

SITE DEVELOPMENT PLAN

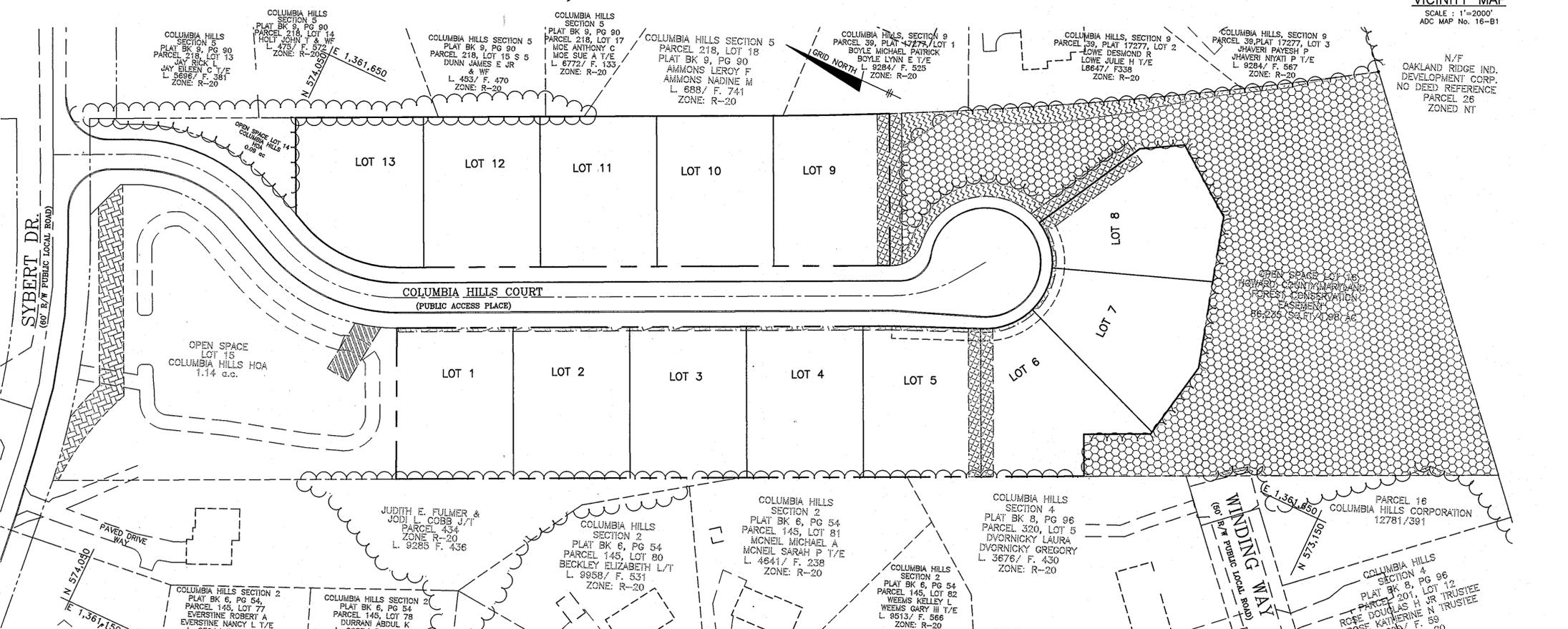
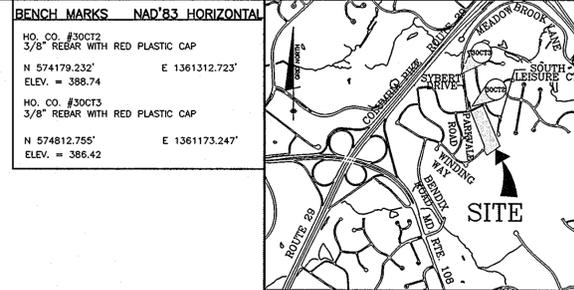
COLUMBIA HILLS SECTION 10

2nd ELECTION DISTRICT

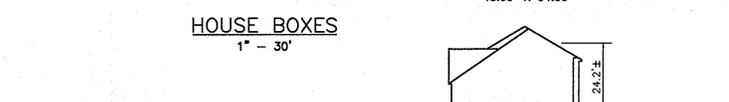
HOWARD COUNTY, MARYLAND

SHEET INDEX	
NO.	DESCRIPTION
1	TITLE SHEET
2	SITE DEVELOPMENT PLAN AND GRADING PLAN
3	SEDIMENT AND EROSION CONTROL PLAN, NOTES AND DETAILS

