EROSION AND SEDIMENT POLLUTION CONTROL GUIDELINES:

1. A LOGICAL CONSTRUCTION SEQUENCE SHALL BE DEVELOPED THAT INCLUDES THE INSTALLATION OF E&SPC FACILITIES, AND BEST MANAGEMENT PRACTICES (BMPS), BEFORE EARTHMOVING MAY COMMENCE.
2. E&SPC FACILITIES AND BMPS SHALL BE CORRECTLY INSTALLED AND MAINTAINED. MAINTENANCE INFORMATION AND CONSTRUCTION DETAILS MAY BE OBTAINED FROM THE LEBANON COUNTY CONSERVATION DISTRICT.
3. EARTH DISTURBANCE SHALL TAKE PLACE WITHIN A DEFINED LIMITS OF DISTURBANCE AND IMMEDIATELY PRIOR TO CONSTRUCTION.
4. DEVELOPMENT PLANS SHALL PRESERVE SALIENT NATURAL FEATURES, MINIMIZE LAND CUTS AND FILLS AND CONFORM TO THE GENERAL TOPOGRAPHY. PLANS SHALL BE DESIGNED AND IMPLEMENTED SO AS TO CREATE THE LEAST POTENTIAL FOR EROSION AND TO ADEQUATELY CONTAIN THE VOLUME AND REDUCE THE VELOCITY OF SURFACE WATER RUNOFF.
5. NATURAL VEGETATION SHALL BE RETAINED, PROTECTED, AND SUPPLEMENTED PRIOR TO AND DURING CONSTRUCTION.
6. TOPSOIL SHALL BE REMOVED FROM CONSTRUCTION AREAS AND STOCKPILED FOR FINAL GRADING AND SEEDBED PREPARATION. DOWNSLOPE AREAS OF ANY STOCKPILES, CONSTRUCTION OR BORROW AREAS SHALL BE PROTECTED WITH CORRECTLY INSTALLED AND MAINTAINED SILT FENCE, STRAW BALES, OR SEDIMENT TRAPS PRIOR TO ANY EARTH DISTURBANCE IN ORDER TO MINIMIZE SEDIMENT LADEN RUNOFF.
7. ALL CUTS AND FILLS SHALL BE BROUGHT TO FINAL GRADE EARLY IN THE CONSTRUCTION SEQUENCE AND STABILIZED IMMEDIATELY WITH SEED AND MULCH.
8. ONLY DRIVEWAY EXCAVATIONS THAT CAN BE STABILIZED WITH A CRUSHED STONE BASE THE SAME DAY SHALL BE COMPLETED.
9. CURRENT REGULATIONS STATE: (A) UPON COMPLETION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED, OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION. (B) EROSION AND SEDIMENT CONTROL BMPS SHALL BE IMPLEMENTED AND MAINTAINED UNTIL THE PERMANENT STABILIZATION IS COMPLETED. (C) FOR AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY TO BE CONSIDERED PERMANENTLY STABILIZED, THE DISTURBED AREAS SHALL BE COVERED WITH ONE OF THE FOLLOWING: (1) A MINIMUM UNIFORM 70% NORTH LEBANON TOWNSHIP – STORMWATER MANAGEMENT ORDINANCE PAGE F.2 PERENNIAL VEGETATIVE COVER, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION. (2) AN ACCEPTABLE BMP WHICH PERMANENTLY MINIMIZES ACCELERATED EROSION AND SEDIMENTATION.
10. THE PENN STATE EROSION CONTROL & CONSERVATION PLANTINGS ON NONCROPLAND GUIDE OR AGRONOMY GUIDE SHALL BE CONSULTED FOR PERMANENT AND TEMPORARY SEEDING AND MULCHING TYPES AND RATES. (STRAW MULCH SHALL BE APPLIED AT A RATE OF AT LEAST 3 TONS PER ACRE OR 5 BALES PER 1000 SQUARE FEET. SLOPES STEEPER THAN 3:1 SHALL BE CORRECTLY LINED WITH APPROPRIATE TURF REINFORCEMENT MATTING.) OTHER HELPFUL PUBLICATIONS INCLUDE TURFGRASS ESTABLISHMENT (SPECIAL CIRCULAR 163), TURFGRASS SEED AND SEED MIXTURES (EXTENSION CIRCULAR 391), AND PRINCIPLES OF TURFGRASS IRRIGATION (SPECIAL CIRCULAR 158). THE PUBLICATIONS REFERENCED ARE AVAILABLE FROM THE PENN STATE EXTENSION OFFICE.
11. ALL RECYCLING AND DISPOSAL OF CONSTRUCTION WASTE SHALL BE IN ACCORDANCE WITH LOCAL AND STATE RULES AND REGULATIONS FOR WASTE MANAGEMENT. CONSTRUCTION WASTE INCLUDES BUT IS NOT LIMITED TO: EXCESS SOIL AND ROCK, BUILDING MATERIALS, CONCRETE AND CONCRETE WASH WATER, SANITARY WASTE AND ANY OTHER MATERIALS THAT COULD ADVERSELY IMPACT SURFACE OR GROUND WATER QUALITY.

WAIVERS/MODIFICATIONS:

NORTH LEBANON TOWNSHIP, LEBANON COUNTY
STORMWATER MANAGEMENT ORDINANCE:

1. §307.B.23: GRASS SWALES SHOULD BE DESIGNED WITH A FLAT CHANNEL BOTTOM AT LEAST TWO (2) FEET IN WIDTH, WITH A LONGITUDINAL SLOPE OF ONE (1) TO TWO (2) PERCENT. IF GRASS SWALE SLOPES EXCEED FOUR (4) PERCENT, CHECK DAMS OR SIMILAR WATER VELOCITY MODIFIERS SHOULD BE USED.

   ALTERNATIVE: ALLOW SHORT SECTIONS OF THE SWALES TO EXCEED 4%.

   JUSTIFICATION: SWALE SECTIONS EXCEEDING 4% ARE RELATIVELY SHORT IN LENGTH AND ACCEPTABLE SWALE STABILIZATION CALCULATIONS ARE PROVIDED.

APPROVED___________/ NOT APPROVED___________ DATE:_______________

2. §308.D: THE SIDE SLOPES OF EARTH FILL EMBANKMENTS SHALL NOT BE STEEPER THAN THREE (3) HORIZONTAL TO ONE (1) VERTICAL ON BOTH SIDES OF THE EMBANKMENT. HOWEVER, THE INTERIOR SIDE SLOPES OF THE IMPOUNDMENT AREA SHALL HAVE SIDE SLOPES OF FIVE (5) HORIZONTAL TO ONE (1) VERTICAL OR FLATTER UNLESS ACCESS TO THE BASIN IS RESTRICTED BY FENCING DESIGNED TO PREVENT ACCESS. IN NO CASE SHALL THE INTERIOR SIDE SLOPES OF THE IMPUNDMENT AREA BE STEEPER THAN THREE (3) HORIZONTAL TO ONE (1) VERTICAL.

   ALTERNATIVE: ALLOW INSIDE SLOPES OF BASIN TO BE 5:1 WITHOUT FENCING.

   JUSTIFICATION: BASIN IS ONLY 2.35' FEET DEEP TO THE SPILLWAY.

APPROVED___________/ NOT APPROVED___________ DATE:_______________

NORTH LEBANON TOWNSHIP ENGINEER

Reviewed by the North Lebanon Township Engineer this ______ day of ___ , 20 ____ .

*___________________________________
*Signature of the North Lebanon Township Engineer

NORTH LEBANON TOWNSHIP PLANNING COMMISSION
REVIEW CERTIFICATE

___________________________________ ____________
Reviewed

NORTH LEBANON TOWNSHIP BOARD OF SUPERVISORS

At a meeting held on ___________________________ , 20___ , the Board of Supervisors of North Lebanon Township, Lebanon County, Pennsylvania approved the STORMWATER MANAGEMENT SITE PLAN for the property as shown hereon. No other Stormwater Management Site plan or plans shall be recognized. Approval includes all documentation, including the comments or requirements of official reviewing individuals or agencies. Approval is based on compliance with applicable ordinances, rules, and regulations, and shall not be construed as a guarantee to any person or organization that the design of any part of the plan will function as anticipated under any or all conditions or situations. Additionally, that by review and/or approval of the plan, the Township expressly declines the assumption of liability errors, omissions, or mistakes in judgement in the design, engineering, construction, or expected function of the matters reviewed and/or approved.

*___________________________________

*___________________________________

*___________________________________

CERTIFICATE OF OWNERSHIP, ACKNOWLEDGEMENT OF PLAN AND OFFER OF DEDICATION

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF LEBANON

On this, the ____day of ________________, 2023 , before me, the undersigned officer, personally appeared , who being duly sworn according to law, deposes and says that they are the _________________ of the property shown on this plan, that the plan thereof was made at their direction, that they acknowledge the same to be their act and plan, that they desire the same to be recorded, and that they acknowledge all stormwater management facilities are permanent fixtures that can be altered or removed only after approval of a revised Stormwater Management Site Plan by the Township.

Signature of Individual

Signature of Notary

My Commission Expires _____________________________, 20___

9/6/2023 11:50 AM

M:\Project Files\HO11 - Cormick Hostetter\HO11.23.1 - 1111 Kochenderfer Road\DWG\SWM Plan.dwg

STORMWATER MANAGEMENT NOTES:

1. MAINTENANCE OF ALL STORMWATER MANAGEMENT FACILITIES AND EASEMENTS NOT LOCATED WITHIN PUBLIC RIGHTS-OF-WAY, INCLUDING THE STORMWATER MANAGEMENT FACILITIES, SHALL BE THE RESPONSIBILITY OF THE CURRENT PROPERTY OWNER. OWNERSHIP AND MAINTENANCE RESPONSIBILITIES WILL TRANSFER TO SUBSEQUENT OWNERS WITH THE TRANSFER OF PROPERTY OWNERSHIP.
2. INFILTRATION BASIN, SWALES AND OTHER STORMWATER MANAGEMENT FACILITIES SHALL BE MAINTAINED IN ACCORDANCE WITH THE DESIGN AND KEPT FREE OF FILL AND OBSTRUCTIONS.
3. ALL YARD INLETS SHALL BE SUMPED AT LEAST SIX (6) INCHES BELOW SURROUNDING GRADE TO CAPTURE TRIBUTARY RUNOFF AND PREVENT BYPASS FLOWS.
4. NO ALTERATION TO ANY STORMWATER MANAGEMENT FACILITIES SHALL BE PERMITTED WITHIN EASEMENTS.
5. NOTHING SHALL BE PLACED, PLANTED, SET OR PUT WITHIN ANY EASEMENT WHICH COULD ADVERSELY AFFECT THE FUNCTION OF THE EASEMENT. NORTH LEBANON TOWNSHIP SHALL HAVE THE RIGHT TO:
   5.1 ACCESS THE SITE TO INSPECT STORM WATER FACILITIES AT ANY TIME.
   5.2 REQUIRE THE CURRENT LAND OWNER TAKE CORRECTIVE MEASURES AND ASSIGN THE LAND OWNER A REASONABLE PERIOD TO TAKE CORRECTIVE ACTION.
   5.3. AUTHORIZE MAINTENANCE TO BE DONE AND LIEN ALL COSTS OF WORK AGAINST THE PROPERTIES OF THE PRIVATE ENTITY RESPONSIBLE FOR MAINTENANCE.
6. THE MAINTENANCE OF ALL STORMWATER CONVEYANCE AND MANAGEMENT FACILITIES SHALL BE BY THE PROPERTY OWNER. MAINTENANCE SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
   6.1. REMOVAL OF SILT AND DEBRIS FROM ALL STORM WATER MANAGEMENT STRUCTURES.
   6.2. PERIODIC REPLACEMENT OF SILT FENCE OR OTHER SIMILAR MEASURES.
   6.3. ESTABLISHMENT OR RE-ESTABLISHMENT OF VEGETATION BY SEEDING AND MULCHING OR SODDING OF SCOURED AREAS OR AREAS WHERE VEGETATION HAS NOT BEEN SUCCESSFULLY ESTABLISHED.
   6.4. INSTALLATION OF NECESSARY CONTROLS TO CORRECT UNFORESEEN PROBLEMS CAUSED BY STORM EVENTS.
   6.5. REMOVAL OF ALL TEMPORARY STORMWATER MANAGEMENT CONTROL FACILITIES UPON THE INSTALLATION OF PERMANENT STORMWATER FACILITIES AT THE COMPLETION OF THE DEVELOPMENT.
   6.6. REPAIR OF STRUCTURAL DAMAGE OR DETERIORATION OF ANY KIND, INCLUDING THAT CAUSED BY SINKHOLES OR OTHER EVENTS.
7. ACCESS TO ALL STORMWATER MANAGEMENT FACILITIES, INCLUDING INLETS, MANHOLES, STORM PIPES, ENDWALLS, HEADWALLS, SWALES, AND BASINS SHALL BE PROVIDED VIA EASEMENTS TO REPRESENTATIVES OF NORTH LEBANON TOWNSHIP.
8. STORMWATER MANAGEMENT FACILITIES (DETENTION FACILITIES, STORM DRAINAGE PIPES, INLETS AND ENDWALLS) SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF NORTH LEBANON TOWNSHIP, LEBANON COUNTY CONSERVATION DISTRICT, LEBANON COUNTY, AND PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION.
9. ALL STORM SEWER JOINTS SHALL BE WATERTIGHT.
10. ALL STORM SEWERS SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH PENNDOT PUB. 408 SPECIFICATIONS, PENNDOT PUB. 72, AND AS SHOWN ON THESE DRAWINGS.
11. RUNOFF FROM THE PROPOSED IMPROVEMENTS SHALL BE DIRECTED TO THE STORM WATER MANAGEMENT FACILITIES.
12. TOWNSHIP AND COUNTY OFFICIALS, AND THEIR AGENTS OR EMPLOYEES, HAVE THE RIGHT OF ACCESS FOR INSPECTION AND, IN CASES OF CONSTRUCTION DEFAULT, CONSTRUCTION OF THE STORM WATER MANAGEMENT FACILITIES. THE DEVELOPER/OWNER GRANTS THE TOWNSHIP THE RIGHT TO ACCESS TO ALL STORMWATER MANAGEMENT EASEMENTS ON THE SUBJECT TRACT VIA THE ACCESS DRIVES, DRIVEWAYS, PARKING AREAS, AND SIMILAR FEATURES WITHIN THE SITE.
13. ACCESSORY BUILDINGS, STRUCTURES, FENCES, WALLS, HEDGES, AND POOLS SHALL NOT BE LOCATED WITHIN OR OBSTRUCT ANY STORMWATER MANAGEMENT FACILITY AND ASSOCIATED CONVEYANCE SYSTEMS.
14. ALL DRAINAGE PIPES SHALL BE LAID TO A MINIMUM DEPTH OF TWELVE (12) INCHES FROM FINISHED SUBGRADE TO THE CROWN OF THE PIPE IN PAVED, STONE, AND GRASSED AREAS.
15. NO PERSON SHALL MODIFY, REMOVE, FILL, LANDSCAPE, OR ALTER STORMWATER MANAGEMENT FACILITIES WHICH HAVE BEEN INSTALLED ON THE PROPERTY UNLESS A STORMWATER MANAGEMENT SITE PLAN HAS BEEN APPROVED BY NORTH LEBANON TOWNSHIP WHICH ALLOWS SUCH MODIFICATION, REMOVAL, FILL, LANDSCAPING, OR ALTERATION. NO PERSON SHALL PLACE ANY STRUCTURE, FILL, LANDSCAPING, OR VEGETATION INTO A STORMWATER MANAGEMENT FACILITY OR WITHIN A DRAINAGE EASEMENT WHICH COULD LIMIT OR ALTER THE FUNCTIONING OF THE FACILITY OR EASEMENT IN ANY MANNER.
16. AS PER SECTION 310 OF THE NORTH LEBANON TOWNSHIP STORMWATER MANAGEMENT ORDINANCE, THE SITE DEPICTED HEREIN IS LOCATED WITHIN THE "NORTH LEBANON TOWNSHIP RESIDUAL" STORMWATER MANAGEMENT DISTRICT.
17. THE TOWNSHIP (717-273-7132), TOWNSHIP ENGINEER, AND DESIGN ENGINEER SHALL BE CONTACTED REGARDING INSPECTION OF THE STORMWATER MANAGEMENT FACILITIES. INSPECTIONS SHALL BE REQUIRED DURING CONSTRUCTION AND AT COMPLETION OF THE FACILITIES. NO OCCUPANCY PERMIT SHALL BE ISSUED UNTIL THE STORMWATER MANAGEMENT FACILITIES HAVE BEEN INSTALLED AND APPROVED THROUGH INSPECTION BY THE TOWNSHIP.
18. THE STORMWATER STRUCTURES ARE THE RESPONSIBILITY OF THE PROPERTY OWNER WHEN LOCATED ON PRIVATE PROPERTY. ACCESS TO BE PROVIDED TO THE TOWNSHIP FOR PURPOSE OF INSPECTION.
19. FINANCIAL SECURITY FOR THE IMPROVEMENTS WILL NOT BE CONSIDERED FOR RELEASE UNLESS THE TOWNSHIP ENGINEER IS PROPERLY NOTIFIED AND THE IMPROVEMENTS ARE INSPECTED.
20. ALL STORMWATER MANAGEMENT FACILITIES SHOWN ON THIS PLAN SHALL BE CONSTRUCTED BY THE DEVELOPER IN ACCORDANCE WITH THE DESIGN, CONDITIONS AND SPECIFICATIONS IDENTIFIED ON THIS PLAN. OWNERSHIP AND MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE LANDOWNER, HIS SUCCESSORS, AND ASSIGNS, UNLESS SPECIFICALLY IDENTIFIED OTHERWISE HEREIN.
21. STORMWATER MANAGEMENT FACILITIES SHALL BE MAINTAINED IN GOOD WORKING CONDITION SO THAT THEY ARE PERFORMING THEIR DESIGN FUNCTION, IN A MANNER ACCEPTABLE TO NORTH LEBANON TOWNSHIP, AS REQUIRED BY NORTH LEBANON TOWNSHIP STORMWATER MANAGEMENT ORDINANCE. MAINTENANCE SHALL INCLUDE PERFORMING ROUTINE MAINTENANCE AND REPAIR OR REPLACEMENT OF DAMAGED FACILITIES, VEGETATION, OR STORMWATER AREAS TO CONDITIONS AS SHOWN ON THE APPROVED PLAN AND IN ACCORDANCE WITH NORTH LEBANON TOWNSHIP STORMWATER MANAGEMENT ORDINANCE.
22. ANY DRAINAGE AND UTILITY EASEMENTS SHOWN ON THE PLAN SHALL BE CONSTRUCTED, OWNED, AND MAINTAINED IN ACCORDANCE WITH THE APPROVED PLAN AND SHALL BE REFERENCED WITHIN THE PROPERTY DEED.
23. RUNOFF FROM THE LOT IMPROVEMENTS SHALL BE DIRECTED TO THE STORMWATER MANAGEMENT FACILITIES. STORMWATER RUNOFF FROM EXISTING NATURAL SWALES AND/OR OTHER EXISTING DRAINAGE CONVEYORS SHALL NOT BE DIRECTED TOWARDS OR INTERCEPTED BY THE STORMWATER MANAGEMENT FACILITIES.
24. TOWNSHIP OFFICIALS AND THEIR AGENTS OR EMPLOYEES HAVE THE RIGHT OF ACCESS FOR INSPECTION AND, IN CASES OF CONSTRUCTION DEFAULT, CONSTRUCTION OF THE STORMWATER MANAGEMENT FACILITIES.
25. CONTACT NORTH LEBANON TOWNSHIP AT (717) 273-7132 PRIOR TO CONSTRUCTION TO COORDINATE INSPECTIONS OF STORMWATER MANAGEMENT FACILITIES BY THE TOWNSHIP ENGINEER. NO OCCUPANCY IS PERMITTED UNTIL STORMWATER MANAGEMENT FACILITIES HAVE BEEN INSTALLED AND APPROVED THROUGH INSPECTION BY THE TOWNSHIP ENGINEER.
26. CONTRACTORS AND PROPERTY OWNERS SHALL NOT STORE CONSTRUCTION MATERIALS OR LOCATE TRASH RECEPTACLES (I.E. DUMPSTERS) ON THE PAVED CARTWAY OF STREETS.
27. ALL MUD FROM CONSTRUCTION ACTIVITIES THAT IS TRACKED ONTO STREETS SHALL BE CLEANED BY THE RESPONSIBLE CONTRACTOR OR PROPERTY OWNER AT THE END OF EACH WORKDAY.
28. STORMWATER INLETS OR DRAINAGE PIPES WHICH BECOME FILLED WITH MUD OR DEBRIS FROM CONSTRUCTION ACTIVITIES SHALL BE CLEANED BY THE RESPONSIBLE CONTRACTOR OR PROPERTY OWNER.

REQUIRED INSPECTIONS DURING SITE CONSTRUCTION

THE TOWNSHIP ENGINEER AND NORTH LEBANON TOWNSHIP SHALL BE NOTIFIED AT 717-273-7132 AT LEAST TWO DAYS PRIOR TO THE START OF ANY WORK REQUIRING AN INSPECTION.

ALL INSPECTIONS OF COMPLETED ITEMS SHALL BE REQUESTED IN WRITING AT LEAST 48 HOURS IN ADVANCE OF THE FINAL INSPECTION DATE & TIME.

INSPECTIONS ARE REQUIRED FOR THE FOLLOWING ACTIVITIES:

1. UPON COMPLETION OF PRELIMINARY SITE PREPARATION INCLUDING STRIPING OF VEGETATION, STOCKPILING OF TOPSOIL AND TEMPORARY EROSION AND SEDIMENTATION CONTROL DEVICES.
2. UPON COMPLETION OF ROUGH GRADING, BUT PRIOR TO PLACING TOPSOIL, PERMANENT DRAINAGE OR OTHER SITE IMPROVEMENTS AND GROUND COVERS.
3. DURING THE CONSTRUCTION OF PERMANENT STORM WATER MANAGEMENT AND BMP FACILITIES. ALL SWALES, STORM SEWERS, CULVERTS, ETC. PRIOR TO BACKFILL.
4. DURING THE CONSTRUCTION OF THE INFILTRATION BASIN INCLUDING; INSTALLATION OF THE CLAY CORE, ANTI-SEEP COLLARS, AND AMENDED SOILS.
5. UPON FINAL COMPLETION OF PERMANENT STORM WATER MANAGEMENT AND BMP FACILITIES AND THE ESTABLISHMENT OF GROUND COVERS AND PLANTINGS.
6. AFTER REVIEW OF THE AS-BUILT DRAWINGS BUT PRIOR TO THE RELEASE OF THE FINAL FINANCIAL GUARANTEE FOR COMPLETION OF FINAL GRADING, VEGETATIVE CONTROLS REQUIRED BY THE BMP STANDARDS OR OTHER SITE RESTORATION.
7. FINANCIAL SECURITY FOR THE IMPROVEMENTS WILL NOT BE CONSIDERED FOR RELEASE UNLESS THE TOWNSHIP ENGINEER IS PROPERLY NOTIFIED AND THE SUBSURFACE IMPROVEMENTS ARE INSPECTED PRIOR TO BACKFILLING.

