

EROSION CONTROL PLAN

GENERAL NOTES

- The site contractor and their designees shall familiarize themselves with this Erosion Control Plan.
2. The site contractor shall be responsible for implementation of this Erosion Control Plan.
3. The site contractor shall not disturb more area than is necessary for the task to be done, so that potential for erosion is minimized.
4. Erosion and sedimentation controls must be constructed, stabilized, and functional before site disturbance within the tributary areas to the controls.
5. At least 7 days before starting any earth disturbance activities, the owner and/or operator shall invite all contractors involved in those activities, the landowner, all appropriate municipal officials, and a representative of the Cumberland County Conservation District to an on-site pre-construction meeting.
6. A copy of the approved Erosion and Sediment Control Plan must be available at the project site during all times.
7. Final site stabilization shall not exceed 35 feet. Stockpile side slopes must be 2:1 or flatter.
8. After final site permanent stabilization has been achieved, temporary erosion and sedimentation controls must be removed. Area disturbed during removal of the controls must be stabilized immediately. Vegetated areas shall be considered "permanently stabilized" when a uniform 70% vegetative cover of erosion resistant perennial species has been achieved over the entire watershed tributary to the control measure, and the disturbed area is covered with an acceptable BMP which permanently minimizes accelerated erosion and sedimentation. Until such time as this standard is achieved, interim stabilization measures and temporary erosion and sediment control BMPs that are used to treat project runoff may not be removed.
9. Only limited disturbance is permitted to initially access and acquire borrow to construct control facilities, before general site alteration begins.
10. The contractor will be responsible for the removal of any excess material and make sure the site(s) receive an approved erosion and sediment control plan that meets the conditions of Chapter 102 and/or other State or Federal regulations.
11. Solids, trash and other pollutants shall be disposed in accordance with federal and state regulations in order to prevent any pollutant in such materials from adversely affecting the environment. All building materials and wastes must be removed from the site and recycled or disposed in accordance with the Department of Environmental Protection's Solid Waste Management regulations at 25 Pa. Code 2601, et seq., 271.1, and 271.1 et seq. No building materials or wastes or unused building materials shall be buried, dumped, or discharged at the site.
12. The Permittee must ensure that visual site inspections are conducted weekly and after each precipitation event by a qualified person trained and experienced in erosion and sediment control, to ascertain that the BMPs are operational and effective in preventing pollution to the waters of the Commonwealth.
13. The Permittee shall take all reasonable steps to minimize or prevent any discharge violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
14. If fuel or other dangerous chemicals are stored on site, then a Preparedness, Prevention and Contingency (PPC) Plan must be developed and kept on site.
15. Prior to commencement of earth disturbance activities, the contractor shall submit a plan or portion of the project, the Permittee shall submit an erosion and sediment control plan for each additional phase or portion of the project for review and authorization by the Cumberland County Conservation District.
16. At least 3 days before starting any earth disturbance activities, all contractors involved in those activities shall notify the Pennsylvania One Call system incorporated at 1-800-242-1776 for location of existing underground utilities.
17. 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 or prevent any pollutant in such materials from adversely affecting the environment.
18. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operators shall contact the Cumberland County Conservation District for a final inspection prior to the removal of BMPs.
19. An erosion control blanket must be installed on all disturbed slopes steeper than 3:1, and all areas with concentrated flows.
20. Immediately after earth disturbance activities cease, the operator shall stabilize the disturbed areas. During non-germinating periods, mulch must be applied at the specified rates. Disturbed areas which are not at finished vegetative stabilization specifications. Disturbed areas which are not at final grade or which will not grade and which will be re-disturbed within 1 year must be stabilized in accordance with the permanent seeding vegetative stabilization specifications.
21. Fill Materials--
The NPDES Permit covers the "moving, depositing, stockpiling, or storing of soil rock or earth materials." Use the check boxes to identify the fill activities for the project sites. 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 be in most cases reside with the Operator. The designer must include a note on the drawings to identify the Operator's responsibility and provide the definition of Clean Fill and Environmental Due Diligence. 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 the environmental due diligence rests on the applicant. This information should be completed prior to submitting a permit application. If all cut and fill materials will be used on the site, a clean fill determination is not required by the operator unless there is a belief that a spill or release of a regulated substance occurred on site.

