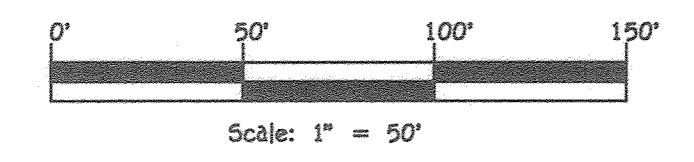
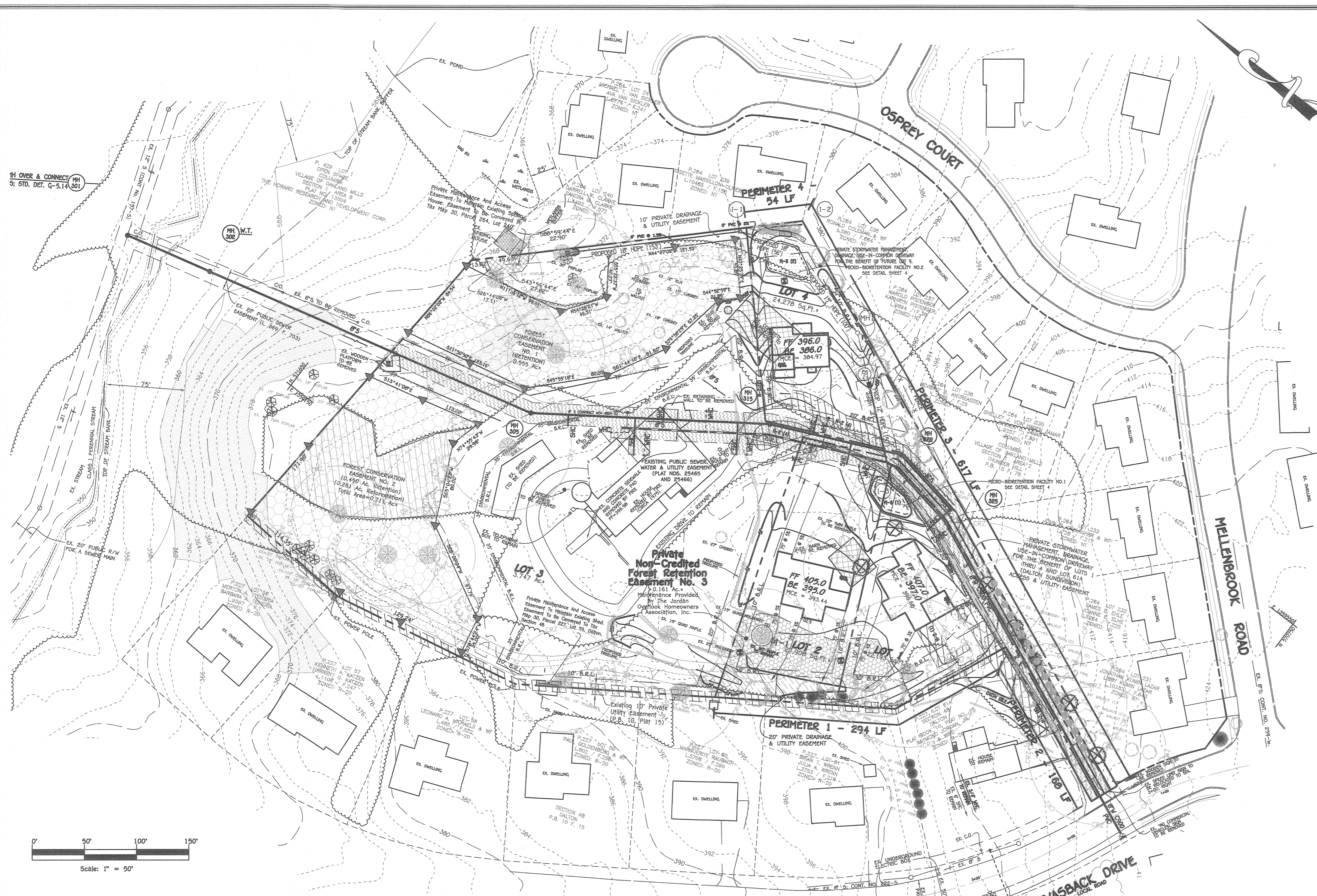




LANDSCAPING PLANT LIST			
TOTAL	KEY	NAME	SIZE
15		ACER RUBRUM 'RED SUNSET' RED SUNSET RED MAPLE	2 1/2" - 3" CALIPER FULL CROWN, B&B
2		ILEX 'NELLIE R. STEVENS' NELLIE R. STEVENS HOLLY	5' - 6' HT.
20		CLETHRA ALNIFOLIA SUMMERSWEET CLETHRA	2-1/2" - 3" CALIPER FULL CROWN, B&B
12		PRUNUS SARGENTII SARGENT CHERRY	2 1/2" - 3" CALIPER FULL CROWN, B&B
4		THUJA PLICATA 'GREEN GIANT' GIANT ARBORVITAE	5'-6' HEIGHT

LEGEND	
SYMBOL	DESCRIPTION
	Existing Contour 2' Interval
	Existing Contour 10' Interval
	Proposed Contour 2' Interval
	Proposed Contour 10' Interval
	Spot Elevation
	Existing shade Tree
	Existing Pine Tree
	Existing Treeline
	Proposed Treeline
	Slopes (15% To 24.9%)
	Existing 10' Public Utility Easement (P.B., 10, Plat 15)
	Private Maintenance and Access Easement To Maintain Existing Spring House
	Public Sewer, Water & Utility Easement
	Specimen Tree (to Remain)
	(C) Existing Tree Credit Toward Landscape Requirement
	Private Stormwater Management, Drainage, Use-In-Common Driveway For The Benefit Lots 1 Thru 4 Access & Utility Easement
	Public Forest Conservation Easement
	Tree Protection
	Forest (Retention) Area
	Forest (Reforestation) Area
	Forest Conservation Signage

Specimen Tree Chart					
Key (X#)	Species	Size (ft.dia)	CRZ (feet radius)	Comments	REMOVE/REMAIN
1	Black walnut	44.5	66.75	poor condition, CRZ impacted by existing driveway	removed under F-11-041
2	Black walnut	39	58.5	Fair condition, CRZ impacted by existing driveway	removed under F-11-041
3	Black walnut	33	49.5	good condition	removed under F-11-041
4	Silver maple	37	55.5	poor condition, trunk rot	removed under F-11-041
5	Silver maple	50.5	75.75	fair condition, limb detach noted	TO REMAIN
6	Sour cherry	33	49.5	poor condition, leaning and root anchorage exposed	TO REMAIN
7	Tulip poplar	33	49.5	good condition	TO REMAIN
8	Tulip poplar	43	64.5	good condition	TO REMAIN
9	Tulip poplar	30	45	good condition	TO REMAIN
10	Tulip poplar	31	46.5	fair condition, storm damage in canopy	TO BE REMOVED
11	Tulip poplar	30.5	45.75	good condition	TO REMAIN
12	Tulip poplar	33	49.5	good condition	TO REMAIN
13	Tulip poplar	30.5	45.75	fair condition, storm damage in canopy	TO REMAIN
14	Tulip poplar	40.5	60.75	fair, twin stems above bh, some storm damage in canopy	TO BE REMOVED
15	Silver maple	36.5	54.75	good condition	TO REMAIN
16	Silver maple	35.5	53.25	fair condition, multitrunked above bh, weak structure, limited crown. Existing driveway impacts crz	TO REMAIN
17	Black locust	36.5	54.75	fair condition, limited crown, some dieback, offsite	removed under F-11-041
18	Black walnut	44	66	good condition, offsite. Existing driveway, road and house impact crz	removed under F-11-041
19	RED MAPLE	40	72	POOR CONDITION DIEBACK NOTED IN CROWN	TO REMAIN



SCHEDULE A - PERIMETER LANDSCAPE EDGE					TOTAL
PERIMETER	P-1	P-2	P-3	P-4	
CATEGORY	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	
LANDSCAPE TYPE	A	A	A	A	
LINEAR FEET OF PERIMETER	294 L.F.	168 L.F.	617 L.F.	54 L.F.	
NUMBER OF PLANTS REQUIRED					
SHADE TREES	(294'/60' = 4.9) = 5	(168'/60' = 2.8) = 3	(617'/60' = 10.3) = 11	(54'/60' = 0.9) = 1	20
EVERGREEN TREES	0	0	0	0	
CREDIT FOR WALL, FENCE OR BERM	0	0	0	0	
CREDIT FOR EXISTING VEGETATION	0	0	0	0	
SHADE TREES	0	0	0	0	0
EVERGREEN TREES	0	0	0	0	0
NUMBER OF PLANTS PROVIDED					
SHADE TREES	4	3	8	0	15
EVERGREEN TREES (SUBSTITUTE 2:1)	2	0	2	2	6
SHRUBS (SUBSTITUTE 10:1)	0	0	0	0	0

PER CONDITION #2 OF WP-20-011 PROVIDE (12) REPLACEMENT TREES OF 2 1/2" TO 3" CALIPER ON SITE IN PLACE OF THE REMOVED TREES AS MITIGATION.

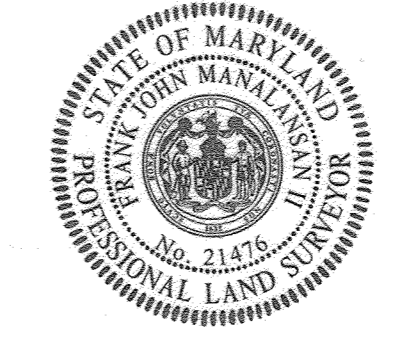
**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10279 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 481-2895

**THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET**



**OWNER AND DEVELOPER**  
 RAYMOND D. JORDAN  
 SHERRIE A. JORDAN  
 14929 CANVASBACK DRIVE  
 COLUMBIA, MARYLAND 21045  
 (410) 795-4903

Replacement sheet to update storm drain per SDP-20-044, approved 6.4.21



**Frank J. Manalapan II** 10/17/21  
 DATE  
 "Professional certification, I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Surveyor under the laws of the State of Maryland, License No. 21476, Expiration Date 7-14-23."