PLAN CERTIFICATE
I hereby certify that, to the best of my knowledge, the plan shown and described hereon is true and correct to the accuracy required by the Lebanon County and North Lebanon Township Ordinances.

___________________, 20___ ______________________________
Joshua T. Weaber, P.E.

GEOLOGY CERTIFICATE
I hereby certify that the proposed stormwater management BMPs are/are not underlain by limestone.

__________ ________, 20___ ______________________________
Registered Professional

CERTIFICATE OF OWNERSHIP, ACKNOWLEDGEMENT OF PLAN AND OFFER OF DEDICATION

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF LEBANON

On this, the ____day of ________________, 2023 , before me, the undersigned officer, personally appeared , who being duly sworn according to law, deposes and says that they are the _________________ of the property shown on this plan, that the plan thereof was made at their direction, that they acknowledge the same to be their act and plan, that they desire the same to be recorded, and that they acknowledge all stormwater management facilities are permanent fixtures that can be altered or removed only after approval of a revised Stormwater Management Site Plan by the Township.

Signature of Individual

Signature of Notary

My Commission Expires _____________________________, 20___

CERTIFICATE OF OWNERSHIP, ACKNOWLEDGEMENT OF PLAN AND OFFER OF DEDICATION

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF LEBANON

On this, the____ day of__________ , 20___ , before me, the undersigned officer, personally appeared______________________________ , being * of ___________________________ who being duly sworn according to law, deposes and says that the corporation is the ___________________________ of the property shown on this plan, that he is authorized to execute said plan on behalf of the corporation, that the plan thereof was made at its direction, that it acknowledges the same to be its act and plan, that it desires the same to be recorded, and that it acknowledges all stormwater management facilities are permanent fixtures that can be altered or removed only after approval of a revised Stormwater Management Site Plan by the Township.

Signature of Representative

Signature of Notary

My Commission Expires _____________________________, 20___

NORTH LEBANON TOWNSHIP
722 KIMERLINGS ROAD
LEBANON, PA 17046
CONTACT - CHERI GRUMBINE
717-273-7132

BUCKEYE PARTNERS
FIVE TEK PARK
9999 HAMILTON BLVD
BREINIGSVILLE, PA 18031
CONTACT - DAVE JONES
dajones@buckeye.com
610-904-4000

VERIZON PENNSYLVANIA LLC
15 E MONTGOMERY AVE
PITTSBURGH, PA 15212
CONTACT - OFFICE PERSONNEL
877-502-2876

UGI UTILITIES INC
1301 AIP DR
MIDDLETOWN, PA 17057-5987
CONTACT - JOANNE ARCHFIELD
jarchfield@ugi.com
717-255-1453

COMCAST CABLE LEBANON
C/O CLS LOCATING SERVICES INC
9045 RIVER ROAD, STE 300
INDIANAPOLIS, IN 46240
CONTACT - CLS PERSONNEL
317-575-7800

FIRSTENERGY CORP
76 S MAIN ST
AKRON, OH 44308-1890
CONTACT - OFFICE PERSONNEL
800-633-4766

SERIAL NUMBER: 20231241443
(NORTH LEBANON TOWNSHIP)
DATE: 05/04/23

CHRISLAND ENGINEERING, INC., HEREBY STATES THAT, PURSUANT TO THE PROVISIONS OF ACT NO. 287 OF 1974 AS AMENDED BY ACT 121 OF 2008 OF THE PENNSYLVANIA GENERAL ASSEMBLY, IT HAS PERFORMED THE FOLLOWING IN PREPARING THESE DRAWINGS REQUIRING EXCAVATION OR DEMOLITION WORK AT SITES WITHIN THE POLITICAL SUBDIVISION(S) SHOWN ON THE DRAWINGS:

1. PURSUANT TO SECTION 4, CLAUSE (2) OF SAID ACT, CHRISLAND ENGINEERING, INC. REQUESTED THE LINE AND FACILITY INFORMATION PRESCRIBED BY SECTION 2, CLAUSE (4) FROM A ONE CALL SYSTEM NOT LESS THAN TEN NOR MORE THAN NINETY WORKING DAYS BEFORE FINAL DESIGN IS TO BE COMPLETED.
2. PURSUANT TO SECTION 4, CLAUSE (3) OF SAID ACT, CHRISLAND ENGINEERING, INC. SHOWN UPON THE DRAWING(S) THE POSITION AND TYPE OF EACH FACILITY OWNERS LINE, DERIVED PURSUANT TO THE REQUEST MADE AS REQUIRED BY SECTION 4, CLAUSE (2), AND THE NAME OF THE FACILITY OWNER, AND THE FACILITY OWNERS DESIGNATED OFFICE ADDRESS AND THE TELEPHONE NUMBER AS SHOWN ON THE LIST REFERRED TO IN SECTION 3.
3. PURSUANT TO SECTION 4, CLAUSE (4) OF SAID ACT, CHRISLAND ENGINEERING, INC. MADE A REASONABLE EFFORT TO PREPARE THE CONSTRUCTION DRAWING(S) TO AVOID DAMAGE TO AND MINIMIZE INTERFERENCE WITH A FACILITY OWNERS FACILITIES IN THE CONSTRUCTION AREA BY MAINTAINING AN EIGHTEEN-INCH CLEARANCE OF THE FACILITY OWNERS FACILITIES WHERE POSSIBLE.
4. PURSUANT TO SECTION 4, CLAUSE (5) OF SAID ACT, CHRISLAND ENGINEERING, INC., SHALL BE DEEMED TO HAVE MET THE OBLIGATIONS OF CLAUSE (2) BY CALLING A ONE CALL SYSTEM AND SHOWING AS PROOF THE SERIAL NUMBER OF THE ONE CALL NOTICE ON THE DRAWING(S). LEBANON COUNTY ID NO. 20221653688

AND CHRISLAND ENGINEERING, INC. DOES NOT MAKE ANY REPRESENTATION, WARRANTY, ASSURANCE OR GUARANTEE THAT THE INFORMATION RECEIVED PURSUANT TO SAID REQUEST AND AS REFLECTED ON THESE DRAWINGS IS CORRECT OR ACCURATE, BUT CHRISLAND ENGINEERING, INC. IS REFLECTING SAID INFORMATION ON THESE DRAWINGS ONLY DUE TO THE REQUIREMENTS OF THE SAID ACT 187, DECEMBER 19, 1996.

GENERAL NOTES:

1. BENCHMARK: SSMH LOCATED ALONG KOCHENDERFER ROAD SOUTH OF THE SITE.
   ELEVATION: 681.25'
   VERTICAL DATUM: NAVD 88
   HORIZONTAL DATUM: NAD83 - COR 96
2. MATTHEW & HOCKLEY ASSOCIATES PERFORMED THE SURVEY AS SHOWN HEREON IN APRIL 2023.
3. UNDERGROUND UTILITIES ARE SHOWN ACCORDING TO INFORMATION PROVIDED BY OTHERS AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION, EXCAVATION OR BLASTING. THE ACTUAL LOCATIONS OF THESE UTILITIES HAVE NOT BEEN FIELD VERIFIED AND THE LOCATIONS ARE APPROXIMATE. CHRISLAND ENGINEERING DOES NOT MAKE ANY REPRESENTATION, WARRANTY, ASSURANCE, OR GUARANTEE THAT THE UNDERGROUND UTILITY LOCATION PROVIDED BY OTHERS AND REFLECTED ON THESE DRAWINGS ARE CORRECT AND ACCURATE. CHRISLAND ENGINEERING. ASSUMES NO RESPONSIBILITY FOR ANY DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN.
4. THE SITE IS NOT LOCATED WITHIN ANY REGULATED FLOOD ZONE PER FEMA FLOOD INSURANCE RATE MAP FOR LEBANON COUNTY, PENNSYLVANIA (ALL JURISDICTIONS), MAP NUMBER 42075C0256E, EFFECTIVE DATE JULY 8, 2020.
5. IN ACCORDANCE WITH THE U.S. FISH AND WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY THERE ARE NO WETLANDS ON THE SUBJECT PREMISES.
6. ANY REVISION TO THESE PLANS AFTER THE DATE OF PLAN PREPARATION OR LATEST REVISION DATE SHALL NOT BE THE RESPONSIBILITY OF CHRISLAND ENGINEERING.
7. NO ONE SHALL SCALE FROM THESE PLANS FOR CONSTRUCTION PURPOSES.
8. THE INFORMATION SHOWN ON THIS DRAWING MAY HAVE ALSO BEEN PROVIDED BY DIGITAL FILE. AFTER A DIGITAL FILE IS RELEASED FROM CHRISLAND ENGINEERING THE VIEWER IS THEREFORE CAUTIONED TO COMPARE ANY SUBSEQUENT REPRODUCTIONS OF THIS DATA WITH THE ORIGINAL HARD COPY SEALED PLAN.
9. ALL SITE DEVELOPMENT SHALL BE DONE IN ACCORDANCE WITH FEDERAL, STATE, COUNTY, AND TOWNSHIP STANDARDS AND REQUIREMENTS.
10. CHRISLAND ENGINEERING HAS NOT PERFORMED ANY SUBSURFACE INVESTIGATIONS GEOLOGICAL STUDIES, SOUNDINGS OR EVALUATIONS OF THE SUBSURFACE CONDITIONS PRESENT THROUGHOUT THE SITE. NUMEROUS UNKNOWN GEOLOGICAL SITE CONDITIONS AND THE UTILIZATION OF NUMEROUS CONSTRUCTION PRACTICES MEAN THAT CHRISLAND ENGINEERING CANNOT CONSIDER EVERY POTENTIAL GEOLOGICAL IMPACT CAUSED BY CONSTRUCTION ON ANY PORTION OF THE SITE WHICH IS THE SUBJECT OF THIS PLAN.
11. IT IS THE RESPONSIBILITY OF THE LANDOWNER, LAND PURCHASER, OR PROSPECTIVE BUYER OF ANY PORTION OF THE SITE DEPICTED ON THIS PLAN TO PERFORM THEIR OWN INDIVIDUAL EVALUATION OF THE GEOLOGY OF THIS SITE TO ASCERTAIN THE GEOLOGICAL FORMATION(S) WHICH UNDERLAY IT, AND THE IMPACT WHICH THOSE FORMATION(S) MAY HAVE UPON THEIR LAND OR ANY CONSTRUCTION PROPOSED THEREON, INCLUDING THE ABILITY TO CONSTRUCT THE REQUIRED STORM WATER MANAGEMENT FACILITIES AND OTHER SITE WORK IN ACCORDANCE WITH THE APPROVED SUBDIVISION PLAN.
12. CHRISLAND ENGINEERING SHALL NOT BE RESPONSIBLE FOR THE COST OF ANY ROCK REMOVAL, SINKHOLES, SOLUTION CHANNELS OR ROCK FRACTURES, OR FOR THE CONSTRUCTION, ENGINEERING, PERMITTING AND INSPECTION COST IMPACT WHICH ANY OF THESE GEOLOGICAL FEATURES MAY HAVE UPON THE LAND OWNER.
13. MATERIALS AND DETAILS SPECIFIED ON THE APPROVED PLAN SHALL NOT BE ALTERED DURING CONSTRUCTION WITHOUT WRITTEN APPROVAL BY THE TOWNSHIP.
14. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS ON SITE PRIOR TO THE START OF CONSTRUCTION. UNDERGROUND UTILITIES HAVE BEEN SHOWN ACCORDING TO INFORMATION PROVIDED BY OTHERS AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION, EXCAVATION OR BLASTING. THE ACTUAL LOCATIONS OF THESE UTILITIES HAVE NOT BEEN FIELD VERIFIED AND THE LOCATIONS ARE APPROXIMATE. CHRISLAND ENGINEERING DOES NOT MAKE ANY REPRESENTATION, WARRANTY, ASSURANCE OR GUARANTEE THAT THE UNDERGROUND UTILITY LOCATION INFORMATION PROVIDED BY OTHERS AND REFLECTED ON THESE DRAWINGS IS CORRECT AND ACCURATE. CHRISLAND ENGINEERING ASSUMES NO LIABILITY FOR ANY DAMAGE INCURRED AS A RESULT OF UNDERGROUND UTILITIES OMITTED OR INACCURATELY SHOWN.
15. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. DAMAGE TO ANY UTILITY SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER, UTILITY COMPANY OR AUTHORITY, AT THE CONTRACTOR'S EXPENSE.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY PERMITS FROM THE MUNICIPALITY, COUNTY, STATE OR AUTHORITY RELATIVE TO CONSTRUCTION SHOWN ON THIS PLAN.
17. THE CONTRACTOR IS RESPONSIBLE FOR ALL TESTING AND RECORD DRAWINGS AS MAY BE REQUIRED BY THE MUNICIPALITY AND/OR THE VARIOUS AUTHORITIES RELATIVE TO THE CONSTRUCTION SHOWN ON THESE PLANS.
18. ALL PROPOSED SIGNS SHALL BE IN ACCORDANCE WITH THE NORTH LEBANON TOWNSHIP ZONING ORDINANCE.
19. THE PROPOSED SITE IS LOCATED WITHIN THE "NORTH LEBANON TOWNSHIP RESIDUAL" STORMWATER MANAGEMENT DISTRICT.
20. ALL APPLICABLE CORNER MARKERS SHALL BE SET UPON APPROVAL OF THE FINAL SUBDIVISION PLAN. RESETTING OF CORNER MARKERS AFTER CONSTRUCTION OF THE DWELLINGS AND BUILDINGS SHOWN HEREON SHALL BE THE RESPONSIBILITY OF THE DEVELOPER OR LOT OWNER.
21. ALL PROPOSED UTILITIES SHALL BE UNDERGROUND.
22. ALL PROPOSED STREET SIGNS SHALL BE INSTALLED BY THE DEVELOPER. INSTALLATION AND SIGN TYPE SHALL BE IN ACCORDANCE WITH THE TOWNSHIP AND/OR PENNDOT SPECIFICATIONS.
23. CLEAR SIGHT TRIANGLES SHALL BE KEPT CLEAR OF ANY OBSTRUCTIONS WITH A HEIGHT GREATER THAN 30 INCHES.
24. ALL PLAN SHEETS, INCLUDING THE APPROVED POST-CONSTRUCTION STORMWATER MANAGEMENT REPORT AND EROSION AND SEDIMENT POLLUTION CONTROL REPORT ARE PART OF THIS PLAN AND ARE ENFORCEABLE AS IF THEY APPEARED IN TOTAL HEREIN.
25. THE DEVELOPER SHALL BE FINANCIALLY RESPONSIBLE FOR ANY ATTORNEY FEES WHERE THE ATTORNEY IS ENGAGED ON BEHALF OF THE TOWNSHIP/AUTHORITY RELATING TO THE REVIEW OF THE SUBDIVISION PLANS OR LAND DEVELOPMENT PLANS THAT ARE SUBMITTED TO THE TOWNSHIP/AUTHORITY. THESE FEES ARE IN ADDITION TO SUBMISSION FEES CHARGED BY THE TOWNSHIP AND AUTHORITY. PAYMENT OF ALL INVOICES IS DUE AND PAYABLE WITHIN 30 DAYS OF RECEIPT BUT IN ALL CASES PRIOR TO PLAN APPROVAL BY THE BOARD OF SUPERVISORS. ANY QUESTIONS ON INVOICES MUST BE REPORTED TO THE TOWNSHIP/AUTHORITY IN WRITING WITHIN 10 DAYS OF RECEIPT OF THE BILL.
26. A PDF COPY OF THE APPROVED PCSM PLAN SHALL BE SUBMITTED TO THE TOWNSHIP.

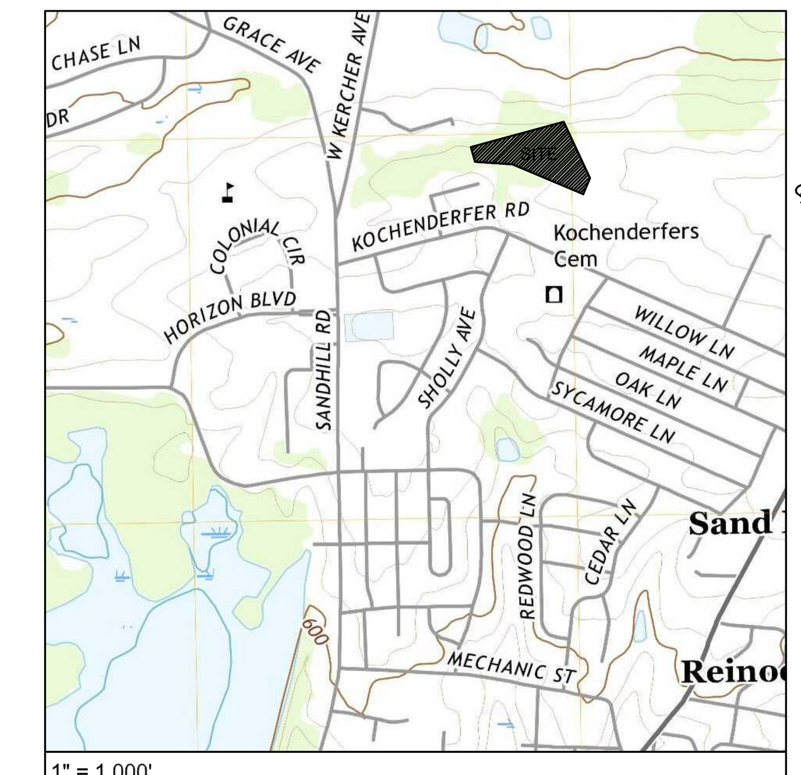
EASEMENT NOTES:

1. A STORMWATER MANAGEMENT CONVEYANCE EASEMENT SHALL BE LOCATED AROUND EACH CONVEYANCE FACILITY (I.E. SWALES, PIPES, ETC.) AND SHALL BE TWENTY (20) FEET IN WIDTH. THE EASEMENT SHALL EXTEND TEN (10) FEET FROM THE CENTERLINE OF THE CONVEYANCE FACILITY.
2. A STORMWATER MANAGEMENT EASEMENTS SHALL BE LOCATED AROUND EACH STORMWATER MANAGEMENT FACILITY (I.E. DETENTION BASINS, INFILTRATION TRENCHES, RAIN GARDENS, ETC.) AND SHALL ENCOMPASS ALL COMPONENTS OF THE FACILITY.
3. AN EASEMENT SHALL ENCOMPASS ALL WETLANDS AND OPEN STREAM CHANNELS. THE EASEMENT SHALL BE LOCATED TEN (10) FEET FROM THE CENTERLINE OF THE STREAM CHANNEL AND AT THE BOUNDARY OF ALL WETLANDS.
4. THE GRANTOR, FOR ITSELF, ITS SUCCESSORS, AND ASSIGNS, AUTHORIZES THE TOWNSHIP AND ITS AUTHORIZED REPRESENTATIVES TO ENTER UPON THE PREMISES TO INSPECT THE FACILITIES LOCATED WITHIN THE EASEMENT.
5. ALL FACILITIES LOCATED WITHIN THE ABOVE MENTIONS EASEMENTS SHALL BE SUBJECT TO THE PROVISIONS OF THE STORMWATER MAINTENANCE AND OWNERSHIP PROGRAM.

