CUMRU TOWNSHIP

BERKS COUNTY, PENNSYLVANIA
UTILITIES INSTALLATION AND REPLACEMENT, ROADWAY AND DRAINAGE IMPROVEMENTS
CUMRU TOWNSHIP MUNICIPAL CAMPUS AND VICINITY
CONTRACT #14

ATLAS
920 Germantown Pike, Suite 200
Plymouth Meeting, PA. 19462

E&SC DRAWING INDEX

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04/20/2023 – PHASE #2 SUBMISSION
05/25/2021 – RESUBMISSION
03/12/2021 – ISSUE FOR BIDS
08/31/2020 – NPDES PERMIT APPLICATION

PROJECT NO. Z057000415

SET CONTAINS 93 **DWGS.**

REFER TO SPECIFICATIONS PRIOR TO CONSTRUCTION. PLANS AND SPECIFICATIONS MUST BE READ TOGETHER TO KNOW FULLY WHAT MUST BE BUILT.

S:\PHILESERVER\Projects\Cumru\Z057000415 - Reed\PRE STATION\DWG\100 General Notes - REED - WATER.dwg, TS ES, 4/20/2023 7:45:53 AM

LEGEND

Symbol	Description
——D——	LIMIT OF DISTURBANCE & NPDES BOUNDARY
——G——	EXISTING GAS MAIN
——S——	EXISTING SANITARY SEWER
— - —	TOWNSHIP RIGHT OF WAY LINE
——S——	PROPOSED SANITARY SEWER
——W——	PROPOSED WATER MAIN
——G——	PROPOSED GAS MAIN
	EXISTING EDGE OF PAVING
— 542 —	EXISTING CONTOUR
——542——	PROPOSED CONTOUR
	EXISTING STORMWATER PIPE
	PROPOSED STORMWATER PIPE
——PH #2——	PHASE #2 WORK AREA
TBV	TO BE VERIFIED (BY CONTRACTOR)
B.O.	WORK BY OTHERS (NOT IN CONTRACT)
(101)	DRAWING #
	EXISTING SIGN
	CONNECTION TO EXISTING
	EXISTING STORMWATER INLET
	PROPOSED STORMWATER INLET
①	PROPOSED STORMWATER STRUCTURE NUMBER
Ⓢ	SANITARY MANHOLE
GCS	GAS CURB STOP
WCS	WATER CURB STOP
SCO	SANITARY CLEAN OUT
HYD	FIRE HYDRANT
WV	VALVE

PROJECT REQUIREMENTS AND NOTES

GENERAL

1. All referenced plans, specifications, codes or other information are to be included as part of the design documents. All contractors, including subcontractors, shall be fully aware of these documents prior to bidding and construction.
2. Any discrepancies found in the design documents shall be brought in writing to the attention of the responsible engineer immediately.
3. No substitutions and/or changes shall be allowed unless requested and approved in writing by the responsible engineer.
4. All work shall be performed in strict accordance with OSHA, Federal, State and local codes and requirements.

CONSTRUCTION

1. All components of construction not specifically called for or detailed on the drawings, but are required, necessary and considered good practice for construction shall be included in the design.
2. (△2) All construction shall comply with PennDOT Publication 408, Latest Edition unless specified in the construction document.
3. (△2) All construction details shall comply with PennDOT Publication 72, "Standards for Roadway Construction", Series RC 0 to 100, Latest Edition unless detailed in the project plans.
4. All curb, sidewalk and sidewalk ramp construction, if any, must meet the respective accessibility regulations and provisions as established in the American with Disabilities Act U.S.C. (ADAAG)
5. The Berks County Conservation District (BCCD) must be notified prior to any earth disturbance. All required erosion and sediment control measures must be installed and operating prior to any earth disturbance, and maintained per BCCD requirements for the duration of the project. Refer to the Soil Erosion and Sediment Control Notes for additional requirements.
6. Maintenance and protection of traffic during construction shall be in accordance with PennDOT Publication 203, "Work Zone Traffic Control" where applicable.
7. Public access to all roadways, driveways, and sidewalks must be available at all times during construction as is possible.
8. During construction, all obstructions (including, but not limited to, equipment and construction materials) shall be removed by the contractor at the end of each working day to allow a safe sight distance for drivers, cyclists, and pedestrians accessing the roadways, driveways and sidewalks. Trained flagmen or other approved means shall be used to assist drivers, cyclists, and pedestrians safely around any temporary sight obstructions.
9. Fire hydrants and other public safety devices must remain visible, operational and accessible at all times during construction.
10. Slopes shall be graded to a maximum of 3 horizontal to 1 vertical or as safely allowed by the soil conditions.
11. (△2) Suitable excavation spoils to be deposited and compacted at Future Fire Station Building location. Remaining excess and unsuitable clean soil is to be deposited and compacted at the Cumru Township Clean Unsuitable Spoils location. All paving, millings, concrete, and other construction and unsuitable materials shall become the property of the contractor, unless specifically requested by the owner, and to be to be properly disposed off-site as required per the soil erosion and sediment control notes.
12. The contractor is responsible for the protection of all trees, bushes, and other landscaping adjacent to the construction area. All damaged landscaping shall be inspected by a licensed arborist and repaired or replaced in kind of the expense of the contractor.
13. All excavation to be unclassified.
14. Final grading restoration to be at same elevation as existed prior to construction except where shown by proposed contours.
15. The Limit of Disturbance (D) line shown is to be the used as the NPDES Permit Boundary limit. No construction activities are permitted outside the Boundary limit.
16. The contractor is fully responsible for adherence to the Preparedness, Prevention and Contingency (PPC) plan as listed in the project plans and specifications.
17. (△2) Existing sewer system and laterals must be protected and maintained in working condition until all connections are transferred to the new system. The existing pipe may require inspection internally by the owner using a camera to confirm all existing connections are shown and included in the scope of work.
18. (△2) Blasting allowed where necessary due to rock conditions if approved by owner per specifications. Contractor must video inspect all adjacent structures prior to confirm existing conditions prior to blasting. Contractor will be responsible for all collateral damages arising from blasting.
19. Construction materials, equipment, and supplies may not be stored in floodplains and/or wetlands.
20. Excavated material not to be used as trench backfill in R-O-W or under pavement.
21. The removal of debris and accumulated sediment to ensure hydraulic capacity of the stream culverts shall be limited to 50 feet upstream and downstream from the culvert and shall be conducted in accordance with PADEP requirements.
22. Gas Main piping and laterals shall be supplied and installed by UGI. Contractor is responsible for excavation, installation coordination, bedding, backfill and temporary paving.
23. Approximately 1,300' of existing water main is to be replaced with new water main in the same trench. Contractor must provide temporary water service to the approximately 26 effected homes until reconnected to new main by the contractor. Contractor to replace corporation stops and reconnect services to new main.
24. (△2) Roadways (except Welsh Road reconstruction) may be closed temporarily during construction hours with required signage. Welsh Road closure during reconstruction must be kept to a minimum and schedule approved by the owner. The interior campus driveway construction must be complete and operational prior to Welsh Road closure. The intersection of Welsh and Church Roads must be open for emergency services traffic in all directions at all times.
25. (△2) Roadways (except Welsh Road reconstruction) must be available for two-way traffic usage after construction hours. Trenches must be fully backfilled and temporary paving installed or securely plated as necessary to allow traffic.
26. Existing sanitary sewer laterals to be replaced to an existing pipe joint location 5' minimum beyond the edge of paving.
27. Water service laterals to be installed for every Cumru Township property abutting the roadway. Pipe to be extended 5' minimum beyond the edge of pavement, with curb stop, box, and capped. The location within the frontage of each property is to be determined in the field by the owner.
28. (△2) Sewer main and manhole replacement to be in same location (trench and elevation) as existing. Bypass pumping around construction area during construction hours is required. Existing upstream system to be reconnected for non-working periods. No overnight or weekend/holiday bypass pumping allowed.
29. Required Bog Turtle avoidance measures for all stream crossings except #1 and #2: Avoid in-stream impacts by spanning the waterway or going under it (e.g., via horizontal boring or directional drilling). If in-stream impacts cannot be avoided, carry out instream work -- including installation of permanent structures (e.g., pipelines, livestock crossings, riprap), or installation, use, and removal of temporary structures (e.g., temporary road crossings) -- between October 1 and March 31.
30. (△2) After making connection to the existing water and sanitary sewer lateral pipe, contractor is to take a picture of the connection, showing the existing pipe and the connection.

UTILITIES

1. All underground utilities shown are based on surface evidence and information obtained from existing plans and records. Variations and/or additional utilities may exist. The contractor is solely responsible for verifying the actual locations by contacting the PA One Call System and the individual utility companies at least three (3) working days prior to any excavation. Additional excavation of test pits may be required for determining the precise location of a buried utility.
2. All existing utility (water, sewer, gas, electric, drainage, etc.) locations and elevations must be verified by the contractor prior to fabrication and construction of replacement of connected utilities.
3. The contractor is solely responsible for the protection of all utilities crossing or adjacent to the construction area per the requirements of the utility owner. Any damaged utilities must be inspected by the utility owner and repaired as necessary per the utility owner's requirements and at the expense of the contractor.
4. Any utilities requiring relocation, either permanent or temporary, shall be completed by the contractor per the requirements and inspection of the utility owner.
5. All required connections from the constructed or replaced utility systems to the existing systems and laterals shall be completed per the requirements of the utility owner. Each connection location, depth, and condition to be verified by contractor and confirmed by the utility owner per PA One Call requirements and exploratory excavation as required.
6. (△2) Excavated clean and suitable material, where to be used as backfill, may be temporarily stored adjacent to the trench and must be used by the end of each work day.

SURVEY

1. Horizontal Survey Control Datum is State Plane Coordinates, NAD83, Pennsylvania South Zone.
2. Vertical Survey Control Datum is NAVD88.
3. Local benchmarks are as noted on the plans.
4. Floodplains shown are based on the latest National Flood Insurance Program (NFIP) Flood Insurance Rate Map as published by FEMA.
5. Soil types mapped are as shown on USDA NRCS Web Soil Survey.
6. The plan depicts the survey conditions as existed on or around 1/1/20.
7. All Right-Of-Ways, Easements and Property Lines shown are for information only, based on existing available records. The plans were prepared without benefit of a title report and are not to be used for establishment of ownership boundaries in the field.
8. The contractor is responsible for providing construction stakeout as needed to accurately construct the design as shown on the plans.

PERMITS

1. (△2) The owner is obtaining or has obtained the following permits for the project:
   - A. General Permit (GP-5) for Utility Line Stream Crossings approved by the Pennsylvania Department of Environmental Protection on 3/20/2020, GP050603219-005.
   - B. General Permit (GP-11) for Maintenance, Testing, Repair, Rehabilitation or Replacement of Water Obstructions and Encroachments, approved by the Pennsylvania Department of Environmental Protection on 3/20/2020, GP110603219-046.
   - C. PHMC #2020-1958-011-A, 07/24/20
   - D. (△2) Individual National Pollutant Discharge Elimination System (NPDES) Permit for Stormwater Discharges Associated with Construction Activities approved by the Pennsylvania Department of Environmental Protection #PAD060047.
2. The contractor shall be responsible for obtaining any and all other required permits and approvals needed for the project.
3. It shall be the contractor's responsibility to be aware of and conform to the requirements of these and any other required permits and approvals.
4. The contractor shall be liable for all penalties for failure to comply with permit requirements, including any sanitary sewer overflows due to construction conditions.
5. The contractor shall be responsible for obtaining all permit extensions as needed for the project duration.
6. The contractor shall be responsible for obtaining approval from the permitting agencies for amending or modifying any permits.
7. All applicable permits must be transferred into the contractor's name prior to any earth disturbance.

Pennsylvania One Call System, Inc.

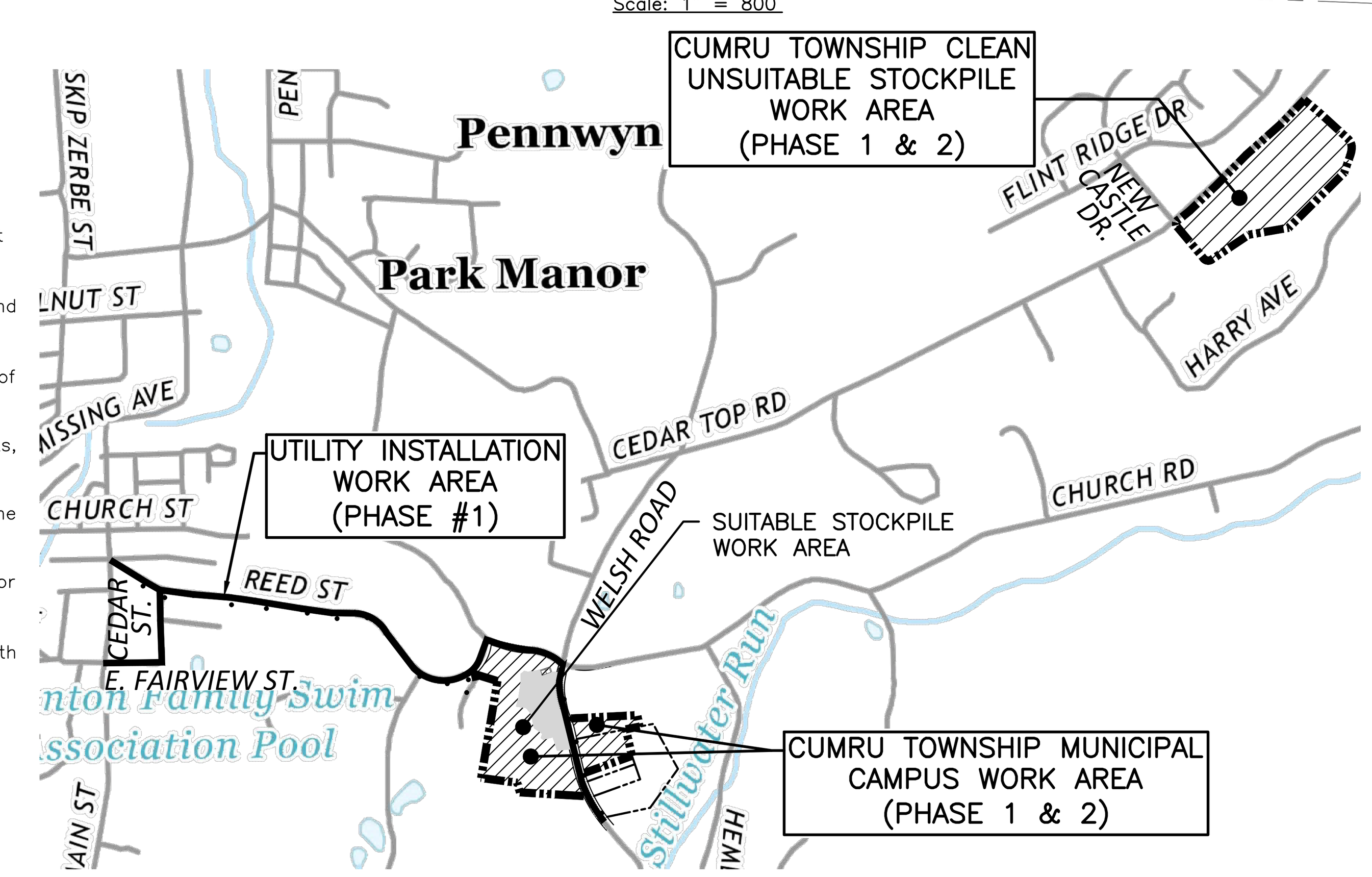
Call Before You Dig
in Pennsylvania
1-800-242-1776

State Law Requires
Construction Phase: Three working Days Notice
Design Phase: Ten working Days Notice
Facility Owners: Member of One Call System

SERIAL NO. #20210272169,
SERIAL NO. #20210272189,
SERIAL NO. #20210272250,
SERIAL NO. #20210272251,
SERIAL NO. #20210272292,
SERIAL NO. #20210272341

LOCATION MAP

Scale: 1" = 800'



Engineer's Certification

I Jeffrey E. Skinner do hereby certify pursuant to the penalties of 18 Pa. C.S.A. Sec. 4904 to the best of my knowledge, information and belief, that the information contained in the accompanying plans, specifications, and reports has been prepared in accordance with accepted engineering practice, is true and correct, and is in conformance with Chapter 105 of the rules and regulations of the Department of Environmental Protection.

NO.	REVISIONS	DATE	ENGR.	DATE	ISSUED FOR
3	NPDES PERMIT #PAD060047, PHASE #2 SUBMISSION	4/20/23	JES		
2	REVISED NOTES AND ADDED STOCK PILE AREA	4/2/21	JES	4/6/21	ADDENDUM #1
1	GENERAL REVISION	3/11/21	JES		

ATLAS
920 Germantown Pike, Suite 200 Plymouth Meeting, PA 19462

DESIGN ENGR.	GTA	APPROVED	
DRAWN BY	RC		
PROJECT ENGR.	JES	APPROVED	
PROJECT MGR.	JES		
CHECKED BY	JFB	DATE	08/31/2020

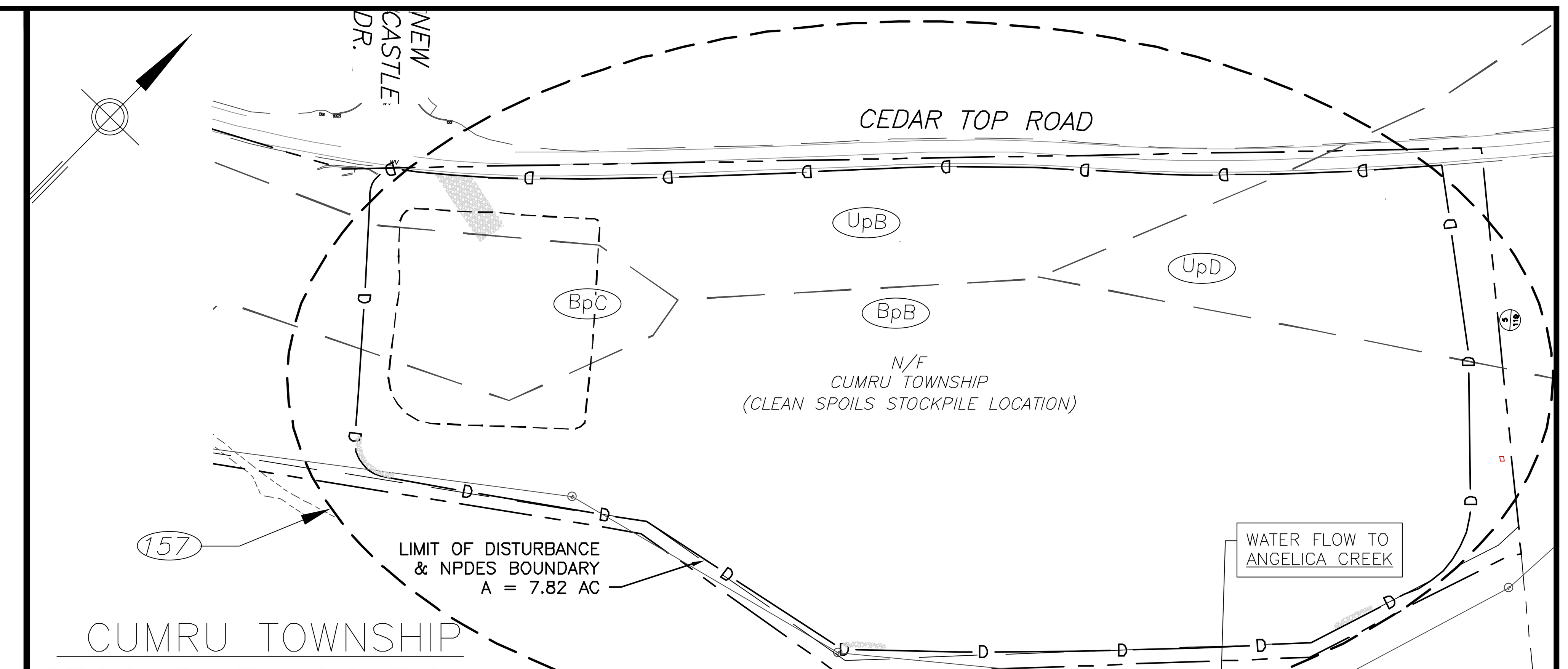
COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — JEFFREY E. SKINNER — ENGINEER NO. 42662-E

CUMRU TOWNSHIP
BERKS COUNTY, PENNSYLVANIA
UTILITIES INSTALLATION AND REPLACEMENT, ROADWAY AND DRAINAGE IMPROVEMENTS
CUMRU TOWNSHIP MUNICIPAL CAMPUS AND VICINITY

CONSTRUCTION SITE AND INDEX PLAN, LOCATION MAP, LEGEND, PROJECT REQUIREMENTS, AND NOTES

SCALE	AS NOTED
PROJECT NO.	Z057000415
DRAWING NO.	100
SHEET	OF

REGISTERED PROFESSIONAL ENGINEER
PENUMBER



CUMRU TOWNSHIP STOCKPILE LOCATION

Scale: 1" = 100'

WETLANDS DELINEATED (2)

A. NOTES FOR UNNAMED TRIBUTARY WETLANDS DELINEATED:

WETLANDS DELINEATED CAME FROM A PLAN TITLE: "WETLAND DELINEATED PLAN," PROJECT: "CUMRU TOWNSHIP FIRE STATION PROJECT, CUMRU TOWNSHIP, BERKS COUNTY, PENNSYLVANIA," BY: VORTEX ENVIRONMENTAL, INC., 2819-I WILLOW STREET PIKE NORTH, WILLOW STREET, PA 17584, PROJECT NUMBER: 172-002-16, DATED: AUGUST 9, 2016

INFORMATION FROM ABOVE PLAN:

1. NOTES:
   a. WETLANDS DELINEATED BY VORTEX ENVIRONMENTAL, INC. ON FEBRUARY 22, AND MARCH 24, 2019 USING THE UNITED STATES ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL, 1987, AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEER WETLAND DELINEATION MANUAL: EASTERN MOUNTAINS AND PIEDMONT REGION – VERSION 2.0 (APRIL 2012)
   b. WETLANDS, BOUNDARY, PROPERTY, AND TOPOGRAPHIC INFORMATION TAKEN FROM AN EXISTING CONDITIONS PLAN FROM THE CUMRU TOWNSHIP FIRE STATION PROJECT, UNDATED.
2. WETLAND CLASSIFICATIONS:
   a. PEM1 – PALUSTRINE, EMERGENT, PRESISTENT
   b. R4SB5 – REIVERINE, INTERITTENT, STREAMBED, MUD
3. WETLAND SUMMARY: WETLAND (PEM1) 0.36 ACRE (ON SITE)

B. PROJECT SITE:

WETLANDS DELINEATED BY A.D. MARBLE FOR THE CUMRU TOWNSHIP PROJECT, TITLE "UTILITIES INSULATION AND REPLACEMENT, ROADWAY AND DRAINAGE IMPROVEMENTS CUMRU TOWNSHIP MUNICIPAL CAMPUS AND VICINITY", DATED MAY 4, 2021. THREE WETLANDS WERE IDENTIFIED WITHIN THE PROJECT STUDY AREA.

1. NOTES FROM "A.D. MARBLE, AQUATIC RESOURCE – PERMIT ENVIRONMENTAL FACTS SHEET".

   WETLAND CLASSIFICATIONS:
   a. WETLANDS 1 AND 2 ARE PALUSTRINE EMERGENT (PEM) WETLANDS
   b. WETLANDS 3 IS CLASSIFIED AS PEM HABITAT, BUT TRANSITIONS TO PALUSTRINE SCRUB-SHRUB (PSS) HABITAT OUTSIDE THE PROJECT STUDY AREA.
2. WETLANDS SUMMARY: WETLAND 1 &2 (PEM) AND WETLANDS 3 (PSS) – 0.065 AC.

E&S SITE PLAN

Scale: 1" = 100'

SCALE IN FEET: 100 50 0 100 200 300

SOILS TYPE ON SITE

LEGEND	NAME	DESCRIPTION
BpB	BRECKNOCK CHANNERY SILT LOAM	3 TO 8 PERCENT SLOPES
BpC	BRECKNOCK CHANNERY SILT LOAM	8 TO 15 PERCENT SLOPES
BpD	BRECKNOCK CHANNERY SILT LOAM	15 TO 25 PERCENT SLOPES
NaB	NESHAMING SILT LOAM	3 TO 8 PERCENT SLOPES
NaC	NESHAMING SILT LOAM	8 TO 15 PERCENT SLOPES
NaD	NESHAMING SILT LOAM	15 TO 25 PERCENT SLOPES
NhD	NESHAMING GRAVELLY SILT LOAM	8 TO 25 PERCENT SLOPES, EXTREMELY BOULDERY
UpB	URBAN LAND–JOANNA COMPLEX	0 TO 8 PERCENT SLOPES
UpD	URBAN LAND–JOANNA COMPLEX	8 TO 25 PERCENT SLOPES

LEGEND

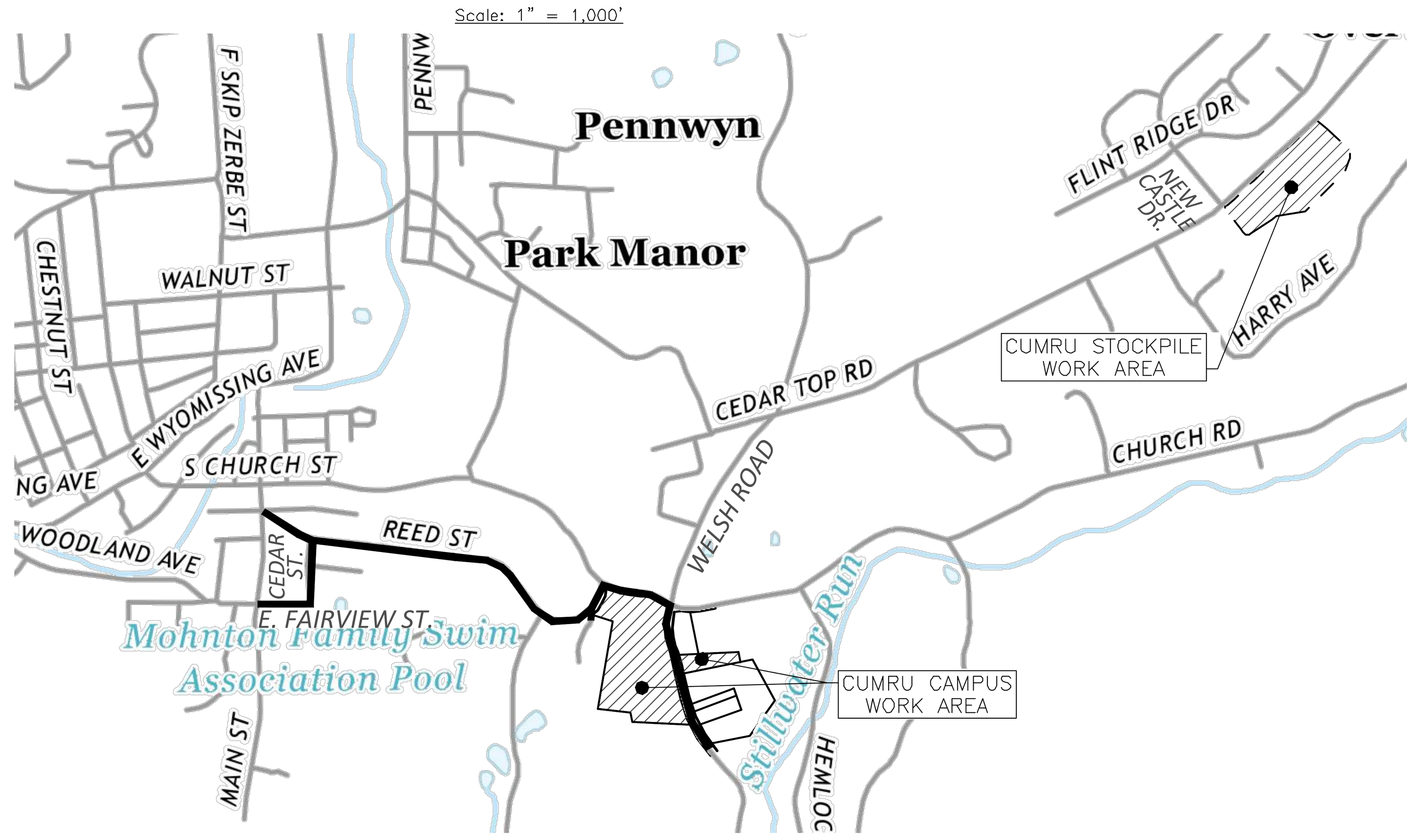
- LIMIT OF DISTURBANCE & NPDES BOUNDARY
- EXISTING GAS MAIN
- EXISTING SANITARY SEWER
- TOWNSHIP RIGHT OF WAY LINE
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN
- PROPOSED GAS MAIN
- EXISTING EDGE OF PAVING
- WATERSHED BOUNDARY LINE
- DRAWING #
- EXISTING SIGN
- CONNECT TO EXISTING
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING STORMWATER PIPE
- PROPOSED STORMWATER PIPE
- PROPOSED STORMWATER INLET
- PROPOSED STORMWATER STRUCTURE NUMBER
- SANITARY MANHOLE
- GAS CURB STOP
- WATER CURB STOP
- WATER VALVE
- SANITARY CLEAN OUT
- FIRE HYDRANT
- GAS VALVE

EROSION & SEDIMENT CONTROL (E&S) LEGEND

- LIMIT OF DISTURBANCE & NPDES BOUNDARY
- CONSTRUCTION ENTRANCE (5/161)
- SOIL BOUNDARY
- SOIL TYPE
- FLOODWAY BOUNDARY
- FILTER SOCK (4/161)
- INLET PROTECTION (3/161)
- PHASE #2 WORK AREA
- RIPRAP (2, 3, 4/162)
- EROSION CONTROLL MATTING (8/161)
- TOP SOIL STOCK PIPE (9/161)
- STOCK PILE (9/161)
- TEMPORARY SEEDING STABILIZATION (162)
- FINAL SEEDING STABILIZATION (162)

LOCATION MAP: READING QUADRANGLE, BERKS COUNTY, PENNSYLVANIA

Scale: 1" = 1,000'



Pennsylvania One Call System, Inc.

Call Before You Dig in Pennsylvania 1-800-242-1776

State Law Requires
Construction Phase: Three working Days Notice
Design Phase: Ten working Days Notice
Facility Owners: Member of One Call System

SERIAL NO. #20210272169, SERIAL NO. #20210272189
SERIAL NO. #20210272250, SERIAL NO. #20210272251
SERIAL NO. #20210272292, SERIAL NO. #20210272341

PA CHAPTER 93

1. WYOMISSING CREEK
   STREAM USE DESCRIPTION: HQ (HIGH QUALITY WATERS), CWF (COLD WATER FISH), MF (MIGRATORY FISH), IT IS A HQ DESIGNATED WATERSHED.
2. ANGELICA CREEK
   STREAM USE DESCRIPTION: CWF (COLD WATER FISH), MF (MIGRATORY FISH), IT IS NOT A HQ OR EV DESIGNATED WATERSHED.

NO.	REVISIONS	DATE	ENGR.	DATE	ISSUED FOR
3	NPDES PERMIT #PAD060047, PHASE #2 SUBMISSION	04-20-23	JES		
2	REVISED DRAWING PER DEP LETTER. 4/12/21	04/16/21	JES		
1	GENERAL REVISION	3/11/21	JES		

ATLAS

920 Germantown Pike, Suite 200 Plymouth Meeting, PA 19462

DESIGN ENGR.	GTA	APPROVED
DRAWN BY	RC	
PROJECT ENGR.	JES	APPROVED
PROJECT MGR.	JES	
CHECKED BY	JES	DATE 08/31/20

SEAL — COMMONWEALTH OF PENNSYLVANIA, REGISTERED PROFESSIONAL ENGINEER, JEFFREY E. SKINNER

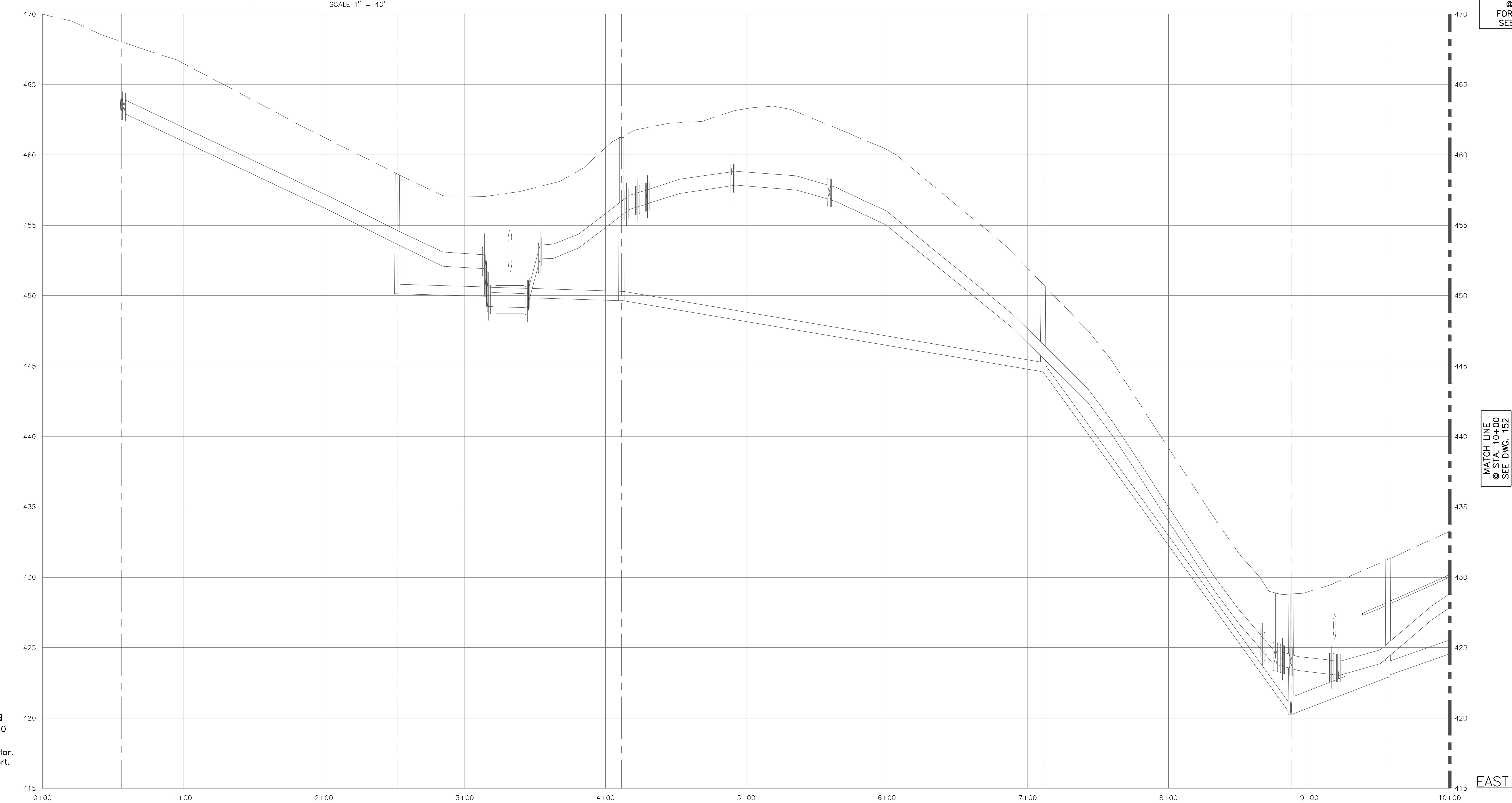
REGISTERED PROFESSIONAL ENGINEER

CUMRU TOWNSHIP
BERKS COUNTY, PENNSYLVANIA

UTILITIES INSTALLATION AND REPLACEMENT, ROADWAY AND DRAINAGE IMPROVEMENTS
CUMRU TOWNSHIP MUNICIPAL CAMPUS AND VICINITY

EROSION AND SEDIMENT CONTROL SITE PLAN
OVERALL SITE PLAN
PROJECT NOTES, LEGEND & LOCATION MAP

SCALE: AS NOTES
PROJECT NO.: Z057000415
DRAWING NO.: 150
SHEET: OF



EAST FAIRVIEW STREET & CEDAR STREET PROFILE

SCALE: V. 1" = 4'
H. 1" = 40'

NOTES:

1. FOR GENERAL NOTES SEE DWG. #100.
2. THE EROSION AND SEDIMENT PROJECT NOTES, LEGEND, AND LOCATION MAP, SEE DWG. #150.
3. ALL SUITABLE SPOILS, SHALL BE TAKEN TO CUMRU TOWNSHIP MUNICIPAL CAMPUS/FUTURE FIRE STATION FOR FILL, SEE DRAWING #156 & #157. ANY CLEAN UNSUITABLE SPOILS MATERIAL SHALL BE TAKEN TO CUMRU TOWNSHIP CLEAN SPOILS STOCKPILE LOCATION, SEE DRAWING #158.
4. STORMWATER STRUCTURE DATA SHOWN ON DRAWING #120.
5. REFER DRAWING #101 FOR CONSTRUCTION PLAN.
6. REFER DRAWING #171 FOR POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN.

SOIL TYPE

UpD – URBAN LAND–JOANNA COMPLEX, 8 TO 25 PERCENT SLOPES

Pennsylvania One Call System, Inc.

Call Before You Dig in Pennsylvania 1-800-242-1776

State Law Requires
Construction Phase: Three working Days Notice
Design Phase: Ten working Days Notice
Facility Owners: Member of One Call System

SERIAL NO. #20210272169, SERIAL NO. #20210272189
SERIAL NO. #20210272250, SERIAL NO. #20210272251
SERIAL NO. #20210272292, SERIAL NO. #20210272341

NO.	REVISIONS	DATE	ENGR.	DATE	ISSUED FOR
1	GENERAL REVISIONS	3/11/21	JES	3/12/21	ISSUE FOR BIDS

BCM ENGINEERS
ATC GROUP SERVICES LLC
920 Germantown Pike, Suite 200 Plymouth Meeting, PA 19462

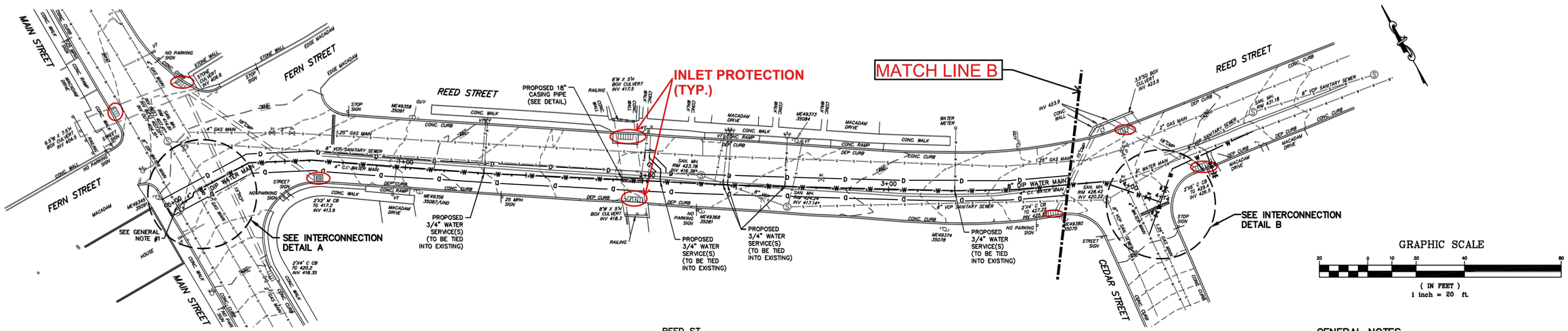
DESIGN ENGR.	GTA	APPROVED	
DRAWN BY	RC		
PROJECT ENGR.	JES	APPROVED	
PROJECT MGR.	JES		
CHECKED BY	JFB	DATE	08/31/20

REGISTERED PROFESSIONAL ENGINEER

CUMRU TOWNSHIP
BERKS COUNTY, PENNSYLVANIA
UTILITIES INSTALLATION AND REPLACEMENT, ROADWAY AND DRAINAGE IMPROVEMENTS
CUMRU TOWNSHIP MUNICIPAL CAMPUS AND VICINITY

EROSION & SEDIMENT CONTROL PLAN
WATER MAIN INSTALLATION – STA. 0+40 TO 10+00
EAST FAIRVIEW STREET AND CEDAR STREET

SCALE	AS NOTED
PROJECT NO.	Z057000415
DRAWING NO.	151
SHEET	OF



PLAN NOTE

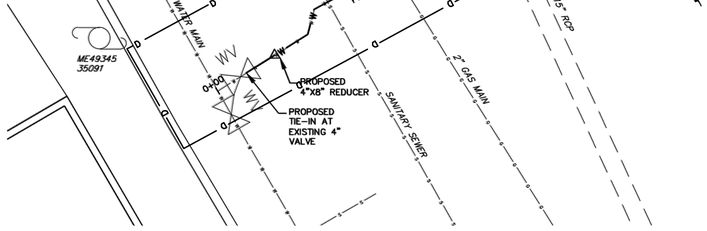
* – SANITARY SEWER INVERT DEPTHS PER BOROUGH SANITARY SEWER SYSTEM PLANS, DATED 3/24/60.

REED ST.
(MAIN ST. TO CEDAR ST.; STA. 0+00 TO 4+14)
PROPOSED WATER MAIN PLAN

SCALE: 1"=20'

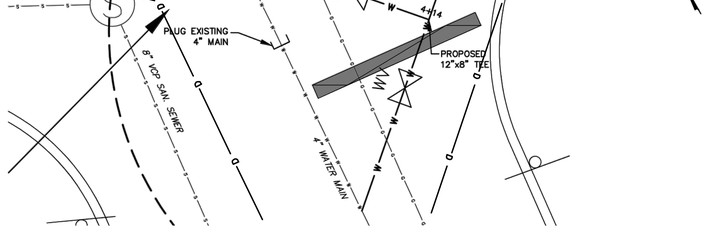
GENERAL NOTES

1. EXPLORATORY DIGS MIGHT BE NEEDED AT MAIN STREET CONNECTION DUE TO APPROXIMATE DEPTH AND LOCATION FROM MAIN STREET WATER MAIN REPLACEMENT CONSTRUCTION PLANS.
2. PROVIDE BACKFLOW PREVENTION FOR THE ENTIRE TEMPORARY MAIN. TEMPORARY MAIN SHALL BE CONNECTED TO THE FIRE HYDRANT AFTER IT IS INSTALLED AND TESTED.



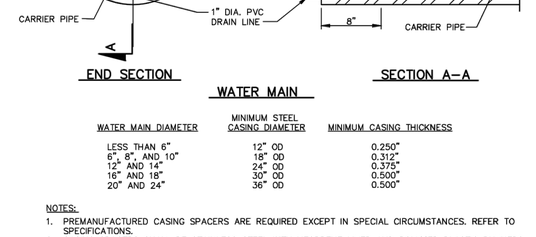
INTERCONNECTION DETAIL A

SCALE: 1"=5'



INTERCONNECTION DETAIL B

SCALE: 1"=5'



END SECTION

SECTION A–A

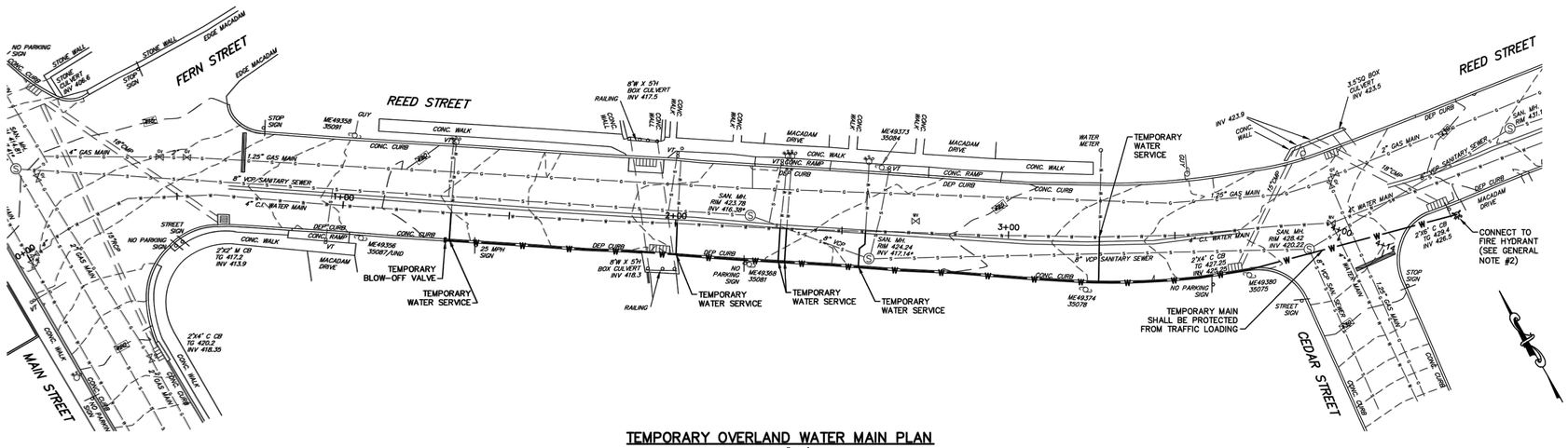
WATER MAIN

WATER MAIN DIAMETER	MINIMUM STEEL CASING DIAMETER	MINIMUM CASING THICKNESS
LESS THAN 6"	12" OD	0.250"
6", 8", AND 10"	18" OD	0.312"
12" AND 14"	24" OD	0.375"
16" AND 18"	30" OD	0.500"
20" AND 24"	36" OD	0.500"

NOTES:

1. PREMANUFACTURED CASING SPACERS ARE REQUIRED EXCEPT IN SPECIAL CIRCUMSTANCES. REFER TO SPECIFICATIONS.
2. CASING SPACERS SHALL BE STAINLESS STEEL WITH NEOPRENE LINER AND POLYMER PLASTIC RUNNERS.
3. CONTRACTOR MAY INSTALL TUNNEL LINER PLATE, WITH APPROVAL OF THE ENGINEER, AS AN ACCEPTABLE CASING CONDUIT. REFER TO SPECIFICATIONS.