TEMPORARY SEEDING SCHEDULE

The contractor shall immediately temporarily stabilize any rough graded area, topsoil stockpile or unused excavated fill material that will be left idle for less than 1 year. The grass will provide interim protection against the impact of precipitation, running water and wind. Permanently seed any area that will be idle for more than 1 year.
Temporary seeding schedule is as follows:
Species: annual ryegrass
% Live Seed: 98%
Application rate: 10 lbs./1,000 sq. yds.
Fertilizer type: general purpose granular, 10-20-20
Fertilizer application rate: 11 lbs./1,000 sq. yds.
Lining rate: per soil test; minimum of 4 tons per acre.
Straw mulch rate: 1,200 lbs./1,000 sq. yds.
Seeding dates: between 4/1 and 10/15
Mulch anchoring: Asphalt, either emulsified or cut-back, containing no solvents or other diluting agents toxic to plant or animal life, uniformly applied at the rate of 31 gallons per 1,000 square yards. Synthetic binders (chemical binders) may be used per manufacturer's recommendation provided they are non-toxic to plant and animal species.
When seeding is not possible due to the time of year or other limitations, disturbed area shall be mulched with strawbales at the rate above. An erosion control blanket must be installed on all disturbed slopes steeper than 3:1, and all areas with concentrated flows. Matting can be North American Green 'S75' or approved equal.
Maintenance procedure:
1) Maintain a minimum 70% uniform soil surface coverage with grass and/or mulch.
2) If a washout, slope failure or similar disturbance occurs, correct drainage problem if necessary, then reseed soil to the proper grade, reapply soil amendments, seed and mulch.

PERMANENT SEEDING SCHEDULE

All disturbed soil to be covered with impervious surfaces, riprap or landscaping mulch shall be permanently seeded to provide protection against the impact of precipitation, running water and wind. Permanent seeding schedule for the general project area is as follows:
FOR RETENTION AREAS--
Species: 100% Tall Fescue, varieties such as K-31, Altra or other recently released dwarf variety tolerant of wetness.
% Pure live seed: 98%
Application rate: 6 lbs./1,000 sq. ft.
Fertilizer type: general purpose granular, 10-20-20
Fertilizer application rate: 11 lbs./1,000 sq. yds.
Lining rate: per soil test; minimum of 6 tons per acre
Seeding dates: between 4/1 and 10/15
Straw mulch rate: 3 tons per acre
Mulch anchoring: Asphalt, either emulsified or cut-back, containing no solvents or other diluting agents toxic to plant or animal life, uniformly applied at the rate of 31 gallons per 1,000 square yards. Synthetic binders (chemical binders) may be used per manufacturer's recommendation provided they are non-toxic to plant and animal species.

FOR NON-RETENTION AREAS / GENERAL LAWN PLANTING

Species: 30% Kentucky bluegrass, 40% Penninn Creeping Red Fescue, 20% Norton Perennial ryegrass, 10% annual ryegrass
% Pure live seed: 98%
Application rate: 6 lbs./1,000 sq. ft.
Fertilizer type: general purpose granular, 10-20-20
Fertilizer application rate: 11 lbs./1,000 sq. yds.
Lining rate: per soil test; minimum of 6 tons per acre
Seeding dates: between 4/1 and 10/15
Straw mulch rate: 3 tons per acre
Mulch anchoring: Asphalt, either emulsified or cut-back, containing no solvents or other diluting agents toxic to plant or animal life, uniformly applied at the rate of 31 gallons per 1,000 square yards. Synthetic binders (chemical binders) may be used per manufacturer's recommendation provided they are non-toxic to plant and animal species.
An erosion control blanket must be installed on all disturbed slopes steeper than 3:1, and all areas with concentrated flows. Matting can be North American Green 'S75' or approved equal.

