

GENERAL NOTES

- Subject Property Zoned R-12 Per 2/02/04 Comprehensive Zoning Plan And Comp Lite Zoning Regulations Effective 7/29/06.
- Coordinates Based On Nad 83, Maryland Coordinate System As Projected By Howard County Geodetic Control Stations No. 42A And No. 0060.
- Station No. 42A North 543,390.4139 East 1,364,912.6624 Elevation 312.01
Station No. 0060 North 542,366.9140 East 1,363,075.9745 Elevation 282.39
- This Plan Is Based On Field Run Monumental Boundary Survey Performed On Or About October, 2012, By Fisher, Collins & Carter, Inc.
- B.R.L. Denotes Building Restriction Line.
- Denotes Iron Pin Set With Cap "F.C.C.".
- Denotes Iron Pipe Or Iron Bar Found.
- Denotes Angular Change In Bearing Of Boundary Or Rights-Of-Way.
- Denotes Concrete Monument Set With Cap "F.C.C.".
- Denotes Concrete Monument Or Stone Found.
- For Flag Or Pipestem Lots, Refuse Collection, Snow Removal And Road Maintenance Are Provided To The Junction Of The Flag Or Pipestem And Road Right-Of-Way Line And Not Onto The Pipestem Lot Driveway.
- Driveways Shall Be Provided Prior To Issuance Of A Use And Occupancy Permit For Any New Dwellings To Ensure Safe Access For Fire And Emergency Vehicles For The Following (Minimum) Requirements:

LANDSCAPE NOTES

The Owner, Tenants And/Or Their Agents Shall Be Responsible For Maintenance Of The Required Landscaping Including Both Plant Materials And Berms, Fences And Walls. All Plant Materials Shall Be Maintained In Good Growing Conditions, 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, Replaced Or Replanted.

No Clearing Of Existing Vegetation Is Permitted Within The Landscape Edge For Which Credit Is Being Taken; However, Landscape Maintenance Is Authorized.

At The Time Of Plant Installation All Shrubs And Trees Listed And Approved On The Landscape Plan, Shall Comply With The Proper Height Requirement In Accordance With The Howard County Landscape Manual. In Addition, No Substitutions Or Relocations Of The Required Plantings May Be Made Without Prior Review And Approval From The Department Of Planning And Zoning. Any Deviation From The Approved Landscape Plan May Result In Denial Or Delay In The Release Of Landscape Survey Unit Such Time As All Required Materials Are Planted And/Or Revision Are Made To Applicable Plans Or Certifications.

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 30386, EXPIRATION DATE: 01/12/2014.

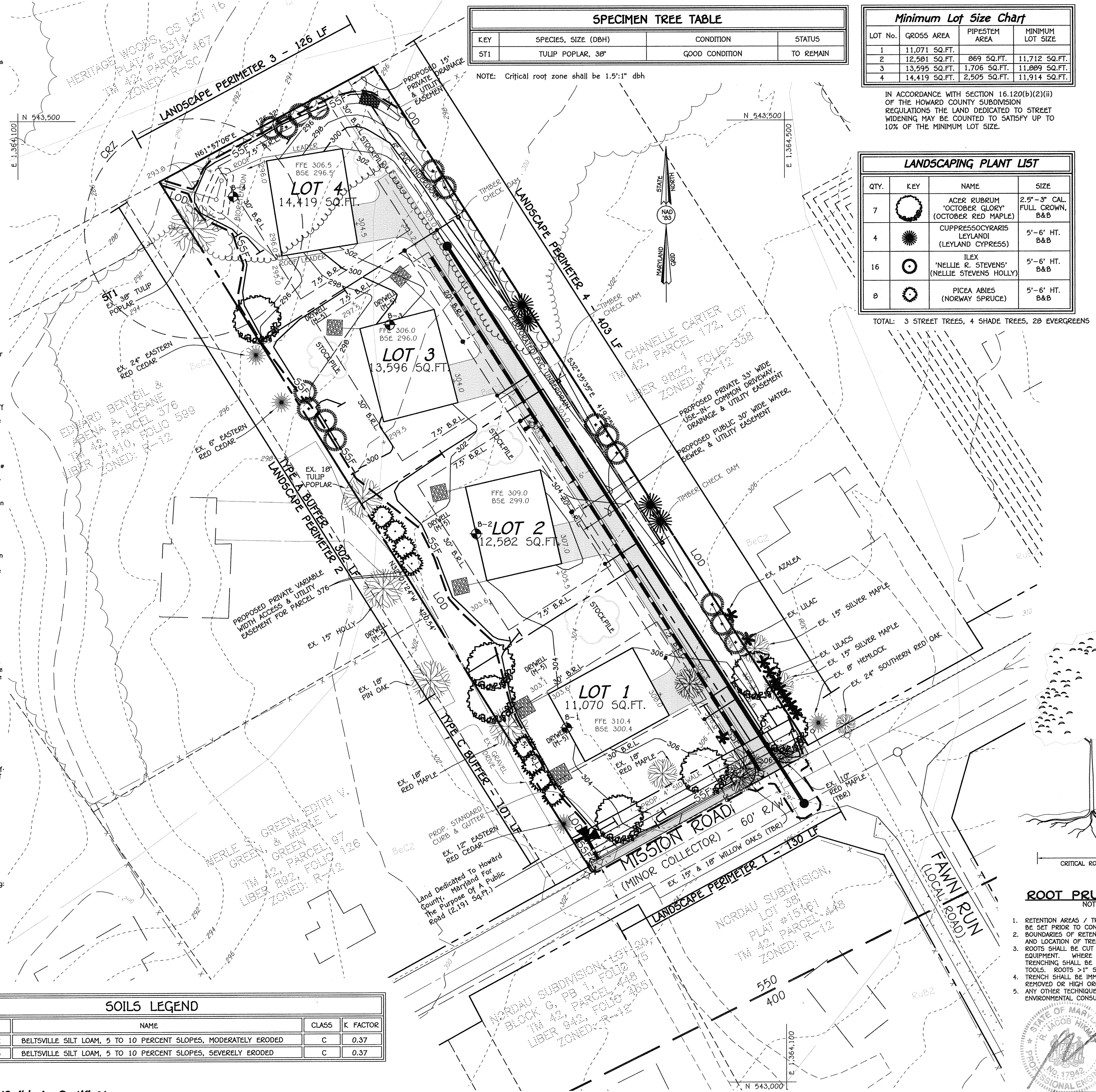
Thyphaine Jinks 7/16/13
Signature of Professional Engineer DATE