INFILTRATION BASIN MAINTENANCE PROCEDURES

1. REMOVE TRASH AND DEBRIS FROM THE INFILTRATION AREA AS NECESSARY.
2. MOW AND TRIM VEGETATION ONLY AS APPROPRIATE FOR THE COVER SPECIES, GENERALLY A MINIMUM OF TWICE PER YEAR. MOW TO ENSURE SAFETY, AESTHETICS, PROPER BASIN OPERATION, AND TO SUPPRESS WEEDS AND INVASIVE VEGETATION. DISPOSE OF CUTTINGS IN A LOCAL COMPOSTING FACILITY. MOW ONLY WHEN THE AREA IS DRY TO AVOID RUTTING.
3. CARE SHALL BE TAKEN TO AVOID COMPACTION BY MOWERS. DO NOT ALLOW OTHER VEHICULAR ACCESS TO THE INFILTRATION AREA OR THE SURFACE ABOVE THE INFILTRATION AREA.
4. RESEED BARE AREAS USING NATIVE GRASS SPECIES. INSTALL APPROPRIATE EROSION CONTROL MEASURES WHEN NATIVE SOIL IS EXPOSED, OR EROSION CHANNELS ARE FORMING. VEGETATIVE COVER SHOULD BE MAINTAINED AT A MINIMUM OF 95%. IF VEGETATIVE COVER HAS BEEN REDUCED BY 10%, VEGETATION SHOULD BE REESTABLISHED.
5. PLANT ALTERNATIVE GRASS SPECIES IN THE EVENT OF UNSUCCESSFUL VEGETATION ESTABLISHMENT.
6. REPLACE DAMAGED VEGETATION WITHOUT DISTURBING REMAINING VEGETATION.
7. IT MAY BE NECESSARY TO WATER THE VEGETATION IN THE INFILTRATION AREA DURING DRY PERIODS TO MAINTAIN VEGETATIVE HEALTH. TREES AND SHRUBS MAY REQUIRE ANNUAL MULCHING.
8. THE UNDERLYING SOIL IN THE INFILTRATION FACILITY MAY NEED TO BE ROTOTILLED OR OTHERWISE AERATED IF THE DRAW DOWN TIME IN THE FACILITY IS MORE THAN 48 HOURS. THIS SOIL RESTORATION PROCESS MAY NEED TO BE REPEATED OVER TIME DUE TO NATURAL SOIL COMPACTION AND SETTLING.
9. SEDIMENT REMOVAL SHOULD BE CONDUCTED WHEN THE FACILITY IS COMPLETELY DRY. SEDIMENT SHOULD BE DISPOSED OF PROPERLY AND ONCE SEDIMENT IS REMOVED, DISTURBED AREAS NEED TO BE IMMEDIATELY STABILIZED AND REVEGETATED. DO NOT COMPACT THE UNDERLYING SOIL DURING THIS PROCESS. IF SOIL IS COMPACTED, THE FACILITY MAY REQUIRE TILLING, MECHANICAL SCRAPING, OR SOIL AMENDMENT TO RESTORE THE ORIGINAL INFILTRATION RATE.
10. CATCH BASINS, INLETS, AND CLEANOUT VAULTS UPGRADIENT OF THE INFILTRATION FACILITIES SHOULD BE INSPECTED AND CLEANED AT LEAST TWO TIMES PER YEAR AND AFTER RUNOFF EVENTS OF GREATER THAN ONE (1) INCH OF RAIN.
11. INSPECTIONS OF THE INFILTRATION FACILITIES SHALL BE CONDUCTED WITHIN 48 HOURS AFTER EVERY STORM EVENT OF GREATER THAN ONE (1) INCH OF RAIN, OR FOUR TIMES PER YEAR AT A MINIMUM.
    a. INSPECT AND CORRECT EROSION PROBLEMS, SLOPE STABILITY PROBLEMS, FLOW CHANNELIZATION, DAMAGE TO VEGETATION, AND THE GROWTH OF UNWANTED OR INVASIVE VEGETATION.
    b. VERIFY THAT ALL WATER IN THE FACILITY HAS DRAINED DOWN WITHIN 72 HOURS AFTER THE RAINFALL EVENT. THE FACILITY MAY REQUIRE TILLING, MECHANICAL SCRAPING, SOIL AMENDMENT, OR THE REPLACEMENT OF STORAGE MEDIA SUCH AS STONE (IF APPLICABLE) TO RESTORE PERMEABILITY IF THE DRAWDOWN TIME EXCEEDS 72 HOURS.
    c. ALL STRUCTURES EXPECTED TO RECEIVE AND/OR TRAP DEBRIS AND SEDIMENT, INCLUDING BASIN BOTTOMS, STORAGE MATRIXES, TRASH RACKS, OUTLETS STRUCTURES, RIPRAP OR GABION STRUCTURES, AND INLETS, SHOULD BE INSPECTED FOR CLOGGING AND EXCESSIVE DEBRIS AND SEDIMENT ACCUMULATION. SEDIMENT ACCUMULATION SHALL BE ADDRESSED WHEN SEDIMENT IS GREATER THAN 3 INCHES DEEP AT ANY SPOT OR IS COVERING VEGETATION.
    d. INSPECT FOR CONFORMANCE WITH ORIGINAL DESIGN CROSS-SECTION AND CORRECT AS NEEDED.
    e. INSPECT ALL PIPES, CATCH BASINS, INLET AND OUTLET STRUCTURES FOR DEFICIENCIES AND REPAIR OR REPLACE IF REQUIRED. COMMON DEFICIENCIES INCLUDE BROKEN CONCRETE, CRUSHED OR RUSTED PIPES, MISSING GROUT, OR BLOCKAGES CAUSED BY LITTER OR FOREIGN MATERIALS.
    f. NOTIFY MUNICIPAL OFFICIALS IF THERE IS EVIDENCE OF WATER CONTAMINATION OR HAZARDOUS MATERIAL SPILLS.
12. ACCESS SHALL BE GRANTED TO ALL AUTHORIZED LOCAL, STATE, AND FEDERAL AGENCIES FOR BMP INSPECTIONS AT REASONABLE TIMES AND WITH REASONABLE FREQUENCY.
13. WRITTEN REPORTS DOCUMENTING ALL INSPECTIONS, REPAIRS, AND MAINTENANCE ACTIVITIES SHALL BE MAINTAINED ON SITE BY THE PROPERTY OWNER AT ALL TIMES.

STORMWATER MANAGEMENT PLAN
FOR
1111 KOCHENDERFER ROAD
NORTH LEBANON TOWNSHIP LEBANON COUNTY, PA
JUNE 29, 2023
Revised: September 5, 2023



ZONING DATA

ZONING DISTRICT: INTENSIVE AGRICULTURAL (IA)

	REQUIRED	PROVIDED
MIN LOT AREA:	1 ACRES	2.62 ACRES
MIN. LOT WIDTH:	125'	262'
MAX COVERAGE:	20%	9.7%
FRONT YARD:	50'	50'
REAR YARD:	50'	50'
SIDE YARD:	20'	20'

WATER: ON-LOT WELL
SEWER: ON-LOT SEWAGE DISPOSAL SYSTEM

SITE DATA

OWNER:	CORMICK & MEGAN HOSTETTER 917 KOCHENDERFER ROAD LEBANON, PA 17046
CONTACT:	CORMICK HOSTETTER PHONE: 717-810-7247 EMAIL: cormickhostetter@gmail.com
ADDRESS:	1111 KOCHENDERFER ROAD LEBANON, PA 17042
DEED NO.:	02325-9626
PARCEL NO.:	27-2336911-380607-0000
SITE AREA:	2.62 ACRES

PURPOSE OF PLAN NOTE

THE PURPOSE OF THIS PLAN IS TO PROPOSE A STORMWATER MANAGEMENT PLAN TO DEVELOP A SINGLE-FAMILY RESIDENTIAL DWELLING, ACCESS DRIVE, AND ASSOCIATED STORMWATER MANAGEMENT FACILITIES.

SEWAGE DISPOSAL NOTE:

1. THE PROPOSED DWELLING IS PROPOSED TO BE SERVED BY AN INDIVIDUAL ON-LOT SEWAGE DISPOSAL SYSTEM.

WATER SUPPLY NOTE:

1. THE PROPOSED DWELLING IS PROPOSED TO BE SERVED BY AN INDIVIDUAL ON-LOT WELL.

BUILDING CODE NOTE:

1. ALL STRUCTURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PENNSYLVANIA UNIFORM CONSTRUCTION CODE (UCC).

CONSTRUCTION SCHEDULE:

START: SEPTEMBER 2023
COMPLETION: MAY 2024

SHEET INDEX

*TO BE RECORDED

REVISION	DATE	BY
PER SESI COMMENT LETTER DATED 7/20/23	7/17/23	JTW
PER SESI COMMENT LETTER DATED 7/20/23	8/30/23	JTW

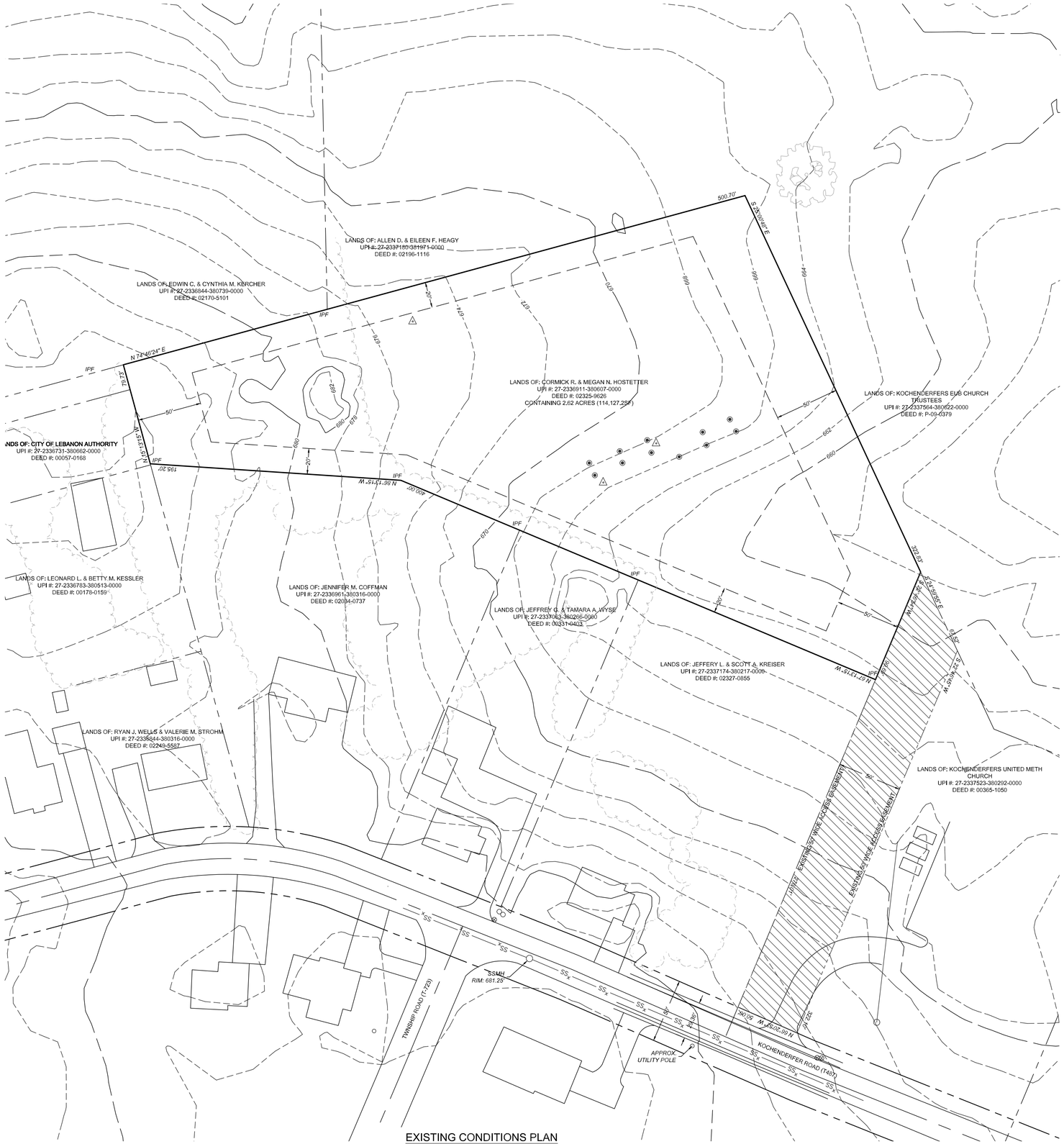
STORMWATER MANAGEMENT PLAN
FOR
1111 KOCHENDERFER ROAD
NORTH LEBANON TOWNSHIP, LEBANON, PA

JUNE 29, 2023

CHRISLAND ENGINEERING
717-954-6513
602 Cornwall Road
Lebanon, PA 17042
717-954-6513
www.chrislandengineering.com

HO11.23.1

Coversheet



EXISTING CONDITIONS PLAN
1"=40'

LEGEND
EXISTING FEATURES

- EXISTING ADJOINER LINE
- EXISTING BOUNDARY LINE AND CORNERS
- EXISTING EDGE OF PAVEMENT AND CURB LINE
- EXISTING RIGHT-OF-WAY
- EXISTING FENCE
- EXISTING SEWER (CLEAN OUT, MANHOLE)
- EXISTING STORMWATER (MANHOLE, INLET, HEADWALL, ENDWALL, RIP-RAP)
- EXISTING WATERLINE (GATE VALVE, FIRE HYDRANT)
- EXISTING GASLINE (GAS VALVE)
- EXISTING SETBACK
- EXISTING SIDEWALK/CONCRETE
- EXISTING CONTOURS (100 MAJOR, MINOR)
- EXISTING TREELINE
- EXISTING SOILS (SOIL TYPE)
- EXISTING UTLITY POLE
- EXISTING LIGHT POLE
- EXISTING TREELINE
- EXISTING IPF

SOIL CHART:

Map Unit Symbol	Map Unit Name	Acres	HSG	% of Disturbed Area	Depth (ft)	Hydric
BeB	Bedington Shaly Silt Loam	4.1	B	100.00	0" – 72"	No

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40ft.

REVISION	DATE	BY
PER SESC COMMENT LETTER DATED 7/20/23	7/17/23	JTW
PER SESC COMMENT LETTER DATED 7/20/23	8/30/23	JTW

STORMWATER MANAGEMENT PLAN
FOR
1111 KOCHENDERFER ROAD
NORTH LEBANON TOWNSHIP, LEBANON, PA

JUNE 29, 2023

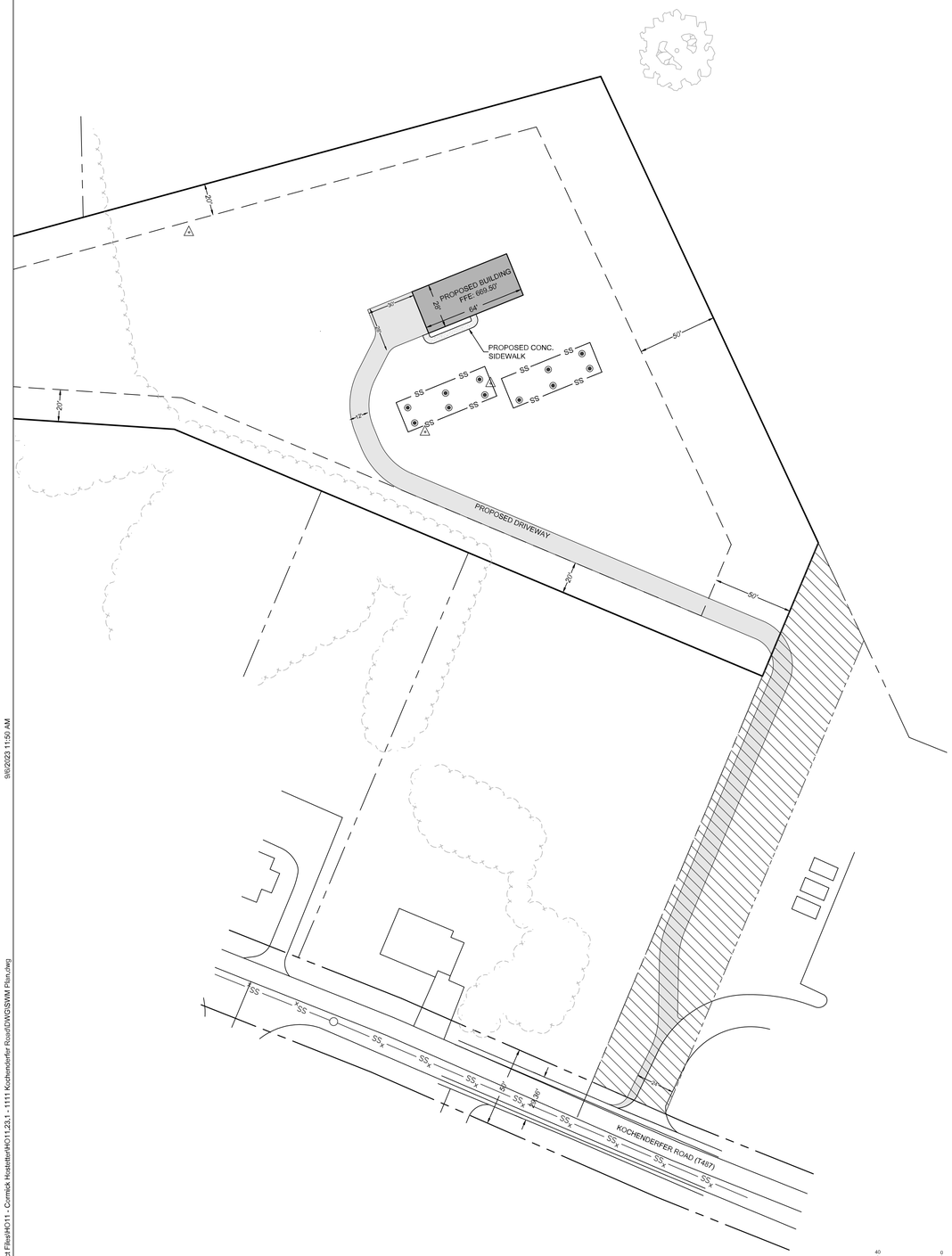
CHRISTLAND ENGINEERING
717-964-6513
602 Cornwall Road
Lebanon, PA 17042
717-964-6513
www.chrislandengineering.com

Existing Conditions

HO11.23.1

2 OF 7

9/6/2023 11:50 AM
M:\Project Files\HO11 - Cormick Hostetter\HO11.23.1 - 1111 Kochendorfer Road\DWG\SWM Plan.dwg

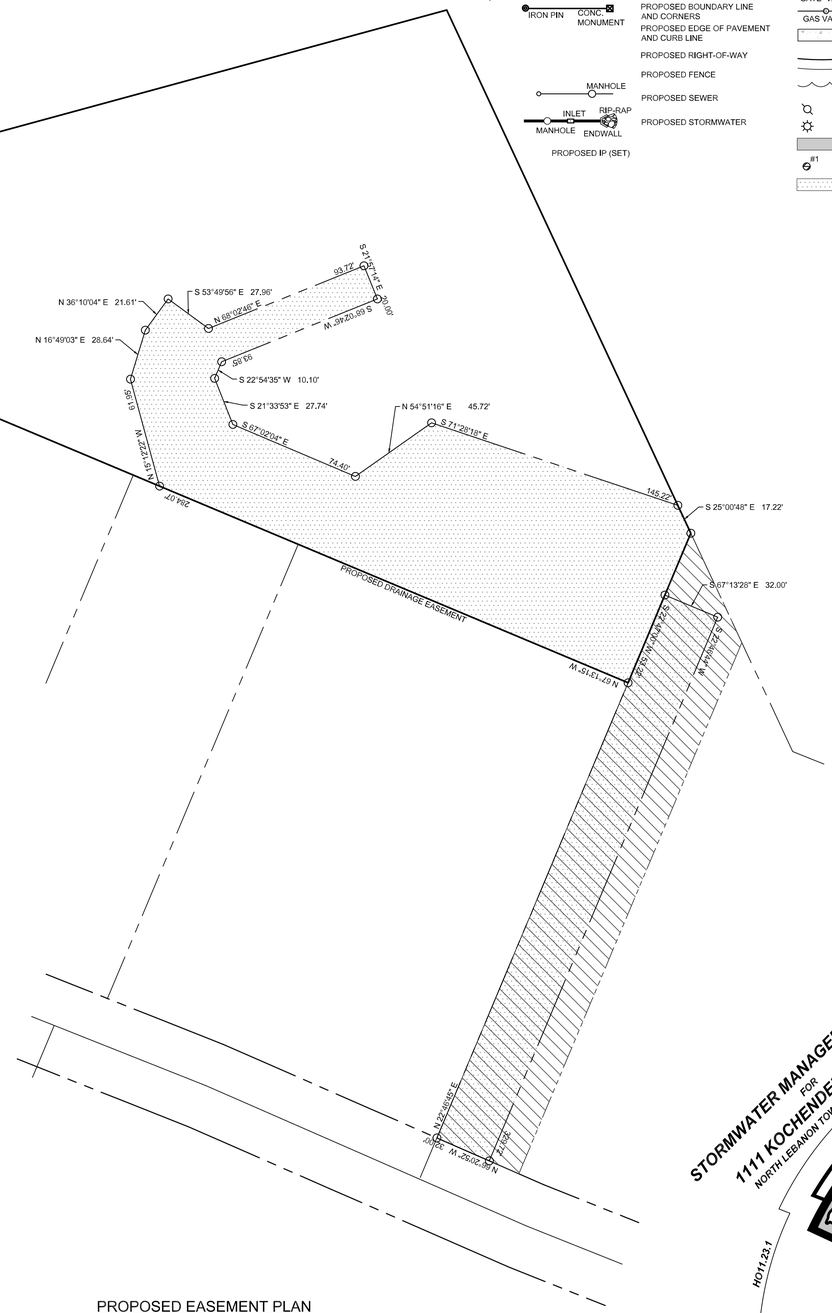


LAYOUT PLAN
1"=40'

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40ft.



PROPOSED EASEMENT PLAN
1"=40'

LEGEND

EXISTING FEATURES

- EXISTING ADJOINER LINE
- EXISTING BOUNDARY LINE AND CORNERS
- EXISTING EDGE OF PAVEMENT AND CURB LINE
- EXISTING RIGHT-OF-WAY
- EXISTING FENCE
- EXISTING SEWER (CLEAN OUT, MANHOLE)
- EXISTING STORMWATER (MANHOLE, INLET, RIP-RAP, HEADWALL, ENDWALL)
- EXISTING WATERLINE (GATE VALVE, FIRE HYDRANT)
- EXISTING GASLINE (GAS VALVE)
- EXISTING SETBACK
- EXISTING SIDEWALK/CONCRETE
- EXISTING CONTOURS (100 MAJOR, MINOR)
- EXISTING TREELINE
- EXISTING SOILS (SOIL TYPE)
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING IPF

PROPOSED FEATURES

- PROPOSED BUILDING SETBACK
- PROPOSED BOUNDARY LINE AND CORNERS (IRON PIN, CONC. MONUMENT)
- PROPOSED EDGE OF PAVEMENT AND CURB LINE
- PROPOSED RIGHT-OF-WAY
- PROPOSED FENCE
- PROPOSED SEWER (MANHOLE)
- PROPOSED STORMWATER (INLET, RIP-RAP, MANHOLE, ENDWALL)
- PROPOSED IP (SET)
- PROPOSED DOMESTIC WATERLINE (GATE VALVE, FIRE HYDRANT)
- PROPOSED GASLINE (GAS VALVE)
- PROPOSED CONCRETE/SIDEWALK
- PROPOSED CONTOURS (100 MAJOR, MINOR)
- PROPOSED TREELINE
- PROPOSED UTILITY POLE
- PROPOSED LIGHT POLE
- PROPOSED STANDARD PAVING
- INFILTRATION TEST LOCATION (IT1)
- PROPOSED STORMWATER MANAGEMENT EASEMENT
- MONUMENTS

REVISION	DATE	BY
PER SESC COMMENT LETTER DATED 7/20/23	7/17/23	JTW
PER SESC COMMENT LETTER DATED 7/20/23	8/30/23	JTW

STORMWATER MANAGEMENT PLAN
FOR
1111 KOCHENDERFER ROAD
NORTH LEBANON TOWNSHIP, LEBANON, PA

JUNE 29, 2023

CHRISTMAN ENGINEERING
717.954-6513
602 Cornwall Road
Lebanon, PA 17042
717.954-6513
www.chrislandengineering.com

Layout & Easement Plan

SHEET 3

HO11.23.1

M:\Project Files\HO11 - Cornick Hostetter\HO11.23.1 - 1111 Kochenderfer Road\DWG\SWM Plan.dwg

9/6/2023 11:50 AM

VEGETATED SWALE

VEGETATED SWALES ARE BROAD, SHALLOW CHANNELS DESIGNED TO SLOW RUNOFF, PROMOTE INFILTRATION, AND FILTER POLLUTANTS AND SEDIMENTS IN THE PROCESS OF CONVEYING RUNOFF. VEGETATED SWALES PROVIDE AN ENVIRONMENTALLY SUPERIOR ALTERNATIVE TO CONVENTIONAL CURB AND GUTTER CONVEYANCE SYSTEMS, WHILE PROVIDING PARTIALLY TREATED (PRETREATMENT) AND PARTIALLY DISTRIBUTED STORMWATER FLOWS TO SUBSEQUENT BMPS. SWALES ARE OFTEN HEAVILY VEGETATED WITH A DENSE AND DIVERSE SELECTION OF NATIVE, CLOSE-GROWING, WATER-RESISTANT PLANTS WITH HIGH POLLUTANT REMOVAL POTENTIAL. THE VARIOUS POLLUTANT REMOVAL MECHANISMS OF A SWALE INCLUDE: SEDIMENTARY FILTERING BY THE SWALE VEGETATION (BOTH ON SIDE SLOPES AND ON BOTTOM), FILTERING THROUGH A SUBSOIL MATRIX, AND/OR INFILTRATION INTO THE UNDERLYING SOILS WITH THE FULL ARRAY OF INFILTRATION-ORIENTED POLLUTANT REMOVAL MECHANISMS.

