

SHEET INDEX	
NO.	DESCRIPTION
1	COVER SHEET
2	SITE DEVELOPMENT & GRADING PLAN, STORMWATER MANAGEMENT DETAILS AND SEC SWALE COMPUTATIONS
3	SEDIMENT CONTROL PLAN, NOTES AND DETAILS

GENERAL NOTES

- THE SUBJECT PROPERTY IS ZONED R-ED PER THE 2/02/04 COMPREHENSIVE ZONING PLAN AND PER COMP. LITE ZONING AMENDMENTS EFFECTIVE 7/28/06.
- PROJECT BOUNDARY AND TOPOGRAPHY ARE BASED ON FIELD RUN BOUNDARY SURVEY AND TOPOGRAPHY PERFORMED BY BENCHMARK ENGINEERING INC. MAY 5, 2005 AND ROAD CONSTRUCTION PLANS F-12-074. ALL VERTICAL CONTROLS ARE BASED ON NAVD83.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM MONUMENTS NOS. 3168 AND 3167 WERE USED FOR THIS PROJECT.
- WATER AND SEWER ARE PUBLIC AND EXISTING UTILITIES ARE BASED ON CONTRACT 14-4741-D.
- STORMWATER MANAGEMENT METHODS WERE DESIGNED BASED ON THE 2000 MARYLAND STORMWATER DESIGN MANUAL, 2007 REVISIONS. QUALITY TREATMENT SHALL BE PROVIDED BY ROADSIDE GRASS SWALES AND MICROBIORETENTION FACILITIES LOCATED IN HOMEOWNERS ASSOCIATION OPEN SPACE LOTS 8 AND 9 AS SHOWN ON F-12-074 AND ON-LOT RAIN GARDENS AS DETAILED ON THIS PLAN. SWALES SHALL BE PUBLICLY OWNED AND JOINTLY MAINTAINED BY THE HOMEOWNER'S ASSOCIATION AND HOWARD COUNTY. ON-LOT RAIN GARDENS ON LOTS 6, 10 AND 11 SHALL BE OWNED AND MAINTAINED BY THE HOME OWNER.
- EXISTING UTILITIES SHOWN WERE TAKEN FROM RECORD DRAWINGS PER F-12-074. IF NECESSARY, CONTRACTOR SHALL ADJUST STRUCTURE TOPS TO MEET SDP GRADES.
- ALL WATER METERS SHALL BE SET INSIDE.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WAS POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT FOR FINAL PLAN F-12-074.
- THE WETLANDS DELINEATION STUDY FOR THIS PROJECT WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. DATED NOV 25, 2005 AND WAS APPROVED UNDER SP-06-012.
- 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.
- FINAL PLAN F-12-075 COMPLIED WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION THROUGH THE ON-SITE RETENTION OF 1.2 ACRES FOREST WITHIN THE LIMITS OF A FOREST CONSERVATION EASEMENT. THIS RETENTION EQUALS THE BREAK-EVEN POINT THRESHOLD AND THEREFORE NO ADDITIONAL PLANTING IS REQUIRED.
- UNLESS NOTED AS "PRIVATE", ALL EASEMENTS ARE PUBLIC.
- BRL INDICATES ZONING BUILDING RESTRICTION LINE, OTHER RESTRICTIONS MAY APPLY.
- IN ACCORDANCE WITH SECTION 128 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, AND SUNROOMS AND ROOM EXTENSIONS MAY PROJECT 10 FEET INTO A REAR SETBACK, ALONG NOT MORE THAN 60% OF THE REAR FACE OF A DWELLING ON A LOT WHICH ADJOINS OPEN SPACE ALONG THE MAJORITY OF THE REAR LOT LINE.
- ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE BUILDERS EXPENSE.
- FOR FLAG OR PIPE STEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPE STEM AND ROAD RIGHT OF WAY LINE ONLY AND NOT ONTO THE FLAG OF PIPE STEM LOT DRIVEWAY.
- 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 MAXIMUM 45' TURNING RADIUS.
 - STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING).
 - 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.
- OPEN SPACE LOTS 8 AND 9 ARE OWNED BY THE HOA PER F-12-075.
- TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO HISTORIC FEATURES OR CEMETERIES ON THIS SITE. A CEMETERY EXISTS ON THE ADJACENT PROPERTY TO THE NORTH (TAX MAP 31, PARCEL 798), BUT NO BURIAL SPACES ARE APPARENT WITHIN 50' OF THIS PROJECT. HOWEVER, IF ANY EVIDENCE OF BURIAL OR GRAVES IS DISCOVERED, THE DEVELOPER WILL BE SUBJECT TO SECTION 16.1305 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. BURIAL GROUNDS WILL NOT BE DISTURBED EXCEPT AS PERMITTED BY STATE LAW.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- FOR DRIVEWAY ENTRANCE DETAIL SEE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL 75-2003 AND THE ZONING REGULATIONS AS AMENDED BY COUNCIL BILL 75-2003. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN OR BUILDING/GRADING PERMIT.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100 YEAR FLOODPLAIN.
- A DESIGN MANUAL WAIVER UNDER F-12-074 WAS APPROVED JUNE 21, 2010, ALLOWING PAYMENT OF FEE-IN-LIEU FOR FRONTAGE IMPROVEMENTS ALONG ILLICOTT AND LANDING ROAD. THE APPROVED FEE-IN-LIEU AMOUNTS ARE \$19,400 FOR ILLICOTT ROAD, AND \$74,500 FOR LANDING ROAD; HOWEVER, IF THE COSTS OF UTILITY POLE RELOCATION ARE REDUCED AS A RESULT OF A BGE COST REDUCTION, THESE FEE IN LIEU AMOUNTS MAY BE REDUCED ACCORDINGLY. A DESIGN MANUAL WAIVER REQUEST TO UTILIZE OPEN SECTION ROAD AND A USE IN COMMON DRIVEWAY WAS DENIED ON THE SAME DATE.
- A DESIGN MANUAL WAIVER WAS REQUESTED TO WAIVE THE REQUIREMENT THAT A DRAINAGE SWALE BE LOCATED 15' FROM A RESIDENTIAL STRUCTURE, AND A STORMWATER SWALE BE LOCATED 25' FROM A RESIDENTIAL STRUCTURE. THIS WAIVER WAS APPROVED JANUARY 6, 2012 BASED ON DEMONSTRATING LIMITED SIZES OF DRAINAGE AREA AND NO IMPACT ON OTHER PROPERTIES.
- A DESIGN MANUAL WAIVER WAS APPROVED APRIL 4, 2012 ESTABLISHING TYPICAL ROAD SECTIONS FOR THE PROJECT WHICH INCLUDE CLOSED SECTION ROAD, OPEN-BACK FLOW THROUGH INLETS AND GRASS SWALES FOR STORMWATER TREATMENT.
- WAIVER PETITION WP-11-183 REQUESTED RELIEF FROM SECTION 16.155(g)(2)(ii) WHICH REQUIRES A SITE DEVELOPMENT PLAN. THIS RELIEF WAS SOUGHT TO CONSTRUCT A MODEL HOME IN ADVANCE OF THE FINAL SUBDIVISION, AND WAS DENIED JUNE 3, 2011.
- THE FOLLOWING HOWARD COUNTY DPZ PLAN NUMBER RELATE TO THIS PROPERTY: SP-06-012, ECP-11-060, PB CASE 380, WP-11-183, WP-13-125, F-12-075, W/S 14-4741-D, SOP-13-050.
- WP-13-125 WAS APPROVED ON MARCH 6, 2013, AND GRANTED AN EXTENSION TO THE SIGNATURE TIME FRAMES IN SECTIONS 16.144(p)(4)(c). THE APPROVAL IS SUBJECT TO 1. PAYMENT OF FEES AND POSTING OF BONDS BY MAY 9, 2013; 2. SUBMISSION OF FINAL PLAT FOR SIGNATURES BY JULY 8, 2013; AND, 3. REVISION OF GENERAL NOTE 12, AND GENERAL NOTE 23 ON THE ROAD PLANS.
- DESIGN MANUAL WAIVER WERE APPROVED JUNE 21, 2012 TO DMV III, CHAPTER 2, APPENDIX A. THE APPROVAL ALLOWING USE OF A 50 CENTERLINE RADIUS FOR WELLSTONE WAY, AND WAIVING PORTIONS OF DMV IV, DETAIL R-5.05 BY ALLOWING PLACEMENT OF DRIVEWAY APRONS ON THE TEE-TURNAROUND FOR WELLSTONE WAY.
- THE ARTICLES OF INCORPORATION FOR THE CASCADE OVERLOOK HOMEOWNERS ASSOCIATION WERE FILED WITH THE STATE DEPARTMENT OF ASSESSMENTS AND TAXATION ON NOV. 16, 2012. RECEIPT NUMBER 1000362004092922.
- THE PROTECTIVE COVENANTS, INCLUDING COVENANTS GOVERNING THE MAINTENANCE OF THE COMMUNITY OWNED OPEN SPACE LOTS 8 AND 9, HAVE BEEN RECORDED IN THE LAND RECORDS OF HOWARD COUNTY, L14940 F372 SIMULTANEOUS WITH THE RECORDATION OF THE PLAT, F-12-074.
- A SHARED DRIVEWAY ACCESS AND MAINTENANCE OBLIGATION AGREEMENT FOR THE USE-IN-COMMON DRIVEWAY WHICH SERVES LOTS 4 AND 5 HAS BEEN RECORDED IN THE LAND RECORDS OF HOWARD COUNTY, L14940 F351 SIMULTANEOUS WITH THE RECORDATION OF THE PLAT, F-12-074.
- THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED PERIMETER LANDSCAPING AND STREET TREES. ALL REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- THE FOREST CONSERVATION EASEMENT WITHIN THE OPEN SPACE AREA FOR THIS DEVELOPMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- TWO CAR GARAGES SHALL BE USED FOR PARKING PURPOSES ONLY AND SHALL NOT BE CONVERTED INTO LIVING SPACE OR STORAGE SPACE. VISITOR AND GUEST PARKING IS RESTRICTED ALONG THE USE-IN-COMMON DRIVEWAY. A MINIMUM OF FOUR SPACES IS PROVIDED FOR EACH RESIDENCE, TWO GARAGE SPACES AND TWO DRIVEWAY SPACES. 2.5 SPACES PER UNIT IS REQUIRED, INCLUDING GUEST PARKING.