- GENERAL NOTES**
- THE SUBJECT PROPERTY IS ZONED R-20 PER THE 2/02/04 COMPREHENSIVE ZONING PLAN AND PER COMP. UTE ZONING AMENDMENTS EFFECTIVE 7/28/06.
 - ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
 - THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
 - THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
 - WATER AND SEWER ARE PUBLIC, AND WERE CONSTRUCTED UNDER 24-4519-D.
 - THE BOUNDARY SHOWN IS BASED ON A MSHA PLAT NO. 56982.
 - THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL MONUMENTS 30CT2 & 30CT3, WHICH ARE BASED ON THE MARYLAND STATE PLANE COORDINATE SYSTEM.
 - EXISTING TOPOGRAPHY SHOWN HEREON WAS BASED ON FIELD RUN SURVEY BY BENCHMARK ENGINEERING, INC., DATED JANUARY, 2007 AND ROAD CONSTRUCTION PLANS F-09-006, CONTOUR INTERVAL IS 2 FEET. ALL VERTICAL CONTROLS ARE BASED ON NGVD29.
 - EXISTING UTILITIES SHOWN HEREON ARE BASED ON FIELD LOCATIONS, RECORD DRAWINGS AND PER F-09-006. IF NECESSARY, CONTRACTOR SHALL ADJUST STRUCTURE TOPS TO MEET SDP GRADES.
 - CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO ANY CONSTRUCTION ACTIVITY AND SHALL ADJUST ALL UTILITIES AND RIM ELEVATIONS AS NEEDED TO MATCH THIS PLAN.
 - FOREST STAND DELINEATION PLAN WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. DATED MAY, 2007, AND APPROVED UNDER SP-08-01.
 - THERE ARE NO 100-YEAR FLOODPLAIN, STEEP SLOPES (25% OR GREATER THAN), WETLANDS AND WETLAND BUFFERS ON THE SITE.
 - 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.
 - BRL INDICATES BUILDING RESTRICTION LINE. OTHER RESTRICTIONS MAY APPLY.
 - UNLESS NOTED AS "PRIVATE", ALL EASEMENTS ARE PUBLIC.
 - THIS PLAN IS SUBJECT TO THE 5th EDITION OF THE HOWARD COUNTY SUBDIVISION REGULATIONS AND THE AMENDED HOWARD COUNTY ZONING REGULATIONS.
 - STORMWATER MANAGEMENT WAS PROVIDED IN F-09-006 FOR THIS PROJECT BASED ON GUIDELINES ESTABLISHED BY THE 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUMES I & II. QUANTITY CONTROL SHALL BE PROVIDED BY: AN EXTENDED DETENTION POND (P-3). QUALITY CONTROL SHALL BE PROVIDED BY: A SURFACE SAND FILTER (F-1) AND AN UNDERGROUND STONE REV CHAMBER. THESE BMP'S SHALL BE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION.
 - THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
 - THE FOREST CONSERVATION OBLIGATIONS FOR THIS PROJECT WERE MET THROUGH THE ON-SITE RETENTION OF 1.82 AC. OF FOREST AND 0.11 AC. OF ON-SITE REFORESTATION AND A FEE-IN-LIEU PAYMENT OF \$32,670.00 TO THE HOWARD COUNTY FOREST CONSERVATION FUND FOR ONE ACRE OF REFORESTATION. SURETY IN THE AMOUNT OF \$15,849.40 (79,247 SF x \$0.20) FOR 1.82 AC. OF RETENTION AND \$2,373.50 (4,747 SF x \$0.50) FOR 0.11 AC. OF ON-SITE REFORESTATION FOR A TOTAL OF \$18,222.90 WAS POSTED WITH THE DEVELOPER'S AGREEMENT UNDER F-09-006.
 - IN ACCORDANCE WITH SECTION 129 OF THE HOWARD COUNTY ZONING REGULATIONS; BAY WINDOWS, CHIMNEYS OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS; PORCHES OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK.
 - ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE BUILDERS EXPENSE.
 - MINIMUM BUILDABLE LOT SIZE SHALL BE 12,000 SQUARE FEET.
 - DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS 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 (1-1/2" MIN.)
 - GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM 45' TURNING RADIUS.
 - STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING).
 - DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 10 YEAR FLOODPLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY.
 - STRUCTURE CLEARANCES - MINIMUM 12 FEET.
 - MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
 - ALL WATER METERS SHALL BE SET INSIDE.
 - FOR DRIVEWAY ENTRANCE DETAIL SEE HOWARD COUNTY STANDARD DETAILS R-6.03 & R-6.05.
 - SHO ELEVATIONS SHOWN ARE AT THE PROPERTY LINE OR EASEMENT LINE.
 - THE STAKING OF FOUNDATIONS PRIOR TO CONSTRUCTION TO ENSURE COMPLIANCE WITH REGULATORY BUILDING RESTRICTION LINES IS RECOMMENDED.
 - DRIVEWAY SLOPES SHOWN ARE AVERAGE. THE SLOPE AT THE OUTSIDE EDGES COULD BE FLATTER OR STEEPER DEPENDING ON GRADE OF ROADWAY.
 - THIS PLAN CONFORMS WITH THE AMENDED 5th EDITION OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. THE BUILDER SHALL APPLY FOR BUILDING PERMITS FOR ALL LOTS AS SHOWN ON THIS SITE DEVELOPMENT PLAN WITHIN FIVE YEARS OF SIGNATURE APPROVAL OF THIS PLAN.
 - THE LANDSCAPING AND STREET TREES ARE PROVIDED BY AND BONDED PER F-09-006.
 - PREVIOUS HOWARD COUNTY FILE NUMBERS: SP-08-001, F-09-006 AND WF-09-213.