MAINTENANCE PLAN

- Until the site is stabilized, all erosion and sediment control BMPs must be maintained properly. Responsibility for implementing and maintaining erosion and sedimentation control measures shall be designated to a minimum of one individual who will be present at the project site each working day. Maintenance must include inspections of all erosion and sediment control BMPs after each runoff event and on a weekly basis, to ensure that they are in place, stable, and functioning properly. All preventative and remedial maintenance work, including clearing, repairs, replacement, re-grading, reseeding, re-mulching, and re-netting must be performed immediately, to restore the control measure to the original design. If erosion and sediment control BMPs fail to perform as expected, replacement BMPs, or modifications of those installed, will be required.
2. Any sediment removed from BMPs during construction will be returned to upland areas within the project area, and incorporated into the pile of excess soil.
3. See the construction details and seeding specifications for maintenance procedures for the various control measures.
4. Mud must be removed from vehicle tires before they exit the site. Washers on the paved roadway, or sweeping the mud deposits into roadway ditches, sewers, culverts, or other drainage ways is not acceptable.

STAGING OF EARTH MOVING ACTIVITIES

- General Notes on sequencing of any work:
A. At least 3 days before starting any earth disturbance activities, all contractors involved in those activities shall notify the Pennsylvania One Call system incorporated at 1-800-242-1776 for the location of existing underground utilities.
B. All earth disturbance activities shall proceed in accordance with the following specific sequencing. Each stage shall be completed and immediately stabilized before any following stage is initiated. Clearing, grubbing and topsoil stripping shall be limited only to those areas described in each stage.
C. 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 or prevent any pollutant in such materials from adversely affecting the environment.
D. At least 7 days before starting any earth disturbance activities, the owner and/or operator shall invite all contractors involved in those activities, the landowner, all appropriate municipal officials, and a representative of the Cumberland County Conservation District to an on-site pre-construction meeting.
E. Immediately after earth disturbance activities cease, the operator shall stabilize the disturbed areas. During non-germinating periods, mulch must be applied at the specified rates. Disturbed areas which are not at finished grade and which will be re-disturbed within 1 year must be stabilized in accordance with the temporary seeding vegetative stabilization specifications. Disturbed areas which are not at final grade or which will not be re-disturbed within 1 year must be stabilized in accordance with the permanent seeding vegetative stabilization specifications.
F. All pumping of sediment laden water shall be through a sediment control BMP, such as a pumped water filter bag or equivalent sediment removal facility, over undisturbed vegetated areas.
SPECIFIC STAGING OF EARTHMOVING ACTIVITIES --
Stage 1--
The maximum limits of earth disturbance should be staked for the contractor. The three rain garden locations should be fenced off with temporary construction fencing, as shown on the drawing. Install all silt barriers.
Stage 2--
Install construction entrance #1, and the temporary berm / hump parallel and next to Gettysburg Pike so that clean street runoff does not enter the site; temporary seed the berm. Incorporate a mountable hump in the construction entrance in conjunction with the berm mentioned above.
Stage 3--
Install storm inlets #0 and E and the associated pipe with D; place inlet protection on the grates immediately. Then install the slope #6 driveway culvert along the Straub property line so off-site runoff follows the property line and exits the site on the permanently seed, mulch and mat the slope / berm immediately, and install gravel for the driveway to the Morrison property. The measures in this stage and stage 2 will eliminate off-site runoff from entering the project area.
Stage 4--
Strip topsoil as necessary, and stockpile where indicated, and install sediment #1, including berm, permanent outlet pipe to the existing storm inlet, temporary riser, cleanout marker, and emergency spillway; permanently seed the basin as soon as it is graded. Immediately permanently seed disturbed soil downhill of silt barriers where the storm pipe connects into the existing inlet. Install temporary swale #13 with the basin, beginning at the bottom end and working uphill, stabilizing the portion of swale created each day.
Stage 5--
Install sediment trap #1, including berm, spillway and cleanout marker; temporary seed the trap as soon as it is graded. Construct with trap creation, install temporary swales #1 and 2 and stabilize the portion of swale created that day.
Stage 6--
Remove trees and existing driveway, and rough grade the site and streets. With the initial street grading, create broad based dip #1 so that runoff from the street is conveyed into the sediment removal facility. With the initial street grading, continuously maintain a gravel driveway to the adjacent Morrison property. Do not install or disturb the rain garden areas yet. Once the cut slope behind units #10 to 17 is completed, replace topsoil, seed and mulch as the area will not be disturbed again.
When the final slope on the Daybreck Church property is completed, replace topsoil and permanently seed and this area will not be disturbed again.

