

EROSION & SEDIMENTATION CONTROL PLAN SITE SPECIFIC NOTES:
SEE STANDARD NOTES & OPTIONAL NOTES FOR ADDITIONAL E&S GUIDANCE

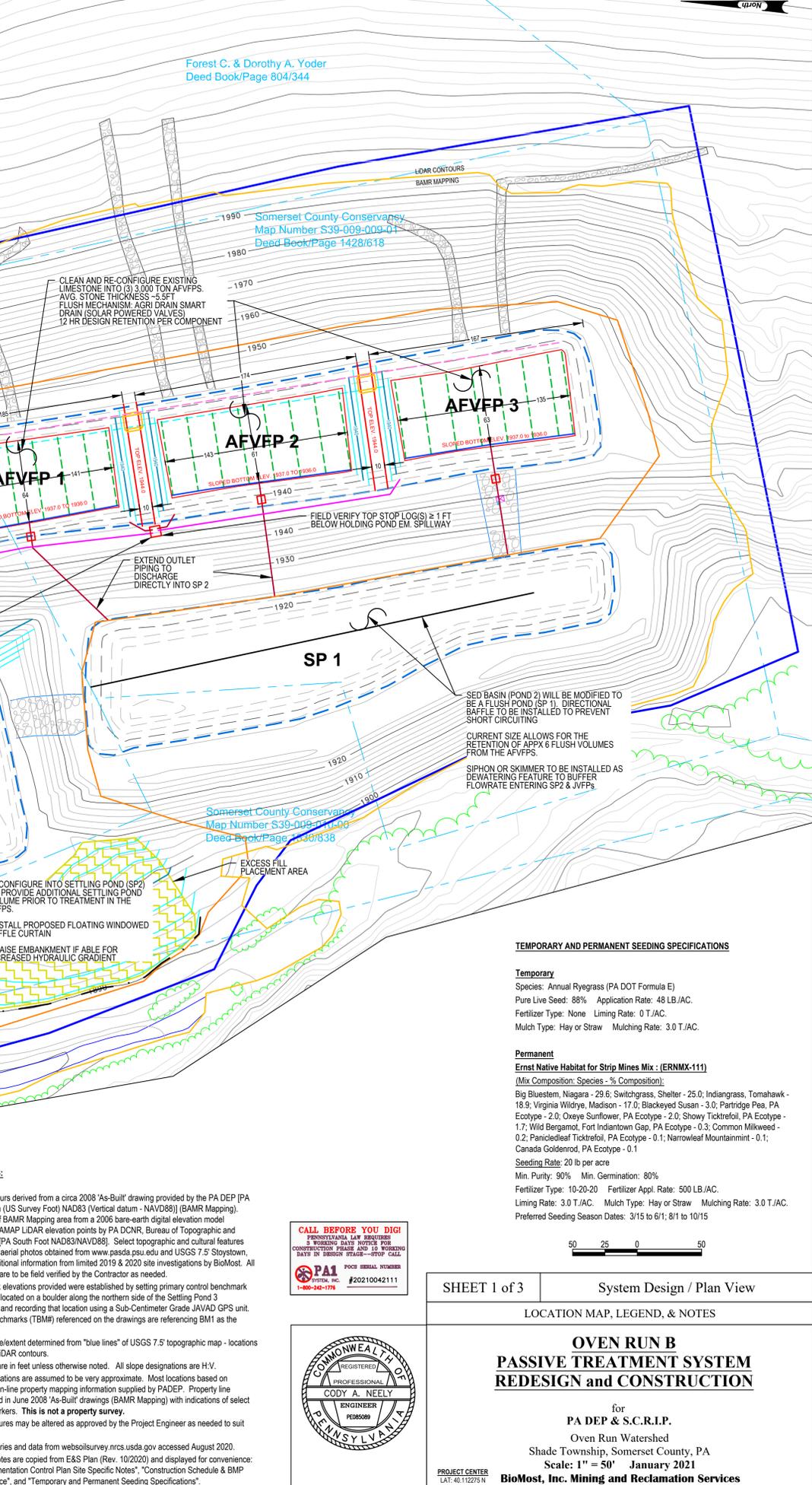
1. Only limited disturbance will be permitted to provide access to install perimeter erosion and sedimentation controls.
2. Sediment removed from BMPs must be placed within the Limits of Disturbance in an area protected by BMPs and promptly will be recycled, scraped, or disposed of in permitted facilities in accordance with all applicable state and federal regulations as needed. The compost/organic material from SAPS1 (existing upper treatment component) will be removed and utilized as an on-site soil amendment on the slopes below the AFVFPs, Sludge Pond, and a portion of the expanded Holding Pond. The final slope after addition of soil amendment shall be promptly revegetated and stabilized with erosion control blankets as necessary. Compost/organic material from SAPS2 (existing lower treatment component) shall be removed and placed in the excess fill placement area below SP2. All sludge and/or sediment realized from cleaning the existing limestone shall be disposed of on-site with final placement to go into the proposed Sludge Pond area.
3. Proposed contours for the Fill Placement Area are approximate in nature and are subject to field changes in order to best place the excess fill material in the existing footprint of the Oven Run B Passive Treatment System while blending the final grade into the existing topography.
4. Though all cut and fill material will be used and placed on site, it is the responsibility of the operator to perform due diligence and determine if any fill material imported from off-site is Clean Fill. 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 block or concrete from construction and demolition activities that is separate from other waste and is not 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.)



- LEGEND**
- EX. INTERMEDIATE CONTOUR
 - EX. INDEX CONTOUR
 - EX. INTERMEDIATE CONTOUR DEPRESSION
 - EX. INDEX CONTOUR DEPRESSION
 - EX. SURFACE WATER
 - EX. TREES AND VEGETATION (APPX.)
 - EX. PROPERTY LINE (APPX.)
 - EX. UNDERDRAIN
 - EX. FLOW CONTROL STRUCTURE (TO BE REMOVED OR ABANDONED)
 - EX. RIPRAP
 - EX. VALVE
 - EX. TRAIL
 - EX. DIRT ROAD
 - PROP. PTS COMPONENT
 - PROP. INDEX CONTOUR
 - PROP. INTERMEDIATE CONTOUR
 - PROP. 18" PIPE
 - PROP. 12" SCH40 PVC PIPE
 - PROP. 12" HDPE PIPE
 - PROP. 6" SDR35 PVC PIPE
 - PROP. 8" SCH40 PVC PIPE
 - PROP. 6" HDPE (PERFORATED) PIPE
 - PROP. 4" SDR35 PVC (PERFORATED) PIPE
 - PROP. WATER CONTROL STRUCTURE / FLOW SPLITTER
 - PROP. GRASS LINED EMERGENCY SPILLWAYS
 - PROP. COMPOST FILTER SOCK
 - WATER SURFACE
 - PROP. PROJECT BOUNDARY (21.4 AC)
 - PROP. LIMITS OF DISTURBANCE (10.9 AC)
 - GPS BENCHMARK