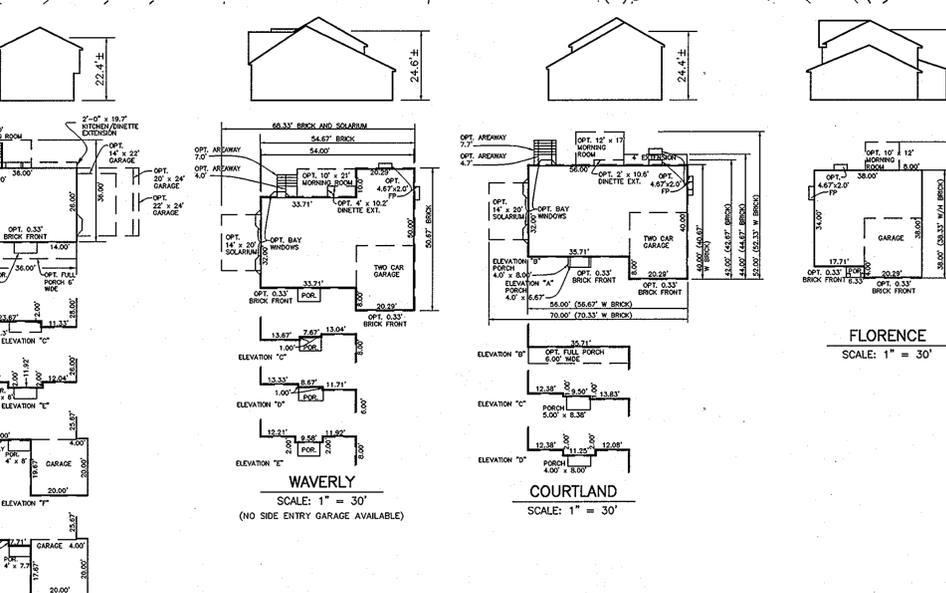


AVAILON:	SAVOY:	WAVELY:	COURTLAND:	FLORENCE:
NO MORNING ROOM				
NO SOLARIUM				
NO FRONT GARAGE				
NO MORNING ROOM				
NO SOLARIUM				
NO FRONT GARAGE				
NO MORNING ROOM				
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NO FRONT GARAGE				
NO MORNING ROOM				
NO SOLARIUM				
NO FRONT GARAGE				



SITE ANALYSIS DATA CHART

A) TOTAL PROJECT AREA	3.58 AC.±
B) AREA OF THIS PLAN SUBMISSION	3.58 AC.±
C) APPROXIMATE LIMIT OF DISTURBANCE	3.53 AC.±
D) PRESENT ZONING	R-20
E) PROPOSED USE OF SITE	RESIDENTIAL SINGLE FAMILY DETACHED UNITS
F) FLOOR SPACE PER LOT	N/A
G) TOTAL NUMBER OF UNITS ALLOWED AS SHOWN ON FINAL PLATS	13
H) TOTAL NUMBER OF UNITS PROPOSED	13
I) MAXIMUM NUMBER OF EMPLOYEES PER USE	N/A
J) NUMBER OF PARKING SPACES REQUIRED BY HO. CO. ZONING REGULATIONS	N/A
K) NUMBER OF PARKING SPACES PROVIDED	N/A
L) OPEN SPACE ON-SITE PERCENTAGE OF GROSS AREA	3.21 AC.± (F-09-006) 40.5%
M) AREA OF RECREATIONAL OPEN SPACE REQUIRED PERCENTAGE OF GROSS AREA	0.08 AC.± (F-09-006) 0.96 AC.± (F-09-006)
N) BUILDING COVERAGE OF SITE PERCENTAGE OF GROSS AREA	N/A
O) APPLICABLE DPZ FILE REFERENCES:	SP-08-001, F-09-006 CONTRACT # 24-4519-D
P) PROPOSED WATER AND SEWER SYSTEMS:	X PUBLIC PRIVATE

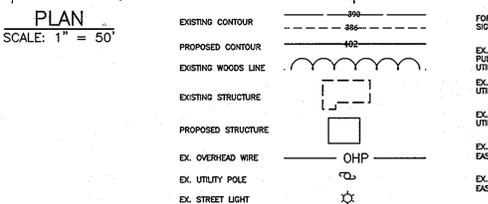


APPROVED: DEPARTMENT OF PLANNING AND ZONING

Keith Sheehy 5/06/10
CHIEF, DIVISION OF LAND DEVELOPMENT

David Chavira 4/8/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Thomas E. Suter 5/6/10
DIRECTOR



