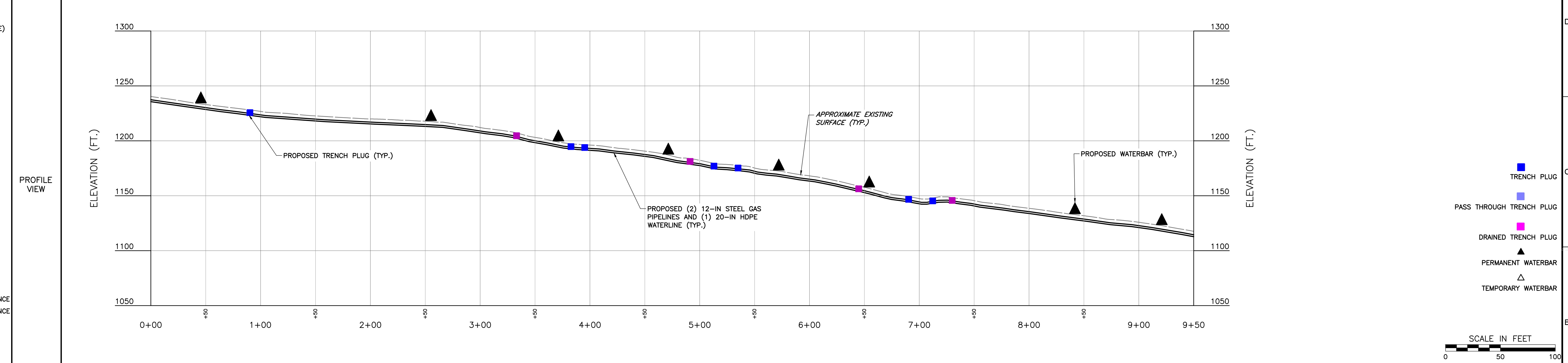
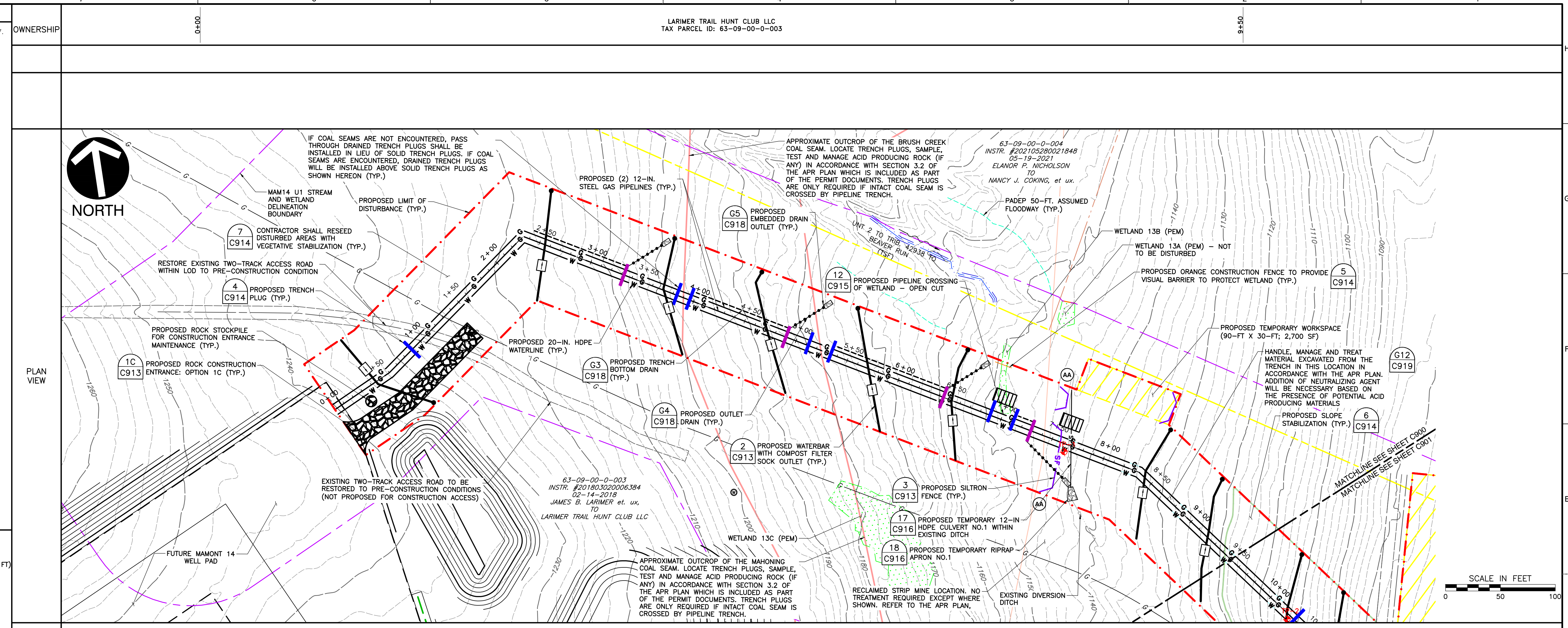


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REVISION RECORD

NO	DATE	DESCRIPTION

C&E
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4350 Northern Pike - Suite 141 - Monroeville, PA 15146
Ph: 724.327.5200 - 800.899.3610 - Fax: 724.327.5280
www.cecinc.com

OWNERSHIP
LARIMER TRAIL HUNT CLUB LLC
TAX PARCEL ID: 63-09-00-0-003

63-09-00-0-003
INSTR. #201803020006384
02-14-2018
JAMES B. LARIMER et. ux,
TO
LARIMER TRAIL HUNT CLUB LLC

63-09-00-0-004
INSTR. #202105280021848
05-19-2021
ELANOR P. NICHOLSON
TO
NANCY J. COOKING, et. ux.

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE-STOP CALL PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776

PENNSYLVANIA ONE CALL LAW: 20233472815

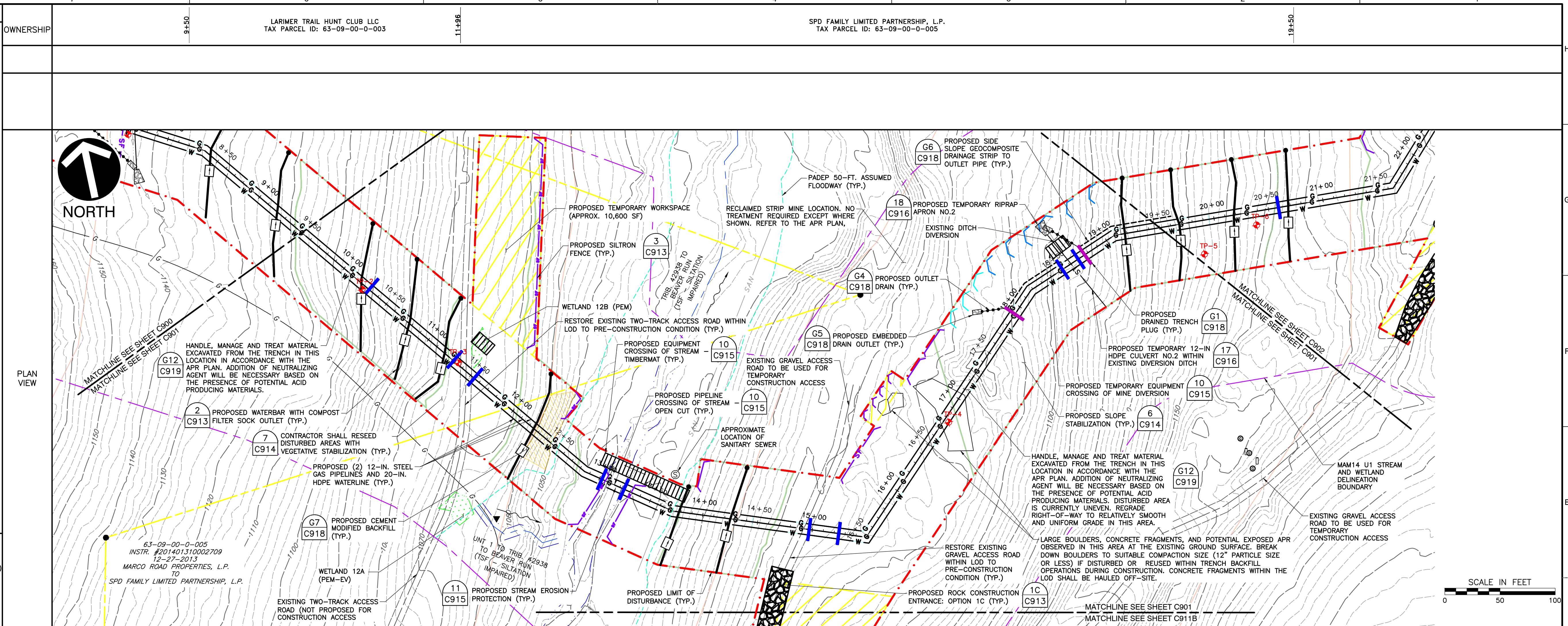
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REGISTERED PROFESSIONAL ENGINEER
CHARLES ROBERT KANE
12/22/23

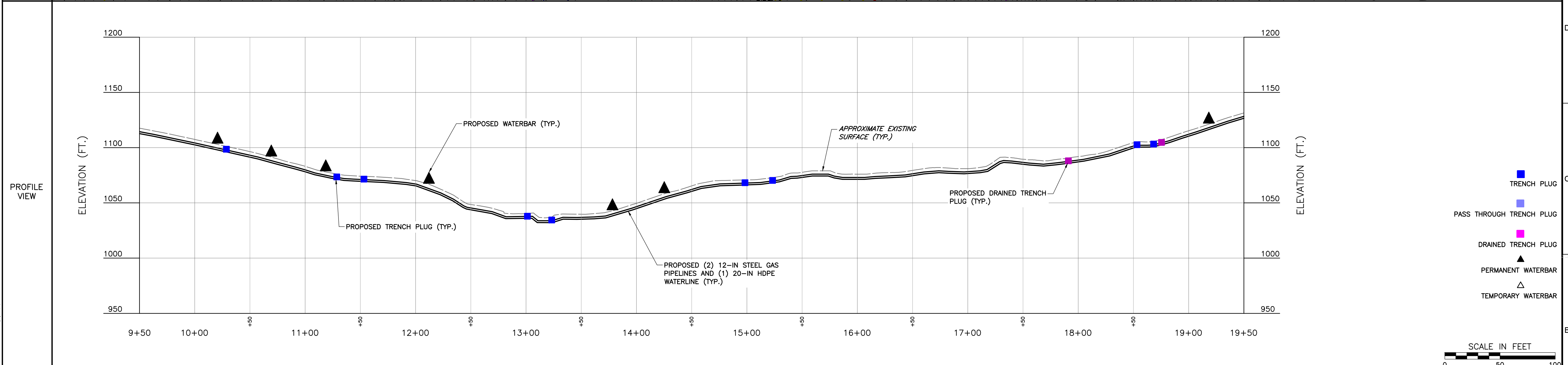
CNX MIDSTREAM OPERATING COMPANY LLC
MAM14 U1 PIPELINE AND WATERLINE
WASHINGTON AND BELL TOWNSHIPS
WESTMORELAND COUNTY
PENNSYLVANIA

DRAWN BY: LMK CHECKED BY: SCT APPROVED BY: CRK
DATE: DECEMBER 2023 DWG SCALE: 1"=50' PROJECT NO: 332-793
EROSION AND SEDIMENTATION CONTROL PLAN
ALIGNMENT SHEET - STA. 0+00 - 9+50
C900
SHEET 1 OF 20

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63-09-00-0-005
INSTR. #201401310002709
12-27-2013
MARCO ROAD PROPERTIES, L.P.
TO
SPD FAMILY LIMITED PARTNERSHIP, L.P.

WETLAND 12A (PEM-EV)
WETLAND 12B (PEM)

UNIT 1 TO TRIBE #2938 TO BEAVER RUN (TSF - SILTATION IMPAIRED)

PROPOSED TEMPORARY WORKSPACE (APPROX. 10,600 SF)

PROPOSED SILTRON FENCE (TYP.)

RESTORE EXISTING TWO-TRACK ACCESS ROAD WITHIN LOD TO PRE-CONSTRUCTION CONDITION (TYP.)

PROPOSED EQUIPMENT CROSSING OF STREAM TIMBERMAT (TYP.)

PROPOSED PIPELINE CROSSING OF STREAM OPEN CUT (TYP.)

APPROXIMATE LOCATION OF SANITARY SEWER

PROPOSED CEMENT MODIFIED BACKFILL (TYP.)

PROPOSED STREAM EROSION PROTECTION (TYP.)

PROPOSED LIMIT OF DISTURBANCE (TYP.)

PROPOSED ROCK CONSTRUCTION ENTRANCE: OPTION 1C (TYP.)

PROPOSED SIDE SLOPE GEOCOMPOSITE DRAINAGE STRIP TO OUTLET PIPE (TYP.)

PROPOSED TEMPORARY RIPRAP APRON NO.2

EXISTING DITCH DIVERSION

PROPOSED OUTLET DRAIN (TYP.)

PROPOSED EMBEDDED DRAIN OUTLET (TYP.)

EXISTING GRAVEL ACCESS ROAD TO BE USED FOR TEMPORARY CONSTRUCTION ACCESS

PROPOSED TEMPORARY 12-IN HDPE CULVERT NO.2 WITHIN EXISTING DIVERSION DITCH

PROPOSED TEMPORARY EQUIPMENT CROSSING OF MINE DIVERSION

PROPOSED SLOPE STABILIZATION (TYP.)

HANDLE, MANAGE AND TREAT MATERIAL EXCAVATED FROM THE TRENCH IN THIS LOCATION IN ACCORDANCE WITH THE APR PLAN. ADDITION OF NEUTRALIZING AGENT WILL BE NECESSARY BASED ON THE PRESENCE OF POTENTIAL ACID PRODUCING MATERIALS. DISTURBED AREA IS CURRENTLY UNEVEN, REGRADE RIGHT-OF-WAY TO RELATIVELY SMOOTH AND UNIFORM GRADE IN THIS AREA.

LARGE BOULDERS, CONCRETE FRAGMENTS, AND POTENTIAL EXPOSED APR OBSERVED IN THIS AREA AT THE EXISTING GROUND SURFACE. BREAK DOWN BOULDERS TO SUITABLE COMPACTION SIZE (12" PARTICLE SIZE OR LESS) IF DISTURBED OR REUSED WITHIN TRENCH BACKFILL OPERATIONS DURING CONSTRUCTION. CONCRETE FRAGMENTS WITHIN THE LOD SHALL BE HAULED OFF-SITE.

RESTORE EXISTING GRAVEL ACCESS ROAD WITHIN LOD TO PRE-CONSTRUCTION CONDITION (TYP.)

EXISTING GRAVEL ACCESS ROAD TO BE USED FOR TEMPORARY CONSTRUCTION ACCESS

MAM14 U1 STREAM AND WETLAND DELINEATION BOUNDARY

SCALE IN FEET

CALL BEFORE YOU DIG!
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REGISTERED PROFESSIONAL ENGINEER
CHARLES ROBERT KANE
12/22/23

CNX MIDSTREAM OPERATING COMPANY LLC
MAM14 U1 PIPELINE AND WATERLINE
WASHINGTON AND BELL TOWNSHIPS
WESTMORELAND COUNTY
PENNSYLVANIA

DRAWN BY: LMK CHECKED BY: SCT APPROVED BY: CRK
DATE: DECEMBER 2023 DWG SCALE: 1"=50' PROJECT NO: 332-793
DRAWING NO: EROSION AND SEDIMENTATION CONTROL PLAN
ALIGNMENT SHEET - STA. 9+50 - 19+50

C901
SHEET 2 OF 20

REFERENCES

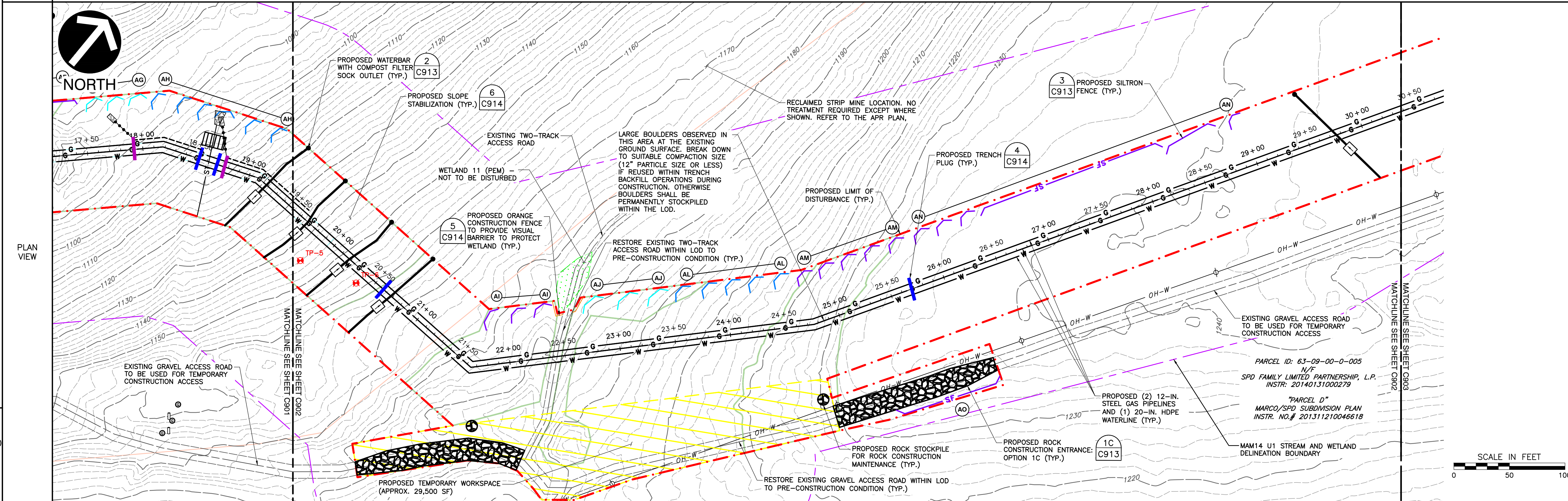
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OWNERSHIP

SPD FAMILY LIMITED PARTNERSHIP, L.P.
TAX PARCEL ID: 63-09-00-0-005

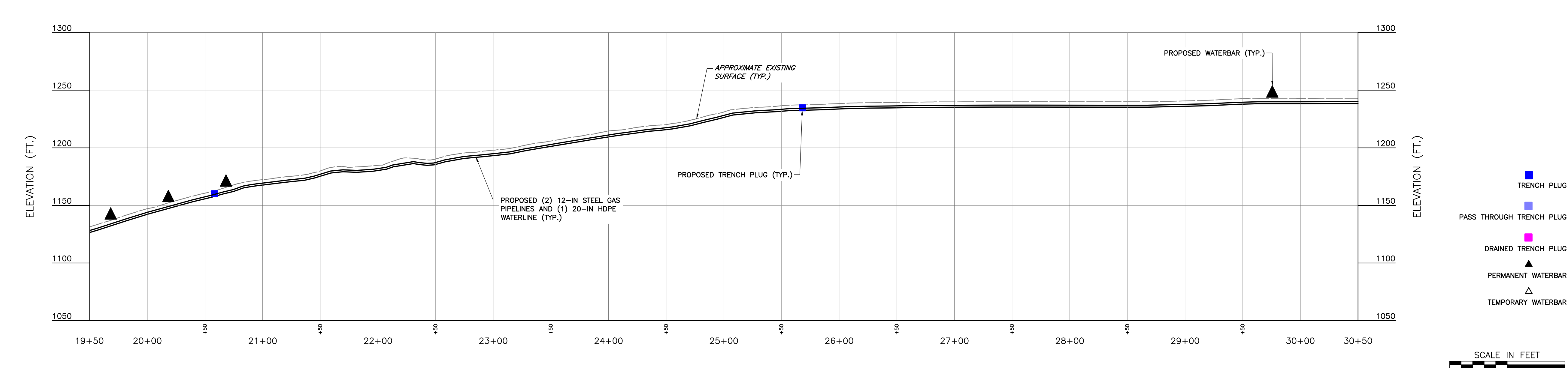
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PLAN VIEW

PROFILE VIEW



REVISION RECORD

NO	DATE	DESCRIPTION

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12/22/23

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DRAWN BY: LMK CHECKED BY: SCT APPROVED BY: CRK
DATE: DECEMBER 2023 DWG SCALE: 1"=50' PROJECT NO: 332-793
DRAWING NO: 3 OF 20

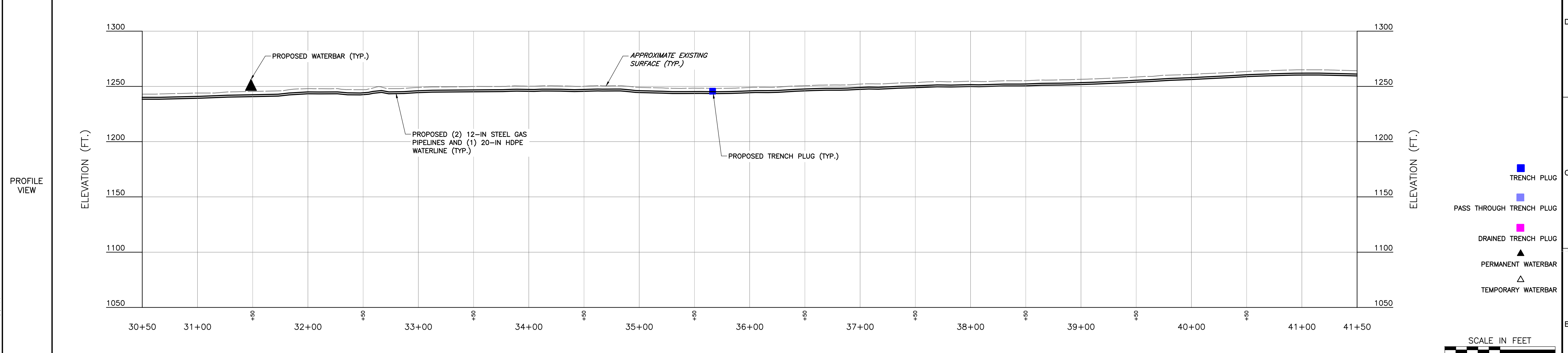
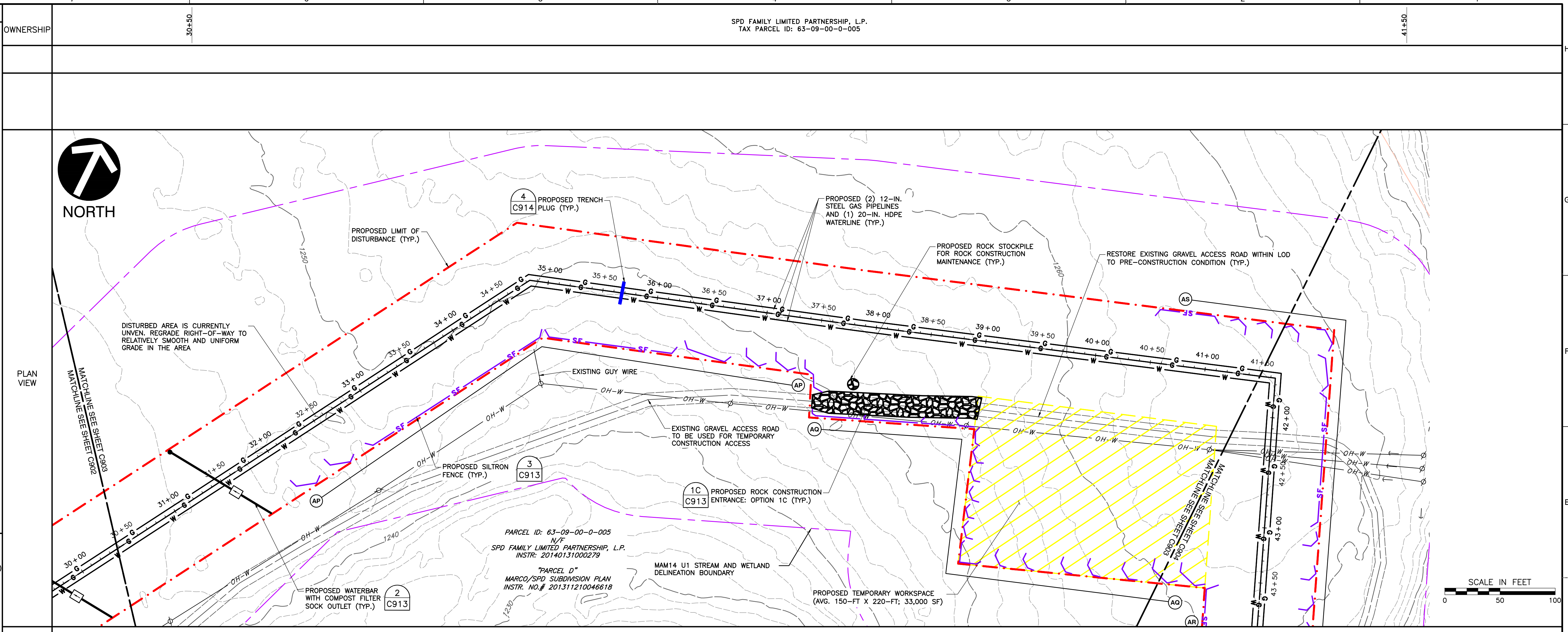
EROSION AND SEDIMENTATION CONTROL PLAN
ALIGNMENT SHEET - STA. 19+50 - 30+50
C902

REFERENCES

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- PROPOSED HYDRAULICALLY APPLIED SLOPE STABILIZATION
- PROPOSED ROCK CONSTRUCTION ENTRANCE
- PROPOSED ORANGE CONSTRUCTION FENCE
- PROPOSED SLOPE STABILIZATION
- PROPOSED TIMBER MAT



REVISION RECORD

NO	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
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www.cecinc.com

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE-STOP CALL PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776

PENNSYLVANIA ONE CALL LAW: 20233472815

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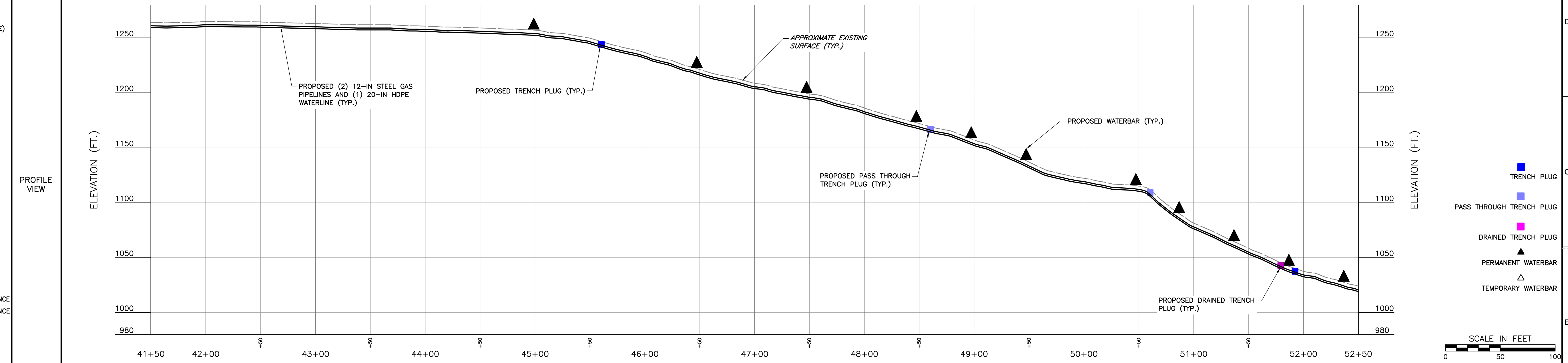
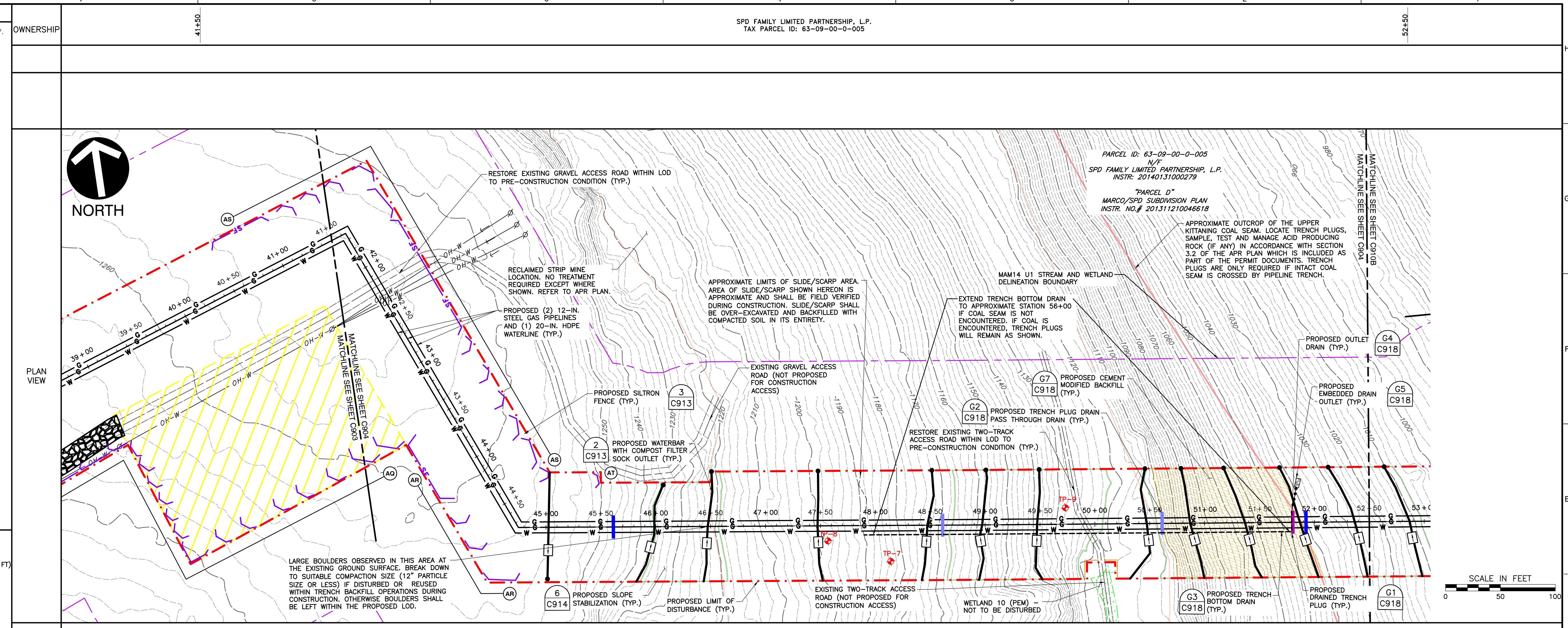
REGISTERED PROFESSIONAL ENGINEER
CHARLES ROBERT KANE
12/22/23

CNX MIDSTREAM OPERATING COMPANY LLC
MAM14 U1 PIPELINE AND WATERLINE
WASHINGTON AND BELL TOWNSHIPS
WESTMORELAND COUNTY
PENNSYLVANIA

DRAWN BY: LMK CHECKED BY: SCT APPROVED BY: CRK
DATE: DECEMBER 2023 DWG SCALE: 1"=50' PROJECT NO: 332-793
EROSION AND SEDIMENTATION CONTROL PLAN
ALIGNMENT SHEET - STA. 30+50 - 41+50
C903
SHEET 4 OF 20

- REFERENCES**
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 - EXISTING STREAM BANK
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 - CEC DELINEATION BOUNDARY
 - EXISTING PEM WETLAND
 - EXISTING PSS WETLAND
 - EXISTING PFO WETLAND
 - EXISTING FENCE
 - EXISTING GAS PIPELINE (APPROXIMATE)
 - EXISTING GAS PIPELINE (LOCATED)
 - EXISTING UTILITY MARKER
 - EXISTING UTILITY POLES/GUY WIRES
 - EXISTING OVERHEAD ELECTRIC
 - EXISTING TEST PIT
 - CROP LINE
 - PROPOSED LIMIT OF DISTURBANCE
 - PROPOSED TEMPORARY WORKSPACE
 - PROPOSED GAS PIPELINE
 - PROPOSED WATERLINE
 - PROPOSED CULVERT
 - PROPOSED RIPRAP APRON
 - PROPOSED WATERBAR
 - PROPOSED EMBEDDED DRAIN OUTLET
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PROFESSIONAL ENGINEER
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12/22/23

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WESTMORELAND COUNTY
PENNSYLVANIA

DRAWN BY: LMK CHECKED BY: SCT APPROVED BY: CRK
DATE: DECEMBER 2023 DWG SCALE: 1"=50' PROJECT NO: 332-793
EROSION AND SEDIMENTATION CONTROL PLAN
ALIGNMENT SHEET - STA. 41+50 - 52+50

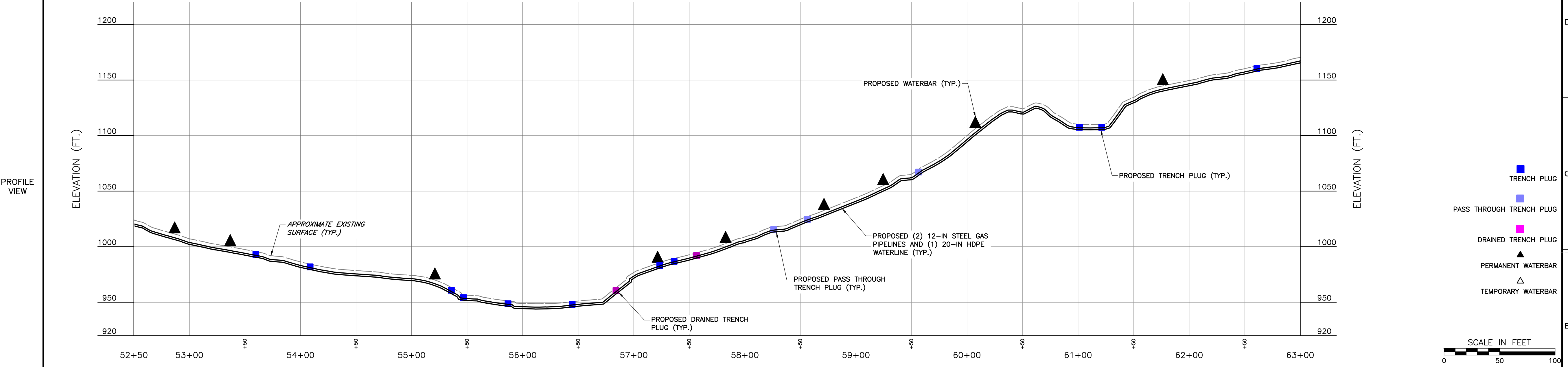
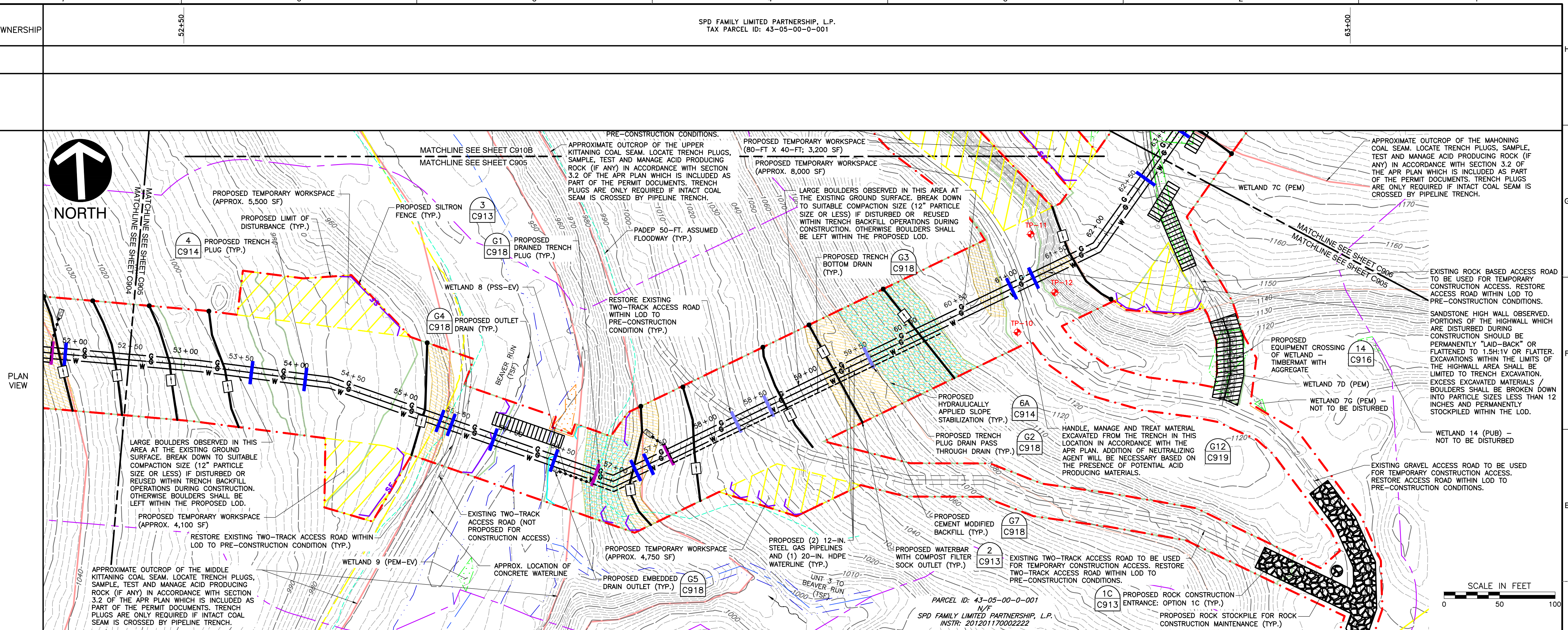
C904
SHEET 5 OF 20

