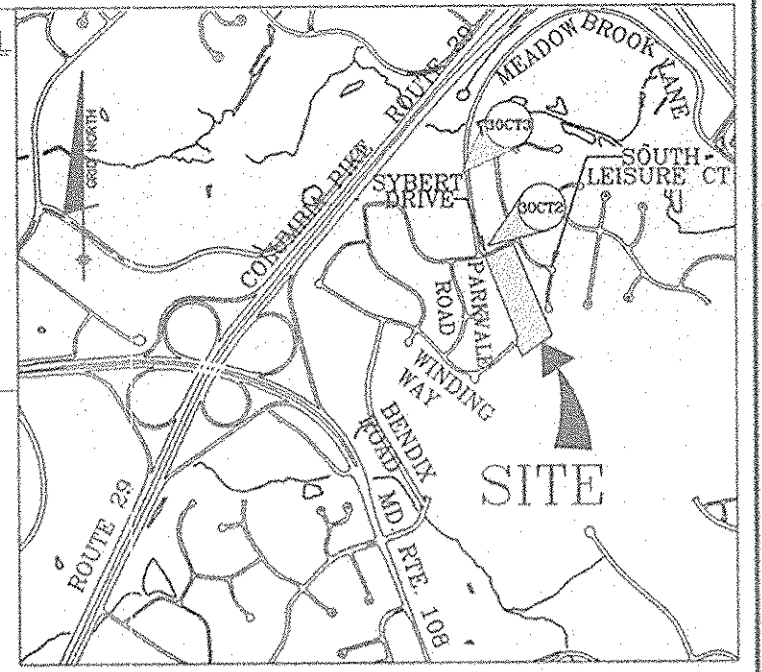


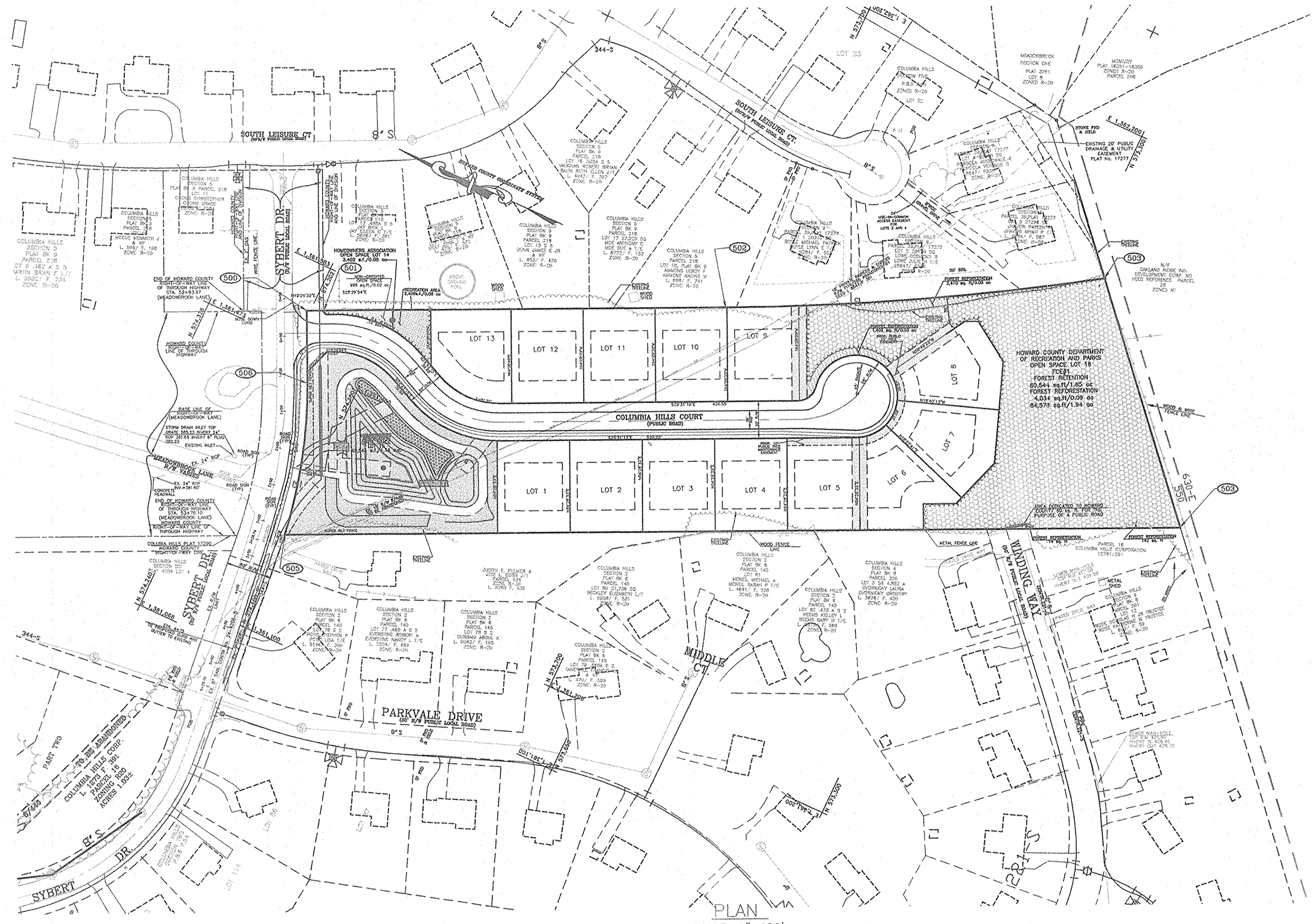
COLUMBIA HILLS SECTION 10 LOTS 1 THRU 13 AND O.S. LOTS 14 thru 16 PARCEL 16 / ZONE: R-20 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND PRELIMINARY EQUIVALENT SKETCH PLAN SP-08-001

BENCH MARKS NAD 83 HORIZONTAL	
HO. CO. #30C2 3/8" REBAR WITH RED PLASTIC CAP N 574179.232' ELEV. = 388.74	E 1361312.723'
HO. CO. #30C3 3/8" REBAR WITH RED PLASTIC CAP N 574812.755' ELEV. = 386.42	E 1361173.247'



VICINITY MAP
SCALE: 1"=2000'
ADC MAP No. 16-B1

- GENERAL NOTES**
- ALL ASPECTS OF THIS PROJECT SHALL BE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVER(S) HAVE BEEN APPROVED.
 - THE BOUNDARY SHOWN IS BASED ON A MSHA PLAT NO. 56982.
 - THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL MONUMENTS 30C2 & 30C3, WHICH IS BASED ON THE MARYLAND STATE PLANE COORDINATE SYSTEM.
 - EXISTING TOPOGRAPHY SHOWN HEREON WAS FIELD RUN BY BENCHMARK ENGINEERING, INC., DATED JANUARY, 2007. CONTOUR INTERVAL IS 2 FEET.
 - EXISTING UTILITIES SHOWN HEREON ARE BASED ON FIELD LOCATIONS AND RECORD DRAWINGS.
 - THIS PROPERTY IS WITHIN THE METROPOLITAN DISTRICT. WATER AND SEWER SHALL BE PUBLIC, CONNECTING TO CONTRACT NO. 24-4205-D AND 137-W. DRAINAGE AREA IS WITHIN THE PATUXENT RIVER WATERSHED.
 - FOREST STAND DELINEATION PLAN WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. DATED MAY, 2007.
 - NO WETLANDS OR 100-YEAR FLOODPLAIN EXIST WITHIN THE LIMITS OF PROJECT.
 - NO NOISE STUDY IS REQUIRED FOR THIS PROJECT.
 - A.P.F.O. TRAFFIC STUDY WAS PREPARED BY THE MARS GROUP, DATED APRIL, 2007 AND APPROVED AUGUST 2, 2007.
 - THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY HILLS-CARNES ENGINEERING ASSOCIATES, DATED MAY 17, 2007.
 - TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO CEMETERY LOCATIONS ON-SITE.
 - THIS PLAN IS SUBJECT TO THE 5th EDITION OF THE HOWARD COUNTY SUBDIVISION REGULATIONS AND THE AMENDED HOWARD COUNTY ZONING REGULATIONS.
 - STORMWATER MANAGEMENT SHALL BE PROVIDED FOR THIS PROJECT BASED ON GUIDELINES ESTABLISHED BY THE 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUMES I & II. QUALITY AND QUANTITY CONTROL SHALL BE CONTROL SHALL BE PROVIDED MICRO POOL, SWM FACILITY.
 - THE STORMWATER MANAGEMENT SYSTEM SHOWN ON THIS PLAN IS AN APPROXIMATION OF THE SIZE, SHAPE, AND LOCATION. IT IS UNDERSTOOD THAT THIS SYSTEM HAS NOT BEEN DESIGNED AND THE ACTUAL DESIGN MAY CHANGE ALTERING THE NUMBER OF UNITS ALLOCATED FOR THIS DEVELOPMENT.
 - STREET LIGHTS ARE REQUIRED AND SHALL BE PROVIDED PER DESIGN MANUAL REQUIREMENTS.
 - ALL LANDSCAPING REQUIREMENTS AS SET FORTH IN THE LANDSCAPE MANUAL SHALL BE FULFILLED.
 - 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 AND NOT TO THE PIPESTEM LOT DRIVEWAY.
 - DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 - WIDTH - 12' (16' SERVING MORE THAN ONE RESIDENCE).
 - SURFACE - 6" OF COMPACT CRUSHER RUN BASE WITH TAR AND CHIP COATING.
 - GEOMETRY - MAX. 15% GRADE, MAX. 10% GRADE CHANGE & MIN. 45' TURNING RADIUS.
 - STRUCTURES/CULVERTS/BRIDGES - CAPABLE OF SUPPORTING 25 GROSS TONS (M25 LOAD)
 - DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOODPLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY.
 - STRUCTURE CLEARANCES - MINIMUM 12 FEET.
 - MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
 - SUBJECT PROPERTY IS ZONED R-20 PER 2-02-04 COMPREHENSIVE ZONING PLAN.
 - THE FOREST CONSERVATION ACT REQUIREMENTS FOR THIS PROJECT WILL BE MET THROUGH THE RETENTION OF 1.85 AC OF FOREST ON THE SITE AND 0.09 ACRES OF ONSITE PLANTING AND PAYMENT TO THE COUNTY'S FEE-IN-LIEU PROGRAM FOR 0.97 ACRE.



