STORM WATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

Site Preparation

The reservoir shall be located in an area that is not subject to flooding from surface waters. The project area will not be impacted by any existing man-made features, including streets, sidewalks, or other features. The proposed pond site shall be cleared of all vegetation, including trees and brush, to a depth of 2 feet below the proposed pond bottom elevation.

Earth Fill

The fill materials shall be from the proposed spillway area. The materials shall be placed in layers not exceeding 1 foot in thickness, and compacted to a dry density of 100 pounds per cubic foot. The fill shall be placed in layers not exceeding 1 foot in thickness, and compacted to a dry density of 100 pounds per cubic foot. The fill shall be placed in layers not exceeding 1 foot in thickness, and compacted to a dry density of 100 pounds per cubic foot.

Structure Shields

The proposed pond shall be protected at the upstream end by a structure shield to prevent erosion and sediment movement. The structure shield shall be located a minimum of 10 feet from the upstream edge of the proposed pond. The structure shield shall be designed to prevent erosion and sediment movement. The structure shield shall be designed to prevent erosion and sediment movement.

Pipe Conduits

All conduits shall be a minimum of 4 inches in diameter. The conduits shall be installed in a trench a minimum of 2 feet deep, and backfilled with clean, loose fill. The conduits shall be installed in a trench a minimum of 2 feet deep, and backfilled with clean, loose fill. The conduits shall be installed in a trench a minimum of 2 feet deep, and backfilled with clean, loose fill.
HOLLIFIELD HILLS
STREAM STABILIZATION PLAN
Howard County, Maryland
December 2007

Index of Sheets:

- Cover Sheet
- Grading Plan
- Cross Sections
- Profile
- Phase one
- Pond removal and stream
- Restoration grading plan
- Notes and Details
- Planting Plan
- Planting Notes and Details
SEQUENCE OF CONSTRUCTION:

1. Prior to installing sediment control measures or grading, a pre-construction meeting must be conducted on-site with the Howard County erosion and sediment control inspector, the owner's representative, restoration specialist, contractor, and the site engineer.
2. The site of disturbance must be marked using stakes and flagging prior to clearing, installation of sediment control measures, grading, or any other construction activities.
3. The contractor shall notify the county at least 48 hours prior to start of construction. All utilities shall be located and marked prior to the start of work.
4. Install SCE, all fences, and all other sediment control devices.
5. Clear vegetation within the limits of disturbance where necessary. All vegetation which is to be removed shall be flushed out using a chain saw. Vegetation which is scarred, trenched, or otherwise damaged shall be preserved to the satisfaction of the restoration specialist.
6. Dozer grading pond to remove standing water.
7. Install diversion at outlets according to plans. Drain any spring flow that is present in the pond before grading.
8. Provide stake list for proposed channel work.
9. Rough gradefill, former pond area to approximate proposed grades.
10. Excavate/shape trench at location of the proposed streamside infiltration channel. Trench should be as wide as the proposed works and 3 feet deeper than the over excavation of the proposed grade.
11. Trench with 3 feet of the specified sand to install streamside infiltration channel according to plans.
12. Placing of the streamside bank etc. at the locations of all disturbed areas at the end of each day.
13. Beginning of the construction and the streamside bank etc. shall be regraded and operated to reduce sediment runoff.
14. Install edge of bank, channel, and other streamside bank etc. according to plans.
15. Stabilize all disturbed areas at the end of each day.
16. Slow flow, all fences, and any other erosion and sediment control devices only after approval is granted from the Howard County inspector and all other applicable regulatory authorities.
17. Install trees and shrubs according to planting plan.

PHASE ONE
POND REMOVAL AND STREAM
RESTORATION GRADING PLAN

HOLLIFIELD HILLS
LOTS 1 THRU 19 & OPEN SPACE LOTS 20 THRU 49

LEGEND

- 20 Guttering (2) PVC Silted
- UDC
- Stabilized Construction Entrance
- SSS Fence
- Super 58 Fence
- Channel Identification

EXISTING TOPOGRAPHY

- Proposed Grade
- Cross Section Locations
- Proposed Profile
- Profile

FINAL

NOTE: SEE SHEETS 5 & 6 FOR REMAINDER OF SITE L.O.D. AND SEDIMENT CONTROL MEASURES.
NOTE: PLANTING SHOULD ONLY BE PERFORMED DURING THE GROWING SEASON, BEGINNING JUNE 1.

