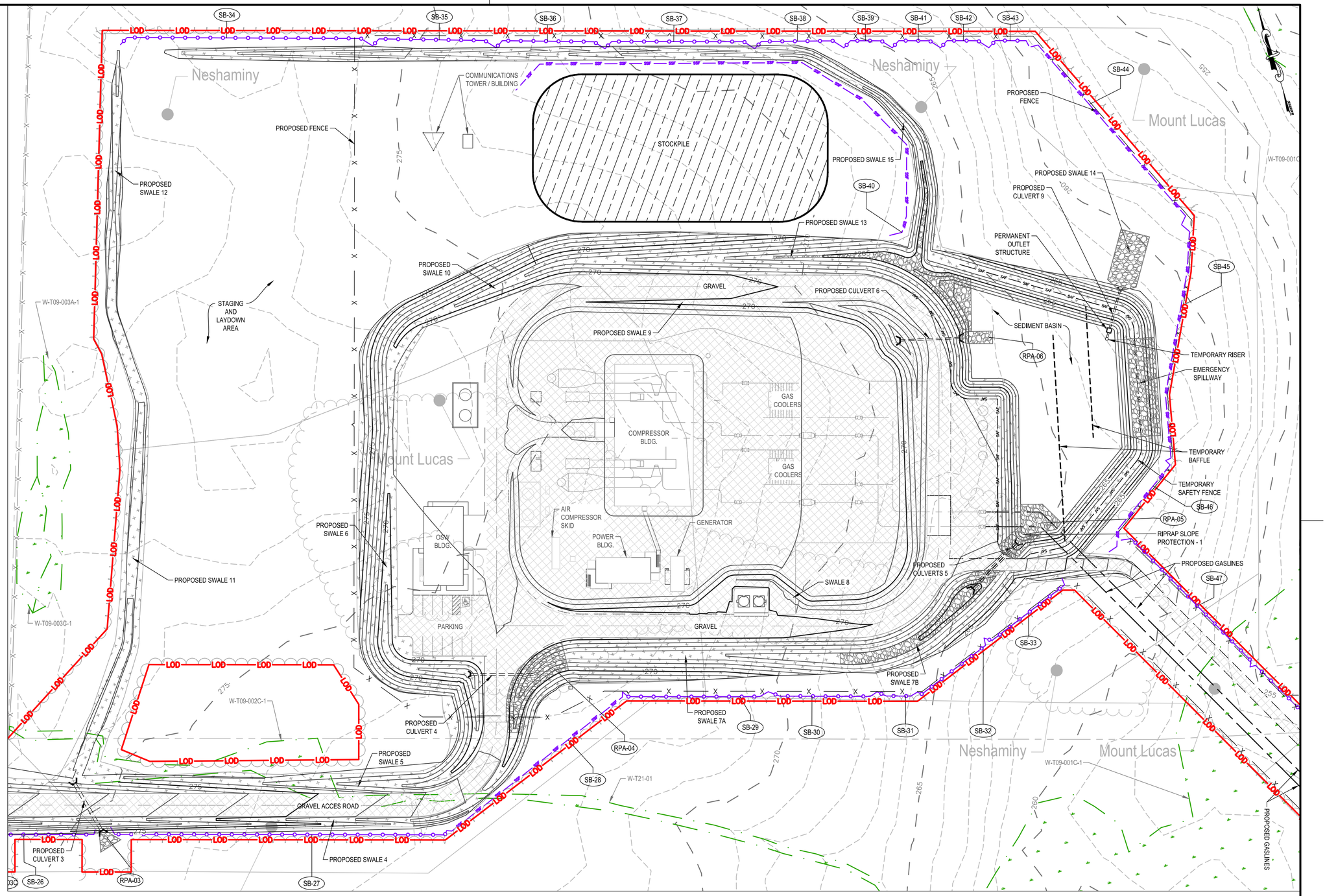
- RIPRAP SLOPE PROTECTION



NOTES:

1. THIS BASE MAP WAS PREPARED ON AERIAL TOPOGRAPHY AND ACTUAL FIELD SURVEY PROVIDED BY WILLIAMS AND ARE REFERENCED TO THE NEW JERSEY STATE PLANE DATUM.
2. PROPERTY LINE INFORMATION PROVIDED BY WILLIAMS.
3. PROPOSED COMPRESSOR STATION SITE WILL BE STABILIZED WITH CLEAN CRUSHED ROCK (GRAVEL).

SOIL LEGEND:

MuA	MOUNT LUCAS SILT LOAMS
NehB	NESHAMINY SILT LOAMS
WasA	WATCHUNG SILT LOAM

50' 25' 0' 50'
SCALE: 1"= 50'

AECOM
625 WEST RIDGE PIKE, SUITE E-100
CONSHOHOCKEN, PA 19428
(610) 832-3500

KEVIN McKEON, P.E.
NEW JERSEY
PROFESSIONAL ENGINEER NO GE32586

REVISIONS

NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
0	06/15/17	GMS	SUBMITTED TO SOMERSET-UNION SCD	1185732	PPH	KDM
1	08/11/17	GMS	REVISED NJDEP AND SCD SUBMISSION	1185732	PPH	KDM
2	01/05/18	GMS	REVISED WORKSPACE	1185732	PPH	KDM
3	02/09/18	GMS	REVISED SUBMISSION TO SOMERSET UNION SCD	1185732	PPH	KDM
4	06/05/18	PPH	SUBMITTED TO NJDEP	1185732	TPF	KDM
5	06/24/19	PPH	SUBMITTED TO NJDEP	1185732	TPF	KDM
6	01/15/20	PPH	NJDEP SUBMISSION	1185732	GMS	KDM

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.
SOIL EROSION & SEDIMENT CONTROL PLAN
NORTHEAST SUPLPLY ENHANCEMENT PROJECT
COMPRESSOR STATION NO. 206 - TRAP ROCK ACCESS ROAD
EROSION CONTROL PLAN (2 OF 3)
FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

Williams GAS PIPELINE

DRAWN BY: GMS	DATE: 06/15/17	ISSUED FOR BID: TBD	SCALE: 1"=50'
CHECKED BY: PPH	DATE: 06/15/17	ISSUED FOR CONSTRUCTION: TBD	REVISION: 6
APPROVED BY: KDM	DATE: 06/15/17	DRAWING NUMBER:	SHEET 6 OF 13
WO: 1185732			

Drawn By & Date/Time: haasp Jan 10, 2020 - 12:56pm
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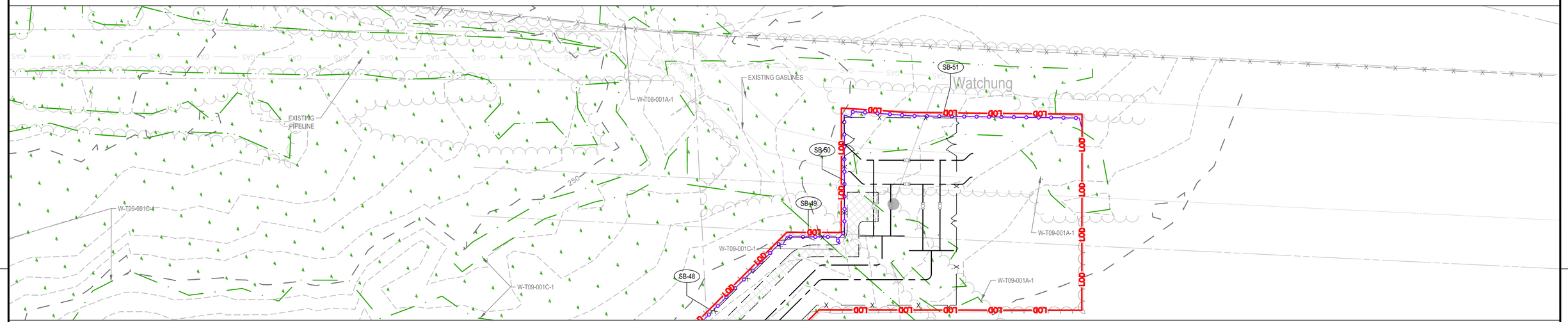

LEGEND

EXISTING FEATURES

- 265 — EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- STREAM CENTERLINE
- WETLAND
- EXISTING TREE LINE
- PARCEL LINE
- EXISTING ACCESS ROADS
- X — EXISTING FENCE
- OHE — EXISTING OVERHEAD POWER LINE
- EXISTING PIPELINE
- EXISTING RIGHT OF WAY
- SOIL TYPE BOUNDARY
- WasA — SOIL TYPE

PROPOSED FEATURES

- LOD — LIMIT OF DISTURBANCE
- 265 — PROPOSED CONTOUR MAJOR
- PROPOSED CONTOUR MINOR
- PROPOSED PIPELINE
- CULVERT
- CONDUIT OUTLET PROTECTION
- X — PROPOSED FENCE
- PROPOSED TREE LINE
- EROSION CONTROL BLANKET
- PROPOSED GRAVEL
- PROPOSED CONCRETE
- SEDIMENT BARRIER (SILT FENCE)
- SSF — SEDIMENT BARRIER (SUPER SILT FENCE)
- SAF — TEMPORARY SAFETY FENCE
- STABILIZED CONSTRUCTION ACCESS
- TEMPORARY STOCKPILE
- RIPRAP SLOPE PROTECTION

NOTES:

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SOIL EROSION & SEDIMENT CONTROL PLAN
NORTHEAST SUPLPLY ENHANCEMENT PROJECT
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EROSION CONTROL PLAN (3 OF 3)
FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

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Drawn By & Date/Time: hoasp Jan 10, 2020 - 12:56pm
Drawing Location & Name: S:\Projects\ENV\60537393_NESE_CS206\900-CAD-GIS\910-CAD\30-E&S SHEETS\05-07 - E&S Plan CS 206.dwg

1. SOIL EROSION AND SEDIMENT CONTROL SPECIFICATIONS

1.1 SCOPE OF WORK

CONTRACTOR SHALL FURNISH ALL SUPERVISION, LABOR, MATERIALS, AND EQUIPMENT TO CONTROL EROSION OF THE SOIL DISTURBED BY CONSTRUCTION ACTIVITIES AS INDICATED ON THE COMPANY'S DRAWINGS AND AS SPECIFIED HEREIN. IF A VARIANCE FROM THESE DOCUMENTS IS DESIRED, CONTRACTOR SHALL SUBMIT PROPOSED SUBSTITUTIONS TO COMPANY'S AUTHORIZED REPRESENTATIVE FOR REVIEW AND APPROVAL. WORK INCLUDES, BUT IS NOT LIMITED TO, THE INSTALLATION, MAINTENANCE, AND REMOVAL OF TEMPORARY SOIL EROSION AND SEDIMENT CONTROL MEASURES, INSTALLATION OF PERMANENT SOIL EROSION AND SEDIMENT CONTROL MEASURES, AND PLOWING OR SCARIFYING TO ATTAIN THE INDICATED SOIL CONDITIONS.

1.2 GENERAL

ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL FOR THE STATE OF NEW JERSEY.

1.3 EXECUTION

A. GENERAL:

WORK SHALL PROCEED EXPEDITIOUSLY, MINIMIZING THE DURATION AND AREAL EXTENT OF EXPOSURE TO EROSIVE FORCES. WORK SHALL BE SCHEDULED TO FOLLOW THE SEQUENCE DESCRIBED HEREIN.

B. PLACEMENT OF TEMPORARY EROSION CONTROL MEASURES:

TEMPORARY CONTROL MEASURES TO CONTROL SOIL EROSION AND SEDIMENTATION, SUCH AS GRAVELED CONSTRUCTION ENTRANCES, SEDIMENT BARRIERS AND DIVERSION TERRACES SHALL BE INSTALLED PRIOR TO ALL EARTH MOVING ACTIVITIES.

C. CLEARING:
THE MINIMUM AREA NECESSARY FOR CONSTRUCTION SHALL BE CLEARED OF TREES, BRUSH, AND OTHER VEGETATION, IF APPLICABLE. ADJACENT VEGETATION, AND WATER RESOURCES, SHALL BE PROTECTED FROM DAMAGE.

ALL DISTURBED AREAS SHALL DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED. IN THE STATION YARD AREA THAT WILL BE DISTURBED BY CONSTRUCTION AND IS COVERED WITH CRUSHED STONE (CHAT), CONTRACTOR SHALL REMOVE THE EXISTING STONE COVER PRIOR TO THE START OF ALL WORK IN THAT AREA. THIS EXISTING STONE SHALL BE SEGREGATED, AS IS PRACTICAL, AND STOCKPILED TO BE RETURNED FOR EROSION AND SEDIMENT CONTROL AFTER CONSTRUCTION IS COMPLETED.

D. ROUGH GRADING:

ROUGH GRADING SHALL BE AS SHOWN ON THE SOIL EROSION AND SEDIMENT CONTROL PLAN. ROUGH GRADING SHALL BE PERFORMED TO ACHIEVE THE PROPER LEVELS, ELEVATIONS AND SLOPES REQUIRED TO ACCOMPLISH THE WORK AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN.

FOR DEEP SOILS THAT WERE PREVIOUSLY IN FLOOD PLAINS AND STREAM TERRACES, 12 INCHES OF TOPSOIL SHALL BE SEGREGATED. IN ALL OTHER AREAS A MINIMUM OF 8 INCHES OF TOPSOIL SHALL BE SEGREGATED.

DURING THE CONSTRUCTION OF THE PROJECT, TOPSOIL STOCKPILES, IF APPLICABLE, SHALL BE STABILIZED AND PROTECTED WITH SEDIMENT CONTROL MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE. STONES GREATER THAN 4 INCHES IN ANY DIMENSION SHALL BE REMOVED FROM THE SEGREGATED TOPSOIL.