**NOTE:**  
 CONTRACTOR TO IMBECATE ALL SF/SF RUNNING DOWNHILL INTO J-SHAPED SEGMENTS AT 50' AND CURL ENDS UPHILL 2' IN ELEVATION

THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FINANCIAL SURETY OF \$9,600.00 FOR 27 SHADE TREES (12 TREES ARE BEING PROVIDED TO REPLACE THE REMOVAL OF 6 SPECIMEN TREES), 6 EVERGREEN TREES AND 20 SHRUBS. A SURETY OF \$2,400.00 WAS PREVIOUSLY POSTED AS PART OF THE WATER AND SEWER DEVELOPERS AGREEMENT. THE LANDSCAPING SHOWN TO BE INSTALLED UNDER THIS PLAN HAS BEEN MODIFIED FROM THE PREVIOUSLY REVIEWED AND APPROVED SUPPLEMENTAL PLAN (F-11-041). THE REMAINING \$7,200.00 OF LANDSCAPE SURETY WAS BE COLLECTED AT THE TIME OF THE GRADING PERMIT OF SDP-20-044.

**REPLACEMENT SHEET**  
**STREET TREE, LANDSCAPE PLAN, GRADING & SEDIMENT CONTROL PLAN**  
**JORDAN OVERLOOK**  
 BUILDABLE LOTS 2 THRU 4, AND 5

ZONING: R-20  
 PREVIOUS FILE Nos. 24-4483-0, 5P-09-010, 8A-08-031, 8A-10-008V & WP-12-005, WP-14-026  
 TAX MAP No. 30 GRID No. 10 PARCEL No. 309  
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: OCTOBER 17, 2021  
 SHEET 2 OF 4

F-11-041

**FOREST PROTECTION GENERAL NOTES**

- ALL FOREST RETENTION AREAS SHALL BE TEMPORARILY PROTECTED BY WELL ANCHORED BLAZE ORANGE PLASTIC FENCING, AS NECESSARY, AND SIGNAGE AS INDICATED ON THE PLANS. THE DEVICES SHALL BE INSTALLED ALONG THE FOREST RETENTION BOUNDARY PRIOR TO ANY LAND CLEARING, GRUBBING, OR GRADING ACTIVITIES.
- THE FOREST PROTECTION DEVICES SHALL BE INSTALLED SUCH THAT THE CRITICAL ROOT ZONES OF ALL TREES WITHIN THE RETENTION AREA NOT OTHERWISE PROTECTED WILL BE WITHIN FOREST PROTECTION DEVICES, UNLESS ROOT PRUNING IS PROPOSED.
- ALL PROTECTION DEVICES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION, INCLUDING SILT FENCE BEING USED AS PROTECTIVE FENCING. ALL DEVICES SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION HAS CEASED IN THE IMMEDIATE VICINITY.
- ATTACHMENT OF SIGNS, OR ANY OTHER OBJECTS TO TREES IS PROHIBITED. NO EQUIPMENT, MACHINERY, VEHICLES, MATERIALS OR EXCESSIVE PEDESTRIAN TRAFFIC SHALL BE ALLOWED WITHIN THESE PROTECTED AREAS.
- INSTALLATION AND MAINTENANCE OF PROTECTIVE FENCING AND SIGNAGE SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL TAKE THE UTMOST CARE TO PROTECT TREE ROOT SYSTEMS DURING ALL CONSTRUCTION ACTIVITIES. TREE ROOT SYSTEMS SHALL BE PROTECTED FROM SMOTHERING, FLOODING, EXCESSIVE WETTING FROM DE-WATERING OPERATIONS, OFF-SITE RUN OFF, SPILLAGE AND DRAINING OF MATERIALS THAT MAY BE HARMFUL TO TREES.
- THE GENERAL CONTRACTOR SHALL PREVENT PARKING OF CONSTRUCTION VEHICLES AND EQUIPMENT, AND THE STORING OF BUILDING SUPPLIES OR STOCKPILING OF EARTH WITHIN FOREST CONSERVATION EASEMENTS.
- REMOVAL OF TOPSOIL OR ROOT MAT WITHIN THE TREE PRESERVATION AREA SHALL BE PROHIBITED.
- THE GENERAL CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY TREES DAMAGED OR DESTROYED WITHIN THE FOREST CONSERVATION EASEMENTS.
- ROOT PRUNING SHALL BE USED AT THE LIMIT OF DISTURBANCE OR LIMIT OF GRADING WITHIN AND ADJACENT TO ALL PRESERVATION AREAS, AS NECESSARY.

**PRE-CONSTRUCTION MEETING**

- AFTER THE BOUNDARIES OF THE FOREST RETENTION AREAS HAVE BEEN FIELD LOCATED AND MARKED, AND AFTER THE FOREST PROTECTION DEVICES HAVE BEEN INSTALLED, BUT BEFORE ANY OTHER DISTURBANCE HAS TAKEN PLACE ON SITE, A PRE-CONSTRUCTION MEETING SHALL TAKE PLACE ON SITE. THE DEVELOPER, CONTRACTOR OR PROJECT MANAGER, AND HOWARD COUNTY INSPECTORS SHALL ATTEND. THE PURPOSE OF THIS MEETING WILL BE:
  - TO IDENTIFY THE LOCATIONS OF THE FOREST RETENTION AREAS, SPECIFIC TREES WITHIN 50 FEET OF THE LIMIT OF DISTURBANCE, LIMITS OF CONSTRUCTION, EMPLOYEE PARKING AREAS AND EQUIPMENT STAGING AREAS;
  - INSPECT ALL FLAGGED BOUNDARIES AND PROTECTION DEVICES;
  - MAKE ALL NECESSARY ADJUSTMENTS;
  - ASSIGN RESPONSIBILITIES AS APPROPRIATE AND DISCUSS PENALTIES.

**CONSTRUCTION MONITORING**

- THE SITE SHALL BE INSPECTED PERIODICALLY DURING THE CONSTRUCTION PHASE OF THE PROJECT. A QUALIFIED PROFESSIONAL SHALL BE RESPONSIBLE FOR IDENTIFYING DAMAGE TO PROTECTED FOREST AREAS OR INDIVIDUAL TREES WHICH MAY HAVE BEEN CAUSED BY CONSTRUCTION ACTIVITIES, SUCH AS SOIL COMPACTION, ROOT INJURY, TRUNK WOUNDS, LIMB INJURY, OR STRESS CAUSED BY FLOODING OR DROUGHT CONDITIONS.
- ANY SUCH DAMAGE THAT MAY OCCUR SHALL BE REMEDIATED IMMEDIATELY USING APPROPRIATE MEASURES. SEVERE PROBLEMS MAY REQUIRE CONSULTATION WITH A PROFESSIONAL AGROBOTANIST.
- THE CONSTRUCTION PROCEDURE SHALL NOT DAMAGE AREAS OUTSIDE OF THE LIMITS OF DISTURBANCE AS DESIGNATED ON THE PLANS. ANY DAMAGE SHALL BE RESTORED BY THE CONTRACTOR AT HIS EXPENSE AND TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

**REFORESTATION PLANTING NOTES**

- Plants, Related Material, And Operations Shall Meet The Detailed Description As Given On The Plans And As Described Herein.
- Plant Material, Unless Otherwise Specified, Shall Be Nursery Grown, Uniformly Branched And Have A Vigorous Root System. Plant Material Shall Be Healthy, Vigorous Plants Free From Defects, Decay, Disturbing Roots, Sunscald Injuries, Abrasions Of The Bark, Plant Disease, Insect Pest Eggs, Borers, Infestations Or Objectionable Disfigurements. Plant Material That Is Weak Or Which Has Been Cut Back From Larger Grades To Meet Specific Requirements Will Be Rejected. Trees With Forked Leaders Will Not Be Accepted. Plants Shall Be Freshly Dug; No Holed-in Plants Or Cold Storage Will Be Accepted.
- Unless Otherwise Specified, Plant Material Shall Conform To "American Standard For Nursery Stock" ANSI Z60.1-1990, Published By The American Association Of Nurserymen, Including All Addenda.
- Contractor Will Be Required To Guarantee Plant Material For A Period Of Two (2) Years After The Date Of Acceptance And Maintain A 75% Survivability At The End Of The Two (2) Years.
- To Lessen The Chance Of Loss, The Plantings Should Be Checked From Time To Time To Insure That They Are Receiving Sufficient Water. See "Maintenance Of Plantings" For Guidelines.
- The Location And Orientation Of All Plant Material Shall Be Randomly Planted In Designated Reforestation Areas By The Contractor. Contractor Shall Be Responsible For Moving Any Plant Material Installed Without Approval.
- Mowing And Applying Herbicides To The Reforestation Area Is Prohibited At Any An All Stages Of The Planting Process In Order To Encourage The Existing Seedlings To Grow.
- Contractor Is Responsible For Installing And Pruning Plant Material In The Proper Planting Season For Each Plant Type. See Tree Planting & Maintenance Calendar.
- Upon Completion Of Installation, Signage Shall Be Installed As Shown.

**PLANTING / SOIL SPECIFICATIONS**

- Planting Of Nursery Stock Shall Take Place Between March 15th And April 30th Or September 15th And November 15th.
- A Twelve (12) Inch Layer Of Topsoil Shall Be Spread Over All Reforestation Areas Impacted By Site Grading To Assure A Suitable Planting Area, If Applicable. Disturbed Areas Shall Be Seeded And Stabilized In Accordance With The Sediment & Erosion Control Plan For This Project. Planting Areas Not Impacted By Site Grading Shall Have No Additional Topsoil Installed.
- All Bare Root Planting Stock Shall Have Their Root System Dipped Into An Anti-Desiccant Gel Prior To Planting.
- Plants Shall Be Installed So That The Top Of The Root Mass Is Level With The Top Of Existing Grade. Backfill In The Planting Pits Shall Consist Of 3 Parts Existing Soil To 1 Part Fine Fines Or Equivalent.
- Fertilizer Shall Consist Of Agriform 22-0-2, Or Equivalent, Applied As Per Manufacturer's Specifications.
- A Two (2) Inch Layer Of Hardwood Mulch Shall Be Placed Over The Root Area Of All Plantings. See Planting Detail.
- Plant Material Shall Be Transported To The Site In A Tarped Or Covered Truck. Plants Shall Be Kept Moist Prior To Planting.
- All Non-Organic Debris Associated With The Planting Operation Shall Be Removed From The Site By The Contractor.

**SEQUENCE OF CONSTRUCTION**

- Sediment Controls And Tree Protective Devices Shall Be Installed In Accordance With Sediment & Erosion Control Plans For This Site, If Applicable. Site Shall Be Graded In Accordance With The Plans.
- Proposed Reforestation Areas Impacted By The Site Grading Shall Be Topsoiled And Stabilized As Per Note 2 Of The "Planting / Soil Specifications".
- Plants Shall Be Installed And Maintained As Per Notes And Specifications For This Project.
- Upon Completion Of The Plantings, Signage Shall Be Installed As Per The Signage Detail.
- Plantings Shall Be Guaranteed And Maintained In Accordance With The "Guarantee Requirements" And "Maintenance Of Plantings" Associated With This Project.