ADDRESS CHART

LOT	STREET ADDRESS	LOT	STREET ADDRESS
1	4714 COLUMBIA HILLS COURT	8	4737 COLUMBIA HILLS COURT
2	4718 COLUMBIA HILLS COURT	9	4727 COLUMBIA HILLS COURT
3	4722 COLUMBIA HILLS COURT	10	4723 COLUMBIA HILLS COURT
4	4726 COLUMBIA HILLS COURT	11	4719 COLUMBIA HILLS COURT
5	4730 COLUMBIA HILLS COURT	12	4715 COLUMBIA HILLS COURT
6	4734 COLUMBIA HILLS COURT	13	4711 COLUMBIA HILLS COURT
7	4738 COLUMBIA HILLS COURT		

PERMIT INFORMATION CHART

SUBDIVISION NAME:	SECTION/AREA:	LOT #
COLUMBIA HILLS	SECTION 10	LOTS 1 - 13
PLAT No.	GRID No.	ZONE
21099 - 21101	05	R-20
TAX MAP	ELECTION DISTRICT	CENSUS TRACT
30	2nd	6023.02

BENCHMARK ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE SUITE 418
ELLICOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644
E-MAIL: bei@benchmarkengineering.com

STATE OF MARYLAND
PROFESSIONAL ENGINEER
3/31/2010

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. 28559, Expiration Date: 07-22-2011.

