



Application for URBAN DESIGN COMMITTEE Review

Department of Planning and Development Review
Planning & Preservation Division
900 E. Broad Street, Room 510
Richmond, Virginia 23219
(804) 646-6335

<http://www.richmondgov.com/CommitteeUrbanDesign>

Application Type

- Addition/Alteration to Existing Structure
 New Construction
 Streetscape
 Site Amenity

- Encroachment
 Master Plan
 Sign
 Other

Review Type

- Conceptual
 Final

Project Name: _____

Project Address: _____

Brief Project Description (this is not a replacement for the required detailed narrative) : _____

Applicant Information

(on all applications other than encroachments, a City agency representative must be the applicant)

Name: _____ Email: _____

City Agency: _____ Phone: _____

Address: _____

Main Contact (if different from Applicant): _____

Company: _____ Phone: _____

Email: _____

Submittal Deadlines

All applications and support materials must be filed no later than 21 days prior to the scheduled meeting of the Urban Design Committee (UDC). Please see the schedule on page 3 as actual deadlines are adjusted due to City holidays. **Late or incomplete submissions will be deferred to the next meeting.**

Filing

Applications can be mailed or delivered to the attention of "Urban Design Committee" at the address listed at the top of this page. **It is important that the applicant discuss the proposal with appropriate City agencies, Zoning Administration staff, and area civic associations and residents prior to filing the application with the UDC.**

UDC Background

The UDC is a ten member committee created by City Council in 1968 whose purpose is to advise the City Planning Commission on the design of projects on City property or right-of-way. The UDC provides advice of an aesthetic nature in connection with the performance of the duties of the Commission under Sections 17.05, 17.06 and 17.07 of the City Charter. The UDC also advises the Department of Public Works in regards to private encroachments in the public right-of-way.

PROJECT NARRATIVE & BACKGROUND:

Regenerative Stormwater Conveyance Systems (RSCS): Children's Farm Water Quality Treatment Train

The RSCS is an open-channel conveyance system that converts through surface pools and a surface sand seepage filter, surface tor flow to shallow groundwater flow through a series of constructed shallow aquatic pools, riffle grade controls, native vegetation, and underlying sand / woodchip mix filter bed medium.

- Provides energy dissipation to the concentrated flows through the restored riparian buffer as well as provided groundwater recharge for vegetated root zone.
- A secondary benefit will be provided by the pools and plant material to reduce flow velocity and enhance the removal of suspended particles and their associated pollutants with an estimated phosphorus reduction to 40%
- Educational Opportunities
- Project exceeds stormwater regulations

A public meeting was held on March 3 to present these projects as well as other Phase 1 projects.

Children's Farm Parking Lot

The Children's Farm Parking Lot improvements adjust current parking lot with lighting, accessibility, and landscaping. Additional parking spaces are added with the improvements to bring the total parking spaces to approximately 211.

PURPOSE OF THE PROJECT:

Maymont has launched the Spirit of Generosity Campaign, a comprehensive \$35 million capital and endowment campaign with two outcomes in mind:

- To expand and improve Maymont's aging facilities and programs (infrastructure)
- To achieve sustainability (via growth of operating endowment funds) so future generations of residents and visitors can enjoy and explore Maymont

Maymont has recently completed a master plan that identified the phasing of the improvements. The Children's Farm project is one of the Phase 1 projects.

PROJECT FUNDING SOURCE:

PROJECT FUNDING SOURCES: Projects are privately funded.

DESCRIPTION OF CONSTRUCTION PROGRAM AND ESTIMATED START TIME:

Construction will begin upon board and funding approvals of each building / improvements mentioned above. Construction of projects may be phased based on approval process.

Parking Lot

A. Electric Car Chargers

Electric Car Chargers are currently outside the current budget.

B. Bicycle Racks

Bike racks will be considered with the future Welcome Plaza design.

C. Planting Changes from Conceptual Submission

The existing trees are Japanese Zelkova's and are mature and have reached an age at which their health will decline. The survey done indicates that there are eight of them. This species is prone to breaking apart, dropping limbs and becoming a maintenance issue as they age and decline. They will be replaced by a hardier species that is better suited to use in difficult growing conditions. This change was recommended by both the Landscape Architect (BCWH) and Maymont's resident Horticulturalist, who added the following:

- The tree, *Zelkova serrata*, was introduced to the landscape trade as replacement for the American Elm, which were decimated by Dutch Elm Disease in the mid- 20th century.
- This tree originates from Japan and is a member of the Ulmaceae or Elm Family. With time this tree has proven to be far inferior to the American elm.
- The biggest challenge with this tree is the branch growth habit of Zelkovas, the branches grow at odd angles creating unstable branch crotches. These weak branch crotches create unsafe conditions as branches mature gaining in size with age.
- In parking lots where there is a constant presence of "targets", families, baby strollers and their cars, proactive measures need to be taken to keep everyone out of harm's way.
- Maymont's trees extend out over the parking area and are reaching the point of potential branch failure in windy and winter weather.
- At Maymont I manage a nationally known collection of mature trees so I fully understand the desire to retain our communities specimens. However, in this case, with these trees and their location this is not advisable.
- Taking action to replace the Zelkovas while renovating the CF parking lot is prudent.

D. Pavers

The permeable paver recommended is the Alleyway Cobble by Newline Hardscapes in Doswell. Tumbled finish, granite color.

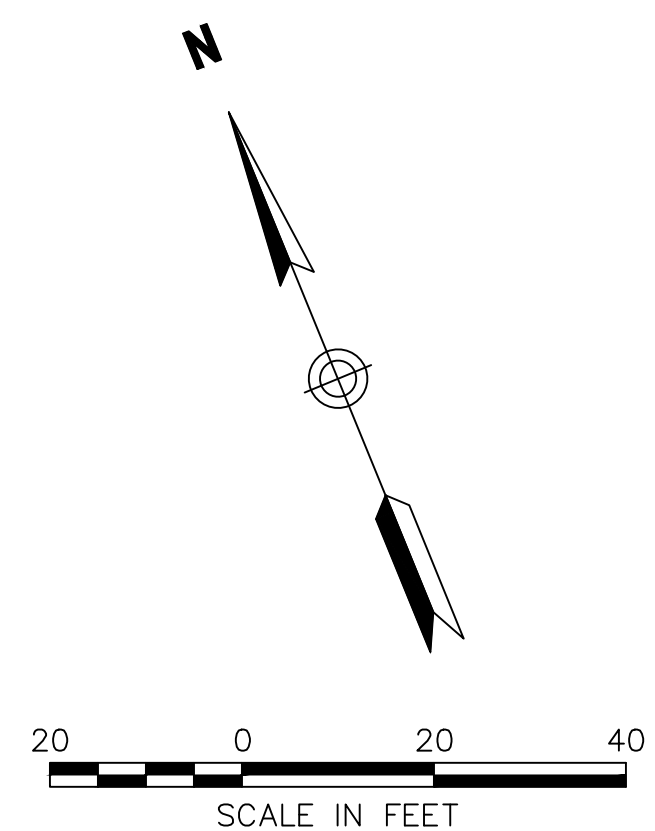


Pavement Legend

[Pattern]	ASPHALT PAVEMENT
[Pattern]	CONCRETE SIDEWALK
[Pattern]	PERMEABLE PAVERS
[Pattern]	MILL AND OVERLAY
[Pattern]	PAVERS

Sign Summary*

M.U.T.C.D. Number	Specification Width	Height	Desc.
R1-1	30"	30"	STOP
R7-8	12"	18"	RESERVED PARKING
R7-BA	12"	6"	VAN ACCESSIBLE



No.	Revision	Date	Apprv.

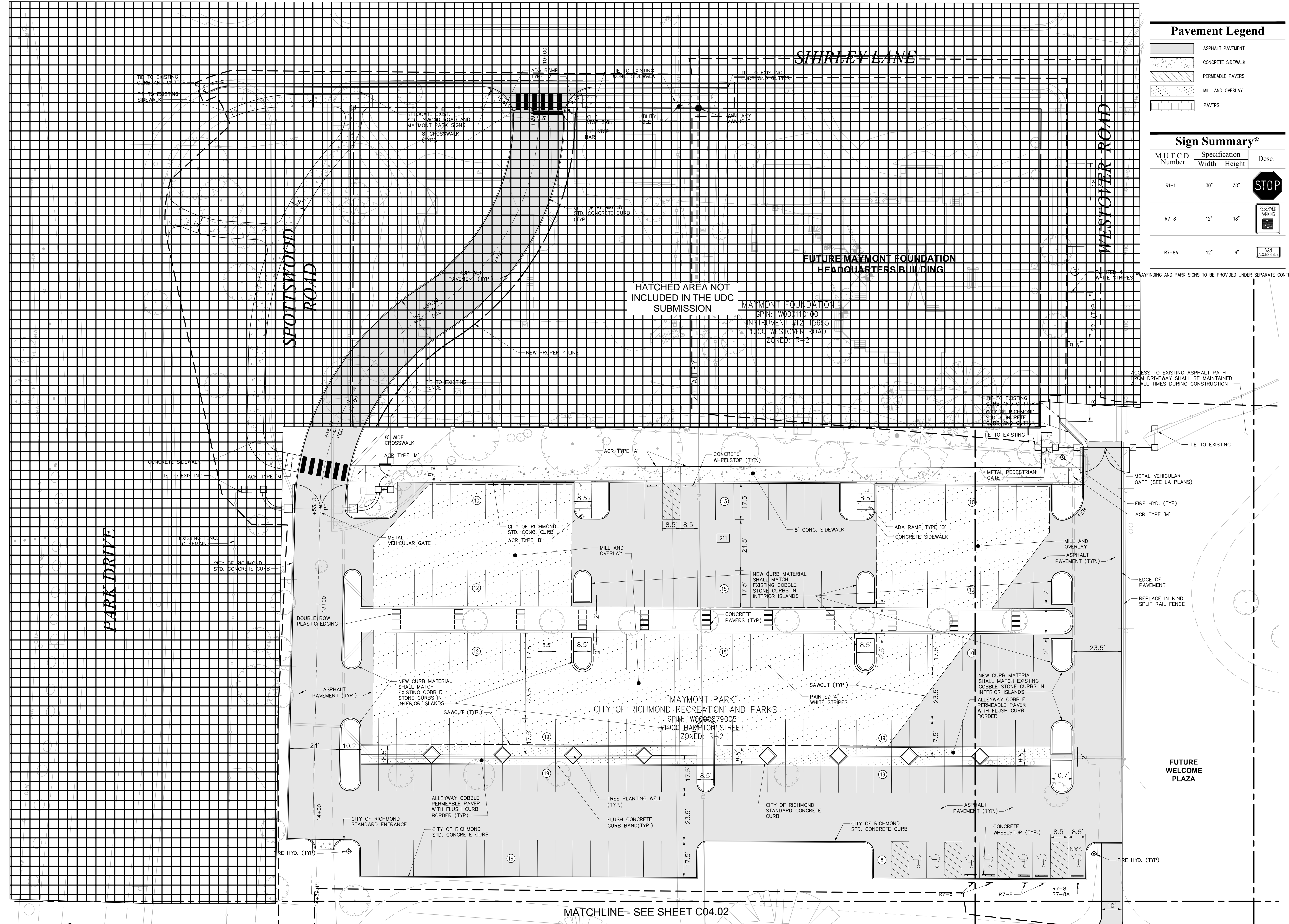
Designed by: _____ Drawn by: _____ Checked by: _____
 CAD checked by: _____ Approved by: _____
 Scale: _____ Date: **September 4, 2015**
 Project Title: _____

**Children's Farm
Maymont Park**

Richmond, Virginia
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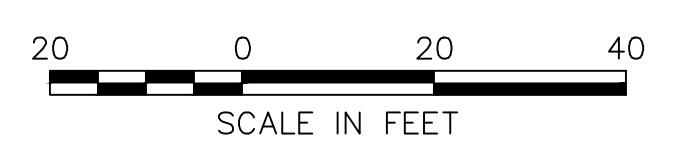
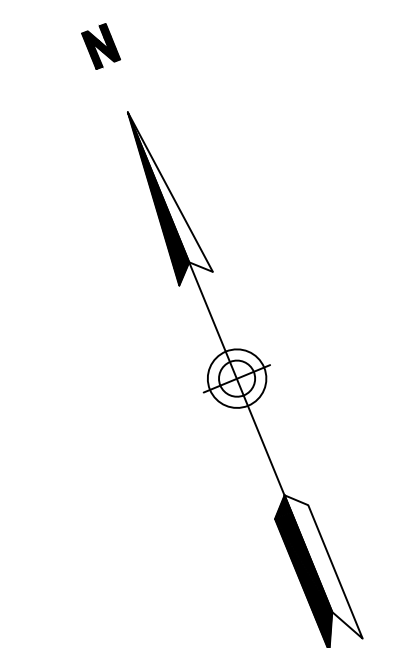
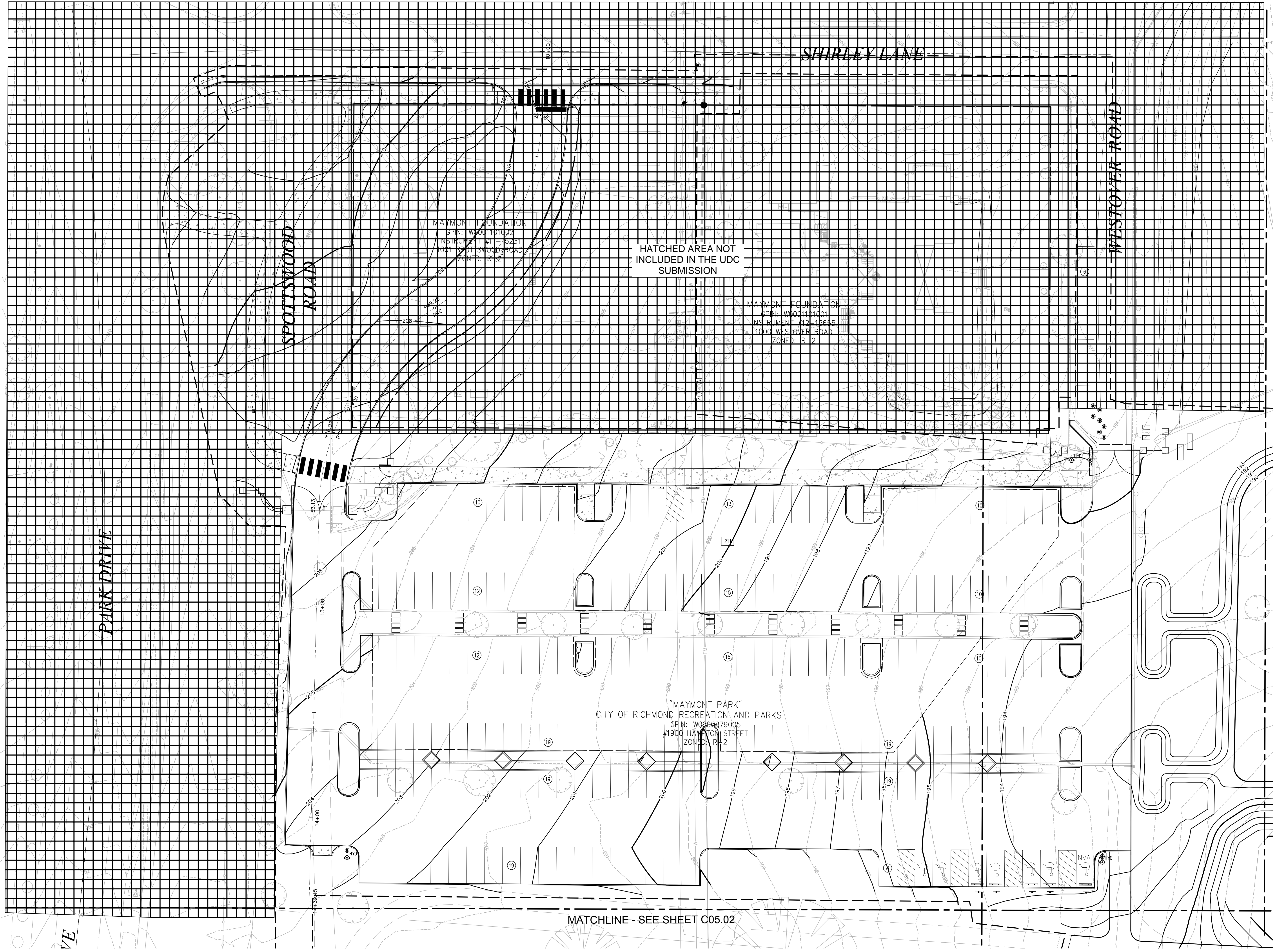
**Layout and Materials
Plan**