CARRIER PIPE AND CASING CONDUIT INSTALLATION DETAIL



TEMPORARY OVERLAND WATER MAIN PLAN

SCALE: 1"=20'

I, STEVEN K. HOFFMAN, DO HEREBY CERTIFY PURSUANT TO PENALTIES OF 18 PA. C.S.A. SEC. 4904 TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THE INFORMATION CONTAINED IN THE ACCOMPANYING PLANS, SPECIFICATIONS, AND REPORTS HAS BEEN PREPARED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE, IS TRUE AND CORRECT, AND IS IN CONFORMANCE WITH CHAPTER 105 OF THE RULES AND REGULATIONS OF THE DEPARTMENT OF OF ENVIRONMENTAL PROTECTION.

EROSION AND SEDIMENT CONTROL PLAN

NO.	DATE	REVISIONS
2.	3/8/21	REVISE TEMP. OVERLAND
1.	11/4/20	PER BCD REVIEW

SURVEY NOTEBOOK:

BOROUGH OF SHILLINGTON
2 EAST LANCASTER AVENUE, SHILLINGTON, PA 19607

REED STREET WATER MAIN REPLACEMENT

PROPOSED WATER MAIN PLAN & INTERCONNECTION DETAILS

MOHNTON BOROUGH, BERKS COUNTY, PENNSYLVANIA

GREAT VALLEY CONSULTANTS
ENGINEERS ♦ ARCHITECTS ♦ PLANNERS ♦ SURVEYORS ♦ CONSULTANTS
75 COMMERCE DRIVE
WYOMISSING, PA 19610–1038
PHONE: 610–375–8822
FAX: 610–375–8977
www.greatvalleyconsultants.com

DRAFTED BY:	JRM	AS NOTED	9/11/20
CHECKED BY:		SCALE	DATE
APPROVALS:		2016–077–D–001	
		DRAWING NUMBER	

NOTES:

1. FOR GENERAL NOTES SEE DWG. #100.
2. THE EROSION AND SEDIMENT PROJECT NOTES, LEGEND, AND LOCATION MAP, SEE DWG. #150.
3. ALL SUITABLE SPOILS, SHALL BE TAKEN TO CUMRU TOWNSHIP MUNICIPAL CAMPUS/FUTURE FIRE STATION FOR FILL, SEE DRAWING #156 & #157. ANY CLEAN UNSUITABLE SPOILS MATERIAL SHALL BE TAKEN TO CUMRU TOWNSHIP CLEAN SPOILS STOCKPILE LOCATION, SEE DRAWING #158.
4. STORMWATER STRUCTURE DATA SHOWN ON DRAWING #120.
5. REFER DRAWING #102 FOR CONSTRUCTION PLAN.
6. REFER DRAWING #172 FOR POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN.

SOIL TYPE

NhD — NESHAMINY GRAVELLY SILT LOAM, 8 TO 25 PERCENT SLOPES, EXTREMELY BOULDERY

UpD — URBAN LAND-JOANNA COMPLEX, 8 TO 25 PERCENT SLOPES

Pennsylvania One Call System, Inc.

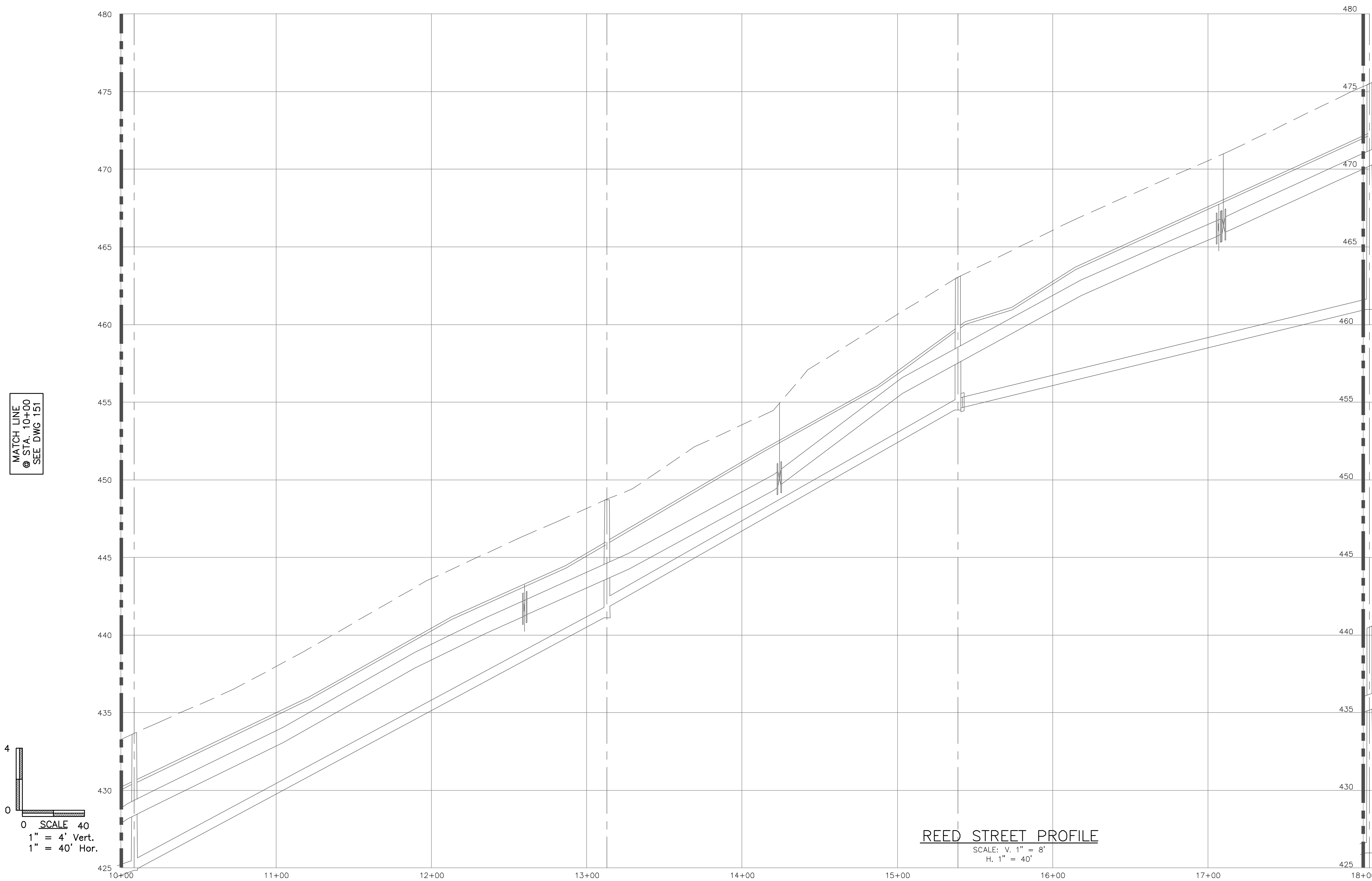
Call Before You Dig in Pennsylvania 1-800-242-1776

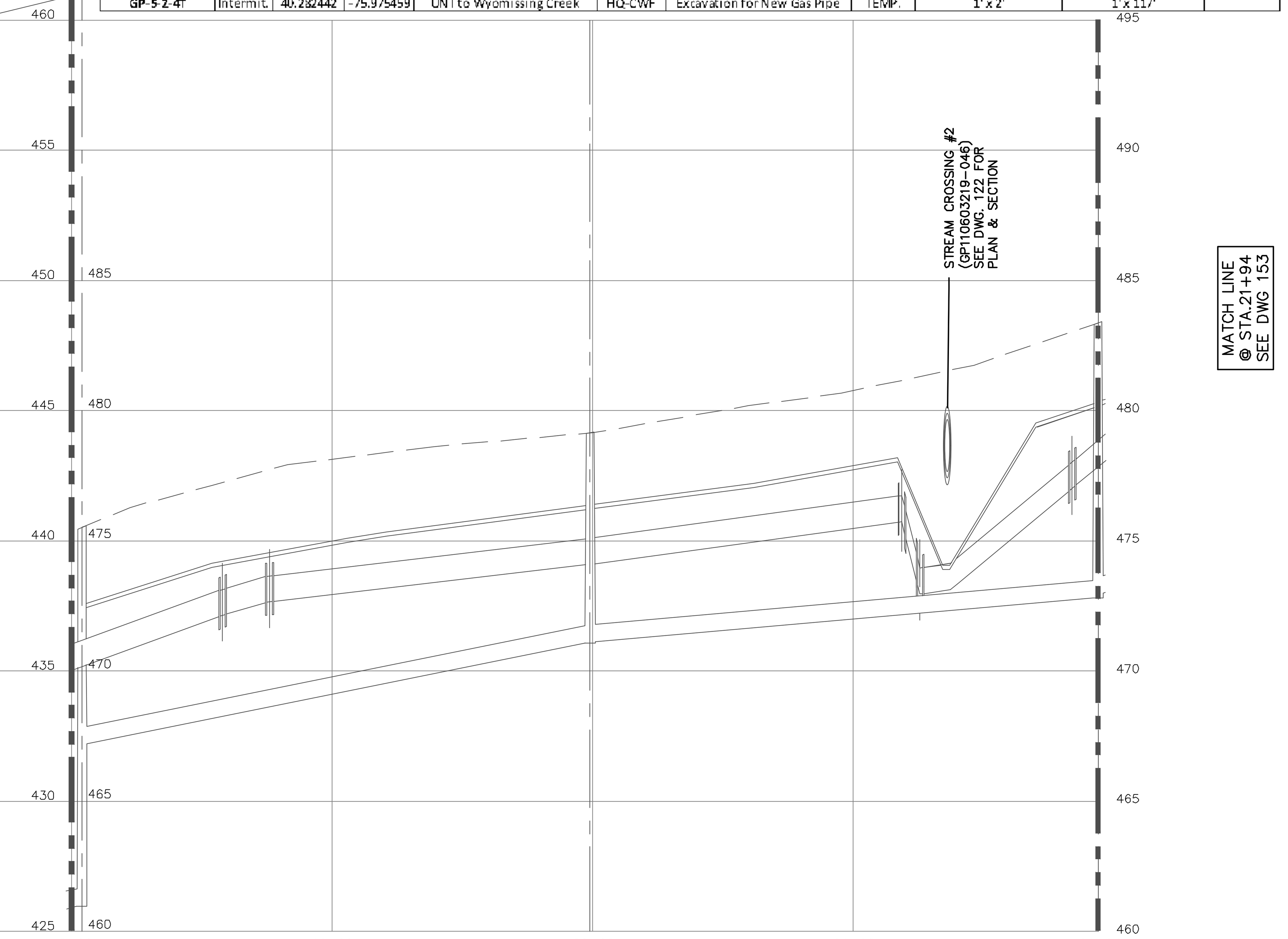
State Law Requires
Construction Phase: Three working Days Notice
Design Phase: Ten working Days Notice
Facility Owners: Member of One Call System

SERIAL NO. #20210272169, SERIAL NO. #20210272189
SERIAL NO. #20210272250, SERIAL NO. #20210272251
SERIAL NO. #20210272292, SERIAL NO. #20210272341

FOR STREAM CROSSING #2

Structure/Activity unique identifier (Permit-Crossing-Activity)	Aquatic Resource Type	Latitude dd nad83	Longitude dd nad83	Waters Name	PA Code Chapter 93 Designation	Work Proposed	DEP Impact Type temp/perm	Watercourse Impact Top of Bank to top of Bank Length and Width	Floodway Impact Area Top of Bank Landward Length and Width	Wetland Impact AREA Length and Width
GP-11-2-1P	Intermit.	40.282442	-75.975459	UNT to Wyomissing Creek	HQ-CWF	Stream Culvert Replacement	PERM.	45' x 2.5'		
GP-11-2-1T	Intermit.	40.282442	-75.975459	UNT to Wyomissing Creek	HQ-CWF	Excavation for Stream Culvert Replacement	TEMP.	230' x 3'	230' x 10'	
GP-11-2-2P	Intermit.	40.282442	-75.975459	UNT to Wyomissing Creek	HQ-CWF	Sanitary Sewer Replacement	PERM.	1' x 2'	1' x 117'	
GP-11-2-2T	Intermit.	40.282442	-75.975459	UNT to Wyomissing Creek	HQ-CWF	Excavation for Sanitary Sewer Replacement	TEMP.	3' x 2'	3' x 117'	
GP-5-2-3P	Intermit.	40.282442	-75.975459	UNT to Wyomissing Creek	HQ-CWF	New Water Pipe	PERM.	0.75' x 2'	0.75' x 117'	
GP-5-2-3T	Intermit.	40.282442	-75.975459	UNT to Wyomissing Creek	HQ-CWF	Excavation for New Water Pipe	TEMP.	3' x 2'	3' x 117'	
GP-5-2-4P	Intermit.	40.282442	-75.975459	UNT to Wyomissing Creek	HQ-CWF	New Gas Pipe	PERM.	0.25' x 2'	0.25' x 117'	
GP-5-2-4T	Intermit.	40.282442	-75.975459	UNT to Wyomissing Creek	HQ-CWF	Excavation for New Gas Pipe	TEMP.	1' x 2'	1' x 117'	





NO.	REVISIONS	DATE	ENGR.	DATE	ISSUED FOR
1	GENERAL REVISIONS	3/11/21	JES	3/12/21	ISSUE FOR BIDS

BCM ENGINEERS
ATC GROUP SERVICES LLC
920 Germantown Pike, Suite 200 Plymouth Meeting, PA 19462

DESIGN ENGR. GTA	APPROVED	
DRAWN BY RC		
PROJECT ENGR. JES	APPROVED	
PROJECT MGR. JES		
CHECKED BY JFB	DATE 08/31/20	

CUMRU TOWNSHIP
BERKS COUNTY, PENNSYLVANIA
UTILITIES INSTALLATION AND REPLACEMENT, ROADWAY AND DRAINAGE IMPROVEMENTS
CUMRU TOWNSHIP MUNICIPAL CAMPUS AND VICINITY

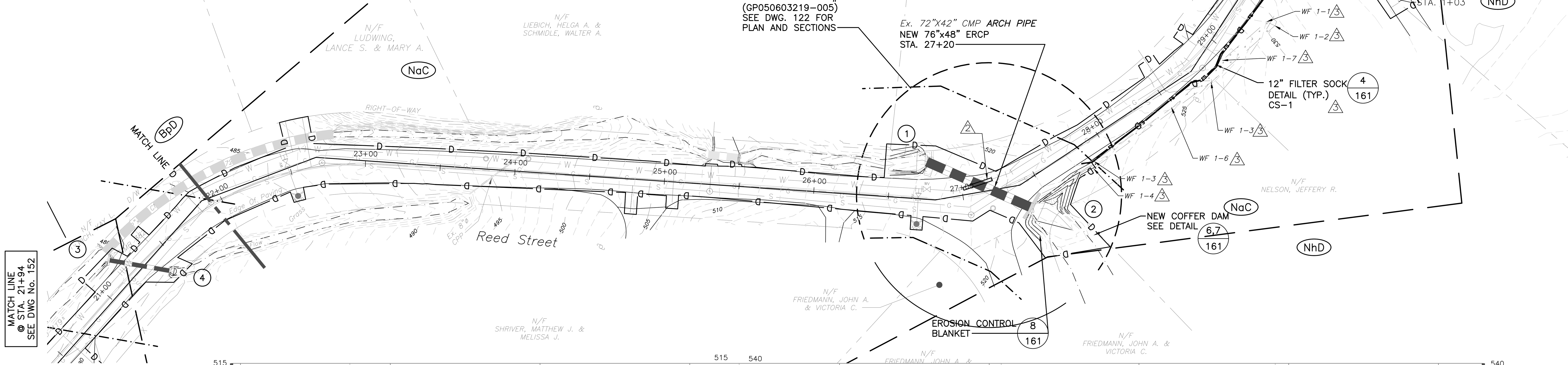
EROSION & SEDIMENT CONTROL PLAN
UTILITIES INSTALLATION AND REPLACEMENT – STA. 10+00 TO 21+94
REED STREET

SCALE: AS NOTED
PROJECT NO. Z057000415
DRAWING NO. 152
SHEET OF

REGISTERED PROFESSIONAL ENGINEER

FOR STREAM CROSSING #1

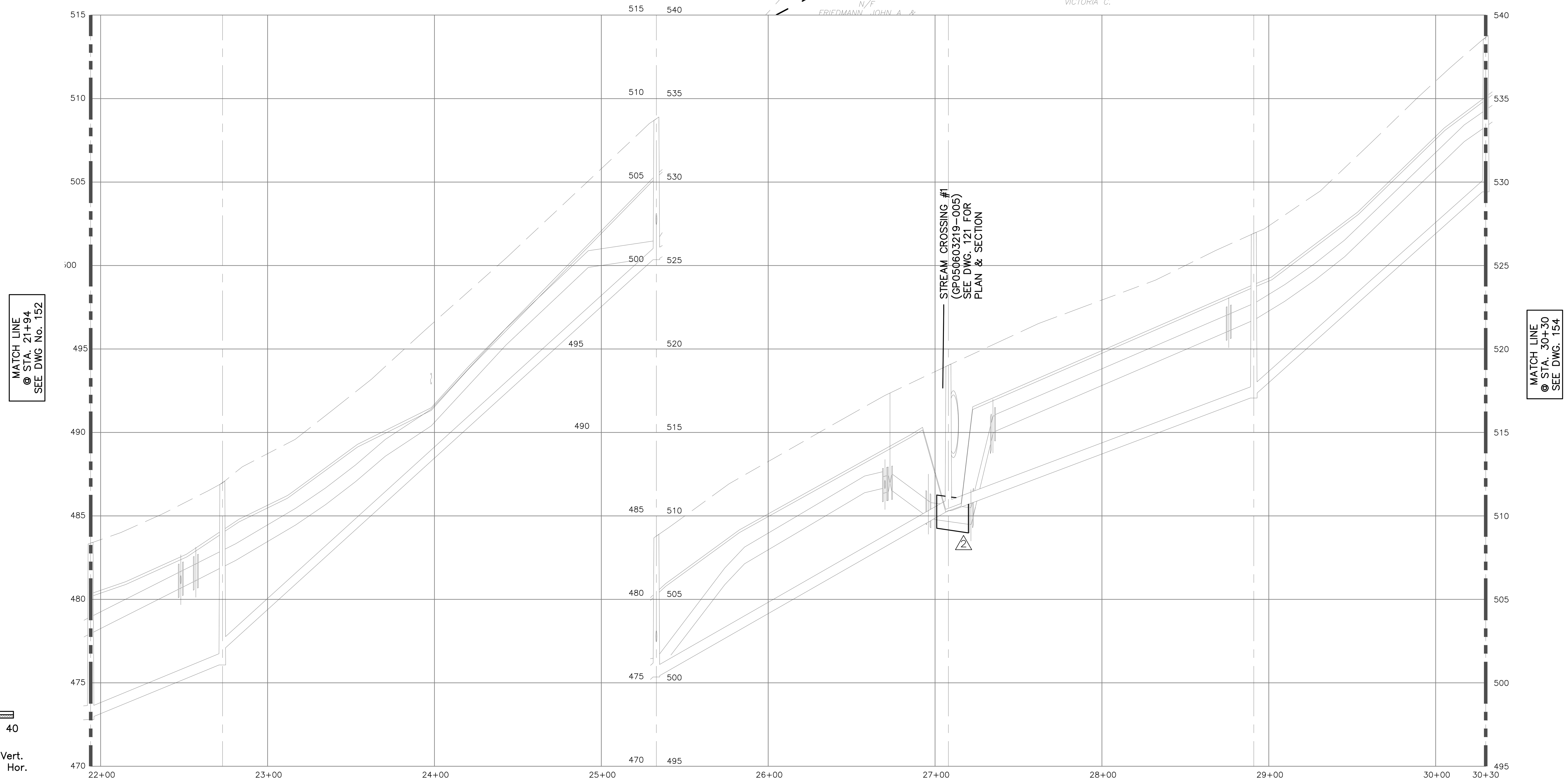
Structure/Activity unique identifier (Permit-Crossing-Activity)	Aquatic Resource Type	Latitude dd nad83	Longitude dd nad83	Waters Name	PA Code Chapter 93 Designation	Work Proposed	DEP Impact Type temp/perm	Watercourse Impact Top of Bank to top of Bank Length and Width	Floodway Impact Area Top of Bank Landward Length and Width	Wetland Impact AREA Length and Width
GP-11-1-1P	Intermit.	40.282616	-75.973678	UNT to Wyomissing Creek	HQ-CWF	Stream Culvert Replacement	PERM.	123' x 9'		
GP-11-1-1T	Intermit.	40.282616	-75.973678	UNT to Wyomissing Creek	HQ-CWF	Excavation for Stream Culvert	TEMP.	148' x 11'	148' x 14'	
GP-11-1-2P	Intermit.	40.282616	-75.973678	UNT to Wyomissing Creek	HQ-CWF	Sanitary Sewer Replacement	PERM.	1' x 8'	1' x 130'	
GP-11-1-2T	Intermit.	40.282616	-75.973678	UNT to Wyomissing Creek	HQ-CWF	Excavation for Sanitary Sewer Replacement	TEMP.	3' x 8'	3' x 130'	
GP-5-1-3P	Intermit.	40.282616	-75.973678	UNT to Wyomissing Creek	HQ-CWF	New Water Pipe	PERM.	0.75' x 8'	0.75' x 130'	
GP-5-1-3T	Intermit.	40.282616	-75.973678	UNT to Wyomissing Creek	HQ-CWF	Excavation for New Water Pipe	TEMP.	3' x 8'	3' x 130'	
GP-5-1-4P	Intermit.	40.282616	-75.973678	UNT to Wyomissing Creek	HQ-CWF	New Gas Pipe	PERM.	0.25' x 8'	0.25' x 130'	
GP-5-1-4T	Intermit.	40.282616	-75.973678	UNT to Wyomissing Creek	HQ-CWF	Excavation for New Gas Pipe	TEMP.	1' x 8'	1' x 130'	



REED STREET VIEW

SCALE 1" = 40'

SCALE IN FEET



SCALE
1" = 4' Vert.
1" = 40' Hor.

Pennsylvania One Call System, Inc.

Call Before You Dig
in Pennsylvania
1-800-242-1776

State Law Requires
Construction Phase: Three working Days Notice
Design Phase: Ten working Days Notice
Facility Owners: Member of One Call System

SERIAL NO. #20210272169, SERIAL NO. #20210272189
SERIAL NO. #20210272250, SERIAL NO. #20210272251
SERIAL NO. #20210272292, SERIAL NO. #20210272341

SOIL TYPE

- BpD — BRECKNOCK CHANNERY SILT LOAM, 15 TO 25 PERCENT SLOPES
- NaC — NESHAMINY SILT LOAM, 8 TO 15 PERCENT SLOPES
- NhD — NESHAMINY GRAVELLY SILT LOAM, 8 TO 25 PERCENT SLOPES, EXTREMELY BOULDERY

NOTES:

1. FOR GENERAL NOTES SEE DWG. #100.
2. THE EROSION AND SEDIMENT PROJECT NOTES, LEGEND, AND LOCATION MAP, SEE DWG. #150.
3. ALL SUITABLE SPOILS, SHALL BE TAKEN TO CUMRU TOWNSHIP MUNICIPAL CAMPUS/FUTURE FIRE STATION FOR FILL, SEE DRAWING #156 & #157. ANY CLEAN UNSUITABLE SPOILS MATERIAL SHALL BE TAKEN TO CUMRU TOWNSHIP CLEAN SPOILS STOCKPILE LOCATION, SEE DRAWING #158.
4. STORMWATER STRUCTURE DATA SHOWN ON DRAWING #120.
5. REFER DRAWING #103 FOR CONSTRUCTION PLAN.
6. REFER DRAWING #173 FOR POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN.

REED STREET PROFILE

SCALE: V. 1" = 8'
H. 1" = 40'

NO.	REVISIONS	DATE	ENGR.	DATE	ISSUED FOR
3	REVISED DRAWING PER DEP LETTER, 4/12/21	4/16/21	JES		
2	ADDED CASING PIPE TO WATER MAIN UNDER CULVERT	4/2/21	JES	4/6/21	ADDENDUM #1
1	GENERAL REVISIONS	3/11/21	JES	3/12/21	ISSUE FOR BIDS

BCM ENGINEERS
ATC GROUP SERVICES LLC
920 Germantown Pike, Suite 200 Plymouth Meeting, PA 19462

DESIGN ENGR. GTA	APPROVED	
DRAWN BY RC		
PROJECT ENGR. JES	APPROVED	
PROJECT MGR. JES		
CHECKED BY JFB	DATE 08/31/20	

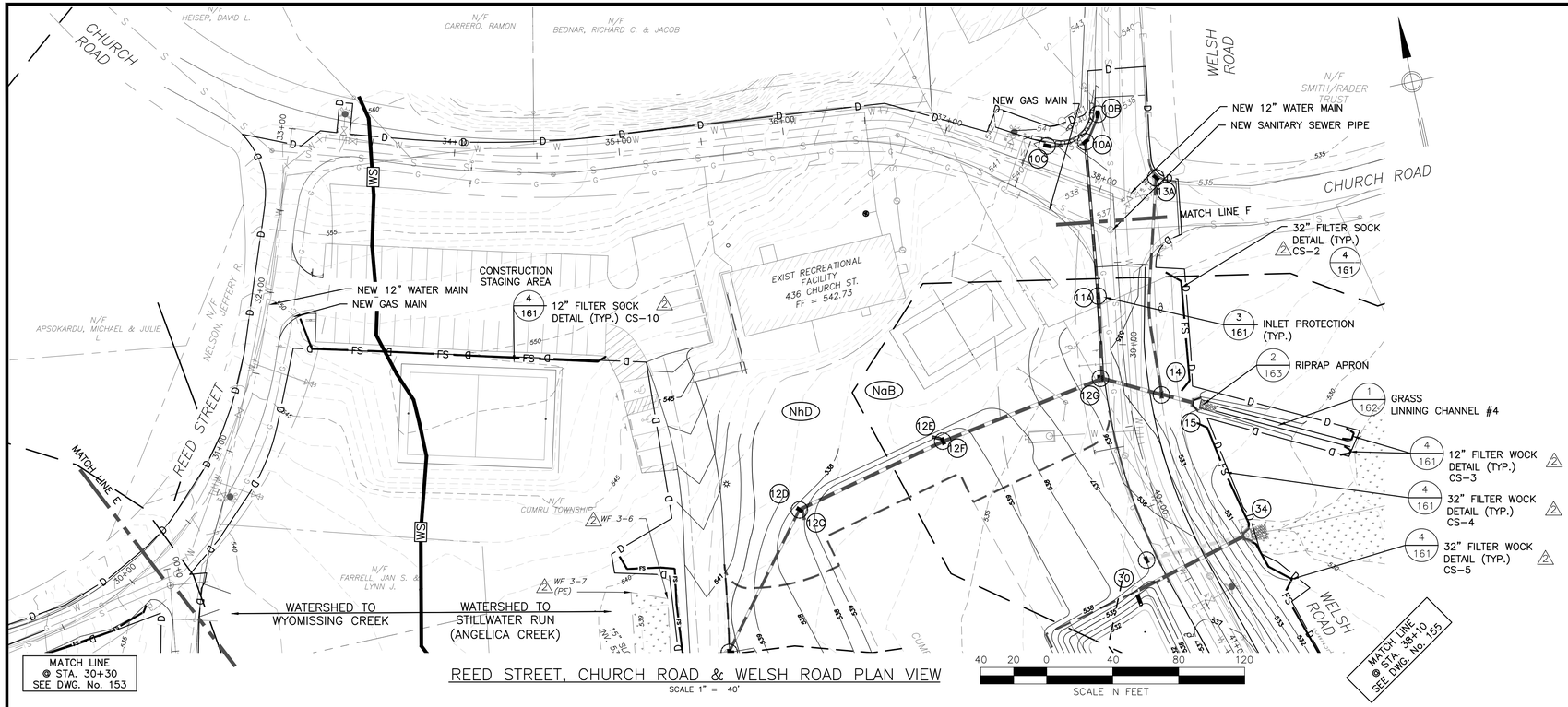
JEFFREY E. SKINNER — PROFESSIONAL ENGINEER — COMMONWEALTH OF PENNSYLVANIA

REGISTERED PROFESSIONAL ENGINEER

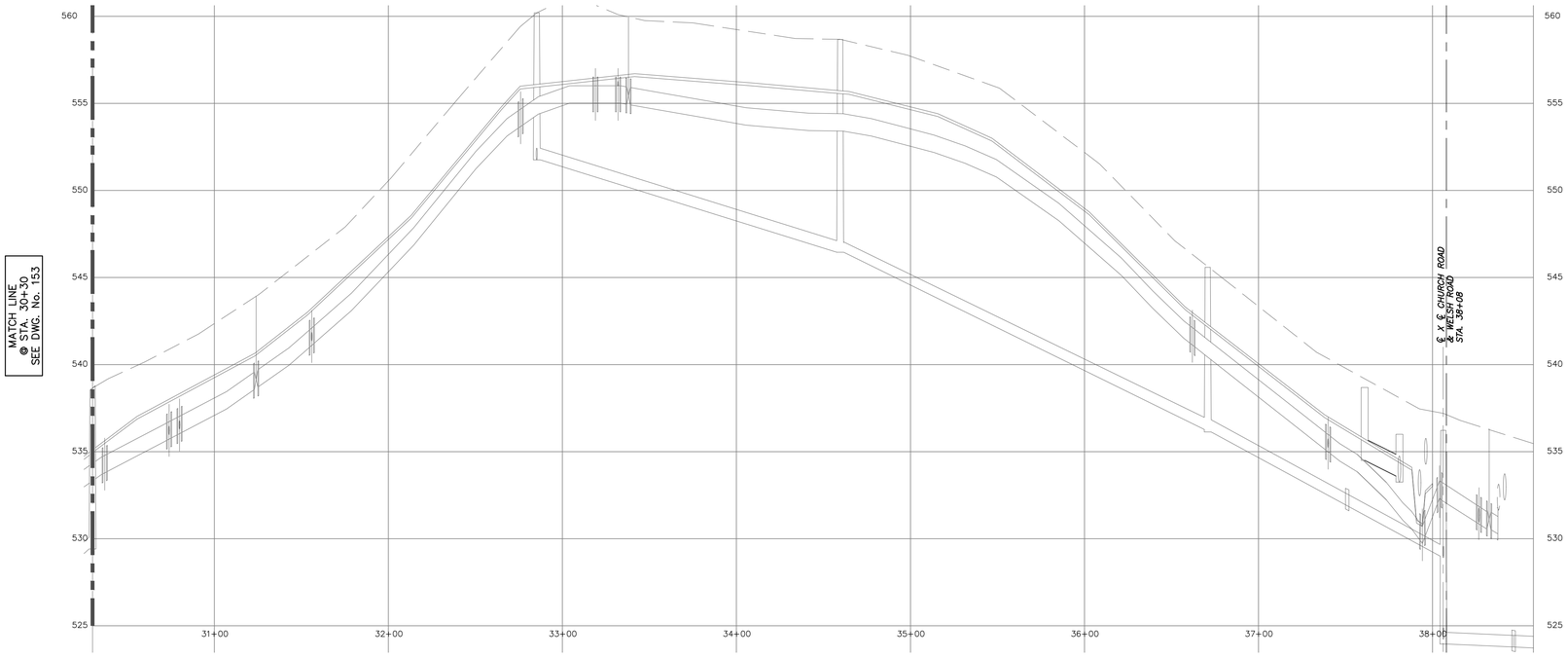
CUMRU TOWNSHIP
BERKS COUNTY, PENNSYLVANIA
UTILITIES INSTALLATION AND REPLACEMENT, ROADWAY AND DRAINAGE IMPROVEMENTS
CUMRU TOWNSHIP MUNICIPAL CAMPUS AND VICINITY

EROSION & SEDIMENT CONTROL PLAN
UTILITIES INSTALLATION AND REPLACEMENT — STA. 21+94 TO 30+30
REED STREET

SCALE	AS NOTED
PROJECT NO.	Z057000415
DRAWING NO.	153
SHEET	OF



REED STREET, CHURCH ROAD & WELSH ROAD PLAN VIEW
SCALE 1" = 40'



SCALE
1" = 4' Vert.
1" = 40' Hor.

NOTES:

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2. THE EROSION AND SEDIMENT PROJECT NOTES, LEGEND, AND LOCATION MAP, SEE DWG. #150.
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4. STORMWATER STRUCTURE DATA SHOWN ON DRAWING #120.
5. REFER DRAWING #104 FOR CONSTRUCTION PLAN.
6. REFER DRAWING #174 FOR POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN.

SOIL TYPE

NaC – NESHAMINY SILT LOAM, 8 TO 15 PERCENT SLOPES
NhD – NESHAMINY GRAVELLY SILT LOAM, 8 TO 25 PERCENT SLOPES, EXTREMELY BOULDERY

Pennsylvania One Call System, Inc.

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Construction Phase: Three working Days Notice
Design Phase: Ten working Days Notice
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SERIAL NO. #20210272250, SERIAL NO. #20210272251
SERIAL NO. #20210272292, SERIAL NO. #20210272341

REED STREET, CHURCH ROAD & WELSH ROAD PROFILE
SCALE: V. 1" = 8'
H. 1" = 40'

NO.	REVISIONS	DATE	ENGR.	DATE	ISSUED FOR
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1	GENERAL REVISIONS	3/11/21	JES	3/12/21	ISSUE FOR BIDS

BCM ENGINEERS
ATC GROUP SERVICES LLC
920 Germantown Pike, Suite 200 Plymouth Meeting, PA 19462

DESIGN ENGR.	GTA	APPROVED	
DRAWN BY	RC		
PROJECT ENGR.	JES	APPROVED	
PROJECT MGR.	JES		
CHECKED BY	JFB	DATE	08/31/20

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER JEFFREY E. SKINNER

REGISTERED PROFESSIONAL ENGINEER

CUMRU TOWNSHIP
BERKS COUNTY, PENNSYLVANIA
UTILITIES INSTALLATION AND REPLACEMENT, ROADWAY AND DRAINAGE IMPROVEMENTS
CUMRU TOWNSHIP MUNICIPAL CAMPUS AND VICINITY

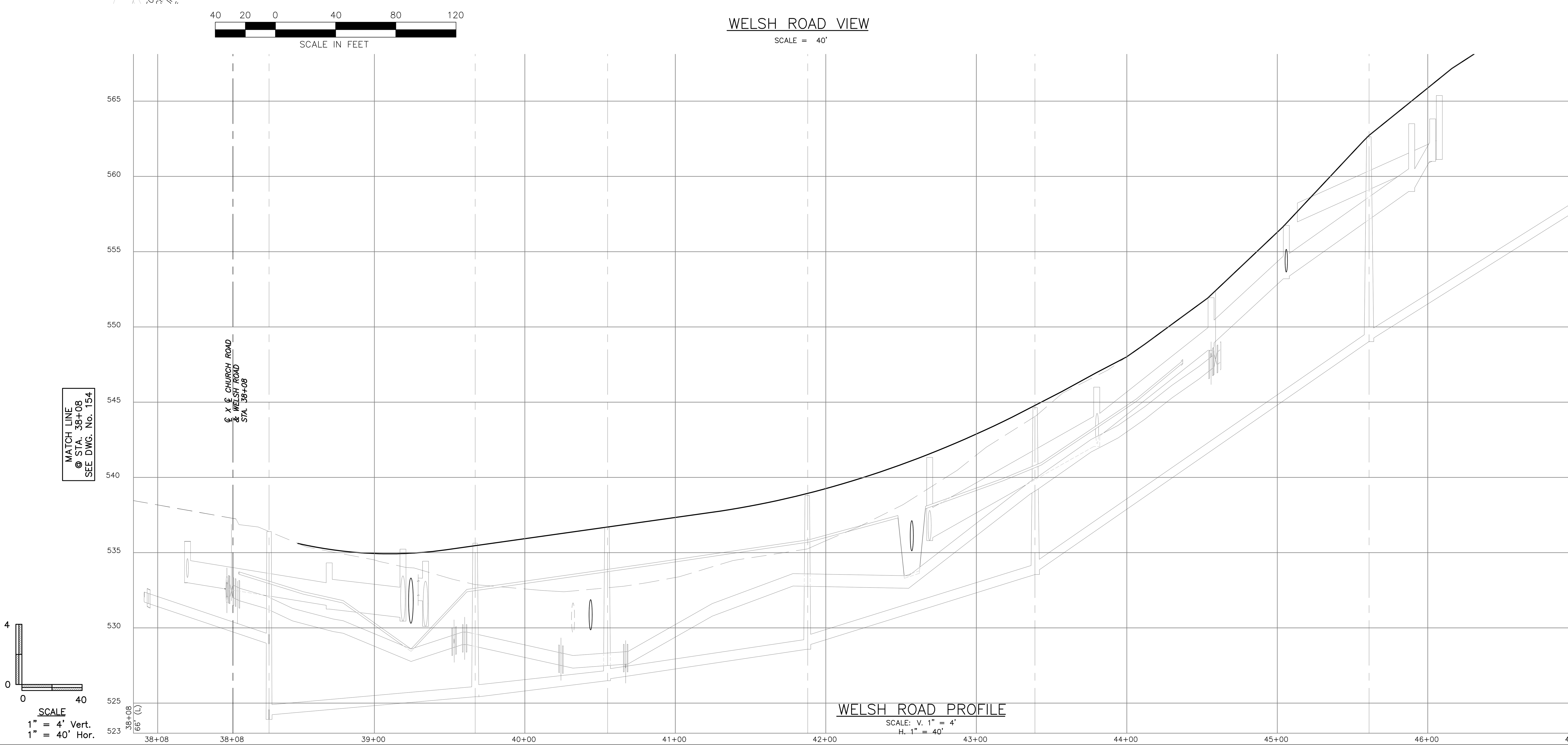
EROSION & SEDIMENT CONTROL PLAN
UTILITIES INSTALLATION AND REPLACEMENT – STA. 30+30 TO 38+10
REED STREET AND CHURCH ROAD

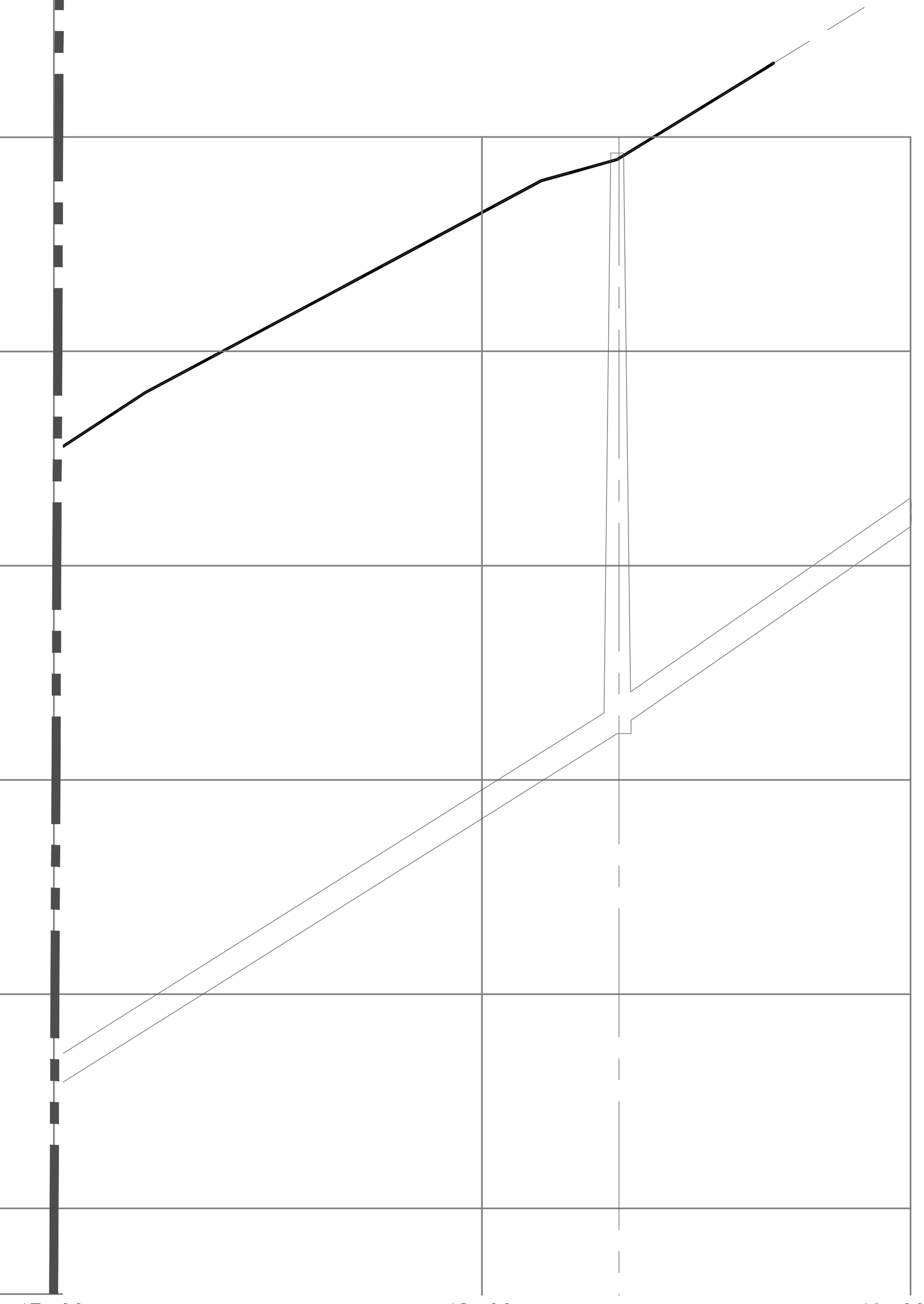
SCALE: AS NOTED
PROJECT NO.: Z057000415
DRAWING NO.: 154
SHEET: OF

S:\ATF\ES\ENGR\Projects\Cumru\Z057000415 - Reed\dwg\151-157 ESC.dwg, 154, 7/19/2021 10:17:18 AM

WELSH ROAD VIEW

SCALE = 40'





NOTES:

1. FOR GENERAL NOTES SEE DWG. #100.
2. THE EROSION AND SEDIMENT PROJECT NOTES, LEGEND, AND LOCATION MAP, SEE DWG. #150.
3. ALL SUITABLE SPOILS, SHALL BE TAKEN TO CUMRU TOWNSHIP MUNICIPAL CAMPUS/FUTURE FIRE STATION FOR FILL, SEE DRAWING #156 & #157. ANY CLEAN UNSUITABLE SPOILS MATERIAL SHALL BE TAKEN TO CUMRU TOWNSHIP CLEAN SPOILS STOCKPILE LOCATION, SEE DRAWING #158.
4. STORMWATER STRUCTURE DATA SHOWN ON DRAWING #120.
5. REFER DRAWING #105 FOR CONSTRUCTION PLAN.
6. REFER DRAWING #175 FOR POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN.

SOIL TYPE

NaB — NESHAMINY SILT LOAM, 3 TO 8 PERCENT SLOPES
NaC — NESHAMINY SILT LOAM, 8 TO 15 PERCENT SLOPES
NhD — NESHAMINY GRAVELLY SILT LOAM, 8 TO 25 PERCENT SLOPES, EXTREMELY BOULDERY

Pennsylvania One Call System, Inc.

