

CONSTRUCTION SEQUENCE: (Major earth moving activities should not be initiated during major rainstorms or when spring thaw is occurring)

1. Clearly mark the perimeter of all wetland areas to be preserved. No equipment may enter within the area of existing wetlands or prior mitigated wetlands to be preserved. See detail on plan drawings.
2. Install Fabric Fence (clearing and grubbing should be limited to what is necessary for installation) in any area to be used for stockpiling of material outside of the existing mine erosion and sedimentation controls.
3. Complete placement of fill material in pit created by mining activity to an elevation 1 foot above the final sub-grade elevation.
4. Stake out proposed final sub-grade elevations in WRA-6 and WRA-7.
5. Excavate the mitigation area in WRA-6 and WRA-7 to the required depth, allowing for the placement of 6" to 12" of hydric substrate to final grade. Material excavated shall be placed in the existing mine permit area.
6. Place hydric substrate in the mitigation area, creating a loose, rough surface with a high degree of micro-topographic relief for the establishment of wetland vegetation.
7. The wetland substrate will be considered the final stabilization. This area should not be re-entered after final placement. If unforeseen circumstances arise and entry is necessary for maintenance or hydrologic adjustments tracked equipment is to be used.
8. After final placement of all wetland substrate and woody debris in WRA-6 and WRA-7, place topsoil side slopes outside of mitigation area.
9. Track steeper slopes, scarify, lime, fertilize, seed and mulch the receiving areas and all remaining disturbed areas per the upland seeding specifications in this plan or suitable alternative.
10. After final stabilization (70% minimum, uniform, perennial vegetative cover and/or permanent stabilization) has been achieved, temporary erosion and sedimentation control measures shall be removed.
11. Any waste material accumulated during construction, which will not be reused in later construction, shall be removed from the site and properly disposed of at a PADEP approved facility.

NOTE: Upon temporary cessation of an earth disturbance activity or any stage or phase of an activity where a cessation of earth disturbance activities will exceed 4 days, the site shall be immediately seeded, mulched, or otherwise protected from accelerated erosion and sedimentation pending future earth disturbance activities.

GENERAL NOTES

The source of existing contours shown on this plan is PA Spatial Data Access (PASDA) PAMAP LIDAR. The contour interval shown on this map is at a two (2) foot interval.

Utilities shown on this plan are for reference purposes only. It shall be the responsibility of the contractor to verify the exact location of all utilities prior to any excavation by notifying The Pennsylvania One Call System at least three days in advance by calling 1-800-242-1776.

Erosion and sediment control measures will be installed or constructed and functional before site disturbance begins in the drainage areas to those control measures.

Until the site is stabilized, all erosion and sediment BMPs must be maintained properly. Maintenance must include inspections of all erosion and sediment BMPs after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, regrading, reseeding, remulching and renetting must be performed immediately. If erosion and sediment control BMPs fail to perform as expected, replacement BMPs, or modifications of those installed will be required.

Should any measures contained within this plan prove incapable of adequately removing sediment from onsite flows prior to discharge, or of stabilizing the surface involved, additional measures must be implemented immediately by the contractor to eliminate all such problems.

Sediments from BMPs shall be removed as necessary and spread on-site then stabilized according to the permanent stabilization specifications. If no suitable areas are available on-site, then the sediments shall be disposed of at a site(s) with an approved erosion and sediment control plan that meets the conditions of Chapter 102 and/or other State and Federal regulations.

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 failure due to slumping, sliding, or other movements.

After final site stabilization has been achieved, temporary E&S BMPs must be removed or converted to permanent post construction stormwater management BMPs. Areas disturbed during removal or conversion of the BMPs must be stabilized immediately. In order to ensure rapid revegetation of disturbed areas, such removal/conversions should be done only during the germinating season.

