

### RAIN GARDEN CHART

LOT 23	RG1	RG2	RG3	RG4	RG5
DIM	1' W	1' W	1' W	1' W	1' W
ELEV.1	372.40	372.40	372.40	366.80	357.00
ELEV.2	372.20	372.20	372.20	366.60	357.00
ELEV.3	371.70	371.70	371.70	366.10	356.50
ELEV.4	371.43	371.43	371.43	365.83	356.23
ELEV.5	368.93	368.93	368.93	364.33	355.73
ELEV.6	368.43	368.43	368.43	363.83	355.23
ELEV.7	367.84	367.84	368.00	354.00	354.00

NOTE: RAIN GARDENS 1 AND 2 CONNECT AND DISCHARGE AT ONE POINT  
RAIN GARDENS 4 AND 5 CONNECT IN SERIES AND DISCHARGE AT ONE POINT

FOREST CONSERVATION WORKSHEET  
VERSION 1.0  
Holiday Hills Section 6 Lots 95 and 96

NET TRACT AREA:

A. Total tract area	1.00
B. Area within 100 year floodplain	0.00
C. Area to remain in agricultural production	0.00
D. Net tract area	1.00

LAND USE CATEGORY: (from table 3.2.1, page 40, Manual)

Input the number "1" under the appropriate land use zoning, and limit to only one entry.

ARA	MDR	IDA	HDR	MPD	CA
1	0	0	0	0	0

E. Afforestation Threshold 15% x D = 0.15  
F. Conservation Threshold 20% x D = 0.20

EXISTING FOREST COVER:

G. Existing forest cover (excluding floodplain)	0.00
H. Area of forest above afforestation threshold	0.00
I. Area of forest above conservation threshold	0.00

BREAK EVEN POINT:

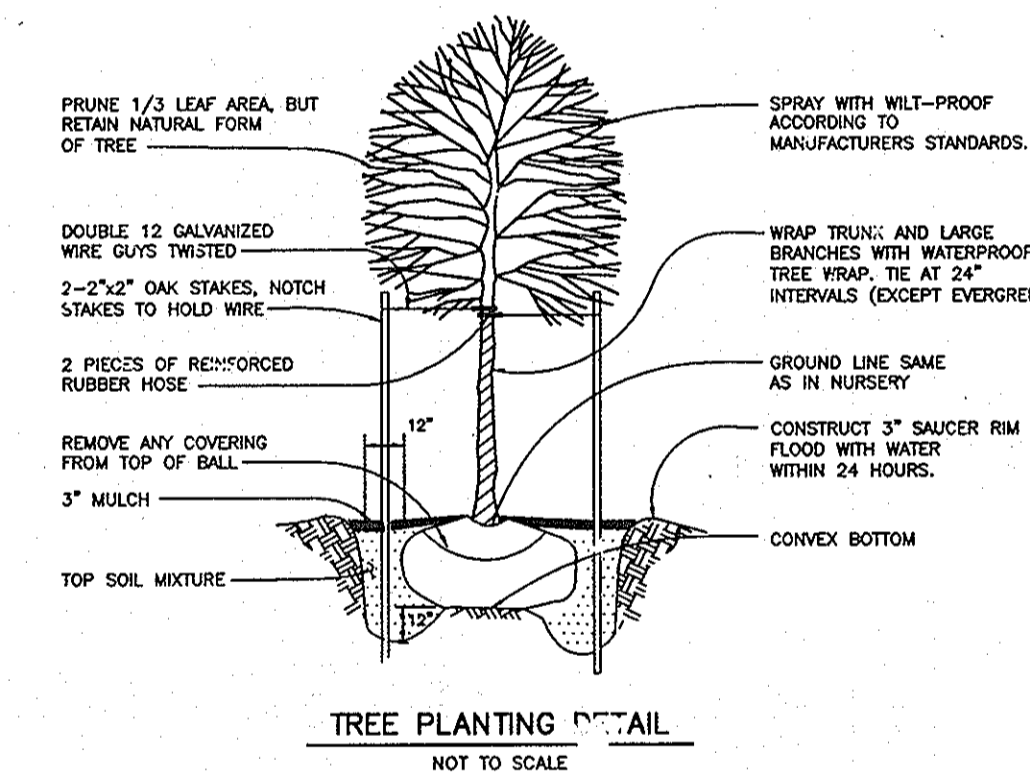
J. Forest retention above threshold with no mitigation	0.00
K. Clearing permitted without mitigation	0.00