**MAINTENANCE OF PLANTINGS**

- Maintenance Of Plantings Shall Last For A Period Of 26 Months.
- All Plant Material Shall Be Generally Watered Twice A Month During The 1st Growing Season. Watering May Be More Or Less Frequent Depending On Weather Conditions.
- During The 2nd Growing Season, Plant Material Shall Be Watered Once A Month From May To September, As Needed.
- Invasive Exotics And Noxious Weeds Shall Be Removed From The Reforestation Area(s). Old Field Successional Species Shall Be Retained.
- Plants Shall Be Examined A Minimum Of Two (2) Times During The Growing Season For Serious Plant Pests And Diseases With The Appropriate Agent.
- Dead Branched Shall Be Pruned From The Plantings.

**GUARANTEE REQUIREMENTS**

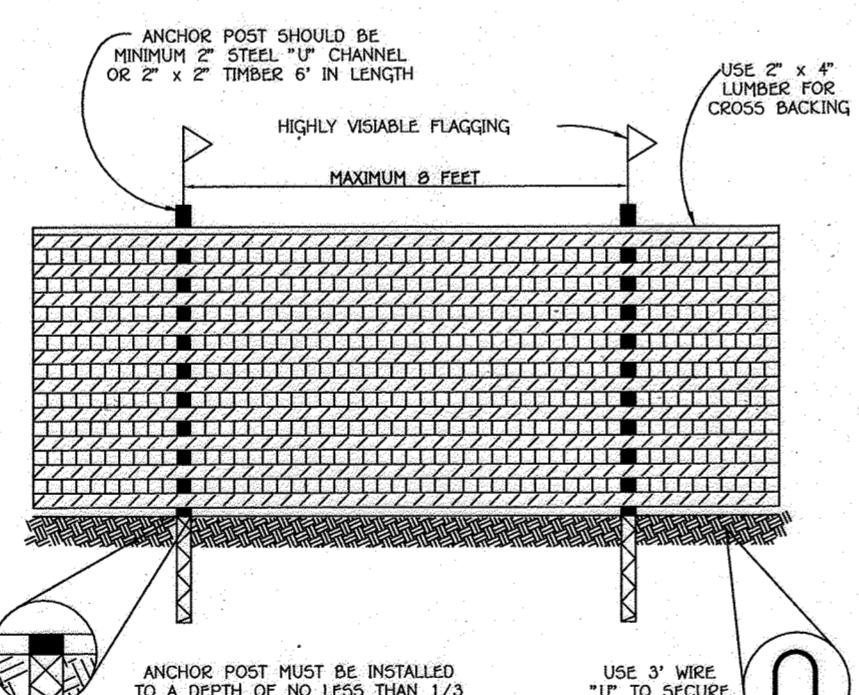
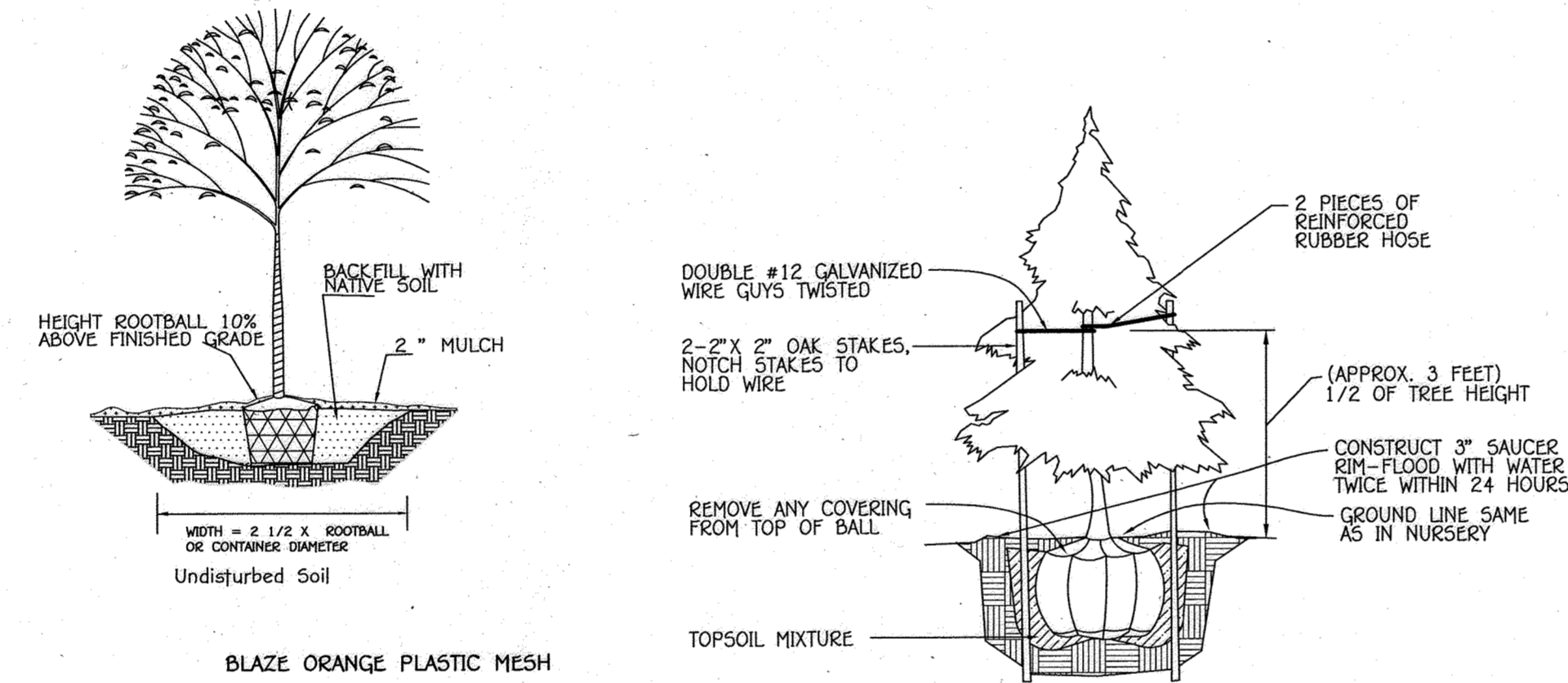
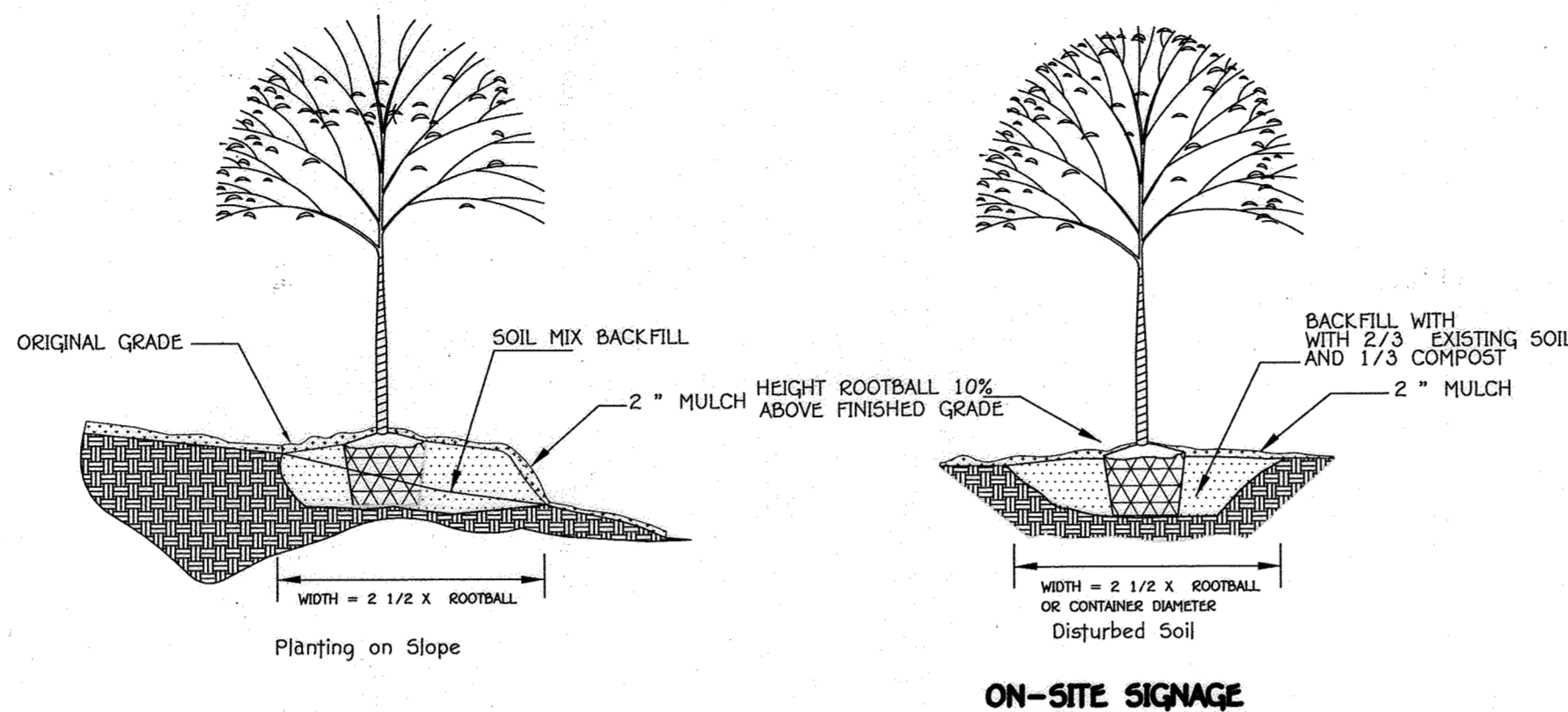
A 75% Survival Rate For The Reforestation Plantings Is Required At The End Of The 24 Month Maintenance Period. All Plant Material Below The 75% Threshold Is Required To Be Replaced At The Beginning Of The Next Growing Season.