Drawing Number
C04.01
 Sheet of _____
 JOHN P. CARTY
 Lic. No. 639452
 09/04/15
 PROFESSIONAL ENGINEER
 Project Number
 32675.05



Saved: Thursday, September 17, 2015 4:44:21 PM MAGEE Plotted: Thursday, September 17, 2015 4:52:16 PM Ager, Merrill
 \\VARIDATA\PROJECTS\32675.05 MAYMONT DESIGN\CAD\LD\PLANS\CHILDRENS FARM\32675.05.LM

Saved Thursday, September 17, 2015 11:35:13 AM MAGEE Plotted Thursday, September 17, 2015 4:58:13 PM Ages, Marshall \\VHB\FRO\PROJECTS\32675.05 MAYMONT DESIGN\CAD\PLANS\CHILDRENS FARM\32675.05.GD



No.	Revision	Date	Apprv.

Designed by _____ Drawn by _____ Checked by _____
 CAD checked by _____ Approved by _____
 Scale _____ Date **September 4, 2015**
 Project Title _____

**Children's Farm
Maymont Park**

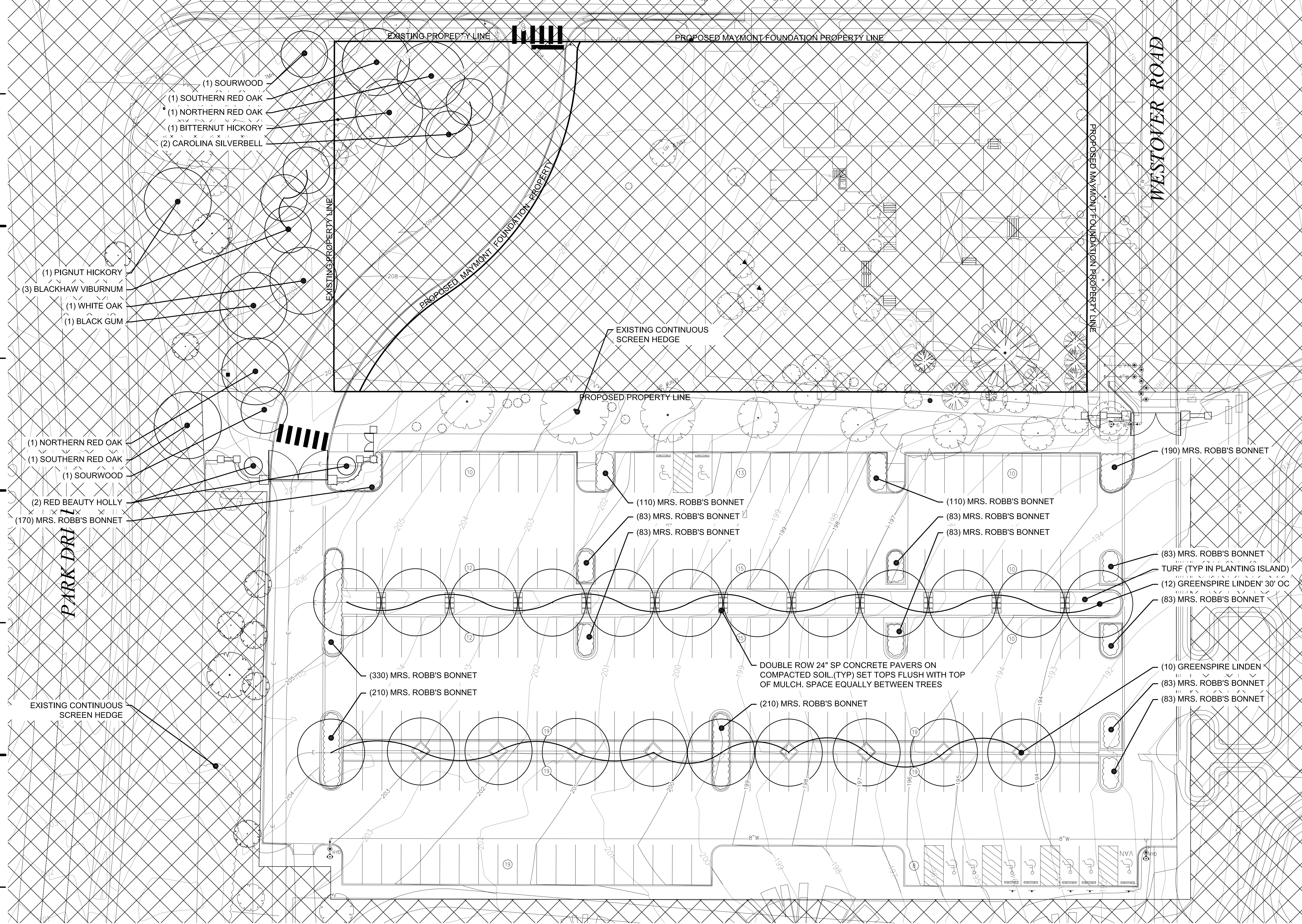
Richmond, Virginia
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Drawing Title
Grading Plan

Drawing Number
C05.01

Sheet **01** of **01**

Project Number
 32675.05



GENERAL NOTES:

- 1) PROVIDE A MINIMUM OF 8 INCHES CLEAN TOPSOIL IN ALL DISTURBED AREAS
- 2) SEED ALL DISTURBED AREAS WITH TURF-TYPE TALL FESCUE MIXED WITH 10 PERCENT KENTUCKY BLUEGRASS BY WEIGHT. PROVIDE TOPSOIL AND ESTABLISH FINISHED GRADES AS SHOWN ON GRADING PLAN. TEST SOIL AND ADJUST PH AS RECOMMENDED. REMOVE ALL STICKS, ROCKS AND OTHER DEBRIS. APPLY SEED AT THE RATE OF 8 LBS. PER 1,000 SQUARE FEET AND ROLL TO ESTABLISH CONTACT WITH SOIL. COVER WITH CLEAN STRAW MULCH OR APPROVED EQUIVALENT. REPEAT AS NECESSARY TO ESTABLISH EVEN, HEALTHY COVERAGE. WATER AND MAINTAIN UNTIL NOTIFICATION BY OWNER OR DATE OF SUBSTANTIAL COMPLETION, WHICHEVER OCCURS FIRST.

BCWH ARCHITECTURE
INTERIORS
LANDSCAPE
CAMPUS PLANNING

1840 West Broad Street
Suite 400
Richmond, Virginia 23220
www.bcwh.com
804.788.4774 phone
804.788.0986 fax

NOT FOR CONSTRUCTION

MAYMONT FOUNDATION HEADQUARTERS

MAYMONT FOUNDATION
1000 WESTOVER ROAD
RICHMOND, VA 23220

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PROJECT NUMBER: 1234.00

PROJECT MANAGER: CW

DRAWN BY: ABE

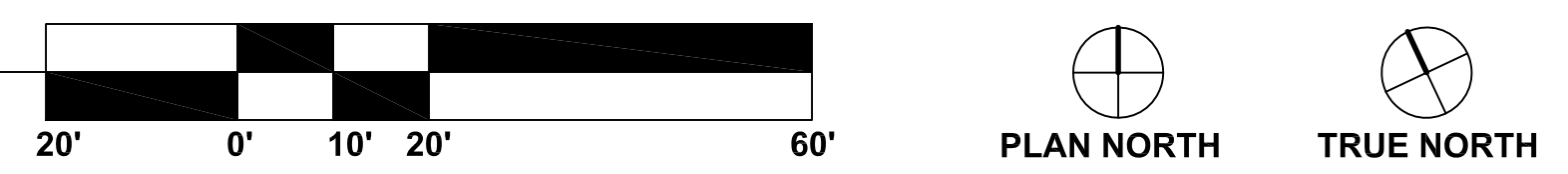
REVISION DATE: 10/26/2015

REVISIONS:

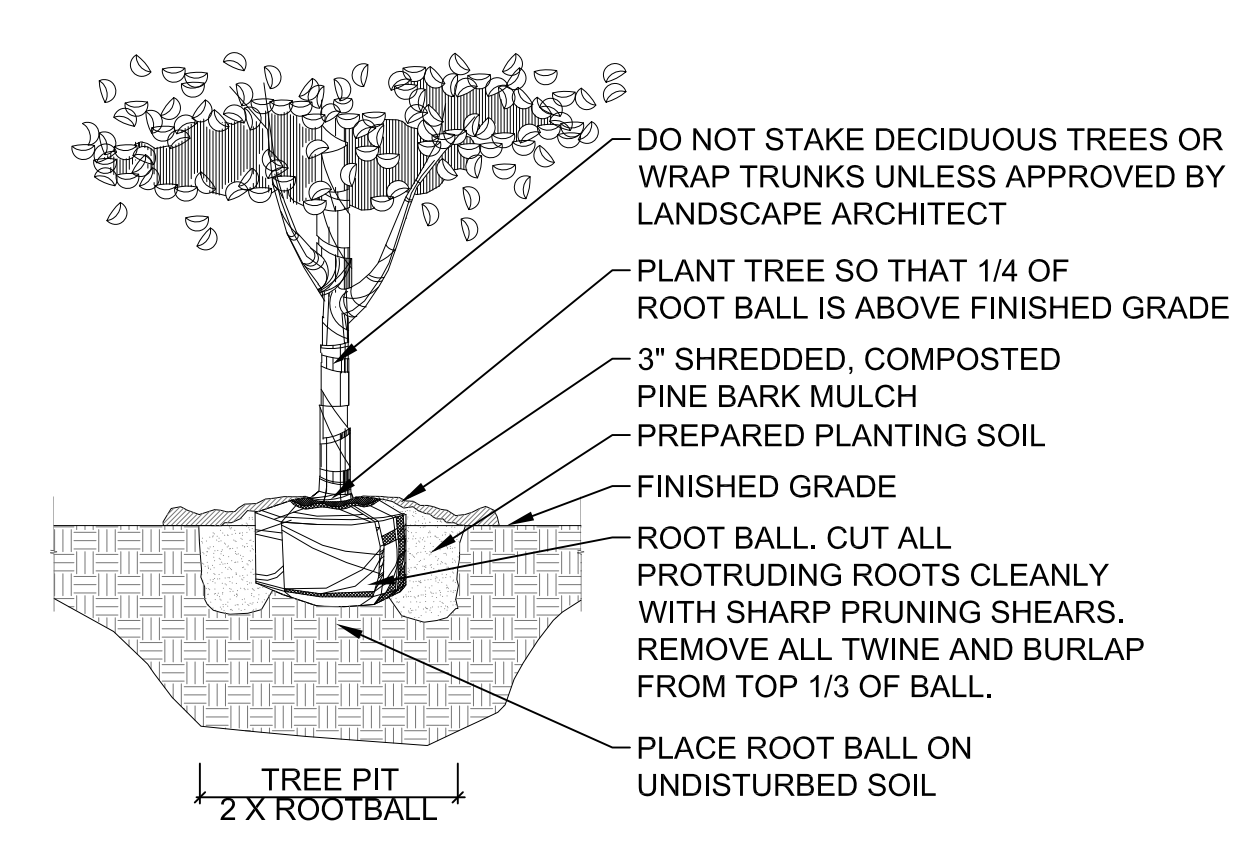
SCALE:

KEY PLAN:

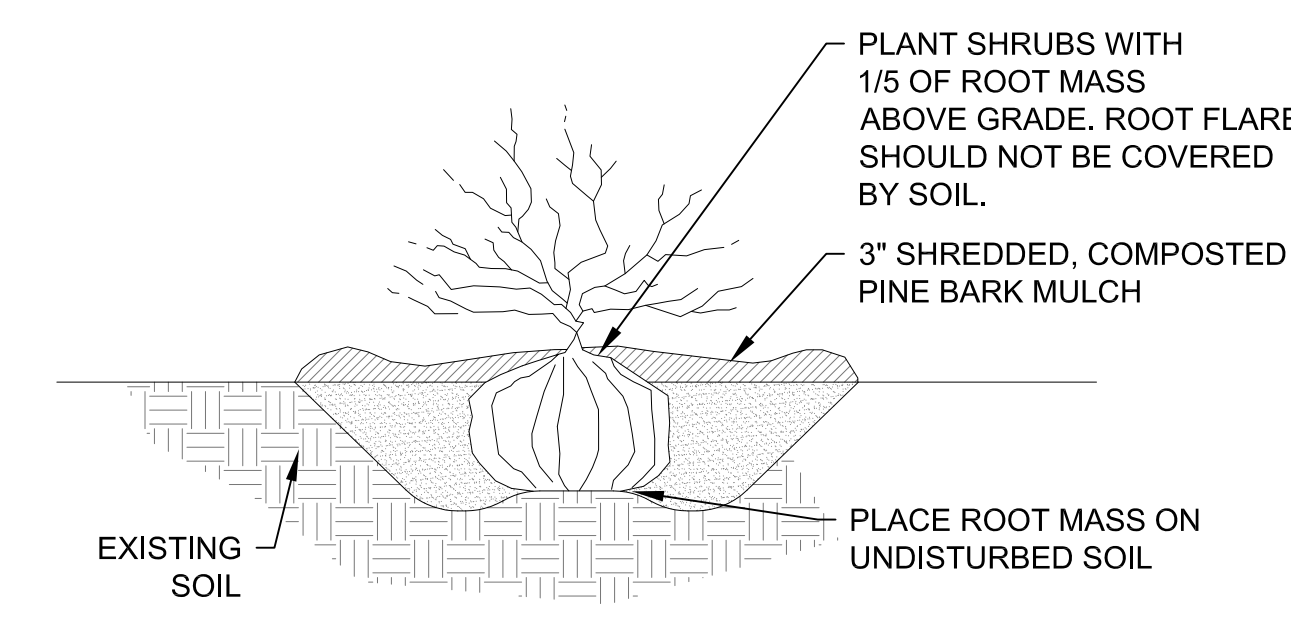
1 PLANTING PLAN - PARKING LOT
SCALE: 1" = 20'