REFERENCES

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PENNSYLVANIA ONE CALL LAW: 20233472815

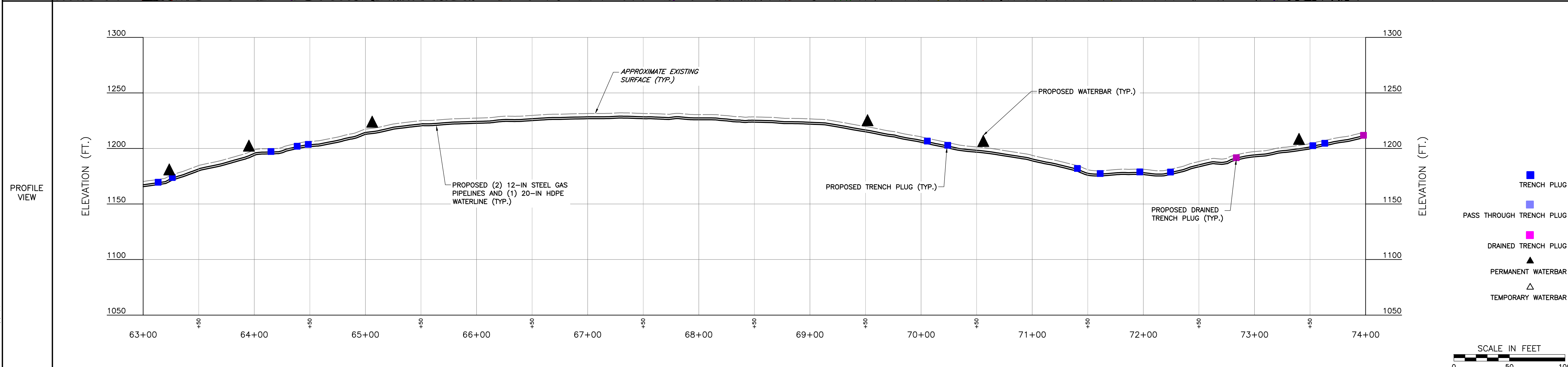
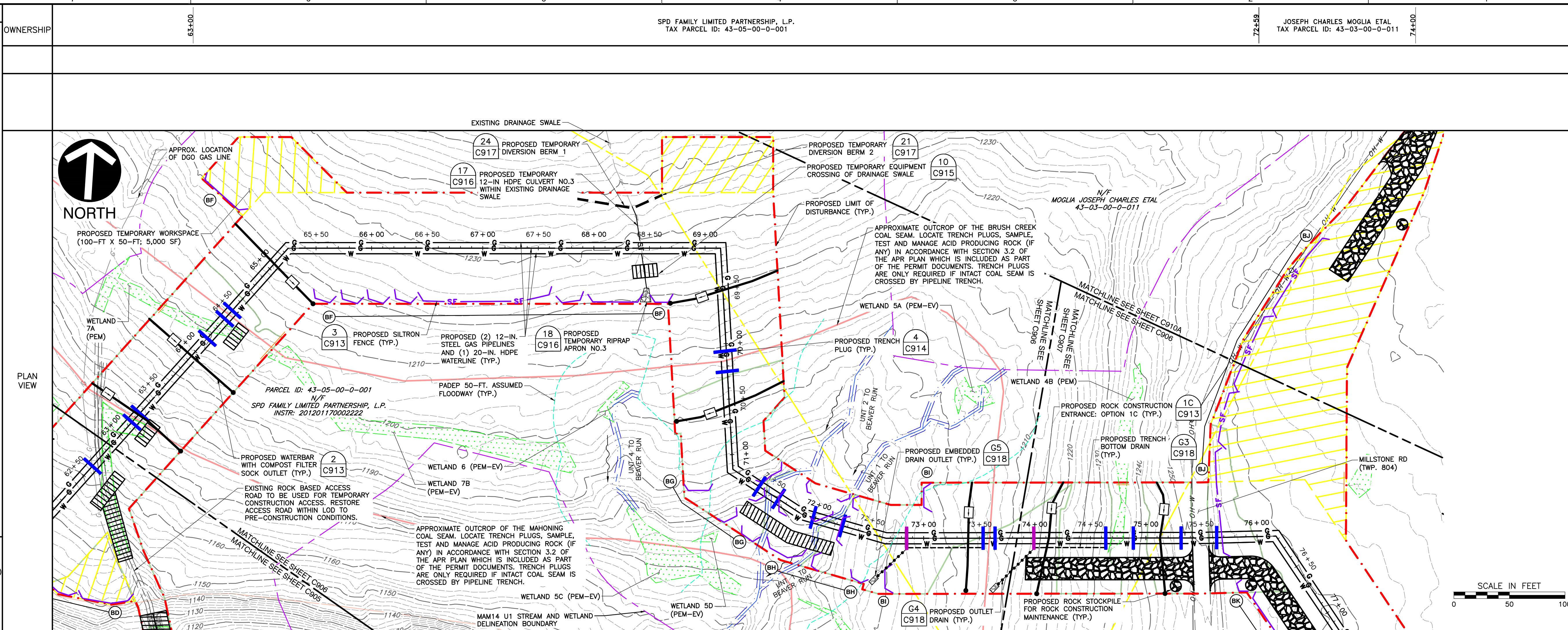
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REGISTERED PROFESSIONAL ENGINEER
 CHARLES ROBERT KANE
 ENGINEER
 12/22/23

CNX MIDSTREAM OPERATING COMPANY LLC
MAM14 U1 PIPELINE AND WATERLINE
 WASHINGTON AND BELL TOWNSHIPS
 WESTMORELAND COUNTY
 PENNSYLVANIA

DRAWN BY: LMK CHECKED BY: SCT APPROVED BY: CRK
 DATE: DECEMBER 2023 DWG SCALE: 1"=50' PROJECT NO: 332-793
 EROSION AND SEDIMENTATION CONTROL PLAN
 ALIGNMENT SHEET - STA. 52+50 - 63+00
C905
 SHEET 6 OF 20

- REFERENCES**
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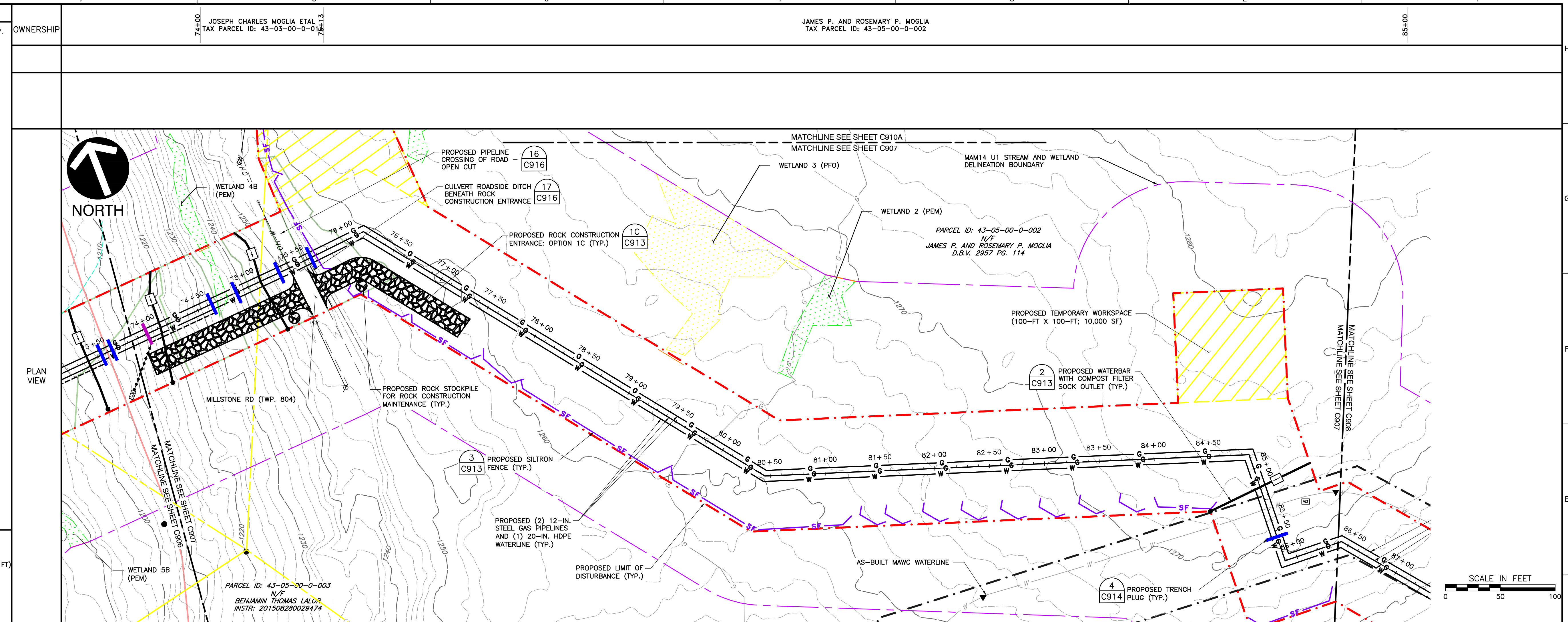
12/22/23

CN MIDSTREAM OPERATING COMPANY LLC
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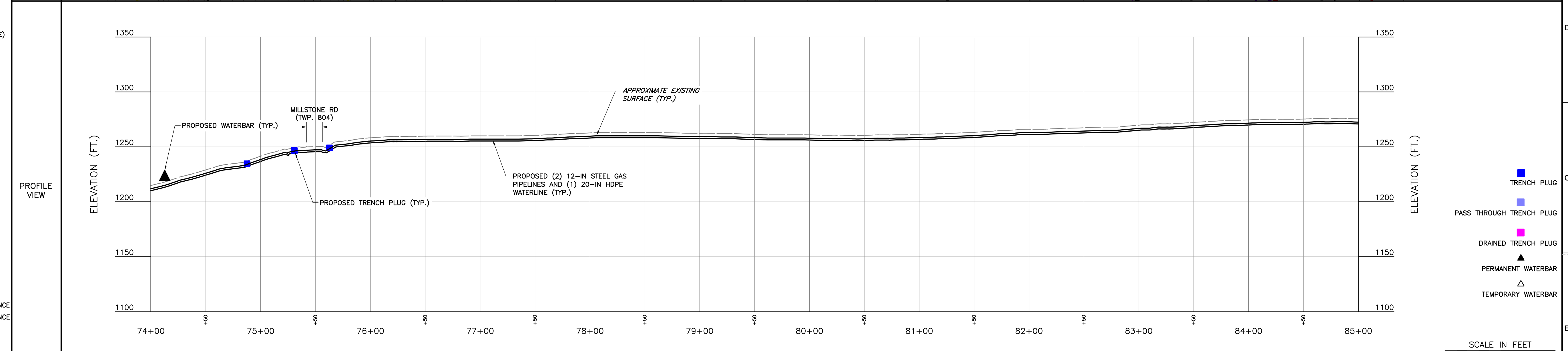
DRAWN BY: LMK CHECKED BY: SCT APPROVED BY: CRK
DATE: DECEMBER 2023 DWG SCALE: 1"=50' PROJECT NO: 332-793
EROSION AND SEDIMENTATION CONTROL PLAN
ALIGNMENT SHEET - STA. 65+00 - 76+00

C906
SHEET 7 OF 20

- REFERENCES**
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C907
SHEET 8 OF 20

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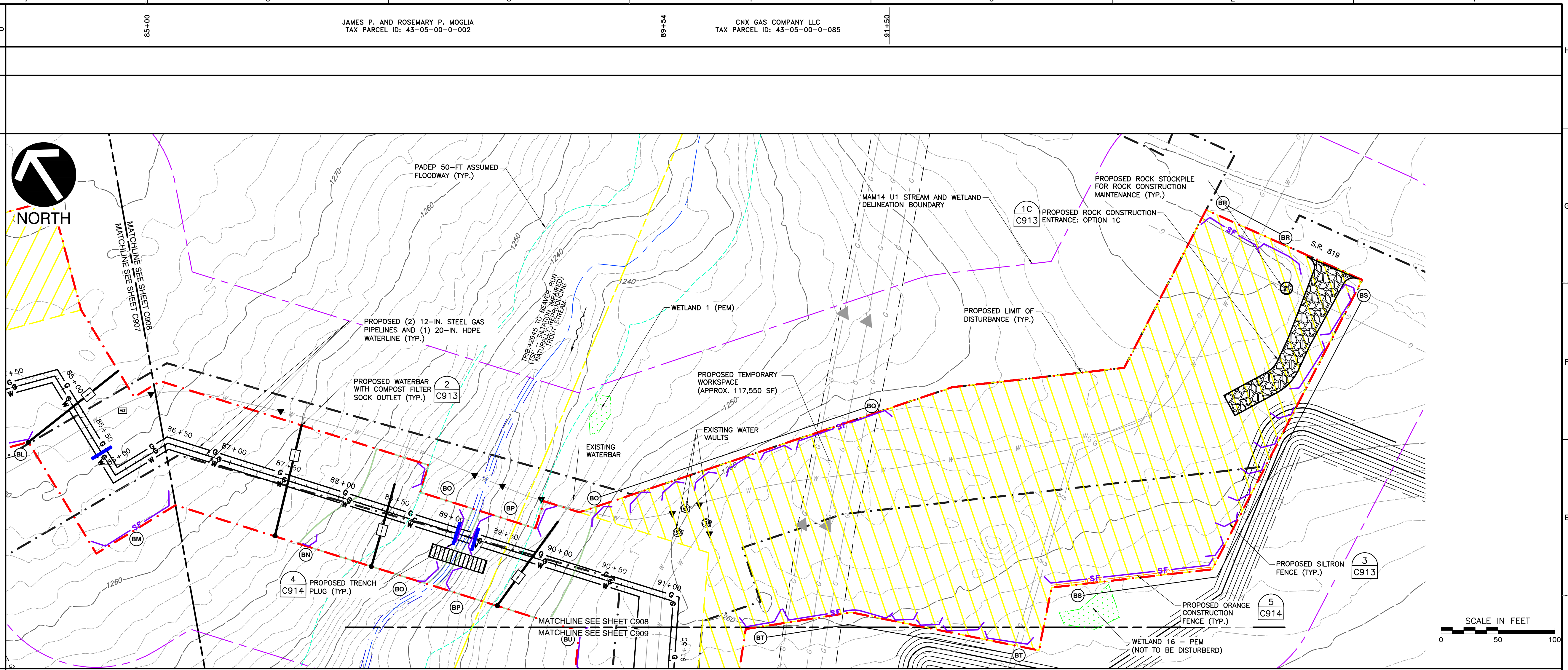
REFERENCES

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OWNERSHIP

JAMES P. AND ROSEMARY P. MOGLIA
TAX PARCEL ID: 43-05-00-0-002

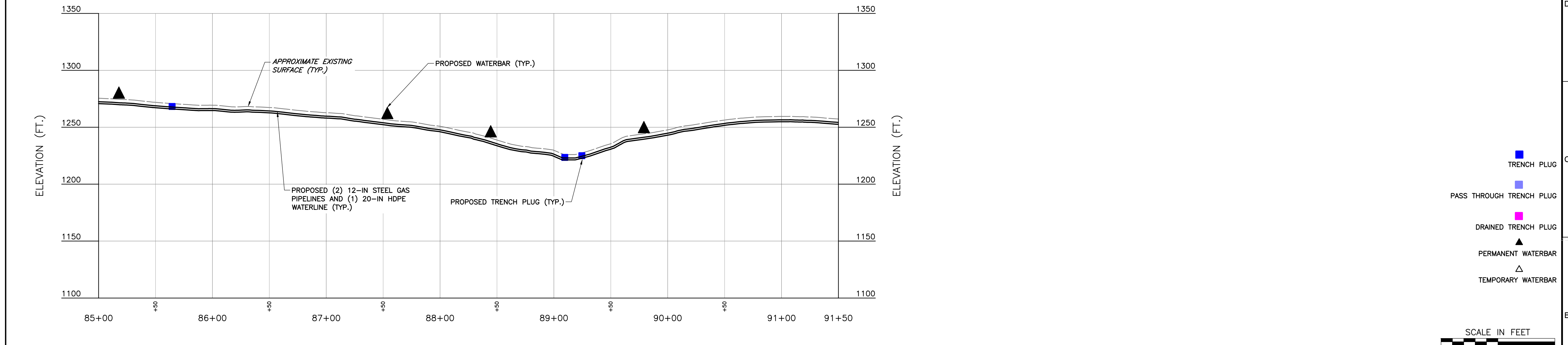
CNX GAS COMPANY LLC
TAX PARCEL ID: 43-05-00-0-085



LEGEND

- EXISTING PROPERTY LINE (VERIFIED)
- EXISTING ADJOINING PROPERTY LINE
- EXISTING INDEX CONTOUR (10 FT)
- EXISTING INTERMEDIATE CONTOUR (2 FT)
- EXISTING STREAM CENTERLINE
- EXISTING STREAM BANK
- ASSUMED PADEP 50-FT FLOODWAY
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- EXISTING PEM WETLAND
- EXISTING PSS WETLAND
- EXISTING PFO WETLAND
- EXISTING FENCE
- EXISTING GAS PIPELINE (APPROXIMATE)
- EXISTING GAS PIPELINE (LOCATED)
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- EXISTING OVERHEAD ELECTRIC
- EXISTING TEST PIT
- CROP LINE
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- PROPOSED TEMPORARY WORKSPACE
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- PROPOSED PASS THROUGH TRENCH PLUG
- PROPOSED DRAINED TRENCH PLUG
- PROPOSED CEMENT MODIFIED BACKFILL
- PROPOSED HYDRAULICALLY APPLIED SLOPE STABILIZATION
- PROPOSED ROCK CONSTRUCTION ENTRANCE
- PROPOSED ORANGE CONSTRUCTION FENCE
- PROPOSED SLOPE STABILIZATION
- PROPOSED TIMBER MAT

PROFILE VIEW



REVISION RECORD

NO	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
4350 Northern Pike - Suite 141 - Monroeville, PA 15146
Ph: 724.327.5200 - 800.899.3610 - Fax: 724.327.5280
www.cecinc.com

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE-STOP CALL PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776

PENNSYLVANIA ONE CALL LAW: 20233472815

PENNSYLVANIA ACT 38 (1997) REQUIRES NO LESS THAN 3 WORKING DAYS NOTICE NOR MORE THAN 10 WORKING DAYS NOTICE FROM EXCAVATORS WHO ARE ABOUT TO: DIG, DRILL, BLAST, AUGER, BORE, GRADE, TRENCH, OR DEMOLISH WHEN IN THE CONSTRUCTION PHASE. FOR LOCATION REQUESTS IN THE STATE OF PENNSYLVANIA, CALL TOLL FREE 1-800-242-1776. UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THE LOCATION MUST BE CONSIDERED APPROXIMATE. OTHER UNDERGROUND UTILITIES MAY EXIST WHICH ARE NOT SHOWN. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN ALL PHYSICAL LOCATIONS OF UTILITY LINES PRIOR TO THE TIME OF CONSTRUCTION, IN NO WAY SHALL THE CONTRACTOR HOLD THE SURVEYOR RESPONSIBLE FOR ANY UTILITY LOCATION SHOWN ON THIS PLAN.

12/22/23

CNX MIDSTREAM OPERATING COMPANY LLC
MAM14 U1 PIPELINE AND WATERLINE
WASHINGTON AND BELL TOWNSHIPS
WESTMORELAND COUNTY
PENNSYLVANIA

DRAWN BY: LMK CHECKED BY: SCT APPROVED BY: CRK
DATE: DECEMBER 2023 DWG SCALE: 1"=50' PROJECT NO: 332-793

EROSION AND SEDIMENTATION CONTROL PLAN

ALIGNMENT SHEET - STA. 85+00 - 91+50

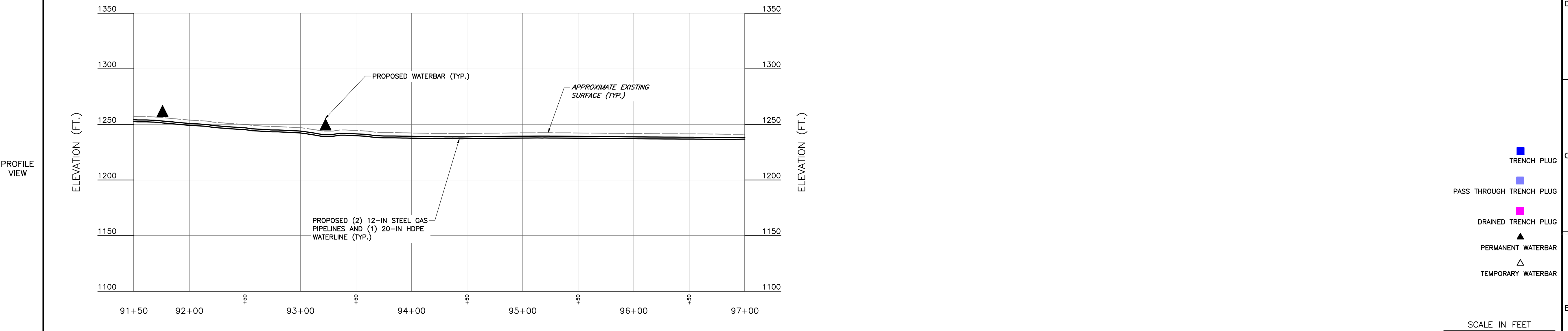
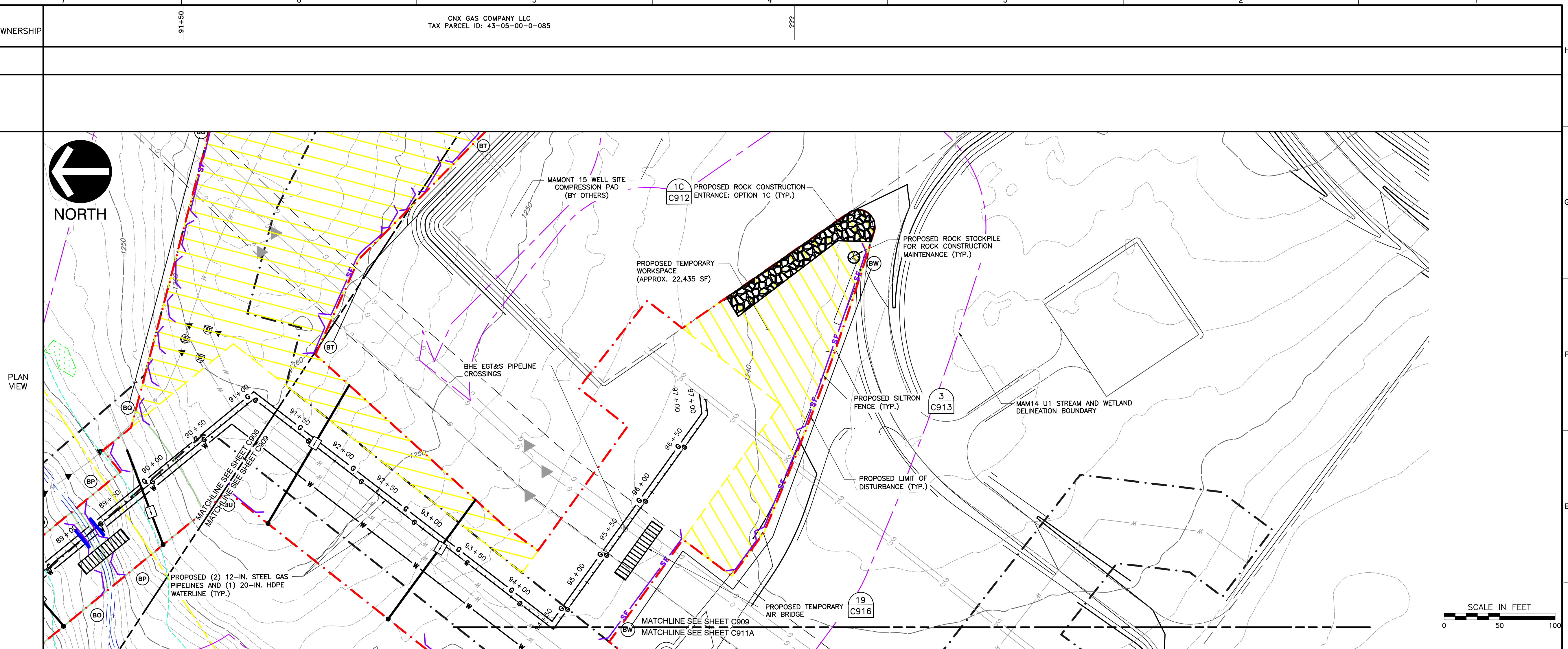
C908
SHEET 9 OF 20

REFERENCES

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REVISION RECORD

NO	DATE	DESCRIPTION

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CNX MIDSTREAM OPERATING COMPANY LLC
MAM14 U1 PIPELINE AND WATERLINE
 WASHINGTON AND BELL TOWNSHIPS
 WESTMORELAND COUNTY
 PENNSYLVANIA

DRAWN BY: LMK CHECKED BY: SCT APPROVED BY: CRK
 DATE: DECEMBER 2023 DWG SCALE: 1"=50' PROJECT NO: 332-793
 EROSION AND SEDIMENTATION CONTROL PLAN
 ALIGNMENT SHEET - STA. 91+50 - 97+00
C909
 SHEET 10 OF 20

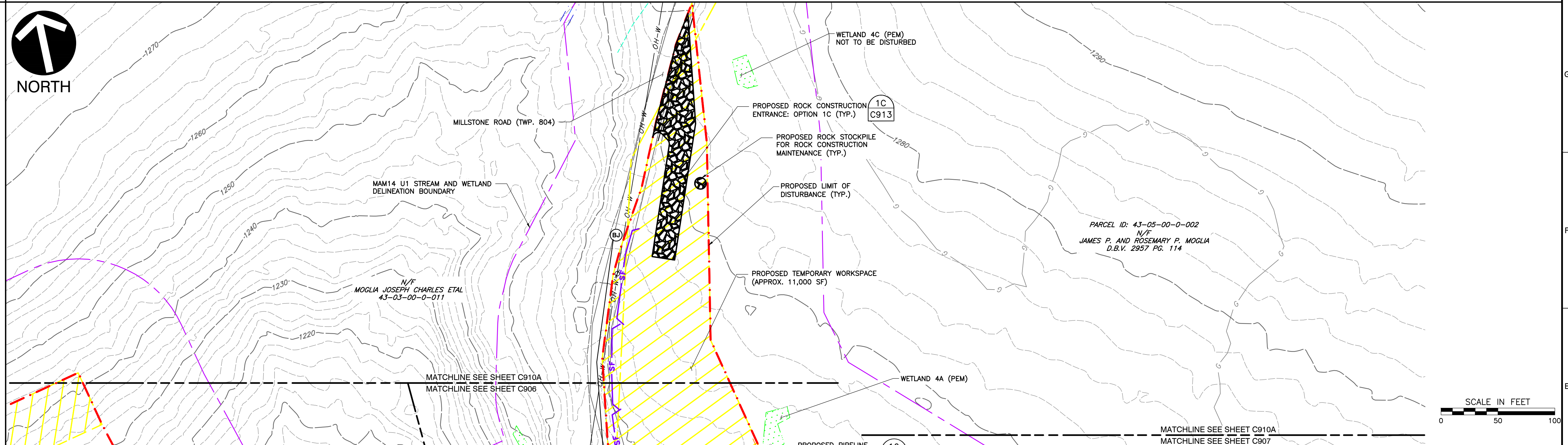
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REFERENCES

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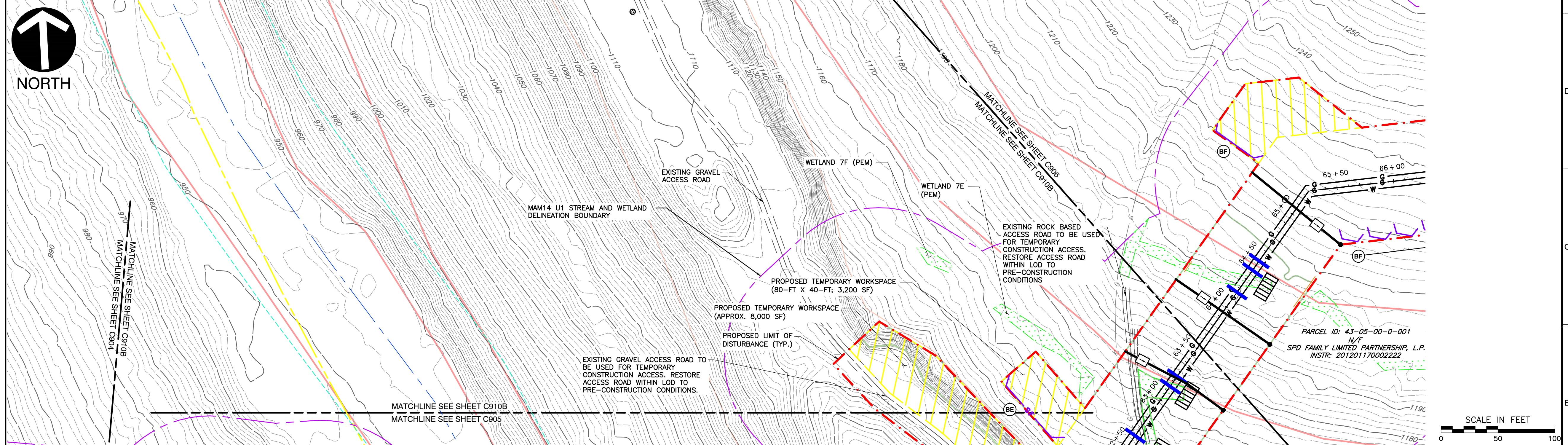
7.



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PLAN VIEW



REVISION RECORD

NO	DATE	DESCRIPTION

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 4350 Northern Pike - Suite 141 - Monroeville, PA 15146
 Ph: 724.327.5200 - 800.899.3610 - Fax: 724.327.5280
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REGISTERED PROFESSIONAL ENGINEER
 CHARLES ROBERT KANE
 12/22/23

CNX MIDSTREAM OPERATING COMPANY LLC
MAM14 U1 PIPELINE AND WATERLINE
 WASHINGTON AND BELL TOWNSHIPS
 WESTMORELAND COUNTY
 PENNSYLVANIA

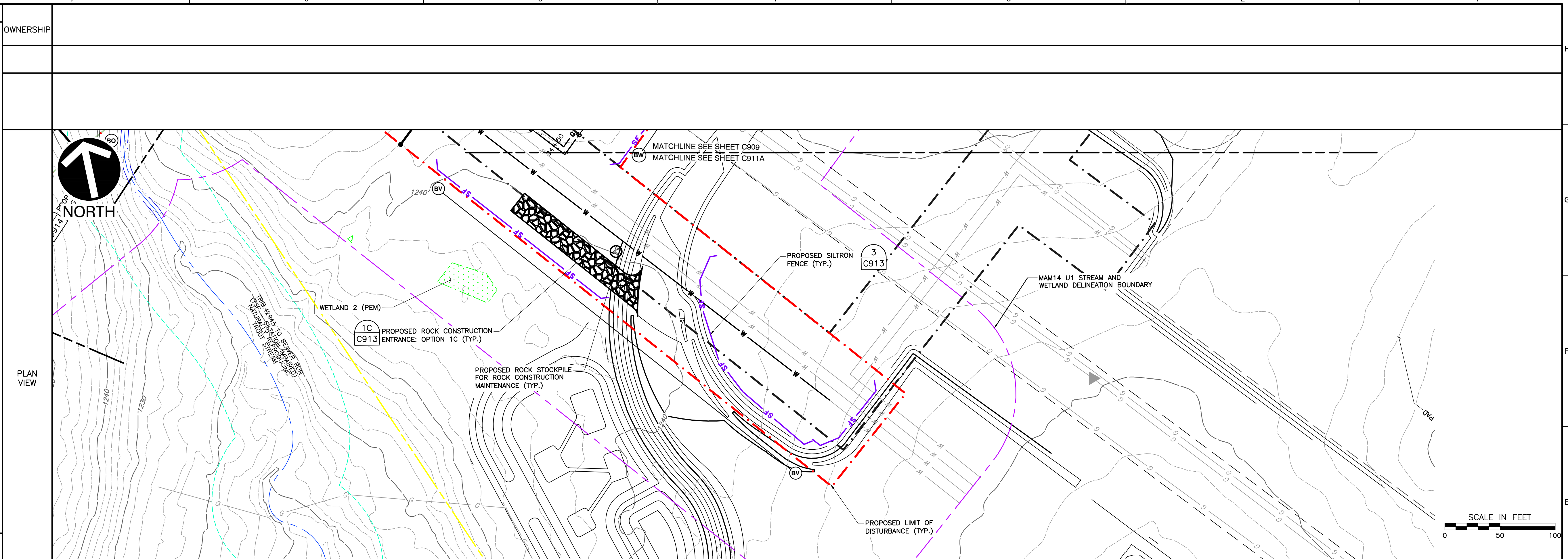
DRAWN BY: LMK CHECKED BY: SCT APPROVED BY: CRK
 DATE: DECEMBER 2023 DWG SCALE: 1"=50' PROJECT NO: 332-793

EROSION AND SEDIMENTATION CONTROL PLAN
 ACCESS ROADS AND TEMPORARY WORKSPACE

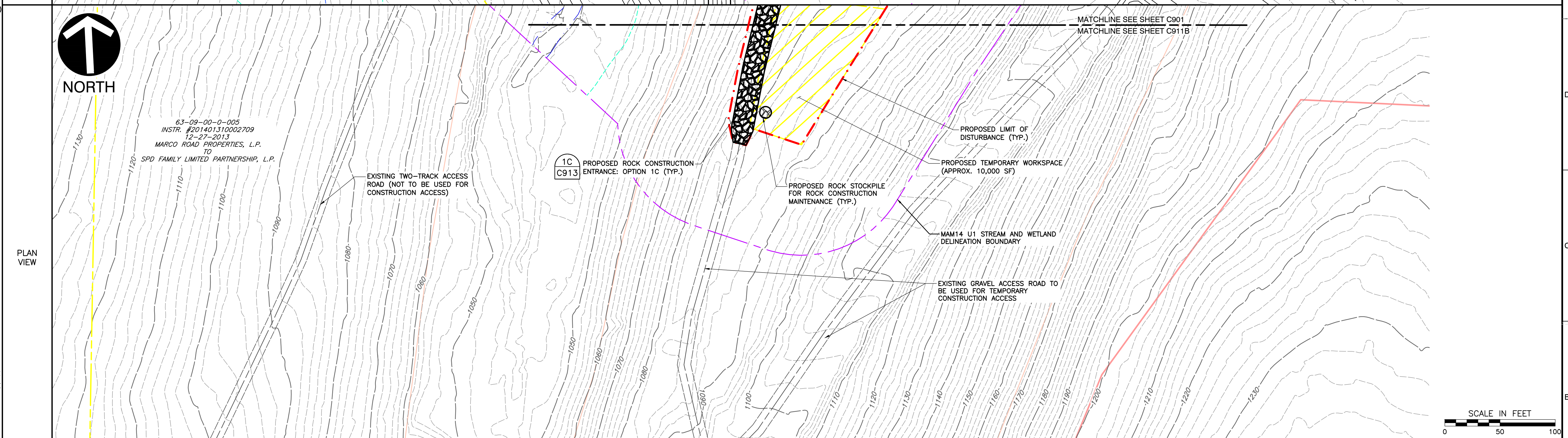
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 SHEET 11 OF 20

P: 1330-001-1332-7931 - CAD01 (Dwg) C:\02-PAP\CAD01\DWG\C910.dwg (12/20/2023 12:53 PM) - e:\proj\12-22-2023-12:53 PM

- REFERENCES**
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63-09-00-0-005
INSTR. #201401310002709
12-27-2013
MARCO ROAD PROPERTIES, L.P.
TO
SPD FAMILY LIMITED PARTNERSHIP, L.P.