Call Before You Dig in Pennsylvania 1-800-242-1776

State Law Requires
Construction Phase: Three working Days Notice
Design Phase: Ten working Days Notice
Facility Owners: Member of One Call System

SERIAL NO. #20210272169, SERIAL NO. #20210272189
SERIAL NO. #20210272250, SERIAL NO. #20210272251
SERIAL NO. #20210272292, SERIAL NO. #20210272341

NO.	REVISIONS	DATE	ENGR.	DATE	ISSUED FOR
3	REVISED DRAWING PER DEP LETTER, 4/12/21	04/16/21	JES		
2	CLARIFIED SEDIMENT TRAPS #3A & #4A CONTOURS	04/02/21	JES	04/06/21	ADDENDUM #1
1	GENERAL REVISIONS	3/11/21	JES	3/12/21	ISSUE FOR BIDS

BCM ENGINEERS
ATC GROUP SERVICES LLC
920 Germantown Pike, Suite 200 Plymouth Meeting, PA 19462

DESIGN ENGR. GTA	APPROVED	
DRAWN BY RC		
PROJECT ENGR. JES	APPROVED	
PROJECT MGR. JES		
CHECKED BY JFB	DATE 08/31/20	

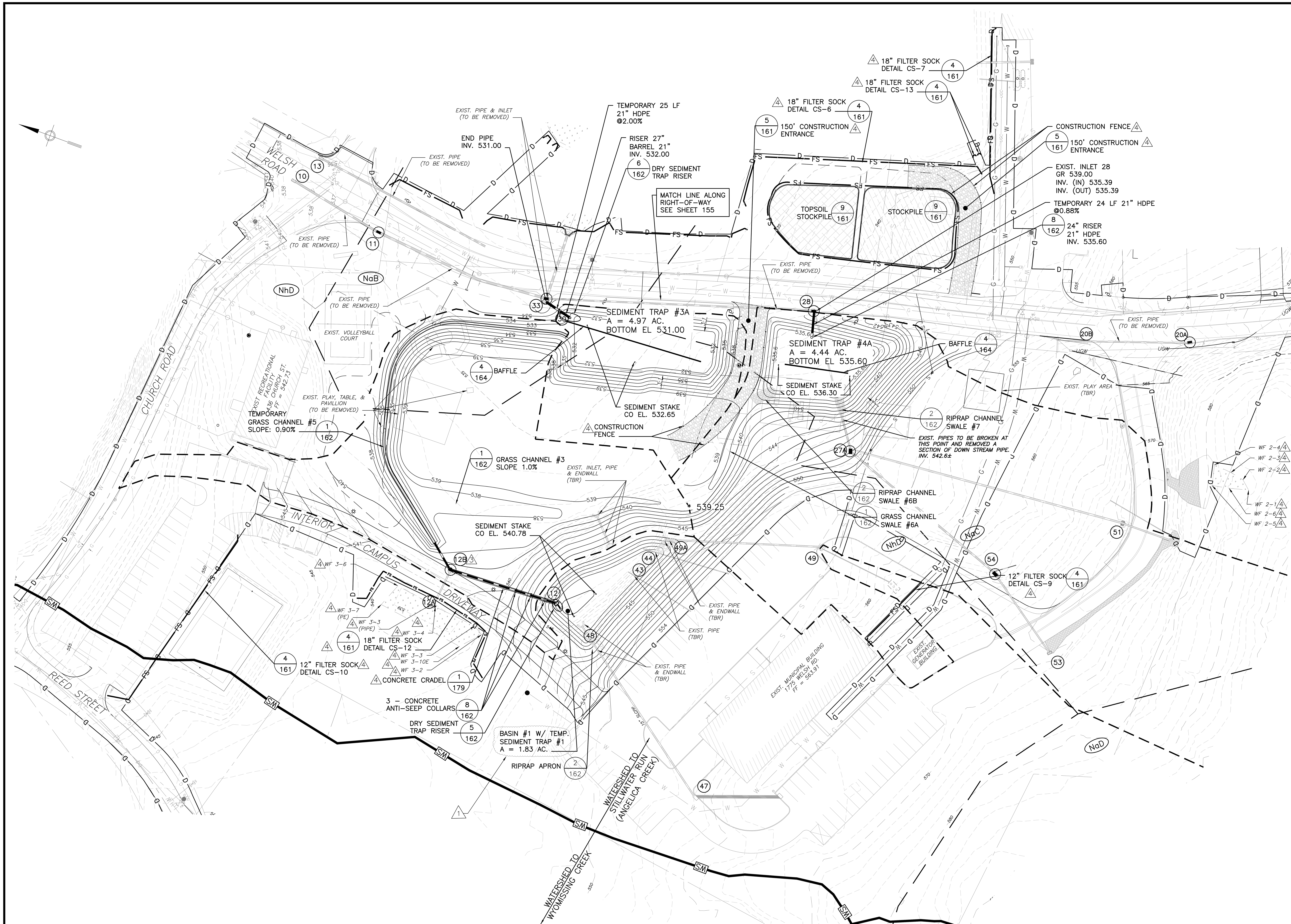
COMMONWEALTH OF PENNSYLVANIA — JEFFREY E. SKINNER — PROFESSIONAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER

CUMRU TOWNSHIP
BERKS COUNTY, PENNSYLVANIA
UTILITIES INSTALLATION AND REPLACEMENT, ROADWAY AND DRAINAGE IMPROVEMENTS
CUMRU TOWNSHIP MUNICIPAL CAMPUS AND VICINITY

EROSION & SEDIMENT CONTROL PLAN
UTILITIES, ROADWAY AND DRAINAGE IMPROVEMENT — STA. 38+10 TO 48+68
WELSH ROAD

SCALE: AS NOTED
PROJECT NO. Z057000415
DRAWING NO. 155
SHEET OF



NOTES:

1. FOR GENERAL NOTES SEE DWG. #100.
2. THE EROSION AND SEDIMENT PROJECT NOTES, LEGEND, AND LOCATION MAP, SEE DWG. #150.
3. ALL SUITABLE SPOILS, SHALL BE TAKEN TO CUMRU TOWNSHIP MUNICIPAL CAMPUS/FUTURE FIRE STATION FOR FILL, SEE DRAWING #156 & #157. ANY CLEAN UNSUITABLE SPOILS MATERIAL SHALL BE TAKEN TO CUMRU TOWNSHIP CLEAN SPOILS STOCKPILE LOCATION, SEE DRAWING #158.
4. STORMWATER STRUCTURE DATA SHOWN ON DRAWING #120.
5. REFER DRAWING #113 FOR CONSTRUCTION PLAN.
6. REFER DRAWING #176 FOR POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN.
7. PLAN DEPICTS 1st. STAGE OF PROJECT E&SC PROCEDURES TO BE TAKEN PRIOR TO WLESH ROAD RECONSTRUCTION

Pennsylvania One Call System, Inc.

Call Before You Dig in Pennsylvania 1-800-242-1776

State Law Requires
Construction Phase: Three working Days Notice
Design Phase: Ten working Days Notice
Facility Owners: Member of One Call System

SERIAL NO. #20210272169, SERIAL NO. #20210272189
SERIAL NO. #20210272250, SERIAL NO. #20210272251
SERIAL NO. #20210272292, SERIAL NO. #20210272341

SOIL TYPE

NaB – NESHAMINY SILT LOAM, 3 TO 8 PERCENT SLOPES
NaC – NESHAMINY SILT LOAM, 8 TO 15 PERCENT SLOPES
NhD – NESHAMINY GRAVELLY SILT LOAM, 8 TO 25 PERCENT SLOPES, EXTREMELY BOULDERY

40 20 0 40 80 120
SCALE IN FEET

NO.	REVISIONS	DATE	ENGR.	DATE	ISSUED FOR
4	REVISED DRAWING PER DEP LETTER, 4/12/21	04/16/21	JES		
3	ADDED INLET PROTECTION FOR INLET 12B	4/2/21	JES		
2	GENERAL REVISION	3/11/21	JES	4/6/21	ADDENDUM #1
1	BCCD REVIEW LETTER, DATED 10/01/2020	10/01/2020	JES	3/12/21	ISSUE FOR BIDS

BCM ENGINEERS
ATC GROUP SERVICES LLC
920 Germantown Pike, Suite 200 Plymouth Meeting, PA 19462

DESIGN ENGR. GTA	APPROVED	
DRAWN BY RC		
PROJECT ENGR. JES	APPROVED	
PROJECT MGR. JES		
CHECKED BY JFB	DATE 08/31/20	

REGISTERED PROFESSIONAL ENGINEER

CUMRU TOWNSHIP
BERKS COUNTY, PENNSYLVANIA
UTILITIES INSTALLATION AND REPLACEMENT, ROADWAY AND DRAINAGE IMPROVEMENTS
CUMRU TOWNSHIP MUNICIPAL CAMPUS AND VICINITY

EROSION AND SEDIMENT CONTROL PLAN
STAGE #1, DRAINAGE AND GRADING
CUMRU TOWNSHIP MUNICIPAL CAMPUS

SCALE: AS NOTED
PROJECT NO.: Z057000415
DRAWING NO.: 156
SHEET: OF

NOTES:

1. FOR GENERAL NOTES SEE DWG. #100.
2. THE EROSION AND SEDIMENT PROJECT NOTES, LEGEND, AND LOCATION MAP, SEE DWG. #150.
3. ALL SUITABLE SPOILS, SHALL BE TAKEN TO CUMRU TOWNSHIP MUNICIPAL CAMPUS/FUTURE FIRE STATION FOR FILL, SEE DRAWING #156 & #157. ANY CLEAN UNSUITABLE SPOILS MATERIAL SHALL BE TAKEN TO CUMRU TOWNSHIP CLEAN SPOILS STOCKPILE LOCATION, SEE DRAWING #158.
4. STORMWATER STRUCTURE DATA SHOWN ON DRAWING #120.
5. REFER DRAWING #113 FOR CONSTRUCTION PLAN.
6. REFER DRAWING #176 FOR POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN.
7. PLAN DEPICTS 2nd. STAGE OF PROJECTS E&SC PROCEDURES TO BE TAKEN DURING WELSH ROAD RECONSTRUCTION.

Pennsylvania One Call System, Inc.

Call Before You Dig in Pennsylvania 1-800-242-1776

State Law Requires
Construction Phase: Three working Days Notice
Design Phase: Ten working Days Notice
Facility Owners: Member of One Call System

SERIAL NO. #20210272169, SERIAL NO. #20210272189
SERIAL NO. #20210272250, SERIAL NO. #20210272251
SERIAL NO. #20210272292, SERIAL NO. #20210272341

SOIL TYPE

NaB – NESHAMINY SILT LOAM, 3 TO 8 PERCENT SLOPES
NaC – NESHAMINY SILT LOAM, 8 TO 15 PERCENT SLOPES
NhD – NESHAMINY GRAVELLY SILT LOAM, 8 TO 25 PERCENT SLOPES, EXTREMELY BOULDERY

40 20 0 40 80 120
SCALE IN FEET

4 E&S BMP (SEDIMENT TRAP #1) CONVERTING PCSM BMP (BASIN #1) NOTES:

1. ALL WORK TO CONVERT SEDIMENT TRAP INTO BASIN SHALL BE RESTRICTED TO THE GROWING SEASON.
2. ALL AREAS ABOVE BASIN WATERSHED SHALL BE STABILIZED. THE VEGETATED AREAS MUST ACHIEVE A MINIMUM UNIFORM 70% PERENNIAL VEGETATION COVER OVER THE ENTIRE DISTURBED AREA. THE PAVEMENT BASE COURSE OF THE INTERIOR CAMPUS DRIVEWAY SHALL BE INSTALLED PRIOR TO CONVERSION.
3. ACCUMULATED SEDIMENT FROM THE CONTRIBUTING STORMWATER SEWER SYSTEM SHALL BE FLUSHED, COLLECTED, REMOVED AND DISPOSED PROPERLY.
4. INSTALL PUMP AND FILTER BAG WITHIN THE OUTFLOW STRUCTURE SUMP. FILTER BAG SHOULD BE PLACED IN A GRASSY AREA PER DETAIL 2 ON DRAWING 161. FOLLOW GUIDELINE FOR SAFE OPERATION OF PUMP AND FILTER BAG.
5. REMOVE TEMPORARY SEDIMENT TRAP RISER AND OTHER TEMPORARY FEATURES WITHIN THE BASIN. INSTALL ORIFICE PLATE AND TRASH RACK PER DETAILS ON DRAWING 181. AVOID COMPACTION BY HEAVY EQUIPMENT AND DISTURBANCE OF STABILIZED AREAS TO THE EXTENT POSSIBLE.
6. RESTABILIZED DISTURBED ARES WITHIN THE BASIN.
7. REMOVE PUMP AND FILTER BAG ONCE THE BASIN HAS ACHIEVED FINAL STABILIZATION.

4 SEDIMENT TRAPS CONVERSION NOTES:

1. E&S BMP (SEDIMENT TRAP #1) CONVERTING PCSM BMP (BASIN #1) SEE NOTE TO THE RIGHT FOR SEQUENCE OF CONSTRUCTION.
2. BASIN #2 IS NOT A SEDIMENT TRAP; THEREFORE, NO ACTION IS REQUIRED FOR A TRAP IN TO A BASIN.
3. SEDIMENT TRAP #3A & #3B AND SEDIMENT TRAP #4A & #4B IS NOT BEING CONVERTING IN TO A BASIN UNTIL CONSTRUCTION OF THE FIREHOUSE BUILDING BY OTHERS.

NO.	REVISIONS	DATE	ENGR.	DATE	ISSUED FOR
4	REVISED DRAWING PER DEP LETTER, 4/12/21	04/16/21	JES		
3	REVISED SEDIMENT TRAP #4B, REMOVED EXTRA PIPE & ADDED INLET PROTECTION	04/02/21	JES		
2	GENERAL REVISION	3/11/21	JES	04/06/21	ADDENDUM #1
1	BCCD REVIEW LETTER, DATED 10/01/2020	10/01/2020	JES	3/12/21	ISSUE FOR BIDS

BCM ENGINEERS
ATC GROUP SERVICES LLC
920 Germantown Pike, Suite 200 Plymouth Meeting, PA 19462

DESIGN ENGR. GTA	APPROVED	
DRAWN BY RC		
PROJECT ENGR. JES	APPROVED	
PROJECT MGR. JES		
CHECKED BY JFB	DATE 08/31/20	

REGISTERED PROFESSIONAL ENGINEER

CUMRU TOWNSHIP
BERKS COUNTY, PENNSYLVANIA
UTILITIES INSTALLATION AND REPLACEMENT, ROADWAY AND DRAINAGE IMPROVEMENTS
CUMRU TOWNSHIP MUNICIPAL CAMPUS AND VICINITY

EROSION AND SEDIMENT CONTROL PLAN
STAGE #2, DRAINAGE AND GRADING
CUMRU TOWNSHIP MUNICIPAL CAMPUS

SCALE AS NOTED
PROJECT NO. Z057000415
DRAWING NO. 157
SHEET OF

SOILS TYPE ON SITE		
LEGEND	NAME	DESCRIPTION
BpB	BRECKNOCK CHANNERY SILT LOAM	3 TO 8 PERCENT SLOPES
BpC	BRECKNOCK CHANNERY SILT LOAM	8 TO 15 PERCENT SLOPES
UpB	URBAN LAND–JOANNA COMPLEX	0 TO 8 PERCENT SLOPES
UpD	URBAN LAND–JOANNA COMPLEX	8 TO 25 PERCENT SLOPES

LEGEND

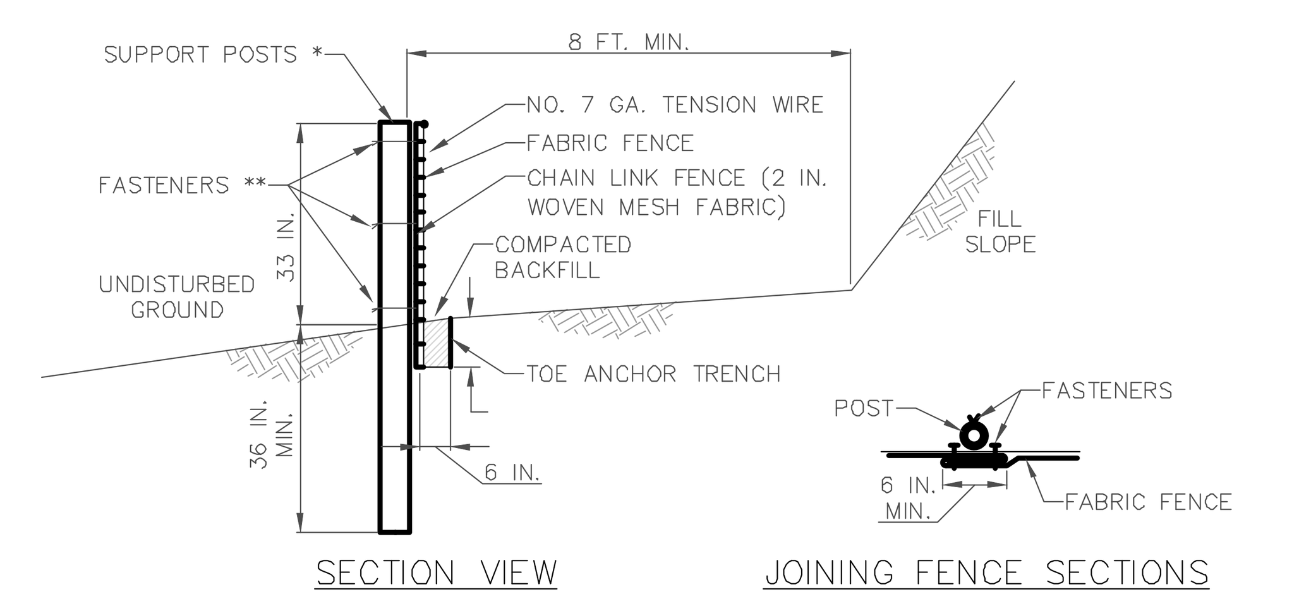
- EXISTING EDGE OF PAVING
- EXISTING CURB
- EXISTING POLE
- GV — GAS VALVE
- EXISTING STORMWATER
- EXISTING STORMWATER INLET
- EXISTING SIGN
- WV — WATER VALVE

EROSION AND SEDIMENT CONTROL LEGEND

- LIMIT OF DISTURBANCE
- SOIL BOUNDARY
- NaC — SOIL TYPE
- SSF — SUPER SILT FENCE
- SPF — STOCK PILE FENCE
- CONSTRUCTION ENTRANCE
- TOP SOIL STOCKPILE AREA
- CLEAR SPOIL STOCKPILE AREA

NOTES:

1. FOR GENERAL NOTES SEE DWG. #100.
2. THE E&SC PROJECT NOTES, LEGEND AND MAPS, SEE DWG. #150.
3. REFER DRAWING #116 FOR CONSTRUCTION PLAN.
4. REFER DRAWING #177 FOR POST–CONSTRUCTION STORMWATER MANAGEMENT PLAN.



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

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

NOTES:

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

FABRIC WIDTH SHALL BE 42 IN. MINIMUM.

POSTS SHALL BE INSTALLED USING A POSTHOLE DRILL.

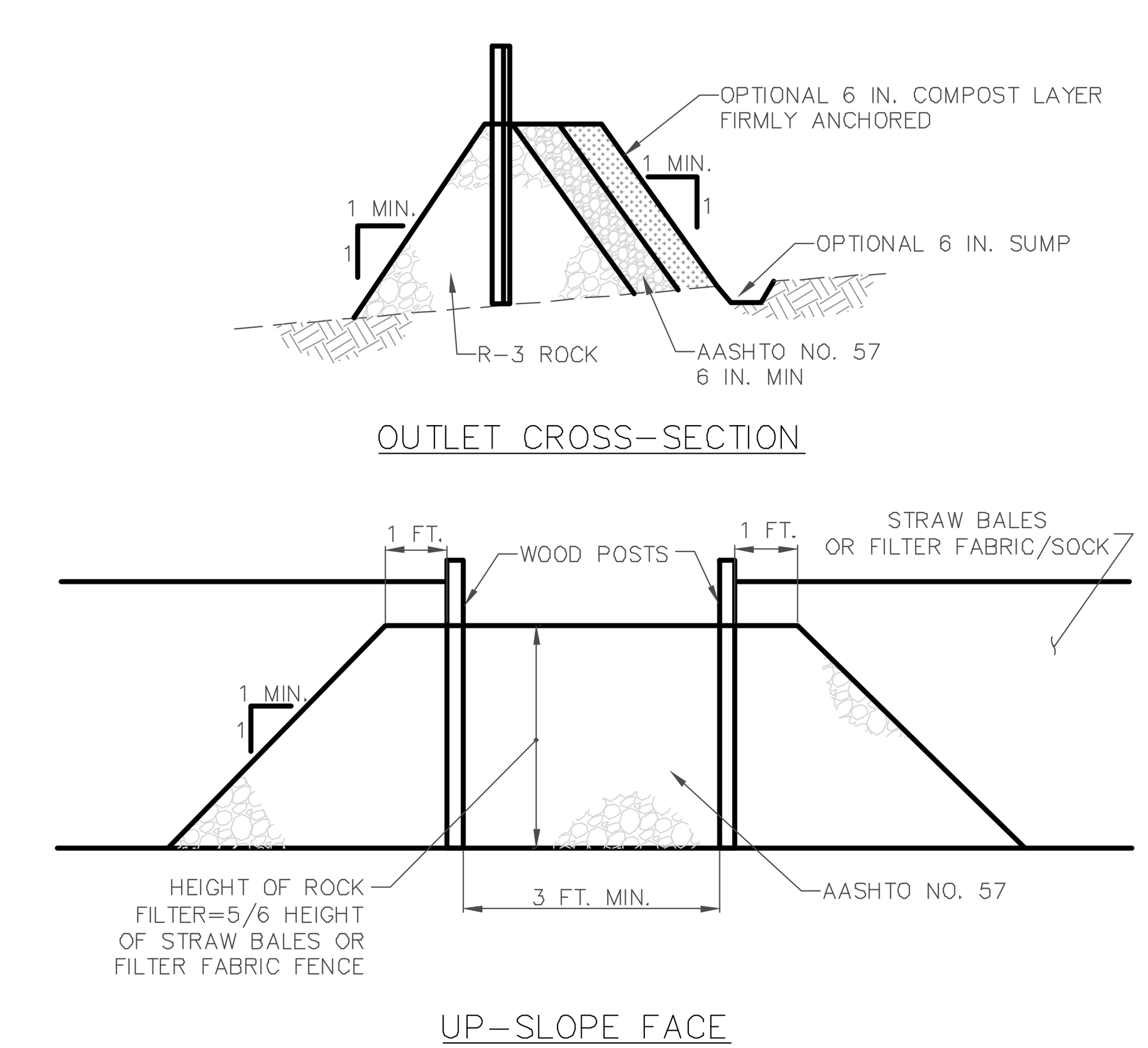
CHAIN LINK SHALL BE GALVANIZED NO. 11.5 GA. STEEL WIRE WITH 2–1/4 IN. OPENING, NO. 11 GA. ALUMINUM COATED STEEL WIRE IN ACCORDANCE WITH ASTM–A–491, OR GALVANIZED NO. 9 GA. STEEL WIRE TOP AND BOTTOM WITH GALVANIZED NO. 11 GA. STEEL INTERMEDIATE WIRES. NO. 7 GAGE TENSION WIRE TO BE INSTALLED HORIZONTALLY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

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

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

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

STANDARD CONSTRUCTION DETAIL #4-10 1/158
SUPER SILT FENCE
NOT TO SCALE



NOTES:

A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A SILT FENCE OR STRAW BALE BARRIER HAS OCCURRED DUE TO CONCENTRATED FLOW. ANCHORED COMPOST LAYER SHALL BE USED ON UPSLOPE FACE IN HQ AND EV WATERSHEDS.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.

STANDARD CONSTRUCTION DETAIL #4-6 2/158
ROCK FILTER OUTLET
NOT TO SCALE

Pennsylvania One Call System, Inc.

Call Before You Dig in Pennsylvania 1–800–242–1776

State Law Requires
Construction Phase: Three working Days Notice
Design Phase: Ten working Days Notice
Facility Owners: Member of One Call System

SERIAL NO. #20210681616

50 25 0 50 100 150
SCALE IN FEET

NO.	REVISIONS	DATE	ENGR.	DATE	ISSUED FOR
1	GENERAL REVISIONS	3/11/21	JES	3/12/21	ISSUE FOR BIDS

BCM ENGINEERS
ATC GROUP SERVICES LLC
920 Germantown Pike, Suite 200 Plymouth Meeting, PA 19462

DESIGN ENGR. RC	APPROVED	
DRAWN BY RC		
PROJECT ENGR. JES	APPROVED	
PROJECT MGR. JES		
CHECKED BY JFB	DATE 08/31/20	

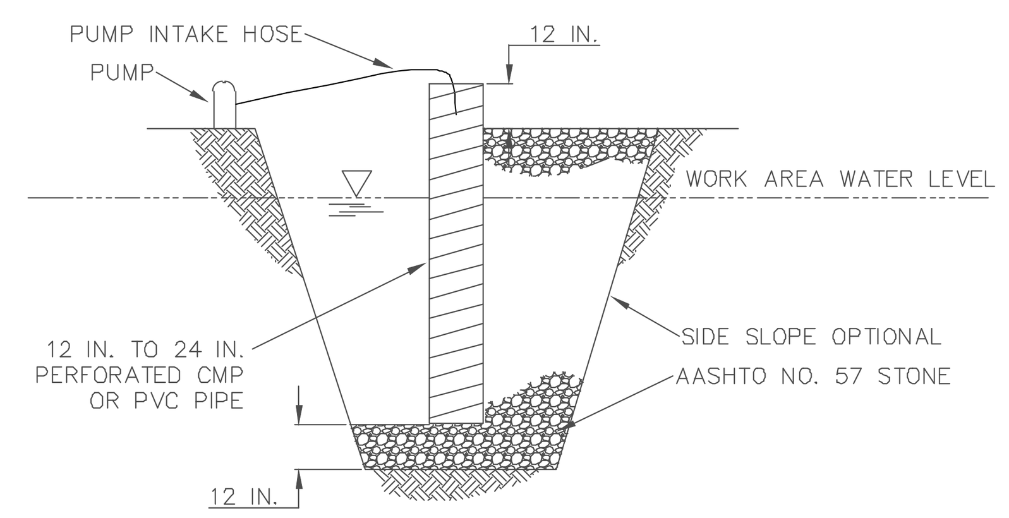
JEFFREY E. SKINNER, REGISTERED PROFESSIONAL ENGINEER, COMMONWEALTH OF PENNSYLVANIA

REGISTERED PROFESSIONAL ENGINEER

CUMRU TOWNSHIP
BERKS COUNTY, PENNSYLVANIA
UTILITIES INSTALLATION AND REPLACEMENT, ROADWAY AND DRAINAGE IMPROVEMENTS
CUMRU TOWNSHIP MUNICIPAL CAMPUS AND VICINITY

EROSION AND SEDIMENT CONTROL PLAN AND DETAILS
DRAINAGE AND GRADING
CUMRU TOWNSHIP CLEAN SPOILS STOCKPILE LOCATION

SCALE: 1" = 50'
PROJECT NO. Z057000415
DRAWING NO. 158
SHEET OF



SECTION VIEW

LOCATE SUMP AT LOW POINT IN WORK AREA AND OUTSIDE OF CONSTRUCTION ACTIVITY. WHEREVER RUNOFF FROM A WORK AREA FLOWS DIRECTLY TO THE SUMP AREA, A FILTER BAG SHALL BE ATTACHED AT THE DISCHARGE POINT UNLESS PUMPING TO A SEDIMENT BASIN OR SEDIMENT TRAP.

MINIMUM DIAMETER OF PIT BOTTOM SHALL BE 24" LARGER THAN PIPE DIAMETER. MINIMUM DEPTH OF PIT SHALL BE 24" BELOW WATER LEVEL IN WORK AREA (INCLUDING THE AASHTO #57 STONE). 12" TO 24" PERFORATED CMP OR PVC PIPE SHALL BE SET ON 12" OF CLEAN AASHTO # 57 STONE.

VOID SPACE AROUND PIPE SHALL BE FILLED WITH AASHTO # 57 STONE. PIPE TO EXTEND 12" MIN. ABOVE TOP OF STONE AND/OR WATER BEING PUMPED FROM WORK AREA.

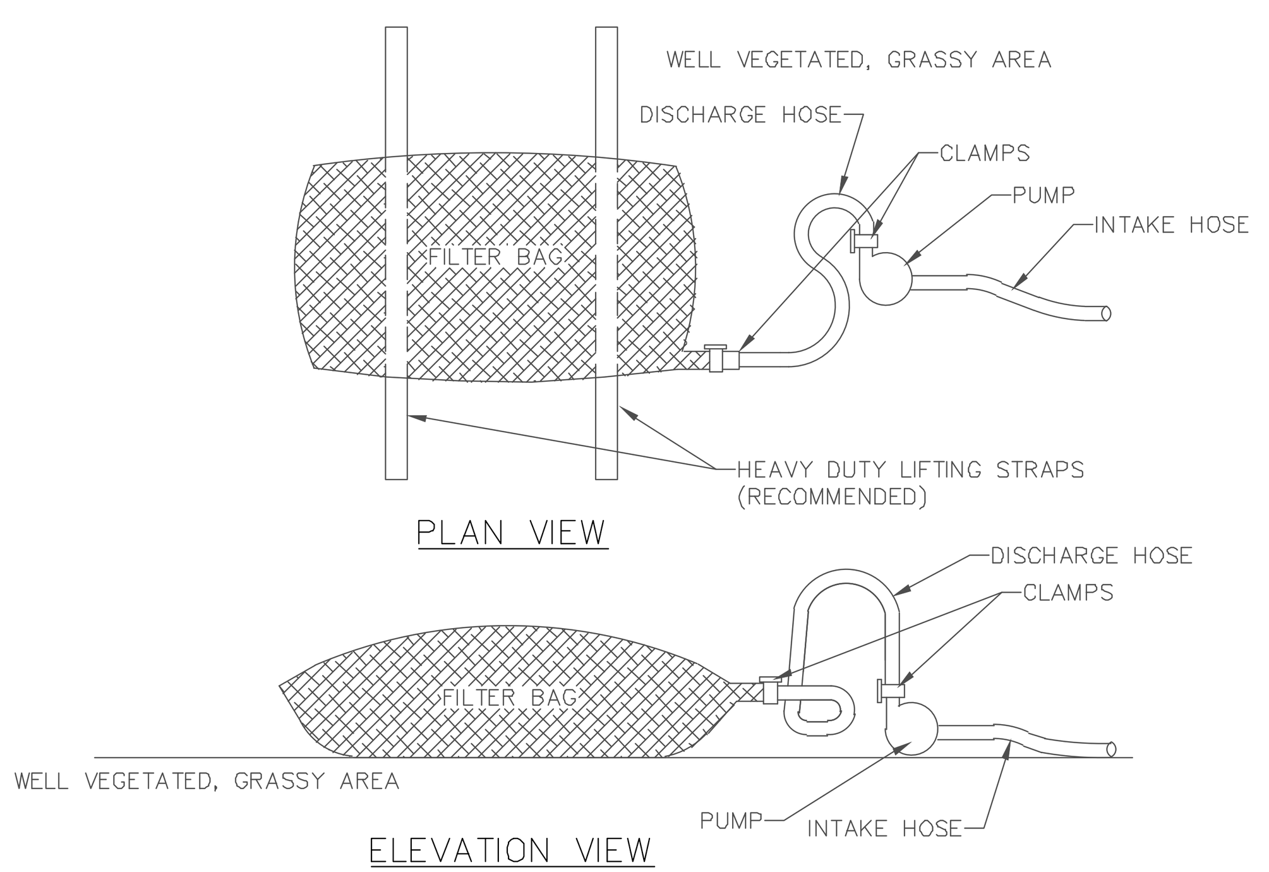
SET PUMP INTAKE INSIDE STANDPIPE.

DISCHARGE FROM PUMP SHALL BE TO A STABLE AREA BELOW DISTURBANCES FROM THE WORK ZONE.

SUMP MAY BE USED IN CONJUNCTION WITH FILTER BAG WHERE ADDITIONAL FILTERING IS NEEDED.

STANDARD WATER DETAIL SUMP PIT (1/161)

N.T.S.



ELEVATION VIEW

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 ½ FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS 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.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. 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.

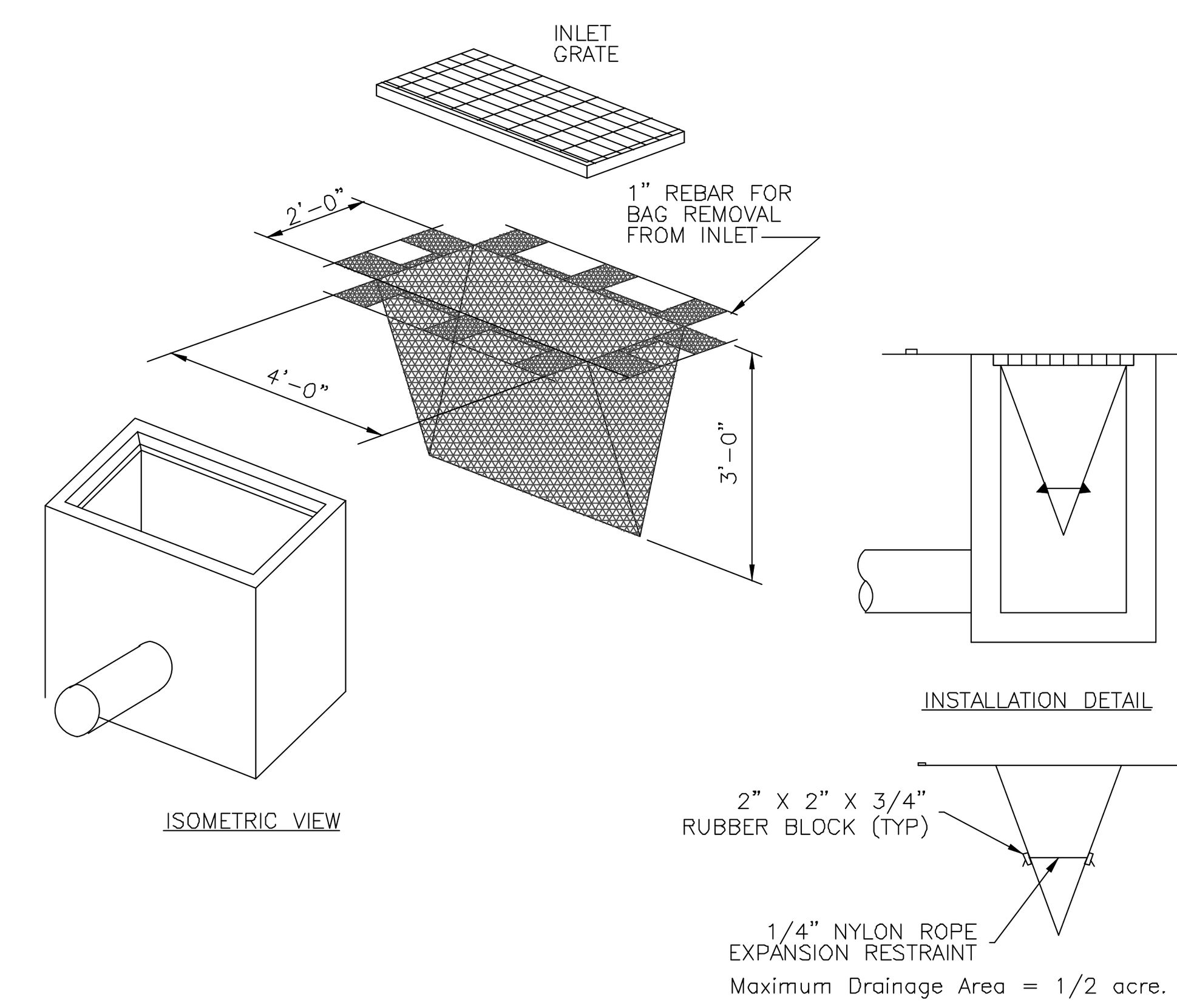
THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

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

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

STANDARD CONSTRUCTION DETAIL PUMPED WATER FILTER BAG (2/161)

N.T.S.



Maximum Drainage Area = 1/2 acre.

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

ROLLED EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN PERMANENTLY.

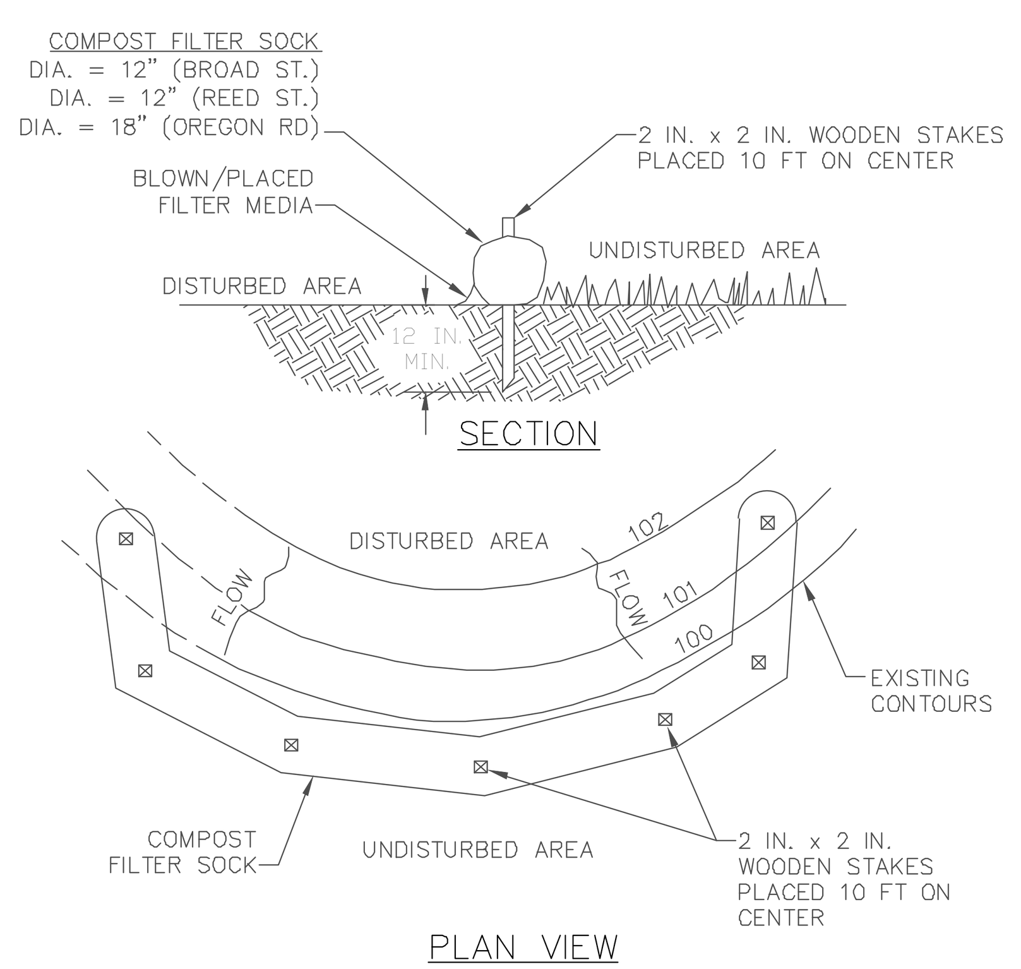
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

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

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

FILTER BAG INLET PROTECTION (3/161)

N.T.S.



PLAN VIEW

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (FIGURE 4.1). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

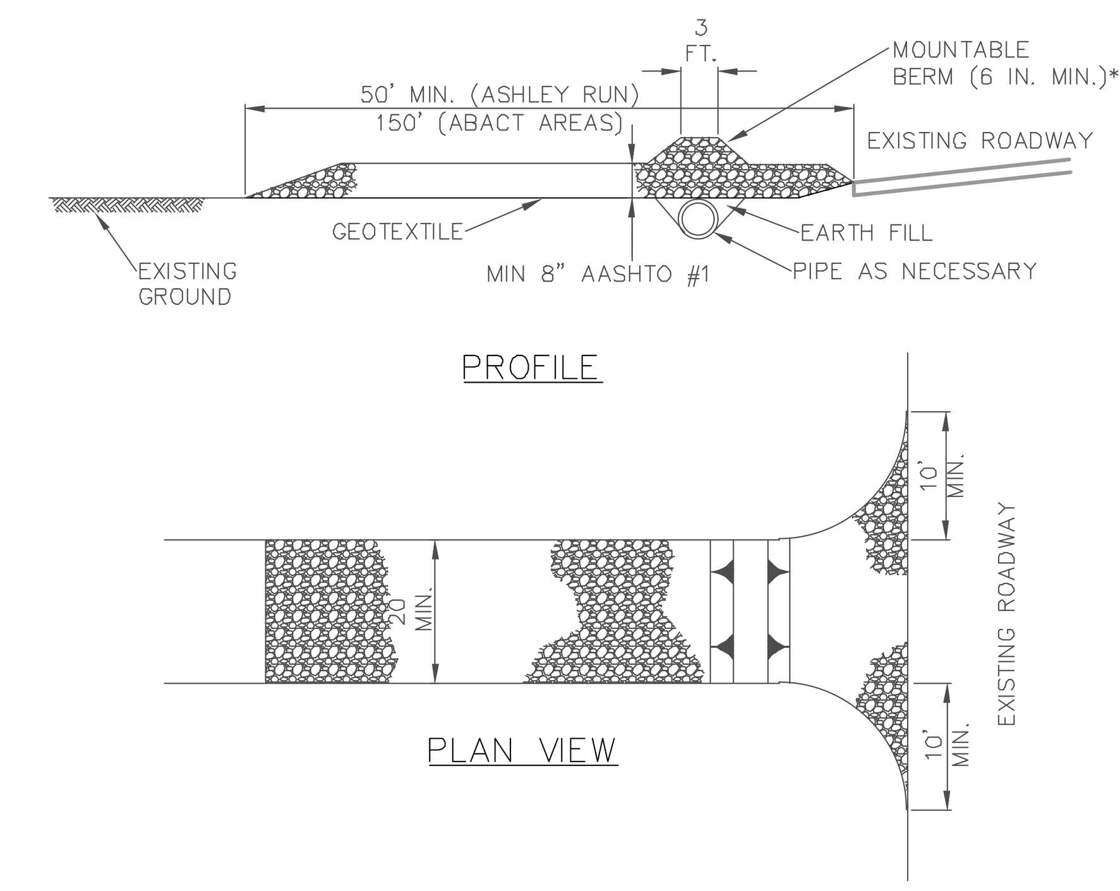
SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

STANDARD CONSTRUCTION DETAIL COMPOST FILTER SOCK (4/161)

N.T.S.



PLAN VIEW

* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

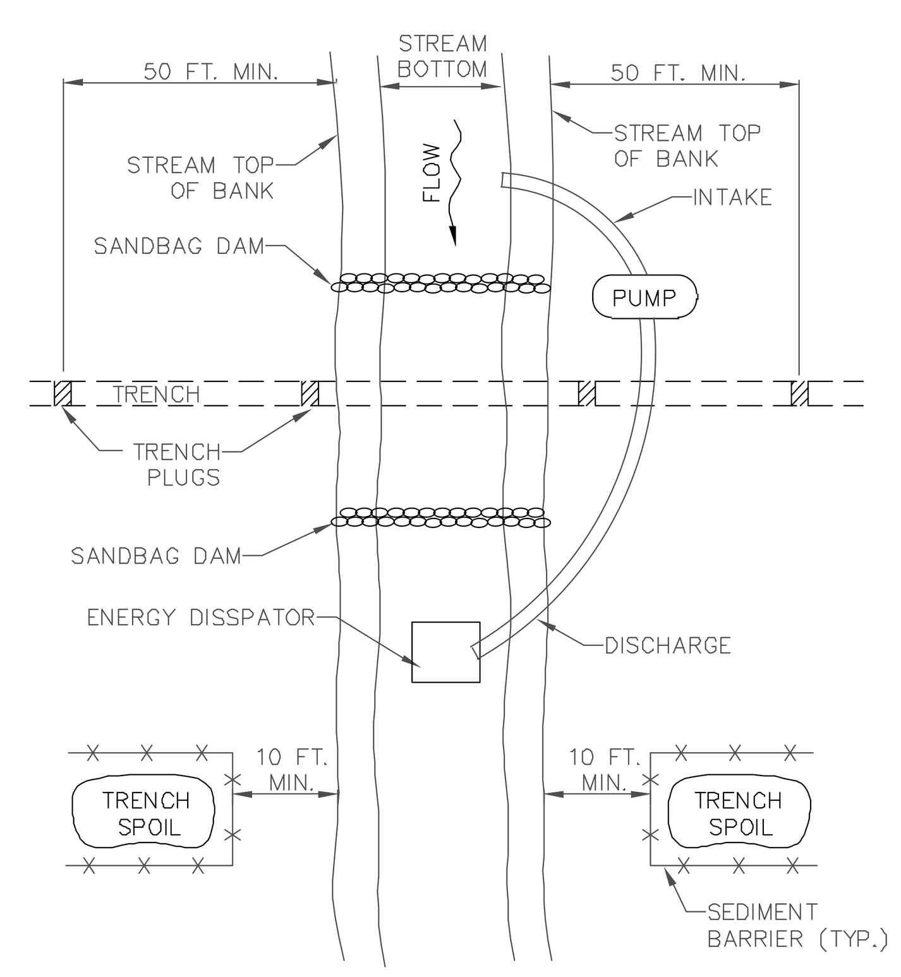
REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

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.

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 150 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.

STANDARD CONSTRUCTION DETAIL ROCK CONSTRUCTION ENTRANCE (5/161) △2

N.T.S.



NOTES:

GRUBBING SHALL NOT TAKE PLACE WITHIN 50 FEET OF TOP-OF-BANK UNTIL ALL MATERIALS REQUIRED TO COMPLETE CROSSING ARE ON SITE AND PIPE IS READY FOR INSTALLATION.

BYPASS PUMP INTAKE SHALL BE MAINTAINED A SUFFICIENT DISTANCE FROM THE BOTTOM TO PREVENT PUMPING OF CHANNEL BOTTOM MATERIALS.

TRENCH PLUGS SHALL BE INSTALLED WITHIN THE TRENCH ON BOTH SIDES OF THE STREAM CHANNEL (STANDARD CONSTRUCTION DETAIL #13-4).

WATER ACCUMULATING WITHIN THE WORK AREA SHALL BE PUMPED TO A PUMPED WATER FILTER BAG OR SEDIMENT TRAP PRIOR TO DISCHARGING INTO ANY SURFACE WATER.

HAZARDOUS OR POLLUTANT MATERIAL STORAGE AREAS SHALL BE LOCATED AT LEAST 100 FEET BACK FROM THE TOP OF STREAMBANK.

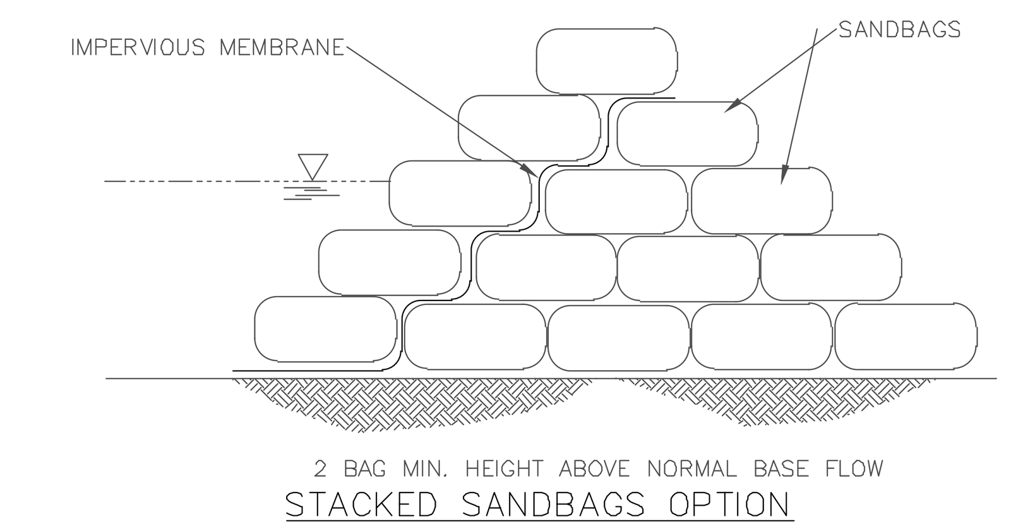
ALL EXCESS EXCAVATED MATERIAL SHALL BE IMMEDIATELY REMOVED FROM THE STREAM CROSSING AREA.