A VEGETATED SWALE TYPICALLY CONSISTS OF A BAND OF DENSE VEGETATION, UNDERLAIN BY AT LEAST 24 INCHES OF PERMEABLE SOIL. SWALES CONSTRUCTED WITH AN UNDERLYING 12 TO 24 INCH AGGREGATE LAYER PROVIDE SIGNIFICANT VOLUME REDUCTION AND REDUCE THE STORMWATER CONVEYANCE RATE. THE PERMEABLE SOIL MEDIA SHOULD HAVE A MINIMUM INFILTRATION RATE OF 0.5 INCHES PER HOUR AND CONTAIN A HIGH LEVEL OF ORGANIC MATERIAL TO ENHANCE POLLUTANT REMOVAL. A NONWOVEN GEOTEXTILE SHOULD COMPLETELY WRAP THE AGGREGATE TRENCH.

CONSTRUCTION SEQUENCE

1. BEGIN VEGETATED SWALE CONSTRUCTION ONLY WHEN THE UPGRADIENT TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE. VEGETATED SWALES SHOULD BE CONSTRUCTED AND STABILIZED EARLY IN THE CONSTRUCTION SCHEDULE, PREFERABLY BEFORE MASS EARTHWORK AND PAVING INCREASE THE RATE AND VOLUME OF RUNOFF. (EROSION AND SEDIMENT CONTROL METHODS SHALL ADHERE TO THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL, MARCH 2000 OR LATEST EDITION.)
2. ROUGH GRADE THE VEGETATED SWALE. EQUIPMENT SHALL AVOID EXCESSIVE COMPACTION AND/OR LAND DISTURBANCE. EXCAVATING EQUIPMENT SHOULD OPERATE FROM THE SIDE OF THE SWALE AND NEVER ON THE BOTTOM. IF EXCAVATION LEADS TO SUBSTANTIAL COMPACTION OF THE SUBGRADE (WHERE AN INFILTRATION TRENCH IS NOT PROPOSED), 18 INCHES SHALL BE REMOVED AND REPLACED WITH A BLEND OF TOPSOIL AND SAND TO PROMOTE INFILTRATION AND BIOLOGICAL GROWTH. AT THE VERY LEAST, TOPSOIL SHALL BE THOROUGHLY DEEP PLOWED INTO THE SUBGRADE IN ORDER TO PENETRATE THE COMPACTED ZONE AND PROMOTE AERATION AND THE FORMATION OF MACROPORES. FOLLOWING THIS, THE AREA SHOULD BE DISKED PRIOR TO FINAL GRADING OF TOPSOIL.
3. CONSTRUCT FILTER SOCK CHECK DAMS, IF REQUIRED. INSTALL IN ACCORDANCE WITH FILTER SOCK DETAIL AT LOCATIONS INDICATED ON THE PLANS.
4. FINE GRADE THE VEGETATED SWALE. ACCURATE GRADING IS CRUCIAL FOR SWALES. EVEN THE SMALLEST NONCONFORMITIES MAY COMPROMISE FLOW CONDITIONS.
5. SEED, VEGETATE AND INSTALL PROTECTIVE LINING AS PER APPROVED PLANS AND ACCORDING TO FINAL PLANTING LIST. PLANT THE SWALE AT A TIME OF THE YEAR WHEN SUCCESSFUL ESTABLISHMENT WITHOUT IRRIGATION IS MOST LIKELY. HOWEVER, TEMPORARY IRRIGATION MAY BE NEEDED IN PERIODS OF LITTLE RAIN OR DROUGHT. VEGETATION SHOULD BE ESTABLISHED AS SOON AS POSSIBLE TO PREVENT EROSION AND SCOUR.
6. ONCE ALL TRIBUTARY AREAS ARE SUFFICIENTLY STABILIZED, REMOVE TEMPORARY EROSION AND SEDIMENT CONTROLS. IT IS VERY IMPORTANT THAT THE SWALE BE STABILIZED BEFORE RECEIVING UPLAND STORMWATER FLOW.
7. FOLLOW MAINTENANCE GUIDELINES, AS DESCRIBED BELOW.

NOTE: IF A VEGETATED SWALE IS USED FOR CONVEYANCE DURING CONSTRUCTION, IT SHOULD BE REGRADED AND RESEEDED IMMEDIATELY AFTER CONSTRUCTION AND STABILIZATION HAS OCCURRED. ANY DAMAGED AREAS SHOULD BE FULLY RESTORED TO ENSURE FUTURE FUNCTIONALITY OF THE SWALE.

MAINTENANCE ISSUES

COMPARED TO OTHER STORMWATER MANAGEMENT MEASURES, THE REQUIRED UPKEEP OF VEGETATED SWALES IS RELATIVELY LOW. IN GENERAL, MAINTENANCE STRATEGIES FOR SWALES FOCUS ON SUSTAINING THE HYDRAULIC AND POLLUTANT REMOVAL EFFICIENCY OF THE CHANNEL, AS WELL AS MAINTAINING A DENSE VEGETATIVE COVER. EXPERIENCE HAS PROVEN THAT PROPER MAINTENANCE ACTIVITIES ENSURE THE FUNCTIONALITY OF VEGETATED SWALES FOR MANY YEARS. THE FOLLOWING SCHEDULE OF INSPECTION AND MAINTENANCE ACTIVITIES IS RECOMMENDED:

MAINTENANCE ACTIVITIES TO BE DONE ANNUALLY AND WITHIN 48 HOURS AFTER EVERY MAJOR STORM EVENT (> 1 INCH RAINFALL DEPTH):

1. INSPECT AND CORRECT EROSION PROBLEMS, DAMAGE TO VEGETATION, AND SEDIMENT AND DEBRIS ACCUMULATION (ADDRESS WHEN > 3 INCHES AT ANY SPOT OR COVERING VEGETATION)
2. INSPECT VEGETATION ON SIDE SLOPES FOR EROSION AND FORMATION OF RILLS OR GULLIES, CORRECT AS NEEDED
3. INSPECT FOR POOLS OF STANDING WATER; DEWATER AND DISCHARGE TO AN APPROVED LOCATION AND RESTORE TO DESIGN GRADE
4. MOW AND TRIM VEGETATION TO ENSURE SAFETY, AESTHETICS, PROPER SWALE OPERATION, OR TO SUPPRESS WEEDS AND INVASIVE VEGETATION; DISPOSE OF CUTTINGS IN A LOCAL COMPOSTING FACILITY; MOW ONLY WHEN SWALE IS DRY TO AVOID RUTTING
5. INSPECT FOR LITTER; REMOVE PRIOR TO MOWING
6. INSPECT FOR UNIFORMITY IN CROSS-SECTION AND LONGITUDINAL SLOPE, CORRECT AS NEEDED
7. INSPECT SWALE INLET (CURB CUTS, PIPES, ETC.) AND OUTLET FOR SIGNS OF EROSION OR BLOCKAGE, CORRECT AS NEEDED

MAINTENANCE ACTIVITIES TO BE DONE AS NEEDED:

1. RE-PLANT SPECIFIED GRASS SPECIES IN THE EVENT OF UNSUCCESSFUL ESTABLISHMENT. INSTALL NAG S75 MATTING IN AREAS WHERE INITIAL GRASS ESTABLISHMENT WAS NOT SUCCESSFUL.
2. RESEED BARE AREAS; INSTALL APPROPRIATE EROSION CONTROL MEASURES WHEN NATIVE SOIL IS EXPOSED OR EROSION CHANNELS ARE FORMING
3. ROTOTILL AND REPLANT SWALE IF DRAW DOWN TIME IS MORE THAN 48 HOURS
4. INSPECT AND CORRECT CHECK DAMS WHEN SIGNS OF ALTERED WATER FLOW (CHANNELIZATION, OBSTRUCTIONS, EROSION, ETC.) ARE IDENTIFIED
5. WATER DURING DRY PERIODS, FERTILIZE, AND APPLY PESTICIDE ONLY WHEN ABSOLUTELY NECESSARY

MOST OF THE ABOVE MAINTENANCE ACTIVITIES ARE REASONABLY WITHIN THE ABILITY OF INDIVIDUAL HOMEOWNERS. MORE INTENSIVE SWALES (I.E. MORE SUBSTANTIAL VEGETATION, CHECK DAMS, ETC.) MAY WARRANT MORE INTENSIVE MAINTENANCE DUTIES AND SHOULD BE VESTED WITH A RESPONSIBLE AGENCY. A LEGALLY BINDING AND ENFORCEABLE MAINTENANCE AGREEMENT BETWEEN THE FACILITY OWNER AND THE LOCAL REVIEW AUTHORITY MIGHT BE WARRANTED TO ENSURE SUSTAINED MAINTENANCE EXECUTION. WINTER CONDITIONS ALSO NECESSITATE ADDITIONAL MAINTENANCE CONCERNS, WHICH INCLUDE THE FOLLOWING:

1. INSPECT SWALE IMMEDIATELY AFTER THE SPRING MELT, REMOVE RESIDUALS (E.G. SAND) AND REPLACE DAMAGED VEGETATION WITHOUT DISTURBING REMAINING VEGETATION.
2. VEGETATION IN SWALES SHALL BE PROVIDED IN ACCORDANCE WITH THE SEEDING AND FERTILIZING SPECIFICATIONS SHOWN HEREON.

SPECIFICATIONS

1. SWALE SOIL SHALL BE USCS CLASS ML (INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS WITH SLIGHT PLASTICITY), SM (SILTY SANDS, POORLY GRADED SAND-SILT MIXTURES), SW (WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES) OR SC (CLAYEY SANDS, POORLY GRADED SAN CLAY MIXTURES). THE FIRST THREE OF THESE DESIGNATIONS ARE PREFERRED FOR SWALES IN COLD CLIMATES. IN GENERAL, SOIL WITH A HIGHER PERCENT ORGANIC CONTENT IS PREFERRED.
2. SWALE SAND SHALL BE ASTM C-33 FINE AGGREGATE CONCRETE SAND (0.02 IN TO 0.04 IN).
3. CHECK DAMS CONSTRUCTED OF NATURAL WOOD SHALL BE 6 IN TO 12 IN DIAMETER AND NOTCHED AS NECESSARY. THE FOLLOWING SPECIES ARE ACCEPTABLE: BLACK LOCUST, RED MULBERRY, CEDARS, CATALPA, WHITE OAK, CHESTNUT OAK, BLACK WALNUT. THE FOLLOWING SPECIES ARE NOT ACCEPTABLE, AS THEY CAN ROT OVER TIME: ASH, BEECH, BIRCH, ELM, HACKBERRY, HEMLOCK, HICKORIES, MAPLES, RED AND BLACK OAK, PINES, POPLAR, SPRUCE, SWEETGUM, AND WILLOW. AN EARTHEN CHECK DAM SHALL BE CONSTRUCTED OF SAND, GRAVEL, AND SANDY LOAM TO ENCOURAGE GRASS COVER (SAND: ASTM C-33 FINE CHECK DAM AGGREGATE CONCRETE SAND 0.02 IN TO 0.04 IN, GRAVEL: AASHTO M-43 0.5 IN TO 1.0 IN). A STONE SHALL BE CONSTRUCTED OF R-4 RIP RAP, OR EQUIVALENT.

INFILTRATION BASIN MAINTENANCE PROCEDURES

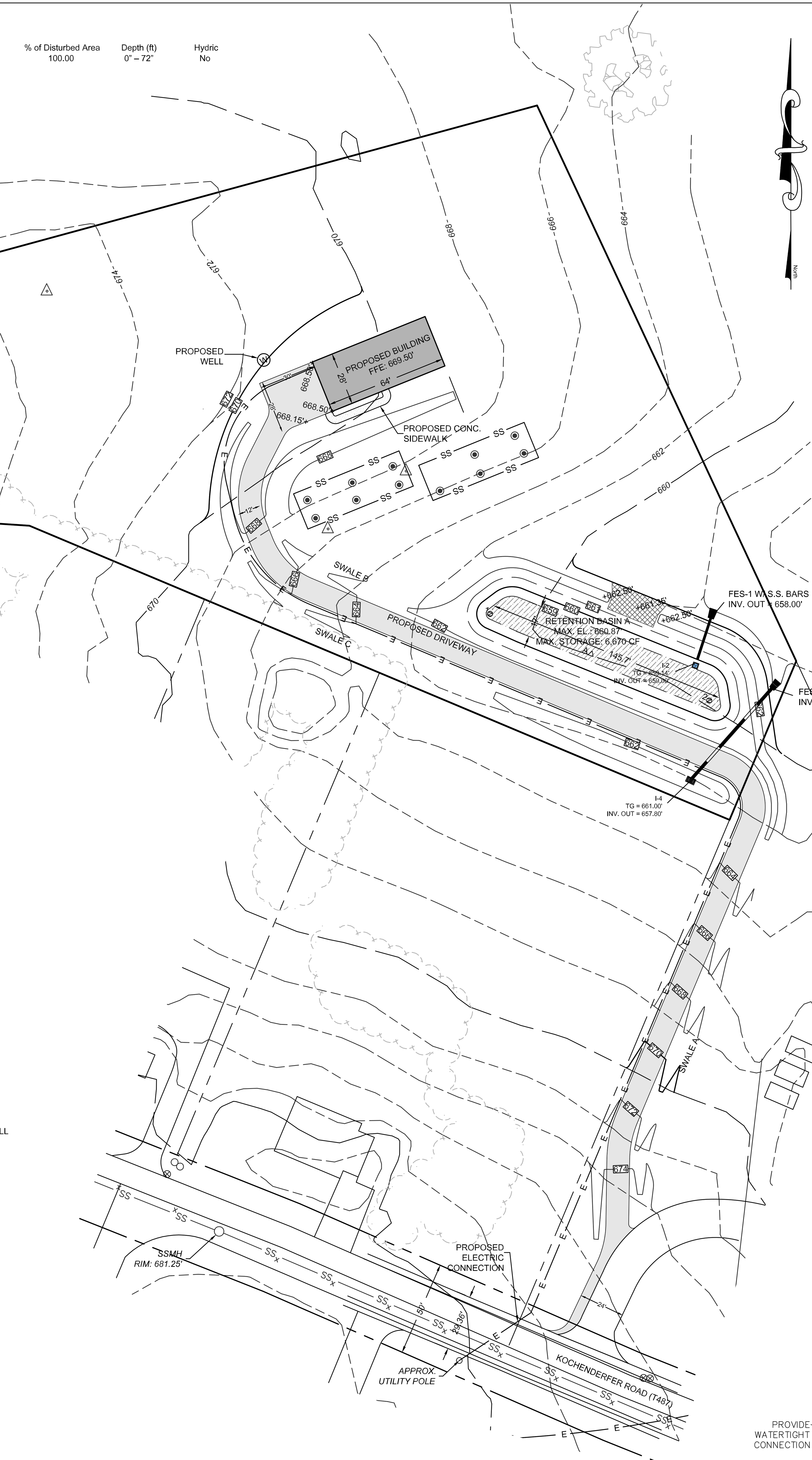
1. Remove trash and debris from the infiltration area as necessary.
2. Mow and trim vegetation only as appropriate for the cover species, generally a minimum of twice per year. Mow to ensure safety, aesthetics, proper basin operation, and to suppress weeds and invasive vegetation. Dispose of cuttings in a local composting facility. Mow only when the area is dry to avoid rutting.
3. Care shall be taken to avoid compaction by mowers. Do not allow other vehicular access to the infiltration area or the surface above the infiltration area.
4. Reseed bare areas using native grass species. Install appropriate erosion control measures when native soil is exposed, or erosion channels are forming. Vegetative cover should be maintained at a minimum of 95%. If vegetative cover has been reduced by 10%, vegetation should be reestablished.
5. Plant alternative grass species in the event of unsuccessful vegetation establishment.
6. Replace damaged vegetation without disturbing remaining vegetation.
7. It may be necessary to water the vegetation in the infiltration area during dry periods to maintain vegetative health. Trees and shrubs may require annual mulching.
8. The underlying soil in the infiltration facility may need to be rototilled or otherwise aerated if the draw down time in the facility is more than 48 hours. This soil restoration process may need to be repeated over time due to natural soil compaction and settling.
9. Sediment removal should be conducted when the facility is completely dry. Sediment should be disposed of properly and once sediment is removed, disturbed areas need to be immediately stabilized and revegetated. Do not compact the underlying soil during this process. If soil is compacted, the facility may require tilling, mechanical scraping, or soil amendment to restore the original infiltration rate.
10. Catch basins, inlets, and cleanout vaults upgradient of the infiltration facilities should be inspected and cleaned at least two times per year and after runoff events of greater than one (1) inch of rain.
11. Inspections of the infiltration facilities shall be conducted within 48 hours after every storm event of greater than one (1) inch of rain, or four times per year at a minimum.
    a. Inspect and correct erosion problems, slope stability problems, flow channelization, damage to vegetation, and the growth of unwanted or invasive vegetation.
    b. Verify that all water in the facility has drained down within 72 hours after the rainfall event. The facility may require tilling, mechanical scraping, soil amendment, or the replacement of storage media such as stone (if applicable) to restore permeability if the drawdown time exceeds 72 hours.
    c. All structures expected to receive and/or trap debris and sediment, including basin bottoms, storage matrixes, trash racks, outlets structures, riprap or gabion structures, and inlets, should be inspected for clogging and excessive debris and sediment accumulation. Sediment accumulation shall be addressed when sediment is greater than 3 inches deep at any spot or is covering vegetation.
    d. Inspect for conformance with original design cross-section and correct as needed.
    e. Inspect all pipes, catch basins, inlet and outlet structures for deficiencies and repair or replace if required. Common deficiencies include broken concrete, crushed or rusted pipes, missing grout, or blockages caused by litter or foreign materials.
    f. Notify municipal officials if there is evidence of water contamination or hazardous material spills.
12. Access shall be granted to all authorized local, state, and federal agencies for BMP inspections at reasonable times and with reasonable frequency.
13. Written reports documenting all inspections, repairs, and maintenance activities shall be maintained on site by the property owner at all times.

SOIL CHART:

Map Unit Symbol	Map Unit Name	Acres	HSG	% of Disturbed Area	Depth (ft)	Hydric
BeB	Bedington Shaly Silt Loam	4.1	B	100.00	0" – 72"	No

GRAPHIC SCALE

(IN FEET)
1 inch = 40ft.