STAGING OF EARTH MOVING ACTIVITIES (CONTINUED)

- Stage 7--
Install underground utilities (water, sanitary sewer, electric, gas) and storm piping. During trenching for pipe installation, limit the amount of open trench to that which will be backfilled that day, and immediately stabilizing, and immediately repairing any affected BMPs or rain garden fencing. Where a utility trench disturbs or conflicts with a control measure, the measure must be temporarily removed until the trench is backfilled, then the measure must be immediately restored. During trenching, should any water accumulate in trenches or elsewhere, to a depth that must be pumped, then the contractor shall use a Facility for Sediment Removal from Pumped Water as detailed on the drawings. As soon as a storm pipe outlet is placed, the riprap apron must be installed. Install water bars in graded areas as indicated, as soon as the receiving inlet and pipe are in place. Install inlet protection where shown as the inlet is placed. Install walls where shown.
Stage 8--
Install curbing, gravel subbase, and binder pavement of streets and driveway on the adjacent Morrison property, thereby eliminating construction entrance #1 and broad based dip #1. Note that the driveway operation on the Morrison property must be done in one short-term continuous operation when precipitation is not expected and disturbed soil must be permanently stabilized immediately. Maintain water bars in streets until streets are ready for paving.
Stage 9--
Building construction may begin at any time now. For building construction, connect laterals, pave driveway, and install front sidewalks and rear patio/deck. Replace topsoil, and permanently seed and mulch remaining disturbed soil along the streets and on the building pads not being used. Replace minimum 4" depth of topsoil when construction and paving is completed, and permanently seed and mulch immediately. Swales #1 to 6 should be installed when final grading is being completed around the adjacent buildings; swales must be seeded, mulched, and matted immediately. With the creation of swale #5, install matted into the basin as shown on the plan. Install erosion control matting where roof drains discharge onto soil areas, or, as an interim measure until grass is established, place flexible plastic pipe to convey the runoff from the downspout to a paved or gravel-paved area (the driveway or street) or to an undisturbed vegetated area that does not drain to undisturbed area.
Stage 10--
Temporary control measures can be removed when the watershed draining to the measure is permanently stabilized, meaning a minimum uniform 70% perennial vegetative cover or other permanent non-vegetative cover with a density capable to resist accelerated surface erosion, and subsurface characteristics sufficient to resist sliding and other movements. The location of the control measure must be immediately permanently stabilized upon its removal. All areas to be permanently seeded shall have a minimum depth of 4" of topsoil before seeding.
Control measure removal instruction specifics:
-- Sediment basin #1 will remain until all buildings are constructed, after which it must be converted to its permanent stormwater and rain garden configuration. Conversion to its permanent stormwater configuration must be done in one continuous short-term operation, as follows: 1) remove the temporary riser pipe assembly and install the permanent stormwater basin outlet structure and spillway; 2) install a minimum 2-foot high horsehoe-shaped stone filter berm of clean 2A stone with 2:1 side slopes around the permanent outlet structure lower orifice opening before altering the basin; 3) re-grade the basin, including the berm and spillway as required to final contours, then permanently seed, mulch and mat any disturbed basin area. Conversion of a basin cannot occur during non-germinating periods, and should not occur when precipitation is anticipated during this short-term work. Should there be any standing water accumulated in a basin to be removed, to a depth that can be pumped, then the contractor shall use a Facility for Sediment Removal from Pumped Water or basin dewatering as detailed on the drawings, before altering the basin. Silt fence outside and downhill of the basin must remain until the ultimate stormwater basin configuration is installed and stabilized.
-- Sediment trap #1 must be removed.
-- Temporary swale #11 and #12 must be removed prior to trap #1 removal.
-- Temporary swale #13 can be removed when the street is curbed and the contributory area to it is permanently graded and stabilized.
-- All inlet protection must be removed.
-- All water bars must be removed.
-- All silt barriers must be removed.
-- Solids, trash and other pollutants shall be disposed in accordance with federal and state regulations in order to prevent any pollutant in such materials from adversely affecting the environment. All building materials and wastes must be removed from the site and recycled or disposed in accordance with the Department of Environmental Protection's Solid Waste Management regulations. No building materials or wastes or unused building materials shall be buried, dumped, or discharged at the site. Stone from removed construction entrances can be stockpiled within the project area, and used later as fill against the building foundation walls.
When the site is permanently stabilized, in a short-term continuous operation install rain gardens #1, 2, 3 and 4. Seed, plant and mulch the areas immediately. Inlet protection must be present on the inlet in the rain garden until the garden is permanently stabilized.
Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operators shall contact the Cumberland County Conservation District for a final inspection prior to the removal of the BMPs.