Arnold Benedict Myers 7/17/13
Signature of Developer/Builder DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development 7/31/13
Chief, Development Engineering Division 7/31/13

Developer's/Builder's Certificate

I HEREBY CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF NOTICE OF LANDSCAPE INSTALLATION ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF MATERIALS WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.



SPECIMEN TREE TABLE

KEY	SPECIES, SIZE (DBH)	CONDITION	STATUS
ST1	TULIP POPLAR, 30"	GOOD CONDITION	TO REMAIN

NOTE: Critical root zone shall be 1.5x1' dbh

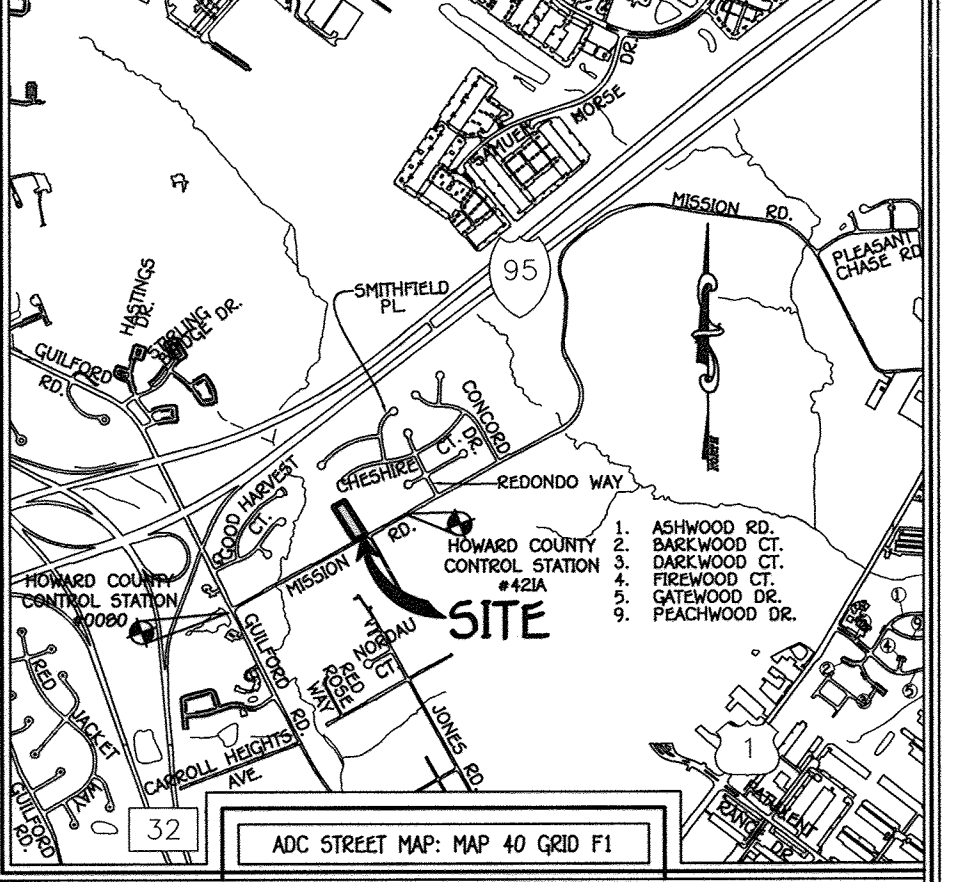
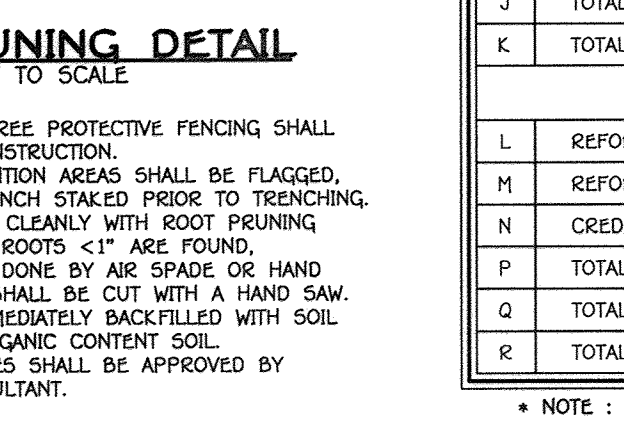
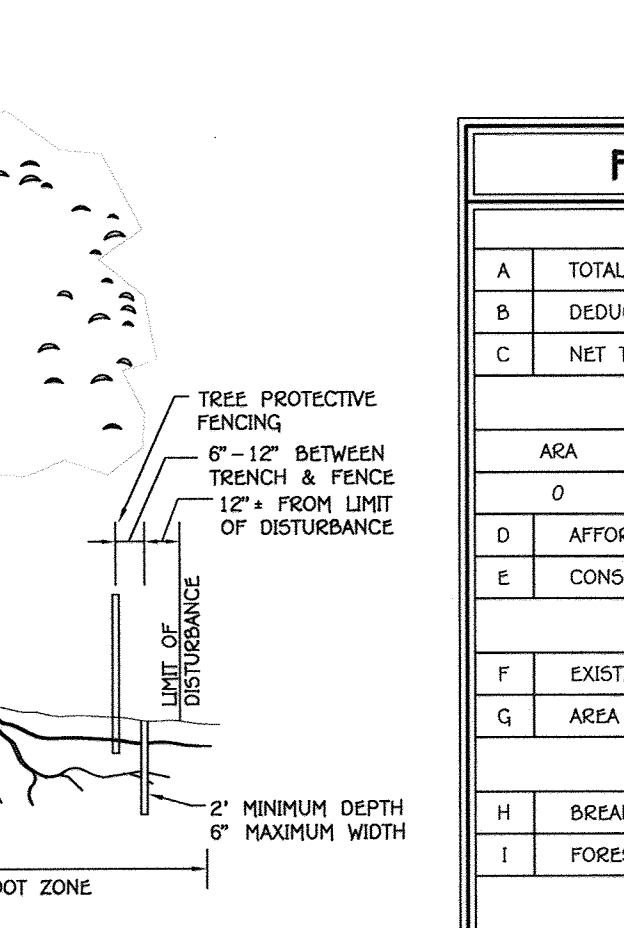
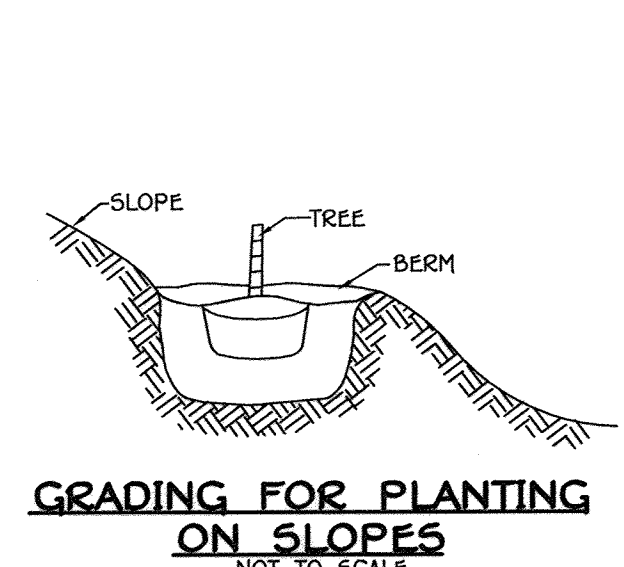
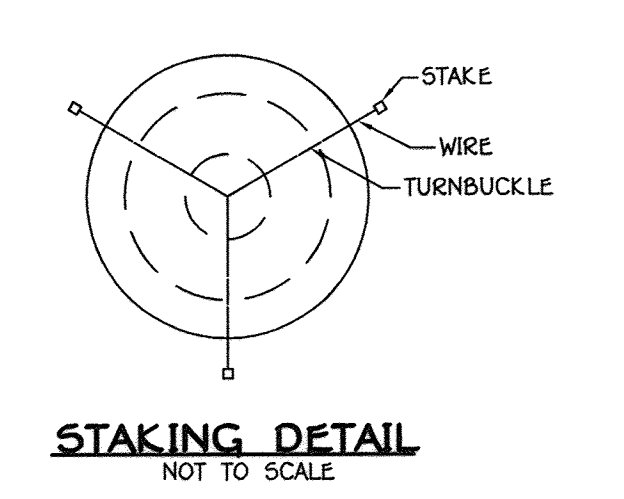
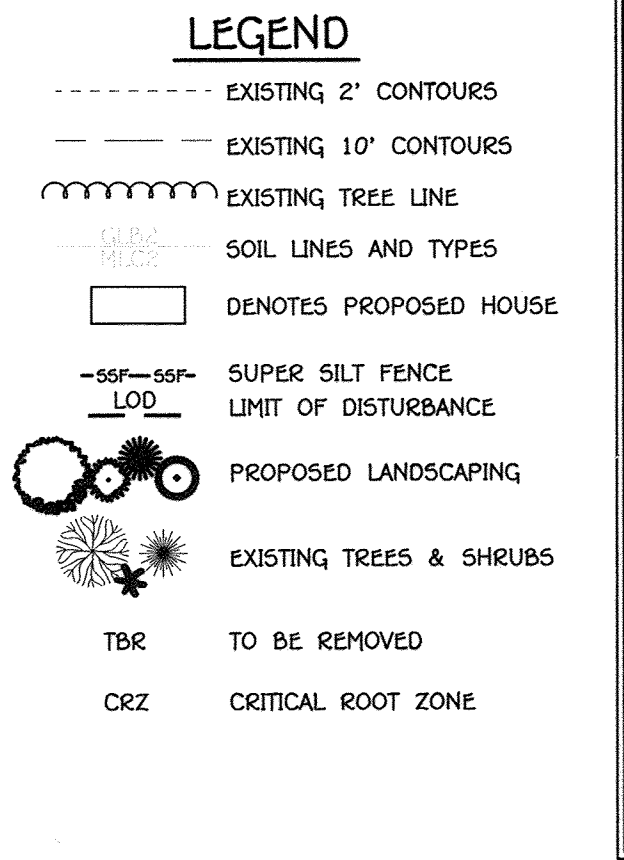
Minimum Lot Size Chart

LOT No.	GROSS AREA	PIPESTEM AREA	MINIMUM LOT SIZE
1	11,071 SQ.FT.	869 SQ.FT.	11,712 SQ.FT.
2	12,581 SQ.FT.	1,706 SQ.FT.	11,069 SQ.FT.
3	13,595 SQ.FT.	1,706 SQ.FT.	11,069 SQ.FT.
4	14,419 SQ.FT.	2,505 SQ.FT.	11,914 SQ.FT.