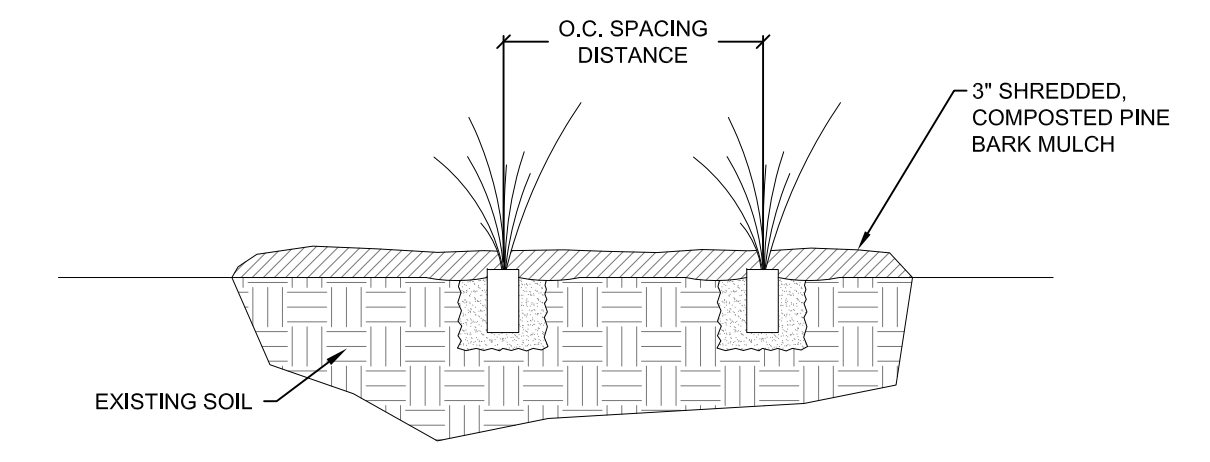
PLANT SCHEDULE - PARKING LOT							
TYPE	QTY.	SCIENTIFIC NAME	COMMON NAME	SIZE	ROOT	SPACING	
TREES	1	CARYA CORDIFORMIS	BITTERNUT HICKORY	2" CALIPER	B&B	SEE PLAN	
	1	CARYA GLABRA	PIGNOT HICKORY	2" CALIPER	B&B	SEE PLAN	
	2	HALESIA CAROLINA	CAROLINA SILVERBELL	6'-7"	CONT	SEE PLAN	
	1	NYSSA SYLVATICA	BLACKGUM	2" CALIPER	B&B	SEE PLAN	
	2	OXYDENDRUM ARBOREUM	SOURWOOD	6'-7"	CONT	SEE PLAN	
	1	QUERCUS ALBA	WHITE OAK	2" CALIPER	B&B	SEE PLAN	
	2	QUERCUS FALCATA	SOUTHERN RED OAK	2" CALIPER	B&B	SEE PLAN	
	2	QUERCUS RUBRA	NORTHERN RED OAK	2" CALIPER	B&B	SEE PLAN	
	22	TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LINDEN	1.5" CALIPER	B&B	SEE PLAN	
	SHRUBS	2	ILEX 'RED BEAUTY'	RED BEAUTY HOLLY	4'-5"	CONT	SEE PLAN
		3	VIBURNUM PRUNIFOLIUM	BLACKHAW VIBURNUM	4'-5"	CONT	SEE PLAN
	PERENNIALS AND GROUNDCOVERS	1994	EUPHORBIA AMYGDALOIDES VAR. ROBBIAE	MRS. ROBB'S BONNET	4"	POT	12" OC



2 TREE PLANTING DETAIL
SCALE: NTS



3 SHRUB PLANTING DETAIL
SCALE: NTS



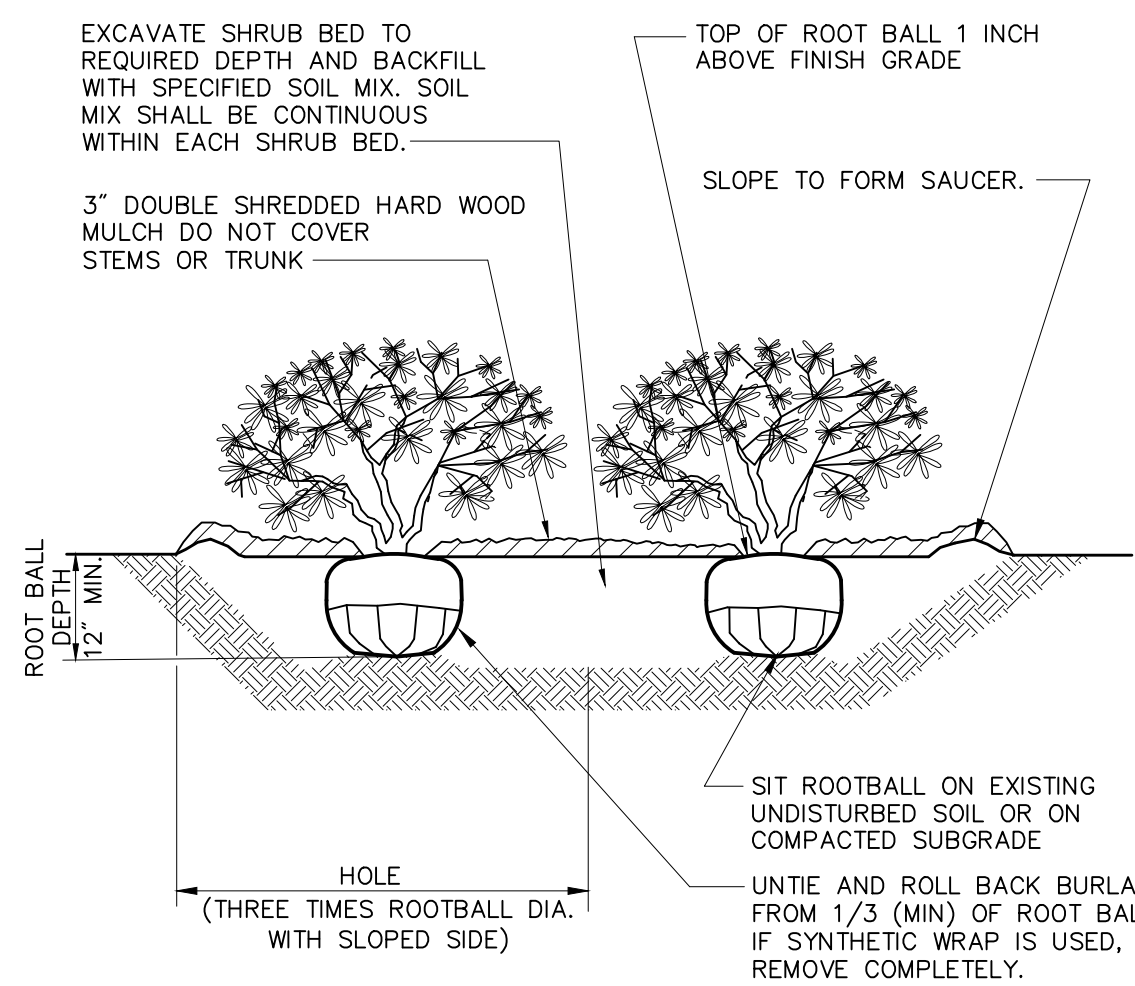
4 GROUNDCOVER PLANTING DETAIL
SCALE: NTS

GENERAL NOTE:

SHEET TITLE: PLANTING PLAN

SHEET NUMBER:

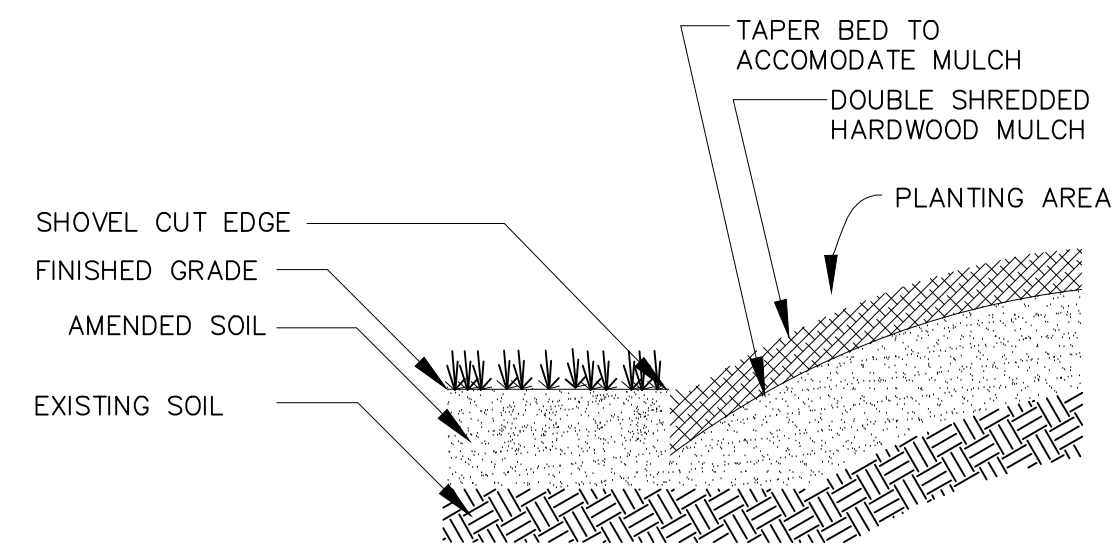
L500



- Notes**
1. LOOSEN ROOTS AT THE OUTER EDGE OF ROOTBALL OF CONTAINER GROWN SHRUBS.

Shrub Bed Planting

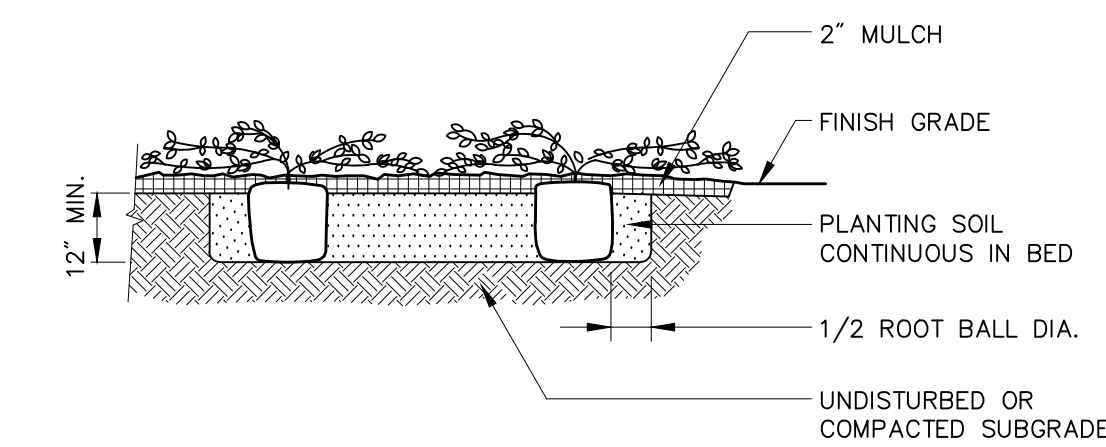
N.T.S. Source: VHB 6/08 LD_601



Shovel Cut Edge Detail

N.T.S. Source: VHB 7/15 REV

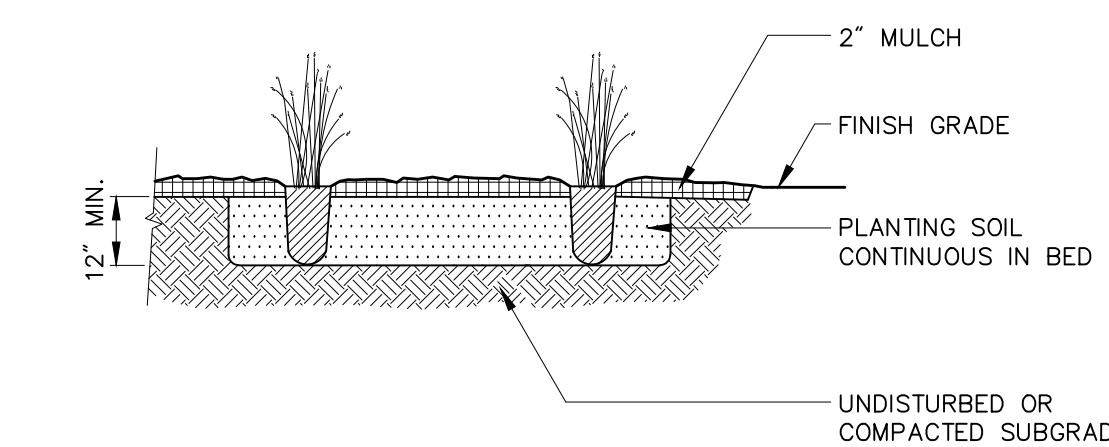
PLANT SPACING ("A")	ROW SPACING ("B")
6 IN. O.C.	5 IN. O.C.
8 IN. O.C.	7 IN. O.C.
10 IN. O.C.	8-1/2 IN. O.C.
12 IN. O.C.	10-1/2 IN. O.C.
15 IN. O.C.	13 IN. O.C.
18 IN. O.C.	16 IN. O.C.
24 IN. O.C.	21 IN. O.C.