GRADING & UTILITY PLAN
1"=40'

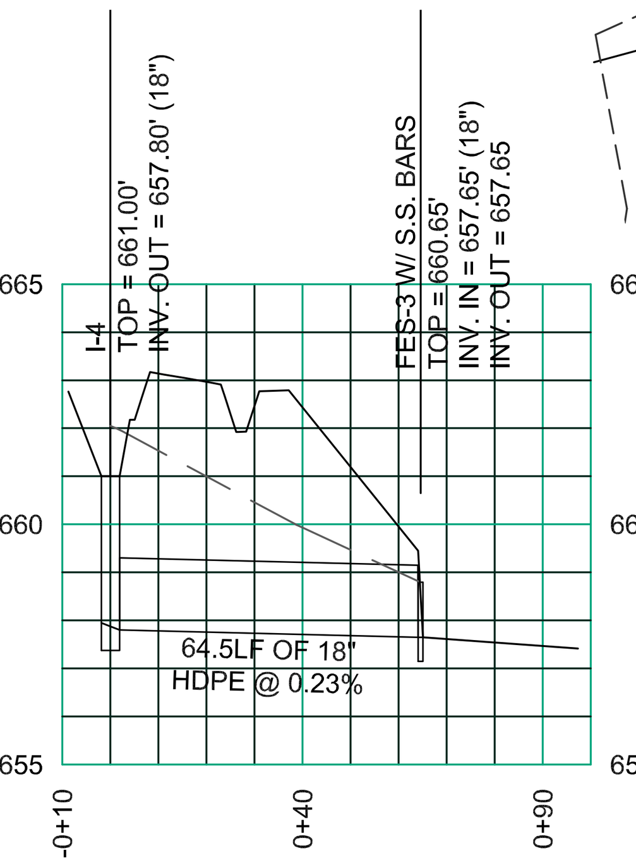
LEGEND

PROPOSED FEATURES

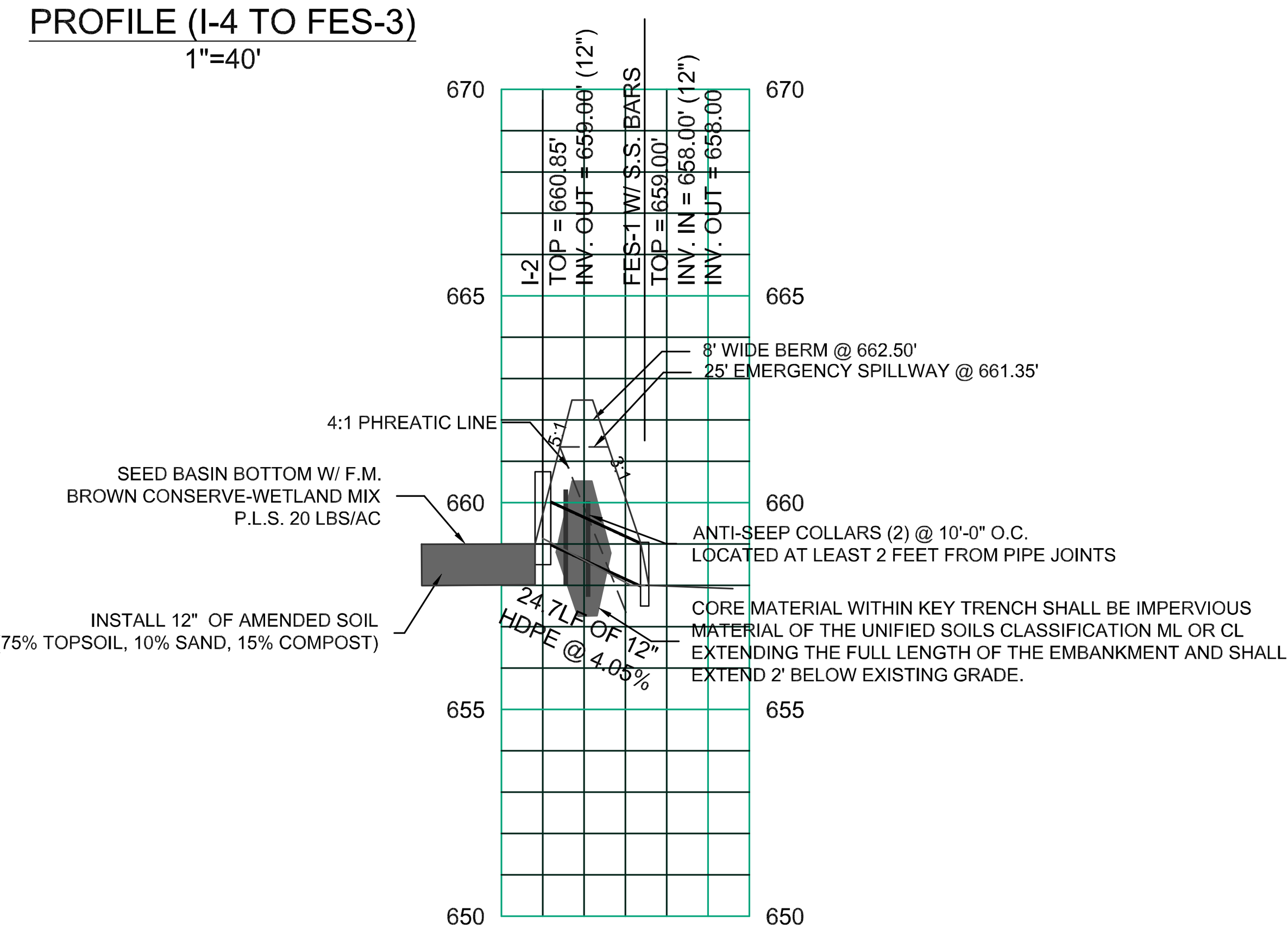
- IRON PIN / CONC. MONUMENT — PROPOSED BUILDING SETBACK
- PROPOSED BOUNDARY LINE AND CORNERS
- PROPOSED EDGE OF PAVEMENT AND CURB LINE
- PROPOSED RIGHT-OF-WAY
- PROPOSED FENCE
- MANHOLE — PROPOSED SEWER
- MANHOLE / INLET / RIP-RAP / ENDWALL — PROPOSED STORMWATER
- MONUMENTS
- GATE VALVE / FIRE HYDRANT — PROPOSED DOMESTIC WATERLINE
- GAS VALVE — PROPOSED GASLINE
- PROPOSED CONCRETE/SIDEWALK
- MAJOR / MINOR — PROPOSED CONTOURS
- PROPOSED TREELINE
- PROPOSED UTILITY POLE
- PROPOSED LIGHT POLE
- PROPOSED STANDARD PAVING
- INFILTRATION TEST LOCATION
- SOIL PROBE TEST LOCATION
- PROPOSED STORMWATER MANAGEMENT EASEMENT

EXISTING FEATURES

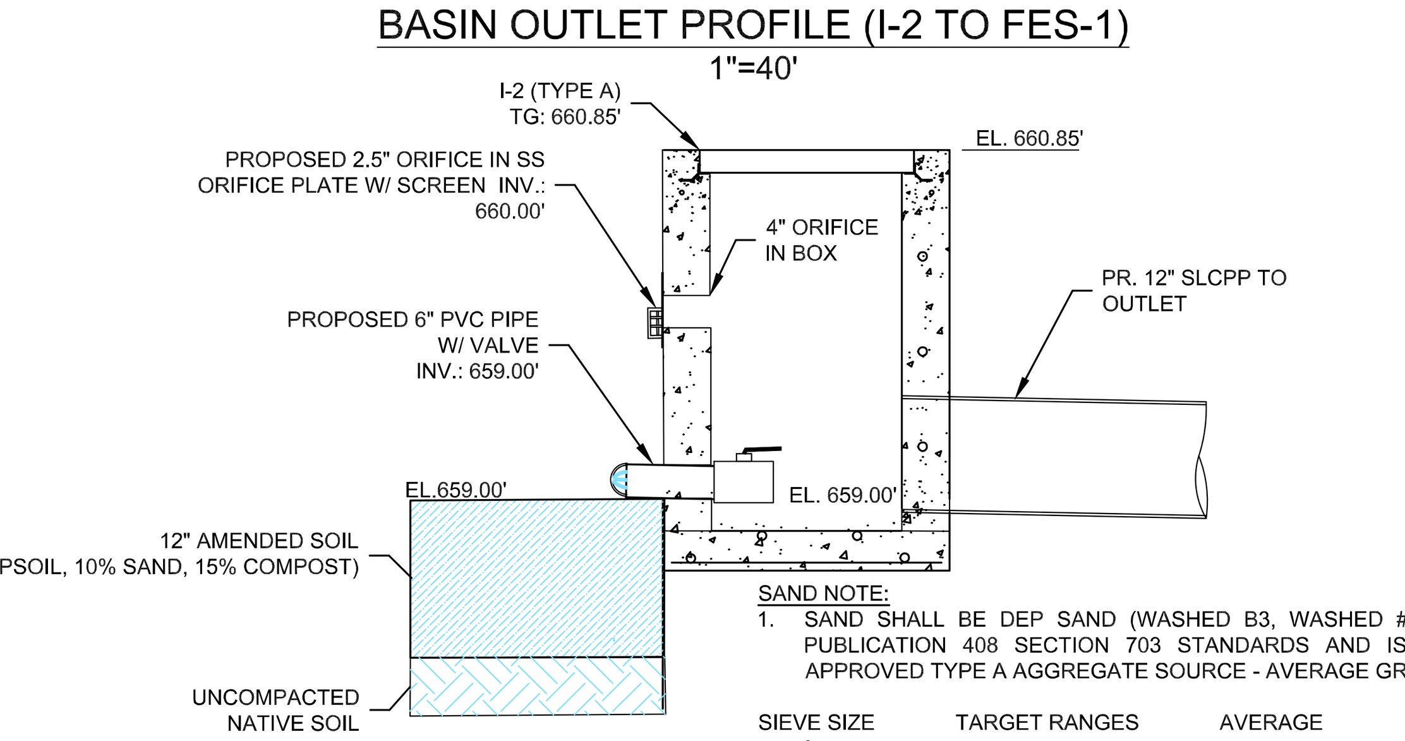
- EXISTING ADJOINER LINE
- EXISTING BOUNDARY LINE AND CORNERS
- EXISTING EDGE OF PAVEMENT AND CURB LINE
- EXISTING RIGHT-OF-WAY
- EXISTING FENCE
- CLEAN OUT / MANHOLE — EXISTING SEWER
- MANHOLE / HEADWALL / INLET / RIP-RAP / ENDWALL — EXISTING STORMWATER
- GATE VALVE / FIRE HYDRANT — EXISTING WATERLINE
- GAS VALVE — EXISTING GASLINE
- EXISTING SIDEWALK/CONCRETE
- MAJOR / MINOR — EXISTING CONTOURS
- EXISTING TREELINE
- SOIL TYPE — EXISTING SOILS
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING IPF



PROFILE (I-4 TO FES-3)
1"=40'



BASIN OUTLET PROFILE (I-2 TO FES-1)
1"=40'



VALVE NOTES:

1. EACH PVC DRAWDOWN PIPE AND VALVE SHALL BE PROVIDED WITH APPROPRIATELY SIZED PVC TRASH SCREEN AT INTAKE.
2. THE 6" PVC VALVE SHALL REMAIN CLOSED DURING NORMAL OPERATION OF THE RAIN GARDEN. THE VALVE SHALL ONLY BE OPENED TO DEWATER THE RAIN GARDEN FOR MAINTENANCE PURPOSES.
3. THE VALVE SHALL BE OPENED AND CLOSED AT LEAST TWICE PER YEAR TO ENSURE IT IS FUNCTIONING PROPERLY.

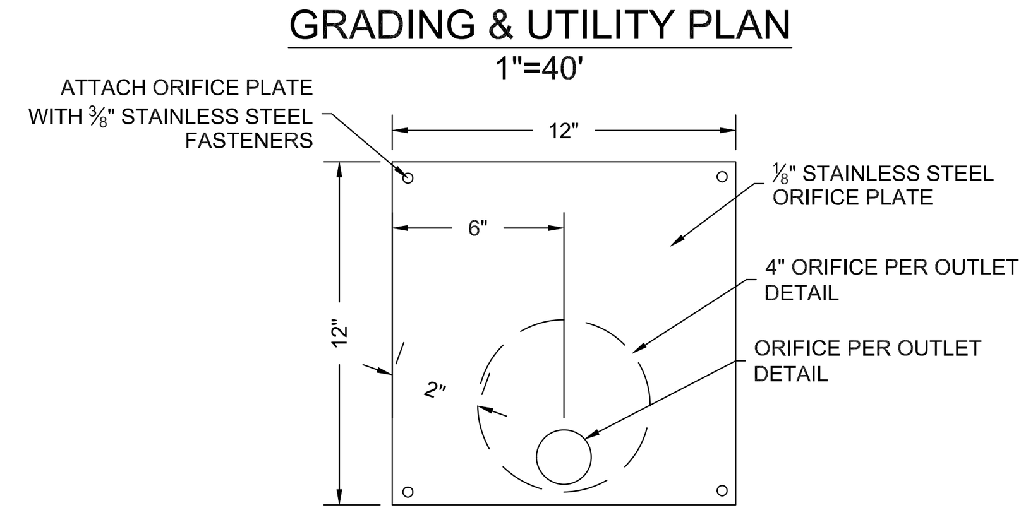
SAND NOTE:

1. SAND SHALL BE DEP SAND (WASHED B3, WASHED #10) WHICH MEETS ALL PENNDOT PUBLICATION 408 SECTION 703 STANDARDS AND IS LISTED IN BULLETIN 14 AS AN APPROVED TYPE A AGGREGATE SOURCE - AVERAGE GRADATION

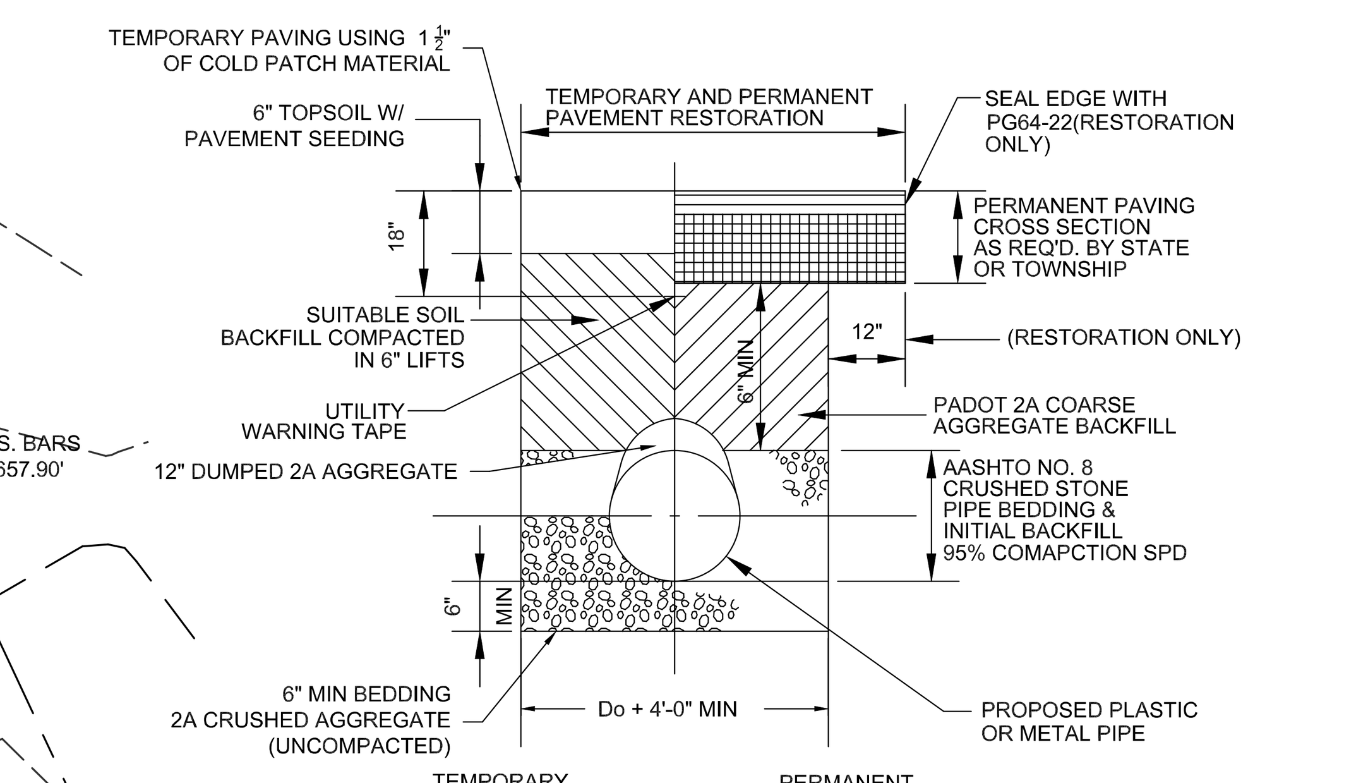
SIEVE SIZE	TARGET RANGES	AVERAGE
⅜"	100%	100%
#4	80%-100%	99%
#8	65%-100%	78%
#16	40%-80%	41%
#30	20%-65%	21%
#50	7%-40%	10%
#100	2%-20%	5%
#200*	0%-5%	2.67%

*LOSS BY WASHING

BASIN A OUTLET DETAIL
NOT TO SCALE



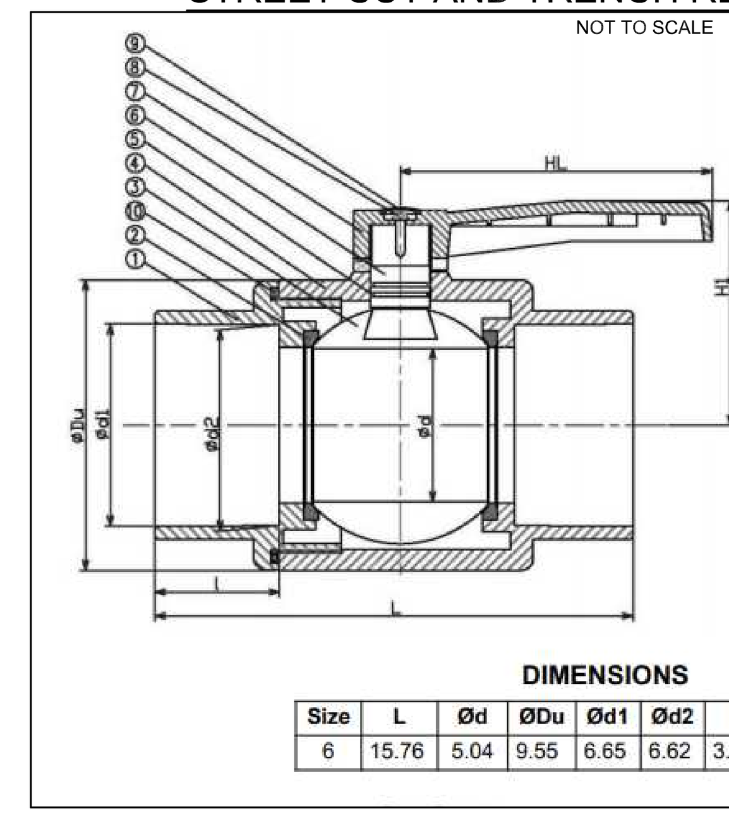
ORIFICE PLATE DETAIL
NOT TO SCALE



1. ALL TRENCH RESTORATION SHALL BE IN ACCORDANCE WITH PENNDOT RC-30M AND AS MAY BE AMENDED BY EXHIBIT "I" OF THE NORTH LEBANON TOWNSHIP STREET ORDINANCE.
2. IF UNSUITABLE MATERIAL IS FOUND, UNDERCUT AS DIRECTED AND BACKFILL WITH SUITABLE MATERIAL TO BOTTOM OF BEDDING ELEVATION OF THE PIPE, 16" MAX.
3. PLACE 2A COARSE AGGREGATE MATERIAL IN LIFTS 4" THICK, ADJACENT TO THE LOWER HAUNCHES TO A HEIGHT OF 12" THICK ABOVE TOP OF PIPE. COMPACT TO 95% SPD. TEST BACKFILL MATERIAL AND CONTINUE EMBANKMENT IN ACCORDANCE WITH PUBLICATION 408, SECTION 601.
4. NOT APPLICABLE TO NLTMA SANITARY SEWERS.

(TYPICAL FOR STATE HIGHWAYS, AND TOWNSHIP ROADS, SHOULDER & DRIVEWAYS)

STREET CUT AND TRENCH RESTORATION DETAIL
NOT TO SCALE



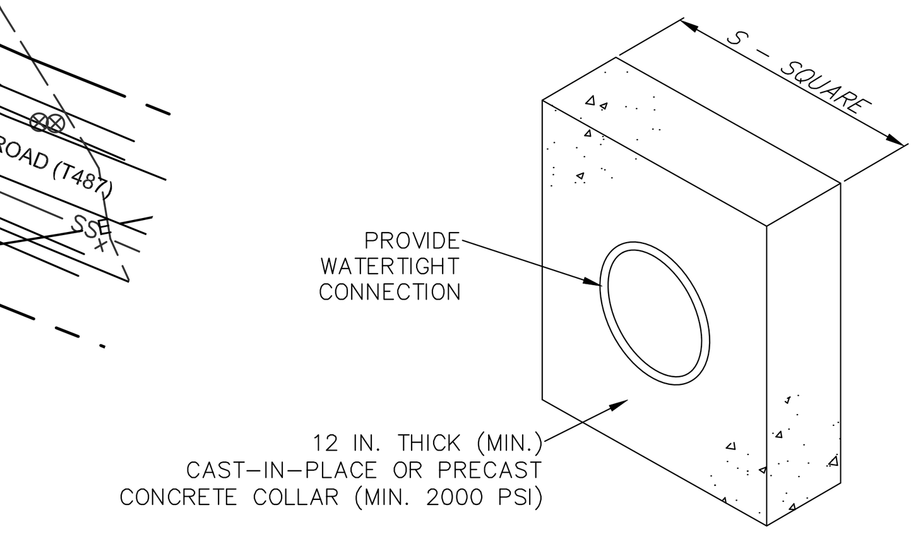
MATERIAL SPECIFICATIONS

No.	Part	Material
1	Body Cap	PVC
2	Seat	EPDM
3	Ball	PVC
4	Body	PVC
5	O-Ring	EPDM
6	Stem	PVS
7	Handle	ABS
8	Bolt	SUS302
9	Handle Cap	ABS
10	O-Ring	EPDM

DIMENSIONS

Size	L	Ød	ØDu	Ød1	Ød2	l	H1	HL
6	15.76	5.04	9.55	6.65	6.62	3.90	7.41	10.28

BASIN OUTLET BALL VALVE DETAIL
NOT TO SCALE



Basin	y (ft)	z (ft)	S (ft/ft)	Ls (ft)	Lf (ft)
1 (12" Pipe)	2.00	3.00	0.055	17.90	20.59
	Increase (ft)	Collar Projection (ft)	# of Collars	D (ft)	Size (ft)
	2.69	0.67	2	1.75	3.09

NOTES:

1. ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.
2. COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

STANDARD CONSTRUCTION DETAIL #7-16
CONCRETE ANTI-SEEP COLLAR FOR PERMANENT BASINS OR TRAPS
NOT TO SCALE

BY	DATE	REVISION
JTW	7/17/23	PER SESI COMMENT LETTER DATED 7/20/23
JTW	8/30/23	PER SESI COMMENT LETTER DATED 7/20/23

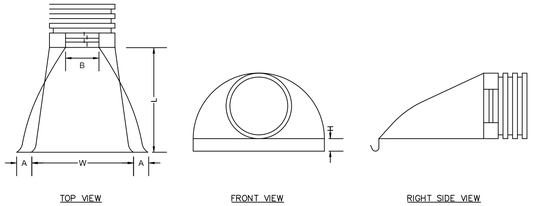
STORMWATER MANAGEMENT PLAN
FOR
1111 KOCHENDERFER ROAD
NORTH LEBANON TOWNSHIP, LEBANON, PA

JUNE 29, 2023

HO11.23.1

CHRISLAND ENGINEERING
717-954-6513
602 Cornwall Road
Lebanon, PA 17042
717-954-6513
www.chrislandengineering.com

Grading & Utility Plan



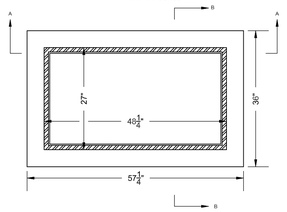
NOTES:

THE INVERT OF THE PIPE AND THE END SECTION SHALL BE AT THE SAME ELEVATION. THE FLARED END SECTION SHALL BE HIGH DESNITY POLYETHYLENE MEETING ASTM D3350 MINIMUM CELL CLASSIFICATION 213320C; CONTACT MANUFACTURER FOR ADDITIONAL CELL CLASSIFICATION INFORMATION. WHEN PROVIDED, THE METAL THREADED FASTENING ROD SHALL BE STAINLESS STEEL.

INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WITH THOSE ISSUED BY STATE OR LOCAL AUTHORITIES.

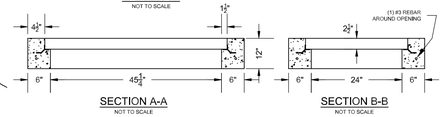
FLARED END SECTION

NOT TO SCALE



PLAN VIEW

NOT TO SCALE



SECTION A-A

NOT TO SCALE

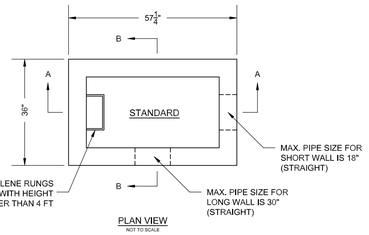
SECTION B-B

NOT TO SCALE

1. ALL CATCH BASINS SHALL BE PROVIDED IN ACCORDANCE WITH PENNDOT PUB 72, RC-45M.
2. ALL CATCH BASINS SHALL BE PROVIDED WITH MARKERS IN ACCORDANCE WITH CHAPTER 21, EXHIBIT "L."

PENNDOT TYPE "M" INLET

NOT TO SCALE

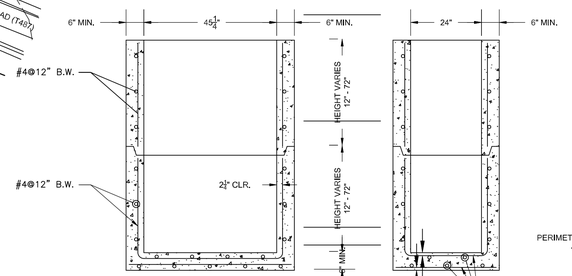


PLAN VIEW

NOT TO SCALE

SPECIFICATIONS:

1. THE CONCRETE IS DESIGNED TO OBTAIN A STRENGTH OF 4,000 PSI IN 28 DAYS.
2. THE REINFORCING STEEL HAS A YIELD STRENGTH OF 60,000 PSI.
3. THE INLET SHALL BE DESIGNED TO MEET PENNDOT SPEC. FORM 408 FOR PRECAST CONCRETE CATCH BASINS (RC-46M).
4. THE REINFORCED CONCRETE BASE SLAB IS DESIGNED FOR A MAXIMUM DEPTH OF 20 FT (DEPTH = F.G. TO TOP OF BASE SLAB).
5. THE OPTIONAL A-LOK STORM GASKET IS DESIGNED TO MEET THE REQUIREMENTS OF ASTM C-1478, "STORM DRAIN RESILIENT CONNECTORS BETWEEN REINFORCED CONCRETE STORM SEWER STRUCTURES, PIPES, AND LATERALS."
6. PROVIDE STEPS WHERE STRUCTURE DEPTH IS GRATER THAN 48".
7. OUT TO OUT DIMENSIONS OF TOP SLABS TO MATCH SIZE OF INLET BOX.



SECTION A-A

NOT TO SCALE

SECTION B-B

NOT TO SCALE

STANDARD PENNDOT INLET BOX

NOT TO SCALE

STAINLESS STEEL BAR GUARDS:

1. 304 STAINLESS STEEL MATERIAL AND HARDWARE PROVIDES EXTENDED LIFE.
2. 4" AND 6" STAINLESS STEEL GUARDS ARE IOWA DOT APPROVED.
3. RESISTS RUST AND CORROSION.
4. GUARD SHALL BE POSITIONED FAR ENOUGH IN THE PIPE TO ALLOW IT TO SWIVEL UP AND LET TRASH PASS WITHOUT EXPOSING THE GUARD BEYOND THE PIPE.
5. GUARDS SHALL BE HELD IN PLACE WITH A STEEL ROD WHICH EXTENDS THROUGH THE FRAME AND THEN THROUGH THE PIPE. THE ROD SHALL EXTEND APPROXIMATELY 1" ON EITHER SIDE OF FRAME.
6. AGRI DRAIN CORPORATION OR EQUAL

SIZE	DIA. OF BAR	BAR SPACING
12"	5/16"	1.125"
15"	5/16"	1.38"

FLARED END SECTION BAR GUARD

NOT TO SCALE

1. ALL BICYCLE SAFE GRATES SHALL BE PROVIDED IN ACCORDANCE WITH PENNDOT PUB 72, RC-45M.

PENNDOT BICYCLE SAFE GRATE

NOT TO SCALE

PRE - DEVELOPMENT PLAN

1"=40'

LEGEND

EXISTING FEATURES

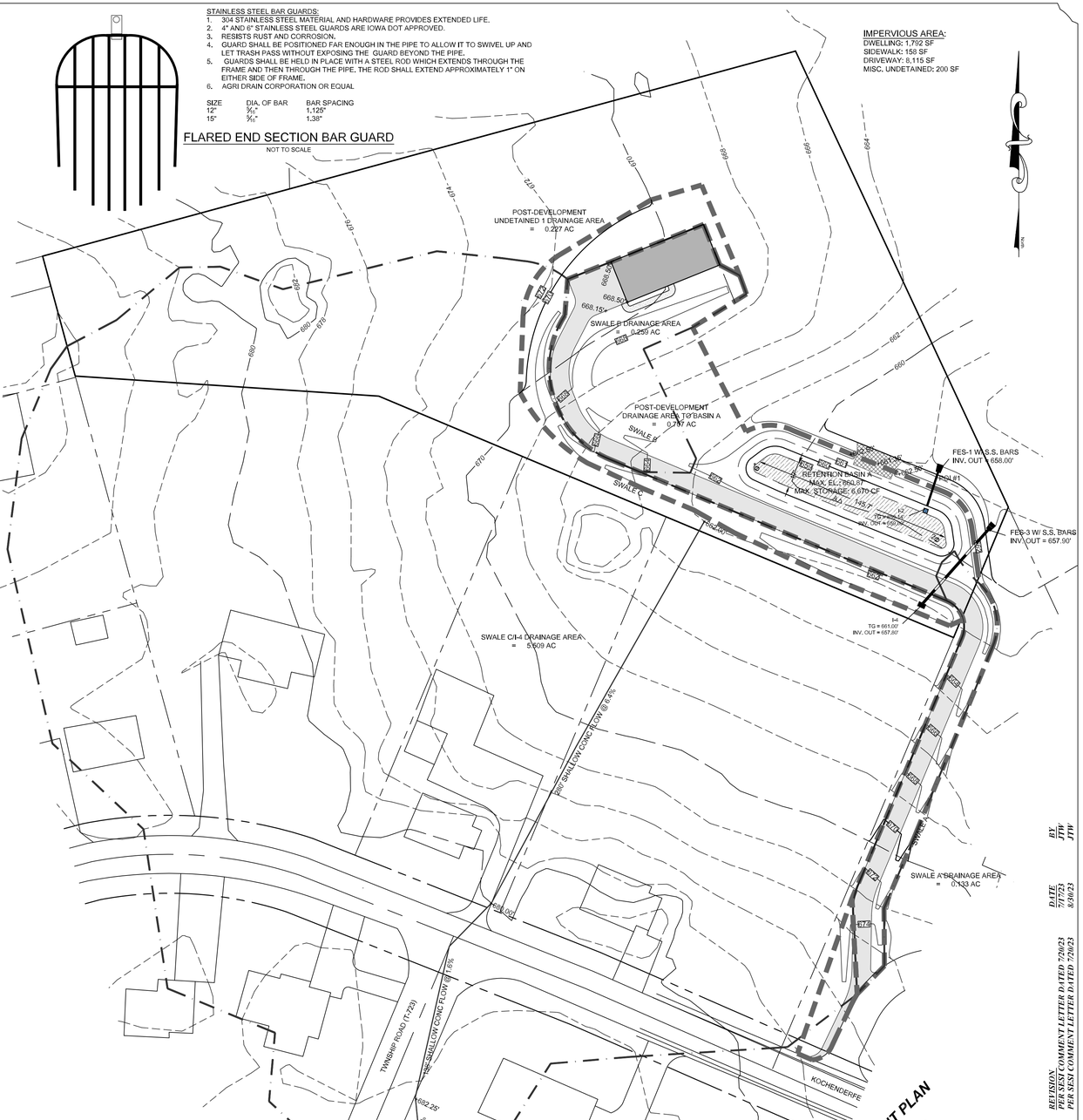
- EXISTING ADJOINER LINE
- EXISTING BOUNDARY LINE AND CORNERS
- EXISTING EDGE OF PAVEMENT AND CURB LINE
- EXISTING RIGHT-OF-WAY
- EXISTING FENCE
- EXISTING SEWER
- EXISTING STORMWATER
- EXISTING SIDEWALK/CONCRETE
- EXISTING CONTOURS (100 MAJOR / MINOR)
- EXISTING TREELINE
- EXISTING SOILS (SOIL TYPE / SOIL TYPE)
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE

PROPOSED FEATURES

- PROPOSED BUILDING SETBACK
- PROPOSED BOUNDARY LINE AND CORNERS
- PROPOSED EDGE OF PAVEMENT AND CURB LINE
- PROPOSED RIGHT-OF-WAY
- PROPOSED FENCE
- PROPOSED SEWER
- PROPOSED STORMWATER
- PROPOSED DOMESTIC WATERLINE
- PROPOSED GASLINE
- PROPOSED CONCRETE/SIDEWALK
- PROPOSED CONTOURS (100 MAJOR / MINOR)
- PROPOSED TREELINE
- PROPOSED UTILITY POLE
- PROPOSED LIGHT POLE
- PROPOSED STANDARD PAVING

POST - DEVELOPMENT PLAN

1"=40'



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)

1 inch = 40ft.

STORMWATER MANAGEMENT PLAN
FOR
1111 KOCHENDERFER ROAD
NORTH LEBANON TOWNSHIP, LEBANON, PA

JUNE 29, 2023

CHRISTLAND ENGINEERING
717-964-4513
602 Cornwall Road
Lebanon, PA 17042
717-964-4513
www.christlandengineering.com

Pre & Post Development Plan

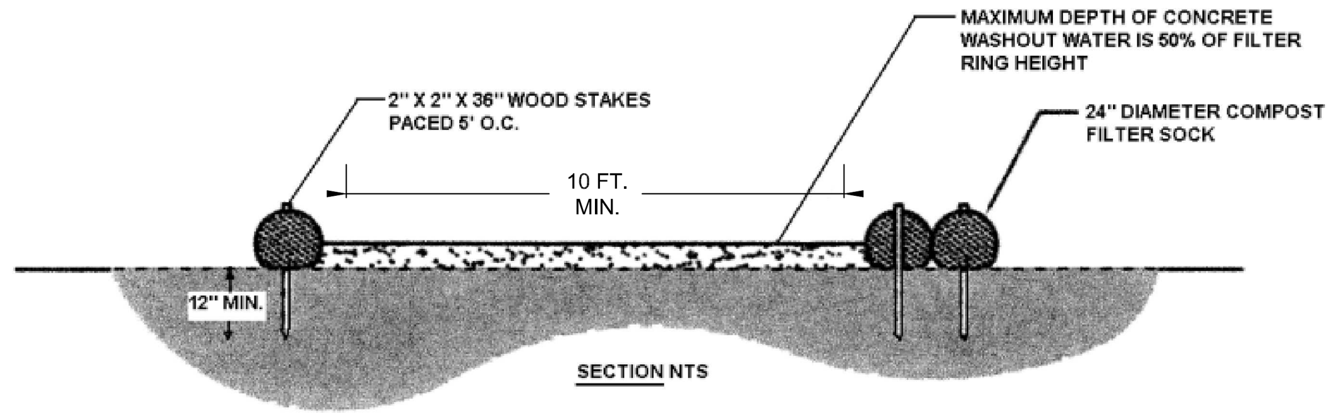
HO11.23.1

5 OF 7

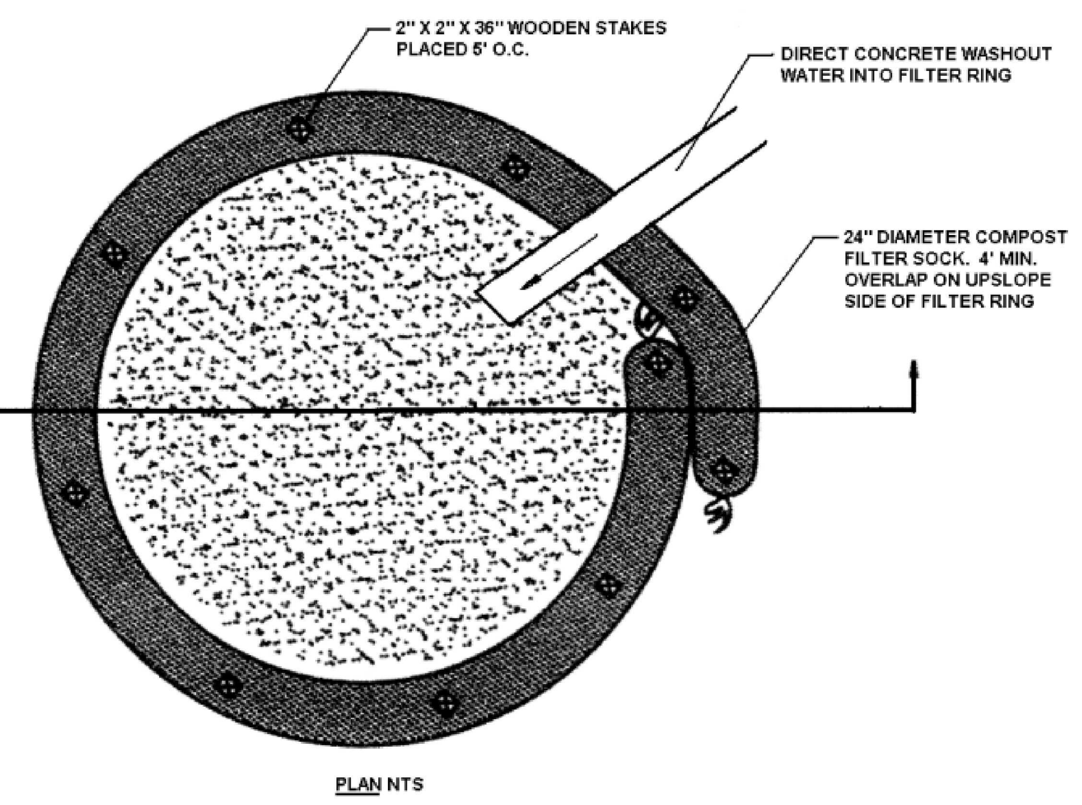
REVISION	DATE	BY
PER SESI COMMENT LETTER DATED 7/20/23	7/17/23	JTW
PER SESI COMMENT LETTER DATED 7/20/23	8/30/23	JTW

9/6/2023 11:50 AM

M:\Project Files\HO11 - Cormick Hostetter\HO11.23.1 - 1111 Kochenderfer Road\DWG\SWM Plan.dwg



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

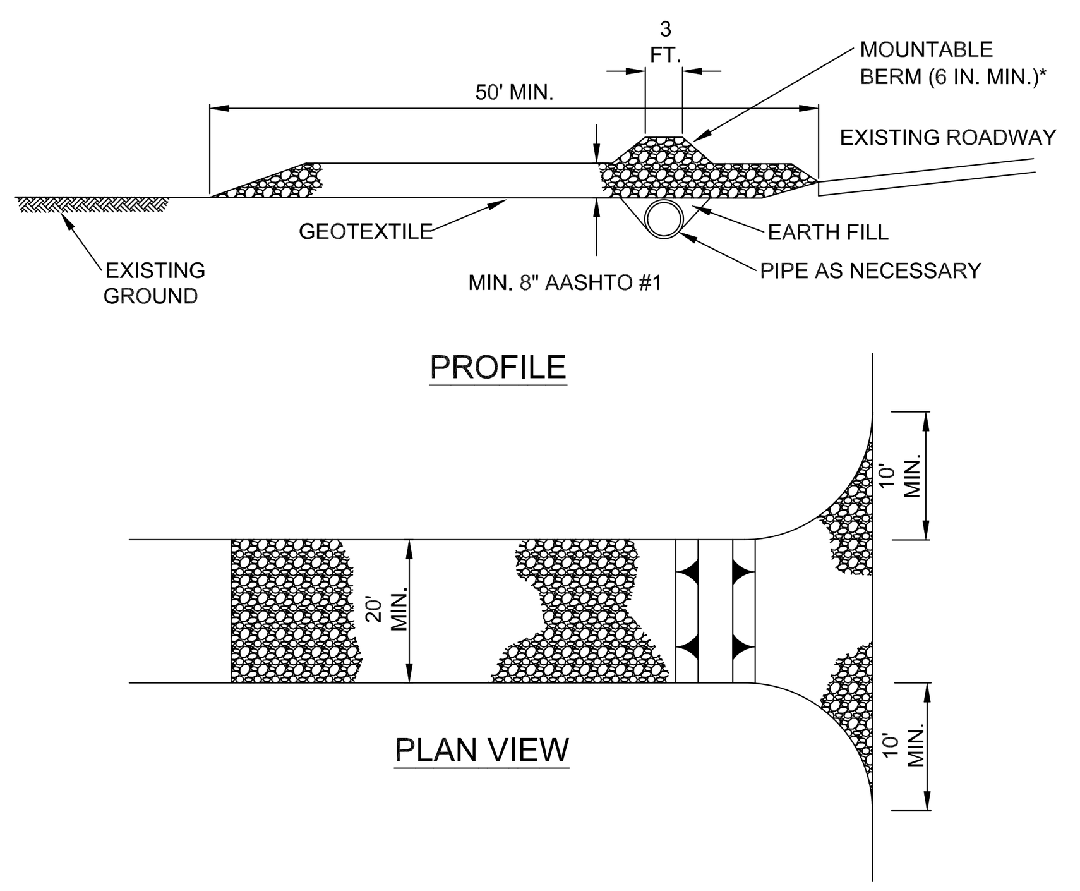


NOTE:

1. A SUITABLE IMPERVIOUS GEOMEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO INSTALLING THE SOCKS.
2. PROVIDE 10' MINIMUM INSIDE DIAMETER.
3. PROVIDE AT LEAST ONE WASHOUT PER GROUPING OF TOWNHOUSES AND EACH APARTMENT BUILDING.

TYPICAL COMPOST SOCK WASHOUT INSTALLATION

NOT TO 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.

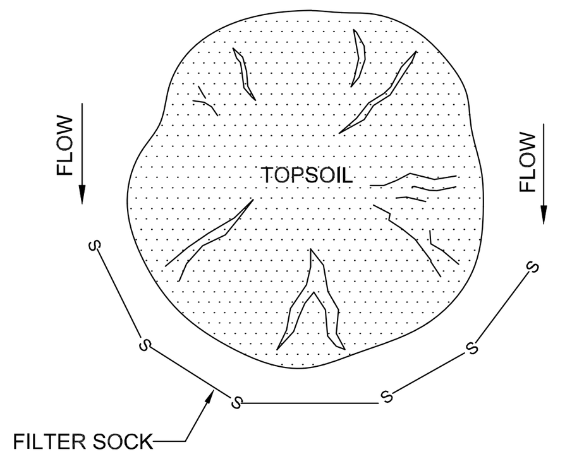
RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

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

NOT TO SCALE



NOTE:
1) A STOCKPILE SHALL BE USED TO CONTAIN ALL STRIPPED TOPSOIL IN A LIMITED AREA IN ORDER TO KEEP DISTURBANCE TO A MINIMUM.
2) STOCKPILES ARE TO BE STABILIZED IMMEDIATELY.
3) STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET.
4) STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.
5) STOCKPILES SHALL BE LOCATED SO THAT ALL SWALES CAN FUNCTION AS DESIGNED.

TOPSOIL STOCKPILE

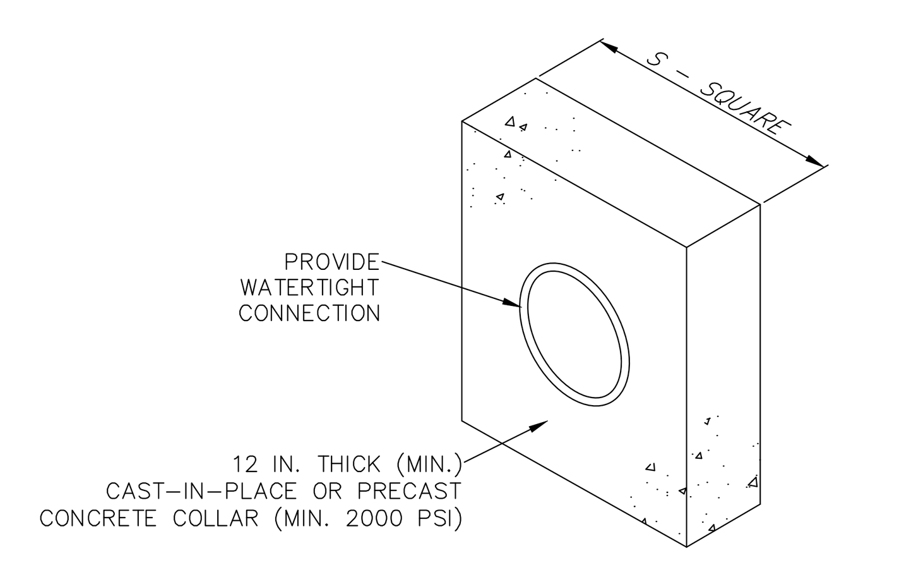
NO SCALE

APPLICATION	SPECIES	APPLICATION RATE 1 (P.L.S. IN LBS/AC)	FERTILIZER (LBS/ACRE)	LIMING RATE 2 (TONS/ACRE)	FINAL SEEDING DATE
TEMPORARY	ANNUAL RYE	174	50-50-50 N-P_2O_5-K_20	1 AG GRADE	OCTOBER 30
PERMANENT	FINE FESCUES	60	100-200-200 N-P_2O_5-K_20	6 AG GRADE	AUGUST 30 AND OCTOBER 30
	KENTUCKY BLUEGRASS	90			
	PERENNIAL RYEGRASS	25			
ATHLETIC FIELDS	KENTUCKY BLUEGRASS	150	100-200-200 N-P_2O_5-K_20	6 AG GRADE	AUGUST 30 AND OCTOBER 30
	PERENNIAL RYEGRASS	25			
INFILTRATION BASIN	F.M. BROWN CONSERVE WETLAND	20	100-200-200 N-P_2O_5-K_20	6 AG GRADE	AUGUST 30 AND OCTOBER 30
STEEP SLOPES					
NURSE CROP	ANNUAL RYE	64	50-50-50 N-P_2O_5-K_20	1 TON/AC AG GRADE*	OCT. 15
PERMANENT	BIRDSFOOT TREFOIL PLUS	10	100-200-200 N-P_2O_5-K_20	1 TON/AC AG GRADE*	MARCH 15 AND OCT. 15
	PLUS TALL FESCUE	30			

1. PLS IS PURE LIVE SEED. PLS IS THE PRODUCT OF THE PERCENTAGE OF PURE SEED TIMES PERCENTAGE GERMINATION DIVIDED BY 100. TO SECURE THE ACTUAL PLANTING RATE, DIVIDE THE POUNDS PLS BY THE PLS PERCENTAGE SHOWN ON THE SEED TAG OR AS PREVIOUSLY DISCUSSED. THUS, IF THE PLS CONTENT OF FINE FESCUES IS 50%, DIVIDE 7 PLS BY 0.50 TO OBTAIN 140 POUNDS OF SEED PER ACRE.
2. LIMING RATE SHALL BE IN ACCORDANCE WITH SOIL TEST RESULTS. APPLY 6 TONS OF AGRICULTURAL GRADE LIMESTONE/AC OF LAND DISTURBED BY DIVERSIONS AND DAMS.
- ALL SEEDED AREAS SHALL BE MULCHED WITH STRAW APPLIED AT A RATE OF 3 TONS/ACRE. MULCH TO BE ANCHORED WITH WOOD CELLULOSE FIBER @ 750 LBS/AC.
- ALL DIVERSIONS, CHANNELS, SED TRAPS AND STOCKPILES MUST BE STABILIZED IMMEDIATELY.