PROPOSED FOREST CLEARING:

L. Total area of forest to be cleared	0.00
M. Total area of forest to be retained	0.00

PLANTING REQUIREMENTS:

N. Reforestation for clearing above conservation threshold	0.00
P. Reforestation for clearing below conservation threshold	0.00
Q. Credit for retention above conservation threshold	0.00
R. Total reforestation required	0.00
S. Total afforestation required	0.15
T. Total reforestation and afforestation required	0.15



### SITE ANALYSIS DATA CHART

GENERAL SITE DATA

1.) PRESENT ZONING: R-20  
2.) APPLICABLE DPZ FILE REFERENCES: N/A  
3.) DEED REFERENCE: LIBER 8938 / FOLIO 608  
4.) PROPOSED USE OF SITE: SINGLE-FAMILY DETACHED  
5.) PROPOSED WATER AND SEWER SYSTEMS: PUBLIC

AREA TABULATION

1.) GROSS TRACT AREA	1.00 AC.±
2.) AREA WITHIN 100-YEAR FLOODPLAIN	0.00 AC.±
3.) TOTAL AREA OF 25% OR GREATER STEEP SLOPES	0.00 AC.±
4.) AREA NOT IN FLOODPLAIN	0.00 AC.±
5.) NET TRACT AREA	1.00 AC.±
6.) TOTAL NUMBER OF RESIDENTIAL UNITS/LOTS PROPOSED ON THIS SUBMISSION	2
7.) AREA OF ROAD RIGHT-OF-WAY	0.00 AC.±

DEVELOPER'S/BUILDER'S CERTIFICATE  
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

OWNER: YU E. YOUNG CHON  
DATE: 9/2/07

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
DATE: 9/25/07  
DATE: 9/25/07

### STREET TREE LANDSCAPE PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS
(+)	4	PRUNUS SAROTENI SARGENT CHERRY	2 1/2" - 3" CAL

### PERIMETER LANDSCAPE PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS
(○)	10	ACER RUBRUM 'OCTOBER GLORY' / OCTOBER GLORY RED MAPLE	2 1/2" - 3" CAL
(○)	22	ELIOMYR ALATUS 'COMPACTA' / DWARF WINGED ELIOMYR	2" - 2 1/2" HT

### SCHEDULE A PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO HIGHWAY	ADJACENT TO PERIMETER PROPERTIES	NO	NO	NO
PERIMETER NO. / LANDSCAPE TYPE	(D)	(D)	(A)	(A)	(A)
LINEAR FEET OF (FRONTAGE/PERIMETER)	214'	215'	135'		
CREDIT FOR EXISTING VEGETATION: NO OR YES (w/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	-	-	-	-	-
CREDIT FOR WALL, FENCE OR BERM: NO OR YES (w/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	-	-	-	-	-
NUMBER OF PLANTS REQUIRED:					
SHADE TREES	4	4	2		
EVERGREEN TREES	4	4	2		
OTHER TREES (2+1 SUBSTITUTE)	22	22			
SHRUBS					
NUMBER OF PLANTS PROVIDED:					
SHADE TREES	4	4	2		
EVERGREEN TREES	4	4	2		
OTHER TREES (2+1 SUBSTITUTE)	22	22			
SHRUBS (10+1 SUBSTITUTE)					
(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)					

\* LOT WITH AN EXISTING HOUSE.

### PLAN SCALE: 1" = 30'

### MATERIALS AND SPECIFICATIONS FOR RAIN GARDEN

MATERIAL	SPECIFICATION	SIZE	NOTES:
PLANTINGS	SEE APPENDIX A; TABLE A.4	N/A	PLANTINGS ARE SITE SPECIFIC
PLANTING SOIL (2" TO 4" DEEP)	SAND: 30-60% SILT: 30-50% CLAY: 0-25%	N/A	USDA SOIL TYPES: LOAMY SAND, SANDY LOAM OR LOAM
MULCH	SHREDDED HARDWOOD	N/A	AGED 6 MONTHS, MINIMUM
COARSELINE (CLASS "C")	APPROPRIATE OPENING SIZE: (ASTM D-4751) GRAB TENSILE STRENGTH: (ASTM D-4632) PUNCTURE RESISTANCE: (ASTM D-4833)	N/A	FOR USE AS NECESSARY BENEATH UNDERDRAINS ONLY
UNDERDRAIN GRAVEL	ASTM M-43	0.375" TO 0.750"	
UNDERDRAIN PIPING	F758, TYPE F758 OR ASTM M-276	3/8" PER 6" O/D; 4 HOLES PER ROW; MINIMUM OF 3" OF GRAVEL OVER PIPES; NOT NECESSARY UNDERNEATH PIPES	