**MULTIFLORA ROSE CONTROL NOTE:**

**PRIOR TO PLANTING ALL MULTIFLORA ROSE WITHIN PLANTING AREAS SHALL BE REMOVED.** Removal Of The Multiflora Rose May Be Performed With Mowing And Herbicide Treatments. Physical Removal Of All Top Growth Followed By A Periodic Herbicide Treatment Of Stump Sprouts Is Recommended. Native Tree And Shrub Species Occurring Within The Rose Thickets Should Be Retained Wherever Possible. Herbicide Treatments Shall Occur On Two (2) Month Intervals During The First Growing Season And Once In The Spring And Once In The Fall For Subsequent Years. Herbicide Used Shall Be Made Specifically To Address Woody Plant Material And Shall Be Applied As Per Manufacturer's Specifications. Care Should Be Taken Not To Spray Planted Trees Or Naturally Occurring Native Tree And Shrub Seedlings. It Is Recommended That Infestation Of Rose Removal Begin At Least Six Months Prior To Planting So That New Growth Of Roses Is Able To Be More Successfully Managed.

**LANDSCAPE NOTES**

- AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPING MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.
- THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERM, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- NO CLEARING OF EXISTING VEGETATION IS PERMITTED WITHIN THE LANDSCAPE EDGE FOR WHICH CREDIT IS BEING TAKEN; HOWEVER, LANDSCAPE MAINTENANCE IS PERMITTED.



**NOTES:**  
 1. FOREST PROTECTION DEVICE ONLY.  
 2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.  
 3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.  
 4. ROOT DAMAGE SHOULD BE AVOIDED.  
 5. PROTECTIVE SIGNAGE MAY ALSO BE USED.  
 6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

**PLANTING SCHEDULE**

FCE # 2 - 0.26 acres  
 Planting Required: 52 (26)  
 Planting Provided: 54 (28)

QTY	Species	Size (Spotted)	Alternate Size (Spotted)
16 (8)	Acer rubrum - Red maple	1" cal. (15% c.)	2" cal. (20% c.)
6 (3)	Carya tomentosa - Mockernut Hickory	1" cal. (15% c.)	2" cal. (20% c.)
1 (1)	Quercus alba - White Oak	1" cal. (15% c.)	2" cal. (20% c.)
4 (2)	Cornus florida - Flowering Dogwood	1" cal. (15% c.)	2" cal. (20% c.)
10 (5)	Liriodendron tulipifera - Tulip Poplar	1" cal. (15% c.)	2" cal. (20% c.)
1 (1)	Quercus alba - White oak	1" cal. (15% c.)	2" cal. (20% c.)
6 (3)	Quercus rubra - Red Oak	1" cal. (15% c.)	2" cal. (20% c.)
4	Viburnum granifolium - Blackhaw	1" cal. (15% c.)	2" cal. (20% c.)
4	Viburnum acerifolium - Arrowwood Viburnum	1" cal. (15% c.)	2" cal. (20% c.)
54	Trees & 8 shrubs		

Note: (1) Two options for tree sizes has been shown to account for availability of nursery stock at the time of installation. Quantities shown for 1 1/2" (15% c.) and 2" (20% c.) call quantity of call quantity.  
 (2) Site proposed to be affixed and planted at 200 trees per acre (100 trees/acre x 0.26 acres = 26 trees minimum). Alternate site proposed to be affixed and planted at 100 trees per acre (100 trees/acre x 0.26 acres = 26 trees minimum). Shrubs (otherwise) not included in total quantity.  
 (3) Red Maple, Hickory, and Oak to be planted at least 50 feet from any overhead electric lines. Dogwoods and Shubs to be planted in areas closer to overhead electric lines.

**FOREST CONSERVATION WORKSHEET  
 VERSION 1.0**

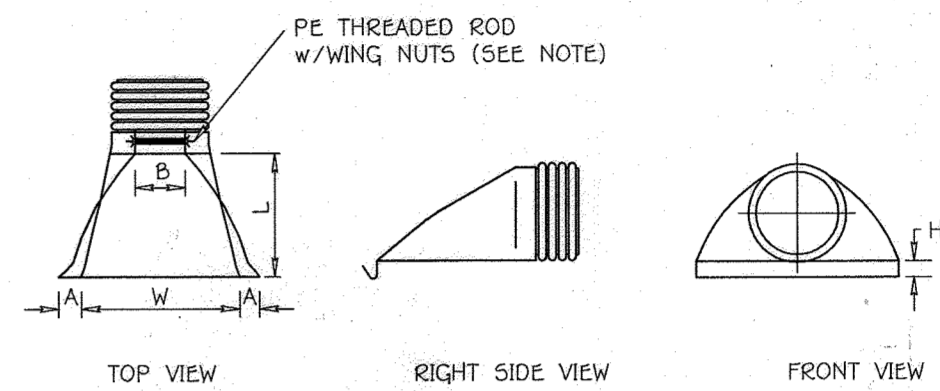
PROJECT: JORDAN OVERLOOK	ACRES
NET TRACT AREA	
A. TOTAL TRACT AREA	5.46
B. DEDUCTIONS (AREA WITHIN 100 YEAR FLOODPLAIN)	0.0
C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION	0
D. NET TRACT AREA	5.46
LAND USE CATEGORY: HIGH DENSITY RESIDENTIAL	
E. AFFORESTATION THRESHOLD (NET TRACT AREA (C) x 15%)	0.82
F. CONSERVATION THRESHOLD (NET TRACT AREA (C) x 20%)	1.09
EXISTING FOREST COVER	
G. EXISTING FOREST COVER WITHIN THE NET TRACT AREA	2.90
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD	0
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD	1.01
BREAK-EVEN POINT	
J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION	BREAK-EVEN POINT
	1.45
K. CLEARING PERMITTED WITHOUT MITIGATION	1.45
PROPOSED FOREST CLEARING	
L. TOTAL AREA OF FOREST TO BE CLEARED OR RETAINED OUTSIDE FCE	1.07
M. TOTAL AREA OF FOREST TO BE RETAINED	1.03
PLANTING REQUIREMENTS	
N. REFORESTATION FOR CLEARING ABOVE THE CONSERVATION THRESHOLD	0.45
P. REFORESTATION FOR CLEARING BELOW THE CONSERVATION THRESHOLD	0.12
Q. CREDIT FOR RETENTION ABOVE THE CONSERVATION THRESHOLD	0
R. TOTAL REFORESTATION REQUIRED	0.57
S. TOTAL AFFORESTATION REQUIRED	0
T. TOTAL PLANTING REQUIREMENT	0.57

NOTE: THE TOTAL FOREST CONSERVATION FOR JORDAN OVERLOOK, LOTS 1 THRU 4 IS 1.60 ACRES. FOREST RETENTION FOR 1.03 ACRES IS PROVIDED ON-SITE AND NO FOREST SURETY IS REQUIRED. REFORESTATION FOR 0.57 ACRES IS PROVIDED WITH A COMBINATION OF 0.26 ACRES ON-SITE PLANTING AND A FEE-IN-LIEU PAYMENT FOR 0.31 ACRES. THE SURETY FOR ON-SITE REFORESTATION IS \$5,662.80 (0.26 ACRES X 43,560 SQ.FT./ACRE X \$0.50/SQ.FT.). THE FEE-IN-LIEU PAYMENT IS \$6,751.80 (0.31 ACRES X 43,560 X \$0.75/SQ.FT.).

Approved: Department Of Planning And Zoning  
 Chief, Division Of Land Development  
 Chief, Development Engineering Division  
 Date: 5/16/14  
 Date: 5/16/14

DRAINAGE AREA M-6 (1) MICRO-BIORETENTION PLANT MATERIAL			
QUANTITY	NAME	TYPE	MAXIMUM SPACING (FT.)
40	PERENNIALS		2 FT.
3	SHRUBS		6 FT.

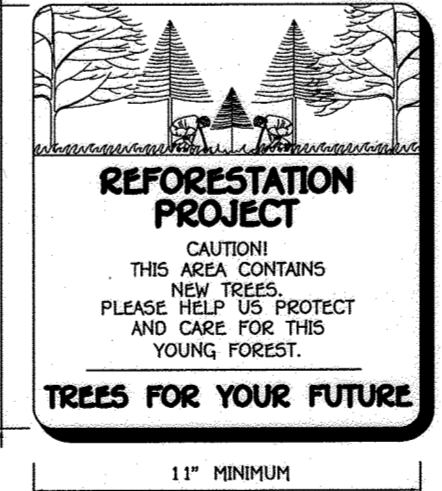
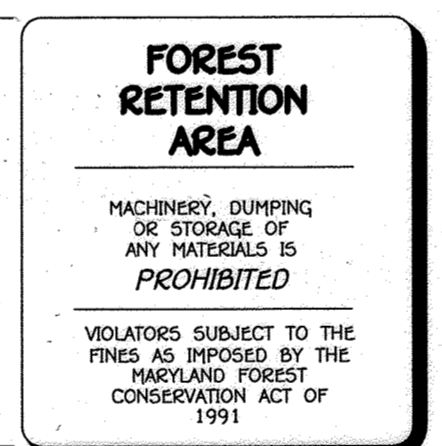
DRAINAGE AREA M-6 (2) MICRO-BIORETENTION PLANT MATERIAL			
QUANTITY	NAME	TYPE	MAXIMUM SPACING (FT.)
60	PERENNIALS		2 FT.
3	SHRUBS		6 FT.



PART#	PIPE SIZE	A	B (max)	H	L	W
1210P	12 in (305 mm)	6.50 in (165 mm)	10.00 in (254 mm)	6.50 in (165 mm)	29.00 in (737 mm)	29.00 in (737 mm)
1510P	15 in (375 mm)	8.50 in (215 mm)	10.00 in (254 mm)	6.50 in (165 mm)	29.00 in (737 mm)	29.00 in (737 mm)
1810P	18 in (450 mm)	7.50 in (191 mm)	15.00 in (381 mm)	6.50 in (165 mm)	32.00 in (813 mm)	35.00 in (889 mm)
2410P	24 in (600 mm)	7.50 in (191 mm)	18.00 in (457 mm)	6.50 in (165 mm)	35.00 in (889 mm)	45.00 in (1143 mm)
3012P	30 in (750 mm)	10.50 in (267 mm)	N/A	7.00 in (178 mm)	53.00 in (1346 mm)	68.00 in (1727 mm)
3612P	36 in (900 mm)	10.50 in (267 mm)	N/A	7.00 in (178 mm)	53.00 in (1346 mm)	68.00 in (1727 mm)

NOTE: PE THREADED ROD W/WING NUTS PROVIDED FOR END SECTIONS 12" - 24". 36" - 36" END SECTIONS TO BE WELDED TO WELD PER MANUFACTURER'S RECOMMENDATIONS.