LEGEND

EXISTING CONTOUR	BOUNDARY CORNERS
PROPOSED CONTOUR	PROPOSED STREET LIGHT
EXISTING WOODS LINE	PREMIER AREAS
PROPOSED WOODS LINE	PROPOSED EARTH DIKE
EXISTING STRUCTURE	SOILS BOUNDARY
PROPOSED STRUCTURE	PROP. LOD
EX. OVERHEAD WIRE	PROP. SCE
EX. UTILITY POLE	EXISTING DRAINAGE ESMT
PROP. DRAINAGE ESMT	PROP. WATER AND UTILITY ESMT
PROP. OPEN SPACE FCE	PROP. STREET TREE MAINTENANCE ESMT
PROP. OPEN SPACE SWMF	PROP. SIDEWALK
PROP. SWM ACCESS ROAD	PROP. REFORESTATION AREA
PROP. RECREATION AREA	PROP. NON-WOODY VEGETATION AREA
PROP. STONE CHAMBER	

SITE DATA TABULATION

- GENERAL SITE DATA
 - PRESENT ZONING: R-20
 - LOCATION: TAX MAP 30 - GRID 05 - PARCEL 13
 - APPLICABLE DPZ FILE REFERENCES:
 - DEED REFERENCE: L10746 / F.151 (PLAT REFERENCE: SHA PLAT 56982)
 - PROPOSED USE OF SITE: 13 SF HOMES
 - PROPOSED WATER AND SEWER SYSTEMS: PUBLIC
- AREA TABULATION
 - TOTAL AREA OF SITE: 7.86 Ac.±
 - AREA OF 100 YEAR FLOODPLAIN (APPROX.): N/A
 - AREA OF STEEP SLOPES (25% OR GREATER): 0.00 Ac.±
 - NET AREA OF SITE: 7.86 Ac.±
 - AREA OF THIS PLAN SUBMISSION: 7.86 Ac.±
 - LIMIT OF DISTURBANCE (APPROX.): 6.08 Ac.±
 - AREA OF PROPOSED BUILDABLE LOTS: 3.58 Ac.±
 - AREA OF OPEN SPACE LOTS: 3.18 Ac.±
 - AREA OF PROPOSED PUBLIC R/W DEDICATION: 1.07 Ac.±
- DENSITY TABULATION
 - NET AREA OF SITE: 7.86 Ac.±
- UNIT/LOT TABULATION
 - TOTAL NUMBER OF RESIDENTIAL LOTS PROPOSED ON THIS SUBMISSION: 13
 - TOTAL NUMBER OF OPEN SPACE LOTS PROPOSED ON THIS SUBMISSION: 3
- OPEN SPACE DATA
 - MINIMUM RESIDENTIAL LOT SIZE SELECTED: 12,000 S.F.
 - OPEN SPACE REQUIRED FOR TOTAL AREA OF SITE (40% OF 7.86 AC.): 3.14 Ac.
 - TOTAL AREA OF PROPOSED OPEN SPACE LOTS PROVIDED WITH THIS SUBDIVISION: 3.16 Ac.
 - OPEN SPACE AREAS LESS THAN 35' IN WIDTH (NON-CREDITED): 0.02 Ac.
 - TOTAL AREA OF OPEN SPACE MEETING MINIMUM OPEN SPACE REQUIREMENTS: 3.16 Ac.(40.5%)
- AREA OF RECREATIONAL OPEN SPACE REQUIRED @200 SQ.FT. PER BUILDABLE LOT.
 - TOTAL AREA OF RECREATIONAL OPEN SPACE REQUIRED: 0.06 Ac.
 - TOTAL AREA OF RECREATIONAL OPEN SPACE PROVIDED: 0.06 Ac.

CENTERLINE LINE TABLE

LINE	LENGTH	BEARING
CL1	66.79'	S25°29'54"E
CL2	39.68'	S24°43'15"W
CL3	438.14'	S25°31'27"E
CL4	16.47'	S66°24'51"E

CENTERLINE CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD DIRECTION	CHORD
C1	109.56'	125.00'	50°13'09"	58.58'	N00°23'20"W	106.09'
C2	109.62'	125.00'	50°14'42"	58.61'	S00°24'06"E	106.14'
C3	75.27'	106.20'	40°36'41"	39.30'	S44°40'30"E	73.71'

BOUNDARY COORDINATE TABLE (NAD '83)

NO.	NORTHING	EASTING
500	574,205.87	1,361,518.31
501	574,186.08	1,361,527.99
502	573,704.56	1,361,757.52
503	573,263.46	1,362,005.96
504	573,029.70	1,361,746.95
505	574,104.99	1,361,234.59
506	574,164.30	1,361,431.32

BOUNDARY CURVE DATA

CURVE	RADIUS	ARC	DELTA	TANGENT	CHORD
C1	3706.72'	506.82'	07°50'03"	253.81'	N29°24'13"W 506.82'
C2	659.00'	206.38'	17°56'37"	104.04'	N73°19'41"E 206.38'

SHEET INDEX

NO.	DESCRIPTION
1	COVER SHEET
2	SITE PLAN
3	GRADING, SEDIMENT & EROSION CONTROL PLAN
4	LANDSCAPE PLAN
5	FOREST CONSERVATION PLAN
6	ROAD PROFILE
7	SOIL MAP
8	PRELIMINARY STORM DRAIN DRAINAGE AREA MAP

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

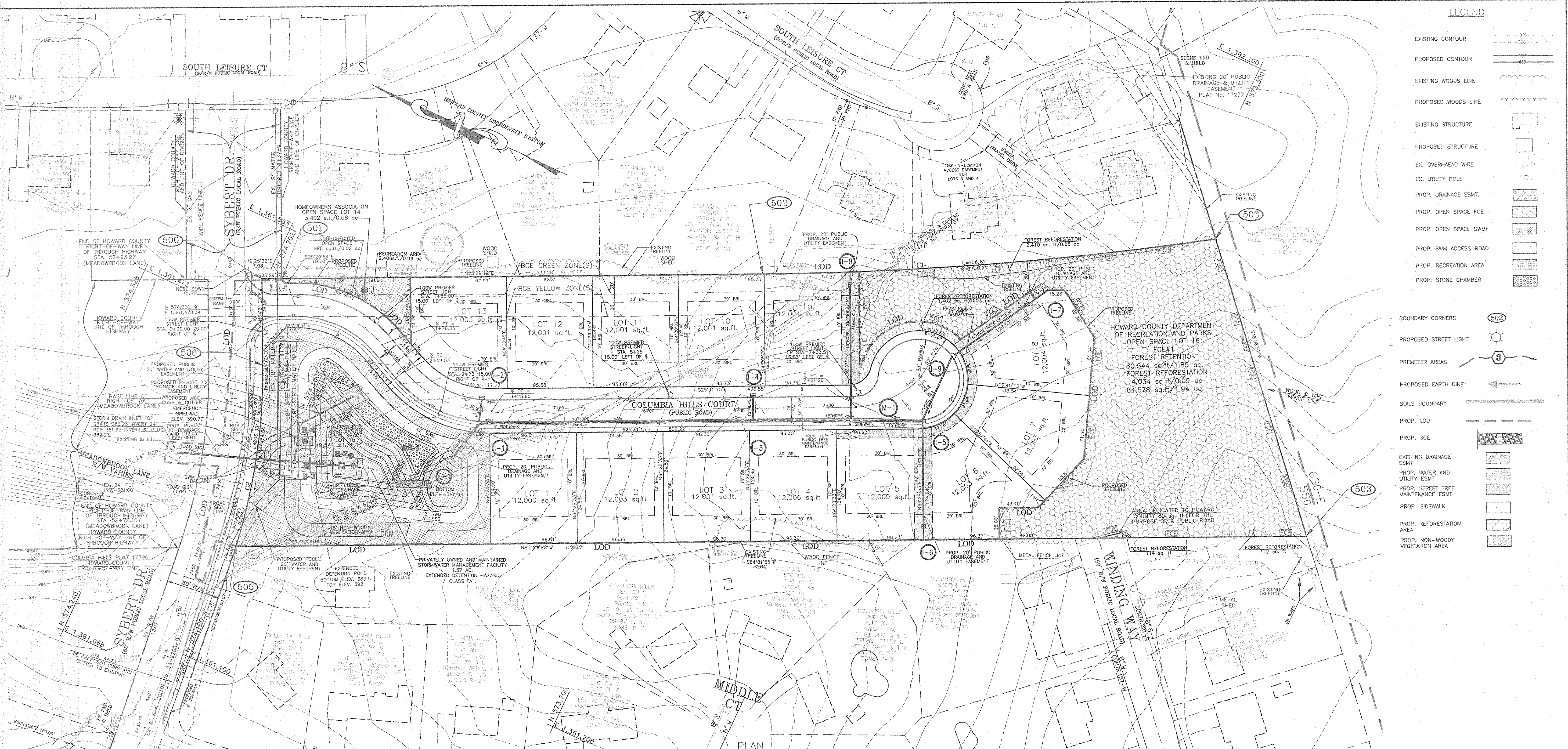
Paul A. Wyle 7/1/08
PLANNING DIRECTOR 7th DATE

SOILS LEGEND

MAP SYMBOL	SOIL TYPE	MAPPING UNIT
CH2	B	CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
GC2	B	GLENELG LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
MR2	B	MANOR LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
MC2	B	MANOR LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
MC3	B	MANOR LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED
MG3	B	MANOR LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED
CH2	B	CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED

SOILS MAP No.20
* - INDICATES HYDRIC SOILS

NO.	DATE	REVISION
BENCHMARK ENGINEERING, INC.		
8480 BALTIMORE NATIONAL PIKE & SUITE 418 ELLCOTT CITY, MARYLAND 21043 PHONE: 410-465-6105 FAX: 410-465-6844 E-MAIL: bei@civilengineering.com		
DEVELOPER/CONTRACT PURCHASER:		PROJECT: COLUMBIA HILLS SECTION 10
COLUMBIA HILLS, LLC P.O. BOX 417 ELLCOTT CITY, MARYLAND 21041 PHONE: (410) 465 - 4244		LOTS 1 THRU 13 AND O.S. LOTS 14 thru 16
TITLE: PRELIMINARY EQUIVALENT SKETCH PLAN COVER SHEET		LOCATION: TAX MAP 30 - GRID 05 PARCEL 13 - ZONE: R-20 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: MAY, 2007	PROJECT NO. 1869	
Des: WEO	Draft: WEO	Check: DAM
SCALE: AS SHOWN	DRAWING 1 OF 8	



LEGEND

- EXISTING CONTOUR: --- 990 ---
- PROPOSED CONTOUR: --- 442 ---
- EXISTING WOODS LINE: --- 440 ---
- PROPOSED WOODS LINE: --- 440 ---
- EXISTING STRUCTURE: [Symbol]
- PROPOSED STRUCTURE: [Symbol]
- EX. OVERHEAD WIRE: --- CHP ---
- EX. UTILITY POLE: [Symbol]
- PROP. DRAINAGE ESMT: [Symbol]
- PROP. OPEN SPACE FCE: [Symbol]
- PROP. OPEN SPACE SWM: [Symbol]
- PROP. SWM ACCESS ROAD: [Symbol]
- PROP. RECREATION AREA: [Symbol]
- PROP. STONE CHAMBER: [Symbol]
- BOUNDARY CORNERS: [Symbol]
- PROPOSED STREET LIGHT: [Symbol]
- PREMETER AREAS: [Symbol]
- PROPOSED EARTH DIKE: [Symbol]
- SOILS BOUNDARY: [Symbol]
- PROP. LOD: [Symbol]
- PROP. SCE: [Symbol]
- EXISTING DRAINAGE ESMT: [Symbol]
- PROP. WATER AND UTILITY ESMT: [Symbol]
- PROP. STREET TREE MAINTENANCE ESMT: [Symbol]
- PROP. SIDEWALK: [Symbol]
- PROP. REFORESTATION AREA: [Symbol]
- PROP. NON-WOODY VEGETATION AREA: [Symbol]

PLAN
SCALE: 1"=50'

SWM FACILITY ELEVATION

Cpv	ELEVATION	386.96	-
WQv	ELEVATION	391.96	-
1 YEAR STORM	ELEVATION	387.04	Q=0.5cfs
10 YEAR STORM	ELEVATION	389.52	Q=5.9cfs
100 YEAR STORM	ELEVATION	390.86	Q=18.9cfs

BOUNDARY COORDINATE TABLE (NAD '83)

NO.	NORTHING	EASTING
500	574,205.87	1,361,518.31
501	574,186.08	1,361,527.99
502	573,704.56	1,361,757.52
503	573,263.46	1,362,005.96
504	573,029.70	1,361,746.95
505	574,104.99	1,361,234.59
506	574,164.30	1,361,431.32

CENTERLINE LINE TABLE

LINE	LENGTH	BEARING
CL1	66.79'	S85°53'44"E
CL2	39.68'	S44°43'15"W
CL3	438.14'	S65°31'27"E
CL4	16.47'	S66°24'51"E

CENTERLINE CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD	CHORD
C1	109.56'	125.00'	50°13'09"	58.58'	100°23'20"W	106.09'
C2	109.62'	125.00'	50°14'42"	58.61'	500°24'06"E	106.14'
C3	75.27'	106.20'	40°36'41"	39.30'	344°40'39"E	73.71'