### SOILS LEGEND

MAP SYMBOL	SOIL TYPE	MAPPING UNIT
Cg2	B	CHESTER GRAVELLY SILT LOAM - 3 TO 8 PERCENT SLOPES - MODERATELY ERODED
ChA	B	CHESTER SILT LOAM - 0 TO 3 PERCENT SLOPES
ChB	B	CHESTER SILT LOAM - 3 TO 8 PERCENT SLOPES - MODERATELY ERODED
Cc2	B	CLENGEL LOAM - 8 TO 15 PERCENT SLOPES - MORE ERODED

SOILS MAP No. 25  
\* - INDICATES HYDRIC SOILS

### MINIMUM LOT SIZE CHART

LOT NO.	GROSS AREA	PIPESTEM AREA	MINIMUM LOT AREA
100	23,009± SF	2,907± SF	20,102± SF

### OPERATION & MAINTENANCE SCHEDULE FOR RAIN GARDENS

- ANNUAL MAINTENANCE OF PLANT MATERIAL AND MULCH LAYER IS REQUIRED. MAINTENANCE OF MULCH IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH-OUT. ANY REPLACEMENT OF MULCH SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE & INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL & PRUNING.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN THE SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD & DISEASED VEGETATION CONSIDERED BEYOND TREATMENT. TREATMENT OF ALL DISEASED TREES & SHRUBS; AND REPLACEMENT OF ALL DEFICIENT STAKES & WIRES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE THE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
- SOIL EROSION TO BE ADDRESSED ON AN AS-NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

### LEGEND

SOILS CLASSIFICATION: AbC1

SOILS DELINEATION: ---

EXISTING CONTOURS: ---

PROPOSED CONTOURS: ---

EXISTING WOODS LINE: ---

PROPOSED WOODS LINE: ---

EXISTING STRUCTURE: [Symbol]

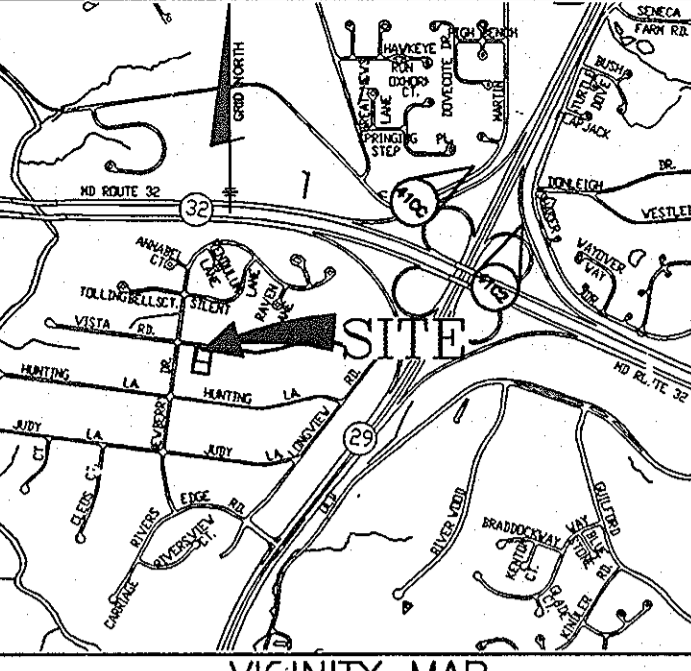
PROPOSED STRUCTURE: [Symbol]

FOREST CONSERVATION EASEMENT: [Symbol]

STORMWATER CREDIT EASEMENT: [Symbol]