LANDSCAPING PLANT LIST

QTY.	KEY	NAME	SIZE
7	(Symbol)	ACER RUBRUM 'OCTOBER GLORY' (OCTOBER RED MAPLE)	2.5"-3" CAL. FULL, CROWN, B&B
4	(Symbol)	CUPRESSOCYRIS LEYLANDI (LEYLAND CYPRESS)	5'-6" HT. B&B
16	(Symbol)	ILEX 'NELLIE R. STEVENS' (NELLIE STEVENS HOLLY)	5'-6" HT. B&B
8	(Symbol)	PICEA ABIES (NORWAY SPRUCE)	5'-6" HT. B&B

TOTAL: 3 STREET TREES, 4 SHADE TREES, 20 EVERGREENS



FOREST CONSERVATION WORKSHEET

NET TRACT AREA		LAND USE CATEGORY					
AREA	MDR	IDA	HR	MPD	CIA		
A	0	0	0	1	0	0	0
B	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0
G	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0
I	0	0	0	0	0	0	0
J	0	0	0	0	0	0	0
K	0	0	0	0	0	0	0
L	0	0	0	0	0	0	0
M	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0
O	0	0	0	0	0	0	0
P	0	0	0	0	0	0	0
Q	0	0	0	0	0	0	0
R	0	0	0	0	0	0	0

* NOTE: A FEE-IN-LIEU IN THE AMOUNT OF \$6,207.30 WILL BE PAID IN ORDER TO FULFILL THE 0.19 ACRE AFFORESTATION REQUIREMENT.

SOILS LEGEND

SOIL	NAME	CLASS	K FACTOR
BeC2	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, MODERATELY ERODED	C	0.37
BeC3	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED	C	0.37

SCHEDULE A - PERIMETER LANDSCAPE EDGE

PERIMETER CATEGORY	ADJACENT TO PERIMETER PROPERTIES				TOTAL
	P-1	P-2	P-3	P-4	
LANDSCAPE TYPE	N/A	C	A	A	
LINEAR FEET OF PERIMETER	130 L.F.	101 L.F.	302 L.F.	126 L.F.	659 L.F.
NUMBER OF PLANTS REQUIRED	N/A	3 / 5 (101'/40' = 2.5 OR 3) (101'/20' = 5)	5 (302'/60' = 5)	2 (126'/60' = 2.1 OR 2)	17
CREDIT FOR EXISTING VEGETATION					5
SHADE TREES	N/A	1	2	0	3
SMALL/MEDIUM DECIDUOUS TREES (2:1 SUBSTITUTION)	N/A	1	0	0	1
NUMBER OF PLANTS PROVIDED	N/A	2	1	0	3
SHADE TREES	N/A	4	0	12	16
SMALL/MEDIUM DECIDUOUS TREES (2:1 SUBSTITUTION)	N/A	4	0	0	4