ALL DISTURBED AREAS WITHIN 50 FEET OF TOP-OF-BANK SHALL BE BLANKETED OR MATTED WITHIN 24 HOURS OF INITIAL DISTURBANCE FOR MINOR STREAMS OR 48 HOURS OF INITIAL DISTURBANCE FOR MAJOR STREAMS UNLESS OTHERWISE AUTHORIZED.

APPROPRIATE STREAMBANK PROTECTION SHALL BE PROVIDED WITHIN THE CHANNEL.

UTILITY LINE STREAM CROSSING WITH PUMP BYPASS (6/161)

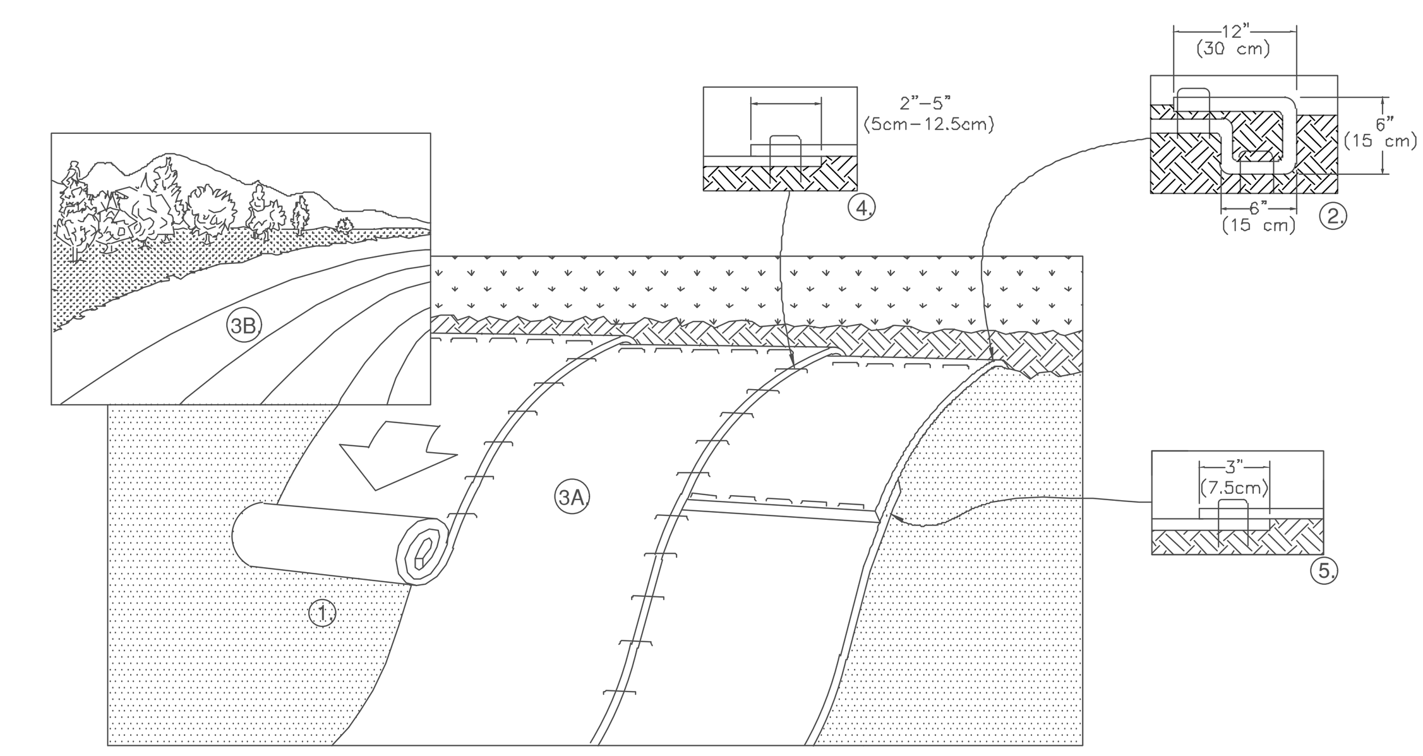
N.T.S.



STACKED SANDBAGS OPTION

SANDBAG DIVERSION DAM OR COFFERDAM (7/161)

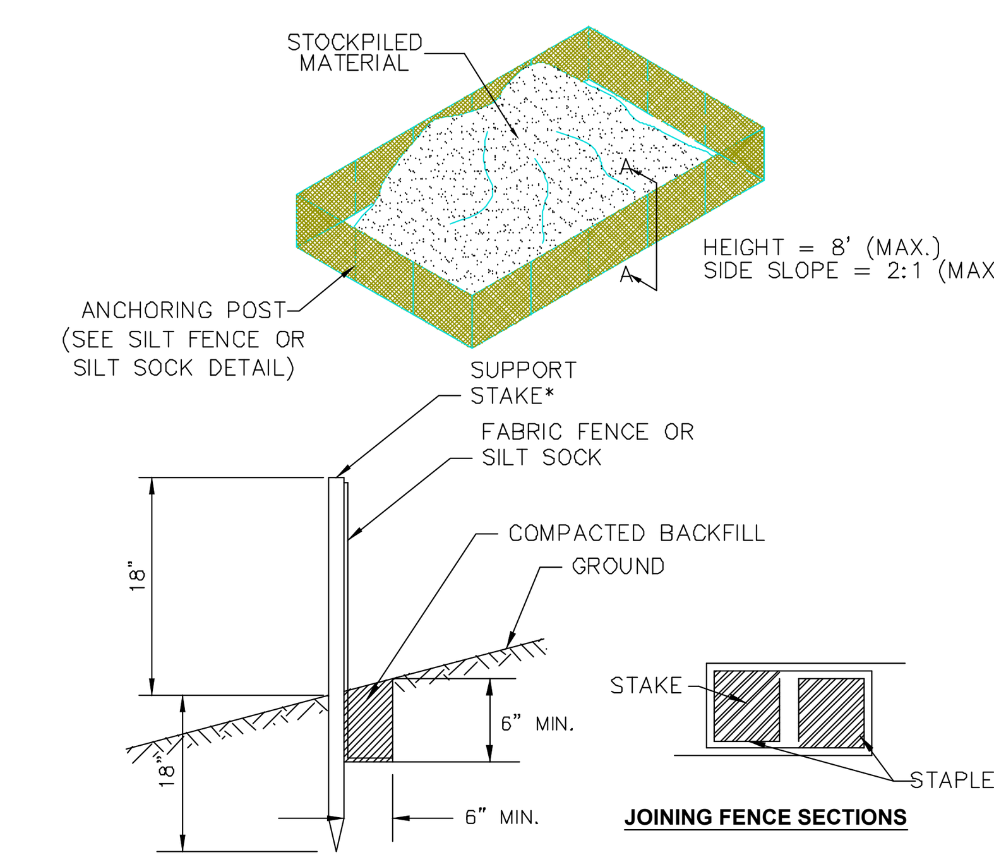
N.T.S.



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED(TM) MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM , STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm-12.5cm) OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH. NOTE: *IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15cm) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

EROSION CONTROL MATTING (8/161)

N.T.S.



* Stakes spaced @ 8' maximum. Use 2" x 2" wood or equivalent steel stakes.

Filter Fabric Fence must be placed at level existing grade. Both ends of the barrier must be extended at least 8 feet up slope at 45 degrees to the main barrier alignment.

Sediment must be removed when accumulations reach 1/2 the above ground height of the fence.

Any section of Filter Fabric Fence which has been undermined or topped must be immediately replaced with a Rock Filter Outlet. See Standard Construction Detail #18.

INSTALL SILT FENCE OR SILT SOCK DOWNSLOPE OF ALL STOCKPILE AREAS.

△2 TOPSOIL & CLEAN SPOILS STOCKPILE CONTROL (9/161)

N.T.S.

NO.	REVISIONS	DATE	ENGR.	DATE	ISSUED FOR
2	REVISED DRAWING PER DEP LETTER, 4/12/21	04/16/21	JES		
1	GENERAL REVISIONS	3/11/21	JES	3/12/21	ISSUE FOR BIDS

BCM ENGINEERS
ATC GROUP SERVICES LLC
920 Germantown Pike, Suite 200 Plymouth Meeting, PA 19462

DESIGN ENGR.	GTA	APPROVED	
DRAWN BY	RC		
PROJECT ENGR.	JES	APPROVED	
PROJECT MGR.	JES		
CHECKED BY	JFB	DATE	08/31/20

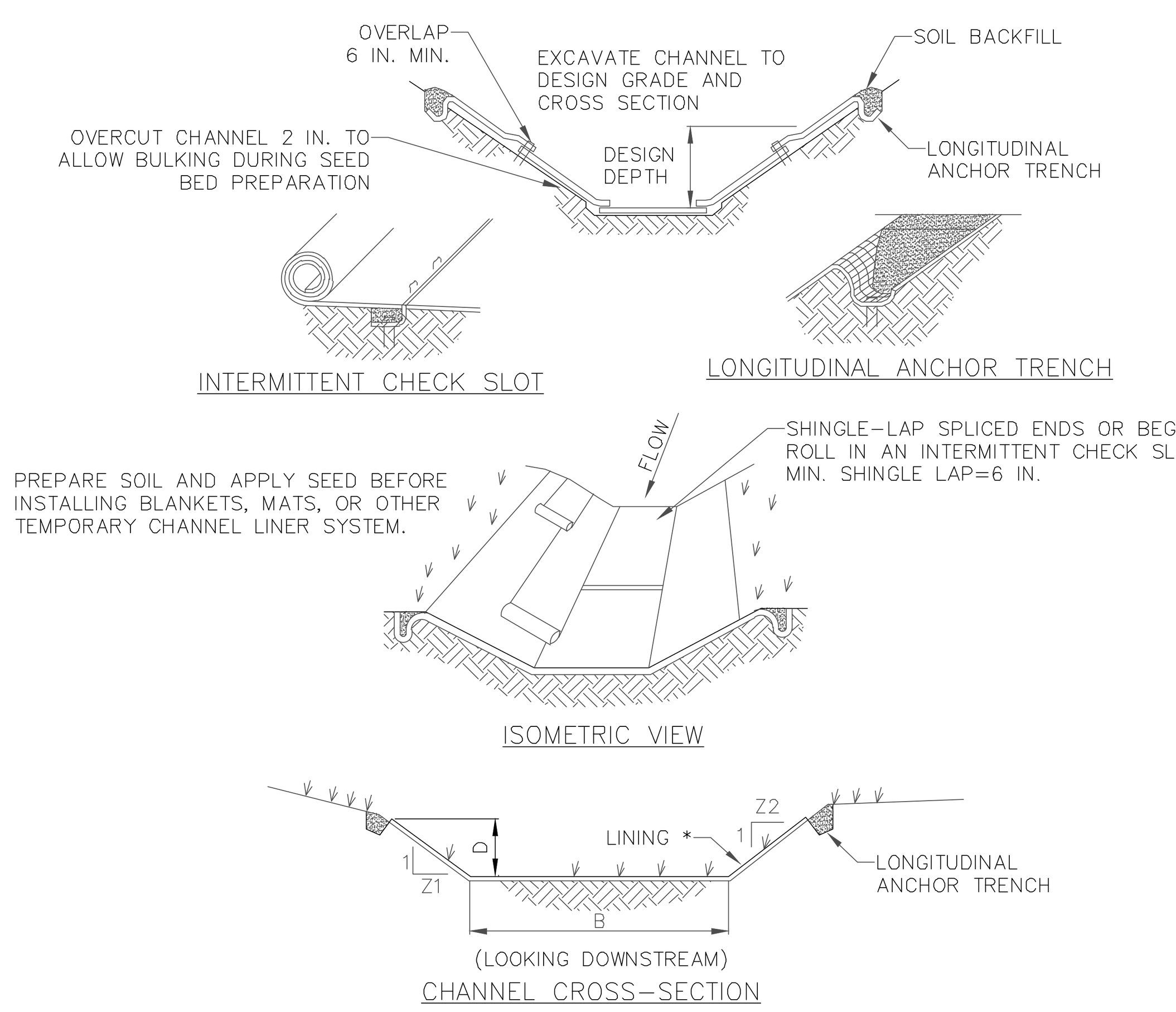
CUMRU TOWNSHIP
BERKS COUNTY, PENNSYLVANIA

UTILITIES INSTALLATION AND REPLACEMENT, ROADWAY AND DRAINAGE IMPROVEMENTS
CUMRU TOWNSHIP MUNICIPAL CAMPUS AND VICINITY

EROSION & SEDIMENT CONTROL
E&SC DETAILS

SCALE: AS SHOWN
PROJECT NO.: Z057000415
DRAWING NO.: 161
SHEET: OF

REGISTERED PROFESSIONAL ENGINEER



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

CHANNEL NO.	STATIONS	BOTTOM WIDTH B (FT)	DEPTH D (FT)	TOP WIDTH W (FT)	Z1 (FT)	Z2 (FT)	LINING *
SWALE 3	275 LF	2	1	8	3	3	GRASS–LEGUME
SWALE 4	84 LF	3	1.61	12.65	3	3	GRASS–LEGUME
SWALE 5	347 LF	2	2	14.0	3	3	GRASS–LEGUME
SWALE 6A	113 LF	1	1	7	3	3	GRASS–LEGUME

NOTES:

ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.

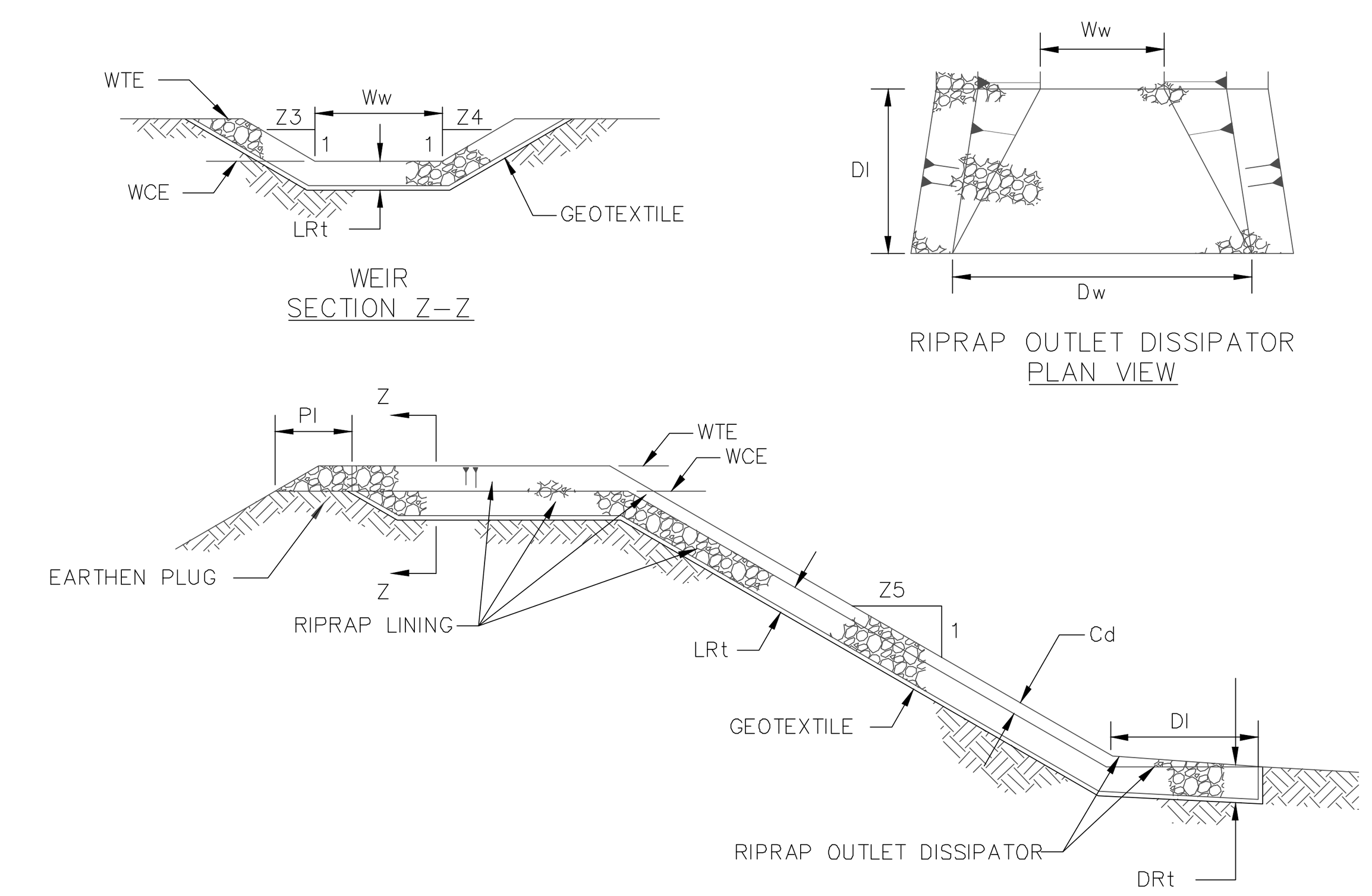
CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION.
SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. DAMAGED LINING SHALL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

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

STANDARD CONSTRUCTION DETAIL #6-1
VEGETATED CHANNEL

NOT TO SCALE

1 / 162



	BASIN NO.	WEIR Z3 (FT)	WEIR Z4 (FT)	WEIR TOP ELEV WTE (FT)	WEIR CREST ELEV WCE (FT)	WEIR WIDTH Ww (FT)	LINING RIPRAP SIZE (R–_)	LINING RIPRAP THICK. LRt (IN)	CHANNEL Z5 (FT)	CHANNEL DEPTH Cd (FT)	DISSIPATOR LENGTH Dl (FT)	DISSIPATOR WIDTH Dw (FT)	DISSIPATOR RIPRAP SIZE (R–_)	DISSIPATOR RIPRAP THICK. DRt (IN)
2	55	3	3	555.23	553.73	1.75	R–4	18	3	0.80	FOREBAY		4	18
2	52	3	3	555.07	553.41	2.00	R–4	18	3	0.80	FOREBAY		4	18
2	49A	3	3	553.75	552.32	0.5	R–4	18	3	0.60	8	11	4	18
2	48	3	3	547.63	546.38	1.25	R–4	18	3	0.60	8	11	4	18
2	SWALE 6B	3	3	539.00	538.00	1.00	R–4	18	2	0.23	8	11	4	18

NOTES:

DIMENSION Pl SHALL BE 5' MINIMUM.
DISPLACED RIPRAP WITHIN THE SPILLWAY AND/OR OUTLET CHANNEL SHALL BE REPLACED IMMEDIATELY.

STANDARD CONSTRUCTION DETAIL #7-12
EMBANKMENT ALONG CHANNEL WITH RIPRAP LINING

NOT TO SCALE

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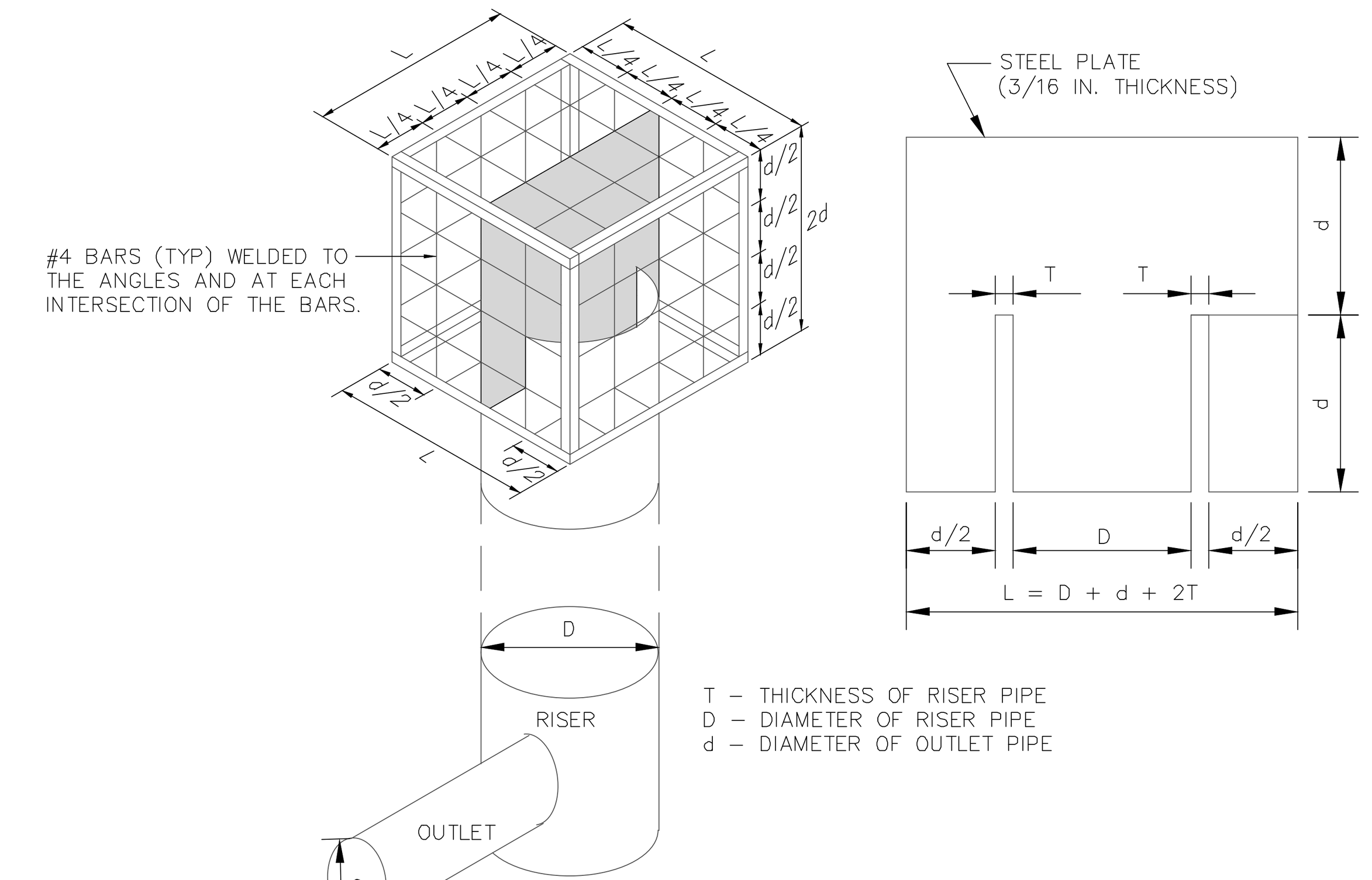

STANDARD CONSTRUCTION DETAIL #7-5
TRASH RACK AND ANTI-VORTEX DEVICE

NOT TO SCALE

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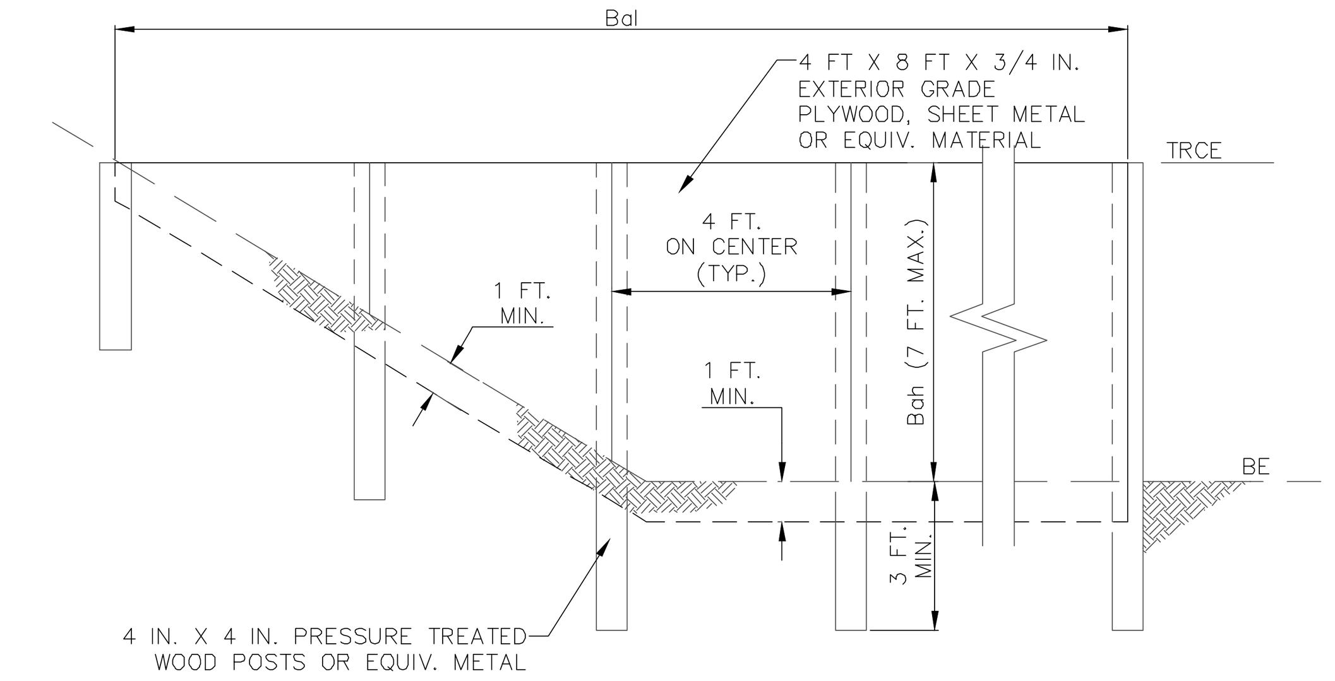

BASIN OR TRAP NO.	BAFFLE LENGTH Bal (FT)	BAFFLE HEIGHT Bah (FT)	TEMPORARY RISER CREST ELEV. TRCE (FT)	BOTTOM BOTTOM ELEV BE (FT)
3A	139	2.49	533.49	531.00
4A	58	1.75	537.35	535.60

NOTES:

SEE APPROPRIATE BASIN DETAIL FOR PROPER LOCATION AND ORIENTATION.

AN ACCEPTABLE ALTERNATIVE IS TO INSTALL A SUPER SILT FENCE AT THE BAFFLE LOCATION

IN POOLS WITH DEPTHS EXCEEDING 7', THE TOP OF THE PLYWOOD BAFFLE DOES NOT NEED TO EXTEND TO THE TEMPORARY RISER CREST. SUPER SILT FENCE BAFFLES NEED NOT EXTEND TO TRCE ELEVATION.

BAFFLES SHALL BE TIED INTO ONE SIDE OF THE BASIN UNLESS OTHERWISE SHOWN ON THE PLAN DRAWINGS.

SUBSTITUTION OF MATERIALS NOT SPECIFIED IN THIS DETAIL SHALL BE APPROVED BY THE DEPARTMENT OR THE LOCAL CONSERVATION DISTRICT BEFORE INSTALLATION.

DAMAGED OR WARPED BAFFLES SHALL BE REPLACED WITHIN 7 DAYS OF INSPECTION.

BAFFLES REQUIRING SUPPORT POSTS SHALL NOT BE INSTALLED IN BASINS REQUIRING IMPERVIOUS LINERS.

STANDARD CONSTRUCTION DETAIL #7-14
BAFFLE

NOT TO SCALE

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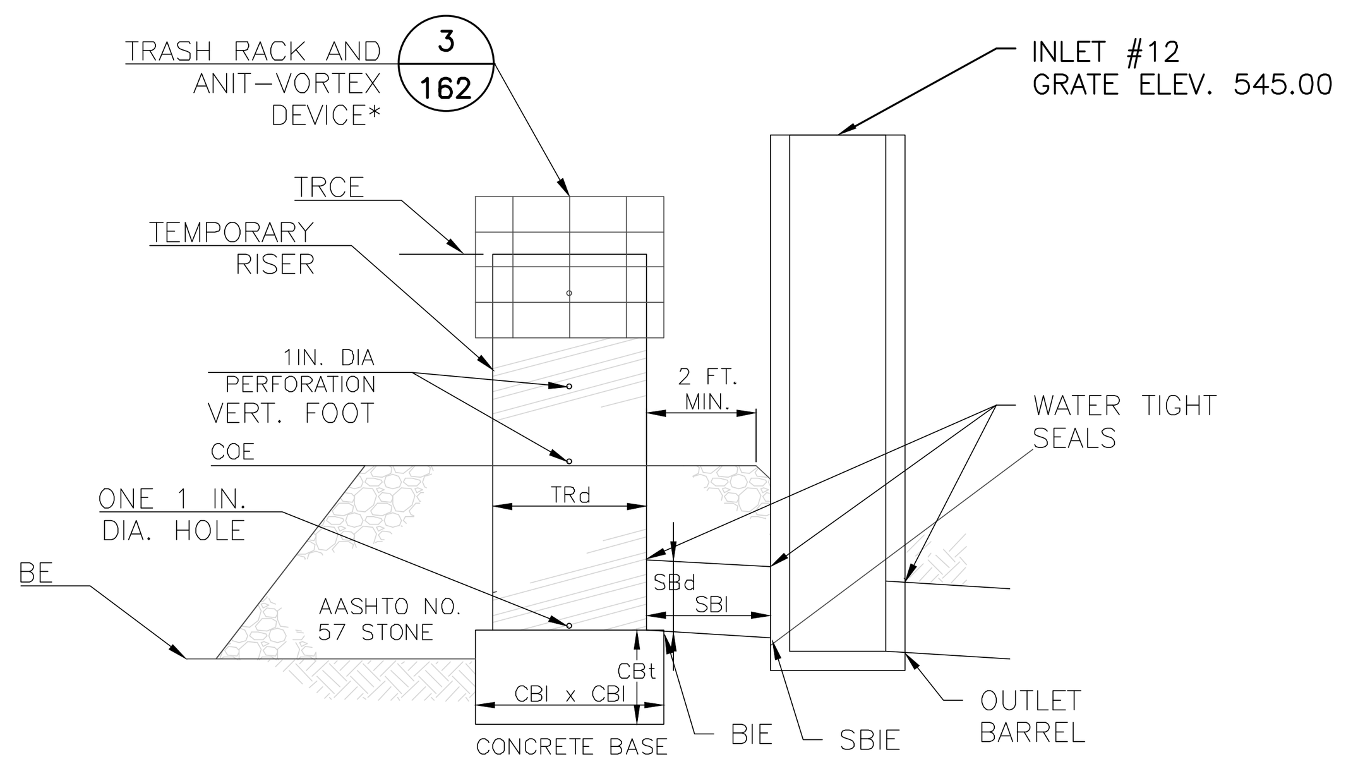

* SEE STANDARD CONSTRUCTION DETAIL #7-5, TRASH RACK AND ANTI-VORTEX DEVICE

NOTES:

IN SPECIAL PROTECTION WATERSHEDS, ANCHOR A 6 IN. LAYER OF COMPOST SHALL BE SECURELY ANCHORED ON TOP OF STONE (HQ) OR REPLACE STONE WITH SUITABLE COMPOST FILTER SOCK (HQ OR EV).

A MINIMUM OF 2-#8 REBAR SHALL BE PLACED AT RIGHT ANGLES AND PROJECTING THROUGH SIDES OF RISER TO ANCHOR IT TO CONCRETE BASE. REBAR SHALL PROJECT A MINIMUM OF 1/4 RISER DIAMETER BEYOND OUTSIDE OF RISER.

CONCRETE BASE SHALL BE POURED IN SUCH A MANNER SO AS TO INSURE THAT CONCRETE FILLS BOTTOM OF RISER TO INVERT OF THE OUTLET PIPE TO PREVENT RISER FROM BREAKING AWAY FROM THE BASE. MINIMUM BASE WIDTH EQUALS 2 TIMES RISER DIAMETER.

EMBEDDED SECTION OF ALUMINUM OR ALUMINIZED PIPE SHALL BE PAINTED WITH ZINC CHROMATE OR EQUIVALENT.

CLOGGED OR DAMAGED SPILLWAYS SHALL BE REPAIRED IMMEDIATELY. TRASH AND OTHER DEBRIS SHALL BE REMOVED FROM THE BASIN AND RISER.

TRAP NO.	TEMPORARY RISER DIA TRd (IN)	TEMPORARY RISER CREST ELEV TRCE (FT)	TEMPORARY RISER MAT'L	TEMPORARY RISER COE ELEV (FT)	CONCRETE BASE LENGTH CBI (IN)	CONCRETE BASE WIDTH CBw (IN)	CONCRETE BASE THICKNESS CBt (IN)	TEMPORARY STUB BARREL RISER ELEV BIE (FT)	TEMPORARY STUB BARREL BARREL LENGHT SBI (FT)	TEMPORARY STUB BARREL DIA SBd (IN)	TEMPORARY STUB BARREL MAT'L	TEMPORARY STUB BARREL INVERT IN ELEV SBIE	STRUCTURE No.
BASIN #1	18	542.00	CMP	540.78	36	36	8	540.05	5	15	CMP	540.00	12

STANDARD CONSTRUCTION DETAIL #8-5
DRY SEDIMENT TRAP TEMPORARY RISER
FOR INLET #12

NOT TO SCALE

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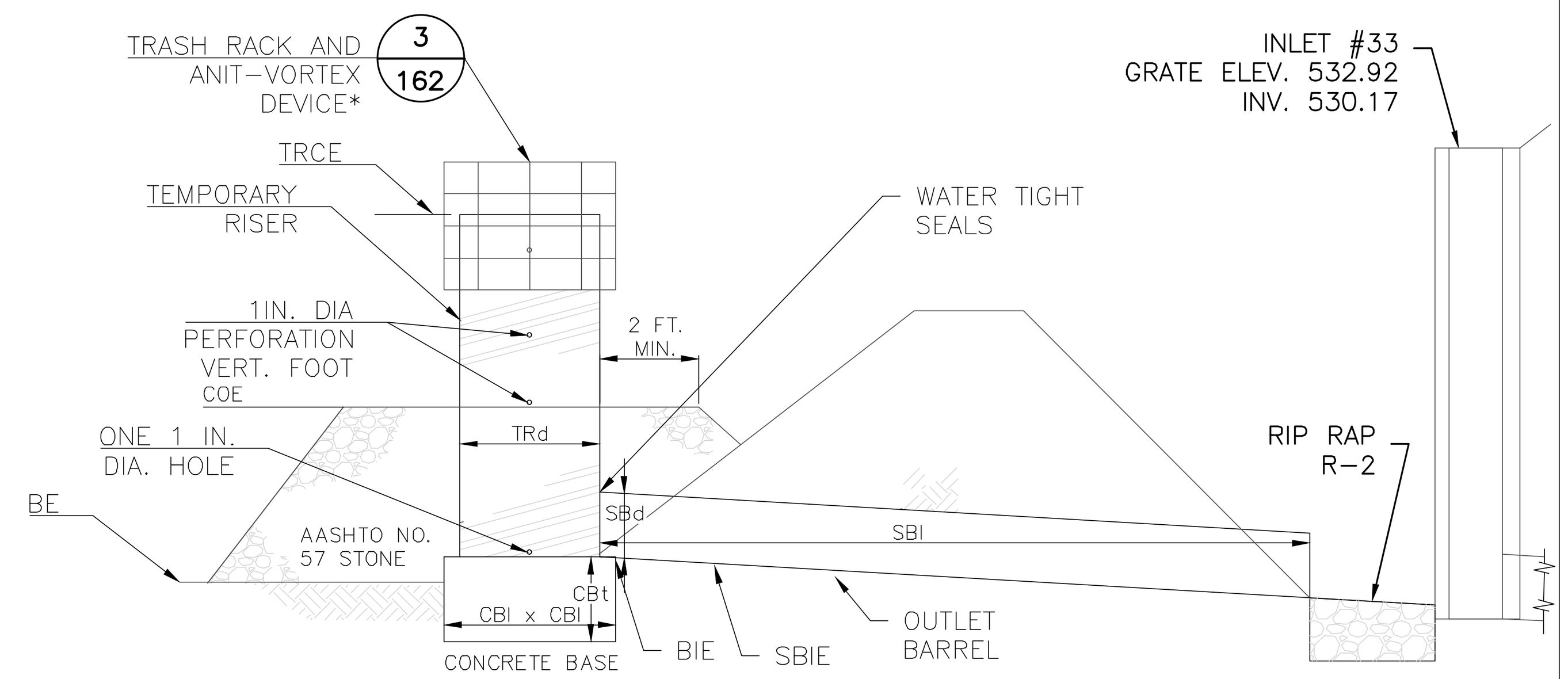

* SEE STANDARD CONSTRUCTION DETAIL #7-5, TRASH RACK AND ANTI-VORTEX DEVICE

NOTES:

IN SPECIAL PROTECTION WATERSHEDS, ANCHOR A 6 IN. LAYER OF COMPOST SHALL BE SECURELY ANCHORED ON TOP OF STONE (HQ) OR REPLACE STONE WITH SUITABLE COMPOST FILTER SOCK (HQ OR EV).

A MINIMUM OF 2-#8 REBAR SHALL BE PLACED AT RIGHT ANGLES AND PROJECTING THROUGH SIDES OF RISER TO ANCHOR IT TO CONCRETE BASE. REBAR SHALL PROJECT A MINIMUM OF 1/4 RISER DIAMETER BEYOND OUTSIDE OF RISER.

CONCRETE BASE SHALL BE POURED IN SUCH A MANNER SO AS TO INSURE THAT CONCRETE FILLS BOTTOM OF RISER TO INVERT OF THE OUTLET PIPE TO PREVENT RISER FROM BREAKING AWAY FROM THE BASE. MINIMUM BASE WIDTH EQUALS 2 TIMES RISER DIAMETER.

EMBEDDED SECTION OF ALUMINUM OR ALUMINIZED PIPE SHALL BE PAINTED WITH ZINC CHROMATE OR EQUIVALENT.

CLOGGED OR DAMAGED SPILLWAYS SHALL BE REPAIRED IMMEDIATELY. TRASH AND OTHER DEBRIS SHALL BE REMOVED FROM THE BASIN AND RISER.

TRAP NO.	TEMPORARY RISER DIA TRd (IN)	TEMPORARY RISER CREST ELEV TRCE (FT)	TEMPORARY RISER MAT'L	TEMPORARY RISER COE ELEV (FT)	CONCRETE BASE LENGTH CBI (IN)	CONCRETE BASE WIDTH CBw (IN)	CONCRETE BASE THICKNESS CBt (IN)	TEMPORARY STUB BARREL RISER ELEV BIE (FT)	TEMPORARY STUB BARREL BARREL LENGHT SBI (FT)	TEMPORARY STUB BARREL DIA SBd (IN)	TEMPORARY STUB BARREL MAT'L	TEMPORARY STUB BARREL INVERT IN ELEV SBIE	STRUCTURE No.
SED. TRAP 3A	27	533.49	CMP	532.65	45	45	8	531.00	25	21	CMP	530.50	33

STANDARD CONSTRUCTION DETAIL #8-5
DRY SEDIMENT TRAP TEMPORARY RISER
FOR MANHOLE #33

NOT TO SCALE

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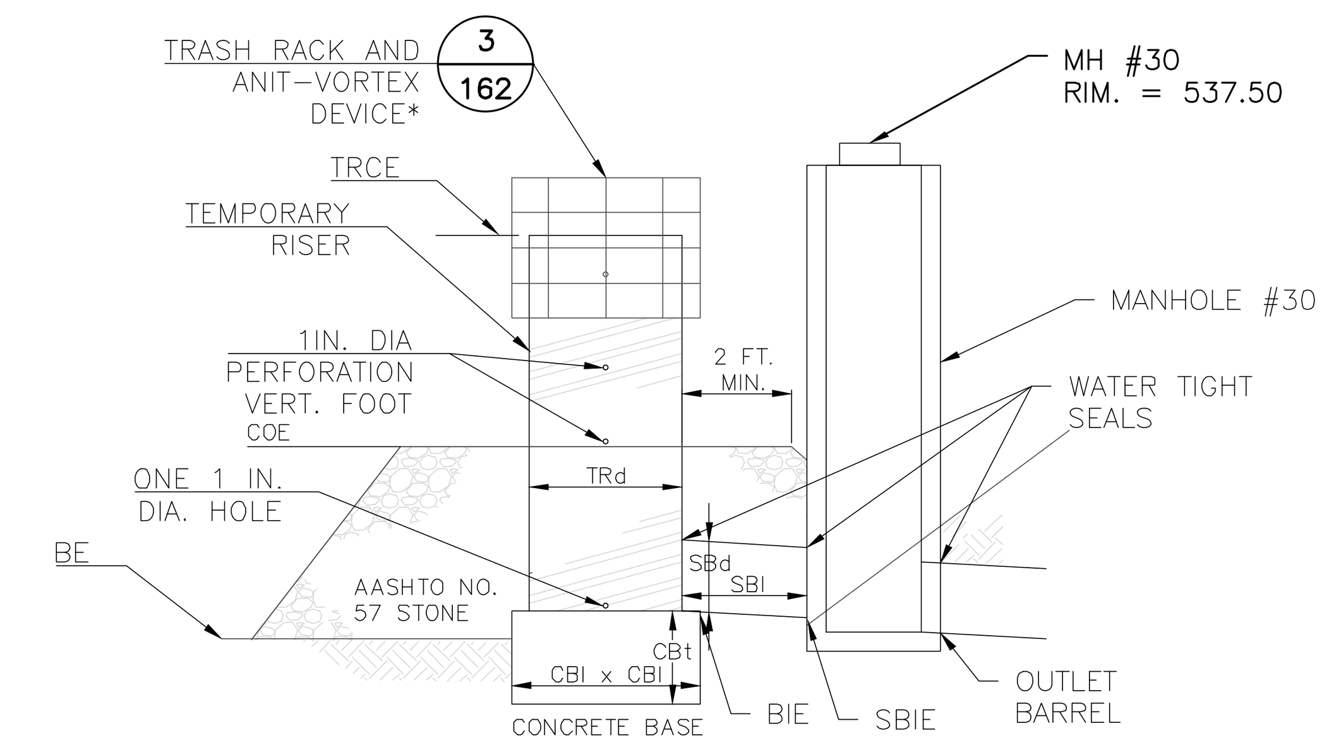

* SEE STANDARD CONSTRUCTION DETAIL #7-5, TRASH RACK AND ANTI-VORTEX DEVICE

NOTES:

IN SPECIAL PROTECTION WATERSHEDS, ANCHOR A 6 IN. LAYER OF COMPOST SHALL BE SECURELY ANCHORED ON TOP OF STONE (HQ) OR REPLACE STONE WITH SUITABLE COMPOST FILTER SOCK (HQ OR EV).

A MINIMUM OF 2-#8 REBAR SHALL BE PLACED AT RIGHT ANGLES AND PROJECTING THROUGH SIDES OF RISER TO ANCHOR IT TO CONCRETE BASE. REBAR SHALL PROJECT A MINIMUM OF 1/4 RISER DIAMETER BEYOND OUTSIDE OF RISER.

CONCRETE BASE SHALL BE POURED IN SUCH A MANNER SO AS TO INSURE THAT CONCRETE FILLS BOTTOM OF RISER TO INVERT OF THE OUTLET PIPE TO PREVENT RISER FROM BREAKING AWAY FROM THE BASE. MINIMUM BASE WIDTH EQUALS 2 TIMES RISER DIAMETER.

EMBEDDED SECTION OF ALUMINUM OR ALUMINIZED PIPE SHALL BE PAINTED WITH ZINC CHROMATE OR EQUIVALENT.

CLOGGED OR DAMAGED SPILLWAYS SHALL BE REPAIRED IMMEDIATELY. TRASH AND OTHER DEBRIS SHALL BE REMOVED FROM THE BASIN AND RISER.