NO.	DATE	REVISION

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

BUILDER: RYAN HOMES, INC.
6031 UNIVERSITY BOULEVARD
SUITE 250
ELLICOTT CITY, MARYLAND 21043
PHONE: 410-796-0980

PROJECT: COLUMBIA HILLS SECTION 10
LOTS 1 THRU 13

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

TITLE: COVER SHEET

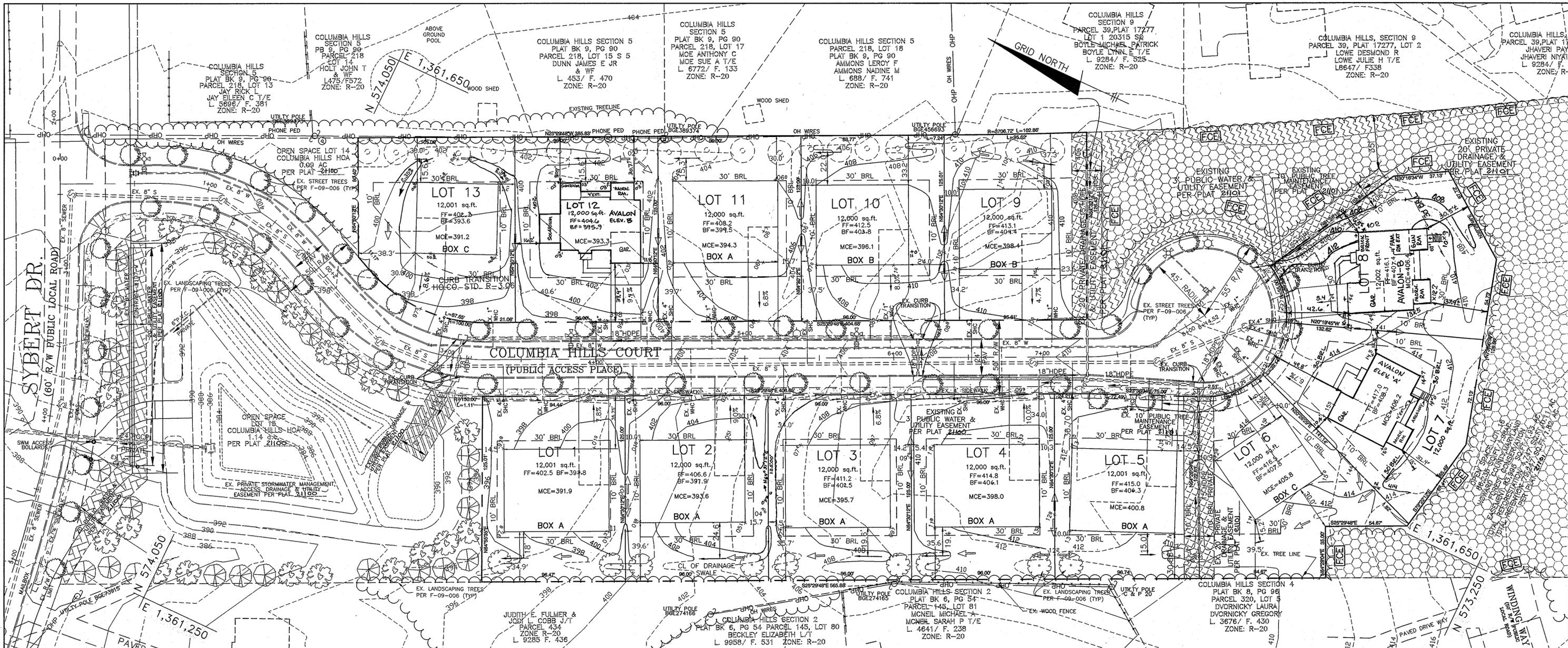
DATE: NOVEMBER, 2009
APRIL, 2010

PROJECT NO. 2317

Des: AAM Draft: AAM Check: JC/BFC

SCALE: AS SHOWN DRAWING 1 OF 3

SDP-10-051



LOT NO.	INVERT AT MAIN	INVERT AT SHC	INVERT AT R/W OR EASEMENT	MCE
LOT 1	386.87	387.04	387.51	391.9
LOT 2	388.63	388.80	389.28	393.6
LOT 3	390.67	390.84	391.32	395.7
LOT 4	392.98	393.15	393.63	398.0
LOT 5	395.76	395.93	396.42	400.8
LOT 6	400.64	400.81	401.60	405.8
LOT 7	401.00	401.17	401.77	406.2
LOT 8	401.00	401.17	401.75	406.4
LOT 9	393.22	393.39	393.97	398.4
LOT 10	390.99	391.16	391.74	396.1
LOT 11	389.15	389.32	389.90	394.3
LOT 12	388.13	388.30	388.88	393.3
LOT 13	385.97	386.14	386.81	391.2

CONTRACTOR TO CHECK SEWER HOUSE CONNECTION ELEVATION AT PROPERTY/EASEMENT LINE PRIOR TO CONSTRUCTION OF HOUSE TO ENSURE PROPER SHC SLOPES CAN BE MAINTAINED.

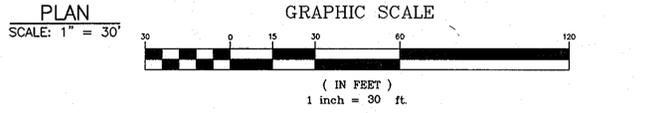
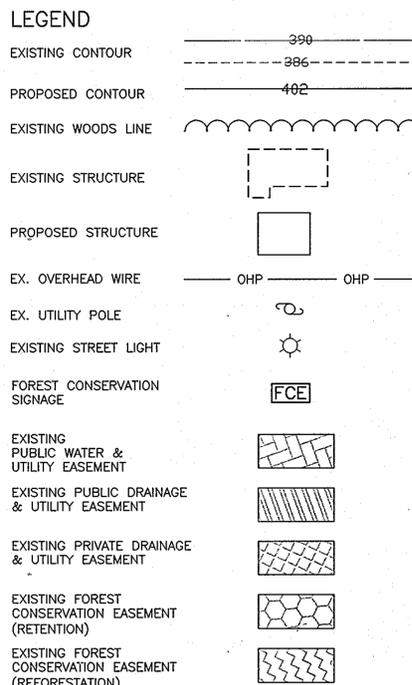
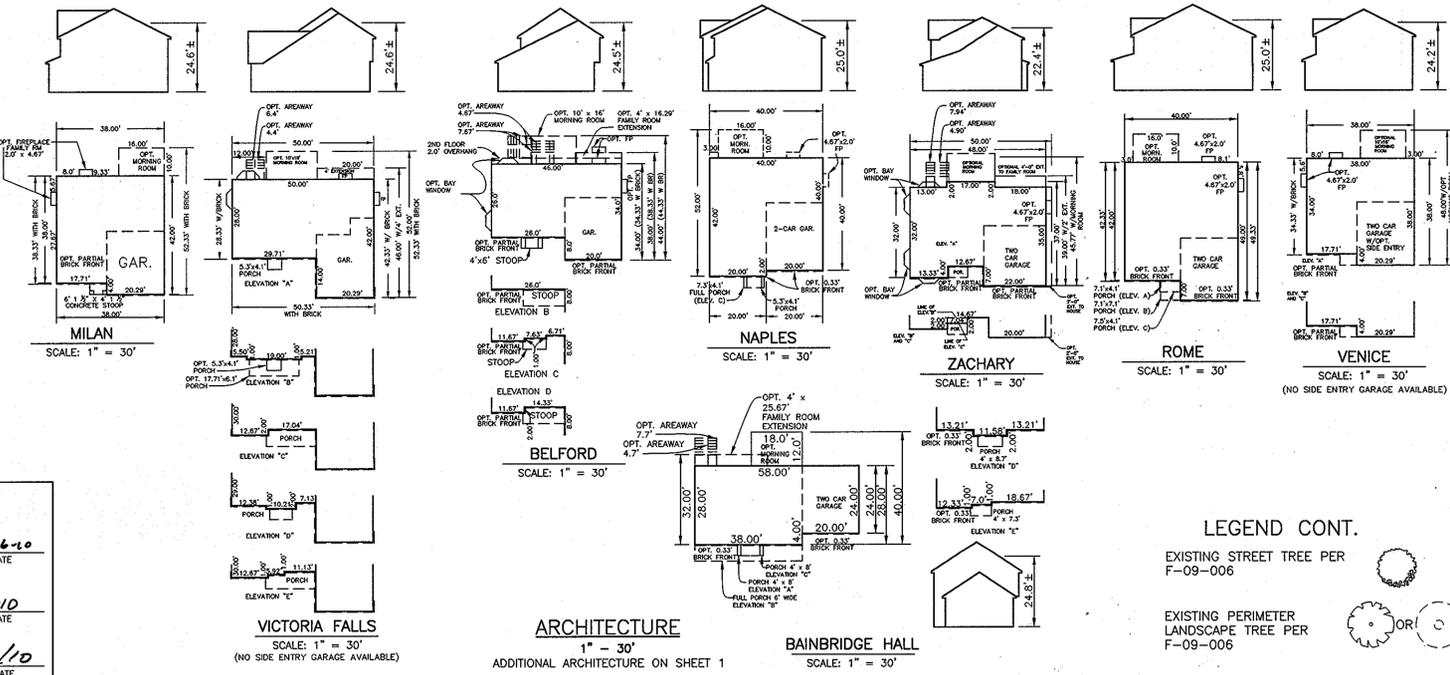
NOTE: THE LANDSCAPE AND STREET TREES ARE PROVIDED BY AND BONDED PER F-09-006.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Vit Shalva 5-06-10
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Chad Edwards 4-8-10
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Thomas & Buttle 5-16-10
 DIRECTOR DATE