E. EXCAVATION:

TRENCH EXCAVATION, IF REQUIRED, SHALL NOT BE LIMITED TO LENGTH OF PIPE PLACED AND BACKFILLED THE SAME DAY, AS LONG AS SOIL EROSION CONTROL MEASURES ARE INSTALLED AS INDICATED ON COMPANY'S DRAWINGS AND AS SPECIFIED HEREIN. CONTRACTOR SHALL OBTAIN APPROVAL FROM COMPANY'S AUTHORIZED REPRESENTATIVE PRIOR TO IMPORTING SOILS FOR BACKFILL OR COVER.

F. FINAL GRADING AND CLEAN-UP:

FINAL CLEAN-UP AND PERMANENT EROSION CONTROL MEASURES SHALL BE COMPLETED WITHIN 10 DAYS AFTER CONSTRUCTION IS COMPLETED, UNLESS COMPANY'S AUTHORIZED REPRESENTATIVE DETERMINES AN EXTENSION OF TIME IS NECESSARY DUE TO WEATHER AND SOIL CONDITIONS.

AREAS COMPACTED AFTER TOPSOIL REPLACEMENT SHALL BE LOOSENED BY ADDITIONAL TILLING.

CONTRACTOR SHALL REMOVE DEBRIS AND WOODY MATERIAL FROM THE CONSTRUCTION SITE AND SHALL FINAL GRADE TO LEAVE THE SOIL IN THE PROPER CONDITION FOR REVEGETATION AND OTHER PERMANENT STABILIZATION MEASURES, AS APPLICABLE.

CONTRACTOR SHALL RESTORE THE REMOVED STONE IN THE CONSTRUCTION AREA TO THE LEVEL THAT PROVIDES FOR PROPER DRAINAGE, AND SHALL REPLENISH THE STONE LOST BY RELOCATING TO, AND RETURNING FROM, THE STOCKPILE.

CONTRACTOR SHALL CONSTRUCT PERMANENT DIVERSION TERRACES TO DIVERT SURFACE RUNOFF TO A STABILIZED OUTLET AS INDICATED IN COMPANY DRAWINGS, IF APPLICABLE.

IF DISTURBED, TURF, ORNAMENTAL SHRUBS, AND OTHER LANDSCAPING SHALL BE RESTORED BY THE CONTRACTOR AS INDICATED ON THE COMPANY'S DRAWINGS.

CONTRACTOR SHALL RESTORE PUBLIC AND PRIVATE ROADWAY CROSSINGS AND ACCESS POINTS TO SAFE AND ACCEPTABLE CONDITIONS RELATIVE TO PRE-CONSTRUCTION STATUS.

G. STABILIZATION:

DIVERSION TECHNIQUES AND SEDIMENT BARRIERS SHALL BE INSTALLED WHERE SHOWN IN COMPANY DRAWINGS TO CONTROL SEDIMENT MOVEMENT PRIOR TO AND DURING ALL EARTH MOVING ACTIVITIES.

PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED AND NATURAL DRAINAGE PATTERNS RESTORED WHEN PERMANENT VEGETATION COVERS 70 PERCENT OF EACH SQUARE YARD OF DISTURBED AREA.

AREAS DISTURBED BY REMOVAL OF EROSION CONTROL MEASURES SHALL BE STABILIZED ACCORDING TO THE REVEGETATION SPECIFICATIONS.

H. MAINTENANCE:

DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF EROSION CONTROL MEASURES. AFTER CONSTRUCTION, MAINTENANCE OF EROSION CONTROL MEASURES WILL BE THE COMPANY'S RESPONSIBILITY. PERIODIC OBSERVATIONS WILL BE PERFORMED BY COMPANY MAINTENANCE PERSONNEL TO IDENTIFY AREAS OF EXCESSIVE EROSION, AND ALL REQUIRED CORRECTIVE ACTIONS WILL BE IMPLEMENTED IN ACCORDANCE WITH THIS PLAN.

2. REVEGETATION SPECIFICATIONS

2.1 SCOPE OF WORK
CONTRACTOR SHALL FURNISH ALL SUPERVISION, LABOR, MATERIALS, AND EQUIPMENT FOR DISKING, HARROWING, AND SCARIFYING THE TOPSOIL, ADDING LIME AND FERTILIZER, PLACING SEED, PLACING MULCH AND MULCH BINDERS, PLANTING SHRUBS, AND SPRIGGING INDIGENOUS PLANTS AS INDICATED ON COMPANY DRAWINGS AND AS SPECIFIED HEREIN.

2.2 GENERAL
VEGETATION SHALL BE USED AS A TEMPORARY AND PERMANENT EROSION CONTROL MEASURE.

A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE LOCAL SOIL CONSERVATION DISTRICT ADMINISTRATOR OR HIS DESIGNATED AGENT, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.

2. REVEGETATION SPECIFICATIONS

2.3 EXECUTION

A. TILLAGE:

CONTRACTOR SHALL THOROUGHLY LOOSEN THE SURFACE OF THE ENTIRE DISTURBED AREA TO A DEPTH OF AT LEAST 6 TO 12 INCHES BY HARROWING, OR BY OTHER APPROVED METHODS UNTIL THE TILLAGE IS SATISFACTORY. TILL OR SCARIFY AREAS WHEN THE SURFACE IS GLAZED OR CRUSTED.

B. SEEDING:

CONTRACTOR SHALL SEED THE PROJECT AREA UPLANDS DURING THE SPECIFIED TIMEFRAME WITH THE FOLLOWING SEED MIX TO ESTABLISH A PERMANENT VEGETATIVE COVER:

TURF TYPE TALL FESCUE (BLEND OF 3 CULTIVARS): PLANTED AT A RATE OF 150 LBS/ACRE BETWEEN MARCH 1 AND NOVEMBER 15.

CONVENTIAL SEEDING IS PERFORMED BY APPLYING SEED UNIFORMILY BY HAND, CYCLONE SEEDER, DROP SEEDER, DRILL OR CULTIPACKER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDEd,ø OR CULTIPACKED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDBED PREPERATION TO A DEPTH OF ¼ TO ½ INCH BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE ¼ INCH DEEPER ON COARSE TEXTURED SOIL.

SEED AREAS ARE TO BE REVEGETATED WITHIN 6 WORKING DAYS OF FINAL GRADING.

PURCHASE SEED IN ACCORDANCE WITH THE PURE LIVE SEED (PLS) SPECIFICATIONS FOR SEED MIXES.

SEED SHALL BE USED WITHIN 12 MONTHS OF TESTING.

WHERE CRITICAL AREAS ARE LEFT EXPOSED BY CONSTRUCTION DELAYS OF MORE THAN THRITY (30) DAYS OR WHERE UNFAVORABLE CONDITIONS PRECLUDE PERMANENT SEEDING, A TEMPORARY GROUND COVER OF QUICK GERMINATING GRASSES SHALL BE ESTABLISHED UTILIZING THE FOLLOWING SEED MIXTURE:

PERENNIAL RYEGRASS: PLANTED AT A RATE OF 40 LBS/ACRE BETWEEN MARCH 1 AND OCTOBER 1.

ALL SOIL DISTURBANCE OCCURRING OUTSIDE OF THE RECOMMENDED PERMANENT SEEDING SEASON, OR ANY BARE SOIL LEFT UNSTABILIZED BY VEGETATION, SHALL BE MULCHED. ALL SEEDING SHALL BE DONE WITHIN THE REOCMMENDED DATES. IF SEEDING CANNOT BE DONE WITHIN THE RECOMMENDED SEEDING DATES, TEMPORARY EROSION CONTROL SHALL BE USED AND SEEDING OF PERMANENT COVER SHALL BE DONE AT THE BEGINNING OF THE NEXT SEEDING SEASON.

C: SOIL SUPPLEMENTS:

PRIOR TO TILLAGE SOIL SUPPLEMENTS SHALL BE APPLIED UNIFORMLY TO THE AREAS SEEDED.

ON AREAS WITH TOPSIL, BLEND THE INITIAL SOIL SUPPLEMENTS INTO THE SOIL TO A DEPTH OF 4 INCHES BY RAKING, DISKING, HARROWING, OR BY ANOTHER APPROVED METHOD. THE BLENDING OF SUPPLEMENTS INTO THE SOIL MAY BE PERFORMED DURING THE TILLAGE OPERATIONS.

SUPPLEMENTS SHALL BE APPLIED AT THE FOLLOWING RATES:

GROUND LIMESTONE: 2 TONS/ACRE (90 LBS/1,000 SQUARE FEET)

FERTILIZER: 500 LBS/ACRE (11 LBS/1,000 SQUARE FEET) OF 10-20-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN

D. MULCHING

MULCHING IS REQUIRED ON ALL SEEDING.

MULCH SHALL BE UNROTTED SMALL GRAIN STRAW, HAY FREE OF SEEDS, OR SALT HAY APPLIED AT THE RATE OF 1.5 TO 2 TONS PER ACRE, EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER THE RATE OF APPLICATION IS 3 TONS PER ACRE.

ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. ANCHORING SHALL BE DONE BY ONE OF THE FOLLOWING METHODS ACCORDING TO THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY:

1. PEG AND TWINE
2. MULCH NETTINGS
3. CRIMPER
4. LIQUID MULCH-BINDERS

MULCH MUST BE DISTRIBUTED EVENLY WITH 85% OF THE SOIL SURFACE COVERED BY THE MULCH.

EROSION AND SEDIMENT CONTROL NOTES

3. APPLICABLE EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE LEFT IN PLACE UNTIL CONSTRUCTION IS COMPLETED AND/OR THE AREA IS STABILIZED.
4. THE CONTRACTOR SHALL PERFORM ALL WORK, FURNISH ALL MATERIALS AND INSTALL ALL MEASURES REQUIRED TO REASONABLY CONTROL SOIL EROSION RESULTING FROM CONSTRUCTION OPERATIONS AND PREVENT EXCESSIVE FLOW OF SEDIMENT FROM THE CONSTRUCTION SITE.
6. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO PROVIDE CONFIRMATION OF LIME, FERTILIZER AND SEED APPLICATION AND RATES OF APPLICATION AT THE REQUEST OF THE CAMDEN COUNTY SOIL CONSERVATION DISTRICT.
8. THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SUCH THAT ALL STORMWATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.
9. ALL SEDIMENTATION STRUCTURES WILL BE INSPECTED AND MAINTAINED ON A REGULAR BASIS AND AFTER EVERY STORM EVENT.
10. A CRUSHED STONE, TIRE CLEANING PAD WILL BE INSTALLED WHEREVER A CONSTRUCTION ACCESS EXISTS. THE STABILIZED PAD WILL BE INSTALLED ACCORDING TO THE STANDARD FOR STABILIZED CONSTRUCTION ACCESS.
14. ALL STORM DRAINAGE OUTLETS WILL BE STABILIZED, AS REQUIRED, BEFORE THE DISCHARGE POINTS BECOME OPERATIONAL.
18. OFFSITE SEDIMENT DISTURBANCE MAY REQUIRE ADDITIONAL CONTROL MEASURES TO BE DETERMINED BY THE EROSION CONTROL INSPECTOR.
19. A COPY OF THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN MUST BE MAINTAINED ON THE PROJECT SITE DURING CONSTRUCTION.
22. IMMEDIATELY AFTER THE COMPLETION OF STRIPPING AND STOCKPILING OF TOPSOIL, THE STOCKPILE MUST BE STABILIZED ACCORDING TO THE STANDARD FOR TEMPORARY VEGETATIVE COVER. STABILIZE TOPSOIL PILE WITH STRAW MULCH FOR PROTECTION IF THE SEASON DOES NOT PERMIT THE APPLICATION AND ESTABLISHMENT OF TEMPORARY SEEDING. ALL SOIL STOCKPILES ARE NOT TO BE LOCATED WITHIN FIFTY (50) FEET OF A FLOODPLAIN, SLOPE, ROADWAY OR DRAINAGE FACILITY AND THE BASE MUST BE PROTECTED WITH A SEDIMENT BARRIER.
23. METHODS FOR THE MANAGEMENT OF HIGH ACID PRODUCING SOILS SHALL BE IN ACCORDANCE WITH THE STANDARDS. HIGH ACID PRODUCING SOILS ARE THOSE FOUND TO CONTAIN IRON SULFIDES OR HAVE A pH OF 4 OR LESS.
25. TEMPORARY AND PERMANENT SEEDING MEASURES MUST BE APPLIED ACCORDING TO THE NEW JERSEY STANDARDS, AND MULCHED WITH SALT HAY OR EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE NEW JERSEY STANDARDS (I.E. PEG AND TWINE, MULCH NETTING OR LIQUID MULCH BINDER).
26. MAXIMUM SIDE SLOPES OF ALL EXPOSED SURFACES SHALL NOT BE CONSTRUCTED STEEPER THAN 3:1 UNLESS OTHERWISE APPROVED BY THE DISTRICT.
27. DUST IS TO BE CONTROLLED BY AN APPROVED METHOD ACCORDING TO THE NEW JERSEY STANDARDS AND MAY INCLUDE WATERING WITH A SOLUTION OF CALCIUM CHLORIDE AND WATER.
28. ADJOINING PROPERTIES SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS ON THE PROPOSED SITE.
29. USE STAGED CONSTRUCTION METHODS TO MINIMIZE EXPOSED SURFACES, WHERE APPLICABLE.
30. ALL VEGETATIVE MATERIAL SHALL BE SELECTED IN ACCORDANCE WITH AMERICAN STANDARDS FOR NURSERY STOCK OF THE AMERICAN ASSOCIATION OF THE NURSERYMEN AND IN ACCORDANCE WITH THE NEW JERSEY STANDARDS.
31. NATURAL VEGETATION AND SPECIES SHALL BE RETAINED WHERE SPECIFIED ON THE LANDSCAPE PLAN.
32. THE SOIL EROSION INSPECTOR MAY REQUIRE ADDITIONAL SOIL EROSION MEASURES TO BE INSTALLED, AS DIRECTED BY THE DISTRICT INSPECTOR.

