

U.S. Army Corps
of Engineers
Baltimore District
PN-19-35

In Reply to Application Number
NAB-2019-00070-P24 (Black Run)

Public Notice

Comment Period: June 10, 2019 to July 10, 2019

THE PURPOSE OF THIS PUBLIC NOTICE IS TO SOLICIT COMMENTS FROM THE PUBLIC REGARDING THE WORK DESCRIBED BELOW. NO DECISION HAS BEEN MADE AS TO WHETHER OR NOT A PERMIT WILL BE ISSUED AT THIS TIME.

This District has received an application for a Department of the Army permit pursuant to Section 10 of the Rivers and Harbors Act of 1899 and/or Section 404 of the Clean Water Act (33. U.S.C. 1344) as described below:

APPLICANT:

Ms. Catherine Prince
Hawthorne SPE, LLC.
3605 Vartan Way, Suite 301
Harrisburg, Pennsylvania 17110

WATERWAY AND LOCATION OF THE PROPOSED WORK:

Black Run located in Susquehanna Township, Dauphin County, Pennsylvania, near the intersection of N. Progress Ave. and Linglestown Road.

PURPOSE AND PROPOSED WORK:

Hawthorne SPE, LLC Development Group is proposing a phased land development project named Susquehanna Union Green. Part of the land development would be a floodplain restoration for Black Run which runs through the 58 acre site. Along with the flood plain restoration, other anticipated development on the site include commercial/retail buildings, hotel, senior living, single family homes, walking trails and green space.

The floodplain restoration project would consist of removing 16,000 cubic yards of legacy sediment to create an approximate five acre floodplain area along Black Run and the construction of a new stream channel, approximately 2,837 linear feet in length, through the created floodplain area. Temporary road crossings would be established for construction vehicles to use during the project. Wood grade control and other large woody debris would be installed in the created stream channels to create fish habitat. The floodplain restoration work is proposing to result in the creation of 143,601 square feet of palustrine emergent wetlands. Four permanent crossings are proposed to be installed in the project area as part of development of the site including one timber pile pedestrian bridge; one Conspan Arch (Hawthorne Circle); and a Concrete Box Culvert and second wetland fill for road crossings associated with Garrison Avenue (two separate crossings for construction of the roadway).

All work is proposed to be completed in accordance with the attached plans (Enclosure).

Impacts Summary

The proposed infrastructure impacts (fills from roads, outfalls, bridges, utilities and embankments) would result in permanent stream impacts of 150 linear feet, temporary stream impacts of 22 linear feet, permanent wetland impacts of 2,752 square feet and temporary wetland impacts of 552 square feet. The timber pile pedestrian bridge would not result in permanent impacts to waters/wetlands, while the Elmwood Drive crossing would impact 42 linear feet of stream channel, and the crossing for Garrison Avenue would result in permanent impacts to 68 linear feet of existing stream channel.

The proposed floodplain and stream restoration work would result in permanent stream impacts of 2,434 linear feet and temporary stream impacts of 283 linear feet. The floodplain and stream restoration work would permanently impact 67,615 square feet of wetlands where legacy sediment is to be removed, re-connecting the wetlands to the historic elevation and groundwater hydrology.

Mitigation

The Black Run Floodplain Restoration Project would result in the enhancement and replacement of at least 0.08 acre of wetlands and 150 linear feet of stream channel. The applicant does not feel that compensatory mitigation is appropriate for this project due to the replacement and enhancement of the resources proposed by the restoration project.

All proposed work would be completed in accordance with the enclosed plan(s).

The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit, which reasonable may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors, which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are conservation, economic, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, and consideration of property ownership and in general, the needs and welfare of the people.

The Corps of Engineers is soliciting comments from the public; federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments provided will become part of the public record for this action. Comments are also used to determine the need for

a public hearing and to determine the overall public interest of the proposed activity. Written comments concerning the work described above related to the factors listed above or other pertinent factors must be received by the District Engineer, U.S. Army Corps of Engineers, Baltimore District, Ms. Brittany Seguin, 1631 South Atherton Street, Suite 101, State College, Pennsylvania 16801, within the comment period specified above.

ESSENTIAL FISH HABITAT: The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 04-267), requires all federal agencies to consult with the National Marine Fisheries Service on all actions, or proposed actions, permitted, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat. The Corps has determined this project will not affect any Essential Fish Habitat.

WATER QUALITY CERTIFICATION: The applicant is required to obtain a water quality certification in accordance with Section 401 of the Clean Water Act from the Pennsylvania Department of Environmental Protection. The Section 401 certifying agency has a statutory limit of one year from the date of this public notice to make its decision.

COASTAL ZONE MANAGEMENT PROGRAMS: Where applicable, the applicant has certified in this application that the proposed activity complies with and will be conducted in a manner consistent with the approved Coastal Zone Management Program. By this public notice, we are requesting the state concurrence or objection to the applicant's consistency statement. It should be noted that the Coastal Zone Management Program has a statutory limit of 6 months to make its consistency determination.

The applicant must obtain any state or local government permits which may be required.

A preliminary review of this application indicates that the proposed work will not affect federal listed threatened or endangered species or their critical habitat, pursuant to Section 7 of the Endangered Species Act, as amended. As the evaluation of this application continues, additional information may become available which could modify this preliminary determination.

Review of the latest published version of the National Register of Historic Places indicates that no registered properties listed as eligible for inclusion, therein, are located at the site of the proposed work. Currently unknown archeological, scientific, prehistoric, or historical data may be lost or destroyed by the work to be accomplished under the request permit.

The evaluation of the impact of this project on the public interest will include application of the guidelines promulgated by the Administrator, U.S. Environmental Protection Agency, under authority of Section 404 of the Clean Water Act.

Any person who has an interest which may be adversely affected by the issuance of this permit may request a public hearing. The request, which must be in writing, must be received by the District Engineer, U.S. Army Corps of Engineers, Baltimore District, Ms. Brittany Seguin, 1631 South Atherton Street, Suite 101, State College, Pennsylvania 16801, within the comment period as specified above to receive consideration. Also it must clearly set forth the interest which may be adversely affected by this activity and the manner in which the interest may be adversely affected.

It is requested that you communicate this information concerning the proposed work to any persons know by you to be interested and not being known to this office, who did not receive a copy of this notice.

If you have any questions concerning this matter, please contact Ms. Brittany Seguin, (717) 249-8822 or at Brittany.seguin@usace.army.mil.

Wade B. Chandler
Chief, Pennsylvania Section
Regulatory Branch

BLACK RUN FLOODPLAIN RESTORATION AT SUSQUEHANNA UNION GREEN PERMIT PLAN SET

SUSQUEHANNA TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA



SITE MAP

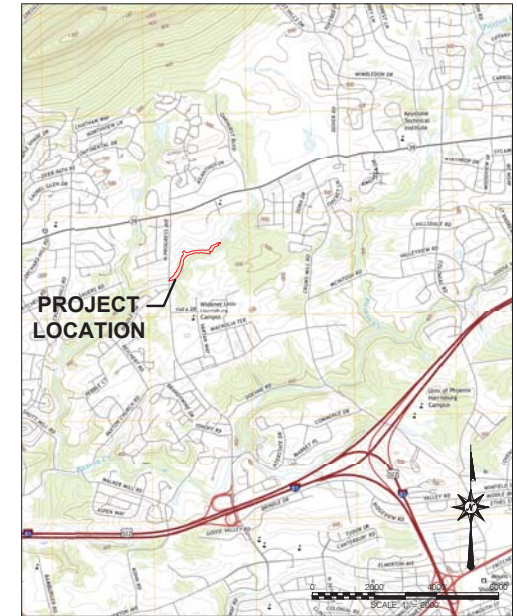
1" = 300'

CLIENT ADDRESS:

HAWTHORNE SPE, LLC.
3605 VARTAN WAY SUITE 301
HARRISBURG, PA 17110
PHONE: (717) 657-0100

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LOCATION MAP

1" = 2,000'



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land@landstudies.com

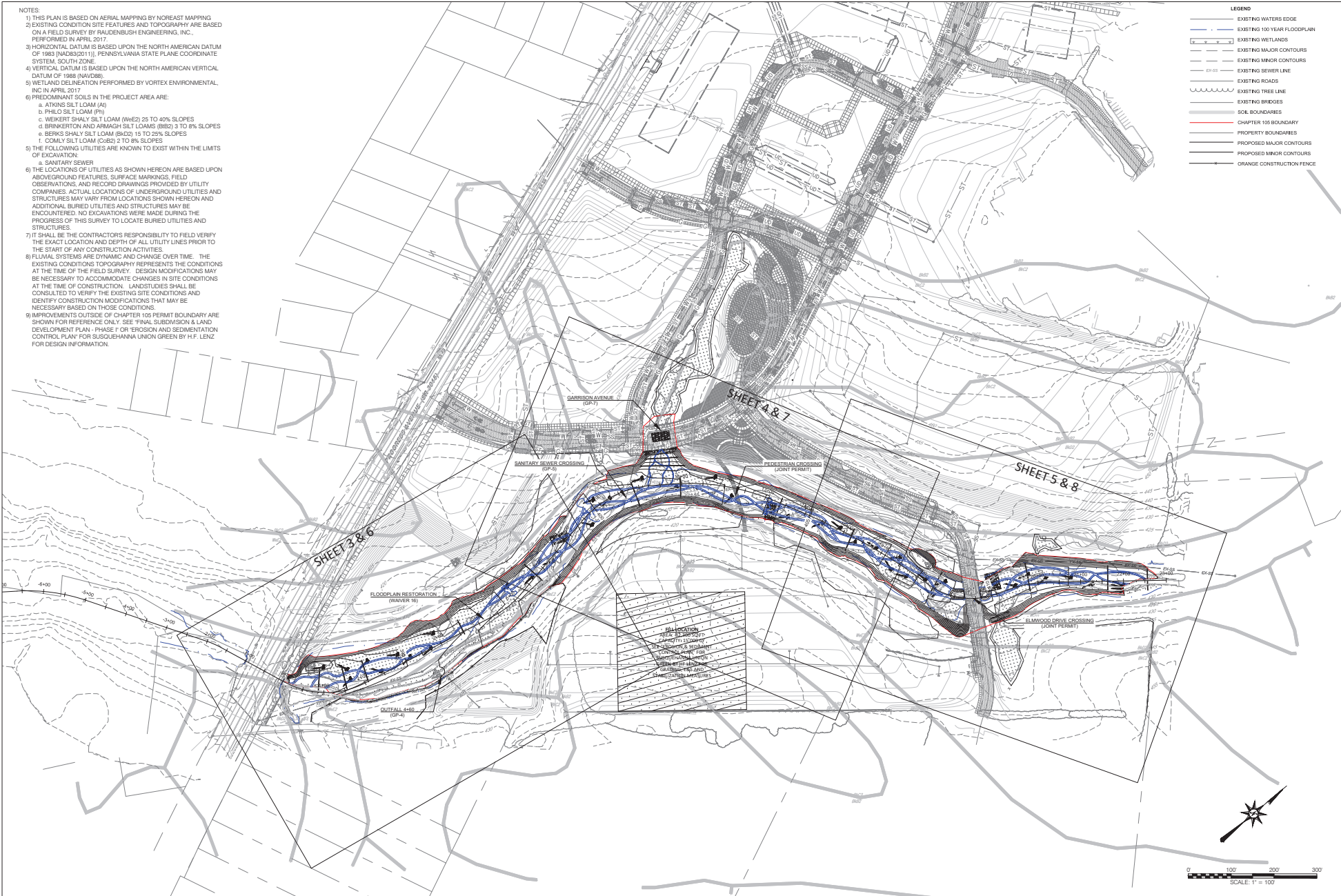
315 North Street | Lititz, PA 17543

PA 042324

NOTES

- THIS PLAN IS BASED ON AERIAL MAPPING BY NOREAST MAPPING
- EXISTING CONDITION SITE FEATURES AND TOPOGRAPHY ARE BASED ON A FIELD SURVEY BY HAUDENUSH ENGINEERING, INC., PERFORMED IN APRIL 2017.
- HORIZONTAL DATUM IS BASED UPON THE NORTH AMERICAN DATUM OF 1983 (NAD83/2011), PENNSYLVANIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE.
- VERTICAL DATUM IS BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- WETLAND DELINEATION PERFORMED BY VORTEX ENVIRONMENTAL, INC IN APRIL 2017
- PREDOMINANT SOILS IN THE PROJECT AREA ARE:
 - ATKINS SILT LOAM (A)
 - PHILO SILT LOAM (P)
 - WEIKERT SHALY SILT LOAM (WIE2) 25 TO 40% SLOPES
 - BRINKERTON AND ARMAGH SILT LOAMS (BB2) 3 TO 8% SLOPES
 - BERKS SHALY SILT LOAM (BUD2) 15 TO 25% SLOPES
 - COMLY SILT LOAM (CDB2) 2 TO 8% SLOPES
- THE FOLLOWING UTILITIES ARE KNOWN TO EXIST WITHIN THE LIMITS OF EXCAVATION:
 - SANITARY SEWER
- THE LOCATIONS OF UTILITIES AS SHOWN HEREON ARE BASED UPON ABOVEGROUND FEATURES, SURFACE MARKINGS, FIELD OBSERVATIONS, AND RECORD DRAWINGS PROVIDED BY UTILITY COMPANIES. ACTUAL LOCATIONS OF UNDERGROUND UTILITIES AND STRUCTURES MAY VARY FROM LOCATIONS SHOWN HEREON AND ADDITIONAL BURIED UTILITIES AND STRUCTURES MAY BE ENCOUNTERED. NO EXCAVATIONS WERE MADE DURING THE PROGRESS OF THIS SURVEY TO LOCATE BURIED UTILITIES AND STRUCTURES.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE EXACT LOCATION AND DEPTH OF ALL UTILITY LINES PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES.
- FLUMAL SYSTEMS ARE DYNAMIC AND CHANGE OVER TIME. THE EXISTING CONDITIONS TOPOGRAPHY REPRESENTS THE CONDITIONS AT THE TIME OF THE FIELD SURVEY. DESIGN MODIFICATIONS MAY BE NECESSARY TO ACCOMMODATE CHANGES IN SITE CONDITIONS AT THE TIME OF CONSTRUCTION. LANDSTUDIES SHALL BE CONSULTED TO VERIFY THE EXISTING SITE CONDITIONS AND IDENTIFY CONSTRUCTION MODIFICATIONS THAT MAY BE NECESSARY BASED ON THOSE CONDITIONS.
- IMPROVEMENTS OUTSIDE OF CHAPTER 105 PERMIT BOUNDARY ARE SHOWN FOR REFERENCE ONLY. SEE FINAL SUBDIVISION & LAND DEVELOPMENT PLAN - PHASE 1 OR EROSION AND SEDIMENTATION CONTROL PLAN FOR SUSQUEHANNA UNION GREEN BY H.F. LENZ FOR DESIGN INFORMATION.