Table with 4 columns: No., REVISION, DATE, COMMENTS. Includes revision history for May 19/11. Also includes contact information for R. J. FISHER & ASSOCIATES, INC. located at 1546 BRIDGE STREET, NEW CUMBERLAND, PA. 17070.

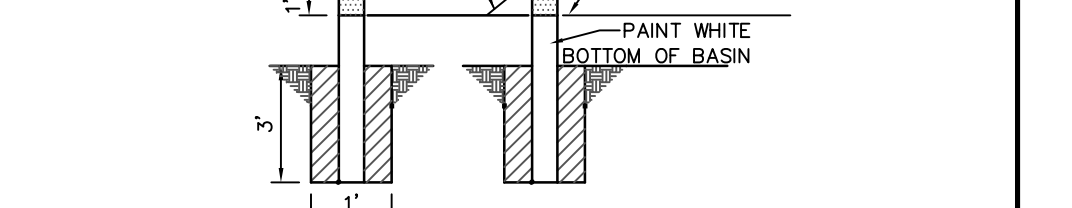
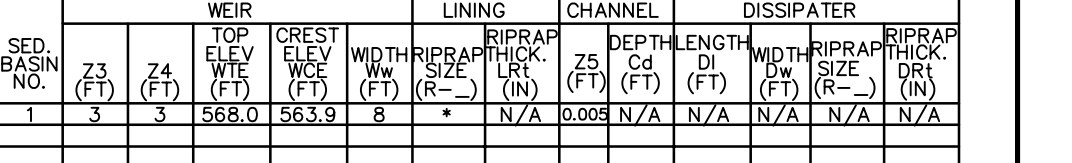
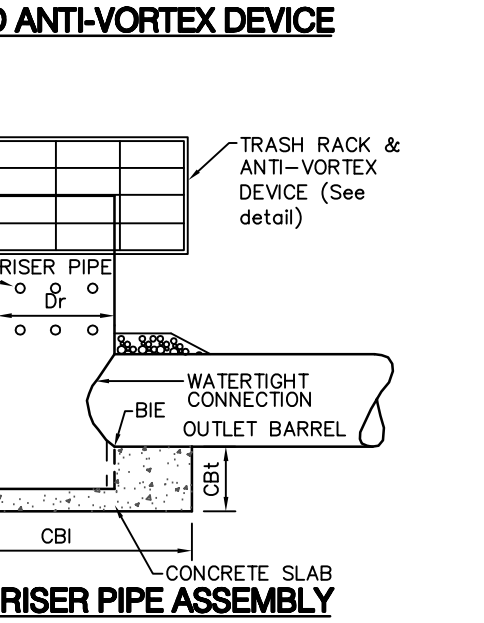
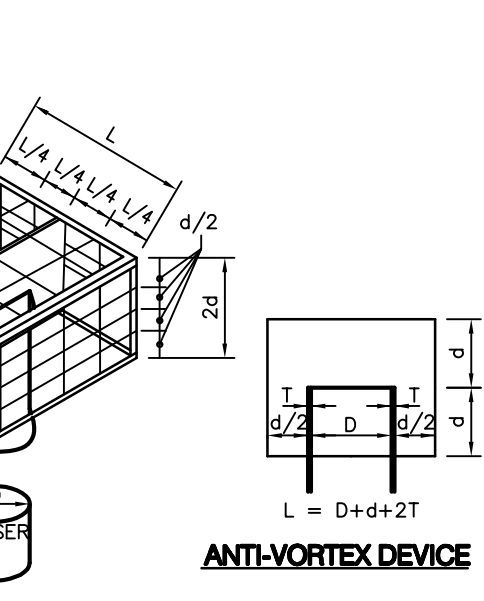
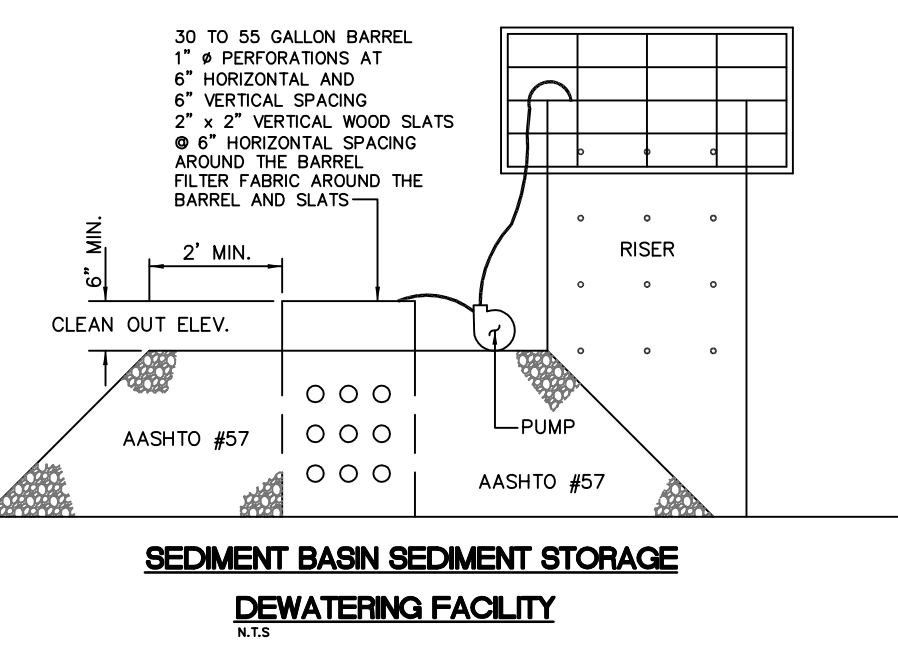
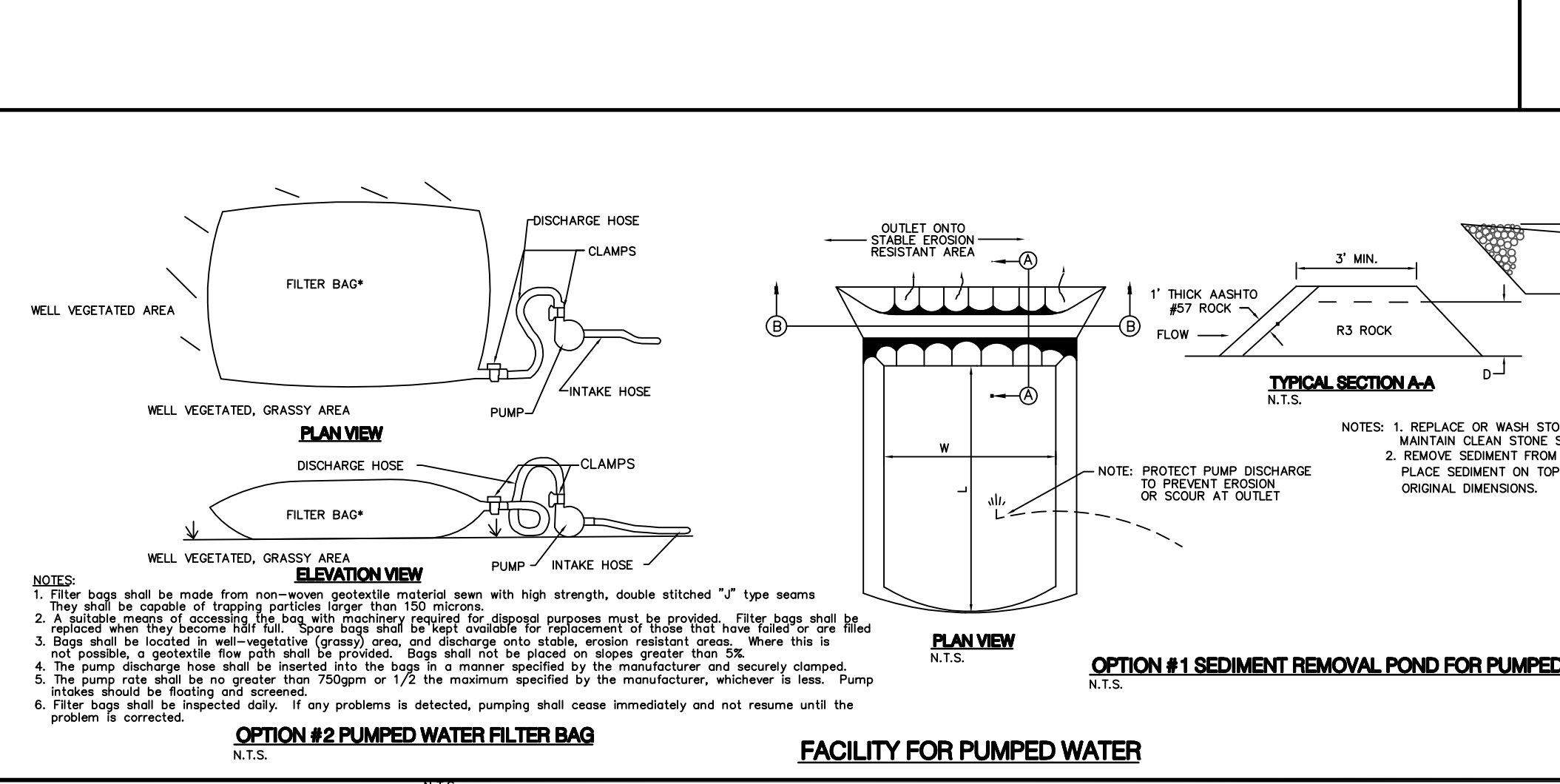