Summary of General Storage Requirement Drainage Area #1 (Sub A & B)

Step	Requirement	Volume Required ac-ft (cfs)	Notes
1.	Water Quality Volume (WQv)	87523 cf (or 0.2009 ac-ft)	0.2009 ac-ft provided within a Surface Sand Filter facility
2.	Recharge Volume (Rev)	0.5675 acres (or 0.05052 ac-ft)	Rev provided within a stone chamber.
3.	Channel Protection Volume (Cpv)	0.2802 ac-ft (or 12209 cf)	0.2220 ac-ft provided within a Extended Detention facility
4.	Overbank Flood Protection Volume (Op)	N/A	Not required
5.	Extreme Flood Volume (Q)	N/A	Not required

Summary of General Storage Requirement Drainage Area #3

Step	Requirement	Volume Required ac-ft (cfs)	Notes
1.	Water Quality Volume (WQv)	N/A	Because DA#3 is the Open Space (Natural Area Conservation Credit)
2.	Recharge Volume (Rev)	0.5675 acres (or 0.05052 ac-ft)	Rev provided within a stone chamber.
3.	Channel Protection Volume (Cpv)	N/A	Cpv release rate is < 2 cfs
4.	Overbank Flood Protection Volume (Op)	N/A	Not required
5.	Extreme Flood Volume (Q)	N/A	Not required

Drainage Area Summary Table

STUDY POINTS (DRAINAGE AREAS)	EXISTING DISCHARGE (CFS)			DEVELOPED DISCHARGE (CFS)		
	1 YR	10 YR	100 YR	1 YR	10 YR	100 YR
#1 (Sub A & B)	0.36	6.87	14.96	0.51*	5.09	22.01
#2	0.01	0.61	1.47	-	-	-
#3	0.2	4.55	10.11	0.05	1.88	4.69

* In developed condition the DA#2 is eliminated and combines with DA#1.
* In developed condition the discharge for DA#1 (Sub A&B) is slightly greater than the existing discharge. 24 hour extended detention will be provided for the one year, 24 hour storm event. Discharge from site shall not be erosive under developed conditions

Non-Structural Water Quality Provisions Summary

Area	Method	Rev (Provided)	Rev (Required)
#1	Stone Chamber (118'x15.5'x3')	0.05 ac-ft	0.05 ac-ft
Total for the Site		0.05 ac-ft	0.05 ac-ft
Remaining Requirement		0.0000 AC	

Note: The Rev provided within the chamber addresses both DA 1 Sub A, B and DA 3.

BOUNDARY CURVE DATA

CURVE	RADIUS	ARC	DELTA	TANGENT	CHORD
C1	3706.72'	506.82'	07°50'03"	253.81'	N29°24'13"W 506.82'
C2	659.00'	206.38'	17°58'37"	104.04'	N73°19'41"E 206.38'

SWM Facility Summary

Facility	Type	WQv (Provided)	WQv (Required)
SWM #1	Surface Sand Filter	0.2009 AC-FT	0.2009 AC-FT
	Total Required	0.2009 AC-FT	0.2009 AC-FT
SWM #2	Extended Detention Pond	Cpv (Provided)	Cpv (Required)
	Total Required	0.2802 AC-FT	0.2802 AC-FT

Note: The channel protection and water quality control are address fully with SWM Facility #1 & 2.
* EXTENDED DETENTION POND PROVIDED FOR Cpv, SURFACE SAND FILTER PROVIDED FOR WQv AND STONE CHAMBER PROVIDED FOR Rev.

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

Deborah L. Leight 4/4/08
PLANNING DIRECTOR DATE

NO. DATE REVISION

BENCHMARK ENGINEERING, INC.
ENGINEERS • LAND SURVEYORS • PLANNERS
8480 BALTIMORE NATIONAL PIKE & SUITE 418
ELLICOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6844
E-MAIL: bei@bei-civilengineering.com

DEVELOPER/CONTRACT PURCHASER: COLUMBIA HILLS, LLC
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21041
PHONE: (410) 465 - 4244

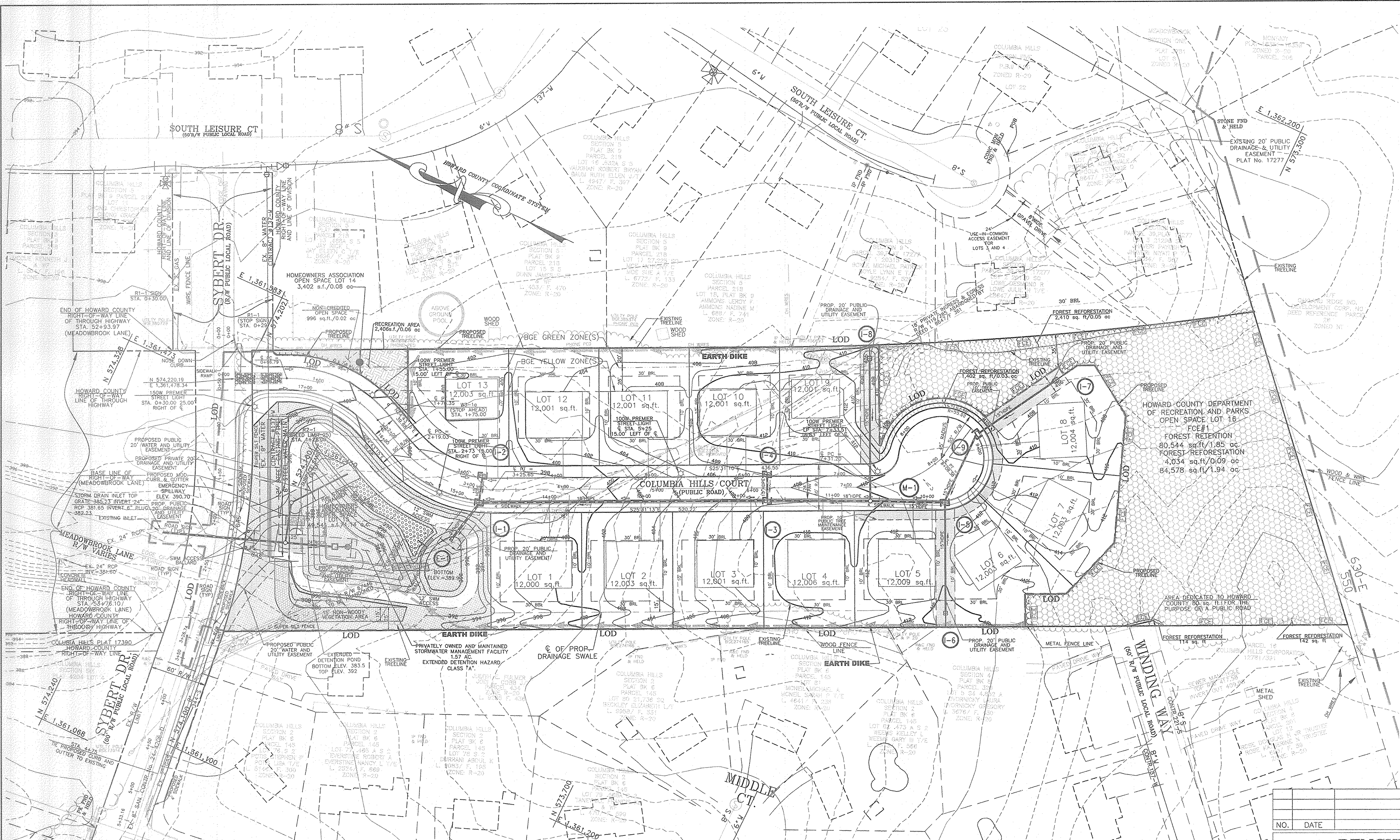
PROJECT: COLUMBIA HILLS SECTION 10
LOTS 1 THRU 13 AND O.S. LOTS 14 thru 16
LOCATION: TAX MAP 30 - GRID 05
PARCEL 13 - ZONE: R-20
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: PRELIMINARY EQUIVALENT SKETCH PLAN

DATE: MAY, 2007 PROJECT NO. 1869
JANUARY 2008

Des: WEO Draft: WEO Check: DAM SCALE: AS SHOWN DRAWING 2 OF 3

SP-08-001



LEGEND

- EXISTING CONTOUR: --- 598 ---
- PROPOSED CONTOUR: --- 412 ---
- EXISTING WOODS LINE: [Symbol]
- PROPOSED WOODS LINE: [Symbol]
- EXISTING STRUCTURE: [Symbol]
- PROPOSED STRUCTURE: [Symbol]
- EX. OVERHEAD WIRE: [Symbol]
- EX. UTILITY POLE: [Symbol]
- PROP. DRAINAGE ESMT.: [Symbol]
- PROP. OPEN SPACE FCE: [Symbol]
- PROP. OPEN SPACE SWMF: [Symbol]
- PROP. SWM ACCESS ROAD: [Symbol]
- PROP. RECREATION AREA: [Symbol]
- PROP. STONE CHAMBER: [Symbol]
- BOUNDARY CORNERS: (502)
- PROPOSED STREET LIGHT: [Symbol]
- PREMIER AREAS: [Symbol]
- PROPOSED EARTH DIKE: [Symbol]
- SOILS BOUNDARY: [Symbol]
- PROP. LOD: [Symbol]
- PROP. SCE: [Symbol]
- EXISTING DRAINAGE ESMT.: [Symbol]
- PROP. WATER AND UTILITY ESMT.: [Symbol]
- PROP. STREET TREE MAINTENANCE ESMT.: [Symbol]
- PROP. SIDEWALK: [Symbol]
- PROP. REFORESTATION AREA: [Symbol]
- PROP. NON-WOODY VEGETATION AREA: [Symbol]

PLAN
SCALE: 1"=50'

NOTE:
STORM DRAIN FROM 18+00 TO 18+50 SHALL BE INSTALLED PRIOR TO DISTURBANCE OF ROADWAY AND DRAINAGE AREA PAST STATION 8+00 IN ORDER TO DIRECT RUNOFF TO SEDIMENT BASIN.

