Crouse Park Redevelopment

Phase IC: Boat Basin Enhancement Construction

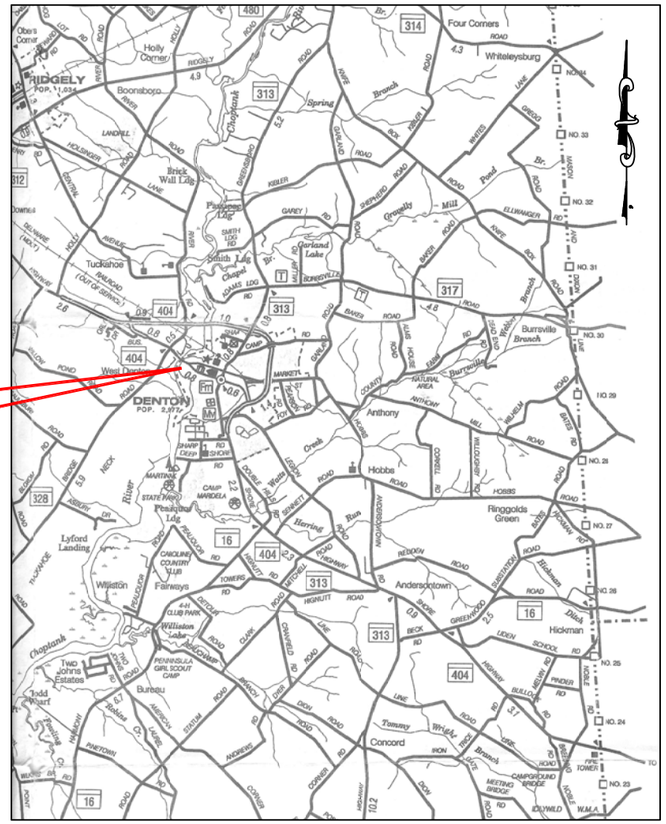
Denton, Maryland

February 4th, 2014

Prepared for:

Town of Denton

13 North Third Street
Denton, Maryland 21629
Phone: (410) 479-2050



REVIEWED FOR THE CAROLINE SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

APPROVED: _____ DATE: _____
CAROLINE SOIL CONSERVATION DISTRICT

OWNERS CERTIFICATION

_____ DATE: _____
DON MULRINE, TOWN OF DENTON ADMINISTRATOR

1. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR OR SUBCONTRACTOR THE ENGINEER OF ANY DEVIATION FROM THIS PLAN. ANY CHANGES MADE ON THIS PLAN WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER WILL PLACE RESPONSIBILITY FOR SAID CHANGE ON THE CONTRACTOR OR SUBCONTRACTOR.
2. ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATION OF ATTENDANCE AT THE DEPARTMENT OF ENVIRONMENT APPROVED TRAINING FOR THE CONTROL OF EROSION AND SEDIMENT BEFORE BEGINNING THE PROJECT

SHEET INDEX:

SHEET NO. 1: SHEET INDEX & VICINITY MAP
SHEET NO. 2: EXISTING CONDITIONS PLAN
SHEET NO. 3: SEDIMENT & EROSION CONTROL AND GRADING PLAN
SHEET NO. 4; CROSS–SECTIONS
SHEET NO. 5; CONSTRUCTION DETAILS
SHEET NO. 6: LANDSCAPING PLAN
SHEET NO. 7: PLANT SCHEDULE & DETAILS

Prepared by:

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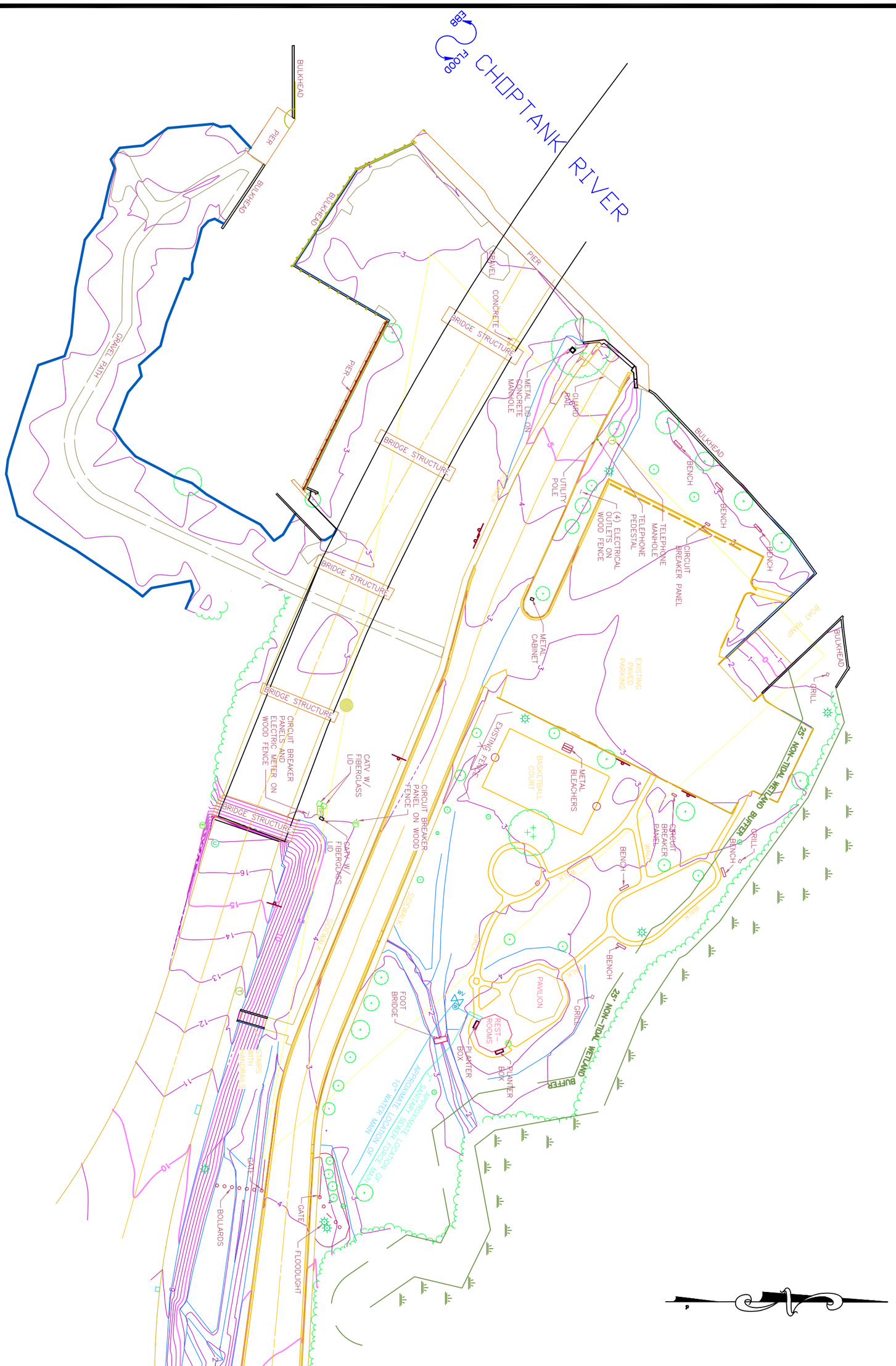

EXISTING CONDITIONS PLAN

Crouse Park Redevelopment
Phase IC
Boat Basin Enhancement Construction

Denton, Maryland

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SCALE:	1 inch = 60 feet
DRAWN BY:	A. McCullough
DATE:	October 23rd, 2008
LAST REVISION:	NONE
SS PROJECT NO:	08003
SHEET NUMBER	2 OF 7

TYPICAL EXISTING GRADES

BULKHEAD

PIER

BULKHEAD

TURBIDITY CURTAIN

BULKHEAD

PROPOSED BIOENGINEERING

PROPOSED BIOENGINEERING

EXISTING GEOTUBES

PIER

BRIDGE STRUCTURE

BRIDGE STRUCTURE

BRIDGE

Vertical Benchmark Nail at West Side of Bulkhead Piling: 3.67 ft. NGVD 29

A

B

C

A'

B'

C'

D

3

2.2 ft.

1.7 ft.

0.0 ft.

2.2 ft.

4.0 ft.

3.0 ft.

3.0 ft.

1.2 ft.

2.2 ft.

1.2 ft.

1.7 ft.

2.2 ft.

0.0 ft.

GRAVEL PATH

TYPICAL PROPOSED GRADES

SILT FENCE

SILT FENCE

NOTES:
1) Limit of Disturbance defined within limits of silt fence & basin.

2) Site access to follow the existing path with under bridge use in accordance with MSHA guidelines.