Round Cover Planting

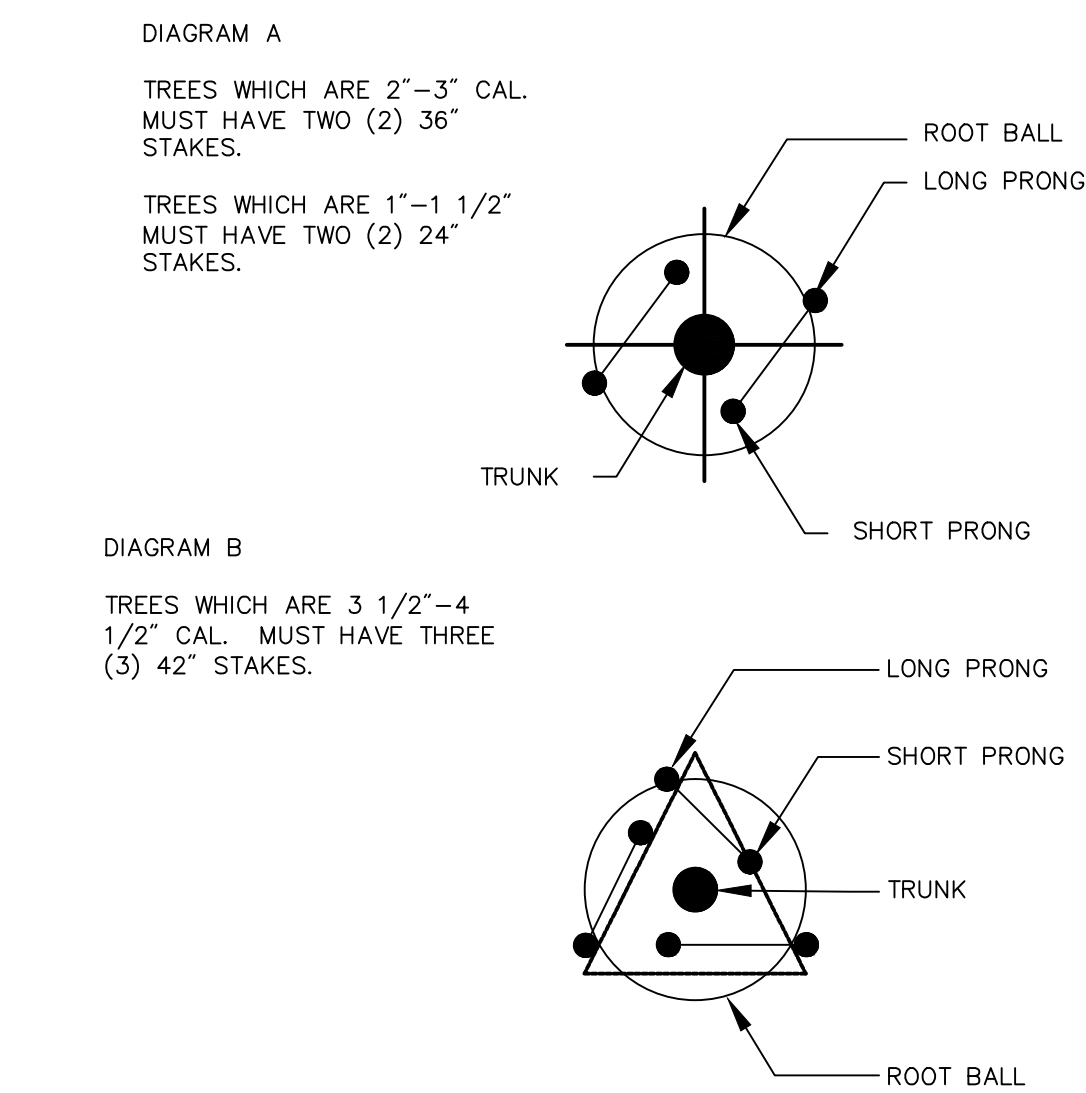
N.T.S. Source: VHB 11/09 LD_615

PLANT SPACING ("A")	ROW SPACING ("B")
6 IN. O.C.	5 IN. O.C.
8 IN. O.C.	7 IN. O.C.
10 IN. O.C.	8-1/2 IN. O.C.
12 IN. O.C.	10-1/2 IN. O.C.
15 IN. O.C.	13 IN. O.C.
18 IN. O.C.	16 IN. O.C.



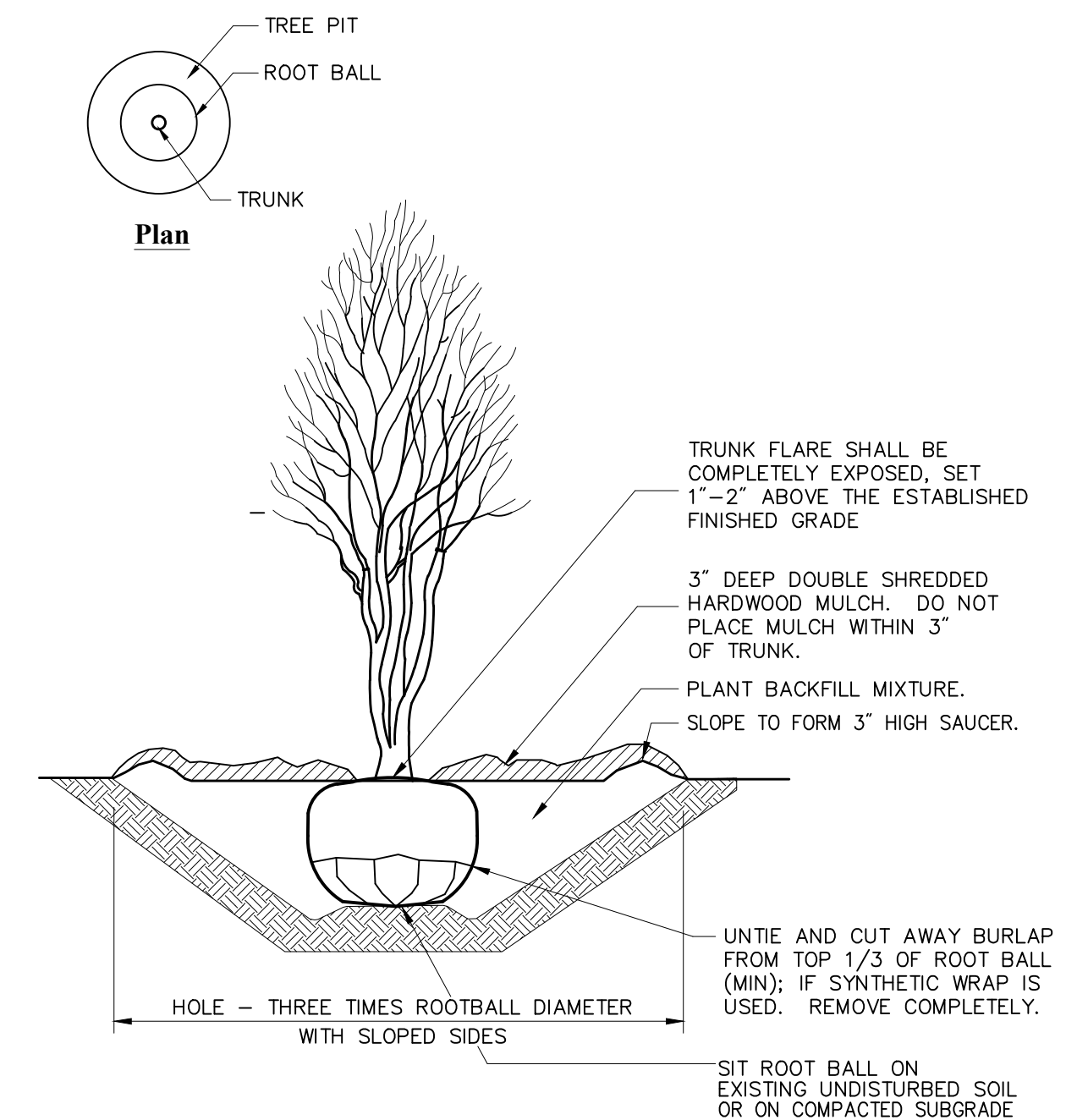
Perennial Plug Planting

N.T.S. Source: VHB 11/09 LD_618



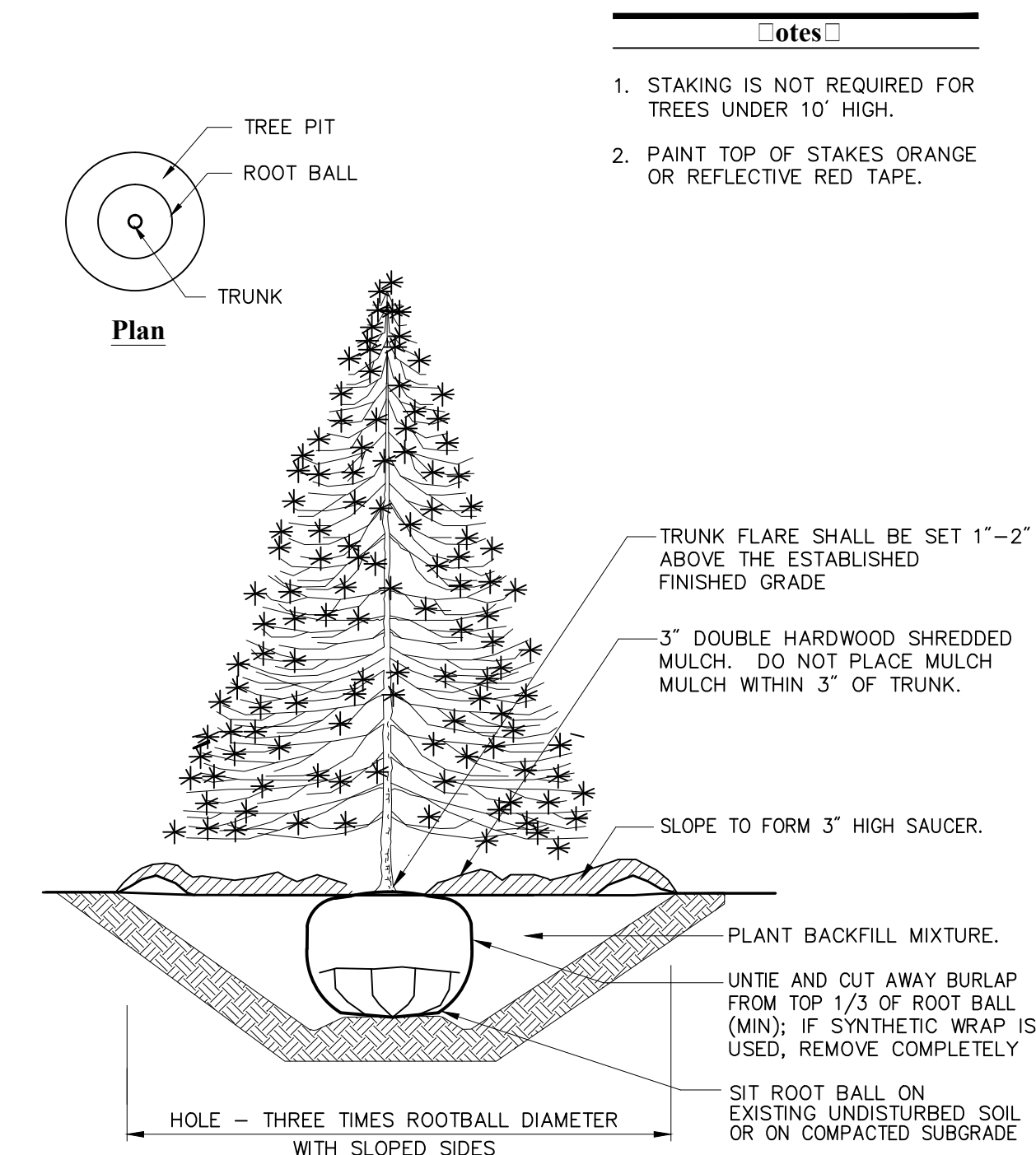
Below Grade Tree Staking System Detail

N.T.S. Source: VHB 11/12



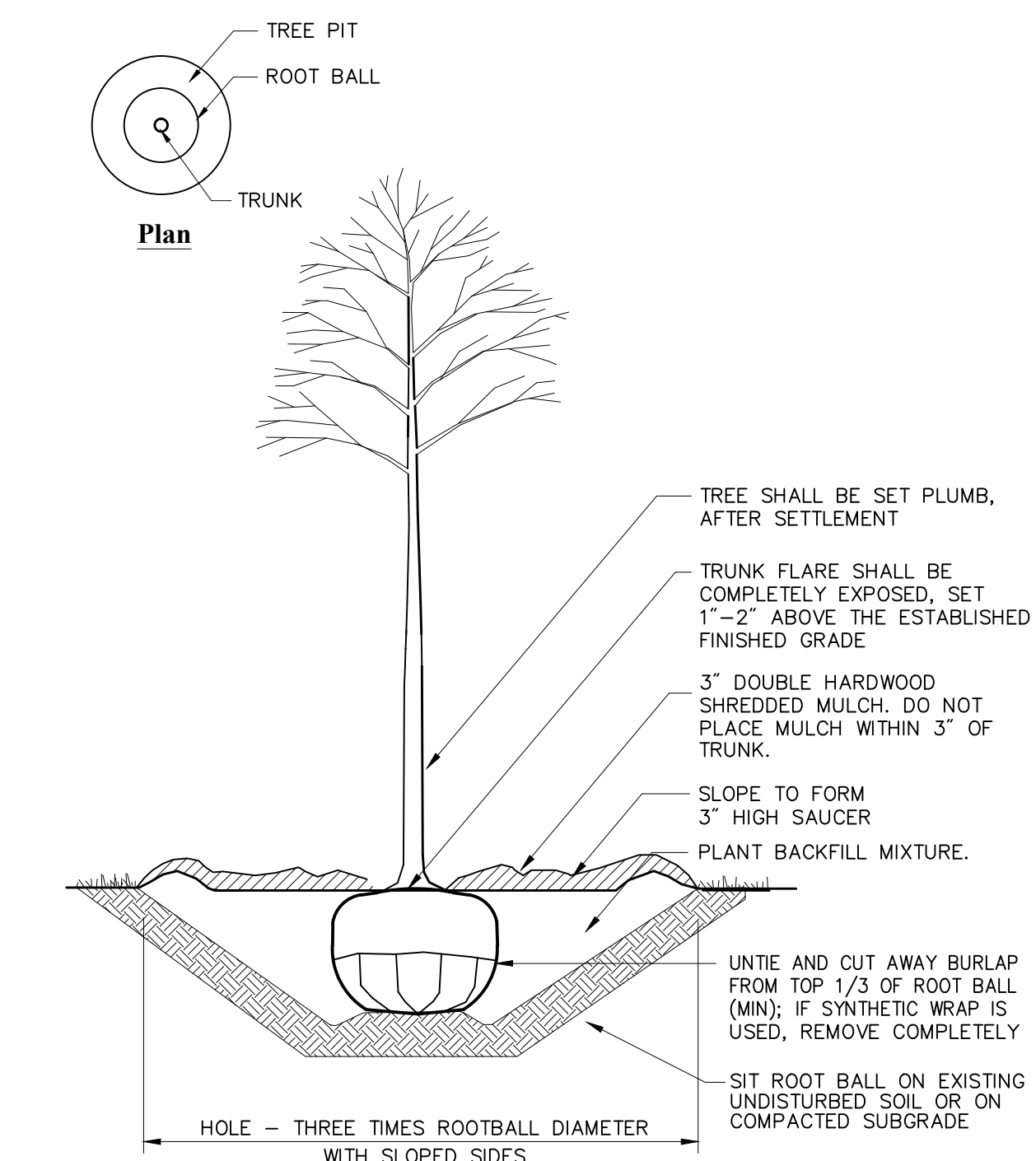
Multistep Tree Planting

N.T.S. Source: VHB



Evergreen Tree Planting

N.T.S. Source: VHB 6/08 REV LD_604



Tree Planting

N.T.S. Source: VHB 1/10 LD_602

No.	Revision	Date	Appvd.