EXISTING TWO-TRACK ACCESS ROAD (NOT TO BE USED FOR CONSTRUCTION ACCESS)

PROPOSED ROCK CONSTRUCTION ENTRANCE: OPTION 1C (TYP.)

PROPOSED ROCK STOCKPILE FOR ROCK CONSTRUCTION MAINTENANCE (TYP.)

PROPOSED TEMPORARY WORKSPACE (APPROX. 10,000 SF)

MAM14 U1 STREAM AND WETLAND DELINEATION BOUNDARY

EXISTING GRAVEL ACCESS ROAD TO BE USED FOR TEMPORARY CONSTRUCTION ACCESS

CALL BEFORE YOU DIG!
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REGISTERED PROFESSIONAL ENGINEER
CHARLES ROBERT KANE
12/22/23

CNX MIDSTREAM OPERATING COMPANY LLC
MAM14 U1 PIPELINE AND WATERLINE
WASHINGTON AND BELL TOWNSHIPS
WESTMORELAND COUNTY
PENNSYLVANIA

DRAWN BY: LMK CHECKED BY: SCT APPROVED BY: CRK
DATE: DECEMBER 2023 DWG SCALE: 1"=50' PROJECT NO: 332-793

EROSION AND SEDIMENTATION CONTROL PLAN
ACCESS ROADS AND TEMPORARY WORKSPACE

C911
SHEET 12 OF 20

P: 1330-001-1332-7931 - CAD01/Dwg/C911-C912-P&P/C911-C912.dwg | L5:12/20/2023 12:54 PM | LP: 12/22/2023 12:54 PM

GENERAL NOTES

- THIS PLAN IS FOR EROSION AND SEDIMENTATION CONTROL PURPOSES ONLY.
- EXISTING CONDITIONS AS DEPICTED ON THESE PLANS ARE GENERAL AND ILLUSTRATIVE IN NATURE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO EXAMINE THE SITE AND BE FAMILIAR WITH EXISTING CONDITIONS PRIOR TO BIDDING ON THIS PROJECT. IF CONDITIONS ENCOUNTERED DURING EXAMINATION ARE SIGNIFICANTLY DIFFERENT THAN THOSE SHOWN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
- THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR COMPLYING WITH APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SUBCONTRACTORS TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
- FOR SIDE-SLOPE CONSTRUCTION, TOPSOIL AND TRENCH SPOILS SHALL BE PLACED IN SEPARATE SPOIL PILES WITH THE UPPERMOST PILE FORMING A BERM TO DIVERT CLEAN WATER RUNOFF FROM THE AREA UPSLOPE OF THE CONSTRUCTION RIGHT-OF-WAY. THE UPSLOPE FACE OF THE SPOIL PILES/DIVERSION BERMS SHALL BE STABILIZED IMMEDIATELY AFTER PLACEMENT WITH STRAW MULCH AND TEMPORARY SEEDING TO CREATE A STABILIZED CONVEYANCE MEASURE FOR STORMWATER RUNOFF AND PREVENT EROSION OF THE BERM AND POLLUTION OF THE CLEAN WATER WITH SEDIMENT. IF SUFFICIENT MATERIAL TO BUILD A BERM IS NOT AVAILABLE, A DIVERSION CHANNEL MAY BE USED IN PLACE OF THE BERM. THE CONTRACTOR IS RESPONSIBLE FOR SELECTING AND PROVIDING RELIEF CUTS (OPENINGS) IN THE UPSLOPE DIVERSION TO ALLOW ACCUMULATED CLEAN WATER RUNOFF TO BE CONVEYED ACROSS THE CONSTRUCTION RIGHT-OF-WAY. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A STABLE RIGHT-OF-WAY CROSS CONVEYANCE FOR THIS CLEAN WATER RUNOFF IN THE FORM OF AN UNDISTURBED AREA, STABILIZED CHANNEL, TEMPORARY CONVEYANCE PIPE, OR SOME COMBINATION THEREOF. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A STABLE OUTFALL AT THE DISCHARGE POINT OF THE RIGHT-OF-WAY CROSS CONVEYANCE MEASURE. THE CONTRACTOR SHALL REGULARLY INSPECT THE RIGHT-OF-WAY CROSS CONVEYANCE MEASURES TO IDENTIFY SIGNS OF EROSION OR OFFSITE SEDIMENT POLLUTION. IT IS THE INTENT OF THIS PLAN THAT THE RUNOFF DIVERTED BY THE UPSLOPE DIVERSION AND CONVEYED BY THE RIGHT-OF-WAY CROSS CONVEYANCE MEASURES WILL BE KEPT FREE OF SEDIMENT POLLUTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE FOR AND MAINTAIN RIGHT-OF-WAY CROSS CONVEYANCE MEASURES THAT WILL ACHIEVE THIS GOAL. STABILIZATION OF PROBLEM AREAS SHALL BE HANDLED BY THE CONTRACTOR ON A SITE-SPECIFIC, CASE-BY-CASE BASIS IN CONSULTATION WITH THE ENGINEER-OF-RECORD.
- THE CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE OWNER, OWNER'S REPRESENTATIVE, AND ENGINEER FOR ANY AND ALL INJURIES AND/OR DAMAGES TO PERSONNEL, EQUIPMENT AND/OR EXISTING FACILITIES OCCURRING IN THE COURSE OF THE DEMOLITION AND CONSTRUCTION DESCRIBED IN THE PLANS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL CODES, OBTAIN ALL APPLICABLE PERMITS, AND PAY ALL REQUIRED FEES PRIOR TO BEGINNING WORK.
- CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICTS ALL WORK ASSOCIATED WITH THE PROJECT.
- WATERBARS SHALL BE PLACED AT 2% MAXIMUM SLOPE DOWNHILL. THEY SHALL BE SPACED AT THE INCREMENTS AS SHOWN ON THE PLANS, AND IN ACCORDANCE TO PADEP E&S MANUAL.
- WATERBARS IN AGRICULTURAL AREAS SHALL BE USED AS TEMPORARY FEATURES.
- MAINTENANCE: BMPs SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BMP REPAIR, REPLACEMENT AND MAINTENANCE ACTIVITIES SHALL BE IN ACCORDANCE WITH THE STANDARD DETAIL FOR EACH BMP. A WRITTEN REPORT SHALL BE COMPLETED DOCUMENTING EACH INSPECTION AND ALL BMP REPAIR, REPLACEMENT AND MAINTENANCE ACTIVITIES.

EROSION AND SEDIMENTATION CONTROL NOTES

- THE LOCATION OF EXISTING UTILITIES AND UNDERGROUND STRUCTURES SHOWN ARE APPROXIMATE AND THOSE SHOWN ARE NOT NECESSARILY ALL THE EXISTING UTILITIES AND STRUCTURES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXACT LOCATION OF ALL ABOVE AND BELOW GROUND UTILITIES AND STRUCTURES PRIOR TO INITIATING CONSTRUCTION ACTIVITIES.
- THE CONTRACTOR SHALL CONTACT PENNSYLVANIA ONE CALL SYSTEM INC. AT 1-800-242-1776 AND THE APPROPRIATE UTILITY COMPANIES AT LEAST THREE (3) DAYS PRIOR TO THE INITIATION OF EARTHMOVING AND DEMOLITION ACTIVITIES.
- ANY CHANGES TO THE SOIL EROSION AND SEDIMENTATION CONTROL PLAN SHALL BE APPROVED BY THE ENGINEER AND THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (PADEP). THE REVISED PLANS MUST MEET ALL CURRENT STATE SOIL EROSION AND SEDIMENTATION CONTROL STANDARDS.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL PREPARED BY PADEP, BUREAU OF SOIL AND WATER CONSERVATION, LATEST EDITION.
- ADDITIONAL EROSION AND SEDIMENTATION CONTROL MEASURES MAY BE REQUIRED AS DEEMED NECESSARY BY THE PADEP, OWNER, OR LOCAL MUNICIPALITY IN THE EVENT THAT ANY UNFORESEEN PROBLEMS ARISE DURING CONSTRUCTION.
- THE CONTRACTOR SHALL INSTALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES PRIOR TO ANY SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE AND MAINTAIN THEM UNTIL PERMANENT STABILIZATION IS ESTABLISHED.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES TO BE REMOVED, RELOCATED AND/OR RAZED ARE DISCONNECTED PRIOR TO INITIATING EARTHMOVING ACTIVITIES.
- TO PROTECT AGAINST ACCELERATED EROSION AND SEDIMENTATION, THE CONTRACTOR SHALL IMMEDIATELY SEED OR MULCH ALL AREAS THAT WILL BE LEFT EXPOSED MORE THAN 4 DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC. IF THE SEASON PREVENTS THE ESTABLISHMENT OF A TEMPORARY COVER, STRAW MULCH SHALL BE APPLIED AT A RATE OF 3 TONS PER ACRE OVERTOP EXPOSED AREAS.
- ANY CLEARED AND GRUBBED MATERIAL HAULED OFFSITE SHALL BE DISPOSED OF AT AN APPROVED WASTE SITE.
- 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 BY THE CONTRACTOR TO MAKE IT SUITABLE TO SUPPORT VEGETATIVE GROUND COVER.
- THE CONTRACTOR SHALL CONTROL DUST WITH WATER OR OTHER METHODS APPROVED BY THE PADEP AND THE OWNER.
- THE CONTRACTOR SHALL INSTALL SILT FENCE ALONG THE PERIMETER OF ALL SOIL STOCKPILES AS INDICATED ON THE PLANS.
- THE CONTRACTOR SHALL SUBMIT A PREPAREDNESS, PREVENTION AND CONTINGENCY (PPC) PLAN TO THE OWNER PRIOR TO CONSTRUCTION IF CHEMICALS, SOLVENTS OR OTHER HAZARDOUS WASTES OR MATERIALS WITH THE POTENTIAL TO CAUSE ACCIDENTAL POLLUTION DURING EARTHMOVING OR OTHER CONSTRUCTION ACTIVITIES ARE STORED OR USED ON SITE. THE PPC PLAN SHALL BE PREPARED IN ACCORDANCE WITH "GUIDELINES FOR THE DEVELOPMENT AND IMPLEMENTATION OF PREPAREDNESS, PREVENTION AND CONTINGENCY (PPC) PLANS", PREPARED BY PADEP BUREAU OF SOLID WASTE MANAGEMENT AND PADEP BUREAU OF WATER QUALITY MANAGEMENT.
- THE CONTRACTOR SHALL CONSTRUCT A BERM AROUND AREAS WHERE HYDRAULIC FLUID AND DIESEL FUEL WILL BE STORED DURING CONSTRUCTION TO SERVE AS A CONTAINMENT AREA FOR THE CONTROL OF POSSIBLE SPILLS. ANY SPILL WITHIN THE CONTAINMENT AREA SHALL BE IMMEDIATELY CLEANED. TELEPHONE NUMBERS OF EMERGENCY RESPONSE TEAMS ARE TO BE KEPT ON SITE, AND THEY ARE TO BE NOTIFIED IN THE CASE OF A SPILL.
- THE CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION.
- THE CONTRACTOR SHALL PROVIDE THE LOCATION AND ANY APPLICABLE PERMIT NUMBERS OF ALL THE OFF SITE DISPOSAL AND BORROW SITES THAT WILL BE UTILIZED DURING CONSTRUCTION TO THE PADEP PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL ALSO IDENTIFY THE EROSION AND SEDIMENTATION CONTROL MEASURES, WHICH WILL BE IMPLEMENTED AT THE DISPOSAL AND/OR BORROW SITES. IF THE DISPOSAL AND/OR BORROW SITES ARE NOT PERMITTED, AN EROSION AND SEDIMENTATION PLAN MUST BE APPROVED BY THE PADEP PRIOR TO THEIR USE.
- RUNOFF DRAINS INTO UNTS TO BEAVER RUN, BEAVER RUN, UNTS TO TRIB. 42938 TO BEAVER RUN, TRIB. 42938 TO BEAVER RUN, AND TRIB. 42945 TO BEAVER RUN. ACCORDING TO THE CHAPTER 93 WATER QUALITY STANDARDS, PADEP, TITLE 25 ENVIRONMENTAL RESOURCES, COMMONWEALTH OF PENNSYLVANIA THE ABOVE NAMED WATERS ARE CLASSIFIED AS TROUT STOCKED FISHES (TSF) WITH NO SPECIAL EXCEPTIONS.
- SEE EROSION, SEDIMENT AND STORMWATER CONTROL PLAN FOR DESCRIPTION OF PROPOSED CONTROLS NOT SHOWN HEREON.
- MATERIAL RECYCLING AND DISPOSAL PRACTICES AND PROCEDURES MUST BE IN PLACE TO ENSURE THE PROPER HANDLING, STORAGE, CONTROL, DISPOSAL, AND RECYCLING OF GARBAGE, FUELS OR ANY SUBSTANCE WHICH MAY BE HARMFUL TO HUMAN, AQUATIC OR FISH LIFE. THESE ITEMS SHALL BE PREVENTED FROM ENTERING SPRINGS, STREAMS, PONDS, LAKES, WETLANDS, OR ANY WATER COURSE OR WATER BODY. OILS, FUELS, LUBRICANTS AND COOLANTS SHALL BE PLACED IN SUITABLE CONTAINERS AND DISPOSED OF PROPERLY. ALL TRASH AND GARBAGE SHALL BE COLLECTED AND DISPOSED OF PROPERLY AS WELL.
- DURING INSTALLATION OF THE PIPELINE THE FOLLOWING PRECAUTIONS SHALL BE IMPLEMENTED TO AVOID LANDSLIDE ACTIVITY: EROSION CONTROL BLANKETS, WATERBARS, TRENCH PLUGS, AND SILT FENCE SHALL BE PRECALLED AS SHOWN ON THE E&S PLANS; TRENCHES SHALL BE EXCAVATED WITH APPROPRIATE LAYBACK BANKS; PUMPS WITH FILTER BAGS SHALL BE USED TO REMOVE WATER FROM THE TRENCH; AND THE DISTURBED AREA SHALL BE VEGETATED AND STABILIZED PROPERLY. IF THE CONTRACTOR SEES ANY SIGN OF POTENTIAL LANDSLIDE ACTIVITY, CEC SHALL BE CONTACTED IMMEDIATELY.

CONSTRUCTION SEQUENCE

- A GENERALIZED CONSTRUCTION SEQUENCE IS PROVIDED BELOW. THE CONSTRUCTION SEQUENCE IS INTENDED TO PROVIDE A GENERAL COURSE OF ACTION IN ORDER TO CONFORM TO THE APPLICABLE REGULATORY AGENCY REQUIREMENTS FOR TEMPORARY AND PERMANENT SOIL EROSION AND SEDIMENTATION CONTROLS. NECESSARY PARTS FOR PROPER AND COMPLETE EXECUTION OF WORK PERTAINING TO THIS PLAN, WHETHER SPECIFICALLY MENTIONED OR NOT, ARE TO BE PERFORMED BY THE CONTRACTOR. IT IS NOT INTENDED THAT THE DRAWINGS SHOW EVERY DETAILED PIECE OF MATERIAL OR EQUIPMENT. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS LISTED IN THIS SECTION. THE CONTRACTOR MAY BE REQUIRED TO ALTER CONTROLS BASED ON EFFECTIVENESS OF CONTROLS OR DIFFERING CONDITIONS ENCOUNTERED IN THE FIELD.
- A PRECONSTRUCTION MEETING IS REQUIRED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY. PADEP MUST BE INVITED TO THIS MEETING AT LEAST SEVEN DAYS IN ADVANCE.
- PIPELINE CONSTRUCTION IS EXPECTED TO BE PERFORMED IN A SEGMENTAL FASHION TO PROGRESS ALONG THE PROJECT ROUTE. AS SUCH, DIFFERENT SEGMENTS OF THE PIPELINE MAY BE AT DIFFERENT STAGES IN THE CONSTRUCTION SEQUENCE DURING THE LIFE OF THE PROJECT. FOR EACH SEGMENT OF PIPELINE, THE CONTRACTOR SHOULD GENERALLY FOLLOW STEPS BELOW AND REPEAT FOR EACH NEW SEGMENT OF PIPELINE CONSTRUCTION. UPON COMPLETION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY, THE SITE SHALL BE IMMEDIATELY STABILIZED OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND DISCHARGE OF SEDIMENT.
- LAYOUT THE LIMITS OF THE PROJECT, INCLUDING SURVEY STAKING THE LIMIT OF DISTURBANCE, ESTABLISH BENCHMARKS, REFERENCE POINTS, AND SENSITIVE AREAS WHICH ARE TO BE PRESERVED OR AVOIDED DURING CONSTRUCTION. INSTALL ORANGE CONSTRUCTION SAFETY FENCE IN THE LOCATIONS IDENTIFIED ON THE E&S PLAN DRAWINGS TO PROTECT SENSITIVE AREAS.
 - LOCATE STAGING AREAS AND ACCESS POINTS INCLUDING CONSTRUCTION ENTRANCES. INSTALL SEDIMENT BARRIERS AS SHOWN ON THE PLANS DOWN SLOPE OF THESE AREAS.
 - INSTALL ROCK CONSTRUCTION ENTRANCES AT THE LOCATIONS SHOWN ON THE E&S PLANS AND IN ACCORDANCE WITH THE STANDARD DETAILS. ROCK CONSTRUCTION ENTRANCE LOCATIONS MAY BE ADJUSTED WITHIN THE LIMIT OF DISTURBANCE AT THE LOCATIONS SHOWN ON THE E&S PLANS TO ALLOW FOR EFFICIENT FLOW OF CONSTRUCTION TRAFFIC. STOCKPILES MAY BE RELOCATED WITHIN THE LIMIT OF DISTURBANCE FROM LOCATIONS SHOWN ON THE E&S PLANS TO ALLOW FOR EFFICIENT FLOW OF CONSTRUCTION TRAFFIC.
 - MINIMIZE TOTAL AREA OF DISTURBANCE. REMOVE TREES AND BRUSH TO EFFECTIVELY INSTALL PERIMETER CONTROLS, AND LEVEL SITE CUTS TO GRANT ACCESS FOR VEHICLES AND WORKERS TO SAFELY PERFORM THE INSTALLATION OF SEDIMENT BARRIERS ON THE SITE AS SHOWN ON THE CONSTRUCTION DRAWINGS. INSTALLATION, BMP SIZING, AND SPACING MUST CONFORM TO THE DETAILS AND SPECIFICATIONS PROVIDED ON PLAN SHEETS.
 - CLEAR AND GRUB ONLY WITHIN THE LIMIT OF DISTURBANCE DEFINED ON THE E&S PLANS. NO GRUBBING OR EARTH DISTURBANCE SHALL OCCUR UNTIL BMPs ARE INSTALLED DOWNSLOPE OF TRIBUTARY AREAS.
 - DURING CLEARING ALONG THE ROW, INSTALL TEMPORARY EQUIPMENT CROSSINGS AT STREAMS AND WETLANDS AS SHOWN ON THE E&S PLANS. CROSSINGS MUST BE INSTALLED IN ACCORDANCE WITH REQUIREMENTS OF THE APPROVED CHAPTER 105 GENERAL PERMIT DOCUMENTS ASSOCIATED WITH EACH INDIVIDUAL CROSSING LOCATION.
- PIPELINE CONSTRUCTION**
- BEGIN PIPELINE CONSTRUCTION. SEGREGATION OF TOPSOIL AND SUBSOIL SHALL TAKE PLACE THROUGHOUT THE ROW. SOIL STOCKPILE LOCATIONS SHALL BE ADJUSTED AS NECESSARY DURING CONSTRUCTION TO ALLOW FOR EFFICIENT FLOW OF CONSTRUCTION OR TO ACCOMMODATE PREVAILING SITE CONDITIONS. THE ROW SHALL BE USED AS THE WORK AREA FOR EXCAVATION, EQUIPMENT MOVEMENT, AND MATERIAL STOCKPILES. EQUIPMENT, STOCKPILES, AND OTHER MATERIALS MUST REMAIN UPSLOPE OF BMPs DURING CONSTRUCTION ACTIVITY.
 - FOR THE DURATION OF CONSTRUCTION, POOLING WATER ENCOUNTERED WITHIN THE CONSTRUCTION AREA SHALL BE DEWATERED BY USING PUMPS, HOSES, AND PUMPED WATER FILTER BAGS THAT DISCHARGE INTO WELL-VEGETATED AREAS.
 - COAL OR OTHER POTENTIAL ACID PRODUCING ROCK (APR) MATERIAL SHALL BE HANDLED IN ACCORDANCE WITH THE APPROVED APR MANAGEMENT PLAN.
 - APPLY SOIL SUPPLEMENTS AND TEMPORARILY SEED AND MULCH TOPSOIL STOCKPILES AND DISTURBED AREAS THAT WILL RECEIVE NO CONSTRUCTION ACTIVITY WITHIN (4) DAYS.
 - PROCEED WITH GAS PIPELINE AND WATERLINE INSTALLATION. PIPELINE INSTALLATION AT STREAM AND WETLAND CROSSINGS MUST BE PERFORMED IN ACCORDANCE WITH REQUIREMENTS OF THE APPROVED CHAPTER 105 GENERAL PERMIT DOCUMENTS ASSOCIATED WITH EACH INDIVIDUAL CROSSING LOCATION.
 - INSTALL TRENCH PLUGS AND GEOLOGIC HAZARD MITIGATION BMPs AT THE LOCATIONS IDENTIFIED ON THE E&S PLANS. GEOLOGIC HAZARD MITIGATION BMP LOCATIONS MAY BE ADJUSTED, RELOCATED, OR ADDED PER PREVAILING SITE CONDITIONS AND AT THE DISCRETION OF A QUALIFIED PROFESSIONAL UNDER DIRECT SUPERVISION OF THE APPROPRIATE LICENSED PROFESSIONAL.
 - UPON COMPLETION OF PIPELINE INSTALLATION, BACKFILL THE TRENCH WITH SUITABLE MATERIAL.
- RIGHT-OF-WAY RESTORATION**
- APPLY SOIL SUPPLEMENTS AND PERMANENT SEED AND MULCH TO DISTURBED AREAS THAT HAVE ACHIEVED FINAL GRADE AND WILL NO LONGER BE SUBJECTED TO CONSTRUCTION ACTIVITY. FOR SLOPE AREAS 3H:1V AND STEEPER, THE AREA SHALL BE VERTICALLY TRACKED AND EROSION CONTROL BLANKETS SHALL BE INSTALLED ONCE SOIL SUPPLEMENTS, SEED, AND MULCH HAVE BEEN APPLIED. FOR SLOPE AREAS 3H:1V AND STEEPER, A STEEP SLOPE SEED MIXTURE SHALL BE USED.
 - UPON COMPLETION OF CONSTRUCTION ACTIVITIES, THE SITE SHALL BE RESTORED IN ACCORDANCE WITH THE PCSM/SR PLAN. DURING RESTORATION OF THE ROW, THE CONTRACTOR SHALL IMPLEMENT DECOMPACTION PROCEDURES (RIPPING, DISCING, TILLING, ETC.) THROUGH THE UPPER 12 TO 18 INCHES OF SUBSOIL TO PROMOTE ROOT GROWTH. TOPSOIL WILL BE RESPREAD ABOVE THE DECOMPACTION SOILS. APPLY SOIL SUPPLEMENTS AND PERMANENT SEED AND MULCH TO ALL REMAINING DISTURBED AREAS. EXISTING THIRD PARTY ACCESS ROADS CROSSED BY THE PIPELINE SHALL BE RESTORED TO THEIR PRE-CONSTRUCTION CONDITION.
 - RESEED, AS NECESSARY, ANY AREAS THAT BECAME DISTURBED OR WHERE VEGETATION HAS NOT BEEN ESTABLISHED.
 - REMOVE ALL TEMPORARY BMPs ONCE A UNIFORM 70 PERCENT PERENNIAL VEGETATIVE COVER HAS ESTABLISHED ON ALL PREVIOUSLY DISTURBED AREAS.
 - IF FUTURE MAINTENANCE ACTIVITIES ALONG THE ROW ARE REQUIRED, CNXM AND THE CONTRACTOR SHALL MONITOR EQUIPMENT LEAVING THE ROW TO ENSURE SEDIMENT IS NOT TRACKED ONTO THE ROADWAY. CNXM SHALL OBTAIN ADDITIONAL PERMITS, IF NECESSARY, DEPENDING ON THE SCOPE OF THE MAINTENANCE ACTIVITIES. SEDIMENT DEPOSITED ONTO THE ROADWAY SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY.

PROJECT SOILS AND LIMITING CHARACTERISTICS

SOILS LEGEND	
Symbol	Name
BcD	Bethesda very clayey silt loam 8-25% slopes
Bcl	Clayey silt loam 3-8% slopes
ErB	Fines silt loam 3-8% slopes
ErC	Fines silt loam 8-15% slopes
GcB	Gulpin clayey silt loam 3-8% slopes
Gcl	Gulpin clayey silt loam 8-15% slopes
Gcd	Gulpin clayey silt loam 15-25% slopes
IdB	Gulpin silt loam complex 3-8% slopes
IdC	Folskell silt loam 15-25% slopes
ShF	Shicksta-Gulpin clayey silt loam 25-75% slopes
Scl	Shicksta-Gulpin clayey silt loam 3-8% slopes
WclB	Wharton silt loam 3-8% slopes
WclC	Wharton silt loam 8-15% slopes

LIMITING SOIL CHARACTERISTICS													
Map Symbol	Soil Name	Compressive to Concrete/Steel	Depth to Saturated Zone	Depth to Hard Bedrock	Slope	Flooding	Frost Action	Low Strength	Unstable Fill	Cut Banks Cave	Hydric/Hydric Inclusions	Shrink/Swell	Piping
BcD	Bethesda	C/S	X		X		X	X	X	X			
Bcl	Bethesda	C/S	X		X		X	X	X	X			
ErB	Fines	C/S	X		X		X	X	X	X			
ErC	Fines	C/S	X		X		X	X	X	X			X
GcB	Gulpin	C/S		X	X		X	X	X	X			
Gcl	Gulpin	C/S		X	X		X	X	X	X			
Gcd	Gulpin	C/S		X	X		X	X	X	X			
IdB	Imann	C/S					X	X	X	X			
IdC	Folskell	S	X	X			X	X	X	X			
ShF	Shicksta-Gulpin	C/S			X	X	X	X	X	X			
Scl	Shicksta-Gulpin	C/S			X	X	X	X	X	X			
WclB	Wharton	C/S	X	X		X	X	X	X	X			
WclC	Wharton	C/S	X	X		X	X	X	X	X			

SOIL LIMITATIONS AND RESOLUTIONS	
Limitation	Resolution
Corrosion to Concrete/Steel	Concrete and steel construction materials shall be coated with corrosion resistant material.
Depth to Saturated Zone	Pumps and pumped water filter bags shall be utilized if groundwater is encountered.
Depth to Hard Bedrock	Excavation shall be as shallow as practicable. Site earthwork operations shall be performed in accordance with the geotechnical recommendations by C.L.C.
Slope	The site shall be regraded to suitable slopes for desired function.
Flooding	No floodplains will be disturbed during the construction of the project.
Frost Action	Ensure proper protection from damage, especially to roadways.
Low Strength	Proper construction techniques shall be employed during earthmoving activities in order to avoid slope failures.
Unstable Fill	A project specific geohazard mitigation report was prepared to address steep slope and unstable fill construction. Refer the geohazard mitigation report for construction recommendations.
Cut Banks Cave	Trenches and cut slopes shall be excavated with appropriate layback banks to prevent cave-ins. Stockpiles shall be located at a sufficient distance away from the trenches and cut slopes. Applicable Occupational Safety and Health Administration standards and regulations should be implemented.
Hydric/Hydric Inclusions	A wetland study was performed by C.E.C. Streams and wetlands are shown on the E&S Plans and in the Wetland Delineation Report included in the 15C-GP-3 application.
Shrink/Swell	Replace pre-existing expansive soils with a non-expansive soil or maintain constant soil moisture.
Piping	Trench plugs shall be utilized in accordance with the PADEP standard detail to minimize water movement via pipe bedding on slopes. Water shall be diverted away from open trenches.

REVISION RECORD		
NO.	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
 4350 Northern Pike - Suite 141 - Monroeville, PA 15146
 Ph: 724.327.5200 - 800.899.3610 - Fax: 724.327.5280
 www.cecinc.com

CALL BEFORE YOU DIG!
 PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE--STOP CALL PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776

PENNSYLVANIA ONE CALL LAW:
 PENNSYLVANIA ACT 38 (1991) REQUIRES NO LESS THAN 3 WORKING DAYS NOTICE NOR MORE THAN 10 WORKING DAYS NOTICE FROM EXCAVATORS WHO ARE ABOUT TO DIG, DRILL, BLAST, AUGER, BORE, GRADE, TRENCH, OR BUSHWHACK IN THE CONSTRUCTION PHASE. FOR LOCATION REQUESTS IN THE STATE OF PENNSYLVANIA, CALL TOLL FREE 1-800-242-1776. UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THE LOCATION MUST BE CONSIDERED APPROXIMATE. OTHER UNDERGROUND UTILITIES MAY EXIST WHICH ARE NOT SHOWN. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN ALL PHYSICAL LOCATIONS OF UTILITY LINES PRIOR TO THE TIME OF CONSTRUCTION. IN NO WAY SHALL THE CONTRACTOR HOLD THE SURVEYOR RESPONSIBLE FOR ANY UTILITY LOCATION SHOWN ON THIS PLAN.

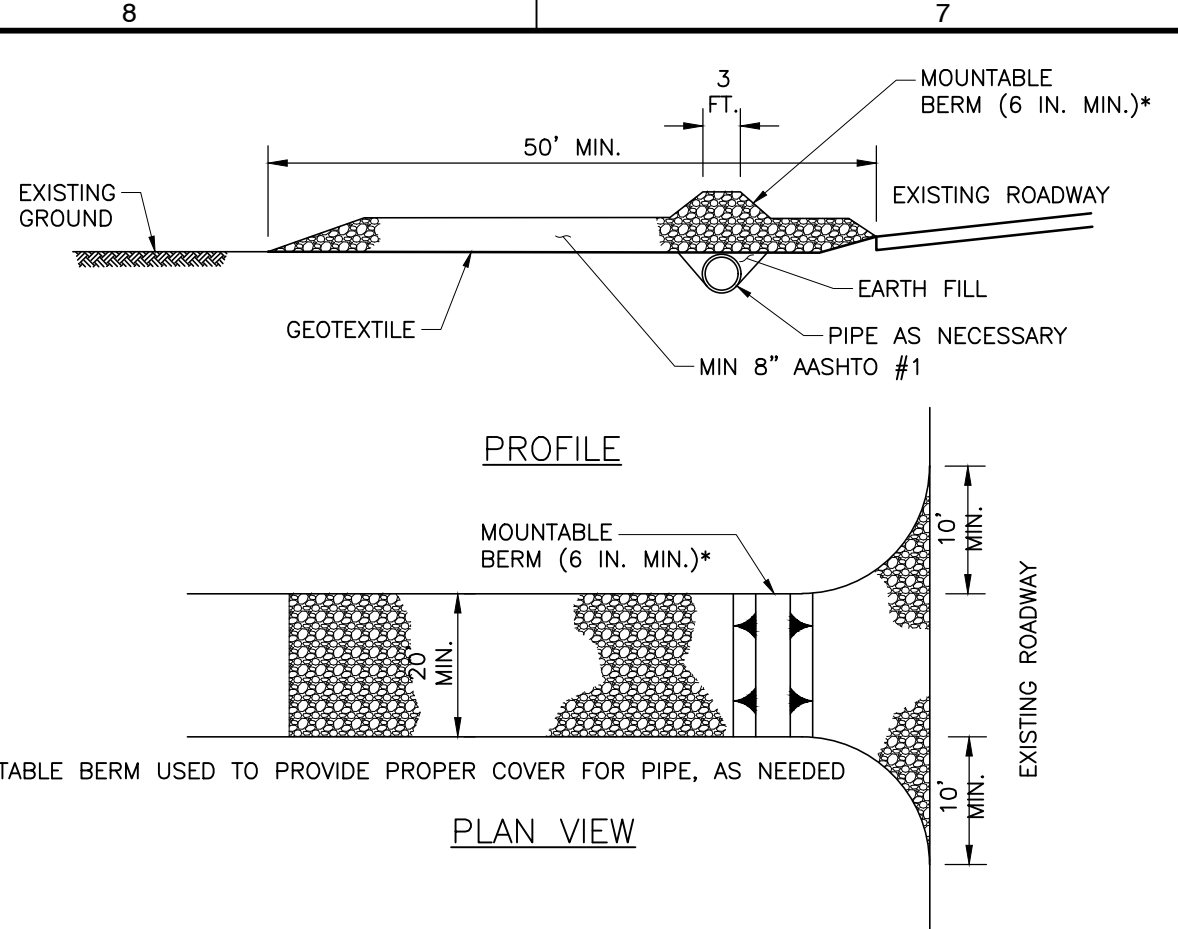
REGISTERED PROFESSIONAL ENGINEER
 CHARLES ROBERT KANE
 12/22/23
 * HAND SIGNATURE ON FILE

CNX MIDSTREAM OPERATING COMPANY LLC
MAM14 U1 PIPELINE AND WATERLINE
WASHINGTON AND BELL TOWNSHIPS
WESTMORELAND COUNTY
PENNSYLVANIA

DRAWN BY: JJN CHECKED BY: SCT APPROVED BY: CRK
 DATE: DECEMBER 2023 DWG SCALE: N.T.S. PROJECT NO: 332-793

EROSION AND SEDIMENTATION CONTROL PLAN
EROSION AND SEDIMENT CONTROL GENERAL NOTES

C912
 SHEET 13 OF 20

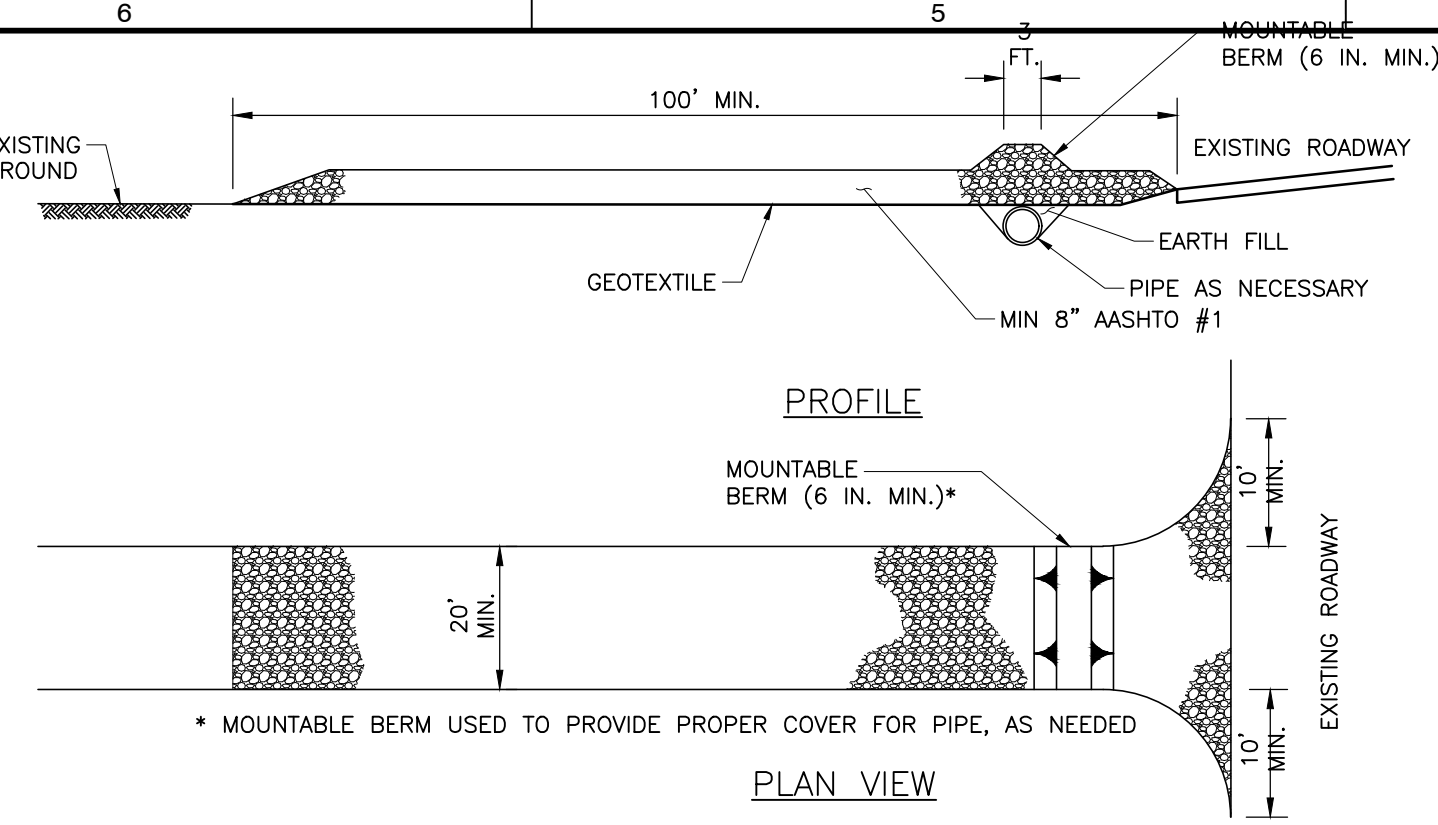


- NOTES:**
- REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
 - RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
 - MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

INSPECTION: ROCK CONSTRUCTION ENTRANCES SHALL BE INSPECTED DAILY AND AFTER EACH RUNOFF EVENT (0.25-INCH DURING E&S PHASE AND 1-INCH AFTER SR BMPs ARE CONSTRUCTED AND PERMANENT STABILIZATION HAS BEEN ACHIEVED).