SITE DEVELOPMENT PLAN

CASCADE OVERLOOK, SECTION 4

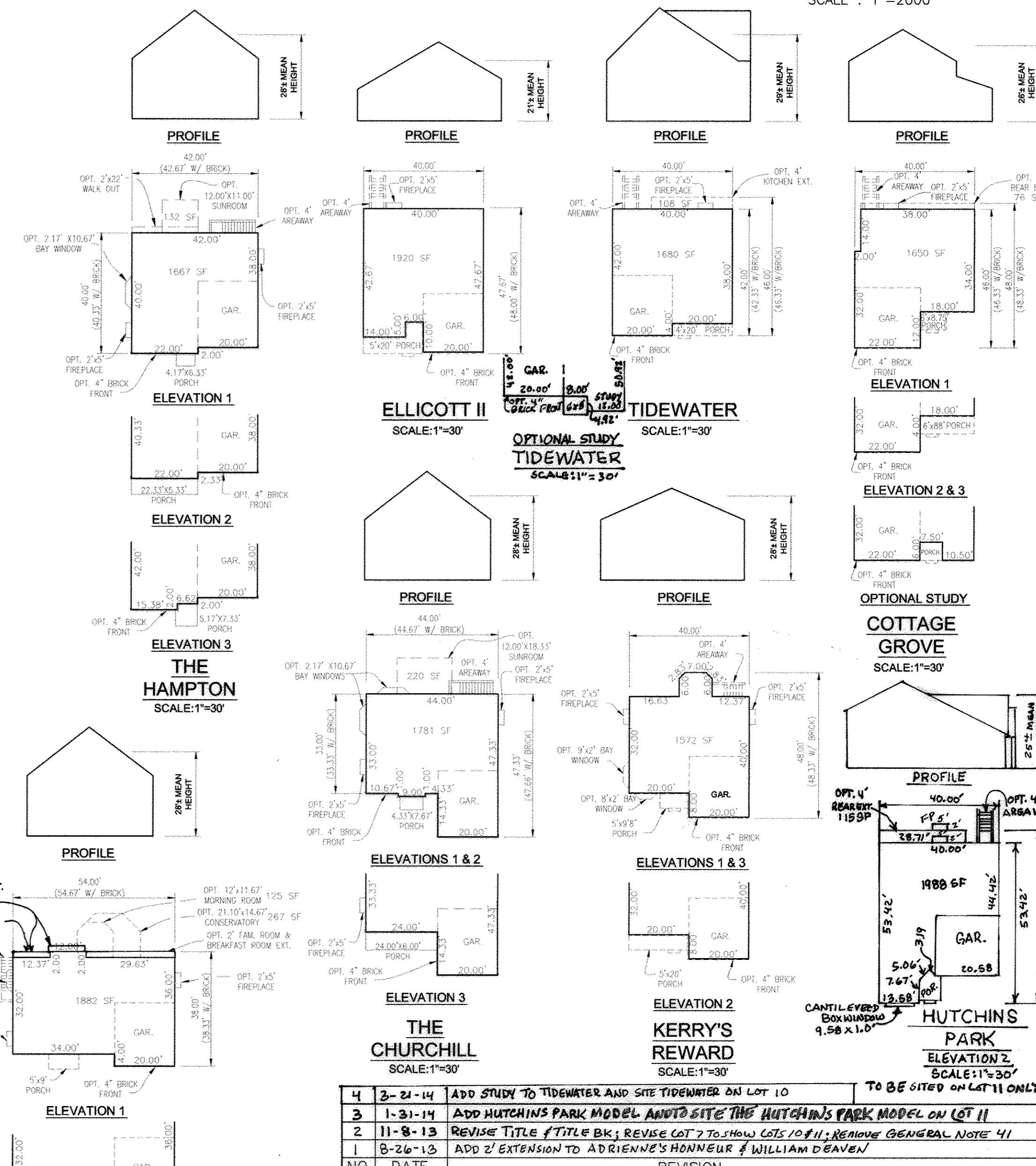
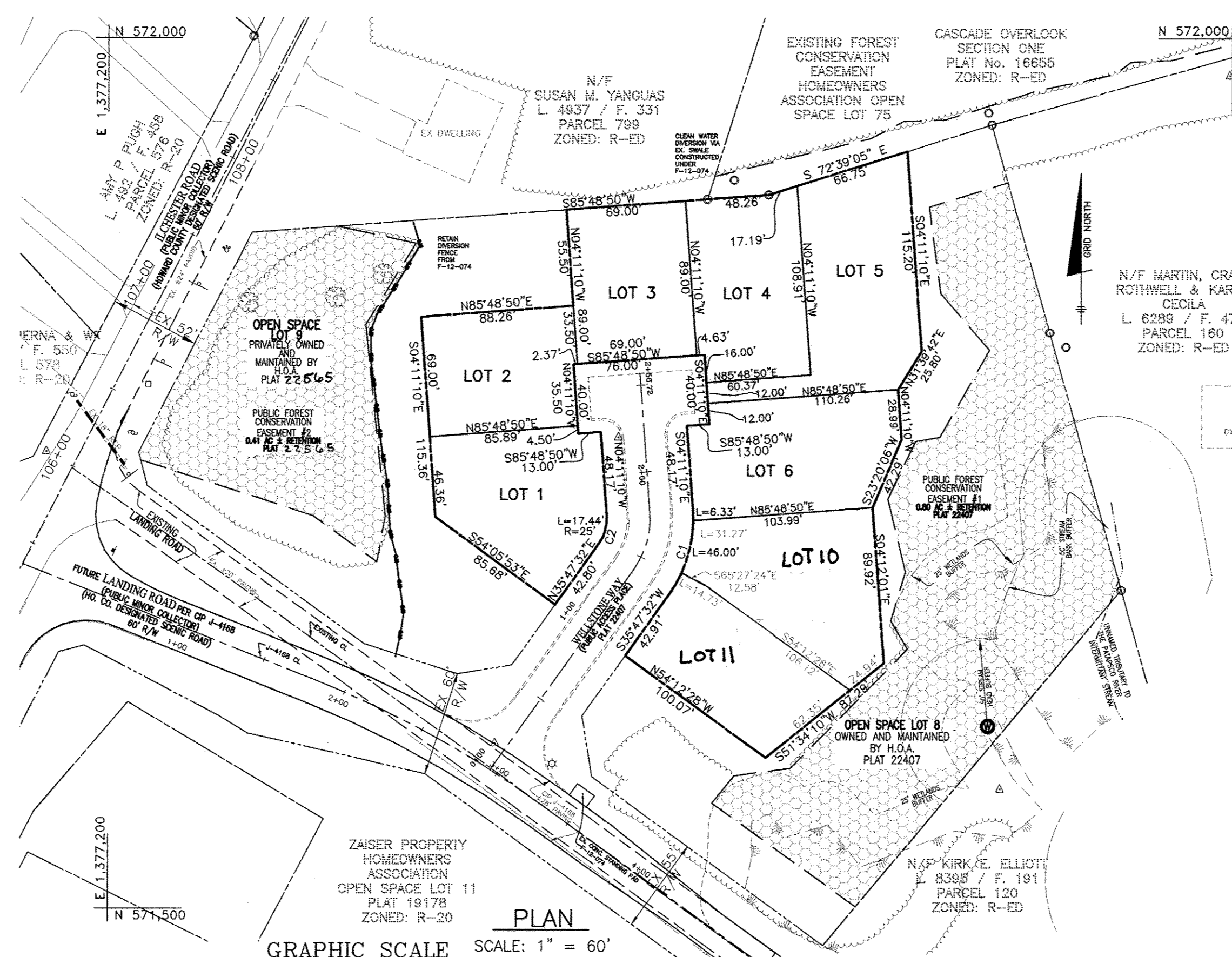
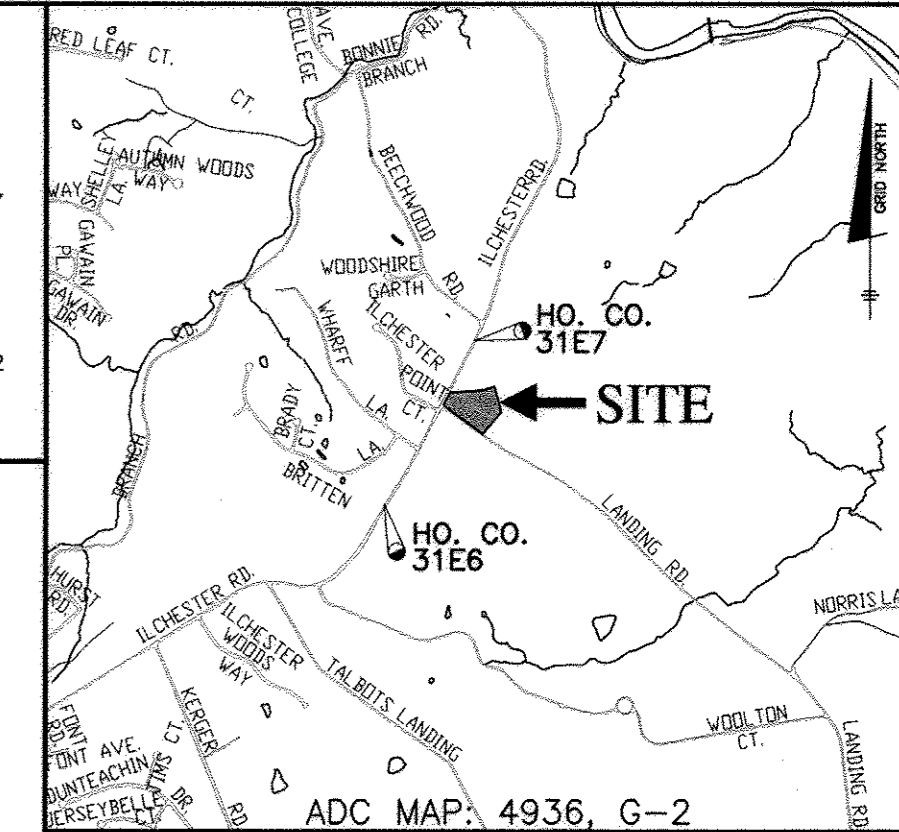
LOTS 1 THRU 6 & LOTS 10 & 11