CONSTRUCTION SCHEDULE & BMP INSTALLATION SEQUENCE

- PASSIVE TREATMENT SYSTEM REDESIGN / REHABILITATION**
1. Install Rock Construction Entrance and replace existing 18" culvert with 24" HDPE N-12 culvert. Install associated riprap apron for culverted access road crossing.
 2. Install CFS#4 and extend the access road to the start of RD3. Construct RD3 to the location of the proposed 18" HDPE culvert. Install associated riprap apron for the culverted access road crossing.
 3. Install CFS#4 and the dual 24" HDPE N-12 access road channel crossing. Extend the riprap apron as applicable to direct water to SP3.
 4. Construct access road to the beginning of RD2 and install RD2 to drain to the dual 24" culvert crossing.
 5. Extend existing 10" PVC drain pipes (from SAPS1 / proposed sludge pond area) as necessary to provide clearance from the access road crossing. Install the dual 18" HDPE N-12 culverted crossing of the Holding Pond emergency spillway. Extend the riprap apron as applicable to introduce water to SP3.
 6. Construct access road from the Holding Pond emergency spillway to the upper treatment level and install RD1 to drain to the dual 18" culvert crossing.
 7. Install CFS#1 and CFS#6 to complete the perimeter E&S controls.
 8. Iron sludge can be removed from the existing upper treatment component (SAPS1) and lower treatment component (SAPS2). This iron shall be stockpiled in a protected area until the proposed sludge pond is prepared.
 9. Existing organic material (compost) from the upper and lower treatment components shall be removed. Organic material from the upper treatment location shall be used as a soil amendment for the area between the upper and lower treatment components. The amended area shall be revegetated and promptly covered with rolled erosion control products to prevent erosion. Organic material from the lower treatment location shall be placed and graded into the excess fill placement area to blend with existing topography.
 10. Excavate the northern end of SAPS1 to the bottom elevation of the component and out the three 10" PVC drain pipes at the location indicated on the drawing to serve as the sludge pond dewatering outlet and Upper Sed Trap outlet location. Install both CFS#5 and CFS#3 within the footprint of the sludge pond.
 11. For the upper treatment component (SAPS1), push existing stone to the southern end of the component to be stockpiled for washing operations. Once the proposed sludge pond area has been exposed, it can be excavated to the lines and grades shown on the plans. The contractor may use over-excavated material from the sludge pond bottom to begin constructing the Holding Pond south embankment as well as the sludge pond south embankment. All existing piping and pond liner material intercepted during this process shall be disposed of in an approved manner.
 12. All stockpiled iron sludge shall be moved to Sludge Pond upon its completion.
 13. Construct AFVFPs (F-3) which includes concurrent limestone washing and placement. All sediment and wash water shall be pumped or directed to either the sludge pond / Upper Sed Trap or pump water filter bags.
 14. Excavate the northern end of SAPS2 to the bottom elevation of the component and expose / intercept the existing outlet pipe. Pull back the existing stone material and install CFS#2 within the footprint of the JVP2 component.
 15. Push the existing stone in the lower treatment component to the southern end to be stockpiled for washing operations. Once the proposed JVP areas have been exposed, they can be excavated to the lines and grades shown on the plans. The contractor may use over-excavated material from the sludge pond bottom to begin constructing the Holding Pond south embankment as well as the sludge pond south embankment. All existing piping and pond liner material intercepted during this process shall be disposed of in an approved manner.
 16. As the treatment stone is cleaned, sediment and wash water shall be pumped or directed to the sludge pond or directed to the lower sediment trap areas. Cleaned stone can be placed in JVP1 area while the SP2 footprint is being eroded.
 17. Once SP2 is clear of stone it can be excavated to the lines and grades shown on the drawings. Any excess material needed for internal embankment building can be excavated from this area.
 18. Cleaned limestone from SAPS2 will be crushed and stockpiled for use in the JVPF treatment media.
 19. Install the JVPF1 and JVPF2 piping, stone, and treatment media.
 20. Complete Holding Pond southern embankment to lines and grades shown, using the excavated material from constructing the collection channel / Moat. Install the H-flume and its approach section to allow for flow measurement at the site. All earth disturbances above the Holding Pond that do not drain to the sediment trap must be completed during dry weather and all disturbed areas must be immediately stabilized.
 21. Install all necessary plumbing and automated flushing apparatuses to direct the discharge to the AFVFPs and throughout the treatment system.
 22. Install baffle curtains.
 23. Final grade all affected areas to blend with surrounding topography and promote positive drainage, while maintaining stable slopes.
 24. Place and spread best on-site soil material as needed to ensure successful revegetation.
 25. Seed entire affected area per permanent seeding specifications as soon as possible or within 1 week after construction of a project area is completed.
 26. Remove all temporary BMPs upon establishment of permanent uniform 70% perennial vegetative cover.
- *Please note that some activities involving the washing of existing limestone may happen concurrently.



SLUDGE POND

EXPAND THE HOLDING POND TO INCREASE THE EFFECTIVE VOLUME TO HOLD 500 GPM FOR A 12 HR RETENTION TIME.

2100 CY OF ORGANIC MIXED TREATMENT MEDIUM (SPENT MUSHROOM COMPOST & WOODCHIPS) PER COMPONENT. TOTAL THICKNESS OF MEDIA = 4.5'

EACH COMPONENT CONTAINS MULTI-CELL UNDERDRAINS BEDDED IN ~1100 - 1200 TONS OF FILTER STONE (REUSED FROM SAPS2) & ~300 TONS OF BASE AGGREGATE MATERIAL.