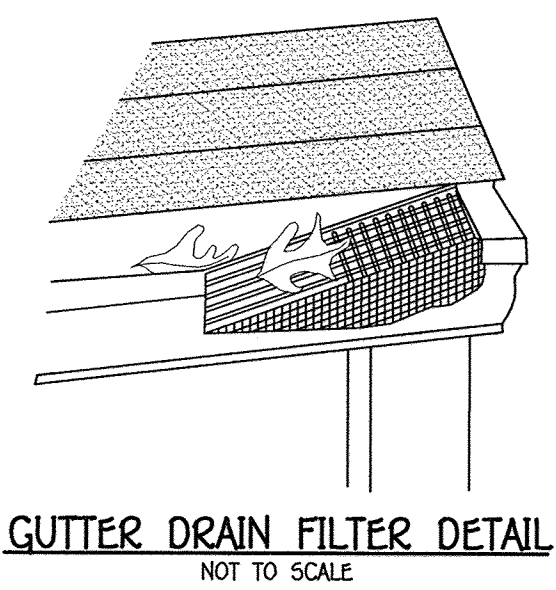
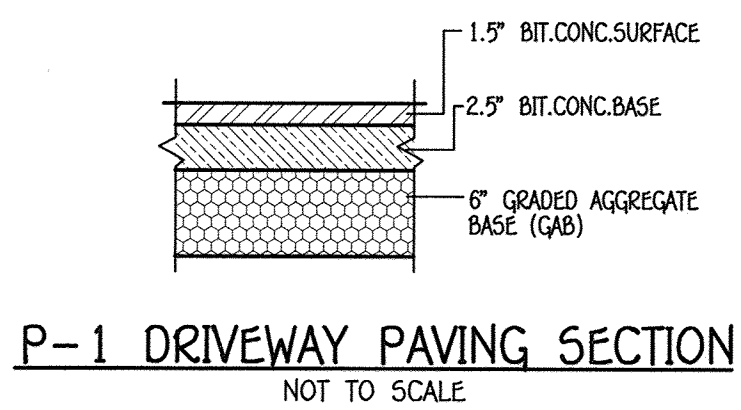
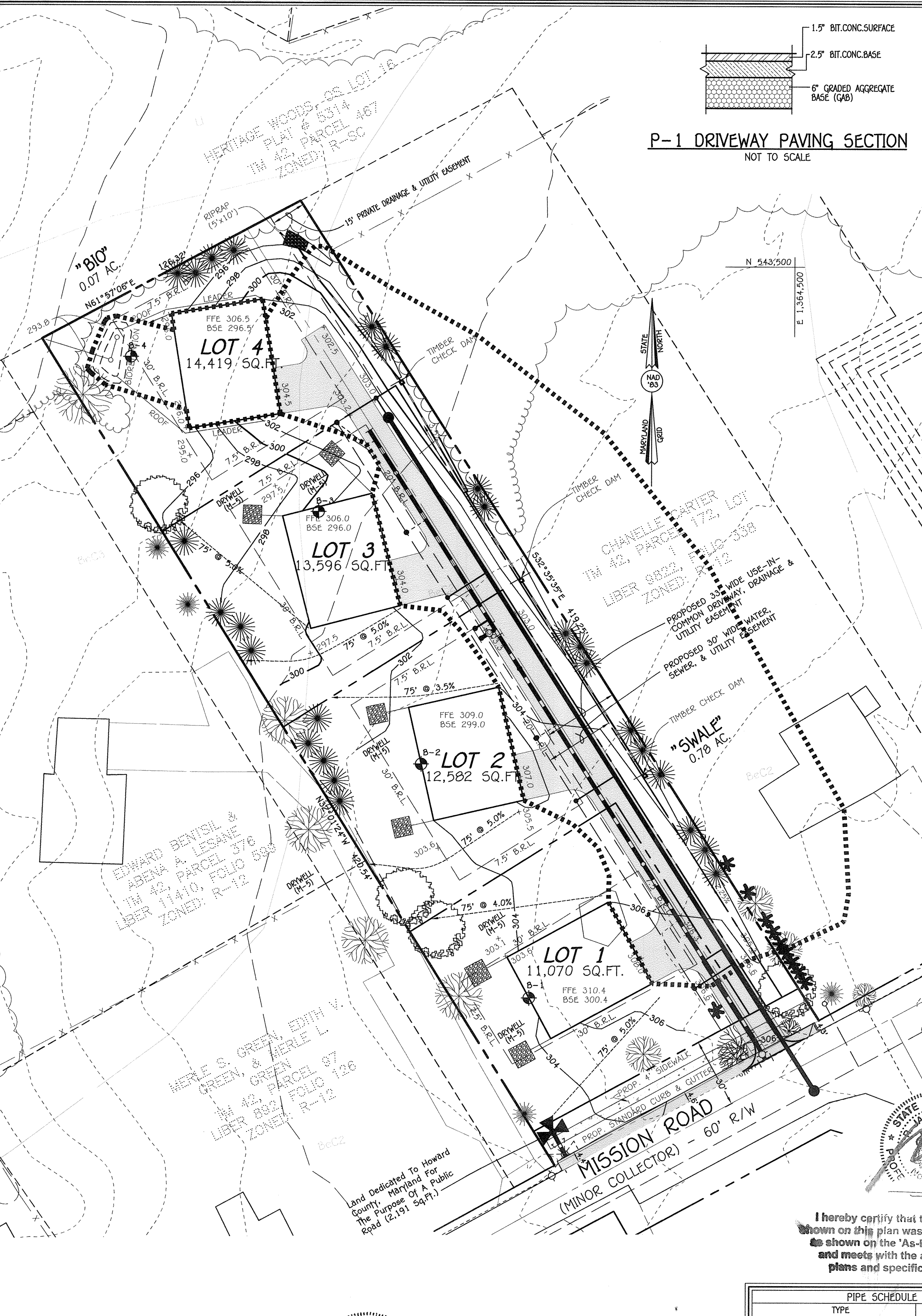
THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

STREET TREES

ROAD NAME	ROAD LENGTH	OF TREES REQUIRED	OF TREES PROVIDED
MISSION ROAD	130 LF	(130'/40' = 3.3 OR 3)	3

SUPPLEMENTAL & LANDSCAPE PLAN

MISSION RIDGE, LOTS 1 THRU 4
ZONED R-12 TAX MAP NO.: 42 GRID NO.: 24
PARCEL NO.: 507 & 512
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JULY 16, 2013
SHEET 1 OF 2



STORMWATER MANAGEMENT NOTES

- STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH CHAPTER 5, "ENVIRONMENTAL SITE DESIGN" OF THE 2007 MARYLAND STORMWATER MANAGEMENT DESIGN MANUAL, EFFECTIVE MAY 4, 2010.
- MAXIMUM CONTRIBUTING ROOF TOP AREA TO EACH DOWNSPOUT SHALL BE 1,000 SQ. FT. OR LESS.
- DRYWELLS SHALL BE PROVIDED AT LOCATIONS WHERE THE LENGTH OF DISCONNECTION IS LESS THAN 75' AT 5% THE SIZE AND CONSTRUCTION OF THE DRYWELL SHALL BE IN ACCORDANCE WITH THE DETAIL SHOWN ON THIS SHEET.
- FINAL GRADING IS SHOWN ON THIS SITE DEVELOPMENT PLAN.