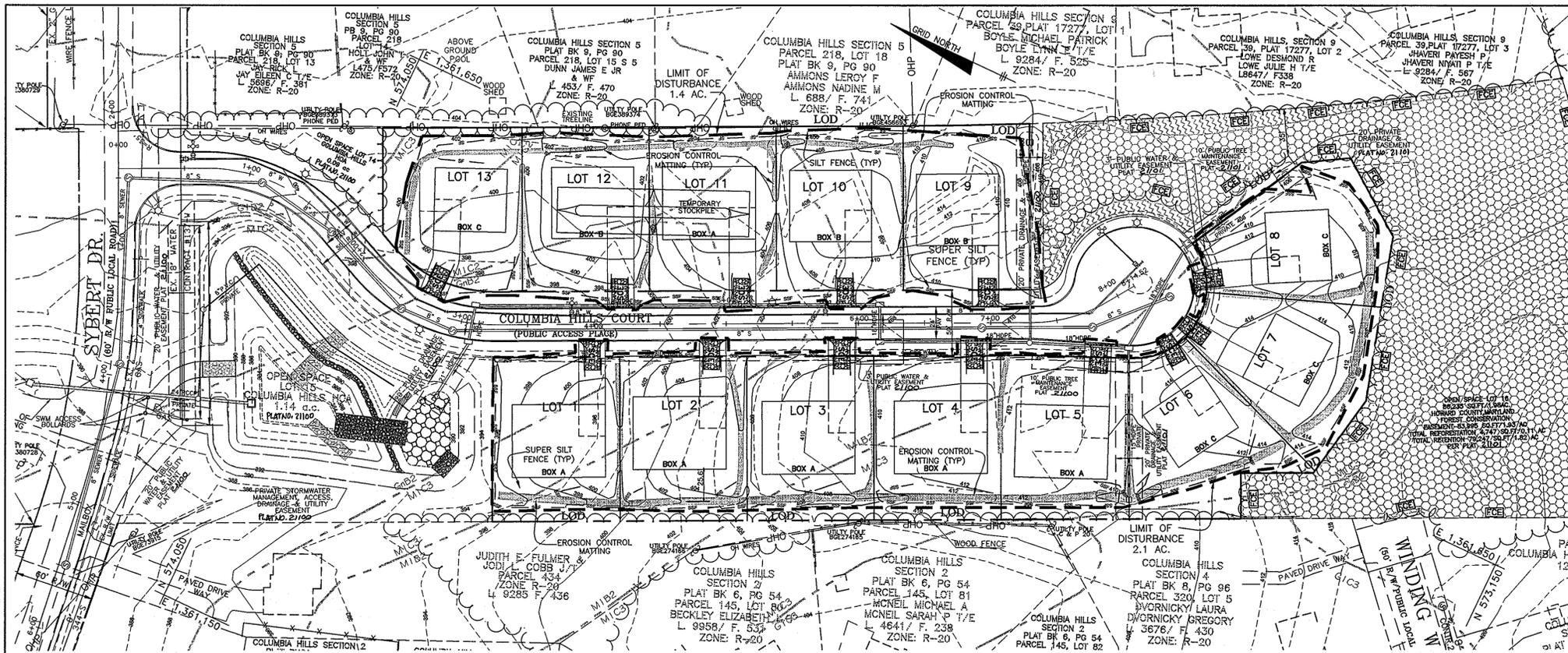
NO.	DATE	REVISION
4	11-12-2010	REVISE GRADES ON LOT 8 PER AS-BUILT CONDITION
3	9-15-2010	SHOW AVALON 'B' SETTING ON, SURROUND, 5'4" FROM EXT. REMOVE GEN. BOX AND RAISE GRADES ON LOT 8
2	8-10-10	SHOW AVALON 'B' EXT. MODERN, SURROUND, 4'4" FROM EXT. DELETE GEN. BOX & REVISE GRADES
1	6-24-10	REVISE BASEMENT, FIRST FLOOR AND SLOPE ELEVATIONS

BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS

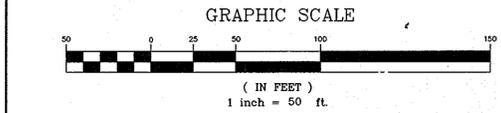
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 ELLICOTT CITY, MARYLAND 21043
 PHONE: 410-465-6105 FAX: 410-465-6644
 E-MAIL: bei@benchmarkengineering.com

Professional Certification: I hereby certify that these documents were prepared by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 28559, Expiration Date: 07-22-2011.