Designed by _____ Drawn by _____ Checked by _____
 CAD checked by _____ Approved by _____
 Scale _____ Date **September 4, 2015**

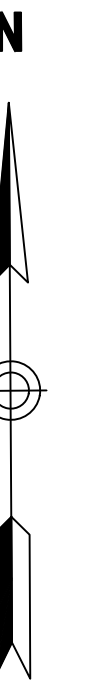
**Children's Farm
Maymont Park**

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Site Details

Drawing Number _____

C07.06
 Sheet of _____
 Project Number 32675.05



No.	Revision	Date	Appr'd.

Designed by	Drawn by	Checked by	
GAD checked by	Approved by	Date	September 4, 2015
Scale	1"=10'		
Project Title			

**Children's Farm
Maymont Park**
Richmond, Virginia
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Stormwater Management
Planting Plan

Drawing Number
C08.02
Sheet of
Project Number
32675.05

BIO-RETENTION BASIN PLANTINGS - MAYMONT PLAN						Total: 7650 SF
Trees = 5050 SF						Planting Density = 1 stem/250 SF
Scientific Name	Common Name	Growth Form	Size	Number of stems	Mature Size	
<i>Alnus serrulata</i>	Smooth Alder	tree	6-8'; 1-in. cal	2.0	20'H x 10' W	
<i>Amelanchier canadensis</i>	Canadian Serviceberry	tree	6-8'; 1-in. cal	2.0	20' H x 15' W	
<i>Chionanthus virginicus</i>	White Fringetree	tree	6-8'; 1-in. cal	2.0	25-30'H x 12' W	
<i>Magnolia virginiana</i>	Sweetbay Magnolia	tree	6-8'; 1-in. cal	2.0	10-20' H x 15' W	
<i>Oxydendrum arboreum</i>	Sourwood	tree	6-8'; 1-in. cal	1.0	25-30'H x 20' W	
<i>Taxodium distichum</i>	Bald Cypress	tree	6-8'; 1-in. cal	1.0	50-70' H x 20' W	
Total:				10.0		
Shrubs = 5050 SF						Planting Density = 1 stem/100 SF
Scientific Name	Common Name	Growth Form	Size	Number of stems	Mature Size	
<i>Aronia arbutifolia 'Brilliantissima'</i>	Red Chokeberry	shrub	1 Gal	3	6-8' H + W	
<i>Aronia melanocarpa 'Viking'</i>	Black Chokeberry	shrub	1 Gal	2	3-6' H x 6-8' W	
<i>Calliopsis americana</i>	Beautyberry	shrub	1 Gal	3	3-8' H x 4-8' W	
<i>Clethra alnifolia 'Hummingbird'</i>	Hummingbird Sweetpepperbush	shrub	1 Gal	3	30-40' H + W	
<i>Cornus racemosa</i>	Gray Dogwood	shrub	1 Gal	2	10-15' H + W	
<i>Fothergilla gardenii 'Mount Airy'</i>	Dwarf Witchhazel	shrub	1 Gal	3	5-6' H + W	
<i>Hypericum densiflorum</i>	Bushy St. Johnswort	shrub	1 Gal	4	4-6' H x 3-4' W	
<i>Ilex decidua 'Sundance'</i>	Sundance Deciduous Holly - Female	shrub	1 Gal	3	7' H x 6' W	
<i>Ilex opaca</i>	American Holly (pollinator for I. decidua)	shrub	1 Gal	1	40-50' H x 18-40' W	
<i>Ilex verticillata 'Nana'</i>	Red Sprite Winterberry - Female	shrub	1 Gal	3	2.5-3' H + W	
<i>Ilex verticillata 'Jim Dandy'</i>	Jim Dandy Winterberry - Male (pollinator)	shrub	1 Gal	1	3-6' H x 4-8' W	
<i>Itsa virginica 'Little Henry'</i>	Little Henry Virginia Sweetspire	shrub	1 Gal	3	3-4' H + W	
<i>Morella cerifera 'Doris Dwarf'</i>	Dwarf Wax Myrtle	shrub	1 Gal	4	2-3' H + W	
<i>Physocarpus opulifolius 'Jefam'</i>	Amber Jubilee Ninebark	shrub	1 Gal	3	4-6' H + W	
<i>Sambucus canadensis</i>	Common Elderberry	shrub	1 Gal	2	5-12' H + W	
<i>Vaccinium corymbosum 'Patriot'</i>	Highbush Blueberry	shrub	1 Gal	2	5-8' H + W	
<i>Viburnum dentatum 'Blue Muffin'</i>	Aronwood	shrub	1 Gal	3	5-7' H + W	
<i>Viburnum lentago</i>	Nannyberry	shrub	1 Gal	2	5-18' H x 6-12' W	
<i>Viburnum nudum 'Winterthur'</i>	Possumhaw	shrub	1 Gal	3	6' H + W	
Total:				50		
Perennials = 5050 SF						Planting Density Required = 1 Plug per SF
Scientific Name	Common Name			Total		
<i>Asclepias incarnata</i>	Swamp Milkweed	plug	1	100.0	3.5' H	
<i>Asclepias syriaca - dry edges</i>	Common Milkweed	plug	1	100.0	2.4' H	
<i>Baptisia alba</i>	White Wild Indigo	plug	1	100.0	2-3' H	
<i>Baptisia australis</i>	Wild blue Indigo	plug	1	100.0	3-4' H	
<i>Baptisia bicolor 'Starlite'</i>	Wild Indigo	plug	1	100.0	2-3' H	
<i>Baptisia x varicolor 'Twilight'</i>	Twilite False Indigo	plug	1	100.0	4-5' H	
<i>Conoclinium coelestinum</i>	Mistflower	plug	1	100.0	1.5-3' H	
<i>Echinacea purpurea 'Pink Double Delight'</i>	Pink Double Delight Eastern Coneflower	plug	1	100.0	24-30' H	
<i>Eupatorium dubium 'Little Joe'</i>	Little Joe Trumpetweed	plug	1	100.0	4-5' H	
<i>Filipendula rubra</i>	Queen of the Prairie	plug	1	100.0	6-8' H	
<i>Helenium autumnale 'Butterpat'</i>	Sneezeweed	plug	1	100.0	1-3' H	
<i>Heliopsis 'Lemon Queen'</i>	Lemon Queen Sunflower	plug	1	100.0	6-8' H	
<i>Hibiscus coccinea</i>	Scarlet Rosemallow	plug	1	100.0	5-8' H	
<i>Irish versicolor</i>	Blue Flag	plug	1	100.0	2-3' H	
<i>Monarda didyma 'Jacob Cline'</i>	Scarlet Beebalm	plug	1	100.0	3-5' H	
<i>Phlox paniculata 'Blue Paradise'</i>	Garden Phlox (mildew resistant)	plug	1	100.0	2-3' H	
<i>Rudbeckia laciniata</i>	Cutleaf Coneflower	plug	1	100.0	5-8' H	
<i>Solidago rugosa 'Fireworks'</i>	Wrinkleleaf Goldenrod	plug	1	100.0	3-4' H	
<i>Symphoricarum novae angliae 'Purple Dome'</i>	New England Aster	plug	1	100.0	18" H	
Total:				1900.0		

PLANT SCHEDULE

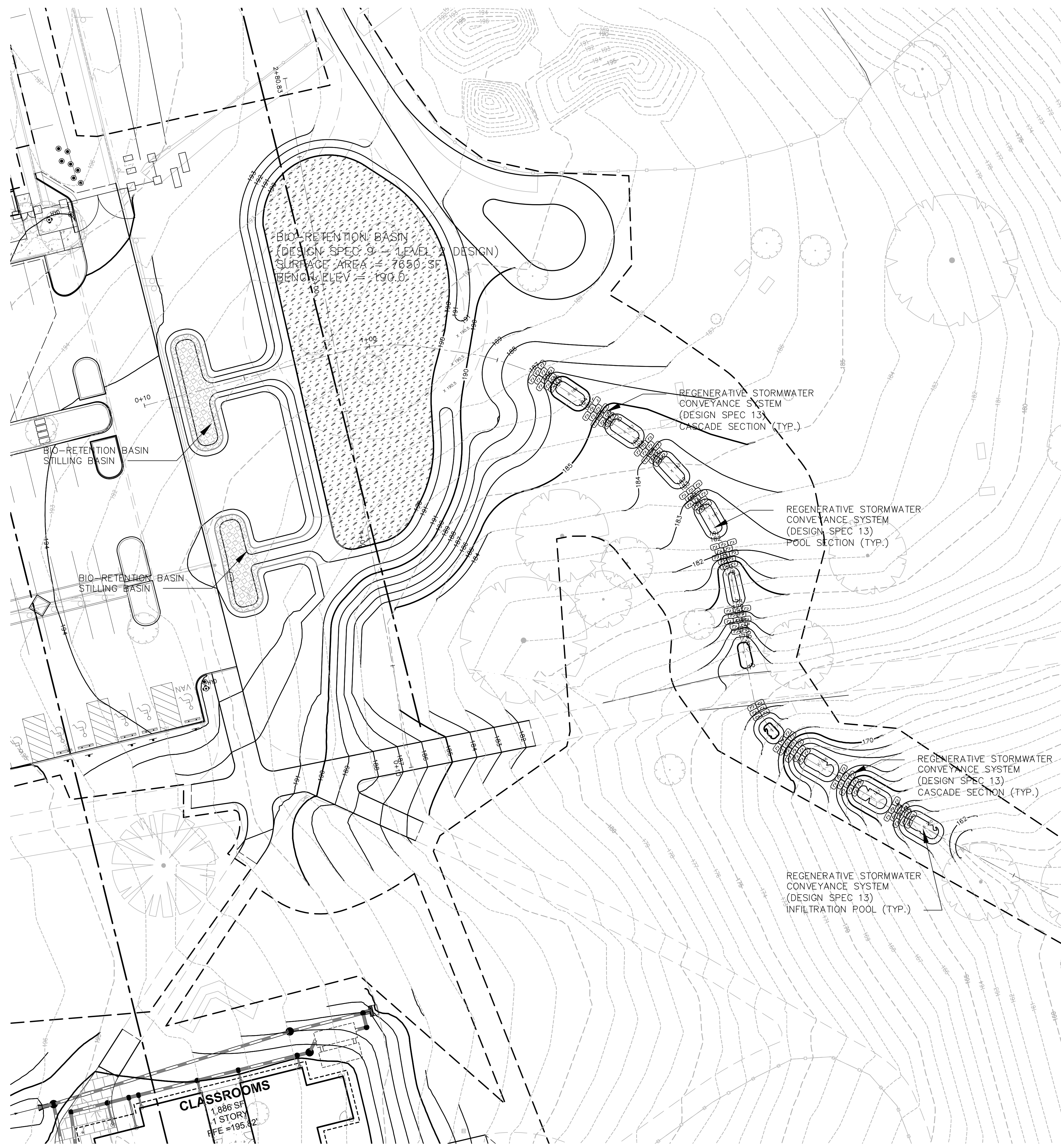
TREES	QTY	NOTES	COMMON NAME	SIZE	REMARKS
S	2		Smooth Alder	6' 8" T.	50' x 10' O.T.
	2		Canadian Serviceberry	6' 8" T.	
	2		White Fringetree	6' 8" T.	
	1		Sweetbay Magnolia	6' 8" T.	or 15' O.T.
	1		Sourwood	6' 8" T.	
	1		Bald Cypress	6' 8" T.	
HERBACEOUS TREES	QTY	NOTES	COMMON NAME	SIZE	REMARKS
M	2		Milkweed	6' 8" T.	
SHRUBS	QTY	NOTES	COMMON NAME	SIZE	REMARKS
	2		Beautyberry	12" dia	
	2		Hummingbird Sweetpepperbush	12" dia	
	2		Gray Dogwood	12" dia	
	2		Dwarf Witchhazel	12" dia	
	2		Bushy St. Johnswort	12" dia	
	2		Sundance Deciduous Holly - Female	12" dia	
	2		American Holly (pollinator for I. decidua)	12" dia	
	2		Red Sprite Winterberry - Female	12" dia	
	2		Jim Dandy Winterberry - Male (pollinator)	12" dia	
	2		Little Henry Virginia Sweetspire	12" dia	
	2		Dwarf Wax Myrtle	12" dia	
	2		Amber Jubilee Ninebark	12" dia	
	2		Common Elderberry	12" dia	
	2		Highbush Blueberry	12" dia	
	2		Aronwood	12" dia	
	2		Nannyberry	12" dia	
	2		Possumhaw	12" dia	
PERENNIALS	QTY	NOTES	COMMON NAME	SIZE	REMARKS
	100		Swamp Milkweed	12" dia	50' x 1.8' x 2.8"
	100		Common Milkweed	12" dia	50' x 1.8' x 2.8"
	100		White Wild Indigo	12" dia	50' x 1.8' x 2.8"
	100		Wild blue Indigo	12" dia	50' x 1.8' x 2.8"
	100		Wild Indigo	12" dia	50' x 1.8' x 2.8"
	100		Twilite False Indigo	12" dia	50' x 1.8' x 2.8"
	100		Mistflower	12" dia	50' x 1.8' x 2.8"
	100		Pink Double Delight Eastern Coneflower	12" dia	50' x 1.8' x 2.8"
	100		Little Joe Trumpetweed	12" dia	50' x 1.8' x 2.8"
	100		Queen of the Prairie	12" dia	50' x 1.8' x 2.8"
	100		Sneezeweed	12" dia	50' x 1.8' x 2.8"
	100		Lemon Queen Sunflower	12" dia	50' x 1.8' x 2.8"
	100		Scarlet Rosemallow	12" dia	50' x 1.8' x 2.8"
	100		Blue Flag	12" dia	50' x 1.8' x 2.8"
	100		Scarlet Beebalm	12" dia	50' x 1.8' x 2.8"
	100		Garden Phlox (mildew resistant)	12" dia	50' x 1.8' x 2.8"
	100		Cutleaf Coneflower	12" dia	50' x 1.8' x 2.8"
	100		Wrinkleleaf Goldenrod	12" dia	50' x 1.8' x 2.8"
	100		New England Aster	12" dia	50' x 1.8' x 2.8"



Bioretention Planting Notes:

- 1. PLANTING PLAN BASED ON TURF, HERBACEOUS, SHRUB AND TREE TEMPLATE AS DEFINED BY VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY SPECIFICATION #9, SECTION 6.8. (TURF = 2600 SF AND HERBACEOUS, SHRUB, TREE - 5050 SF)
- 2. TREES SHALL BE PLANTED WITH A MINIMUM SPACING OF 15 FEET ON CENTER PER BIORETENTION MATERIAL SPECIFICATIONS (REFER TO DEQ TABLE 9.6 ON SHEET C11.01)
- 3. TREES, SOD, AND MULCH MATERIALS SHALL BE SOURCED FROM SAME VENDOR AS MATERIALS FROM PROPOSED SITE LANDSCAPE PLAN PREPARED BY STITH DESIGN.
- 4. CONTRACTOR SHALL COORDINATE LOCATIONS OF UNDERDRAINS WITH TREE LOCATIONS TO ENSURE THAT THERE WILL BE NO CONFLICTS WITH ROOT BALLS.
- 5. PLANTINGS SHOWN REFLECT ONLY THOSE WITHIN THE LIMITS OF THE BIORETENTION SOIL MEDIA. SOD REMAINDER OF BIORETENTION BASINS (SLOPES AND BERMS).
- 6. TURF GRASS AREA SHALL BE SEEDD WITH TALL FESCUE SEED MIX AT A RATE 50-100 POUNDS PER ACRE.