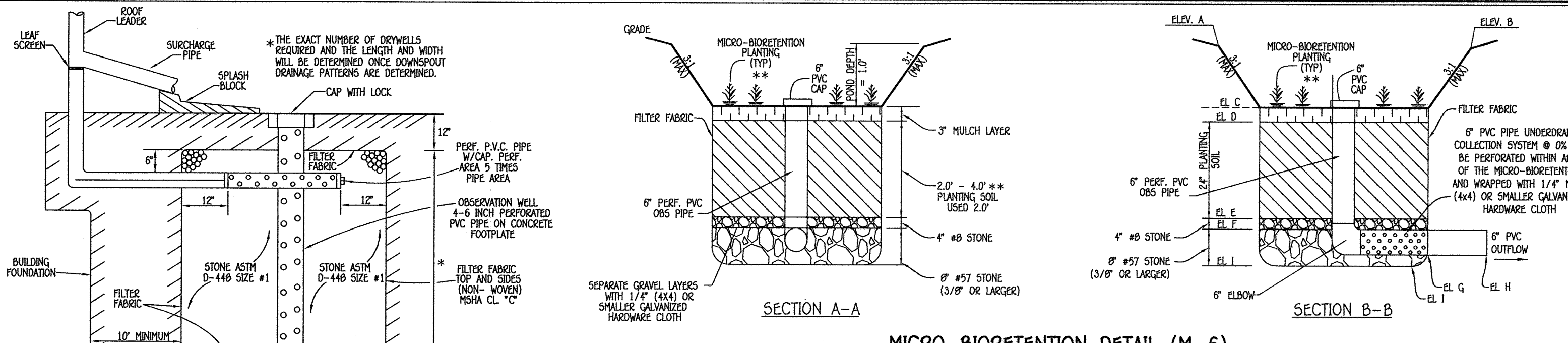
DRY WELL CHART

DRYWELL NO.	AREA OF ROOF PER DOWN SPOUT	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF TREATMENT	L	W	D
1 (LOT 1)	500 SQ. FT.	64 C.F.	92 C.F.	100%	9'	8.5' x 4'	
2 (LOT 1)	500 SQ. FT.	64 C.F.	92 C.F.	100%	9'	8.5' x 4'	
3 (LOT 2)	500 SQ. FT.	64 C.F.	96 C.F.	100%	8'	8' x 5'	
4 (LOT 2)	500 SQ. FT.	64 C.F.	96 C.F.	100%	8'	8' x 5'	
5 (LOT 3)	500 SQ. FT.	64 C.F.	96 C.F.	100%	8'	8' x 5'	
6 (LOT 3)	500 SQ. FT.	64 C.F.	96 C.F.	100%	8'	8' x 5'	

STORMWATER MANAGEMENT SUMMARY CHART

AREA = 1,236 ACRES
RCN = 70
TARGET PE = 1.6"

AREA ID	SWM TREATMENT PROVIDED
LOT 1	DRYWELLS (M-5), GRASS SWALE (M-8), & ROOFTOP DISCONNECTION (M-1)
LOT 2	DRYWELLS (M-5), GRASS SWALE (M-8), & ROOFTOP DISCONNECTION (M-1)
LOT 3	DRYWELLS (M-5), GRASS SWALE (M-8), & ROOFTOP DISCONNECTION (M-1)
LOT 4	MICRO-BIORETENTION (M-6) & GRASS SWALE (M-8)



OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DRY WELLS (M-5)

- THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT.
- THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO ENSURE TRENCH DRAINAGE.
- THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
- WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN A SEVENTY-TWO (72) HOUR PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
- THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
- ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED OPEN CHANNEL SYSTEMS - GRASS SWALES, (M-8)

- THE OPEN CHANNEL SYSTEM SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE FACILITY IS FUNCTIONING PROPERLY.
- THE OPEN CHANNEL SHALL BE MOWED A MINIMUM OF AS NEEDED DURING THE GROWING SEASON TO MAINTAIN A MAXIMUM GRASS HEIGHT OF LESS THAN 6 INCHES.
- DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MAINTENANCE OPERATIONS AND AS NEEDED.
- VISIBLE SIGNS OF EROSION IN THE OPEN CHANNEL SYSTEM SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
- REMOVE SILT IN THE OPEN CHANNEL SYSTEM WHEN IT EXCEEDS 25% OF THE ORIGINAL MOV.
- INSPECT CHECK DAMS TWICE A YEAR FOR STRUCTURAL INTEGRITY. RESTORE CHECK DAMS TO ORIGINAL CONDITION AS APPLICABLE.

MICRO-BIORETENTION PLANTING DETAIL

QUANTITY	NAME	MAXIMUM SPACING (FT.)
12	MIXED PERENNIALS	1.5 TO 3.0 FT.
1	SILKY DOGWOOD	PLANT AWAY FROM INFLOW LOCATION

MICRO-BIORETENTION

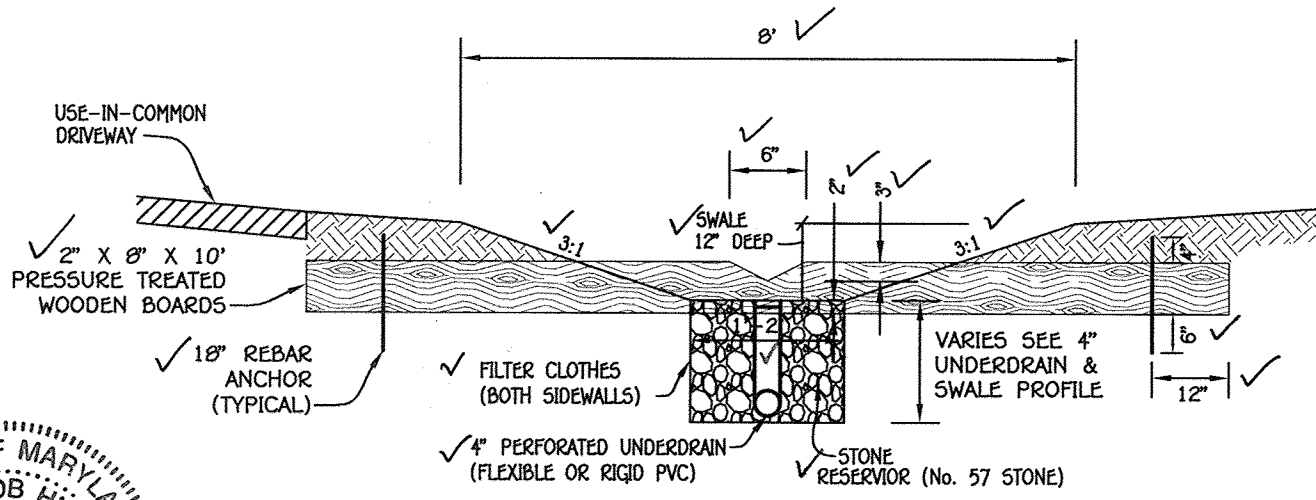
BIORETENTION FILTER	A	B	C	D	E	F	G	H	I
1	[293.00]	[293.00]	[292.00]	[292.00]	[290.00]	[290.00]	[289.00]	[289.00]	[289.00]