- ## LEGEND
- EXISTING WATERS EDGE
 - EXISTING 100-YEAR FLOODPLAIN
 - EXISTING WETLANDS
 - EXISTING MAJOR CONTOURS
 - EXISTING MINOR CONTOURS
 - EXISTING SEWER LINE
 - EXISTING ROADS
 - EXISTING TREE LINE
 - EXISTING BRIDGES
 - SOIL BOUNDARIES
 - CHAPTER 105 BOUNDARY
 - PROPERTY BOUNDARIES
 - PROPOSED MAJOR CONTOURS
 - PROPOSED MINOR CONTOURS
 - ORANGE CONSTRUCTION FENCE



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PROJECT:
 SUSQUEHANNA UNION GREEN
 HAWTHORNE SPE, LLC.
 3003 VARTAN WAY SUITE 101
 HARRISBURG PA 17110

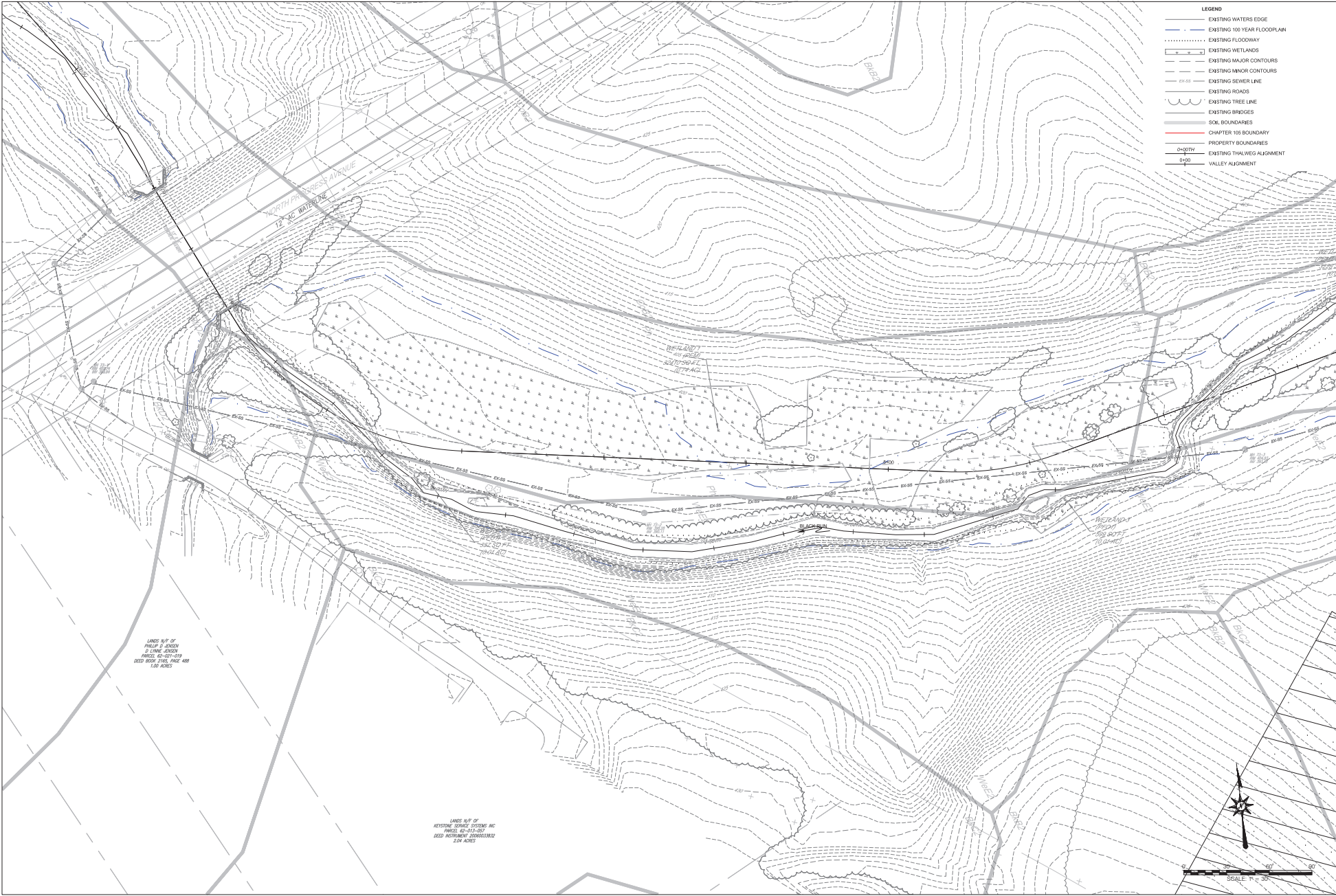
KEY MAP
 PERMIT PLAN SET
 BLACK RUN FLOODPLAIN RESTORATION
 SUSQUEHANNA TOWNSHIP
 DAUPHIN COUNTY, PENNSYLVANIA

REVISIONS

NO.	DATE	DESCRIPTION
1	11/8/2018	ISSUED FOR PERMIT
2	11/8/2018	ISSUED FOR PERMIT
3	11/8/2018	ISSUED FOR PERMIT
4	11/8/2018	ISSUED FOR PERMIT
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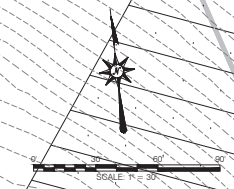
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 DRAWN BY:
 JS
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 BE
 DATE:
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 SCALE:
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 KEY MAP

SHEET NUMBER:
2
 OF 15



LANDS N/P OF
HARRIS & SONS
D LIME LENS
PAGES 42-57-519
DEED BOOK 2165, PAGE 488
1.88 ACRES

LANDS N/P OF
KEYSTONE SERVICE SYSTEMS INC
PAGES 40-41-42-43
DEED INSTRUMENT RECORDED
5.24 ACRES



- LEGEND
- EXISTING WATERS EDGE
 - EXISTING 100 YEAR FLOODPLAIN
 - EXISTING FLOODWAY
 - EXISTING WETLANDS
 - EXISTING MAJOR CONTOURS
 - EXISTING MINOR CONTOURS
 - EXISTING SEWER LINE
 - EXISTING ROADS
 - EXISTING TREE LINE
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 - PROPERTY BOUNDARIES
 - EXISTING THALWEG ALIGNMENT
 - VALLEY ALIGNMENT

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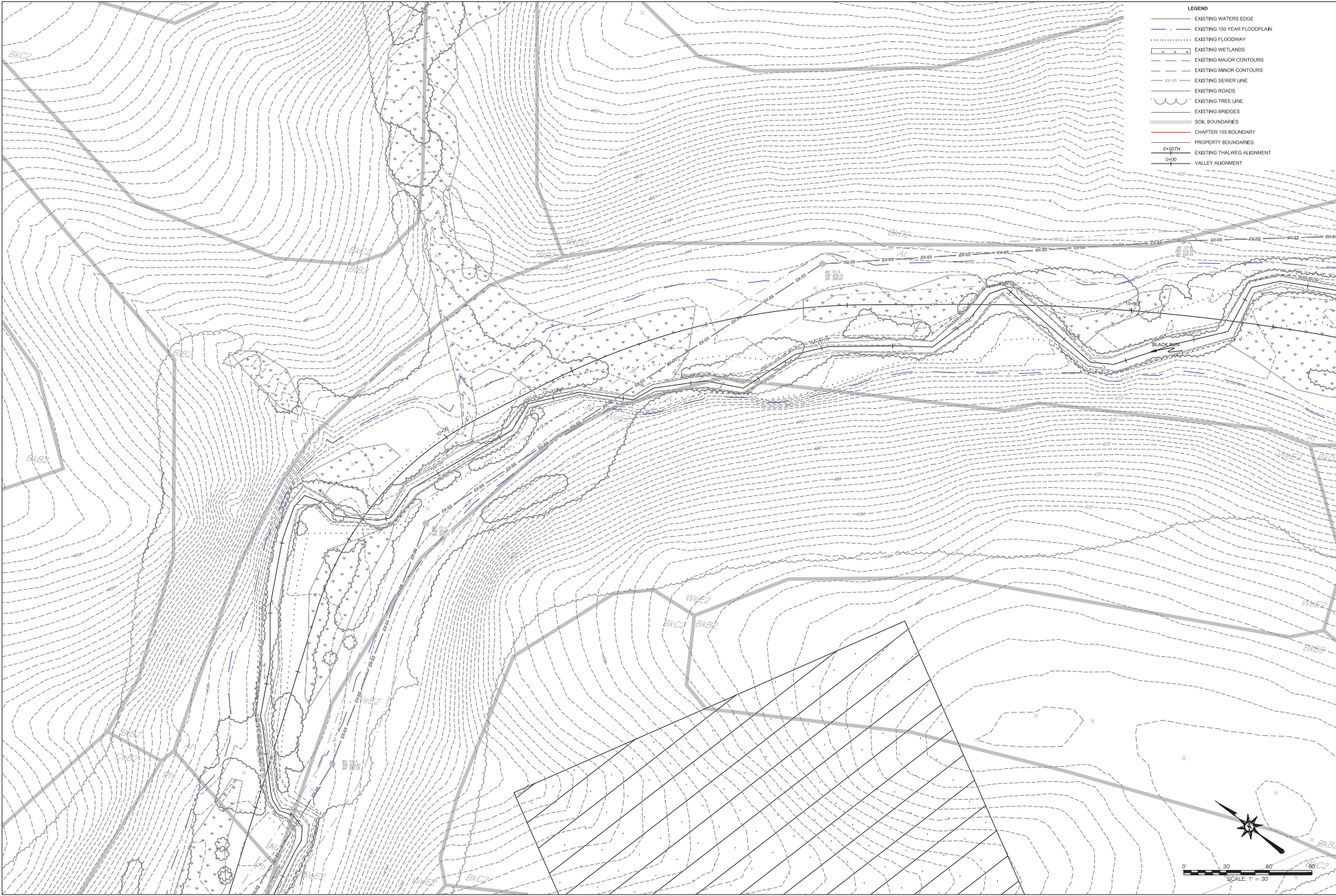
SUSQUEHANNA UNION GREEN
HAWTHORNE SPE, LLC
3003 WARTON WAY SUITE 301
HARRISBURG PA 17110

EXISTING CONDITIONS
PERMIT PLAN SET
BLACK RUN FLOODPLAIN RESTORATION
SUSQUEHANNA TOWNSHIP
DAUPHIN COUNTY, PENNSYLVANIA

SHEET TITLE:

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EXISTING CONDITIONS
SHEET NUMBER: 3 OF 15



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PROJECT:

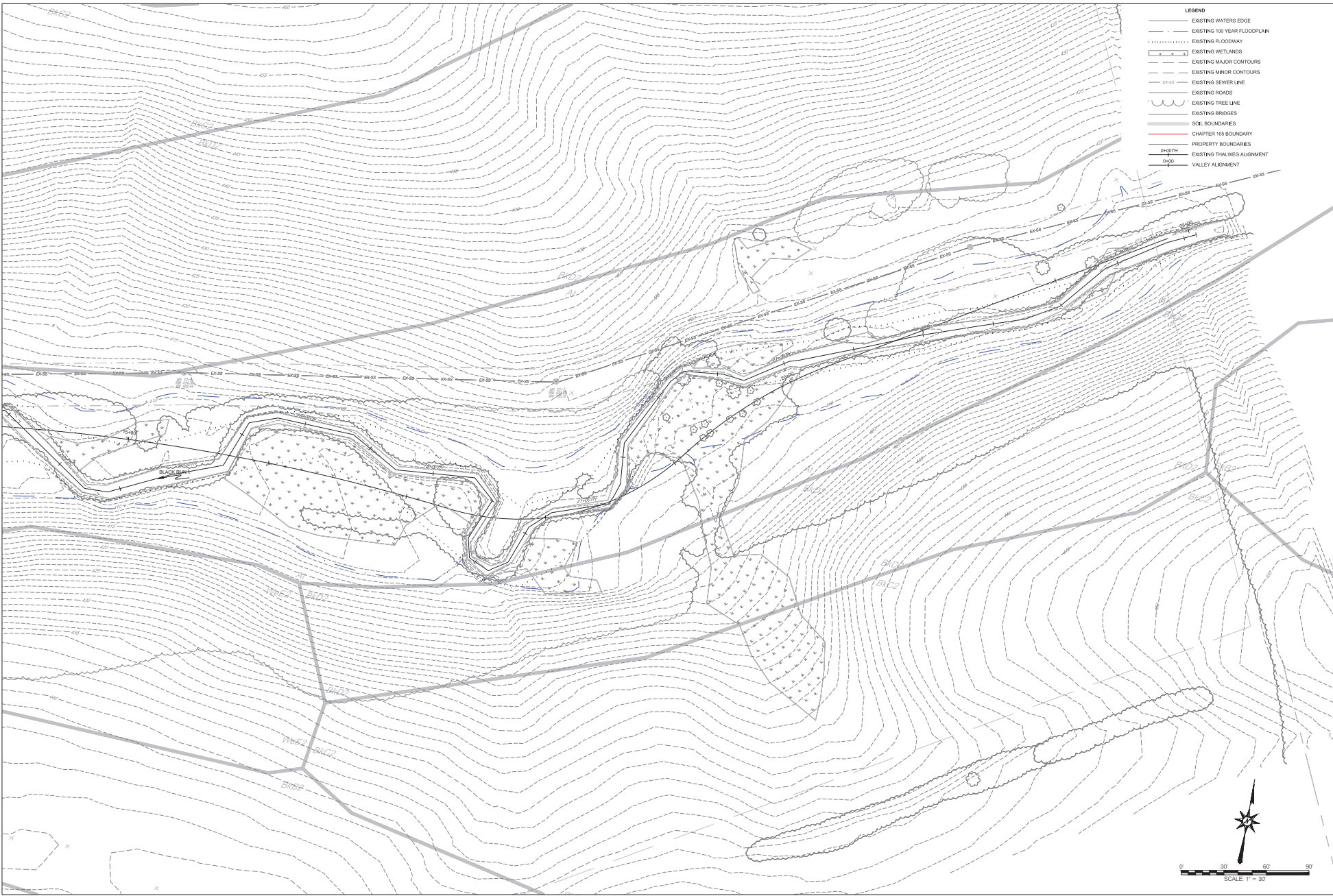
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HAWTHORNE SPE, LLC.
3003 VARTAN WAY SUITE 101
HARRISBURG PA 17110

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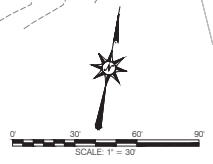
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BLACK RUN FLOODPLAIN RESTORATION
SUSQUEHANNA TOWNSHIP
DAUPHIN COUNTY, PENNSYLVANIA

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DATE: 11/8/2018
SCALE: 1" = 30'
EXISTING CONDITIONS
SHEET NUMBER: 4
OF 15



- LEGEND**
- EXISTING WATERS EDGE
 - EXISTING 100 YEAR FLOODPLAIN
 - EXISTING FLOODWAY
 - EXISTING WETLANDS
 - EXISTING MAJOR CONTOURS
 - EXISTING MINOR CONTOURS
 - EXISTING SEWER LINE
 - EXISTING ROADS
 - EXISTING TREE LINE
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 - SOIL BOUNDARIES
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 - EXISTING THALWEG ALIGNMENT
 - VALLEY ALIGNMENT



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PROJECT:

SUSQUEHANNA UNDER GREEN
HAWTHORNE SPE, LLC.
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HARRISBURG PA 17110

SHEET TITLE:

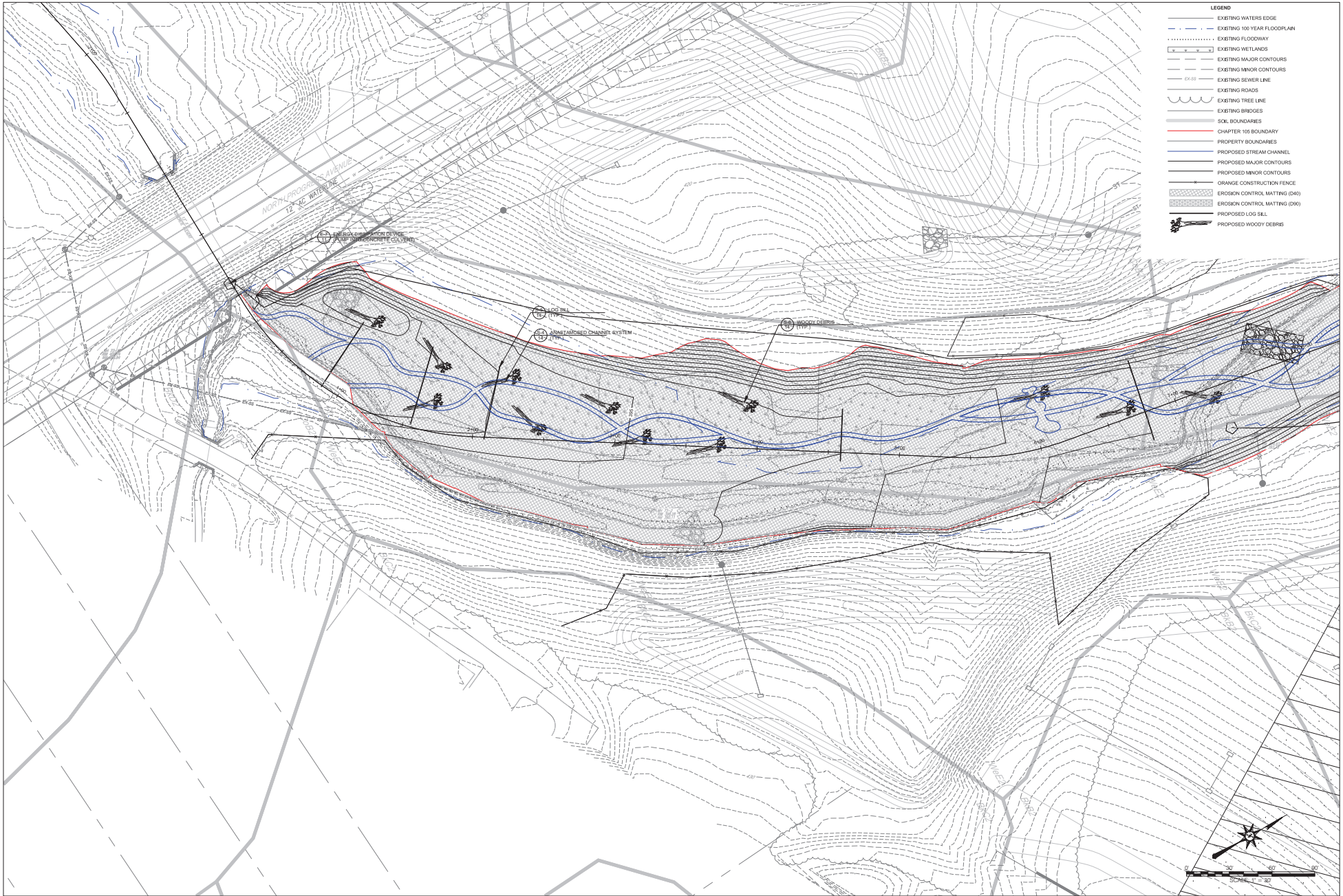
**EXISTING CONDITIONS
PERMIT PLAN SET**
BLACK RUN FLOODPLAIN RESTORATION
SUSQUEHANNA TOWNSHIP
DAUPHIN COUNTY, PENNSYLVANIA

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PROJECT NUMBER: D-1137.2-18
DESIGNED BY: JS
DATE: 11/8/2018
SCALE: 1" = 30'
EXISTING CONDITIONS

SHEET NUMBER:

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OF 15



- LEGEND**
- EXISTING WATERS EDGE
 - EXISTING 100 YEAR FLOODPLAIN
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 - PROPOSED MINOR CONTOURS
 - ORANGE CONSTRUCTION FENCE
 - EROSION CONTROL MATTING (D40)
 - EROSION CONTROL MATTING (D90)
 - PROPOSED LOG SILL
 - PROPOSED WOODY DEBRIS

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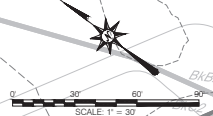
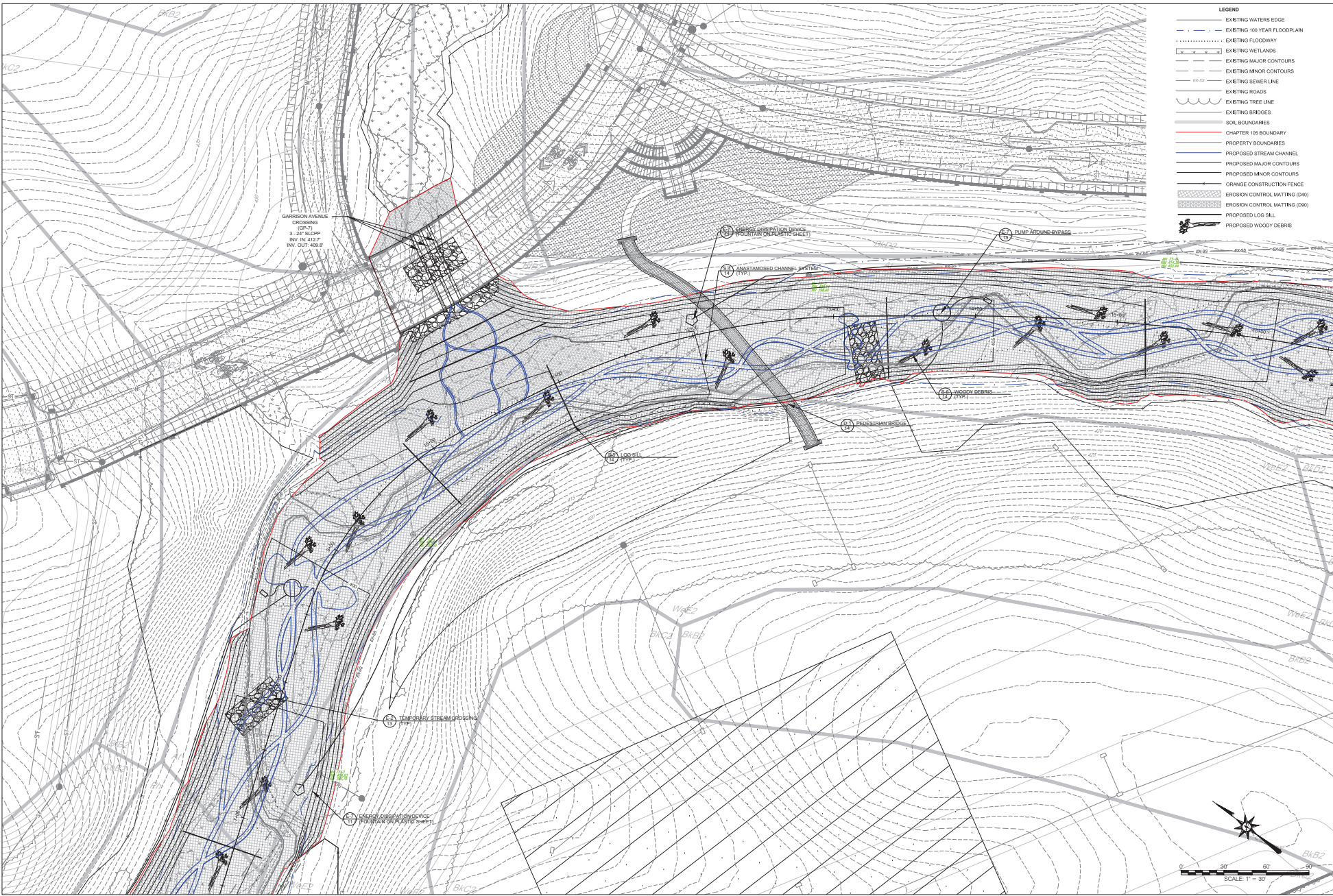
**E&S AND GRADING PLAN
PERMIT PLAN SET
BLACK RUN FLOODPLAIN RESTORATION**
SUSQUEHANNA TOWNSHIP
DAUPHIN COUNTY, PENNSYLVANIA

