

COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

HARRISBURG, PENNSYLVANIA

TOM WOLF, GOVERNOR PATRICK MCDONNELL, SECRETARY

PROJECT NO. D06-434-101.1 NEW KERNSVILLE DAM SEDIMENT REMOVAL PROJECT

TILDEN AND WINDSOR TOWNSHIPS
BERKS COUNTY, PENNSYLVANIA

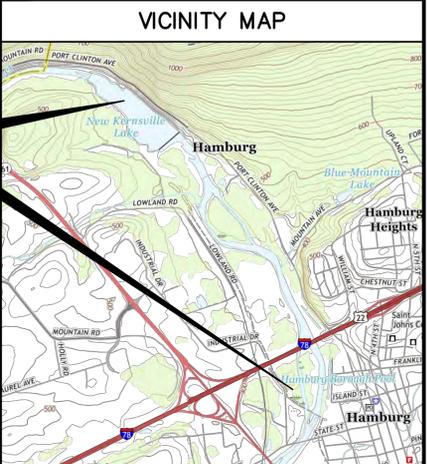
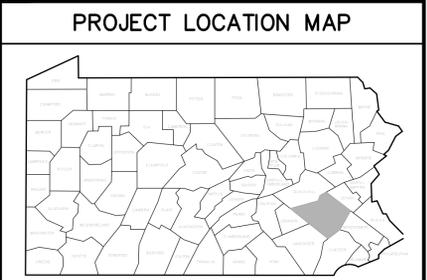


DESIGN PROFESSIONAL

DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERWAYS ENGINEERING AND WETLANDS
HARRISBURG, PENNSYLVANIA

INDEX TO DRAWINGS

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- P-2 Sediment Disposal Plan
- D-1 Details

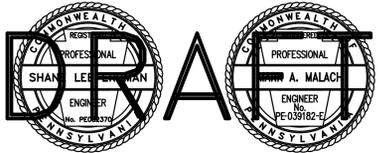


PROJECT

APPROVALS

APPROVED _____ DATE _____
DOUGLAS HILL, CHIEF
DIVISION OF PROJECT DEVELOPMENT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

APPROVED _____ DATE _____
ROGER ADAMS, DIRECTOR
BUREAU OF WATERWAYS ENGINEERING AND WETLANDS
DEPARTMENT OF ENVIRONMENTAL PROTECTION



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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF WATER PROGRAMS

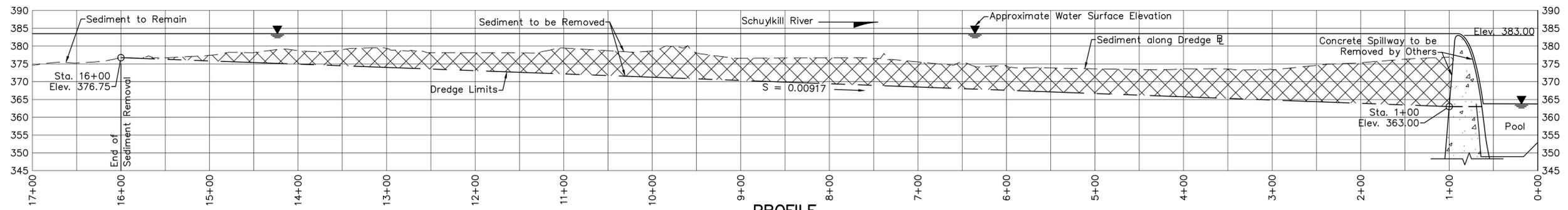
PROJECT NO. D06-434-101.1

**NEW KERNSVILLE DAM
SEDIMENT REMOVAL PROJECT**
SCHUYLKILL RIVER

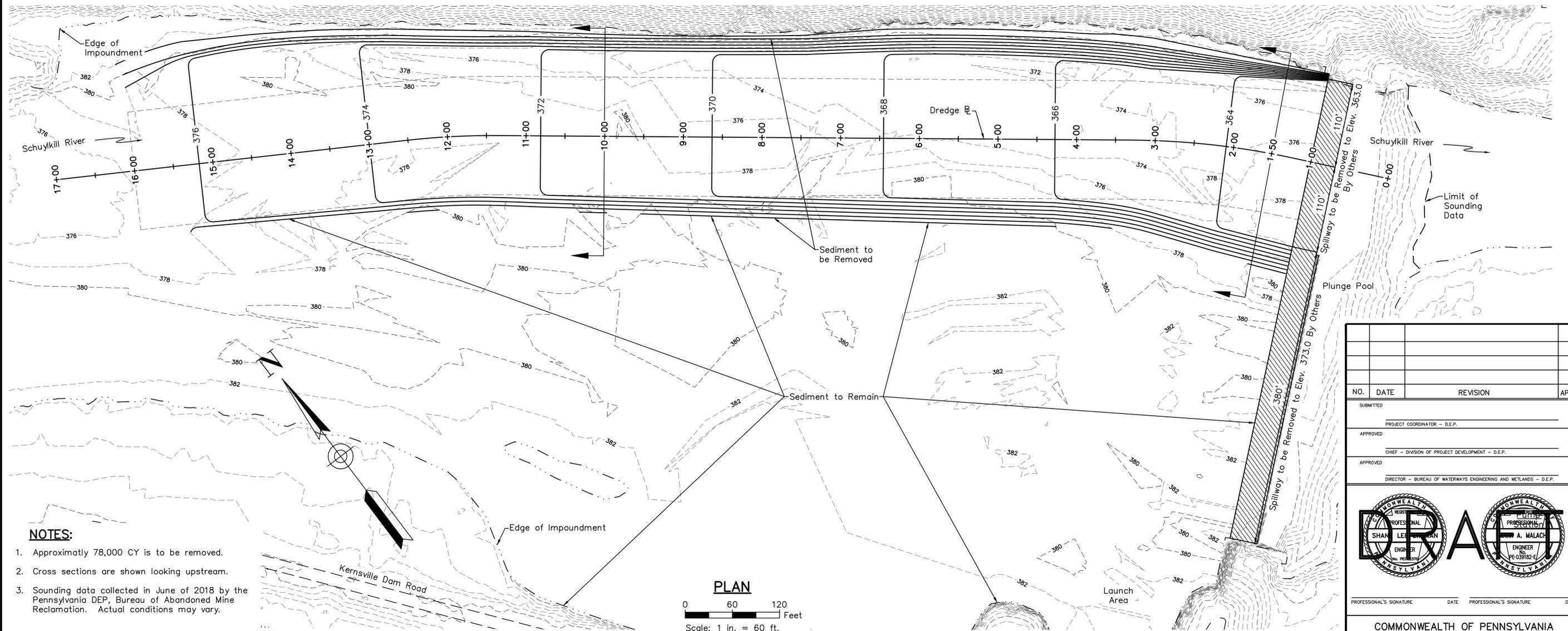
TILDEN TOWNSHIP WINDSOR TOWNSHIP BERKS COUNTY

COVER SHEET

DRAWN BY S.L.E.	DATE	DRAWING NO. CS-1
CHECKED BY	SCALE As Shown	

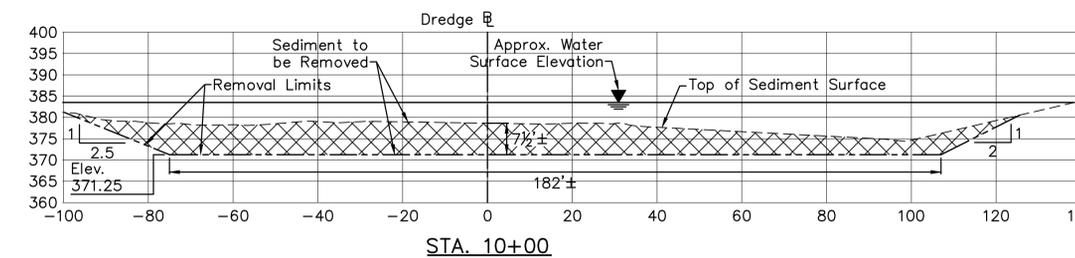
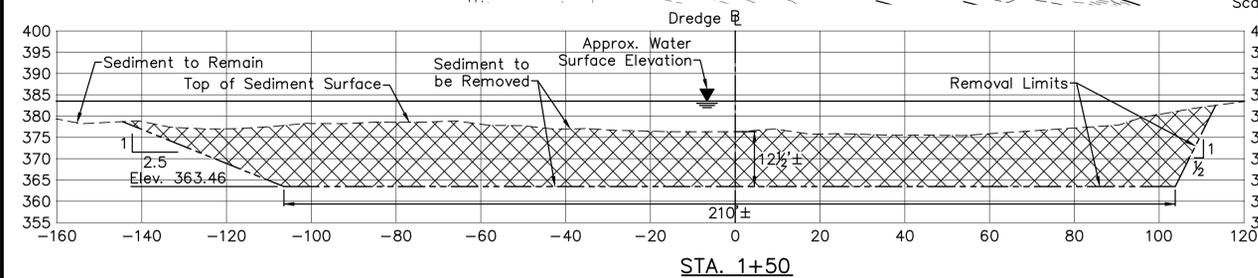


PROFILE
 0 60 120 Feet
 0 15 30 Feet
 Horizontal Scale: 1 in. = 60 ft. Vertical Scale: 1 in. = 15 ft.



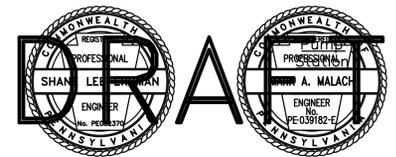
PLAN
 0 60 120 Feet
 Scale: 1 in. = 60 ft.

- NOTES:**
1. Approximately 78,000 CY is to be removed.
 2. Cross sections are shown looking upstream.
 3. Sounding data collected in June of 2018 by the Pennsylvania DEP, Bureau of Abandoned Mine Reclamation. Actual conditions may vary.



CROSS SECTIONS
 0 20 40 Feet
 Scale: 1 in. = 20 ft.

