

GENERAL NOTES

1. SITE ANALYSIS:
TOTAL PROJECT AREA: 22.84 AC.
PRESENT ZONING: R-VH, R-A-15, P.O.R.
USE OF STRUCTURE: TOWNHOMES, APARTMENTS, SENIOR CENTER AND RECREATION CENTER.
RECREATION CENTER:
PARKING SPACES PROVIDED: 226 SPACES
RESIDENTIAL DENSITY:
198 RESIDENTIAL UNITS
PARKING SPACES PROVIDED: 369 SPACES
2. THE EXISTING TOPOGRAPHY SHOWN HEREON IS TAKEN FROM AN AERIAL TOPOGRAPHIC SURVEY PREPARED BY FOTOMAC AERIAL SURVEYS, DATED MAY 15, 2009.
3. COORDINATES AND ELEVATIONS ARE BASED ON MARYLAND COORDINATE SYSTEM - NAD83(1991) AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 2541 AND 2542.
4. THE PROPERTY LINES SHOWN HEREON IS BASED ON A FIELD-RUN BOUNDARY SURVEY PERFORMED BY ROBERT H. VOGEL ENGINEERING, INC. ON MAY 2009.
5. THE MINIMUM BUILDING SETBACK RESTRICTIONS FROM PROPERTY LINES AND PUBLIC ROAD RIGHT-OF-WAY FOR THE OTHER RESIDENTIAL PARCELS ARE IN ACCORDANCE WITH THE COMPREHENSIVE SKETCH PLAN DEVELOPMENT CRITERIA APPROVED UNDER S-99-12, PB-399 AND PB-359.
6. WETLAND REPORT PREPARED BY MCCARTHY & ASSOCIATES, INC.; DATED 3-11
7. THIS PROJECT IS SUBJECT TO COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS DEVELOPMENT OR CONSTRUCTION ON THIS PROPERTY MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WATER PERMIT APPLICATION OR BUILDING GRADING PERMIT APPLICATIONS.
8. STORMWATER MANAGEMENT WATER WAY AND CPU IS BEING PROVIDED BY PREVIOUS PAVEMENT, MICRO BIORETENTION, SAND FILTERS AND ROOFTOP DISCONNECTS. REV WILL BE PROVIDED UNDER EACH FACILITY.
9. 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 AREAS AND 100 YEAR FLOODPLAIN.
10. APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN AND/OR RED-LINE REVISION PLAN. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS SHALL OCCUR AT THE SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN STAGES AND/OR RED-LINE REVISION PROCESS. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED REVIEW COMMENTS (INCLUDING COMMENTS THAT MAY ALTER THE OVERALL SITE DESIGN) AS THIS PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.

SITE DATA

LOCATION: TAX MAP 25, BLOCK 7, PARCELS 12 & 291
DEED REFERENCES: L.477/F.718, L.456/F.448, L.448/F.46
2ND ELECTION DISTRICT
PRESENT ZONING: R-VH, R-A-15, POR
GROSS AREA OF PROJECT: 22.84 AC.
LIMIT OF DISTURBANCE: 11.61 AC.
PROPOSED USE OF SITE: TOWNHOMES, APARTMENTS, SENIOR CENTER, RECREATION CENTER, AND CHILD CARE
GREEN OPEN AREA: 12.19 AC.
IMPROVED AREA: 7.59 AC.
AREA OF FLOODPLAIN: 0.0 AC.
AREA OF WETLANDS/BUFFER: 0.00 AC.
AREA OF STREAM BUFFER: 0.33 AC.
AREA OF STEEP SLOPES: 4.84 AC.
OPEN SPACE REQUIRED: 236 OR 5.71 AC.
RECREATIONAL OPEN SPACE REQUIRED: 400SF/UNIT
OPEN SPACE PROVIDED: 536 OR 12.19 AC.
RECREATIONAL OPEN SPACE PROVIDED: 84,475 SF
RECREATION CENTER: 43,870 SF
OUTDOOR PLAYGROUND: 7,000 SF
OUTDOOR BASKETBALL COURT: 4,650 SF
OUTDOOR POOL DECK: 8,550 SF
ON-SITE NATURE TRAIL: 2,010 SF
NORTHERN RESIDUE PARCEL 5: 18,397 SF (TRAIL & BENCHES) TOTAL 84,477 SF

SWM NARRATIVE

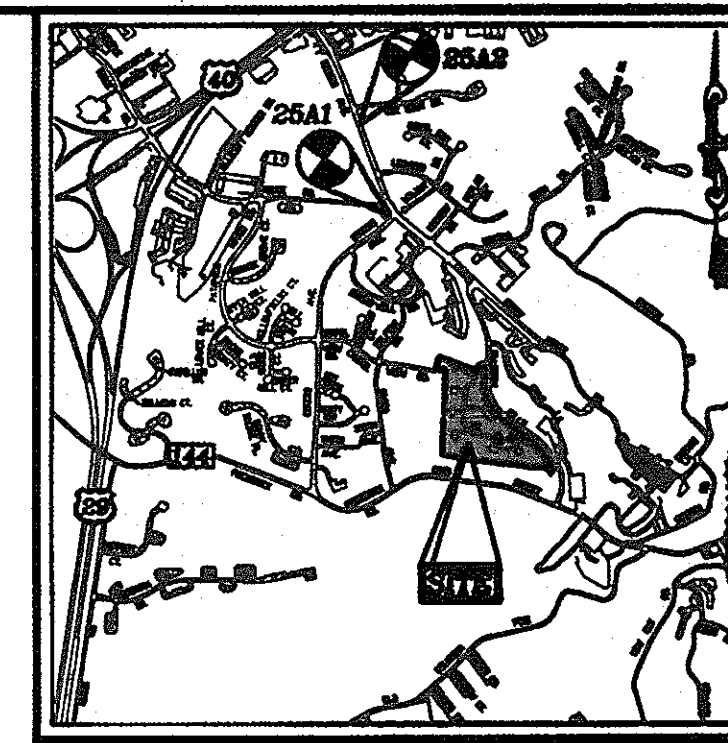
THE STORMWATER MANAGEMENT FOR THIS SITE HAS BEEN DESIGN TO PRESERVE THE NATURAL RESOURCES TO THE MAXIMUM EXTENT POSSIBLE. NON STRUCTURAL PRACTICES (SUCH AS ROOFTOP DISCONNECTS) WERE UTILIZED WHERE EVER POSSIBLE. PERVIOUS PAVEMENT, MICRO BIORETENTION AND SAND FILTERS WERE USED WHERE IT WAS NOT FEASIBLE TO USE NON STRUCTURAL MEASURES. AN UNDERGROUND DETENTION FACILITY IS PROPOSED TO MANAGE THE 100 YEAR STORM EVENT BECAUSE THE VOLUME NEEDED TO CONTROL THIS RUNOFF COULD NOT BE ACHIEVED IN A MORE NATURAL TYPE OF FACILITY. PERIMETER SLOPES THAT WERE ELIGIBLE TO BE USE AS FOREST CONSERVATION AREAS WERE DESIGNATED AS SUCH TO KEEP THEM IN TACT AND INSURE THEY WILL NOT BE DEVELOPED IN THE FUTURE. RETAINING WALLS WERE USED TO MINIMIZE THE LIMITS OF DISTURBANCE. OFF SITE RUNOFF HAS BEEN COLLECTED AND ROUTED THROUGH THE SITE IN A CLOSED CONDUIT SYSTEM TO KEEP IT FROM COLLECTING POLLUTANTS WHEN REACHING OUR SITE AND REQUIRING MORE WATER QUALITY MEASURES. THE SEDIMENT CONTROL MEASURES FOR THIS SITE HAVE ALSO BEEN DESIGNED TO PROTECT THE NATURAL RESOURCES OF THE SITE. CLEAN WATER DIKES HAVE BEEN PLACED AROUND THE PERIMETER TO KEEP CLEAN OFFSITE RUNOFF FROM MIXING WITH THE SEDIMENT LADEN DISCHARGE ON SITE. ALL OF THE SEDIMENT CONTROL MEASURES AND PERMANENT SWM FEATURES ON THIS SITE ARE INTENDED TO PRESERVE THE NATURAL RESOURCES OF THE SITE TO THE MAXIMUM EXTENT POSSIBLE. THERE IS A STREAM BUFFER ON THE SOUTHERN PORTION OF THE SITE THAT WILL BE PROTECTED FROM GRADING AND CLEARING. THE ONLY DISTURBANCE IN THIS BUFFER WILL BE THE STORMDRAIN OUTFALL FOR THIS PORTION OF THE SITE AND IT HAS BEEN EXTENDED DOWN THE SLOPE TO AVOID EROSION AT THE OUTFALL. THIS DISTURBANCE IS DEEMED NECESSARY TO AVOID THE EROSION OF THE SLOPE DUE TO HIGH VELOCITY WATER DISCHARGE ON THE SLOPE.