TRAP NO.	TEMPORARY RISER DIA TRd (IN)	TEMPORARY RISER CREST ELEV TRCE (FT)	TEMPORARY RISER MAT'L	TEMPORARY RISER COE ELEV (FT)	CONCRETE BASE LENGTH CBI (IN)	CONCRETE BASE WIDTH CBw (IN)	CONCRETE BASE THICKNESS CBt (IN)	TEMPORARY STUB BARREL RISER ELEV BIE (FT)	TEMPORARY STUB BARREL BARREL LENGHT SBI (FT)	TEMPORARY STUB BARREL DIA SBd (IN)	TEMPORARY STUB BARREL MAT'L	TEMPORARY STUB BARREL INVERT IN ELEV SBIE	STRUCTURE No.
SED. TRAP 3B	27	533.49	CMP	532.65	45	45	8	531.00	18	21	CMP	530.50	30

STANDARD CONSTRUCTION DETAIL #8-5
DRY SEDIMENT TRAP TEMPORARY RISER
FOR MANHOLE #30

NOT TO SCALE

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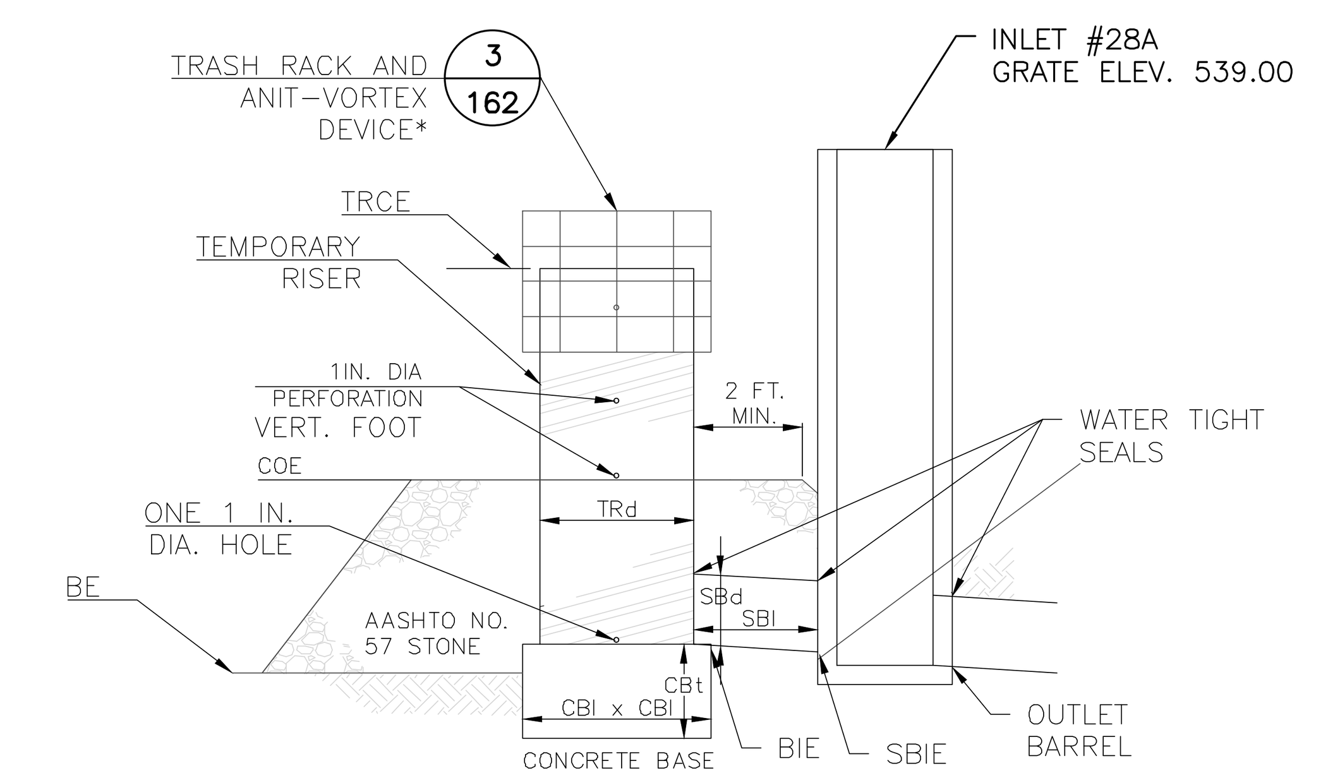

* SEE STANDARD CONSTRUCTION DETAIL #7-5, TRASH RACK AND ANTI-VORTEX DEVICE

NOTES:

IN SPECIAL PROTECTION WATERSHEDS, ANCHOR A 6 IN. LAYER OF COMPOST SHALL BE SECURELY ANCHORED ON TOP OF STONE (HQ) OR REPLACE STONE WITH SUITABLE COMPOST FILTER SOCK (HQ OR EV).

A MINIMUM OF 2-#8 REBAR SHALL BE PLACED AT RIGHT ANGLES AND PROJECTING THROUGH SIDES OF RISER TO ANCHOR IT TO CONCRETE BASE. REBAR SHALL PROJECT A MINIMUM OF 1/4 RISER DIAMETER BEYOND OUTSIDE OF RISER.

CONCRETE BASE SHALL BE POURED IN SUCH A MANNER SO AS TO INSURE THAT CONCRETE FILLS BOTTOM OF RISER TO INVERT OF THE OUTLET PIPE TO PREVENT RISER FROM BREAKING AWAY FROM THE BASE. MINIMUM BASE WIDTH EQUALS 2 TIMES RISER DIAMETER.

EMBEDDED SECTION OF ALUMINUM OR ALUMINIZED PIPE SHALL BE PAINTED WITH ZINC CHROMATE OR EQUIVALENT.

CLOGGED OR DAMAGED SPILLWAYS SHALL BE REPAIRED IMMEDIATELY. TRASH AND OTHER DEBRIS SHALL BE REMOVED FROM THE BASIN AND RISER.

TRAP NO.	TEMPORARY RISER DIA TRd (IN)	TEMPORARY RISER CREST ELEV TRCE (FT)	TEMPORARY RISER MAT'L	TEMPORARY RISER COE ELEV (FT)	CONCRETE BASE LENGTH CBI (IN)	CONCRETE BASE WIDTH CBw (IN)	CONCRETE BASE THICKNESS CBt (IN)	TEMPORARY STUB BARREL RISER ELEV BIE (FT)	TEMPORARY STUB BARREL BARREL LENGHT SBI (FT)	TEMPORARY STUB BARREL DIA SBd (IN)	TEMPORARY STUB BARREL MAT'L	TEMPORARY STUB BARREL INVERT IN ELEV SBIE	STRUCTURE No.
SED. BASIN #4	24	537.35	CMP	536.30	42	42	8	535.60	24	21	CMP	535.39	28A

STANDARD CONSTRUCTION DETAIL #8-5
DRY SEDIMENT TRAP TEMPORARY RISER
FOR INLET #28A

NOT TO SCALE

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NO.	REVISIONS	DATE	ENGR.	DATE	ISSUED FOR
2	REVISED RIPRAP DETAIL	4/2/21	JES		
1	GENERAL REVISIONS	3/11/21	JES	3/12/21	ISSUE FOR BIDS

BCM ENGINEERS
ATC GROUP SERVICES LLC
920 Germantown Pike, Suite 200 Plymouth Meeting, PA 19462

DESIGN ENGR. GTA	APPROVED	
DRAWN BY RC		
PROJECT ENGR. JES	APPROVED	
PROJECT MGR. JES		
CHECKED BY JFB	DATE 08/31/20	

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JEFFREY E. SKINNER ENGINEER NO. 42652-E

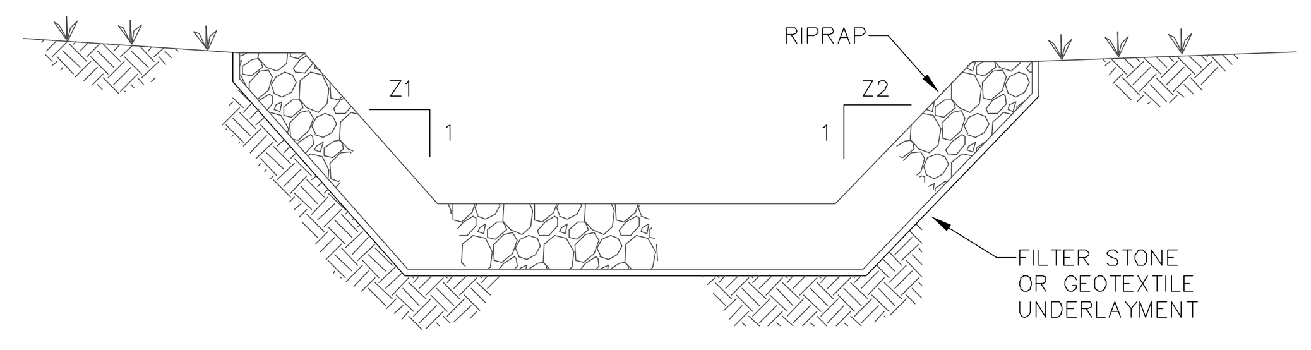
REGISTERED PROFESSIONAL ENGINEER

CUMRU TOWNSHIP
BERKS COUNTY, PENNSYLVANIA

UTILITIES INSTALLATION AND REPLACEMENT, ROADWAY AND DRAINAGE IMPROVEMENTS
CUMRU TOWNSHIP MUNICIPAL CAMPUS AND VICINITY

EROSION & SEDIMENT CONTROL
E&SC DETAILS

SCALE: AS SHOWN
PROJECT NO.: Z057000415
DRAWING NO.: 162
SHEET OF



(LOOKING DOWNSTREAM)
CHANNEL CROSS-SECTION

CHANNEL NO.	LENGTH	BOTTOM WIDTH B (FT)	DEPTH D (FT)	Z1 (FT)	Z2 (FT)	RIPRAP GRADATION (R-_)	RIPRAP DEPTH t (IN)	UNDERLAYMENT	UNDER-LAYMENT THICKNESS
SWALE 1A	152 LF	2	1.25	3	3	R-3	12	NO	N/A
SWALE 1B & EW 41	168 LF	1	0.5	4	4	R-3	12	NO	N/A
SWALE 2	157 LF	1	0.50	4	4	R-3	12	NO	N/A
SWALE/BERM #10	132 LF	1.50	1.00	4	4	R-4	18	NO	N/A
SWALE/BERM #11	309 LF	1.25	1.00	3	3	R-4	18	GEOTEXTILE	6"

NOTES:

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

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

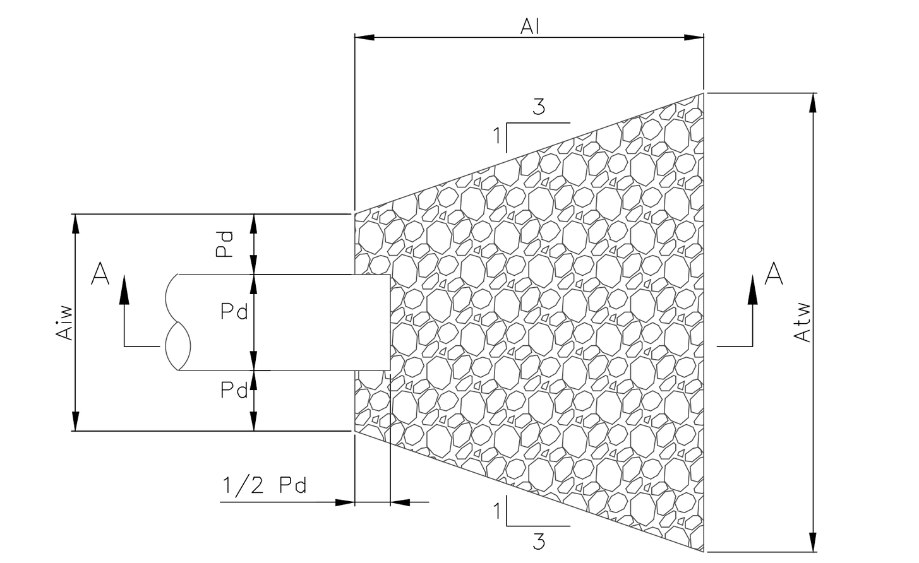
CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION. SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE.

DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.

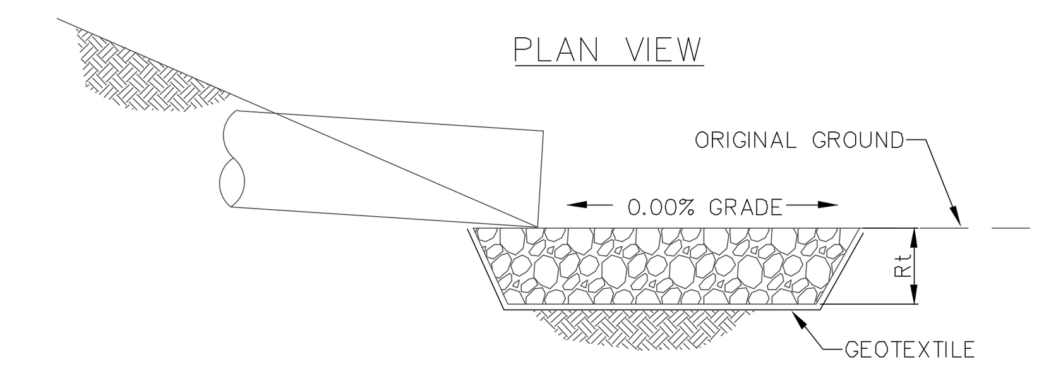
THE MINIMUM ROCK THICKNESS (t) SHALL BE 1.5 TIMES THE MAX ROCK SIZE.

RIPRAP CHANNEL (SCD 6-3) 1/163

N.T.S.



PLAN VIEW



SECTION A-A

OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP SIZE R-_	RIPRAP THICK. Rt (IN)	APRON LENGTH Al (FT)	APRON INITIAL WIDTH Aiw (FT)	APRON TERMINAL WIDTH Atw (FT)	SPECIAL CONDIT.
15	36	R-4	18	14	9	14	MATCH CHANNEL
29	24	R-4	18	10	6	16	----
34 (△2)	24	R-4	18	10	6	10	

NOTES:

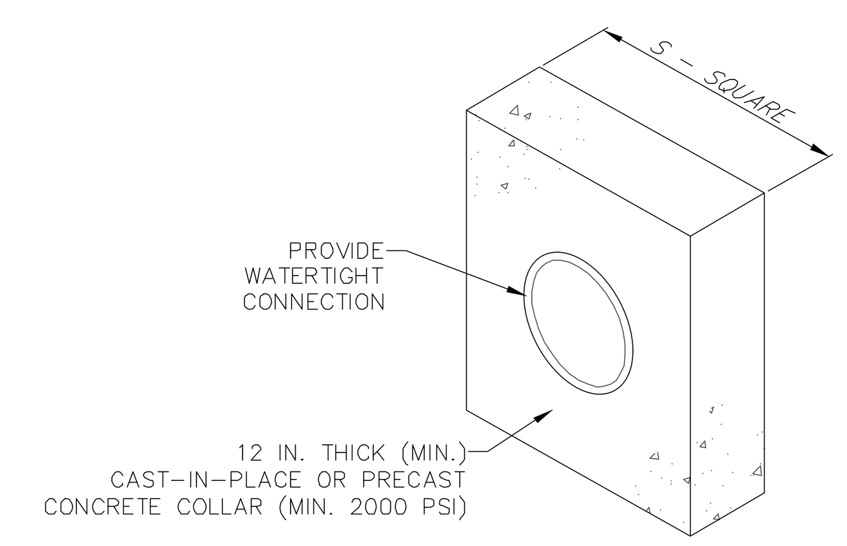
ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

EXTEND RIPRAP ON BACK SIDE OF APRON TO AT LEAST 1/2 DEPTH OF PIPE ON BOTH SIDES TO PREVENT SCOUR AROUND THE PIPE.

RIPRAP APRON AT PIPE OUTLET W/ ENDWALL (SCD 9-2) 2/163

N.T.S.



BASIN OR TRAP NO.	PIPE SIZE (IN)	S (IN)	NO. OF COLLARS	RISER TO FIRST COLLAR (FT)	COLLAR SPACING (FT)
BASIN 1	18	42	3	39	13
BASIN 2	24	72	2	35	20

NOTES:

ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.

COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

STANDARD CONSTRUCTION DETAIL #7-16
CONCRETE ANTI-SEEP COLLAR FOR PERMANENT BASINS OR TRAPS 3/163

NOT TO SCALE

NO.	REVISIONS	DATE	ENGR.	DATE	ISSUED FOR
△2	REVISED RIPRAP DETAIL	4/2/21	JES	4/6/21	ADDENDUM #1
△1	GENERAL REVISIONS	3/11/21	JES	3/12/21	ISSUE FOR BIDS

BCM ENGINEERS
ATC GROUP SERVICES LLC
920 Germantown Pike, Suite 200 Plymouth Meeting, PA 19462

DESIGN ENGR. GTA	APPROVED	
DRAWN BY RC		
PROJECT ENGR. JES	APPROVED	
PROJECT MGR. JES		
CHECKED BY JFB	DATE 08/31/20	

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JEFFREY E. SKINNER ENGINEER NO. 42662-E

REGISTERED PROFESSIONAL ENGINEER

CUMRU TOWNSHIP
BERKS COUNTY, PENNSYLVANIA
UTILITIES INSTALLATION AND REPLACEMENT, ROADWAY AND DRAINAGE IMPROVEMENTS
CUMRU TOWNSHIP MUNICIPAL CAMPUS AND VICINITY

EROSION & SEDIMENT CONTROL
E&SC DETAILS

SCALE: AS SHOWN
PROJECT NO.: Z057000415
DRAWING NO.: 163
SHEET: OF

S:\57FILESERVER\Projects\Cumru\Z057000415 - Reed\dwg\104-105 E&S NOTES AND DETAILS Cumru 2018 - REED.dwg, 163 DETAILS, 7/19/2021 10:17:57 AM

I. GENERAL

A. THE CONTRACTOR SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED THROUGHOUT THE DURATION OF THE PROJECT.

BEFORE INITIATING ANY REVISIONS TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN, OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED E&S CONTROL PLAN, THE CONTRACTOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE BERKS COUNTY CONSERVATION DISTRICT, 1238 COUNTY WELFARE ROAD, SUITE 200, LEESPORT, PA 19533–9710. (610) 372–4657 EXT. 201, PRIOR TO BEGINNING LAND DISTURBANCE.

THE CONTRACTOR SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY THE APPROPRIATE CONSERVATION DISTRICT, AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL SOIL AND/OR ROCK SPOIL AND BORROW AREAS, REGARDLESS OF THEIR LOCATIONS.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO IMPLEMENT THIS PLAN IN THE FIELD AND MEET ALL STATE AND LOCAL REGULATIONS PERTAINING TO IT. THE CONTRACTOR SHALL ASSIGN THIS RESPONSIBILITY TO A PERSON EXPERIENCED IN SEDIMENT AND EROSION CONTROL PROCEDURES. MODIFICATIONS OR DEVIATIONS FROM THIS PLAN WILL BE ALLOWED ONLY IF THE CONTRACTOR FIRST OBTAINS WRITTEN PERMISSION FROM THE AGENCIES HAVING JURISDICTION. A COPY OF THIS PLAN SHALL BE KEPT AT THE PROJECT SITE.

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING, AS WELL AS CUTS AND FILLS, SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.

2. AT LEAST SEVEN (7) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, SUB–CONTRACTORS, THE LANDOWNER, READING AREA WATER AUTHORITY OFFICIALS, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE BERKS COUNTY CONSERVATION DISTRICT TO AN "ON–SITE PRE–CONSTRUCTION MEETING".

3. AT LEAST THREE (3) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM INCORPORATED AT 1–800–242–1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.

4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT, OR BY THE DEPARTMENT, PRIOR TO IMPLEMENTATION.

5. PARTICULAR ATTENTION SHOULD BE GIVEN TO AREAS OF STEEP TOPOGRAPHY AND HIGHLY ERODIBLE SOILS. CLEARED AREAS SHALL BE KEPT TO A MINIMUM AND TO THE SHORTEST PRACTICAL DISTANCE AHEAD OF CONSTRUCTION. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES, POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION, AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.

6. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 & 287.1 ET SEQ. NO BUILDING MATERIALS, WASTES, OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.

7. ALL OFF–SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT, OR THE DEPARTMENT, FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.

8. SHOULD UNFORESEEN EROSIVE CONDITIONS DEVELOP DURING CONSTRUCTION, THE CONTRACTOR SHALL TAKE ACTION TO REMEDY SUCH CONDITIONS AND TO PREVENT DAMAGE TO ADJACENT PROPERTIES AS A RESULT OF INCREASED RUNOFF AND/OR SEDIMENT DISPLACEMENT. STOCKPILES OF WOOD CHIPS, HAY BALES, CRUSHED STONE AND OTHER MULCHES SHALL BE HELD IN READINESS TO DEAL IMMEDIATELY WITH EMERGENCY PROBLEMS OF EROSION.

9. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP–001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, BUT QUALIFYING AS CLEAN FILL, DUE TO ANALYTICAL TESTING.

10. PUMPING OF ALL WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.

11. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPs SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPs AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING, MUST BE PERFORMED IMMEDIATELY.
IF THE E&S BMPs FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPs, OR MODIFICATIONS OF THOSE INSTALLED, WILL BE REQUIRED.

12. A LOG SHOWING DATES THAT E&S BMPs WERE INSPECTED, AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED, SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.

13. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY, OR SIDEWALK, SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.

14. ALL SEDIMENT REMOVED FROM BMPs SHALL BE DISPOSED OF IN THE MANNER DESCRIBED IN THE PLAN DRAWINGS.

15. AREAS WHICH ARE TO BE TOPSOILED, SHALL BE SCARIFIED TO A MINIMUM DEPTH OF THREE (3) TO FIVE (5) INCHES, 6 TO 12 INCHES ON COMPACTED SOILS, PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING.
FILL–OUT SLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.

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

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

18. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS, THAT WOULD INTERFERE WITH, OR PREVENT, CONSTRUCTION OF SATISFACTORY FILLS.

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

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

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

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

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

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

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

26. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.

27. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL, OR CONVERSION, OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.

28. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.

29. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT–LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

II. EROSION & SEDIMENT CONTROL MEASURES

A. ROCK CONSTRUCTION ENTRANCE (IF NECESSARY)

1. A ROCK CONSTRUCTION ENTRANCE SHALL BE PROVIDED, AS NEEDED, TO PREVENT THE TRACKING OR FLOW OF SEDIMENT ONTO AREAS OTHER THAN THE IMMEDIATE PROJECT SITE. SEE "STABILIZED CONSTRUCTION ENTRANCE" DETAIL.

2. ROCK CONSTRUCTION ENTRANCE THICKNESS WILL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL WILL BE MAINTAINED ON THE SITE FOR THIS PURPOSE. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PUBLIC ROADWAYS WILL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE.

B. PRESERVATION OF EXISTING VEGETATION

1. GOOD STANDS OF EXISTING VEGETATION ADEQUATE TO CONTROL EROSION SHOULD BE PRESERVED WHEREVER POSSIBLE. REGENERATION OF WOOD PLANTS SHOULD BE ENCOURAGED WHERE ACCEPTABLE. NEW VEGETATION, SOIL TREATMENTS, ETC. SHALL BE DONE AS SPECIFIED ON THE DRAWINGS AND IN THE APPLICABLE SECTIONS OF THE SPECIFICATIONS.

C. COMPOST FILTER SOCK

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

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

3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

5. COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER REPLACED WITHIN 24 HOURS OF INSPECTION.

6. BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER.

7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

D. INLET FILTER BAG

1. INLET FILTER BAGS SHOULD BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. FILTER BAGS SHOULD BE CLEANED AND/OR REPLACED WHEN THE BAG IS HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET.

2. ACCUMULATED SEDIMENT SHOULD BE DISPOSED IN THE APPROVED MANNER. BAGS THAT WILL BE REUSED SHOULD BE RINSED AT A LOCATION WHERE THE RINSE WATER WILL ENTER A SEDIMENT TRAP OR SEDIMENT BASIN.

3. NEEDED REPAIRS SHOULD BE INITIATED IMMEDIATELY AFTER THE INSPECTION.

4. DAMAGED FILTER BAGS SHOULD BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS.

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

E. PUMPED WATER

1. SEDIMENTS FILTER BAG SHALL BE INSTALLED AT PUMP DISCHARGE TO FILTER PUMPED WATER IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. BAG SHALL FILTER PARTICLES LARGER THAN 150 MICRONS AND BE MANUFACTURED FROM NON–WOVEN GEOTEXTILE MATERIAL.

2. A MINIMUM OF ONE CUBIC FOOT OF STORAGE CAPACITY FOR EACH GALLON PER MINUTE OF THE DEWATERING PUMPING RATE SHALL BE PROVIDED TO INSURE STRUCTURE FAILURE WILL NOT OCCUR.

F. PUMPED WATER FILTER BAG:

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

PROPERTY	TEST METHOD	MINIMUM STANDARD
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

2. A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

3. BAGS SHALL BE LOCATED IN WELL–VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON–ERODIBLE AND NON–POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

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

5. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

6. THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

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

III. TEMPORARY STABILIZATION

△2 A. ALL INACTIVE DISTURBED AREAS ARE TO BE STABILIZED IMMEDIATELY.

1. VEGETATIVE COVER SHALL BE PROVIDED IN AREAS REQUIRING TEMPORARY STABILIZATION DURING CONSTRUCTION, AS FOLLOWS:

   a. FERTILIZER: APPLY 10–20–20 FERTILIZER, OR EQUIVALENT, AT THE RATE OF 150 LBS PER ACRE.

   b. LIMESTONE: SHALL BE AN AGRICULTURAL GRADE LIME STONE EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDES, AND APPLIED AT THE RATE OF 1 TON PER ACRE.

   c. SEED TYPE SHALL BE AS INDICATED BELOW:

2. OPTIMUM SEEDING DATES ARE, FEBRUARY 15 THROUGH MAY 1, OR AUGUST 15 THROUGH OCTOBER 15 FOR THE FOLLOWING SPECIES:

SPECIES	POUNDS PER ACRE	OPTIMUM SEED DEPTH (DOUBLE FOR SANDY SOIL)
ANNUAL RYEGRASS	40	0.5 INCH
PERENNIAL RYEGRASS	40	0.5 INCH
OATS	86	1.0 INCH
BARLEY	96	1.0 INCH

3. OPTIMUM SEEDING DATES ARE, MAY 1 THROUGH AUGUST 15 FOR THE FOLLOWING SPECIES:

SPECIES	POUNDS PER ACRE	OPTIMUM SEED DEPTH (DOUBLE FOR SANDY SOIL)
PEARL MILLET	20	1.0 INCH
SUDAN GRASS	30	1.0 INCH
MILLET (GERMAN OR HUNGARIAN)	30	1.0 INCH
WEEPING LOVEGRASS	5	1.0 INCH

B. MULCHING

1. MULCHING SHALL BE PROVIDED AS REQUIRED IN AREAS DIFFICULT TO VEGETATE AND DURING OFF–SEASON OPERATIONS. MULCHING METHODS AND MATERIALS SHALL CONFORM TO THE FOLLOWING:

   a. MULCH MATERIALS SHALL BE UNROTTED SALT HAY, HAY OR SMALL GRAIN STRAW APPLIED AT THE RATE OF 3 TONS PER ACRE. MULCH BLOWERS SHALL NOT GRIND OR CHOP THE MATERIAL.

   b. MULCH SHALL BE SPREAD UNIFORMLY BY HAND, OR MECHANICALLY, SO THAT APPROXIMATELY 75 PERCENT TO 95 PERCENT OF THE SOIL SURFACE WILL BE COVERED.

   c. MULCH ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF SLOPES AND COSTS.

      (1. PEG AND TWINE – DRIVE 8 TO 10 INCH PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET, IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRISS–CROSS AND A SQUARE PATTERN, SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.

      (2. MULCH NETTING – STAPLE PAPER, JUTE, COTTON OR PLASTIC NETTING TO THE SOIL SURFACE. USE A DEGRADABLE NETTING IN AREAS TO BE MOWED.

      (3. LIQUID MULCH BINDERS – MAY BE USED TO ANCHOR SALT HAY, HAY OR STRAW MULCHES.

      (4. APPLICATIONS SHOULD BE HEAVIER AT EDGES WERE WIND CATCHES THE MULCH, IN VALLEYS AND AT CRESTS OF BANKS. REMAINDER OF AREA SHOULD BE UNIFORM IN APPEARANCE.

      (5. WOOD–FIBER OR PAPER–FIBER MULCH AT THE RATE OF 1,500 POUNDS PER ACRE MAY BE APPLIED BY A HYDROSEEDER. USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.

C. OTHER

1. WHERE EXCESSIVE SOIL EROSION, TRACKING, OR FLOWING OF SEDIMENT IS EVIDENT OR ANTICIPATED, A MINIMUM OF 4 INCHES OF CRUSHED STONE SHALL BE PLACED WITHIN THE AFFECTED AREA AND MAINTAINED UNTIL PERMANENT STABILIZATION IS PROVIDED. ADDITIONAL STONE SHALL BE PLACED, AS REQUIRED, UNTIL STABILIZATION IS ACHIEVED.
CRUSHED STONE SHALL CONFORM TO AASHTO DESIGNATION M43, SIZE NO. 2 (2–1/2" TO 1–1/2").

2. UPON COMPLETION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY, THE OPERATOR SHALL STABILIZE IMMEDIATELY THE DISTURBED AREAS TO PROTECT FROM ACCELERATED EROSION. DURING NON–GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH TEMPORARY SEEDING SPECIFICATIONS. DISTURBED AREAS, WHICH ARE EITHER AT FINISHED GRADE OR WILL NOT BE REDISTURBED WITHIN 1 YEAR, MUST BE STABILIZED IN ACCORDANCE WITH PERMANENT SEEDING SPECIFICATIONS.

3. DIVERSION CHANNELS, SEDIMENTATION BASINS, SEDIMENT TRAPS, AND STOCKPILES MUST BE STABILIZED IMMEDIATELY.

4. MULCH WITH MULCH CONTROL NETTING OR EROSION BLANKETS, MUST BE INSTALLED ON ALL SLOPES GREATER THAN 3:1.

IV. FINAL SEEDING

A. GENERAL

△2 1. NO MORE THAN 15,000 SQUARE FEET OF DISTURBED AREA SHALL ACHIEVE FINAL GRADE BEFORE STABILIZATION BY VEGETATIVE COVER WITH SEEDING AND MULCHING.

2. AFTER THE CONSTRUCTION PHASE IS COMPLETE, PERMANENT VEGETATION ON THE AREAS THAT HAVE BEEN DISTURBED SHALL BE REESTABLISHED AS RAPIDLY AS POSSIBLE. IF THE COMPLETION OF THE CONSTRUCTION ACTIVITIES DOES NOT COINCIDE WITH A SEASON IN WHICH PERMANENT VEGETATION CAN BE STARTED, AN INTERIM OR TEMPORARY PROGRAM IS REQUIRED. THIS SHALL INCLUDE SOIL STABILIZATION, MULCHING OR THE ESTABLISHMENT OF FILTER STRIPS. IN ANY CASE, SEDIMENT AND EROSION CONTROLS SHALL BE INSTALLED PROMPTLY AND THEIR MAINTENANCE ASSURED.

4. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM OF 70% UNIFORM PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON–VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENTS.

5. AT A MINIMUM, PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED BY PROVIDING THE FOLLOWING:

   a. FERTILIZER: 500 LBS PER ACRE OF 10–20–20, OR EQUIVALENT.

   b. LIMESTONE: SHALL BE AN AGRICULTURAL GRADE LIME STONE EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDES, AND APPLIED AT THE RATE OF 4 TONS PER ACRE.

   c. PERMANENT SEEDING (MINIMUM REQUIREMENTS) SHALL BE AS FOLLOWS:

△2 LAWN SEED

	% BY WEIGHT	MINIMUM % PURITY	MINIMUM % GERMINATION	MAXIMUM % WEED SEED
Kentucky bluegrass (2 or more varieties – none greater than 25% of total)	50	90	80	.20
Pennfine Perennal Rye Grass	20	95	90	0.15
Pennlawn and Fescue	30	98	85	0.25
Special Areas – swales, diversion channels, and occassional water flow areas.				
Kentuck 31 Tall Fescue	80	98	85	0.25
Pennfine Perennial Rye Grass	20	95	90	.15

V. MAINTENANCE

A. INSPECTION SHALL BE MADE AT FREQUENT INTERVALS AND AFTER EACH STORM EVENT TO DETECT ANY IMPAIRMENT IN THE ABILITY OF THE EROSION CONTROL FACILITIES, INSTALLED AS PART OF THIS PLAN, TO CONTINUE TO FUNCTION EFFECTIVELY.

B. THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AND ANY STANDARD CONDITIONS RELATING TO SOIL EROSION AND SEDIMENT CONTROL, ISSUED AS PART OF ANY PERMITS, SHALL BE AVAILABLE AT THE IMMEDIATE SITE OF CONSTRUCTION ACTIVITY AT ALL TIMES.

C. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION CONTROLS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTION OF ALL EROSION AND SEDIMENTATION CONTROLS AFTER EACH STORM EVENT AND ON A WEEKLY BASIS. ALL PREVENTIVE AND REMEDIAL MAINTENANCE WORK,INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY.

CLEAN FILL AND CLEAN SPOIL NOTES

Clean Fill and clean spoils-----Uncontaminated, non–water soluble, non–decomposable, inert, solid material. This includes soil, rock, stone, and dredged material, that is separate from other waste and is recognizable as such. It does not include materials placed in or on the surface waters unless otherwise authorized, milled asphalt, or asphalt that has been processed for re–use, used asphalt, and brick, block or concrete from construction and demolition activities.

PADEP Ch. 102 E&SC Manual Soil Limitations

Soil Limitation	Resolution
Cutbacks Cave	Use Trench Shoring and/or Trench Boxes
Depth to Water Table	Manage Pumped Water
Depth to Bedrock	Anticipate Potential Need to Rip Rock For Excavation

Ur-Urban soils do not have specific limitations. Limitations listed are per PADEP Ch. 102 Manual, App. E, Table E.1 for typical utility construction.

The potential for erosion of exposed soils is addressed by strict adherence to the following requirements:
1. The seeding and mulching specifications
2. Installation of erosion control measures indicated on the approved erosion and sedimentation control plans
3. Limiting the areal extent and the maximum amount of soil disturbed at any one time
4. Limiting cut and fill slopes to a maximum 1V:3H wherever possible
5. Compliance with the sequence of construction notes.

TABLE 4.1
Compost Sock Fabric Minimum Specifications

Material Type	3 mil HDPE	5 mil HDPE	5 mil HDPE	Multi-Filament Polypropylene (MFPP)	Heavy Duty Multi-Filament Polypropylene (HDMFPP)
Material Characteristics	Photo-degradable	Photo-degradable	Bio-degradable	Photo-degradable	Photo-degradable
Sock Diameters	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
Tensile Strength		26 psi	26 psi	44 psi	202 psi
Ultraviolet Stability % Original Strength (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
Minimum Functional Longevity	6 months	9 months	6 months	1 year	2 years
Two-ply systems					
Inner Containment Netting	HDPE biaxial net Continuously wound Fusion-welded junctures 3/4" X 3/4" Max. aperture size				
Outer Filtration Mesh	Composite Polypropylene Fabric (Woven layer and non-woven fleece mechanically fused via needle punch) 3/16" Max. aperture size				
Sock fabrics composed of burlap may be used on projects lasting 6 months or less.					

Filtrexx & JMD

TABLE 4.2
Compost Standards

Organic Matter Content	80% - 100% (dry weight basis)
Organic Portion	Fibrous and elongated
pH	5.5 - 8.0
Moisture Content	35% - 55%
Particle Size	98% pass through 1" screen
Soluble Salt Concentration	5.0 dS/m (mmhos/cm) Maximum

Filtrexx

TABLE 11.1
Cubic Yards of Topsoil Required for Application to Various Depths

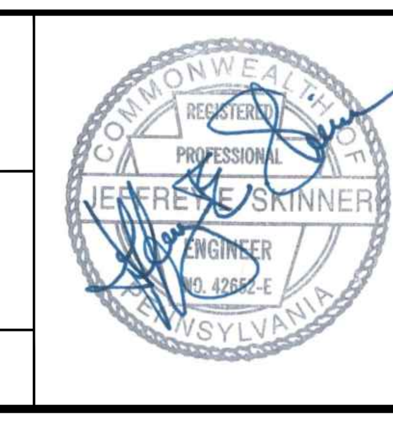
Depth (in)	Per 1,000 Square Feet	Per Acre
1	3.1	134
2	6.2	268
3	9.3	403
4	12.4	537
5	15.5	672
6	18.6	806
7	21.7	940
8	24.8	1,074

Adapted from VA DSWC

NO.	REVISIONS	DATE	ENGR.	DATE	ISSUED FOR
△2	REVISED DRAWING PER DEP LETTER, 4/12/21	04/16/21	JES		
△1	GENERAL REVISIONS	3/11/21	JES	3/12/21	ISSUE FOR BIDS

BCM ENGINEERS
ATC GROUP SERVICES LLC
920 Germantown Pike, Suite 200 Plymouth Meeting, PA 19462

DESIGN ENGR.	GTA	APPROVED	
DRAWN BY	RC		
PROJECT ENGR.	JES	APPROVED	
PROJECT MGR.	JES		
CHECKED BY	JFB	DATE	08/31/20



REGISTERED PROFESSIONAL ENGINEER

CUMRU TOWNSHIP
BERKS COUNTY, PENNSYLVANIA
UTILITIES INSTALLATION AND REPLACEMENT, ROADWAY AND DRAINAGE IMPROVEMENTS
CUMRU TOWNSHIP MUNICIPAL CAMPUS AND VICINITY

EROSION & SEDIMENT CONTROL
E&SC NOTES

SCALE: AS SHOWN
PROJECT NO.: Z057000415
DRAWING NO.: 164
SHEET: OF

PREPAREDNESS, PREVENTION AND CONTINGENCY PLAN NOTES

This plan is part of the NPDES permit application for the discharge of stormwater associated with construction activities and the related Erosion and Sediment Control Plan. It is required to comply with Chapter 101.3(b) of the Rules and Regulations of the Pennsylvania Department of Environmental Protection, and conditions under the NPDES permit.

1. Name of Permittee: Cumru Township
2. Name of Co-permittee (contractor): TBD

2. Name of Project: **Cumru Township**

3. Project Location: Cumru Township, Berks County, PA

4. List name(s) and telephone number(s) of responsible Township officials to be contacted in case of emergency (to be confirmed at pre-construction meeting):

Name	Day Phone #	Night Phone #
Daniel Rickard	**(570) 371-1906**	**(570) 371-1906**

5. List name and telephone number of the following:

Berks County emergency management:	**David Hahn –** Call 9-1-1
Nearest fire department station:	Cumru Fire Chief (**570) 348-4132**
Nearest hospital:	Reading Hospital, (484) 628-4357

6. Notification to the following agencies must be made immediately in the event of a spill of any polluting substances.

PADEP Regional Office:	Northeast Regional Office (Wilkes-Barre, PA) (570) 826-2511
PA Fish and Boat Commission:	Harrisburg, PA (717) 705-7800

7. List name and telephone number of any downstream water users, including drinking water supplies, industrial intakes and agricultural uses.
It is the permittee's/co-permittees responsibility to immediately contact water users if polluting material is released from the site.

–______________________________

____

8. Construction of improvement of existing sanitary sewer system, extension water main, extension gas main, improvement on Welsh Road and site work as shown on the permit drawings.

See NPDES permit drawings

9. Material and Waste Inventory

A. Pesticides and herbicides*
Name & Quantity (pounds or gallons)
None

B. Fertilizer*
Name & Quantity (pounds or gallons)
None

C. Other chemicals, such as paints, detergents, acids for cleaning, solvents, soil additives, concrete curing compounds:*
Name & Quantity (pounds or gallons)
Other chemicals will be brought on site if and as needed. It is not anticipated that an inventory of these materials will be stored on site.

*Any items listed under A, B or C above must have Material Safety Data Sheets (MSDS's) kept on the project premises.

D. Petroleum based products

Gasoline	________ gallons
Diesel fuel	________ gallons
Kerosene	________ gallons
Lubricating oil	________ gallons
Asphalts, tars	________ gallons
Other	________ gallons

Note: It is not anticipated that gasoline, diesel fuel, lubricating oils, etc. will be stored onsite. Heavy equipment will typically be serviced periodically by fuel trucks on an as-needed basis. Fueling operations will not performed near any streams, drainage ways or storm sewers, and will only be performed with proper supervision. Any liquid that is stored onsite must be kept within a diked area (lined with an impervious clay, concrete or synthetic membrane), sized to hold 110% of the largest container's capacity.

10. List the types and quantities of absorbent materials used for spill mitigation that are stored on premises. The quantities of absorbent booms, pads and other materials and equipment needed to contain spills and begin cleanup must be kept at the site. List the types and quantities each:

A selection of absorbent socks, mat pads, barrel top pads, etc., of various sizes will be kept onsite by the contractor.

11. During concrete work, steps shall be taken to assure that no pollution enters waterways. Concrete mixer truck washings shall be deposited onsite into a container specially-designed for the purpose. The container shall be located in a specified area as far upslope on the site as practicable to best prevent migration of materials into streams, drainage ways or storm sewers.

12. Particular attention shall be given to equipment refueling operations. Refueling shall only occur as far upslope on the site as practicable. The location shall be protected by a containment dike and secured from vandalism. Operators shall be familiar with the proper emergency response procedures and contact information in the event of a spill.

13. The site shall be inspected daily for evidence of existing or potential spills or leaks, vandalism, and the condition and quantity of cleanup materials.

14. Material Management Practices.

The following material management practices shall be used to reduce the risk of spills or other accidental discharge of materials and substances to storm water runoff:

A. Good Housekeeping:

The following good housekeeping practices shall be followed onsite during construction:
- All efforts shall be made to store only enough products onsite as are required to do the job.
- Materials stored onsite shall be stored in a neat, orderly manner in appropriate containers and, if possible, under a roof or other enclosure.
- Products shall be kept in their original containers with the original manufacturer's label.
- Substances shall not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product shall be used up before disposing of the container.
- Manufacturer's recommendations for proper use and disposal shall be strictly followed.
- The contractor's site superintendent shall perform daily inspections to ensure proper use and disposal of materials onsite.
- At least once per month, the contractor's safety consultant shall inspect the premises to confirm conformance to all OSHA regulations.

B. Hazardous Products:

The practices described below shall be used to reduce the risks associated with hazardous materials:
- Products shall be kept in their original containers unless they are not resealable.
- Original labels and material safety data sheets (MSDS's) shall be retained at the jobsite.
- If surplus materials must be disposed of, manufacturer's or local and State recommended methods for proper offsite disposal shall be followed.

15. Product-Specific Practices

The following product-specific practices shall be followed onsite:

A. Petroleum Products:
All onsite vehicles and equipment shall be monitored daily for leaks and shall receive regular preventive maintenance to reduce the chance of leakage. Petroleum products shall be stored in tightly-sealed containers which are clearly labeled. Any asphaltic material used onsite shall only be applied according to the manufacturer's recommendations.

B. Fertilizers:
Fertilizers used shall be applied only in the minimum amount recommended by the manufacturer. Once applied, fertilizer shall be worked into the soil to limit exposure to stormwater. Storage shall be in a covered shed. The contents of any partially-used bags of fertilizer shall be immediately transferred to a sealable plastic bin to avoid spills.

C. Chemical/Paints:
All containers shall be tightly sealed and stored when not in use. Excess paint shall not be disposed of in the storm sewer system, it shall be properly disposed of according to the manufacturer's instructions or per State and local requirements.

D. Concrete Truck Washout Materials:
Concrete truck washout materials shall be deposited onsite into a container specifically designed for the purpose. The container shall be located in a specific area as far upslope on the site as practicable to best prevent migration of materials into streams, drainage ways or storm sewers. Once cured and hardened, the concrete shall be removed from the site and properly disposed of.

16. Spill Prevention Practices

In addition to the good housekeeping and material management practices described above, the following practices shall be followed for spill prevention and cleanup:
- The manufacturer's recommended methods for spill cleanup shall be clearly posted, and site personnel shall be trained in the proper procedures and the location of the information and cleanup supplies.
- Materials and the equipment necessary for spill cleanup shall be kept onsite. Equipment and materials shall include, but not limited to:
Brooms, dust pans, mops, rags, gloves, goggles, absorbent granular material, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
- All spills shall be cleaned up immediately after discovery.
- The spill area shall be kept well ventilated and personnel shall wear appropriate protective clothing to prevent contact with a hazardous substance.
- All spills of toxic or hazardous material, regardless of the size of the spill, shall be reported immediately via text, email or in writing to the Engineer, the Owner, and the appropriate local and State government agencies.
- The spill prevention plan shall be revised to include measures to prevent any type of spill from recurring, and to confirm how to clean up a spill if there is another one. A description of the spill, what caused it, and the cleanup measures used shall also be included in the written spill report.
- The contractor's site superintendent responsible for the day-to-day site operations shall be the project's spill prevention and cleanup coordinator. The superintendent shall designate at least three (3) other site personnel, who shall receive spill prevention and cleanup training. The names and cell phone numbers of these responsible spill personnel shall be posted prominently onsite. These individuals shall each be made responsible for a particular phase of spill prevention and cleanup.

17. Site Security
All materials requiring security shall be kept locked within secure containers stored in a designated secure area.

18. All construction and site activities shall be performed in accordance with the specifications and plans approved by the appropriate governmental authorities. Activities may also be monitored and inspected by the municipal engineer, related agency inspectors, and the municipal water/sewer authorities.

EROSION & SEDIMENT CONTROL (E&SC) PLAN NARRATIVE

E&SC Plan Planning & Design 102.4(b)(4)
The E&SC Plans are separate from the PCSM Plans and are labeled "E&SC Plan" and are the final plans to be used during construction.

Documentation that the E&SC Plans was prepared by a person trained and experienced in E&SC design methods and techniques applicable to the size and scope of the project is provided in ATTACHMENT C.

The temporary erosion control measures provided during construction and restoration activities are designed to minimize soil loss, prevent pollution of Stillwater Run near the municipal campus and the unnamed tributary at the Ashley Run Clean Soils Site, both tributaries to Angelica Creek, in addition to the tributaries to Wyomissing Creek along Reed Street. These controls will also protect adjacent properties, and maximize protection of existing drainage features and vegetation.

The following measures and Best Management Practices (BMP's) shown on the E&SC Plans must be incorporated throughout the project's construction by the contractor:
- Limiting areas of disturbance, and preservation of existing vegetation wherever possible
- Temporary seeding and mulching applied immediately to all disturbed areas
- Proper silt fence and/or filter sock sediment barrier installation and maintenance
- Stabilized construction entrance installation and maintenance
- Restricting construction traffic to the site disturbed areas and stone driveways
- Pumped water filter bag installation and maintenance
- Erosion control matting along stream banks and steep slopes as needed
- Filter bag/stone & block inlet protection installation and maintenance

The above measures, shown throughout the E&SC Plans will:
- ✓ Minimize the extent and duration of earth disturbance;
- ✓ Maximize protection of existing site drainage features and vegetation;
- ✓ Minimize soil compaction; and
- ✓ Control/minimize the generation of increased stormwater runoff.

Existing topographic features of the project site and the immediate surrounding area §102.4(b)(5)(i)
The topography of the project site is shown on the drawings, by use of contours at one-foot intervals.

A USGS quadrangle location map is provided in ATTACHMENT D and on the plan cover sheet.

The project drawings incorporate both construction and E&SC information on the E&SC plan to aid the contractor in compliance with E&SC requirements during construction.

Soil Types, depth, slope, locations and limitations §102.4(b)(5)(ii)
The maps of soil types and limits related to the project were identified using the NRCS Web Soil Survey website. The soil survey map pertaining to the project is provided in ATTACHMENT E and is shown on the drawings.