F. VEGETATIVE STABILIZATION - GENERAL SEEDING

TABLE A - PERMANENT REVEGETATION

SPECIES	APPLICATION RATES (LBS./AC)	APPLICATION DATES
TURF TYPE TALL FESCUE (BLEND OF 3 CULTIVARS - EXCEPT FOR AREAS OF PROPOSED BRUSH SEEDING. SEE NOTE 3.)	200	MARCH 1 - AUGUST 14
FERTILIZER/SOIL SUPPLEMENT:		
AGRICULTURAL GRADE LIMESTONE	IN ACCORDANCE WITH SOIL TEST RESULTS	PRIOR TO SEEDING
FERTILIZER	500 (11 LBLS/1000 SQ. FT.) OF 10-10-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS SOIL TEST INDICATES OTHERWISE AND INCORPORATED INTO THE SURFACE 4 INCHES	PRIOR TO SEEDING

TABLE B - TEMPORARY REVEGETATION

SPECIES	APPLICATION RATES (LBS./AC)	APPLICATION DATES
PERENNIAL RYEGRASS	100	MARCH 1 - OCTOBER 1
WINTER CEREAL RYE	112	AUGUST 1 - NOVEMBER 15
FERTILIZER/SOIL SUPPLEMENT:		
AGRICULTURAL GRADE LIMESTONE	IN ACCORDANCE WITH SOIL TEST RESULTS	PRIOR TO SEEDING
FERTILIZER	500 (11 LBLS/1,000 SQ. FT.) OF 10-20-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS SOIL TEST INDICATES OTHERWISE	PRIOR TO SEEDING

NOTES:
1. NO HAY OR STRAW MULCH SHALL BE PLACED ON WATERBODY BANKS. AT A MINIMUM, ALL WATERBODY BANKS SHALL BE COVERED WITH AN EROSION CONTROL BLANKET. IN ADDITION, ONLY STRAW MULCH (AND NOT HAY MULCH) SHALL BE USED IN AREAS ADJACENT TO WETLANDS.
2. IF A TEMPORARY SEED MIX IS UTILIZED PRIOR TO A PERMANENT SEED MIX, A PERMANENT SEED MIX SHALL BE APPLIED THE FOLLOWING GROWING SEASON.
3. REFER TO THE "POST CONSTRUCTION STORMWATER MANAGEMENT PLAN DRAWINGS" FOR SPECIFICATIONS AND AREAS WHERE "BRUSH SEEDING" SHALL TAKE PLACE

SOMERSET-UNION SOIL CONSERVATION DISTRICT SOIL EROSION AND SEDIMENT CONTROL NOTES

1. THE SOMERSET-UNION SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED IN WRITING 48 HOURS IN ADVANCE OF ANY LAND DISTURBING ACTIVITY.

2. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCES, OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.

3. ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN 30 DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF A TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF TWO (2) TONS PER ACRE, ACCORDING TO NJ STATE STANDARDS

4. PERMANENT VEGETATION SHALL BE SEEDED OR SODDED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING. MULCH WILL BE USED FOR PROTECTION UNTIL SEEDING IS ESTABLISHED

5. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE NJ STATE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.

6. A SUB-BASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS IN ORDER TO STABILIZE STREETS, ROADS, DRIVEWAYS AND PARKING AREAS. IN AREAS WHERE NO UTILITIES ARE PRESENT, THE SUB-BASE SHALL BE INSTALLED WITHIN 15 DAYS OR PRELIMINARY GRADING.

7. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING ALL CRITICAL AREAS SUBJECT TO EROSION (I.E.: STEEP SLOPES, ROADWAY EMBANKMENTS) WILL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AT A RATE OF TWO (2) TONS PER ACRE, ACCORDING TO THE NJ STATE STANDARDS.

8. ANY STEEP SLOPES RECEIVING PIPELINE INSTALLATION WILL BE BACKFILLED AND STABILIZED DAILY, AS THE INSTALLATION PROCEEDS (I.E.: SLOPES GREATER THAT 3:1)

9. TRAFFIC CONTROL STANDARDS REQUIRE THE INSTALLATION OF A 50'X30'X6"PAD OF 1 1/2" OR 2" STONE, AT ALL CONSTRUCTION DRIVEWAYS, IMMEDIATELY AFTER INITIAL SITE DISTURBANCE.

10. AT THE TIME WHEN THE SITE PREPARATION FOR PERMANENT VEGETATIVE STABILIZATION IS GOING TO BE ACCOMPLISHED, ANY SOIL THAT WILL NOT PROVIDE A SUITABLE ENVIRONMENT TO SUPPORT ADEQUATE VEGETATIVE GROUND COVER, SHALL BE REMOVED OR TREATED IN SUCH A WAY THAT WILL PERMANENTLY ADJUST THE SOIL CONDITIONS AND RENDER IT SUITABLE FOR VEGETATIVE GROUND COVER. IF THE REMOVAL OR TREATMENT OF THE SOIL WILL NOT PROVIDE SUITABLE CONDITIONS, NON-VEGETATIVE MEANS OF PERMANENT GROUND STABILIZATION WILL HAVE TO BE EMPLOYED.

11. IN THAT NJSA 4:24-39 ET SEQ., REQUIRES THAT NO CERTIFICATE OF OCCUPANCY BE ISSUED BEFORE THE PROVISIONS OF THE CERTIFIED PLAN FOR SOIL EROSION AND SEDIMENT CONTROL HAVE BEEN COMPLIED WITH FOR PERMANENT MEASURES, ALL SITE WORK FOR SITE PLANS AND ALL WORK AROUND INDIVIDUAL LOTS IN SUBDIVISIONS, WILL HAVE TO BE COMPLETED PRIOR TO THE DISTRICT ISSUING A REPORT OF COMPLIANCE FOR THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY BY THE MUNICIPALITY.

12. CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.

13. ANY CHANGES TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN WILL REQUIRE THE SUBMISSION OF REVISED SOIL EROSION AND SEDIMENT CONTROL PLANS TO THE DISTRICT FOR RECERTIFICATION, THE REVISED PLANS MUST MEET ALL CURRENT NJ STATE SOIL EROSION & SEDIMENT CONTROL STANDARDS.

14. THE SOMERSET-UNION SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED OF ANY CHANGES IN OWNERSHIP.

15. MULCHING TO THE NJ STANDARDS IS REQUIRED FOR OBTAINING A CONDITIONAL REPORT OF COMPLIANCE. CONDITIONALS ARE ONLY ISSUED WHEN THE SEASON PROHIBITS SEEDING.

16. CONTRACTOR IS RESPONSIBLE FOR KEEPING ALL ADJACENT ROADS CLEAN DURING LIFE OF CONSTRUCTION PROJECT.

17. THE DEVELOPER SHALL BE RESPONSIBLE FOR REMEDIATING ANY EROSION OR SEDIMENT PROBLEMS THAT ARISE AS A RESULT OF ONGOING CONSTRUCTION AT THE REQUEST OF THE SOMERSET-UNION SOIL CONSERVATION DISTRICT.

18. HYDRO SEEDING IS A TWO- STEP PROCESS. THE FIRST STEP INCLUDES SEED, FERTILIZER, LIME, ETC., ALONG WITH MINIMAL AMOUNTS OF MULCH TO PROMOTE CONSISTENCY, GOOD SEED TO SOIL CONTACT, AND GIVE A VISUAL INDICATION OF COVERAGE. UPON COMPLETION OF SEEDING OPERATION, HYDROMULCH SHOULD BE APPLIED AT A RATE OF 1500 LBS. PER ACRE IN SECOND STEP. THE USE OF HYDROMULCH, AS OPPOSED TO STRAW, IS LIMITED TO OPTIMUM SEEDING DATES AS LISTED IN THE NJ STANDARDS.

19. UNFILTERED DEWATERING IS NOT PERMITTED. NECESSARY PRECAUTIONS MUST BE TAKEN DURING ALL DEWATERING OPERATIONS TO MINIMIZE SOIL TRANSFER. ANY DEWATERING METHODS USED MUST BE IN ACCORDANCE WITH THE STANDARD FOR DEWATERING.

SEDIMENT BASIN NOTES:

1. SEDIMENT BASINS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
2. SEDIMENT BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
3. SOILS ACCEPTABLE FOR EMBANKMENT CONSTRUCTION SHALL BE LIMITED TO GC, GM, SC, SM, CL OR ML AS DESCRIBED IN ASTMD-2487 (UNIFIED SOILS CLASSIFICATION). EMBANKMENT CORE SOILS SHALL CONTAIN NO LESS THAN 35% PASSING THE NO. 200 SIEVE SIZE.
4. ANY SPRINGS ENCOUNTERED IN THE FOUNDATION AREA OF A BASIN EMBANKMENT SHOULD BE DRAINED TO THE OUTSIDE/DOWNSTREAM TOE OF THE EMBANKMENT WITH A DRAIN SECTION TWO FEET BY TWO FEET IN DIMENSION CONSISTING OF PENNDOT TYPE A SAND, COMPACTED BY HAND TAMPER. NO GEOTEXTILES ARE TO BE USED AROUND THE SAND. THE LAST THREE FEET OF THIS DRAIN AT THE OUTSIDE/DOWNSTREAM SLOPE SHOULD BE CONSTRUCTED WITH AASHTO #8 MATERIAL. OTHER METHODS OF DRAINING SPRING DISCHARGES MAY BE ACCEPTABLE ON A CASE-BY-CASE BASIS.
5. AS EMBANKMENTS AND OTHER DISTURBED AREAS IN AND AROUND THE BASIN SHOULD BE STABILIZED IMMEDIATELY UPON COMPLETION OF THE BASIN. TREES MAY NOT BE PLANTED ON ANY BASIN EMBANKMENT, BECAUSE THE ROOT SYSTEMS MAY COMPROMISE THE INTEGRITY OF THE BERM OVER TIME.
6. ALL EXPOSED EMBANKMENT SLOPES SHOULD BE LIMED, FERTILIZED, SEEDED AND MULCHED. EMBANKMENTS SHOULD BE MAINTAINED WITH A GRASSY VEGETATIVE COVER, FREE OF BRUSH AND TREES.
7. A CLEAN OUT STAKE SHALL BE PLACED NEAR THE CENTER OF EACH BASIN. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED THE CLEAN OUT ELEVATION ON THE STAKE AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS. DISPOSE OF MATERIALS REMOVED FROM THE BASIN IN THE MANNER DESCRIBED IN THE E&S PLAN.
8. INSPECT ALL SEDIMENT BASINS ON AT LEAST A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. CHECK BASIN EMBANKMENTS, SPILLWAYS, AND OUTLETS FOR EROSION, PIPING AND SETTLEMENT. NECESSARY REPAIRS SHALL BE MADE IMMEDIATELY. DISPLACED RIPRAP WITHIN THE OUTLET ENERGY DISSIPATER SHALL BE REPLACED IMMEDIATELY. ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISTURBED AREAS SHALL BE STABILIZED INSIDE THE BASIN BEFORE CONVERSION TO AN INFILTRATION FACILITY.
9. THE FOUNDATION OF THE EMBANKMENT SHOULD BE STRIPPED AND GRUBBED TO A DEPTH OF TWO FEET PRIOR TO ANY PLACEMENT AND COMPACTION OF EARTHEN FILL. FILL MATERIAL FOR THE EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS.
10. ALL BASIN EMBANKMENTS SHOULD BE COMPACTED BY SHEEPSFOOT OR PAD ROLLER. THE LOOSE LIFT THICKNESS SHOULD BE 9 INCHES OR LESS, DEPENDING ON ROLLER SIZE, AND THE MAXIMUM PARTICLE SIZE IS 6 INCHES OR LESS — 2/3 LIFT THICKNESS. FIVE PASSES OF THE COMPACTION EQUIPMENT OVER THE ENTIRE SURFACE OF EACH LIFT IS REQUIRED. EMBANKMENT COMPACTION TO VISIBLE NON-MOVEMENT IS ALSO REQUIRED. UPON COMPLETION, THE EMBANKMENT SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED ACCORDING TO THE SPECIFICATIONS OF THE E&S PLAN DRAWINGS. TREES SHALL NOT BE PLANTED ON THE EMBANKMENT.