SHEET TITLE:

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PROJECT NUMBER: D-1137.2-18
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SCALE: 1" = 30'
E&S & GRADING PLAN

SHEET NUMBER:
6
OF 15



- LEGEND**
- EXISTING WATERS EDGE
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 - PROPOSED WOODY DEBRIS

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SHEET TITLE:

E&S AND GRADING PLAN SET
PERMIT PLAN SET
BLACK RUN FLOODPLAIN RESTORATION
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DAUPHIN COUNTY, PENNSYLVANIA

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PROJECT NUMBER: D-1137.2-18
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CHECKED BY: BE
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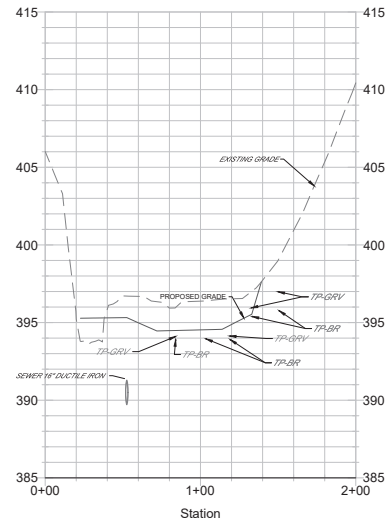
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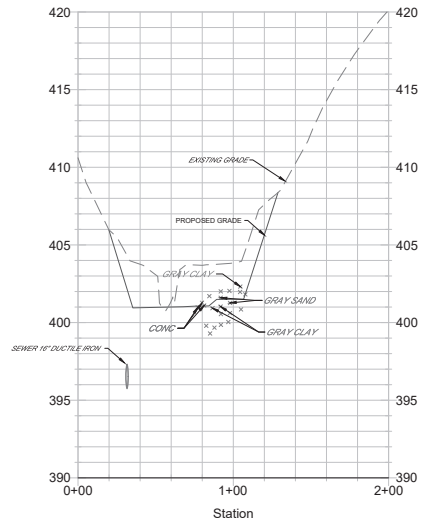
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PROJECT NUMBER:
 D-1137.2-18
 DRAWN BY:
 JS
 CHECKED BY:
 BE
 DATE:
 11/8/2018
 SCALE:
 1" = 40'
 CROSS SECTIONS

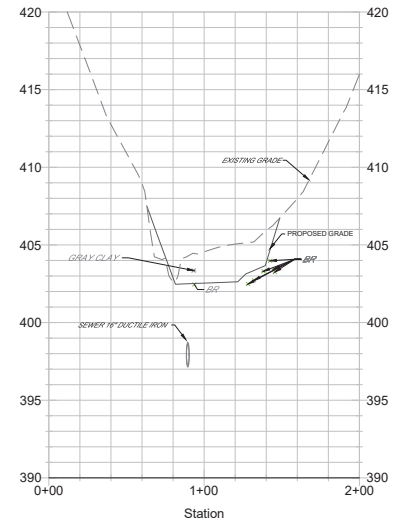
Valley Cross Section 2+45



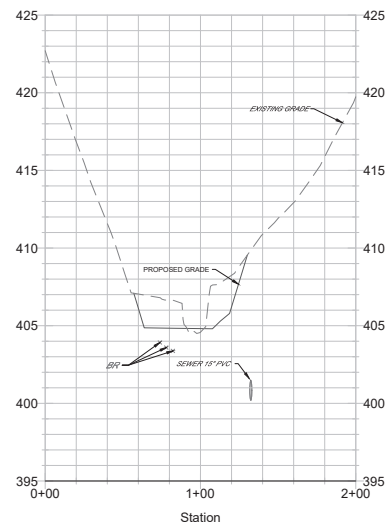
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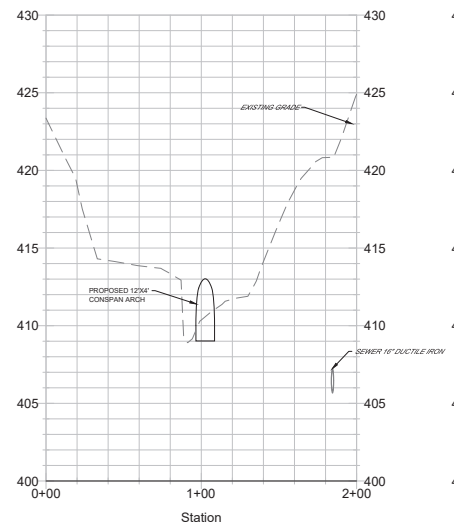
Valley Cross Section 11+55



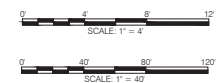
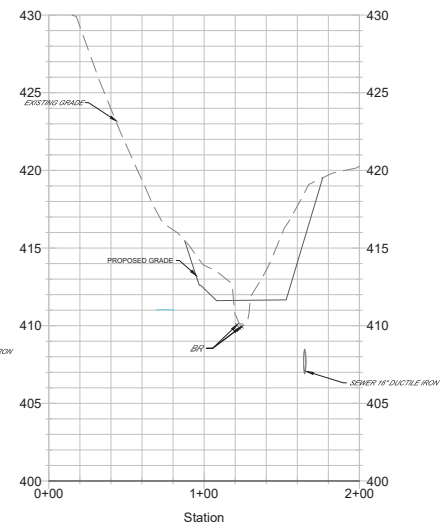
Valley Cross Section 13+95

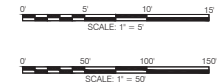
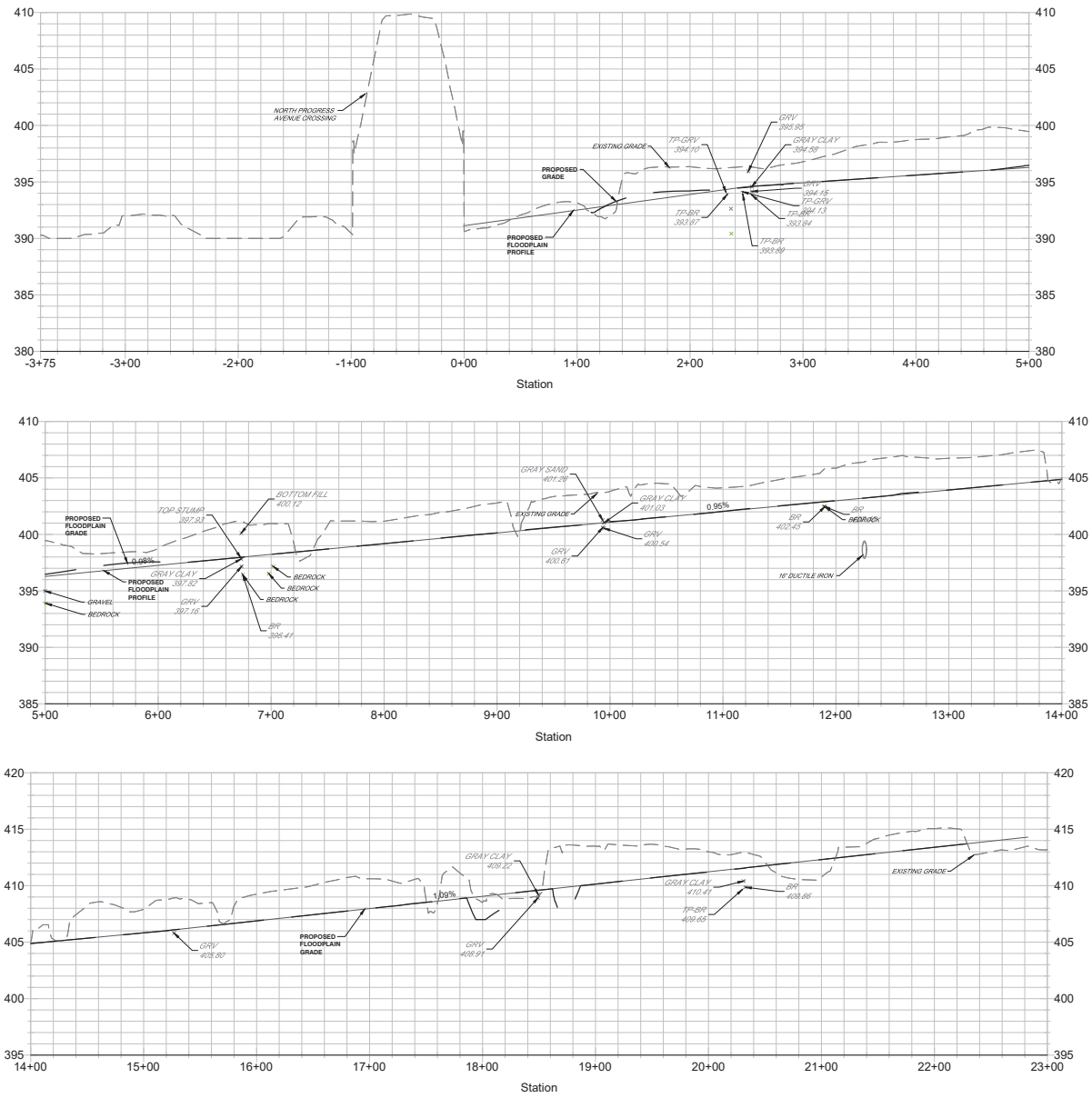


Valley Cross Section 18+45



Valley Cross Section 20+35





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PROJECT:
BLACK RUN FLOODPLAIN RESTORATION
HAWTHORNE SPE, LLC.
3603 VARTAN WAY SUITE 101
HARRISBURG PA 17110

SHEET TITLE:
VALLEY PROFILE
PERMIT PLAN SET
BLACK RUN FLOODPLAIN RESTORATION
SUSQUEHANNA TOWNSHIP
DAUPHIN COUNTY, PENNSYLVANIA

REVISIONS		
NO.	DATE	DESCRIPTION
1	11/08/18	T&P COMMENTS
2	12/05/18	PERMIT SLUMP
3	---	---
4	---	---
5	---	---
6	---	---
7	---	---