OPERATION & MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)

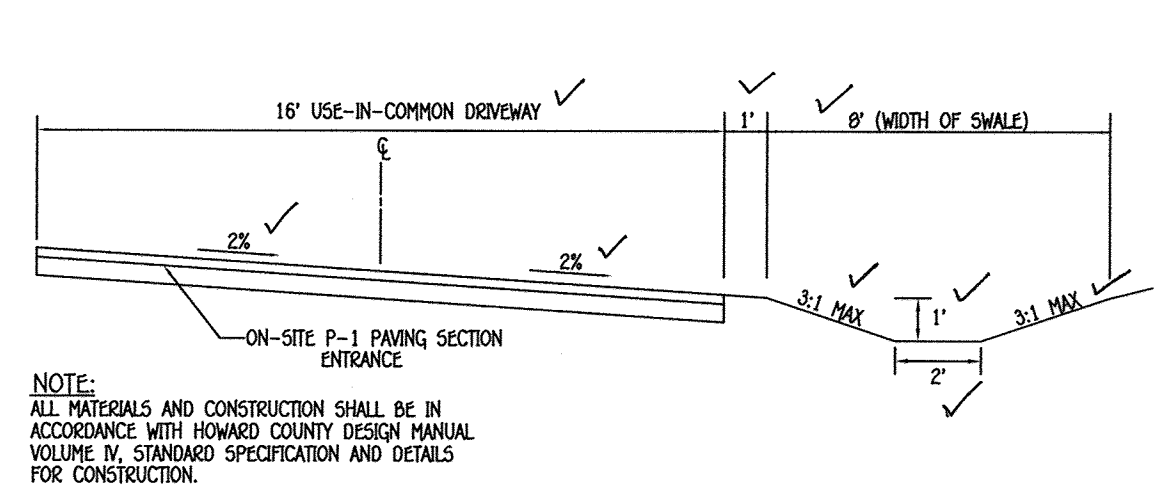
- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE SHALL 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 OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED PLANTS AND INSURE PROPER REPLACEMENT. REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL. TREAT DISEASED TREES AND SHRUBS AND REPLACE ALL DEFICIENT STAKES AND WIGGS.
- 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.