RESIDENCE TIME OF 12 HRS PER POND

REPRESENTATIVE RAW WATER QUALITY

	pH	Acid	T Fe	T Mn	T Al	Sulfates
Average	2.8	320	28	11	25	799

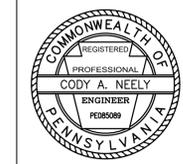
DESIGN BASIS SUMMARY - (PER DEP MONITORING)

- FLOW**
MAXIMUM: 367 GPM
AVERAGE: 158 GPM
- LOAD ACID**
MAXIMUM: 2,467 LB/DAY
AVERAGE: 533 LB/DAY
- IRON**
MAXIMUM: 215 LB/DAY
AVERAGE: 42 LB/DAY
- ALUMINUM**
MAXIMUM: 195 LB/DAY
AVERAGE: 43 LB/DAY
- MANGANESE**
MAXIMUM: 103 LB/DAY
AVERAGE: 19 LB/DAY

NOTE: SYSTEM DOES NOT INCLUDE COMPONENTS TO REMOVE MANGANESE.

GENERAL NOTES:

1. Base map contours derived from a circa 2008 "As-Built" drawing provided by the PA DEP (PA State Plane - South (US Survey Foot) NAD83 (Vertical datum - NAVD83)) (BAMR Mapping). Contours outside of BAMR Mapping area from a 2006 bare-earth digital elevation model constructed from PAMAP LIDAR elevation points by PA DCMR, Bureau of Topographic and Geological Survey (PA South Foot NAD83/NAV83). Select topographic and cultural features from 2008 PAMAP aerial photos obtained from www.pasda.psu.edu and USGS 7.5 Stoytown, PA (PR1994). Additional information from limited 2019 & 2020 site investigations by BioMost. All existing conditions are to be field verified by the Contractor as needed.
2. The bench mark elevations provided were established by setting primary control benchmark (BM1) chiseled "X" located on a boulder along the northern side of the Settling Pond 3 embankment area, and recording that location using a Sub-Centimeter Grade JAVAD GPS unit. Any temporary benchmarks (TBM#) referenced on the drawings are referencing BM1 as the base station.
3. Stream presence/extent determined from "blue lines" of USGS 7.5' topographic map - locations revised based on LIDAR contours.
4. All dimensions are in feet unless otherwise noted. All slope designations are H:V.
5. Property line locations are assumed to be very approximate. Most locations based on Somerset County on-line property mapping information supplied by PADEP. Property line information included in June 2008 "As-Built" drawings (BAMR Mapping) with indications of select property corner markers. This is not a property survey.
6. Proposed structures may be altered as approved by the Project Engineer as needed to suit field conditions.
7. Soil unit boundaries and data from websoilsurvey.nrcs.usda.gov accessed August 2020.
8. The following notes are copied from E&S Plan (Rev. 10/2020) and displayed for convenience: "Erosion and Sedimentation Control Plan Site Specific Notes", "Construction Schedule & BMP Installation Sequence", and "Temporary and Permanent Seeding Specifications".



TEMPORARY AND PERMANENT SEEDING SPECIFICATIONS

Temporary
Species: Annual Ryegrass (PA DOT Formula E)
Pure Live Seed: 88% Application Rate: 48 LB./AC.
Fertilizer Type: None Limiting Rate: 0 T./AC.
Mulch Type: Hay or Straw Mulching Rate: 3.0 T./AC.

Permanent
Ernst Native Habitat for Strip Mines Mix : (ERNMX-11)
(Mix Composition: Species - % Composition)
Big Bluestem, Niagara - 29.6; Switchgrass, Shelter - 25.0; Indiangrass, Tomahawk - 18.9; Virginia Wildrye, Madison - 17.0; Blackeyed Susan - 3.0; Partridge Pea, PA Ecotype - 2.0; Oxyeye Sunflower, PA Ecotype - 2.0; Showy Ticktrel, PA Ecotype - 1.7; Wild Bergamot, Fort Indiantown Gap, PA Ecotype - 0.3; Common Milkweed - 0.2; Panicledleaf Ticktrel, PA Ecotype - 0.1; Narrowleaf Mountainmint - 0.1; Canada Goldenrod, PA Ecotype - 0.1
Seeding Rate: 20 lb per acre
Min. Purity: 90% Min. Germination: 80%
Fertilizer Type: 10-20-20 Fertilizer Appl. Rate: 500 LB./AC.
Limiting Rate: 3.0 T./AC. Mulch Type: Hay or Straw Mulching Rate: 3.0 T./AC.
Preferred Seeding Season Dates: 3/15 to 6/11; 8/11 to 10/15

SHEET 1 of 3 System Design / Plan View

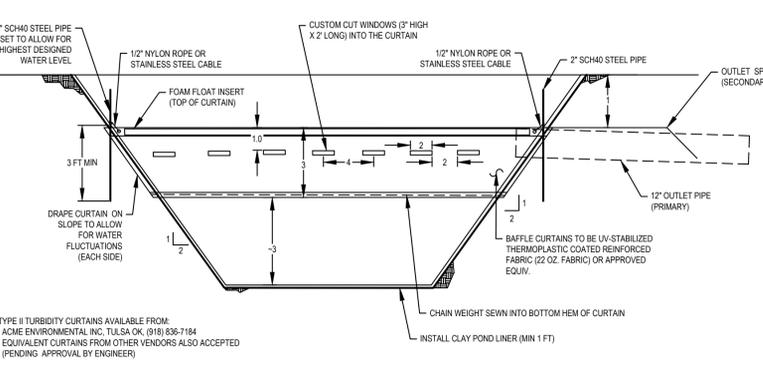
LOCATION MAP, LEGEND, & NOTES

OVEN RUN B
PASSIVE TREATMENT SYSTEM
REDESIGN and CONSTRUCTION

for
PA DEP & S.C.R.I.P.
Oven Run Watershed
Shade Township, Somerset County, PA
Scale: 1" = 50' January 2021

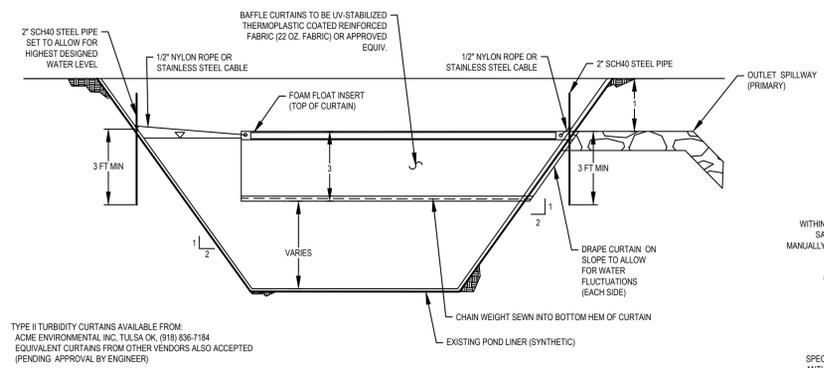
BioMost, Inc. Mining and Reclamation Services
Mars, PA www.biomost.com