PROJECT NUMBER:
D-1137.2-18
DESIGNED BY:
JS
BE
DATE:
11/8/2018
SCALE:
AS NOTED
PROFILE SHEET

SHEET NUMBER
10
OF 15

EROSION AND SEDIMENT CONTROL PLAN NOTES

- ALL EARTH DISTURBANCE ACTIVITIES 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.
- 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 LANDSCAPER, APPROPRIATE MUNICIPAL OFFICIALS, A REPRESENTATIVE FROM LANDTUSSES INC., THE E&S PLAN PREPARER AND A REPRESENTATIVE FROM PADEP TO AN ON-SITE PRECONSTRUCTION MEETING.
- AT LEAST 1 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.
- 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 BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
- AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
- 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.
- AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS UNLESS VIA A STABILIZED CONSTRUCTION ENTRANCE OR STABILIZED PARKING LOTS.
- TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE FINAL SUBDIVISION & LAND DEVELOPMENT PLAN - PHASE 1 FOR SUBURGHANNA UNION GREEN BY H.F. LANE 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.
- STREAM AND FLOODPLAIN GRADING AND STABILIZATION SHALL BE COMPLETED IN PORTIONS ADJACENT TO A DISTURBANCE ZONE ESTABLISHED AT THE BEGINNING OF EACH WORK DAY TO MINIMIZE THE AMOUNT OF TOTAL DISTURBANCE. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 48 HOURS UNLESS RAIN IS FORECASTED, IN WHICH CASE DISTURBED AREAS SHALL BE STABILIZED BY THE END OF THE WORK DAY.
- STREAM AND FLOODPLAIN EXCAVATION SHALL BE SEQUENCED IN A MANNER THAT WORK WILL BE COMPLETED IN THE DRY AND TIME SPENT IN ACTIVE FLOW SHALL BE MINIMIZED TO THE GREATEST EXTENT POSSIBLE. ALL FLOW DIVERSIONS SHALL INTRODUCE CLEAN WATER INTO NEWLY CONSTRUCTED AREAS SLOWLY, AND INSTREAM WORK SHALL OCCUR ONLY DURING LOW FLOW CONDITIONS. SOME AREAS MAY NEED TO BE Dewatered DURING CONSTRUCTION USING PUMPS IN ADDITION TO THE PUMP AROUND BYPASS.
- EXCAVATED MATERIAL SHALL BE TEMPORARILY STOCKPILED WITHIN THE PROPOSED LIMIT OF DISTURBANCE, BUT NOT IN THE FLOODPLAIN AND USED FOR FILL AS REQUIRED. ANY REMAINING EXCAVATED MATERIAL WILL BE STOCKPILED AT AN APPROVED LOCATION ON SITE AND STABILIZED WITH SEED AND MULCH WITH SILT FENCE OR FILTER ROLL STOCK ON THE DOWNSTREAM SIDE. ALL STOCKPILES MUST BE OUTSIDE OF THE 100 YEAR FLOODPLAIN AND OUTSIDE OF PROTECTED AREAS INDICATED ON THE SUBURGHANNA UNION GREEN DEMOLITION PLAN BY H.F. LANE.
- TOPSOIL SHALL NOT BE EXCAVATED FROM AREAS BEYOND THE LIMIT OF EACH DAY'S DISTURBANCE ZONE. EXCAVATED TOPSOIL SHALL BE STOCKPILED SEPARATE FROM OTHER EXCAVATED MATERIAL WITHIN TEMPORARY STOCKPILE AREAS. A 4" THICK LAYER OF TOPSOIL SHALL BE SPIGDED THROUGHOUT THE PROPOSED FLOODPLAIN AREA TO ACHIEVE FINAL GRADE. UNUSUED TOPSOIL WILL BE DESTROYED BY STOCKPILING ON SITE AND USED TO IMPROVE E&S PLAN. IF IT IS DETERMINED BY THE DESIGN ENGINEER THAT THE EXISTING SOIL AT THE PROPOSED FLOODPLAIN ELEVATION IS AN ACCEPTABLE GROWING MEDIUM, THEN THE APPLICATION OF TOPSOIL MAY NOT BE NECESSARY.
- ALL CONSTRUCTION TRAFFIC MUST ENTER AND EXIT THE SITE VIA THE ACCESS POINTS DESIGNATED ON THE FINAL SUBDIVISION & LAND DEVELOPMENT PLAN - PHASE 1 FOR SUBURGHANNA UNION GREEN. ALL SEGMENT OF SEDIMENT CONTROL EQUIPMENT CALLED IN BY THE DESIGNER MUST BE INSTALLED TO DEPOSIT ON THE ROADWAY. THE SEDIMENT MUST BE IMMEDIATELY CLEANED UP (NOT WASHED OFF WITH WATER) AND A ROCK CONSTRUCTION ENTRANCE MUST BE INSTALLED TO AVOID FURTHER SEDIMENT MIGRATION FROM THE CONSTRUCTION SITE.
- IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMMEDIATELY APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE CENTRAL OFFICE OF THE DEPARTMENT.
- 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 P.S. CODE 2601 ET SEQ., 27 P.S. AND 28 P.S. ET SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
- ALL OFF-SITE INLET AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM PF-601 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.
- TEMPORARY BYPASS PUMP AROUND SYSTEMS SHALL BE USED TO DIVERT EXISTING STREAM FLOW AROUND THE AREA. IF A DEEP POOL IS NOT AVAILABLE TO DRAFT WATER FROM A SUCCESSFUL PUMP AROUND DEPLOYMENT MAY REQUIRE THE INSTALLATION OF A TEMPORARY COFFER DAM. PUMPING OF CLEAN WATER MAY BE DISCHARGED DIRECTLY TO OTHER CLEAN WATER TO THE ENERGY OF THE DISCHARGED WATER IS DISPERSED BY USING AN ENERGY DISSIPATION DEVICE (SUCH AS A FOUNTAIN OR OTHER DEVICE). PUMPING OF TURBID WATER MUST BE PUMPED THROUGH A PUMPED WATER FILTER BAG THAT IS DEPLOYED ON A WELL VEGETATED AREA IN ACCORDANCE WITH DETAIL E&S1 INTO A SEDIMENT BARN OR THROUGH SPRAY IRRIGATION IRRIGATION WATER SEEDS ARE PROTECTED WITH EROSION CONTROL MATTING. IRRIGATION MEASURES MUST BE MONITORED TO ENSURE THAT SEDIMENT LADEN WATER DOES NOT ENTER THE WATERWAY.
- 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 RAINFALL EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN-UP, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REINFORCING AND REMEDY MUST BE PERFORMED IMMEDIATELY IF THE E&S BMPs FAIL TO PERFORM AS EXPECTED. REPLACEMENT BMPs, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
- 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.
- SEDIMENT TRACKS ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED OF IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEEPED INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
- ALL SEDIMENT REMOVED FROM BMPs SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
- AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARPED TO A MINIMUM DEPTH OF 3 TO 5 INCHES - 8 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 DITCHES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
- ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED RISK FACTORS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
- ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
- FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOIL, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
- FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
- FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
- SEEP OR SPRINGS ENCOUNTERED DURING CONSTRUCTION OF THE PROPOSED FLOODPLAIN SHALL BE INCORPORATED INTO THE GRADING OF WETLAND FEATURES AT THE DIRECTION OF THE DESIGN ENGINEER.
- ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDING 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.
- 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.
- 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 FLOODS DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
- E&S BMPs SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TREBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE DEPARTMENT.
- AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED (70% VEGETATIVE COVER), 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.
- UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT PADEP TO SCHEDULE A FINAL INSPECTION.
- 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.
- IF BEDROCK IS ENCOUNTERED DURING EXCAVATION, WORK IS TO PROCEED AROUND THE ROCK. BEDROCK IS NOT TO BE BLASTED, HOE-RAMMED, JACKHAMMERED OR OTHERWISE DISTURBED UNTIL THE PROJECT DESIGNER IS CONSULTED. ADJUSTMENT OF CHANNEL ALIGNMENT MAY BE NECESSARY AT THE DIRECTION OF THE PROJECT DESIGNER.
- THE DESIGNER (OR PARTY DESIGNATED BY THE DESIGNER) MUST BE ON SITE DURING CONSTRUCTION OF STREAM OR FLOODPLAIN TO ENSURE THE HYDRIC SOIL LAYER ELEVATION IS ACHIEVED. FINAL FLOODPLAIN ELEVATIONS MAY BE ADJUSTED AN AVERAGE OF 0.5' HIGHER OR LOWER THAN THE DESIGN ELEVATION IN ORDER TO INTERFACE WITH THE HISTORIC HYDRIC SOIL LAYER. FINAL GRADE MUST BE SCARPED WITH A TOOTHED TRACKHOE BACKDO TO BREAK UP RESIDUAL AERIAL, SURFACE COMPACTION, AND LARGE SOIL CLODS PRIOR TO SEEDING AND MATTING.
- EXCAVATION TRAFFIC MUST BE LIMITED AT THE PROPOSED FLOODPLAIN ELEVATION. MATERIAL IS TO BE REMOVED WITH A TRACKHOE FROM EXISTING GRADE. LOW GROUND PRESSURE EQUIPMENT MAY BE USED IN THE FLOODPLAIN BOTTOM IF APPROVED BY THE DESIGNER AND A TRACKHOE IS LIMITED TO ONE PASS. FLOODPLAIN MUST BE RE-SCARPED WITH A TRACKHOE IF TRACK MARKS ARE PRESENT.

CONSTRUCTION SEQUENCE

- ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED UNLESS OTHERWISE STATED. THE SIZE, LOCATION AND ORIENTATION OF WETLAND POCKETS AND EROSION CONTROL STRUCTURES SHALL BE DETERMINED BY THE DESIGN ENGINEER BASED ON THE DESIGN INFORMATION PROVIDED. THE DESIGN ENGINEER 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.
- 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 LANDSCAPER, APPROPRIATE MUNICIPAL OFFICIALS, A REPRESENTATIVE FROM LANDTUSSES INC., THE E&S PLAN PREPARER AND A REPRESENTATIVE FROM PADEP TO AN ON-SITE PRECONSTRUCTION MEETING.
- AT LEAST 1 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.
- 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 BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
- AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
- 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.
- AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS UNLESS VIA A STABILIZED CONSTRUCTION ENTRANCE OR STABILIZED PARKING LOTS.
- TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE FINAL SUBDIVISION & LAND DEVELOPMENT PLAN - PHASE 1 FOR SUBURGHANNA UNION GREEN BY H.F. LANE. INITIAL FILTER SOCKETS, FENCE AND ROCK CONSTRUCTION ENTRANCES. FILTER SOCKETS, FENCE MUST BE INSTALLED DOWNHILL OF ANY DISTURBED AREA AT THE FILL LOCATIONS. STRIP TOPSOIL FROM FILL LOCATIONS AND STOCKPILE FOR REDISTRIBUTION ON THE FILL AREAS.
- INSTALL TEMPORARY STREAM CROSSINGS.
- PROJECT DESIGNER MUST FLAG SUITABLE TREES TO BE LEFT FOR LIVE STAKE MATERIAL AND/OR TRANSPLANTING TO THE PROPOSED FLOODPLAIN AS WELL AS TREES SUITABLE FOR LOGS BILLS AND ROOT WADS. CLEAR AND GRUB SITE PER THE FOLLOWING TREE MARKING INSTRUCTIONS. GRADING MAY COMMENCE ONCE CLEARING AND GRUBBING HAS BEEN COMPLETED FOR THE IMMEDIATE AREA.
- LEAVE TREES MARKED FOR LIVE STAKE/TRANSPLANTING IN THE PROPOSED FLOODPLAIN. THIS MATERIAL WILL BE RELOCATED ONCE THE FINAL ORIENTATION/LOCATION HAS BEEN DESIGNATED BY THE PROJECT DESIGNER.
- TREES GREATER THAN 10" DBH MAY BE MARKED FOR STRUCTURES BY THE PROJECT DESIGNER. THESE TREES ARE TO BE PULPED OVER AND BUCKED PER THE DESIGNERS CUTTING INSTRUCTIONS. ALL ROOTS SHALL BE AT LEAST 14" OF STUMP ATTACHED. THE REMAINDER OF THE TRUNK (10" DIAMETER MINIMUM) WILL BE LIMBED AND REMAIN FULL LENGTH FOR USE AS LOG BILLS.
- MATERIAL NOT MEETING THE PREVIOUS CRITERIA IS TO BE UTILIZED AS ADDITIONAL WOODY DEBRIS IN THE FLOODPLAIN AT THE DISCRETION OF THE PROJECT DESIGNER.
- ANY REMAINING MATERIAL IS TO BE DISPOSED OF PROPERLY.
- THE FOLLOWING MAINTENANCE OF FLOW PROCEDURE MUST BE ESTABLISHED WHEN IN CHANNEL WORK IS ANTICIPATED.
- SANDBAG EXISTING CHANNEL, IF NECESSARY AND SET UP PUMP AROUND SYSTEM WITH ENERGY DISSIPATION DEVICE WHEN DISCHARGING CLEAN WATER TO CLEAN WATER. IT MAY BE NECESSARY TO RUN THE PUMP AROUND OVERNIGHT OPENING ON THE PROGRESS OF THE CHANNEL CONNECTION BETWEEN THE PROPOSED AND EXISTING CHANNELS AT THE END OF THE WORK DAY. LOCAL ORDINANCES MUST BE FOLLOWED AND VARIANCES REQUEST IF NECESSARY.
- LOCALLY Dewater EXISTING STREAM CHANNEL FROM UPSTREAM TO DOWNTHEAM AND CONDUCT FILL SALVAGE PROCEDURES. SALVAGED ANIMALS ARE TO BE RELOCATED TO AN UNAFFECTED STREAM REACH. CLEAN WATER MAY BE DISCHARGED TO A STREAM CHANNEL VIA AN ENERGY DISSIPATOR. DRY WATER MUST BE PUMPED THROUGH A PUMPED WATER FILTER BAG DEPLOYED IN A STABLE GRASSSED AREA INTO A SEDIMENT BARN. SPRAY IRRIGATION SHALL BE USED TO RESEED AND STABILIZE THE CHANNEL.
- THE FOLLOWING SEQUENCE MAY BE REPEATED AT MULTIPLE SEGMENTS WITHIN THE RESTORATION REACH SIMULTANEOUSLY. THE STREAM SEGMENTS FOR MANAGEMENT OF FLOW ARE ANTICIPATED TO BE THE SEGMENTS BETWEEN EACH TEMPORARY STREAM CROSSING BUT THE FINAL PLACEMENT OF THE INTAKE AND ENERGY DISSIPATION DEVICES WILL BE DETERMINED IN THE FIELD.
- BEGIN EARTHWORKING FROM A DOWNTHEAM TO UPSTREAM FASHION, EXCAVATING THE FLOODPLAIN TO PROPOSED ELEVATION. CONSTRUCT THE PROPOSED CHANNEL (IN THE DRY WHEN POSSIBLE). WHEN THE SEGMENT OF PROPOSED CHANNEL HAS BEEN CONSTRUCTED IN THE DRY, SET UP PUMP AROUND SYSTEM TO MANAGE FLOW AND CONNECT THE PROPOSED CHANNEL. BED MATERIAL IS TO BE HARVESTED FROM THE EXISTING CHANNEL AND PLACED IN THE PROPOSED CHANNEL, WHEN POSSIBLE.
- THE PROPOSED FLOODPLAIN MUST HAVE A MINIMUM OF 4" OF TOPSOIL, OR SOIL DEEMED SUITABLE FOR THE ESTABLISHMENT OF PLANT MATERIAL BY THE PROJECT DESIGNER.
- CONSTRUCTED FLOODPLAIN IS TO BE SEEDED AND STABILIZED WITH EROSION CONTROL MATTING WITHIN 48 HOURS (OR BY THE END OF THE WORK DAY IF RAIN IS IN THE FORECAST).
- PUMP AROUND CAN BE DISCONTINUED OVERNIGHT IF THE EXISTING CHANNEL IS CONNECTED TO THE CONSTRUCTED CHANNEL TO MAINTAIN FLOW OVERNIGHT. TEMPORARY CHANNELS MAY NEED TO BE CONSTRUCTED IN THE VICINITY OF THE TEMPORARY STREAM CROSSINGS. THESE TEMPORARY CHANNELS MUST BE ESTABLISHED IN THE SAME MANNER AS THE PROPOSED STREAM CHANNEL.
- PUMP AROUND SETUPS SHOWN ON THE E&S PLAN SHOULD ELIMINATE THE BYPASS OF FLOODPLAIN WORK BETWEEN TEMPORARY STREAM CROSSINGS. THE PUMP AROUND IS TO BE MOVED TO THE ACTIVE SEGMENT OF GRADING TO MAINTAIN FLOW.
- WHEN TEMPORARY STREAM CROSSINGS ARE TO BE REMOVED, THE REMAINING FLOODPLAIN AND PROPOSED CHANNEL WILL BE CONSTRUCTED WHILE ENSURING PROPER PUMP AROUND PRACTICES ARE EMPLOYED.
- CONTINUE EXCAVATING PROPOSED FLOODPLAIN FROM DOWNTHEAM TO UPSTREAM DIRECTION, CONSTRUCTING CHANNEL, INSTALLING WETLAND POCKETS AND WOOD STRUCTURES AS SPECIFIED ON THE PLANS. ONCE FINAL GRADE IS OBTAINED IN THE FLOODPLAIN, STABILIZATION MUST OCCUR WITHIN 48 HOURS (OR BY THE END OF THE WORK DAY IF RAIN IS IN THE FORECAST). STABILIZE THE FLOODPLAIN BY APPLYING TEMPORARY AND PERMANENT SEED PRIOR TO INSTALLING EROSION CONTROL MATTING. REFER TO THE TABLE ON THIS SHEET FOR TEMPORARY SEED SPECIFICATION AND SHEET 15 FOR PERMANENT SEED SPECIFICATIONS.
- PLANT PLUGS, SHRUBS AND TREES ACCORDING TO THE LANDSCAPING PLAN ON SHEET 17.
- LIME AND/OR FERTILIZER MUST NOT BE APPLIED IN THE FLOODPLAIN BOTTOM UNLESS DIRECTED BY THE PROJECT DESIGNER. TRANSITION SIDE SLOPES SHALL BE SEEDED AND STABILIZED UPON REACHING FINAL GRADE, AS SHOWN ON THE PLANS.
- TREES, SHRUBS AND HERACEROUS PLUGS ARE TO BE INSTALLED PER THE PLANTING WINDOW ON THE PLANTING PLAN.
- REMOVE ORANGE CONSTRUCTION FENCING WHEN EQUIPMENT IS DEMOLISHED.
- REMOVE TEMPORARY EROSION CONTROL BMPs AFTER 70% VEGETATIVE COVER IS ACHIEVED.