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REVISIONS

NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
0	06/15/17	GMS	SUBMITTED TO SOMERSET-UNION SCD	1185732	PPH	KDM
1	08/11/17	GMS	REVISED NJDEP AND SCD SUBMISSION	1185732	PPH	KDM
2	01/05/18	GMS	REVISED WORKSPACE	1185732	PPH	KDM
3	02/09/18	GMS	REVISED SUBMISSION TO SOMERSET UNION SCD	1185732	PPH	KDM
4	06/05/18	PPH	SUBMITTED TO NJDEP	1185732	TPF	KDM
5	06/24/19	PPH	SUBMITTED TO NJDEP	1185732	TPF	KDM
6	01/15/20	PPH	NJDEP SUBMISSION	1185732	GMS	KDM

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.
SOIL EROSION & SEDIMENT CONTROL PLAN
NORTHEAST SUPLPLY ENHANCEMENT PROJECT
COMPRESSOR STATION NO. 206 - TRAP ROCK ACCESS ROAD
EROSION CONTROL NOTES
FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

Williams GAS PIPELINE

DRAWN BY: GMS	DATE: 06/15/17	ISSUED FOR BID: TBD	SCALE: N.T.S.
CHECKED BY: PPH	DATE: 06/15/17	ISSUED FOR CONSTRUCTION: TBD	REVISION: 6
APPROVED BY: KDM	DATE: 06/15/17	DRAWING NUMBER:	SHEET 8 OF 13
W.O. 1185732			

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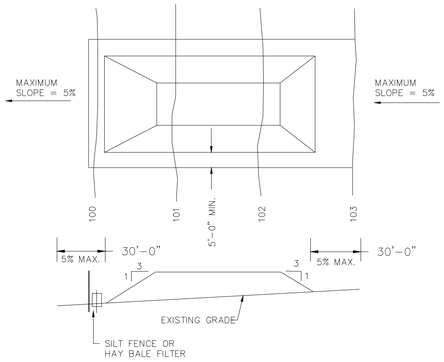


NOTES:

1. PLACE STOCKPILES AT LOCATIONS AS SHOWN ON THE SOIL EROSION AND SEDIMENT CONTROL PLAN.
2. ALL SIDE SLOPES SHALL BE 3 TO 1 OR FLATTER.
3. ONCE SHAPED, TEMPORARY STOCKPILE SHALL RECIEVE A VEGETATIVE COVER IN ACCORDANCE WITH TEMPORARY VEGETATIVE COVER STANDARDS SHOWN HEREON.
4. SILT FENCE OR HAY BALE FILTER SHALL BE INSTALLED AS DETAILED HEREON.

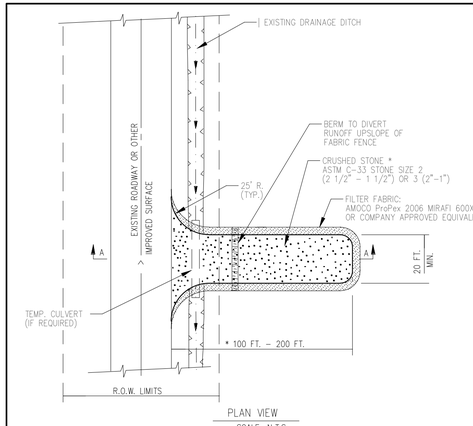
TEMPORARY STOCKPILE DETAIL

N.T.S.

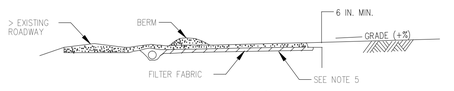
NEW JERSEY

NO.	DATE	REVISION DESCRIPTION	CHK.	APP.

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
STANDARD ENVIRONMENTAL DETAIL
TEMPORARY STOCKPILE DETAIL



PLAN VIEW
SCALE: N.T.S.



SECTION 'A-A'
SCALE: N.T.S.

* SEE NOTE 8

NOTES:

1. STABILIZED ENTRANCE SHALL BE INSTALLED WHERE EQUIPMENT ENTERS AND EXITS CONSTRUCTION SITES ONTO PAVED ROADWAY OR OTHER IMPROVED SURFACE.
2. LOCATE ALL ROADWAY CROSSINGS AND ENTRANCES TO ENSURE SAFE AND ACCESSIBLE CONDITIONS THROUGHOUT THE CONSTRUCTION PHASE.
3. THE ENTRANCE SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION IN A CONDITION WHICH WILL MINIMIZE TRACKING OF SEDIMENT ONTO A PUBLIC ROADWAY.
4. ALL SEDIMENT TRACKED ONTO PAVEMENT SHALL BE REMOVED IMMEDIATELY BY SWEEPING OR SCRAPING.
5. TOP SOIL SHALL BE REMOVED TO A MINIMUM DEPTH OF 6 INCHES PRIOR TO PLACEMENT OF GEOTEXTILE FABRIC AND STONE.
6. WHERE DRAINAGE DITCH EXISTS, CONTRACTOR SHALL PROVIDE A FLUME PIPE.
7. THE CONSTRUCTION ENTRANCE SHALL BE REMOVED AND AREA RESTORED AS PART OF FINAL GRADING AND CLEAN UP. REMOVAL IS NOT CONTINGENT UPON ESTABLISHMENT OF PERMANENT VEGETATION.
8. GRADE 0% TO 2% LENGTH EQUALS 100 FEET. GRADE 2% TO 5% LENGTH EQUALS 200 FEET FOR GRADE GREATER THAN 5% THE ENTIRE SURFACE SHALL BE STABILIZED WITH FABC (FINE AGGRATE BASE CONCRETE), BASE COARSE AS PRESCRIBED BY LOCAL ORDINANCE OR OTHER GOVERNING AUTHORITY.

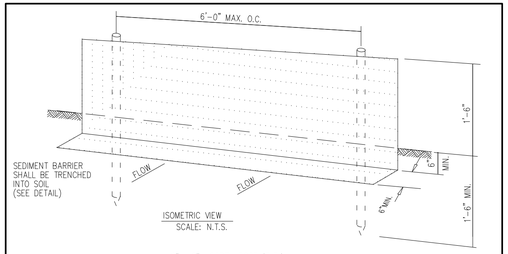
CONSTRUCTION ENTRANCE

TEMPORARY EROSION CONTROL MEASURE
TO BE INSTALLED IN AREAS WHERE SOILS ARE FINE (SILT & CLAY)

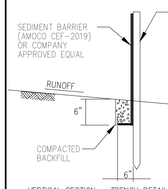
NEW JERSEY

NO.	DATE	REVISION DESCRIPTION	CHK.	APP.

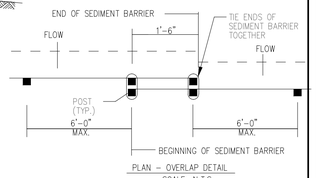
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
STANDARD ENVIRONMENTAL DETAIL
CONSTRUCTION ENTRANCE



ISOMETRIC VIEW
SCALE: N.T.S.



VERTICAL SECTION - TRENCH DETAIL
SCALE: N.T.S.



PLAN - OVERLAP DETAIL
SCALE: N.T.S.

NOTES:

1. SEDIMENT BARRIER SHALL BE INSTALLED TO FILTER SEDIMENT FROM SURFACE RUNOFF.
2. INSTALLATIONS SHALL BE PERIODICALLY CHECKED, THE SEDIMENT SHALL BE REMOVED WHEN IT REACHES ONE-THIRD THE HEIGHT OF THE SEDIMENT BARRIER.
3. SEDIMENT BARRIER SHALL BE LEFT IN PLACE UNTIL PERMANENT VEGETATIVE COVER IS ESTABLISHED.
4. SEDIMENT BARRIER SHALL BE REPLACED WHENEVER IT HAS DETERIORATED TO SUCH AN EXTENT THAT IT REDUCES THE EFFECTIVENESS OF THE SEDIMENT BARRIER.
5. AREA DISTURBED AS A RESULT OF REMOVING THE SEDIMENT BARRIER SHALL BE RESTABILIZED BY BACKFILLING, COMPACTING, AND SEEDING IN ACCORDANCE WITH THE REVEGETATION PLAN.
6. SEDIMENT BARRIER SHALL BE PLACED TO FOLLOW (RUN PARALLEL TO) THE CONTOURS.
7. ON UP SLOPE INSTALLATIONS, BOTH ENDS OF THE SEDIMENT BARRIER SHALL BE TURNED AND EXTENDED UP SLOPE.
8. SEDIMENT BARRIER SHALL BE CONSTRUCTED OF AMOCO CEF-2019 FABRIC OR A SIMILAR COMPANY APPROVED FABRIC WITH A TENSILE STRENGTH OF 50 LB./LINEAR INCH AT 20% (MAX.) ELONGATION.

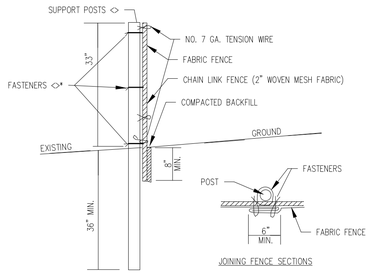
SEDIMENT BARRIER (STANDARD SILT FENCE)

TEMPORARY EROSION CONTROL MEASURE

NEW JERSEY

NO.	DATE	REVISION DESCRIPTION	CHK.	APP.

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
STANDARD ENVIRONMENTAL DETAIL
SEDIMENT BARRIER (STANDARD SILT FENCE)



JOINING FENCE SECTIONS

* POSTS SPACED @ 10' MAX. USE 2 1/2" DIA. GALVANIZED OR ALUMINUM POSTS.
** CHAIN LINK TO POST FASTENERS SPACED @ 14" MAX. USE NO. 6 GA. ALUMINUM WIRE OR NO. 9 GALVANIZED STEEL PRE-FORMED CLIPS. CHAIN LINK TO TENSION WIRE FASTENERS SPACED @ 60" MAX. USE NO. 10 GA. GALVANIZED STEEL WIRE. FABRIC TO CHAIN FASTENERS SPACED @ 24" MAX. C TO C.

NOTES:

1. NO. 7 GAUGE TENSION WIRE SHALL BE INSTALLED HORIZONTALLY AT TOP AND BOTTOM OF CHAIN LINK FENCE.
2. SUPER SILT FENCE FENCE MUST BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER MUST BE EXTENDED AT LEAST 8 FEET UPSLOPE AT 45 DEGREES TO MAIN BARRIER ALIGNMENT.
3. SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE FENCE.
4. REINFORCED SILT FENCE SHALL BE LEFT IN PLACE UNTIL PERMANENT VEGETATIVE COVER IS ESTABLISHED.
5. AREA DISTURBED AS A RESULT OF REMOVING THE REINFORCED SEDIMENT BARRIER SHALL BE RESTABILIZED BY SEEDING IN ACCORDANCE WITH THE REVEGETATION PLAN.

TABLE 2
MAXIMUM SLOPE LENGTHS FOR SUPER SILT FENCE

SLOPE - PERCENT	MAXIMUM SLOPE LENGTH (FT)
2 (OR LESS)	1,000
5	500
10	300
20	200
30	100
40	75
50	50

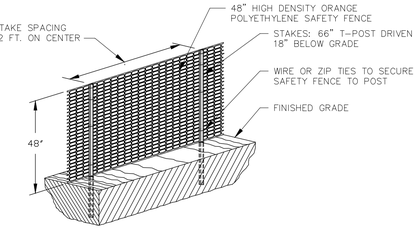
SEDIMENT BARRIER (SUPER SILT FENCE)

TEMPORARY EROSION CONTROL MEASURE

NEW JERSEY

NO.	DATE	REVISION DESCRIPTION	CHK.	APP.

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
STANDARD ENVIRONMENTAL DETAIL
SEDIMENT BARRIER (SUPER SILT FENCE)



ISOMETRIC VIEW
SCALE: N.T.S.

NOTES:

1. ALL SENSITIVE AREAS SHALL BE PROTECTED AS PER PLAN.
2. ALL TREES IN THE CONSTRUCTION AREA NOT SPECIFICALLY DESIGNED FOR REMOVAL SHALL BE PRESERVED AND PROTECTED WITH HIGH VISIBILITY FENCE AS PER PLAN.
3. WHEN PRACTICABLE, INSTALL HIGH VISIBILITY 3 FEET OUTSIDE OF THE DRIP LINE OF THE TREE.
4. SAFETY FENCE SHOULD BE FASTENED SECURELY TO THE POST.
5. THE FENCE MUST REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION; ANY CHANGE OF THE PROTECTIVE FENCING MUST BE APPROVED.

SAFETY FENCE (SAF)

PERMANENT EROSION CONTROL MEASURE

NEW JERSEY

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

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
STANDARD ENVIRONMENTAL DETAIL
SAF SAFETY FENCE

GAS PIPELINE

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625 WEST RIDGE PIKE, SUITE E-100
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(610) 832-3500

KEVIN McKEON, P.E.
NEW JERSEY
PROFESSIONAL ENGINEER NO GE32586

REVISIONS

NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
0	06/15/17	GMS	SUBMITTED TO SOMERSET-UNION SCD	1185732	PPH	KDM
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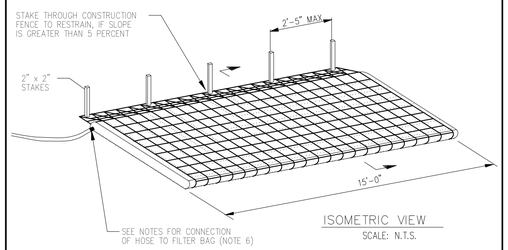
5	06/24/19	PPH	SUBMITTED TO NJDEP	1185732	TPF	KDM
6	01/15/20	PPH	NJDEP SUBMISSION	1185732	GMS	KDM

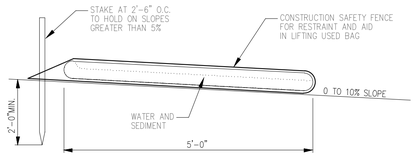
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.
SOIL EROSION & SEDIMENT CONTROL PLAN
NORTHEAST SUPLPLY ENHANCEMENT PROJECT
COMPRESSOR STATION NO. 206 - TRAP ROCK ACCESS ROAD
EROSION CONTROL DETAILS
FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

GAS PIPELINE

DRAWN BY: GMS	DATE: 06/15/17	ISSUED FOR BID: TBD	SCALE:
CHECKED BY: PPH	DATE: 06/15/17	ISSUED FOR CONSTRUCTION: TBD	REVISION: 6
APPROVED BY: KDM	DATE: 06/15/17	DRAWING NUMBER:	SHEET 9 OF 13
W.O. 1185732			



ISOMETRIC VIEW
SCALE: N.T.S.



SECTION
SCALE: N.T.S.