1st ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

RIGHT OF WAY CURVE TABLE					
CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD
C1	92.33'	75.00'	38°58'42"	27.28'	S15°48'11"W 51.28'
C2	17.44'	25.00'	38°58'42"	9.06'	N15°48'11"E 17.08'

BENCH MARKS NAD'83	
HO. CO. #3168	3/4" REBAR 0.5' BELOW SURFACE
	3' SOUTHWEST OF ILLICOTT ROAD PAVING
	500'± WEST OF WHARF LANE.
N 570852.3717	E 1376700.6467
HO. CO. #3167	3/4" REBAR 0.5' BELOW SURFACE
	3' SOUTHWEST OF ILLICOTT ROAD PAVING
	250'± WEST OF BEECHWOOD ROAD
N 572335.3503	E 1377504.0332
HO. CO. BM#2745004	ELEV. 364.78
USED FOR VERTICAL CONTROL.	



SITE ANALYSIS DATA CHART	
A.) TOTAL PROJECT AREA	1.32 AC.
B.) AREA OF THIS PLAN SUBMISSION	1.32 AC.
C.) APPROXIMATE LIMIT OF DISTURBANCE	1.32 AC.
D.) PRESENT ZONING:	R-20
E.) PROPOSED USE OF SITE:	RESIDENTIAL SINGLE FAMILY DETACHED UNITS
F.) TOTAL NUMBER OF UNITS ALLOWED AS SHOWN ON FINAL PLAT(S)	6
G.) TOTAL NUMBER OF UNITS PROPOSED	6
H.) MINIMUM PARKING PER UNIT	4 SPACES (SEE NOTE 40) (2-GARAGE, 2-DRIVEWAY) SP-06-012, ECP-11-060, PB CASE 380, WP-11-183, WP-13-125, F-12-075
I.) APPLICABLE DPZ FILE REFERENCES:	SP-06-012, ECP-11-060, PB CASE 380, WP-11-183, WP-13-125, F-12-075
J.) PROPOSED WATER AND SEWER SYSTEMS:	<input checked="" type="checkbox"/> PUBLIC <input type="checkbox"/> PRIVATE

MODEL	COMMENTS
THE HAMPTON	ALL OPTIONS AND ELEVATIONS AVAILABLE.
ELICOTT II	ALL OPTIONS AND ELEVATIONS AVAILABLE.
TIDEWATER	ALL OPTIONS AND ELEVATIONS AVAILABLE.
COTTAGE GROVE	ALL OPTIONS AND ELEVATIONS AVAILABLE.
MADISON	ALL OPTIONS AND ELEVATIONS AVAILABLE.
ADRIENNE'S HONNEUR	ALL OPTIONS AND ELEVATIONS AVAILABLE.
WILLIAM DEAVEN	ALL OPTIONS AND ELEVATIONS AVAILABLE.
THE CHURCHILL	ALL OPTIONS AND ELEVATIONS AVAILABLE.
KERRY'S REWARD	ALL OPTIONS AND ELEVATIONS AVAILABLE.
HUTCHINS PARK	ALL OPTIONS AND ELEVATIONS AVAILABLE.

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THE CHURCHILL	ALL OPTIONS AND ELEVATIONS AVAILABLE.
KERRY'S REWARD	ALL OPTIONS AND ELEVATIONS AVAILABLE.
HUTCHINS PARK	ALL OPTIONS AND ELEVATIONS AVAILABLE.

ADDRESS CHART	
LOT	STREET ADDRESS
1	4811 WELLSTONE WAY
2	4815 WELLSTONE WAY
3	4819 WELLSTONE WAY
4	4822 WELLSTONE WAY
5	4818 WELLSTONE WAY
6	4814 WELLSTONE WAY
10	4810 WELLSTONE WAY
11	4806 WELLSTONE WAY

BENCHMARK ENGINEERING, INC.
 8400 BALTIMORE NATIONAL PIKE & SUITE 315 ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-8105 (F) 410-465-8644
 75 THOMAS JOHNSON DRIVE SUITE E & FREDERICK, MARYLAND 21702
 301-710-9886
 www.benchmark-engineering.com

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. 283769, Expiration Date: 01-01-2015.

PERMIT INFORMATION CHART

SUBDIVISION NAME:	SECTION/AREA:	LOT/PARCEL #
CASCADE OVERLOOK SECTION 4	N/A	LOTS 1-6 & 10 & 11
PLAT No. 22407 22545	GRID NO. 10&11	ZONE R-ED
TAX MAP 31	ELECTION DISTRICT 1st	CENSUS TRACT 6011.01

PROJECT: CASCADE OVERLOOK SECTION 4 LOTS 1-6 & LOTS 10 & 11 S.F.D.