ENVIRONMENTAL CONCEPT PLAN

HILLTOP REDEVELOPMENT - PHASE 1

RESIDENTIAL AND RECREATION CENTER

L.477/F.718, L.456/F.448, L.448/F.46
ECP-11-051



VICINITY MAP
SCALE: 1"=200'
ADC MAP COORDINATES: 4816 / 87

BENCHMARKS
HOWARD COUNTY BENCHMARK 2541
N 586,557.546 E 1,366,847.098 ELEV.: 396.343'
HOWARD COUNTY BENCHMARK 2542
N 587502.729 E 1,366556.377 ELEV.: 348.145'

LEGEND

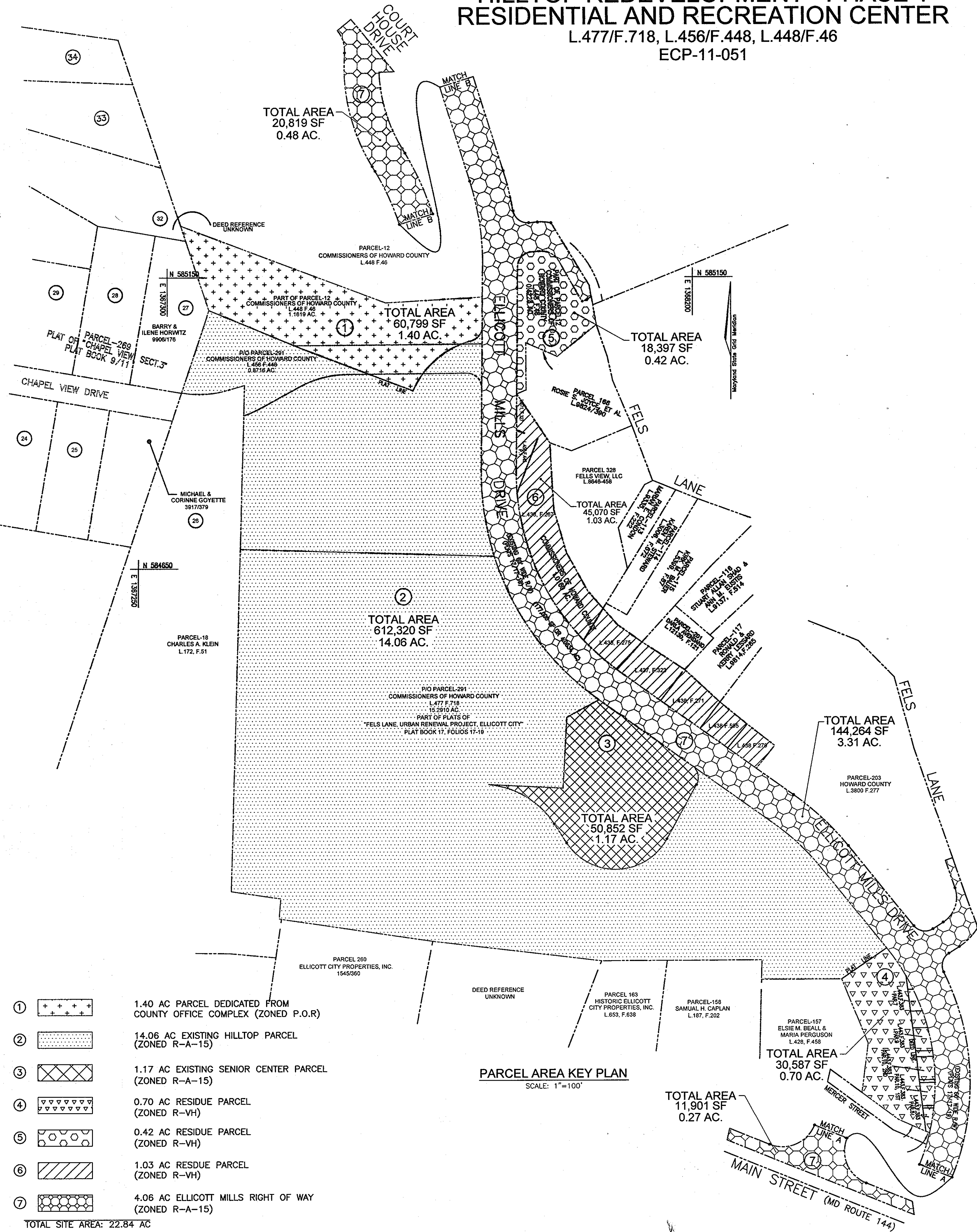
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- EXISTING CURB AND GUTTER
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- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
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- EXISTING SANITARY LINE
- EXISTING WATER LINE
- EXISTING STORMDRAIN LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- SOILS BOUNDARY
- EXISTING SIDEWALK
- EXISTING TREELINE
- MODERATE SLOPES (15% - 24.99%)
- STEEP SLOPE (>25%)
- EXISTING BOE LINE
- EXISTING COMCAST LINE

SHEET INDEX

DESCRIPTION	SHEET NO.
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OWNER
MILLTOWNE ASSOCIATE LP
BY: HCH PARTNERS III LLC, GENERAL PARTNER
BY: HOWARD COUNTY HOUSING COMMISSION, MEMBER
BY: STACY SPANN, EXECUTIVE DIRECTOR
6751 COLUMBIA GATEWAY DR.
3RD FLOOR
COLUMBIA, MD 21046
(410) 313-6320

DEVELOPER
STAVROU ASSOCIATES, INC.
2661 RIVA ROAD
BUILDING 300
ANNAPOLIS, MD 21401
C/O STEPHEN J. MOORE
(410) 571-8610



PARCEL AREA KEY PLAN
SCALE: 1"=100'

①	1.40 AC PARCEL DEDICATED FROM COUNTY OFFICE COMPLEX (ZONED P.O.R)
②	14.06 AC EXISTING HILLTOP PARCEL (ZONED R-A-15)
③	1.17 AC EXISTING SENIOR CENTER PARCEL (ZONED R-A-15)
④	0.70 AC RESIDUE PARCEL (ZONED R-VH)
⑤	0.42 AC RESIDUE PARCEL (ZONED R-VH)
⑥	1.03 AC RESIDUE PARCEL (ZONED R-VH)
⑦	4.06 AC ELLICOTT MILLS RIGHT OF WAY (ZONED R-A-15)

TOTAL SITE AREA: 22.84 AC

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 9/1/11

CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 8/31/11

ENVIRONMENTAL CONCEPT PLAN
HILLTOP REDEVELOPMENT - PHASE 1
RESIDENTIAL AND RECREATION CENTER
L.477/F.718, L.456/F.448, L.448/F.46