NOTES:

1. FILTER BAG SHALL BE PLACED ON A SLOPING OR LEVEL, WELL VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM DEVICE AND ANY WORK AREAS.
2. THE FILTER BAG MUST BE STAKED IN PLACE IF THE FILTER BAG IS PLACED ON A SLOPE GREATER THAN 5 PERCENT.
3. FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM.
4. CONTRACTOR SHALL PROPERLY REMOVE AND PROPERLY DISPOSE OF USED FILTER BAGS IMMEDIATELY UPON COMPLETION OF DEWATERING OPERATIONS. UNDER NO CIRCUMSTANCES SHALL USED FILTER BAGS BE LEFT IN PLACE FOR A PERIOD OF TIME GREATER THAN 48 HOURS AFTER DEWATERING OPERATIONS ARE COMPLETE.
5. SEDIMENT FROM BAG SHALL BE SPREAD IN AN UPLAND AREA WITHIN THE CONSTRUCTION CORRIDOR AND THE AREA SHALL BE STABILIZED AND REVEGETATED.
6. TO ATTACH HOSE, CUT OPEN CORNER OF FILTER BAG, GATHER UP MATERIAL AND CLAMP TO A SHORT SECTION OF STEEL PIPE. CLAMP HOSE TO OTHER END OF PIPE. BOTH CONNECTIONS SHALL BE WATERTIGHT.
7. CONTRACTOR SHALL ONLY INSTALL ONE DEWATERING HOSE PER FILTER BAG.

FILTER BAG

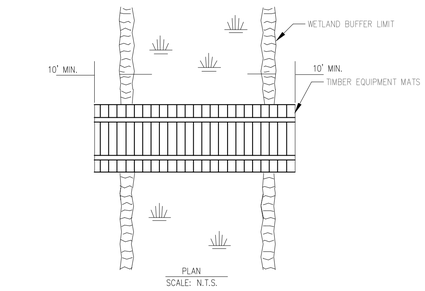
TEMPORARY EROSION CONTROL MEASURE

NEW JERSEY

NO.	DATE	REVISION DESCRIPTION	CHK.	APP.

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
STANDARD ENVIRONMENTAL DETAIL

FILTER BAG



NOTES:

1. PERIODICALLY CHECK INSTALLATION AND REMOVE BUILD-UP OF SEDIMENT OR DEBRIS.
2. MATERIALS PLACED IN WETLANDS SHALL BE COMPLETELY REMOVED DURING FINAL CLEAN-UP. REMOVAL OF THIS STRUCTURE IS NOT CONTINGENT UPON ESTABLISHMENT OF PERMANENT VEGETATION.
3. IF A WATERBODY IS LOCATED WITHIN A WETLAND SYSTEM, EXTEND TIMBER EQUIPMENT MATS TO THE BRIDGE EQUIPMENT CROSSING (BEC) USED TO CROSS THE WATERBODY IN ORDER TO ALLOW FOR CONTINUOUS TIMBER EQUIPMENT MAT COVERAGE THROUGH THE WETLAND AND WATERBODY AREA.
4. USE ADDITIONAL TIMBER MAT LAYERS TO RAISE CROSSING ABOVE GRADE WHERE POOR SOIL CONDITIONS EXIST.
5. TIMBER EQUIPMENT MATS SHALL EXTEND A MINIMUM OF 10 FEET OUTSIDE OF THE WETLAND BOUNDARIES.
6. INSTALL EARTHEN RAMP APPROACHES TO TIMBER EQUIPMENT MATS. EARTHEN RAMPS TO BE CONSTRUCTED OF UPLAND MATERIAL, TOP SOIL SHALL NOT BE USED TO CONSTRUCT EARTHEN RAMPS.

WETLAND EQUIPMENT CROSSING

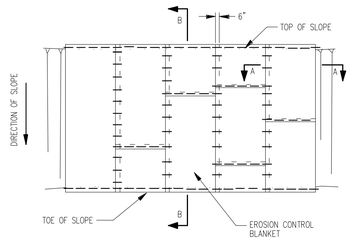
TEMPORARY EROSION CONTROL MEASURE

NEW JERSEY

NO.	DATE	REVISION DESCRIPTION	CHK.	APP.

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
STANDARD ENVIRONMENTAL DETAIL

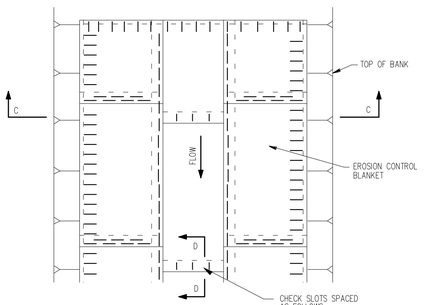
WETLAND EQUIPMENT CROSSING



PLAN
SCALE: N.T.S.

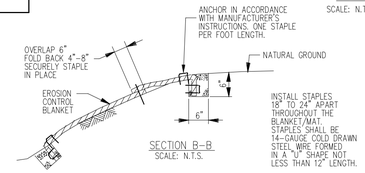
MATERIAL
NORTH AMERICAN GREEN S150

* OR APPROVED EQUIVALENT



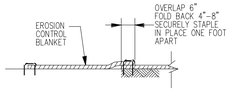
PLAN
SCALE: N.T.S.

SLOPE	SPACING
0-3%	50'
> 3%	25'

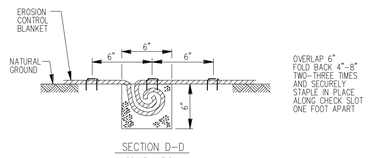


SECTION B-B
SCALE: N.T.S.

EMBANKMENT INSTALLATION



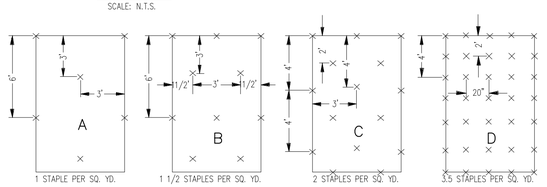
SECTION A-A
SCALE: N.T.S.



SECTION D-D
SCALE: N.T.S.

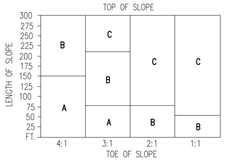
SECTION C-C
SCALE: N.T.S.

CHANNEL INSTALLATION



FLOW	STAPLE PATTERN TYPE
LOW VELOCITY	C
MED. TO HIGH VELOCITY	D

CHANNEL INSTALLATION -
STAPLE PATTERN TABLE
(SEE STAPLE PATTERN GUIDE)



EMBANKMENT INSTALLATION -
STAPLE PATTERN TABLE
(SEE STAPLE PATTERN GUIDE)

STAPLE PATTERN GUIDE

NOTES:

1. EROSION CONTROL BLANKETS SHALL EXTEND COMPLETELY ACROSS DISTURBED AREA TO PROTECT ERODIBLE SURFACES. THE SOIL SHALL BE PROPERLY PREPARED, SEEDED AND MULCHED PRIOR TO INSTALLATION.
2. INSTALL EROSION CONTROL BLANKETS ON FRESHLY GRADED EMBANKMENTS ON SLOPES IN EXCESS OF 3:1 (H:V) TO SUPPORT VEGETATION.
3. INSTALL BLANKETS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
4. BLANKET SHALL BE LOOSELY INSTALLED AND TAMPED OR ROLLED IN PLACE AFTER INSTALLATION. STAPLES SHALL BE DRIVEN FLUSH WITH THE GROUND.

EROSION CONTROL BLANKET

PERMANENT EROSION CONTROL MEASURE

NEW JERSEY

NO.	DATE	REVISION DESCRIPTION	CHK.	APP.

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
STANDARD ENVIRONMENTAL DETAIL

EROSION CONTROL BLANKET
PERMANENT EROSION CONTROL MEASURE

AECOM
625 WEST RIDGE PIKE, SUITE E-100
CONSHOHOCKEN, PA 19428
(610) 832-3500

KEVIN McKEON, P.E.
NEW JERSEY
PROFESSIONAL ENGINEER NO GE32586

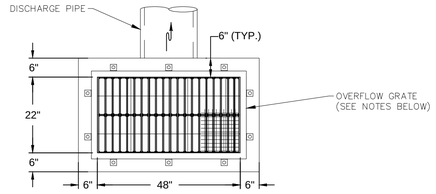
REVISIONS

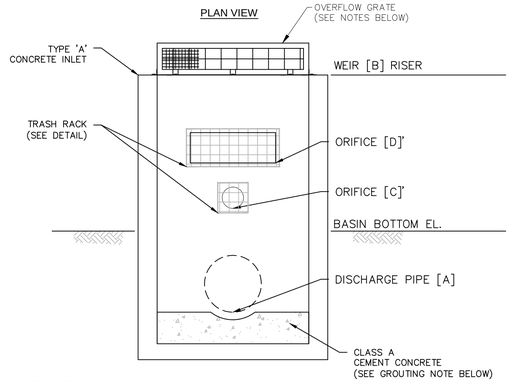
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
0	06/15/17	GMS	SUBMITTED TO SOMERSET-UNION SCD	1185732	PPH	KDM
1	08/11/17	GMS	REVISED NJDEP AND SCD SUBMISSION	1185732	PPH	KDM
2	01/05/18	GMS	REVISED WORKSPACE	1185732	PPH	KDM
3	02/09/18	GMS	REVISED SUBMISSION TO SOMERSET UNION SCD	1185732	PPH	KDM
4	06/05/18	PPH	SUBMITTED TO NJDEP	1185732	TPF	KDM
5	06/24/19	PPH	SUBMITTED TO NJDEP	1185732	TPF	KDM
6	01/15/20	PPH	NJDEP SUBMISSION	1185732	GMS	KDM

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.
SOIL EROSION & SEDIMENT CONTROL PLAN
NORTHEAST SUPLPLY ENHANCEMENT PROJECT
COMPRESSOR STATION NO. 206 - TRAP ROCK ACCESS ROAD
EROSION CONTROL DETAILS
FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

Williams GAS PIPELINE

DRAWN BY: GMS	DATE: 06/15/17	ISSUED FOR BID: TBD	SCALE:
CHECKED BY: PPH	DATE: 06/15/17	ISSUED FOR CONSTRUCTION: TBD	REVISION: 6
APPROVED BY: KDM	DATE: 06/15/17	DRAWING NUMBER:	SHEET 10 OF 13
WO: 1185732			





OVERFLOW GRATE NOTES:

AN OVERFLOW GRATE IS DESIGNED TO PREVENT OBSTRUCTION OF THE STRUCTURE. THE GRATE MUST COMPLY WITH THE FOLLOWING REQUIREMENTS:

1. THE OVERFLOW GRATE MUST BE SECURED TO THE OUTLET STRUCTURE BUT REMOVABLE FOR EMERGENCIES AND MAINTENANCE;
2. THE OVERFLOW GRATE SPACING MUST BE NO GREATER THAN 2 INCHES ACROSS THE SMALLEST DIMENSION; AND
3. THE OVERFLOW GRATE MUST BE CONSTRUCTED OF RIGID, DURABLE, AND CORROSION RESISTANT MATERIAL AND DESIGNED TO WITHSTAND A PERPENDICULAR LIVE LOADING OF 300 LBS/SF.

GROUTING NOTE:

THE SPACE BELOW THE INVERT OF THE DISCHARGE PIPE MUST BE FILLED WITH MATERIAL, SUCH AS CONCRETE, A MIXTURE OF SAND AND CEMENT, OR SIMILAR GROUTING MATERIAL, SUCH THAT WATER WILL NOT POND IN THE OUTLET STRUCTURE. THIS MATERIAL MUST BE SLOPED TOWARDS THE DISCHARGE PIPE TO FACILITATE DRAINAGE.

BASIN NO.	BASIN BOTTOM	CULVERT [A] OUTFALL		WEIR [B] RISER	ORIFICE [C]		ORIFICE [D]	
	ELEV.	SIZE / MATERIAL	INV. ELEV.	ELEV.	SIZE	INV. ELEV.	SIZE	INV. ELEV.
SEDIMENT BASIN	262.00	18" RCP	261.75	265.50	4"	262.15	0.5' H 0.8' W	263.25

NEW JERSEY

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

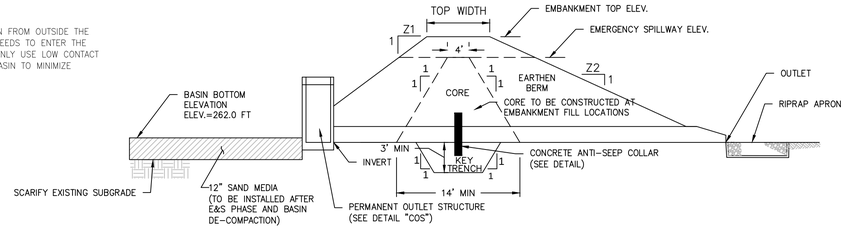
TRANSCONTINENTAL GAS PIPE LINE CORPORATION
PROJECT SPECIFIC DETAIL

COS CONCRETE OUTLET STRUCTURE

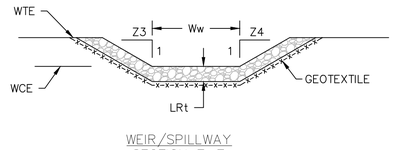
Williams GAS PIPELINE

NOTES:

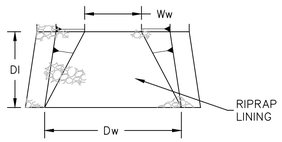
1. CONTRACTOR SHALL EXCAVATE THE BASIN FROM OUTSIDE THE LIMITS OF THE BASIN. IF CONTRACTOR NEEDS TO ENTER THE BASIN FOOTPRINT, CONTRACTOR SHALL ONLY USE LOW CONTACT PRESSURE EQUIPMENT TO GRADE THE BASIN TO MINIMIZE COMPACTING THE SOILS.