LOCATION: TAX MAP 31 - GRID 10 & 11 - PARCELS 133 ZONE: R-ED 1st ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE: SITE DEVELOPMENT PLAN COVER SHEET

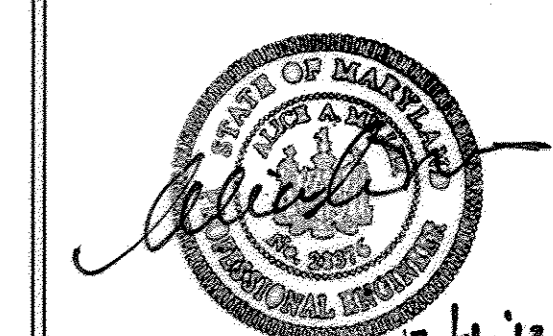
DATE: MARCH, 2013
JULY, 2013

PROJECT NO.: 1817-SDP

SCALE: AS SHOWN

SHEET: 1 OF 3

DESIGN: AAM **DRAFT:** AAM **CHECK:** CAM

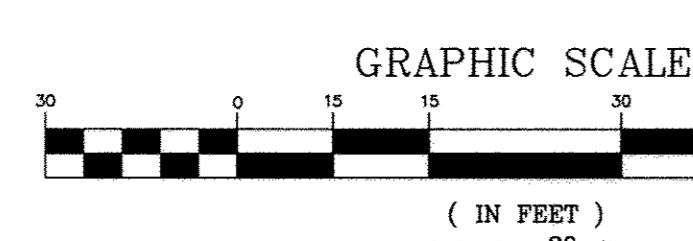


APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 7/31/13
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 7/31/13
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 7/31/13
 DIRECTOR



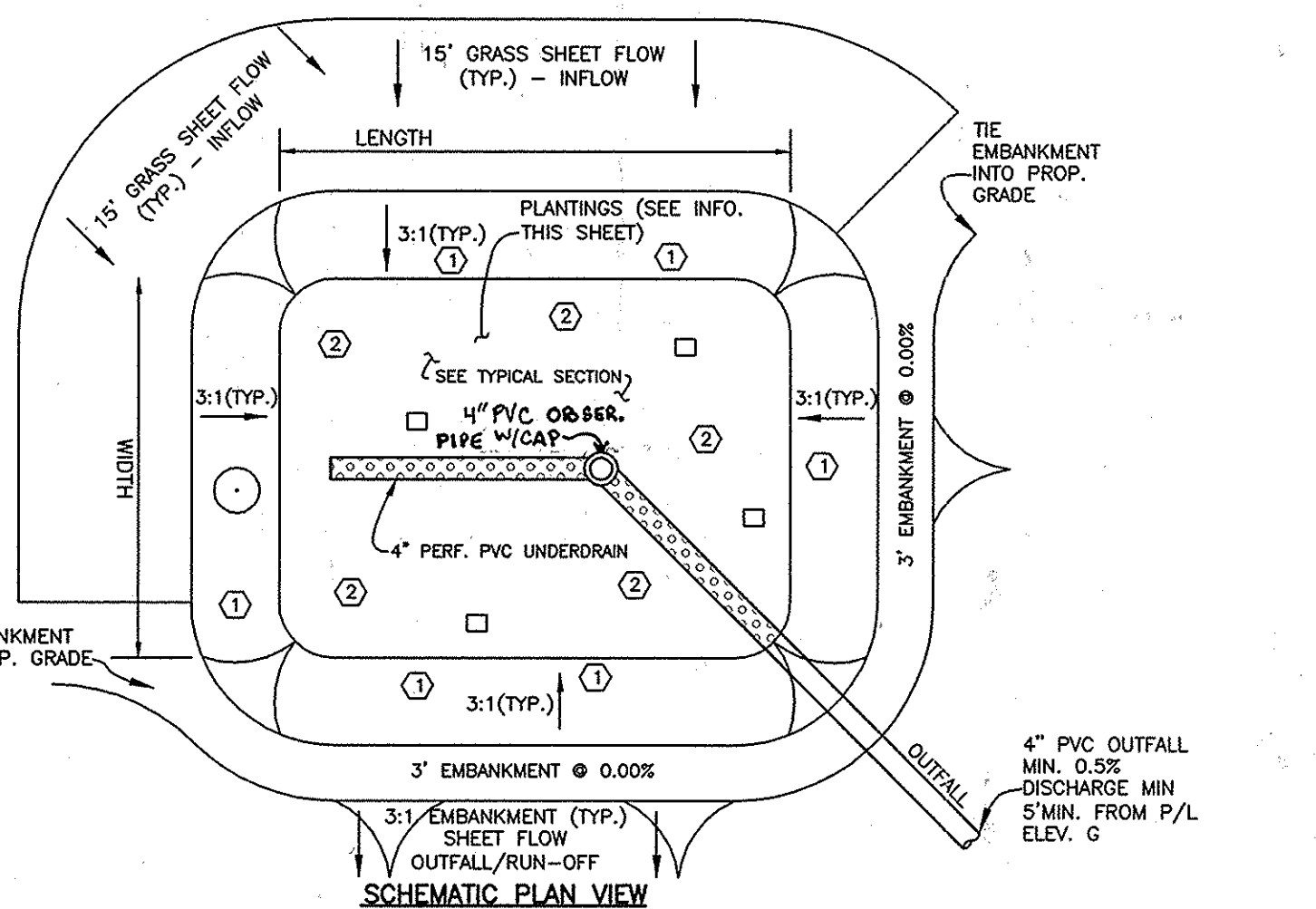
DESIGN IMPERVIOUS	
LOT	DESIGN AREA (SF)
1	1900
2	2100
3	2100
4	1950
5	2000
6	1619
10	2182
11	2160

MINIMUM LOT SIZE CHART			
LOT NO.	GROSS AREA	PIPESTEM AREA	MINIMUM LOT SIZE
5	8,920 S.F.	725 S.F.	8,195 S.F.



OPERATION AND 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 WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A-1.1 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 VEGETATION CONSIDERED BEYOND TREATMENT. REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- 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.