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK, WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

**OPTION 1A
STABILIZED ROCK CONSTRUCTION ENTRANCE**



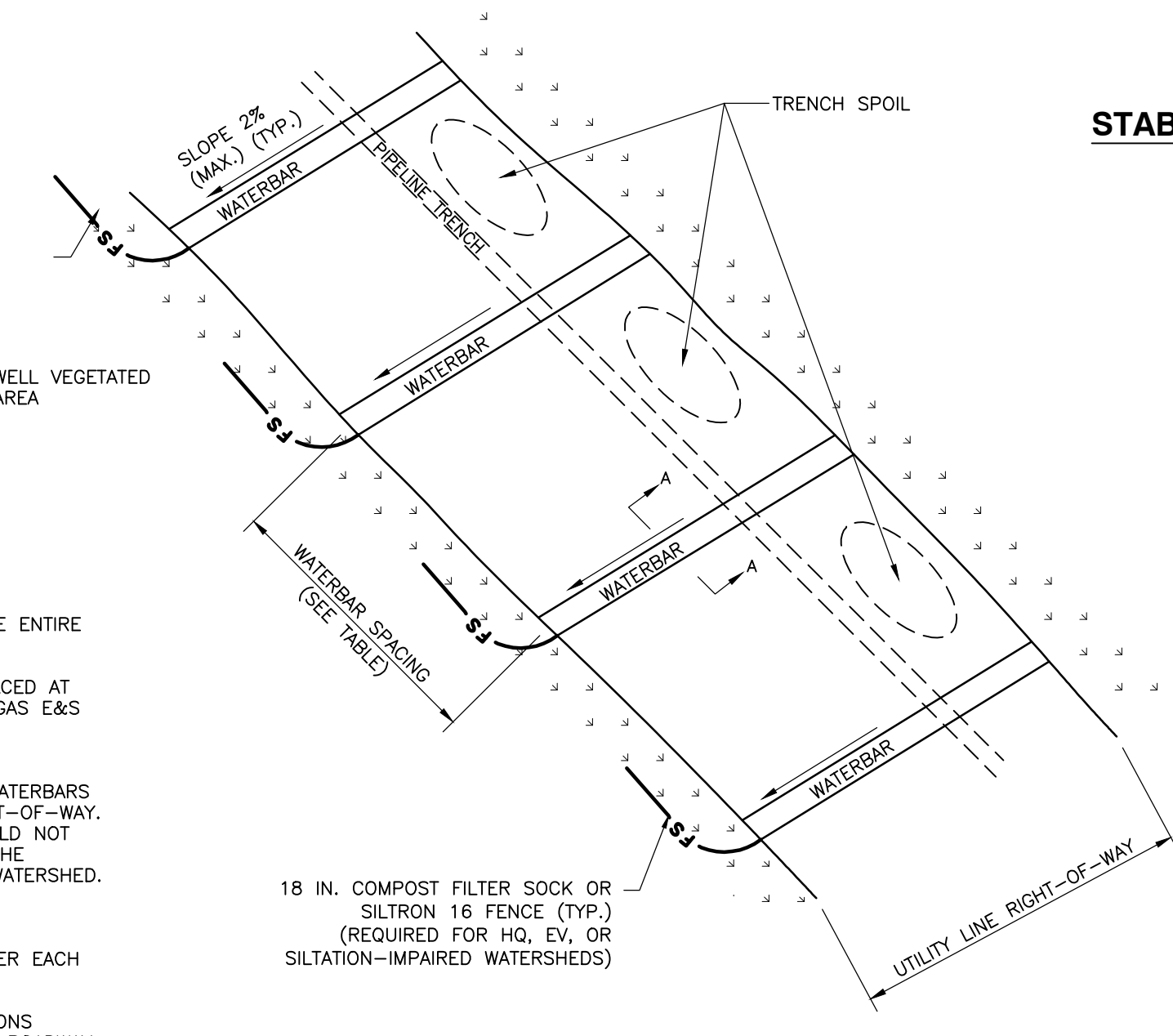
- NOTES:**
- REASONABLE METHODS WHICH ARE SANCTIONED BY THE PADEP AS ABACT ALTERNATIVES TO INSTALLATION OF TIRE WASH STATIONS ON PUBLIC ROAD ACCESS POINTS IN SILTATION IMPAIRED WATERSHEDS INCLUDE:
 - FOR PAVED SURFACE PUBLIC ROADS: USE OF A VACUUM TRUCK SWEEPER OR SWEEPER WITH A CATCH BIN ATTACHMENT.
 - FOR DIRT OR GRAVEL SURFACE PUBLIC ROADS: RIGOROUS MANUAL REMOVAL OF MUD/DIRT FROM VEHICLE/EQUIPMENT TIRES PRIOR TO EXITING CONSTRUCTION SITE, SUPPLEMENTED BY IMMEDIATE RECOVERY, BY MANUAL OR MECHANICAL MEANS, OF SOIL WHICH MAY BECOME DISCHARGED ONTO PUBLIC ROADWAYS. DUST CONTROL AND/OR COMPACTION VIA ROLLING OF THE DIRT PUBLIC ROAD SURFACE WILL BE IMPLEMENTED AS NEEDED.
 - A PREDICATE FOR UTILIZING THE ALTERNATIVES IN NOTE 1 ABOVE IS THE ROCK CONSTRUCTION ENTRANCE MUST BE EXTENDED TO A MINIMUM TOTAL LENGTH OF 100 FEET AND MUST BE CONSTANTLY MAINTAINED, INCLUDING STRUCTURE THICKNESS, TO ENSURE ITS EFFECTIVENESS REMAINS INTACT AT ALL TIMES.
 - FREQUENCY OF MECHANICAL AND/OR MANUAL CONTROLS WILL BE DEPENDENT UPON CONSTRUCTION TRAFFIC INTENSITY, WEATHER AND SOIL MOISTURE CONDITIONS. AT A MINIMUM FOR PAVED ROADS - ANY DAY IN WHICH CONSTRUCTION TRAFFIC IS EXITING THE ROCK CONSTRUCTION ENTRANCE, THE VACUUM TRUCK SWEEPER OR SWEEPER WITH A CATCH BIN ATTACHMENT SHALL CLEAN THE ROAD WAY AT THE END OF THE WORK DAY AND PRIOR TO ANY FORECASTED RAIN EVENT. THE REQUIREMENT IS TO NOT INTRODUCE SEDIMENT LOAD FROM CONSTRUCTION TRAFFIC ONTO PUBLIC ROAD SURFACES AND INTO ROAD DITCHES WHICH WILL FLOW INTO THE WATER RESOURCES WHICH ARE THE SUBJECT OF THE INCREASED PROTECTION MEASURES.
 - REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
 - A MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

INSPECTION: ROCK CONSTRUCTION ENTRANCES SHALL BE INSPECTED DAILY AND AFTER EACH RUNOFF EVENT (0.25-INCH DURING E&S PHASE AND 1-INCH AFTER SR BMPs ARE CONSTRUCTED AND PERMANENT STABILIZATION HAS BEEN ACHIEVED).

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK, WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

**OPTION 1B
STABILIZED ROCK CONSTRUCTION ENTRANCE
(ALTERNATE WITH STREET SWEEPING FOR SILTATION IMPAIRED WATERSHEDS)**

**DETAIL 1
STABILIZED ROCK CONSTRUCTION ENTRANCE
N.T.S.**



**WATERBAR INSTALLATION
N.T.S.**

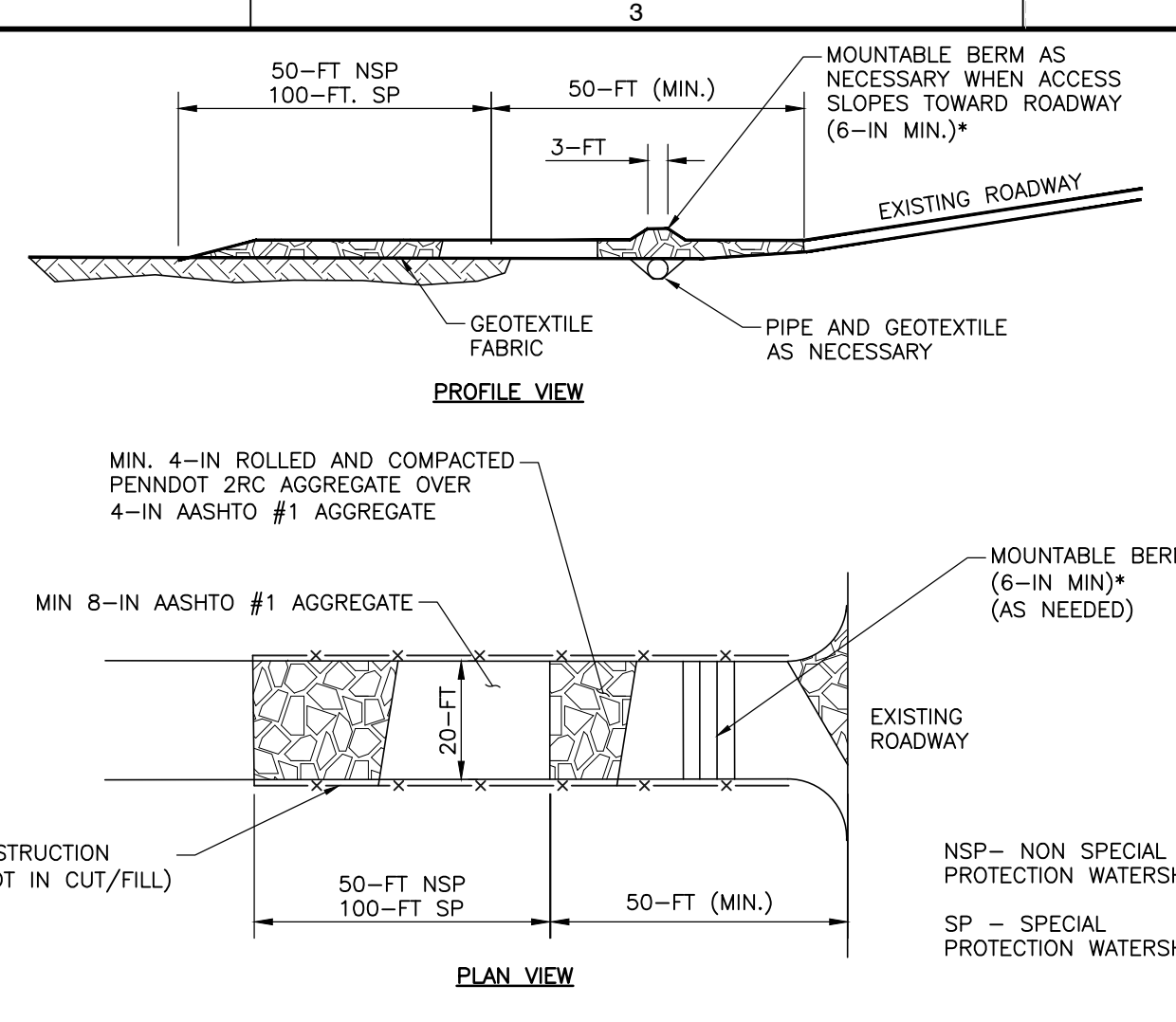
**DETAIL 2
TYPICAL WATERBAR INSTALLATION
N.T.S.**

REQUIRED SPACING FOR PERMANENT WATERBARS	
PERCENT SLOPE	SPACING(FT)
<5	250
5-15	150
15-30	100
>30	50

- NOTES:**
- WATERBARS (SLOPE BREAKERS, INTERCEPTOR DIKES) SHOULD BE INSTALLED ACROSS THE ENTIRE RIGHT-OF-WAY ON ALL SLOPES GREATER THAN 5%.
 - WATERBARS SHALL BE PLACED AT 2% MAXIMUM SLOPE DOWNHILL. THEY SHALL BE SPACED AT THE INCREMENTS AS SHOWN ON THE PLANS, AND IN ACCORDANCE WITH PADEP OIL & GAS E&S STANDARDS.
 - WATERBARS SHOULD BE CONSTRUCTED AT A SLOPE OF 2% AND DISCHARGE TO A WELL-VEGETATED AREA. WATERBARS SHOULD NOT DISCHARGE INTO AN OPEN TRENCH. WATERBARS SHOULD BE ORIENTED SO THAT THE DISCHARGE DOES NOT FLOW BACK ONTO THE RIGHT-OF-WAY. OBSTRUCTIONS, (E.G. STRAW BALES, COMPOST FILTER SOCK, ROCK FILTERS, ETC.) SHOULD NOT BE PLACED IN ANY WATERBARS. COMPOST FILTER SOCKS SHOULD BE LOCATED BELOW THE DISCHARGE END OF A WATERBAR LOCATED IN A HIGH QUALITY OR SILTATION-IMPAIRED WATERSHED.
 - REFER TO PADEP MANUAL FOR MORE INFORMATION.

INSPECTION: WATERBARS SHALL BE INSPECTED WEEKLY (DAILY ON ACTIVE ROADS) AND AFTER EACH RUNOFF EVENT.

MAINTENANCE: DAMAGED OR ERODED WATERBARS SHALL BE RESTORED TO ORIGINAL DIMENSIONS WITHIN 24 HOURS OF INSPECTION. MAINTENANCE OF WATERBARS SHALL BE PROVIDED UNTIL ROADWAY, SKIDTRAIL, OR RIGHT-OF-WAY HAS ACHIEVED PERMANENT STABILIZATION.

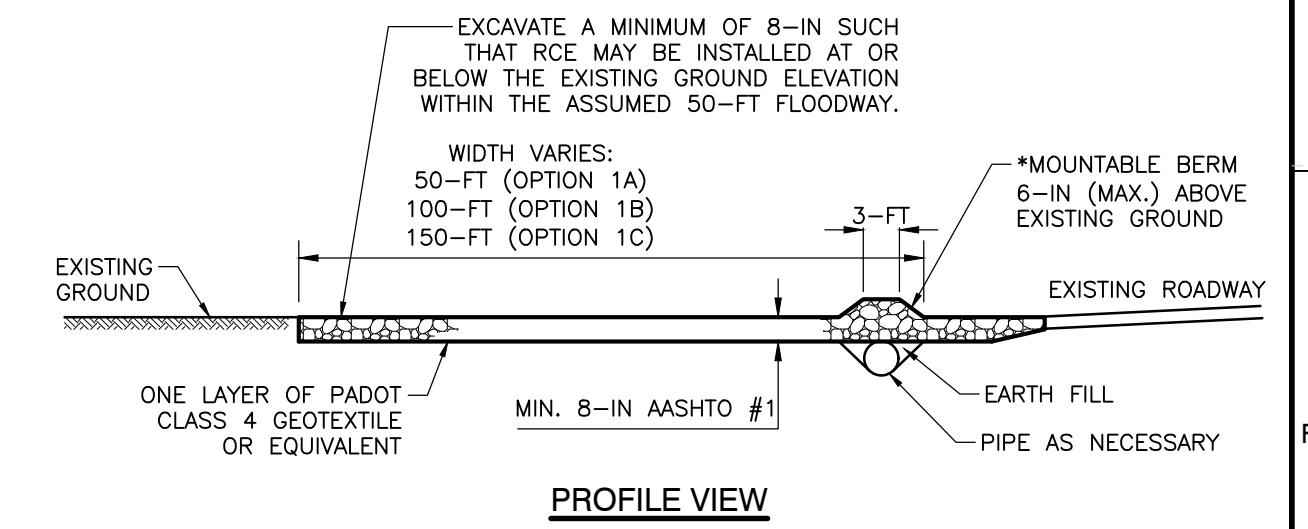


- NOTES:**
- THE ABACT ALTERNATIVE TO INSTALLATION OF TIRE WASH STATIONS IN SPECIAL PROTECTION WATERSHEDS REQUIRES THE ROCK CONSTRUCTION ENTRANCE TO BE EXTENDED TO A MINIMUM TOTAL LENGTH OF 150 FEET AND MUST BE CONSTANTLY MAINTAINED, INCLUDING STRUCTURE THICKNESS, TO ENSURE ITS EFFECTIVENESS REMAINS INTACT AT ALL TIMES.
 - REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
 - RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
 - MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

INSPECTION: ROCK CONSTRUCTION ENTRANCES SHALL BE INSPECTED DAILY AND AFTER EACH RUNOFF EVENT.

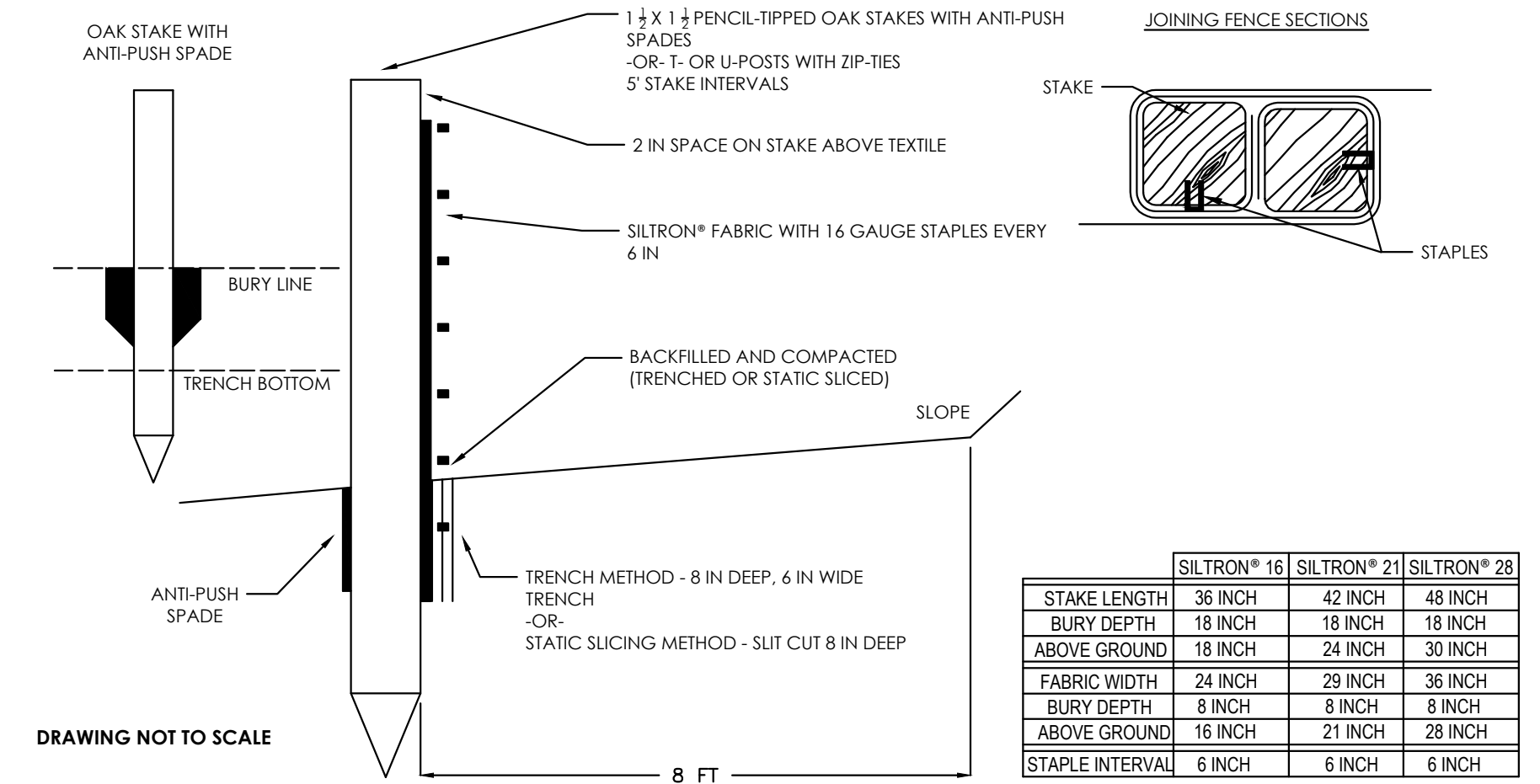
MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL A WASH RACK, WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

**OPTION 1C
STABILIZED ROCK CONSTRUCTION ENTRANCE
(ALTERNATE FOR SILTATION IMPAIRED WATERSHEDS)**



**OPTION 1D
ROCK CONSTRUCTION ENTRANCE INSTALLED
WITHIN PADEP ASSUMED 50-FT FLOODWAY**

- NOTES:**
- ROCK CONSTRUCTION ENTRANCE LENGTH MAY VARY DEPENDANT ON WATERSHED IMPAIRMENTS. REFER TO DETAIL 1A, 1B, OR 1C, OR PLAN DRAWING C941 FOR ADDITIONAL LENGTH AND AGGREGATE TYPES.



DRAWING NOT TO SCALE

WOOD STAKES SHALL BE A 1 1/2 IN X 1 1/2 IN PENCIL-TIPPED OAK STAKE AND MUST INCLUDE INTEGRATED ANTI-PUSH SPADE -OR- EQUIVALENT STEEL (U OR T) STAKE. STAKES PLACED AT 5 FT INTERVALS.

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

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

ANY SECTION OF FENCE WHICH HAS BEEN COMPROMISED THROUGH PHYSICAL DAMAGE OR IS BLINDED WITH SEDIMENT OR HYDROCARBONS SHALL BE IMMEDIATELY REPLACED WITH SILTRON, ROCK FILTER OUTLET CONFIGURATION, OR FILTER SOCK (COMPOST OR SWITCHGRASS).

IF UNDERCUTTING OCCURS, FILL MUST BE ADDED TO TRENCH AND AREA RE-COMPACTED.

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

- INSPECTION:** SILTRON® ADVANCED SILT FENCE SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT.
- MAINTENANCE:** DAMAGED SILTRON® ADVANCED SILT FENCE SHALL BE REPAIRED BY INSTALLING A ROCK FILTER OUTLET OR REPLACED WITHIN 24 HOURS. SEDIMENT DEPOSITS SHALL BE ROUTINELY REMOVED WHEN THEY REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE SILTRON® ADVANCED SILT FENCE.

**DETAIL 3
SILTRON FENCE
NOT TO SCALE**

REVISION RECORD

NO	DATE	DESCRIPTION

C&E
Civil & Environmental Consultants, Inc.
4350 Northern Pike - Suite 141 - Monroeville, PA 15146
Ph: 724.327.5200 - 800.899.3610 - Fax: 724.327.5280
www.cecinc.com

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE-STOP CALL PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776

PENNSYLVANIA ONE CALL LAW:
PENNSYLVANIA ACT 38 (1991) REQUIRES NO LESS THAN 3 WORKING DAYS NOTICE NOR MORE THAN 10 WORKING DAYS NOTICE FROM EXCAVATORS WHO ARE ABOUT TO: DIG, DRILL, BLAST, AUGER, BORE, GRADE, TRENCH, OR BOMBUSH WHEN IN THE CONSTRUCTION PHASE. FOR LOCATION REQUESTS IN THE STATE OF PENNSYLVANIA, CALL TOLL FREE 1-800-242-1776. UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THE LOCATION MUST BE CONSIDERED APPROXIMATE. OTHER UNDERGROUND UTILITIES MAY EXIST WHICH ARE NOT SHOWN. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN ALL PHYSICAL LOCATIONS OF UTILITY LINES PRIOR TO THE TIME OF CONSTRUCTION. IN NO WAY SHALL THE CONTRACTOR HOLD THE SURVEYOR RESPONSIBLE FOR ANY UTILITY LOCATION SHOWN ON THIS PLAN.

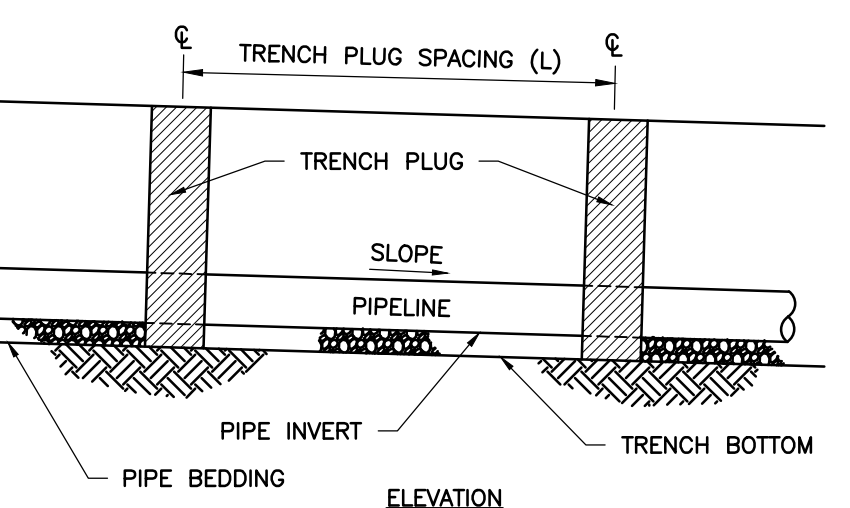
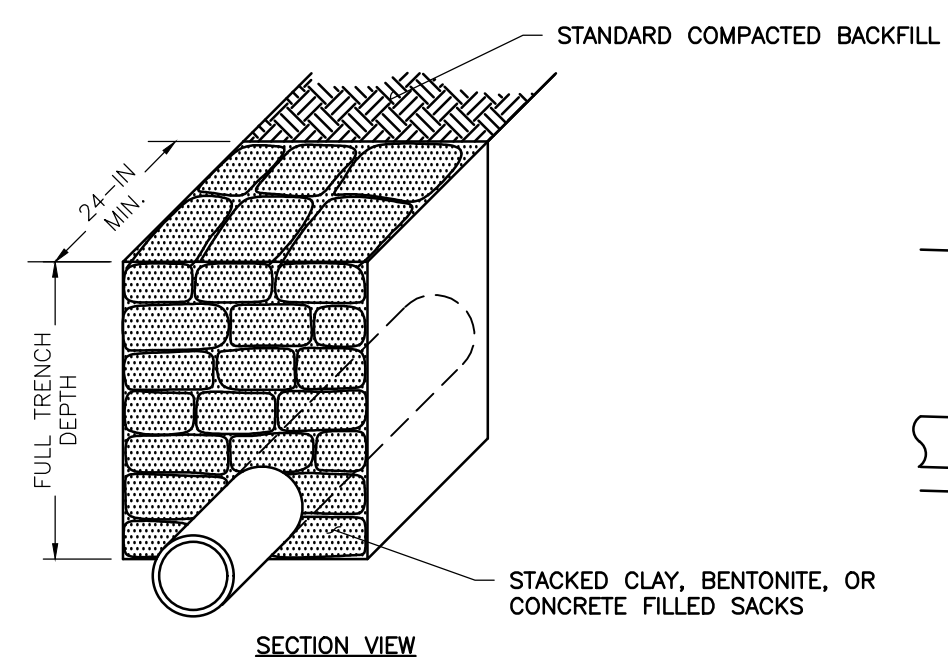
PROFESSIONAL ENGINEER
REGISTERED PROFESSIONAL ENGINEER
CHARLES ROBERT KANE
12/22/23
* HAND SIGNATURE ON FILE

CNX MIDSTREAM OPERATING COMPANY LLC
MAM14 U1 PIPELINE AND WATERLINE
WASHINGTON AND BELL TOWNSHIPS
WESTMORELAND COUNTY
PENNSYLVANIA

DRAWN BY: JJN CHECKED BY: SCT APPROVED BY: CRK
DATE: DECEMBER 2023 DWG SCALE: N.T.S. PROJECT NO: 332-793

EROSION AND SEDIMENTATION CONTROL PLAN
EROSION AND SEDIMENT CONTROL DETAILS

C913
SHEET 14 OF 20



PADEP EROSION CONTROL MANUAL TABLE 13.1
MAXIMUM SPACING AND MATERIALS FOR TRENCH PLUGS

TRENCH SLOPE (%)	SPACING L (FT)	PLUG MATERIAL
< 5	1000	* CLAY, BENTONITE, OR CONCRETE FILLED SACKS
5 - 15	500	* CLAY, BENTONITE, OR CONCRETE FILLED SACKS
15 - 25	300	* CLAY, BENTONITE, OR CONCRETE FILLED SACKS
25 - 35	200	* CLAY, BENTONITE, OR CONCRETE FILLED SACKS
35 - 100	100	* CLAY, BENTONITE, OR CONCRETE FILLED SACKS
> 100	50	CEMENT BAGS (WETTED) OR MORTARED STONE

* TOPSOIL MAY NOT BE USED TO FILL SACKS

- NOTES:
- IMPERVIOUS TRENCH PLUGS ARE REQUIRED FOR ALL STREAM, RIVER, WETLAND OR OTHER WATER BODY CROSSINGS AS WELL AS UPSLOPE FROM ROADWAY AND RAILROAD CUT SLOPES.
 - SPRAY FOAM MAY BE USED AS AN ALTERNATIVE TO THE PLUG MATERIALS LISTED IN THE CHART ABOVE.

**DETAIL 4
TRENCH PLUG**
N.T.S.

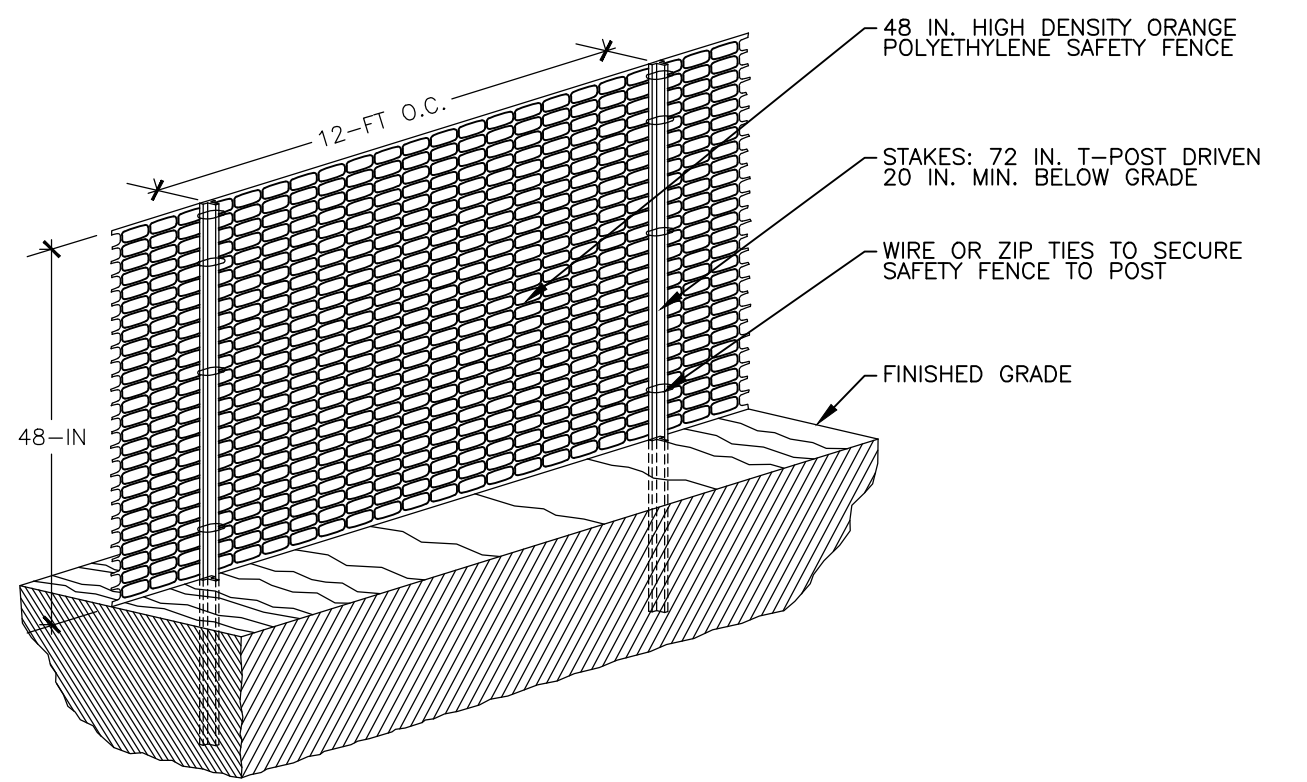
SITE CONDITION	SEED MIXTURE (SELECT ONE)*
CUT SLOPES AND FILLS (NOT MOWED) WELL DRAINED	4
CUT SLOPES AND FILLS (NOT MOWED) VARIABLE DRAINAGE	4
CUT SLOPES AND FILLS (MOWED)	1
CUT SLOPES AND FILLS (GRAZED/HAY)	1 OR 2
GULLIES AND ERODED AREAS	4
EROSION CONTROL BMPs - CHANNELS, DRAINAGE DITCHES, TRAPS, EMBANKMENTS, ETC.	1
EROSION CONTROL BMPs - FOR HAY OR SILAGE	2
RIGHT-OF-WAY, WELL-DRAINED	1, 2, OR 4
RIGHT-OF-WAY, VARIABLE DRAINAGE	2 OR 3
RIGHT-OF-WAY, WELL-DRAINED AREAS FOR GRAZING/HAY	2
STRIP MINED AREAS - SPOILS, WASTE AREAS, FLY ASH, SLAG, ETC.	2, 3, OR 4
STRIP MINED AREAS - FOR GRAZING/HAY	2 OR 4

* PLUS "NURSE CROP" OF 64 LBS/ACRE OF OATS OR 112 LBS/ACRE OF WINTER RYE

MIXTURE NUMBER	SEASON	SPECIES	SEEDLING RATE LB/AC
1	COOL	FINE FESCUE, PLUS REDTOP, PLUS BIRDSFOOT TREFLOIL	46 8
2	COOL	ORCHARDGRASS PLUS BIRDSFOOT TREFLOIL	26 8
3	WARM	DEERTONGUE, PLUS BIRDSFOOT TREFLOIL	21 8
4	WARM	SWITCHGRASS OR BIG BLUESTEM, PLUS BIRDSFOOT TREFLOIL	15 15 8

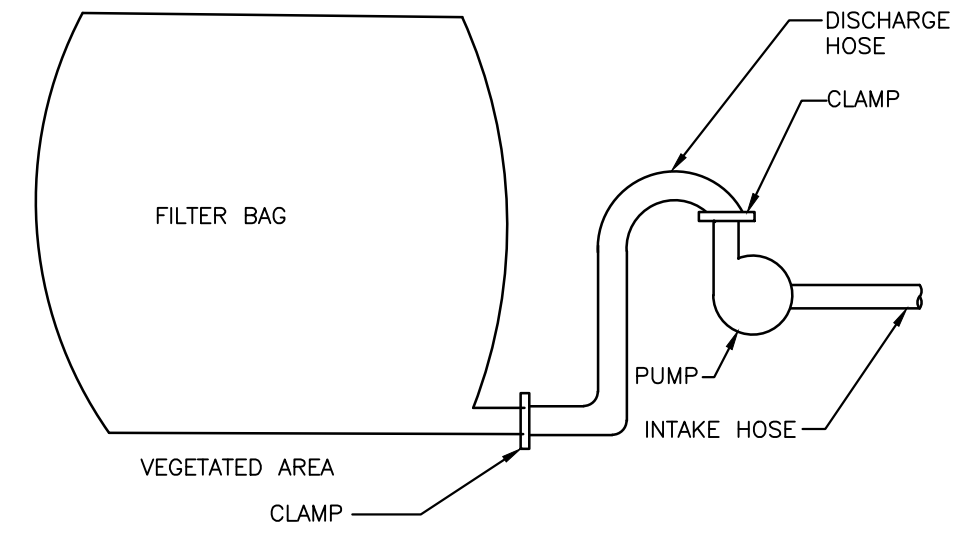
PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

* TYPICALLY NOT REQUIRED FOR TOPSOIL STOCKPILES OR AS PER SOIL TEST; MAY NOT BE REQUIRED IN AGRICULTURAL FIELDS



- NOTES:
- ALL SENSITIVE AREAS SHALL BE PROTECTED AS PER PLAN.
 - SAFETY FENCE SHOULD BE FASTENED SECURELY TO THE T-POSTS.
 - THE FENCING MUST REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION; ANY CHANGE OF THE PROTECTIVE FENCING MUST BE APPROVED.