James H. & Donnalee B. Weaver
Interest
Map No. S39-005-063-00
Deed Book/Page 1766/475
Terry A. & Fannie Kramer
Interest



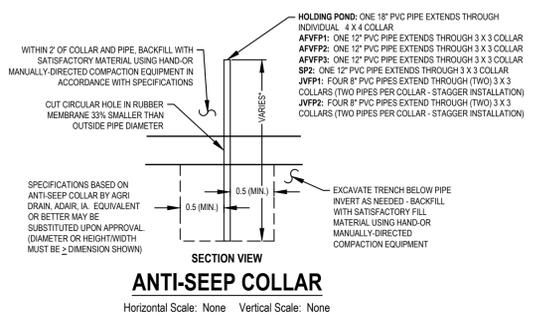
SETTLING POND #2 WITH WINDOWED BAFFLE CURTAIN

Horizontal Scale: None Vertical Scale: None
 NOTES: SEE PLAN VIEW FOR BAFFLE CURTAIN LOCATION.
 *BAFFLE CURTAIN LENGTH TO BE MEASURED AT THE DESIGN WATER LEVEL PRIOR TO CONFIRMING ORDER. FOR OPTIMIZED FIT.
 *CUT 3 SIDES FOR EACH WINDOW (TOP AND BOTH SIDES) SO WINDOW FLAP CAN BE TIED UP TO ALLOW FOR CUSTOMIZED WINDOW LOCATIONS IN THE FUTURE. SET BAFFLE CURTAIN ANCHORS TO ALLOW FOR THE HIGHEST DESIGN WATER LEVEL IN THE POND, AND ALLOW ENOUGH SLACK FOR THE CURTAIN TO DROP TO THE LOWEST DESIGN WATER LEVEL.



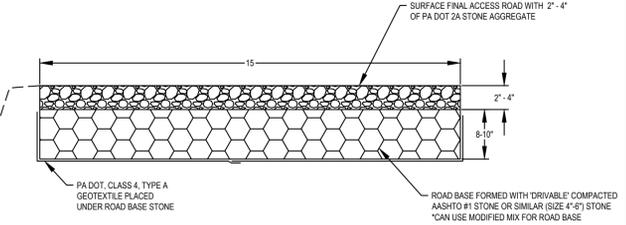
SETTLING POND #1 & #3 WITH DIRECTIONAL BAFFLE CURTAIN (TYPICAL)

Horizontal Scale: None Vertical Scale: None
 NOTES: SEE PLAN VIEW FOR BAFFLE CURTAIN LOCATIONS.
 *BAFFLE CURTAIN LENGTHS ARE TO BE MEASURED AT THE DESIGN WATER LEVEL PRIOR TO CONFIRMING ORDERS.
 *SET BAFFLE CURTAIN ANCHORS TO ALLOW FOR THE HIGHEST DESIGN WATER LEVEL IN THE POND, AND ALLOW ENOUGH SLACK FOR THE CURTAIN TO DROP TO THE LOWEST DESIGN WATER LEVEL (IF VARIABLE).



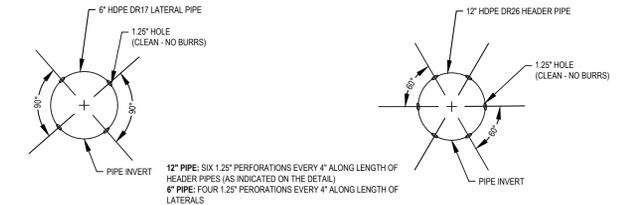
ANTI-SEEP COLLAR

Horizontal Scale: None Vertical Scale: None



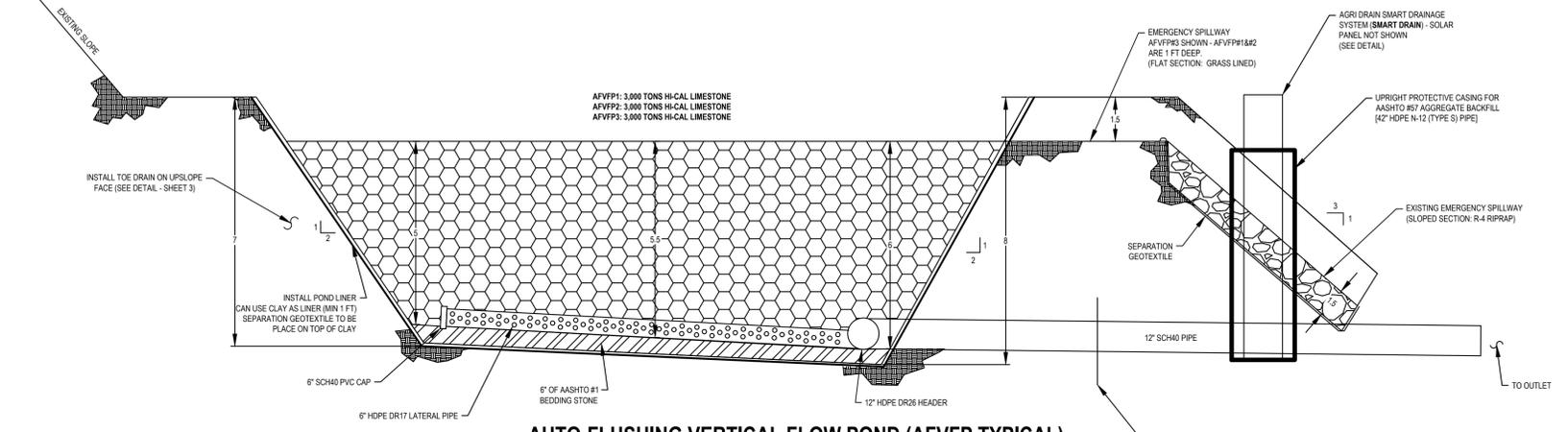
ACCESS ROAD (TYPICAL)