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PROJECT NO. D06-434-101.1

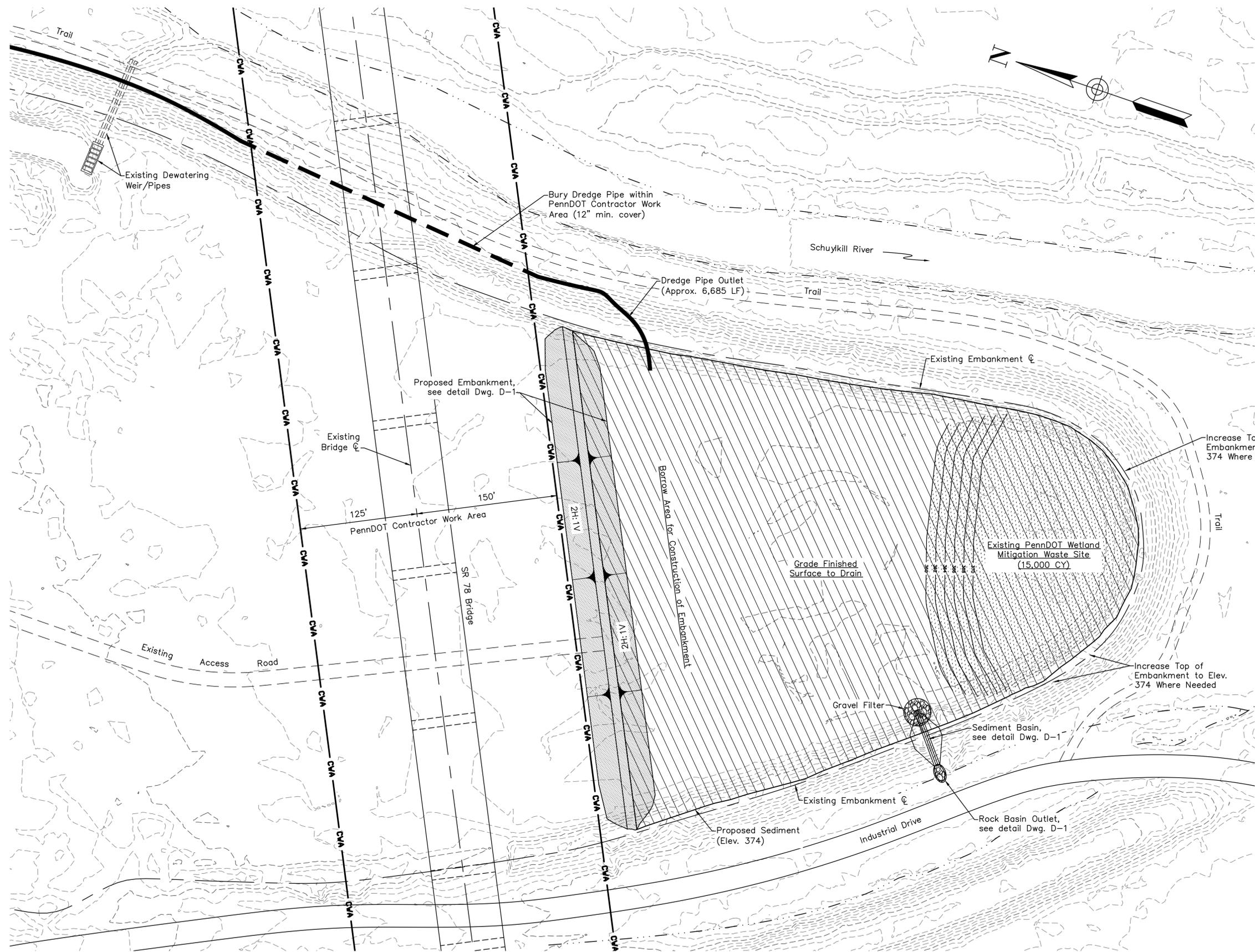
**NEW KERNSVILLE DAM
 SEDIMENT REMOVAL PROJECT
 SCHUYLKILL RIVER**

TILDEN TOWNSHIP WINDSOR TOWNSHIP BERKS COUNTY

**SEDIMENT REMOVAL PLAN,
 PROFILE AND CROSS SECTIONS**

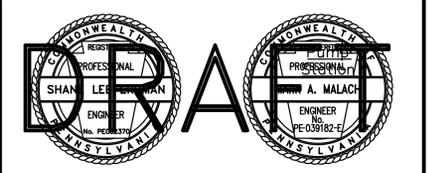
DRAWN BY: S.L.E. DATE: SCALE: As Shown DRAWING NO. P-1
 CHECKED BY: DATE: SCALE: As Shown

ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY CONTRACTOR AT THE SITE.



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 DIRECTOR - BUREAU OF WATERWAYS ENGINEERING AND WETLANDS - D.E.P.



PROFESSIONAL'S SIGNATURE DATE PROFESSIONAL'S SIGNATURE DATE

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PROJECT NO. D06-434-101.1

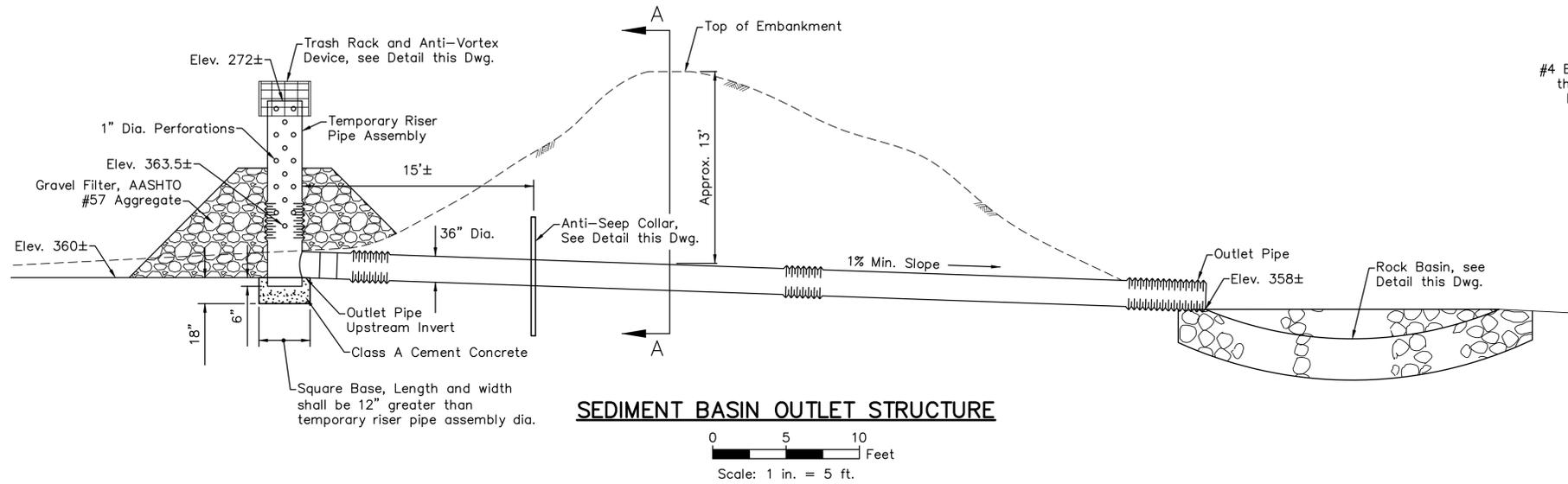
NEW KERNSVILLE DAM
 SEDIMENT REMOVAL PROJECT
 SCHUYLKILL RIVER

TILDEN TOWNSHIP WINDSOR TOWNSHIP BERKS COUNTY

SEDIMENT DISPOSAL PLAN

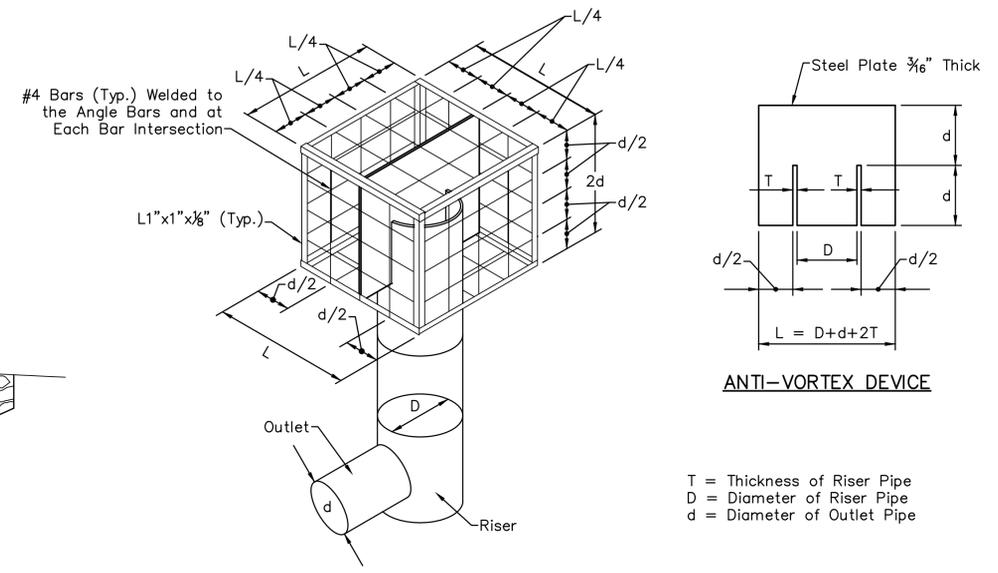
DRAWN BY S.L.E. DATE DRAWING NO. P-2
 CHECKED BY SCALE As Shown

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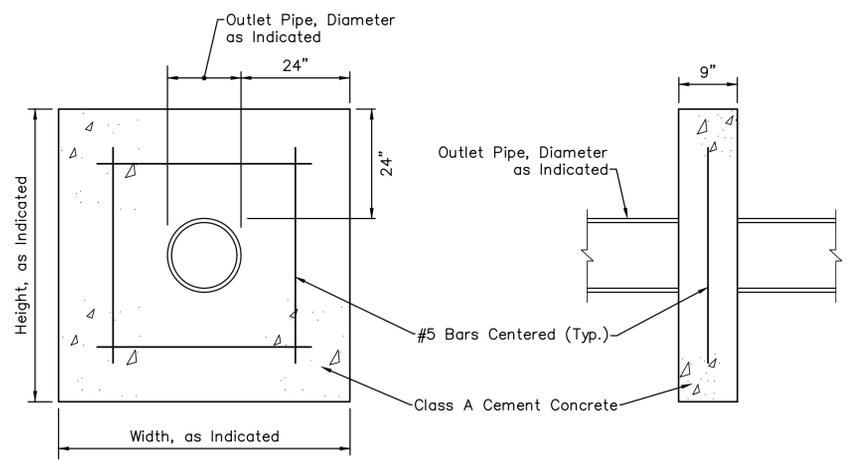
SEDIMENT BASIN OUTLET STRUCTURE

0 5 10 Feet
Scale: 1 in. = 5 ft.



