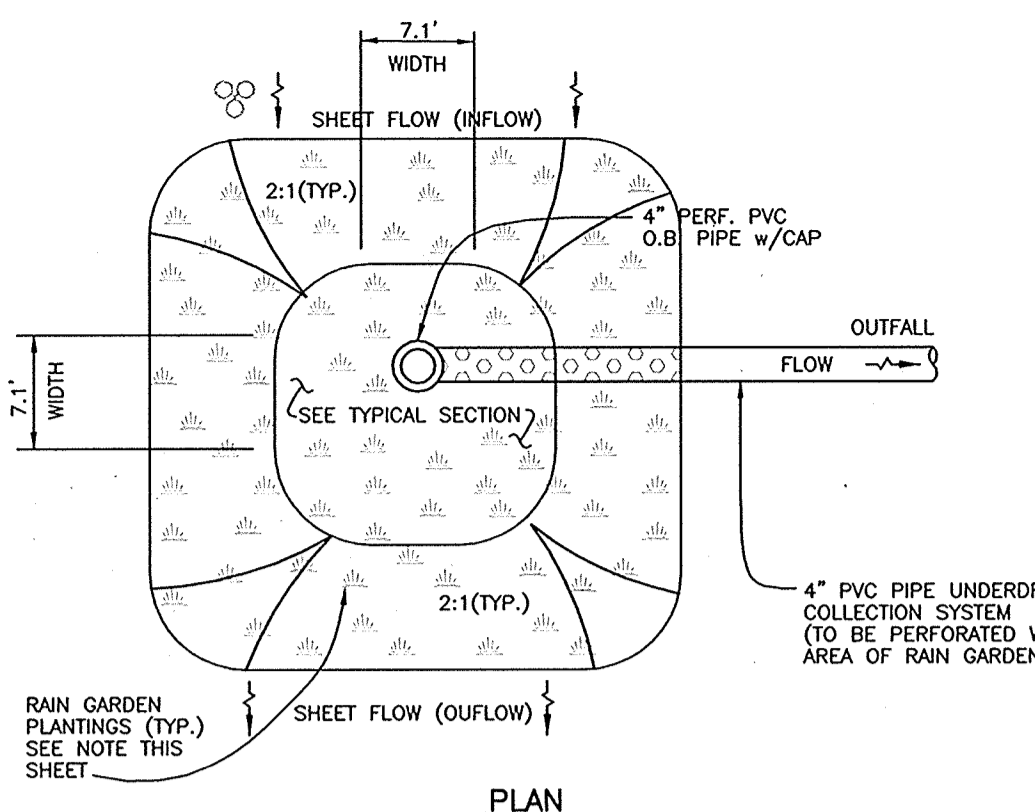


PLAN
SCALE: 1"=50'