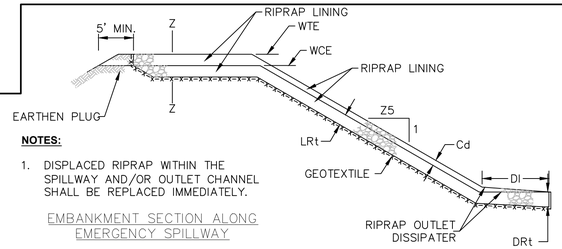
EMBANKMENT				BARREL			
Z1	Z2	TOP ELEV. (FEET)	TOP WIDTH (FEET)	INVERT ELEV. (FEET)	OUTLET ELEV. (FEET)	DIA (INCH)	MATERIAL
3	3	267.00	10	261.75	261.20	18	RCP



WEIR/SPILLWAY SECTION Z-Z



RIPRAP OUTLET DISSIPATER PLAN VIEW



NOTES:

1. DISPLACED RIPRAP WITHIN THE SPILLWAY AND/OR OUTLET CHANNEL SHALL BE REPLACED IMMEDIATELY.

EMBANKMENT SECTION ALONG EMERGENCY SPILLWAY

BASIN NO.	WEIR					LINING		CHANNEL		DISSIPATER			
	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	RIPRAP SIZE (R-_)	RIPRAP THICK. LRt (IN)	Z5 (FT)	DEPTH Cd (FT)	LENGTH DI (FT)	WIDTH Dw (FT)	RIPRAP SIZE (R-_)	RIPRAP THICK. DRt (IN)
1	3	3	267.00	266.00	100	4	18	3	1	5	100	4	18

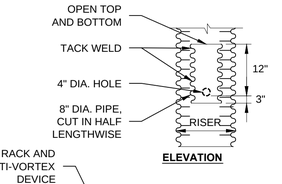
NEW JERSEY

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

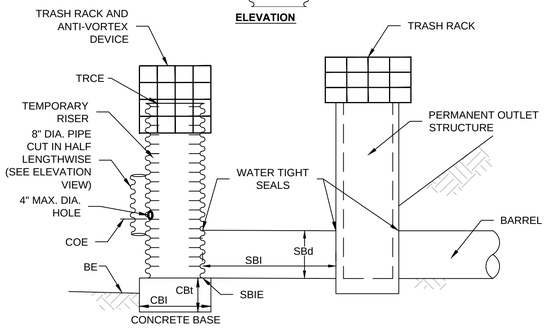
TRANSCONTINENTAL GAS PIPE LINE CORPORATION
STANDARD ENVIRONMENTAL DETAIL

SEDIMENT BASIN

Williams GAS PIPELINE



ELEVATION



BASIN NO.	BASIN BOTTOM ELEVATION BE	TEMPORARY RISER			PERFORATION		CONCRETE BASE	
		DIA TRd (IN)	CREST ELEV TRCE (FT)	MATERIAL	BOTTOM OF HOLE COE (FT)	HOLE DIA. (IN)	LENGTH AND WIDTH CBI (IN)	THICK CBt (IN)
SED	262.00	18	265.00	CMP	263.00	4	48	12

BASIN NO.	TEMPORARY STUB			
	DIA SBd (IN)	INVERT ELEV SBIE (FT)	MATERIAL	LENGTH SBI (FT)
SED	18	261.75	CMP	5

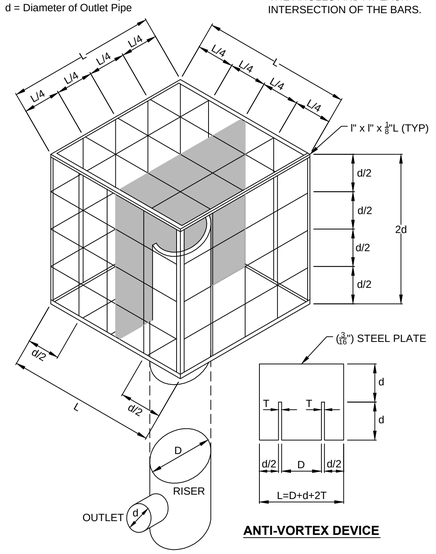
NOTES:

1. A MINIMUM 2 #8 REBAR SHALL BE PLACED AT RIGHT ANGLES AND PROJECTING THROUGH SIDES OF RISER TO ANCHOR IT TO CONCRETE BASE. REBAR SHALL PROJECT A MINIMUM OF $\frac{1}{4}$ RISER DIAMETER BEYOND OUTSIDE OF RISER.
2. CONCRETE BASE SHALL BE POURED IN SUCH A MANNER TO INSURE THAT CONCRETE FILLS BOTTOM OF RISER TO INVERT OF THE OUTLET PIPE TO PREVENT RISER FROM BREAKING AWAY FROM THE BASE. MINIMUM BASE WIDTH EQUALS 2 TIMES RISER DIAMETER.

SEDIMENT BASIN TEMPORARY RISER
N.T.S.

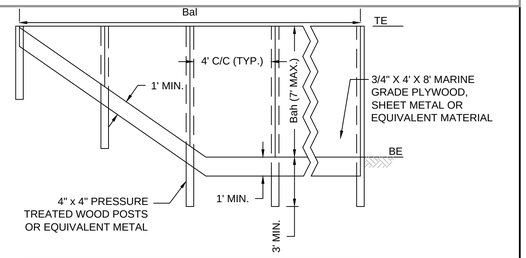
T = Thickness of Riser Pipe
D = Diameter of Riser Pipe
d = Diameter of Outlet Pipe

#4 BARS (TYP.) WELDED TO THE ANGLES AND AT EACH INTERSECTION OF THE BARS.



ANTI-VORTEX DEVICE

TRASH RACK AND ANTI-VORTEX DEVICE
N.T.S.

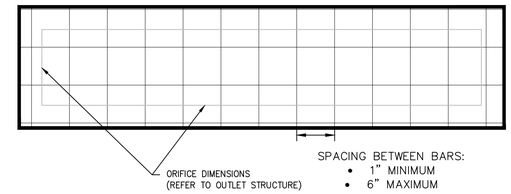


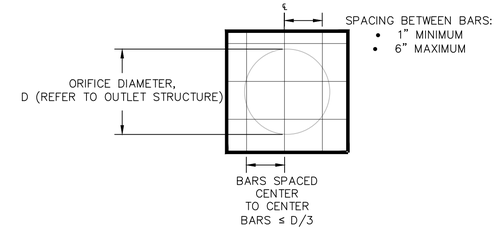
BAFFLE		TOP	BOTTOM
LENGTH Bal (FT)	HEIGHT Bah (FT)	TOP ELEV TE (FT)	BOTTOM ELEV BE (FT)
210	4.0	266.0	262.00
140	4.0	266.0	262.00

NOTES:

1. SUBSTITUTION OF MATERIALS NOT SPECIFIED IN THIS DETAIL SHALL BE APPROVED BY NJDEP OR THE LOCAL CONSERVATION DISTRICT BEFORE INSTALLATION.
2. DAMAGED OR WARPED BAFFLES SHALL BE REPLACED WITHIN 7 DAYS OF INSPECTION.
3. REFER TO PLAN SHEET FOR BAFFLE CONFIGURATIONS.

SEDIMENT BASIN BAFFLE
N.T.S.





NOTES:

FOR SYSTEMS DESIGNED WITH AN OUTLET STRUCTURE, TRASH RACKS MUST BE INSTALLED AT THE INTAKE TO THE OUTLET STRUCTURE. THEY MUST MEET THE FOLLOWING CRITERIA:

1. PARALLEL BARS WITH 1-INCH SPACING BETWEEN THE BARS UP TO THE ELEVATION OF THE WATER QUALITY DESIGN STORM;
2. PARALLEL BARS HIGHER THAN THE ELEVATION OF THE WATER QUALITY DESIGN STORM MUST BE SPACED NO GREATER THAN ONE-THIRD THE WIDTH OF THE DIAMETER OF THE ORIFICE, WITH MINIMUM SPACING BETWEEN BARS OF 1-INCH AND A MAXIMUM SPACING BETWEEN BARS OF SIX INCHES;
3. THE TRASH RACK MUST BE DESIGNED SO AS NOT TO ADVERSELY AFFECT THE HYDRAULIC PERFORMANCE OF THE OUTLET PIPE OR STRUCTURE;
4. CONSTRUCTED OF RIGID, DURABLE AND CORROSION-RESISTANT MATERIAL; AND
5. DESIGNED TO WITHSTAND PERPENDICULAR LIVE LOADING OF 300 LBS/SF.

TRASH RACK TR

NEW JERSEY

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

TRANSCONTINENTAL GAS PIPE LINE CORPORATION
STANDARD ENVIRONMENTAL DETAIL

TR TRASH RACK

Williams GAS PIPELINE

SOMERSET-UNIOIN SOIL CONSERVATION DISTRICT BASIN COMPACTION NOTES:

1. INSPECT SITE. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RE-TILLED AND FIRMED IN ACCORDANCE WITH ABOVE.
2. THE SURFACE SHOULD BE SCARIFIED 6" TO 12" WHERE THERE HAS BEEN SOIL COMPACTION. THIS WILL HELP INSURE A GOOD BOND BETWEEN THE TOPSOIL AND SUBSOIL. THIS PRACTICE IS PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.).
3. SOIL COMPACTION RESULTING FROM LAND GRADING ACTIVITIES CAN IMPACT THE INFILTRATION RATE OF THE SOIL. RESTORATION OF COMPACTED SOILS THROUGH DEEP TILLAGE (6" TO 12") MAY BE REQUIRED IN PLANNED PERVIOUS AREAS TO ENHANCE THE INFILTRATION RATE OF THE DISTURBED SOIL. THIS PRACTICE IS PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.).
4. TO PREVENT COMPACTION OF THE SUBSOIL WHICH WILL REDUCE ITS INFILTRATION CAPACITY, BASINS SHOULD BE EXCAVATED WITH LIGHT EARTH MOVING EQUIPMENT (LOW GROUND PRESSURE), PREFERABLY WITH TRACKS OR OVER-SIZED TIRES RATHER THAN THE NORMAL RUBBER TIRES. ONCE THE FINAL CONSTRUCTION PHASE IS REACHED, THE FLOOR OF THE BASIN SHALL BE SCARIFIED AND DE-COMPACTED DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW AND SMOOTHED OVER WITH A LEVELING DRAG OR EQUIVALENT GRADING EQUIPMENT
5. FOR BASINS, ANNUAL TILLING OPERATIONS MAINTAIN INFILTRATION CAPACITY. DEEP TILLING CAN BE USED TO BREAKUP CLOGGED SURFACE LAYERS FOLLOWED BY RE-GRADING AND LEVELING. SAND OR ORGANIC MATTER CAN BE TILLED INTO THE BASIN FLOOR TO PROMOTE A RESTORED INFILTRATION CAPACITY. SEDIMENT REMOVAL PROCEDURES SHOULD NOT BE UNDERTAKEN UNTIL THE BASIN IS THOROUGHLY DRY. THE TOP LAYER SHOULD BE REMOVED BY LIGHT EQUIPMENT TO PREVENT COMPACTION. THE REMAINING SOIL CAN BE RE-TILLED.

BASIN COMPACTION NOTES

NO.	DATE	BY	REVISION DESCRIPTION			

BASIN COMPACTION NOTES

AECOM
625 WEST RIDGE PIKE, SUITE E-100
CONSHOHOCKEN, PA 19428
(610) 832-3500

KEVIN McKEON, P.E.
NEW JERSEY
PROFESSIONAL ENGINEER NO GE32586

REVISIONS

NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
0	06/15/17	GMS	SUBMITTED TO SOMERSET-UNION SCD	1185732	PPH	KDM
1	08/11/17	GMS	REVISED NJDEP AND SCD SUBMISSION	1185732	PPH	KDM
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5	06/24/19	PPH	SUBMITTED TO NJDEP	1185732	TPF	KDM
6	01/15/20	PPH	NJDEP SUBMISSION	1185732	GMS	KDM

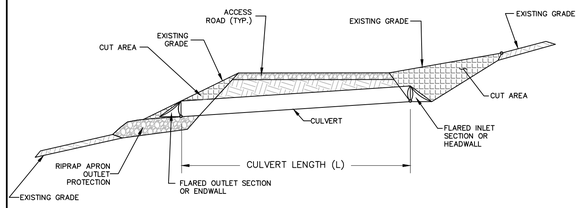
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.
SOIL EROSION & SEDIMENT CONTROL PLAN
NORTHEAST SUPLPLY ENHANCEMENT PROJECT
COMPRESSOR STATION NO. 206 - TRAP ROCK ACCESS ROAD
EROSION CONTROL DETAILS
FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

Williams GAS PIPELINE

DRAWN BY: GMS	DATE: 06/15/17	ISSUED FOR BID: TBD	SCALE:
CHECKED BY: PPH	DATE: 06/15/17	ISSUED FOR CONSTRUCTION: TBD	REVISION: 6
APPROVED BY: KDM	DATE: 06/15/17	DRAWING NUMBER:	SHEET 11 OF 13
W.O. 1185732			

Drawn By & Date/Time: hosp Jan 10, 2020 - 12:57pm
Drawing Location & Name: S:\Projects\ENV\60537393_NESE_CS206\900-CAD-GIS\910-CAD\30-E&S SHEETS\08-13 - E&S Detail Sheets.dwg