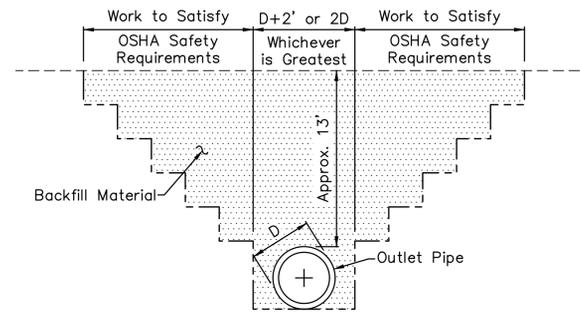
TRASH RACK AND ANTI-VORTEX DEVICE

No Scale



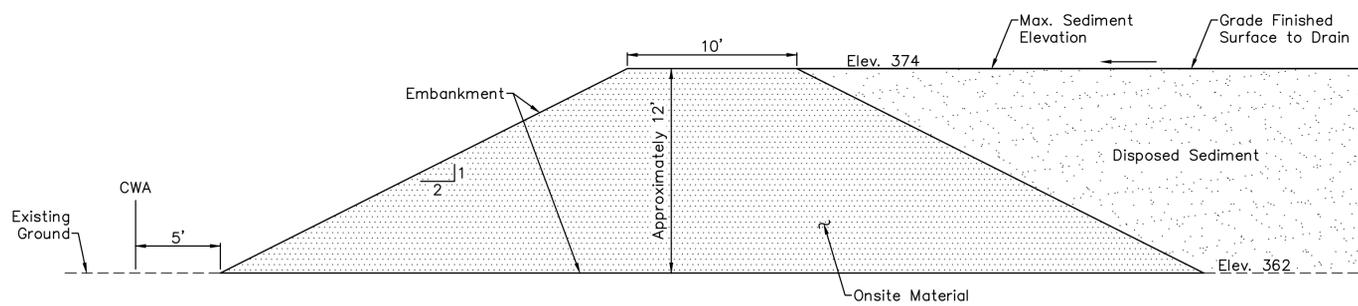
CONCRETE ANTI-SEEP COLLAR

No Scale



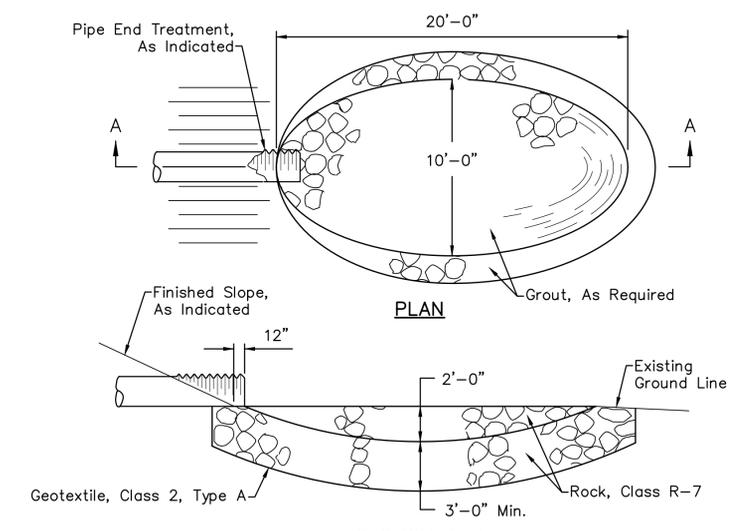
SECTION A-A

0 5 10 Feet
Scale: 1 in. = 5 ft.



EMBANKMENT DETAIL

0 5 10 Feet
Scale: 1 in. = 5 ft.



ROCK BASIN

No Scale

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DIRECTOR - BUREAU OF WATERWAYS ENGINEERING AND WETLANDS - D.E.P.			
			
PROFESSIONAL'S SIGNATURE		PROFESSIONAL'S SIGNATURE	
DATE		DATE	
COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF WATER PROGRAMS			
PROJECT NO. D06-434-101.1			
NEW KERNSVILLE DAM SEDIMENT REMOVAL PROJECT SCHUYLKILL RIVER			
TILDEN TOWNSHIP		BERKS COUNTY	
DETAILS			
DRAWN BY	DATE	DRAWING NO.	
CHECKED BY	SCALE	As Shown	
D-1			

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COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION HARRISBURG, PENNSYLVANIA

TOM WOLF, GOVERNOR PATRICK MCDONNELL, SECRETARY

PROJECT NO. D06-434-102.1 NEW KERNSVILLE DAM REMOVAL PROJECT

TILDEN AND WINDSOR TOWNSHIPS
BERKS COUNTY, PENNSYLVANIA

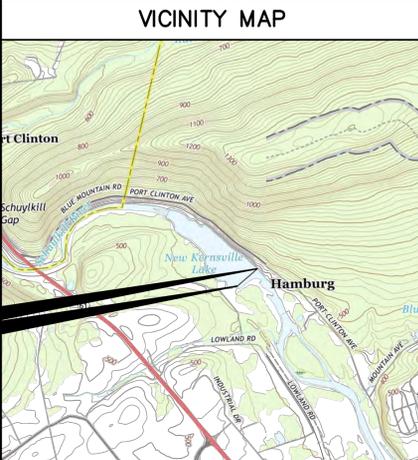
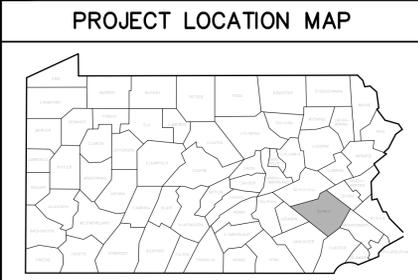


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HARRISBURG, PENNSYLVANIA

INDEX TO DRAWINGS

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- GP-1 General Plan
- P-1 Plan and Profile
- D-1 Abutment, Spray Wall, and Spillway Details
- D-2 Conduit, Hand Rail, & Cross Section Details
- ES-1 E&S General Plan
- ES-2 E&S General Notes
- ES-3 E&S General Details

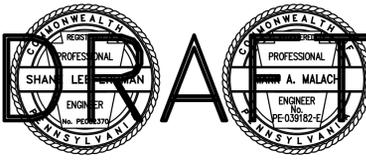


PROJECT

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APPROVED _____ DATE _____
DOUGLAS HILL, CHIEF
DIVISION OF PROJECT DEVELOPMENT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

APPROVED _____ DATE _____
ROGER ADAMS, DIRECTOR
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DEPARTMENT OF ENVIRONMENTAL PROTECTION



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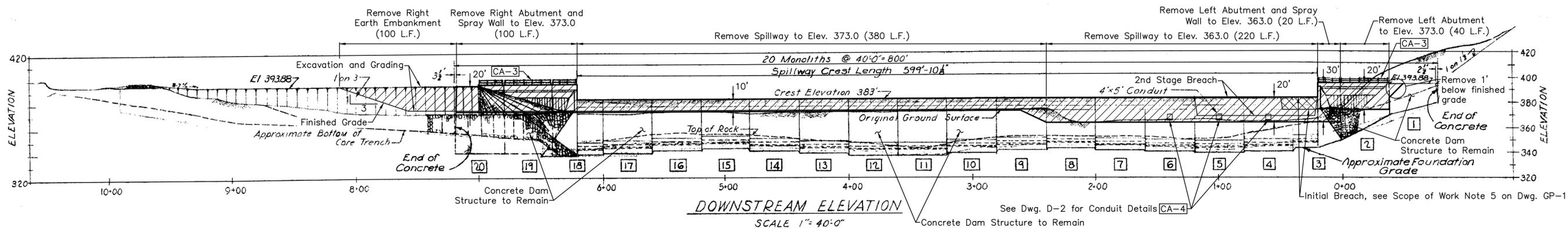
COMMONWEALTH OF PENNSYLVANIA
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PROJECT NO. D06-434-102.1