SCALE:	1 inch = 20 feet
DRAWN BY:	A. McCullough
DATE:	September 23rd, 2008
LAST REVISION:	NONE
SS PROJECT NO:	08003
SHEET NUMBER	3 OF 7

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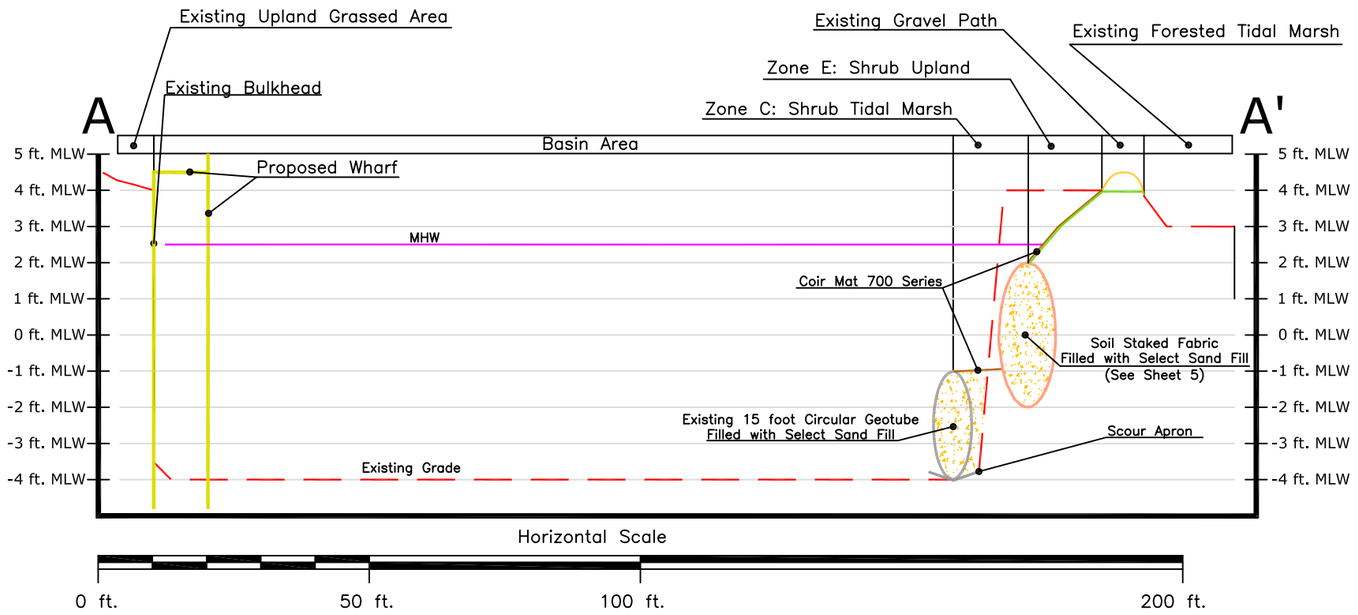
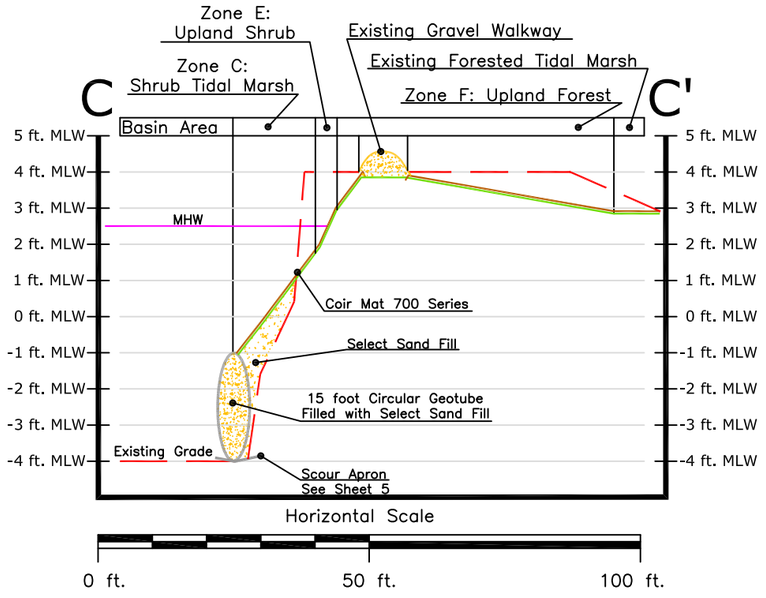
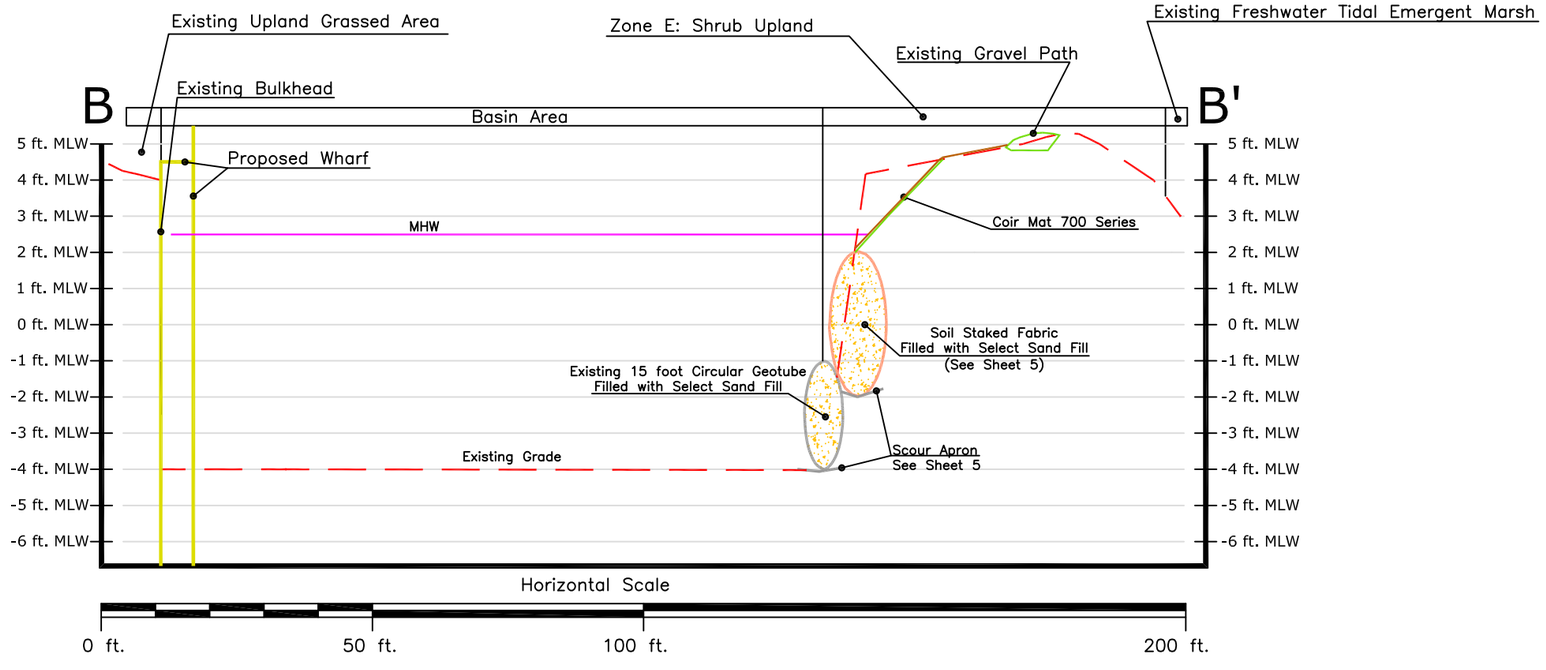
SEDIMENT & EROSION AND GRADING PLAN