**DETAIL 5
ORANGE CONSTRUCTION FENCE**
N.T.S.



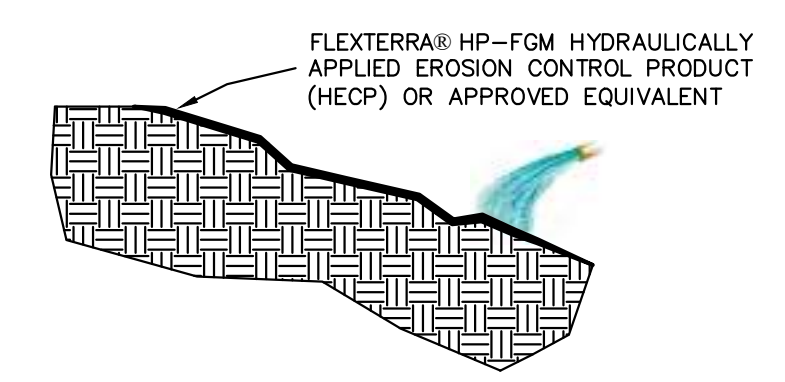
- NOTES:
- LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

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

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

INSPECTION: FILTER BAGS SHALL BE INSPECTED DAILY.
MAINTENANCE: IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

**DETAIL 8
WATER FILTER BAG**
N.T.S.



INSTALLATION

STRICTLY COMPLY WITH EQUIPMENT MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS. USE APPROVED HYDRO-SPRAYING MACHINES WITH FAN-TYPE NOZZLE (50-DEGREE TIP), TO ACHIEVE OPTIMUM SOIL SURFACE COVERAGE, APPLY HP-FGM FROM OPPOSING DIRECTIONS TO SOIL SURFACE. ROUGH SURFACES (ROCKY TERRAIN, CAT TRACKS AND RIPPED SOILS) MAY REQUIRE HIGHER APPLICATION RATES TO ACHIEVE 100% COVER. SLOPE INTERRUPTION DEVICES OR WATER DIVERSION TECHNIQUES ARE RECOMMENDED WHEN SLOPE LENGTHS EXCEED 100 FEET. MAXIMUM SLOPE LENGTH IS FOR PRODUCT APPLICATIONS ON A 3H:1V SLOPE. FOR APPLICATION ON STEEPER SLOPES, SLOPE INTERRUPTION LENGTHS MAY NEED TO BE DECREASED BASED ON ACTUAL SITE CONDITIONS. NOT RECOMMENDED FOR CHANNELS OR AREAS WITH CONCENTRATED WATER FLOW. NO CHEMICAL ADDITIVES WITH THE EXCEPTION OF FERTILIZER, LIMING AND BIOSTIMULANT MATERIALS SHOULD BE ADDED TO THIS PRODUCT. TO ENSURE PROPER APPLICATION RATES, MEASURE AND STAKE AREA. FOR MAXIMUM PERFORMANCE, APPLY HP-FGM IN A TWO-STEP PROCESS AS FOLLOWS:

- STEP ONE: APPLY FERTILIZER WITH SPECIFIED PRESCRIPTIVE AGRONOMIC FORMULATIONS AND 50% OF SEED WITH A SMALL AMOUNT OF HP-FGM FOR VISUAL METERING.
- STEP TWO: MIX BALANCE OF SEED AND APPLY HP-FGM AT A RATE OF 50 LB PER 125 GALLONS OF WATER OVER FRESHLY SEEDED SURFACES. CONFIRM LOADING RATES WITH EQUIPMENT MANUFACTURER. DO NOT LEAVE SEEDED SURFACES UNPROTECTED, ESPECIALLY IF PRECIPITATION IS IMMINENT.

APPLICATION RATES: THESE APPLICATION RATES ARE FOR STANDARD CONDITIONS. DESIGNERS MAY WISH TO REDUCE RATES TO ENCOURAGE FASTER VEGETATION ESTABLISHMENT OR MAY NEED TO INCREASE APPLICATION RATES ON ROUGH SURFACES. CONSULT APPLICATION AND LOADING CHARTS TO DETERMINE NUMBER OF BAGS TO BE ADDED FOR DESIRED AREA AND APPLICATION RATE.

SLOPE GRADIENT / CONDITION	APPLICATION RATE
≤ 4H TO 1V	2500 LB/AC
> 4H TO 1V AND ≤ 3H TO 1V	3000 LB/AC
≥ 3H TO 1V AND ≤ 2H TO 1V	3500 LB/AC
≥ 2H TO 1V AND ≤ 1H TO 1V	4000 LB/AC
> 1H TO 1V	4500 LB/AC
BELOW ECB OR TRM	1500 LB/AC
AS INFILL FOR TRM	3500 LB/AC

**OPTION A
HYDRAULICALLY APPLIED EROSION CONTROL**

INSPECTION: STABILIZED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE STABILIZED AREA.

MAINTENANCE: DAMAGED OR DISPLACED STABILIZATION SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

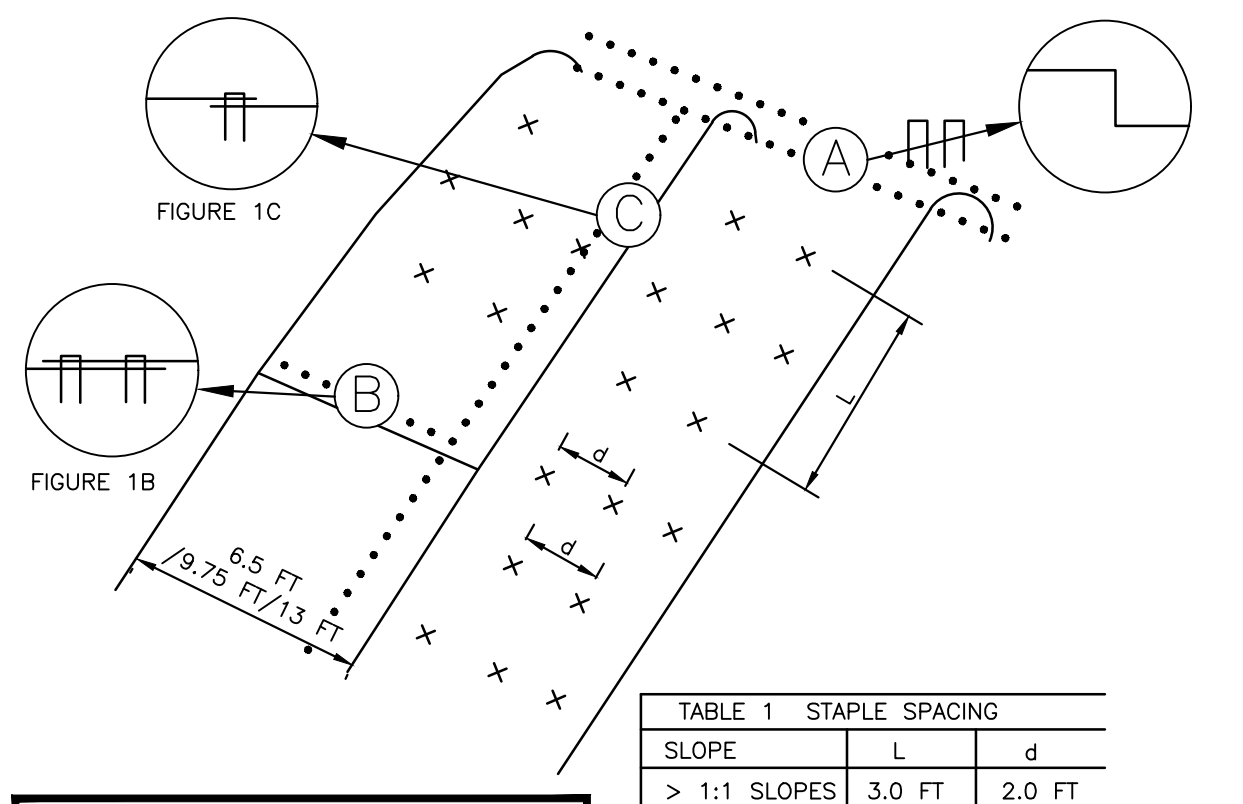


TABLE 1 STAPLE SPACING

SLOPE	L	d
> 1:1 SLOPES	3.0 FT	2.0 FT
2:1 SLOPES	4.0 FT	2.0 FT
3:1 SLOPES	6.0 FT	3.0 FT
4:1 SLOPES	8.0 FT	3.0 FT

THE HATCHED PATTERN SHOWN ON THE PLANS INDICATES THE MINIMUM AREA TO BE PROTECTED WITH AN EROSION CONTROL BLANKET/MAT. ALL SLOPES EQUAL TO OR GREATER THAN 3:1 SHALL REQUIRE AN EROSION CONTROL BLANKET/MAT.

- NOTES:
- USE BIODEGRADABLE EROSION CONTROL MATS (JUTE, COIR, ETC.) WHERE SPECIFIED ON STREAM BANKS, DITCHES, AND STEEP SLOPES FOR TEMPORARY STABILIZATION OF UNVEGETATED SOIL.
 - PREPARE SOIL, INCLUDING GRADING, APPLICATION OF SOIL AMENDMENTS, AND SEED. THE SURFACE OF THE SOIL SHOULD BE SMOOTH AND FREE OF ROCKS, ROOTS AND OTHER OBSTRUCTIONS.
 - LAY BLANKETS ON STREAM BANKS AT RIGHT ANGLE TO THE STREAM CHANNEL. UNLESS THE ENTIRE STREAM BANK (FROM TOE TO TOP OF BANK) CAN BE COVERED BY A SINGLE WIDTH LAID PARALLEL TO THE CHANNEL. LAY MATS LOOSELY ON THE GROUND ALLOWING GOOD CONTACT BETWEEN SOIL AND BLANKETS.
 - ANCHOR MATS IN A 6-INCH DEEP X 6-INCH WIDE ANCHOR TRENCH AT THE TOE OF THE STREAM BANK OR SHORELINE. STAPLE/STAKE THE MAT IN THE TRENCH, BACKFILL AND COMPACT THE TRENCH WITH SOIL.
 - STAPLE THE OPEN MAT EDGE USING ONE ROW OF STAPLES AT 1.5 - 2 FOOT INTERVALS. THE MIDDLE OF THE MAT SHOULD BE STAPLED USING A PREFERRED STAPLE PATTERN (TABLE 1).
 - WHEN MAT SPlicing DOWN THE SLOPE IS NECESSARY, OVERLAP MATS 8 INCHES WITH THE UPSLOPE MAP EDGE ON TOP. USE TWO ROWS OF STAPLES/STAKES AND 12-INCH SPACING TO ANCHOR MATS (FIG. 1B). TO SPlice MATS ACROSS THE SLOPE, OVERLAP THE SIDES OF MATS AT LEAST 6 INCHES WITH THE TRAILING EDGE OF THE TOP OVERLAPPING MAP ORIENTED IN A DOWNSTREAM DIRECTION. USE ONE ROW OF STAPLES/STAKES AND 12-INCH SPACING TO ANCHOR MATS (FIG. 1C).
 - ANCHOR THE MAT AT THE TOP OF THE SLOPE IN A 6-INCH DEEP X 6-INCH WIDE ANCHOR TRENCH. PLACE MAT, STAPLE/STAKE, BACKFILL AND COMPACT (FIG. 1A)
- SOURCE: MODIFIED FROM ROLANKA INTERNATIONAL, [HTTP://WWW.ROLANKA.COM/](http://www.rolanka.com/)

**OPTION B
EROSION CONTROL BLANKET**

**DETAIL 6
SLOPE STABILIZATION**
N.T.S.

MULCH APPLICATION RATES

APPLICATION RATE (TON/AC)	NOTES
STRAW 3	EITHER WHEAT OR OAT STRAW, FREE OF WEEDS, NOT CHOPPED OR FINELY BROKEN
HAY 3	TIMOTHY, MIXED CLOVER AND TIMOTHY OR OTHER NATIVE FORAGE GRASSES
WOOD CHIPS 4-6	MAY PREVENT GERMINATION OF GRASSES AND LEGUMES
HYDROMULCH 1	SHREDDED PAPER MULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5%; WOOD FIBER MULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED A TACKIFIER IS USED

NOTED PERMANENT SEED MIXTURES ARE THOSE ANTICIPATED TO ACHIEVE A MEADOW-GOOD COVER CONDITION AT MINIMUM 70-PERCENT VEGETATIVE STABILIZATION.

INSPECTION: TEMPORARY AND PERMANENT STABILIZATION SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT.

MAINTENANCE: INSTALL TOPSOIL AND SEED ERODED AREAS WITHIN 4 DAYS OF THE CESSATION OF EARTH DISTURBANCE ACTIVITIES AND UNTIL 70% UNIFORM PERENNIAL VEGETATION IS ESTABLISHED.

**DETAIL 7
VEGETATIVE STABILIZATION**

REVISION RECORD

NO	DATE	DESCRIPTION

C&E
Civil & Environmental Consultants, Inc.
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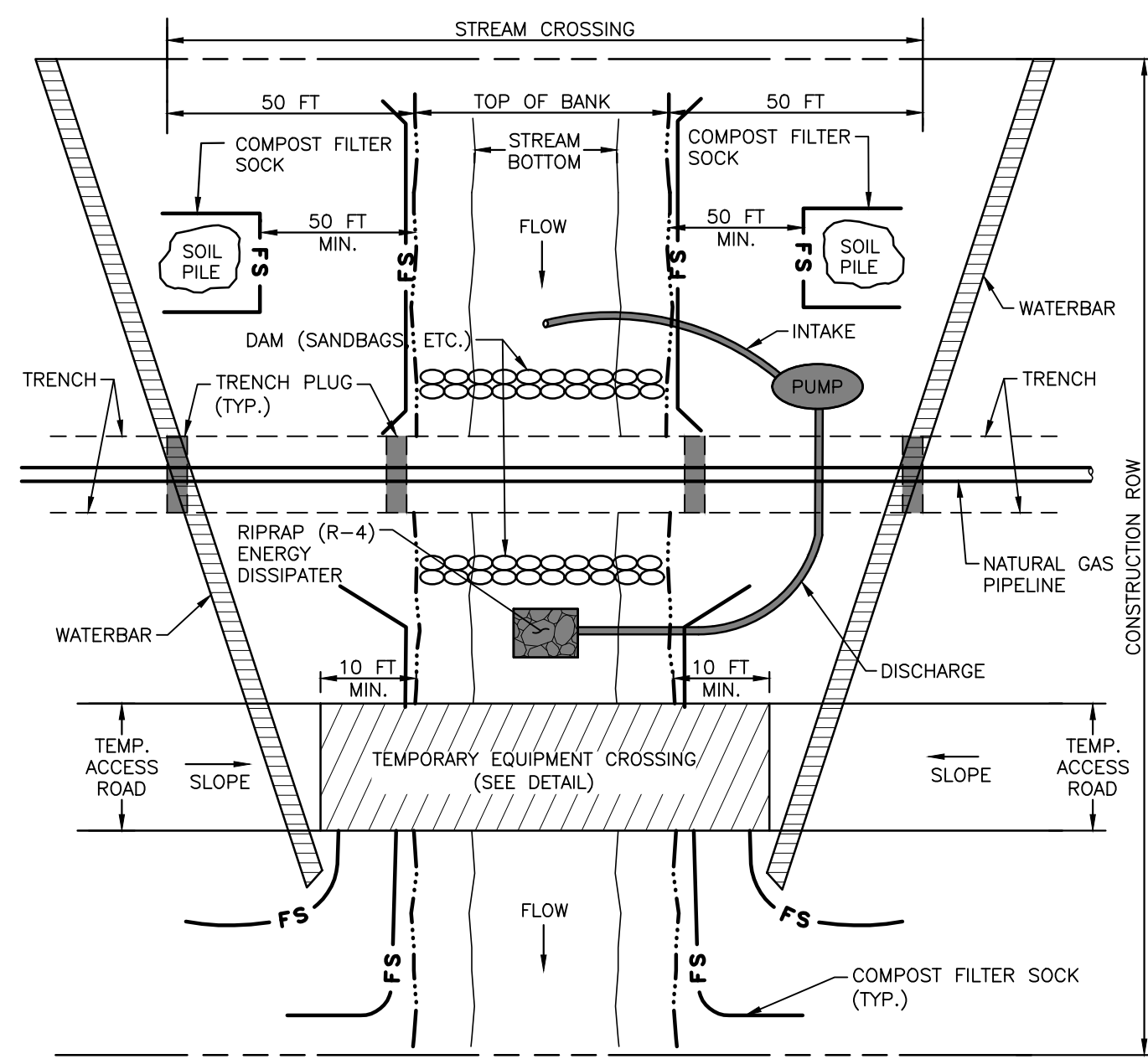
REGISTERED PROFESSIONAL ENGINEER
CHARLES ROBERT KANE
12/22/23

CNX MIDSTREAM OPERATING COMPANY LLC
MAM14 U1 PIPELINE AND WATERLINE
WASHINGTON AND BELL TOWNSHIPS
WESTMORELAND COUNTY
PENNSYLVANIA

DRAWN BY: JJN CHECKED BY: SCT APPROVED BY: CRK
DATE: DECEMBER 2023 DWG SCALE: N.T.S. PROJECT NO: 332-793

EROSION AND SEDIMENTATION CONTROL PLAN
EROSION AND SEDIMENT CONTROL DETAILS

DRAWING NO.: **C914**
SHEET 15 OF 20



PLAN VIEW

NOTES:

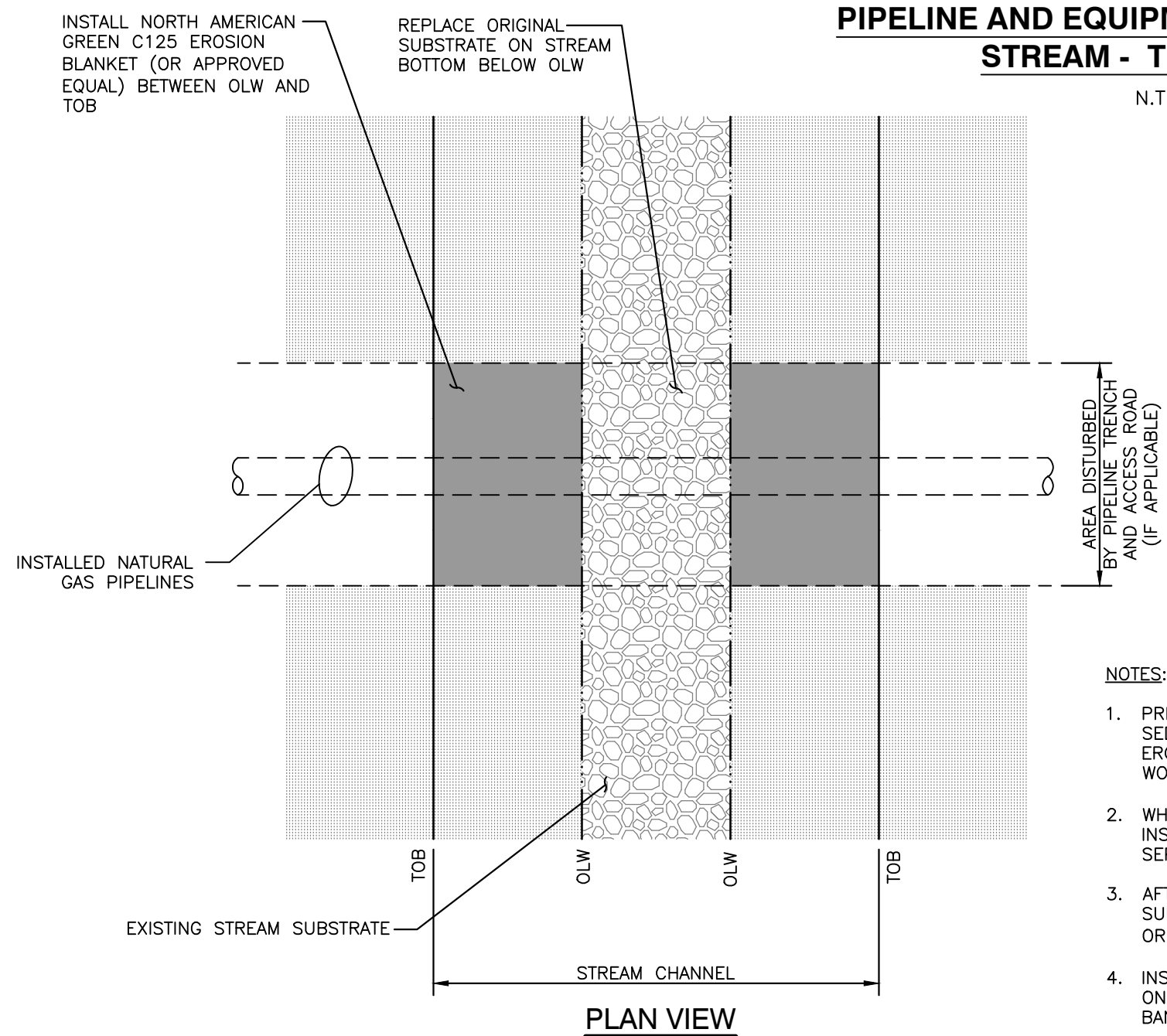
1. ALL RUNOFF FROM DISTURBED UPSLOPE AREAS WITHIN CONSTRUCTION RIGHT-OF-WAY MUST BE TREATED FOR SEDIMENT BEFORE IT REACHES STREAM CROSSING.
2. INSTALL COMPOST FILTER SOCK, TRENCH PLUGS, PUMP, ENERGY DISSIPATER, AND DAMS BEFORE TRENCHING STREAM.
3. PUMP MUST BE OF SUFFICIENT CAPACITY TO CONVEY NORMAL AND/OR EXISTING STREAM FLOW OVER TRENCH. A BACK-UP PUMP OF EQUAL CAPACITY MUST BE AVAILABLE ON-SITE DURING CONSTRUCTION OF THE PIPELINE CROSSING.
4. PLACE SPOIL PILES A MINIMUM OF 10-FT FROM TOP OF BANK.
5. INSTALL WATERBARS AT APPROACHES TO STREAM CROSSING AND COMPOST FILTER SOCK ALONG STREAM BANKS AND AT DOWNSLOPE END OF WATER BARS.
6. MAINTAIN SURFACE OF TEMPORARY EQUIPMENT CROSSING TO PREVENT SOIL DISCHARGES TO STREAM.
7. APPROACHES TO CROSSINGS ARE NOT TO EXCEED A DEPTH OF 6-IN ABOVE ORIGINAL GRADE.

OPTION 1 - PUMP DIVERSION

DETAIL 9

PIPELINE AND EQUIPMENT CROSSING OF STREAM - TRENCHING

N.T.S.



PLAN VIEW

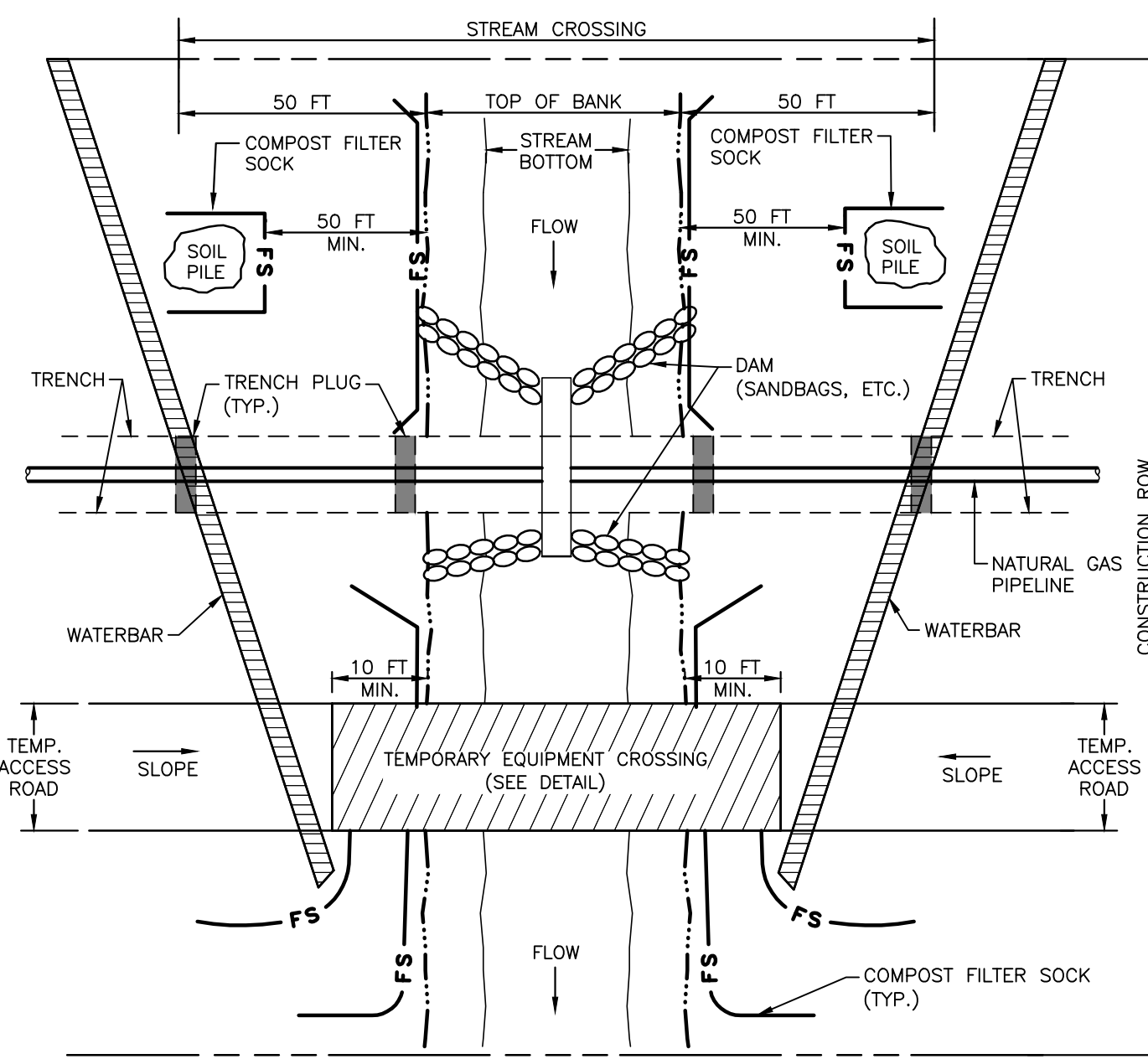
NOTES:

1. PRIOR TO WORKING IN STREAM CHANNEL, INSTALL ALL EROSION AND SEDIMENTATION CONTROL BEST MANAGEMENT PRACTICES SPECIFIED IN EROSION AND SEDIMENTATION PLAN AND DIVERT STREAM FLOW AROUND WORK AREA.
2. WHEN EXCAVATING PIPELINE TRENCH ACROSS STREAM AND/OR INSTALLING TEMPORARY VEHICULAR ACCESS CROSSINGS, SEGREGATE AND SEPARATELY STOCKPILE STREAM SUBSTRATE.
3. AFTER INSTALLING PIPELINE IN TRENCH, REPLACE STOCKPILED SUBSTRATE ON SURFACE OF BOTTOM OF STREAM CHANNEL BELOW THE ORDINARY LOW WATER (OLW) LEVEL.
4. INSTALL NORTH AMERICAN GREEN C125 BLANKET (OR APPROVED EQUAL) ON STREAM BANKS FROM ORDINARY LOW WATER LEVEL TO TOP OF THE BANK, COVERING DISTURBED PORTIONS OF THE STREAM BANK.

DETAIL 11

STREAM EROSION PROTECTION

N.T.S.

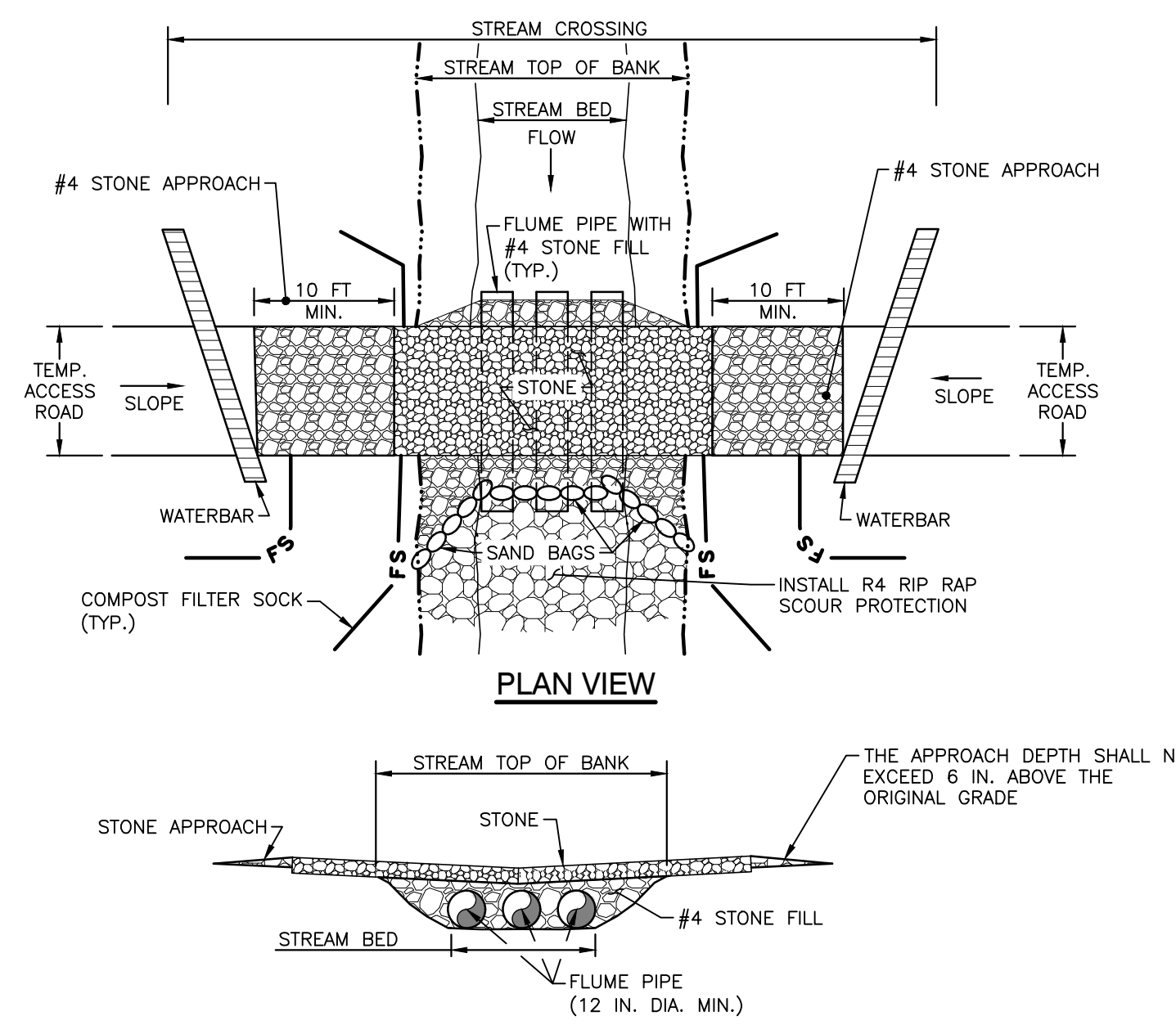


PLAN VIEW

NOTES:

1. ALL RUNOFF FROM DISTURBED UPSLOPE AREAS WITHIN CONSTRUCTION RIGHT-OF-WAY MUST BE TREATED FOR SEDIMENT BEFORE IT REACHES STREAM CROSSING.
2. INSTALL COMPOST FILTER SOCK, TRENCH PLUGS, PUMP, ENERGY DISSIPATER, AND DAMS BEFORE TRENCHING STREAM.
3. FOR FLUME PIPE AND ROCK FILL CROSSINGS, INSTALL FLUME PIPE ON EXISTING STREAMBED. MORE THAN 1 FLUME PIPE MAY BE NEEDED TO SPAN STREAM CHANNEL.
4. PLACE SPOIL PILES A MINIMUM OF 10-FT FROM TOP OF BANK.
5. INSTALL WATERBARS AT APPROACHES TO STREAM CROSSING AND COMPOST FILTER SOCK ALONG STREAM BANKS AND AT DOWNSLOPE END OF WATER BARS.
6. MAINTAIN SURFACE OF TEMPORARY EQUIPMENT CROSSING TO PREVENT SOIL DISCHARGES TO STREAM.
7. APPROACHES TO CROSSINGS ARE NOT TO EXCEED A DEPTH OF 6-IN ABOVE ORIGINAL GRADE.