Temporary Stabilization Seed Mix				
%	Lbs/Ac.	Botanical Name	Common Name	Seeding Window
100%	36	Secale cereale	Cereal Rye	Sept. 1- Oct. 16
OR				
100%	36	Avena sativa	Oats	May 1- Sept. 15

Mulch Application Rates		Application Rate (Min.)		Notes
Mulch Type	Per Acre	Per 1,000 sq. ft.	Per 1,000 sq. yd.	
Straw	3 tons	140 lb.	1,240 lb.	Either wheat or oat straw, free of weeds, not chipped or finely broken
Hay	3 tons	140 lb.	1,240 lb.	Timothy, mixed clover and timothy or other native forage grasses

NOTES:

- TEMPORARY STABILIZATION SEED MIX MUST BE USED ON ALL DISTURBED AREAS INCLUDING THOSE AREAS THAT WILL BE PLANTED OTHERWISE AS INDICATED ON THE PLANTING PLANS.
- USE APPROPRIATE SPECIES FOR TEMPORARY SITE STABILIZATION BASED ON SEEDING WINDOW.
- AN EQUIVALENT SEED MIX MAY BE USED IN PLACE OF THE PROPOSED TEMPORARY STABILIZATION SEED MIX IF APPROVED BY THE ENGINEER OR CONSTRUCTION MANAGER.
- MULCH MUST BE APPLIED AT A RATE OF 3 TONS PER ACRE TO ALL SEEDED AND DISTURBED AREAS THAT ARE NOT COVERED WITH EROSION CONTROL BLANKET. MULCH MUST BE COMPACTED FOLLOWING APPLICATION.
- HYDROSEEDING IS ALSO PERMITTED AS AN ALTERNATIVE STABILIZATION METHOD AS DETERMINED BY THE ENGINEER OR CONSTRUCTION MANAGER BASED ON SITE CONDITIONS DURING CONSTRUCTION.
- PERMANENT FLOODPLAIN SEED MIX IS TO BE APPLIED AT A RATE OF 2 LB/ACRE BETWEEN MARCH 15 TO JUNE 15 AND SEPTEMBER 1 TO OCTOBER 31. ANY PERMANENT SEED APPLIED OUTSIDE THE TARGET SEEDING WINDOW WILL BE APPLIED AT A RATE OF 2 LB/ACRE TO ACCOUNT FOR POSSIBLE LOSS OF SEED OVER NON-GERMINATING PERIODS.

PA 042924

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info@landtusses.com
landtusses.com



BLACK RUN FLOODPLAIN RESTORATION
HAWTHORNE SPE. LLC.
3603 VARTAN WAY SUITE 301
HARRISBURG PA, 17110

PROJECT:

E&S NOTES
PERMIT PLAN SET
SUBURGHANNA TOWNSHIP
DAUPHIN COUNTY, PENNSYLVANIA

SHEET TITLE:

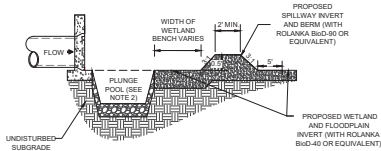
REVISIONS	NO.	DATE	DESCRIPTION
	1	05/14/2018	ISSUED FOR PERMIT
	2	05/14/2018	FOR REVIEW
	3	05/14/2018	FOR REVIEW
	4	05/14/2018	FOR REVIEW
	5	05/14/2018	FOR REVIEW
	6	05/14/2018	FOR REVIEW
	7	05/14/2018	FOR REVIEW
	8	05/14/2018	FOR REVIEW
	9	05/14/2018	FOR REVIEW
	10	05/14/2018	FOR REVIEW

PROJECT NUMBER: D-1137-2-18
OWNER: JS
DESIGNED BY: BE
DATE: 11/9/2018
SCALE: AS NOTED
NOTES:
SHEET NUMBER:

11
OF 15



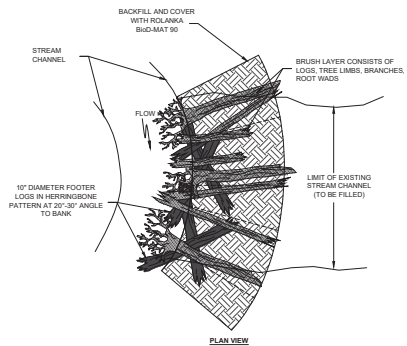
PENNSYLVANIA ONE CALL SYSTEM, INC.
CALL 3 BUSINESS DAYS BEFORE YOU DIG!
1-800-242-1776 OR 8-1-1
POCS SERIAL #20171141544



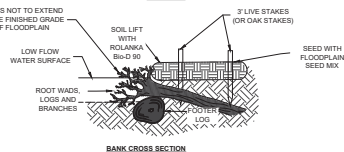
- 1) GRADING MUST BE CONDUCTED WITH A TRACKHOE TO MINIMIZE COMPACTION AND MAINTAIN THE INTEGRITY OF THE SUBSOIL STRUCTURE.
- 2) SEE PLANS FOR THE PLUNGE POOL SPECIFICATIONS.
- 3) MATTING MUST BE INSTALLED PERPENDICULAR TO FLOW AND SHINGLED WITH THE FLOW (BEGINNING DOWNSTREAM AND WORKING UPSTREAM) WITH MATTING OVERLAPPING 1" OVER TOP. THE MATTING INSTALLED DOWNSTREAM MUST BE TRENCHED 1" DEEP ON THE UPWILL END OF THE MATTING. EIGHT INCH (8") STAPLES MUST BE INSTALLED 24" ON CENTER AND ALONG ALL SEAMS.
- 4) THE ENTIRE WETLAND AND SIDE SLOPES MUST BE MATTED WITH ROLANKA BUD-80 OR EQUIVALENT EROSION CONTROL MATTING.
- 5) WETLAND BENCH MUST NOT BE AT LEAST 6" DEPTH OF SOIL SUITABLE FOR PLANT GROWTH.
- 6) BERMS WILL BE EXCLUDED ON THE OUTFALLS AT THE SOUTH SIDE OF THE STREAM WHERE A FLOODPLAIN BENCH IS PRESENT. IN THESE LOCATIONS A 0.5' DEPRESSION MUST BE CONSTRUCTED.

S-1 12 PROPOSED OUTFALL WETLAND DETAIL

NOT TO SCALE



PLAN VIEW



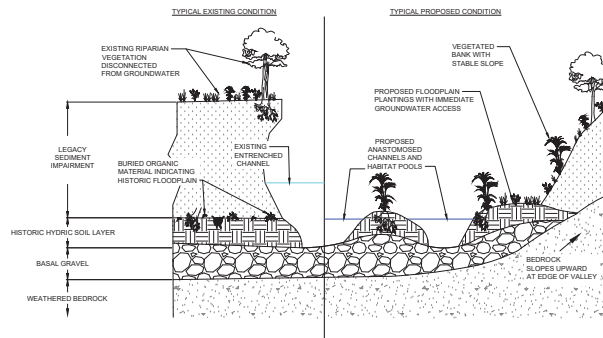
BANK CROSS SECTION

- NOTES:
1. FOOTER LOGS MUST BE AT LEAST 10" IN DIAMETER AND Laid IN A HERRINGBONE PATTERN AT A 20° ANGLE TOWARDS OR AWAY FROM THE DIRECTION OF FLOW.
 2. INSTALLATION MUST BE APPROVED BY THE DESIGN ENGINEER.
 3. LIVE STAKES MUST BE AT LEAST 1 1/2" IN DIAMETER AND 3' IN LENGTH AND MUST BE INSTALLED 3' ON CENTER. 2"x2" OAK STAKES MAY BE SUBSTITUTED IF SUITABLE LIVE STAKE MATERIAL IS NOT AVAILABLE ON SITE.
 4. SOIL LIFT TO BE PLACED ON TOP OF THE TOE WOOD AND COMPACTED WITH A TRACKHOE BUCKET. ROLANKA BUD-80 TO BE KEVED IN AT LEAST 2" UNDER AND WRAPPED AROUND SOIL LIFT BEFORE BEING STAKED IN. SEE PER THE LANDSCAPING PLAN PRIOR TO FASTENING MATTING.

S-2 12 TOE WOOD BANK PROTECTION

NOT TO SCALE

RESTORATION APPROACH OVERVIEW

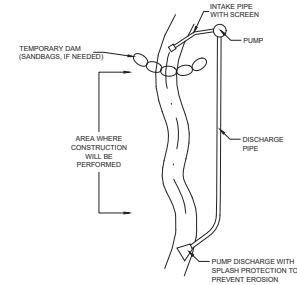


NOTES

1. THE LEGACY SEDIMENT LAYER, RANGING FROM 2' TO 4', CONSISTS OF HOMOGENOUS MATERIAL DEPOSITED IN RECENT GEOLOGIC HISTORY THROUGH UPLAND EROSION AND STREAM ENCRICHMENTS RESULTING FROM HUMAN IMPACTS.
2. THE HISTORIC HYORIC SOIL LAYER REPRESENTS THE HISTORIC FLOODPLAIN SURFACE PRIOR TO THE DEPOSITION OF LEGACY SEDIMENT AND WAS LARGELY DETERMINED BASED ON PARTIALLY DECOMPOSED ORGANIC MATERIAL, INCLUDING LEAF-PACK, GRASSES, AND WOODY DEBRIS FOUND DURING THE SURFACE INVESTIGATION AND INDICATING SATURATED, ANAEROBIC ENVIRONMENTS.
3. A BASAL GRAVEL LAYER, APPROXIMATELY 6" TO 1' THICK, PROVIDES GROUNDWATER STORAGE WITHIN INTERSTITIAL PORE SPACE. THE PROPOSED CHANNEL SYSTEM AND HABITAT DEPRESSIONS CONNECT TO THESE GRAVELS IN ORDER TO PROVIDE SYSTEM STABILITY AND INCREASE GROUNDWATERSURFACE WATER INTERACTION.
4. THIS RESTORATION APPROACH OVERVIEW IS PROVIDED FOR REFERENCE ONLY. SITE CONSTRAINTS AND OTHER DESIGN CONSIDERATIONS LIMIT THE POTENTIAL RESTORATION EXTENTS AND SUBSURFACE VARIABILITY MAY LIMIT THE POTENTIAL TO EXPOSE HISTORIC HYORIC SOILS AT THE PROPOSED FLOODPLAIN SURFACE. CONSTRUCTION SHALL BE CARRIED OUT IN ACCORDANCE WITH GRADING SHOWN ON THE PLANS AND UNDER THE DIRECTION OF THE DESIGN ENGINEER.