Per the PADEP E&SC Chapter 102 Manual, Appendix E, there are no limitations listed for Urban land, Joanna complex (UpD). Other soils at the site can be used to determine the properties of this urban land. Soil at the project site include Neshaminy Silt Loam (NaB and NaC), Neshamniny gravelly silt loam (NhD) and the site is bordered by Brecknock channery silt loam (BpD). The table below describes the expected limitations for these soils.

Map Unit Symbol	Map Unity Name	Limitations
BpB	Brecknock channery silt loam, 3 to 8 percent slopes	N/A
BpC	Brecknock channery silt loam, 8 to 15 percent slopes	Slope
NaB	Neshaminy silt loam 3 to 8 percent slopes	Slopes
NaC	Neshaminy silt loam 8 to 15 percent slopes	Slopes
NaD	Neshaminy silt loam 15 to 25 percent slopes	Slopes
NhD	Neshaminy gravelly silt loam, 8 to 25 percent slopes, extremely boulder	Slopes, Depth to saturated zone
UpB	Urban land-Joanna complex, 0 to 8 percent slopes	Unknown/Undefined
UpD	Urban land-Joanna complex, 8 to 25 percent slopes	Unknown/Undefined

These limitations can be addressed with proper shoring of bulk excavations and use of trench boxes for linear excavations, the coating of exposed concrete and steel proposed for underground service, and standard pumping of water from excavations.

Preliminary sampling and testing of representative soils is being performed concurrently with the submittal of this application. Once construction starts, further sampling and testing will be performed on the underlying soils. Test results will be presented upon receipt and will be used in determining the proper disposal method for exported fill materials.

Since there are only a few construction-related notes on the plans, it is requested that it be deemed acceptable that the Construction Plans are included in the E&SC and PCSM (Restoration) Plan set. This provides better coordination to the contractor than having two separate plan sets in the field. Every effort has been made to ensure that the plan information shown is complete and legible.

Past, present and proposed land uses and proposed alteration to project site §102.4(b)(5)(iii)
From review of available online historical mapping, the past use(s) for the project sites for the prior fifty years indicate that the uses have been farming, vacant, residential homes, and roadways.

The present land use for the past five years has not changed.

The proposed work along E Fairview Street, Cedar Street, Reed Street, and Church Road will conclude with restoration of the existing residential (paved street) to existing conditions. Proposed work along Welsh Road includes raising the elevation of the road at the conclusion of utility line installation and replacement. Land to the west of Welsh Road will be regraded and a fire station built upon it.

Volume and rate of runoff from the project site and its upstream watershed area §102.4(b)(5)(iv)
A decrease in volume and peak rate of runoff from the site can be expected due to work completed during this phase of the project. The work includes removal of several impervious areas (garage, driveway, and pavilion), regrading of fields in front of the township building, and reconstruction of the stormwater management basin. Changes to the existing stormwater management basin will increase retention time in the basin. Regrading to the east of the township building includes installation of a new basin to manage other stormwater flows being directed further south along Welsh Road via road gutter lines that are to be improved. Summary of calculations results is in ATT J.

Location of all surface waters and their classification under Chapter 93 §102.4(b)(5)(v)
The receiving surface waters, tributaries to Wyomissing Creek and Angelica Creek, are shown and labeled on the drawings.

Per PADEP Chapter 93 classification, the designated use of the receiving stream basin, the Wyomissing Creek, is HQ-CWF (High Quality Cold Water Fishes) and MF (Migratory Fishes); it is a HQ designated watershed.

Angelica Creek has a designated use listed as CWF (Cold Water Fishes) and MF (Migratory Fishes); it is not a HQ or EV designated watershed. There is no existing use listed in Chapter 93.

Narrative description of the location and type of perimeter and onsite BMPs §102.4(b)(5)(vi)
The temporary erosion control measures to be provided during construction and restoration activities are designed to minimize soil loss, prevent water pollution of adjacent streams and rivers, protect adjacent properties, and maximize protection of existing drainage features and vegetation. The following E&SC Best Management Practices (BMP's) are incorporated in the design and details of the project:
- Limiting areas of disturbance and preservation of existing vegetation wherever possible.
- Temporary seeding and mulching to be applied immediately to all disturbed areas.
- Silt fence/filter sock sediment barrier
- Benching of slopes
- (Stabilized) Rock construction entrances
- Pumped water filter bags
- Erosion control matting along stream banks and steep slopes
- Filter bag inlet protection

Sequence of BMP installation and removal §102.4(b)(5)(vii)
A general construction sequence for the installation of piping and appurtenances, including installation and removal of temporary E&SC BMPs, is shown on the drawings.

Supporting calculations and measurements §102.4(b)(5)(viii)
Supporting calculations for the existing and replacement basins are included in ATT K.

Supporting calculations for the proposed new basin are included in ATT L

Plan drawings §102.4(b)(5)(ix)
Drawings describing the proposed earthmoving are included in the application. The limit of disturbance is shown on the drawings. The existing grading will generally be restored after the construction is completed. E&SC BMP details are included on the drawings.

Maintenance program §102.4(b)(5)(x)
Erosion and sediment control measures included in this plan shall be maintained after construction so that they individually and collectively perform the function for which they were designed.

During the work, the contractor will assign worker(s) experienced in erosion control measures to make inspections and preparing reports weekly and after rainfall events, to determine any maintenance or repair that may be required. Temporary features such as silt fence, inlet protection, and erosion control matting will be inspected and any needed maintenance or repair will be noted. After inspection, the preventative and remedial work needed will be determined and corrected immediately.

Sediment will not be permitted to accumulate to a depth sufficient to limit the effectiveness of the proposed E&S BMP(s). After final site stabilization has been achieved, only then will the temporary erosion and sediment BMP's be removed. Any areas disturbed during removal of the BMP's will be stabilized immediately.

The maintenance of the proposed BMP's is addressed in the notes on the drawings.

An inspection schedule for the proposed BMP's is addressed in the notes on the drawings.

A written report documenting inspections and repairs is specified in the notes on the drawings.

Recycling or disposal of materials §102.4(b)(5)(xi)
Potential construction wastes from a project of this type include: sediment collected in the trench water filtration system, disturbed sediments that may run overland, concrete truck washout materials, wood dunnage from equipment delivery pallets and concrete formwork, excess excavated materials, and typical construction debris. All of these wastes will be recycled or disposed of offsite as described in the standard general sediment control notes #A.10 & 11 on the permit plans (Drawing 163): i.e., per the PADEP Solid Waste Management Regulations (document 258-2182-773); no disposal will occur onsite.

Instructions for the proper recycling/offsite disposal of other materials are provided in the notes on the drawings and on the Preparedness, Prevention and Contingency (PPC) Plan which is included on the drawings and in ATT H.

Geologic formations/soil conditions that may have the potential to cause pollution §102.4(b)(5)(xii)
There are no known naturally-occurring geologic or other soil conditions that are anticipated to have the potential to cause pollution; measures to avoid, minimize or mitigate them are not applicable.

Potential thermal impacts to surface waters §102.4(b)(5)(xiii)
During the project, the thermal impacts of stormwater will be avoided, minimized, and mitigated by pumping water from the trenches through a filter bag and into a grassy area allowing time for water to cool before any may possibly run off into surface waters.

The post-construction thermal impacts of stormwater runoff from the project site will be avoided, minimized, and mitigated by restoring most disturbed areas to the cover conditions (or better) that existed prior to construction. For areas that were changed and not restored, the revitalized storm swales along the sites of Welsh Road will slow the first flush and allow for some to be retained and infiltrated or runoff to cool before entering waters of the Commonwealth.

E&S Plan designed and implemented to be consistent with PCSM Plan §102.4(b)(5)(xiv)
The proposed PCSM structural BMP stormwater management basins are shown on the E&SC Plan Maps. These areas are protected during construction as suggested in their implementation guidelines to prevent sediment from entering the system before they have been fully stabilized and to avoid compaction by construction equipment. Drainage area and ground cover calculations show that there is no expected increase in runoff peak rate. A summary of the results of the calculations are included to support this in ATT J.

There are no existing or proposed riparian buffers within the project site. Therefore the requirement that riparian buffers are shown outside limits of disturbance is not applicable. A wetland delineation was performed. Wetlands are located outside the project site and are labeled on the drawings.

Existing/proposed riparian forest buffers §102.4(b)(5)(xv)
The project site does not discharges to a High Quality or Exceptional Value watershed. The site and disturbance area is within 150 feet of a perennial or intermittent river, stream, or creek, lake, pond or reservoir, however, the project consists primarily of road maintenance activities. Therefore, the project meets the requirements for granting of a waiver listed in the following section(s) of Chapter 102.14:
- 102.14(d)(1)(v) Road maintenance activities so long as any existing riparian buffer is undisturbed to the extent practicable.

There are wetlands present to the east of the site, per review of the NWI mapping online, and these wetlands are shown on the project plans. These areas are not forested and are outside the limit of disturbance.

Antidegradation Analysis
The project site drains to an MS4. This MS4 drains to a wetland as shown on the plans. Wetlands are designated as EV by definition. The Antidegradation Analysis Module 3 is applicable and included.

△2 SEQUENCE OF EARTHMOVING RELATED ACTIVITY

CUMRU TOWNSHIP E&S SEQUENCE OF CONSTRUCTION FOR INSTALLING NEW WATER MAIN, NEW GAS MAIN TRENCH (PIPE BEING INSTALL BY OTHERS), SANITARY SEWER SYSTEMS REPLACEMENT, STORMWATER SYSTEMS, WELSH ROAD'S IMPROVEMENTS, CUMRU TOWNSHIP CAMPUS GRADING AND CUMRU TOWNSHIP CLEAN SPOILS STOCKPILE AREA.

CUMRU TOWNSHIP CLEAN SPOILS STOCKPILE AREA.
1. LIMIT OF DISTURBANCE SHALL BE MARKED PRIOR TO DISTURBANCE ACTIVITIES WITH ORANGE CONSTRUCTION FENCE.
2. INSTALL CONSTRUCTION ENTRANCE AS IT IS EXHIBITED ON THE PLAN.
3. INSTALL PERIMETER SUPER SILT FENCE.
4. STOCKPILE TOPSOIL AS SHOWN ON THE DRAWINGS AND INSTALL FILTER SOCK AROUND THE TOPSOIL.
5. IMMEDIATELY TEMPORARILY STABILIZE THE TOPSOIL STOCKPILE AND CLEAN SPOIL STOCKPILE WITH SEEDING AND MULCH UPON COMPLETION OR CESSATION OF EARTH DISTURBANCE FOR AT LEAST 4 DAYS.
6. AT THE END OF CONSTRUCTION OF CUMRU TOWNSHIP ADMINISTRATION CAMPUS, UTILITIES, AND WELSH ROAD. GRADE SITE WITH CLEAN STOCKPILE FILL. CONSTRUCTION SWALE/BERM #11. GRADED AREAS SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3" TO 5" PRIOR TO TOPSOIL PLACEMENT TO PERMIT BONDING TO THE TOPSOIL. NO MORE THAN 15,000 SQUARE FEET OF DISTURBED AREA SHALL REACH FINAL GRADE BEFORE INITIATING SEEDING AND MULCHING OPERATIONS.

CUMRU TOWNSHIP ADMINISTRATION/FIRE STATION CAMPUS AND WELSH ROAD.
1. LIMIT OF DISTURBANCE SHALL BE MARKED PRIOR TO DISTURBANCE ACTIVITIES WITH ORANGE CONSTRUCTION FENCE.
2. INSTALL CONSTRUCTION ENTRANCES AS IT IS DEPICTED ON THE PLAN.
3. LIMIT CLEARING AND GRUBBING TO ONLY WHAT IS NEEDED FOR INSTALL OF PERIMETER FILTER STOCK.
4. INSTALL INLET PROTECTION AS SHOWN ON THE THE PLAN WHEN WORKING ALONG WELSH ROAD.
5. REMOVE TOP SOILS AND PLACE IT IN THE AREA AS IT IS SHOWN ON THE PLAN. INSTALL FILTER STOCK AROUND THE TOPSOIL STOCKPILE. IMMEDIATELY STABILIZE THE TOPSOIL STOCKPILE WITH SEEDING AND MULCH.
6. **WITH A PROFESSIONAL ENGINEER PRESENT.** CONSTRUCT SEDIMENT TRAP #3A WITH SWALE #3 & #5 AND SEDIMENT TRAP #4A WITH SWALE #6. IMMEDIATELY STABILIZE THE DISTURBED AREAS WITH SEEDING AND MULCH.
7. **WITH A PROFESSIONAL ENGINEER PRESENT.** CONSTRUCT SEDIMENT TRAP FOR BASIN #1 AND INSTALL STORMWATER MANAGEMENT SYSTEM FROM INLET #12 TO END OF PIPE AS IT IS DEPICTED ON DRAWING #156. GRADE BASIN #1 TO THE FINAL GRADING. IMMEDIATELY STABILIZE THE DISTURBED AREAS WITH SEEDING AND MULCH.
8. REMOVE TWO (2) FEET OF SOIL FROM THE LOCATION OF THE FUTURE BUILDING PAD AND THE INTERIOR CAMPUS DRIVEWAY. THIS TWO FEET OF UNDESIRABLE SOIL SHALL BE REMOVED FROM SITE AND DEPOSITED AT THE CUMRU TOWNSHIP CLEAN SPOILS STOCKPILE AREA. NOTE, THE BUILDING PAD AND INTERIOR CAMPUS DRIVEWAY SHALL BE CONSTRUCTED TO THE PAD READINESS ELEVATION WITH CLEAN SPOILS FROM ROAD WORK TRENCHES.
9. AFTER THE INTERIOR CAMPUS DRIVEWAY IS FINISHED, REMOVE SWALE #5 AND INSTALL PROPOSED STORMWATER PIPING SYSTEM WITH SWALE #4. CONVERT SEDIMENT TRAP #3A TO SEDIMENT TRAP #3B.
10. INSTALL FILTER SOCK ALONG LOW SIDE OF THE NEW WELSH ROAD ALIGNMENT.
11. **WITH A PROFESSIONAL ENGINEER PRESENT.** CONSTRUCT BASIN #2 AS IT IS DISPLAYED ON THE DRAWING #157. INSTALL THE FINAL STORMWATER MANAGEMENT SYSTEM AS IT IS SHOWN ON DRAWING #157. IMMEDIATELY STABILIZE DISTURBED AREAS.
12. CONSTRUCT SWALES #1A, #1B, & #2 AND STABILIZE THE EMBANKMENT, AS IT IS DEPICTED ON THE DRAWING #157.
13. GRADED AREAS SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3" TO 5" PRIOR TO TOPSOIL PLACEMENT TO PERMIT BONDING OF THE TOPSOIL.
14. STABILIZE ALL DISTURBED AREAS WITH SEEDING AND MULCH. NOTE, NO MORE THAN 15,000 SQUARE FEET OF DISTURBED AREA SHALL REACH FINAL GRADING BEFORE INITIATING SEEDING AND MULCHING OPERATIONS.

UTILITIES INSTALLATION.
1. LIMIT OF DISTURBANCE SHALL BE MARKED PRIOR TO DISTURBANCE ACTIVITIES WITH PAINT IN PAVED AREAS.
2. INSTALL EROSION AND SEDIMENTATION CONTROL BMPS ONLY IN THE AREA THAT IS BEING CONSTRUCTED. DO NOT INSTALL FOR THE ENTER SITE.
3. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT AND BACKFILLING THAT CAN BE COMPLETED IN THE SAME DAY. THE TRENCH WILL BE TEMPORARY STABILIZED AT THE END OF EACH DAY.
4. INSTALL STREAM CROSSINGS #1 AND #2 PER CONSTRUCTION SEQUENCE ON THE DRAWING 122 AND 123.
5. COMPLETION OR TEMPORARY CESSATION OF EARTH DISTURBANCE ACTIVITY FOR AT LEAST 4 DAYS REQUIRES TEMPORARY STABILIZATION.

FINAL STAGE
1. PRIOR TO REMOVAL OF THE BMP'S, THE BERKS COUNTY CONSERVATION DISTRICT SHOULD BE CONTACTED. THE DISTRICT MAY REQUIRE A SITE INSPECTION PRIOR TO THE CONVERSION OR REMOVAL OF BMP'S.
2. REMOVE ALL BMPS WHEN THE WORK AREA IS AT A MINIMUM OF 70% UNIFORM PERENNIAL VEGETATIVE COVER OR TRENCH BACKFILL PAVING IS COMPLETE.

5. REMOVE ALL FILTER SOCK AND OTHER TEMPORARY SOIL EROSION AND SEDIMENT CONTROL FACILITIES AFTER ALL AREAS HAVE BEEN PERMANENTLY STABILIZED. AREAS DISTURBED DURING REMOVAL OF THE CONTROLS MUST BE STABILIZED IMMEDIATELY. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM OF 70% UNIFORM PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENTS. TOPSOIL SHALL BE REPLACED TO PREDEVELOPMENT DEPTHS OR TO A MINIMUM DEPTH OF 6 INCHES, WHICHEVER IS GREATER. IT IS ALSO RECOMMENDED THAT SOIL TESTS BE PERFORMED IN ORDER TO DETERMINE ACTUAL LIME AND FERTILIZER NEEDS INSTEAD OF PROVIDING A GENERIC APPLICATION RATE.
6. WITHIN 30 DAYS AFTER THE COMPLETION OF EARTH DISTURBANCE ACTIVITIES AUTHORIZED BY THIS PERMIT, INCLUDING THE PERMANENT STABILIZATION OF THE SITE AND PROPER INSTALLATION OF PCSM BMPS IN ACCORDANCE WITH THE APPROVED PCSM PLANS, OR UPON SUBMISSION IF NOT SOONER, THE PERMITTEE SHALL FILE WITH THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT A STATEMENT SIGNED BY A LICENSED PROFESSIONAL AND BY THE PERMITTEE CERTIFYING THAT WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE PERMIT AND THE WORK APPROVED EROSION AND SEDIMENTATION AND POST CONSTRUCTION STORMWATER MANAGEMENT PLANS. COMPLETION CERTIFICATED ARE NEEDED TO ENSURE THAT ALL IS PERFORMED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE PERMIT AND THE APPROVED E&S AND PCSM PLANS.

NO.	REVISIONS	DATE	ENGR.	DATE	ISSUED FOR
△2	REVISED DRAWING PER DEP LETTER, 4/12/21	04/16/21	JES		
△1	GENERAL REVISIONS	3/11/21	JES	3/12/21	ISSUE FOR BIDS

BCM ENGINEERS
ATC GROUP SERVICES LLC
920 Germantown Pike, Suite 200 Plymouth Meeting, PA 19462

DESIGN ENGR.	GTA
DRAWN BY	RC
PROJECT ENGR.	JES
PROJECT MGR.	JES
CHECKED BY	JFB
APPROVED	
APPROVED	
DATE	08/31/20

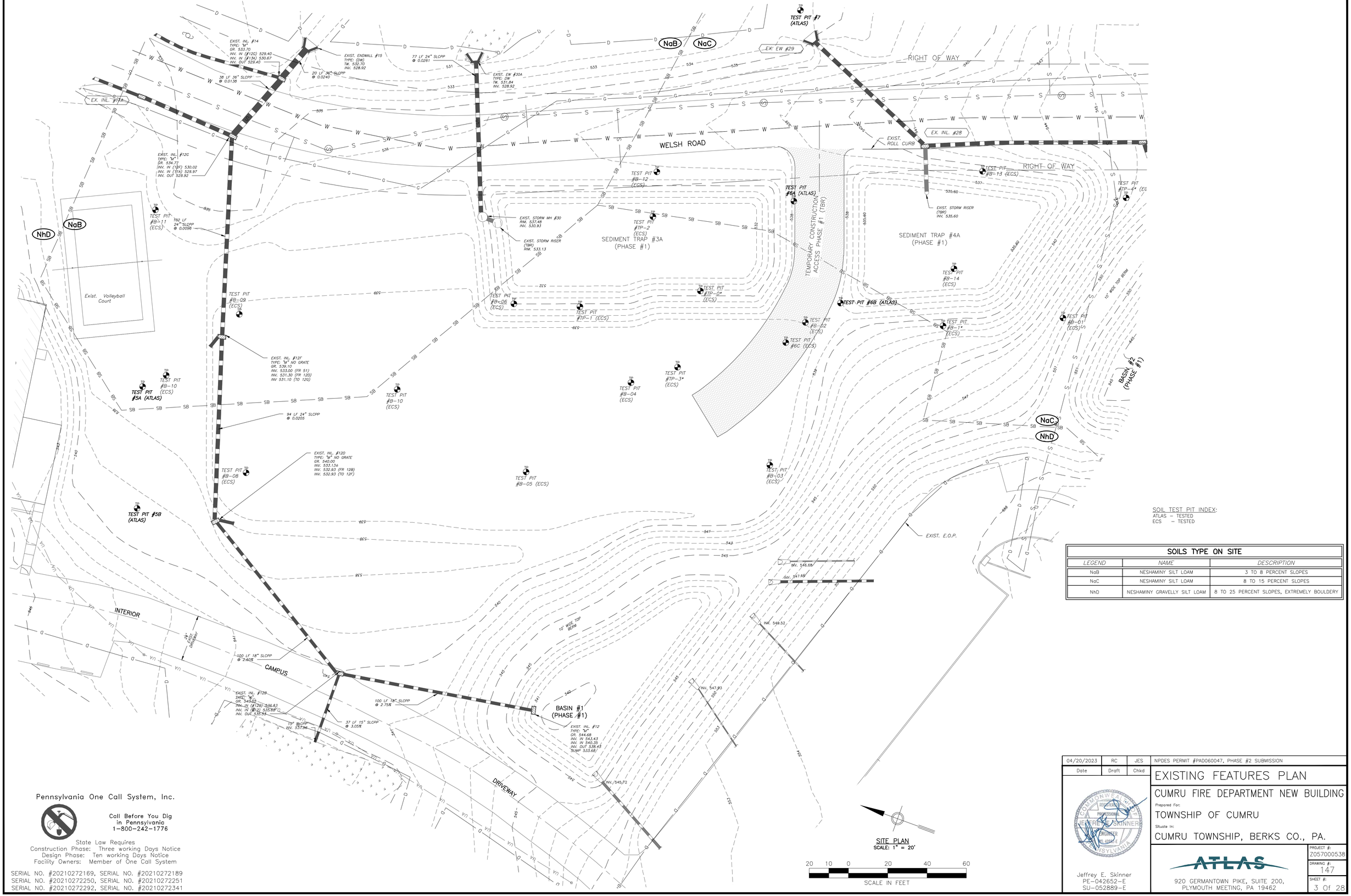
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JEFFREY E. SKINNER ENGINEER NO. 42652-E

REGISTERED PROFESSIONAL ENGINEER

CUMRU TOWNSHIP
BERKS COUNTY, PENNSYLVANIA
UTILITIES INSTALLATION AND REPLACEMENT, ROADWAY AND DRAINAGE IMPROVEMENTS
CUMRU TOWNSHIP MUNICIPAL CAMPUS AND VICINITY

EROSION & SEDIMENT CONTROL
NPDES NOTES

SCALE	AS SHOWN
PROJECT NO.	Z057000415
DRAWING NO.	165
SHEET	OF



SOIL TEST PIT INDEX:
ATLAS – TESTED
ECS – TESTED

SOILS TYPE ON SITE		
LEGEND	*NAME*	*DESCRIPTION*
NaB	NESHAMINY SILT LOAM	3 TO 8 PERCENT SLOPES
NaC	NESHAMINY SILT LOAM	8 TO 15 PERCENT SLOPES
NhD	NESHAMINY GRAVELLY SILT LOAM	8 TO 25 PERCENT SLOPES, EXTREMELY BOULDERY

Pennsylvania One Call System, Inc.

Call Before You Dig in Pennsylvania 1-800-242-1776

State Law Requires
Construction Phase: Three working Days Notice
Design Phase: Ten working Days Notice
Facility Owners: Member of One Call System

SERIAL NO. #20210272169, SERIAL NO. #20210272189
SERIAL NO. #20210272250, SERIAL NO. #20210272251
SERIAL NO. #20210272292, SERIAL NO. #20210272341

04/20/2023	RC	JES	NPDES PERMIT #PAD060047, PHASE #2 SUBMISSION
Date	Draft	Chkd	

EXISTING FEATURES PLAN

CUMRU FIRE DEPARTMENT NEW BUILDING

Prepared For:
TOWNSHIP OF CUMRU

Situate In:
CUMRU TOWNSHIP, BERKS CO., PA.

COMMONWEALTH OF PENNSYLVANIA — JEFFREY E. SKINNER — PROFESSIONAL ENGINEER — PE-042652-E

Jeffrey E. Skinner
PE-042652-E
SU-052889-E

ATLAS
920 GERMANTOWN PIKE, SUITE 200,
PLYMOUTH MEETING, PA 19462

PROJECT #: Z057000538
DRAWING #: 147
SHEET #: 3 Of 28

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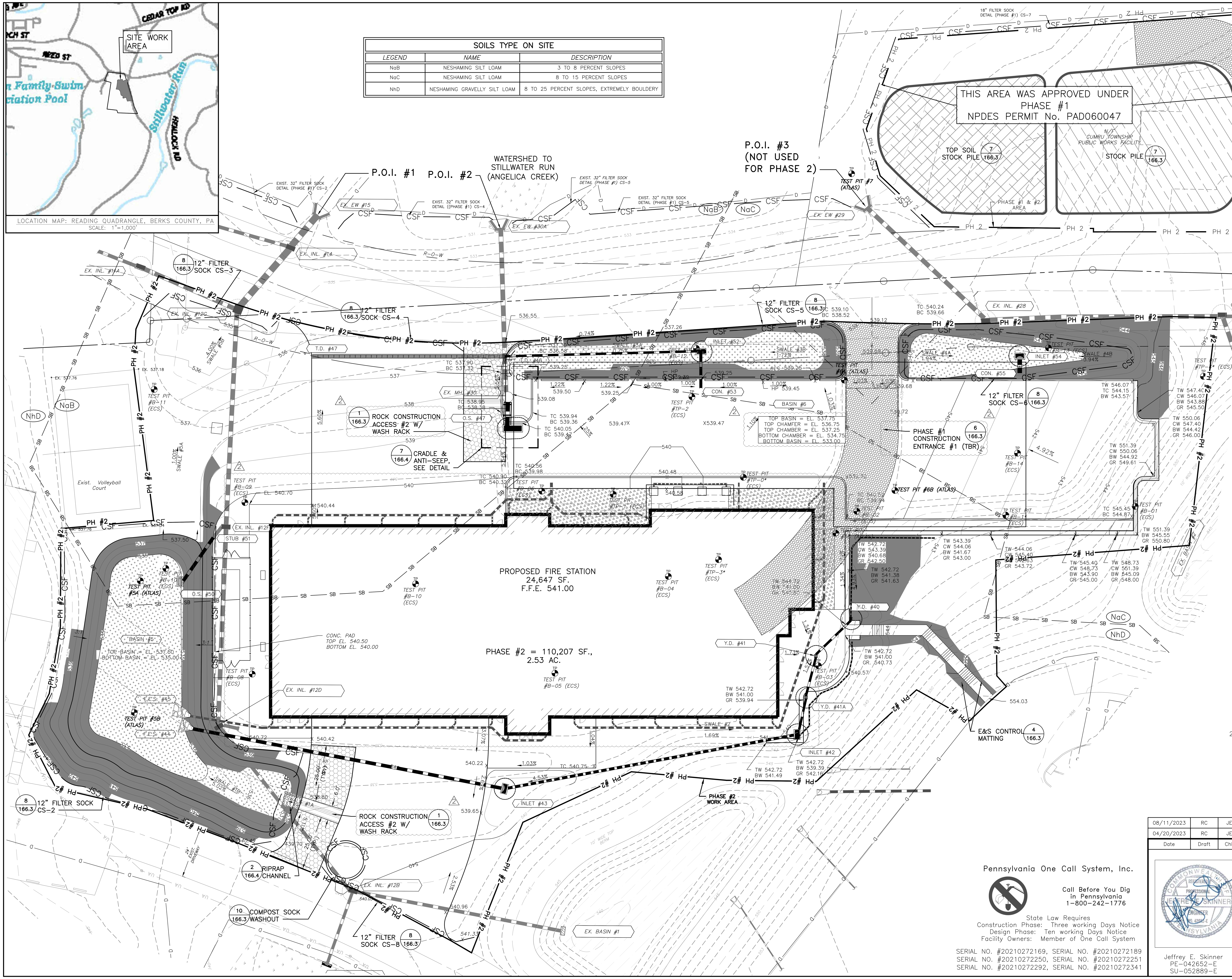

SOILS TYPE ON SITE

LEGEND	NAME	DESCRIPTION
NaB	NESHAMING SILT LOAM	3 TO 8 PERCENT SLOPES
NaC	NESHAMING SILT LOAM	8 TO 15 PERCENT SLOPES
NhD	NESHAMING GRAVELLY SILT LOAM	8 TO 25 PERCENT SLOPES, EXTREMELY BOULDERY

EROSION & SEDIMENT CONTROL (E&S) LEGEND

Symbol	Description	Detail
PH #2	PHASE #2 WORK BOUNDARY	
	CONSTRUCTION ENTRANCE	1 / 166.3
SB	SOIL BOUNDARY	
NaC	SOIL TYPE	
CSF	FILTER SOCK	8 / 166.3
	INLET PROTECTION	3 / 166.3
	RIPRAP	6 / 166.4
	EROSION CONTROL MATTING	4 / 166.3
	TOP SOIL STOCK PIPE	7 / 166.3
	STOCK PILE	7 / 166.3
	TEMPORARY SEEDING STABILIZATION	1 / 166.1
	FINAL SEEDING STABILIZATION	1 / 166.1
	GRASS IN SPECIAL AREAS – SWALE, BASIN BOTTOM	1 / 166.1

NOTE:

SEQUENCE OF EARTH MOVING RELATED ACTIVITY (2 / 166.1)

Pennsylvania One Call System, Inc.

Call Before You Dig in Pennsylvania 1-800-242-1776

State Law Requires
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SERIAL NO. #20210272169, SERIAL NO. #20210272189
SERIAL NO. #20210272250, SERIAL NO. #20210272251
SERIAL NO. #20210272292, SERIAL NO. #20210272341

Date	Draft	Chkd	Revision
08/11/2023	RC	JES	2 REVISED DRAWINGS PER BCCD REVIEW E-MAIL, DATED 07/31/2023.
04/20/2023	RC	JES	NPDES PERMIT #PAD060047, PHASE #2 SUBMISSION

EROSION & SEDIMENTATION CONTROL PLAN

CUMRU FIRE DEPARTMENT NEW BUILDING

Prepared For:
TOWNSHIP OF CUMRU

Situate In:
CUMRU TOWNSHIP, BERKS CO., PA.

Jeffrey E. Skinner
PE-042652-E
SU-052889-E

ATLAS
920 GERMANTOWN PIKE, SUITE 200,
PLYMOUTH MEETING, PA 19462

PROJECT #: Z057000538
DRAWING #: 166
SHEET #: 12 Of 27

I. GENERAL

A. The contractor shall assure that the approved erosion and sediment control plan is properly and completely implemented. Before initiating any revisions to the approved erosion and sediment control plan or revisions to other plans which may affect the effectiveness of the approved E&S Control Plan, the operator must receive approval of the revisions from the Berks County Conservation District. 1238 County Welfare Road, Suite 200, Leesport, PA 19533–9710, Telephone number: (610) 372–4657 prior to beginning land disturbance. The contractor shall assure that an erosion and sediment control plan has been prepared, approved by the appropriate conservation district, and is being implemented and maintained for all soil and/or rock spoil and borrow areas, regardless of their locations. It shall be the responsibility of the contractor to implement this plan in the field and meet all state and local regulations pertaining to it. The contractor shall assign this responsibility to a person experienced in sediment and erosion control procedures. Modifications or deviations from this plan will be allowed only if the contractor first obtains written permission from the agencies having jurisdiction. A copy of this plan shall be kept at the project site.

1. All earth disturbances, including clearing and grubbing as well as cuts and fills shall be done in accordance with the approved E&S plan. A copy of the approved drawings must be available at the project site at all times. The reviewing agency shall be notified of any changes to the approved plan prior to implementation of those changes. The reviewing agency may require a written submittal of those changes for review and approval at its discretion.
2. At least 7 days prior to starting any earth disturbance activities, including clearing and grubbing, the owner and/or operator shall invite all contractors, the landowner, appropriate municipal officials, the E&S plan preparer, the PCSM plan preparer, the licensed professional responsible for oversight of critical stages of implementation of the PCSM plan, and a representative from the local conservation district to an on–site preconstruction meeting.
3. At least 3 days prior to starting any earth disturbance activities, or expanding into an area previously unmarked, the Pennsylvania One Call System Inc. shall be notified at 1–800–242–1776 for the location of existing underground utilities.
4. All earth disturbance activities shall proceed in accordance with the sequence provided on the plan drawings. Deviation from that sequence must be approved in writing from the local conservation district or by the Department prior to implementation.
5. Areas to be filled are to be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots and other objectionable material.
6. Clearing, grubbing, and topsoil stripping shall be limited to those areas described in each stage of the construction sequence. General site clearing, grubbing and topsoil stripping may not commence in any stage or phase of the project until the E&S BMPs specified by the BMP sequence for that stage or phase have been installed and are functioning as described in this E&S plan.
7. At no time shall construction vehicles be allowed to enter areas outside the limit of disturbance boundaries shown on the plan maps. These areas must be clearly marked and fenced off before clearing and grubbing operations begin.
8. Topsoil required for the establishment of vegetation shall be stockpiled at the location(s) shown on the plan maps(s) in the amount necessary to complete the finish grading of all exposed areas that are to be stabilized by vegetation. Each stockpile shall be protected in the manner shown on the plan drawings. Stockpile heights shall not exceed 35 feet. Stockpile slopes shall be 2H:1V or flatter.
9. Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management minimize the potential for erosion and sediment pollution and notify the local conservation district and/or the regional office of the Department.
10. All building materials and wastes shall be removed from the site and recycled or disposed of in accordance with the Department's Solid Waste Management Regulations at 25 Pa. Code 260.1 et seq., 271.1, and 287.1 et. seq. No building materials or wastes or unused building materials shall be burned, buried, dumped, or discharged at the site.
11. All off–site waste and borrow areas must have an E&S plan approved by the local conservation district or the Department fully implemented prior to being activated.
12. The contractor is responsible for ensuring that any material brought on site is clean fill. Form FP–001 must be retained by the property owner for any fill material affected by a spill or release of a regulated substance but qualifying as clean fill due to analytical testing.
13. All pumping of water from any work area shall be done according to the procedure described in this plan, over undisturbed vegetated areas.
14. Vehicles and equipment must enter directly and exit directly through the construction entrance.
15. Until the site is stabilized, all erosion and sediment BMPs shall be maintained properly. Maintenance shall include inspections of all erosion and sediment BMPs after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, regrading, reseeding, remulching and renetting must be performed immediately. If the E&S BMPs fail to perform as expected, replacement BMPs, or modifications of those installed will be required.
16. The maintenance instruction should specify that inspection be logged on DEP form 3800–FM–BCW027d. This log showing dates that E&S BMPs were inspected as well as any deficiencies found and the date they were corrected shall be maintained on 'the site and be made available to regulatory agency officials at the time of inspection.
17. Sediment tracked onto any public roadway or sidewalk shall be returned to the construction site by the end of each work day and disposed in the manner described in this plan. In no case shall the sediment be washed, shoveled, or swept into any roadside ditch, storm sewer, or surface water.
18. All sediment removed from BMPs shall be disposed of in the manner described on the plan drawings.
19. Areas which are to be topsoiled shall be scarified to a minimum depth of 3 to 5 inches – 6 to 12 inches on compacted soils – prior to placement of topsoil. Areas to be vegetated shall have a minimum 4 inches of topsoil in place prior to seeding and mulching. Fill outslopes shall have a minimum of 2 inches of topsoil.
20. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended to support buildings, structures and conduits, etc. shall be compacted in accordance with local requirements or codes.
21. All earthen fills shall be placed in compacted layers not to exceed 9 inches in thickness.
22. Fill materials shall be free of frozen particles, brush, roots, sad, or other foreign or objectionable materials that would interfere with or prevent construction of satisfactory fills.
23. Frozen materials or soft, mucky, or highly compressible materials shall not be incorporated into fills.
24. Fill shall not be placed on saturated or frozen surfaces.
25. Seeps or springs encountered during construction shall be handled in accordance with the standard and specification for subsurface drain or other approved method.
26. All graded areas shall be permanently stabilized immediately upon reaching finished grade. Cut slopes in competent bedrock and rock fills need not be vegetated.
27. At stream crossing, a 50–foot buffer shall be maintained. on buffers, clearings, sod disturbances and excavations, equipment traffic should be minimized. Activity such as stacking logs, burning cleared brush, discharging rainwater from trenches, welding pipe sections, refueling and maintaining equipment should be avoided within buffer zones.
28. Immediately after earth disturbance activities cease in any area or subarea of the project, the operator shall stabilize all disturbed areas. During non–germinating months, mulch or protective blanketing shall be applied as described in the plan. Areas not at finished grade, which will be reactivated within 1 year, may be stabilized in accordance with the temporary stabilization specifications. Those areas which will not be reactivated within 1 year shall be stabilized in accordance with the permanent stabilization specifications.
29. Permanent stabilization is defined as a minimum uniform. perennial 70% vegetative cover or other permanent non–vegetative cover with a density sufficient to resist accelerated erosion. Cut and fill slopes shall be capable of resisting failure due to slumping, sliding, or other movements.
30. E&S BMPs shall remain functional as such until all areas tributary to them are permanently stabilized or until they are replaced by another BMP approved by the local conservation district or the Department
31. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operator shall contact the local conservation district for an inspection prior to removal/conversion of the E&S BMPs.
32. After final site stabilization has been achieved, temporary erosion and sediment BMPs must be removed or converted to permanent post construction stormwater management BMPs. Areas disturbed during removal or conversion of the BMPs shall be stabilized immediately. In order to ensure rapid revegetation of disturbed areas, such removal/conversions are to be done only during the germinating season.
33. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operator shall contact the local conservation district to schedule a final inspection.
34. Failure to correctly install E&S BMPs, failure to prevent sediment–laden runoff from leaving the construction site, or failure to take immediate corrective action to resolve failure of E&S BMPs may result in administrative, civil, and/or criminal penalties being instituted by the Department as defined in Section 602 of the Pennsylvania Clean Streams Law. The Clean Streams Law provides for up to $10,000 per day in civil penalties, up to $10,000 in summary criminal penalties, and up to $25,000 in misdemeanor criminal penalties for each violation.

B. Stockpile

1. All stripped topsoil and excavated earthen material from the project site Shall be properly stockpiled in accordance with the "stockpile control" detail. Material found to be unsuitable for subsequent use or in excess of the quantity required shall be disposed of. The location, method of disposal, and means of transport shall be in accordance with state and local laws.
2. All soil that is to be stockpiled for a period of greater than 10 calendar days shall be temporarily stabilized as described in item iii, "Temporary Stabilization."
3. Stockpile heights must not exceed 35 feet, stockpile slopes must be 2:1 or flatter.
4. Silt fence shall be provided at the base of all stockpiles for additional protection. See "Stockpile Control" detail.

II. EROSION AND SEDIMENT CONTROL MEASURES

A. Rock Construction Entrance

1. A rock construction entrance shall be provided as needed to prevent the tracking or flow of sediment onto areas other than the immediate project site. See "Stabilized Construction Entrance" detail.
2. Rock construction entrance thickness will be constantly maintained to the specified dimensions by adding rock. A stockpile of rock material will be maintained on the site for this purpose. At the end of each construction day, all sediment deposited on public roadways will be removed and returned to the construction site.

B. PRESERVATION OF EXISTING VEGETATION

1. GOOD STANDARDS OF EXISTING VEGETATION ADEQUATE TO CONTROL EROSION SHOULD BE PRESERVED WHEREVER POSSIBLE. REGENERATION OF WOOD PLANTS SHOULD BE ENCOURAGED WHERE ACCEPTABLE. NEW VEGETATION, SOIL TREATMENTS, ETC. SHALL BE DONE AS SPECIFIED ON THE DRAWINGS AND IN THE APPLICABLE SECTIONS OF THE SPECIFICATIONS.

C. COMPOST FILTER SOCK

1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER AND/OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

D. INLET FILTER BAG

1. INLET FILTER BAGS SHOULD BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. FILTER BAGS SHOULD BE CLEANED AND/OR REPLACED WHEN THE BAG IS HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET.
2. ACCUMULATED SEDIMENT SHOULD BE DISPOSED IN THE APPROVED MANNER. BAGS THAT WILL BE REUSED SHOULD BE RINSED AT A LOCATION WHERE THE RINSE WATER WILL ENTER A SEDIMENT TRAP OR SEDIMENT BASIN.
3. NEEDED REPAIRS SHOULD BE INITIATED IMMEDIATELY AFTER THE INSPECTION.
4. DAMAGED FILTER BAGS SHOULD BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS.
5. AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS, A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

E. PUMPED WATER

1. SEDIMENTS FILTER BAG SHALL BE INSTALLED AT PUMP DISCHARGE TO FILTER PUMPED WATER IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. BAG SHALL FILTER PARTICLES LARGER THAN 150 MICRONS AND BE MANUFACTURED FROM NON–WOVEN GEOTEXTILE MATERIAL.
2. A MINIMUM OF ONE CUBIC FOOT OF STORAGE CAPACITY FOR EACH GALLON PER MINUTE OF THE DEWATERING PUMPING RATE SHALL BE PROVIDED TO INSURE STRUCTURE FAILURE WILL NOT OCCUR.

F. PUMPED WATER FILTER BAG:

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

PROPERTY	TEST METHOD	MINIMUM STANDARD
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

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

G. COMPOST SOCK WASHOUT

1. Concrete washout activities must be conducted in a manner that does not contribute pollutants to surface waters or stormwater runoff.
2. Wherever compost sock washouts are used, a suitable impervious geomembrane should be placed at the location of the washout. Compost socks should be staked in the manner recommended by the manufacturer around perimeter of the geomembrane so as to form a ring with the ends of the sock located at the upslope corner (Figure 3.18). Care should be taken to ensure continuous contact of the sock with the geomembrane at all locations. Where necessary, socks may be stacked and staked so as to form a triangular cross–section.
3. Washout facilities should not be placed within 50 feet of storm drains, open ditches or surface waters. They should be in a convenient location for the trucks, preferably near the place where the concrete is being poured, but far enough from other vehicular traffic to minimize the potential for accidental damage or spills. Wherever possible, they should be located on slopes not exceeding a 2% grade.
4. Part of inspecting and maintaining washout areas is ensuring that adequate signage is provided and in good repair and that the washout area is being used, as opposed to washout in non–designated areas of the site.
5. Remove concrete waste in the washout area, as needed to maintain BMP function (typically when filled to about two–thirds of its capacity). Collect concrete waste and deliver offsite to a designated disposal location.
6. Upon termination of use of the washout site, accumulated solid waste, including concrete waste and any contaminated soils, must be removed from the site to prevent on–site disposal of solid waste. If the wash water is allowed to evaporate and the concrete hardens, it may be recycled

III. TEMPORARY STABILIZATION

A. All areas disturbed by on–site work that will not be constructed immediately shall be temporarily stabilized:

1. Vegetative cover Temporary vegetative cover shall be provided in areas requiring temporary stabilization during construction, as follows:

A. Fertilizer: apply 10–20–20 fertilizer or equivalent at the rate of 150 lbs per acre.

B. Limestone: shall be an agricultural grade lime stone equivalent to 50% Calcium plus Magnesium oxides, and applied at the rate of 1 ton per acre.

C. Seed type shall be as indicated below:

1. Optimum seeding dates are February 15 through May 1 or August 15 through October 15 for the following species:

Species	Pounds Per acre	Optimum seed depth (double for sandy soil)
Annual Ryegrass	40	0.5 inch
Perennial Ryegrass	40	0.5 inch
Oats	86	1.0 inch
Barley	96	1.0 inch

2. Optimum seeding dates are May 1 through August 15 for the following species:

Species	Pounds Per acre	Optimum seed depth (double for sandy soil)
Pearl Millet	20	1.0 inch
Sudan Grass	30	1.0 inch
Millet (German or Hungarian)	30	1.0 inch
Weeping Lovegrass	5	1.0 inch

2. Mulching

A. Mulching shall be provided as required in areas difficult to vegetate, and during Off–season operations. Mulching methods and materials shall conform to the following:

(1) Mulch materials shall be unrotted salt hay, hay or small grain straw applied at the rate of 3 tons per acre. Mulch blowers shall not grind or chop the material.

(2) Mulch shall be spread uniformly by hand or mechanically so that approximately 75% to 95% of the soil surface will be covered.

(3) Mulch anchoring shall be accomplished immediately after placement to minimize loss by wind or water. This may be done by one of the following methods, depending upon the size of slopes and costs.

(a) Peg and twine – drive 8 to 10 inch pegs to within 2 to 3 inches of the soil surface every 4 feet in all directions. Stakes may be driven before or after applying mulch. Secure mulch to soil surface by stretching twine between pegs in a crises–cross and a square pattern, secure twine around each peg with two or more round turns.

(b) Mulch netting – staple paper, jute, cotton or plastic netting to the soil surface. Use a degradable netting in areas to be mowed.

(c) Liquid mulch binders – may be used to anchor salt hay, hay or straw mulches.

(d) Applications should be heavier at edges were wind catches the mulch, in valleys and at crests of banks. Remainder of area should be uniform in appearance.

(e) Wood–fiber or paper–fiber mulch at the rate of 1,500 pounds per acre may be applied by a hydroseeder. Use is limited to flatter slopes and during optimum seeding periods in spring and fall.

3. Other

A. Where excessive soil erosion, tracking, or flowing of sediment is evident or anticipated, a minimum of 4 inches of crushed stone shall be placed within the affected area and maintained until permanent stabilization is provided. Additional stone shall be placed as required until stabilization is achieved. Crushed stone shall conform to AASHTO Designation M43, size No. 2 (2–1/2" to 1–1/2").