OPTION 2 - FLUME PIPE DIVERSION



PLAN VIEW

CROSS SECTION - CULVERT / ROCK FILL

NOTES:

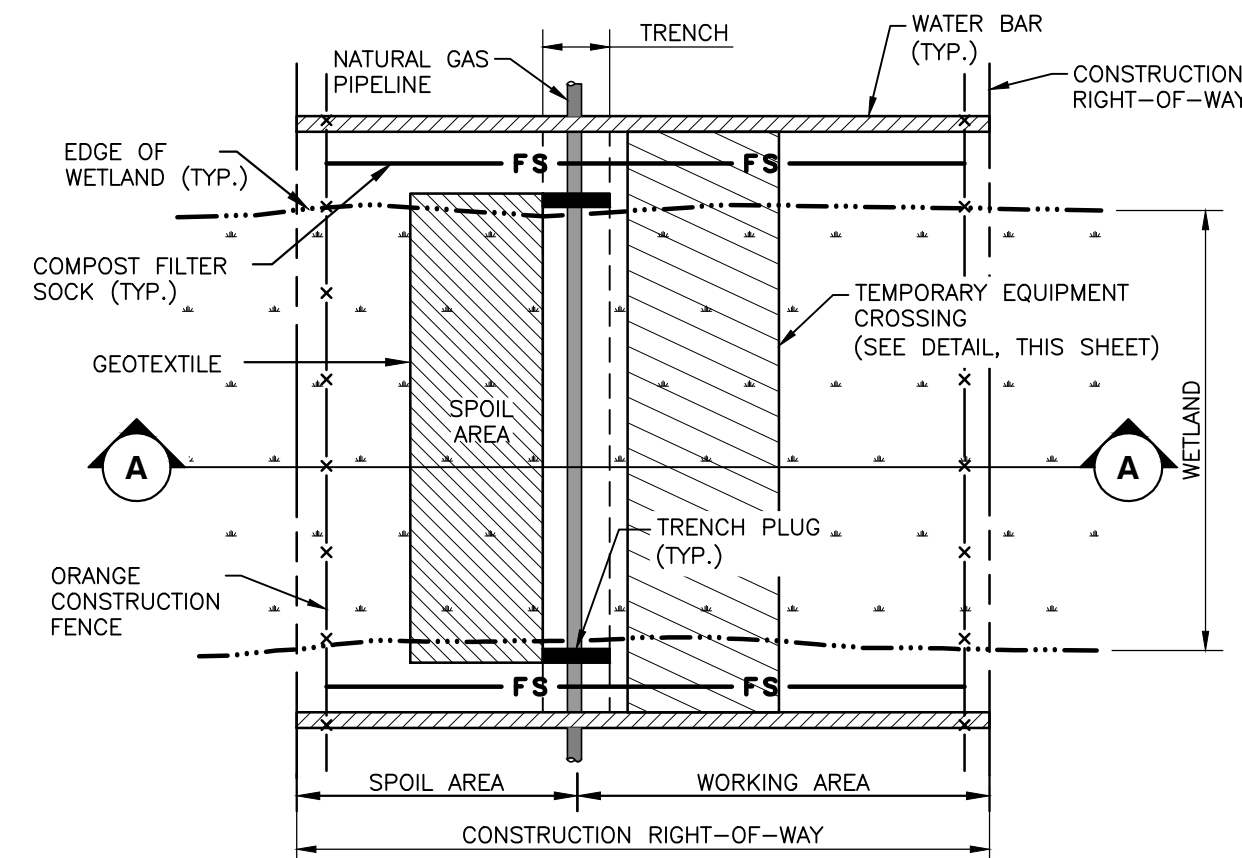
1. INSTALL FLUME PIPE(S) ON EXISTING STREAMBED. A SUFFICIENT SIZE AND NUMBER OF FLUME PIPE(S) SHALL BE INSTALLED AT EACH STREAM CROSSING TO SPAN THE ENTIRE STREAM CHANNEL.
2. INSTALL WATER BARS AT APPROACHES TO STREAM CROSSING AND COMPOST FILTER SOCK ALONG STREAM BANKS. INSTALL COMPOST FILTER SOCK AT OUTLET OF WATER BARS.
3. INSTALL A ROCK PAD APPROACH 10-FT PRIOR TO THE CROSSING.
4. APPROACHES TO CROSSINGS ARE NOT TO EXCEED A DEPTH OF 6-IN ABOVE ORIGINAL GRADE.

OPTION 1 - ROCK FILL AND CULVERT

DETAIL 10

TEMPORARY EQUIPMENT CROSSING OF STREAM

N.T.S.



PLAN VIEW

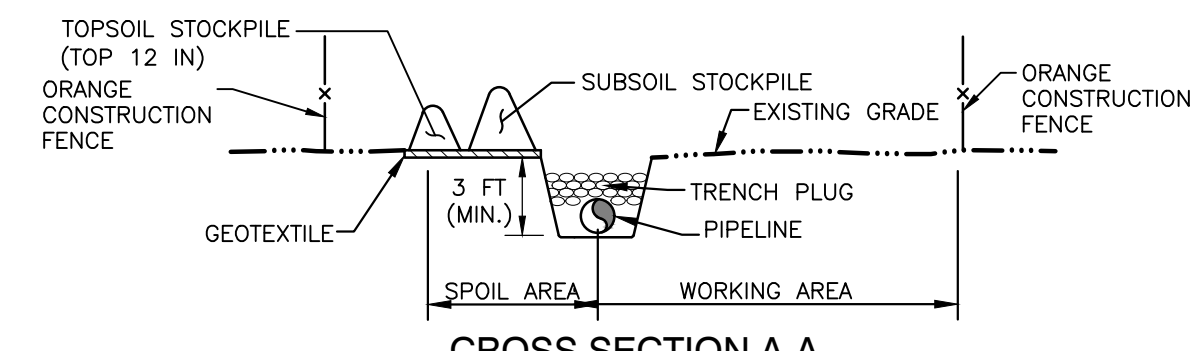
NOTES:

1. INSTALL COMPOST FILTER SOCK ACROSS THE RIGHT-OF-WAY, IMMEDIATELY UPSLOPE OF THE WETLAND BOUNDARY, AT THE EDGE OF THE RIGHT-OF-WAY, AND AS NECESSARY, AROUND SOIL STOCKPILES.
2. EQUIPMENT STAGING AREA MUST BE LOCATED A MINIMUM OF 50 FT FROM THE EDGE OF THE WETLAND.
3. USE ONE OF THE FOLLOWING OPTIONS FOR VEHICULAR CROSSING OF THE WETLAND: 1) TIMBER MATS OR 2) STONE OVER GEOTEXTILE. VEHICLES ARE NOT ALLOWED ACCESS TO THE WETLAND CROSSING UNLESS THE WETLAND IS BEING PROTECTED BY ONE OF THESE OPTIONS.
4. INSTALL TRENCH PLUGS ON EACH SIDE OF THE WETLAND TO PREVENT THE TRENCH FROM DRAINING WETLAND OR CHANGING HYDROLOGY.
5. WHEN EXCAVATING TRENCH IN WETLAND, EXCAVATE WETLAND TOPSOIL (TOP 12 IN.) AND STOCKPILE SEPARATELY FROM SUBSOIL. DURING BACKFILLING OF TRENCH, REPLACE TOPSOIL IN TOP OF TRENCH TO RESTORE WETLAND. STOCKPILE SOIL ONTO GEOTEXTILE IN THE SPOIL AREA NEXT TO THE TRENCH. (UNLESS THERE IS STANDING WATER OR THE SOIL IS TOO SATURATED TO SEGREGATE.)
6. SWAMP MATS SHOULD BE UTILIZED IN WORKING AREA TO MINIMIZE DISTURBANCE/COMPACTION OF WETLANDS.
7. UPON RESTORATION, REMOVE GEOTEXTILE, SWAMP MATS, INSTALL WATERBARS, AND RESTORE WETLAND TO EXISTING GRADE.

DETAIL 12

PIPELINE AND EQUIPMENT CROSSING OF WETLAND - TRENCHING

N.T.S.



CROSS SECTION A-A

REVISION RECORD	
NO	DATE

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CHARLES ROBERT KANE
 REGISTERED PROFESSIONAL ENGINEER
 12/22/23

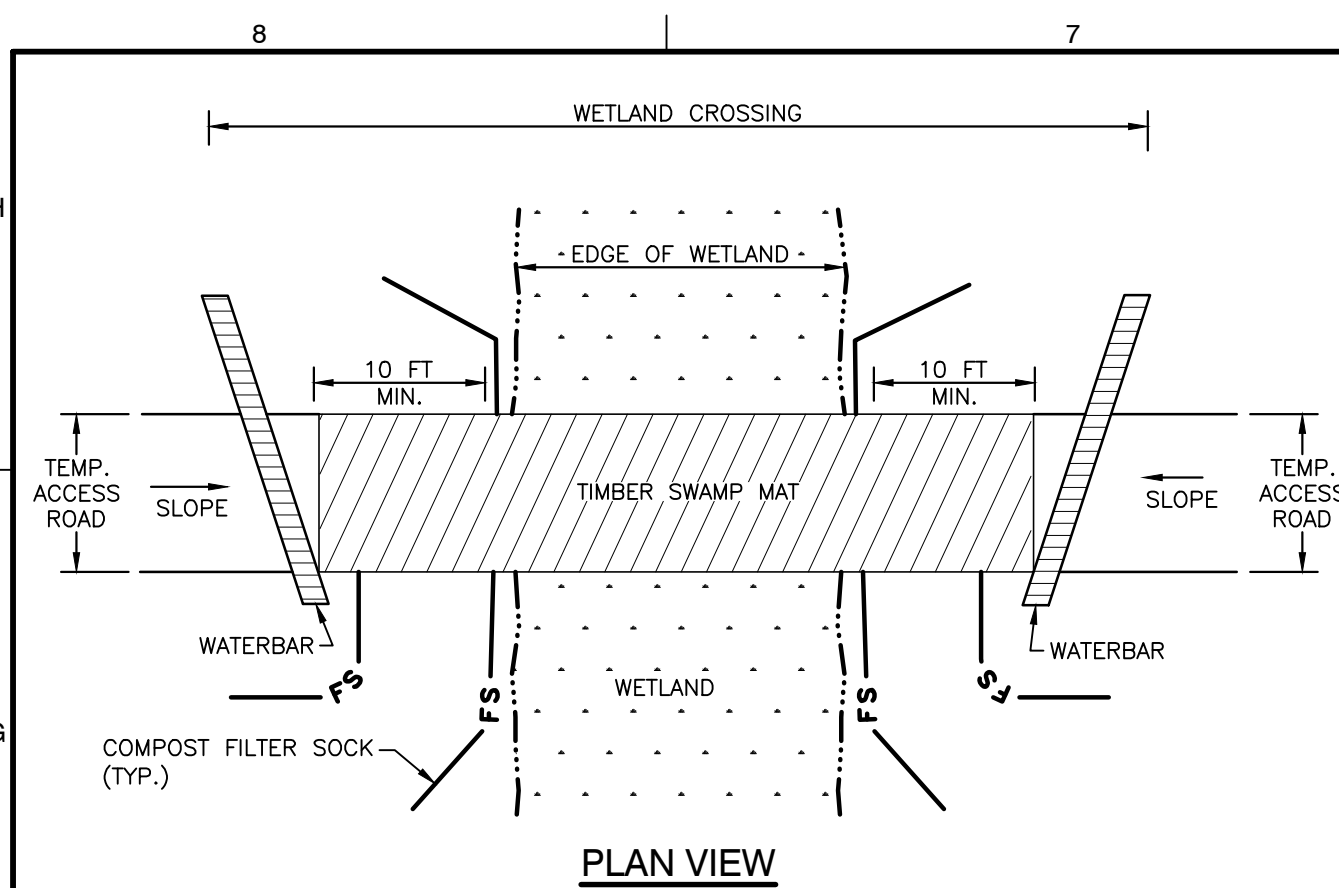
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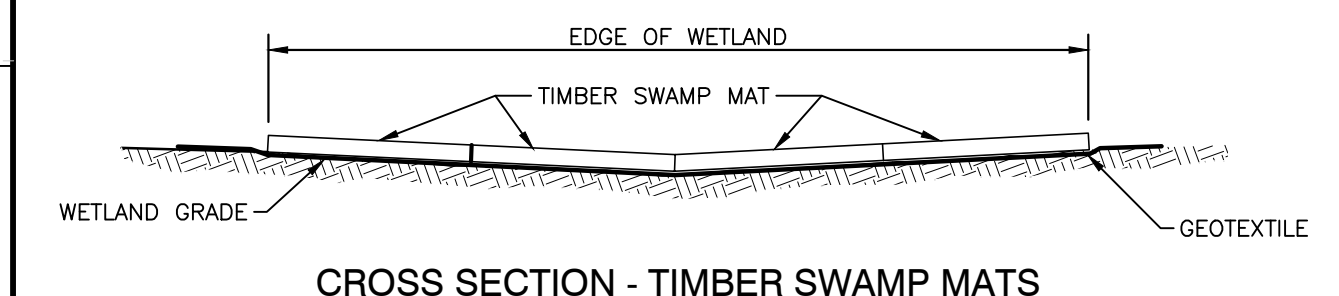
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EROSION AND SEDIMENTATION CONTROL PLAN
EROSION AND SEDIMENT CONTROL DETAILS

C915
 SHEET 16 OF 20



PLAN VIEW

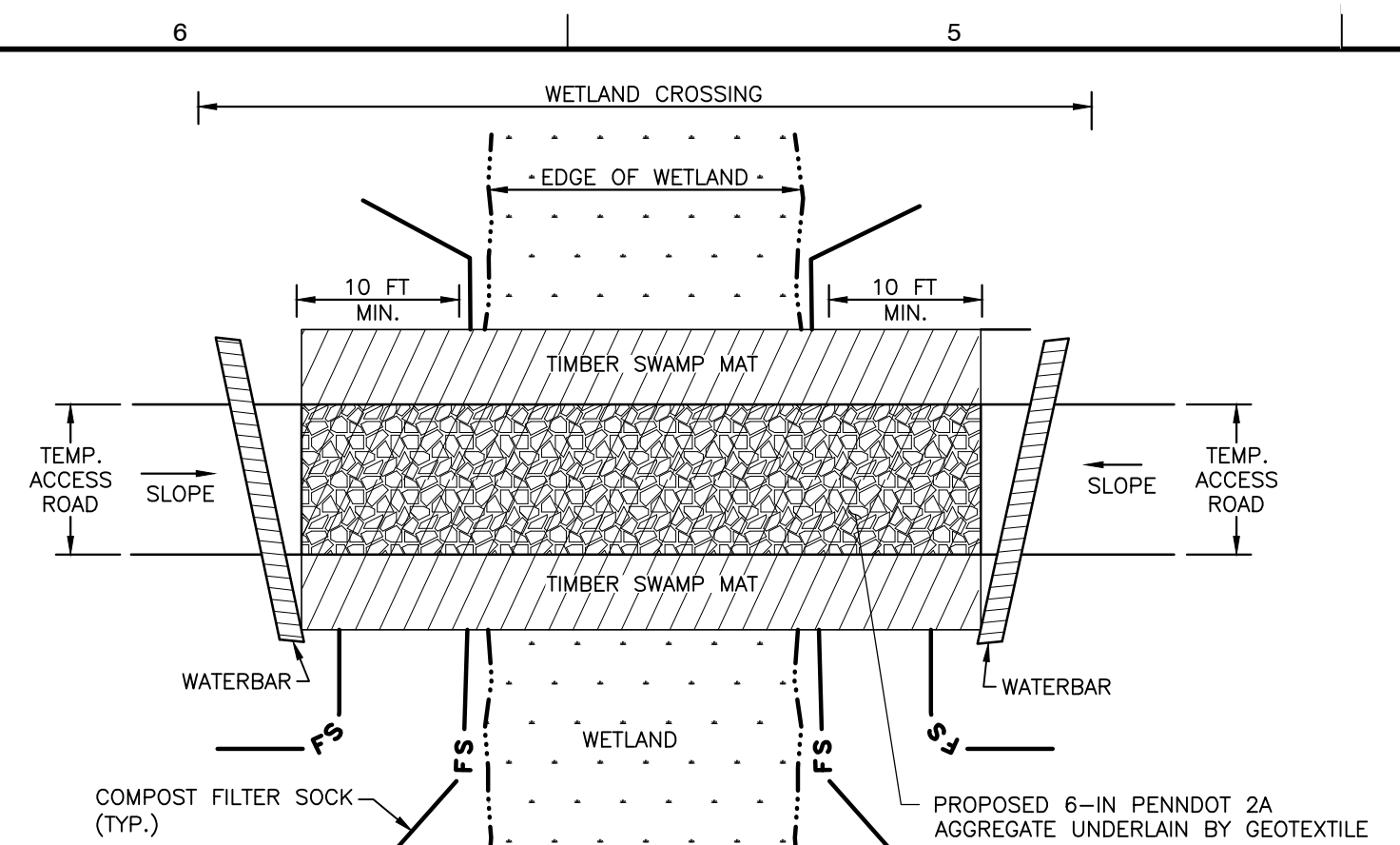


CROSS SECTION - TIMBER SWAMP MATS

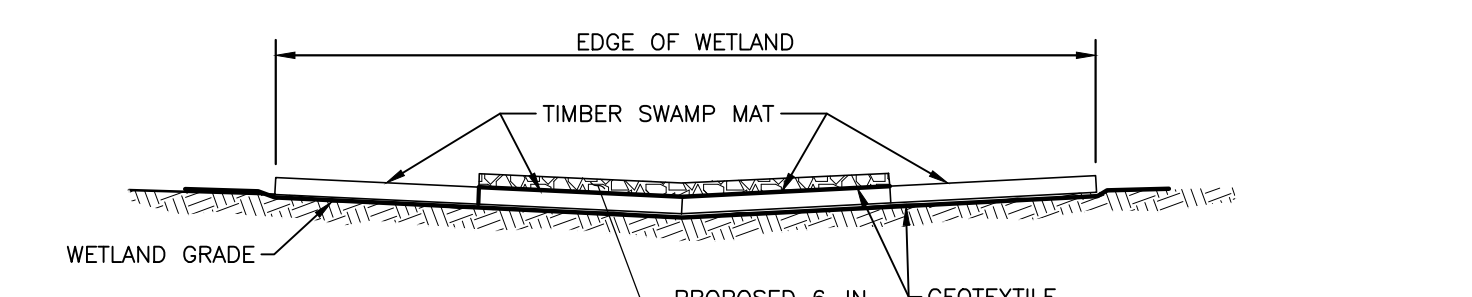
- NOTES:**
1. INSTALL A ROCK PAD APPROACH 10-FT PRIOR TO THE TIMBER SWAMP MATS.
 2. APPROACHES TO CROSSINGS ARE NOT TO EXCEED A DEPTH OF 6-IN ABOVE ORIGINAL GRADE.

**DETAIL 13
TEMPORARY EQUIPMENT CROSSING OF
WETLAND - TIMBER SWAMP MAT**

N.T.S.



PLAN VIEW

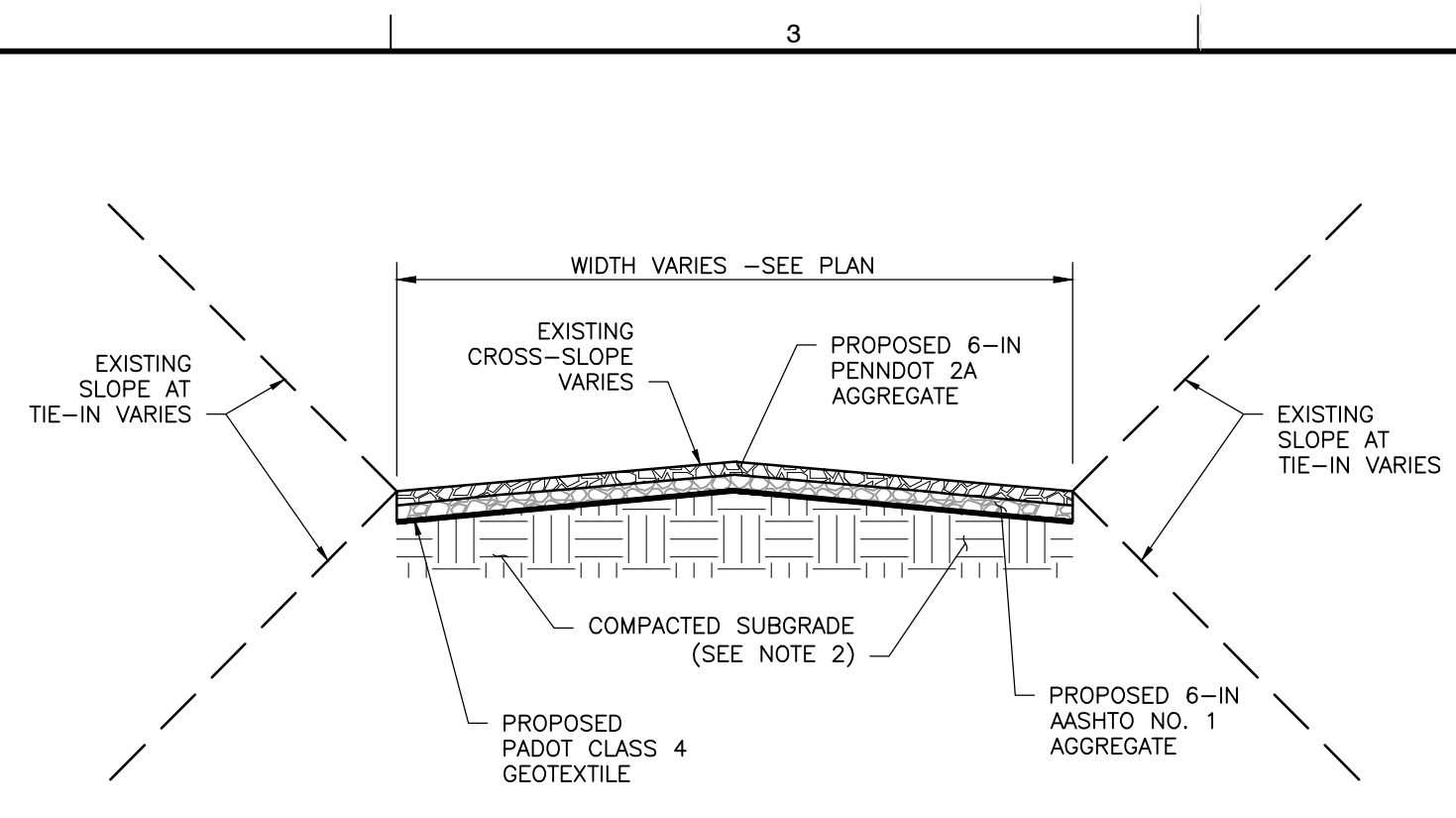


CROSS SECTION - TIMBER SWAMP MATS WITH AGGREGATE

- NOTES:**
1. INSTALL A ROCK PAD APPROACH 10-FT PRIOR TO THE TIMBER SWAMP MATS.
 2. APPROACHES TO CROSSINGS ARE NOT TO EXCEED A DEPTH OF 6-IN ABOVE ORIGINAL GRADE.

**DETAIL 14
TEMPORARY EQUIPMENT CROSSING OF STEEP SLOPE
WETLAND - TIMBER SWAMP MAT WITH AGGREGATE**

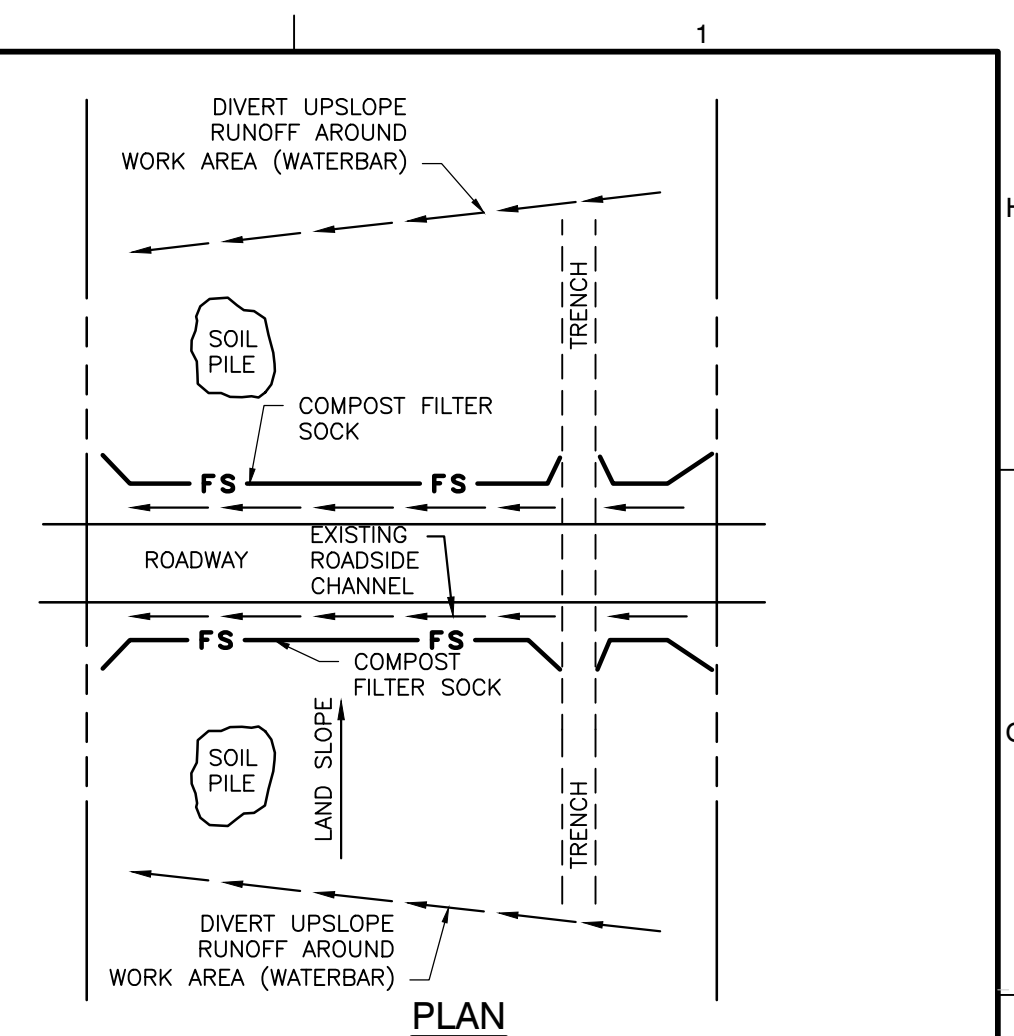
N.T.S.



**DETAIL 15
TEMPORARY/EXISTING ACCESS ROAD**

N.T.S.

- NOTES:**
1. FURNISH AND INSTALL MATERIALS IN ACCORDANCE WITH PENNDOT PUB. 408, LATEST ADDITION.
 2. PROOFROLL SUBGRADE PRIOR TO ROAD CONSTRUCTION IN ACCORDANCE WITH PENNDOT PUB. 402, LATEST REVISION.

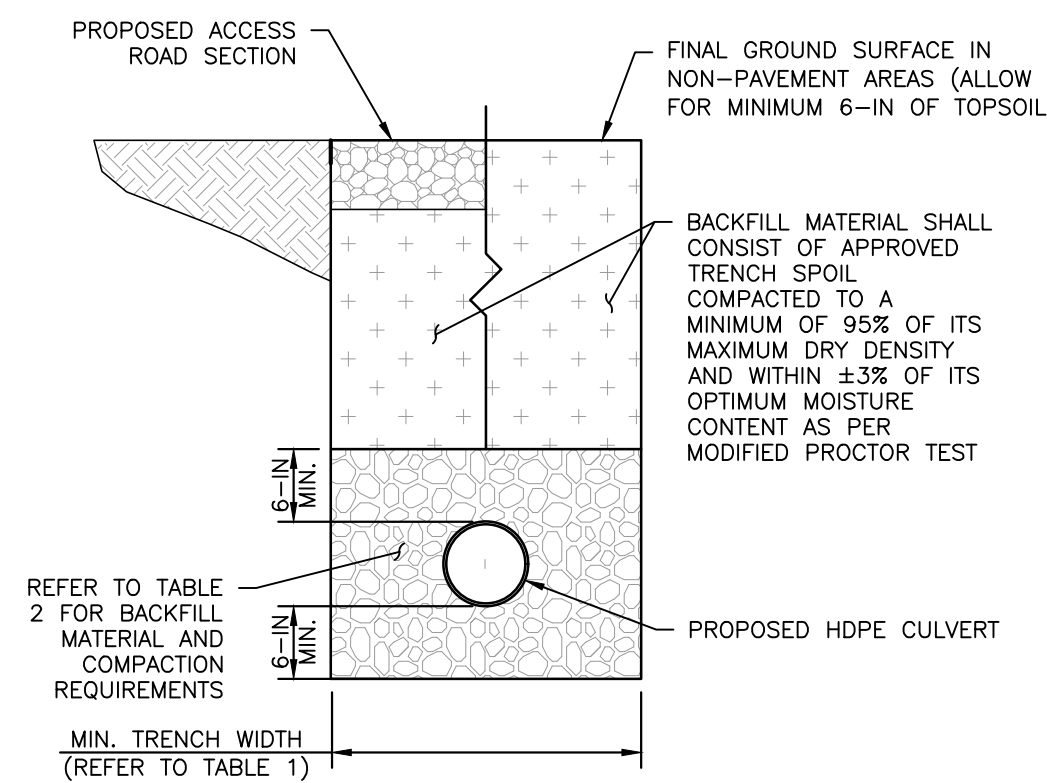


PLAN

- NOTES:**
1. ROADWAY CROSSINGS MAY BE SUBJECT TO THE CONDITIONS OF CROSSING OR HIGHWAY OCCUPANCY PERMITS. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ANY APPLICABLE ROAD CROSSING PERMITS. THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO THE CONDITIONS OF THE PERMITS.
 2. INSTALL COMPOST FILTER SOCK AND WATERBARS BEFORE CONDUCTING EARTH DISTURBANCE OPERATIONS UPGRADIENT OF THE CROSSING AREA.
 3. INSTALL TRAFFIC CONTROL DEVICES PRIOR TO TRENCHING OPERATIONS AS SPECIFIED BY TOWNSHIP OR STATE OFFICIALS OR AS SPECIFIED IN PERMITS.
 4. FOLLOWING PIPELINE INSTALLATION, RESTORE ROADWAY, ROADSIDE DRAINAGE AND CONSTRUCTION AREAS INCLUDING TRENCHES TO PRE-CONSTRUCTION CONDITIONS. INSTALL ROAD SURFACE TO PRE-CONSTRUCTION CONDITIONS OR AS SPECIFIED BY PERMITS.
 5. IF DEWATERING OF THE TRENCH IS NECESSARY DURING CONSTRUCTION, SEDIMENT-LADEN WATER SHALL BE PUMPED INTO A FILTER BAG PLACED IN A WELL-VEGETATED AREA.

**DETAIL 16
PIPELINE CROSSING OF ROAD - OPEN CUT**

N.T.S.



- NOTES:**
1. MATERIALS EXCAVATED DURING TRENCHING SHALL BE STOCKPILED A SUFFICIENT DISTANCE FROM TRENCHES TO PREVENT SLIDES OR CAVE-INS.
 2. BACKFILL MATERIALS SHALL BE APPROVED BY THE OWNER'S ENGINEER OR THEIR REPRESENTATIVE BEFORE BEING PLACED. BACKFILL MATERIAL SHALL BE PLACED IN MAXIMUM 8-IN THICK LIFTS FOR FULL-SIZE COMPACTION EQUIPMENT, 4-IN-6-IN LIFTS WITH HANDHELD EQUIPMENT.
 3. THE MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT FOR THE BACKFILL MATERIALS SHALL BE DETERMINED BY ASTM D1557, VISUAL OBSERVATION OF COMPACTION TO NON-MOVEMENT, AND/OR THE RELATIVE DENSITY OF THE AASHTO NO. 57 AGGREGATE AS DETERMINED BY MAX/MIN RELATIVE DENSITY IN ACCORDANCE WITH ASTM D4253 AND ASTM D4254.
 4. THE CONTRACTOR SHALL CONSTRUCT TRENCHES AND PROVIDE ADEQUATE SHORING (WHERE NECESSARY) IN CONFORMANCE WITH THE LATEST OSHA REQUIREMENTS FOR CONSTRUCTION STANDARD FOR EXCAVATIONS (29 CFR PART 1926.650-652 SUBPART P).
 5. THE CONTRACTOR SHALL VERIFY THAT THE MINIMUM SPECIFIED PIPE COVER IS PROVIDED BETWEEN THE FINAL GROUND SURFACE AND TOP OF PIPE BEFORE LAYING PIPE. PROVIDE COVER IN ACCORDANCE WITH PIPE MANUFACTURER'S RECOMMENDATIONS.
 6. INCREASE TRENCH WIDTH AS NECESSARY TO ALLOW FOR PROPER COMPACTION OF BEDDING/BACKFILL.
 7. RECOMMENDED MANUFACTURER/MATERIAL: ADVANCED DRAINAGE SYSTEMS, INC. (ADS), OR APPROVED EQUAL HDPE PIPE. PIPE TO BE FURNISHED AND INSTALLED WITH WATER TIGHT JOINTS.

**DETAIL 17
CULVERT DETAIL**

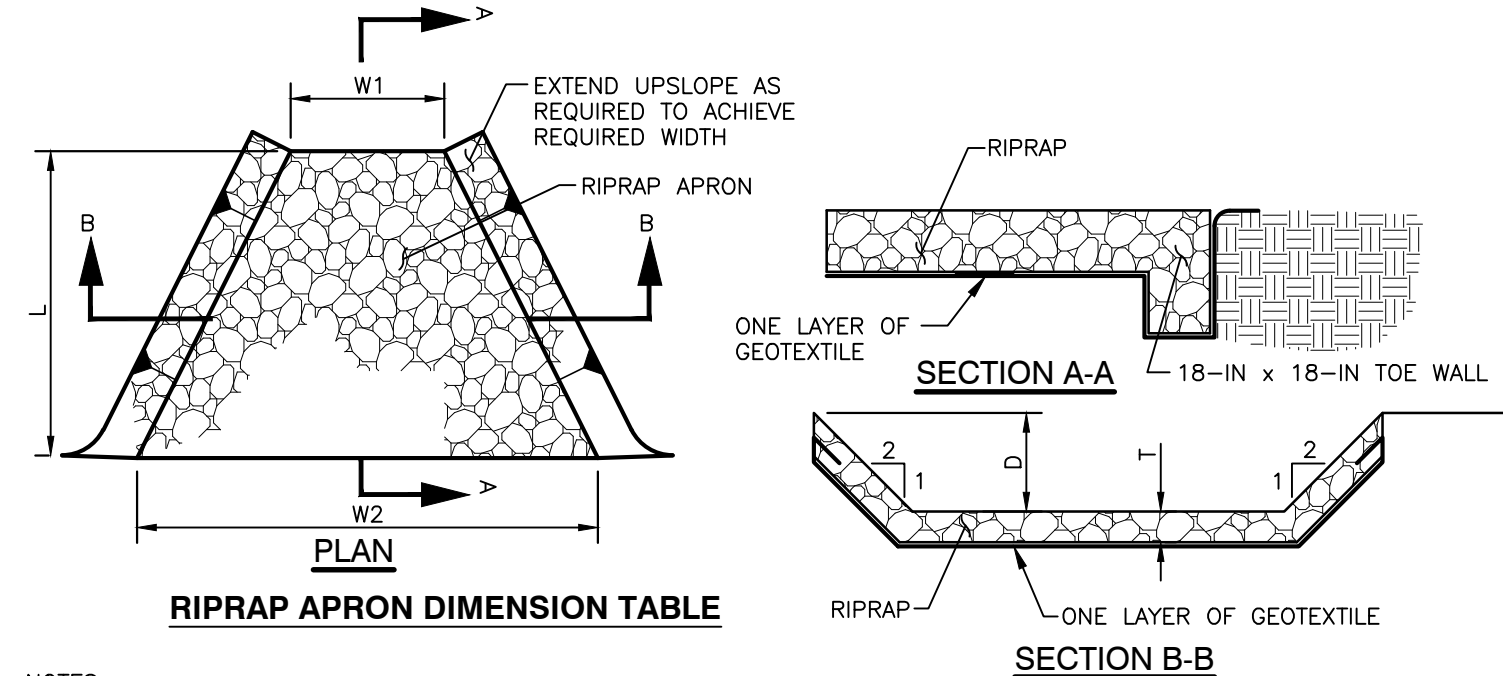
N.T.S.