S-3 12 TARGET RESTORATION ELEVATION GUIDANCE

NOT TO SCALE

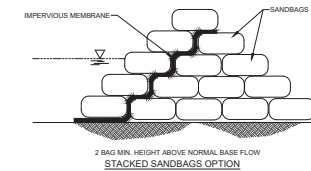


NOTES:

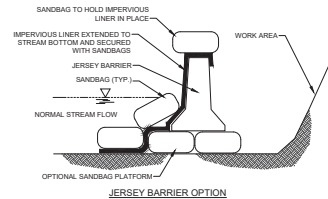
1. PUMPED WATER MUST BE DISCHARGED ONTO AN ENERGY DISSIPATING DEVICE SUCH AS PLYWOOD, PLASTIC, ROCK, STANDING WATER POOL, FOUNTAIN OR OTHER DEVICE TO MINIMIZE THE OPPORTUNITY FOR EROSION OR INCREASING TURBIDITY.
2. PUMP AROUND BYPASS LOCATIONS MAY BE FIELD MODIFIED TO SUIT SITE CONSTRAINTS WHILE PROVIDING WATER MANAGEMENT WITHOUT INCREASING TURBIDITY.
3. PUMP AROUND LENGTH SHOULD IMPACT LESS THAN 1,000 LINEAR FEET OF STREAM DURING ANY SINGLE ACTIVE SETUP.

E-7 12 PUMP AROUND BYPASS

NOT TO SCALE



2 BAG MIN. HEIGHT ABOVE NORMAL BASE FLOW
STACKED SANDBAGS OPTION



JERSEY BARRIER OPTION

E-8 12 STANDARD CONSTRUCTION DETAIL #3-15 SANDBAG DIVERSION DAM OR COFFERDAM

TO BE USED ONLY IF NECESSARY FOR CONSTRUCTION
NOT TO SCALE

PA 042324

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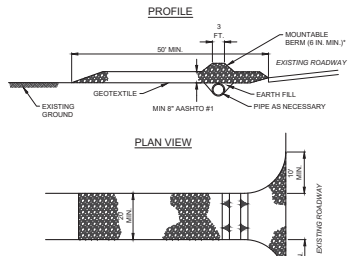
PROJECT: BLACK RUN FLOODPLAIN RESTORATION
HAWTHORNE SPE, LLC.
3005 VARTAN WAY SUITE 301
HARRISBURG PA 17110

DETAILS & NOTES
PERMIT PLAN SET
BLACK RUN FLOODPLAIN RESTORATION
SUSQUEHANNA TOWNSHIP
DAUPHIN COUNTY, PENNSYLVANIA

REVISIONS		
NO.	DATE	DESCRIPTION
1	11/09/2018	RESPONSE TO COMMENTS
2	11/09/2018	PERMIT SUBMIT

PROJECT NUMBER: C-1137.2-18
DRAWN BY: JS
CHECKED BY: BE
DATE: 11/9/2018
SCALE: AS NOTED
DETAILS & NOTES
SHEET NUMBER

12
OF 15



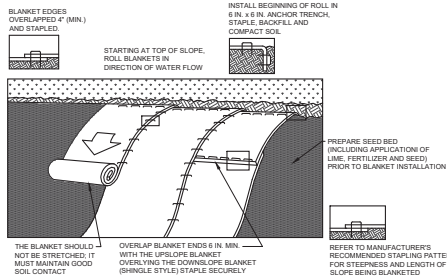
NOTES:

- 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 10 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

E-1
13

NOT TO SCALE



NOTES:

- SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.
- PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
- SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
- BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
- THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

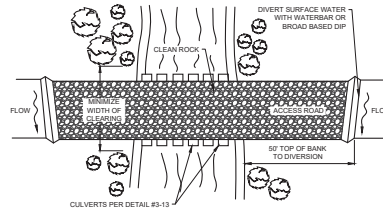
EROSION CONTROL BLANKET SPECIFICATIONS:

Rolanka Bio-Mat 40 (Bio-40) - OR APPROVED EQUIV. MANUFACTURER: ROLANKA INTERNATIONAL, INC. PHONE: (800) 760-3215 ONLINE: WWW.ROLANKA.COM

STANDARD CONSTRUCTION DETAIL #4-1 EROSION CONTROL BLANKET INSTALLATION

E-4
13

NOT TO SCALE



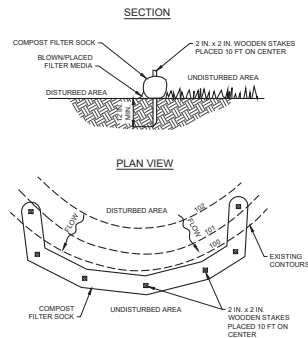
NOTES:

- WATERBARS AND BROAD-BASED DIPS SHALL DISCHARGE TO SEDIMENT REMOVAL FACILITY.
- CLEAN ROCK SHALL CONFORM TO CHAPTER 105 PERMITTING REQUIREMENTS.
- FOLLOW PERMIT CONDITIONS REGARDING REMOVAL OF CROSSING.

STANDARD CONSTRUCTION DETAIL #3-12 TEMPORARY STREAM CROSSING - PLAN VIEW

E-2
13

NOT TO SCALE



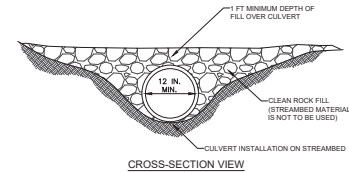
NOTES:

- 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. PHOTOGRADABLE 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 MESH SPREAD AS A SOIL SUPPLEMENT.

STANDARD CONSTRUCTION DETAIL #4-1 COMPOST FILTER SOCK

E-5
13

NOT TO SCALE



NOTES:

- PROVIDE 50' STABILIZED ACCESS TO CROSSING ON BOTH SIDES OF STREAM CHANNEL (SEE STANDARD CONSTRUCTION DETAIL #3-12).
- PIPES SHALL EXTEND BEYOND THE TOE OF THE ROADWAY.
- RUNOFF FROM THE ROADWAY SHALL BE DIVERTED OFF THE ROADWAY AND INTO A SEDIMENT REMOVAL BMP BEFORE IT REACHES THE ROCK APPROACH TO THE CROSSING.

MAINTENANCE

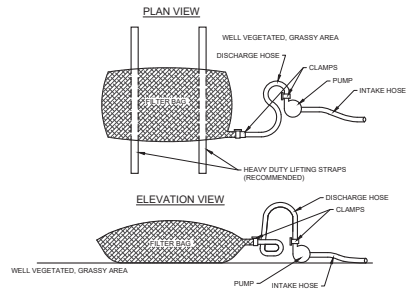
- TEMPORARY STREAM CROSSINGS SHALL BE INSPECTED ON A DAILY BASIS.
- DAMAGED CROSSINGS SHALL BE REPAIRED WITHIN 24 HOURS OF THE INSPECTION AND BEFORE ANY SUBSEQUENT USE.
- SEDIMENT DEPOSITS ON THE CROSSING OR ITS APPROACHES SHALL BE REMOVED WITHIN 24 HOURS OF THE INSPECTION.

AS SOON AS THE TEMPORARY CROSSING IS NO LONGER NEEDED, IT SHALL BE REMOVED. ALL MATERIALS SHALL BE DISPOSED OF PROPERLY AND DISTURBED AREAS STABILIZED.

STANDARD CONSTRUCTION DETAIL #3-13 TEMPORARY STREAM CROSSING

E-3
13

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
AVERAGE WIDTH STRENGTH	ASTM D-4834	80 LB/LIN
GRAB TENSILE	ASTM D-4832	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLER BURST	ASTM D-3759	300 PSI
UV RESISTANCE	ASTM D-4355	70%
AOCS % 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 BECAUSE 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.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS WHERE THIS IS NOT POSSIBLE. A GEOTEXTILE UNDERLAYERMENT 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 HD 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 FLOWING 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

E-6
13

NOT TO SCALE

PA 042924

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315 North Street | Lititz, PA 17543



PROJECT:
BLACK RUN FLOODPLAIN RESTORATION
HAWTHORNE SPE, LLC.
3005 VARTAN WAY SUITE 301
HARRISBURG PA 17110

E&S DETAILS
PERMIT PLAN SET
BLACK RUN FLOODPLAIN RESTORATION
SUSQUEHANNA TOWNSHIP
DAUPHIN COUNTY, PENNSYLVANIA

SHEET TITLE:

REVISIONS

NO.	DATE	DESCRIPTION
1	11/09/18	ISSUED FOR PERMIT
2	05/09/19	REVISION SUBMIT
3		
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PROJECT NUMBER:

D-1137.2-18

DRAWN BY:

JS

CHECKED BY:

BE

DATE:

11/09/2018

SCALE:

AS NOTED

DETAILS

SHEET NUMBER

13

OF 15

14
OF 15

TREES AND SHRUBS

KEY BOTANICAL NAME	COMMON NAME	QTY	SIZE	CONDITION	SPACING
AR ACER RUBRUM	RED MAPLE	15	#15	CONTAINER	SEE PLANS
BN BETULA NIGRA	RIVER BIRCH	12	#15	CONTAINER	SEE PLANS
CC CERCIS CANADENSIS	EASTERN REDBUD	28	#7	CONTAINER	SEE PLANS
CS CORNUS SERICEA	RED OSIER DOGWOOD	56	#3	CONTAINER	SEE PLANS
IV ILEX VERTICILLATA	WINTERBERRY	24	#3	CONTAINER	SEE PLANS
PO PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	12	#15	CONTAINER	SEE PLANS
QB QUERCUS BICOLOR	SWAMP WHITE OAK	6	#15	CONTAINER	SEE PLANS
VD VIBURNUM DENTATUM	ARROWWOOD	26	#3	CONTAINER	SEE PLANS
TOTAL 179					

WETLAND PLUGS

BOTANICAL NAME	COMMON NAME	QTY	SIZE	CONDITION
ASCLEPIAS INCARNATA	SWAMP MILK WEED	300	PLUG	CONTAINER
ASTER NOVA BELGII	NEW YORK ASTER	300	PLUG	CONTAINER
CALTHA PALUSTRIS	YELLOW MARSH MARIGOLD	300	PLUG	CONTAINER
CAREX STIPATA	AWLFruit SEDGE	300	PLUG	CONTAINER
CAREX STRICTA	TUSsock SEDGE	300	PLUG	CONTAINER
HIBISCUS MOSCHEutos	CRIMSONEYED ROSE MALLOW	300	PLUG	CONTAINER
IRIS VERSICOLOR	BLUE FLAG	300	PLUG	CONTAINER
JUNCUS EFFUSUS	COMMON RUSH	300	PLUG	CONTAINER
LOBELIA CARDINALIS	CARDINAL FLOWER	300	PLUG	CONTAINER
ONOCLEA SENSIBILIS	SENSITIVE FERN	300	PLUG	CONTAINER
PELTANDRA VIRGINICA	ARROW ARUM	300	PLUG	CONTAINER
PHYTOLTEGA VIRGINIANA	ORCHID PLANT	300	PLUG	CONTAINER
SAGITTARIA LATIFOLIA	DUCK POTATO	300	PLUG	CONTAINER
SAURURUS CERNULUS	LIZARD'S TAIL	300	PLUG	CONTAINER
SCHENOPECTUS PLUNGENS	COMMON THREE-SQUARE	300	PLUG	CONTAINER
SCIRPUS ATROVIRENS	GREEN BULRUSH	300	PLUG	CONTAINER
SCIRPUS CYPERINUS	WOOLGRASS	300	PLUG	CONTAINER
TOTAL 5100				