Crouse Park Redevelopment
Phase IC
Boat Basin Enhancement Construction

Denton, Maryland







NOTE:
1) MLW = −0.78 ft. NGVD 29

SCALE: 1 inch = 20 feet
DRAWN BY: A. McCullough
DATE: September 23rd, 2008
LAST REVISION: February 4th, 2014
SS PROJECT NO: 08003
SHEET NUMBER 4 OF 7

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CROSS-SECTIONS

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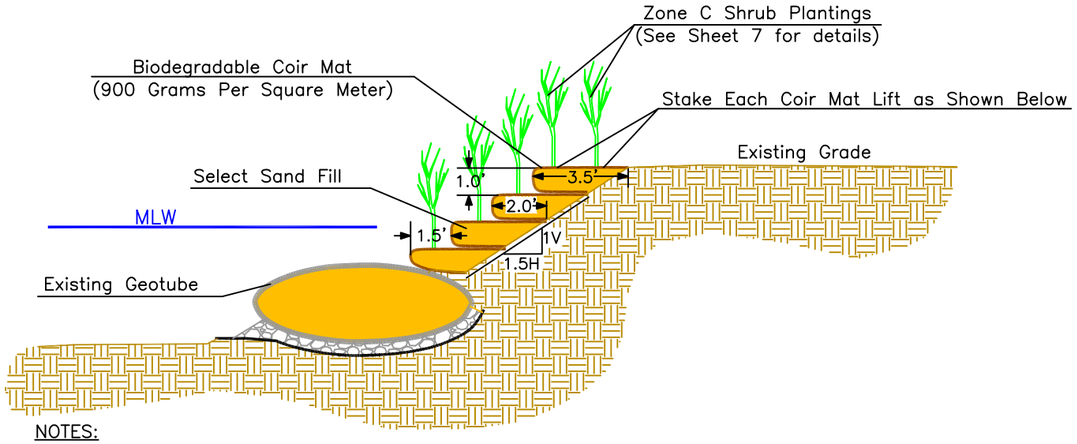


NOTES:

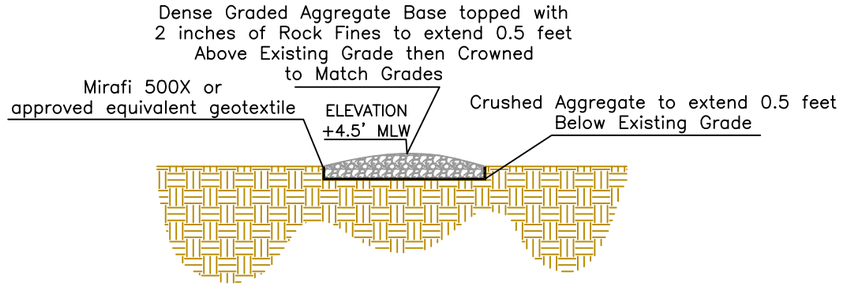
1) Select Sand Fill shall be comprised of clean washed sand with no more than ten (10) percent passing by weight the No. 100 sieve.

2) Slope behind existing geotube to be graded to a 1.5H:1V inclination.

3) Biodegradable coir mat shall be constructed of coconut fiber with a tight weave and weight of 900 grams per square meter.

4) Coir mat bottom shall extend a minimum 2 feet under the one (1) foot thick select sand fill. After placing & grading the select sand fill the coir fabric shall be pulled tightly back over the top into the graded bank for a minimum of 3.5 feet.

EXISTING GEOTUBE AND PROPOSED SOIL LIFT DETAIL
Not to Scale



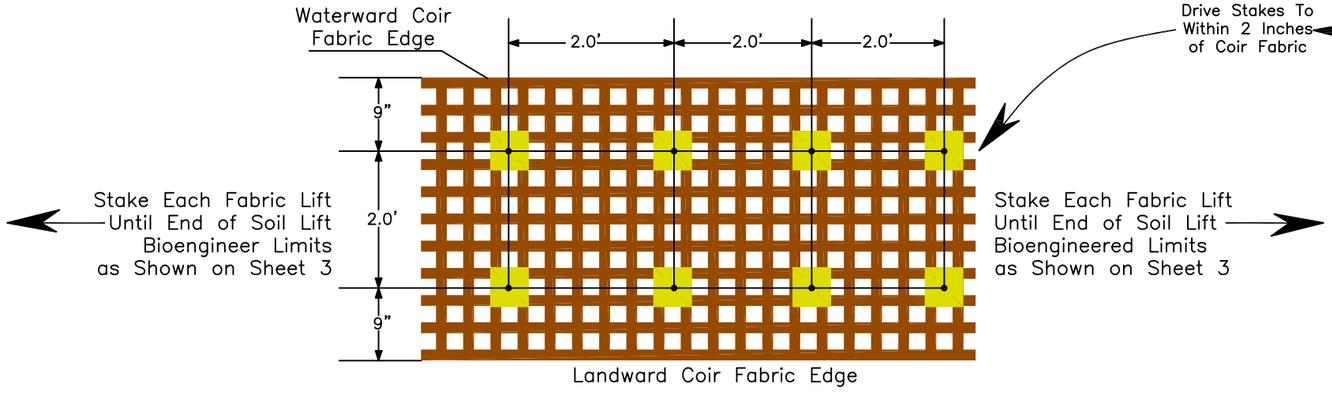
NOTES:

1) Base aggregate to consist of crushed stone conforming to State of Maryland Dense Graded Aggregate Base gradation. Aggregate to be compacted in place with final two (2) inches comprised of rock fines. Final grading crowned and compacted.

2) Path shall be six (6) feet wide with shoulders set at Elevation 4.0 and crown top set at Elevation 4.5 in all zones except Zone E. Path in Zone E shall follow the existing grade as shown on the grading plan.

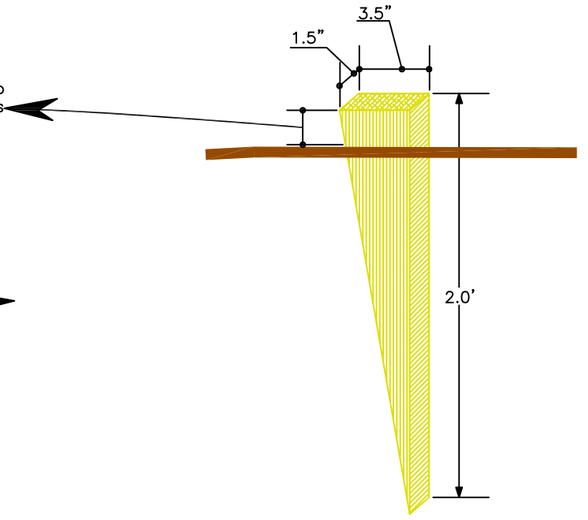
3) Path shall be undercut 0.5 feet in depth and 6 feet wide with the entire excavation lined with the noted geotextile.