### BENCH MARKS NAD '83

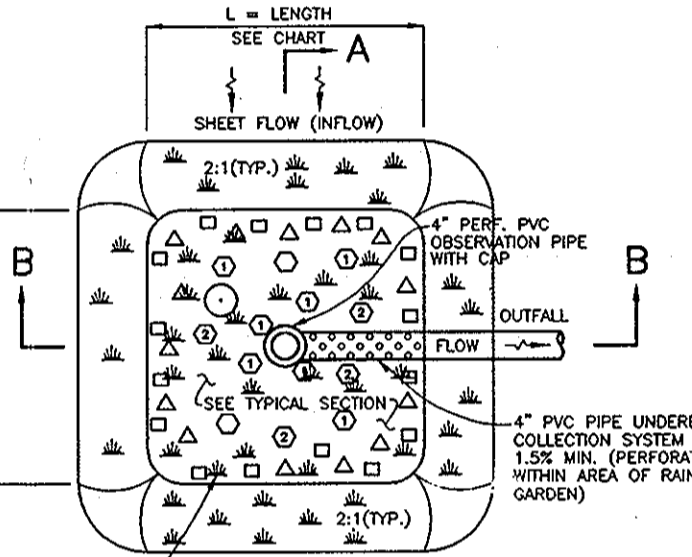
HO. CO. 41CC	ELEV. 400.00
STAMPED DISC ON CONCRETE MONUMENT BEING 44.4' SOUTH OF FIRE HYDRANT 15.8' EAST OF 6" X 6" POLYESTER 054, 17' NORTH EAST OF GUY WIRE	
N 552,494.27	E 1,347,082.44
HO. CO. 41C2	ELEV. 395.17
STAMPED DISC ON CONCRETE MONUMENT BEING 107' NORTH EAST OF OVERPASS BRIDGE 11.6' SOUTH OF HIGHWAY SIGN	
N 551,616.42	E 1,348,104.24



### LANDSCAPING NOTES

- PERIMETER LANDSCAPING SHALL BE PROVIDED BY THE PLANTINGS AS SHOWN ON THESE PLANS.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL MONUMENTS 4102 & 4102, WHICH IS BASED ON THE MARYLAND STATE COORDINATE SYSTEM.
- THIS PROPERTY IS WITHIN THE METROPOLITAN DISTRICT, WATER AND SEWER SHALL BE PUBLIC, CONNECTING TO CONTRACTS 30-3123 FOR SEWER AND TO CONTRACT 34-1810-D FOR WATER. DRAINAGE AREA IS WITHIN THE PATAPSCO RIVER AREA WATERSHED.
- STORMWATER MANAGEMENT SHALL BE PROVIDED FOR THIS PROJECT BASED ON GUIDELINES ESTABLISHED BY THE 2000 MARYLAND STORMWATER DESIGN MANUAL. VOLUMES 1 & 2. STORMWATER MANAGEMENT SHALL BE PROVIDED BY USE OF ROOFTOP DISCONNECTION CREDITS, NON-ROOFTOP DISCONNECTION CREDITS (INCLUDING GRASS SWALES), NATURAL CONSERVATION AREA CREDIT, SHEET FLOW "J" BUFFER CREDIT AND THE USE OF DRYWELLS.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF \$366,000 AT THE TIME OF SFP SUBMITTAL.