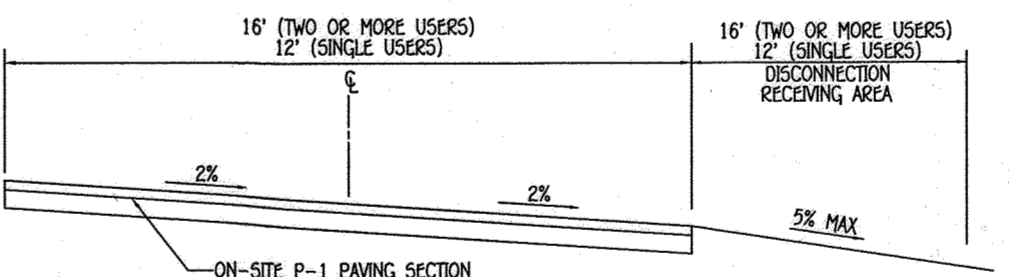
**FLARED END SECTION DETAIL**



**FOREST CONSERVATION SIGN DETAILS**  
 NOT TO SCALE

**OWNER AND DEVELOPER**

RAYMOND D. JORDAN  
 SHEROEE A. JORDAN  
 4929 CANNASACK DRIVE  
 COLUMBIA, MARYLAND 21045  
 (410) 795-4903



NOTE: ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME II, STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION.

**TYPICAL PRIVATE DRIVE CROSS SLOPE SECTION**  
 NOT TO SCALE

NO.	REVISION	DATE
1	REVISE TITLE BLOCK, NOTES & CHANGE	9/2/12



THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

**LANDSCAPING DETAILS AND FOREST CONSERVATION WORKSHEET  
 JORDAN OVERLOOK  
 BUILDABLE LOTS 2 THRU 4 AND 5**

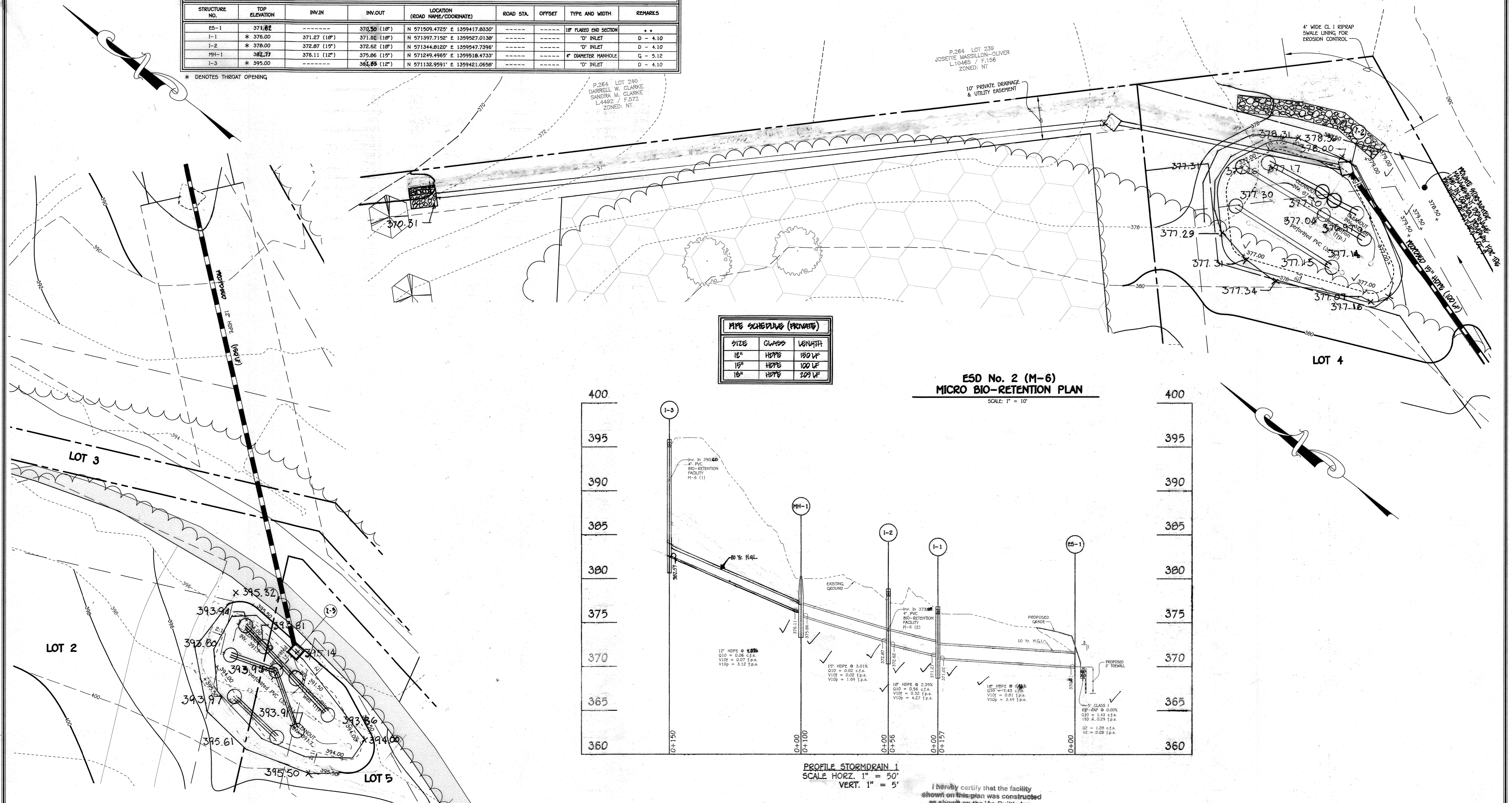
ZONING: R-20  
 TAX MAP No. 30 GRID No. 10 PARCEL No. 309  
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: APRIL 2, 2014  
 SHEET 3 OF 5

F-11-041



STRUCTURE SCHEDULE									
STRUCTURE NO.	TOP ELEVATION	INV. IN	INV. OUT	LOCATION (ROAD NAME/COORDINATE)	ROAD STA.	OFFSET	TYPE AND WIDTH	REMARKS	
ES-1	371.82		370.50 (18")	N 571509.4725' E 1359417.8330'			18" FLARED END SECTION		**
I-1	* 376.00	371.27 (18")	371.02 (18")	N 571397.7152' E 1359527.0138'			"D" INLET	D - 4.10	
I-2	* 378.00	372.87 (15")	372.62 (18")	N 571344.8120' E 1359547.7396'			"D" INLET	D - 4.10	
MH-1	382.77	376.11 (12")	375.86 (15")	N 571249.4965' E 1359518.4733'			4" DIAMETER MANHOLE	G - 5.12	
I-3	* 395.00		382.85 (12")	N 571132.9591' E 1359421.0658'			"D" INLET	D - 4.10	

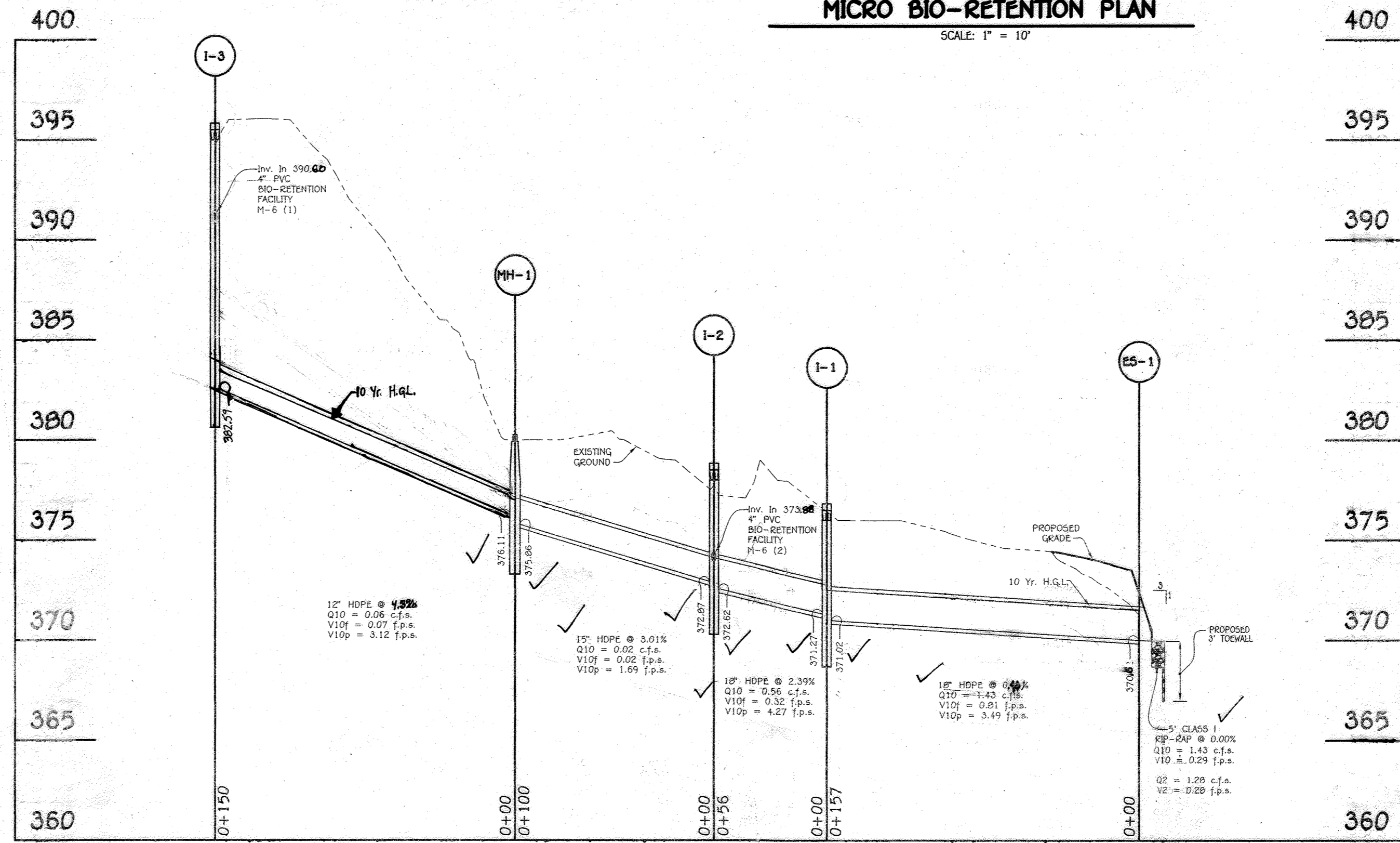
\* DENOTES THROAT OPENING



PIPE SCHEDULES (PRIVATE)		
SIZE	CLASS	LENGTH
18"	HYPE	150 LF
15"	HYPE	100 LF
18"	HYPE	209 LF

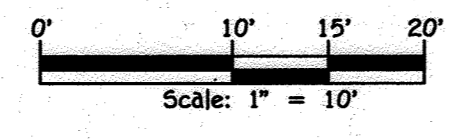
**ESD No. 1 (M-6)**  
**MICRO BIO-RETENTION PLAN**  
 SCALE: 1" = 10'