DEVELOPER: COLUMBIA HILLS, LLC P.O. BOX 417 ELLICOTT CITY, MARYLAND 21041 PHONE: 410-465-4244	PROJECT: COLUMBIA HILLS SECTION 10 LOTS 1 THRU 13
BUILDER: RYAN HOMES, INC. 6031 UNIVERSITY BOULEVARD SUITE 250 ELLICOTT CITY, MARYLAND 21043 PHONE: 410-796-0980	LOCATION: TAX MAP 30 - GRID 05 PARCEL 13 - ZONE: R-20 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE: SITE DEVELOPMENT PLAN AND GRADING PLAN	DATE: NOVEMBER 2009 APRIL 2010
Des: AAM Draft: AAM Check: JC/BFC	PROJECT NO. 2317 SCALE: AS SHOWN DRAWING 2 OF 3



PLAN
SCALE: 1" = 50'



LEGEND

EXISTING CONTOUR		FOREST CONSERVATION SIGNAGE	
PROPOSED CONTOUR		FOREST CONSERVATION EASEMENT (RETENTION)	
EXISTING WOODS LINE		FOREST CONSERVATION EASEMENT (REFORESTATION)	
EXISTING STRUCTURE		SILT FENCE	
PROPOSED STRUCTURE		SUPER SILT FENCE	
EX. OVERHEAD WIRE		EROSION CONTROL MATTING	
EX. UTILITY POLE		SOILS BOUNDARY	
PROPOSED STREET LIGHT		LIMIT OF DISTURBANCE	
		PROP. STABILIZED CONSTRUCTION ENTRANCE	

SOILS LEGEND

MAP SYMBOL	SOIL TYPE	MAPPING UNIT
GbB	B	GLENELG LOAM, 3 TO 8 PERCENT SLOPES
GhB	B	GLENELG-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES
MaC	B	MANOR LOAM, 8 TO 15 PERCENT SLOPES
MaD	B	MANOR LOAM, 15 TO 25 PERCENT SLOPES
Co	B	CODORUS AND HATBORO SILT LOAMS, 0 TO 3 PERCENT SLOPES

SEQUENCE OF CONSTRUCTION

- NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF CONSTRUCTION
- DAY 1-1) OBTAIN GRADING PERMIT.
 - DAY 2-6) 2) INSTALL SEDIMENT CONTROLS THAT ARE NOTED TO BE INSTALLED UNDER THIS SOP.
 - DAY 7-10) 3) EXCAVATE FOR FOUNDATIONS, ROUGH GRADE AND STABILIZE IN ACCORDANCE WITH TEMPORARY SEEDBED NOTES.
 - DAY 11-80) 4) CONSTRUCT HOUSES, BACKFILL AND CONSTRUCT DRIVEWAYS.
 - DAY 81-85) 5) FINAL GRADE AND STABILIZE IN ACCORDANCE WITH PERMANENT SEEDBED NOTES AND FLUSH STORM DRAIN SYSTEM.
 - DAY 86-89) 6) WITH THE APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES AND STABILIZE ANY REMAINING DISTURBED AREA.
- NOTE: - - - INDICATES SINGLE HOUSE CONSTRUCTION.
- EROSION CONTROL MATTING SHALL BE PLACED IN SWALES WHERE DEEMED NECESSARY UNTIL VEGETATION IS ESTABLISHED OR SOLID SOIL SHOULD BE USED.

TOPSOIL SPECIFICATIONS

- Topsoil salvaged from the existing site may be used provided that it meets standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be determined from the representative soil profile section in the Soil Survey published by USGS in cooperation with Maryland Agricultural Experiment Station.
 - Topsoil Specifications - Soil to be used as topsoil must meet the following:
 - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting texture subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1-1/2" in diameter.
 - Topsoil must be free of plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nutsedge, poison ivy, thistle, or others as specified.
 - Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedure.
 - For sites having disturbed areas over 5 acres:
 - Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
 - For sites having disturbed areas over 5 acres:
 - On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
 - pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
 - Organic content or topsoil shall be not less than 1.5 percent by weight.
 - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
 - No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.
- Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

SEDIMENT CONTROL NOTES

- A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION. (1313-1850).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RESTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A 7 CALENDAR DAYS FOR ALL PERMETER SEDIMENT CONTROL STRUCTURES, DICES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1. (B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNED SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 51) SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:

TOTAL AREA OF SITE (THIS SUBMISSION)	3.58 ACRES
AREA DISTURBED	3.5 ACRES
AREA TO BE ROOFED OR PAVED	1.1 ACRES
AREA TO BE VEGETATIVELY STABILIZED	2.4 ACRES
TOTAL CUT	5590 CY
TOTAL FILL	5590 CY
OFFSITE WASTE/BORROW AREA LOCATION	*

*IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY THE SPILL/BORROW SITE AND NOTIFY AND OBTAIN APPROVAL FROM THE SEDIMENT CONTROL DIVISION OF THE SITE AND ITS GRADING PERMIT NUMBER AT THE TIME OF CONSTRUCTION.
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

TEMPORARY SEEDBED PREPARATIONS

- APPLY TO GRADED OR GRADED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.
- SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
- SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT).
- SEEDING: FOR PERIOD MARCH 1 THROUGH APRIL 30 AND FROM AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 2-1/2 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT) FOR THE PERIOD MAY 1 THROUGH AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (0.7 LBS/1000 SQ FT) FOR THE PERIOD NOVEMBER 16 THROUGH FEBRUARY 28. PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.
- MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FT OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.
- REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

PERMANENT SEEDBED PREPARATIONS

- SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
- SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:
- PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL AT TIME OF SEEDING. APPLY 400 LBS PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ FT).
 - ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.
- SEEDING: FOR THE PERIODS MARCH 1 THROUGH APRIL 30 AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SQ FT) OF KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (0.5 LBS/1000 SQ FT) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY: OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS PER ACRE OF KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS PER ACRE OF WELL ANCHORED STRAW.
- MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.
- MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

ENGINEER'S CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CONSERVATION DISTRICT.

ENGINEER: *[Signature]* 3/31/2010 DATE

DEVELOPER'S CERTIFICATE

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD COUNTY CONSERVATION DISTRICT.

BUILDER: *[Signature]* 3-5-10 DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY CONSERVATION DISTRICT.

[Signature] 9/11/10 DATE

HOWARD SCD

DETAIL 22 - SILT FENCE

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum cut, or 1 3/4" diameter (minimum) round end shall be of good quality hardwood. Steel posts will be standard T or U section weighing not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples of top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft/minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

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DETAIL 33 - SUPER SILT FENCE

CONSTRUCTION SPECIFICATIONS

- Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.
- Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
- Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
- Filter cloth shall be embedded a minimum of 8" into the ground.
- When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
- Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height.
- Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft/minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

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	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

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DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

CONSTRUCTION SPECIFICATIONS

- Length - minimum of 50' (200' for single residence lot).
- Width - 10' minimum, should be flared at the existing road to provide a turning radius.
- Geotextile fabric (either cloth) shall be placed over the existing ground prior to placing stone. The plan approval authority may not require stone filter residence to use geotextile.
- Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the strip, and width of the entrance.
- Surface Water - all surface water flowing to or directed toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be secured with a rounded beam with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCD is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
- Location - A stabilized construction entrance shall be located at every spot where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

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DETAIL 30 - EROSION CONTROL MATTING

CONSTRUCTION SPECIFICATIONS

- KEY-IN THE MATTING BY PLACING THE TOP ENDS OF THE MATTING IN A NARROW TRENCH, 6" IN DEPTH. BACKFILL THE TRENCH AND TAMP FIRMLY TO CONFORM TO THE CHANNEL CROSS-SECTION. SECURE WITH A ROW OF STAPLES ABOUT 4" DOWN SLOPE FROM THE TRENCH. SPACING BETWEEN STAPLES IS 6".
- STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES.
- BEFORE STAPLING THE OUTER EDGES OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL.
- STAPLES SHALL BE PLACED 2' APART WITH 4 ROWS FOR EACH STRIP, 2 OUTER ROWS AND 2 ALTERNATING ROWS DOWN THE CENTER.
- WHEN ONE ROLL OF MATTING ENDS AND ANOTHER BEGINS, THE END OF THE TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4". SHIMLAP FASTENERS SHALL BE USED TO SECURE THE DOUBLE ROW OF STAPLES SPACED 6' APART IN A STAGGERED PATTERN ON EITHER SIDE.
- THE DISCHARGE END OF THE MATTING ROLL SHOULD BE SECURELY SECURED WITH 2" DOUBLE ROWS OF STAPLES.

NOTE: IF FLOW WILL ENTER FROM THE EDGE OF THE MATTING THEN THE AREA IMPROVED BY THE FLOW MUST BE REVEGETATED.

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BENCHMARK

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PROJECT: COLUMBIA HILLS SECTION 10 LOTS 1 THRU 13

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

TITLE: SEDIMENT AND EROSION CONTROL PLAN, NOTES AND DETAILS

DATE: NOVEMBER, 2009 PROJECT NO. 2317
APRIL, 2010

SCALE: AS SHOWN DRAWING 3 OF 3

Des: AM Draft: AM Check: JC/BFC