**NEW KERNSVILLE
DAM REMOVAL PROJECT**
SCHUYLKILL RIVER
TILDEN TOWNSHIP WINDSOR TOWNSHIP BERKS COUNTY

COVER SHEET

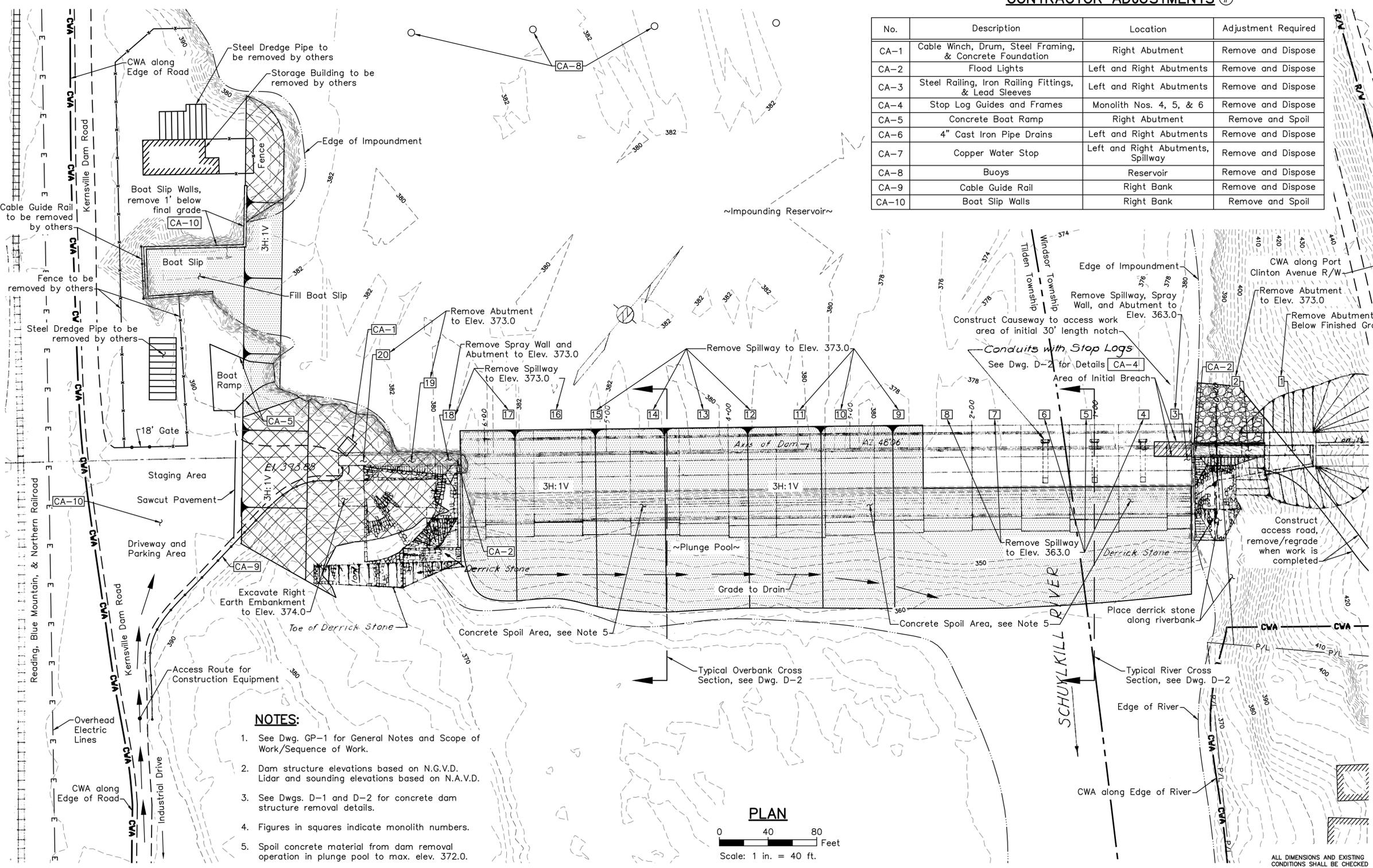
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CHECKED BY	SCALE As Shown	



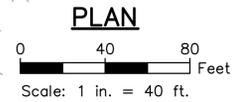
DOWNSTREAM ELEVATION
SCALE 1" = 40'-0"

CONTRACTOR ADJUSTMENTS #

No.	Description	Location	Adjustment Required
CA-1	Cable Winch, Drum, Steel Framing, & Concrete Foundation	Right Abutment	Remove and Dispose
CA-2	Flood Lights	Left and Right Abutments	Remove and Dispose
CA-3	Steel Railing, Iron Railing Fittings, & Lead Sleeves	Left and Right Abutments	Remove and Dispose
CA-4	Stop Log Guides and Frames	Monolith Nos. 4, 5, & 6	Remove and Dispose
CA-5	Concrete Boat Ramp	Right Abutment	Remove and Spoil
CA-6	4" Cast Iron Pipe Drains	Left and Right Abutments	Remove and Dispose
CA-7	Copper Water Stop	Left and Right Abutments, Spillway	Remove and Dispose
CA-8	Buoys	Reservoir	Remove and Dispose
CA-9	Cable Guide Rail	Right Bank	Remove and Dispose
CA-10	Boat Slip Walls	Right Bank	Remove and Spoil



- NOTES:**
- See Dwg. GP-1 for General Notes and Scope of Work/Sequence of Work.
 - Dam structure elevations based on N.G.V.D. Lidar and sounding elevations based on N.A.V.D.
 - See Dwg. D-1 and D-2 for concrete dam structure removal details.
 - Figures in squares indicate monolith numbers.
 - Spoil concrete material from dam removal operation in plunge pool to max. elev. 372.0.



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DIRECTOR - BUREAU OF WATERWAYS ENGINEERING AND WETLANDS - D.E.P.			



PROFESSIONAL ENGINEER
SHANTEL LEE
No. PE039782-E
PENNSYLVANIA



PROFESSIONAL ENGINEER
A. MALACHUK
No. PE039782-E
PENNSYLVANIA

PROFESSIONAL'S SIGNATURE _____ DATE _____

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OFFICE OF WATER PROGRAMS

PROJECT NO. D06-434-102.1

**NEW KERNSVILLE
DAM REMOVAL PROJECT**
SCHUYLKILL RIVER

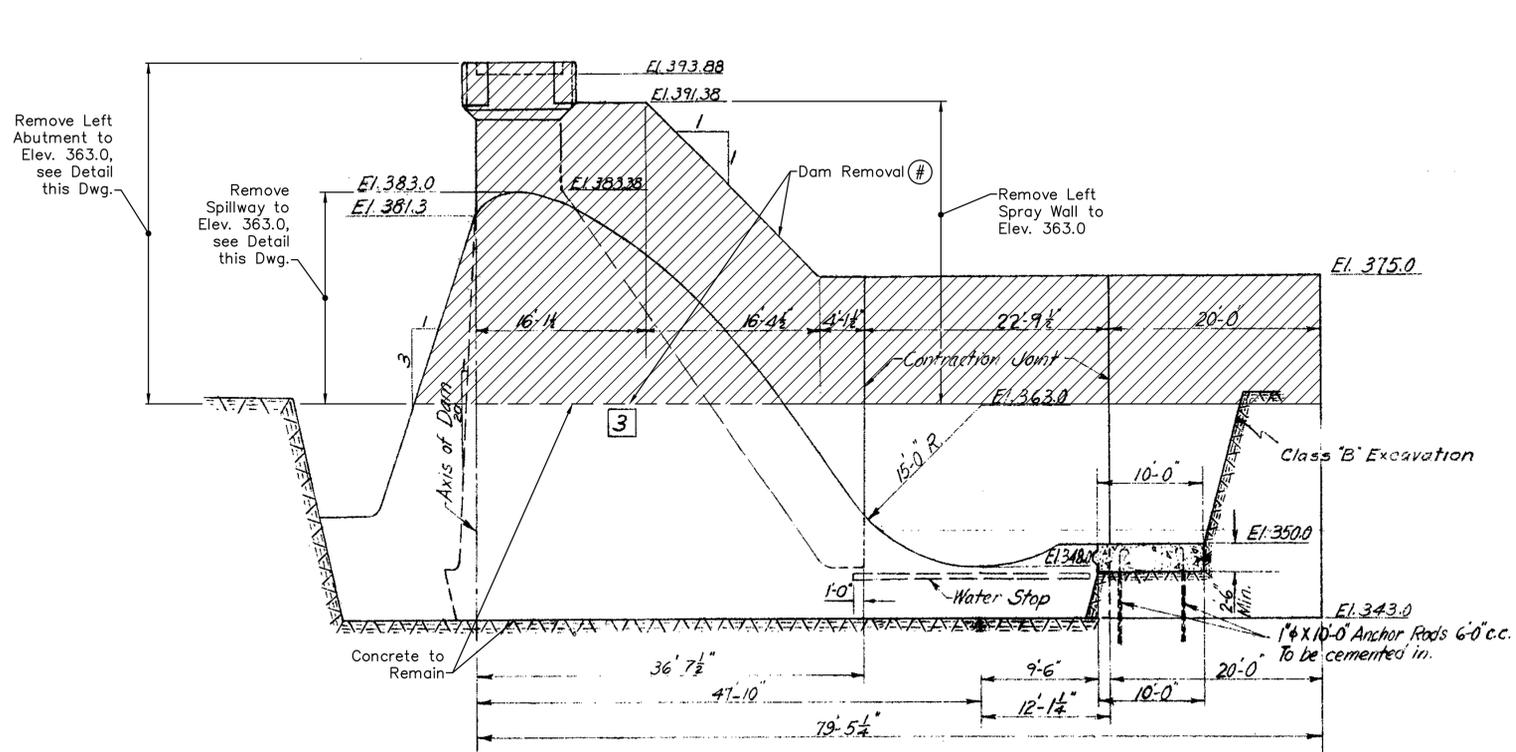
TILDEN TOWNSHIP WINDSOR TOWNSHIP BERKS COUNTY

PLAN AND PROFILE

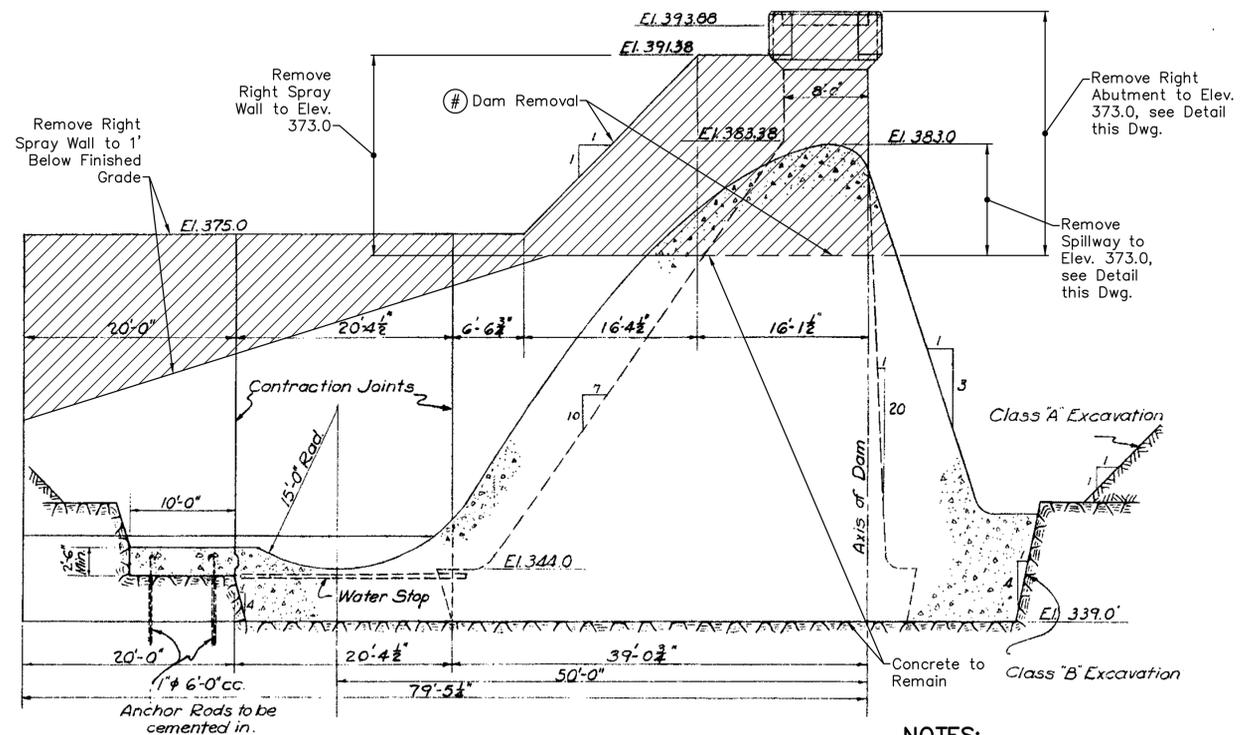
DRAWN BY	S.L.E.	DATE		DRAWING NO.	
CHECKED BY		SCALE	As Shown		

P-1

ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY CONTRACTOR AT THE SITE.