Horizontal Scale: None Vertical Scale: None



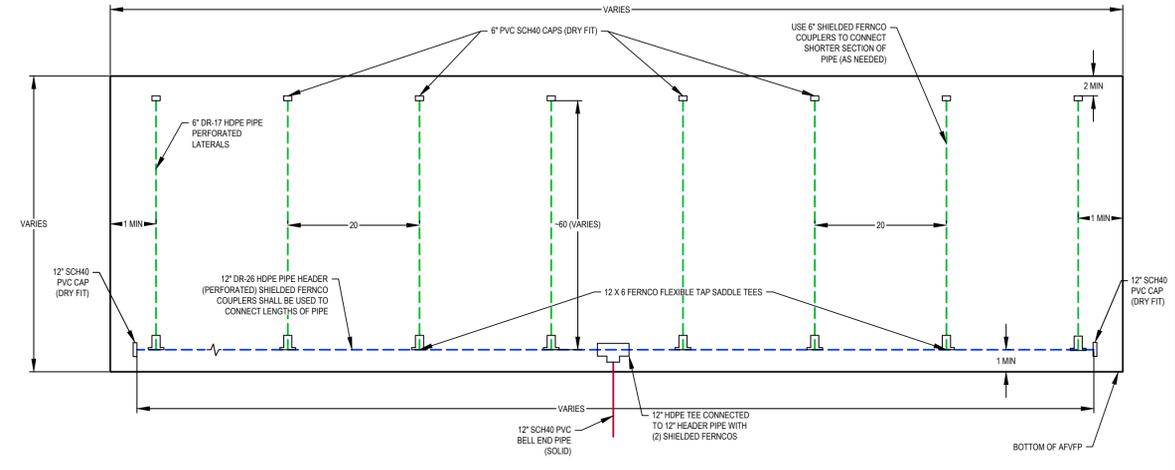
PIPE PERFORATION DETAIL

Horizontal Scale: None Vertical Scale: None



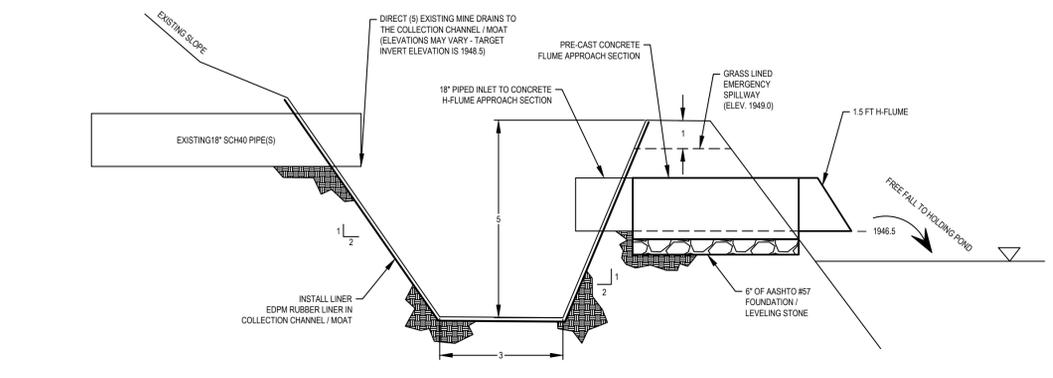
AUTO-FLUSHING VERTICAL FLOW POND (AFVFP TYPICAL)

Horizontal Scale: None Vertical Scale: None



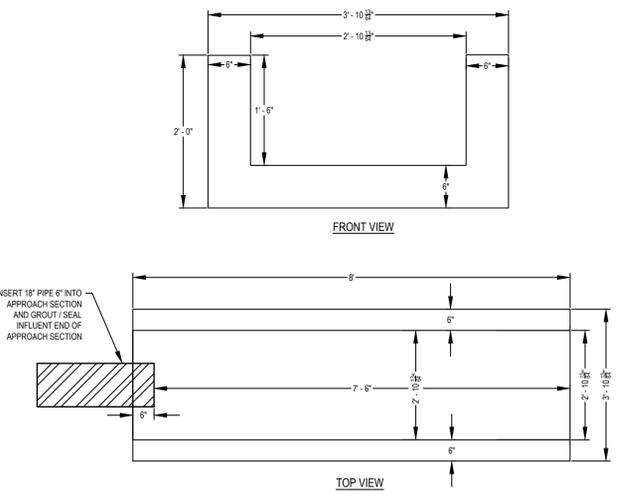
AFVFP UNDERDRAIN PIPING SCHEMATIC (TYPICAL)

Horizontal Scale: None Vertical Scale: None



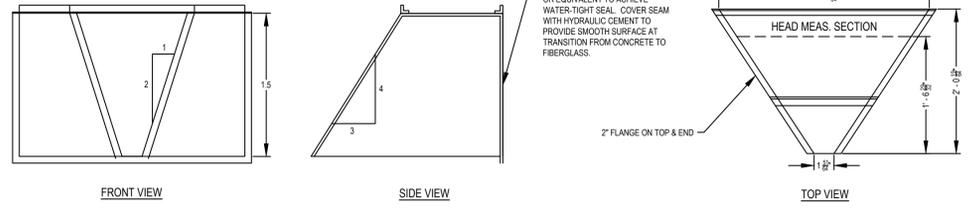
COLLECTION CHANNEL / MOAT

Horizontal Scale: None Vertical Scale: None



PRE-CAST CONCRETE FLUME APPROACH SECTION

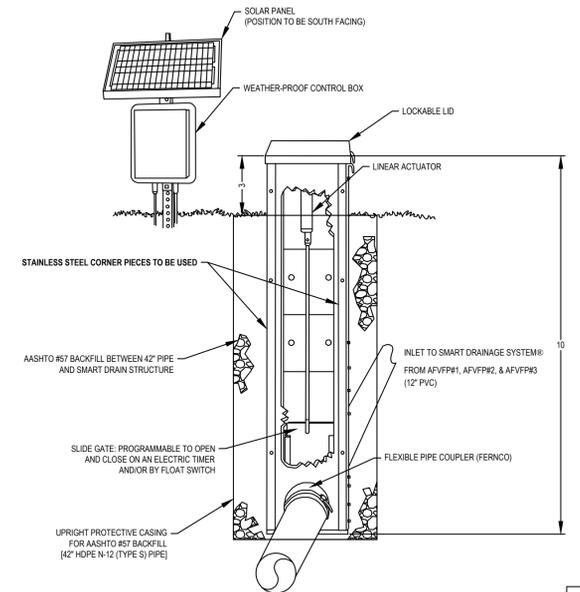
Horizontal Scale: None Vertical Scale: None