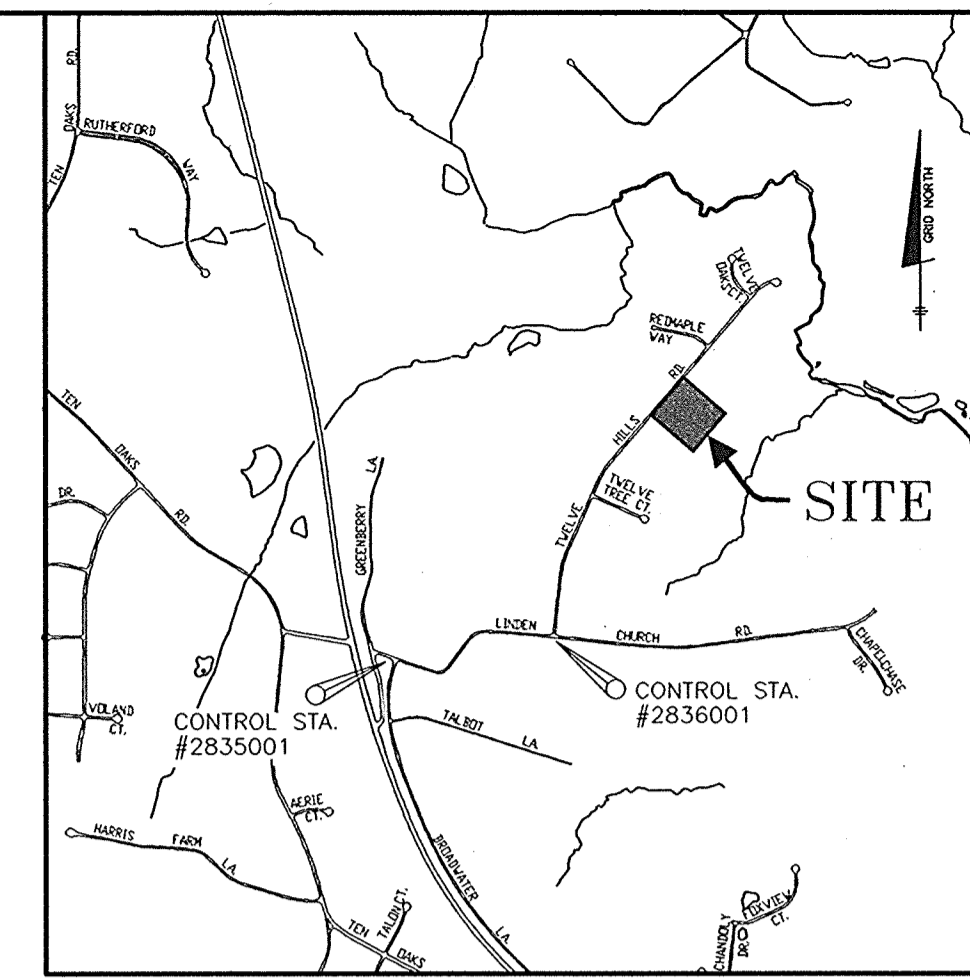
TYPICAL PROFILE
NOT TO SCALE

TYPICAL SECTION
NOT TO SCALE

MATERIAL	SPECIFICATION	SIZE	NOTES:
PLANTINGS	SEE APPENDIX A, TABLE A.4	N/A	PLANTINGS ARE SPECIFIC
PLANTING SOIL (2.0' TO 4.0' DEEP)	SMW 30-40% Silt, 50-55% Sand, 0-5% Clay	N/A	USDA SOIL TYPES: LOAMY SAND, SANDY LOAM OR LOAM
MULCH	SHREDED HARDWOOD	N/A	AGED 6 MONTHS, MINIMUM
GEOTEXTILE (CLASS 5)	APPROXIMATE OPENING SIZE: (ASTM D-4191) 1/8" MINIMUM; (ASTM D-4632) 1/4" MAXIMUM; 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	75% TYPE 2000 OR ASTRIO M-278	4" TO 6" RIGID SOIL-AD PVC	3/4" PERF. Ø 6" D/C, 4 HOLES PER ROW, MINIMUM OF 3" OF GRAVEL OVER PIPES, NOT NECESSARY UNDERNEATH PIPES

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.



VICINITY MAP
SCALE: 1"=2000'

FOREST CONSERVATION WORKSHEET VERSION 1.0	
NET TRACT AREA	
A. TOTAL TRACT AREA	6.74 AC.±
B. AREA WITHIN 100 YEAR FLOOD PLAIN	0.00 AC.±
C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION	0.00 AC.±
D. NET TRACT AREA	6.74 AC.±
LAND USE CATEGORY RESIDENTIAL -RURAL MEDIUM DENSITY	
E. AFFORESTATION THRESHOLD (20% x D =)	1.35 AC.±
F. CONSERVATION THRESHOLD (25% x D =)	1.69 AC.±
EXISTING FOREST COVER	
G. EXISTING FOREST COVER (EXCLUDING FLOODPLAIN)	1.28 AC.±
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD	0.00 AC.±
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD	0.00 AC.±
BREAK EVEN POINT	
J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION	0.00 AC.±
K. CLEARING PERMITTED WITHOUT MITIGATION	0.00 AC.±
PROPOSED FOREST CLEARING	
L. TOTAL AREA OF FOREST TO BE CLEARED (CANNOT EXCEED EXIST.)	0.00 AC.±
M. TOTAL AREA OF FOREST TO BE RETAINED	1.28 AC.±
PLANTING REQUIREMENTS	
N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD	0.00 AC.±
P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD	0.00 AC.±
Q. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD	0.00 AC.±
R. TOTAL REFORESTATION REQUIRED	0.00 AC.±
S. TOTAL AFFORESTATION REQUIRED	0.07 AC.±
T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED	0.07 AC.±
* NO FOREST CLEARING IS PROPOSED	

RAIN GARDEN - 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 (AJUCA REPTANS)
COMMON FERNWIKLE (VINCA MINOR)
LILY-TURF (LIRIOPE, SP.)
- PLANTINGS ALONG THE PERIMETER (BERM) AREA OF THE RAIN GARDEN ARE TO BE OF A LOW TO MEDIUM WATER TOLERANCE.
SUGGESTED SPECIES:(PERENNIALS/ANNUALS)
IRIS (IRIS VESICOLOR)
DAILY (HEMEROCALLIS SP.)
WHITE GLORY (ASTILE SP.)
- AVOID PLANTINGS WITH EXCESSIVE ROOT MASS IN POND AREA OF THE RAIN GARDEN NEAR O.B. PIPE AND UNDERDRAIN.