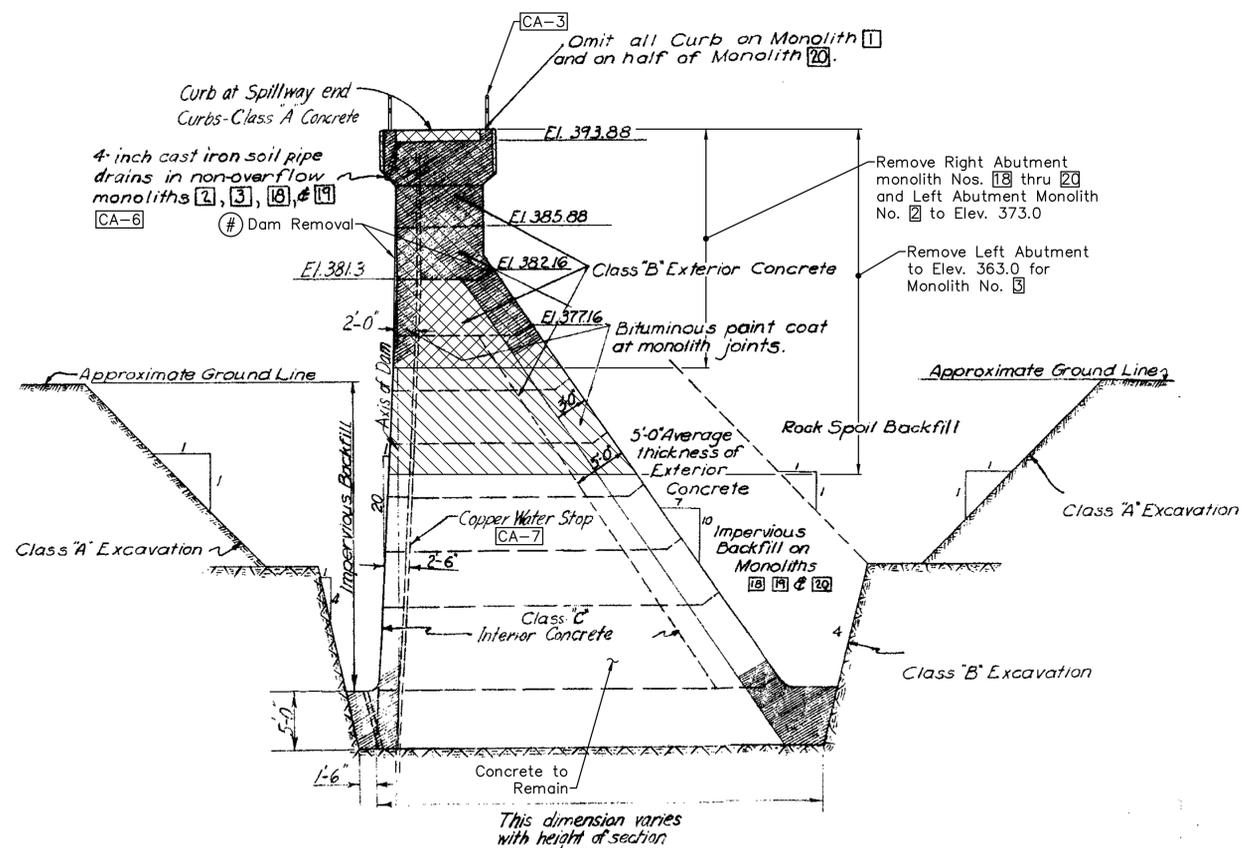
ELEVATION OF LEFT SPRAY WALL



ELEVATION OF RIGHT SPRAY WALL

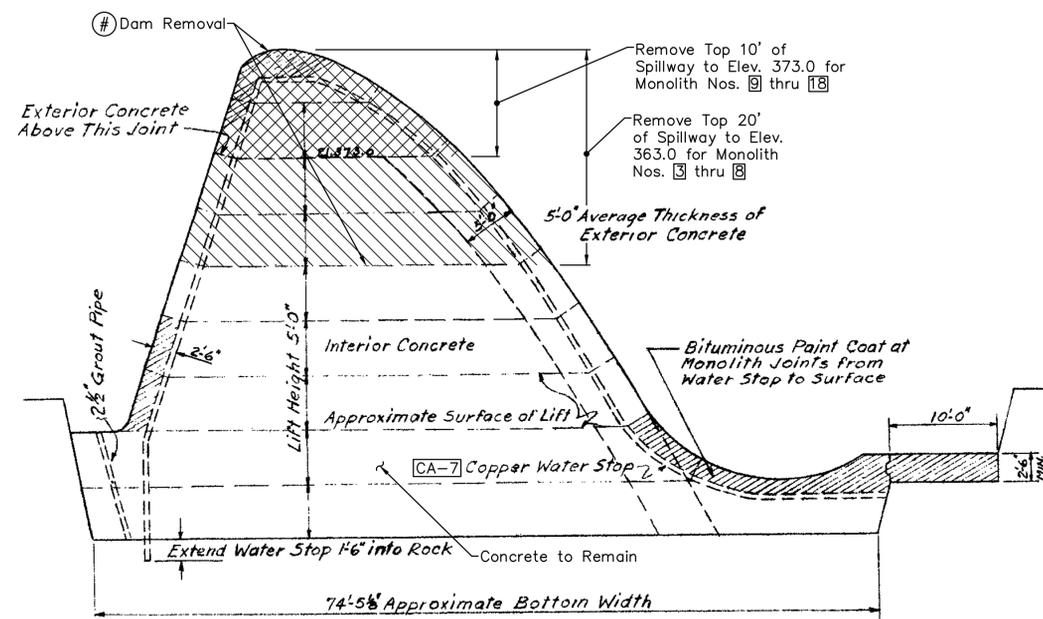
NOTES:

1. Dam structure elevations based on N.G.V.D. Lidar and sounding elevations based on N.A.V.D.
2. All information shown on this drawing has been obtained from as-built drawings and may not be accurate.



NON-OVERFLOW SECTION CONSTRUCTION DETAILS

Scale 1/8 in. = 1 ft.

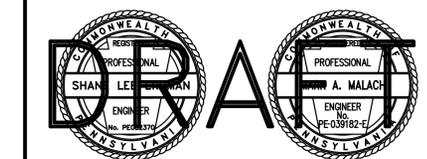


SPILLWAY CONSTRUCTION DETAILS

Scale 1/8 in. = 1 ft.

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NEW KERNSVILLE
DAM REMOVAL PROJECT
SCHUYLKILL RIVER

TILDEN TOWNSHIP WINDSOR TOWNSHIP BERKS COUNTY

ABUTMENT, SPRAY WALL,
AND SPILLWAY DETAILS

DRAWN BY	S.L.E.	DATE		DRAWING NO.	
CHECKED BY		SCALE	As Shown		

D-1

ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY CONTRACTOR AT THE SITE.

SCHUYLKILL RIVER HYDROLOGY DATA

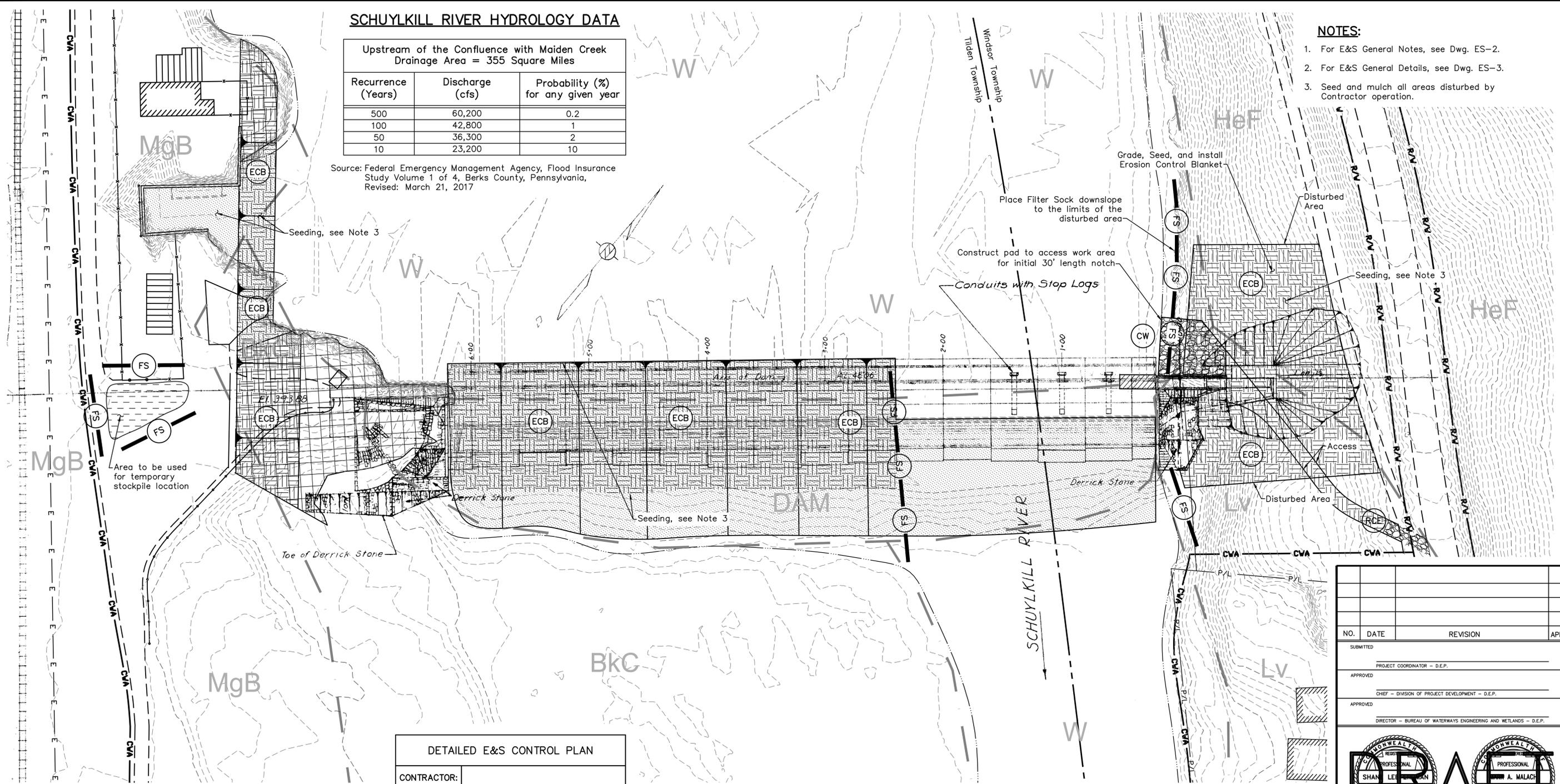
Upstream of the Confluence with Maiden Creek
Drainage Area = 355 Square Miles