**ESD No. 2 (M-6)**  
**MICRO BIO-RETENTION PLAN**  
 SCALE: 1" = 10'



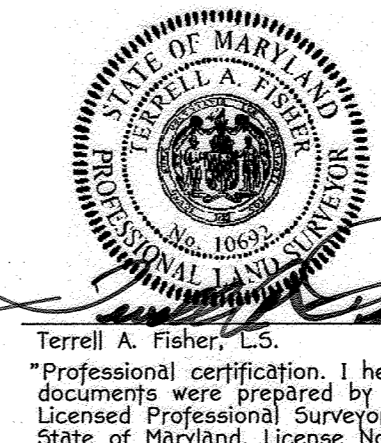
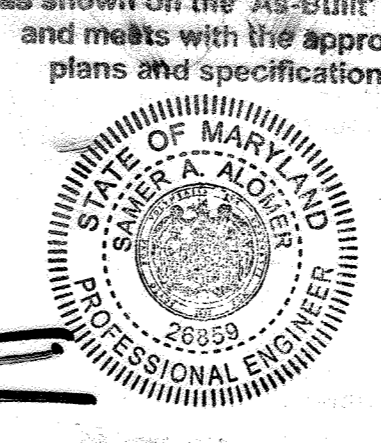
**PROFILE STORMDRAIN 1**  
 SCALE: HORIZ. 1" = 50'  
 VERT. 1" = 5'

1	REVERSE TITLE BLOCK, STORMDRAIN, AND CHARTS & PROFILE	0/2/14
NO.	REVISION	DATE



**OWNER AND DEVELOPER**  
 RAYMOND D. JORDAN  
 SHEREE A. JORDAN  
 4929 CANVASBACK DRIVE  
 COLUMBIA, MARYLAND 21045  
 (410) 795-4903

I hereby certify that the facility shown on this plan was constructed as shown on the 'As-Built' plans and meets with the approved plans and specifications.



Terrell A. Fisher, L.S.  
 DATE: 4/2/14  
 \*Professional certification, I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Surveyor under the laws of the State of Maryland, License No. 10892, Expiration Date 12-13-15.\*

**STORMWATER MANAGEMENT PLANS**  
**JORDAN OVERLOOK**  
 BUILDABLE LOTS 2 THRU 4 AND 5

ZONING: R-20  
 PREVIOUS FILE Nos. 24-4483-0, 5P-09-010, BA-08-031, BA-10-008V & WP-12-005, WP-14-026  
 TAX MAP No. 30 GRID No. 10 PARCEL No. 309  
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: APRIL 2, 2014  
 SHEET 4 OF 5

F-11-041

I:\2000\06043\dwg\Supplemental Plan Site Redesign 4-16-2013\06043 SHEET 4&5 Swm Details.dwg, SHEET 4, 11

**OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (M-6) (FACILITY Nos. 1 & 2)**

- The owner shall maintain the plant material, mulch layer and soil layer annually. Maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning. Acceptable replacement plant material is limited to the following: 2000 Maryland stormwater design manual volume II, table A.4.1 and 2.
- The owner shall perform a plant in the spring and in the fall each year. During the inspection, the owner shall remove dead and diseased vegetation, consider dead plant material, replace dead plant material with acceptable replacement plant material. Treat diseased trees and shrubs and replace all deficient stakes and wires.
- The owner shall inspect the mulch each spring. The mulch shall be replaced every two to three years. The previous mulch layer shall be removed before the new layer is applied.
- The owner shall correct soil erosion on an as needed basis, with a minimum of once per month and after each heavy storm.

**Infiltration and Filter System Construction Specifications**

Infiltration and filter systems either take advantage of existing permeable soils or create a permeable medium such as sand for WC, and Re x. In some instances where permeability is great, these facilities may be used for up to wall. The most common systems include infiltration trenches, infiltration basins, sand filters, and capillary filters.

When properly planted, vegetation will thrive and enhance the functioning of these systems. For example, pre-treatment buffers will trap sediments that often are bound with phosphorus and metals. Vegetation planted in the facility will aid in nutrient uptake and water storage. Additionally, plant roots will provide aeration for stormwater to permeate soil for groundwater recharge. Finally, successful plantings provide aesthetic value and wildlife habitat making these facilities more desirable to the public.

- Design Constraints:**
- Filtering layer shall be at least 20 feet will cause sediments to settle out before reaching the facility, thereby reducing the possibility of clogging.
  - Determine areas that will be saturated with water and water table depth so that appropriate plants may be selected (reference to be made to bioretention facilities, see figure A.5 and Table A.4 for planting material guidelines).
  - Plants known to send down deep taproots should be avoided in systems where filter fabric is used as part of facility design.
  - Test soil conditions to determine if soil amendments are necessary.
  - Plants shall be located so that access is possible for structure maintenance.
  - Stabilize heavy flow areas with erosion control mats or soil.
  - Temporary divert flows from seeded areas until vegetation is established.
  - See Table A.5 for additional design considerations.

**Bio-retention**

**Soil Bed Characteristics**  
The characteristics of the soil for the bioretention facility are perhaps as important as the facility location, size, and treatment volume. The soil must be permeable enough to allow runoff to filter through the media, while having characteristics suitable to promote and sustain a robust vegetative cover crop. In addition, much of the nutrient pollutant uptake (nitrogen and phosphorus) is accomplished through absorption and microbial activity within the soil profile. Therefore, soils must balance their chemical and physical properties to support local communities above and below ground.

The planting soil should be a sandy loam, loamy sand, loam (USDA), or a loam/sand mix (should contain a minimum 35 to 60% sand by volume). The clay content for these soils should be less than 25% by volume (Environmental Quality Resources (EQE), 1996; Engineering Technology Inc. and Sustainable, Inc. (ESI), 1992). Soils should fall within the S6, M6, SC classifications or the Unified Soil Classification System (USCS). A permeability of at least 1.0 feet per day (0.9"/hr) is required (a conservative value of 0.5 feet per day is used for design). The soil should be free of stones, stumps, roots, or other woody material over 1" in diameter. Branch or seeds from noxious weeds (e.g., Johnson Grass, Mugwort, Nutsedge, and Canada Thistle) or other noxious weeds as specified under COMAR 15.08.01.05 should not be present in the soils. Placement of the planting soil should be 12 to 10 inches that are loosely compacted (lumped lightly with a backhoe bucket or traversed by dozer tracks). The specific characteristics are presented in Table A.5.

Table A.5 Planting Soil Characteristics

Parameter	Value
pH range	5.2 to 7.00
Organic matter	1.5 to 4.0% (by weight)
Magnesium	35 lbs. per acre, minimum
Phosphorus (phosphate - P2O5)	75 lbs. per acre, minimum
Potassium (potash - K2O)	85 lbs. per acre, minimum
Soluble salts	500 ppm
Clay	10 to 25 %
Silt	30 to 55 %
Sand	35 to 60%

**Mulch Layer**

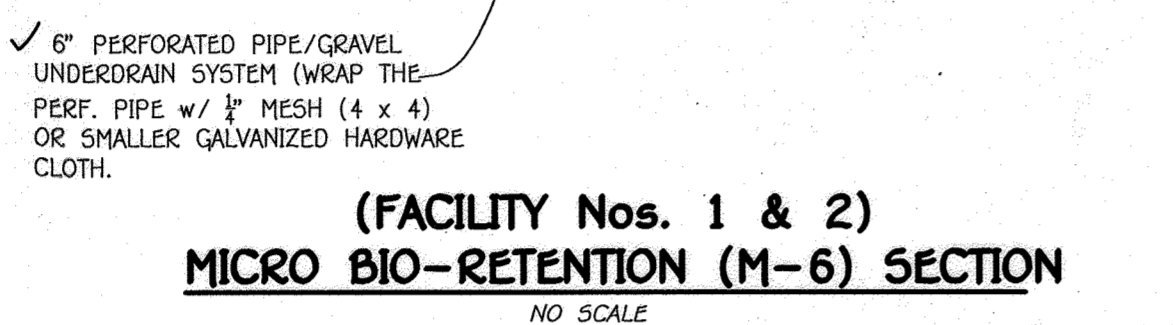
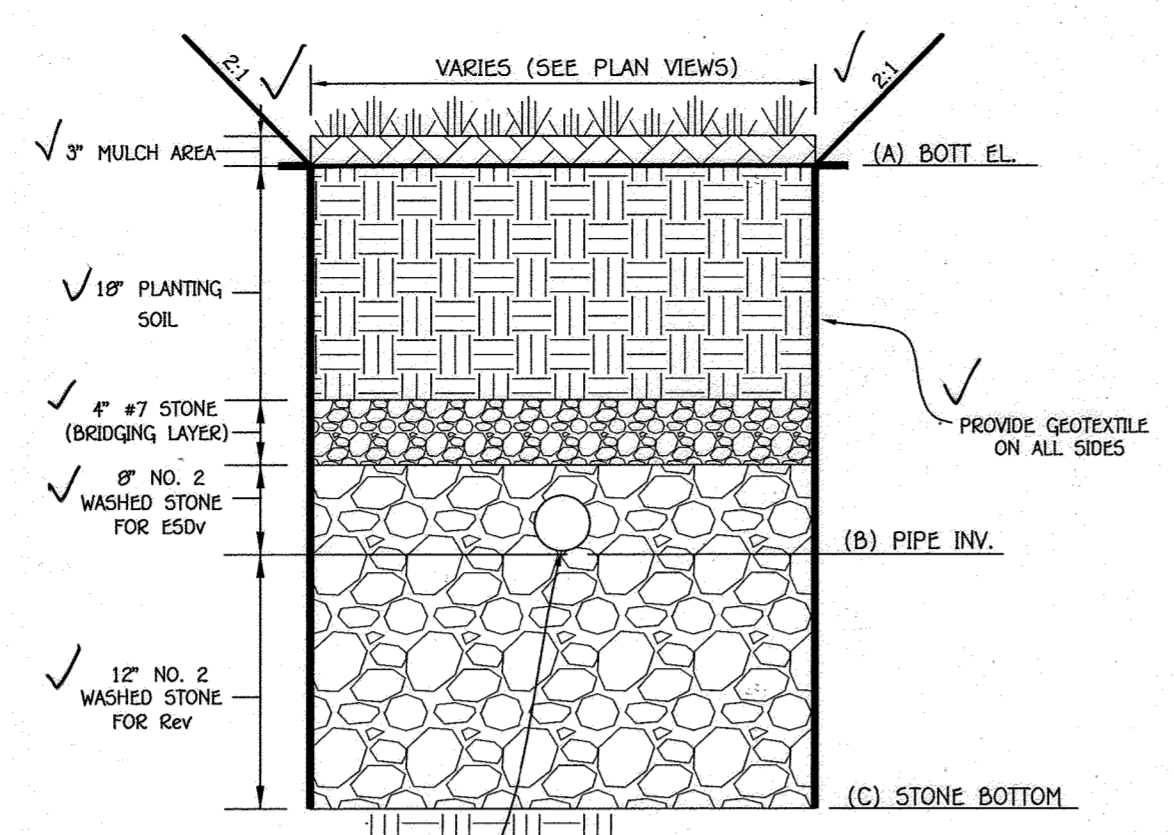
The mulch layer plays an important role in the performance of the bioretention system. The mulch layer helps maintain soil moisture and avoids surface sealing, which reduces permeability. Mulch helps prevent erosion, and provides a microenvironment suitable for soil biota at the mulch/soil interface. It also serves as a pretreatment layer, trapping the finer sediments, which remain suspended after the primary pretreatment.