Saved Friday, October 02, 2015 9:31:05 AM KATHERINESMITH Plotted Friday, October 02, 2015 3:14:31 PM Smith, Katherine \\VHB\FPO\PROJECTS\2675.05 MAYMONT DESIGN\CAD\PLANS\SET\CHILDRENS_FARM_32675.05-SW-LA



Project Narrative:

Maymont is over 100 acres in size and consists of grassy rolling hills, forested areas, fenced in pasture areas with livestock, paved sidewalks, parking facilities, and buildings. The site drains to Dooley's Branch, a relatively narrow stream channel that flows in a southwesterly direction toward the James River while bisecting the property. Dooley's Branch is formed by two perennial tributaries that both originate from an offsite urban combined storm and sanitary sewer network. Several grass ephemeral channels also feed Dooley's Branch conveying runoff from forested, maintained grass, pasture, and impervious areas.

Maymont is proposing improvements for the Children's Farm area which involves parking lot expansion, welcome plaza, entrance road, and building improvements. The parking lot will be expanded to add two additional rows of parking. The Children's Farm includes two new buildings, an animal care facility, children's classrooms, and the existing barn will also be renovated. The welcome plaza project consists of a hardscaped area for pedestrians to enter the park, and provides a connection from the parking lot and Westover Road to the new Children's Farm area. The total impervious area for proposed work will increase from 3.31 acres to 4.20 acres. The proposed area of disturbance for the project is approximately 5.2 acres.

The proposed redevelopment for this project will result in a phosphorous load reduction requirement of 1.54 pounds per year (lbs/yr) for new development plus 2.23 lbs/yr for the 20% redevelopment for a total of 3.77 lbs/yr. See runoff reduction method (RRM) worksheets on Sheet C08-03. Treatment for the increased phosphorous load will be provided by a planned bioretention filter with level 2 design specifications per DEQ Stormwater Design Specification #9. Based on a total contributing runoff volume of 0.23 acre-feet, the required surface area for the filter is 7650 sf. The bioretention filter will provide a total phosphorous reduction of 5.81 lbs/yr which exceeds the required load by 2.04 lbs/yr.

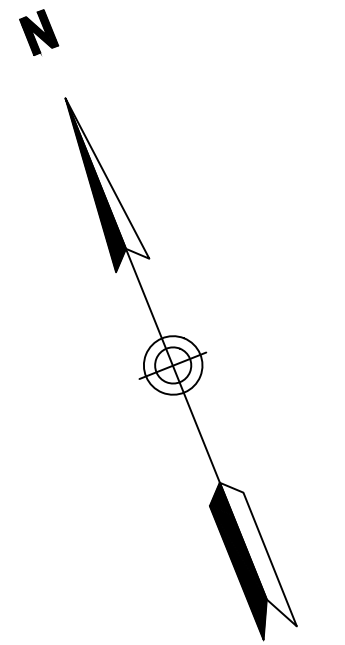
The bioretention filter will be adjacent to the downhill end of the parking lot. Runoff from the parking lot will sheet flow into two armored stilling basins, which will convey the runoff through a grass level spreader prior to discharging into the bioretention filter. The bioretention will create a good environment for runoff reduction, filtration, biological uptake, and microbial activity, and will provide high pollutant removal. The bioretention will also serve as an attractive landscaping feature for the entrance to the park. The primary component of a bioretention filter is the filter bed, which has a mixture of sand, soil, and organic material as the filtering media, all beneath a surface mulch layer. During storms, runoff temporarily ponds 6-inches above the mulch layer and then rapidly filters through the bed. The filtered runoff will infiltrate into the in-situ soil which is mostly sand (SM) with infiltration rates ranging from 13 to 24 inches per hour.

A Regenerative Stormwater Conveyance System (RSCS) per DEQ Stormwater Design Specification #13 is also proposed following the bio-retention basin to provide additional treatment to the maintained turf areas, existing sidewalks, and portions of the Children's Farm building expansion. The RSCS will replace the existing maintained grass channel which currently shows evidence of scour and lacks water quality benefits. The RSCS is an open-channel conveyance system that converts, through surface pools and a subsurface sand seepage filter, surface storm flow to shallow groundwater flow through a series of constructed shallow aquatic pools, riffle grade controls, native vegetation, and

\\vhb\p\Richmond\2017\05 Maymont Design\Tech\Children's Farm\Maymont Water Quality Plan Narrative.doc

underlying organic topsoil filter bed media. This practice will provide energy dissipation and flood conveyance/attenuation functions, as well as provide groundwater recharge. The infiltration rates of the in-situ sand (SM) soils below the pools ranges from 13 to 24 inches per hour. A secondary benefit will be provided by the pools and plant material to reduce flow velocity and enhance the removal of suspended particles and their associated pollutants with an estimated phosphorous reduction of 50% or 1.82 pounds/yr. The RSCS will provide treatment to runoff from the compost storage area. The RSCS will also serve as an aesthetically pleasing landscape feature visible from a pedestrian walking trail and the picnic area.

Maymont is committed to providing a more interactive and user-friendly family experience for guests of all ages while incorporating environmentally-friendly practices, systems, and materials into the Maymont Park. This is accomplished through expanded parking and stormwater management systems using eco-friendly paving materials, and a water quality treatment train starting with a bioretention filter at the Children's Farm Welcome Plaza, flowing through a Regenerative Stormwater Conveyance System to an existing wetland expanded adjacent to Dooley Creek. Also, a rainwater collection system with new gutters and downspouts will be added to the existing barn building, enabling water to be collected into a cistern and filtered for reuse in the gardens and farm areas. Lastly, new graphic interpretive panels and exhibits describing the relationship between man and his natural environment that highlights the water management techniques and other environmentally friendly practices being utilized at the Farm. Together these low impact development practices will reduce phosphorous, nitrogen, sediment, and runoff volumes to pre-development forested baseline levels providing significant water quality for Maymont and the receiving James River.




No.	Revision	Date	Appr.

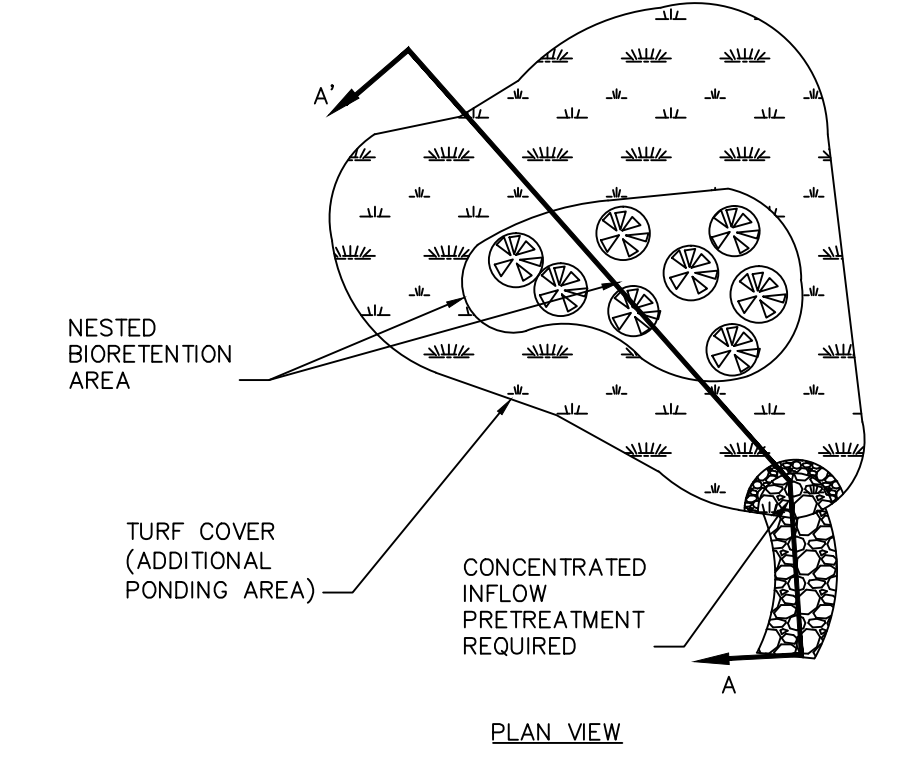
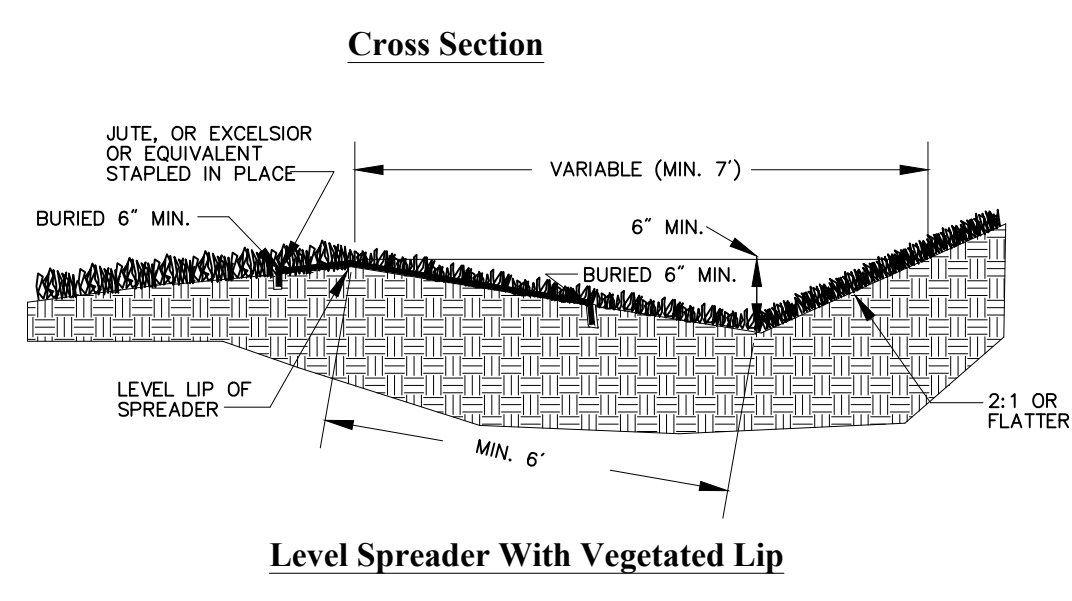
**Children's Farm
Maymont Park**

Richmond, Virginia
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Stormwater Management Plan

Drawing Number	C08.01
Sheet	of
Project Number	32675.05





	Pre-Developed	Post-Developed no RR	Post-Developed with RR	
Drainage Area, acres	4.25	4.25	4.25	
Runoff Curve Number	77	85	74	
Potential Max Retention, S	2.99	1.76	3.51	S=(1000/CN)-10
Initial Abstraction, Ia	0.564	0.439	0.597	TR-55 Table 4-1
Ia/P	0.201	0.157	0.213	
Runoff Volume, RV (inches)	0.93	1.42	0.78	TR-55 Runoff Equation, Figure 2-1, Table 2-1
Runoff Volume, RV (ac-ft)	0.33	0.50	0.28	Site Area times depth (in) divided by 12
Peak Discharge (q1) (cfs)	3.87	12.63	9.34	from TR-55 Routing Program
Post Developed EB Allowed, qo (cfs)		2.04	3.69	from Energy Balance
Storage Volume Required, RVs (ac-ft)			0.2112	from Figure 6-1
Post Developed EB Routed, qo (cfs)			0.00	from Hydro CAD Routing
Storage Volume Provided, RVs (ac-ft)			0.55	

Project Name: MAYMONT CHILDRENS FARM	
Date: AUGUST 2015	
	data input cells
	calculation cells
	constant values
Post-ReDevelopment Project & Land Cover Information	Total Disturbed Acreage: 2.19

Annual Rainfall (inches)	43
Target Rainfall Event (inches)	1.00
Phosphorus EMC (mg/L)	0.26
Target Phosphorus Target Load (lb/acre/yr)	0.41
Pj	0.90
Nitrogen EMC (mg/L)	1.86

	A soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) – undisturbed, protected forest/open space or reforested land	0.00	0.47	0.75	0.01	1.23
Managed Turf (acres) – disturbed, graded for yards or other turf to be mowed/managed	0.00	4.30	3.56	0.81	8.67
Impervious Cover (acres)	0.00	0.51	2.76	0.04	3.31
Total					13.21

	A soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) – undisturbed, protected forest/open space or reforested land	0.00	0.46	0.53	0.01	1.00
Managed Turf (acres) – disturbed, graded for yards or other turf to be mowed/managed	0.00	4.21	2.98	0.82	8.01
Impervious Cover (acres)	0.00	0.60	3.57	0.03	4.20
Total					13.21

Okay	Check Areas	Check Areas	Okay
------	-------------	-------------	------

	A soils	B Soils	C Soils	D Soils
Forest/Open Space	0.02	0.03	0.04	0.05
Managed Turf	0.15	0.20	0.22	0.25
Impervious Cover	0.95	0.95	0.95	0.95

	Listed	Adjusted ¹		Land Cover Summary Post-ReDevelopment
Forest/Open Space Cover (acres)	1.23	1.00		1.00
Composite Rv(forest)	0.04	0.04		0.04
% Forest	9%	8%		8%
Managed Turf Cover (acres)	8.67	8.00		8.01
Composite Rv(turf)	0.21	0.21		0.21
% Managed Turf	66%	65%		65%
Impervious Cover (acres)	3.31	3.31		3.31
Rv(impervious)	0.95	0.95		0.95
% Impervious	25%	27%		27%
Total Site Area (acres)	13.21	12.31		12.32
Site Rv	0.38	0.40		0.40