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

David L. Caylor 4/4/08
PLANNING DIRECTOR DATE

NO.	DATE	REVISION

BENCHMARK
ENGINEERS • LAND SURVEYORS • PLANNERS

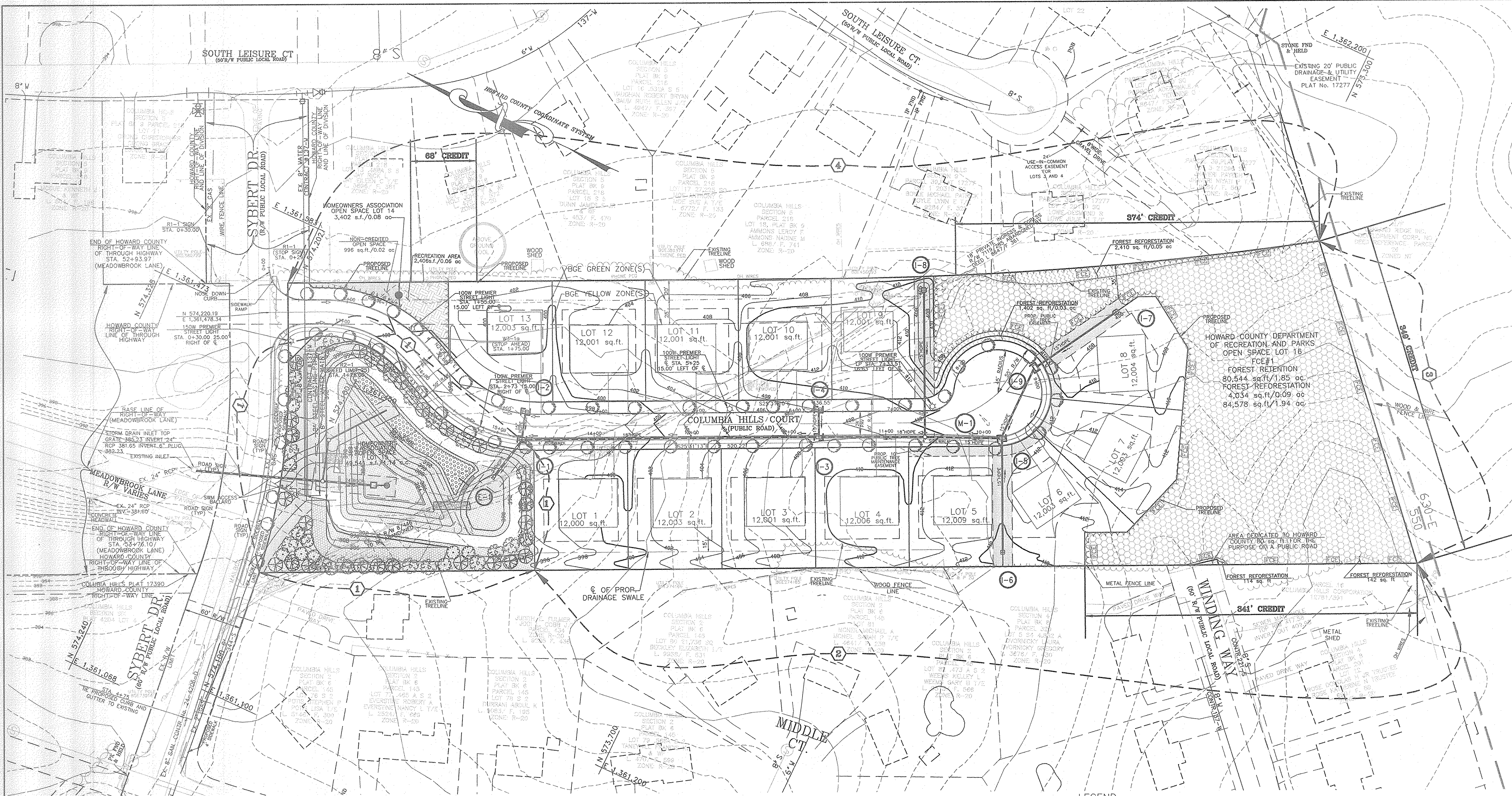
ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE • SUITE 418
ELLCOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6844
E-MAIL: be@be-engineering.com

3-18-08
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. 21443, Expiration Date: 12-21-2008.

DEVELOPER/CONTRACT PURCHASER:	PROJECT:
COLUMBIA HILLS, LLC P.O. BOX 417 ELLCOTT CITY, MARYLAND 21041 PHONE: (410) 465 - 4244	COLUMBIA HILLS SECTION 10 LOTS 1 THRU 13 AND O.S. LOTS 14 thru 16
TITLE:	LOCATION:
PRELIMINARY GRADING, SEDIMENT CONTROL EROSION CONTROL PLAN	TAX MAP 30 - GRID 05 PARCEL 13 - ZONE: R-20 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE:	PROJECT NO.:
MAY, 2007	1869
SCALE:	DRAWING:
AS SHOWN	3 OF 8

Des: WEO Draft: WEO Check: DAM



- LANDSCAPING NOTES**
- 1.) PERIMETER LANDSCAPING SHALL BE PROVIDED BY THE EXISTING VEGETATION TO REMAIN AND BY THE PLANTINGS AS SHOWN ON THESE PLANS.
 - 2.) THE DEVELOPER SHALL BE RESPONSIBLE FOR THE PRESERVATION OF THE PERIMETER VEGETATION AND FOR THE PERIMETER PLANTINGS AS SHOWN ON THESE PLANS. BONDING FOR PLANTINGS IS THE OBLIGATION OF THE DEVELOPER AS PART OF THE DEVELOPERS AGREEMENT.
 - 3.) 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.
 - 4.) A MINIMUM DISTANCE OF TWENTY (20) FEET MUST BE MAINTAINED BETWEEN ANY TREES LOCATED ALONG THE CURB LINE AND FROM ANY STREET LIGHTS.
 - 5.) THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SEC. 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.

PLAN
SCALE: 1"=50'

TREE LEGEND

SYMBOL	QUANTITY	NAME
	51	STREET TREES
	40	PERIMETER SHADE TREES
	24	PERIMETER EVERGREEN TREES

LEGEND

EXISTING CONTOUR	BOUNDARY CORNERS	
PROPOSED CONTOUR	PROPOSED STREET LIGHT	
EXISTING WOODS LINE	PREMETER AREAS	
PROPOSED WOODS LINE	PROPOSED EARTH DIKE	
EXISTING STRUCTURE	SOILS BOUNDARY	
PROPOSED STRUCTURE	PROP. LOD	
EX. OVERHEAD WIRE	PROP. SCE	
EX. UTILITY POLE	EXISTING DRAINAGE ESMT	
PROP. DRAINAGE ESMT.	PROP. WATER AND UTILITY ESMT	
PROP. OPEN SPACE FCE	PROP. STREET TREE MAINTENANCE ESMT	
PROP. OPEN SPACE SWMF	PROP. SIDEWALK	
PROP. SWM ACCESS ROAD	PROP. REFORESTATION AREA	
PROP. RECREATION AREA	PROP. NON-WOODY VEGETATION AREA	
PROP. STONE CHAMBER		

**SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING**

LINEAR FEET OF PERIMETER	93' TYPE 'B'
NUMBER OF TREES REQUIRED	19
SHADE TREES (1:50)	19
EVERGREEN TREES (1:40)	24
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
NO. OF TREES PROVIDED	19
SHADE TREES	19
EVERGREEN TREES	24

FOREST CONSERVATION EASEMENT CHART

FCE	AREA OF RETENTION FOREST	AREA OF REFORESTATION FOREST
FCE 1	1.77 ACRE	0.08 ACRE
TOTAL	1.77 ACRES	0.08 ACRE

**SCHEDULE A
PERIMETER LANDSCAPE EDGE**

CATEGORY	ADJACENT TO ROADWAY			ADJACENT TO PERIMETER PROPERTIES		
	NO	NO	NO	YES	YES	YES
PERIMETER NO. / LANDSCAPE TYPE	2	A	3	A	4	A
LINEAR FEET OF (FRONTAGE/PERIMETER)	906'	349'	1062'			
CREDIT FOR EXISTING VEGETATION: NO OR YES (w/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES	YES	YES	341'	349'	445'
CREDIT FOR WALL, FENCE OR BERM: NO OR YES (w/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO			
NUMBER OF PLANTS REQUIRED: SHADE TREES	10	0	11			
EVERGREEN TREES	-	-	-			
OTHER TREES (2:1 SUBSTITUTE)	-	-	-			
SHRUBS (10:1 SUBSTITUTE) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	-	-	-			
NUMBER OF PLANTS PROVIDED: SHADE TREES	10	0	11			
EVERGREEN TREES	-	-	-			
OTHER TREES (2:1 SUBSTITUTE)	-	-	-			
SHRUBS (10:1 SUBSTITUTE)	-	-	-			

STREET TREE CALCULATIONS
PROPOSED COLUMBIA HILLS COURT
STREET TREES REQUIRED FOR 1710 LF OF RIGHT-OF-WAY 1794/40 = 45 TREES REQUIRED
45 TREES PROVIDED

STREET TREE CALCULATIONS
SYBERT DRIVE
STREET TREES REQUIRED FOR 223 LF OF RIGHT-OF-WAY WITH 0 LF OF CREDIT FOR PRESERVING EXISTING VEGETATION 223/40 = 6 TREES REQUIRED
6 TREES PROVIDED

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY
David L. Coyle 4/1/08
PLANNING DIRECTOR DATE

BENCHMARK ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE & SUITE 418
ELLCOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644
E-MAIL: bei@bei-civilengineering.com

REVISION

NO.	DATE	REVISION

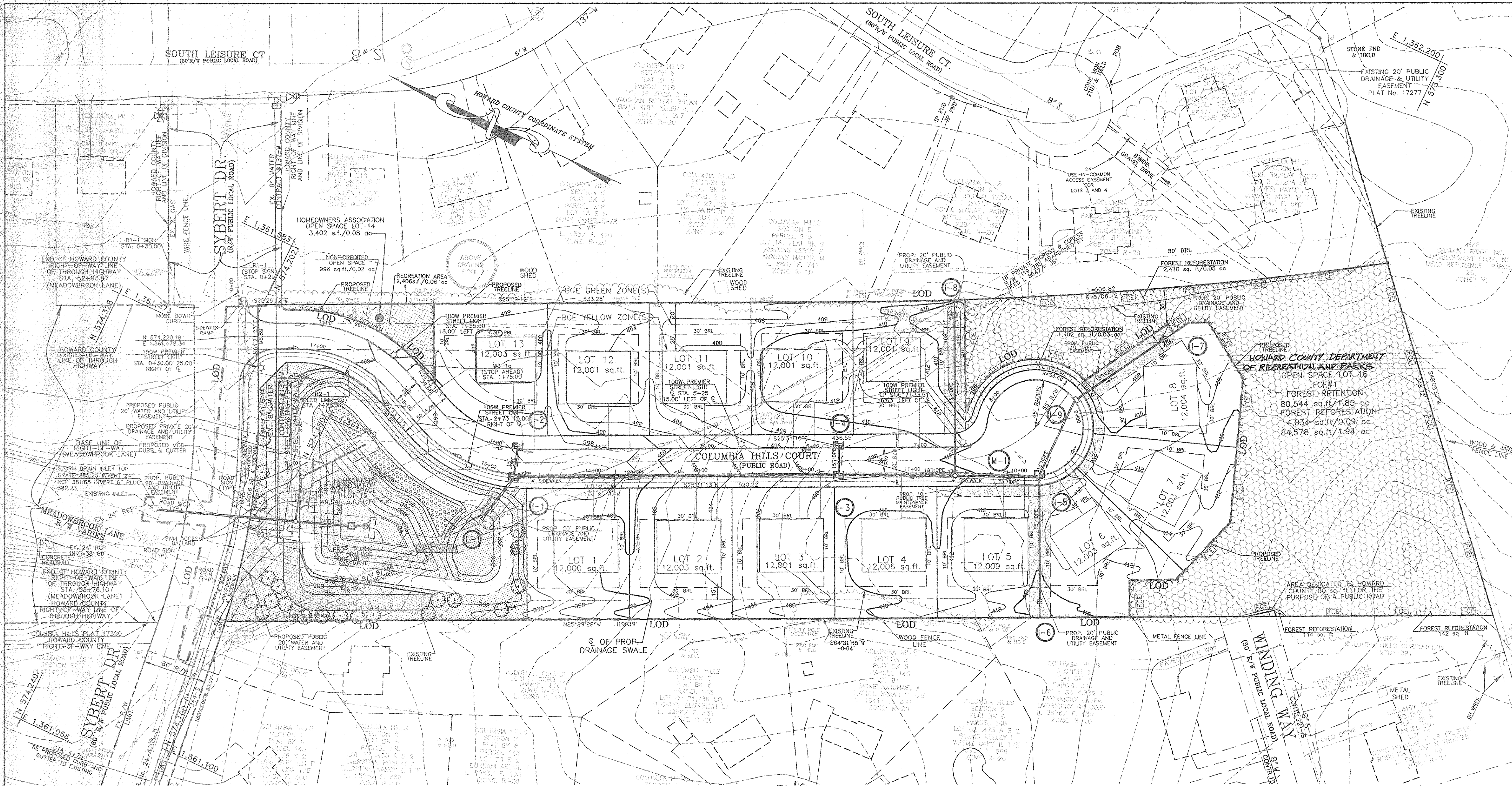
DEVELOPER/CONTRACT PURCHASER:
COLUMBIA HILLS, LLC
P.O. BOX 417
ELLCOTT CITY, MARYLAND 21041
PHONE: (410) 465 - 4244

PROJECT: COLUMBIA HILLS SECTION 10
LOTS 1 THRU 13 AND O.S. LOTS 14 thru 16
LOCATION: TAX MAP 30 - GRID 05
PARCEL 13 - ZONE: R-20
2nd ELECTRIC DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: PRELIMINARY EQUIVALENT SKETCH LANDSCAPE PLAN

DATE: MAY 2007 PROJECT NO. 1869
JANUARY 2008
SCALE: AS SHOWN DRAWING 4 OF 8

Des: WEO Draft: WEO Check: DAM



FOREST CONSERVATION WORKSHEET
COLUMBIA HILLS SECTION 10

NET TRACT AREA:

A. Total tract area ...	7.86
B. Land dedication for roads, county facility, etc. ...	0.00
C. Land dedication for roads or utilities (not being constructed by this plan) ...	0.00
D. Area to remain in commercial agricultural production/use ...	0.00
E. Other deductions (especially) ...	0.00
F. Net Tract Area ...	7.86

LAND USE CATEGORY: (from Trees Technical Manual)
Input the number "1" under the appropriate land use, limit to only one entry.