Recurrence (Years)	Discharge (cfs)	Probability (%) for any given year
500	60,200	0.2
100	42,800	1
50	36,300	2
10	23,200	10

Source: Federal Emergency Management Agency, Flood Insurance Study Volume 1 of 4, Berks County, Pennsylvania, Revised: March 21, 2017

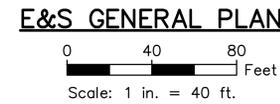
NOTES:

- For E&S General Notes, see Dwg. ES-2.
- For E&S General Details, see Dwg. ES-3.
- Seed and mulch all areas disturbed by Contractor operation.



DETAILED E&S CONTROL PLAN

CONTRACTOR:	
DATE:	
SIGNATURE:	



LEGEND

- Soil Classification Boundary
- Rock Construction Entrance
- Causeway
- Filter Bag
- Filter Sock
- Erosion Control Blanket

SOILS

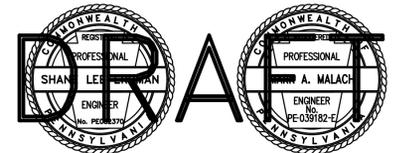
- W - Water
- DAM - Dams and Impoundment Structures
- MgB - Monongahela Silt Loam, 3 to 8 Percent Slopes, Hydrologic Soil Group: C
- BkC - Berks-Weikert Complex, 8 to 15 Percent Slopes, Hydrologic Soil Group: D
- HeF - Hazleton Very Channery Loam, 25 to 60 percent Slopes, Extremely Stony, Hydrologic Soil Group: A
- LV - Linden Loam, Hydrologic Soil Group: A

Soil information was obtained from USDA-NRCS Web Soil Survey for Berks County, Pennsylvania

SOIL LIMITATION RESOLUTIONS

- SLOPES** - Excavations should be stabilized to prevent erosion and Contractor should employ proper construction techniques to ensure safety on steep sloped areas.
- DEPTH OF ROCK** - If bedrock is encountered, remove as necessary in accordance with project specifications.
- FROST ACTION** - Contractor shall consult project Geotechnical Engineer/Inspector regarding any special measures to be taken for earthwork which is to occur during periods of frost.
- SOIL pH LEVELS** - Contractor shall have soil pH tested to determine correct fertilizer application rates.
- FLOODING POTENTIAL** - Schedule in-channel work for seasonal and forecasted periods of low stream flow. Normal flow should be conveyed past the work area by use of bypass channels, pipe flumes, cofferdams and bypass pumping.
- HIGH GROUNDWATER LEVEL** - Contractor shall employ dewatering techniques as approved by the Bureau of Waterways Engineering & Wetlands. Pumped water filter bags shall be used to dewater utility trenches and below grade excavations.
- EROSION** - Any erosion that occurs that cannot be addressed by measures found in the plans, the Contractor shall contact the Bureau of Waterways Engineering & Wetlands.

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DAM REMOVAL PROJECT
SCHUYLKILL RIVER

TILDEN TOWNSHIP WINDSOR TOWNSHIP BERKS COUNTY

E&S GENERAL PLAN

DRAWN BY	DATE	DRAWING NO.
CHECKED BY	SCALE	
	As Shown	ES-1

ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY CONTRACTOR AT THE SITE.

E&S GENERAL NOTES

The following general directives apply to all phases of construction activities:

1. A copy of the approved Erosion and Sediment Control Plan must be available at the project site at all times.
2. Special care shall be taken to prevent sediment laden stormwater from entering all stormwater management and conveyance facilities until the site has been properly stabilized.
3. During construction, the Contractor is to make certain all runoff is directed to the sediment control devices. Erosion and sediment BMPs must be constructed, stabilized, and functional before site disturbance begins within the tributary areas of those BMPs.
4. All erosion and sedimentation pollution control measures shall remain in place until the site has been stabilized. Vegetated areas considered to be stabilized when a uniform 70 percent vegetative cover of erosion resistant perennial species has been achieved, or the disturbed area is covered with an acceptable bmp which permanently minimizes accelerated erosion and sedimentation. Until such time as this standard is achieved, interim stabilization measures and temporary erosion and sediment control BMPs that are used to treat project runoff may not be removed. Until the site is stabilized, all erosion and sediment control BMPs must be maintained properly. Maintenance must include inspections of all erosion and sediment control BMPs after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including cleanout, repair, replacement, re-grading, reseeding, re-mulching and re-netting must be performed immediately. If erosion and sediment control BMPs fail to perform as expected, replacement BMPs or modifications of those installed will be required.
5. After final site stabilization has been achieved, temporary erosion and sediment BMPs must be removed. Areas disturbed during removal of the BMPs must be stabilized immediately.
6. Erosion and sediment BMPs must be constructed, stabilized, and functional before site disturbance begins within the tributary areas of those BMPs.
7. All soil stockpiles shall be seeded with a grass cover immediately to avoid prolonged exposure of the bare soil material to rainfall events. If the area is expected to be disturbed again during the construction process, the temporary seed mixture may be utilized. Stockpiles shall not be greater than 35 feet in height, nor shall stockpile slopes be steeper than 2 to 1. Whenever possible, place all excavated material upslope from disturbed areas. Stockpiles shall be set parallel to grade to reduce runoff.
8. All vehicles and equipment must enter and exit the project site through the rock construction entrances.
9. Erosion control blanket shall be installed on disturbed slopes as shown on the plans or as required in the current D.E.P. E&S Manual.
10. In all cases during construction, the area of disturbance should be minimized.
11. Silt fence shall be placed end to end, securely staked in place, and maintained until area is stabilized.
12. All pumping of sediment laden water shall be through a sediment control bmp, such as a pumped water filter bag or equivalent sediment removal facility, over undisturbed vegetated areas.
13. Upon general completion of the site improvements, topsoil shall be placed and final grading passes shall be made perpendicular to the direction of runoff.
14. Reseed and reestablish any barren and disturbed areas not having established ground cover.
15. Any disturbed area must be stabilized immediately. If the area is expected to be disturbed again during the construction process, the temporary seed mixture may be utilized. During non-germinating periods, mulch must be applied at the recommended 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 one year must be stabilized in accordance with permanent seeding specifications.
16. In all cases, care should be taken to prevent the entry of soil, stone, or other materials and refuse into existing drainage pipes and swales, as well as wetland areas on the site.
17. Fill material for the embankments shall be free of roots, or other woody vegetation, organic material, large stones, and other objectionable materials. The embankment shall be compacted in accordance with the specifications.
18. The Contractor shall be cognizant of appropriate seasons for planting grass seed mixtures, and plan his construction schedule to appropriately utilize the best times of the year for germination of the seed and stabilization of the site.
19. Wherever the term "seeding" is mentioned in the construction sequence or in the Erosion and Sediment Pollution Control Plan, the term means the entire soil preparation, seeding, and mulching process.
20. Sediment and soil material that is removed from clogged or full BMPs shall be disposed of by thoroughly mixing with other suitable fill materials on the project site, and incorporated into fill in upland areas of the project site. The fill area and other disturbed areas shall be stabilized in accordance with the Erosion and Sediment Pollution Control Plan. In no case shall the sediment or "waste" soil material be carelessly dumped or otherwise placed in a manner that causes the material to again be eroded and transported by runoff, either on or off the project site.
21. The Contractor shall dispose of waste materials obtained from demolition activities in a legal manner, and shall recycle as much of the waste material as possible, in accordance with applicable sections of the contract specifications. All building materials and wastes must be

22. 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.
23. Should any soil materials be removed from the site at any time, the soil materials must be disposed of properly. The Contractor will be responsible for the proper removal and disposal of any excess topsoil and fill material from the site. The receiving site must have a Soil Erosion and Sedimentation Control Plan approved by the County Conservation District prior to the placement of any fill. In addition, the receiving site may require an NPDES Permit.
24. Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices to eliminate the potential for accelerated erosion and/or sediment pollution. Should additional or unexpected erosion or sedimentation occur during construction, or questions regarding the maintenance control practices arise, contact the Bureau of Waterways Engineering & Wetlands.
25. The Contractor will be responsible for the removal of any excess material and make sure site(s) receiving the excess has an approved Erosion and Sediment Control Plan that meets the conditions of chapter 102 and/or other state or federal regulations.
26. Clean fill is defined as: uncontaminated, non-water soluble, non-decomposable, inert, solid material. The term includes soil, rock, stone, dredged material, used asphalt, and brick, block or concrete from construction and demolition activities that is separate from other waste and is recognizable as such. The term does not include materials placed in or on the waters of the Commonwealth unless otherwise authorized. (The term "used asphalt" does not include milled asphalt or asphalt that has been processed for re-use.)
27. Clean fill affected by a spill or release of a regulated substance: fill materials affected by a spill or release of a regulated substance still qualifies as clean fill provided the testing reveals that the fill material contains concentrations of regulated substances that are below the residential limits in tables FP-1a and FP-1b found in the Department's Policy "Management of Fill".
28. Any person placing clean fill that has been affected by a spill or release of a regulated substance must use form FP-001 to certify the origin of the fill material and the results of the analytical testing to qualify the material as clean fill. Form FP-001 must be retained by the owner of the property receiving the fill.
29. Environmental due diligence: investigative techniques, including, but not limited to, visual property inspections, electronic data base searches, review of property ownership, review of property use history, sanborn maps, environmental questionnaires, transaction screens, analytical testing, environmental assessments or audits. Analytical testing is not a required part of due diligence unless visual inspection and/or review of the past land use of the property indicates that the fill may have been subjected to a spill or release of regulated substance. If the fill may have been affected by a spill or release of a regulated substance, it must be tested to determine if it qualifies as clean fill. Testing should be performed in accordance with Appendix A of the Department's Policy "Management of Fill".
30. Fill material that does not qualify as clean fill is regulated fill. Regulated fill is waste and must be managed in accordance with the Department's Municipal or Residual Waste Regulations based on 25 pa. code chapters 287 Residual Waste Management or 271 Municipal Waste Management, whichever is applicable.