COVER SHEET

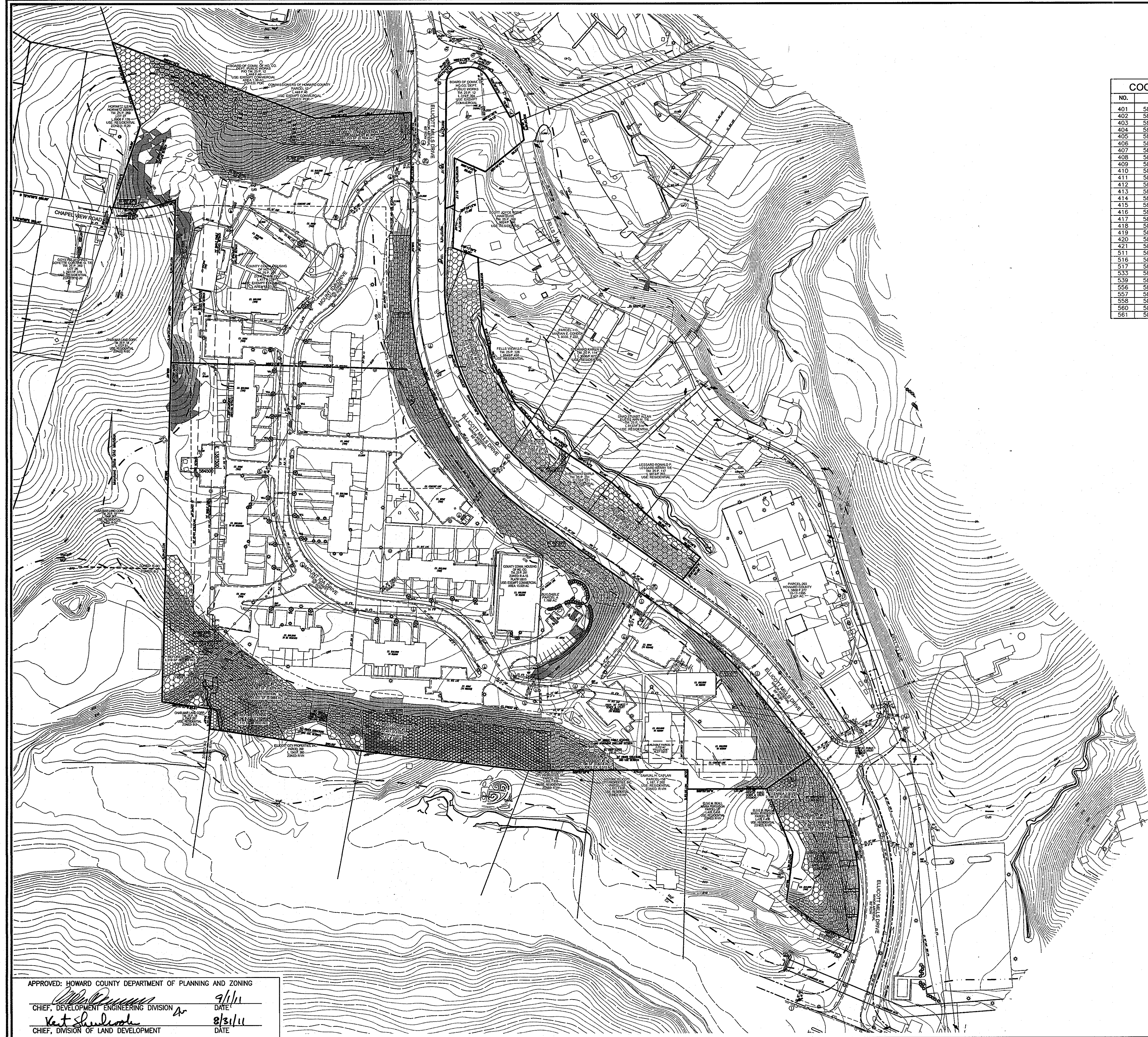
TAX MAP: 25 PARCELS: 12, 291 BLOCK: 07 ZONINGS: R-VH, R-A-15, POR
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERS, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

DESIGN BY: JTD
DRAWN BY: KG
CHECKED BY: JTD
DATE: AUGUST 2011
SCALE: 1"=100'
W.O. NO.: 10-24

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. 21438 EXPIRATION DATE: 12-16-2016

1 SHEET OF 8



COORDINATE TABLE

NO.	NORTH	EAST
401	583681.2977	1368597.7580
402	583701.3194	1368551.9417
403	583747.9694	1368488.7819
404	583833.3157	1368499.3574
405	583943.0777	1368316.9178
406	583976.4573	1368317.7479
407	584048.7963	1367490.4797
408	584083.3384	1367493.4350
409	584095.8607	1367408.4628
410	584955.2567	1367721.2254
411	585041.1535	1367820.9926
412	585065.1410	1367839.6513
413	584818.5898	1367837.7075
414	584423.9457	1368039.0542
415	584211.3575	1368337.2546
416	584134.1684	1368419.4536
417	583996.5245	1368531.2573
418	583678.8052	1368604.2868
419	585238.5734	1367323.0594
420	585106.4189	1367673.9357
421	585116.1765	1367840.0551
511	585558.4404	1367216.2349
516	585033.8031	1367371.4063
517	585029.1768	1367527.0176
533	583943.4580	1368454.3030
539	583975.6960	1368042.7490
556	584010.0966	1367753.1441
557	585213.0453	1367331.4957
558	584952.5197	1367324.4374
560	584958.3387	1367409.0356
561	584965.1804	1367432.4275

- LEGEND:**
- - - - - EXISTING CONTOUR
 - 402.80 EXISTING SPOT ELEVATION
 - == EXISTING CURB AND GUTTER
 - EXISTING UTILITY POLE
 - EXISTING LIGHT POLE
 - EXISTING MAILBOX
 - EXISTING SIGN
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 - EXISTING SANITARY LINE
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 - EXISTING FIRE HYDRANT
 - EXISTING WATER LINE
 - EXISTING TREE LINE
 - EXISTING VEGETATION (APPROXIMATE LOCATION)
 - EXISTING STREET TREES
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 - EXISTING STORMDRAIN LINE
 - EXISTING FOREST CONSERVATION EASEMENT
 - PROPOSED FOREST CONSERVATION EASEMENT

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 2661 RVA ROAD
 BUILDING 300
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 C/O STEPHEN J. MOORE
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NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN
HILLTOP REDEVELOPMENT - PHASE 1
RESIDENTIAL AND RECREATION CENTER
 L.477/F.718, L.456/F.448, L.448/F.46
EXISTING CONDITIONS PLAN

TAX MAP: 25 PARCELS: 12, 291 BLOCK: 07 ZONINGS: R-VH, R-A-15, POR
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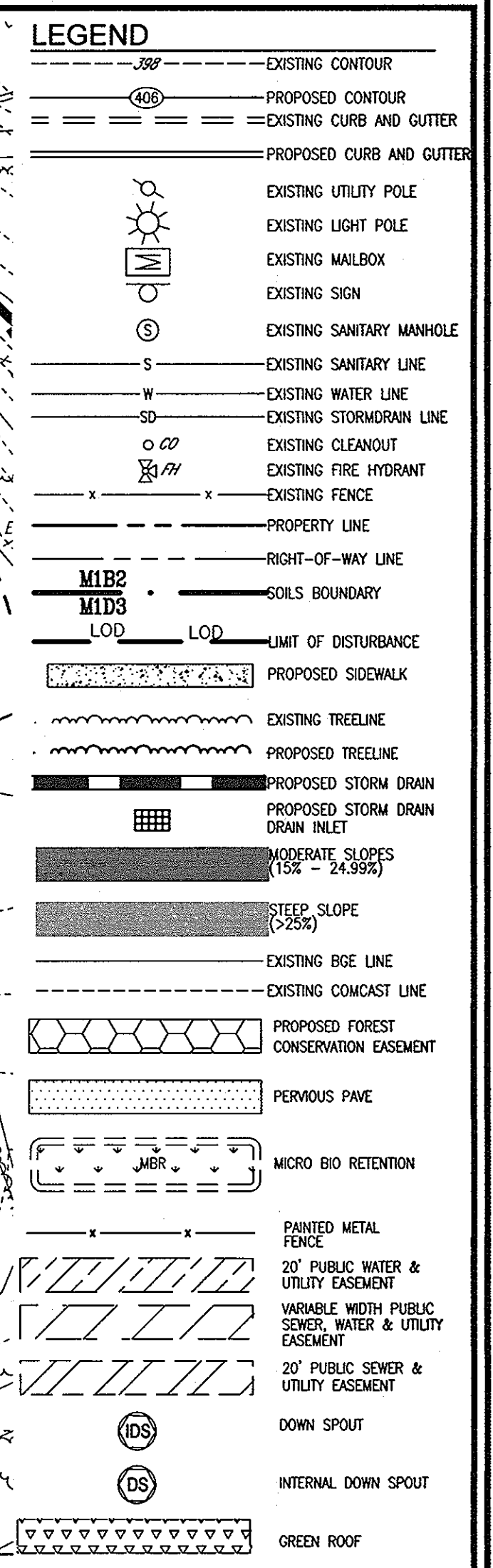
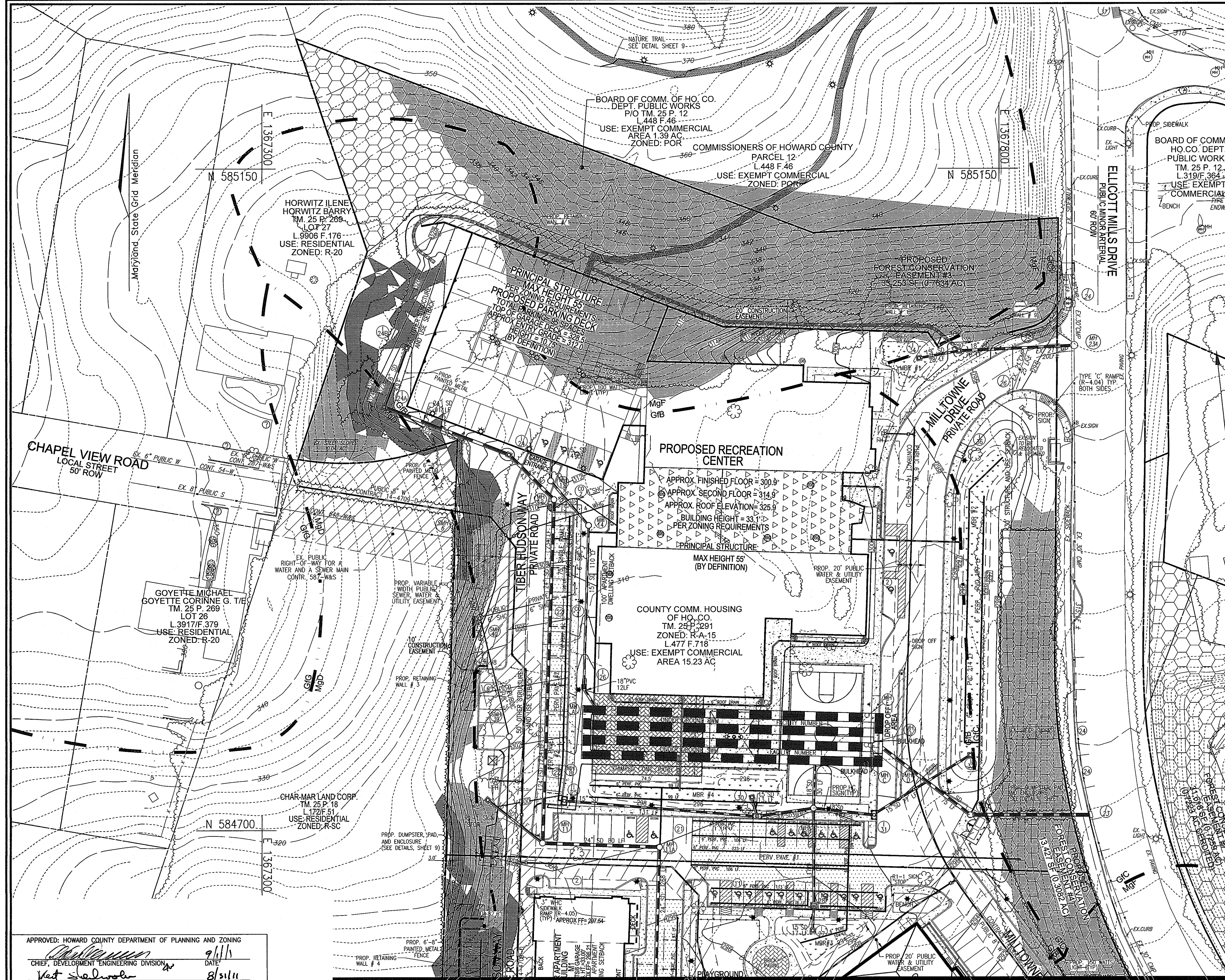
2 SHEET OF 8