SEEDING AND FERTILIZER SPECIFICATIONS

NOT TO SCALE



Basin	y (ft)	z (ft)	S (ft/ft)	Ls (ft)	Lf (ft)
1 (12" Pipe)	2.00	3.00	0.055	17.90	20.59
	Increase (ft)	Collar Projection (ft)	# of Collars	D (ft)	Size (ft)
	2.69	0.67	2	1.75	3.09

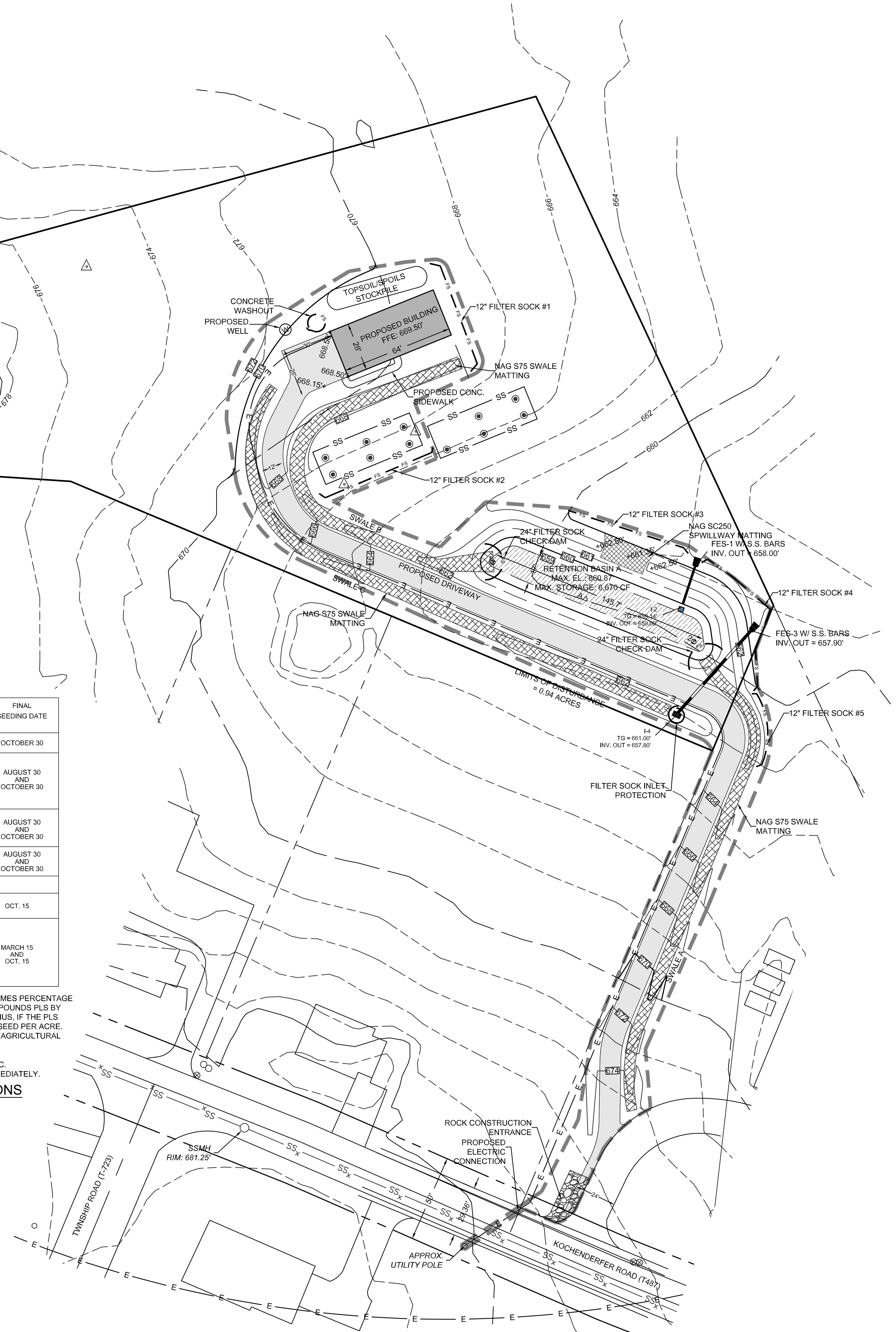
NOTES:

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

NOT TO SCALE



EROSION & SEDIMENT POLLUTION CONTROL PLAN

1"=40'

LEGEND

EXISTING FEATURES

- EXISTING ADJOINER LINE
- EXISTING BOUNDARY LINE AND CORNERS
- EXISTING RIGHT-OF-WAY
- EXISTING OVERHEAD ELECTRIC
- 100 MAJOR / MINOR — EXISTING CONTOURS
- EXISTING TREELINE
- SOIL TYPE / SOIL TYPE — EXISTING SOILS
- EXISTING UTLITY POLE

PROPOSED FEATURES

- HEADWALL, INLET, RIP-RAP, MANHOLE, ENDWALL — PROPOSED STORMWATER
- PROPOSED STORMWATER MANAGEMENT EASEMENT
- Ⓦ PROPOSED WELL
- ROCK CONSTRUCTION ENTRANCE
- TOPSOIL/SPOILS STOCKPILE — TOPSOIL STOCKPILE
- PROPOSED CONCRETE/SIDEWALK
- 100 MAJOR / MINOR — PROPOSED CONTOURS
- #1 INFILTRATION TEST LOCATION
- FS — FILTER SOCK
- ▨ SWALE/SLOPE MATTING
- DISTURBANCE LIMITS
- NPDES LIMITS
- ▨ PROPOSED AMENDED SOILS

STANDARD E&S PLAN NOTES

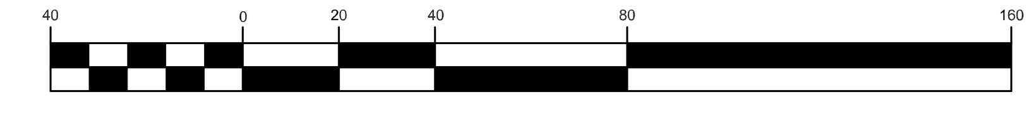
1. All earth disturbances, including clearing and grubbing as well as cuts and fills shall be done in accordance with the approved E&S plan. A copy of the approved drawings (stamped, signed and dated by the reviewing agency) must be available at the project site at all times. The reviewing agency shall 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 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 South Lebanon Township Engineer, 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 practices to 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. 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.
15. 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.
16. 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.
17. All sediment removed from BMPs shall be disposed of in the manner described on the plan drawings.
18. 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.
19. 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.
20. All earthen fills shall be placed in compacted layers not to exceed 9 inches in thickness.
21. 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.
22. Frozen materials or soft, mucky, or highly compressible materials shall not be incorporated into fills.
23. Fill shall not be placed on saturated or frozen surfaces.
24. Seeps or springs encountered during construction shall be handled in accordance with the standard and specification for subsurface drain or other approved method.
25. 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.
26. 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.
27. 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.
28. 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.
29. 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.
30. 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.
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 to schedule a final inspection.
32. 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.
33. Underground utilities cutting through any active channel shall be immediately backfilled and the channel restored to its original cross-section and protective lining. Any base flow within the channel shall be conveyed past the work area in the manner described in this plan until such restoration is complete.
34. Erosion control blanketing shall be installed on all slopes 3H:1V or steeper within 50 feet of a surface water and on all other disturbed areas specified on the plan maps and/or detail sheets.
35. Fill material for embankments shall be free of roots, or other woody vegetation, organic material, large stones, and other objectionable materials. The embankment shall be compacted in maximum 9" layered lifts at 95% density.

SOIL CHART:

Map Unit Symbol	Map Unit Name	Acres	HSG	% of Disturbed Area	Depth (ft)	Hydric
BeB	Bedington Shaly Silt Loam	4.1	B	100.00	0" – 72"	No

REVISION	DATE	BY
PER SESI COMMENT LETTER DATED 7/20/23	7/17/23	JTW
PER SESI COMMENT LETTER DATED 7/20/23	8/30/23	JTW

GRAPHIC SCALE



(IN FEET)
1 inch = 40ft.

STORMWATER MANAGEMENT PLAN
FOR
1111 KOCHENDERFER ROAD
NORTH LEBANON TOWNSHIP, LEBANON, PA

JUNE 29, 2023

CHRISLAND ENGINEERING
717-954-6513
602 Cornwall Road
Lebanon, PA 17042
717-954-6513
www.chrislandengineering.com

HO11.23.1

Erosion & Sediment Pollution Control Plan

ES1
6 OF 7

EROSION AND SEDIMENT POLLUTION CONTROL NARRATIVE
Stormwater Management Plan
for 1111 Kochenderfer Road
North Lebanon Township, Lebanon County, PA 17046

A. SITE LOCATION

The site is located at 1111 Kochenderfer Road, Lebanon, PA 17046, North Lebanon Township, Lebanon County, PA. The deed book and page for the property is 02325-9626. The Lebanon County map number for the property is 27-2336911-380607 (See USGS Map).

B. PROJECT DESCRIPTION

The project consists of the construction of a single-family residential dwelling, access drive, and associated stormwater management facilities (See Site Plan). The disturbance area for this project is 0.94 acres.

C. EXISTING SITE CONDITIONS & DOWNSTREAM DRAINAGE PATH

The deeded acreage for 1111 Kochenderfer Road is 2.62 acres. The site currently is being used for agricultural row crops; the subject tract has been in said condition since before 1985 according to research done from historical aerial photographs. The site slopes from the high point on the west side of the property to the east. Once leaving the property, runoff is intercepted by UNT to Little Swatara Creek, in the Swatara Creek Watershed. The chapter 93 designation of UNT Little Swatara Creek is Warm Water Fishes (WWF).

D. SOIL LIMITATIONS AND RESOLUTIONS

The following soils are found within or adjacent to the area disturbed by earth moving activities.

Map Unit Symbol	Map Unit Name	Acres	HSG	% of Disturbed Area	Depth	Hydric
BeB	Bedington Shaly Silt Loam	4.1	B	100.00	43" – 98"	No

Few soil limitations are existing for the proposed project. The Web Soil Survey indicates lawns and landscaping establishment limitations classified as somewhat limited for the BeB soil type due to dustiness, large stones content, depth to bedrock, gravel content, doughtiness, and depth to saturated zone. These potential limitations should not be a problem since the project site is currently stabilized with agricultural row crops.

The Web Soil Survey indicated dwellings with and without basements limitations classified as not limited for the BeB soil type.

The Soil Rutting Hazard limitation is classified as slight for the BeB soil type due to strength. Although the limitation is slight standard construction practices will be utilized to avoid the potential for rutting and erosion associated with rutting will be controlled with standard erosion and sediment pollution controls.

E. CALCULATIONS

Temporary and permanent erosion control facilities were designed in accordance with the standards established in the Erosion and Sediment Pollution Control Manual (PA DEP Bureau of Soil and Water Conservation).

Runoff calculations were performed using the Rational Method in accordance with PaDEP and North Lebanon Township regulations. The proposed condition peak rates of runoff and runoff volumes will remain consistent with existing conditions. The vegetative cover will be restored to existing conditions to mitigate any potential increase in peak rates of runoff and runoff volumes.

F. STAGING OF EARTHMOVING

All earth disturbance activities shall proceed in accordance with the sequence provided on the plan drawings. **Deviation from that sequence must be approved by the Lebanon County Conservation District or by the Department prior to implementation. Each step of the sequence shall be completed before proceeding to the next step, except where noted.**

The construction sequence for development of the project shall be as follows:

1. 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, and a representative from the Lebanon County Conservation District to an on-site preconstruction meeting.

   Also, 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.

2. Install stabilized construction entrance(s). The base course shall be AASHTO #1 installed at a minimum of 20-ft wide and 50-ft long.
3. Install filter sock at topsoil stockpile and other areas as indicated on the attached plan. Filter sock is to be installed along the contour at a level grade. Upon installation or stabilization of all perimeter sediment control BMPs, and at least 3 days prior to proceeding with the bulk earth disturbance activities, the permittee or co-permittee shall provide notification to the Department or authorized conservation district.
4. Clear, grub, and strip areas as necessary to construct improvements. Excess topsoil shall be placed on the "Topsoil/Spoil Stockpile" shown hereon. Immediately stabilize topsoil stockpile.
5. Rough grade site for installation of the dwelling, driveway, and stormwater management facilities. Take care to avoid unnecessary compaction of the infiltration facility bottom. Excavation shall take place from outside the limits of the infiltration facility. If compaction occurs, the infiltration basin bottom shall be scarified to loosen the soils prior to placement of the amended soils.
6. Backfill and bring site to necessary grade for installation of the dwelling. Place stone base for dwelling and driveway as soon as practicable. Construct dwelling, connect utilities, and complete associated grading.
7. Construct infiltration basin and install basin berm, outlet pipe, outlet structure, riprap outlet protection, and filter sock check dams.

   Take care to avoid unnecessary compaction of the infiltration area bottom. Excavation shall take place from outside the limits of the infiltration basin. If compaction occurs, the infiltration basin bottom shall be scarified to loosen the soils prior to placement of the amended soils.

8. Install storm sewer and install inlet protection as soon as practicable to prevent sediment laden runoff from entering the infiltration basin.
9. Fine grade any remaining areas as shown on the grading plan, install swales A,B, C, and D and erosion matting as depicted on the plans. Spread 6-in of topsoil on freshly graded areas. Final passes during fine grading shall be made at right angles to the slopes. Prepare the remainder of the disturbed area for permanent stabilization.
10. Install slope matting as indicated on the plan. Seedbed shall be prepared in accordance with accepted practices. Seed mixture shall be applied in accordance with the manufacturer's rates and instruction.
11. Remove any sediment from the basins and install amended soils and basin seeding.
12. Mulch all remaining disturbed areas and seeded areas with hay or straw at a minimum rate of three (3) tons per acre (or mulch as a part of hydroseeding).
13. Remove all temporary erosion and sediment controls once the site is completely stabilized (defined as a minimum uniform 70% perennial vegetative cover, with a density capable of resisting accelerated erosion and sedimentation in all areas tributary to the controls). All areas disturbed during this process shall be stabilized immediately through seeding and mulching.
14. The operator shall remove from the site, recycle or dispose of all building materials and wastes in accordance with the Department's Solid Waste Management Regulations at 25 PA Code 260.1 et seq., 271.1 et seq., and 287.1 et seq. The contractor shall not illegally bury dump or discharge any building material or wastes on or off the site.

G. TEMPORARY CONTROL MEASURES

1. Topsoil Stockpile

a. A stockpile shall be used to contain all stripped topsoil in a limited area in order to keep disturbance to a minimum.
b. Stockpiles shall be stabilized immediately in accordance with the temporary seeding specification contained hereon.
c. Stockpiles shall be located so that all swales can function as designed.
d. Stockpile heights must not exceed 35' in height. Side slopes shall be 2:1 or flatter.

2. Filter Sock

a. Filter sock shall be used to intercept sediment-laden runoff from small watersheds.
b. Filter sock must be installed at level grade.
c. Sediment must be removed when accumulations reach ½ the above ground height of sock.
d. All areas of concentrated flow and at all areas where the filter sock has been undercut due to excessive flows, rock filters shall be installed (see Temporary Control Measures, item 3.)

3. Rock Filter Outlets (Filter Sock Locations)

a. A gravel berm shall be provided where shown on the plan and at all locations of concentrated flows or where failures in the silt fence occur due to excessive sedimentation or concentrated flows.
b. Rock filters shall be constructed of AASHTO #67 and R-4 stone in accordance with the specified dimensions on the detail.
c. Rock filters will be removed when clogged with sediment. The stone shall be washed free of all sediment or new stone shall be used to rebuild the filter.

4. Interim Stabilization

a. Temporary seeding and mulching shall be applied where indicated to provide interim stabilization to exposed areas.
b. Temporary seeding/mulching shall be as applied as specified on the Seeding Schedule contained on the E&SPC Plan.
c. Any disturbed area on which activity has ceased and which will remain exposed must be stabilized immediately. During non-germinating periods, mulch must be applied at the recommended rates. Disturbed areas that are not at finished grade and will be re-disturbed within 1 year may be stabilized in accordance with the temporary seeding specification contained hereon. Disturbed areas that are at finished grade or will not be re-disturbed within 1 year must be stabilized in accordance with the permanent seeding specifications contained hereon.

5. Rock Construction Entrance

a. A stabilized pad of crushed stone (AASHTO #1) shall be located where construction traffic will be entering and leaving the site. The rock construction entrance is used to eliminate the tracking of flowing of sediment onto the existing cartway.

H. PERMANENT CONTROL MEASURES

1. Permanent Grass or Legume Cover

a. All disturbed areas that are not paved shall be permanently stabilized with grass to minimize erosion. All swales shall be permanently seeded as required in accordance with the seeding specification shown on the attached E&SPC Plan.
b. Permanent grass cover shall be applied as specified in accordance with the Seeding Schedule and Notes contained on the attached E&SPC Plan.

1. Mulch

a. Mulch shall be applied to all seeded areas to help establish a permanent grass cover and to prevent erosion on all areas permanently stabilized with seed.
b. Mulch shall be applied at a rate of 3 tons per acre. Mulch shall be anchored with wood cellulose fiber at 750 lbs/acre.

2. Sod

a. Sod shall be installed in areas where permanent stabilization with seed alone is difficult.
b. Sod materials and installation shall meet the approval of the Dauphin County Conservation District.
c. All permanent and temporary spillways are to be sodded to provide immediate erosion protection. Sod shall extend from the spillway to the top of the slope of the trap embankment.

3. Rip-Rap Outlet Protection

a. Rip-rap shall be used at all pipe outlets to reduce the outflow velocity and minimize erosion potential at the outlet pipe.
b. Rip-rap shall be installed in accordance with the dimensions and materials shown on the attached plan.

A. MAINTENANCE

1. The Applicant/or His Designee shall be responsible for maintaining all facilitates shown on this plan.
2. Until the site is stabilized, all erosion and sedimentation must be maintained properly. Maintenance must include inspections of all erosion and sedimentation control after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including clean-out, repair, replacement, regrading, reseeding, re-mulching, and re-netting, must be performed immediately.
3. Stockpiles must be stabilized immediately.
4. All sediment removed from sediment trapping devices shall be disposed within the site in a manner that will not cause erosion or sedimentation. All areas disturbed during this process will be mulched and permanently stabilized with seed.
5. Any permanently seeded area that becomes eroded or disturbed shall have the topsoil replaced, the grass re-sown and mulch reapplied or, at the discretion of the owner, sod installed.
6. Filter sock must be installed at level grade. Sediment must be removed when accumulations reach ½ the above ground height of the sock.
7. Any sock section that has been undermined or topped must be immediately replaced with a rock filter outlet. See rock filter outlet detail.
8. Stockpile heights must not exceed 35 feet. Stockpile slopes must be 2:1 or flatter.
9. Any disturbed area on which activity has ceased and which will remain exposed must be stabilized immediately. During non-germinating periods, mulch must be applied at the recommended rates. Disturbed areas which are not at finished grade and which will be re-disturbed within one (1) year may be stabilized in accordance with temporary seeding specifications. Disturbed areas which are either at finished grade or will not be re-disturbed within one (1) year must be stabilized in accordance with permanent seeding specifications.
10. After final site stabilization has been achieved (defined as a minimum uniform 70% perennial vegetative cover, with a density capable of resisting accelerated erosion and sedimentation in all areas tributary to the controls), temporary erosion and sedimentation controls must be removed. Areas disturbed during removal of the controls must be stabilized immediately.

B. FILL MATERIALS

If the site will need to have fill imported from an off-site location, the responsibility for performing environmental due diligence and the determination of clean fill will in most cases reside with the Operator. If the site will have excess fill that will need to be exported to an off-site location, the responsibility of clean fill determination and environmental due diligence rests on the applicant.

C. CLEAN FILL

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.

D. 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 a 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."

E. 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.

F. POTENTIAL POLLUTANT CAUSING MATERIALS

The site consists of Bedington soil, which has the potential to erode when disturbed. Standard erosion controls such as rock construction entrances, filter socks, rock filters, and temporary and final seeding will be utilized to minimize the potential for erosion.

G. E&S PLAN MINIMIZES SOIL COMPACTION

The project will compact fill only as needed to provide the necessary structural stability. It is not anticipated there will be any unnecessary compaction by construction equipment since the project is limited in size and construction equipment will generally to concentrated in areas of proposed driveways immediately adjacent to the proposed structures. Topsoil will be placed in accordance with industry standards and will not be overly compacted. The topsoil placement and stabilization will be the last steps of the project with limited potential for unwarranted compaction.