ARA	MDR	IDA	HDR	MPD	CIA
0	0	0	1	0	0

G. Afforestation Threshold ... 15% x F = 1.18
H. Conservation Threshold ... 20% x F = 1.57

EXISTING FOREST COVER:

I. Existing forest cover ...	7.20
J. Area of forest above afforestation threshold ...	6.02
K. Area of forest above conservation threshold ...	5.63

BREAK EVEN POINT:

L. Forest retention above threshold with no mitigation ...	2.70
M. Clearing permitted without mitigation ...	4.50

PROPOSED FOREST CLEARING:

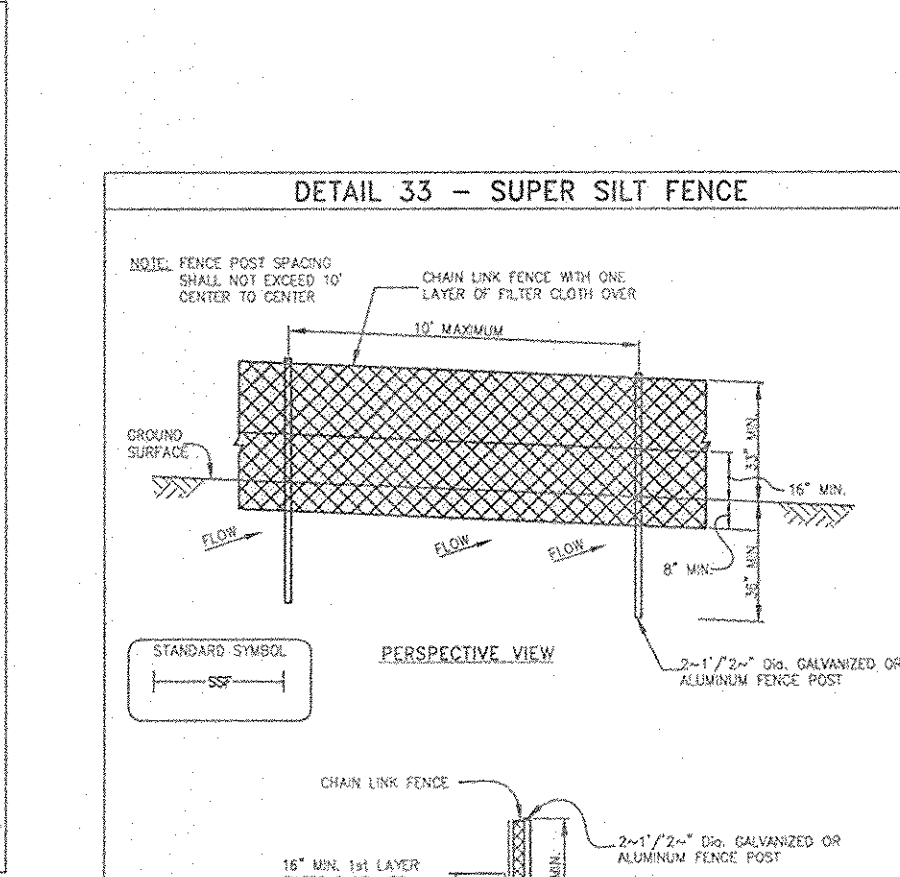
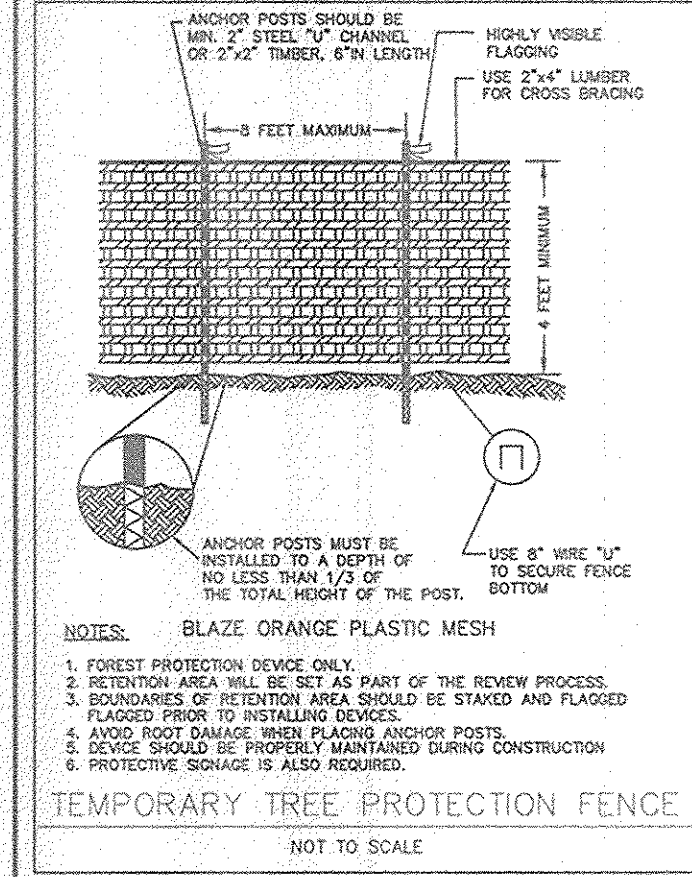
N. Total area of forest to be cleared ...	5.35
O. Total area of forest to be retained ...	1.85

PLANTING REQUIREMENTS:

P. Reforestation for clearing above conservation threshold ...	1.34
Q. Reforestation for clearing below conservation threshold ...	0.00
R. Credit for retention above conservation threshold ...	0.28
S. Total reforestation required ...	1.06
T. Total afforestation required ...	0.00
U. Credit for landscaping (may not exceed 20% of "S") ...	0.00
V. Total reforestation and afforestation required ...	1.06

LEGEND

EXISTING CONTOUR	BOUNDARY CORNERS
PROPOSED CONTOUR	PROPOSED STREET LIGHT
EXISTING WOODS LINE	PREMIER AREAS
PROPOSED WOODS LINE	PROPOSED EARTH DIKE
EXISTING STRUCTURE	SOILS BOUNDARY
PROPOSED STRUCTURE	PROP. LOD
EX. OVERHEAD WIRE	PROP. SCE
EX. UTILITY POLE	EXISTING DRAINAGE ESMT
PROP. DRAINAGE ESMT	PROP. WATER AND UTILITY ESMT
PROP. OPEN SPACE FCE	PROP. STREET TREE MAINTENANCE ESMT
PROP. OPEN SPACE SWMF	PROP. SIDEWALK
PROP. SWM ACCESS ROAD	PROP. REFORESTATION AREA
PROP. RECREATION AREA	PROP. NON-WOODY VEGETATION AREA
PROP. STONE CHAMBER	

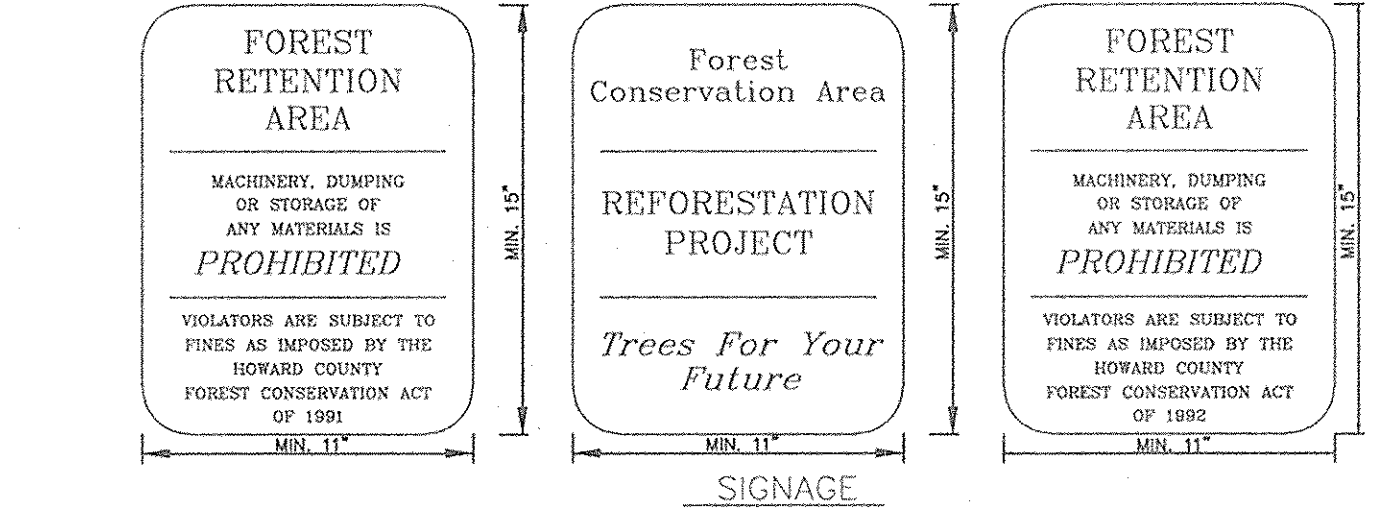


FCP NOTES

- Any Forest Conservation Easement (FCE) area shown hereon is subject to protective covenants which may be found in the Land Records of Howard County which restrict the disturbance and use of these areas.
- Forested areas occurring outside of the FCE shall not be considered part of the FCE and shall not be subject to protective land covenants.
- Limits of disturbance shall be restricted to areas outside the limit of temporary fencing or the FCE boundary, whichever is greater.
- There shall be no clearing, grading, construction or disturbance of vegetation in the Forest Conservation Easement, except as permitted by Howard County DPZ.
- No stockpiles, parking areas, equipment cleaning areas, etc. shall occur within areas designated as Forest Conservation Easements.
- Temporary fencing shall be used to protect the specimen trees during construction. Fencing shall be installed along limits of disturbance occurring within 50 feet of the specimen trees to be retained. Permanent signage will be posted at 50-100 foot intervals along all FCE limits.
- The Forest Conservation Act requirements of this project will be met through the retention of 1.85 acres of forest on the site and 0.09 acres of Forest Conservation Easement. Additional forest conservation obligation will be met by afforestation.
- The Forest Conservation Signage must be in place for perpetuity.
- The Forest Conservation Act requirements for this project will be met through the retention of 1.85 acres of forest on the site and 0.09 acres of onsite planting and payment to the County's fee-in-lieu program for 0.97 acre.