B. Upon completion of an earth disturbance activity or any stage or phase of an activity, the operator shall stabilize immediately the disturbed areas to protect from accelerated erosion. During non–germinating periods, mulch must be applied at the specified rates. Disturbed areas which are not at finished grade, and which will be redisturbed within 1 year, may be stabilized in accordance with Temporary Seeding Specifications. Disturbed areas, which are either at finished grade or will not be redisturbed within 1 year, must be stabilized in accordance with Permanent Seeding Specifications.

C. Diversion channels, sedimentation basins, sediment traps, and stockpiles must be stabilized immediately.

D. Mulch with mulch control netting or erosion blankets must be installed on all slopes greater than 3:1.

IV. FINAL SEEDING (1 / 166.1)

A. GENERAL

1. NO MORE THAN 15,000 SQUARE FEET OF DISTURBED AREA SHALL ACHIEVE FINAL GRADE BEFORE STABILIZATION BY VEGETATIVE COVER WITH SEEDING AND MULCHING.
2. AFTER THE CONSTRUCTION PHASE IS COMPLETE, PERMANENT VEGETATION ON THE AREAS THAT HAVE BEEN DISTURBED SHALL BE REESTABLISHED AS RAPIDLY AS POSSIBLE. IF THE COMPLETION OF THE CONSTRUCTION ACTIVITIES DOES NOT COINCIDE WITH A SEASON IN WHICH PERMANENT VEGETATION CAN BE STARTED, AN INTERIM OR TEMPORARY PROGRAM IS REQUIRED. THIS SHALL INCLUDE SOIL STABILIZATION, MULCHING OR THE ESTABLISHMENT OF FILTER STRIPS. IN ANY CASE, SEDIMENT AND EROSION CONTROLS SHALL BE INSTALLED PROMPTLY AND THEIR MAINTENANCE ASSURED.
4. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM OF 70% UNIFORM PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON–VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENTS.
5. AT A MINIMUM, PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED BY PROVIDING THE FOLLOWING:
   a. FERTILIZER: 500 LBS PER ACRE OF 10–20–20, OR EQUIVALENT.
   b. LIMESTONE: SHALL BE AN AGRICULTURAL GRADE LIME STONE EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDES, AND APPLIED AT THE RATE OF 4 TONS PER ACRE.
   c. PERMANENT SEEDING (MINIMUM REQUIREMENTS) SHALL BE AS FOLLOWS:

V. MAINTENANCE

A. Inspection shall be made at frequent intervals and after each storm event to detect any impairment in the ability of the erosion control facilities, installed as part of this plan, to continue to function effectively.

LAWN SEED	% BY WEIGHT	MINIMUM % PURITY	MINIMUM % GERMINATION	MAXIMUM % WEED SEED
Kentucky bluegrass (2 or more varieties – none greater than 25% of total)	50	90	80	.20
Pennfine Perennal Rye Grass	20	95	90	0.15
Pennlawn and Fescue	30	98	85	0.25
Special Areas – swales, diversion channels, and occasional water flow areas.				
Kentucky 31 Tall Fescue	80	98	85	0.25
Pennfine Perennial Rye Grass	20	95	90	.15

B. The approved erosion and sediment control plan and any standard conditions relating to soil erosion and sediment control, issued as part of any permits, shall be available at the immediate site of construction activity at all times.

C. Until the site is stabilized, all erosion and sedimentation controls must be maintained properly. Maintenance must include inspection of all erosion and sedimentation controls after each storm event and on a weekly basis. All preventive and remedial maintenance work, including clean out, repair, replacement, regrading, reseeding, remulching and renetting must be performed immediately.

VI. EXCAVATED TRENCH OPEN

"The total length of excavated trench open at any one time should not be greater than the total length of the utility line that can be placed in the trench and back–filled in one working day. No more than 50 lineal feet of open trench should exist when utility line installation ceases at the end of the workday. Soil supplements, seed and much must be applied according to 25 Pa. Code §102.22. (Page 283 of E&S Manual)."

VII. SEQUENCE OF EARTH MOVING RELATED ACTIVITY (2 / 166.1)

1. Pre–Construction Stage:
   a. Field–marks limits of disturbance and environmentally sensitive areas.
   b. At least 7 days prior to starting any earth disturbance activities (including clear and grubbing), the Owner and/or Operator shall invite all Contractors, the Landowner, appropriate Municipal Officials, the E&S plan prepared, the PCSM plan preparer, and a representative from the Bucks County Conservation District to an on–site reconstruction meeting.
   c. Upon installation or stabilization of all perimeter sediment control BMP's and at least 3 days prior to proceeding with the bulk earth disturbance activities, the permittee of co–permittee shall provide notification to the department or authorized conservation district.
   d. At least 3 days prior to starting any earth disturbance activities, or expanding into an area previously unmarked, the Pennsylvania One Call System Inc. shall be notified at 1–800–242–1776 for the location of existing underground utilities.
   e. All earth disturbance activities shall proceed in accordance with the sequence provided on the plans. Deviation from the sequence must be approved by the Bucks County Conservation District or by the department prior to implementation. Each step of sequence shall be completed before proceeding to the next step, except where noted.
2. Construction Activity: (2)
   a. Convert the existing 150 feet Rock Construction Access #1 to Rock Construction Access with Wash Rock, where as depicted on the plan.
   b. Install Rock Construction Access #2 with Wash Rack and Concrete Washouts, see drawing.
   c. Access to site's E&S BMPs, see drawings for work areas.
      i Install Compost Filter Sock as depicted on the plan.
      ii. Install Inlet Protection per plan.
      iii. Install Orange Construction Fence around the basins per plan.
   d. Site Operation for earthwork.
      i. Bring the proposed Building pad grades to the proper elevation. Construction new Building.
      ii. All building materials and wastes must be removed from the site and recycled or disposed of in accordance with the Pennsylvania Department of Environmental Protection's Solid Waste Management Regulations at 25pa. Code §260.1 et seq., §271.1 et seq., and §287.1 et seq. No building material or wastes or unused building materials shall be burned, buried, dumped, or discharged at the site.
      (2) iii. Install all building utilities, see "note *" below.
      iv. **Critical Stage**, remove sediment traps by grading the areas to the proposed grade. Sediment trap #3A becomes swale #3A/B and part of basin #6 and sediment trap #4A becomes swale #4A/B and part of basin #6. See dwg. #183 notes on converting sediment traps into basin 6,
      v. **Critical Stage.** Construct basin #5 and basin #6. Stabilize basin #5 steep slope with E&S blankets. Additional notes detailing Basin #5 & Basin #6 construction shown on dwgs. 183.4 & 183.6.
      vi. Install stormwater inlets and pipes. Install Inlet Protection on all new inlets and stabilize areas. See "note *" below.
      vii. Construct all swales and stabilize with temporary seeding.
      viii. Construction proposed parking lot wall.
      ix. Final grade site and stabilize with temporary seeding. Construction new sidewalk and proposed walls. Install subbase stone course on parking lot and all driveways. Then install parking lot and driveways with binder course.
   e. Permanent stabilization stage:
      i. Replacement of top soil (4–6 inches) and install all permanent vegetation requirements.
      ii. Permanent seeding and mulch all areas. An area shall be considered to have achieved final stabilization when it has a minimum of 70% uniform perennial vegetative cover or other permanent non–vegetative cover with density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding or other movements. Topsoil shall be replaced to predevelopment depths or to a minimum depth of 6 inches, whichever is greater. It is also recommended that soil tests be performed in order to determine actual lime and fertilizer needs instead of providing a generic application rate.
      iii. Clean binder course of parking lot and all driveway surfaces and install wearing course on all surfaces.
3. Removal/Conversion of temporary sediment pollution controls stage:
   a. Prior to removal of the E&S bmp's, the Berks County Conservation District should be contacted. The district may require a site inspection prior to the conversion or removal of BMP's.
   b. Remove all E&S BMPs when the work area is at a minimum of 70% uniform perennial vegetative cover or trench backfill paving is complete.
   c. Remove all filter sock and other temporary soil erosion and sediment control facilities after all areas have been permanently stabilized. Areas disturbed during removal of the controls must be stabilized immediately. An area shall be considered to have achieved final stabilization when it has a minimum of 70% uniform perennial vegetative cover or other permanent non–vegetative cover with density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding or other movements. Topsoil shall be replaced to predevelopment depths or to a minimum depth of 6 inches, whichever is greater. It is also recommended that soil tests be performed in order to determine actual lime and fertilizer needs instead of providing a generic application rate.
   d. Within 30 days after the completion of earth disturbance activities authorized by this permit, including the permanent stabilization of the site and proper installation of PCSM BMPs in accordance with the approved PCSM Plans, or upon submission if NOT sooner, the permittee shall file with the department or authorized conservation district a statement signed by a licensed professional and by the permittee certifying that work has been performed in accordance with the terms and conditions of the permit and the work approved erosion and sedimentation and post construction stormwater management plans. Completion certificated are needed to ensure that all is performed in accordance with the terms and conditions of the permit and the approved E&S and PCSM Plans.

Note: **Critical Stage**, the design engineer shall be on site.

Note *: "The total length of excavated trench open at any one time should not be greater than the total length of the utility line that can be placed in the trench and back–filled in one working day. No more than 50 lineal feet of open trench should exist when utility line installation ceases at the end of the workday. Soil supplements, seed and much must be applied according to 25 Pa. Code §102.22. (Page 283 of E&S Manual)."

Date	Draft	Chkd	Revision
08/11/2023	RC	JES	(2) REVISED DRAWINGS PER BCCD REVIEW E–MAIL, DATED 07/31/2023.
04/20/2023	RC	JES	NPDES PERMIT #PAD060047, PHASE #2 SUBMISSION

Jeffrey E. Skinner
PE–042652–E
SU–052889–E

EROSION & SEDIMENTATION CONTROL NOTES

CUMRU FIRE DEPARTMENT NEW BUILDING

Prepared For:

TOWNSHIP OF CUMRU

Situate In:

CUMRU TOWNSHIP, BERKS CO., PA.

ATLAS

920 GERMANTOWN PIKE, SUITE 200,
PLYMOUTH MEETING, PA 19462

PROJECT #: Z057000538
DRAWING #: 166.1
SHEET #: 13 Of 27

PREPAREDNESS, PREVENTION AND CONTINGENCY PLAN NOTES

This plan is part of the NPDES permit application for the discharge of stormwater associated with construction activities and the related Erosion and Sediment Control Plan. It is required to comply with Chapter 101.3(b) of the Rules and Regulations of the Pennsylvania Department of Environmental Protection, and conditions under the NPDES permit.

1. Name of Permittee: Cumru Township
   Name of Co-permittee (contractor): TBD

2. Name of Project: Reed Street Utility Extension

3. Project Location: Mohnton, Berks County, PA

4. List name(s) and telephone number(s) of responsible Cumru Township officials to be contacted in case of emergency (to be confirmed at pre-construction meeting):

Name	Day Phone #	Night Phone #
Bob McNichols	**(610) 777-1343**	

5. List name and telephone number of the following:

   Bucks County emergency management: (Berks) Brian Gottschall (610) 374-4800 x8202
   Nearest fire department station: Cumru Fire Station 2 (610) 777-1343
   Nearest hospital: Reading Hospital Tower Health, (484) 628-8000

6. Notification to the following agencies must be made immediately in the event of a spill of any polluting substances.

   PADEP Regional Office: Southcentral Regional Office (Harrisburg) – (717) -705-4700
   PA Fish and Boat Commission: Harrisburg, PA (717) 705-7800

7. List name and telephone number of any downstream water users, including drinking water supplies, industrial intakes and agricultural uses. It is the permittee's/co-permittees responsibility to immediately contact water users if polluting material is released from the site.

   – _____

8. General Description of Construction Activity.

   Re-grading and realignment of Welsh Road. Replace sanitary and storm sewers along Welsh Road and sanitary from border of Mohnton Borough along Reed Street. Extension of gas an water main from intersection of Main Street and Fairview Ave. to Welsh Road.

   See NPDES permit drawings

9. Material and Waste Inventory

   A. Pesticides and herbicides*
   Name & Quantity (pounds or gallons)
   None

   B. Fertilizer*
   Name & Quantity (pounds or gallons)
   None

   C. Other chemicals, such as paints, detergents, acids for cleaning, solvents, soil additives, concrete curing compounds:*
   Name & Quantity (pounds or gallons)
   Other chemicals will be brought on site if and as needed. It is not anticipated that an inventory of these materials will be stored on site.

   *Any items listed under A, B or C above must have Material Safety Data Sheets (MSDS's) kept on the project premises.

   D. Petroleum based products

Gasoline	_____ gallons
Diesel fuel	_____ gallons
Kerosene	_____ gallons
Lubricating oil	_____ gallons
Asphalts, tars	_____ gallons
Other	_____ gallons

   Note: It is not anticipated that gasoline, diesel fuel, lubricating oils, etc. will be stored onsite. Heavy equipment will typically be serviced periodically by fuel trucks on an as-needed basis. Fueling operations will not performed near any streams, drainage ways or storm sewers, and will only be performed with proper supervision. Any liquid that is stored onsite must be kept within a diked area (lined with an impervious clay, concrete or synthetic membrane), sized to hold 110% of the largest container's capacity.

10. List the types and quantities of absorbent materials used for spill mitigation that are stored on premises. The quantities of absorbent booms, pads and other materials and equipment needed to contain spills and begin cleanup must be kept at the site. List the types and quantities each:

    A selection of absorbent socks, mat pads, barrel top pads, etc., of various sizes will be kept onsite by the contractor.

11. During concrete work, steps shall be taken to assure that no pollution enters waterways. Concrete mixer truck washings shall be deposited onsite into a container specially-designed for the purpose. The container shall be located in a specified area as far upslope on the site as practicable to best prevent migration of materials into streams, drainage ways or storm sewers.

12. Particular attention shall be given to equipment refueling operations. Refueling shall only occur as far upslope on the site as practicable. The location shall be protected by a containment dike and secured from vandalism. Operators shall be familiar with the proper emergency response procedures and contact information in the event of a spill.

13. The site shall be inspected daily for evidence of existing or potential spills or leaks, vandalism, and the condition and quantity of cleanup materials.

14. Material Management Practices.

    The following material management practices shall be used to reduce the risk of spills or other accidental discharge of materials and substances to storm water runoff:

    A. Good Housekeeping:

    The following good housekeeping practices shall be followed onsite during construction:
    - All efforts shall be made to store only enough products onsite as are required to do the job.
    - Materials stored onsite shall be stored in a neat, orderly manner in appropriate containers and, if possible, under a roof or other enclosure.
    - Products shall be kept in their original containers with the original manufacturer's label.
    - Substances shall not be mixed with one another unless recommended by the manufacturer.
    - Whenever possible, all of a product shall be used up before disposing of the container.
    - Manufacturer's recommendations for proper use and disposal shall be strictly followed.
    - The contractor's site superintendent shall perform daily inspections to ensure proper use and disposal of materials onsite.
    - At least once per manth, the contractor's safety consultant shall inspect the premises to confirm conformance to all OSHA regulations.

    B. Hazardous Products:

    The practices described below shall be used to reduce the risks associated with hazardous materials:
    - Products shall be kept in their original containers unless they are not resealable.
    - Original labels and material safety data sheets (MSDS's) shall be retained at the jobsite.
    - If surplus materials must be disposed of, manufacturer's or local and State recommended methods for proper offsite disposal shall be followed.

15. Product-Specific Practices

    The following product-specific practices shall be followed onsite:

    A. Petroleum Products:
    All onsite vehicles and equipment shall be monitored daily for leaks and shall receive regular preventive maintenance to reduce the chance of leakage. Petroleum products shall be stored in tightly-sealed containers which are clearly labeled. Any asphaltic material used onsite shall only be applied according to the manufacturer's recommendations.

    B. Fertilizers:
    Fertilizers used shall be applied only in the minimum amount recommended by the manufacturer. Once applied, fertilizer shall be worked into the soil to limit exposure to stormwater. Storage shall be in a covered shed. The contents of any partially-used bags of fertilizer shall be immediately transferred to a sealable plastic bin to avoid spills.

    C. Chemical/Paints:
    All containers shall be tightly sealed and stored when not in use. Excess paint shall not be disposed of in the storm sewer system, it shall be properly disposed of according to the manufacturer's instructions or per State and local requirements.

    D. Concrete Truck Washout Materials:
    Concrete truck washout materials shall be deposited onsite into a container specifically designed for the purpose. The container shall be located in a specific area as far upslope on the site as practicable to best prevent migration of materials into streams, drainage ways or storm sewers. Once cured and hardened, the concrete shall be removed from the site and properly disposed of.

16. Spill Prevention Practices

    In addition to the good housekeeping and material management practices described above, the following practices shall be followed for spill prevention and cleanup:
    - The manufacturer's recommended methods for spill cleanup shall be clearly posted, and site personnel shall be trained in the proper procedures and the location of the information and cleanup supplies.
    - Materials and the equipment necessary for spill cleanup shall be kept onsite. Equipment and materials shall include, but not limited to:
      Brooms, dust pans, mops, rags, gloves, goggles, absorbent granular material, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
    - All spills shall be cleaned up immediately after discovery.
    - The spill area shall be kept well ventilated and personnel shall wear appropriate protective clothing to prevent contact with a hazardous substance.
    - All spills of toxic or hazardous material, regardless of the size of the spill, shall be reported immediately via text, email or in writing to the Engineer, the Owner, and the appropriate local and State government agencies.
    - The spill prevention plan shall be revised to include measures to prevent any type of spill from recurring, and to confirm how to clean up a spill if there is another one. A description of the spill, what caused it, and the cleanup measures used shall also be included in the written spill report.
    - The contractor's site superintendent responsible for the day-to-day site operations shall be the project's spill prevention and cleanup coordinator. The superintendent shall designate at least three (3) other site personnel, who shall receive spill prevention and cleanup training. The names and cell phone numbers of these responsible spill personnel shall be posted prominently onsite. These individuals shall each be made responsible for a particular phase of spill prevention and cleanup.

17. Site Security
    All materials requiring security shall be kept locked within secure containers stored in a designated secure area.

18. All construction and site activities shall be performed in accordance with the specifications and plans approved by the appropriate governmental authorities. Activities may also be monitored and inspected by the municipal engineer, related agency inspectors, and the municipal water/sewer authorities.

EROSION & SEDIMENT CONTROL (E&SC) PLAN NARRATIVE

E&SC Plan Planning & Design 102.4(b)(4)

The E&SC Plans are separate from the PCSM Plans and are labeled "E&SC Plan" and are the final plans to be used during construction.

Documentation that the E&SC Plans was prepared by a person trained and experienced in E&SC design methods and techniques applicable to the size and scope of the project is provided in ATTACHMENT C.

The temporary erosion control measures provided during construction and restoration activities are designed to minimize soil loss, prevent pollution of Stillwater Run near the municipal campus and the unnamed tributary at the Ashley Run Clean Soils Site, both tributaries to Angelica Creek, in addition to the tributaries to Wyomissing Creek along Reed Street. These controls will also protect adjacent properties, and maximize protection of existing drainage features and vegetation.

The following measures and Best Management Practices (BMP's) shown on the E&SC Plans must be incorporated throughout the project's construction by the contractor:
- Limiting areas of disturbance, and preservation of existing vegetation wherever possible
- Temporary seeding and mulching applied immediately to all disturbed areas
- Proper silt fence and/or filter sock sediment barrier installation and maintenance
- Stabilized construction entrance installation and maintenance
- Restricting construction traffic to the site disturbed areas and stone driveways
- Pumped water filter bag installation and maintenance
- Erosion control matting along stream banks and steep slopes as needed
- Filter bag/stone & block inlet protection installation and maintenance

The above measures, shown throughout the E&SC Plans will:

✓ Minimize the extent and duration of earth disturbance;

✓ Maximize protection of existing site drainage features and vegetation;

✓ Minimize soil compaction; and

✓ Control/minimize the generation of increased stormwater runoff.

Existing topographic features of the project site and the immediate surrounding area §102.4(b)(5)(i)

The topography of the project site is shown on the drawings, by use of contours at one-foot intervals.

A USGS quadrangle location map is provided in ATTACHMENT D and on the plan cover sheet.

The project drawings incorporate both construction and E&SC information on the E&SC plan to aid the contractor in compliance with E&SC requirements during construction.

Soil Types, depth, slope, locations and limitations §102.4(b)(5)(ii)

The maps of soil types and limits related to the project were identified using the NRCS Web Soil Survey website. The soil survey map pertaining to the project is provided in ATTACHMENT E1 and E2 and soil boundaries are shown on the drawings.

Per the PADEP E&SC Chapter 102 Manual, Appendix E, there are no limitations listed for Urban land, Joanna complex (UpD). Other soils at the site can be used to determine the properties of this urban land. Soil at the project site include Neshaminy Silt Loam (NaB and NaC), Neshaminy gravelly silt loam (NhD) and the site is bordered by Brecknock channery silt loam (BpD). The table below describes the expected limitations for these soils.

Map Unit Symbol	Map Unity Name	Limitations
BpB	Brecknock channery silt loam, 3 to 8 percent slopes	N/A
BpC	Brecknock channery silt loam, 8 to 15 percent slopes	Slope
NaB	Neshaminy silt loam 3 to 8 percent slopes	Slopes
NaC	Neshaminy silt loam 8 to 15 percent slopes	Slopes
NaD	Neshaminy silt loam 15 to 25 percent slopes	Slopes
NhD	Neshaminy gravelly silt loam, 8 to 25 percent slopes, extremely boulder	Slopes, Depth to saturated zone
UpB	Urban land-Joanna complex, 0 to 8 percent slopes	Unknown/Undefined
UpD	Urban land-Joanna complex, 8 to 25 percent slopes	Unknown/Undefined

These limitations can be addressed with proper shoring of bulk excavations and use of trench boxes for linear excavations, the coating of exposed concrete and steel proposed for underground service, and standard pumping of water from excavations.

Preliminary sampling and testing of representative soils is being performed concurrently with the submittal of this application. Once construction starts, further sampling and testing will be performed on the underlying soils. Test results will be presented upon receipt and will be used in determining the proper disposal method for exported fill materials.

Since there are only a few construction-related notes on the plans, it is requested that it be deemed acceptable that the Construction Plans are included in the E&SC and PCSM (Restoration) Plan set. This provides better coordination to the contractor than having two separate plan sets in the field. Every effort has been made to ensure that the plan information shown is complete and legible.

Past, present and proposed land uses and proposed alteration to project site §102.4(b)(5)(iii)

From review of available online historical mapping, the past use(s) for the project sites for the prior fifty years indicate that the uses have been farming, vacant, residential homes, and roadways.

The present land use for the past five years has not changed.

The proposed work during Phase 1 includes along E Fairview Street, Cedar Street, Reed Street, and Church Road will conclude with restoration of the existing residential (paved street) to existing conditions. Proposed work along Welsh Road includes raising the elevation of the road at the conclusion of utility line installation and replacement. Land to the west of Welsh Road will be regraded and a fire station built upon it.

The proposed work during Phase 2 includes the construction of a new fire station with driveways and parking as well as stormwater management features to address the increase in runoff due to the new impervious surfaces connected to features installed in Phase 1.

Volume and rate of runoff from the project site and its upstream watershed area §102.4(b)(5)(iv)

During Phase 1, a decrease in volume and peak rate of runoff from the site can be expected due to work completed during this phase of the project. The work includes removal of several impervious areas (garage, driveway, and pavilion), regrading of fields in front of the township building, and reconstruction of the stormwater management basin. Changes to the existing stormwater management basin will increase retention time in the basin. Regrading to the east of the township building includes installation of a new basin to manage other stormwater flows being directed further south along Welsh Road via road gutter lines that are to be improved.

During Phase 2, an increase in volume and peak rate of runoff can be expected due to work completed. These increases are addressed by PCSM features including an infiltration basin and a dry extended detention basin beneath the parking lot.

Summary of calculations results is in the ATT Js, each labeled for relevant locations.

Location of all surface waters and their classification under Chapter 93 §102.4(b)(5)(v)

During Phase 1, the receiving surface waters, tributaries to Wyomissing Creek and tributaries to Angelica Creek. These waterways are shown and labeled on the drawings. During Phase 2, runoff will only flow to the tributaries to Angelica Creek.

Per PADEP Chapter 93 classification, the designated use of the receiving stream basin, the Wyomissing Creek, is HQ-CWF (High Quality Cold Water Fishes) and MF (Migratory Fishes); it is a HQ designated watershed.

Angelica Creek has a designated use listed as CWF (Cold Water Fishes) and MF (Migratory Fishes); it is not a HQ or EV designated watershed. There is no existing use listed in Chapter 93.

Narrative description of the location and type of perimeter and onsite BMPs §102.4(b)(5)(vi)

The temporary erosion control measures to be provided during construction and restoration activities are designed to minimize soil loss, prevent water pollution of adjacent streams and rivers, protect adjacent properties, and maximize protection of existing drainage features and vegetation. The following E&SC Best Management Practices (BMP's) are incorporated in the design and details of the project:
- Limiting areas of disturbance and preservation of existing vegetation wherever possible.
- Temporary seeding and mulching to be applied immediately to all disturbed areas.
- Silt fence/filter sock sediment barrier
- Benching of slopes
- (Stabilized) Rock construction entrances
- Pumped water filter bags
- Erosion control matting along stream banks and steep slopes
- Filter bag inlet protection

Sequence of BMP installation and removal §102.4(b)(5)(vii)

A general construction sequence for the installation of piping and appurtenances, including installation and removal of temporary E&SC BMPs, is shown on the drawings.

Supporting calculations and measurements §102.4(b)(5)(viii)

Supporting calculations for E&SC measures is included in ATT Q. These include worksheets for compost sock, flare end sections and end walls, swale and channel design, and anti-seep collars. Attachments are labeled for phases to which they correspond.

Supporting calculations for the existing land cover and basins are included in ATT K of the Appendices to the PCSM Narrative. Existing land cover for Phase 2 is the proposed land cover at the conclusion of Phase 1.

Supporting calculations for the proposed new basins are included in ATT L of the PCSM Appendices. Phase 1 includes calculations for permanent basin 1 and 2 as well as temporary sediment basins 3 and 4. Phase 2 includes calculations for removal of temporary sediment traps 3 and 4 and permanent basins 5 and 6.

Plan drawings §102.4(b)(5)(ix)

Drawings describing the proposed earthmoving are included in the application. The limit of disturbance is shown on the drawings. The existing grading will generally be restored at the conclusion of Phase 1. Grading will be adjusted as shown of the plans for Phase 2. E&SC BMP details are included on the drawings.

Maintenance program §102.4(b)(5)(x)

Erosion and sediment control measures included in this plan shall be maintained after construction so that they individually and collectively perform the function for which they were designed.

During the work, the contractor will assign worker(s) experienced in erosion control measures to make inspections and preparing reports weekly and after rainfall events, to determine any maintenance or repair that may be required. Temporary features such as silt fence, inlet protection, and erosion control matting will be inspected and any needed maintenance or repair will be noted. After inspection, the preventative and remedial work needed will be determined and corrected immediately.

Sediment will not be permitted to accumulate to a depth sufficient to limit the effectiveness of the proposed E&S BMP(s). After final site stabilization has been achieved, only then will the temporary erosion and sediment BMP's be removed. Any areas disturbed during removal of the BMP's will be stabilized immediately.

The maintenance of the proposed BMP's is addressed in the notes on the drawings.

An inspection schedule for the proposed BMP's is addressed in the notes on the drawings.

A written report documenting inspections and repairs is specified in the notes on the drawings.

Recycling or disposal of materials §102.4(b)(5)(xi)

Potential construction wastes from a project of this type include: sediment collected in the trench water filtration system, disturbed sediments that may run overland, concrete truck washout materials, wood dunnage from equipment delivery pallets and concrete framework, excess excavated materials, and typical construction debris. All of these wastes will be recycled or disposed of offsite as described in the standard general sediment control notes #A.10 & 11 on the permit plans (Drawing 162): i.e., per the PADEP Solid Waste Management Regulations (document 258-2182-773); no disposal will occur onsite.

Instructions for the proper recycling/offsite disposal of other materials are provided in the notes on the drawings and on the Preparedness, Prevention and Contingency (PPC) Plan which is included on the drawings and in ATT H.

Geologic formations/soil conditions that may have the potential to cause pollution §102.4(b)(5)(xii)

There are no known naturally-occurring geologic or other soil conditions that are anticipated to have the potential to cause pollution; measures to avoid, minimize or mitigate them are not applicable.

Potential thermal impacts to surface waters §102.4(b)(5)(xiii)

During the project, the thermal impacts of stormwater will be avoided, minimized, and mitigated by pumping water from the trenches through a filter bag and into a grassy area allowing time for water to cool before any may possibly run off into surface waters.

The post-construction thermal impacts of stormwater runoff from the project site will be avoided, minimized, and mitigated by restoring most disturbed areas to the cover conditions (or better) that existed prior to construction. For areas that were changed and not restored, the revitalized storm swales along the sites of Welsh Road will slow the first flush and allow for some to be retained and infiltrated or runoff to cool before entering waters of the Commonwealth.

E&S Plan designed and implemented to be consistent with PCSM Plan §102.4(b)(5)(xiv)

The proposed PCSM structural BMP stormwater management basins are shown on the E&SC Plan Maps. These areas are protected during construction as suggested in their implementation guidelines to prevent sediment from entering the system before they have been fully stabilized and to avoid compaction by construction equipment. Drainage area and ground cover calculations show that there is no expected increase in runoff peak rate. A summary of the results of the calculations are included to support this in the PCSM Spreadsheets.

There are no existing or proposed riparian buffers within the project site. Therefore the requirement that riparian buffers are shown outside limits of disturbance is not applicable. A wetland delineation was performed. Wetlands are located outside the project site and are labeled on the drawings.

Existing/proposed riparian forest buffers §102.4(b)(5)(xv)

The project site does not discharges to a High Quality or Exceptional Value watershed. The site and disturbance area is within 150 feet of a perennial or intermittent river, stream, or creek, lake, pond or reservoir, however, the project consists primarily of road maintenance activities during Phase 1. Therefore, the project meets the requirements for granting of a waiver listed in the following section(s) of Chapter 102.14:

- 102.14(a)(1)(v) Road maintenance activities so long as any existing riparian buffer is undisturbed to the extent practicable.

During Phase 2 the following waiver applies:

- 102.14(a)(1)(i) A project site located greater than 150 feet (45.7 meters) from a river, stream, creek, lake, pond or reservoir.

There are wetlands present to the east of the site, per review of the NWI mapping online, and these wetlands are shown on the project plans. These areas are not forested and are outside the limit of disturbance.

Antidegradation Analysis

The project site drains to an MS4. This MS4 drains to a wetland as shown on the plans. Wetlands are designated as EV if they meet the definition listed in 105.17(1)(i-v). Given the wide definition in the PA Code and the lack of knowledge of other wetlands in the area which may affect the classification of wetlands adjacent to the site and cost prohibitive nature to classify them, it is unclear if these wetlands meet the criteria for definition as EV, therefore the Antidegradation Analysis Module 3 is included. ABACT BMPs are proposed for use.

08/11/2023	RC	JES	2 REVISED DRAWINGS PER BCCD REVIEW E-MAIL, DATED 07/31/2023.
04/20/2023	RC	JES	NPDES PERMIT #PAD060047, PHASE #2 SUBMISSION
Date	Draft	Chkd	

EROSION & SEDIMENTATION CONTROL NOTES

CUMRU FIRE DEPARTMENT NEW BUILDING

Prepared For:

TOWNSHIP OF CUMRU

Situate In:

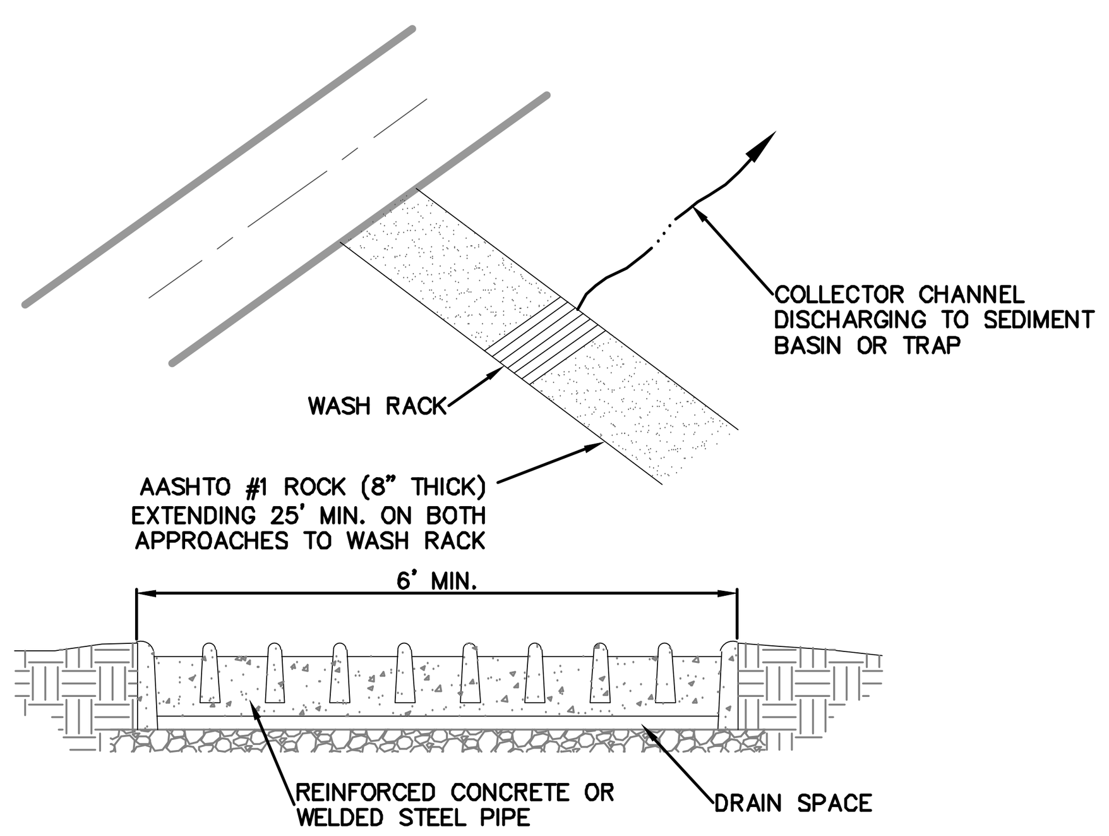
CUMRU TOWNSHIP, BERKS CO., PA.

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — JEFFREY E. SKINNER — ENGINEER — No. 042652-E

Jeffrey E. Skinner
PE-042652-E
SU-052889-E

ATLAS
920 GERMANTOWN PIKE, SUITE 200,
PLYMOUTH MEETING, PA 19462

PROJECT #: Z057000538
DRAWING #: 166.2
SHEET #: 14 Of 27



NOTES:

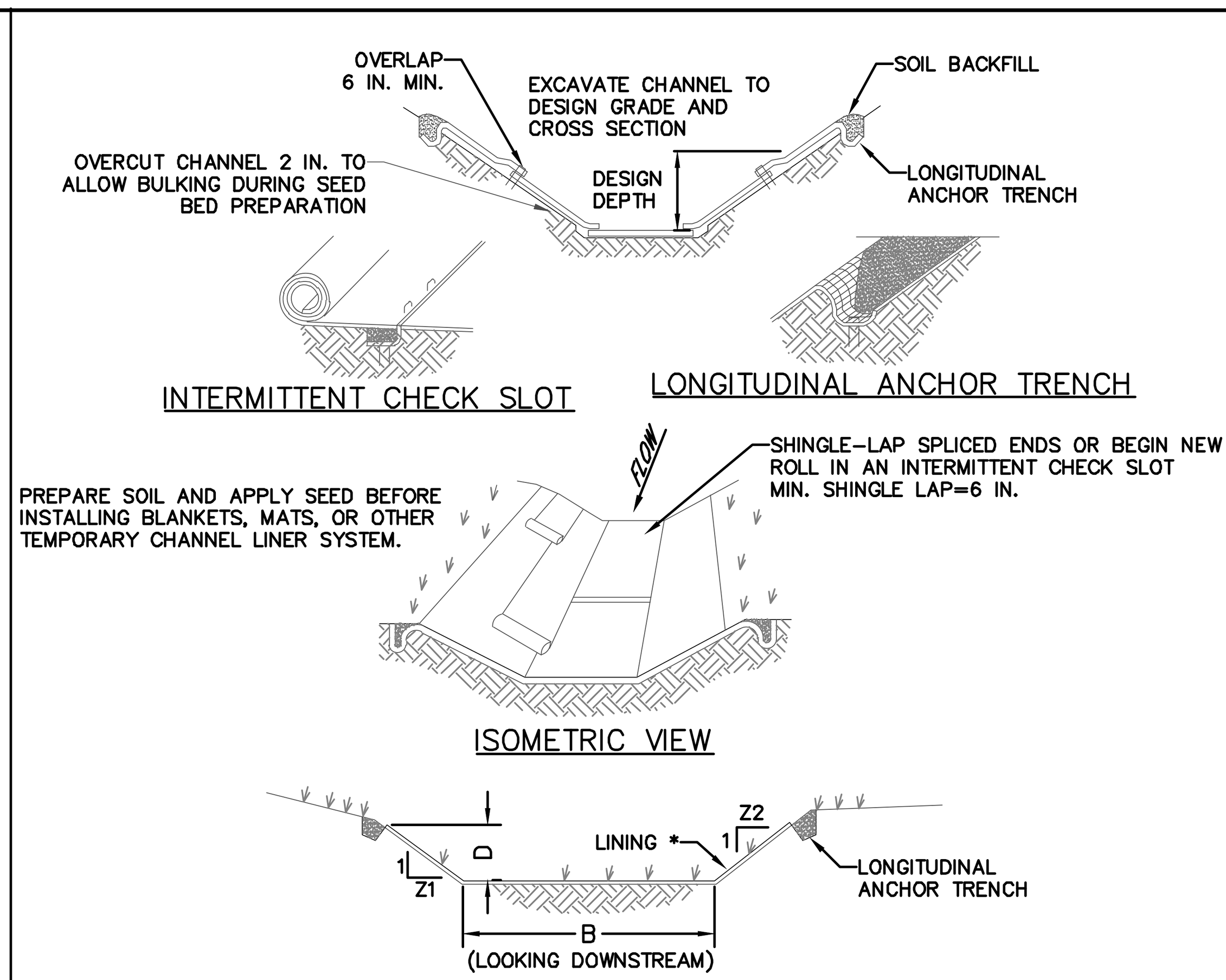
WASH RACK SHALL BE 20 FEET (MIN.) WIDE OR TOTAL WIDTH OF ACCESS.

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

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

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

STANDARD CONSTRUCTION DETAIL #3-2
ROCK CONSTRUCTION ACCESS WITH WASH RACK (1 / 166.3)
NOT TO SCALE



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

CHANNEL NO.	STATIONS	BOTTOM WIDTH B (FT)	DEPTH D (FT)	TOP WIDTH W (FT)	Z1 (FT)	Z2 (FT)	LINING *
SWALE 1A	6 LF	1	1	7	3	3	R-5
SWALE 1B	40 LF	1	1	7	3	3	GRASS-LEGUME
SWALE 2	94 LF	1	1	7	3	3	GRASS-LEGUME
SWALE 3A	91 LF	1	1	7	3	3	GRASS-LEGUME
SWALE 3B	58 LF	1	1	7	3	3	GRASS-LEGUME
SWALE 4A	52 LF	1	1	7	3	3	GRASS-LEGUME
SWALE 4B	50 LF	1	1	7	3	3	GRASS-LEGUME
SWALE 5A	49 LF	2.5	1.26	10.04	3	3	GRASS-LEGUME
SWALE 5B	56 LF	2.5	1	8.5	3	3	GRASS-LEGUME

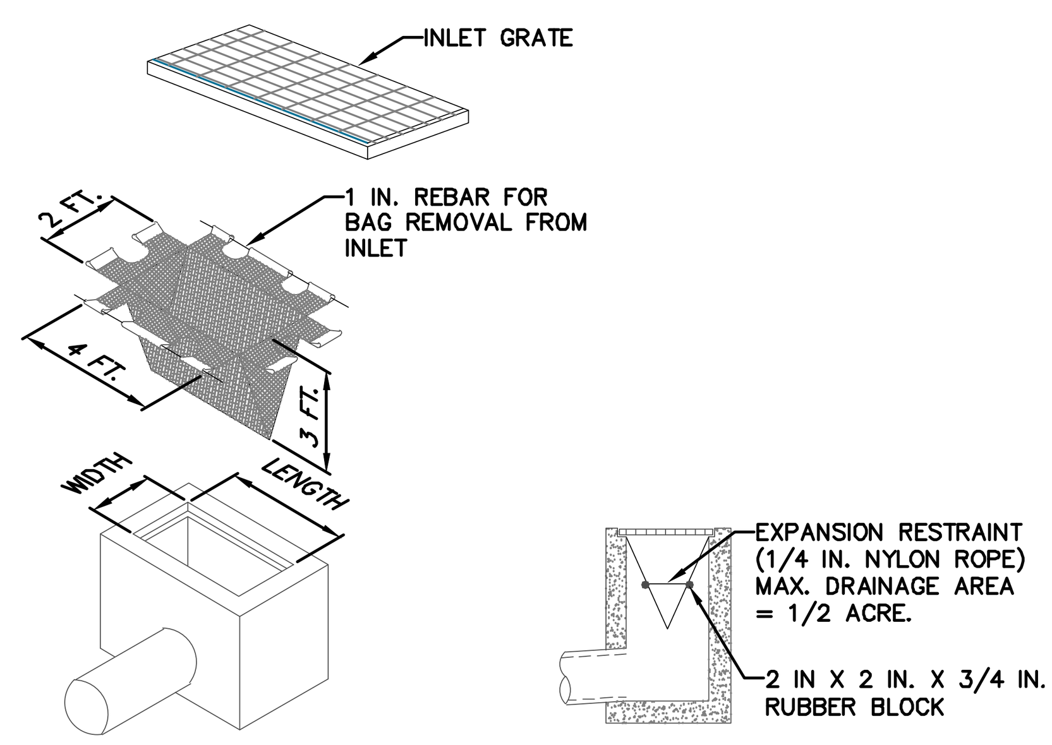
NOTES:

ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.

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

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

STANDARD CONSTRUCTION DETAIL #6-1 (2 / 166.3)
VEGETATED CHANNEL
NOT TO SCALE



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

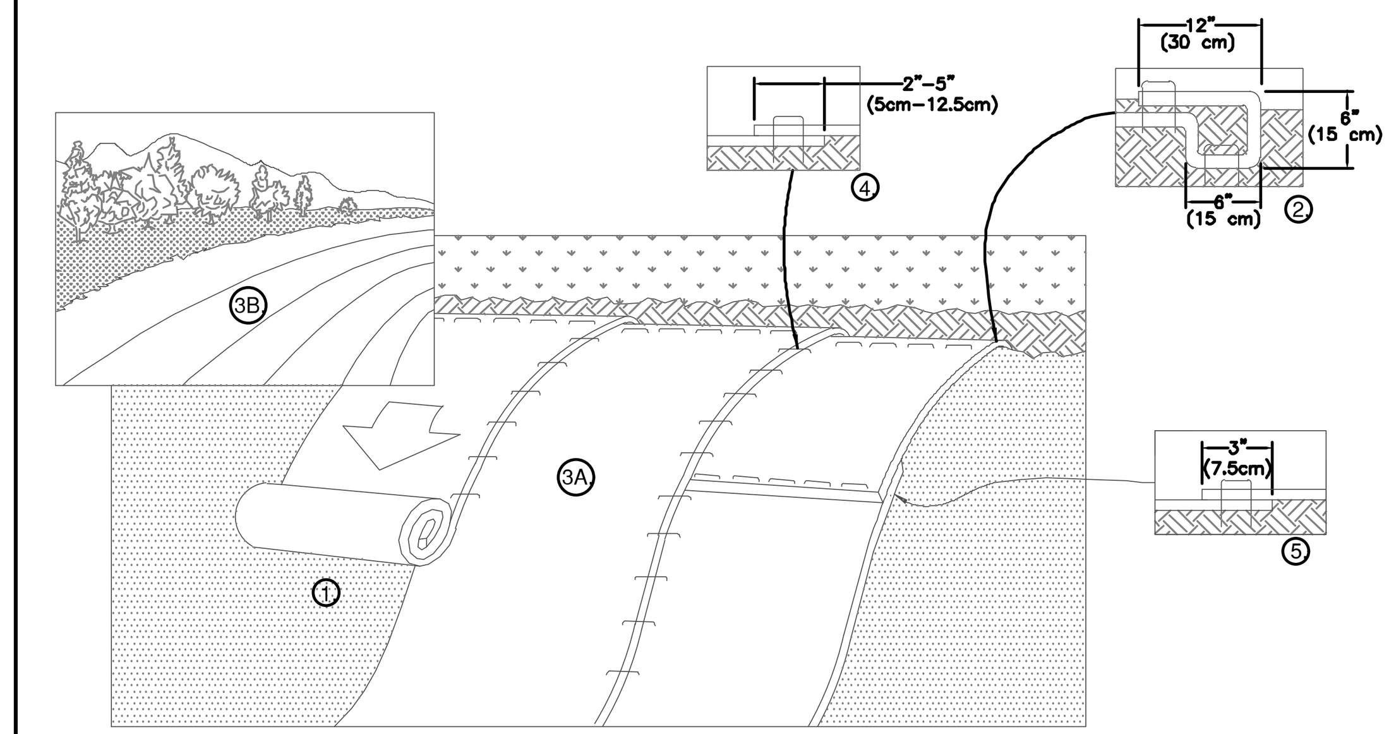
ROLLED EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN PERMANENTLY.