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 9/1/11
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 8/31/11
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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OWNER
 MILLTOWNE ASSOCIATE LP
 BY: HCH PARTNERS III LLC, GENERAL PARTNER
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 BY: STACY SPANN, EXECUTIVE DIRECTOR
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 L. 477/F. 718, L. 456/F. 448, L. 448/F. 46

ENVIRONMENTAL CONCEPT PLAN

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3 SHEET OF 8

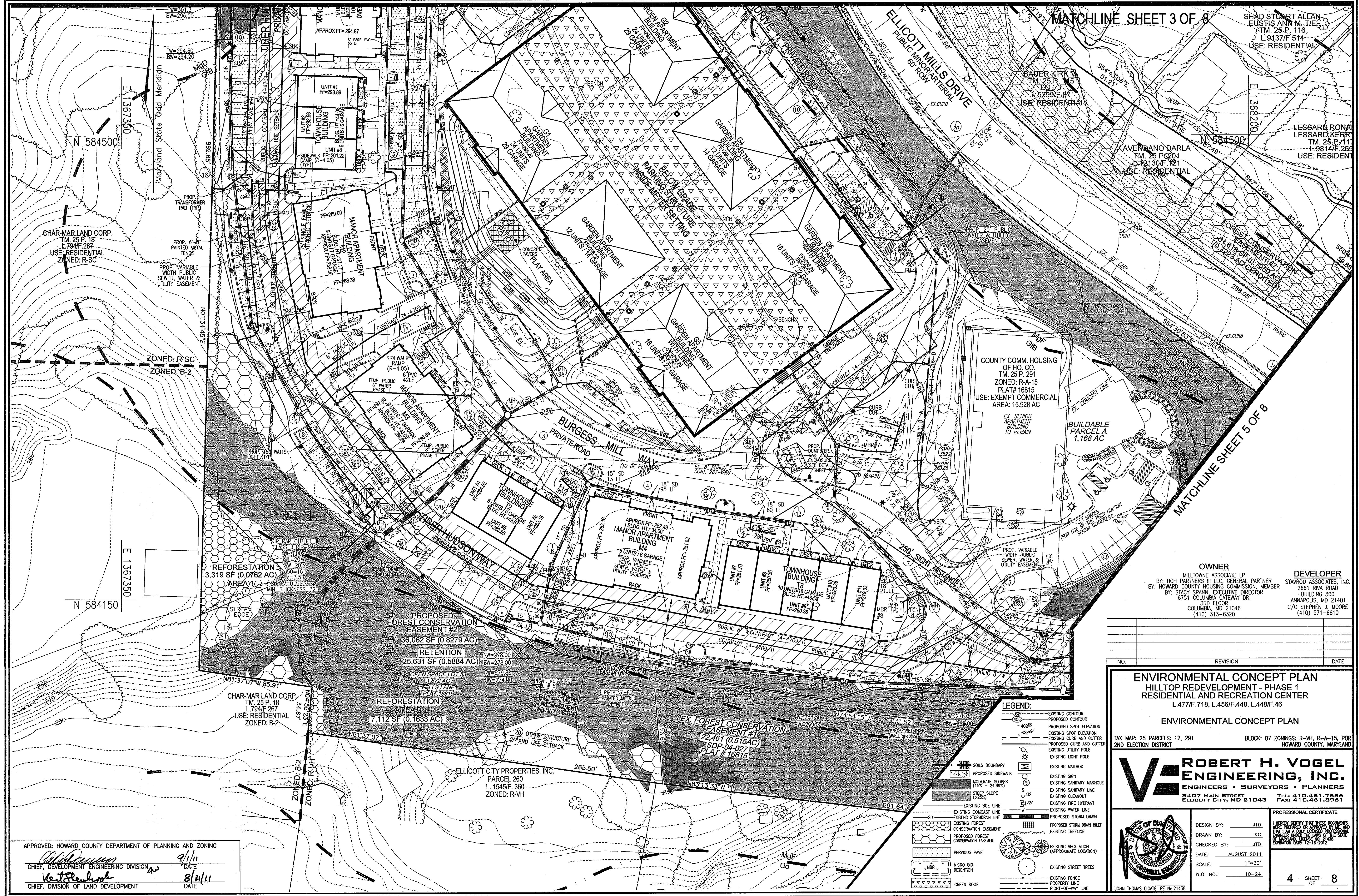
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MATCHLINE SHEET 4 OF 8

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MATCHLINE SHEET 3 OF 8

MATCHLINE SHEET 5 OF 8

COUNTY COMM. HOUSING
OF HO. CO.
TM. 25 P. 291
ZONED: R-A-15
PLAT# 16815
USE: EXEMPT COMMERCIAL
AREA: 15.928 AC

BUILDABLE
PARCEL A
1.168 AC

OWNER
MILLSTONE ASSOCIATE LP
BY: HCH PARTNERS III LLC, GENERAL PARTNER
BY: HOWARD COUNTY HOUSING COMMISSION, MEMBER
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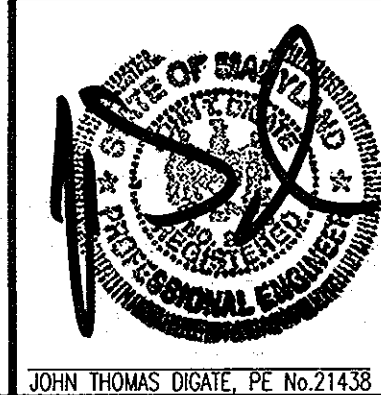
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ENVIRONMENTAL CONCEPT PLAN

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[Signature]
CHIEF, DIVISION OF LAND DEVELOPMENT 8/31/11

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- LEGEND:**
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 - - - - - PROPOSED CONTOUR
 - + 402.88 PROPOSED SPOT ELEVATION
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 - — — — — EXISTING STORMDRAIN LINE
 - — — — — EXISTING BOE LINE
 - — — — — EXISTING COMCAST LINE
 - PROPOSED FOREST CONSERVATION EASEMENT
 - PERVIOUS PAVE
 - MICRO BIO-RETENTION
 - PAINTED METAL FENCE
 - 20' PUBLIC WATER & UTILITY EASEMENT
 - VARIABLE WIDTH PUBLIC SEWER, WATER & UTILITY EASEMENT
 - 20' PUBLIC SEWER & UTILITY EASEMENT