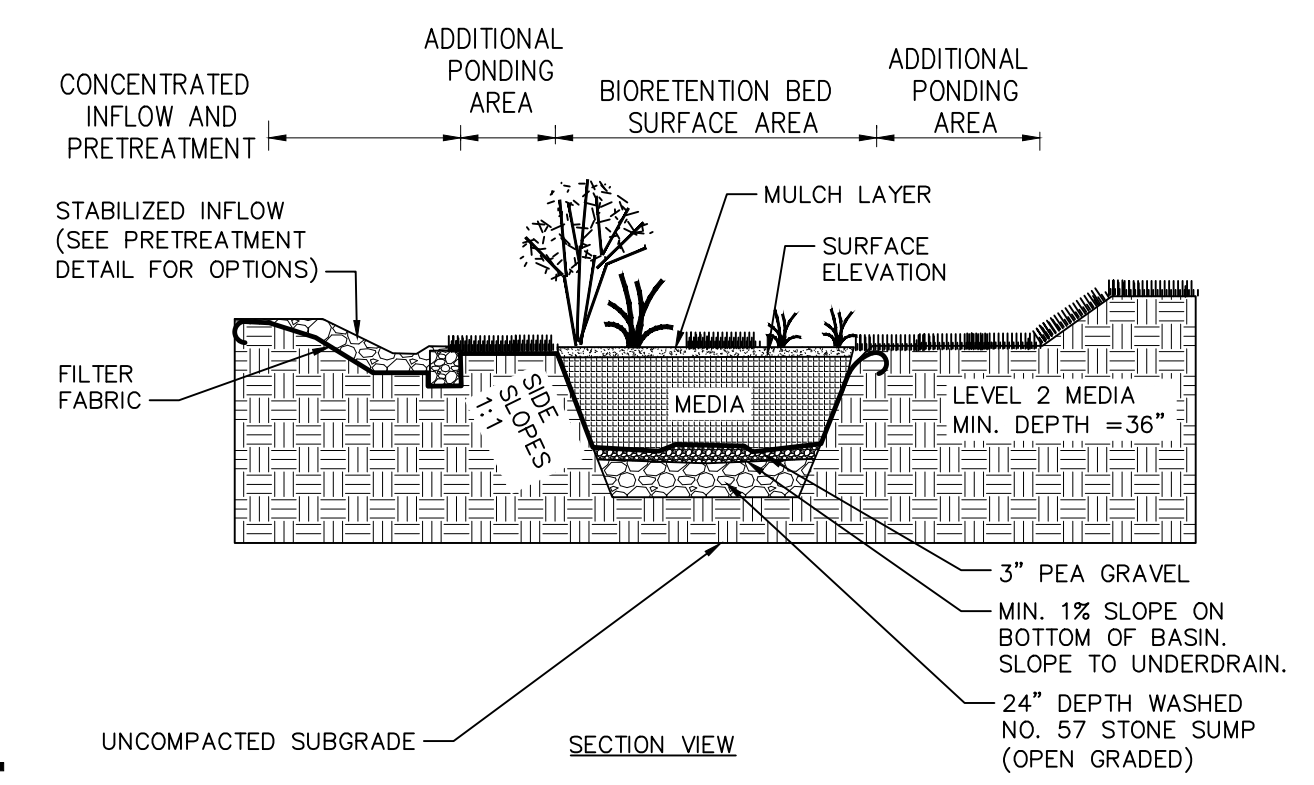
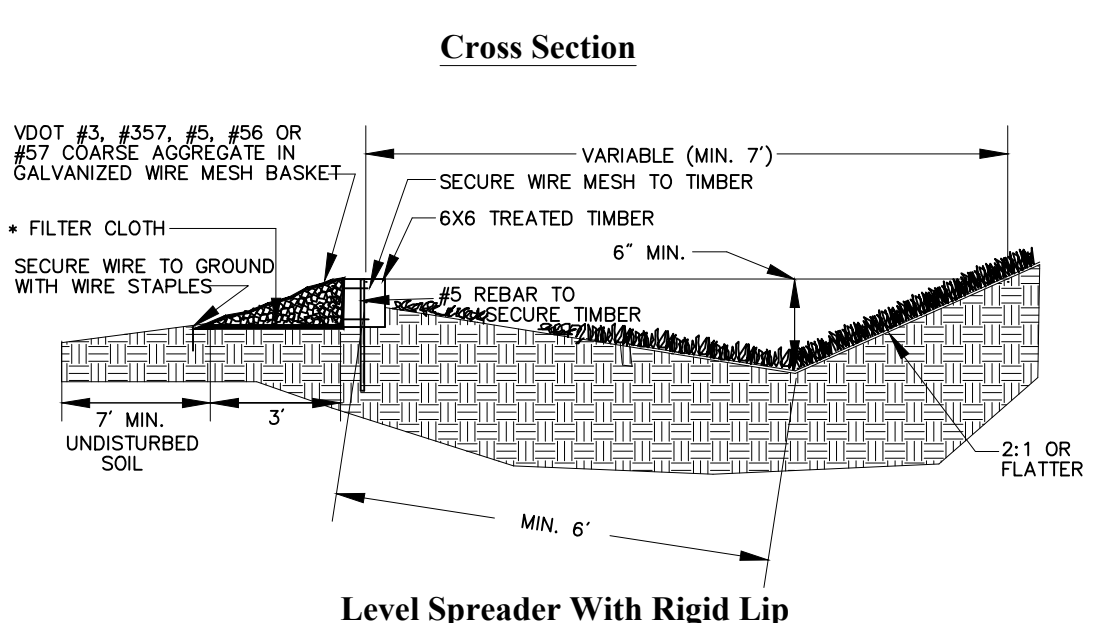
Pre-Development Treatment Volume (acre-ft)	0.4196	0.4067	Post-Development Treatment Volume (acre-ft)	0.4069
Pre-Development Treatment Volume (cubic feet)	18,276	17,715	Post-Development Treatment Volume (cubic feet)	17,724
Pre-Development Load (TP) (lb/yr)	11.48	11.13	Post-Development Load (TP) (lb/yr)	11.14

Pre-Development Load (TN) (lb/yr)	82.15	Post-Development Load (TN) (lb/yr)	93.31
Maximum % Reduction Required Below Pre-ReDevelopment Load		20%	
TP Load Reduction Required for Redeveloped Area (lb/yr)		2.23	
Total Load Reduction Required (lb/yr)		3.77	

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E
IMPERVIOUS COVER	0.52	2.41	0.27	0.99	0.00
IMPERVIOUS COVER TREATED	0.00	2.41	0.27	0.99	0.00
TURF AREA	0.46	1.30	4.46	1.80	0.00
TURF AREA TREATED	0.00	1.30	4.46	1.80	0.00
AREA CHECK	OK.	OK.	OK.	OK.	OK.

TOTAL PHOSPHOROUS LOAD REDUCTION REQUIRED (LB/YEAR)	3.77
RUNOFF REDUCTION (cf)	9346
PHOSPHOROUS LOAD REDUCTION ACHIEVED (LB/YR)	7.72
ADJUSTED POST-DEVELOPMENT PHOSPHOROUS LOAD (TP) (lb/yr)	5.32
REMAINING PHOSPHOROUS LOAD REDUCTION (LB/YR) NEEDED	CONGRATULATIONS!! YOU EXCEEDED THE TARGET REDUCTION BY 3.9 LB/YEAR!!

RUNOFF REDUCTION (cf)	9346
NITROGEN LOAD REDUCTION ACHIEVED (LB/YR)	49.55
ADJUSTED POST-DEVELOPMENT NITROGEN LOAD (TP) (lb/yr)	43.76

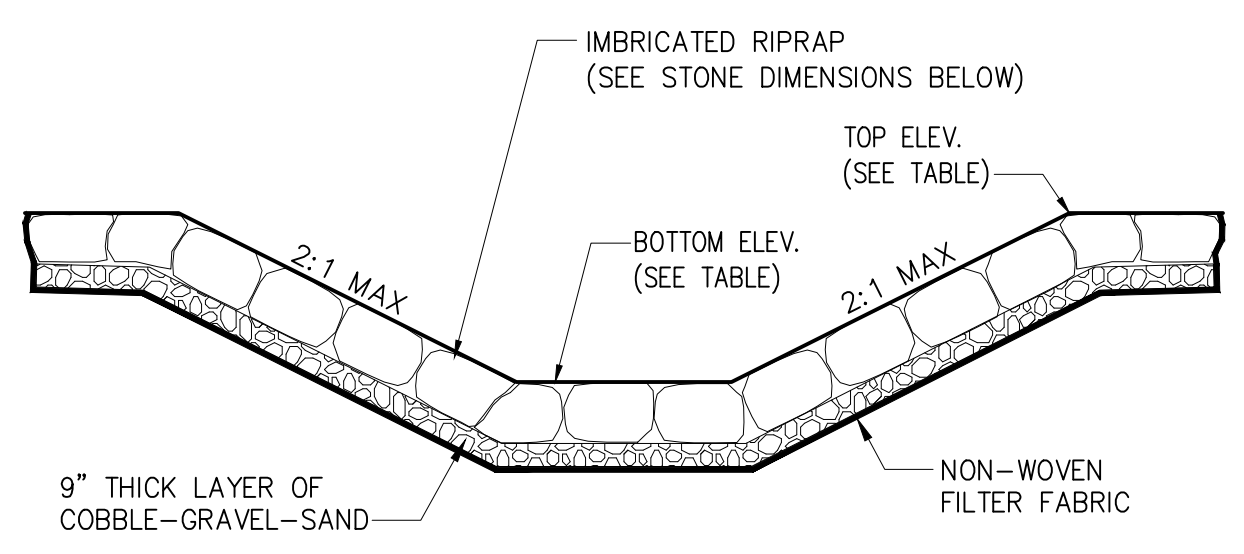


	Pre-Developed	Post-Developed	Post-Developed Routing	
Drainage Area, acres	3.71	4.25		
Runoff Curve Number	77	85		
Peak Discharge (q10) (cfs)	18.07	28.25	12.17	10-YR POST ROUTED < 10-YR PRE

Level 2 Design --> TP Removal = 50% and RR = 80%	
Subgrade Infiltration Rate	13.34 in/hr
Surface Area = [1.25 * Tv] / Storage Depth	
Storage Depth	
Depth (ft)	Void Ratio (%)
Surface 0.5	100
Media 3	25
Gravel 1	40
Weighted Depth = 1.65	
Tv (from Impervious Area Worksheet)	0.23 ac-ft
Required Surface Area	0.17 ac-ft
Required Surface Area	7619.70 sf
Provided Surface Area	7650.00 sf

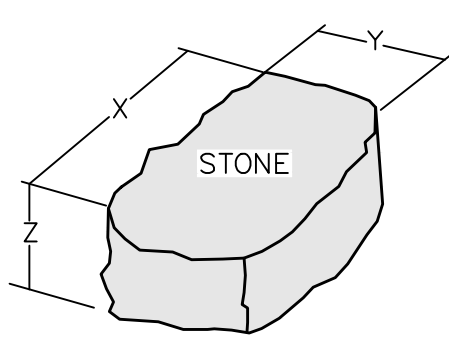
Level Spreader 6/08
N.T.S. Source: Virginia Erosion And Sediment Control Handbook Plate 3.21-2

Bioretention with Additional Surface Ponding 3/11
N.T.S. Source: VA DEQ Stormwater Design Specification No. 9 Fig 9.5



	STILLING BASIN	TOP ELEVATION	BOTTOM ELEVATION	LEVEL SPREADER ELEVATION
#1		192.0	190.0	191.0
#2		192.0	190.0	191.0

X	Y	Z
3' - 5'	2.5' - 3.5'	1.5' - 2'



NOTE:
STILLING BASINS TO OUTFALL AT LEVEL SPREADERS (SEE SEPARATE DETAIL).

Stilling Basin Typical Section 4/15
N.T.S. Source: VHB

SOIL	B	C	D	TOTAL	Rv Coefficients	Rv X Area	TV (AC-FT)
TOTAL AREA (AC)			0.59	0.59			
FORESTED AREA (AC)	0.00	0.00	0.00	0.00	0.03	0.04	0.05
TOTAL PERVIOUS (AC)	0.53	0.00	0.00	0.53			
MANAGED TURF (AC)	0.40	0.00	0.00	0.40	0.20	0.22	0.25
IMPERVIOUS (AC)	0.14	0.00	0.00	0.14	0.95	0.95	0.95
check				0.54			
Weighted Rv							0.41
Weighted Rv							0.0184

SOIL	B	C	D	TOTAL	Rv Coefficients	Rv X Area	TV (AC-FT)
TOTAL AREA (AC)	1.52	2.19	0.00	3.71			
FORESTED AREA (AC)	0.00	0.00	0.00	0.00	0.03	0.04	0.05
MANAGED TURF (AC)	1.30	0.00	0.00	1.30	0.20	0.22	0.25
IMPERVIOUS (AC)	0.22	2.19	0.00	2.41	0.95	0.95	0.95
check				3.71			
Weighted Rv							0.69
Weighted Rv							0.2125

No.	Revision	Date	Appr.

Designed by	Drawn by	Checked by	Approved by
CAD checked by	Approved by		
Scale	Date	September 4, 2015	