FLOODPLAIN SEED MIX

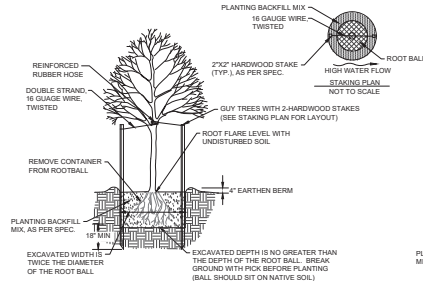
%	LBS/AC.	BOTANICAL NAME	COMMON NAME
15.91%	3.50	FESTUCA RUBRA	CREeping RED FESCUE
15.23%	3.35	AGROSTIS PERENNANS	AUTUMN BENTGRASS
9.09%	2.00	AGROSTIS SCABRA	THICKLEGRASS
9.09%	2.00	CAREX VULPINODEA	FOX SEDGE
5.68%	1.25	ELYMUS VIRGINICUS	VIRGINIA WILDRYE
5.45%	1.20	POA PALUSTRIS	FOWL BLUEGRASS
4.55%	1.00	JUNCUS EFFUSUS	SOFT RUSH
4.55%	1.00	CAREX SCOPARIA	BLUNT BROOM SEDGE
4.55%	1.00	CHASMANTHIUM LATIFOLIUM	NORTHERN RIVERGRASS
4.55%	1.00	CAREX COMOSA	BRISTLY SEDGE
3.18%	0.70	LEERSIA ORIZOIDES	RICE CUTGRASS
1.82%	0.40	GLYCERIA STRIATA	FOWL MANNAGRASS
1.82%	0.40	COREOPSIS TINCTORIA	PLAINS COREOPSIS
1.82%	0.40	VERBENA HASTATA	BLUE VERVAIN
1.82%	0.40	VERNONIA NOVEBORACENSIS	NEW YORK IRONWEED
0.91%	0.20	RATIBIDA PINNATA	GRAYHEAD CONEFLOWER
0.91%	0.20	CHAMAECRISTA FASCICULATA	PARTRIDGE PEA
0.91%	0.20	MONARDA FISTULOSA	WILD BERGAMOT
0.91%	0.20	SCIRPUS CYPERINUS	WOOL GRASS
0.91%	0.20	LIATRIS SPICATA	BLAZING STAR
0.91%	0.20	HELIUM AUTUMNALE	SNEEZEWEED
0.91%	0.20	RUDBECKIA HIRTA	BLACK-EYED SUSAN
0.68%	0.15	EUPATORIUM PERFORIATUM	COMMON BONESET
0.68%	0.15	ASTER PUNICEUS	SWAMP ASTER
0.45%	0.10	CAREX GRANULARIS	PALE SEDGE
0.45%	0.10	LYCOPUS AMERICANUS	WATER HOREHOUND
0.45%	0.10	DULCHICHILUM ARUNDINACEUM	THREE-WAY SEDGE
0.45%	0.10	BIDENS FRONDOSA	BEGGARTICK
0.45%	0.10	BIDENS ARISTATA	BUR MANGOLD, 'SUTHER' NC ECOTYPE
0.45%	0.10	ASCLEPIAS INCARNATA	SWAMP MILKWEED
0.45%	0.10	ZIZIA AUREUS	GOLDEN ALEXANDERS
100%	22.00		

APPLICATION RATE: 22 LBS BULK SEED PER ACRE (MAR 15 - JUNE 15 & SEPT 1 - OCT 30)
28 LBS BULK SEED PER ACRE ALL OTHER TIMES OF THE YEAR

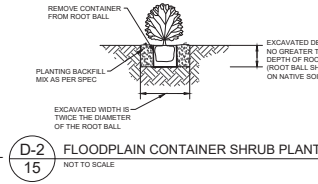
TRANSITION SLOPE SEED MIX

%	LBS/AC.	BOTANICAL NAME	COMMON NAME
17.24%	5.00	FESTUCA RUBRA	CREeping RED FESCUE
17.24%	5.00	FESTUCA OVINA	SHEEP FESCUE
17.24%	5.00	AGROSTIS PERENNANS	AUTUMN BENTGRASS
10.34%	3.00	LOLIUM MULTIFLORUM	ANNUAL RYEGRASS
6.90%	2.00	BOULELOUA CURTIPENDULA	SIDEOTS GRASS
10.34%	3.00	SCHIZACHYRIUM SCOPARIUM, 'CAMPER'	LITTLE BLUESTEM, 'CAMPER'
6.90%	2.00	ELYMUS VIRGINICUS	VIRGINIA WILDRYE
6.90%	2.00	ELYMUS CANADENSIS	CANADA WILDRYE
1.03%	0.30	ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED
1.03%	0.30	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER
1.03%	0.30	CHAMAECRISTA FASCICULATA	PARTRIDGE PEA
1.03%	0.30	COREOPSIS LANCEOLATA	LANCELEAF COREOPSIS
0.69%	0.20	CHIMPHILIA PURPUREA	PURPLE CONEFLOWER
0.69%	0.20	RUDBECKIA HIRTA	BLACK-EYED SUSAN
0.69%	0.20	LIATRIS SPICATA	BLAZING STAR
0.69%	0.20	SOLIDAGO JUNCEA	EARLY GOLDENROD
100.00%	29.00		

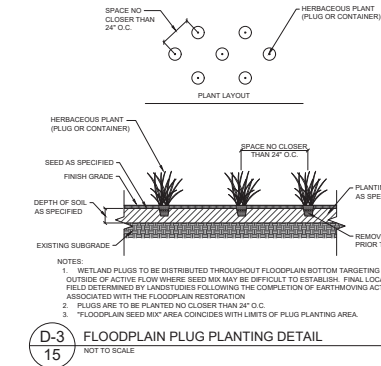
APPLICATION RATE: 29 LBS BULK SEED PER ACRE (MAR 15 - JUNE 15 & SEPT 1 - OCT 30)
35 LBS BULK SEED PER ACRE ALL OTHER TIMES OF THE YEAR



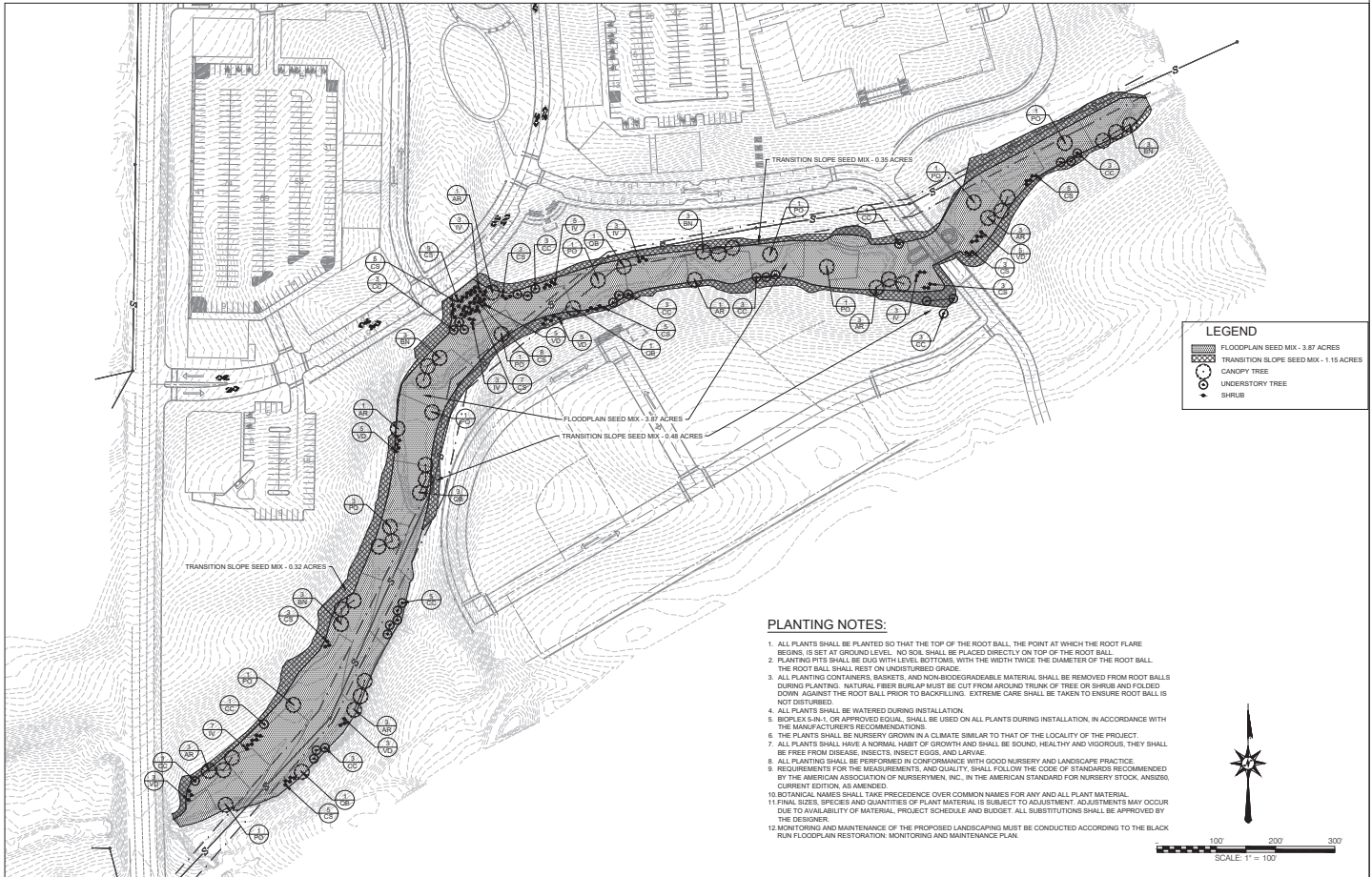
D-1 FLOODPLAIN DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE



D-2 FLOODPLAIN CONTAINER SHRUB PLANTING DETAIL
NOT TO SCALE

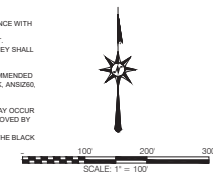


D-3 FLOODPLAIN PLUG PLANTING DETAIL
NOT TO SCALE



PLANTING NOTES:

1. ALL PLANTS SHALL BE PLANTED SO THAT THE TOP OF THE ROOT BALL, THE POINT AT WHICH THE ROOT FLARE BEGINS, IS SET AT GROUND LEVEL. NO SOIL SHALL BE PLACED DIRECTLY ON TOP OF THE ROOT BALL.
2. PLANTING PITS SHALL BE DUG WITH LEVEL BOTTOMS WITH THE WIDTH TWICE THE DIAMETER OF THE ROOT BALL. THE ROOT BALL SHALL REST ON UNDISTURBED GRADE.
3. ALL PLANTING CONTAINERS, BASKETS, AND NON-BIODEGRADABLE MATERIAL SHALL BE REMOVED FROM ROOT BALLS DURING PLANTING. NATURAL FIBER BURLAP MUST BE CUT FROM AROUND TRUNK OF TREE OR SHRUB AND FOLDED DOWN AGAINST THE ROOT BALL PRIOR TO BACKFILLING. EXTREME CARE SHALL BE TAKEN TO ENSURE ROOT BALL IS NOT DISTURBED.
4. ALL PLANTS SHALL BE WATERED DURING INSTALLATION.
5. BURLAP, BURLAP OR APPROVED EQUIVALENT, SHALL BE USED ON ALL PLANTS DURING INSTALLATION, IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
6. THE PLANTS SHALL BE NURSERY GROWN IN A CLIMATE SIMILAR TO THAT OF THE LOCALITY OF THE PROJECT.
7. ALL PLANTS SHALL HAVE A NORMAL HABIT OF GROWTH AND SHALL BE SOUND, HEALTHY AND VIGOROUS. THEY SHALL BE FREE FROM DISEASE, INSECTS, INSECT EGGS, AND LARVAE.
8. ALL PLANTING SHALL BE PERFORMED IN CONFORMANCE WITH GOOD NURSERY AND LANDSCAPE PRACTICE. REQUIREMENTS FOR THE MEASUREMENTS AND QUALITY SHALL FOLLOW THE CODE OF STANDARDS RECOMMENDED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC., IN THE AMERICAN STANDARD FOR NURSERY STOCK, ANSICC, CURRENT EDITION, AS AMENDED.
9. BOTANICAL NAMES SHALL TAKE PRECEDENCE OVER COMMON NAMES FOR ANY AND ALL PLANT MATERIAL.
10. FINAL SIZES, SPECIES AND QUANTITIES OF PLANT MATERIAL IS SUBJECT TO ADJUSTMENT. ADJUSTMENTS MAY OCCUR DUE TO AVAILABILITY OF MATERIAL, PROJECT SCHEDULE AND BUDGET. ALL SUBSTITUTIONS SHALL BE APPROVED BY THE DESIGNER.
12. MONITORING AND MAINTENANCE OF THE PROPOSED LANDSCAPE MUST BE CONDUCTED ACCORDING TO THE BLACK RUN FLOODPLAIN RESTORATION: MONITORING AND MAINTENANCE PLAN.



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PROJECT:
BLACK RUN FLOODPLAIN RESTORATION
HAYTHORNE SPE, LLC.
SUSQUEHANNA TOWNSHIP
DAUPHIN COUNTY, PENNSYLVANIA

LANDSCAPE PLAN & DETAILS
PERMIT PLAN SET
BLACK RUN FLOODPLAIN RESTORATION
SUSQUEHANNA TOWNSHIP
DAUPHIN COUNTY, PENNSYLVANIA

REVISIONS	NO.	DATE	DESCRIPTION
1	1	11/16/18	TOP CHANGES
2	2	11/16/18	POINT SUBMIT
3	3	11/16/18	
4	4	11/16/18	
5	5	11/16/18	
6	6	11/16/18	
7	7	11/16/18	
8	8	11/16/18	
9	9	11/16/18	
10	10	11/16/18	

PROJECT NUMBER: D-1137-2-18
DESIGNER: EL
CHECKED BY: JS
DATE: 11/16/18
SCALE: 1" = 100'
SUBJECT: LANDSCAPE

SHEET NUMBER

15
OF 15