OWNER
 MOUNTAIN ASSOCIATE LP
 BY: HCH PARTNERS III LLC, GENERAL PARTNER
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ENVIRONMENTAL CONCEPT PLAN
HILLTOP REDEVELOPMENT - PHASE 1
RESIDENTIAL AND RECREATION CENTER
 L.477/F.718, L.456/F.448, L.448/F.46

ENVIRONMENTAL CONCEPT PLAN

TAX MAP: 25 PARCELS: 12, 291 BLOCK: 07 ZONINGS: R-VH, R-A-15, POR
 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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5 SHEET OF 8

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 9/6/11
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 9/21/11
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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APPENDIX B.4.C SPECIFICATIONS FOR MICRO-BIORETENTION, RAIN GARDEN, LANDSCAPE INFILTRATION & INFILTRATION BERMS

1. MATERIAL SPECIFICATIONS
THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1.

2. FILTERING MEDIA OR PLANTING SOIL
THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR BLENDED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH OR PROVIDE A HINDERANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.
THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:
* SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION).
* ORGANIC CONTENT - MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (35% TO 40%) OR SANDY LOAM (50%), COARSE SAND (50%), AND COMPOST (40%).
* CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 0%.
* PH RANGE - SHOULD BE BETWEEN 5.5 - 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED IN TO THE SOIL TO INCREASE OR DECREASE PH.
THERE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH AND ADDITIONAL TESTS OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKPILED TOPSOIL IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.

3. COMPACTION
IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL, WHEN POSSIBLE, USE EXCAVATION AIDS TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING LOADERS, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TIRE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.
COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHESEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACATURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.
ROTOTILL TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDING WATER BEFORE PRESSING (ROTOTILLING) BASE.
WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE.
WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 16". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.

4. PLANT MATERIAL
RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.

5. PLANT INSTALLATION
COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.
ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION. TREES SHALL BE BRICED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.
GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLOUS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.
THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFATS, OR AT A MINIMUM, IMPERES THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.

6. UNDERDRAINS
UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:
* PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F 758, TYPE PS 28, OR AASHTO M-278) IN A GRAVEL LAYER. THE PERFORATED MATERIAL IS SLOTTED, 4" DIA. PIPE SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 7'X4" (NO. 4 OR 6) GALVANIZED HARDWARE CLOTH.
* GRAVEL - THE GRAVEL LAYER (NO. 57 OR FINE) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.
* THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.
* A ROCK NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.
* A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES IN TO THE UNDERDRAIN. THIS LAYER MUST BE COVERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".
THIS MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

7. MISCELLANEOUS
THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

OPERATION AND MAINTENANCE SCHEDULE FOR MICROBIORETENTION AREAS

- ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. 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.4.1 AND 2.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
- SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

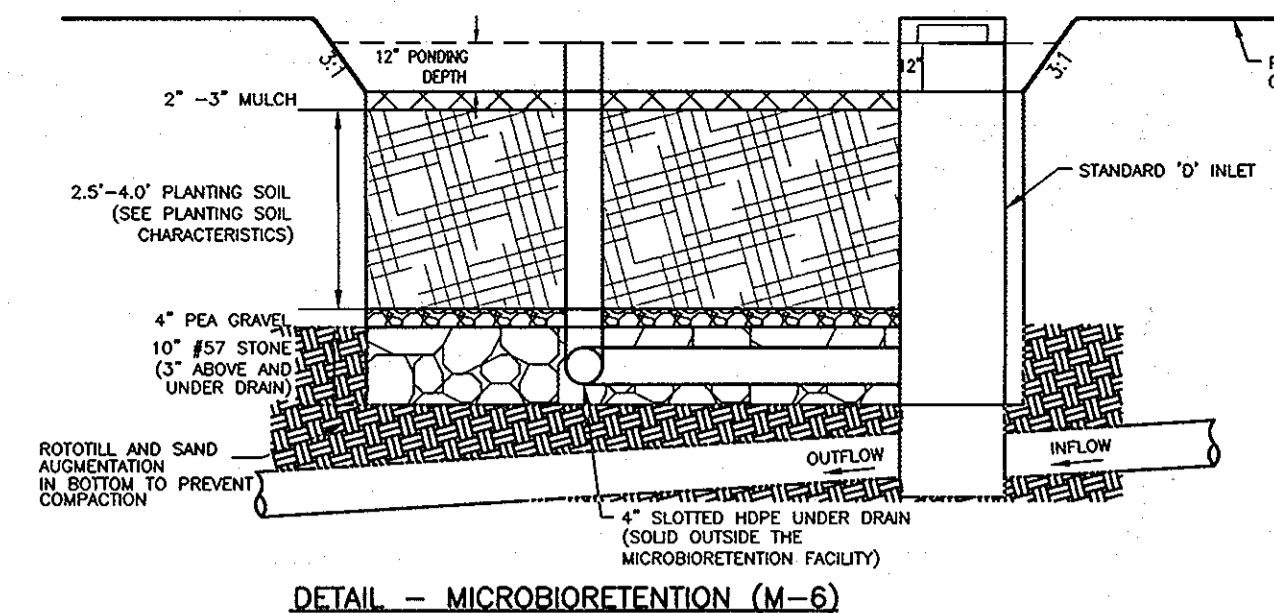
B.4.B SPECIFICATIONS FOR PERMEABLE PAVEMENTS & REINFORCED TURF
THESE SPECIFICATIONS INCLUDE INFORMATION ON ACCEPTABLE MATERIALS FOR TYPICAL APPLICATIONS AND ARE NOT EXCLUSIVE OR LIMITING. THE DESIGNER IS RESPONSIBLE FOR DEVELOPING SPECIFICATIONS FOR INDIVIDUAL PROJECTS AND SPECIFIC CONDITIONS.

1. PERVIOUS CONCRETE SPECIFICATIONS
DESIGN THICKNESS - PERVIOUS CONCRETE APPLICATIONS SHALL BE DESIGNED SO THAT THE THICKNESS OF THE CONCRETE SLAB SHALL SUPPORT THE TRAFFIC AND VEHICLE TYPES THAT WILL BE CARRIED. APPLICATIONS MAY BE DESIGNED USING EITHER STANDARD PAVEMENT PROCEDURES (E.G., AASHTO A2 325.9R, A2 330R) OR USING STRUCTURAL VALUES DERIVED FROM FLEXIBLE PAVEMENT DESIGN PROCEDURES.
MIX & INSTALLATION - TRADITIONAL PORTLAND CEMENTS (ASTM C 150, C 1157) MAY BE USED IN PERVIOUS CONCRETE APPLICATIONS. PHOSPHORUS ADMIXTURES (MAY ALSO BE USED). MATERIALS SHOULD BE TESTED (E.G., BULK DENSITY) PRIOR TO CONSTRUCTION SO THAT CRITICAL PROPERTIES (E.G., SETTING TIME, RATE OF STRENGTH DEVELOPMENT, POROSITY, PERMEABILITY) CAN BE DETERMINED.
AGGREGATE - PERVIOUS CONCRETE CONTAINS A LIMITED FINE AGGREGATE CONTENT. COMMONLY USED GRADATIONS INCLUDE ASTM C 33 NO. 67 (3/4 IN. TO NO. 4), NO. 8 (1/2 IN. TO NO. 10) AND NO. 89 (1/8 IN. TO NO. 20) SIZES. SINGLE-SIZED AGGREGATE (UP TO 1 INCH) MAY ALSO BE USED.
WATER CONTENT - WATER-TO-CEMENT RATIOS BETWEEN 0.27 AND 0.30 ARE USED ROUTINELY WITH PROPER INCLUSION OF CHEMICAL ADMIXTURES. WATER QUANTITY SHOULD MEET ACI 308. AS A GENERAL RULE, POTABLE WATER SHOULD BE USED ALTHOUGH RECYCLED CONCRETE PRODUCTION WATER MEETING ASTM C 94 OR AASHTO M 157 MAY ALSO BE USED.
ADMIXTURES - CHEMICAL ADMIXTURES (E.G., RETARDERS OR HYDRATION-STABILIZERS) ARE USED TO OBTAIN SPECIAL PROPERTIES IN PERVIOUS CONCRETE. USE OF ADMIXTURES SHOULD MEET ASTM C 494 (CHEMICAL ADMIXTURES) AND ASTM C 260 (AIR ENTRAINING ADMIXTURES) AND CLOSELY FOLLOW MANUFACTURER'S RECOMMENDATIONS.
BASE COURSE - THE BASE COURSE SHALL BE AASHTO NO. 3 OR 4 COURSE AGGREGATE WITH AN ASSUMED OPEN PORE SPACE OF 30% (n=0.30).