DENSE GRADED AGGREGATE BASE PATH DETAIL
Not to Scale



Overlap roll ends a minimum of two (2) feet & stake together

PROPOSED SOIL LIFT STAKING DETAIL
Not to Scale



Stakes cut from 2 by 4 inch wood studs then driven to within 2 inches of coir fabric at spacings shown to lock all fabric layers together & into exposed bank cut face.

SCALE: As Shown
DRAWN BY: A. McCullough
DATE: September 23rd, 2008
LAST REVISION: November 11th, 2013
SS PROJECT NO: 08003
SHEET NUMBER 5 OF 7

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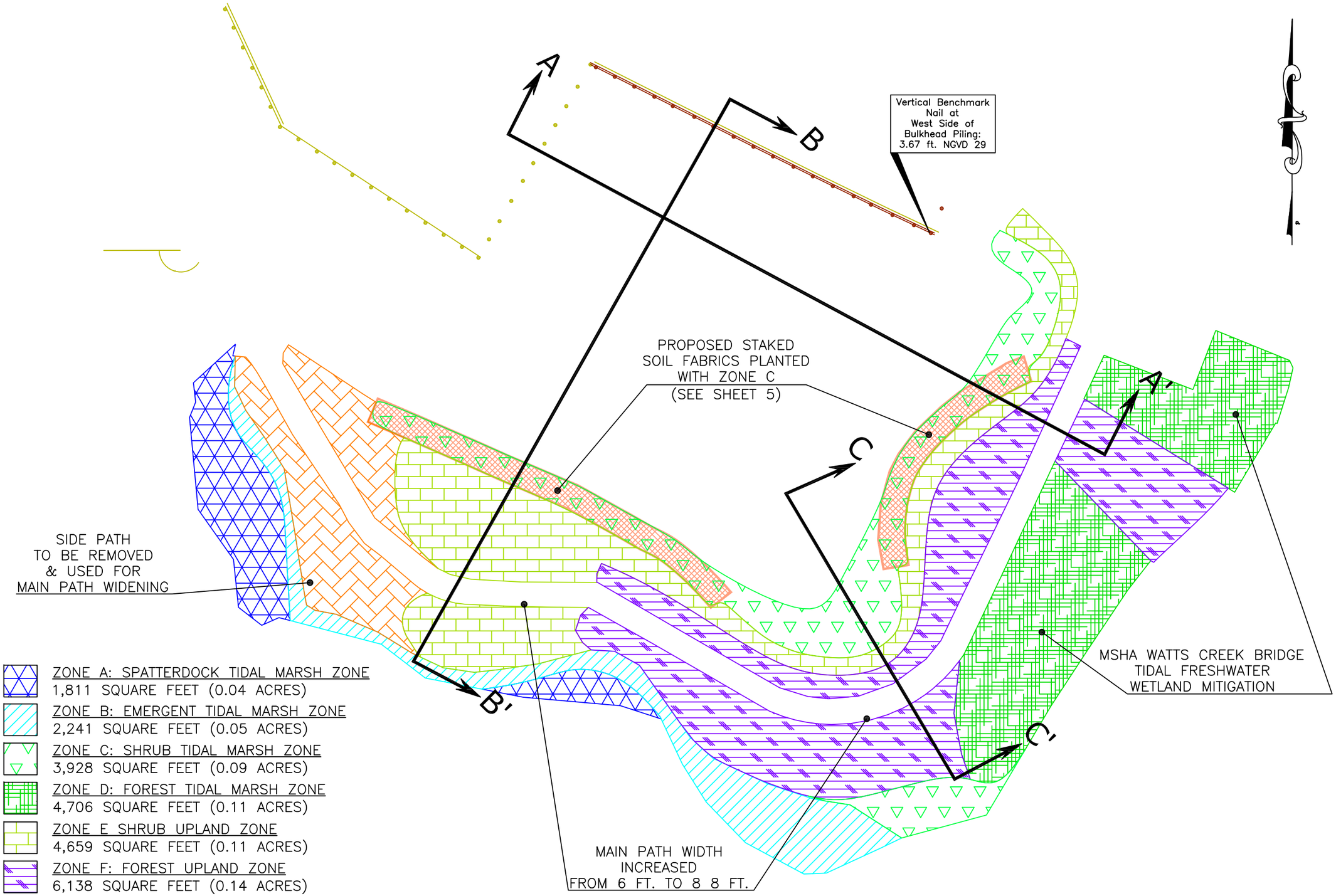
CONSTRUCTION DETAILS

Crouse Park Redevelopment
Phase IC
Boat Basin Enhancement Construction

Denton, Maryland



SCALE: 1 inch = 20 feet
DRAWN BY: A. McCullough
DATE: September 23rd, 2008
LAST REVISION: November 14th, 2013
SS PROJECT NO: 08003
SHEET NUMBER 6 OF 7