H. E&S PLAN UTILIZES OTHER MEASURES OR CONTROLS THAT PREVENT OF MINIMIZE GENERATION OF INCREASED STORMWATER RUNOFF

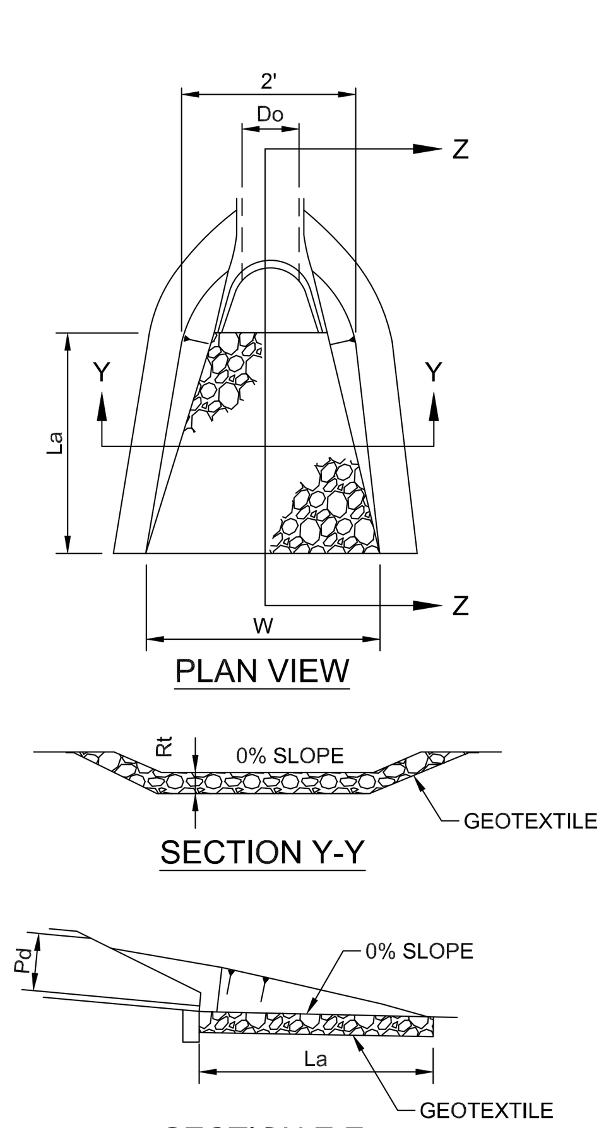
A stormwater management system is proposed to reduce peak rates of runoff and the volume of runoff. Disturbed areas will be restored to meadow/grass conditions similar to pre-development conditions.

I. ANALYSIS OF DOWNSTREAM CHANNEL

The site discharges off-site to an existing stream located north of the site. The runoff follows existing drainage paths. The existing drainage path is currently stable. No adverse impacts are expected as part of this development. The proposed stormwater management system proposes to reduce the peak flow rates for all storms and reduces the 2-year runoff volume to less than pre-development conditions. Therefore, the conveyance capacity of the downstream drainage path will be improved. The current drainage path is stable and expected to continue to be so in post-development conditions.

J. ANALYSIS OF DOWNSTREAM CHANNEL

No thermal impacts are expected from this project. The runoff is collected and conveyed to the infiltration basin via vegetated swales and sheet flow which allow the runoff to cool prior entering the basin. Once entering the basin, runoff will be detained and allowed to cool further prior to discharge.



NOTES:

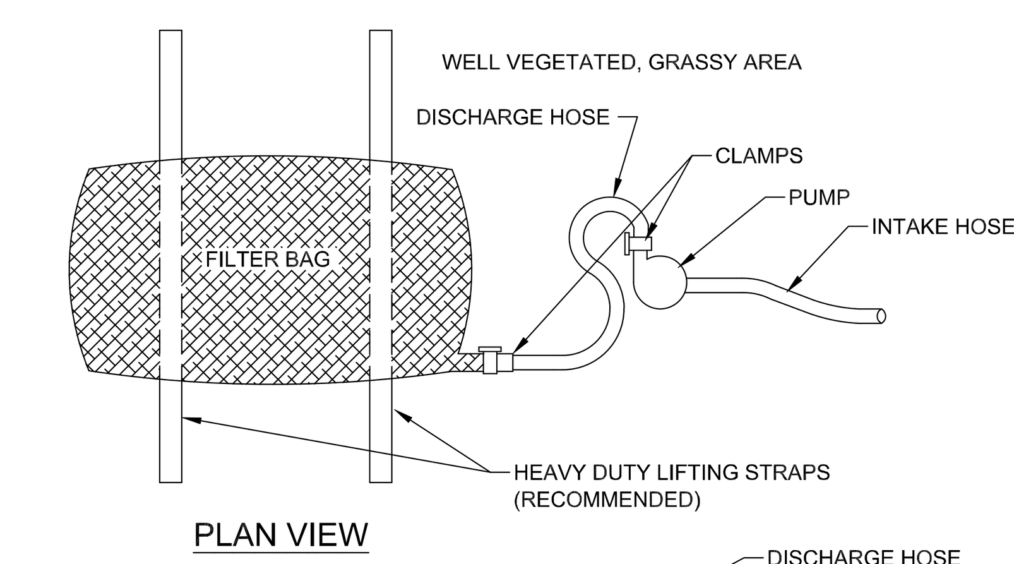
ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

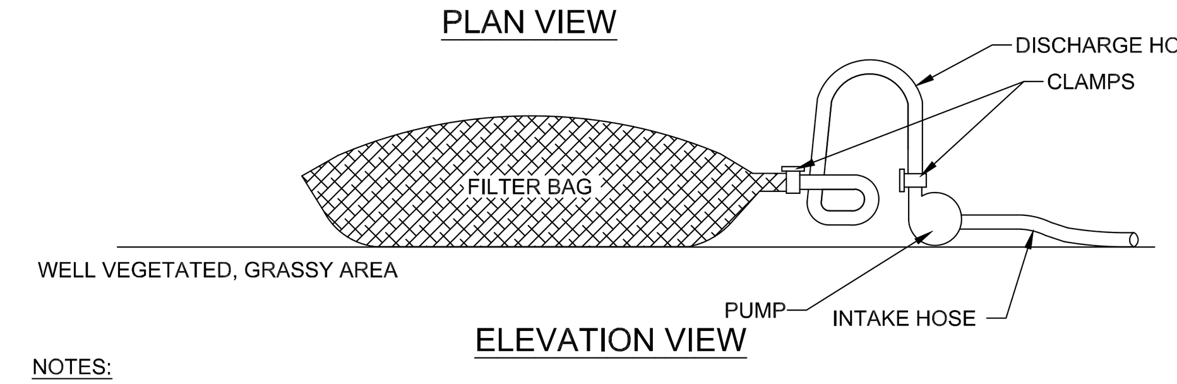
ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

OUTLET NO.	PIPE DIA., D_O (in)	TAILWATER CONDITION	L_a (ft)	W (ft)	Q (cfs)	RIPRAP (R-?)	DEPTH (ft)
FES-1	12	Min	8	11.0	0.80	3	1
FES-3	15	Min	8	11.8	7.70	4	1.5

STANDARD CONSTRUCTION DETAIL #9-1
RIPRAP APRON AT PIPE OUTLET WITH FLARED END SECTION OR ENDWALL

NOT TO SCALE





NOTES:

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

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

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

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

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.

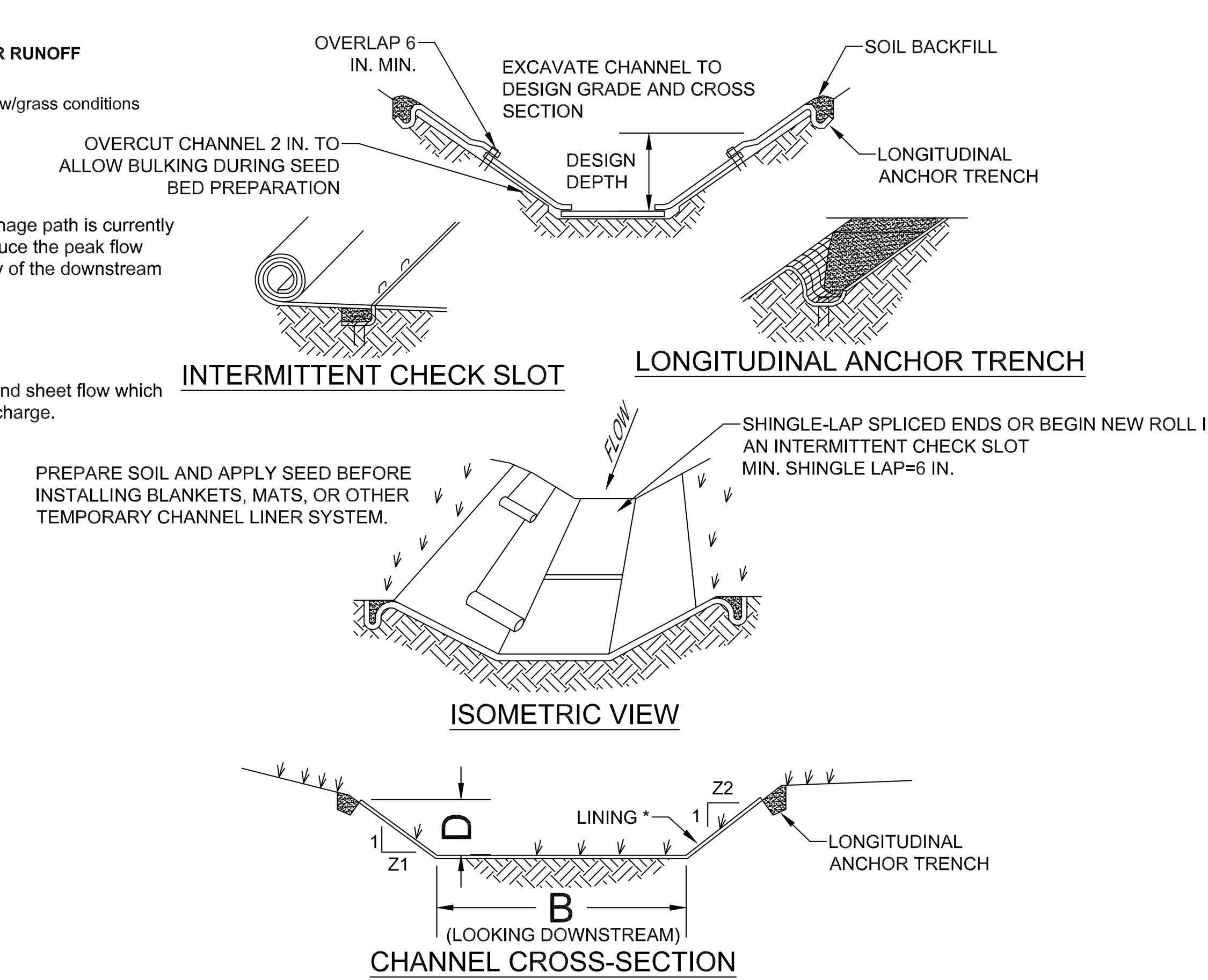
THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

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

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

STANDARD CONSTRUCTION DETAIL #3-16
PUMPED WATER FILTER BAG

NOT TO SCALE



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

CHANNEL	STATIONS	B (ft)	D (ft)	Z_1	Z_2	LINING	Staple Pattern
A	All	2	1	3	3	Grass/N.A.G. S75	D
B	All	2	1	3	3	Grass/N.A.G. S75	D
C	All	2	1.5	3	3	Grass/N.A.G. S75	D

NOTES:

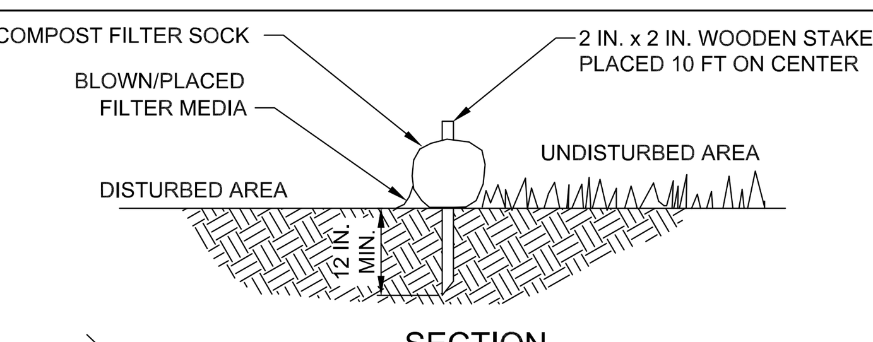
ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.

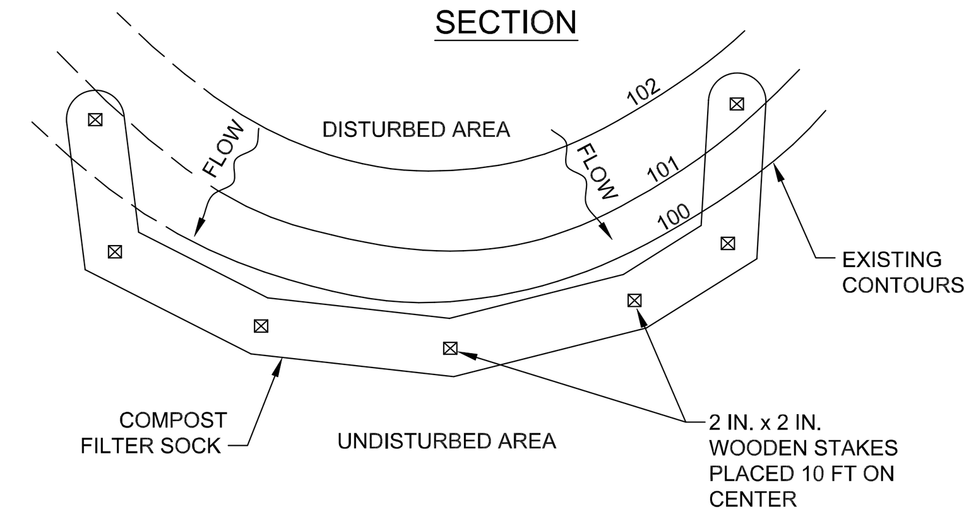
CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION.
SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. DAMAGED LINING SHALL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





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.

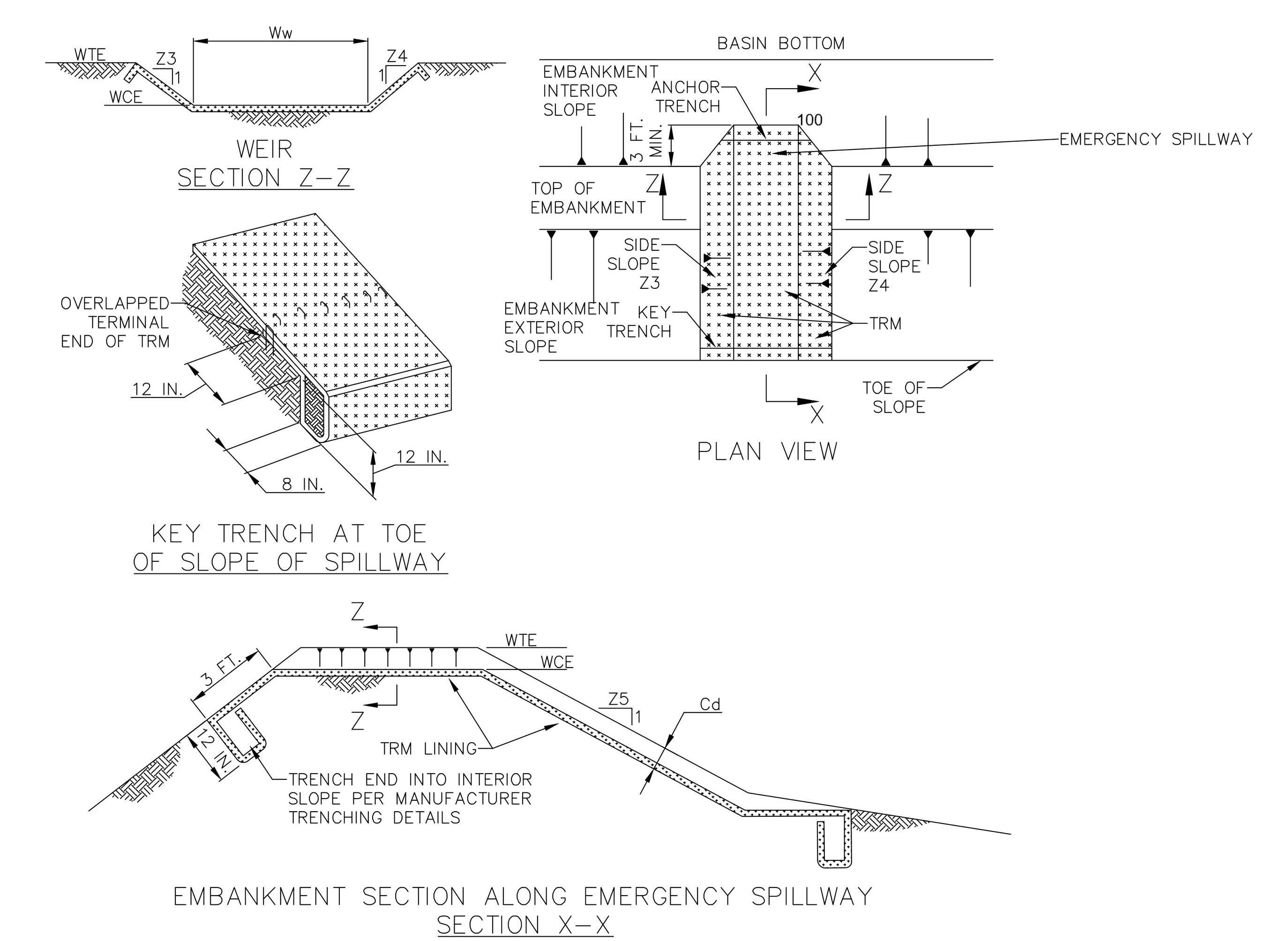
ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

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



BASIN NO.	Q100 (CFS)	Z3 (FT)	Z4 (FT)	Z5 (FT)	C	WIDTH Ww (FT)	FLOW HEIGHT (FT)	CREST ELEV WCE	TOP ELEV WTE	TRM TYPE	STAPLE PATTERN	FREEBOARD
1	2.79	3	3	3	3	25	0.11	661.35	662.5	SC250	E	1.04

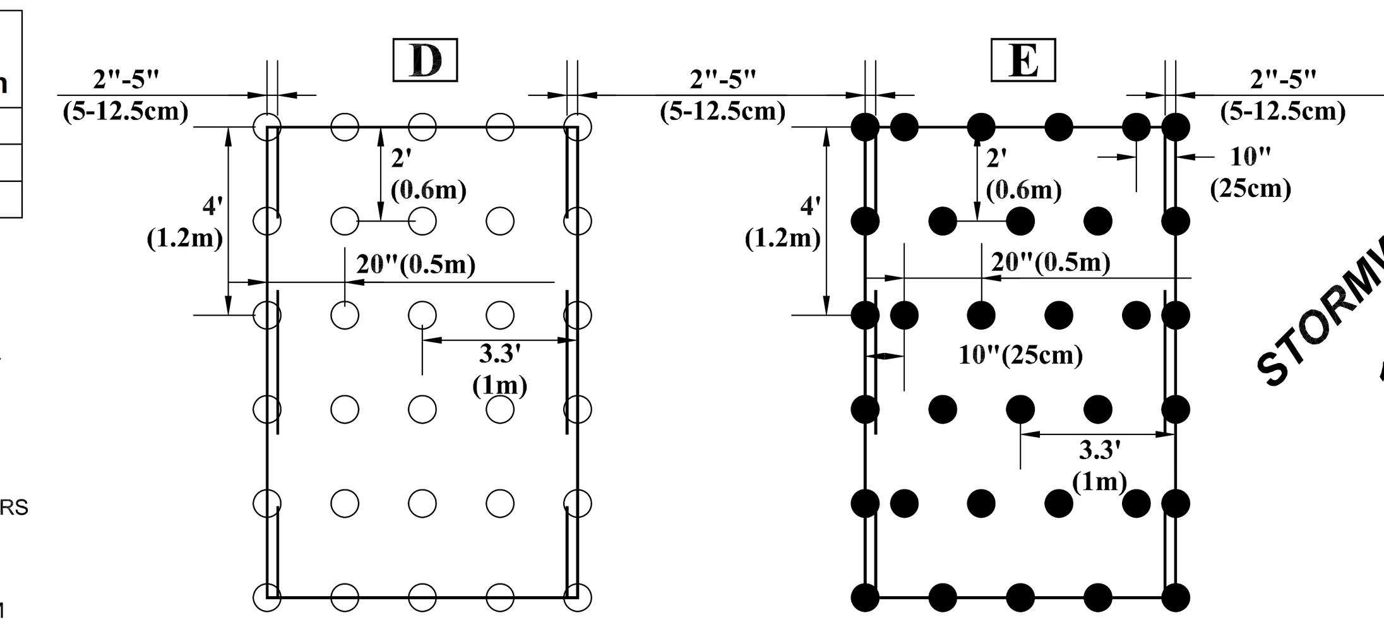
NOTES:

HEAVY EQUIPMENT SHALL NOT CROSS OVER SPILLWAY WITHOUT PRECAUTIONS TAKEN TO PROTECT TRM LINING.

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

EMERGENCY SPILLWAY WITH TRM LINING

NOT TO SCALE



3.4 Staples per SQ.YD.

3.75 Staples per SQ.YD.

STAPLE PATTERN FOR TRM LINING

STORMWATER MANAGEMENT PLAN
FOR
1111 KOCHENDERFER ROAD
NORTH LEBANON TOWNSHIP, LEBANON, PA

JUNE 29, 2023

CHRISLAND ENGINEERING
717-934-6513
602 Cornwall Road
Lebanon, PA 17042
717-934-6513
www.chrislandengineering.com

Erosion & Sediment Pollution Control Details

HO11.23.1

ES2

7 OF 7

REVISION	DATE	BY
PER SESI COMMENT LETTER DATED 7/20/23	7/17/23	JTW
PER SESI COMMENT LETTER DATED 7/20/23	8/30/23	JTW