Temporary E & S Seeding and Stabilization:

All disturbed land shall be seeded with Annual Rye Grass at a rate of 48 pounds per acre and mulched at a rate of 3 tons per acre. During non-germinating periods mulch shall be applied at a rate of 3 tons per acre for interim stabilization.

Permanent Seeding and Stabilization:

No seeding shall occur within the wetland replacement basins. Salvaged hydric substrate will be used as the "seed source" for these areas. Portions of the salvaged hydric substrate from the existing wetlands containing *Phragmites australis* and *Phalaris arundinacea* shall be delineated prior to construction to include a 20-foot buffer and removed by excavation to be placed or buried in an upland position (not in the vicinity of the wetland replacement areas).

The following seed mix shall be used in the areas adjacent to the wetland replacement basins (ie. cut slopes).

Eastern Native Habitat Mix: (ERNMX-173 from Ernst or equivalent)

- 25% *Andropogon gerardii*, Niagara PLS -- Niagara Big Bluestem PLS
- 25% *Elymus canadensis* PLS -- Canada Wild Rye PLS
- 20% *Sorghastrum nutans*, Nebraska 54 PL -- Nebraska 54 Indian Grass PLS
- 10% *Chamaecrista fasciculata* PLS -- Partridge Pea PLS
- 5% *Panicum virgatum*, Shelter PLS -- Shelter Switch Grass PLS
- 5% *Heliopsis helianthoides* PLS -- Ox Eye Sunflower PLS
- 4% *Desmodium canadense* PLS -- Showy Tick Trefoil PLS
- 4% *Achillea syriaca* PLS -- Common Milkweed PLS
- 2% *Rudbeckia hirta* PLS -- Black Eyed Susan PLS

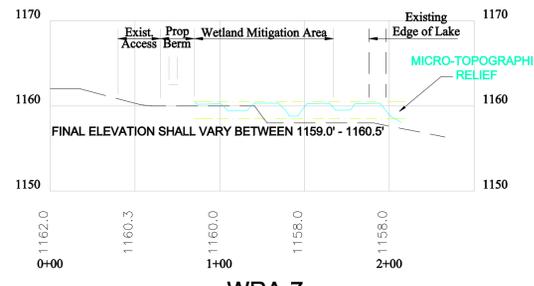
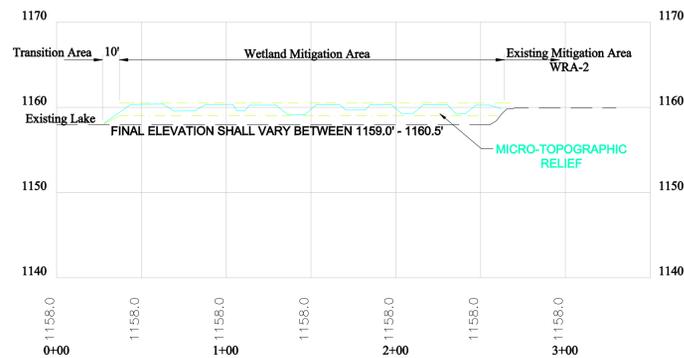
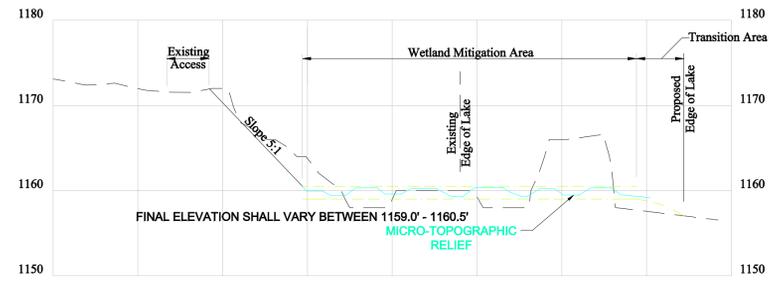
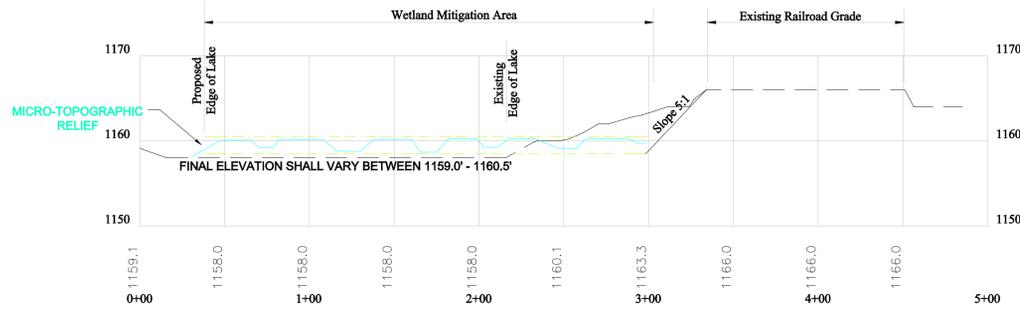
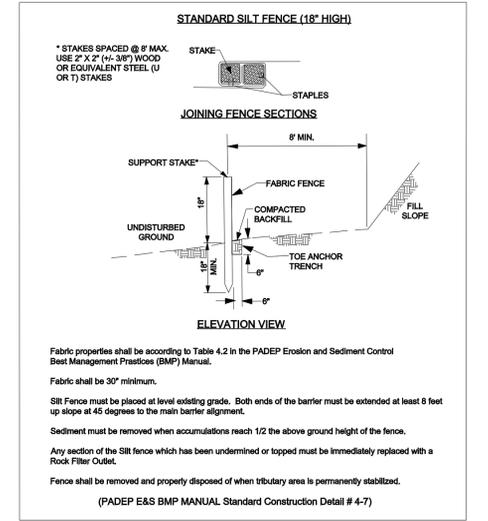
Seeding Rate: 11 lb (9 lb per acre ELS) per acre