1.5 FT H FLUME TYPICAL

Horizontal Scale: None Vertical Scale: None

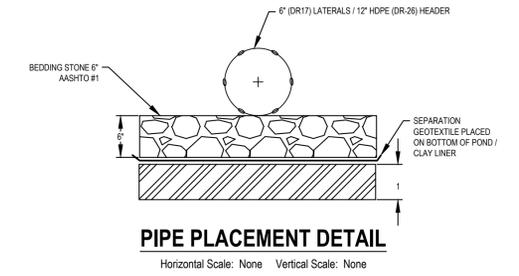
NOTE: A STAFF GAUGE SHALL BE INSTALLED AT THE FLUME'S MEASUREMENT POINT



AUTO-FLUSH SYSTEM (AFVFP-OUTLETS) AGRICULTURAL SMART DRAINAGE SYSTEM

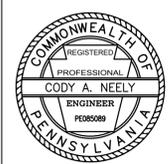
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NOTE: POSITION THE SMART DRAIN SYSTEMS SO THAT APPX 3' OF FLOW CONTROL BOX STRUCTURE IS ABOVE FINAL GRADE.
 SPECIAL ORDER STAINLESS STEEL CORNER PIECES, DUE TO CORROSIVE WATER.
 INSTALL CULVERT PIPE (STANDING UPRIGHT) AS PROTECTIVE CASING (PROVIDE CUSTOM BOTTOM CUT-OUTS FOR PIPE) AND BACKFILL ANNULUS EVENLY WITH INERT AGGREGATE TO FINAL GRADE ONCE PER DAY PROGRAMMABLE FLUSHING CAPABILITY