The mulch layer should be situated landscape style, single or double shredded hardwood mulch or chips. The mulch layer should be well aged (stockpiled or stored for at least 12 months), uniform in color, and free of other materials, such as weed seeds, soil, roots, etc. The mulch should be applied to a maximum depth of three inches. Grass clippings should not be used as a mulch material.

**Planting Guidance**

Plant material selection should be based on the goal of simulating a terrestrial forested community of native species. Bioretention simulates an upland-species ecosystem. The community should be dominated by trees, but have a distinct community of understory trees, shrubs and herbaceous materials. By creating a diverse, dense plant cover, a bioretention facility will be able to treat stormwater runoff and withstand urban stresses from insects, disease, drought, temperature, wind, and exposure.

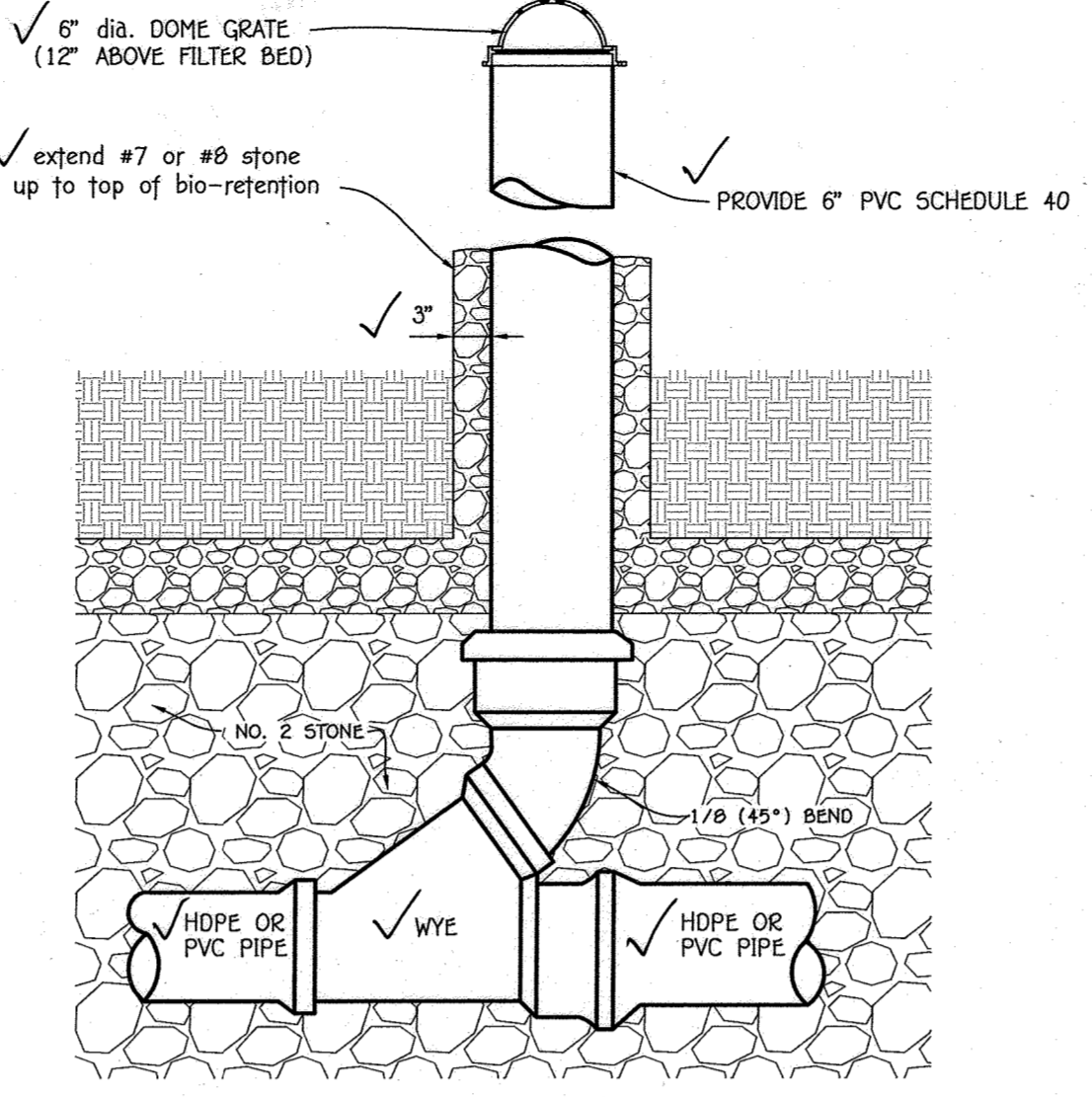
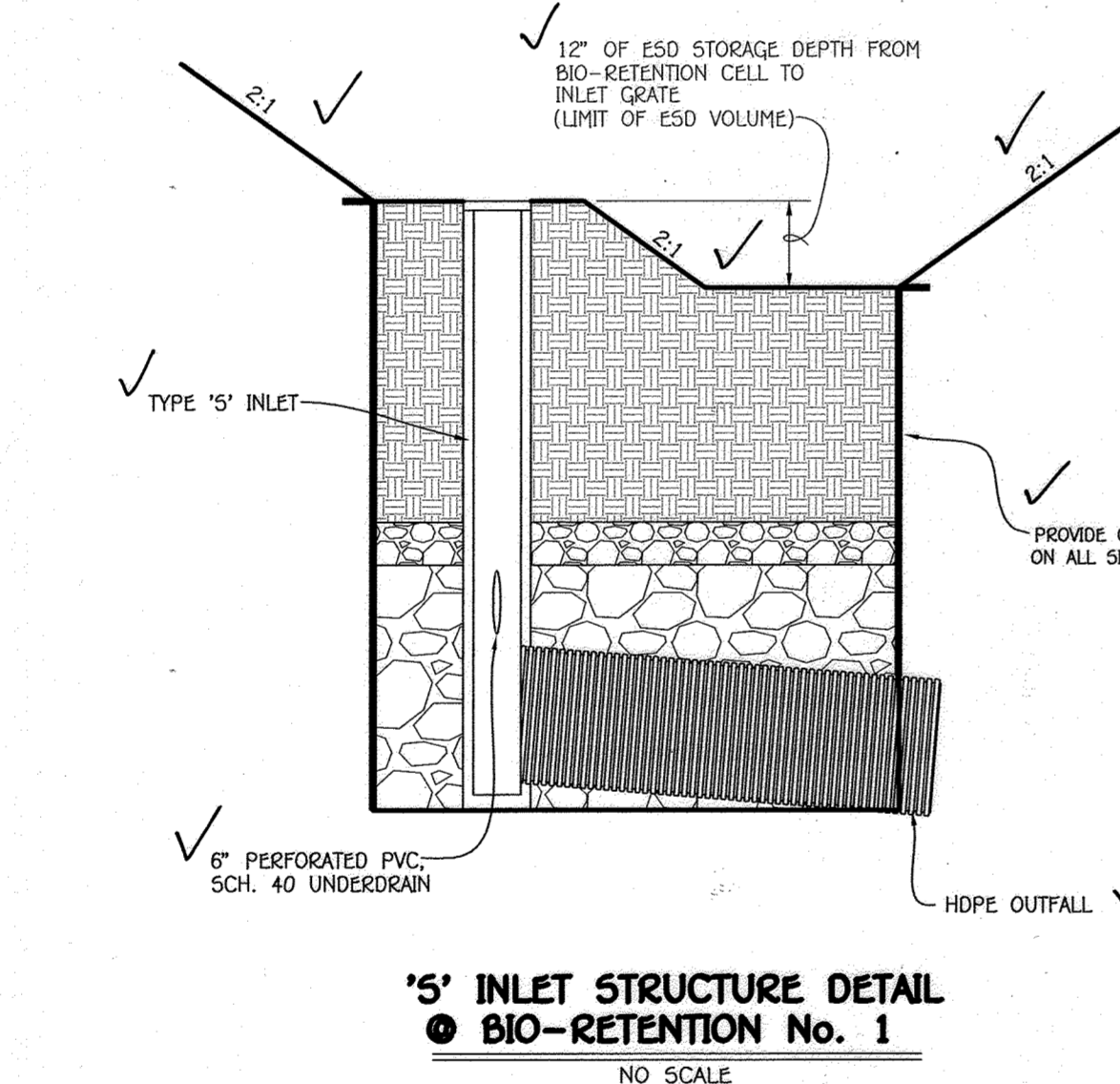
The proper selection and installation of plant material is key to a successful system. There are essentially three zones within a bioretention facility (Figure A.5). The lowest elevation supports plant species adapted to standing and fluctuating water levels. The middle elevation supports plants that like drier soil conditions, but can still tolerate occasional inundation by water. The outer edge is the highest elevation and generally supports plants adapted to drier conditions. A sample of appropriate plant materials for bioretention facilities are included in Table A.4. The layout of plant material should be flexible, but should follow the general principles described in Table A.5. The objective is to have a system, which resembles a random, natural plant layout, while maintaining optimal conditions for plant establishment and growth. For a more extensive bioretention plan, consult ERM, 1993 or Clappier and Schueler, 1997.