LEGEND

Existing Topography

Proposed Grade

Cross Section Locations

Proposed Tree

Proposed Foul

Tree Area

Planting Area

Environmental Systems Analysis, Inc.

PLANTING PLAN
HOLLIFIELD HILLS
LOTS 1 THRU 45 & OPEN SPACE LOTS 46 THRU 67

S-609

Scale: 1"=30'
PLANTING NOTES

GENERAL PLANTING NOTES
1. The Landscape Contractor shall notify ESA, Inc. of the scheduled date for commencement of planting so that all planting materials and planting methods may be inspected and approved by ESA, Inc. NO PLANTS SHALL BE INSTALLED WITHOUT A REPRESENTATIVE OF ESA, INC. ON SITE.
2. All plants shall be placed within the Limits of Disturbance, excluding the active channel.
3. The Landscape Contractor is responsible for the location of all underground utilities. Repairs of utilities damaged during planting shall be at the Contractor's expense.
4. Planting shall be performed in accordance with the latest edition of the Landscape Contractors Association’s “Landscape Specification Guidelines” and as specified below.
5. Plants may be installed from September 1st to November 15th and from March 15th to June 15th. Planting shall not be performed outside of these dates without the expressed permission of ESA, Inc. In addition, planting shall not occur at sub-freezing temperatures, when the ground is frozen, or when the soil is too dry or wet, or otherwise in a condition not generally accepted as satisfactory for planting.

STANDARDS
1. All plant material shall conform to the current issue of the American Standard for Nursery Stock published by the American Association of Nurserymen and as specified below.
2. All container stock shall be nursery-grown within a 200-mile radius of the site. Plant materials collected from the wild will be rejected.
3. Plant materials shall be obtained from nurseries that have been inspected and certified by state plant inspectors.
4. The root system of container grown plants shall be white, well-developed, and well-distributed throughout the container with the roots not touching the inside face of the growing container.
5. If in leaf, the plants shall appear healthy with no leaf spot, leaf drop, leaf discoloration, leaf wilting or evidence of insects on the plant.
6. There shall be no change in the quantity, size or species of scheduled plant material without the prior approval of ESA, Inc.

STORAGE AND DELIVERY
1. Seed shall be delivered in containers (bottles, jars, paper/cloth bag/boxes) having labels that report the origin of the seed, the purity of the seed and the germination percentage, and date of germination testing of the seed.
2. After being delivered to the job site, plants shall be stored in a cool, shaded location. Plant root masses shall be kept moist with periodic watering until the time of planting.
3. Soil root masses shall be thoroughly moist upon delivery to the site. Dry or light weight plants shall be rejected.
4. If the soil/root masses are substantially smaller than the specified container size and loose soil exists on the bottom of the containers, the plants shall be rejected.
5. All rejected material shall be immediately removed from the site.

PLANTING Master Schedule

PLANTING Container Detail

<table>
<thead>
<tr>
<th>TREE</th>
<th>SPECIES/.nickname</th>
<th>COMMON NAME</th>
<th>NAME</th>
<th>SIZE</th>
<th>4&quot;</th>
<th>6&quot;</th>
<th>8&quot;</th>
<th>NO.</th>
<th>10&quot;</th>
<th>12&quot;</th>
<th>RADIUS</th>
<th>18&quot;</th>
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<tr>
<td>96</td>
<td>American Beauty</td>
<td>Lagerstroemia indica</td>
<td>1 gal</td>
<td>12</td>
<td>18</td>
<td>24</td>
<td>36</td>
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<tr>
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<td>Black Beauty</td>
<td>Lagerstroemia indigotica indica</td>
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<td>18</td>
<td>24</td>
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<tr>
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<tr>
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<tr>
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<td>18</td>
<td>24</td>
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<td>1,2,3</td>
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<td>10,11,12</td>
<td>13,14,15</td>
<td>16,17,18</td>
<td></td>
</tr>
</tbody>
</table>