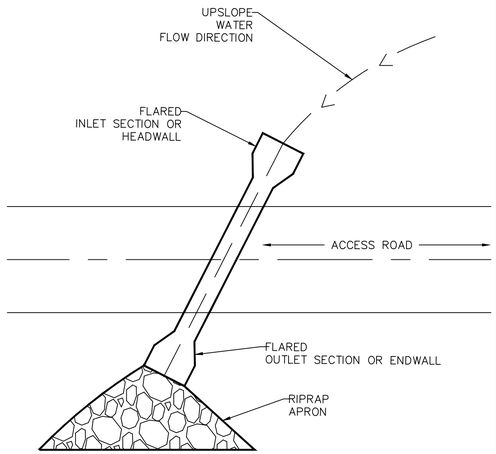
CULVERT NO.	CULVERT DIAMETER (IN.)	CULVERT LENGTH, L (FT)	EMBEDMENT DEPTH, D BELOW INVERT IN ELEV. (FT.)	INVERT IN (ELEV.)	INVERT OUT (ELEV.)	PIPE SLOPE (%)	MATERIAL
3A	2 x 2 BOX	49	0.5	283.80	283.60	0.5	RCP
3B	2 x 2 BOX	43	0.5	279.03	278.80	0.5	RCP
3C	2 x 2 BOX	47	0.5	276.50	276.28	0.5	RCP
3	2 x 2 BOX	45	0.5	275.50	275.26	0.5	RCP
4	18	50	N/A	267.00	266.50	1.0	RCP
5	18 (QTY 2)	64	N/A	264.63	264.31	0.5	RCP
6	24	68	N/A	266.00	265.00	1.5	RCP
9	15	40	N/A	260.30	259.80	1.2	RCP



NOTES:

1. CUT AND FILL SLOPES SHALL BE STABILIZED IMMEDIATELY UPON COMPLETION OF ROADWAY GRADING. THESE AREAS SHALL BE BLANKETED WHEREVER THEY ARE LOCATED WITHIN 50 FEET OF A SURFACE WATER OR WITHIN 100 FEET OF A SURFACE WATER WHERE A SUITABLE VEGETATIVE FILTER STRIP DOES NOT EXIST. STEEP SLOPES AT 3H:1V OR STEEPER SHALL BE PROTECTED AGAINST EROSION WITH EROSION CONTROL BLANKET SUITABLE FOR THE ESTABLISHMENT OF VEGETATION.
2. A DURABLE TOP DRESSING SHALL BE PROVIDED FOR SOILS HAVING LOW STRENGTH.
3. UPSLOPE CUT AREA SHALL BE LINED WITH EROSION CONTROL BLANKET.
4. ROADWAY SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED ROADWAYS, DITCHES, OR CROSS DRAINS SHALL BE REPAIRED IMMEDIATELY.

CROSS SECTION



NOTES:

1. TEMPORARY STORMWATER BYPASS BENEATH ACCESS ROAD WILL BE INSTALLED PRIOR TO EARTH DISTURBANCE AT ASSOCIATED GRAVEL WORK AREA, AS APPLICABLE.
2. STORMWATER RUNOFF FROM UPSLOPE BYPASS AREAS WILL BE DIRECTED BENEATH ACCESS ROAD AND WILL DISCHARGE OVER A RIPRAP APRON.

PLAN VIEW

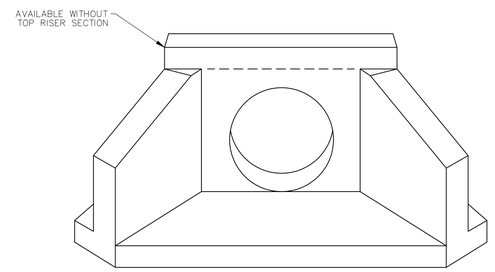
NEW JERSEY

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

TRANSCONTINENTAL GAS PIPE LINE CORPORATION
PROJECT SPECIFIC DETAIL

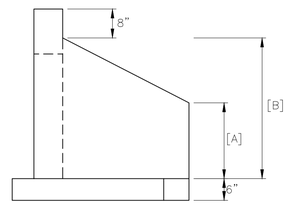
ACCESS ROAD CULVERT
FOR NON-STREAM CROSSINGS

Williams GAS PIPELINE

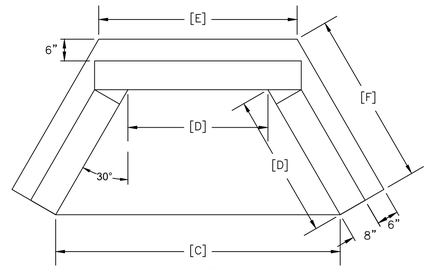


ISOMETRIC

MAXIMUM CULVERT DIA (IN)	[A] (IN)	[B] (IN)	[C] (IN)	[D] (IN)	[E] (IN)	[F] (IN)
15	11	21	48	24	38	34
18	12	26	52	26	43	33
21	12	26	52	26	43	33
24	21	39	80	40	55	55
36	21	39	80	40	55	55
48	23	52	104	52	73	60



SIDE VIEW



PLAN VIEW

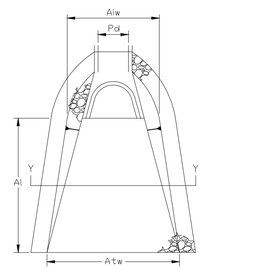
NEW JERSEY

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

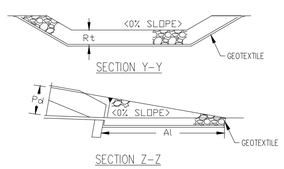
TRANSCONTINENTAL GAS PIPE LINE CORPORATION
PROJECT SPECIFIC DETAIL

EW TYPICAL DW ENDWALL

Williams GAS PIPELINE



PLAN VIEW



SECTION Y-Y

SECTION Z-Z

RIPRAP GRADATION TABLE					
NATIONAL STONE ASSOCIATION NUMBER	SIZE OF ROCKS (INCHES) MAXIMUM	d50 AVERAGE *	MINIMUM **	MIN. THICKNESS OF RIPRAP LAYER (IN.) "T"	TOE (FEET)
R-1	1?	?	NO. 8	2	1
R-2	3	1?	1	4	1.25
R-3	6	3	2	9	1.5
R-4	12	6	3	18	2.5
R-5	18	9	4	27	4
R-6	24	12	6	36	4
R-7	30	18	12	45	5
R-8	42	24	15	63	6

* THE "AVERAGE SIZE", OR d50, IS DEFINED AS A SIZE THAT IS EXCEEDED BY AT LEAST 50% OF THE TOTAL WEIGHT SHIPPED. (I.E. 50% OF THE TONNAGE SHIPPED CONSISTS OF PIECES LARGER THAN THE "AVERAGE SIZE" SHOWN IN CHART.)

** PIECES SMALLER THAN THE "MINIMUM SIZE" SHOWN SHALL NOT EXCEED 15% OF THE TONNAGE SHIPPED.

MATERIAL NOTES:

1. ROCK UTILIZED FOR RIPRAP SHALL CONSIST OF SOUND, DURABLE ROCK, INSOLUBLE IN WATER, AND RESISTANT TO WEATHERING.
2. ALL MATERIAL SHALL BE FREE OF STRUCTURAL DEFECTS, SHALE SEAMS AND ORGANIC MATTER.
3. INDIVIDUAL PIECES SHOULD BE SHARPLY ANGULAR, BLOCK SHAPED AND HAVE A MINIMUM SPECIFIC GRAVITY OF 2.5.
4. NO PIECE SHALL HAVE A LENGTH EXCEEDING THREE (3) TIMES ITS WIDTH OR DEPTH.
5. EACH LOAD OF ROCK SHALL BE OF WELL-GRADED MIXTURE. A WELL-GRADED MIXTURE, AS USED HEREIN, IS DEFINED AS A MIXTURE COMPOSED PRIMARILY OF LARGER STONE, BUT WITH A SUFFICIENT MIXTURE OF SMALLER SIZES TO FILL THE VOIDS.
6. MATERIAL SHALL MEET NSA SPECIFICATIONS – SEE TABLE.
7. IF STREAM WIDTH IS EQUAL TO OR LESS THAN 2 TIMES THE TOE WIDTH, RIPRAP SHALL BE PLACED ACROSS THE ENTIRE STREAM WIDTH.

CONSTRUCTION:
RIPRAP SHALL BE PLACED TO THE FULL COURSE THICKNESS IN ONE CONTINUOUS OPERATION. OPERATIONS WHICH CAUSE SEGREGATION OF THE MATERIALS SHALL NOT BE PERMITTED. INDIVIDUAL ROCKS MAY BE REARRANGED, AND THE VOIDS FILLED WITH HAND PLACED SMALLER ROCK IN ORDER TO ACHIEVE THE DESIRED UNIFORM ARMOR.

APRON NO.	RIPRAP SIZE (R-_)	RIPRAP THICK. Rt (IN)	APRON LENGTH Al (FT)	APRON INITIAL WIDTH Aiw (FT) (SEE NOTES 1 & 2)	APRON TERMINAL WIDTH Atw (FT) (SEE NOTES 1 & 2)	CULVERT DIAMETER (IN)	CULVERT EFFECTIVE HEIGHT (FT)	CULVERT MIN. APRON LINING HEIGHT (FT) 2/3 EFFECTIVE HEIGHT
RPA-01	R-4	18	24	12 [1,2]	16 [1,2]	48 [4]	2.0	1.34
RPA-02	R-3	9	18	12 [1,2]	12 [1,2]	42 [4]	1.5	1.0
RPA-03A	R-4	18	18	6	24	2 x 2 BOX [3]	1.5	1.34
RPA-03B	R-4	18	18	6	24	2 x 2 BOX [3]	1.5	1.34
RPA-03C	R-4	18	18	6	24	2 x 2 BOX [3]	1.5	1.34
RPA-03	R-4	18	18	6	24	2 x 2 BOX [3]	1.5	1.34
RPA-04	R-4	18	36	30 [3]	30 [3]	18	1.5	1.0
RPA-05	R-4	18	18	20 [3]	20 [3]	18 (QTY 2)	1.5	1.0
RPA-06	R-4	18	36	12 [1,2]	12 [2]	24	2.0	1.34
RPA-07	R-3	9	18	12 [1,2]	12 [1,2]	42 [4]	1.5	1.0
RPA-08	R-3	9	18	12 [1,2]	12 [1,2]	42 [4]	1.5	1.0
RPA-09	R-3	9	18	10 [1,2]	10 [1,2]	3	0.25	1.0

NOTES:
1. CONDUIT OUTLET PROTECTION SHALL BE PLACED WITHIN STREAM CHANNEL AND MIXED WITH NATIVE SUBSTRATE. INITIAL AND TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.
2. WHERE THERE IS A WELL-DEFINED CHANNEL DOWNSTREAM OF THE APRON, THE BOTTOM WIDTH OF THE APRON SHALL BE AT LEAST EQUAL TO THE BOTTOM WIDTH OF THE CHANNEL; AND THE STRUCTURAL LINING SHALL EXTEND AT LEAST ONE FOOT ABOVE THE TAILWATER ELEVATION BUT NO LOWER THAN TWO-THIRDS OF THE VERTICAL CONDUIT DIMENSION ABOVE THE CONDUIT INVERT.
3. BOX CULVERTS SHALL BE EMBEDDED 6 INCHES.
4. 42" AND 48" CIRCULAR CULVERTS SHALL BE EMBEDDED 2 FT.

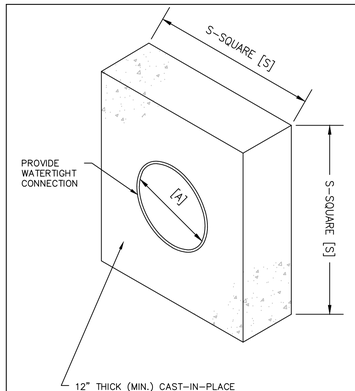
NEW JERSEY

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

TRANSCONTINENTAL GAS PIPE LINE CORPORATION
STANDARD ENVIRONMENTAL DETAIL

RPA RIPRAP APRON

Williams GAS PIPELINE



BASIN NO.	PIPE DIAMETER (IN) [A]	S (IN) [S]	NO. OF COLLARS	DISTANCE RISER TO 1ST COLLAR (FT)
INFIL. BASIN	18	64	1	20

NOTES:

1. ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.
2. COLLARS SHALL NOT BE INSTALLED CLOSER THAN 2 FEET TO A PIPE JOINT.

NEW JERSEY

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

TRANSCONTINENTAL GAS PIPE LINE CORPORATION
PROJECT SPECIFIC DETAIL

CONCRETE ANTI-SEEP COLLAR

Williams GAS PIPELINE

KEVIN McKEON, P.E.