MAINTENANCE PROGRAM

1. Until the site is stabilized, all erosion and sediment control BMPs must be maintained properly. Maintenance must include inspections of all erosion and sediment control BMPs after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including cleanout, repair, replacement, re-grading, reseeding, re-mulching and re-netting must be performed immediately. If erosion and sediment control BMPs fail to perform as expected, replacement BMPs or modifications of those installed will be required.
2. The Permittee and Co-permittee must ensure that visual site inspections are conducted weekly, and after each measurable precipitation event by qualified personnel, trained and experienced in erosion and sediment control, to ascertain that the erosion and sediment control (E&S) BMPs are operational and effective in preventing pollution to the waters of the Commonwealth. A written report of each inspection shall be kept, and include:
 - 1) A summary of the site conditions, E&S BMPs, and compliance; and
 - 2) The date, time, and the name of the person conducting the inspection.
3. A rock construction entrance shall be placed at the point of construction ingress and egress. The structure will prevent tracking and flowing of sediment onto existing stabilized areas. Clean and redress the rock construction entrance when the voids become choked with mud and sediment. The entrance shall remain functional for the duration of the project.
4. Where dust or wind erosion is a problem, the unstable surface(s) shall be sprinkled with water or other suitable dust suppressor.
5. Any temporary erosion control measure applied to exposed soil surfaces shall remain functional until vegetative cover is sufficiently established.
6. Permanent soil protection will be completed as early as practical.
7. Any debris accumulated at silt barrier fencing shall be removed and properly disposed. Barriers shall be checked daily and realigned or reset as required. Remove sediment when it reaches one half of fence height.
8. Any sediment removed from BMPs during construction will

- be returned to upland areas on site and incorporated into the site grading.
9. All channels must be kept free of obstructions such as fill ground, fallen leaves & woody debris, accumulated sediment, and construction materials/wastes. Channels should be kept mowed and/or free of all weedy, brushy or woody growth.
10. Vegetated channels shall be constructed free of rocks, tree roots, stumps or other projections that will impede normal channel flow and/or prevent good lining to soil contact. The channel shall be initially over-excavated to allow for topsoil placement.
11. Vegetative stabilization shall be periodically inspected for proper growth. Any areas not responding shall be promptly reseeded. Areas which show signs of erosion prior to stabilization shall be graded, reseeded and re-mulched as soon as possible. Sod shall be utilized at areas where seeding does not appear to be properly stabilizing an area.
12. Clean and re-dress the rock filter berms when the voids become choked with mud and sediment. Rock filter berms shall remain functional for the duration of the project.

TEMPORARY CONTROL MEASURES

1. During construction, the contractor shall keep the site well drained at all times. Erosion and sediment BMPs must be constructed, stabilized, and functional before site disturbance begins within the tributary areas of those BMPs.
2. Any waste material accumulated during construction, which will not be reused in later construction, shall be removed from the site and disposed of in a responsible and legal manner.
3. All unstabilized soil stockpiled temporarily shall be covered with a tarp or other suitable stabilization (seeded) in order to prevent washoff when precipitation is imminent.
4. Silt barrier fence shall be placed at critical erosion areas in order to prevent sediment from entering onto public roadways, adjacent properties and waterways.
5. Stabilized construction entrances shall be placed at the point of construction ingress and egress. This structure will prevent tracking and flowing of sediment onto the public roadway. The entrance shall remain functional for the duration of the project.
6. Where dust or wind erosion is a problem, the unstable surface(s) shall be sprinkled with water or other suitable dust suppressor.
7. Any water pumped from sanitary, storm, or utility trenches, for any reason, shall be directed through a bmp such as a sediment filter bag discharging over non-disturbed areas.
8. The Contractor shall employ measures during construction to prevent spills of fuels or lubricants. If a spill occurs, it shall be controlled immediately to prevent its entry into nearby waterways.
9. All earth moving activities shall be carried out in such a manner as to minimize the amount of disturbed area.
10. Responsibility for implementing erosion and sedimentation control shall be designated to a minimum of one individual who will be present at the project site daily.
11. When the engineer, municipal official, or county representative determines that erosion control measures are necessary, that were not foreseen in the design stage, said official shall estimate the erosion potential and select measures on the basis of both cost effectiveness and the consequences of the erosion.
12. Any temporary erosion control measure applied to exposed soil surfaces shall remain functional until vegetation cover is sufficiently established.
13. All temporary erosion and sedimentation control measures shall be subject to applicable regulations of the Department of Transportation publication 408 Specifications, most recent edition.
14. After final site stabilization has been achieved, temporary erosion and sediment BMPs controls must be removed. Areas disturbed during removal of the BMPs must be stabilized immediately.

SEQUENCE OF CONSTRUCTION

All earth disturbance activities shall proceed in accordance with the following sequence. Each stage shall be completed and immediately stabilized before any following stage is initiated. Clearing, grubbing, and topsoil stripping shall be limited only to those areas described in each stage.

- Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices to eliminate the potential for accelerated erosion and/or sediment pollution.
1. At least 7 days before starting any earth disturbance activities, the owner and/or operator shall invite all Contractors involved in those activities, the landowner, all appropriate municipal officials, the Erosion and Sediment Control Plan preparer, and a representative of the County Conservation District to an on-site pre-construction meeting.
 2. At least 3 days before starting any earth disturbance activities, all 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.
 3. All vehicles entering the site shall do so via the rock construction entrances. Any mud or sediment tracked onto macadam roadways shall be removed by the Contractor at the end of each working day. Washing of the roadway is not permitted. The contractor is also responsible for all traffic control devices associated with the access drive throughout the term of construction activities.

4. Field-mark all waters of the Commonwealth boundaries including stream buffers, wetland boundaries, floodways etc.
5. Field-mark the project limit of disturbance.
6. Field-mark all limits of disturbance within the interior of the site, including steep slopes, infiltration areas, trees selected to be saved, etc.
7. Install silt barrier as necessary to perform construction of the project and to protect the water body from sediment runoff.
8. Clear and grub the area of proposed construction. Strip topsoil and stockpile at the temporary areas provided, surround with filter fabric and seed per temporary seeding specifications, fertilizer and mulch.
9. Coordinate and overlap segments to provide continuous erosion and sedimentation control for the entire project length.
10. Replace topsoil and stabilize all exposed or disturbed areas by performing final grading operations at the soil material stockpile areas. Seed, fertilize and mulch exposed or disturbed areas.
11. Perform fine grading operations at disturbed areas adjacent to the channel/culvert, and seed the disturbed areas with permanent seed mixture.
12. Upon completion of all earth disturbance activities, removal of all temporary BMPs, and permanent *stabilization of all disturbed areas, the owner and/or operators shall contact the County Conservation District for a final inspection. Proper disposal and/or recycling of the BMPs is required by the site Contractor as per General E&S note #21.

* Stabilization- Permanent stabilization is defined as a minimum uniform 70% 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 and other movements.

**Immediately after earth disturbance activities cease, the operator shall stabilize any areas disturbed by the activities. 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 must be stabilized in accordance with the temporary vegetative stabilization specifications. Disturbed areas which are at finished grade or which will not be redisturbed within 1 year must be stabilized in accordance with the permanent vegetative stabilization specifications.

SEED MIXTURES

Temporary Seed Mixture

Temporary seeding shall consist of annual ryegrass (100 percent by weight), or equivalent, and shall be placed at the rate of 10 pounds per 1,000 square yards. Temporary seeding shall be applied to those areas that are a potential erosion problem during construction and to those areas exposed for longer than 4 calendar days. If conditions do not permit temporary seeding, mulching shall be employed. Straw mulch shall be applied in long strands, not chopped or finely broken.

Permanent Seed Mixture

The following seeding mixture, applied at the rate of 49 pounds per acre:

- A) Spring Oats (Avena Fatua). Percentage of total seed mixture by weight: 61% or;
- B) Winter Rye (Secale Cereale). Percentage of total seed mixture by weight: 61%;
- C) Big Bluestem (Andropogon gerardii). Percentage of total seed mixture by weight: 6%;
- D) Little Blue Stem (Schizachyrium scoparium). Percentage of total seed mixture by weight: 6%;
- E) Indiangrass (Sorghastrum nutans). Percentage of total seed mixture by weight: 6%;
- F) Switchgrass (Panicum virgatum). Percentage of total seed mixture by weight: 6%;
- G) Deertongue (Dicanthelium clandestinum). Percentage of total seed mixture by weight: 3%;
- H) Partridge Pea (Chamaecrista fasciculata). Percentage of total seed mixture by weight: 8%;
- I) Showy Tick-trefoil (Desmodium canadense). Percentage of total seed mixture by weight: 4%;

MULCH SPECIFICATIONS

On all disturbed areas which do not have an erosion control blanket specified for installation:

Immediately after seeding, or within 6 hours after seeding is completed, spread mulch uniformly over the entire seeded area at a rate of 6,000 pounds (dry weight) per acre. The mulch shall be moist at the time of placement of mulch. To prevent the mulch from being blown away or bunched by the wind and to ensure the mulch cover holds the soil and seed in place, anchor the moist mulch to the soil by an approved means. On slopes where machinery cannot be used, hold the mulch in place by a means that will not be detrimental to subsequent operations. Nonasphaltic mulch binders may be applied uniformly over and through the mulch at the manufacturer's recommended rate. Mulches shall be free of foreign materials, coarse or woody materials such as tobacco and soybean stems, substances toxic to plant growth, and mature seed bearing stalks or roots of prohibited and noxious weeds as defined by law. Mulches shall be cut into lengths of not less than 6 inches and cured to less than 20 percent moisture content by weight. Mulches shall be hay, straw, or a combination both. Hay shall be timothy hay, mixed clover and timothy hay, or other approved native or forage grasses. Straw shall be either wheat or oat straw, reasonably free of viable seeds.