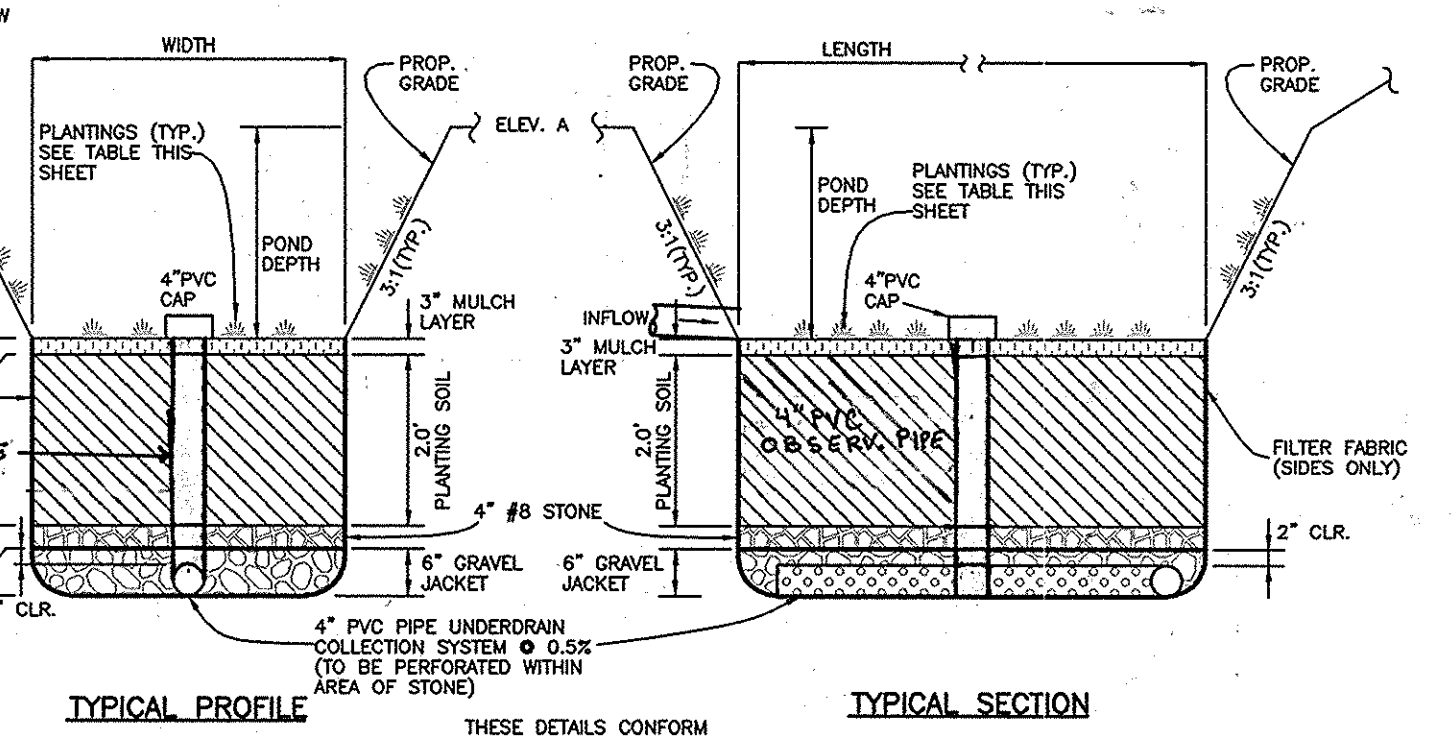


MICRO-BIORETENTION (M-6) PLANTING SCHEDULE

- MB-6 MB-10 AND MB-11
- IRIS VERSICOLOR (IRIS)
 - NYMPHODES PELTATA FLOATING-HEART YELLOW
 - LOBELIA CARDINALIS CARDINAL FLOWER
 - ACER RUBRUM (RED MAPLE)

PLANTING DATA

- PLANTINGS WITHIN THE PONDING AREA OF THE MICRO-BIORETENTION AREA ARE TO BE OF A MEDIUM TO HIGH WATER TOLERANCE.
- PLANTINGS ALONG THE PERIMETER (BERM) AREA OF THE RAIN GARDEN ARE TO BE OF A LOW TO MEDIUM WATER TOLERANCE.
- AVOID PLANTINGS WITH EXCESSIVE ROOT MASS IN POND AREA OF THE RAIN GARDEN NEAR O.B. PIPE AND UNDERDRAN.



MICRO-BIORETENTION DETAILS
NOT TO SCALE

NOTE: DESIGN COMPUTATIONS MAY BE FOUND IN F-12-074. ATTACHED INFORMATION IS FOR CONSTRUCTION ONLY. DECLARATIONS OF COVENANTS WERE RECORDED WITH PLAT 22408 AND ARE VALID FOR THE ON-LOT FACILITIES AS SHOWN.

MICRO-BIORETENTION GEOMETRY (M-6)

LOT	LENGTH	WIDTH	DEPTH	A	B	C	D	E	F	G	A _F	B _F
MB-6	24'	7'	1.0'	439.0	438.4	438.42	438.42	438.09	435.59	435.5	259	259
MB-10	22'	5'	1.0'	436.7	435.8	435.75	431.75	431.42	430.92	430.8	104	104
MB-11	21'	5'	1.0'	436.7	435.8	434.75	432.75	432.42	431.92	431.8	94	94

NOTE: FACILITY SHAPES ARE IRREGULAR. SEE PLAN VIEW FOR LAYOUT.

TABLE B.3.2 MATERIALS AND SPECIFICATIONS FOR SWM FACILITIES

MATERIAL	SPECIFICATION	SIZE	NOTES:
PLANTINGS (IF REQUIRED)	SEE APPENDIX A, TABLE A.4	N/A	PLANTINGS ARE SITE SPECIFIC
PLANTING SOIL (2.5' TO 4.0' DEEP)	SAND, 30-60% SILT, 30-50% CLAY, 0-25%	N/A	USDA SOIL TYPES: LOAMY SAND, SANDY LOAM OR LOAM
MULCH	SHREDDED HARDWOOD (ASTM D-4751)	N/A	2" TO 3" DEPTH, AGED 6 MONTHS, MINIMUM
GEOTEXTILE (CLASS 2)	APPARENT OPENING SIZE: (ASTM D-4751) GRAB TENSILE STRENGTH: (ASTM D-4632) PUNCTURE RESISTANCE: (ASTM D-4633)	N/A	FOR USE AS NECESSARY BENEATH UNDERDRAINS ONLY
UNDERDRAN GRAVEL	ASTM M-43	0.375" TO 0.750"	
UNDERDRAN PIPING	F758, TYPE PS28 OR ASTM M-278	4" TO 6" RISE	3/8" PERF. @ 6" O/C. 4 HOLES PER ROW. MINIMUM OF 3" OF GRAVEL OVER PIPES, NOT NECESSARY UNDERDRAIN PIPES
POURED-IN-PLACE CONC. (IF REQUIRED)	MSEA MIX NO. 1, CONC. 28 DAYS, NORMAL WEIGHT, AIR ENTRAINED, CONFORMING TO MEET ASTM 610-60	N/A	ON-SITE TESTING OF POURED-IN-PLACE CONC. REQUIRED; 28 DAY STRENGTH TEST AND SLUMP TEST; ALL CONC. DESIGN (CAST-IN-PLACE OF PRE-CAST) NOT USING PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS REQUIRES DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND. DESIGN TO INCLUDE MEETING ACI CODE 350R/88; VERTICAL LOADING (H-10 OR H-20) ALLOWABLE HORIZONTAL LOADING (BASED ON SOIL PRESSURE); AND ANALYSIS OF POTENTIAL CRACKING
CHECK DAM (TREATED WOOD)	AWPA STANDARD C6	6"X6" OR 6"X8"	DO NOT JOIN WITH CROSSPIES; EMBED AT LEAST 3" INTO SIDE SCOPES

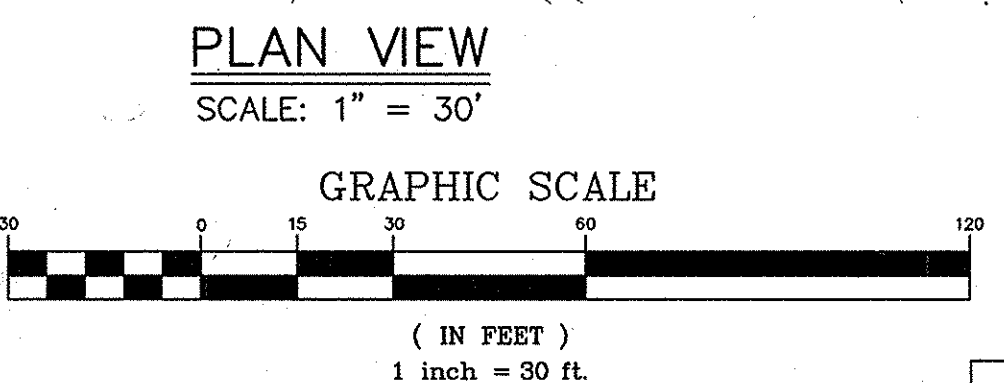
NOTE: DURING THE ROAD CONSTRUCTION PLAN REVIEW AND APPROVAL PROCESS, A DESIGN MANUAL WAIVER WAS APPROVED ON JUNE 21, 2010 PERMITTING THIS PROJECT TO PAY A FEE-IN-LIEU FOR FRONTAGE IMPROVEMENTS, AS COORDINATION WITH THE ADJACENT CAPITAL PROJECT J-4168 FOR THE REALIGNMENT OF LAND ROAD WOULD LIKELY RESULT IN WASTED EFFORTS. THE FEE-IN-LIEU AMOUNT WAS NEGOTIATED AND PAID AS PART OF THE DEVELOPER AGREEMENT FOR F-12-074. SEE GENERAL NOTE #34.