SEQUENCE OF CONSTRUCTION

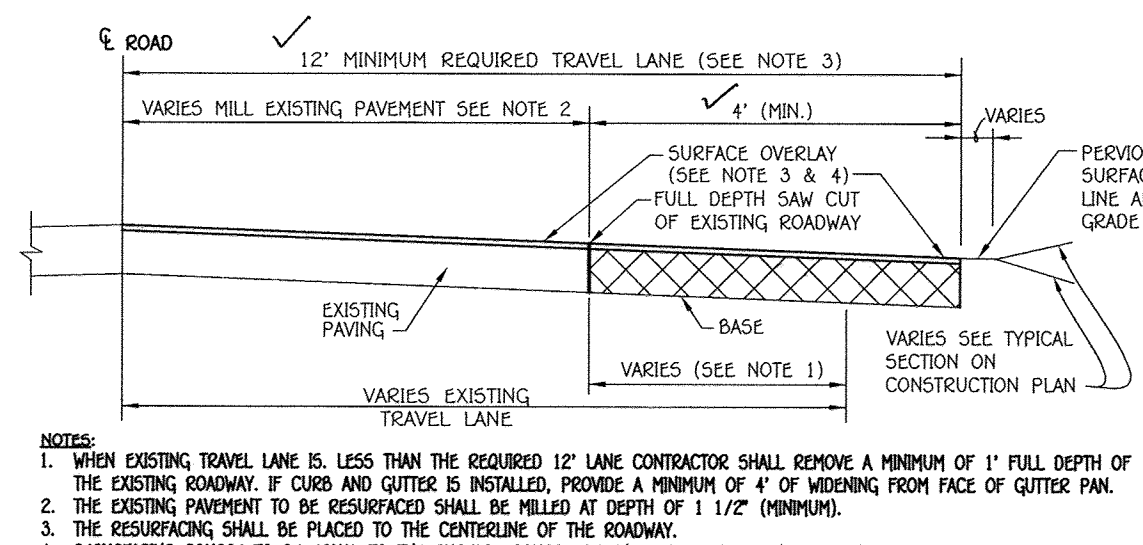
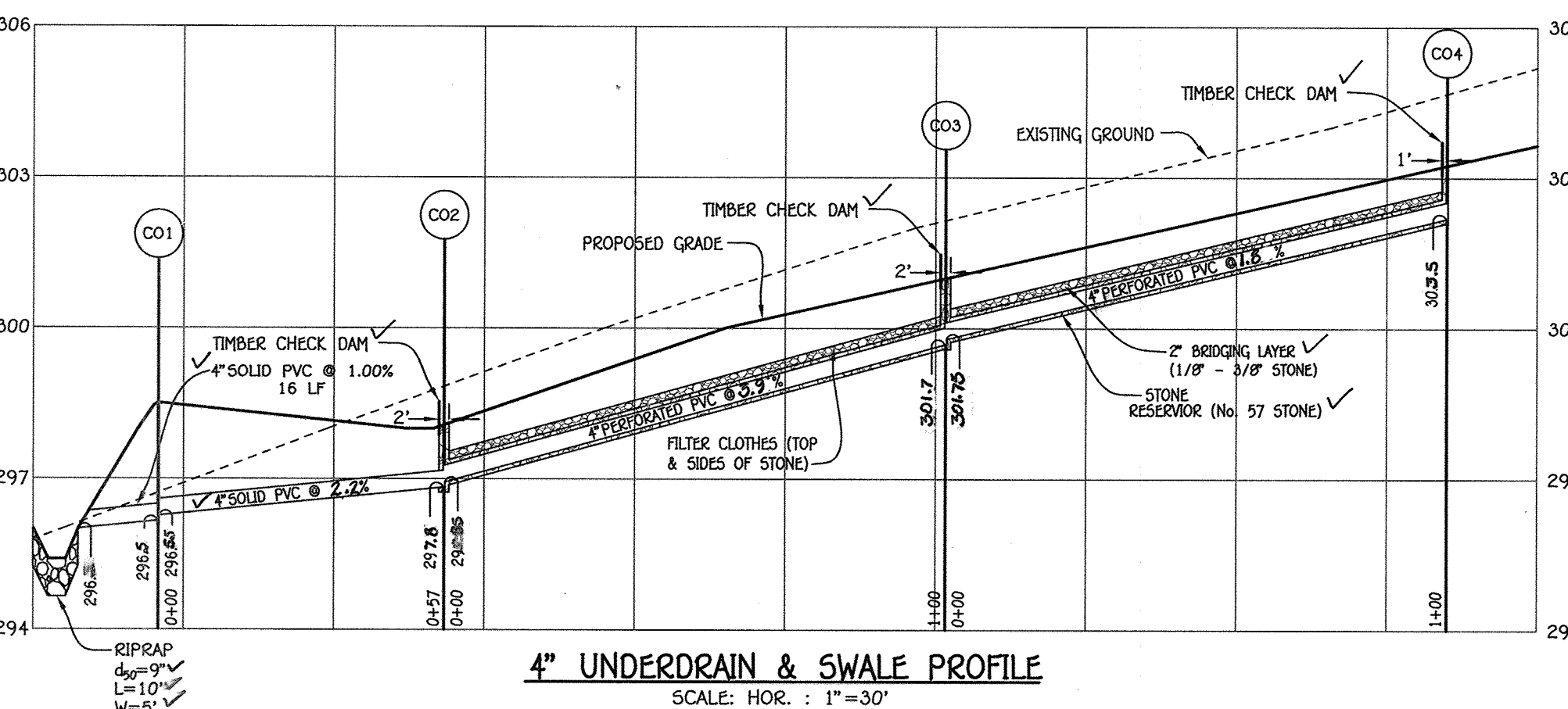
- OBTAIN GRADING PERMIT. (7 DAYS)
- INSTALL SEDIMENT AND EROSION CONTROL DEVICES AND TREE PROTECTION FENCE. (1 DAY)
- CLEAR AND GRUB TO LIMITS OF DISTURBANCE. (1 DAY)
- ROUGH GRADE AREA OF ROAD WIDENING AND COMMON DRIVEWAY AND INSTALL TEMPORARY SEEDING. (1 DAY)
- CONSTRUCT WATER AND SEWER MAINS. (14 DAYS)
- INSTALL SWALE ALONG COMMON DRIVEWAY WITH CHECK DAMS, STONE WINDOWS, AND UNDERDRAIN WITH CLEANOUTS AND RIPRAP. (5 DAYS)
- INSTALL CURBS & GUTTERS. (2 DAYS)
- PAVE ROAD WIDENING AND COMMON DRIVEWAY. (3 DAYS)
- REMOVE SEDIMENT CONTROL DEVICES AS UPLAND AREAS ARE STABILIZED AND PERMISSION IS GRANTED BY SEDIMENT CONTROL INSPECTOR. (1 DAY)



GRASS SWALE & TIMBER CHECK DAM DETAIL



USE-IN-COMMON DRIVEWAY & SWALE CROSS SLOPE SECTION



EXISTING ROADWAY WIDENING STRIP (R-1.08)

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)					
		3 TO <5	5 TO <7	>7	3 TO <5	5 TO <7	>7
P-2	PARKING DRIVE ASSESS, RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY	PAVEMENT MATERIAL (INCHES)					
		HMA SUPERPAVE FINAL SURFACE					
		HMA SUPERPAVE INTERMEDIATE SURFACE					
		HMA SUPERPAVE BASE					
LOCAL ROADS	ACCESS PLACE, ACCESS STREET	CALIFORNIA BEARING RATIO (CBR)					
		GRADED AGGREGATE BASE (GAB)					

SUPPLEMENTAL PLAN - STORMWATER MANAGEMENT DETAILS & NOTES

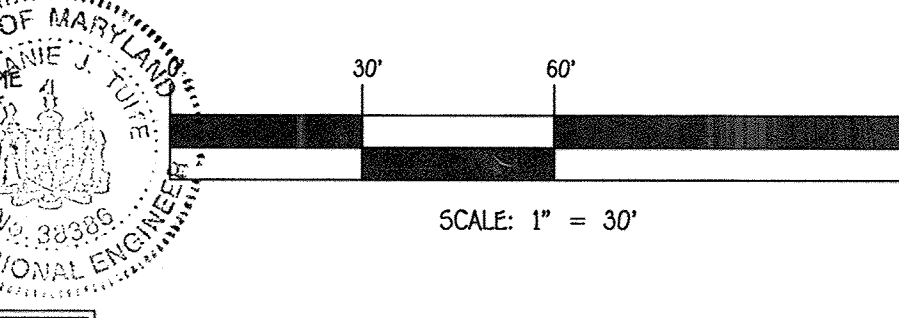
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PARCEL NO.: 507 & 512
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JULY 16, 2013
SHEET 2 OF 2

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 36386, EXPIRATION DATE: 01/12/2014.

Signature of Professional Engineer
DATE: 7/16/13

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Signature of Chief, Division of Land Development
DATE: 7/31/13



FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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BLUDD CITY, MARYLAND 21042
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301-785-8931

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