LANDSCAPING NOTES

- PERIMETER LANDSCAPING SHALL BE PROVIDED BY THE EXISTING VEGETATION TO REMAIN AND BY THE PLANTINGS AS SHOWN ON THESE PLANS.
- TREES MUST BE A MINIMUM OF FOUR(4) FEET FROM THE CURB OR SIDEWALK AND MUST BE A MINIMUM OF FIVE(5) FEET FROM ANY STORM DRAIN.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED AS PART OF THE THE GRADING PERMIT IN THE AMOUNT OF \$3,600.00.

FOREST RETENTION AREA

MACHINERY, DUMPING OR STORAGE OF ANY MATERIALS IS **PROHIBITED**

VIOLATORS ARE SUBJECT TO FINES AS IMPOSED BY THE HOWARD COUNTY FOREST CONSERVATION ACT OF 1989

SIGNAGE
NOT TO SCALE

MAP SYMBOL	SOIL GROUP	SOIL TYPE
CgB2	B	CHESTER GRAVELLY SILT LOAM, 3 TO 8 % SLOPES, MODERATELY ERODED
ChB2	B	CHESTER SILT LOAM, 3 TO 8 % SLOPES, MODERATELY ERODED.
ChC2	B	CHESTER SILT LOAM, 8 TO 15 % SLOPES, MODERATELY ERODED.
GbB2	B	GLENELO LOAM, 3 TO 8 % SLOPES, MODERATELY ERODED
GbC2	B	GLENELO LOAM, 8 TO 15 % SLOPES, MODERATELY ERODED
MgC3	B	MANOR GRAVELLY LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
MgC2	B	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
MgC2	B	MANOR LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED

* INDICATES HYDRIC SOILS
TAKEN FROM SOILS SURVEY, ISSUED JULY 1988, MAP NO. 18

PERIMETER AND SWM PLANTING LIST			
SYMBOL	QUANTITY	NAME	REMARKS
(Symbol)	12	ACER SACCHARUM (SUGAR MAPLE)	2 1/2" MIN. CAL. B&B FULL HEAD

SCHEDULE A PERIMETER LANDSCAPE EDGE				
CATEGORY	ADJACENT TO PERIMETER PROPERTIES			
LANDSCAPE BUFFER TYPE	1) N/A	2) A	3) A	4) A
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	160'	570'	515'	77'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	*YES 435'	*YES 77'
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED				
SHADE TREES	0	10	2	0
EVERGREEN TREES	0	-	-	-
OTHER TREES (2:1 SUBSTITUTE)	-	-	-	-
SHRUBS	-	-	-	-
NUMBER OF PLANTS PROVIDED				
SHADE TREES	0	10	2	0
EVERGREEN TREES	-	-	-	-
OTHER TREES (2:1 SUBSTITUTE)	-	-	-	-
SHRUBS (10:1 SUBSTITUTE)	-	-	-	-

(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)

* EXISTING VEGETATION TO REMAIN

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional
USACO2 Wetland Delineator
Certification #WD0933MD061004432

John P. Canoles

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Cindy Skowron
CHIEF, DIVISION OF LAND DEVELOPMENT

John P. Canoles
CHIEF, DEVELOPMENT ENGINEERING DIVISION

7/26/04
7/26/04

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 MAY 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.

2	
1	
NO.	DATE
REVISION	

BENCHMARK ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE & SUITE 418
ELLCOTT CITY, MARYLAND 21043
PHONE: 410-465-8105 FAX: 410-465-6844
www.bei-civilengineering.com

Donald Moran
REGISTERED PROFESSIONAL ENGINEER
No. 12919

OWNER:
SAMIR B. HISHMEH AND MARY WELDON HISHMEH, T/E
13058 TWELVE HILLS ROAD
CLARKSVILLE, MD 21029-1143

PROJECT:
TWELVE HILLS - SECTION THREE
RESUBDIVISION OF LOT 28

LOCATION:
TAX MAP 28, GRID 10, PARCEL 381
5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE:
SUPPLEMENTAL PLAN, SOILS, LANDSCAPE PLAN
AND FOREST CONSERVATION PLAN

DATE: APRIL 2004
JUNE 2004

PROJECT NO. 1614

Design: RPS Draft: RPS Check: DAM SCALE: AS SHOWN DRAWING 1 OF 1