2. PERMEABLE INTERLOCKING CONCRETE PAVEMENTS (PICP)
PAVER BLOCKS - BLOCKS SHOULD BE EITHER 37 IN. OR 4 IN. THICK, AND MEET ASTM C 936 OR CSA A231.2 REQUIREMENTS. APPLICATIONS SHOULD HAVE 20% OR MORE (40% PREFERRED) OF THE SURFACE AREA OPEN. INSTALLATION SHOULD FOLLOW MANUFACTURER'S INSTRUCTIONS, EXCEPT THAT INFILL AND BASE COURSE MATERIALS AND DIMENSIONS SPECIFIED IN THIS APPENDIX SHALL BE FOLLOWED.
INFILL MATERIALS AND LEVELING COURSE - OPENINGS SHALL BE FILLED WITH ASTM C-33 GRADED SAND OR SANDY LOAM. PICP BLOCKS SHALL BE PLACED ON A ONE-INCH THICK LEVELING COURSE OF ASTM C-33 SAND.
BASE COURSE - THE BASE COURSE SHALL BE AASHTO NO. 3 OR 4 COURSE AGGREGATE WITH AN ASSUMED OPEN PORE SPACE OF 30% (n=0.30).

3. REINFORCED TURF
REINFORCED GRASS PAVEMENT (RGP) - WHETHER USED WITH GRASS OR GRAVEL, THE RGP THICKNESS SHALL BE AT LEAST 1-3/4" THICK WITH A LOAD CAPACITY CAPABLE OF SUPPORTING THE TRAFFIC AND VEHICLE TYPES THAT WILL BE CARRIED.

FACILITY	BOTTOM ELEVATION	AF (SF)	IN DEPTH OF STONE (INCH)	VOL. REQU. CF	VOL. PROV. CF
MBR#1	296.0	3256	36"	6758	6887
MBR#2	299.7	593	36"	1256	1342
MBR#3	295.0	1864	36"	3965	3965
MBR#4	298.0	503	24"	906	1003
MBR#5	285.0	1215	36"	1094	2537
MBR#6	281.0	677	24"	1011	1271
MBR#7	279.0	1267	36"	2633	2650
MBR#8	276.0	93	36"	237	255
MBR#9	280.5	47	36"	176	176
MBR#10	282.8	132	36"	273	331
MBR#11	283.0	182	24"	333	396
MBR#12	285.0	118	36"	308	308
MBR#13	285.0	122	36"	327	327
SAND FILTER #1	260.0	4363	36"	3927	15144



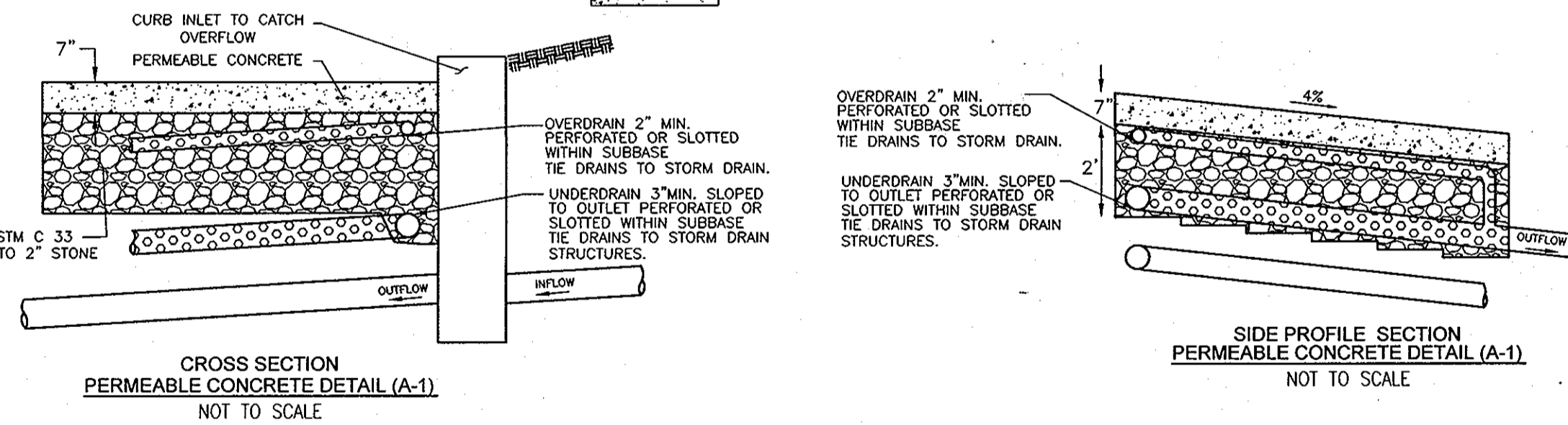
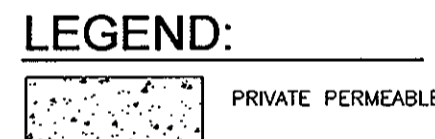
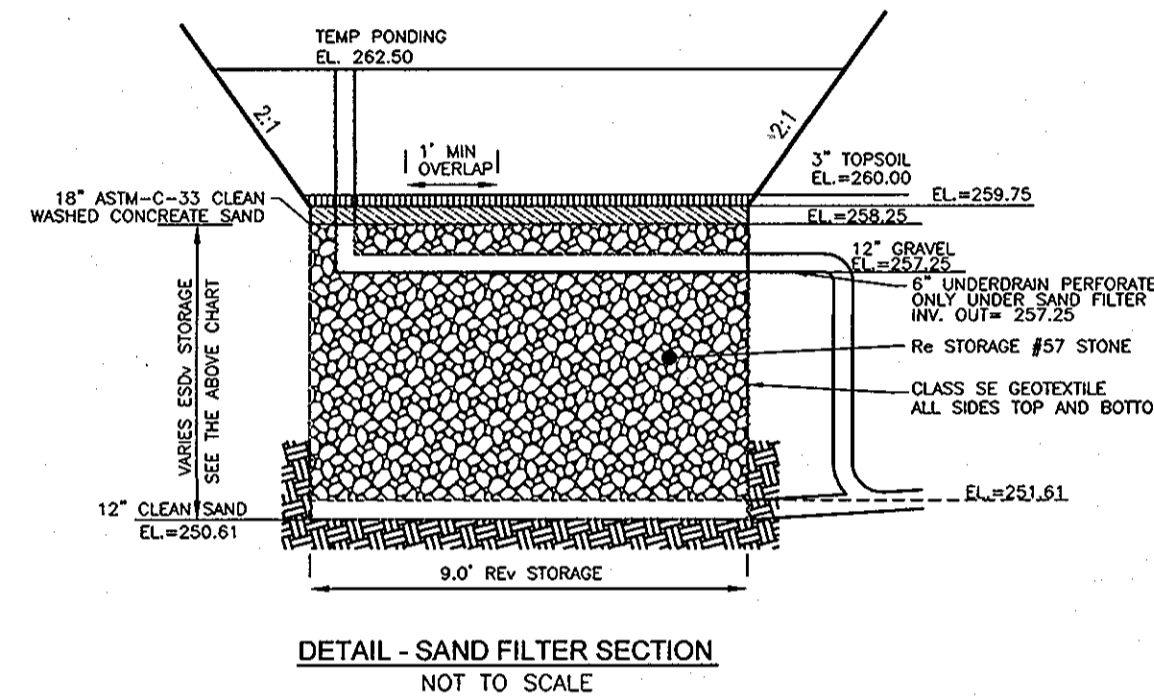
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KEY	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
AR	TBD	ACER RUBRUM / OCTOBER GLORY	2 1/2"-3" CAL	B & B
IG	TBD	ILEX GLABRA / OCTOBER GLORY RED MAPLE	2 1/2"-3" HT	CONT.
PV	TBD	SWITCH GRASS / PANICUM VIRGATUM	1 GALLON	24" O.C.
MD	TBD	BEE BALM / MONARDA DIDYMA	1 GALLON	24" O.C.
EP	TBD	JOE PYE WEED / EUPATORIUM PURPUREUM	1 GALLON	48" O.C.

* QUANTITIES FOR EACH FACILITY WILL BE DETERMINED AT SDP STAGE.

FACILITY	IN DEPTH OF STONE (IN)	AF	VOL.
PERV PAVE #1	10	11867	4746.8
PERV PAVE #2	24	3580	2148
PERV PAVE #3	10	11480	2870
PERV PAVE #4	12	1620	486
PERV PAVE #5	12	1295	388.5
PERV PAVE #6	12	1490	447
PERV PAVE #7	18	1660	747
PERV PAVE #8	12	1632	489.6

* 30% VOID RATIO.



Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil (2" to 4" deep)	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (50%), coarse sand (50%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pre gravel discharge	fine gravel, ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile	n/a		PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe, 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipe; not necessary underdrain pipe. Perforated pipe shall be wrapped with 1/2-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3, f'c = 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-A615-60	n/a	on-site testing of poured-in-place concrete required: 28-day strength and slump test; all concrete design (cast-in-place or 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 350.8R9; vertical loading (H-10 or H-20); allowable horizontal loading (based on soil research); and analysis of potential cracking. Sand substitutions such as Diabase and Graystone (AASHTO) #10 are not acceptable. No tabular carbonate or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.
Sand	AASHTO M-6 or ASTM-C-33	0.075" to 0.04"	

OWNER
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BY: HOWARD COUNTY HOUSING COMMISSION, MEMBER
BY: STACY SPANN, EXECUTIVE DIRECTOR
6751 COLUMBIA GATEWAY DR.
3RD FLOOR
COLUMBIA, MD 21046
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DEVELOPER
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2661 RIVA ROAD
BUILDING 300
ANNAPOLIS, MD 21401
C/O STEPHEN J. MOORE
(410) 571-6610

NO.	REVISION	DATE

**ENVIRONMENTAL CONCEPT PLAN
HILLTOP REDEVELOPMENT - PHASE 1
RESIDENTIAL AND RECREATION CENTER
L.477/F.718, L.456/F.448, L.448/F.46**

SWM DETAILS

TAX MAP: 25 PARCELS: 12, 291 BLOCK: 07 ZONINGS: R-VH, R-A-15, PR
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL
ENGINEERING, INC.**
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET TEL: 410.461.7666
ELLICOTT CITY, MD 21043 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

DESIGN BY: JTD
DRAWN BY: KG
CHECKED BY: JTD
DATE: AUGUST 2011
SCALE: AS SHOWN
W.O. NO.: 10-24

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. 21438 EXPIRATION DATE: 12-16-2012

6 SHEET OF 8

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 9/1/11
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

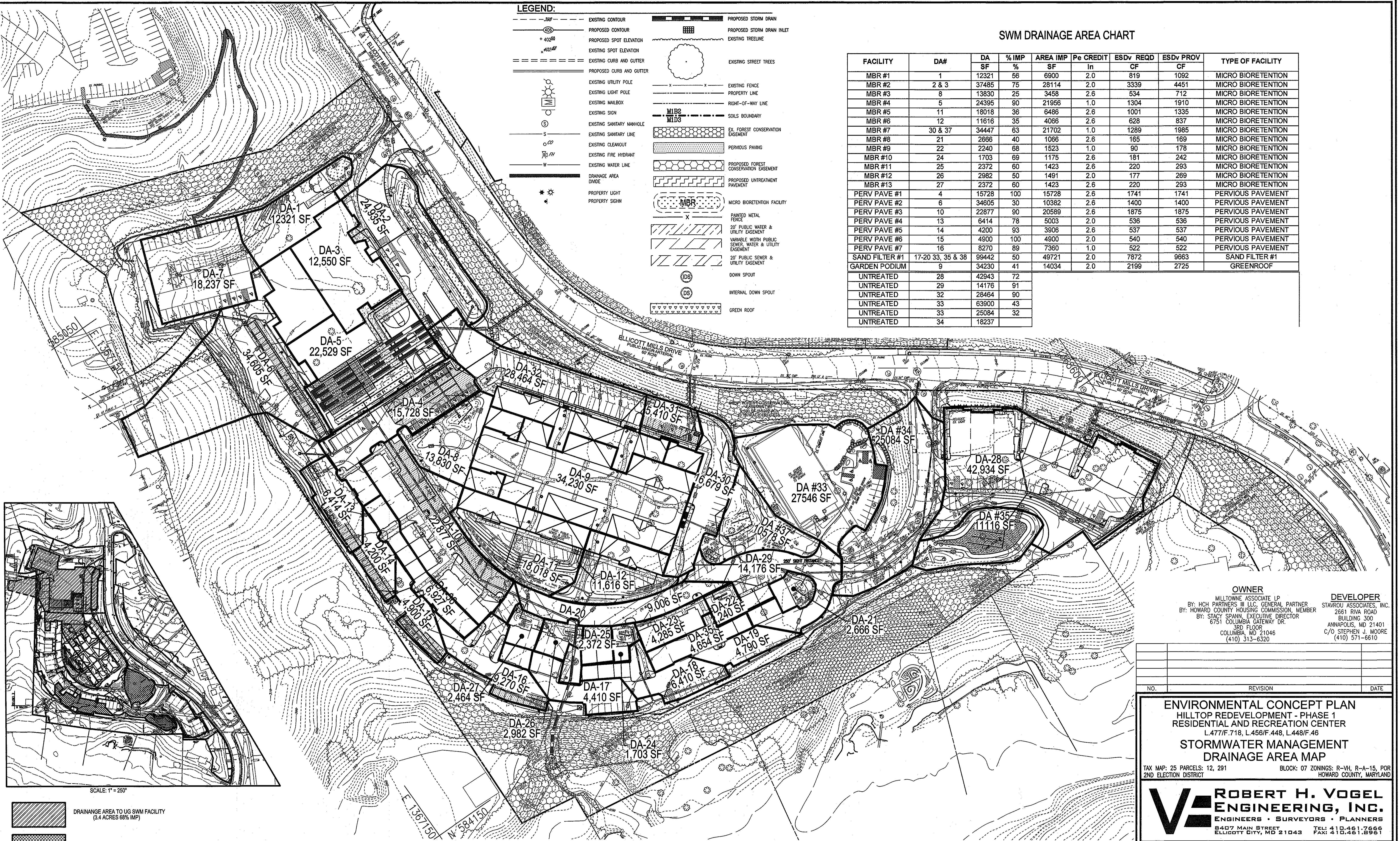
[Signature] 8/31/11
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

LEGEND:

- 389 --- EXISTING CONTOUR
- 406 --- PROPOSED CONTOUR
- + 402.88 EXISTING SPOT ELEVATION
- + 402.88 PROPOSED SPOT ELEVATION
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- DRAINAGE AREA DIVIDE
- PROPERTY LIGHT
- PROPERTY SIGN
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- EXISTING TREE LINE
- EXISTING STREET TREES
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- SOILS BOUNDARY
- EX. FOREST CONSERVATION EASEMENT
- PERVIOUS PAVING
- PROPOSED FOREST CONSERVATION EASEMENT
- PROPOSED UNTREATMENT PAVEMENT
- MICRO BIORETENTION FACILITY
- PAINTED METAL FENCE
- 20' PUBLIC WATER & UTILITY EASEMENT
- VARIABLE WIDTH PUBLIC SEWER, WATER & UTILITY EASEMENT
- 20' PUBLIC SEWER & UTILITY EASEMENT
- DRAINAGE AREA DIVIDE
- INTERNAL DOWN SPOUT
- GREEN ROOF

SWM DRAINAGE AREA CHART

FACILITY	DA#	DA SF	% IMP	AREA IMP SF	Pe	CREDIT In	ESDv REQD	ESDv PROV CF	TYPE OF FACILITY
MBR #1	1	12321	56	6900	2.0	819	1092		MICRO BIORETENTION
MBR #2	2 & 3	37485	75	28114	2.0	3339	4451		MICRO BIORETENTION
MBR #3	8	13830	25	3458	2.6	534	712		MICRO BIORETENTION
MBR #4	5	24395	90	21956	1.0	1304	1910		MICRO BIORETENTION
MBR #5	11	18018	36	6486	2.6	1001	1335		MICRO BIORETENTION
MBR #6	12	11616	35	4066	2.6	628	837		MICRO BIORETENTION
MBR #7	30 & 37	34447	63	21702	1.0	1289	1985		MICRO BIORETENTION
MBR #8	21	2666	40	1066	2.6	165	169		MICRO BIORETENTION
MBR #9	22	2240	68	1523	1.0	90	178		MICRO BIORETENTION
MBR #10	24	1703	69	1175	2.6	181	242		MICRO BIORETENTION
MBR #11	25	2372	60	1423	2.6	220	293		MICRO BIORETENTION
MBR #12	26	2982	50	1491	2.0	177	269		MICRO BIORETENTION
MBR #13	27	2372	60	1423	2.6	220	293		MICRO BIORETENTION
PERV PAVE #1	4	15728	100	15728	2.6	1741	1741		PERVIOUS PAVEMENT
PERV PAVE #2	6	34605	30	10382	2.6	1400	1400		PERVIOUS PAVEMENT
PERV PAVE #3	10	22877	90	20589	2.6	1875	1875		PERVIOUS PAVEMENT
PERV PAVE #4	13	6414	78	5003	2.0	536	536		PERVIOUS PAVEMENT
PERV PAVE #5	14	4200	93	3906	2.6	537	537		PERVIOUS PAVEMENT
PERV PAVE #6	15	4900	100	4900	2.0	540	540		PERVIOUS PAVEMENT
PERV PAVE #7	16	8270	89	7360	1.0	522	522		PERVIOUS PAVEMENT
SAND FILTER #1	17-20, 33, 35 & 38	99442	50	49721	2.0	7872	9663		SAND FILTER #1
GARDEN PODIUM	9	34230	41	14034	2.0	2199	2725		GREENROOF
UNTREATED	28	42943	72						
UNTREATED	29	14176	91						
UNTREATED	32	28464	90						
UNTREATED	33	63900	43						
UNTREATED	33	25084	32						
UNTREATED	34	18237	32						