INDIVIDUAL HOUSE SITES SHALL PROVIDE PRIVATE DRIVEWAYS A MINIMUM 18 FOOT DEPTH FROM THE FACE OF GARAGE TO THE EDGE OF THE USE-IN-COMMON DRIVEWAY SO THAT A CAR, IF PARKED IN THE DRIVEWAY, WILL NOT OVERHANG INTO THE PAVED AREA OF THE SHARED DRIVEWAY. THE SHARED DRIVEWAY SHALL PROVIDE ADEQUATE UNOBSTRUCTED ACCESS TO ALL DWELLINGS AT ALL TIMES AS REQUIRED BY HOWARD COUNTY DEPARTMENT OF FIRE & RESCUE.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Kurt Stelmasch 7/31/13
CHIEF, DIVISION OF LAND DEVELOPMENT

William J. Lowery 7/31/13
CHIEF, DEVELOPMENT ENGINEERING DIVISION



LEGEND

EXISTING CONTOUR	---112---	EXISTING FOREST CONSERVATION EASEMENT	
PROPOSED CONTOUR	---410---	EXISTING PUBLIC DRAINAGE AND UTILITY EASEMENT	
EXISTING WOODS LINE	---	EXISTING PRIVATE DRAINAGE AND UTILITY EASEMENT	
LIMIT OF WETLANDS	---	EXISTING PRIVATE ACCESS AND UTILITY EASEMENT	
PROPOSED HOUSE		EX. PERIMETER AND STREET TREES PER F-12-074	
EX. FOREST RETENTION SIGNS PER F-12-074			

SEWER HOUSE CONNECTION CHART

LOT NO.	INVERT AT RW/ESMT.	MCE
1	438.1	441.6
2	439.6	443.3
3	440.1	443.8
4	435.7	440.3
5	431.5	437.3
6	436.4	440.1
10	434.2	438.3
11	433.7	437.2

SWALE COMPUTATIONS
PROJECT: Cascade Overlook Section 4 DATE: 6/19/2013 DESIGN BY: am

D.A. #	Channel Slope (%)	Bare Earth				Grass lined				Shear Stress	2-yr Stabilization Requirement	Final Stabilization Requirement		
		Q ₂ (cfs)	V ₂ (cfs)	R (ft)	Sw (ft/ft)	Q ₂ (cfs)	V ₂ (cfs)	R (ft)	Sw (ft/ft)					
S-1 - Construction	4.0	0.41	2.17	0.056	0.040	0.14	None	0.61	0.676	0.199	0.04	0.50	None	None
S-1 - Post-Construction		Assume stabilization is complete before diversion is removed.				1.18	0.832	0.272	0.04	0.68	None	None	None	None
S-2	6.7	0.65	3.06	0.064	0.067	0.27	Temporary	0.95	0.963	0.233	0.07	0.97	None	Temporary

Velocity, hydraulic radius were obtained from ACAD swale computations, following pages.
Shear Stress Equation: $\tau = \gamma \cdot R \cdot S_w$ where:
 τ = shear stress (lb/ft²)
 γ = weight density of water (62.4 lb/ft³)
 R = average water depth (hydraulic radius) (ft)
 S_w = water surface slope (ft/ft)

7	3-31-16	REVISE MDR GEOMETRY TABLE TO MATCH DETAIL AND FIELD CONDITIONS
6	9-12-14	REVISE LOT 6 PER AS BUILT CONDITIONS
5	4-22-14	REVISE F.F. ELEV. ON LOT 2
4	3-21-14	ADD STUDY TO TIDYWARE AND SITE TIDYWARE ON LOT 10
3	1-31-14	ADD HUTCHINS PARK MODEL AND TO SITE THE HUTCHINS PARK MODEL ON LOT 11
2	11-8-13	REVISE LOT 7 TO SHOW LOTS 10 & 11; REVISE TITLE BLOCK; ERASE STAKE LINES FROM CHARTS
1	8-26-13	ADD WILLIAM DEAVEN ELEV 1 W/BRICK TO LOT 2 & WILLIAM DEAVEN ELEV 2
NO	DATE	REVISION

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Professional Certification. I hereby certify that the 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. 283769, Expiration Date: 01-01-2015.

BUILDER: THE WILLIAMSBURG GROUP
5485 HARPER'S FARM ROAD
COLUMBIA, MARYLAND 21044
PHONE: 410-997-8800

PROJECT: CASCADE OVERLOOK, SECTION 4
LOTS 1-6 & LOTS 10 & 11 S.F.D.

LOCATION: TAX MAP 31 - GRID 10 & 11 - PARCELS 133
ZONE: R-ED 1st ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

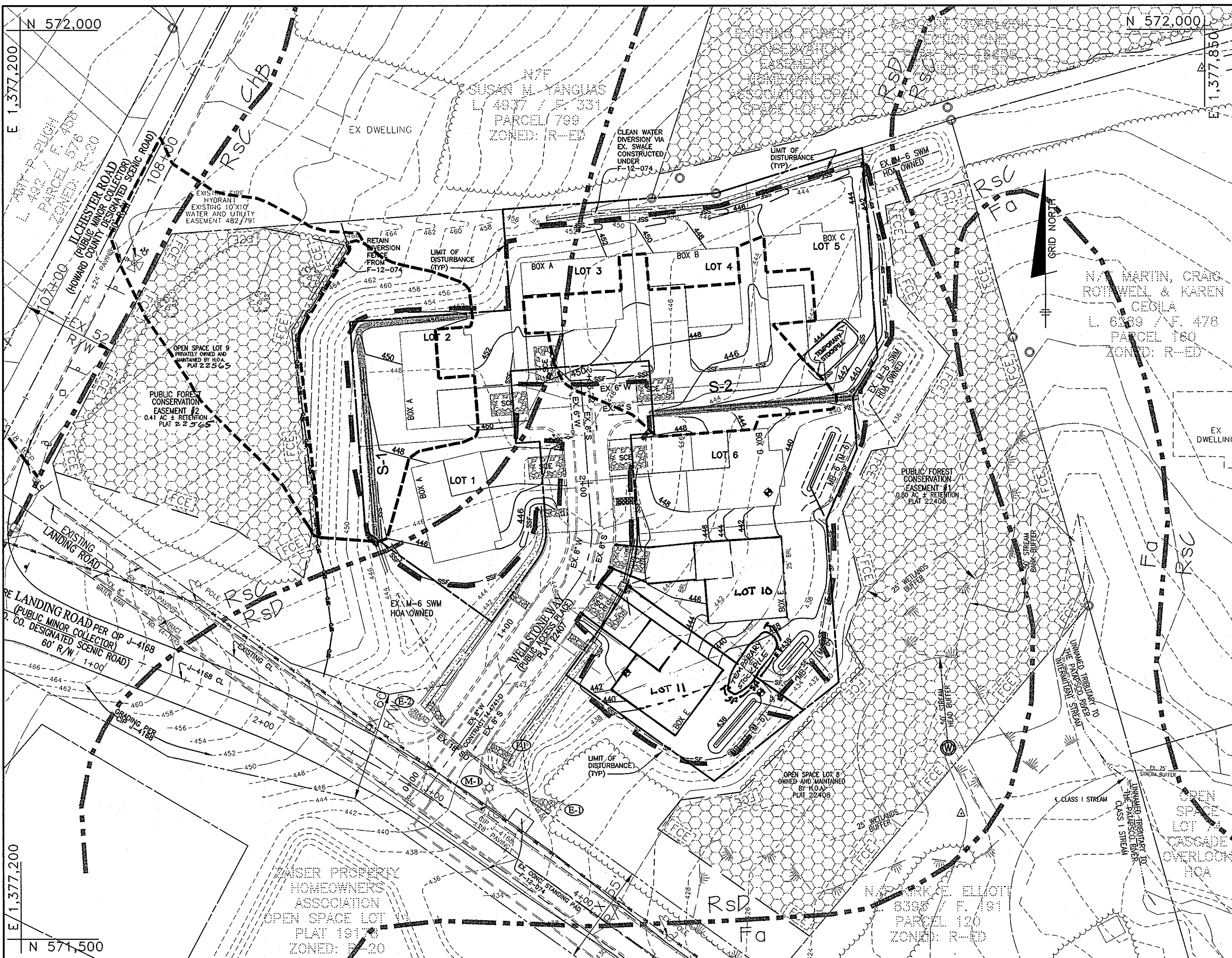
TITLE: SITE DEVELOPMENT & GRADING PLAN
STORMWATER DETAILS AND
SEC SWALE COMPUTATIONS

DATE: MARCH 2013
JULY 2013

PROJECT NO.: 1817

DESIGN: AAM **DRAFT:** AAM **CHECK:** CAM

SCALE: AS SHOWN **SHEET:** 2 OF 3



B-4-3 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

A. Soil Preparation

1. Temporary Stabilization

a. Seeded preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or ripers mounted on construction equipment. After the soil is loosened, it must not be rolled, dragged, smoothed, but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.

b. Apply fertilizer and lime as prescribed on the plans.

c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.