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

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

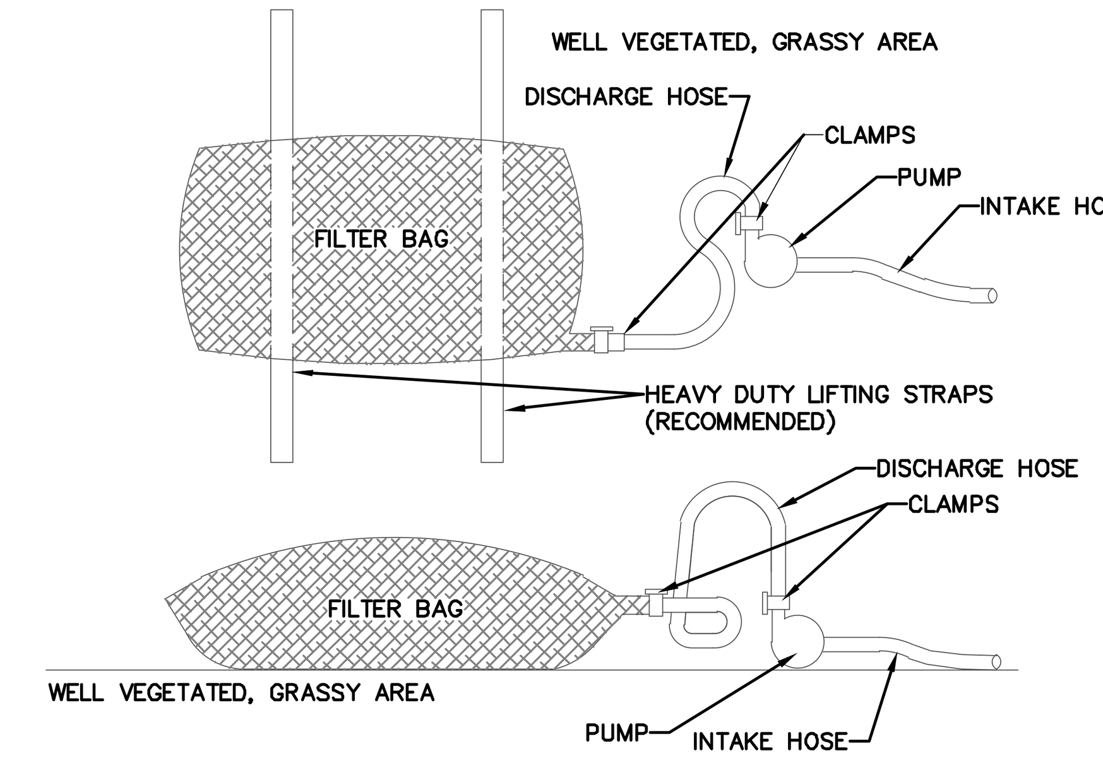
DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

FILTER BAG INLET PROTECTION (3 / 166.3)
N.T.S.



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED(TM) MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM , STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm-12.5cm) OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH. NOTE: *IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15cm) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

EROSION CONTROL MATTING (4 / 166.3)
N.T.S.



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 ½ FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS 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.

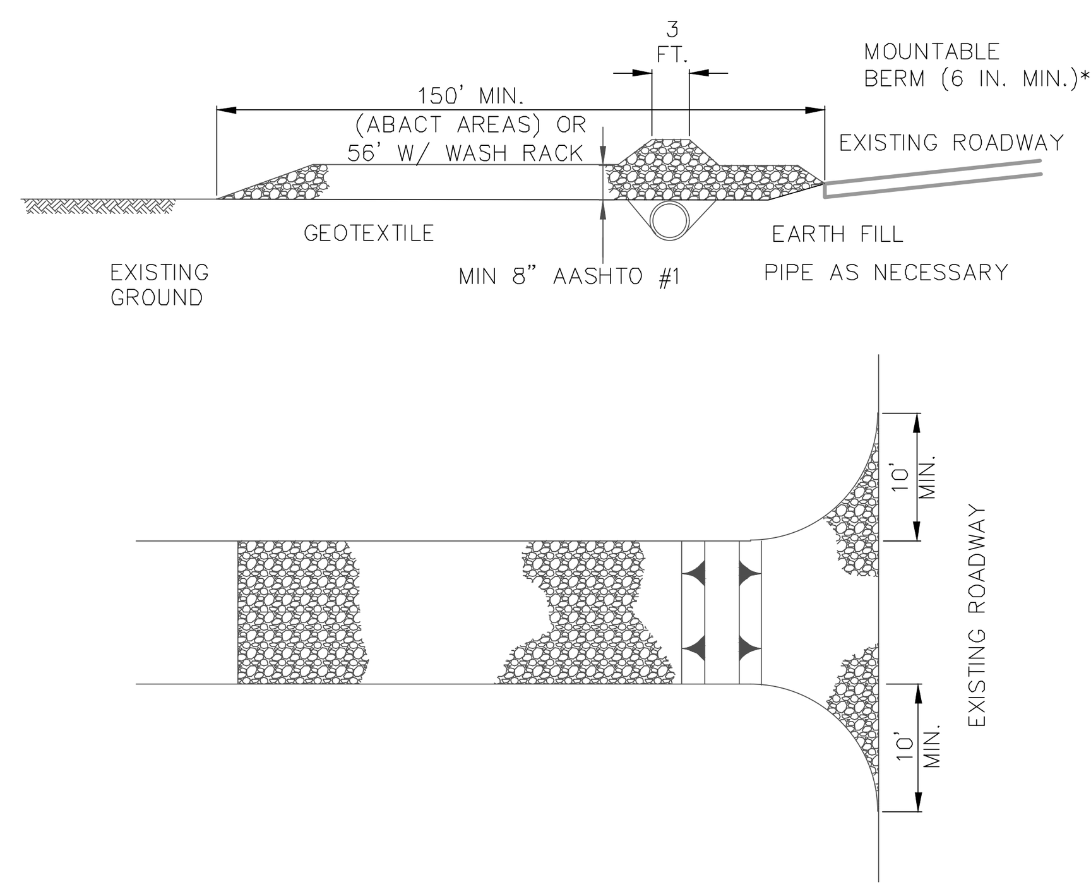
NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

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 ½ THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

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

STANDARD CONSTRUCTION DETAIL (5 / 166.3)
PUMPED WATER FILTER BAG
N.T.S.



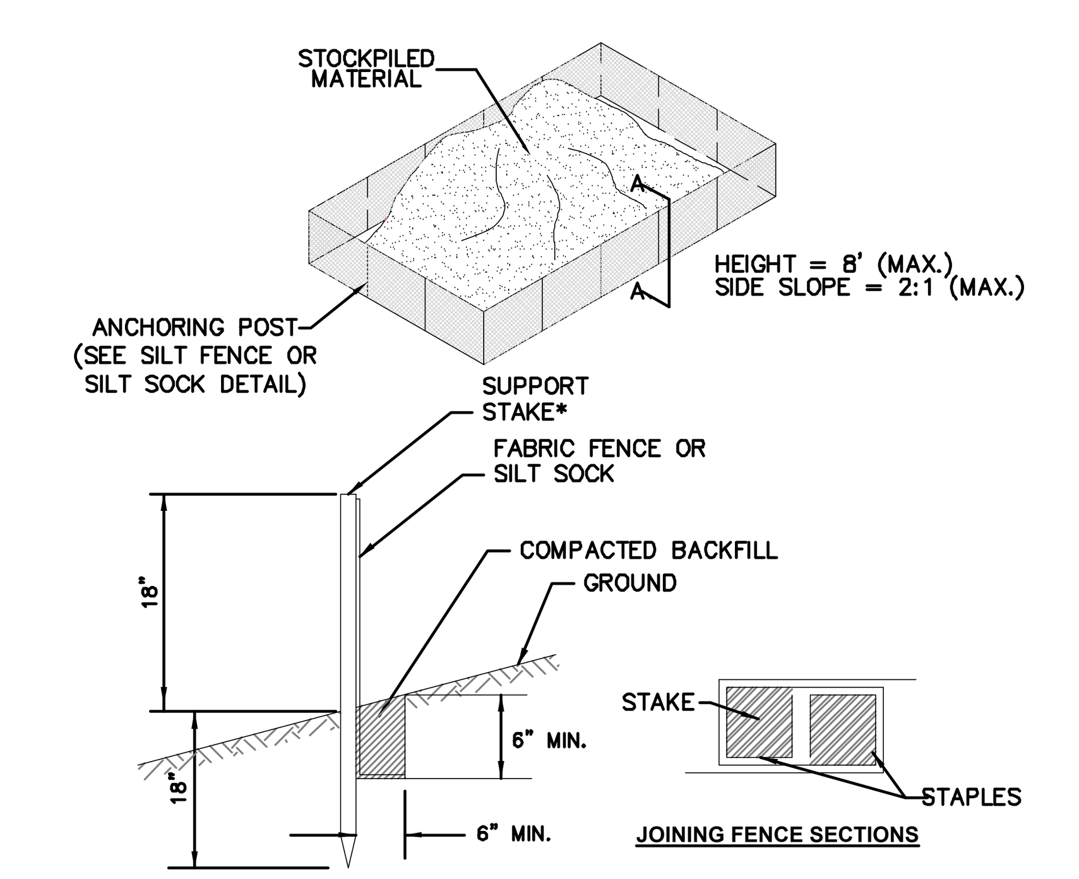
* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

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

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 150 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.

STANDARD CONSTRUCTION DETAIL (6 / 166.3)
ROCK CONSTRUCTION ENTRANCE
N.T.S.



* Stakes spaced @ 8' maximum. Use 2" x 2" wood or equivalent steel stakes.

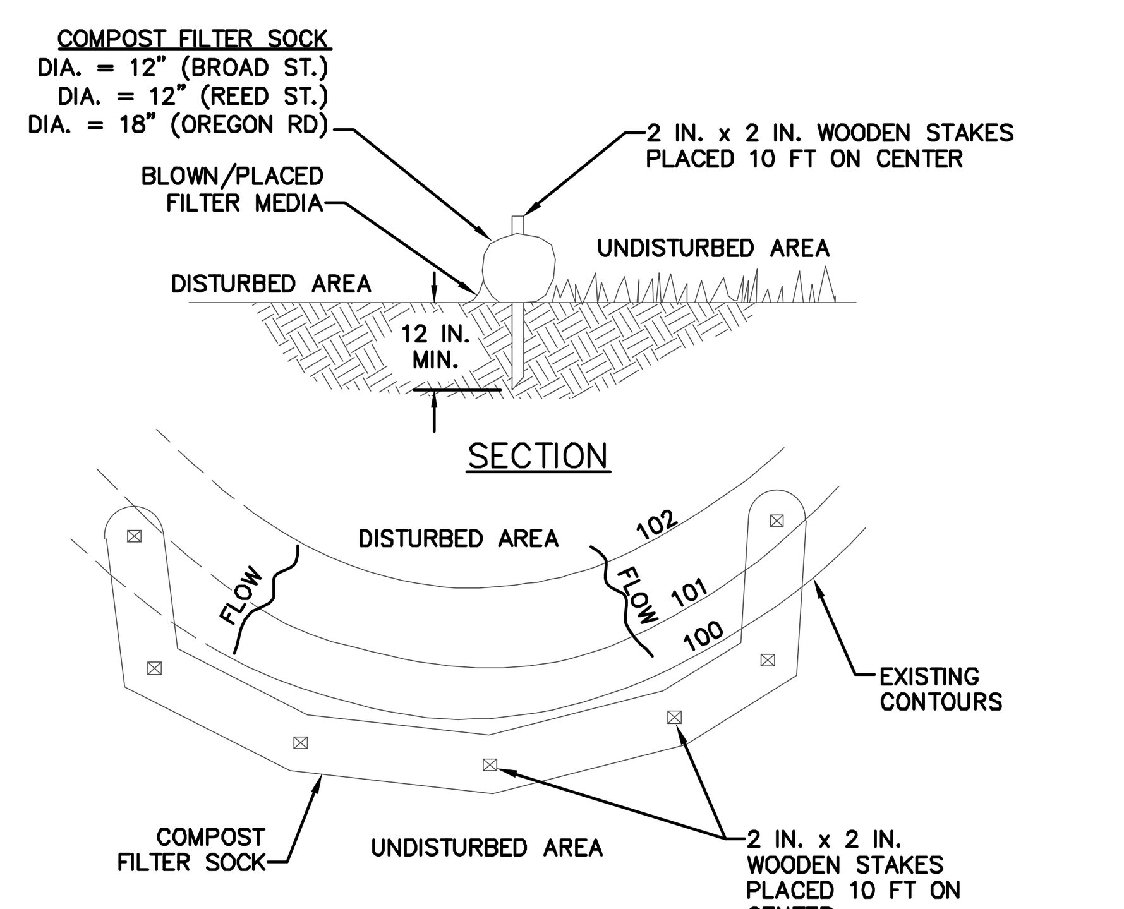
Filter Fabric Fence must be placed at level existing grade. Both ends of the barrier must be extended at least 8 feet up slope at 45 degrees to the main barrier alignment.

Sediment must be removed when accumulations reach 1/2 the above ground height of the fence.

Any section of Filter Fabric Fence which has been undermined or topped must be immediately replaced with a Rock Filter Outlet. See Standard Construction Detail #18.

INSTALL SILT FENCE OR SILT SOCK DOWNSLOPE OF ALL STOCKPILE AREAS.

TOPSOIL & CLEAN SPOILS STOCKPILE CONTROL (7 / 166.3)
N.T.S.



COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (FIGURE 4.1). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.

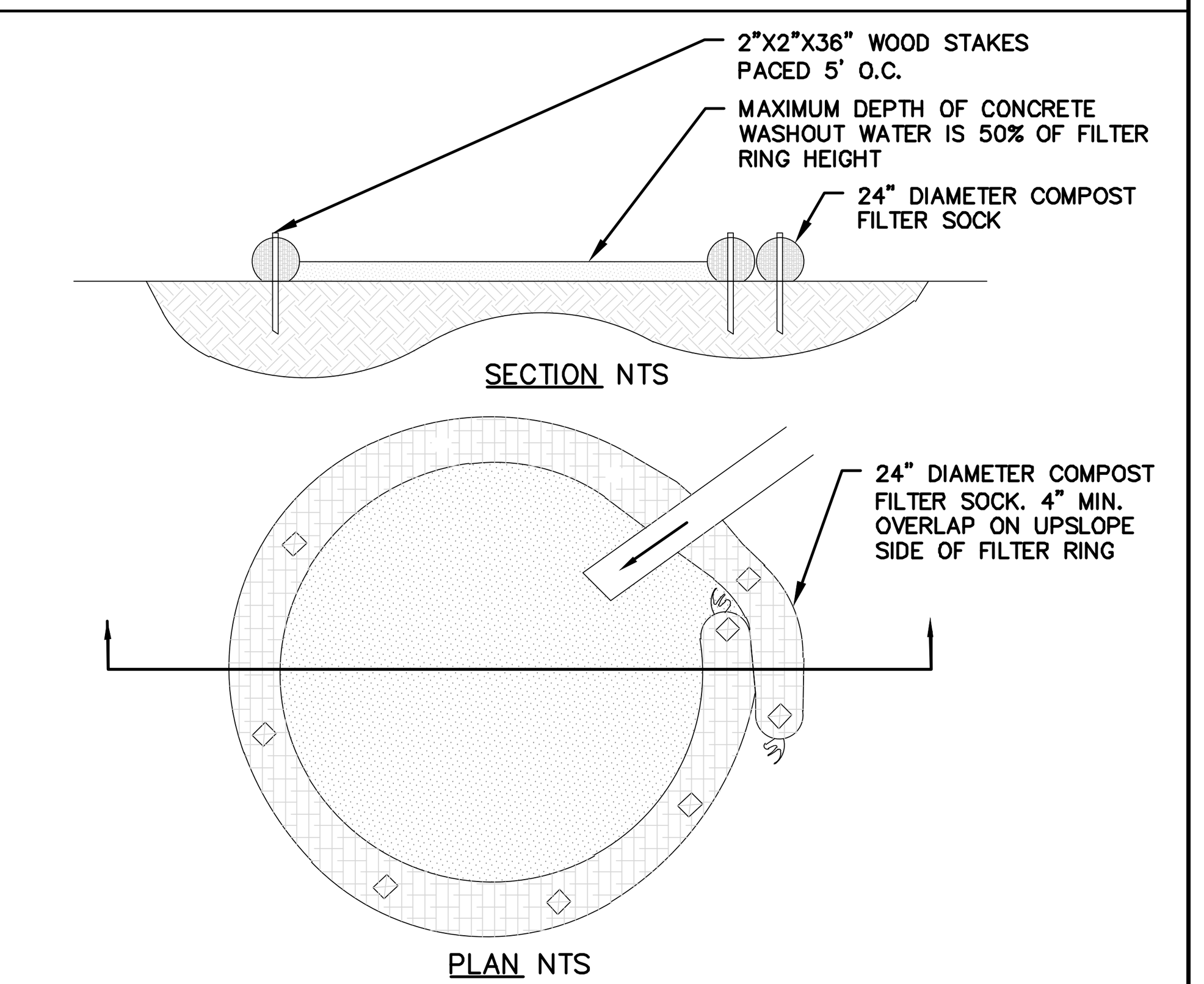
ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

STANDARD CONSTRUCTION DETAIL (8 / 166.3)
COMPOST FILTER SOCK
N.T.S.



NOTES:
1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE
2. 18" DIAMETER FILTER SOCK MAY BE STAKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.

A SUITABLE IMPERVIOUS GROMEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO INSTALLING THE SOCKS.

TYPICAL COMPOST
SOCK WASHOUT INSTALLATION (10 / 166.3)
N.T.S.

Date	Draft	Chkd	
04/20/2023	RC	JES	NPDES PERMIT #PAD060047, PHASE #2 SUBMISSION

EROSION & SEDIMENTATION CONTROL DETAILS

CUMRU FIRE DEPARTMENT NEW BUILDING

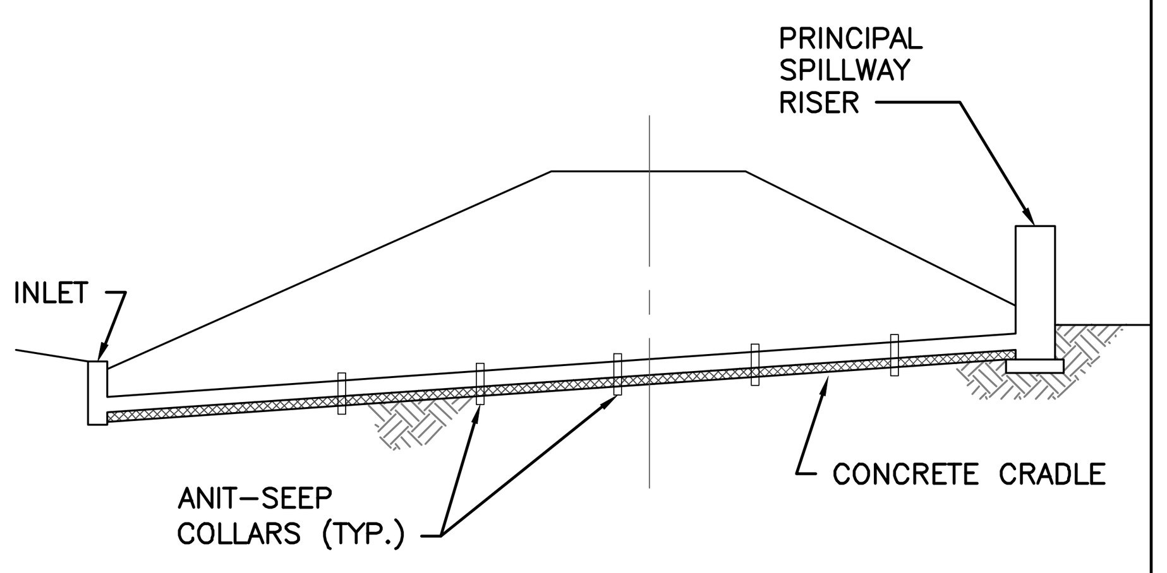
Prepared For:
TOWNSHIP OF CUMRU

Situate In:
CUMRU TOWNSHIP, BERKS CO., PA.

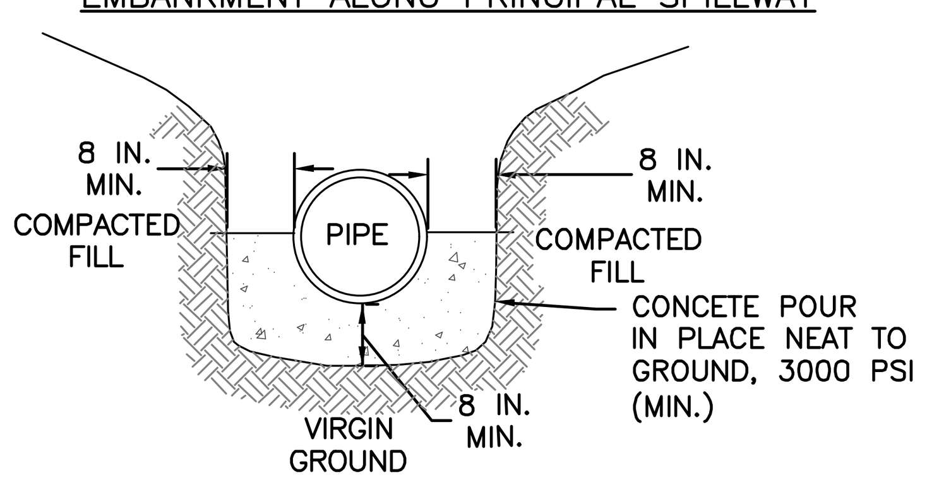
Jeffrey E. Skinner
PE-042652-E
SU-052889-E

ATLAS
920 GERMANTOWN PIKE, SUITE 200,
PLYMOUTH MEETING, PA 19462

PROJECT #: Z057000538
DRAWING #: 166.3
SHEET #: 16 Of 28



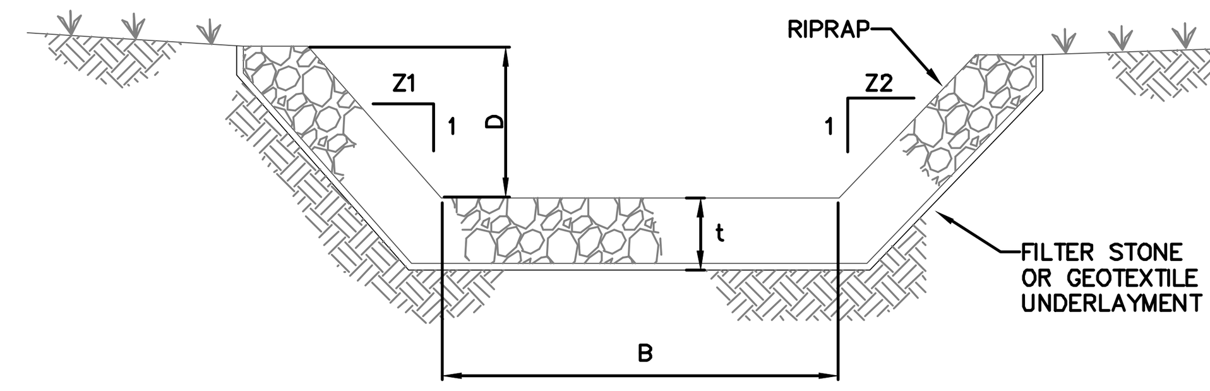
EMBANKMENT ALONG PRINCIPAL SPILLWAY



CROSS SECTION AT OUTLET BARREL

NOTES:
A CONCRETE CRADLE MAY BE USED IN CONJUCTION WITH ANTI-SEEP COLLARS AND/OR FILTER DIAPHRAGM.
ANTI-SEEP COLLAR NUNBER, SIZE AND SPACING SHALL BE AS SHOWN ELSEWHERE IN PLAN.

STANDARD CONSTRUCTION DETAIL #7-17
CONCRETE CRADLE FOR BASIN OR TRAP OUTLET BARREL (1 / 166.4)
NOT TO SCALE



(LOOKING DOWNSTREAM)
CHANNEL CROSS-SECTION

CHANNEL NO.	STATIONS	BOTTOM WIDTH B (FT)	DEPTH D (FT)	Z1 (FT)	Z2 (FT)	RIPRAP GRADATION (R-_)	RIPRAP DEPTH t (IN)	UNDERLAYMENT	UNDER-LAYMENT THICKNESS
SWALE 1A	6.0 LF	1	1	3	3	R-5	24	NA	NA
FES 44	3.0'	4.5	1	3	3	R-4	18	NA	NA
FES 45	3.0'	3	0.5	3	3	R-4	18	NA	NA

NOTES:

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

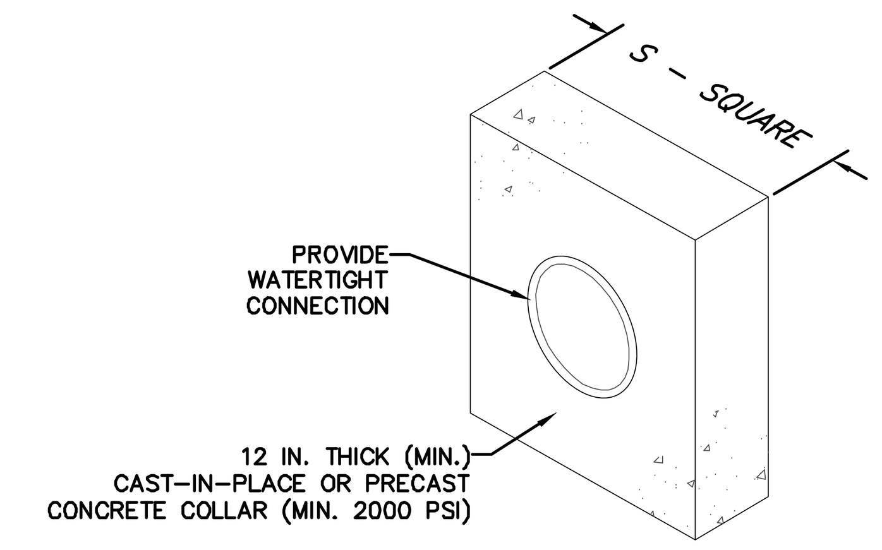
CHANNEL DIMENSIONS ARE FOR THE COMPLETED CHANNEL AFTER ROCK PLACEMENT. CHANNEL MUST BE OVER-EXCAVATED A SUFFICIENT AMOUNT TO ALLOW FOR THE VOLUME OF ROCK PLACED WITHIN THE CHANNEL WHILE PROVIDING THE SPECIFIED FINISHED DIMENSIONS.

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

DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.

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

RIPRAP CHANNEL (2 / 166.4)
(SCD 6-3)
N.T.S



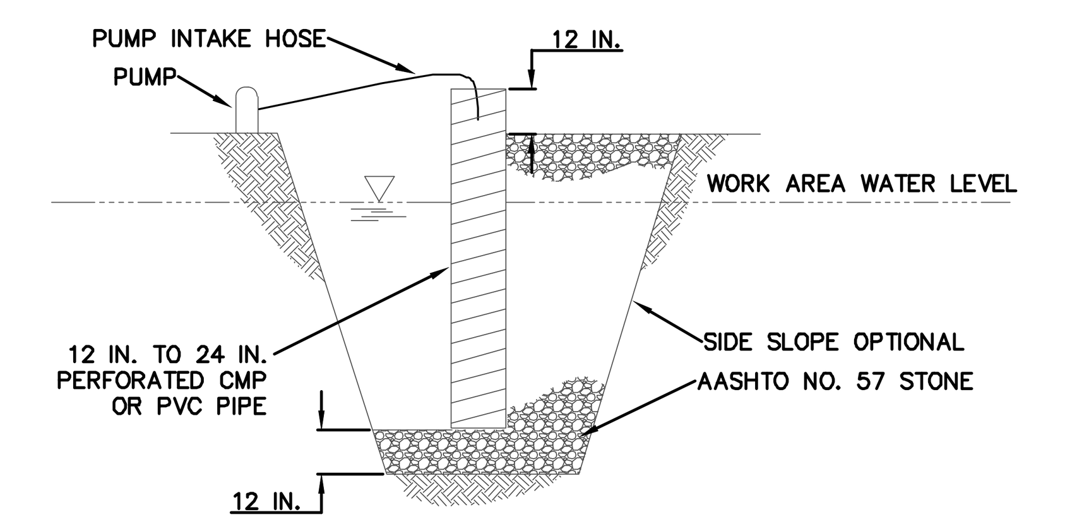
BASIN OR TRAP NO.	PIPE SIZE (IN)	S (IN)	NO. OF COLLARS	RISER TO FIRST COLLAR (FT)	COLLAR SPACING (FT)
#6	24	48	2	5	10

NOTES:

ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.

COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

CONCRETE ANTI-SEEP COLLAR FOR PERM. BASINS OR TRAPS (SCD 7-16) (3 / 166.4)
N.T.S



LOCATE SUMP AT LOW POINT IN WORK AREA AND OUTSIDE OF CONSTRUCTION ACTIVITY. WHEREVER RUNOFF FROM A WORK AREA FLOWS DIRECTLY TO THE SUMP AREA, A FILTER BAG SHALL BE ATTACHED AT THE DISCHARGE POINT UNLESS PUMPING TO A SEDIMENT BASIN OR SEDIMENT TRAP.

MINIMUM DIAMETER OF PIT BOTTOM SHALL BE 24" LARGER THAN PIPE DIAMETER. MINIMUM DEPTH OF PIT SHALL BE 24" BELOW WATER LEVEL IN WORK AREA (INCLUDING THE AASHTO #57 STONE). 12" TO 24" PERFORATED CMP OR PVC PIPE SHALL BE SET ON 12" OF CLEAN AASHTO # 57 STONE.

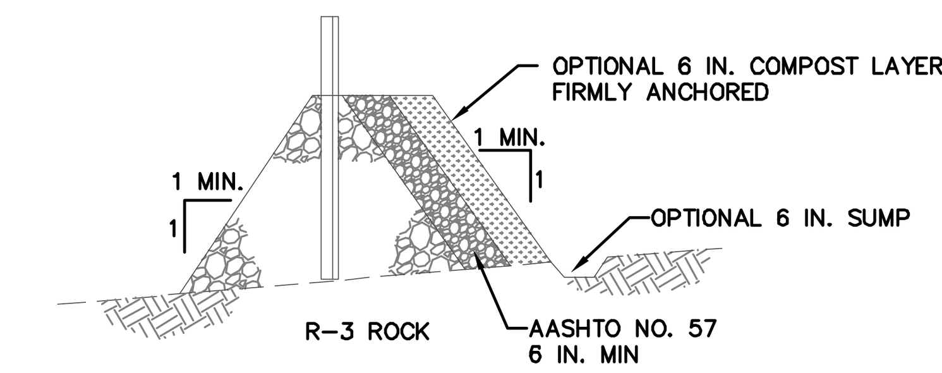
VOID SPACE AROUND PIPE SHALL BE FILLED WITH AASHTO # 57 STONE. PIPE TO EXTEND 12" MIN. ABOVE TOP OF STONE AND/OR WATER BEING PUMPED FROM WORK AREA.

SET PUMP INTAKE INSIDE STANDPIPE.

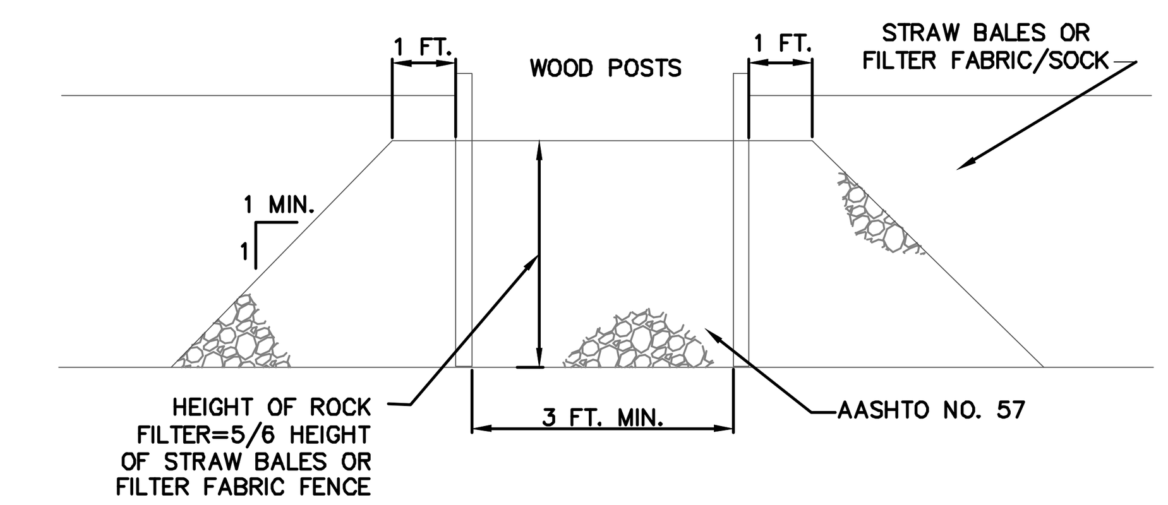
DISCHARGE FROM PUMP SHALL BE TO A STABLE AREA BELOW DISTURBANCES FROM THE WORK ZONE.

SUMP MAY BE USED IN CONJUNCTION WITH FILTER BAG WHERE ADDITIONAL FILTERING IS NEEDED.

STANDARD WATER DETAIL (4 / 166.4)
SUMP PIT
N.T.S.



OUTLET CROSS-SECTION



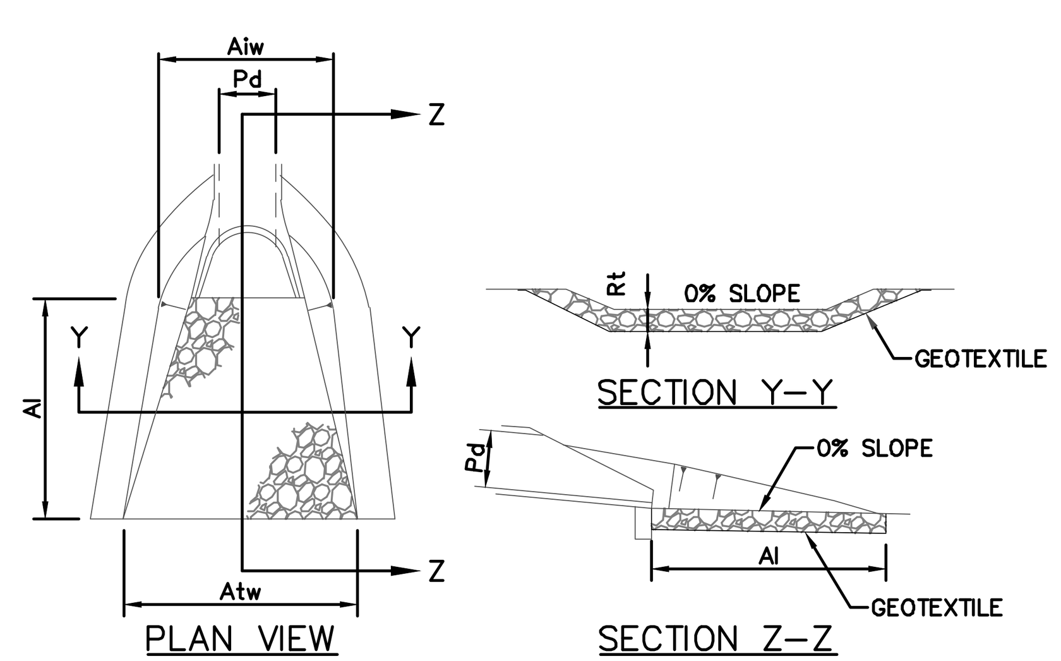
UP-SLOPE FACE

NOTES:

A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A SILT FENCE OR STRAW BALE BARRIER HAS OCCURRED DUE TO CONCENTRATED FLOW. ANCHORED COMPOST LAYER SHALL BE USED ON UPSLOPE FACE IN HQ AND EV WATERSHEDS.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.

STANDARD CONSTRUCTION DETAIL #4-6 (5 / 166.4)
ROCK FILTER OUTLET
NOT TO SCALE



OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP SIZE R-_	RIPRAP THICK. Rt (IN)	APRON LENGTH Al (FT)	APRON INITIAL WIDTH Aiw (FT)	APRON TERMINAL WIDTH Atw (FT)
44	18	R-4	18	7	4.5	8
45	12	R-4	18	9	3	9

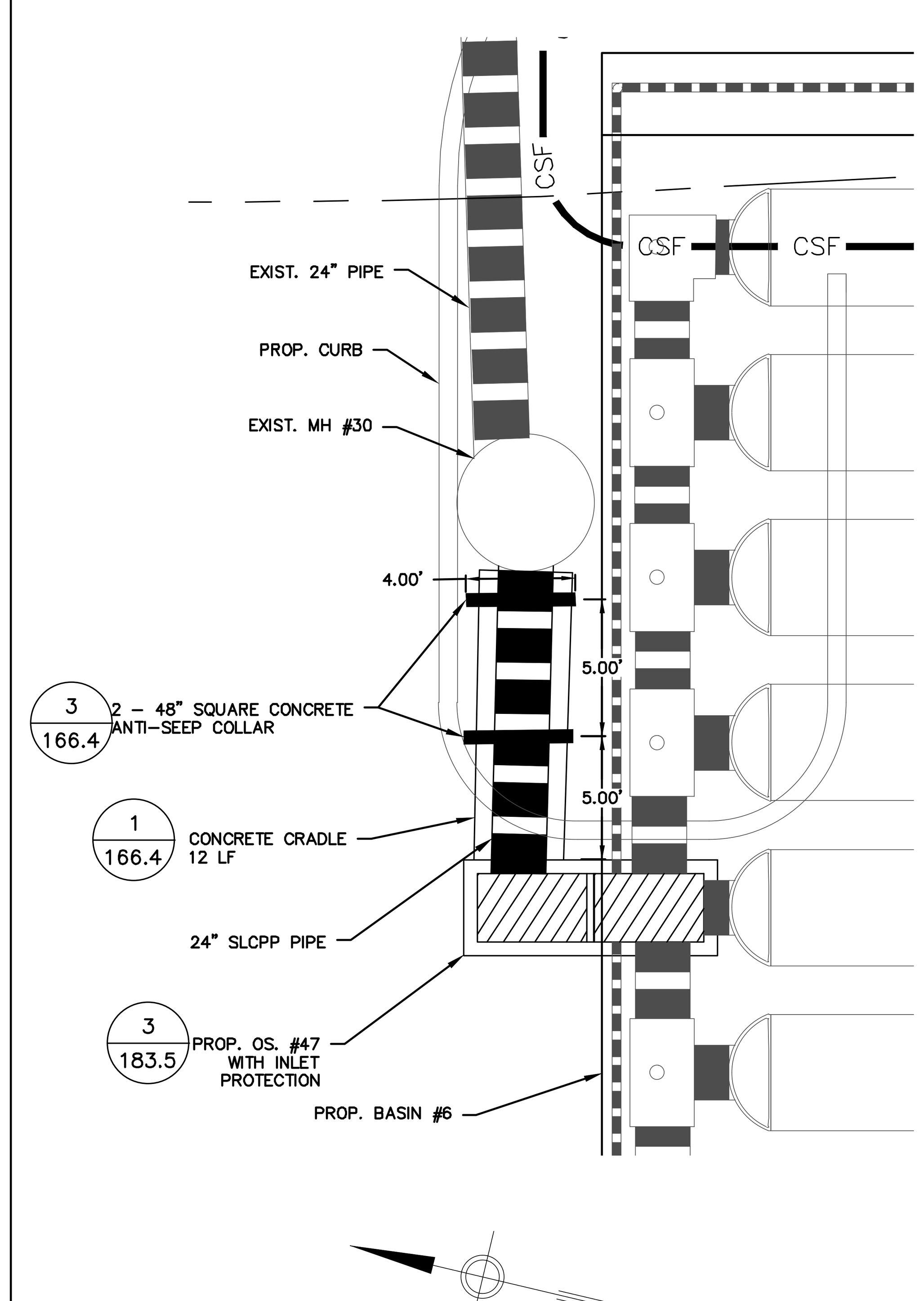
(2 / 166.4) (2 / 166.4)

NOTES:

ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

RIPRAP APRON AT PIPE OUTLET W/ FLARED (6 / 166.4)
(SCD 9-1)
N.T.S.



CONCRETE ANTI-SEEP COLLAR & CONCRETE CRADLE (7 / 166.4)
SCALE: 1" = 5'
5 2.5 0 5 10 15
SCALE IN FEET

04/20/2023	RC	JES	NPDES PERMIT #PAD060047, PHASE #2 SUBMISSION
Date	Draft	Chkd	

Jeffrey E. Skinner
PE-042652-E
SU-052889-E

EROSION & SEDIMENTATION CONTROL DETAILS

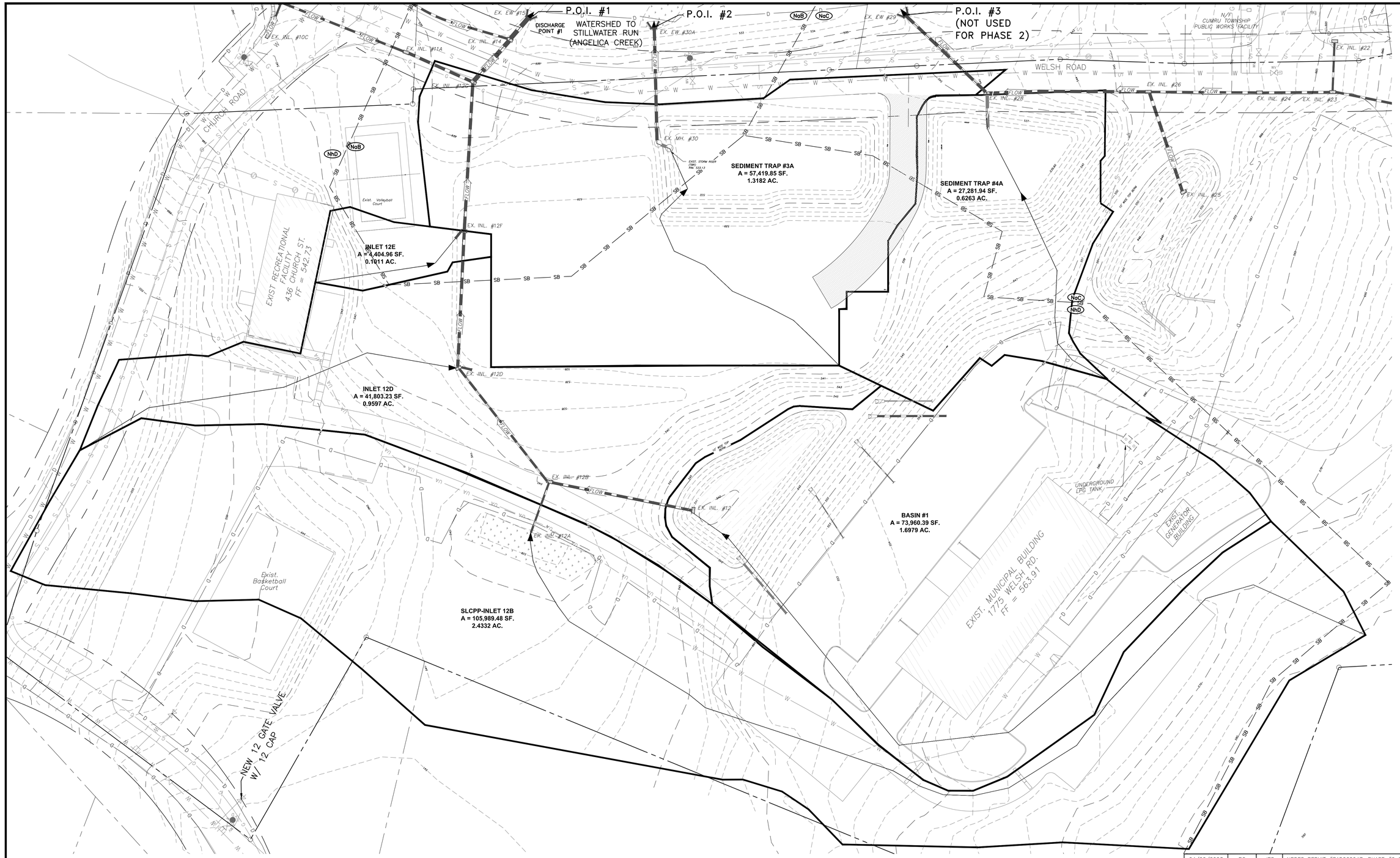
CUMRU FIRE DEPARTMENT NEW BUILDING

Prepared For:
TOWNSHIP OF CUMRU

Situate In:
CUMRU TOWNSHIP, BERKS CO., PA.

ATLAS
920 GERMANTOWN PIKE, SUITE 200,
PLYMOUTH MEETING, PA 19462

PROJECT #: Z057000538
DRAWING #: 166.4
SHEET #: 17 Of 28



04/20/2023	RC	JES	NPDES PERMIT #PAD060047, PHASE #2 SUBMISSION
Date	Draft	Chkd	

PRE-DEVELOPMENT PHASE #2 DRAINAGES

CUMRU FIRE DEPARTMENT NEW BUILDING

Prepared For:
TOWNSHIP OF CUMRU

Situate In:
CUMRU TOWNSHIP, BERKS CO., PA.

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JEFFREY E. SKINNER ENGINEER

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ATLAS
920 GERMANTOWN PIKE, SUITE 200,
PLYMOUTH MEETING, PA 19462

PROJECT #: Z057000538
DRAWING #: 184
SHEET #: 27 Of 28

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Date	Draft	Chkd	
04/20/2023	RC	JES	NPDES PERMIT #PAD060047, PHASE #2 SUBMISSION

POST-DEVELOPMENT PHASE #2 DRAINAGES

CUMRU FIRE DEPARTMENT NEW BUILDING

Prepared For:
TOWNSHIP OF CUMRU

Situate In:
CUMRU TOWNSHIP, BERKS CO., PA.

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ATLAS
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PLYMOUTH MEETING, PA 19462

PROJECT #: Z057000538
DRAWING #: 184.1
SHEET #: 28 Of 28