**TABLE 1:
MINIMUM TRENCH WIDTHS**

PIPE DIAMETER (in.)	TRENCH WIDTH (in.)
4-10	28
12	30
15	34
18	39
24	48
30	56
36	64
42	72
48	80
54	88
60	96

TABLE 2: BACKFILL MATERIAL AND COMPACTION REQUIREMENTS

DESCRIPTION	SOIL CLASSIFICATIONS			MIN. MODIFIED PROCTOR DENSITY %
	ASTM D2321	ASTM D487	AASHTO M43	
GRADED OR CRUSHED STONE, GRAVEL	CLASS 1	-	5	N/A SEE NOTES FOR VISUAL CRITERIA
WELL-GRADED SAND, GRAVELS AND GRAVEL/SAND MIXTURES; POORLY GRADED SAND, GRAVELS AND GRAVEL/SAND MIXTURES; LITTLE TO NO FINES	CLASS I	GW GP SW SP	57 6	95%
SILTY OR CLAYEY GRAVELS, GRAVEL/SAND/SILT OR GRAVEL AND CLAY MIXTURES; SILTY OR CLAYEY SANDS, SAND/CLAY OR SAND/SILT MIXTURES	CLASS II	GW GP SW SP	GRAVEL SAND SAND (<10% FINES)	95%

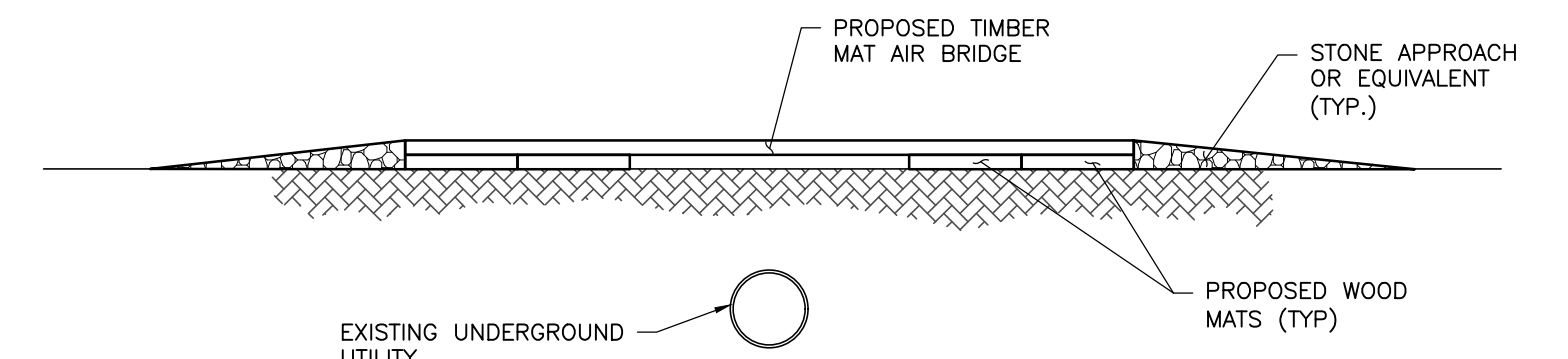


RIPRAP APRON DIMENSION TABLE

- NOTES:**
1. ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.
 2. ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.
- INSPECTION:** DURING ACTIVE CONSTRUCTION, ALL RIPRAP APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER ANY LARGE RAINFALL EVENT (1.5 INCHES OF RUNOFF OR GREATER IN 24 HOURS). UPON COMPLETION OF CONSTRUCTION ACTIVITY, ALL RIPRAP APRONS SHALL BE INSPECTED AT LEAST BI-ANNUALLY AND AFTER ANY LARGE RAINFALL EVENT (1.5 INCHES OF RUNOFF OR GREATER IN 24 HOURS).
- MAINTENANCE:** ANY ACCUMULATED SEDIMENT AND DEBRIS SHALL BE REMOVED IMMEDIATELY. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

**DETAIL 18
RIPRAP APRON DETAIL**

N.T.S.



**DETAIL 19
TEMPORARY AIR BRIDGE**

N.T.S.

- NOTE:**
1. CONTRACTOR SHALL NOT INSTALL TIMBER MAT AIR BRIDGE CROSSING UNTIL APPROVAL TO CROSS THE EXISTING UNDERGROUND UTILITY IS PROVIDED BY UNDERGROUND UTILITY OWNER.

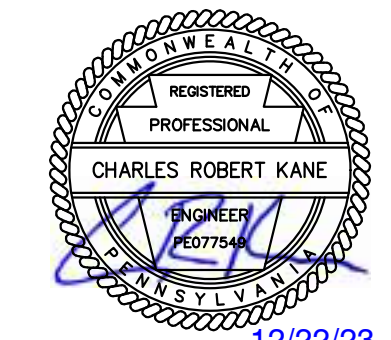
REVISION RECORD		
NO	DATE	DESCRIPTION



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12/22/23
* HAND SIGNATURE ON FILE

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MAM14 U1 PIPELINE AND WATERLINE
WASHINGTON AND BELL TOWNSHIPS
WESTMORELAND COUNTY
PENNSYLVANIA**

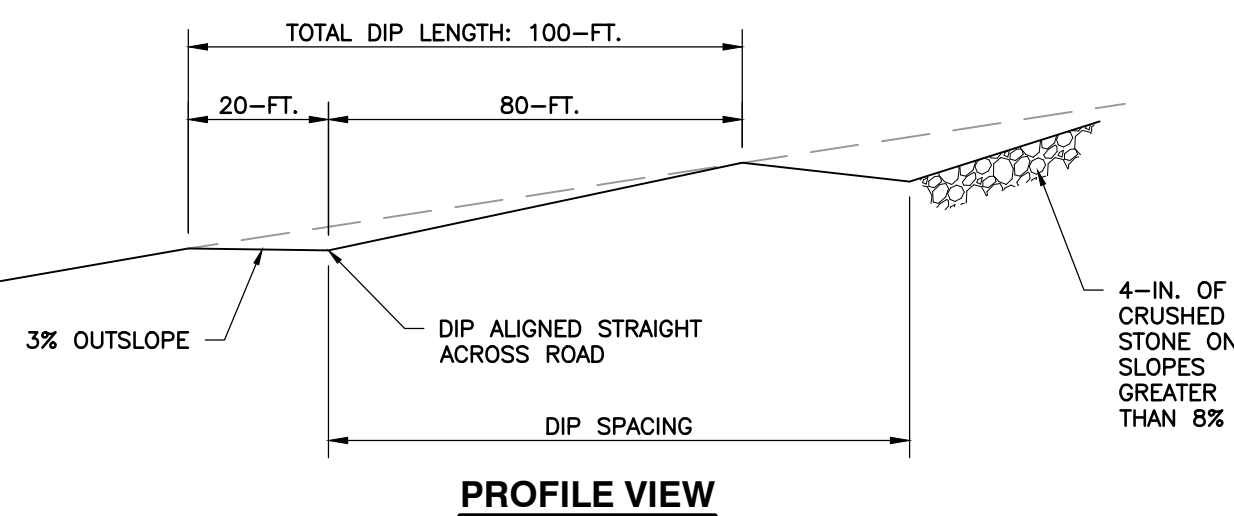
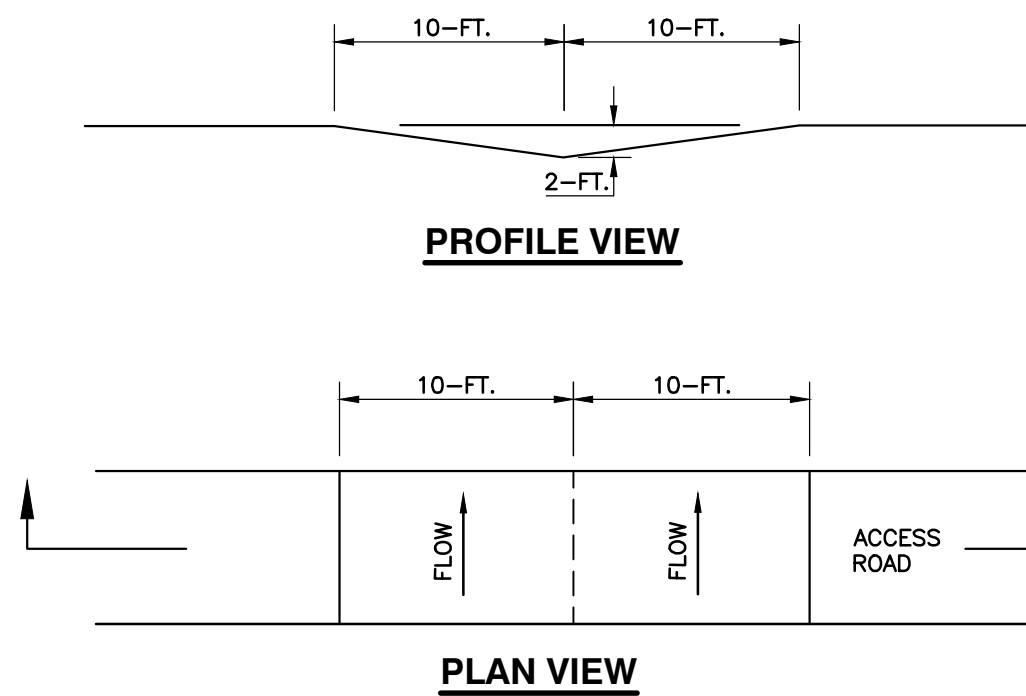
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EROSION AND SEDIMENTATION CONTROL PLAN
EROSION AND SEDIMENT CONTROL DETAILS

DRAWING NO: **C916**
SHEET 17 OF 20

TABLE 3.2

ROAD GRADE (%)	SPACING BETWEEN BROADBASED DIPS (FT)
<2	300
3	235
4	200
5	185
6	165
7	155
8	150
9	145
10	140



- NOTES:**
- BROAD-BASED DIPS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN AND AT THE LOCATIONS SHOWN ON THE PLAN DRAWINGS.
 - DIPS SHALL BE ORIENTED SO AS TO DISCHARGE TO THE LOW SIDE OF THE ROADWAY.
 - MAXIMUM SPACING OF BROAD-BASED DIPS SHALL BE AS SHOWN IN TABLE 3.2 OF THE PADEP EROSION CONTROL MANUAL.

- NOTES:**
- BROAD-BASED DIPS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN AND AT THE LOCATIONS SHOWN ON THE PLAN DRAWINGS.
 - DIPS SHALL BE ORIENTED SO AS TO DISCHARGE TO THE LOW SIDE OF THE ROADWAY.
 - MAXIMUM SPACING OF BROAD-BASED DIPS SHALL BE AS SHOWN IN TABLE 3.2 OF THE PADEP EROSION CONTROL MANUAL.

LOW GRADIENT (<5%) ROADWAYS

HIGH GRADIENT (5-10%) ROADWAYS

NOTE:

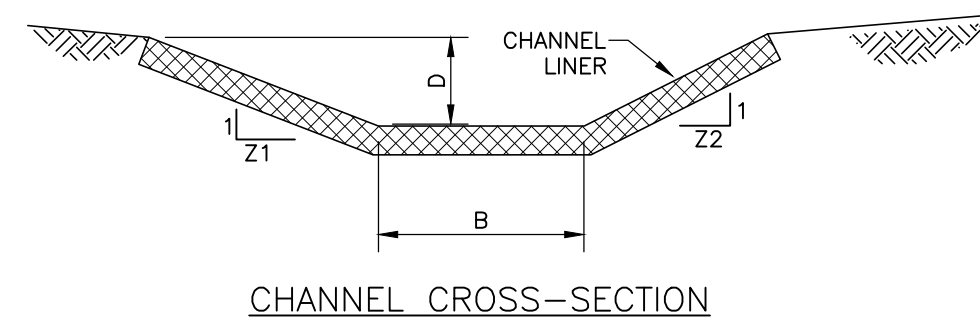
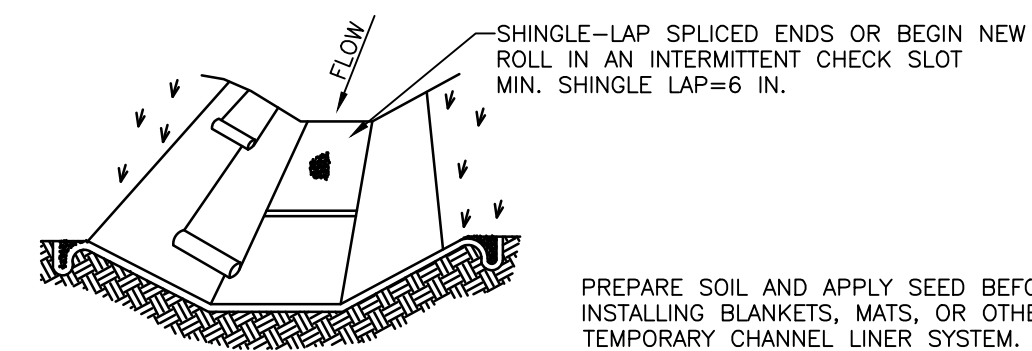
- BROAD-BASED DIPS SHALL ONLY BE REQUIRED IF EROSION IS OCCURRING ALONG THE ACCESS ROAD. BROAD-BASED DIPS SHALL BE INSTALLED ACCORDING TO THE SPACING AND DIMENSIONS SHOWN HEREON.

INSPECTION: BROAD-BASED DIPS SHALL BE INSPECTED DAILY.

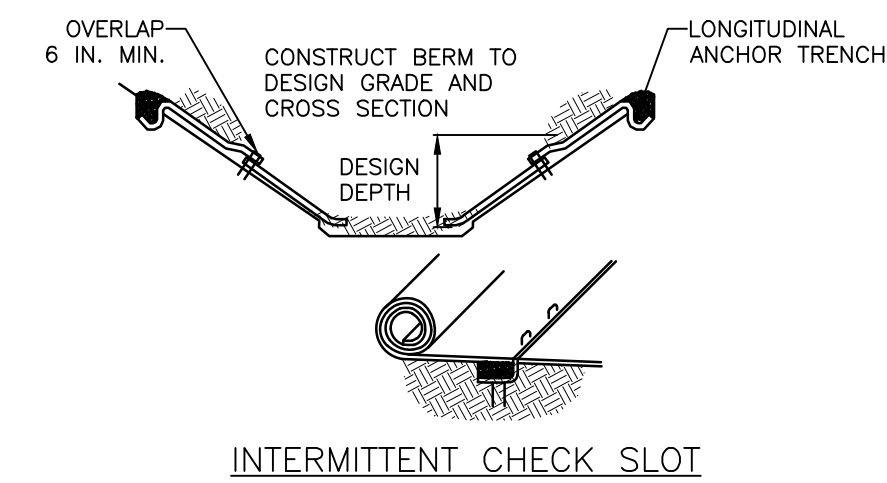
MAINTENANCE: DAMAGED OR NON-FUNCTIONING DIPS SHALL BE REPAIRED BY THE END OF THE WORKDAY.

**DETAIL 20
BROAD-BASED DIP**

N.T.S.

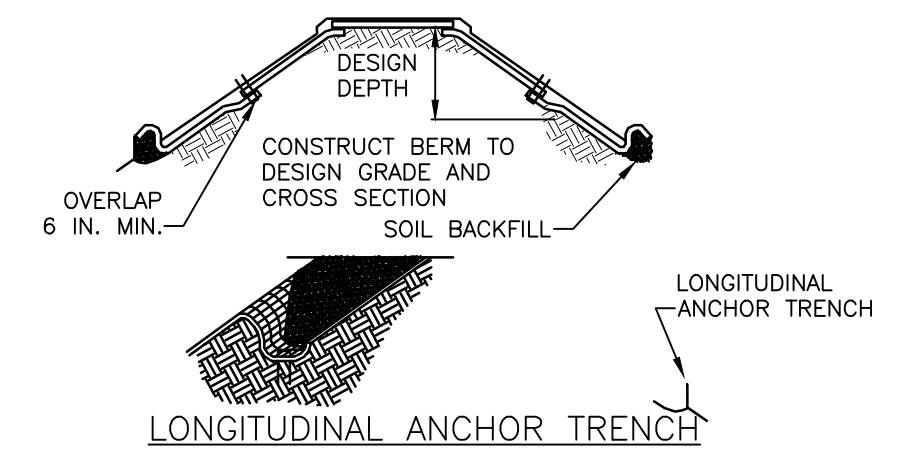


* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, VEGETATIVE STABILIZATION FOR SOIL AMENDMENTS, SEED MIXTURES AND MULCHING INFORMATION



NOTES:

- ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNELS/BERMS IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.
- CHANNEL/BERM DIMENSIONS SHALL BE REGULARLY MAINTAINED. SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY.
- NAG - NORTH AMERICAN GREEN. BERM LINERS SHALL BE NORTH AMERICAN GREEN OR APPROVED EQUIVALENT.



INSPECTION: ALL CHANNELS/DIVERSION BERMS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT.

MAINTENANCE: CHANNELS/DIVERSION BERMS SHOULD BE MAINTAINED TO ENSURE THAT THE SPECIFIED DESIGN DIMENSIONS ARE MAINTAINED AND PROTECTIVE LININGS ARE IN GOOD CONDITION. CHANNELS/DIVERSION BERMS SHOULD BE CLEANED WHENEVER TOTAL BERM DEPTH IS REDUCED BY 25% AT ANY LOCATION. DAMAGED LININGS SHOULD BE REPAIRED OR REPLACED IMMEDIATELY.

**DETAIL 21
TEMPORARY EARTHEN DIVERSION BERM**

N.T.S.

REVISION RECORD		
NO	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
4350 Northern Pike · Suite 141 · Monroeville, PA 15146
Ph: 724.327.5200 · 800.899.3610 · Fax: 724.327.5280
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PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE-STOP CALL. PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776

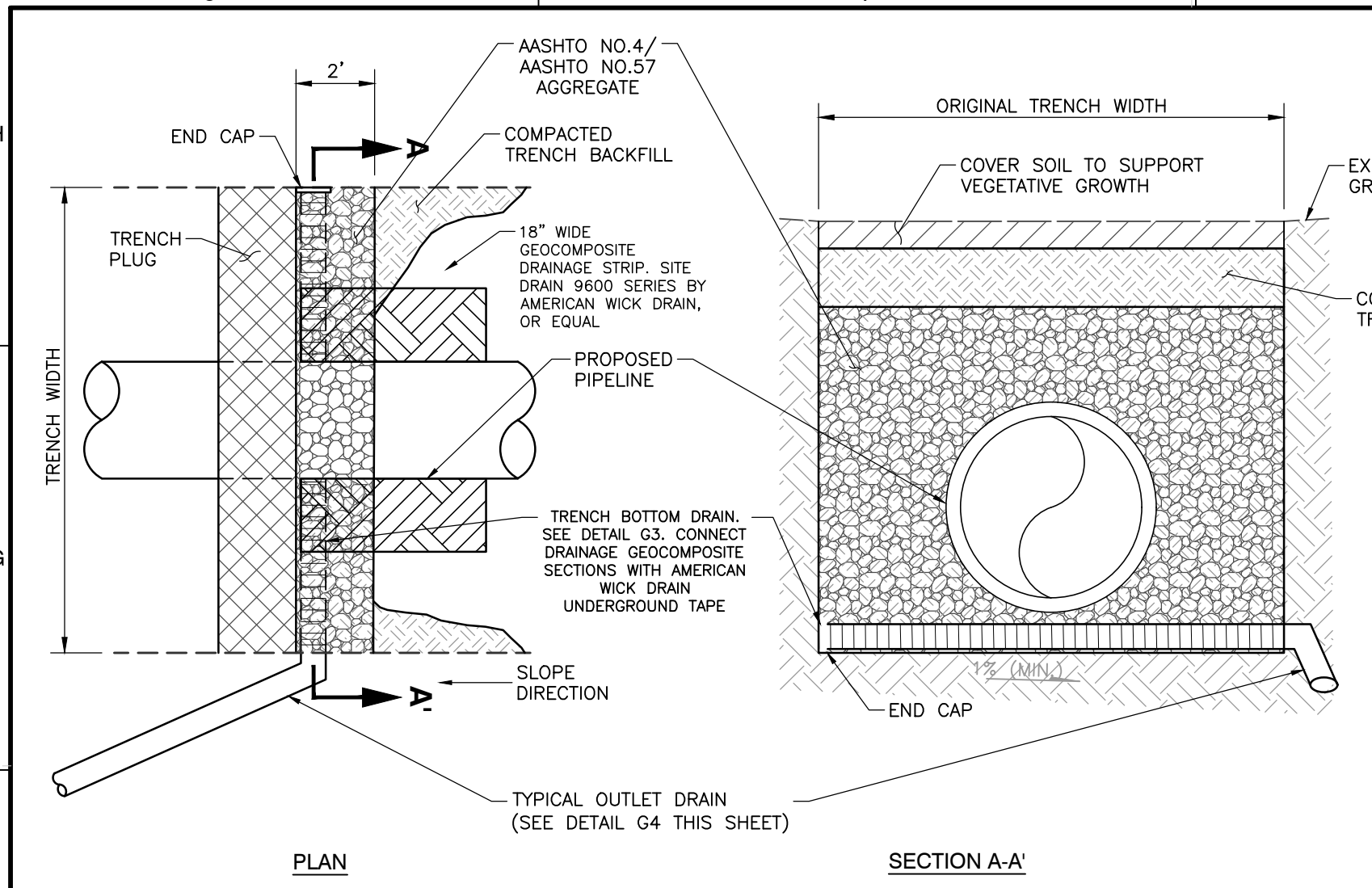
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**CNX MIDSTREAM OPERATING COMPANY LLC
MAM14 U1 PIPELINE AND WATERLINE
WASHINGTON AND BELL TOWNSHIPS
WESTMORELAND COUNTY
PENNSYLVANIA**

DRAWN BY: JJN CHECKED BY: SCT APPROVED BY: CRK
DATE: DECEMBER 2023 DWG SCALE: N.T.S. PROJECT NO: 332-793

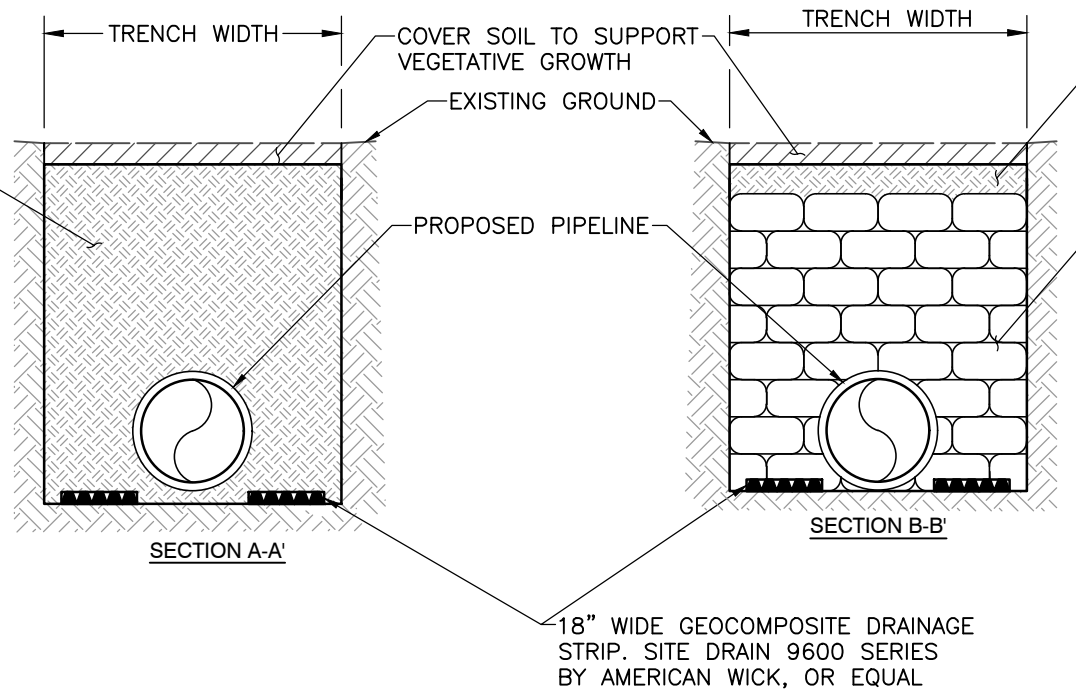
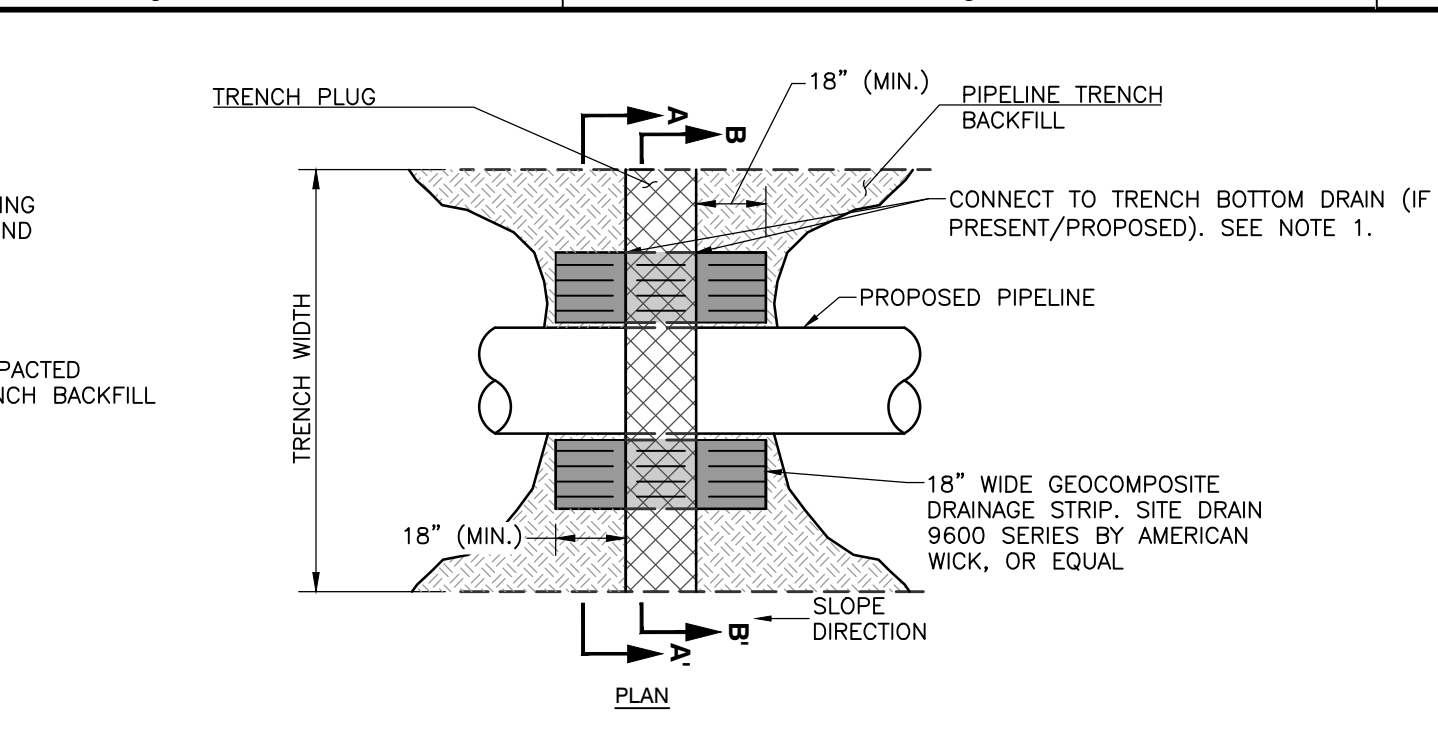
EROSION AND SEDIMENTATION CONTROL PLAN
EROSION AND SEDIMENT CONTROL DETAILS

C917
SHEET 18 OF 20



NOTE:
 1. DAYLIGHT DISCHARGE PIPE TO EMBEDDED DRAIN OUTLET (SEE DETAIL G5)
 2. SLOPE BASE OF PIPE TRENCH, AT THE UPSLOPE SIDE OF TRENCH PLUG TOWARDS THE OUTLET PIPE AT A MINIMUM 1% GRADE.

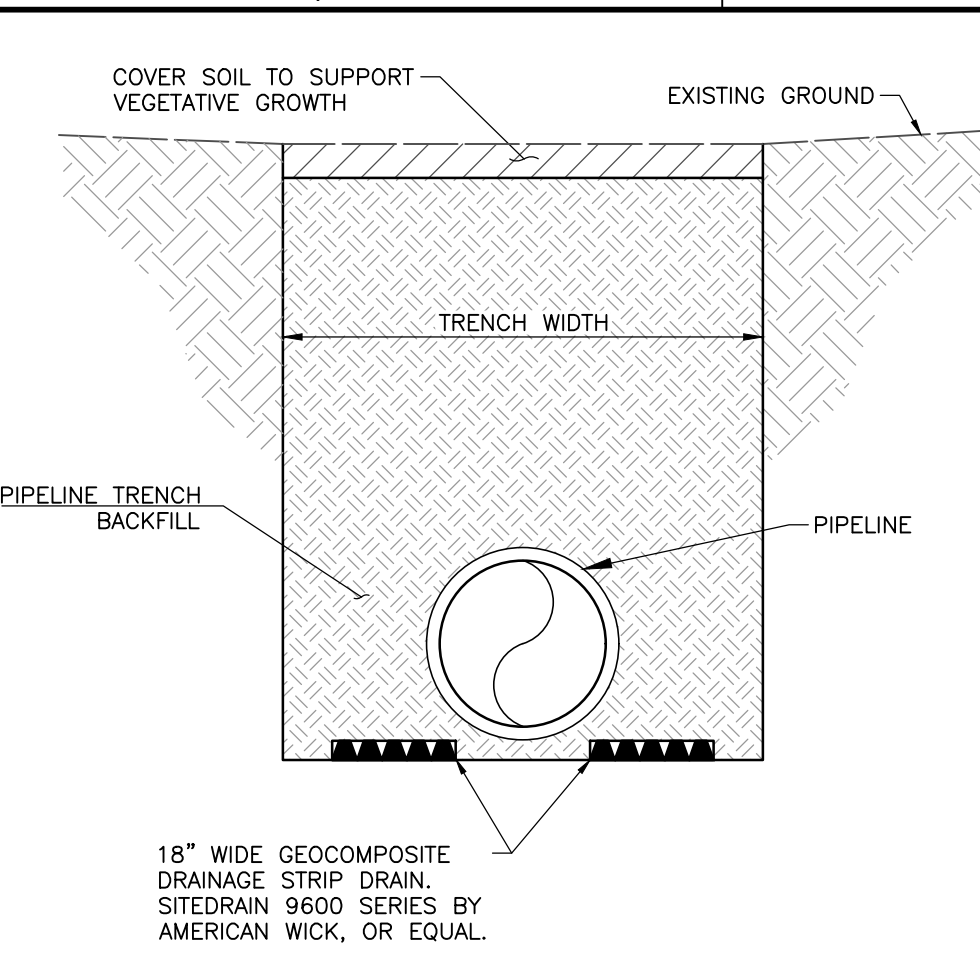
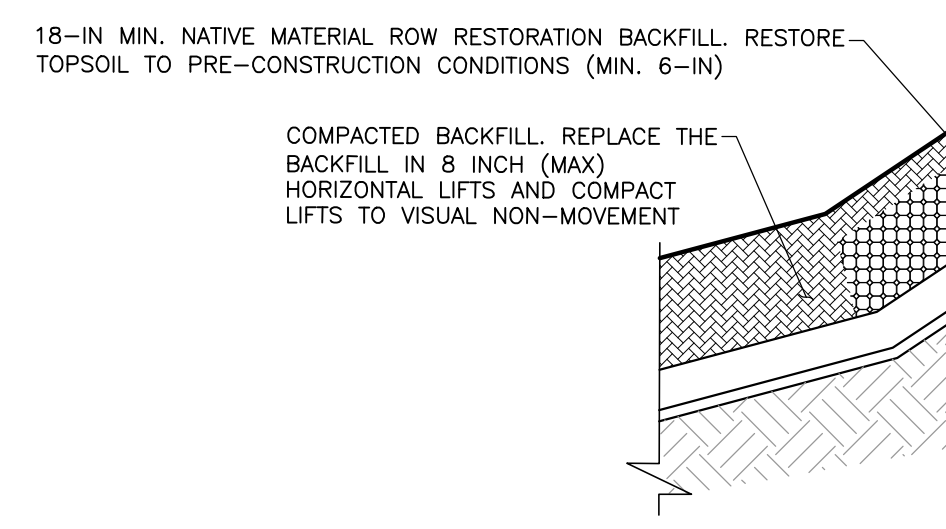
**DETAIL G1
DRAINED TRENCH PLUG**
N.T.S.



NOTE:
 1. WHEN TRENCH BOTTOM DRAINS ARE PROPOSED UPSLOPE AND DOWNSLOPE OF PASS THROUGH DRAIN. SPLICE GEOCOMPOSITE DRAINAGE STRIPS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.
 2. CARE SHALL BE TAKEN DURING INSTALLATION OF TRENCH PLUG AS TO NOT DAMAGE OR CRUSH THE GEOCOMPOSITE DRAINAGE STRIPS.

**DETAIL G2
TRENCH PLUG PASS THROUGH DRAIN**
N.T.S.

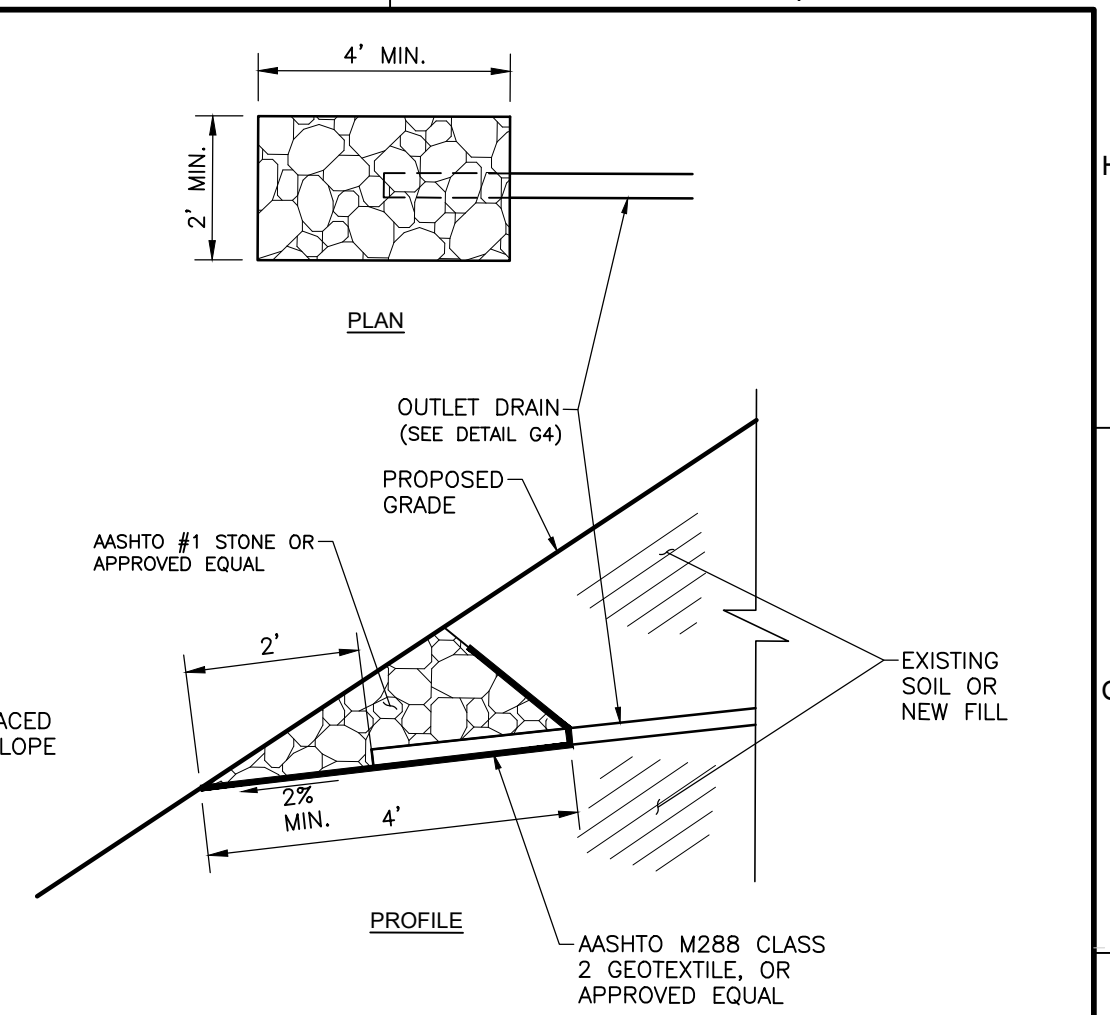
CEMENT MODIFIED BACKFILL MATERIAL SHALL HAVE AN UNCONFINED COMPRESSIVE STRENGTH OF 50 PSI. APPLY 6% PORTLAND CEMENT TYPE I OR III BY WEIGHT. EXISTING SOILS SHALL BE ADEQUATELY BLENDED ONSITE WITH CEMENT PRIOR TO LIFT PLACEMENTS. CEMENT MODIFIED BACKFILL SHALL NOT BE USED TO RESTORE STREAM BEDS OR BANKS BELOW THE ORDINARY HIGH WATER MARK.