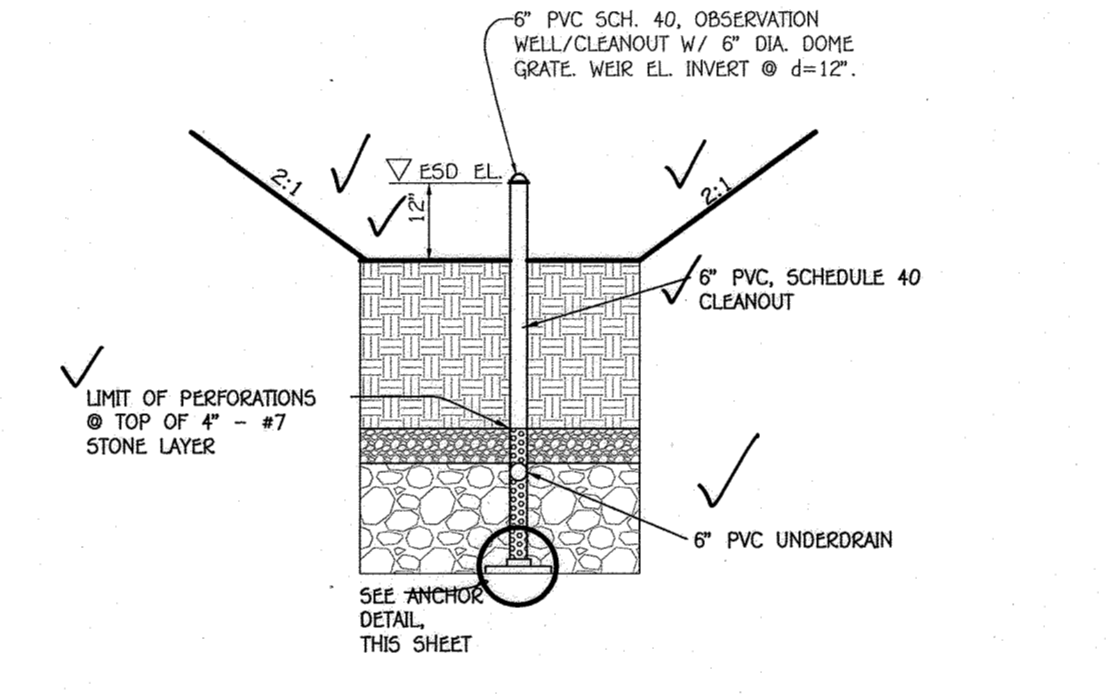
(FACILITY Nos. 1 & 2)  
**MICRO BIO-RETENTION (M-6) SECTION**

FACILITY NO.	A	B	C
BIO-RETENTION No. 1	394.00	390.50	389.50
BIO-RETENTION No. 2	377.00	374.00	373.00

NOTE: PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW.



**TYPICAL CLEAN-OUT DETAIL**  
NO SCALE



**SECTION OF OBSERVATION WELL LOCATION**  
NOT TO SCALE

NOTES:  
UNDERDRAIN PIPE SHALL BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F 758, TYPE P5 28 OR ASHTO-M-276) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED 4" RIGID PIPE (E.G., PVC OR HDPE).

PERFORATIONS SHALL BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4 X 4) GALVANIZED HARDWARE CLOTH.

GRAVEL LAYER SHALL BE (NO. 57 STONE PREFERRED) AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.

THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.

A RIGID, NON PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQ.FT.) TO PROVIDE A CLEANOUT PORT AND MONITOR PERFORMANCE OF THE FILTER.

A 4" LAYER OF PEA GRAVEL (1/4" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
V. J. ...  
CHIEF, DIVISION OF LAND DEVELOPMENT  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

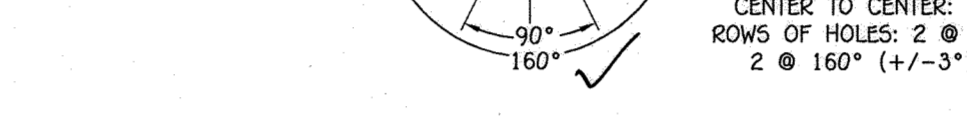
PERFORATIONS SHALL BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4 X 4) GALVANIZED HARDWARE CLOTH.

GRAVEL LAYER SHALL BE (NO. 57 STONE PREFERRED) AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.

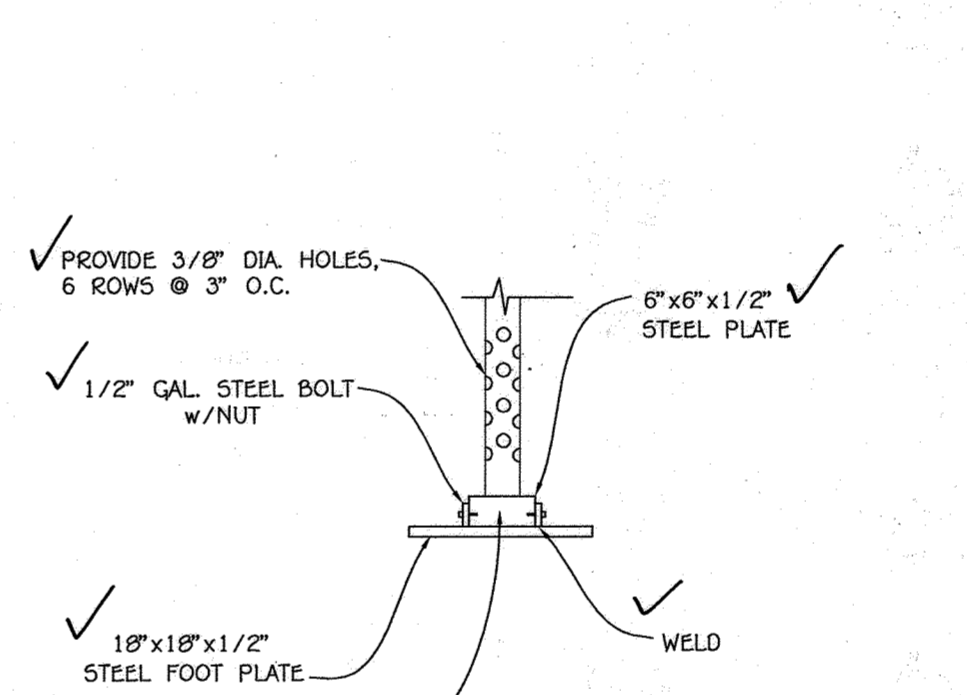
THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.

A RIGID, NON PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQ.FT.) TO PROVIDE A CLEANOUT PORT AND MONITOR PERFORMANCE OF THE FILTER.

A 4" LAYER OF PEA GRAVEL (1/4" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".



**SCH40 PVC PERFORATED UNDERDRAIN PIPE DETAIL FOR HORIZONTAL DRAIN PIPE**  
NO SCALE



**OBSERVATION WELL ANCHOR DETAIL**  
NO SCALE

**B.4.C Specifications for Micro-Bioretention, Rain Gardens, Landscape Infiltration & Infiltration Berms**

- Material Specifications  
The allowable materials to be used in these practices are detailed in Table B.4.1.
- Filtering Media or Planting Soil  
The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the micro-bioretention practice that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.

The planting soil shall be tested and shall meet the following criteria:  
Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification)  
Organic Content - Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mix of loamy sand (60%-55%) and compost (35% to 40%) or sandy loam (30%), coarse sand (50%), and compost (40%).  
Clay Content - Media shall have a clay content of less than 5%.

pH Range should be between 5.5 - 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH. There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated.

3. Compaction  
It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoses to remove original soil. If practices are excavated using a loader, the contractor should use wide tracks or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.

4. Plant Material  
Recommended plant material for micro-bioretention practices can be found in Appendix A, Section A.2.3.

5. Plant Installation  
Compost is a better organic material source, is less likely to float, and should be placed in the invert and other low areas. Mulch should be placed in surrounding to a uniform thickness of 2" to 3" shredded or chipped hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

6. Underdrains  
Underdrains should meet the following criteria:  
Pipe - Should be 4" diameter, slotted or perforated rigid plastic pipe (ASTM F 758, Type P5 28, or ASHTO-M-276) in a gravel layer. The preferred material is slotted, 4 rigid pipe (e.g., PVC or HDPE).

Perforations - If perforated pipe is used, perforations should be 3/8" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with No. 4 (4x4) galvanized hardware cloth.

Gravel - The gravel layer (No. 57 stone preferred) shall be at least 3" above and below the underdrain.

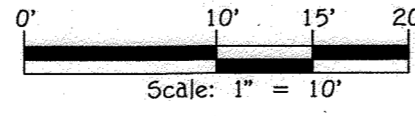
The main collector pipe shall be at a minimum 0.5% slope.  
A rigid, non-perforated observation well must be provided (one per every 1,000 square feet) to provide a clean-out port and monitor performance of the filter.

A 4" layer of pea gravel (1/4" to 3/8") shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24".

The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1,000 square feet of surface area).

7. Miscellaneous  
These practices may not be constructed until all contributing drainage area has been established.

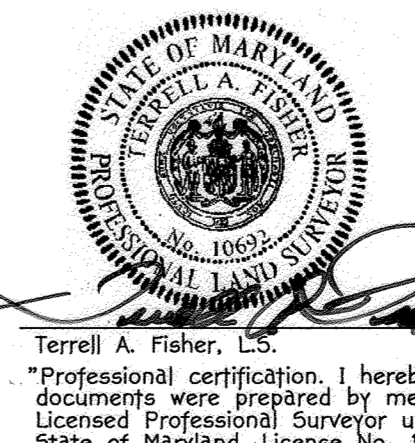
FISHER, COLLINS & CARTER, INC.  
ENGINEERING CONSULTANTS & LAND SURVEYORS  
CONTINENTAL SQUARE OFFICE PARK - 18272 BARKHURST NATIONAL PARK  
ELLSWORTH CITY, MARYLAND 21046  
(410) 461-2895



I hereby certify that the facility shown on this plan was constructed as shown on the 'As-Built' plans and meets with the approved plans and specifications.

OWNER AND DEVELOPER  
RAYMOND D. JORDAN  
SHERGEE A. JORDAN  
4929 CANVASBACK DRIVE  
COLUMBIA, MARYLAND 21045  
(410) 795-4903

Terrell A. Fisher, L.S.  
DATE 4/14



STORMWATER MANAGEMENT NOTES & DETAILS  
**JORDAN OVERLOOK**  
BUILDABLE LOTS 2 THRU 4 AND 5  
ZONING: R-20  
PREVIOUS FILE Nos. 24-4483-D, 5P-09-010, BA-88-031, BA-10-006B & WP-12-005, WP-14-026  
TAX MAP No. 30 GRID No. 309  
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: APRIL 2, 2014  
SHEET 5 OF 5

F-11-041