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7 SHEET OF 8

SCALE: 1" = 250'

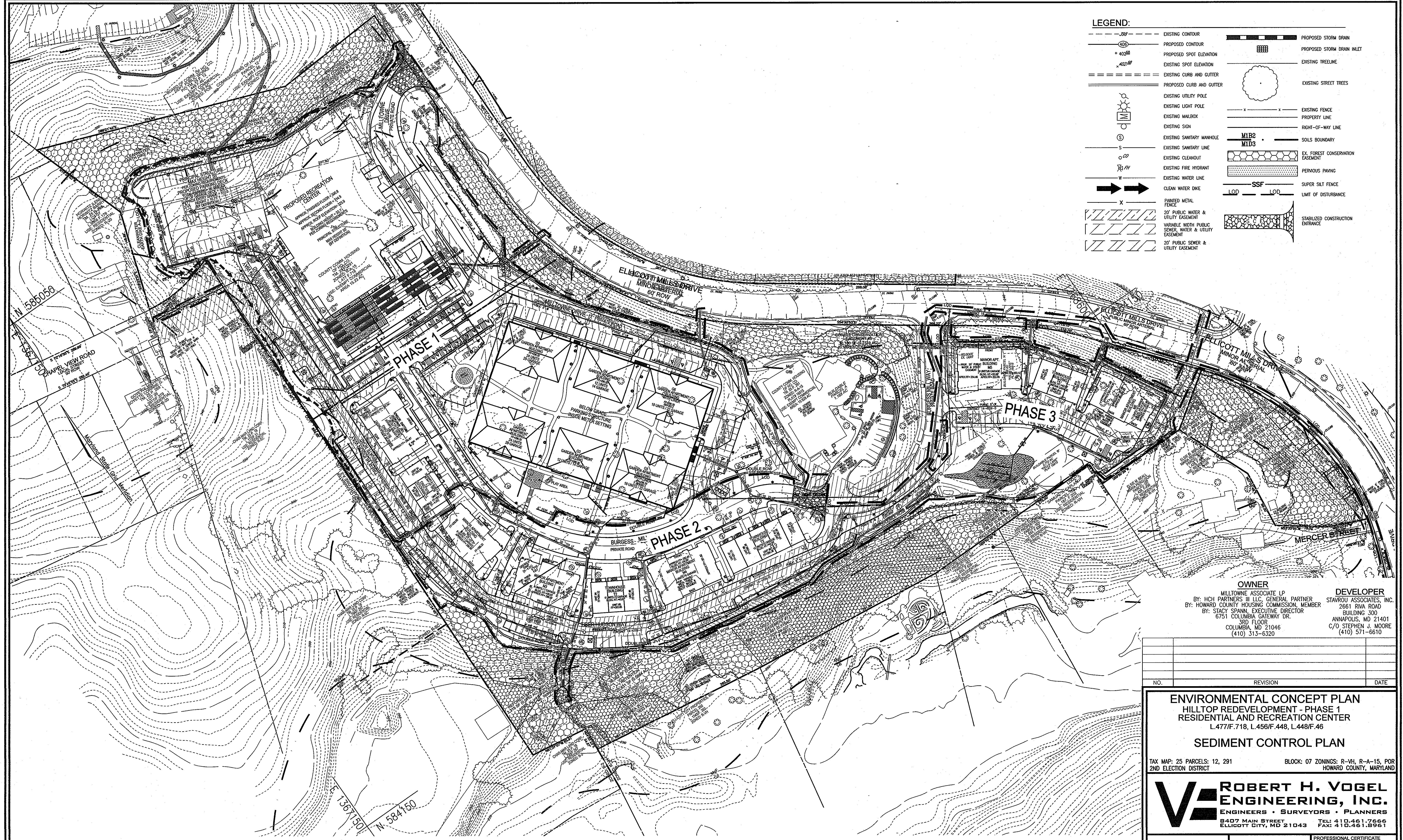
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 9/6/11
CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 8/31/11

BY THE DEVELOPER:
"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN 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 SOIL CONSERVATION DISTRICT."

BY THE ENGINEER:
"I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT 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."

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

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LEGEND:

--- 20' ---	EXISTING CONTOUR	--- 20' ---	PROPOSED STORM DRAIN
--- 20' ---	PROPOSED CONTOUR	--- 20' ---	PROPOSED STORM DRAIN INLET
+	EXISTING SPOT ELEVATION	--- 20' ---	EXISTING TREELINE
+	PROPOSED SPOT ELEVATION	○	EXISTING STREET TREES
---	EXISTING CURB AND GUTTER	---	EXISTING FENCE
---	PROPOSED CURB AND GUTTER	---	PROPERTY LINE
○	EXISTING UTILITY POLE	---	RIGHT-OF-WAY LINE
○	EXISTING LIGHT POLE	---	SOILS BOUNDARY
○	EXISTING MAILBOX	MIB2	EX. FOREST CONSERVATION EASEMENT
○	EXISTING SIGN	MID3	PERVIOUS PAVING
○	EXISTING SANITARY MANHOLE	---	SUPER SILT FENCE
---	EXISTING SANITARY LINE	---	LIMIT OF DISTURBANCE
---	EXISTING CLEANOUT	---	STABILIZED CONSTRUCTION ENTRANCE
---	EXISTING FIRE HYDRANT	---	
---	EXISTING WATER LINE	---	
---	CLEAN WATER DIKE	---	
---	PAINTED METAL FENCE	---	
---	20' PUBLIC WATER & UTILITY EASEMENT	---	
---	VARIABLE WIDTH PUBLIC SEWER, WATER & UTILITY EASEMENT	---	
---	20' PUBLIC SEWER & UTILITY EASEMENT	---	

OWNER
MILLTOWNE ASSOCIATE LP
BY: HCH PARTNERS III LLC, GENERAL PARTNER
BY: HOWARD COUNTY HOUSING COMMISSION, MEMBER
BY: STACY SPANN, EXECUTIVE DIRECTOR
6751 COLUMBIA GATEWAY DR.
3RD FLOOR
COLUMBIA, MD 21046
(410) 313-6320

DEVELOPER
STAVROU ASSOCIATES, INC.
2661 RIVA ROAD
BUILDING 300
ANNAPOLIS, MD 21401
C/O STEPHEN J. MOORE
(410) 571-6610

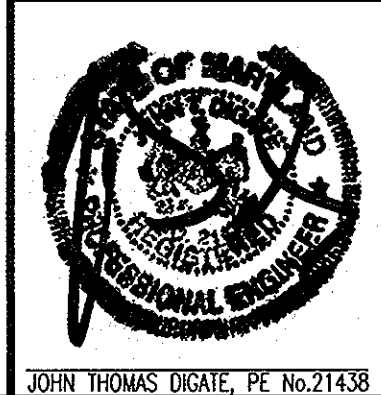
NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN
HILLTOP REDEVELOPMENT - PHASE 1
RESIDENTIAL AND RECREATION CENTER
L.477/F.718, L.456/F.448, L.448/F.46

SEDIMENT CONTROL PLAN

TAX MAP: 25 PARCELS: 12, 291 BLOCK: 07 ZONINGS: R-VH, R-A-15, POR
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET TEL: 410.461.7666
ELlicott CITY, MD 21043 FAX: 410.461.8961



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. 21438, EXPIRATION DATE: 12-16-2012.

DESIGN BY: JTD
DRAWN BY: KG
CHECKED BY: JTD
DATE: AUGUST 2011
SCALE: 1"=60'
W.O. NO.: 10-24

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP
G1B	GLADSTONE-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES	B
G1C	GLADSTONE-URBAN LAND COMPLEX, 8 TO 15 PERCENT SLOPES	B
G1B	GLENVILLE-URBAN LAND-UDORTHEMITS COMPLEX, 0 TO 8 PERCENT SLOPES	C
M1D	MANOR-BANNERTOWN SANDY LOAMS, 15 TO 25 PERCENT SLOPES, ROCKY	B
M1F	MANOR-BANNERTOWN SANDY LOAMS, 25 TO 65 PERCENT SLOPES, ROCKY	B

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 8/1/11
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 8/31/11
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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