FCE ACREAGE CHART

EASEMENT	RETENTION (NTA)	REFORESTATION
FCE #1	1.85 ACRE	0.09 ACRE
TOTAL	1.85 ACRES	0.09 ACRE



TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

PLANNING DIRECTOR: [Signature]
DATE: [Signature]

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional
USACO Wetland Delineator
Certification # WDCP93MD061004423

John P. Canoles
12/10/08

P.O. Box 5005 Glen Arm, MD 21057 (410) 592-6752

Onsite Planting Area - 0.09 acres
FCE # 1

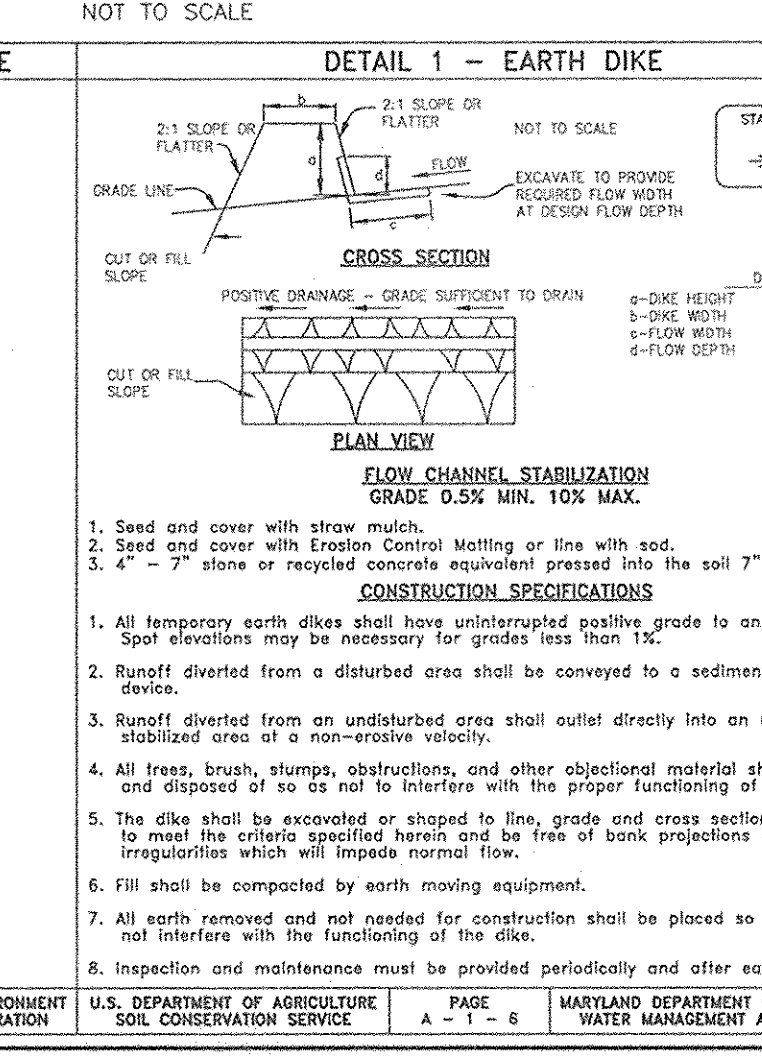
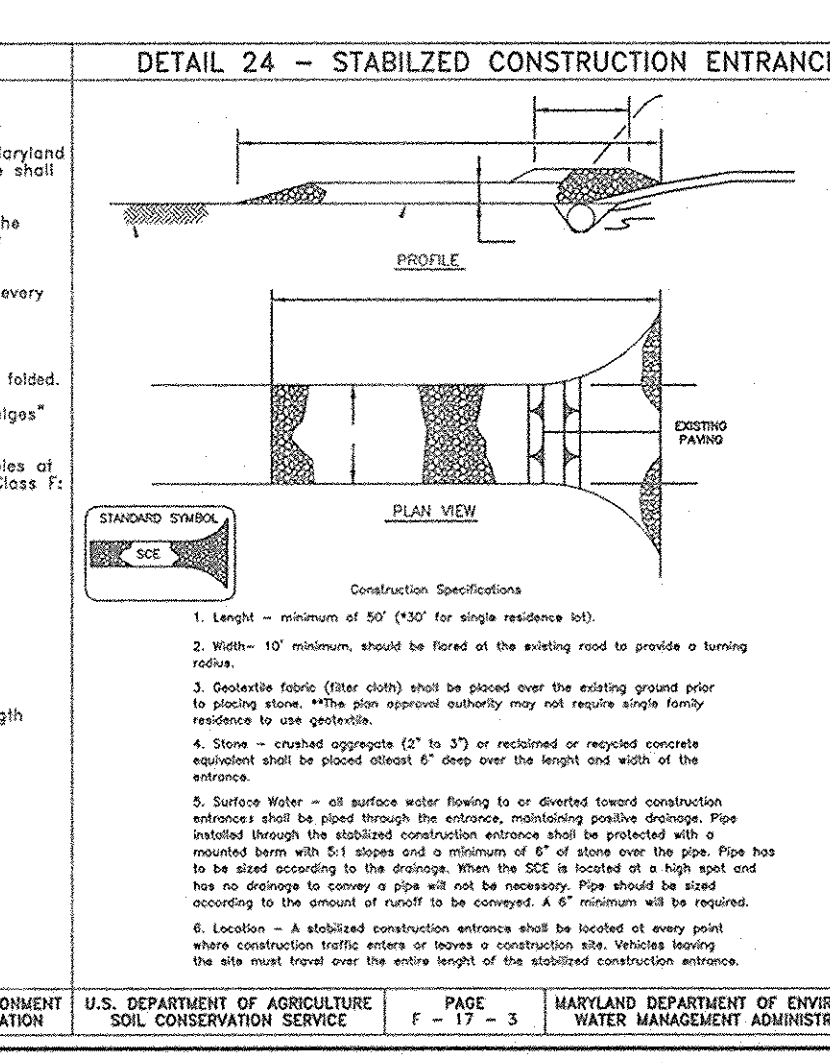
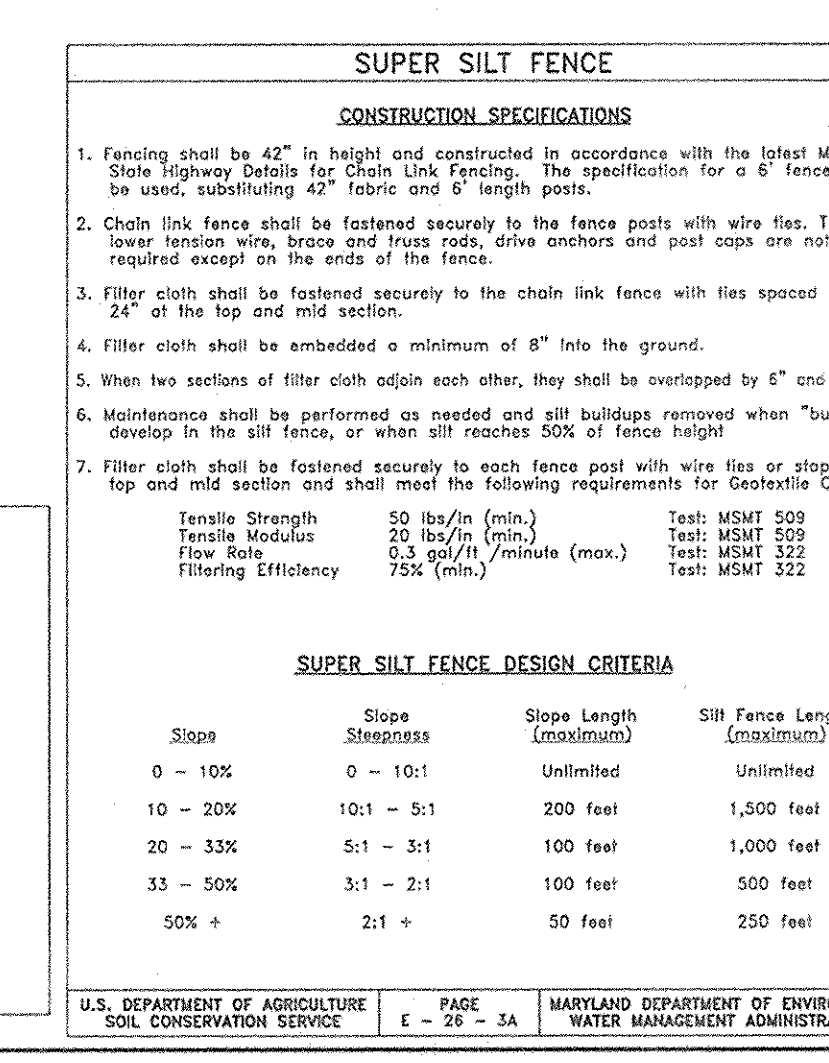
Qty	Species	Size	Spacing
7	Acer rubrum - Red maple	2-3" whip	11' o.c.
5	Acer saccharinum - Silver maple	2-3" whip	11' o.c.
7	Cornus florida - Flowering dogwood	2-3" whip	11' o.c.
3	Liriodendron tulipifera - Tulip poplar	2-3" whip	11' o.c.
2	Prunus serotina - Black cherry	2-3" whip	11' o.c.
2	Quercus alba - White oak	2-3" whip	11' o.c.
2	Quercus rubra - Red Oak	2-3" whip	11' o.c.

Total Qty = 28

Note: Whips will be planted with Tree Shelters.

SUPER SILT FENCE DESIGN CRITERIA

Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 2:1	50 feet	500 feet
50% +	2:1 +	50 feet	250 feet



BENCHMARK ENGINEERING, INC.
ENGINEERS & LAND SURVEYORS & PLANNERS

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ELLICOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644
E-MAIL: be@be-civilengineering.com

DEVELOPER/CONTRACT PURCHASER: COLUMBIA HILLS, LLC
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21041
PHONE: (410) 465-4244

NO. DATE REVISION

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PROJECT: COLUMBIA HILLS SECTION 10
LOT 1 THRU 13 AND O.S. LOTS 14 THRU 16

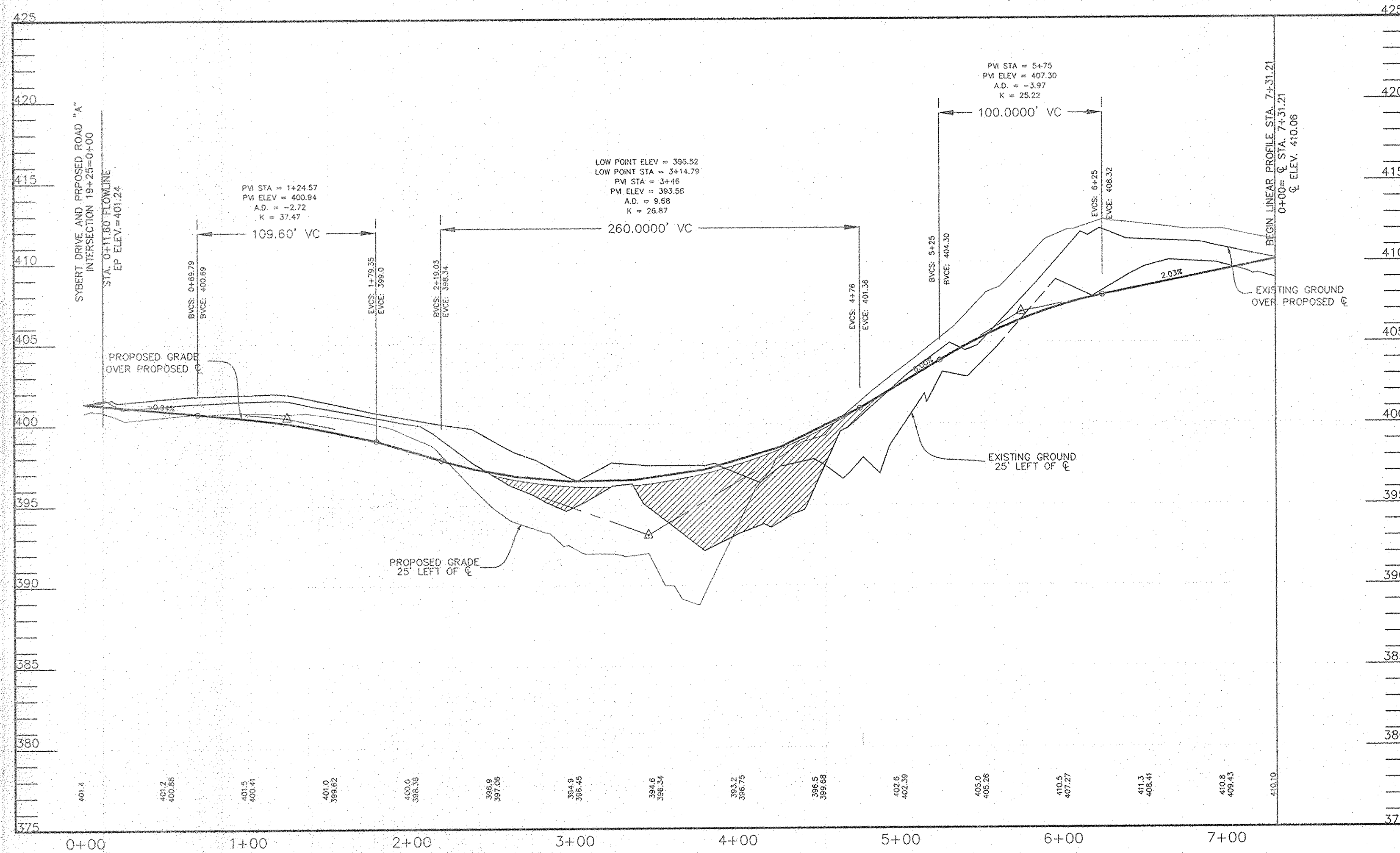
LOCATION: TAX MAP 30 - GRID 05
PARCEL 13 - ZONE: R-20
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: PRELIMINARY EQUIVALENT SKETCH FOREST CONSERVATION PLAN