NEW JERSEY
PROFESSIONAL ENGINEER NO GE32586

AECOM
625 WEST RIDGE PIKE, SUITE E-100
CONSHOHOCKEN, PA 19428
(610) 832-3500

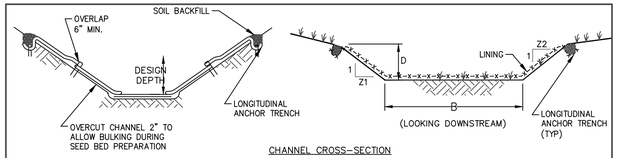
REVISIONS

NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
0	06/15/17	GMS	SUBMITTED TO SOMERSET-UNION SCD	1185732	PPH	KDM
1	08/11/17	GMS	REVISED NJDEP AND SCD SUBMISSION	1185732	PPH	KDM
2	01/05/18	GMS	REVISED WORKSPACE	1185732	PPH	KDM
3	02/09/18	GMS	REVISED SUBMISSION TO SOMERSET UNION SCD	1185732	PPH	KDM
4	06/05/18	PPH	SUBMITTED TO NJDEP	1185732	TPF	KDM
5	06/24/19	PPH	SUBMITTED TO NJDEP	1185732	TPF	KDM
6	01/15/20	PPH	NJDEP SUBMISSION	1185732	GMS	KDM

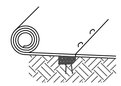
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.
SOIL EROSION & SEDIMENT CONTROL PLAN
NORTHEAST SUPLPLY ENHANCEMENT PROJECT
COMPRESSOR STATION NO. 206 - TRAP ROCK ACCESS ROAD
EROSION CONTROL DETAILS
FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

Williams GAS PIPELINE

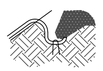
DRAWN BY: GMS	DATE: 06/15/17	ISSUED FOR BID: TBD	SCALE:
CHECKED BY: PPH	DATE: 06/15/17	ISSUED FOR CONSTRUCTION: TBD	REVISION: 6
APPROVED BY: KDM	DATE: 06/15/17	DRAWING NUMBER:	SHEET 12 OF 13
W.O. 1185732			



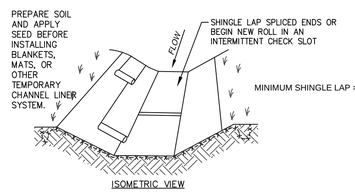
CHANNEL CROSS-SECTION



INTERMITTENT CHECK SLOT



LONGITUDINAL ANCHOR TRENCH



ISOMETRIC VIEW

CHANNEL	BOTTOM WIDTH B (FT)	DEPTH D (FT)	TOP WIDTH W (FT)	Z1 (FT)	Z2 (FT)	LINING [5]
1	2	1.0	10	4	4	SC250/VEG
2	2	1.0	10	4	4	SC250/VEG
3	2	1.5	14	4	4	SC250/VEG
4	2	1.5	8	2	2	SC250/VEG
5	2	1.5	14	4	4	SC250/VEG
6	2	1.5	14	4	4	SC250/VEG
7A	2	1.5	14	4	4	SC250/VEG
10	2	1.5	14	4	4	SC250/VEG
11	2	1.5	14	4	4	SC250/VEG
12	2	1.5	14	4	4	SC250/VEG
15	2	1.5	8	2	2	SC250/VEG

NOTES:

1. SEE MANUFACTURER'S INSTALLATION DETAIL FOR STAPLE PATTERNS, AND VEGETATION STABILIZATION SPECIFICATIONS FOR SOIL AMENDMENTS, SEED MIXTURES, AND MULCHING INFORMATION.
2. ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.
3. 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.
4. 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.
5. NORTH AMERICAN GREEN (NAG) SC-250 EROSION CONTROL MATTING (OR EQUIVALENT) SHALL BE USED CHANNEL LINING.

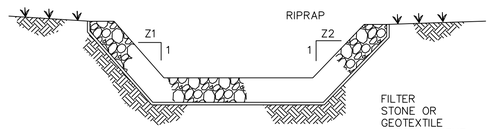
NEW JERSEY

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

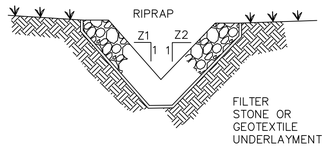
TRANSCONTINENTAL GAS PIPE LINE CORPORATION
STANDARD ENVIRONMENTAL DETAIL

VC VEGETATED CHANNEL

Williams GAS PIPELINE



(LOOKING DOWNSTREAM)
TRAPEZOIDAL CHANNEL CROSS-SECTION



(LOOKING DOWNSTREAM)
TRIANGULAR CHANNEL CROSS-SECTION

NOTES:

FILTER STONE UNDERLAYMENT FOR BED SLOPES ≥ 0.10 FT/FT (10 %) SHALL BE USED.

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

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.

THE MINIMUM ROCK THICKNESS (t) SHALL BE 1.5 TIMES THE MAX ROCK SIZE.

CHANNEL	SHAPE (TRAPEZOIDAL OR TRIANGULAR)	BOTTOM WIDTH B (FT)	DEPTH D (FT)	TOP WIDTH W (FT)	Z1 (FT)	Z2 (FT)	LINING	THICKNESS t (IN)
7B	TRAPEZOIDAL	2	10.0	37	4	4	R-3	6
8	TRIANGULAR	0	1.5	15	5	5	R-3	6
9	TRIANGULAR	0	1.5	15	5	5	R-3	6
13	TRAPEZOIDAL	2	2.0	18	4	4	R-3	6
14	TRAPEZOIDAL	20	1.0	36	8	8	R-4	12

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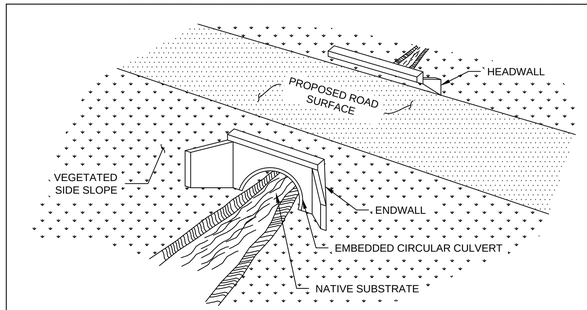
TRANSCONTINENTAL GAS PIPE LINE CORPORATION
PROJECT SPECIFIC DETAIL

RIPRAP CHANNEL

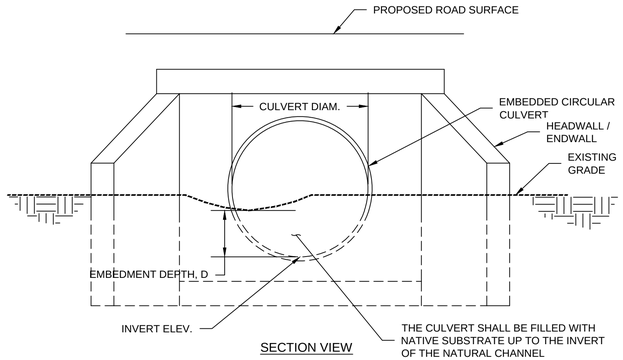
Williams GAS PIPELINE



ISOMETRIC VIEW

NOTES:

1. PROPOSED EMBEDDED CIRCULAR CULVERTS SHALL COMPLETELY SPAN THE WIDTH OF THE STREAM CHANNEL.
2. CONTRACTOR SHALL REPLICATE NATURAL STREAM MATERIAL (I.E. NATIVE SUBSTRATE) AND MATCH OR EXCEED THE DIMENSIONS OF THE EXISTING CHANNEL AT THE INLET AND OUTLET OF THE CULVERT.
3. HEADWALL & ENDWALL SHALL BE ATTACHED TO CULVERT PRIOR TO EMBEDMENT.
4. CONTRACTOR SHALL INSTALL RIPRAP APRON (REFER TO DETAIL) AND MIX EXISTING STREAMBED MATERIAL (I.E. NATIVE SUBSTRATE) TO REPLICATE PRE-CONSTRUCTION CONDITIONS.



SECTION VIEW

CULVERT NO.	CULVERT DIAMETER (IN.)	CULVERT LENGTH, L (FT)	EMBEDMENT DEPTH, D (FT.)	INVERT IN (ELEV.)	INVERT OUT (ELEV.)	PIPE SLOPE (%)	MATERIAL
1	48	65	2	261.0	258.0	4.6	RCP
2	42	57	2	263.0	262.0	1.8	RCP
7	42	71	2	262.0	261.0	1.4	RCP
8	42	61	2	262.0	260.0	3.3	RCP

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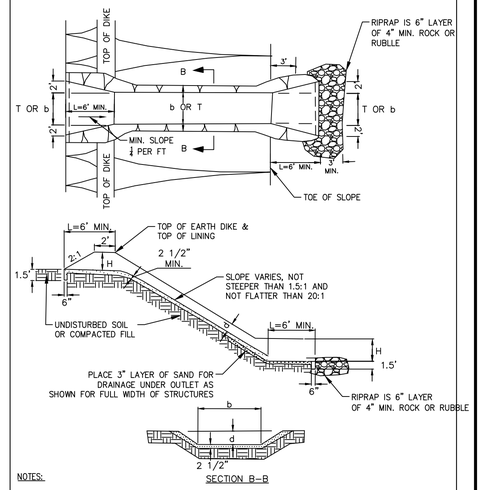
TRANSCONTINENTAL GAS PIPE LINE CORPORATION
PROJECT SPECIFIC DETAIL

CULVERT FOR STREAM CROSSINGS

Williams GAS PIPELINE



NOTES:

1. LINING SHALL BE RIPRAP.
2. SOME TYPE OF ENERGY DISSIPATOR, SUCH AS THE ONE SHOWN ABOVE, MUST BE USED TO PREVENT EROSION AT THE OUTLET.

RIPRAP SLOPE PROTECTION	BOTTOM WIDTH b (FT)	HEIGHT H (FT)	DEPTH d (FT)	LINING
1	25	2.0	0.75	R-3

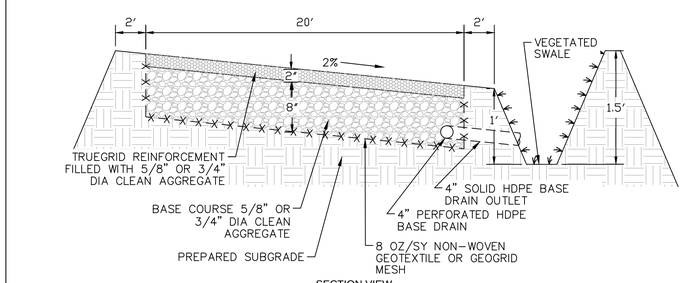
NEW JERSEY

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

TRANSCONTINENTAL GAS PIPE LINE CORPORATION
PROJECT SPECIFIC DETAIL

RIPRAP SLOPE PROTECTION

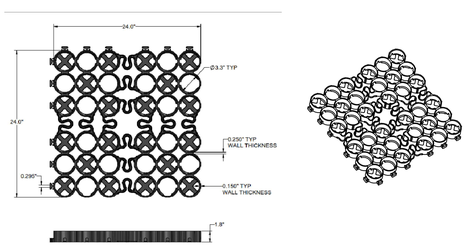
Williams GAS PIPELINE



SECTION VIEW
N.T.S.

NOTES:

1. ONCE SUBGRADE HAS BEEN PREPARED, INSTALL GEOTEXTILE OR GEOGRID MESH.
2. INSTALL BASE DRAIN AND BACKFILL BASE COURSE MATERIAL IN 4-INCH LIFTS, LEVELED AND COMPACTED TO LOCK IN ANGULAR STONE.
3. INSTALL TRUEGRID REINFORCEMENT UNITS BY PLACING CELLS FACE UP, RE-CONFIGURED AND CUT AS NECESSARY TO MEET THE PROJECT GEOMETRY.
4. BACKFILL SURFACE COURSE MATERIAL BY BACK DUMPING DIRECTLY FROM DUMP TRUCKS OR FROM BUCKETS MOUNTED TO TRACTORS. HAND SHOVELING IS ALSO ACCEPTABLE. SPREAD MATERIAL USING STEER LOADERS, POWER BROOMS, BLADES, FLAT-BOTTOMED SHOVELS, AND/OR WIDE "ASPHALT RAKES" TO FILL THE CELLS. ONCE CELLS ARE AT CAPACITY, COMPACT AGGREGATE WITH A ROLLER OR VIBRATING PLATE.
5. ALL AGGREGATE SHALL BE UNIFORMLY GRADED AND CLEAN PRIOR TO INSTALLATION
6. REFER TO PLANS FOR VEGETATED SWALE LOCATIONS AND DETAILS FOR LINING AND DIMENSION REQUIREMENTS.
7. BASE DRAIN SHALL DAYLIGHT A MINIMUM OF 200' FEET OF LINEAR ROAD AT A MINIMUM SLOPE OF 0.5%



TRUEGRID BLOCK REFERENCE VIEW
N.T.S.

PREASSEMBLED & DELIVERED IN 4' X 4' SHEET. RECONFIGURE AS NEEDED. NO EXTRA TOOLING OR ACCESSORIES REQUIRED

NEW JERSEY

DATE	BY	REVISION DESCRIPTION

TRANSCONTINENTAL GAS PIPE LINE CORPORATION
PROJECT SPECIFIC DETAIL

REINFORCED GRAVEL ACCESS ROAD

Williams GAS PIPELINE

AECOM
625 WEST RIDGE PIKE, SUITE E-100
CONSHOHOCKEN, PA. 19428
(610) 832-3500

KEVIN McKEON, P.E.
NEW JERSEY
PROFESSIONAL ENGINEER NO GE32586

REVISIONS

NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
0	06/15/17	GMS	SUBMITTED TO SOMERSET-UNION SCD	1185732	PPH	KDM
1	08/11/17	GMS	REVISED NJDEP AND SCD SUBMISSION	1185732	PPH	KDM
2	01/05/18	GMS	REVISED WORKSPACE	1185732	PPH	KDM
3	02/09/18	GMS	REVISED SUBMISSION TO SOMERSET UNION SCD	1185732	PPH	KDM
4	06/05/18	PPH	SUBMITTED TO NJDEP	1185732	TPF	KDM
5	06/24/19	PPH	SUBMITTED TO NJDEP	1185732	TPF	KDM
6	01/15/20	PPH	NJDEP SUBMISSION	1185732	GMS	KDM

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.
SOIL EROSION & SEDIMENT CONTROL PLAN
NORTHEAST SUPLPLY ENHANCEMENT PROJECT
COMPRESSOR STATION NO. 206 - TRAP ROCK ACCESS ROAD
EROSION CONTROL DETAILS
FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

Williams GAS PIPELINE

DRAWN BY: GMS	DATE: 06/15/17	ISSUED FOR BID: TBD	SCALE:
CHECKED BY: PPH	DATE: 06/15/17	ISSUED FOR CONSTRUCTION: TBD	REVISION: 6
APPROVED BY: KDM	DATE: 06/15/17	DRAWING NUMBER:	SHEET 13 OF 13
W.O: 1185732			

Drawn By & Date/Time: haasp Jan 10, 2020 - 12:57pm
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