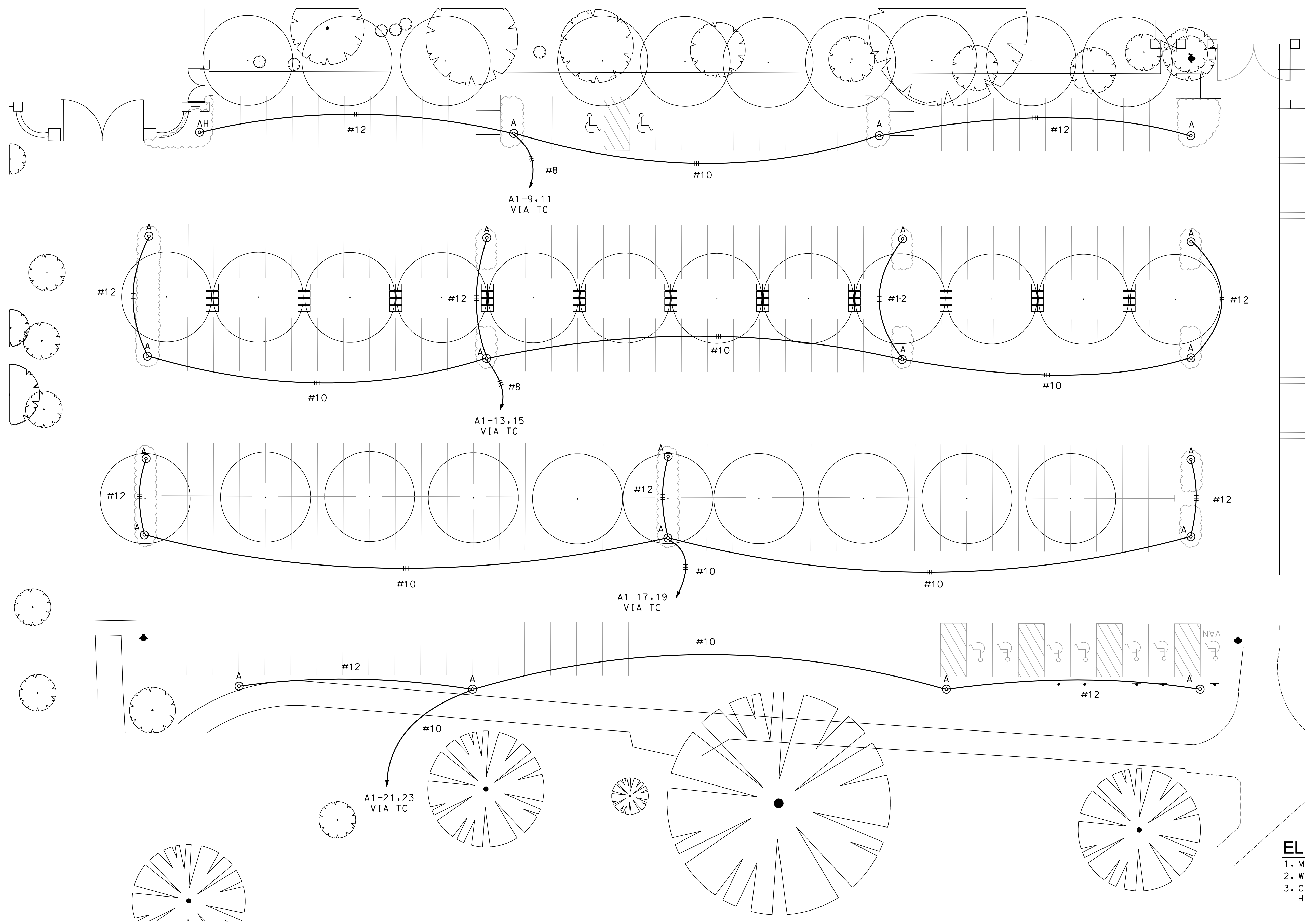
Children's Farm Maymont Park

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SWM DETAILS

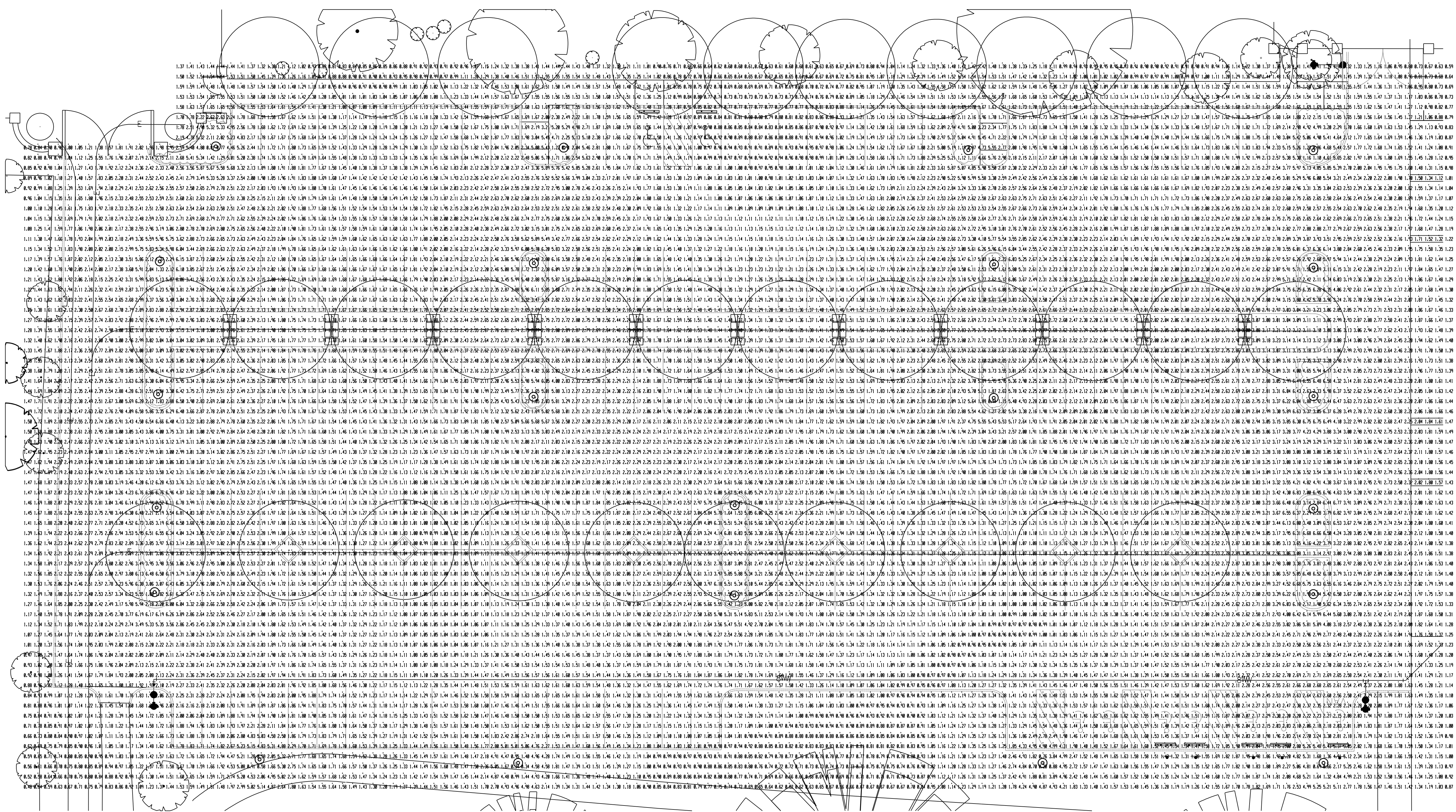
Drawing Number
C08.03
Sheet of
Project Number
32675.05

LIGHT FIXTURE SCHEDULE										
TYPE	QTY	MANUFACTURER	MODEL NUMBER	LIGHT LOSS FACTOR	LAMPS / COLOR TEMP.	INITIAL LUMENS	BALLAST TYPE	FIXTURE WATT.	MOUNTING HEIGHT	REMARKS
A	18	ARCHITECTURAL AREA LIGHTING	SP10-250PSMH-COP-COLOR		1-250W MH 3,800	22,000	PULSE START	300 W	24'	ROUND POLE MOUNT WITH HOOD DIRECT BURIAL POLE
AH	4		SP10-250PSMH-COP-COLOR-HSS		1-250W MH 3,800	22,000	PULSE START	300 W	24'	SAME AS "A" WITH HOUSE SIDE SHIELD

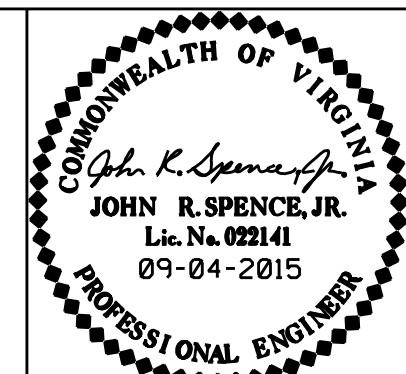
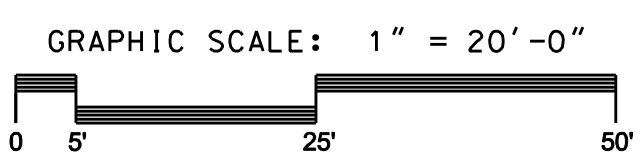


ELECTRICAL PLAN
 1. MINIMUM DEPTH OF BURY = 2'-0"
 2. WIRE SHALL BE TYPE THWN, SIZES AS NOTED.
 3. COORDINATE WIRING ROUTES TO CLEAR TREES AND ROOTS WITH THE OWNER.
 HAND DIG TRENCHES WHERE NEEDED TO PREVENT DAMAGE TO ROOT SYSTEMS.

ELECTRICAL PLAN
 GRAPHIC SCALE: 1" = 20'-0"
 0 25 50



FOOT CANDLE PLAN



SE
Spence Engineering, PLC
 MEP Consulting Engineers
 804.744.8886
 JRSpence@SpenceEngineeringPLC.com



3
 NORTH

MAYMONT CHILDREN'S FARM - CLASSROOMS
 Maymont, Richmond,
 Virginia

Issue Date: 4 SEPTEMBER 2015

SE-2 SITE
 FOOT CANDLE PLAN

100% CONSTRUCTION DOCUMENTS

SP10 – Spectra™ Very Large Scale

TYPE

RESET



SP10

- Moldcast Pericline® optics with a Type 5 distribution
- Symmetric or asymmetric distribution
- Up to 250 watt HID with pulse start ballasts
- Powder coat finish in 13 standard colors with a polymer primer sealer

1. LUMINAIRE	2. LAMP/BALLAST	3. HOOD FINISH	4. COLOR	5. OPTIONS

1. LUMINAIRE

- SP10 (Spectra very large. WT: 65 lbs EPA: 4.0 IP: 54 Slip over a 5"/127mm O.D. pole)

2. LAMP/BALLAST

METAL HALIDE (120/277 volt ballast)

Medium base, ED-28 lamp

- 100MPH

PULSE START METAL HALIDE (120/208/240/277)

Medium base, ED-28 lamp

- 150PSMH 250PSMH

Medium base, ED-17 lamp

- 200PSMH

HIGH PRESSURE SODIUM (120/208/240/277 volt ballast)

Medium base, ED-23 1/2 lamp

- 150HPS

Medium base, ED-18 lamp

- 200HPS 250HPS

All ballasts are factory wired for 277 volts, unless specified. Lamps not included. LED drivers are universal input

3. HOOD FINISH (OPTIONAL)

Hood finish will match luminaire finish unless selecting one of these options. Hood underside is unfinished to develop a patina

- COP (Natural copper)

4. COLOR

- | | |
|---|---|
| <input type="checkbox"/> AWT (Arctic White) | <input type="checkbox"/> MAL (Matte Aluminum) |
| <input type="checkbox"/> BLK (Black) | <input type="checkbox"/> MDG (Medium Grey) |
| <input type="checkbox"/> MTB (Matte Black) | <input type="checkbox"/> ATG (Antique Green) |
| <input type="checkbox"/> DGN (Dark Green) | <input type="checkbox"/> LGY (Light Grey) |
| <input type="checkbox"/> DBZ (Dark Bronze) | <input type="checkbox"/> RAL/PREMIUM |
| <input type="checkbox"/> WRZ (Weathered Bronze) | COLOR (Provide RAL) |
| <input type="checkbox"/> BRM (Metallic Bronze) | <input type="checkbox"/> CUSTOM COLOR |
| <input type="checkbox"/> VBL (Verde Blue) | (Provide color chip for matching) |
| <input type="checkbox"/> CRT (Corten) | |

5. OPTIONS

- 347 (347 volt ballast 120/227/347. Not available with electronic ballast)
- ASY (Asymmetric distribution-field installed)
- HSS (House Side Shield-field installed)
- LDL (Lightly diffused lens)

SPECIFICATIONS

HOUSING

The fixture housing shall be all cast aluminum, A356 alloy, free of any porosity, foreign materials, or cosmetic fillers. The ballast shall be mounted internally and accessed by loosening two captive bolts and lifting off the top of the fixture. The top cover shall be hinged and secured with one captive tool-less fastener for relamping. The top shall seal with a molded silicone gasket. The upper reflector cone shall be matte finished anodized aluminum. The lens shall be clear seamless acrylic sealed to the housing with a molded silicone gasket on the top and bottom. The vertical struts shall be 316 stainless steel tubing. All internal and external hardware shall be stainless steel. All female threads on the aluminum parts shall be cast-in-place brass inserts to ensure no thread seizure.

The fixture shall slip over a 5"/127 mm O.D. pole and secured with six stainless steel set screws.

The shade is spun from 6061 T-6 aluminum, 316 stainless steel or 110 copper. The shade has a beaded edge for added strength. The underside of the painted shades only are finished in a high reflectance white powder coating. Copper shade is unfinished to develop a patina.

The reflector assembly is the Moldcast Pericline optics with an upper collecting reflector and lower distributing reflector, with a type five distribution

ELECTRICAL

The ballast is integral to the fixture, mounted on a prewired module with a quick disconnect plug. The ballast module has two keyhole slots and is removable by loosening two screws. Socket is pulse rated porcelain. HID ballasts are high power factor, rated for -30°C starting. Ballasts are multitap, wired at the factory for 277 volts, unless specified.

FINISH

Fixture finish shall consist of a five stage pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance.

See next page

| CLEAR |

JOB _____

TYPE _____

NOTES _____



ARCHITECTURAL AREA LIGHTING
 16555 East Gale Ave. | City of Industry | CA 91745
 P 626.968.5666 | F 626.369.2695 | www.aal.net
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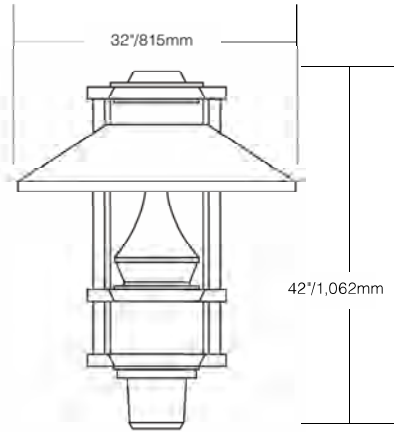
CERTIFICATION

Fixtures shall be listed with ETL for outdoor, wet location use, UL1598 and Canadian CSA Std. C22.2 NO.9. IP=54

WARRANTY

Fixture is warranted for three years. Ballast components carry the ballast manufacturer's limited warranty. Any unauthorized return, repair, replacement or modification of the Product(s) shall void this warranty. This warranty applies only to the use of the Product(s) as intended by AAL and does not cover any misapplication or misuse of said Product(s), or installation in hazardous or corrosive environments

DIMENSIONS



SP10

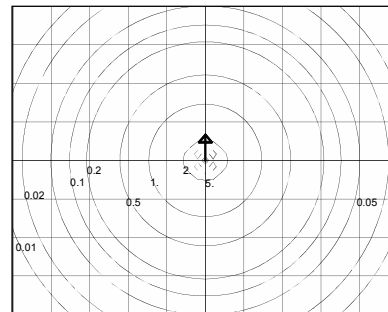
WATTAGE: 300

LUMEN OUTPUT: 10665

EFFICACY: 76.7

B3 U3 G2

FORWARD LIGHT		LUMEN	
FL	30°	3.0%	691
FM	60°	8.9%	2036
FH	80°	10.1%	2312
FVH	90°	0.6%	140
BACK LIGHT			
BL	30°	3.0%	691
BM	60°	8.9%	2036
BH	80°	10.1%	2312
BVH	90°	0.6%	140
UPLIGHT			
UL	100°	0.5%	120
UH	180°	0.7%	169
TRAPPED LIGHT		43.8%	



Mounting Height	Multiplier
10	4.000
15	1.778
20	1.000
25	0.640
30	0.444
35	0.327
40	0.250
45	0.198
50	0.160

UPLIGHT 97.3%
DOWNLIGHT 2.7%

20' MOUNTING HEIGHT

AAL reserves the right to change product specifications without notice.

IES files can be found at www.aal.net