2. Permanent Stabilization

a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions for permanent vegetative establishment are:

- Soil pH between 6.0 and 7.0.
- Soluble salts less than 500 parts per million (ppm).
- Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent less than 40 percent clay) to provide the capacity to hold a moderate amount of moisture. An exception: if loosened with a sandy soil (less than 30 percent silt plus clay) would be acceptable.
- Soil contains 1.5 percent minimum organic matter by weight.

b. Soil contains sufficient pore space to permit adequate root penetration.

c. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.

d. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.

e. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.

f. Soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and rake the area for seed application. Loosen surface soil by dragging with a heavy chain or other suitable tool. Prepare the surface where site conditions will permit seeded preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 3 to 5 inches of soil loose and friable. Seeded loosening may be unnecessary on newly disturbed areas.

B. Topsoiling

1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low nutrient levels, low pH, metallic toxic to plants, or other unacceptable soil gradation.

2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.

3. Topsoiling is limited to areas having 2:1 or flatter slopes where:

- The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
- The soil material is so shallow that the rooting zone is not deep enough to support plants or sustain continuing supplies of moisture and plant nutrients.
- The original soil to be vegetated contains material toxic to plant growth.
- The soil is so acidic that treatment with limestone is not feasible.
- Areas having slopes steeper than 2:1 require special consideration and design.

4. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:

- Topsoil must be a loam, sandy loam, or loamy sand, or loamy clay.
- Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate authority.
- Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, concrete fragments, gravel, sticks, trash, or other materials larger than 1 1/2 inches in diameter.
- Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
- Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate authority, may be used in lieu of natural topsoil.

5. Topsoil Application

a. Erosion and sediment control practices must be maintained when applying topsoil.

b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed at a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or other areas of concern.

c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seeding preparation.

C. Soil Amendments (Fertilizer and Lime Specifications)

- Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analysis.
- Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and variety of the producer.
- Lime materials must be ground limestone (hydrated or burnt lime) may be substituted except when hydroxydizing, which contains the hydroxyl total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve. Lime and fertilizer must be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
- Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 6 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

B-4-4 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

A. Seeding

1. Applications

a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the time of sowing such material on any project. Refer to Table B-4.4 regarding the quality of seed. Seed lots must be available upon request to the inspector to verify type and seed quality.

b. Mixture of seeds may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.

c. Inoculants for treating legume seed in the seed mixtures must not be used later than the date listed on the label for the inoculant. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.

d. Sod or seed must not 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 prevent dissipation of phytotoxic materials which may be detrimental to the seed.

2. Application

a. Seeding This includes use of conventional drop or broadcast spreaders.

b. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1.

c. Permanent Seeding Table B.3, or site-specific seeding summation.

d. If fertilizer is used in conjunction with seed, apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.

e. Drill or Outrigger Seeding: Mechanical seeders that apply and cover seed with soil.

f. Outrigger seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm after planting.

g. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.

h. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).

i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P2O5 (phosphorus), 200 pounds per acre total of soluble phosphorus; K2O (potassium), 200 pounds per acre.

l. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, no more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.

m. Mix seed and fertilizer on site and seed immediately and without interruption.

n. When hydroseeding do not incorporate seed into the soil.

B. Mulch

1. Multiple Materials (in order of preference)

- Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
- Wood Cellulose Fiber Mulch (WCFFM) consisting of specially prepared wood cellulose processed into a fibrous mulch material.
- WCFFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
- WCFFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will resist water and retain its structure in water under application and will blend with fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, an application, showing moisture absorption and percolation properties and must provide good seed contact with the soil without inhibiting the growth of the grass seedlings.
- WCFFM materials must not contain elements or compounds at concentrations levels that will be phytotoxic.
- WCFFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, minimum particle size of 0.2 millimeters, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.

2. Application

a. Apply mulch to all seeded areas immediately after seeding.

b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 4 tons per acre.

c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to obtain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

3. Anchoring mulch and seeding application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:

- A mulch anchoring tool in a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
- Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water. iii. Synthetic binders such as Acrylic DLR (DORSEAL), DCA-200, Petrolite, etc., may be used if approved by the appropriate authority. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

B-4-5 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

Stockpile Area - A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

Purpose - To provide a designated location for the temporary storage of soil that controls the potential for erosion, sediment, and other pollutants.

Conditions Where Practice Applies - Stockpile areas are utilized when it is necessary to solve and store soil for later use.

- The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
- The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a 4:1 slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
- Runoff from the stockpile area must drain to a suitable sediment control practice.
- Access to the stockpile area must be provided from the up-slope side.
- Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth berm, temporary rock wall or diversion fence. Provisions must be made for discharging contained flow in a non-erosive manner.
- Where runoff concentrations along the top of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
- Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
- If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate hydrologic isolation. Stockpiles containing material must be covered with impermeable sheeting.

Maintenance

The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4-5 Vegetative Stabilization. Slopes must be maintained at no steeper than a 2:1 slope. The vertical height of a stockpile exceeding 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

SEQUENCE OF CONSTRUCTION

NOTIFY SEDIMENT CONTROL DIVISION 48 HOUR PRIOR TO START OF CONSTRUCTION

DAY 1-1) OBTAIN GRADING PERMIT AND REQUEST PRE-CONSTRUCTION MEETING.

DAY 2-6) INSTALL PERIMETER SEDIMENT CONTROLS THAT ARE INCLUDED UNDER THIS SDP.

DAY 7-10) 3) INSTALL FRONT OF LOT SUPER SILT FENCE AND STABILIZED CONSTRUCTION ENTRANCE AS INDIVIDUAL HOUSE CONSTRUCTION TAKES PLACE. EXCAVATE FOR FOUNDATIONS AND ROUGH GRADE, TAKING CARE TO PROTECT FRONT GRASS SWALES AND OPEN SPACES. SWALE FACILITIES FROM SEDIMENT STABILIZATION IN ACCORDANCE WITH TEMPORARY SEEDING NOTES.

DAY 11-80) 4) CONSTRUCT HOUSES, UTILITY CONNECTIONS, BACKFILL AND CONSTRUCT DRIVEWAYS.

DAY 81-85) 5) FINAL GRADE AND STABILIZE IN ACCORDANCE WITH PERMANENT SEEDING NOTES. FLUSH STORM DRAIN SYSTEM. REMOVE SILT FROM SWALES, AND REPLACE EROSION CONTROL MATTING IF NECESSARY.

DAY 86-92) 6) WHEN CONTRIBUTING AREAS ARE STABILIZED, INSTALL ON-LOT RAIN GARDENS AND PLANT MATERIALS.

DAY 93-96) 7) WITH THE APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES AND STABILIZE ANY REMAINING DISTURBED AREAS.

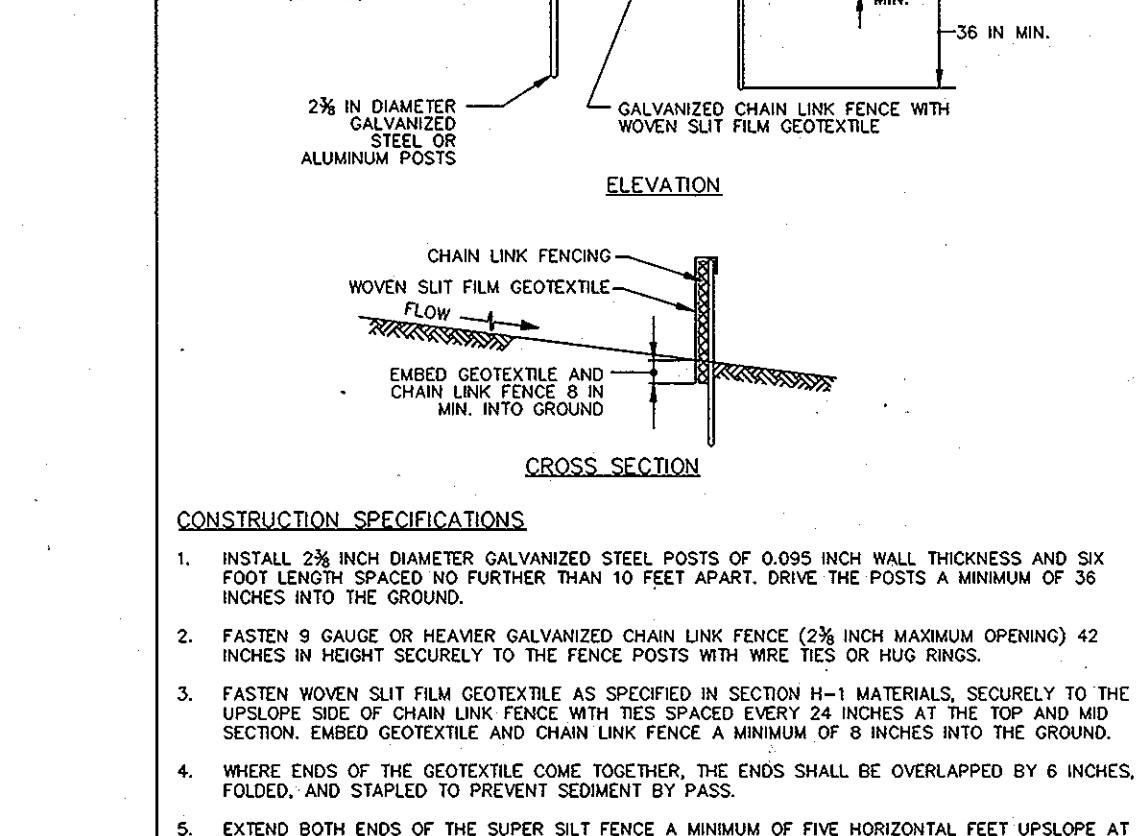
NOTE: EROSION CONTROL MATTING SHALL BE PLACED IN SWALES WHERE DEEMED NECESSARY UNTIL VEGETATION IS ESTABLISHED OR SOLID SOIL SHOULD BE USED.