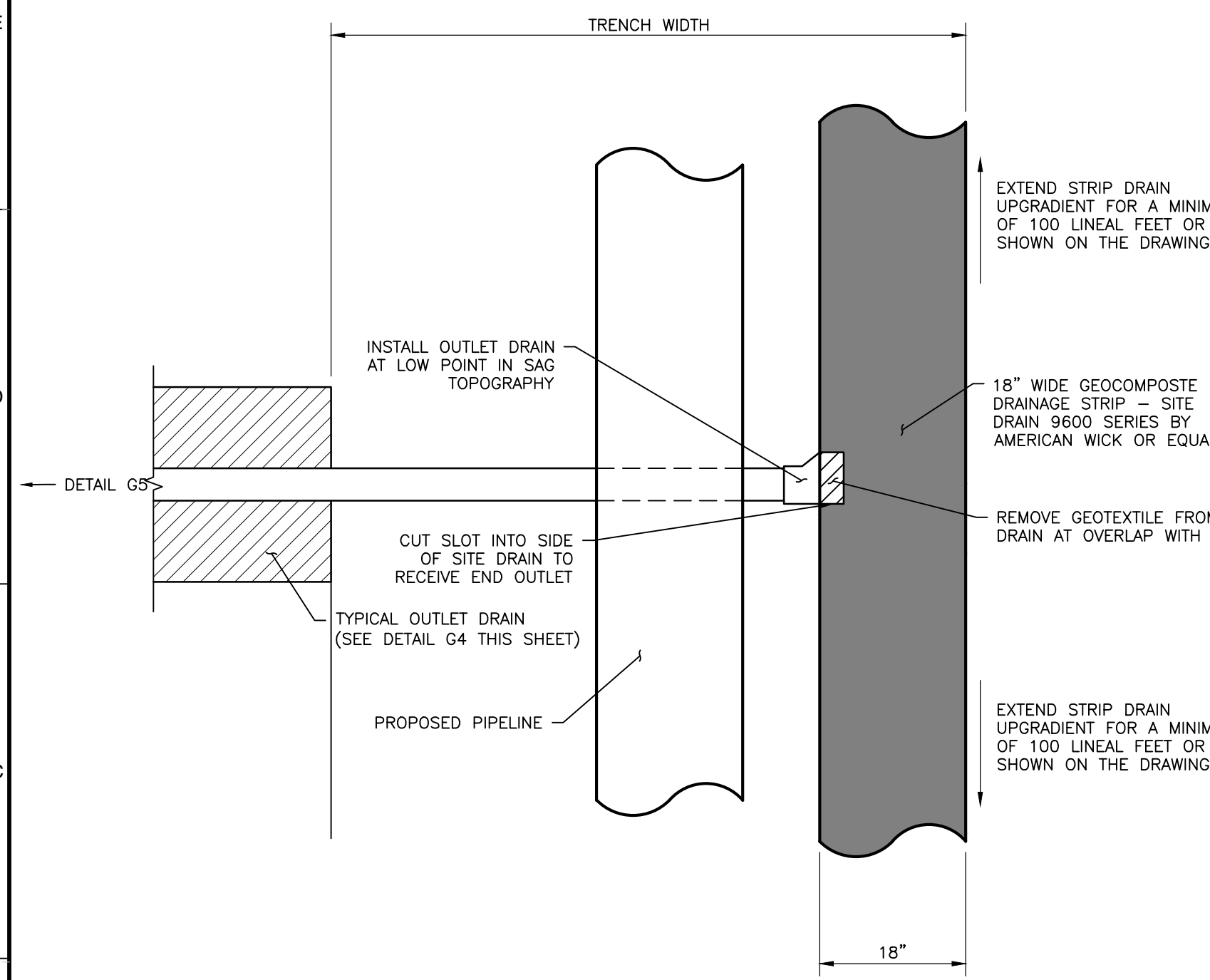
NOTE:
 1. SPLICE GEOCOMPOSITE DRAINAGE STRIPS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
 2. PLACE GEOCOMPOSITE DRAINAGE STRIPS AT THE BOTTOM OF THE PIPE TRENCH PRIOR TO BACKFILLING. PLACE CRIBBING OVER GEOCOMPOSITE. DO NOT CRUSH DRAIN WITH CRIBBING.
 3. TRENCH BOTTOM DRAINS CAN BE OMITTED IF THERE IS NO EVIDENCE OF WATER OR SEASONAL HIGH GROUND WATER IN THE TRENCH WITH APPROVAL FROM CEC/CNX.

**DETAIL G3
TRENCH BOTTOM DRAIN**
N.T.S.

**DETAIL G4
TYPICAL OUTLET DRAIN**
N.T.S.



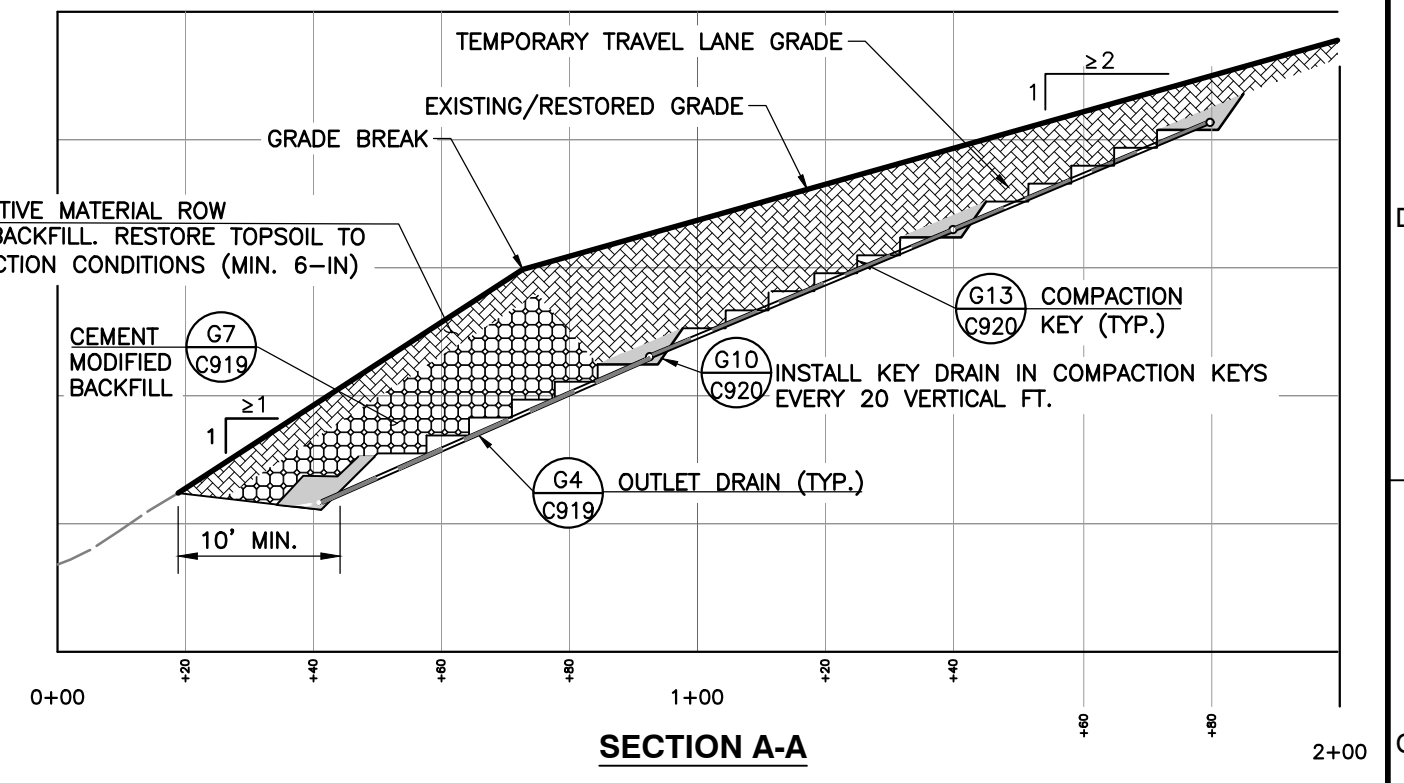
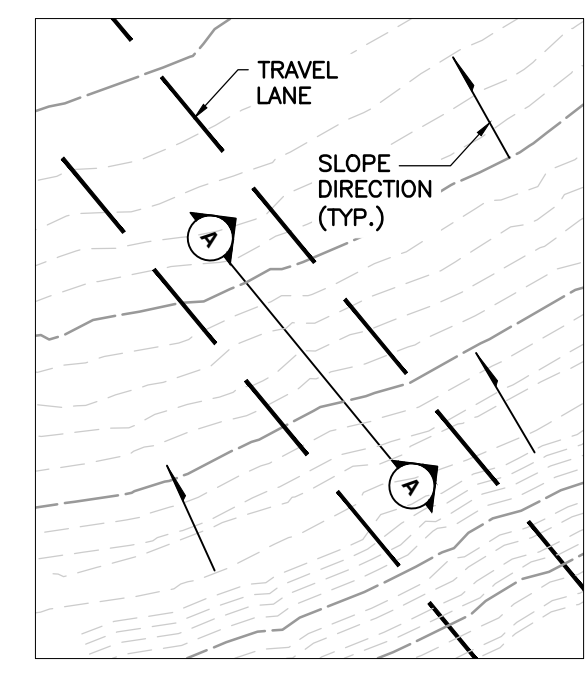
**DETAIL G5
EMBEDDED DRAIN OUTLET**
N.T.S.



**DETAIL G6
SIDE SLOPE GEOCOMPOSITE DRAINAGE STRIP TO OUTLET PIPE CONNECTION**
N.T.S.

CEMENT MODIFIED BACKFILL TABLE						
AREA NO.	STA.	SHFFT NO.	AREA (SF)	DEPTH (FT)	APPROXIMATE VOLUME (CY)	APPROXIMATE TOTAL WEIGHT EXCAVATED MATERIAL (LB)
1	12+00	C901	1,413	5.5	300	39,000
2	52+00	C904	12,449	5.5	2,600	338,000
3	55+50	C905	1,953	5.5	400	52,000
4	57+00	C905	5,092	5.5	1,200	156,000
5	60+00	C905	11,264	5.5	2,300	299,000
6	62+25	C905	1,300	5.5	300	39,000
7	62+75	C905	335	5.5	100	13,000

**DETAIL G7
CEMENT MODIFIED BACKFILL IN PIPELINE TRENCH**
N.T.S.



NOTE:
 1. PLACE BACKFILL IN COMPACTED, HORIZONTAL LIFTS UNTIL IN A FIRM, NON-YIELDING STATE.
 2. CEMENT MODIFIED BACKFILL MATERIAL SHALL HAVE AN UNCONFINED COMPRESSIVE STRENGTH OF 50 PSI. APPLY 6% PORTLAND CEMENT TYPE I OR III BY WEIGHT. EXISTING SOILS SHALL BE ADEQUATELY BLENDED ONSITE WITH CEMENT PRIOR TO LIFT PLACEMENTS.
 3. CEMENT MODIFIED BACKFILL SHALL NOT BE USED TO RESTORE STREAM BEDS OR BANKS BELOW THE ORDINARY HIGH WATER MARK.

**DETAIL G8
DOWN-SLOPE TRAVEL LANE ALONG 2H:1V TO 1H:1V SLOPES**
N.T.S.

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NO.	DATE	DESCRIPTION

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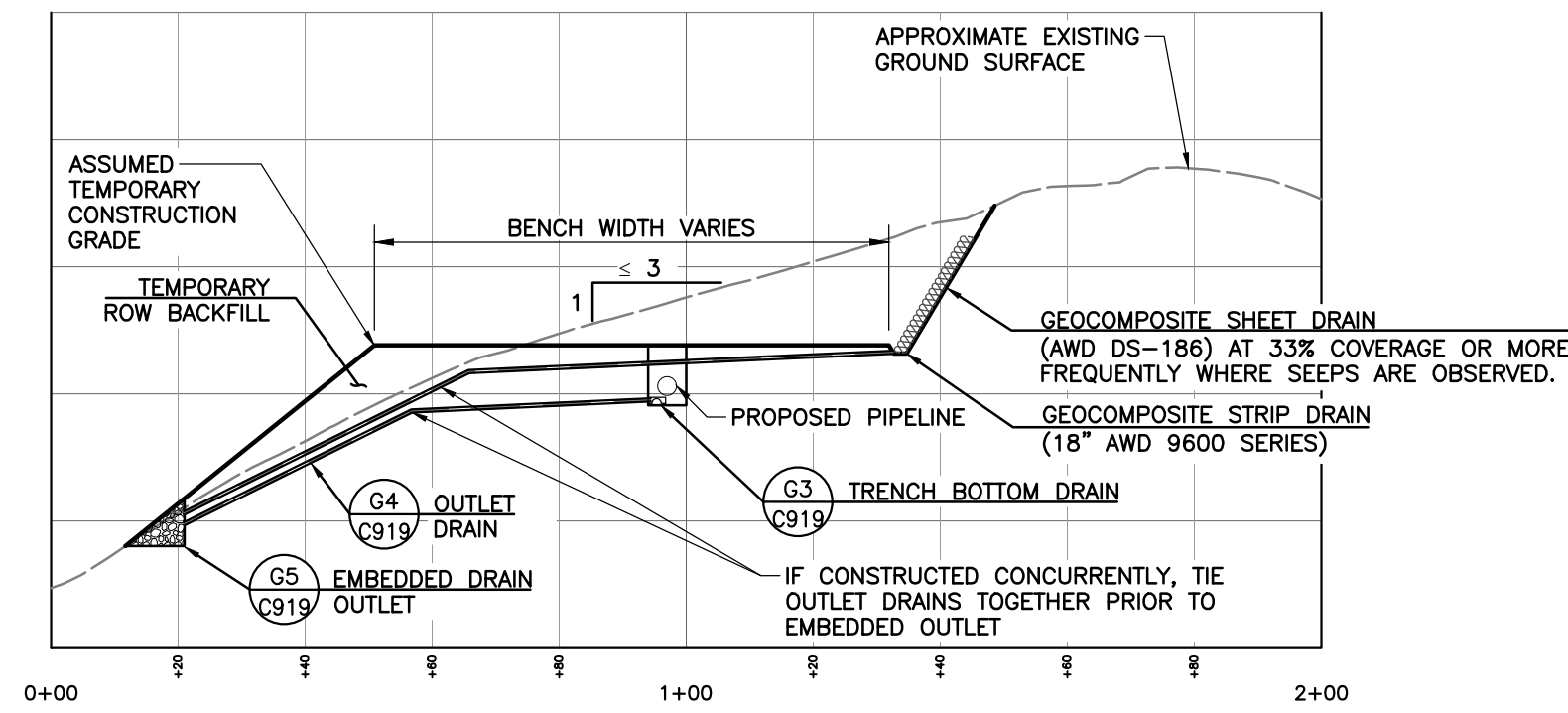
COMMONWEALTH OF PENNSYLVANIA
 REGISTERED PROFESSIONAL ENGINEER
 TYLER JOSEPH REYNOLDS
 No. PE03840

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WASHINGTON AND BELL TOWNSHIPS
WESTMORELAND COUNTY
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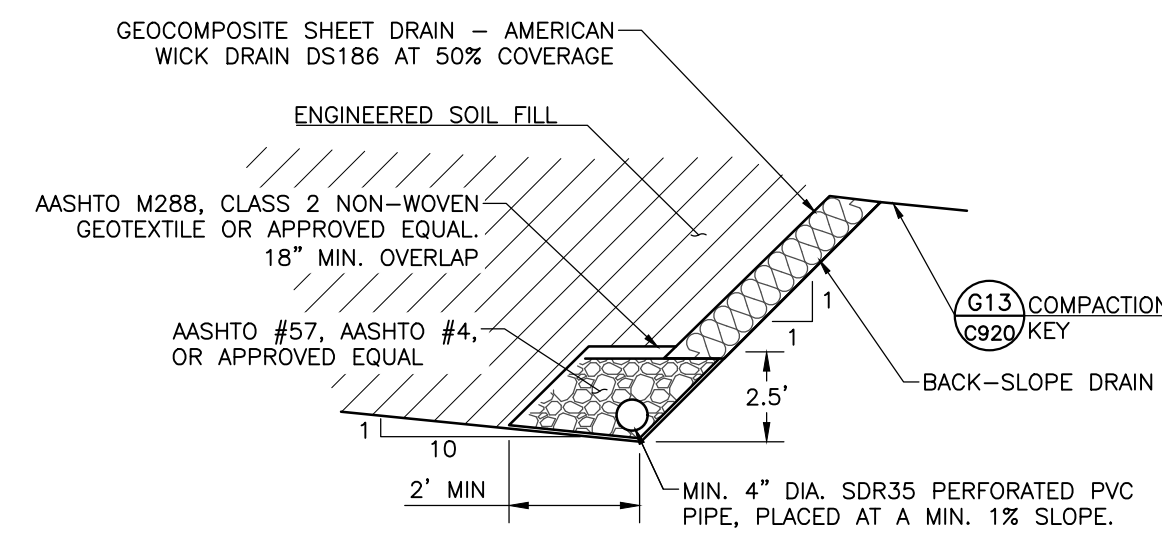
DRAWN BY: JJN CHECKED BY: SCT APPROVED BY: CRK
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EROSION AND SEDIMENTATION CONTROL PLAN
GEOHAZARD MITIGATION DETAILS

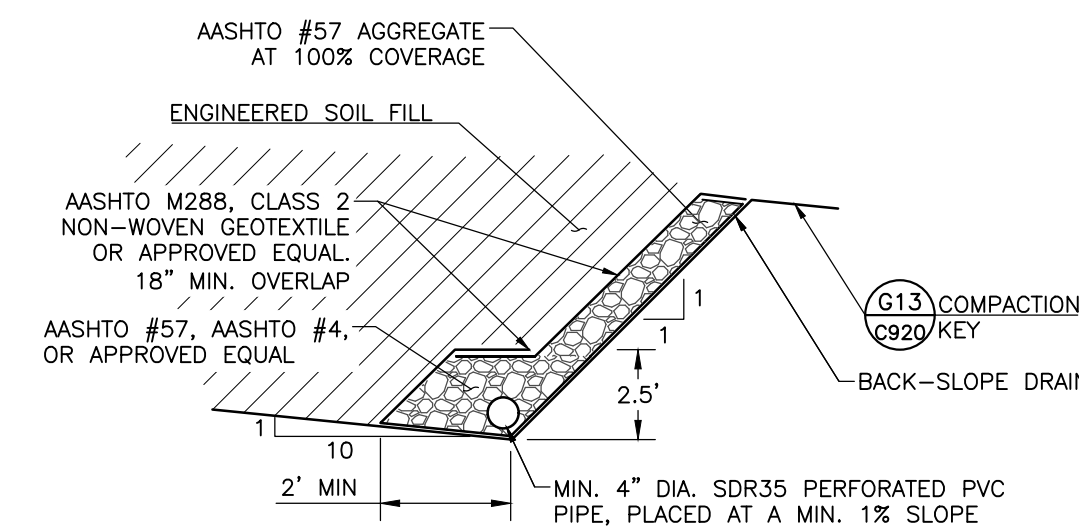
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 SHEET 19 OF 20



DETAIL G9
SIDE SLOPE BENCH DRAIN
N.T.S.



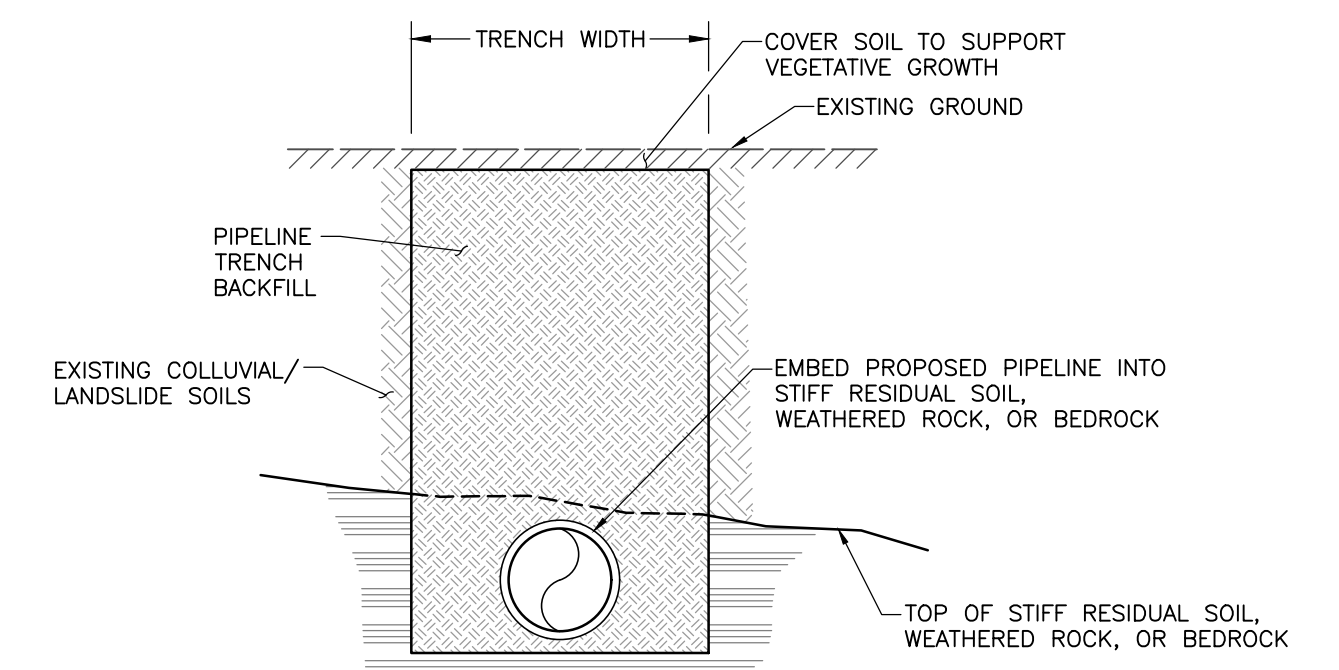
TYPE A - GEOCOMPOSITE



TYPE B - AGGREGATE

NOTES:

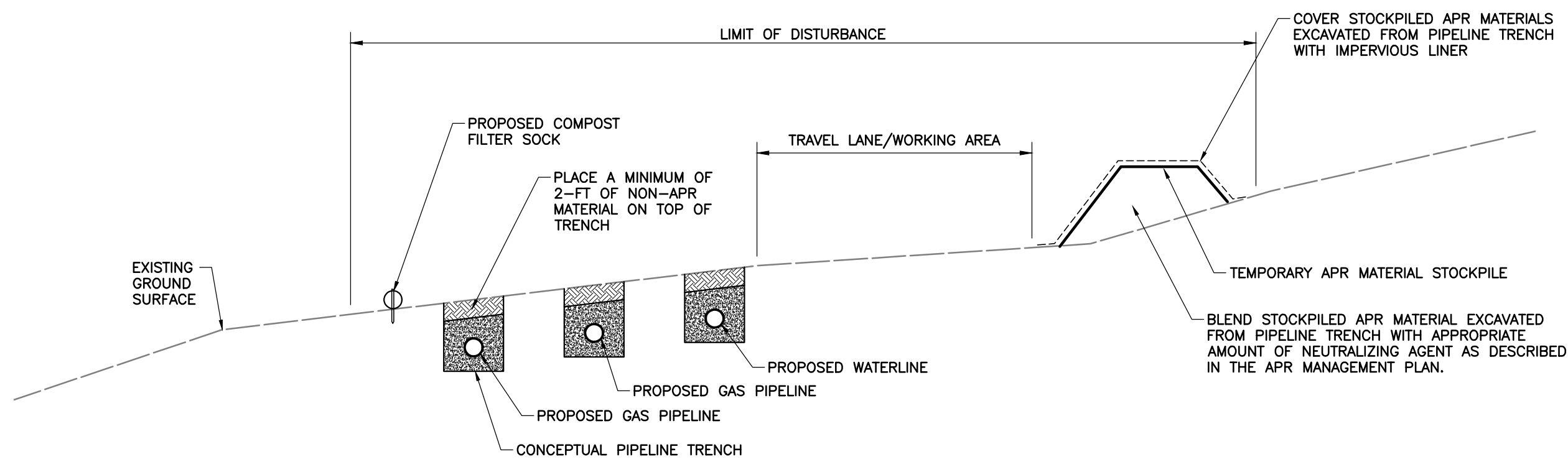
1. SLOPE PIPES AT 1% MIN. TOWARDS THE OUTLET DRAIN LOCATION AND IN THE DIRECTION INDICATED ON THE PLAN.
2. BACK-SLOPE DRAINS CONSIST OF GEOCOMPOSITE SHEET DRAIN (50% COVERAGE) OR AGGREGATE (100% COVERAGE) AND SHALL BE INSTALLED IF SEEPS, GROUNDWATER, OR EVIDENCE OF GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION. TERMINATE BACK-SLOPE DRAIN AT THE OBSERVED SEEP/GROUNDWATER LOCATION OR A MAXIMUM OF 3-FT BELOW FINISHED GRADE.
3. FOR TYPE A KEY DRAIN, USE SOD STAPLES TO SECURE GEOCOMPOSITE DRAIN TO BACK SLOPE OF EXCAVATION.
4. FOR TYPE B KEY DRAIN, CONSTRUCT AGGREGATE BACK-SLOPE DRAIN IN LIFTS CONCURRENT WITH ADJACENT FILL LIFT PLACEMENT.
5. USE MANUFACTURER'S FITTINGS TO CONNECT KEY DRAINS TO OUTLET DRAINS. CONSTRUCT KEY/OUTLET DRAIN CONNECTION IN ACCORDANCE WITH DETAIL 5 WHERE OUTLET DRAINS ARE NOT LOCATED AT THE LOW POINT OF THE KEY.
6. BACKSLOPE DRAIN MAY BE OMITTED UNLESS SEEPS, GROUNDWATER, OR EVIDENCE OF GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION. SIMILARLY, THE BACKSLOPE DRAIN MAY BE OMITTED WHERE THE TOE-KEY IS LESS THAN 5 FEET DEEP.



NOTES:

1. INSTALL PIPELINE IN COMPETENT MATERIAL IN AREAS WHERE THE EXISTING GRADE IS STEEPER THAN 3H:1V AND/OR IN AREAS WHERE LANDSLIDE SOILS ARE PRESENT.
2. THE DETAIL DEPICTS ONE PIPELINE. INSTALL EACH PIPELINE INTO COMPETENT MATERIAL.

DETAIL G11
PIPELINE INSTALLATION IN COMPETENT MATERIAL
N.T.S.

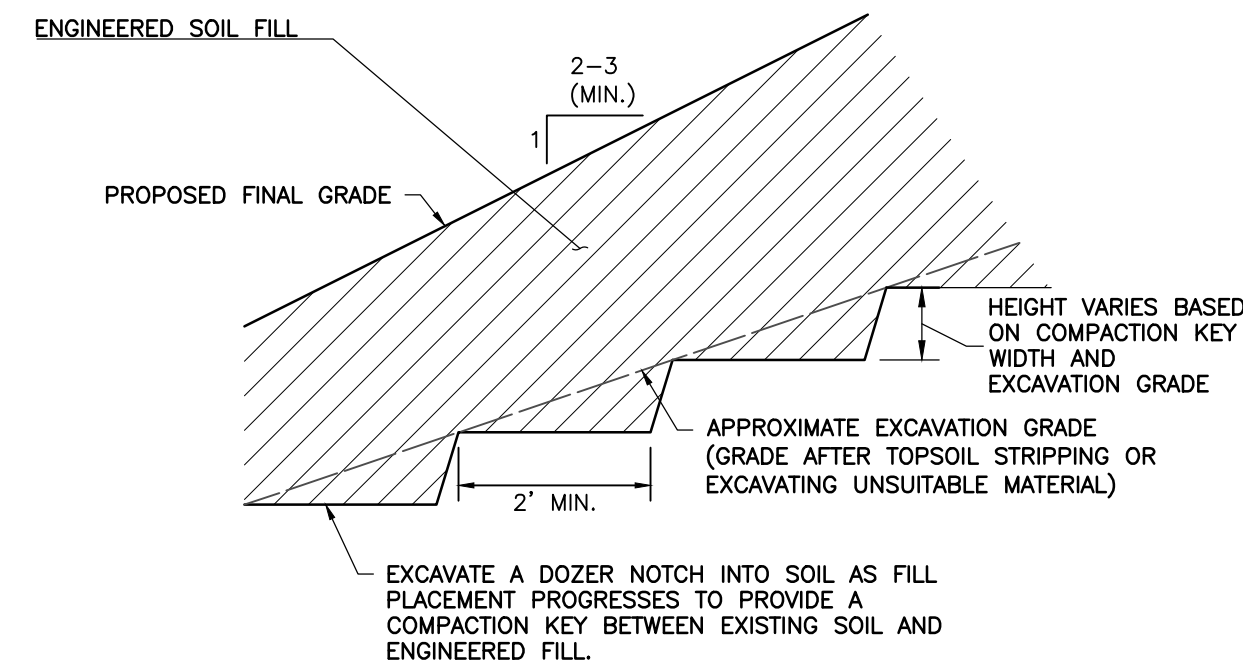


DETAIL G10
KEY DRAIN
N.T.S.

NOTES:

1. THIS DETAIL IS INTENDED TO PROVIDE A CONCEPTUAL LAYOUT FOR HANDLING POTENTIAL ACID PRODUCING ROCK (APR) DURING PIPELINE CONSTRUCTION. ACTUAL LAYOUT MAY VARY BASED ON PREVAILING SITE CONDITIONS.
2. AT DOCUMENTED COAL SEAL OUTCROP LOCATIONS, THE CONTRACTOR SHALL ADHERE TO THE FOLLOWING STEPS TO SAMPLE, TEST, AND HANDLE POTENTIAL APR MATERIALS:
 - A. IDENTIFY THE MAPPED COAL OUTCROP LOCATIONS SHOWN ON THE E&S PLAN DRAWINGS;
 - B. FOLLOWING TREE CLEARING AND TOPSOIL STRIPPING, BUT BEFORE PIPELINE TRENCHING, EXCAVATE TEST PITS TO THE DEPTH OF THE PROPOSED PIPELINE TRENCH IN THE VICINITY OF THE MAPPED COAL OUTCROPS TO IDENTIFY THE EXACT LOCATION AND DEPTH OF COAL BELOW THE GROUND SURFACE. PERFORM TEST PITS AT THE LOCATIONS INDICATED IN THE APR PLAN. IF COAL OR CARBONACEOUS SHALE IS ENCOUNTERED IN THE TEST PITS, COLLECT AND SUBMIT SAMPLES TO THE LAB FOR TOTAL SULFUR TESTING. TEST PITS SHOULD BE BACKFILLED DURING THE SAME WORK DAY. IF COAL AND/OR CARBONACEOUS SHALE IS NOT ENCOUNTERED, COLLECT A SAMPLE FROM THE ANTICIPATED COAL OUTCROP LOCATION AND SUBMIT FOR TESTING;
 - C. TESTING SHALL BE SCHEDULED AND PERFORMED WITH ADEQUATE TIME TO RECEIVE LAB TEST RESULTS PRIOR TO PIPELINE TRENCHING OPERATIONS. IF THE LAB RESULTS INDICATE THE COAL/CARBONACEOUS SHALE IS LESS THAN 0.5% TOTAL SULFUR CONTENT, NO FURTHER APR TESTING/MANAGEMENT IS REQUIRED;
 - D. IF THE TEST RESULTS INDICATE PIPELINE TRENCHING WILL ENCOUNTER COAL/CARBONACEOUS SHALE WITH GREATER THAN 0.5% TOTAL SULFUR CONTENT, THE CONTRACTOR SHALL PERFORM THE FOLLOWING STEPS:
 - INSTALL TRENCH PLUGS UPGRADIENT AND DOWNGRADIENT OF THE APR AREA. INSTALL DRAINED TRENCH PLUGS AS NECESSARY BASED ON THE RECOMMENDATIONS OF THE GEOLOGIC HAZARD MITIGATION PLAN;
 - EXCAVATE THE PIPELINE TRENCH THROUGH THE APR AREA. ISOLATE AND STOCKPILE APR MATERIAL SEPARATE FROM TOPSOIL OR OTHER NON-APR MATERIAL;
 - COVER APR STOCKPILES WITH AN IMPERVIOUS LINER TO PREVENT DIRECT CONTACT WITH RAIN WATER IF NOT IMMEDIATELY NEUTRALIZED;
 - BLEND THE APR MATERIAL WITH THE NEUTRALIZING AGENT (QUICKLIME OR SIMILAR) WITH THE AMOUNT ESTIMATED VIA PREVIOUS TESTING AND IN ACCORDANCE WITH THE APR MANAGEMENT PLAN;
3. AT PREVIOUSLY STRIP MINED LOCATIONS, ADD THE AMOUNT OF NEUTRALIZING AGENT TO EXCAVATED TRENCH MATERIALS WHERE SHOWN ON THE PLANS. THE AMOUNT OF NEUTRALIZED AGENT IS ESTIMATED IN THE ACID PRODUCING ROCK (APR) PLAN WHICH IS PART OF THIS PERMIT.
4. REPLACE THE NEUTRALIZED APR MATERIAL AS TRENCH BACKFILL IN THE SAME LOCATIONS WHERE THE MATERIAL WAS INITIALLY EXCAVATED. PLACE A MINIMUM OF 2 FEET OF NON-APR MATERIAL IN THE TRENCH ON TOP OF THE NEUTRALIZED APR MATERIAL.
5. NOTE ANY AREAS WHERE NEUTRALIZED APR MATERIAL IS REPLACED IN THE PIPELINE TRENCH ON THE E&S AND SR PLANS.

DETAIL G12
ACID PRODUCING ROCK MANAGEMENT DETAIL
N.T.S.



DETAIL G13
COMPACTION KEY
N.T.S.

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
TYLER JOSEPH REYNOLDS
No. PE03840
12-22-2023

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