Mulch Binders - Mulch binders shall be nonasphaltic emulsions, of either a water soluble natural vegetable gum blended with gelling and hardening agents or a water soluble blend of hydrophilic polymers, viscosifiers, sticking aids, and gums. Obtain binders from a producer listed in PA Bulletin 15.

DETAILED E&S CONTROL PLAN	
CONTRACTOR:	
DATE:	
SIGNATURE:	

NOTES:

1. For E&S General Plan, see Dwg. ES-1.
2. For E&S General Details, see Dwg. ES-3.

NO.	DATE	REVISION	APPR.

SUBMITTED	_____
PROJECT COORDINATOR - D.E.P.	
APPROVED	_____
CHIEF - DIVISION OF PROJECT DEVELOPMENT - D.E.P.	
APPROVED	_____
DIRECTOR - BUREAU OF WATERWAYS ENGINEERING AND WETLANDS - D.E.P.	



PROFESSIONAL ENGINEER
SHANLEY



PROFESSIONAL ENGINEER
A. MALACHUK

PROFESSIONAL'S SIGNATURE _____ DATE _____

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF WATER PROGRAMS

PROJECT NO. D06-434-102.1

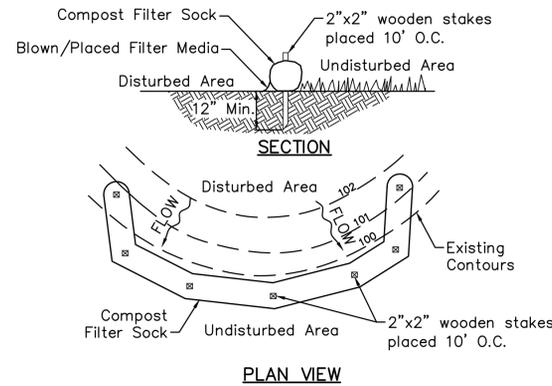
**NEW KERNSVILLE
DAM REMOVAL PROJECT
SCHUYLKILL RIVER**

TILDEN TOWNSHIP WINDSOR TOWNSHIP BERKS COUNTY

E&S GENERAL NOTES

DRAWN BY	DATE	DRAWING NO.
S.L.E.		ES-2
CHECKED BY	SCALE	
	As Shown	

ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY CONTRACTOR AT THE SITE.



NOTES:

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.

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.

Traffic shall not be permitted to cross compost filter socks.

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.

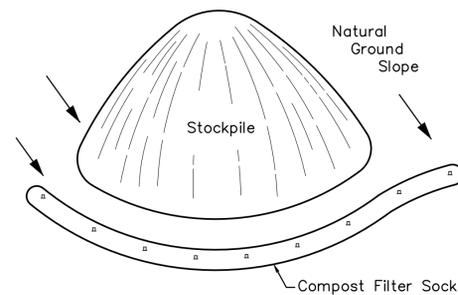
Compost filter socks shall be inspected weekly and after each runoff event. Damaged socks shall be repaired according to manufacturer's specifications or replaced within 24 hours of inspection.

Biodegradable compost 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 #4-1
COMPOST FILTER SOCK**

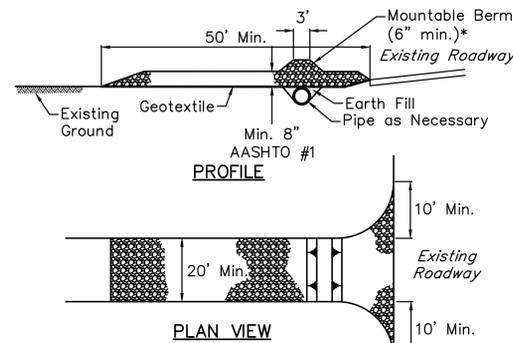
No Scale



Contractor to acquire approval for use and occupancy of stockpile sites located at Contractor's discretion. Sites shall not be located in wetlands. Site to be restored/revegetated to original condition upon removal of stockpile. Maximum stockpile height must not exceed 35 feet; maximum side slope is 2:1.

STOCKPILE

No Scale



* Mountable berm used to provide proper cover for pipe

NOTES:

Remove topsoil prior to installation of rock construction entrance. Extend rock over full width of entrance.

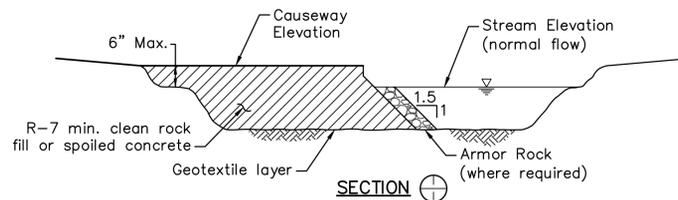
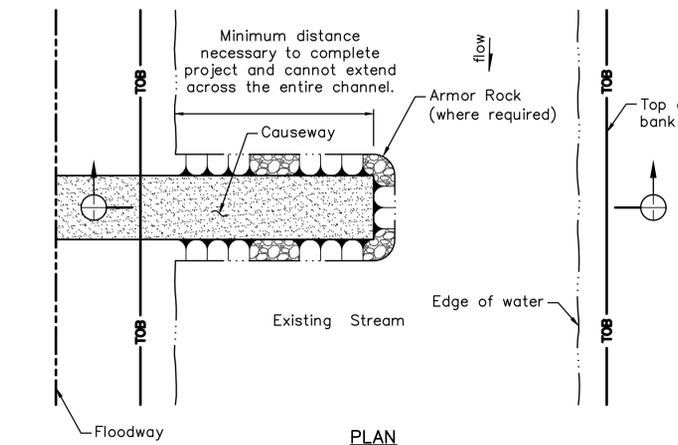
Runoff shall be diverted from roadway to a suitable sediment removal bmp prior to entering rock construction entrance.

Mountable berm shall be installed wherever optional culvert pipe is used and proper pipe cover as specified by manufacturer is not otherwise provided. Pipe shall be sized appropriately for size of ditch being crossed.

Maintenance: Rock construction entrance thickness shall be constantly maintained to the specified dimensions by adding rock. A stockpile shall be maintained on site for this purpose. All sediment deposited on paved roadways shall be removed and returned to the construction site immediately. If excessive amounts of sediment are being deposited on roadway, extend length of rock construction entrance by 50 foot increments until condition is alleviated or install wash rack. Washing the roadway or sweeping the deposits into roadway ditches, sewers, culverts, or other drainage courses is not acceptable.

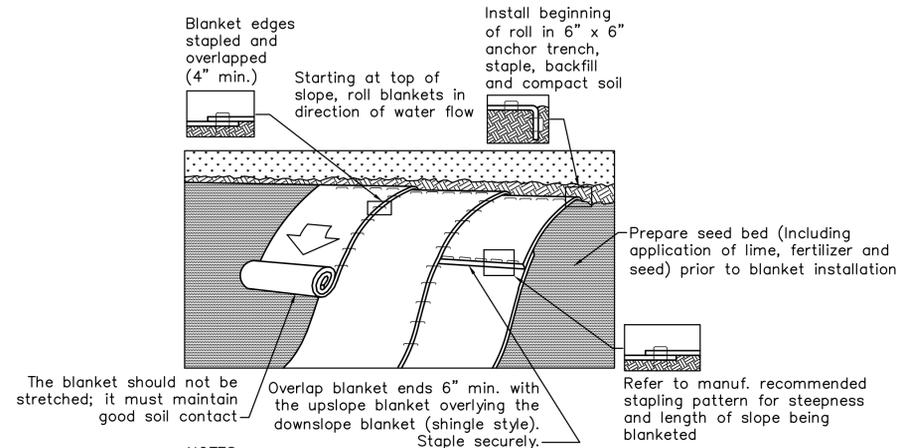
**STANDARD CONSTRUCTION DETAIL #3-1
ROCK CONSTRUCTION ENTRANCE**

No Scale



CAUSEWAY

No Scale



NOTES:

Seed and soil amendments shall be applied according to the rates in the plan drawings prior to installing the blanket.

Provide anchor trench at toe of slope in similar fashion as at top of slope.

Slope surface shall be free of rocks, clods, sticks, and grass.

Blanket shall have good continuous contact with underlying soil throughout entire length. Lay blanket loosely and stake or staple to maintain direct contact with soil. Do not stretch blanket.

The blanket shall be stapled in accordance with the manufacturer's recommendations.

Blanketed areas shall be inspected weekly and after each runoff event until perennial vegetation is established to a minimum uniform 70% coverage throughout the blanketed area. Damaged or displaced blankets shall be restored or replaced within 4 calendar days.

**STANDARD CONSTRUCTION DETAIL #11-1
EROSION CONTROL BLANKET INSTALLATION**

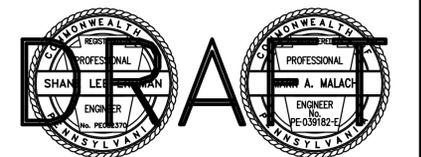
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DETAILED E&S CONTROL PLAN	
CONTRACTOR:	
DATE:	
SIGNATURE:	

NOTES:

- For E&S General Plan, see Dwg. ES-1.
- For E&S General Notes, see Dwg. ES-2.

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	As Shown	ES-3

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