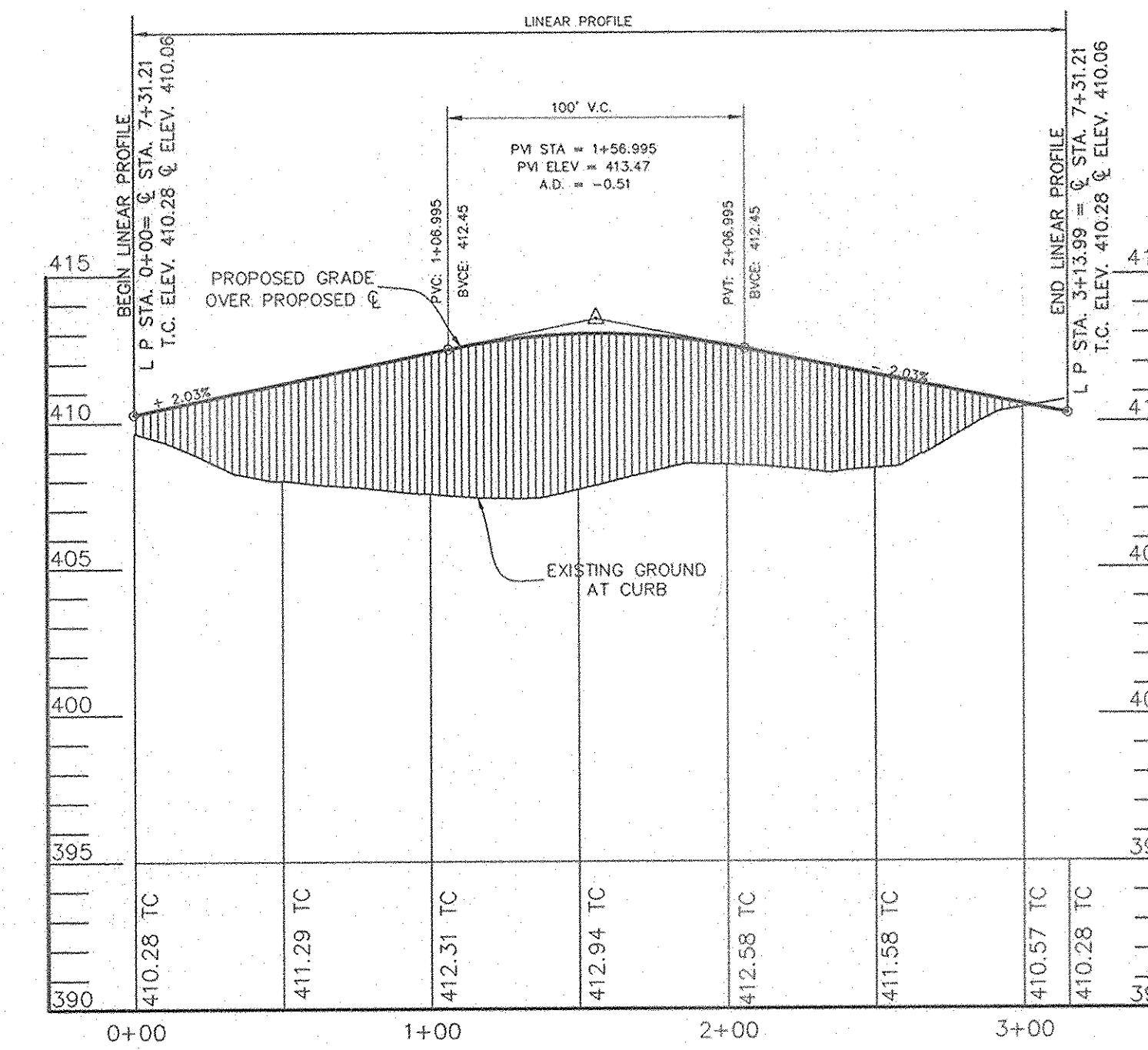
DATE: MAY 2007 PROJECT NO. 1869
JANUARY 2008

SCALE: AS SHOWN DRAWING NO. 08

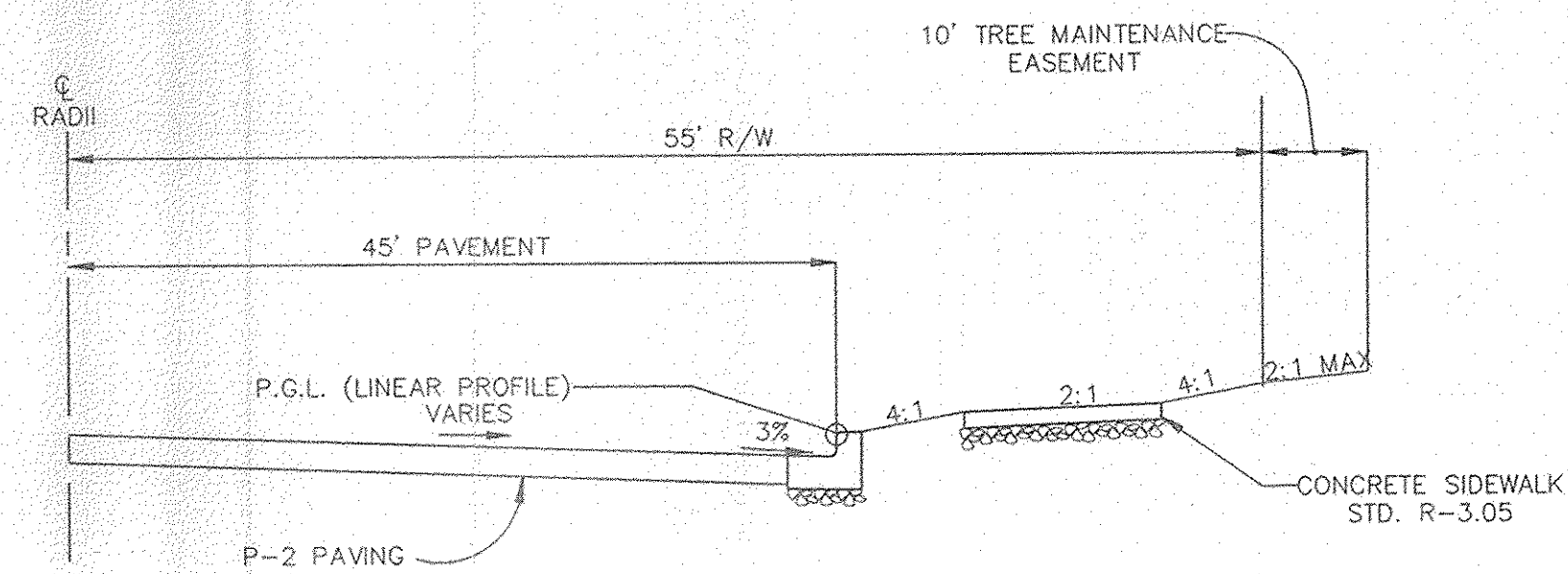
Des: WEO Draft: WEO Check: DAM



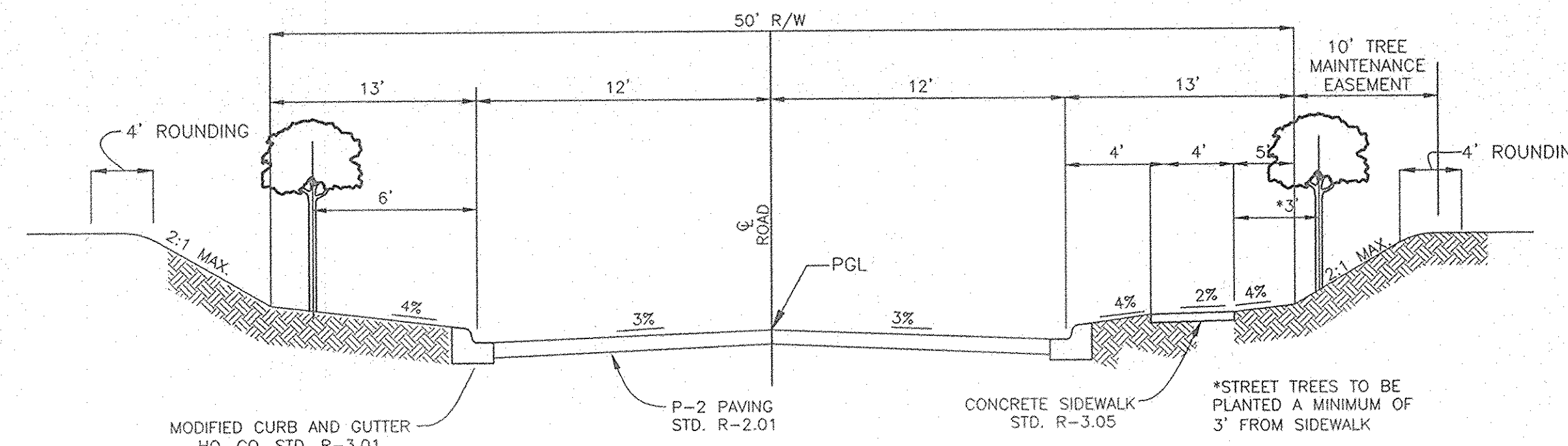
COLUMBIA HILLS COURT PROFILE
(PUBLIC ACCESS PLACE DESIGN SPEED : 15 MPH)
SCALE: HOR: 1" = 50'
VERT: 1" = 5'



COLUMBIA HILLS COURT CUL-DE-SAC LINEAR PROFILE
(PUBLIC ACCESS PLACE DESIGN SPEED : 15 MPH)
SCALE: HOR: 1" = 50'
VERT: 1" = 5'