Table with columns: BASIN NO., CREST ELEV., BOT. ELEV., BARREL DIA., INLET DIA., OUTLET DIA., EM BANK CLEAN, BOTTOM DIA., CONCRETE BASE. Includes basin data for basins 3 and 4.

- GENERAL NOTES:
1. Sediment basins, including all appurtenant works, shall be constructed to the detail and dimensions shown on the E & SPC plan drawings.
2. Fill material for the embankments shall be free of roots, or other woody vegetation, organic material, large stones, and other objectionable materials.
3. Sediment basins shall be constructed in layers. If sedimentation basin berm which is used as permanent stormwater basin berm per permanent basin berm detail for berm construction shall be constructed according to the specifications of the E & SPC Plan Drawings.
4. Sediment basins must be protected from unauthorized acts of third parties.
5. Sediment basin must be converted to their permanent stormwater configuration when no longer needed for sediment control.
MAINTENANCE NOTES:
1. Inspect of sediment basins on at least a weekly basis and after each runoff event.
2. Provide access for sediment removal and other required maintenance activities.
3. Remove accumulated sediment and restore the basin to its original dimensions when the sediment has accumulated to the level shown on the sediment clean-out stake located near the center of the basin. Place sediment on the topsoil stockpile.
4. Remove silt and other debris from the basin and riser.
5. Remove spillway, and spillway, and spillway, and spillway.
6. Replace displaced riprap within the outlet energy dissipator immediately after it is displaced and especially after major storm discharge events.
7. Remove accumulated sediment and stabilize disturbed area inside the basin before any sediment basin is converted to a permanent storm water management facility, to assist in removing sediment, which is usually saturated, using the Dewatering Facility as detailed with this sediment basin detail, to dewater the sediment prior to its removal. Add rock filters as necessary.

SEDIMENT BASIN DETAIL



Vertical text on the right side of the drawing: 'EROSION CONTROL DETAILS FOR THE TERRACES AT SHEPHERDSTOWN'. Includes contact information for R. J. FISHER & ASSOCIATES, INC. and drawing ID 210014-ESD/TJ. SHEET 14 OF 14.