SITE SOILS CAN BE HIGHLY ERODIBLE, AND EITHER PERMANENT OR TEMPORARY STABILIZATION IS TO BE PROVIDED IMMEDIATELY AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

Table B.1: Temporary Seeding for Site Stabilization

Plant Species	Seeding Rate* (lb./1000 sq. ft.)	Seeding Depth (in.)	Recommended Seeding Dates by Plant Standstill Zone†	
			26 and 46	46 to 200 ft.
Crookedneck Oatgrass	80	0.5	July 15 to Sept 15; Aug 1 to Sep 15	July 15 to Sept 15; Aug 1 to Sep 15
Small Fescue (Common fescue)	80	0.5	July 15 to Sept 15; Aug 1 to Sep 15	July 15 to Sept 15; Aug 1 to Sep 15
Slender (Dallisgrass) Ryegrass	90	2.0	July 15 to Sept 15; Aug 1 to Sep 15	July 15 to Sept 15; Aug 1 to Sep 15
Common Fescue (Common)	72	1.0	July 15 to Sept 15; Aug 1 to Sep 15	July 15 to Sept 15; Aug 1 to Sep 15
White (Dallisgrass) Ryegrass	120	2.0	July 15 to Sept 15; Aug 1 to Sep 15	July 15 to Sept 15; Aug 1 to Sep 15
Creole Ryegrass (Dallisgrass)	152	2.0	July 15 to Sept 15; Aug 1 to Sep 15	July 15 to Sept 15; Aug 1 to Sep 15
Wheat (Common)	35	0.5	July 15 to Sept 15; Aug 1 to Sep 15	July 15 to Sept 15; Aug 1 to Sep 15
Small Fescue (Common)	35	0.5	July 15 to Sept 15; Aug 1 to Sep 15	July 15 to Sept 15; Aug 1 to Sep 15

* Seeding rate for the various regions may be adjusted to meet local conditions. Actual seeding rates shall be adjusted to wet ground conditions and apply in a broadcast manner. † Seeding dates for the various regions may be adjusted to meet local conditions. Actual seeding rates shall be adjusted to wet ground conditions and apply in a broadcast manner. ‡ Seeding dates for the various regions may be adjusted to meet local conditions. Actual seeding rates shall be adjusted to wet ground conditions and apply in a broadcast manner.



LEGEND

EXISTING CONTOUR -410-

PROPOSED CONTOUR -412-

EXISTING WOODS LINE

LIMIT OF WETLANDS

PROPOSED HOUSE

SOILS CLASSIFICATION

SOILS DELINEATION

EROSION CONTROL MATTING

EXISTING FOREST CONSERVATION EASEMENT

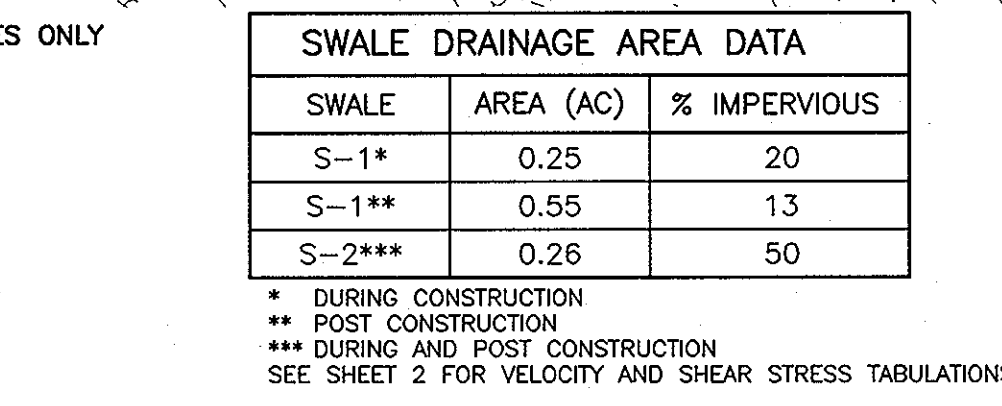
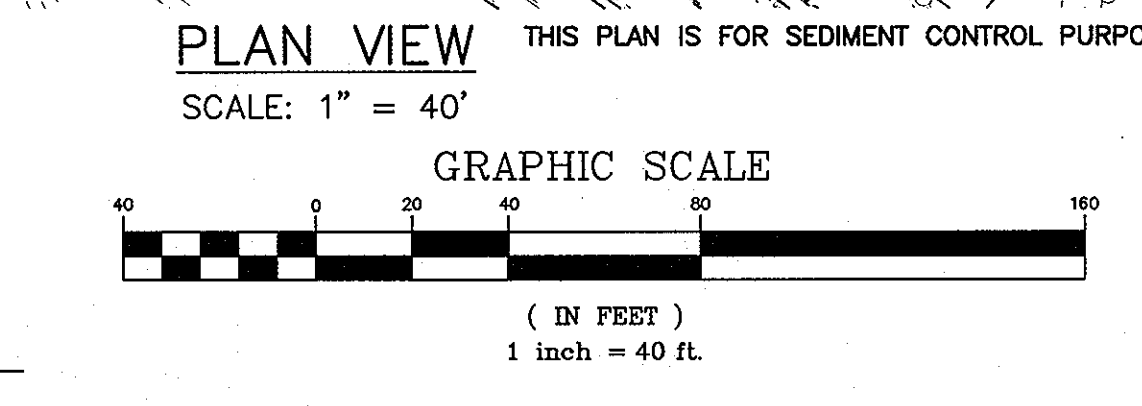
EXISTING PUBLIC DRAINAGE AND UTILITY EASEMENT

EXISTING PRIVATE DRAINAGE AND UTILITY EASEMENT

EXISTING PRIVATE ACCESS AND UTILITY EASEMENT

SILT FENCE

STABILIZED CONSTRUCTION ENTRANCE



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 SOIL CONSERVATION DISTRICT.

William J. Williams
ENGINEER
17 July '13
DATE

DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF 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 SOIL CONSERVATION DISTRICT.

William J. Williams
DEVELOPER
7-18-13
DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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

John K. Roberts
HOWARD SCD
7/25/13
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Kathleen
CHIEF, DIVISION OF LAND DEVELOPMENT
7/31/13
DATE

William J. Williams
CHIEF, DEVELOPMENT ENGINEERING
7/31/13
DATE

William J. Williams
DIRECTOR
7/31/13
DATE

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE 2011

MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE 2011

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U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE 2011

MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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PROJECT: CASCADE OVERLOOK, SECTION 4 LOTS 1-6 & LOTS 10&11 S.F.D.

LOCATION: TAX MAP 31 - GRID 10 811 - PARCELS 133 ZONE: R-ED 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE: SEDIMENT CONTROL PLAN, NOTES AND DETAILS

DATE: MARCH, 2013

PROJECT NO. 1817-SOP

SCALE: AS SHOWN

SHEET 3 OF 3

DESIGN: AAM DRAFT: AAM CHECK: CAM

SDP-13-050