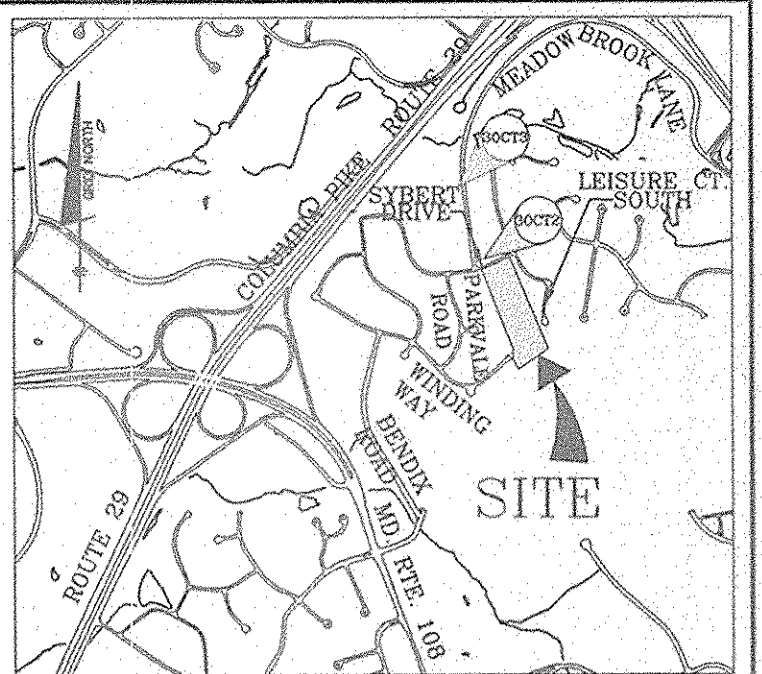
TYPICAL ROADWAY SECTION
AT CUL-DE-SAC
LINEAR PROFILE
NOT TO SCALE



COLUMBIA HILLS COURT
STA. 0+11.6 TO STA. 8+63.89
(PUBLIC ACCESS PLACE - LESS THAN 200 ADT)
DESIGN SPEED: 25 MPH
TYPICAL ROADWAY SECTION
NOT TO SCALE

TENTATIVELY APPROVED
DEPT. OF PLANNING AND
ZONING OF
HOWARD COUNTY
Paul H. [Signature] 4/1/08
PLANNING DIRECTOR DATE

NO.	DATE	REVISION
BENCHMARK ENGINEERING, INC. ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS 8480 BALTIMORE NATIONAL PIKE & SUITE 418 ELLICOTT CITY, MARYLAND 21043 PHONE: 410-465-6105 FAX: 410-465-6644 E-MAIL: bei@bei-civilengineering.com		
DEVELOPER/CONTRACT PURCHASER: COLUMBIA HILLS, LLC P.O. BOX 417 ELLICOTT CITY, MARYLAND 21041 PHONE: (410) 465 - 4244		PROJECT: COLUMBIA HILLS SECTION 10 LOTS 1 THRU 13 AND O.S. LOTS 14 thru 16 LOCATION: TAX MAP 30 - GRID 5 PARCEL 13 - ZONE: R-20 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND TITLE: PRELIMINARY EQUIVALENT SKETCH PLAN ROAD PROFILE DATE: MAY, 2007 PROJECT NO. 1869 SCALE: AS SHOWN DRAWING 6 OF 8
Des: WEO	Draft: WEO	Check: DAM



VICINITY MAP

SCALE: 1"=2000'
ADD MAP No. 15-B1

BENCH MARKS	NAD'83 HORIZONTAL
HO. CO. #30022 3/8" REBAR WITH RED PLASTIC CAP	
N 574179.232'	E 1361312.723'
ELEV. = 388.74	
HO. CO. #30023 3/8" REBAR WITH RED PLASTIC CAP	
N 574812.755'	E 1361173.247'
ELEV. = 386.42	



PLAN
SCALE: 1"=50'

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

Mark A. Lough 4/14/08
PLANNING DIRECTOR DATE

SOILS LEGEND		
MAP SYMBOL	SOIL TYPE	MAPPING UNIT
ChB2	B	CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
GIC2	B	GLENELG LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
MIB2	B	MANOR LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
MIC2	B	MANOR LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
MIC3	B	MANOR LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED
MIB3	B	MANOR LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED
ChB3	B	CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED

SOILS MAP No.20
* - INDICATES HYDRIC SOILS

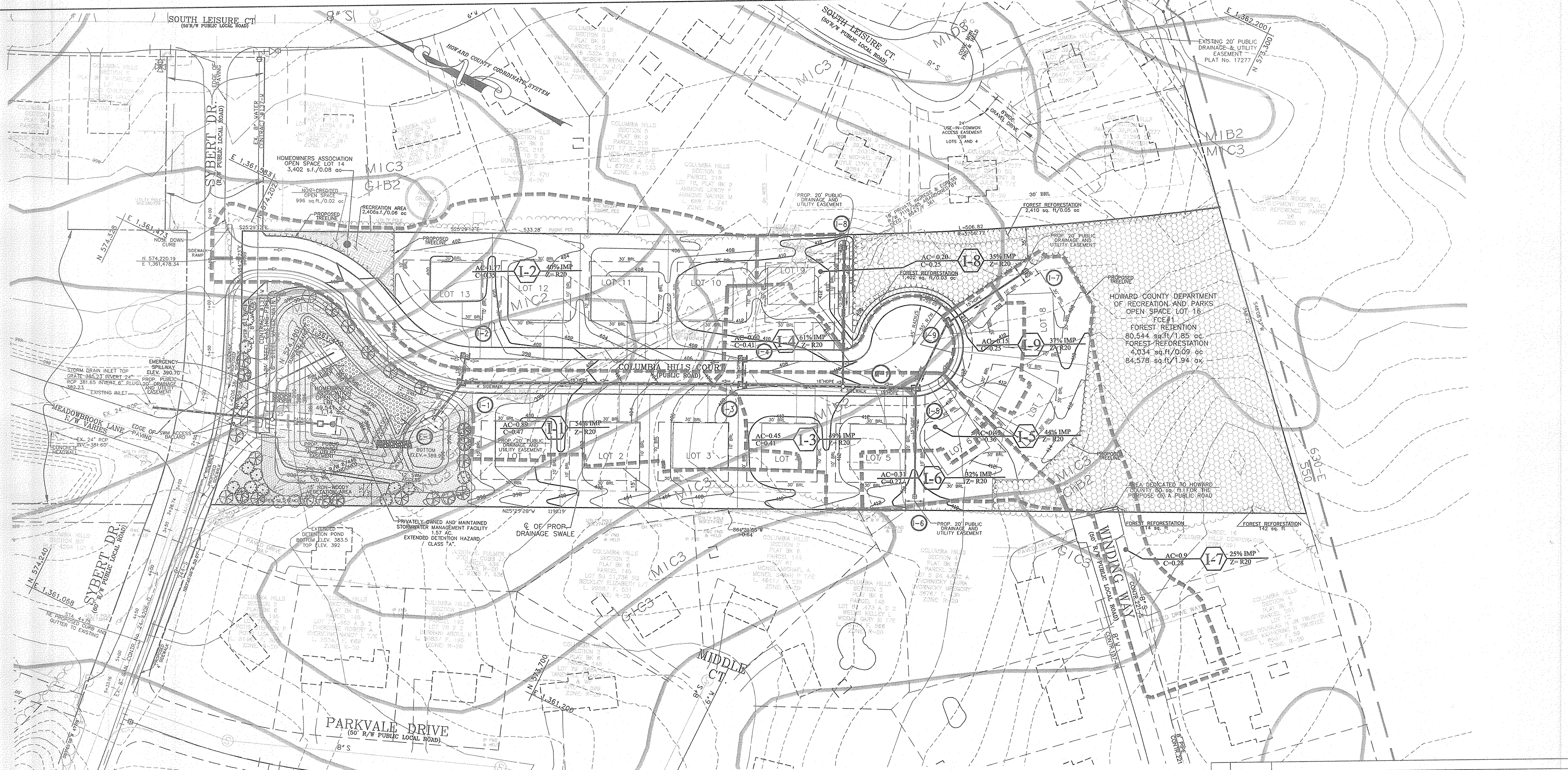
NO.	DATE	REVISION

BENCHMARK
ENGINEERS & LAND SURVEYORS & PLANNERS

ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE & SUITE 418
ELLCOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644
E-MAIL: bbl@bci-civilengineering.com

DEVELOPER/CONTRACT PURCHASER:	PROJECT:
COLUMBIA HILLS, LLC P.O. BOX 417 ELLCOTT CITY, MARYLAND 21041 PHONE: (410) 465 - 4244	COLUMBIA HILLS SECTION 10 LOTS 1 THRU 13 AND O.S. LOTS 14 thru 16
TITLE:	LOCATION:
PRELIMINARY EQUIVALENT SKETCH PLAN SOIL MAP	TAX MAP 30 - GRID 05 PARCEL 13 - ZONE: R-20 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE:	PROJECT NO.:
MAY, 2007	1869
Des: WEO	Draft: WEO
Check: DAM	SCALE: AS SHOWN
DRAWING 7 OF 8	



PLAN
SCALE: 1"=50'

LEGEND

- SOILS CLASSIFICATION *AbC1*
- SOILS DELINEATION
- EXISTING CONTOURS
- EXISTING WOODS LINE
- PROPOSED WOODS LINE
- EXISTING STRUCTURE
- PROPOSED STRUCTURE
- DRAINAGE AREA
- DRAINAGE DIVIDE
- To STUDY PATH
- TREE PROTECTION FENCE
- FCE PERMANENT SIGNAGE
- LIMIT OF DISTURBANCE
- STABILIZED CONSTRUCTION ENTRANCE
- SILT DIVERSION FENCE
- SUPER SILT FENCE
- INLET PROTECTION
- PROP. SWM EASEMENT
- PROP. FOREST CONSERVATION EASEMENT
- PROP. UTILITY EASEMENT
- PROP. RECREATIONAL AREA
- PROP. NON-WOODY VEGETATION AREA
- PROP. NON-CREDITED OPEN SPACE
- PROP. SWM ACCESS

STORM DRAIN RUNOFF

INLET	DA (Ac.)	C	%IMP	ZONE
I-1	0.89	0.47	54	R-20
I-2	1.85	0.35	40	R-20
I-3	0.45	0.41	49	R-20
I-4	0.60	0.54	61	R-20
I-5	0.45	0.36	44	R-20
I-6	0.31	0.27	32	R-20
I-7	0.90	0.28	25	R-20
I-8	0.20	0.19	35	R-20
I-9	0.15	0.25	37	R-20

SYMBOL	HYDRIC	HYDROLOGIC GROUP	NAME
ChB2		B	CHESTER SILT LOAM, 3 TO 8 PERCENT, MODERATELY ERODED
GIB2		B	GLENELG LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
GnB2	YES	C	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
MIB2		B	MANOR LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
MIC2		B	MANOR LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
MIC3		B	MANOR LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED
GIC3		B	GLENELG LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED

TENTATIVELY APPROVED
DEPT. OF PLANNING AND ZONING OF
HOWARD COUNTY
Mark A. Leger 4/4/08
PLANNING DIRECTOR DATE

NO. DATE		REVISION
BENCHMARK ENGINEERS • LAND SURVEYORS • PLANNERS ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE & SUITE 418 ELLICOTT CITY, MARYLAND 21043 PHONE: 410-465-6105 FAX: 410-465-6644 E-MAIL: bel@bel-civilengineering.com		
DEVELOPER/CONTRACT PURCHASER: COLUMBIA HILLS, LLC P.O. BOX 417 ELLICOTT CITY, MARYLAND 21041 PHONE: (410) 465 - 4244		PROJECT: COLUMBIA HILLS SECTION 10 LOTS 13 THRU 13 AND O.S. LOTS 14 THRU 16 LOCATION: TAX MAP 30 - GRID 5 PARCEL 13 - ZONE: R-20 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND TITLE: PRELIMINARY STORM DRAIN DRAINAGE AREA MAP
DATE: APRIL 2007	PROJECT NO. 1869	
DES: WEO	DRAFT: WEO	CHECK: DAM
SCALE: AS SHOWN	DRAWING 8 OF 8	

Donall Mao
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. 21443, Expiration Date: 12-31-2008.