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LANDSCAPING PLAN

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ZONE A: Spatterdock Freshwater Tidal Marsh Zone: (1,811 square feet / 0.04 acres)

Botanical Name	Common Name	Size	Plant Spacing	Quantity	Planting Elevation*	Planting Period
Nuphar lutea	Spatterdock	2–inch plug	1 ft. OC	1,207	–1.8 to –0.3 ft.	April 15th to June 15th
Peltandra virginica	Arrow Arum	2–inch plug	1 ft. OC	604	–0.3 to 1.2 ft.	April 15th to June 15th

ZONE B: Emergent Freshwater Tidal Marsh Zone (2,241 square feet / 0.05 acres)

Botanical Name	Common Name	Size	Plant Spacing	Quantity	Planting Elevation*	Planting Period
Iris versicolor	Blue Iris	2–inch plug	1 ft. OC	560	1.7 to 2.2 ft.	April 15th to June 15th
Lobelia cardinalis	Cardinal Flower	2–inch plug	1 ft. OC	560	1.7 to 2.2 ft.	April 15th to June 15th
Pontederia cordata	Pickerelweed	2–inch plug	1 ft. OC	1,121	1.2 to 1.7 ft.	April 15th to June 15th

ZONE C: Shrub Freshwater Tidal Marsh Zone (3,928 square feet / 0.09 acres)

Botanical Name	Common Name	Size	Plant Spacing	Quantity	Planting Elevation*	Planting Period
Cephalanthus occidentalis	Buttonbush	2–inch tubeling**	4 ft. OC	124	–0.8 to 1.2 ft.	April 15th to June 15th
Hibiscus moscheutos	Marsh Hibiscus	2–inch tubeling	4 ft. OC	62	1.2 to 1.7 ft.	April 15th to June 15th
Sambucus canadensis	Elderberry	2–inch tubeling	4 ft. OC	62	1.2 to 1.7 ft.	April 15th to June 15th

ZONE D: Forest Freshwater Tidal Marsh Zone (4,705 square feet / 0.11 acres)

Botanical Name	Common Name	Size	Plant Spacing	Quantity	Planting Elevation*	Planting Period
Taxodium distichum	Bald Cypress	1 gal. cont.	7 ft. OC	100	2.2 to 3.2 ft.	April 15th to June 15th

ZONE E: Shrub Upland Zone (4,659 square feet / 0.11 acres)

Botanical Name	Common Name	Size	Plant Spacing	Quantity	Planting Elevation*	Planting Period
Cornus sericea	Red–osier Dogwood	1 qt. cont.	4 ft. OC	97	1.7 to 3.2 ft.	April 15th to June 15th
Hibiscus moscheutos	Marsh Hibiscus	1 qt. cont.	4 ft. OC	97	1.7 to 3.2 ft.	April 15th to June 15th
Viburnum dentatum	Arrowwood	1 qt. cont.	4 ft. OC	97	1.7 to 3.2 ft.	April 15th to June 15th

ZONE F: Forest Freshwater Tidal Marsh Zone (6,138 square feet / 0.14 acres)

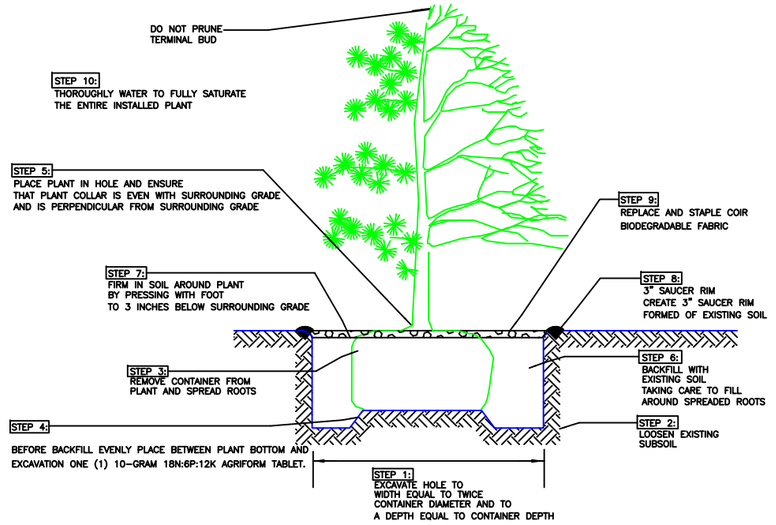
Botanical Name	Common Name	Size	Plant Spacing	Quantity	Planting Elevation*	Planting Period
Acer rubrum	Red Maple	1 gal. cont.	7 ft. OC	125	2.2 to 3.2 ft.	April 15th to June 15th

ZONE G: Upland Meadow Zone (2,353 square feet / 0.05 acres)