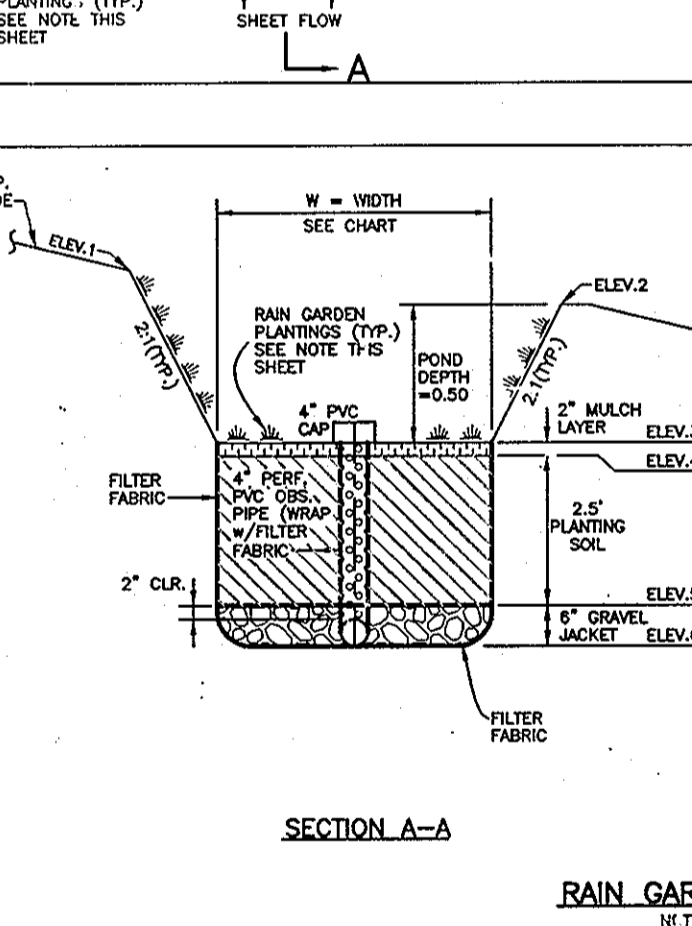
AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN WILL RESULT IN DENIAL OR DELAY IN RELEASE OF LANDSCAPE SURETY. UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.



### RAIN GARDEN - PLANTING SCHEDULE

(○)	VINCA MINOR (COMMON PERNNWILE)	16
(○)	AUSTIA REPIAN 2 (CREEPING BUGLEWEED)	15
(○)	IRIS VERSICOLOR (IRS)	8
(○)	HEMEROCALLIS SP (DAILY)	5
(○)	ACER RUBRUM (RED MAPLE)	1

NOTE: LANDSCAPING SHALL PROVIDE A MINIMUM OF 50% COVERAGE WITHIN EACH RAINGARDEN.



### PLANTING DATA

- PLANTINGS WITHIN THE PONDING AREA OF THE RAIN GARDEN ARE TO BE OF A MEDIUM TO HIGH WATER TOLERANCE  
SUGGESTED SPECIES: CREEPING BUGLEWEED (AUGA REPTANS) COMMON PERNNWILE (VINCA MINOR) LIL'-'URF (LIL'-'URF, SP.)
- PLANTINGS ALONG THE PERIMETER ("FORM") AREA OF THE RAIN GARDEN ARE TO BE OF A LOW TO MEDIUM WATER TOLERANCE  
SUGGESTED SPECIES: PERENNIALS/ANNUALS: IRIS (IRIS VERSICOLOR) DAILY (HEMEROCALLIS SP.) WHITE GLORY (ASTILE SP.)
- AVOID PLANTINGS WITH EXTENSIVE ROOT MASS IN POND AREA OF THE RAIN GARDEN NEAR OBSERVATION PIPE AND UNDERDRAIN.

### LANDSCAPE DATA

HYDROLOGIC ZONE 3 - REGULARLY INUNDA'ED SHORELINE FRINGE (HIGH MARSH)  
HYDROLOGIC CONDITION - 0" TO 1" - 3" DEEP HARD, LESS - TEMPERATE ZONE 6b (-5 TO 0")  
SEE SHEET 2 FOR SEQUENCE OF CONSTRUCTION

NOTE: REFER TO MDE 2000 MD STORMWATER DESIGN MANUAL VOLUMES 1 & 2 FOR LANDSCAPE CONTRACTOR RESPONSIBILITIES, PRACTICES AND MAINTENANCE DUTIES

## BENCHMARK ENGINEERING, INC.

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Professional Certificate: 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. 21443, Expiration Date: 12-21-2008.

OWNER: SANG DAE CHON  
10705 VISTA ROAD  
COLUMBIA, MD 21044-4223  
410-531-2235

PROJECT: HOLIDAY HILLS SECTION 6  
LOTS 99 AND 100  
A RESUBDIVISION OF LOT 71 PREVIOUSLY RECORDED AS PB.9, F.99

LOCATION: TAX MAP 41 - GRID 5  
PARCEL 304  
5TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

TITLE: SUPPLEMENTAL GRADING PLAN, STREET TREE PLAN AND LANDSCAPE PLAN

DATE: DECEMBER, 2005  
AUGUST, 2007

PROJ. NO. 1641  
DRAWING 1 OF 1

Design: MAN Draft: MAN Check: DAM

SCALE: AS SHOWN

F-06-034