PIPE PLACEMENT DETAIL

Horizontal Scale: None Vertical Scale: None



SHEET 2 of 3 System Design / Details

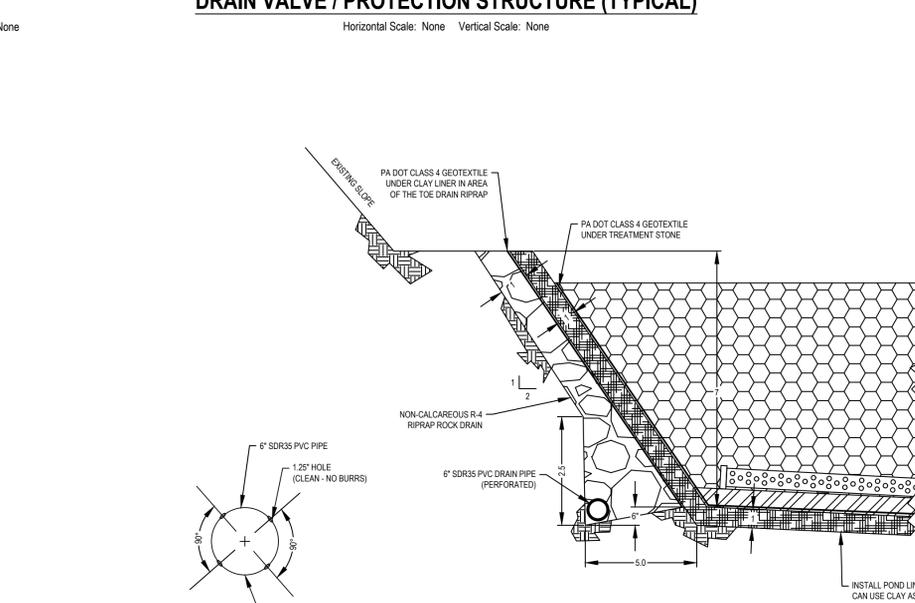
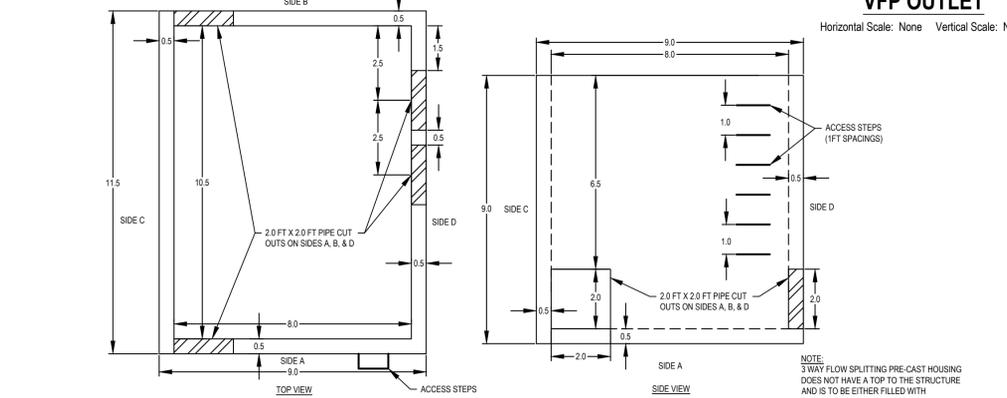
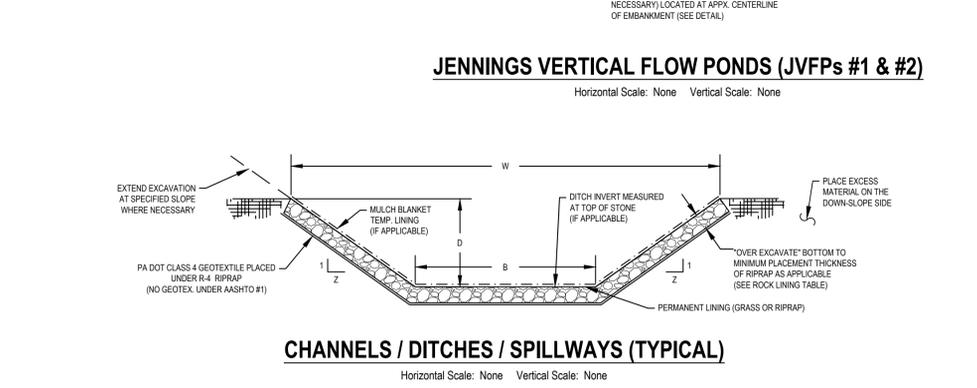
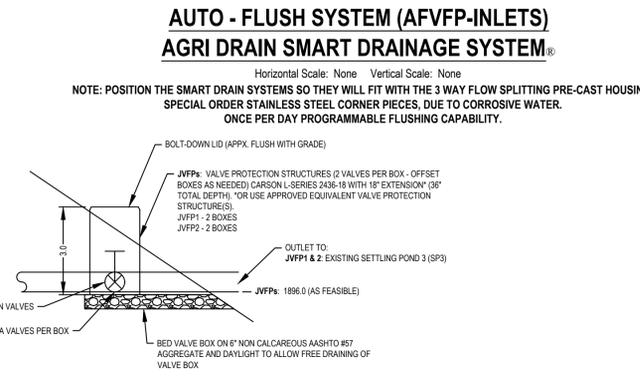
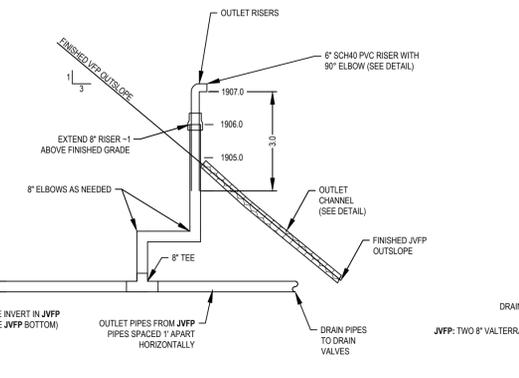
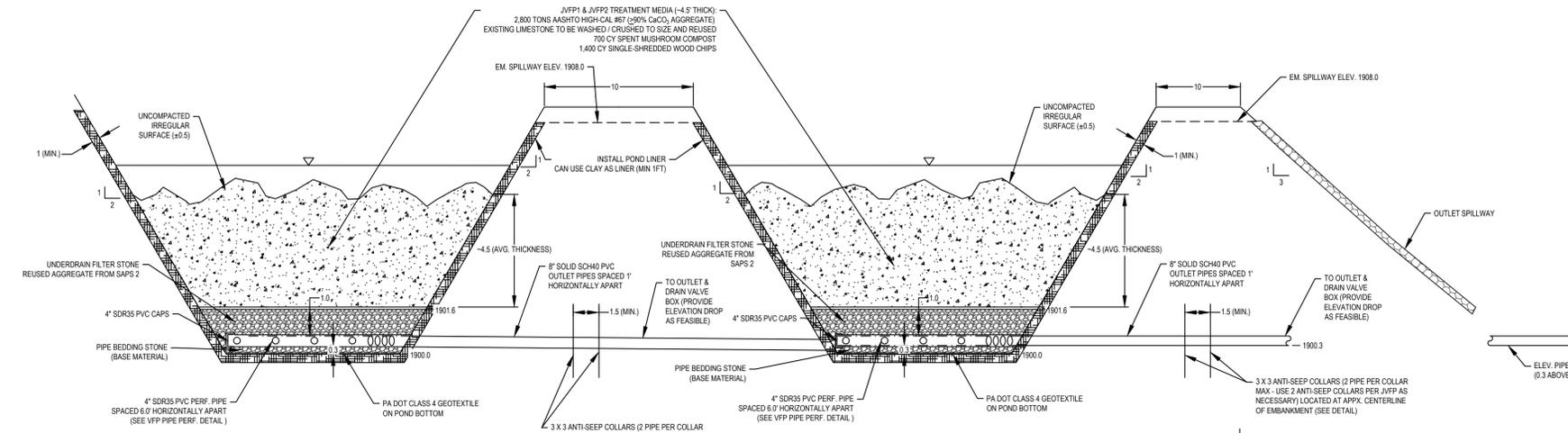
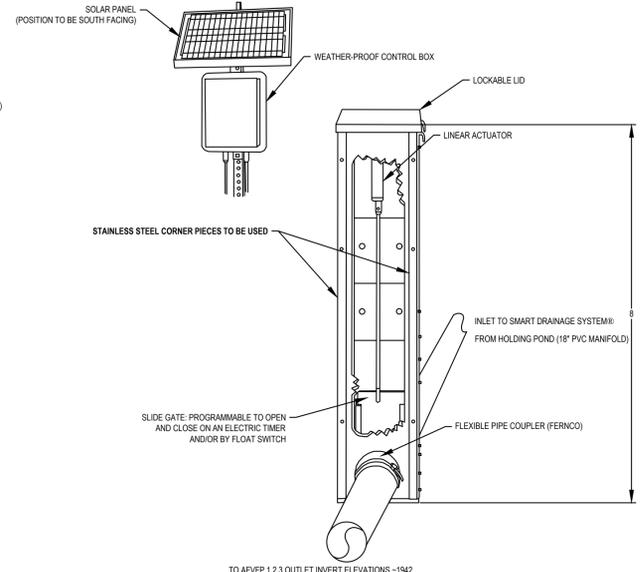
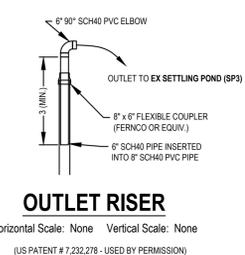
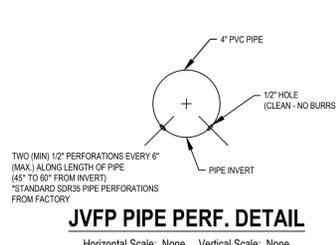
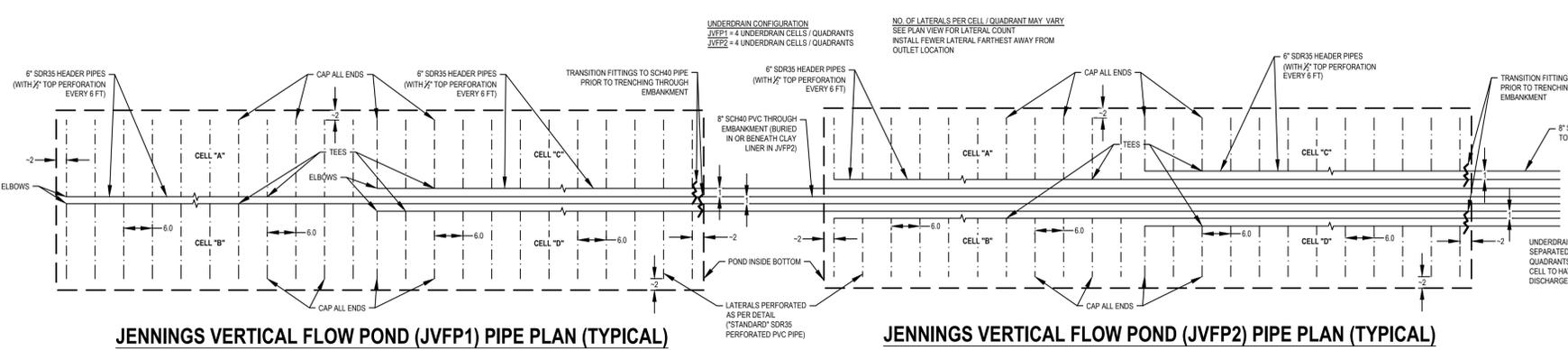
DETAILS