Botanical Name	Common Name	Sowing Rate (Pure Live Seed)	Planting Area	Sowing Period
Panicum virgatum	Switchgrass	12 pounds per acre	Zones E through G	April 15 – June 1
Schizachyrium scoparium	Little Bluestem	4 pounds per acre	Zones E through G	April 15 – June 1
Andropogon virginicus	Broomsedge	2 pound per acre	Zones E through G	April 15 – June 1
Andropogon gerardi	Big Bluestem	6 pounds per acre	Zones E through G	April 15 – June 1
Andropogon glomeratus	Indian Grass	6 pounds per acre	Zones E through G	April 15 – June 1
Asclepias tuberosa	Butterfly Weed	1/2 ounce per acre	Zones E through G	April 15 – June 1
Asclepias syriaca	Common Milkweed	1/2 ounce per acre	Zones E through G	April 15 – June 1
Aster laevis	Smooth Aster	1/2 ounce per acre	Zones E through G	April 15 – June 1
Lupinus perennis	Lupine	4 ounces per acre	Zones E through G	April 15 – June 1
Rudbeckia hirta	Black–eyed Susan	1/4 ounce per acre	Zones E through G	April 15 – June 1
Solidago rigida	Stiff Goldenrod	1/2 ounce per acre	Zones E through G	April 15 – June 1
Solidago speciosa	Showy Goldenrod	1/4 ounce per acre	Zones E through G	April 15 – June 1

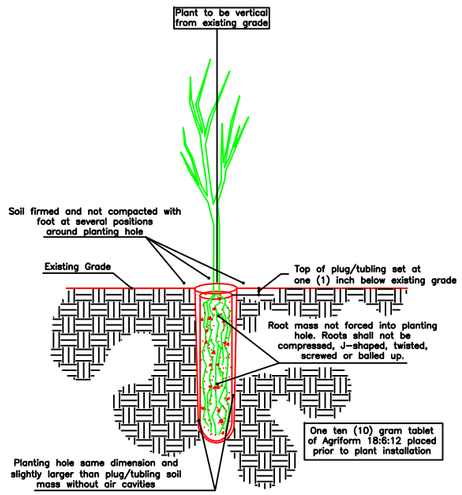
* Elevations relate to NGVD 29 with benchmark as noted on Sheets 3 & 6

** Plant height to be 3 to 4 feet in height and planted to maintain crown above MHW



NOTES

1. ALL DELIVERED PLANT MATERIAL TO BE WATERED TO FULL SATURATION DAILY UNTIL INSTALLED
2. ALL INSTALLED PLANT MATERIAL TO BE WATERED TO FULL SATURATION IMMEDIATELY AFTER INSTALLATION
3. AFTER INSTALLATION, ALL PLANT MATERIAL TO BE WATERED AT NO LONGER THAN 48 HOURS BETWEEN LAST PRECIPITATION (1/2 INCH OR GREATER) OR IRRIGATION EVENT



1) Locate the cylindrical dibble or plug extractor in the center of the planting spot, orient the tool vertically (straight down), and apply firm pressure on the footstep so that the planting tool penetrates to the full design depth. The created hole shall be within 10 degrees of vertical.

2) Remove the planting tool and examine the planting hole. The created hole shall be clean and conform to the shape of the plug/tubling dimensions. If it does not conform to the required shape, insert the tool again to create correct dimensions. If dimensions still not correct or a large air pocket is created, the hole shall be abandoned and a new planting location selected.

3) Once the correct planting hole size is achieved, gently remove the tubling from the plant tray, plant carrier or shipping container and carefully remove the tree/shrub from the plant tube. Alternately, carefully remove a plug from the planting bag or plant carrier.

4) Immediately place the tree/shrub in the planting hole. The tree/shrub shall be placed in the planting hole such that the top of tubling root collar or plug rootmass is one (1) inch below the adjacent soil elevation with the roots oriented downward. Do not force into the planting hole. The root system shall not be compressed, twisted, screwed, J–shaped or balled up.

5) With the foot, scape enough soil from the surrounding area to close the planting hole fully to cover the soil surface of the tubling or plug to an elevation slightly higher than the adjacent grade.

6) While gently holding the top of tree/shrub, apply firm foot pressure in several different positions immediately around the tree/shrub to firm the soil and eliminate air pockets. The final placement shall result in the top of the root mass being one (1) inch below the soil surface with the planting hole being totally closed with firmed, uncompacted soil without any air pockets.

SCALE: 1 inch = 20 feet
DRAWN BY: A. McCullough
DATE: September 23rd, 2008
LAST REVISION: November 14th, 2013
SS PROJECT NO: 08003
SHEET NUMBER 7 OF 7

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PLANT SCHEDULE & DETAILS PLAN

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