PLANTING NOTES TREATS AND SHRUBS
1. Excavate a planting hole at least 12" wider than the width of the rootball and to a depth which leaves approximately 1½ of the rootball above the existing grade.
2. Remove the plant either by cutting or inverting the container.
3. To encourage the outward growth of the roots, make 4 to 5 one inch deep cuts the length of the root ball with a sharp knife or blade.
4. Install contorted root in the center of the hole with approximately 1½ of the rootball above finished landscape grade.
5. Backfill planting hole with two thirds existing soil and one third organic matter.
6. Any surplus soil remaining after planting shall be used to create a small mound around the edge of the planting hole to hold water during watering operations.
7. Thoroughly water the interior of the tree saucers until it is filled. Watering shall be undertaken even if it is raining. A second watering may be necessary to insure saturation of the rootball and elimination of the air pockets.
8. Place 3 foot diameter mulch ring around each plant. Mulch shall be a minimum depth of 2" and a maximum depth of 3". DO NOT PLACE MULCH AGAINST THE TRUNK.
9. Prune any and all tree branches that are dead, diseased, damaged, or conflicting.
10. Remove all tags, labels, string, and wire from the trees.

SEEDING
1. Soak the seed in water for a depth of 1 to 2 inches with a hand rake or other approved device.
2. Apply seed when the soil is friable (soil should break up easily extending to the inside face of the growing container) when worked) using a broadcast seeder or a hydroseeder.
3. If a broadcast seeder is used, mix the seed with a carrier of similar weight (perlite, vermiculite, sawdust or similar product) and make two passes over each area. The second pass shall be made at a 90 degree angle to the first pass to ensure even seed distribution. Work seed into the soil with the back of a hand rake. Finally, press the seed into the soil with a hand roller or by simply walking on the seeded areas following raining to ensure soil to seed contact.
4. If using a hydroseeder, no carrier is required and one pass over each area will be sufficient provided that all portions of the site to be seeded are covered.
5. Mulch all disturbed areas with the exception of those covered with soil stabilization fabric with straw at a rate of 100 bales/acre or 16 cubic yards/acre.

PRODUCTS
1. Organic Matter: Thoroughly shredded and well composted leaf material free of trash.

MULCHING MATERIAL

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Straw</td>
<td>Small-grained, such as wheat or barley which is free of rot, mildew, and noxious weed seeds.</td>
</tr>
<tr>
<td>b. Mulch</td>
<td>Well-aged, medium to coarse hardwood or pine bark mulch, dark brown in color and free of foreign matter. Pine bark mulch is used, less than 10% shall be sawdust.</td>
</tr>
</tbody>
</table>

MAINTENANCE AND GUARANTEE
1. Plant material shall be maintained by the Landscape Contractor for one year from the date of initial inspection and acceptance of the planting by ESA, Inc. Maintenance shall include all watering, fertilization, and animal repellant necessary to ensure the survival and growth of the plants.
2. The landscape contractor shall guarantee that 85% of the planted material shall be alive and healthy one year after the initial inspection and acceptance by ESA, Inc. At the end of this period, ESA, Inc. shall conduct a final inspection with the Landscape Contractor. All failed material exceeding 85% of the total plant quantity based on these plants or as amended in writing by ESA, Inc. shall be replaced by the Landscape Contractor. This guarantee shall cover all damages except vandalism, fire, flood, and animal predation.

PLANT MATERIAL WHICH IS 25% DEAD OR MORE SHALL BE CONSIDERED DEAD

PLANT MATERIAL WHICH IS 25% DEAD OR MORE SHALL BE CONSIDERED DEAD

SOIL STABILIZATION MATTING

INSTALLATION SEQUENCE
1. Slope to be covered shall be fine graded and seeded.
2. Beginning at the bottom of the slope at the upstream limit of the fabric, fasten edge of fabric using staples.
3. Until fabric parallel to slope, making sure there is full contact between soil and fabric. Consecutive rolls aligned across the slope shall be overlapped 3 inches from upstream to downstream. Place staples 1 foot apart along edges and where fabrics overlap.
4. Continue process moving up-slope. Overlap fabric edges 3 inches, and snyllong such that the up-slope fabric overlaps the downstream fabric.
5. Continue process until the area is covered. At the top of the slope, cut a "Y" into side and place edge of fabric into slop. Secure with staples then backfill with soil and compact.