All other disturbed land outside the wetland replacement basins resulting from the mitigation construction shall be graded and seeded with Formula "B" at a rate of 21 lbs. per 1000 square yards. Formula "B" consists of a 20% Perennial Ryegrass, 30% Creeping Red Fescue, and 50% Kentucky Bluegrass mixture or suitable alternative. Mulch shall be applied at a rate of 3 tons per acre. Fertilizer (10-20-20 mix) shall be applied at a rate of 23lbs/acre and pulverized limestone at a rate of 3 tons/acre.

Supplemental planting will be utilized as needed to achieve the required performance standards. These plantings will be utilized according to the following Scrub/Shrub Wetland Planting Specifications:

Supplemental Native Woody Shrub Planting Stock Density Rates

Planting Stock Type for Native Woody Plants	Plant Spacing (O.C./P.FEET)	Approximate Average Stems/Acre
Transplanted Grubs Existing Native Woody Vegetation	16-18	150
Nursery Stock	14-16	200
Bare Root Seedlings	6-10	700
Live Stakes	6-10	700



CALL BEFORE YOU DIG!
PA LAW REQUIRES
3 WORKING DAYS NOTICE FOR
CONSTRUCTION PHASE AND 10 WORKING
DAYS IN DESIGN STAGE - STOP CALL
PA ONE CALL SYSTEM, INC.
1-800-242-1776

Survey Information Provided By:
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LAKE TOWNSHIP, MERCER COUNTY
JACK R. CHAMBERLIN
PROFESSIONAL LAND SURVEYOR
SURVEYING AND CONSULTING
702 CHAMBERLIN ROAD, BROOKVILLE, PA 15825

Scale: 1" = 200'

REVISIONS	SHEET 3 of 3
WETLAND MITIGATION PLAN	
STECKLER MINE	
Lake Township, Mercer County H & H Materials, Inc., Stoneboro, Pa.	
Prepared by:	March 2012
Beran Environmental Services, Inc. Boyers, PA	