OVEN RUN B PASSIVE TREATMENT SYSTEM REDESIGN and CONSTRUCTION

for PA DEP & S.C.R.I.P.
 Oven Run Watershed
 Shade Township, Somerset County, PA
 Scale: As Shown January 2021

PROJECT CENTER
 LAT: 40.11275 N
 LONG: -78.91204 W

BioMost, Inc. Mining and Reclamation Services
 Mars, PA www.biomost.com



CHANNEL / DITCH / SPILLWAY DATA TABLE

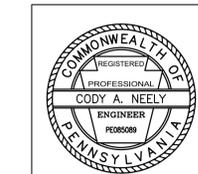
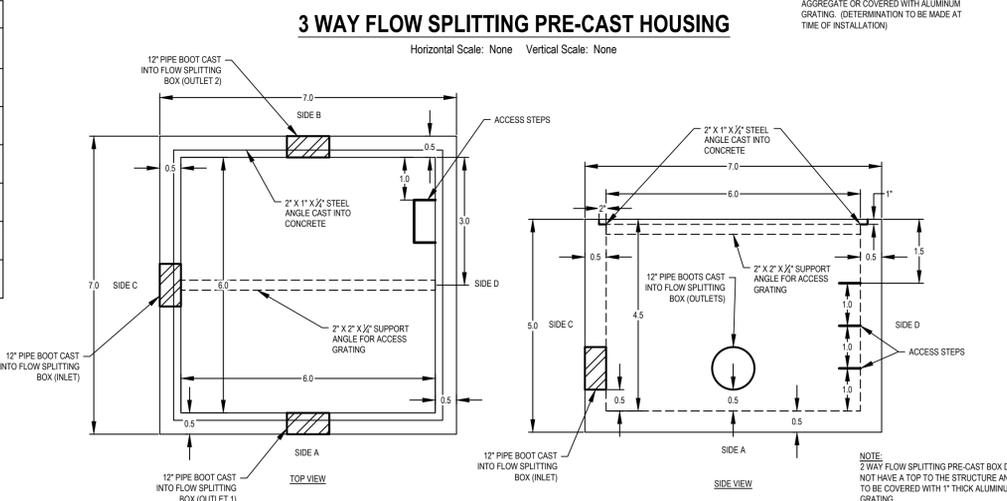
CHANNEL/DITCH/SPILLWAY	SEGMENT	BEGIN ELEV. (INVERT)	END ELEV. (INVERT)	LENGTH (FT)	SLOPE (%)	Z (FT) UP-SLOPE/DOWN-SLOPE	D' (FT)	B (FT)	W** (FT)	TEMP*** LINING	PERM LINING
COLLECTION CHANNEL / MOAT EM SPILLWAY	FLAT SEGMENT THROUGH EMBANKMENT	1949.0	1949.0	10.0	0.0	2.0	1.0	10.0	14.0	S75 MULCH BLANKET	GRASS
SLUDGE POND	FLAT SEGMENT THROUGH EMBANKMENT	1943.0	1943.0	68.0	0.0	2.0	1.0	10.0	14.0	S75 MULCH BLANKET	GRASS
AFVFP1 EM SPILLWAY	FLAT SEGMENT THROUGH EMBANKMENT	1943.0	1943.0	14.0	0.0	2.0	1.0	10.0	14.0	S75 MULCH BLANKET	GRASS
AFVFP2 EM SPILLWAY	FLAT SEGMENT THROUGH EMBANKMENT	1943.0	1943.0	14.0	0.0	2.0	1.0	10.0	14.0	S75 MULCH BLANKET	GRASS
JVFP1 EM SPILLWAY	FLAT SEGMENT THROUGH EMBANKMENT	1908.0	1908.0	14.0	0.0	2.0	1.0	10.0	14.0	S75 MULCH BLANKET	GRASS
JVFP2 EM SPILLWAY	FLAT SEGMENT THROUGH EMBANKMENT	1908.0	1908.0	14.0	0.0	2.0	1.0	10.0	14.0	S75 MULCH BLANKET	GRASS

EAS ROAD DITCHES (NOT SHOWN ABOVE) ARE PROVIDED ON THE SEPARATE EAS CONTROL PLAN DRAWING SET
*DEPTH TO TOP OF ROCK-LINED PORTION OF SPILLWAY/DITCH CHANNEL. TOTAL EXCAVATION DEPTH MAY BE GREATER. CHANNEL ABOVE RIPRAP LINED PORTION TO BE GRASS LINED. DEPTHS DISPLAYED FOR DIVERSION & COLLECTION DITCHES ARE THE MINIMUM REQUIRED DEPTHS TO PASS REQUIRED FLOWS (SEE CALCULATIONS). FOR CONSTRUCTION PURPOSES THE DIMENSIONS (DEPTH AND CORRESPONDING TOP WIDTHS) CAN BE ADJUSTED LARGER FOR EASE OF CONSTRUCTION IF DESIRED.
**TOP WIDTH SHOWN TO BASE ROCK-LINED SPILLWAY/DITCH CHANNEL DEPTH - ACTUAL TOP WIDTH OF GRASS-LINED PORTION MAY BE GREATER IF APPLICABLE.
***S75 MULCH BLANKET TEMPORARY LINING PER MANUFACTURER SPECIFICATIONS ALLOWS FOR HIGHER CHANNEL VELOCITY, MORE SHEAR STRESS, AND EXHIBITS A LOWER MANNINGS ROUGHNESS COEFFICIENT THAN A GRASS LINED CHANNEL. THEREFORE ANYWHERE TO RECEIVE PERMANENT GRASS LINING MAY UTILIZE S75 MULCH BLANKET FOR TEMPORARY STABILIZATION PURPOSES.

ROCK LINING TABLE

NCSA # (AASHTO #)	AVG. STONE SIZE (Ø50)	MIN. DEPTH ("A")
R-3	3"	9"
R-4	6"	18"
R-5	9"	27"
R-6	12"	36"
R-7	18"	45"

*UNLESS SPECIFIED OTHERWISE



SHEET 3 of 3

System Design / Details

DETAILS

OVEN RUN B PASSIVE TREATMENT SYSTEM REDESIGN and CONSTRUCTION

for
PA DEP & S.C.R.I.P.
Oven Run Watershed
Shade Township, Somers County, PA
Scale: As Shown January 2021

BioMost, Inc. Mining and Reclamation Services
Mars, PA www.biomost.com

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