

ENVIRONMENTAL CONCEPT PLAN

MACALPINE

LOT 11

2nd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND					
SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALTERNATE GROUP	NAME	k-VALUE
LoB		B		LEGORE-MONTALTO-URBAN LAND COMPLEX 0 TO 8 PERCENT SLOPES	0.64

SOILS MAP # 13.

ESD SWM CHART

FACILITY	D.A.	MDE Type	Total DA	Impervious Area	Qe	A (SF)		Depth/Gal	ESDv (CF)			
						Required	Provided		Af Min.	Required	Provided	Pe(Provided)
SW-1		M-8	1,510	1,510	1.52	242	210	PASS	NA	191	191	1.6
SW-2		M-8	1,500	1,500	1.52	240	210	PASS	NA	190	190	1.6
PP-1		A-2	1,212	1,212	1.52	364	1012	PASS	2.00	154	304	3.2
TOTAL TREATED			4,222	4,222		846	1,432			535	685	2.0
SITE TOTAL			4,222	4,222								

10-100 YEAR SWM STORAGE CHART					
FACILITY TYPE	STORM	EXISTING RUNOFF	PROPOSED RUNOFF**	STORAGE REQUIRED	STORAGE PROVIDED
STONE STORAGE CHAMBER	3.5HR/6.6IN.	1.8 cfs	3.3 cfs	1246 cf	1300 cft @ 446.4
STONE STORAGE CHAMBER	10 YEAR	0.76 cfs	1.21 cfs	1792 cf	1800 cft @ 447.3
STONE STORAGE CHAMBER	100 YEAR	2.38 cfs	3.04 cfs	3106 cf	3200 cft @ 449.3

** DEVELOPED RUNOFF BEFORE ROUTING THROUGH FACILITY.

DESIGN NARRATIVE

THIS PROJECT, KNOWN AS MACALPINE LOT 11, IS LOCATED IN TAX MAP 24, PARCEL 182 AND IS APPROXIMATELY 0.40 ACRES. THE PARCEL IS ZONED R-20. THE PROPERTY SLOPES FROM THE WEST TO THE EAST TOWARDS MACALPINE ROAD WITH RELATIVELY MODERATE SLOPES. THE PROPERTY IS CURRENTLY VACANT. THE SITE CONSISTS OF TYPE 'B' SOILS PER THE NRCS SOILS CLASSIFICATION BUT BASED ON A GEOTECHNICAL ANALYSIS OF THE SITE THE SOILS ARE A SILTY CLAY LOAM WITH ROCK AT DEPTHS OF 4' TO 6'. THE DRAINAGE AREA IS PATUXENT RIVER LOWER NORTH BRANCH (02150906), AND IS A CLASS 1-P STREAM.

THE TARGET PE FOR THIS SITE IS 1.6 INCHES BASED ON THE IMPERVIOUS AREA OF THE PROPOSED CONDITIONS. THE TARGET PE WAS TREATED USING ENVIRONMENTAL SITE DESIGN PRACTICES AS OUTLINED IN CHAPTER 5 OF THE 2000 MARYLAND STORMWATER DESIGN MANUAL. TREATMENT IS PROVIDED USING ENVIRONMENTAL SITE DESIGN METHODS, INCLUDING GRASS SWALES (M-8) FOR THE ROOF RUNOFF AND POROUS PAVING (A-2) FOR THE DRIVEWAY.

ADDITIONALLY, THIS SITE IS LOCATED WITHIN THE TIBER BRANCH WATERSHED. ON OCTOBER 7, 2019, THE COUNTY COUNCIL VOTED TO ADOPT CR#123-2019 AMENDING DESIGN MANUAL VOLUME 1. THE AMENDMENT REQUIRES DEVELOPMENT WITHIN THE TIBER BRANCH AND PLUMTREE WATERSHEDS TO MANAGE AND CONVEY RUNOFF FOR THE 24-HOUR 100 YEAR, 24-HOUR 10 YEAR, AND 3.5 HOUR 6.6-INCH STORM EVENT TO A STORM WATER MANAGEMENT FACILITY.

THIS SITE PROPOSES TO PROVIDE 10 & 100-YEAR MANAGEMENT AND THE 3.5 HOUR 6.6 INCH MANAGEMENT ONSITE BY METHODS OF RETENTION WITHIN A STONE CHAMBER. THIS CHAMBER WILL COLLECT THE SWALE RUNOFF THROUGH USE OF DRAINS DIVERTED TO THE FACILITY. UNDERDRAINS ARE PROVIDED FOR THE RELEASE UTILIZING POP-UP DRAINS ON THE LOT AT THE 100-YEAR WATER SURFACE ELEVATION.

TO PROTECT NATURAL RESOURCES, IT IS IMPORTANT TO MINIMIZE AND ADEQUATELY TREAT THE STORMWATER RUNOFF. THE FINAL DESIGN WILL INCORPORATE ADEQUATE TREATMENT AND STORAGE IN ORDER TO CREATE THE LEAST POSSIBLE STORMWATER RUNOFF IN GENERAL COMPLIANCE WITH THIS CONCEPT PLAN. THE RUNOFF WILL BE TREATED ON-SITE USING APPROVED METHODS.

MAINTENANCE OF THE NATURAL FLOW PATTERNS IS PROVIDED BY LIMITING THE SITE DISTURBANCE AND BY THE USE OF SWALES OPPOSED TO STRUCTURAL PRACTICES ALTERING THE DRAINAGE PATTERNS AND LIMITING CONCENTRATED FLOWS. UTILIZING SWALES, A NONSTRUCTURAL PRACTICE, MAKES FOR A BETTER SITE DESIGN AS WELL AS MAINTAINING THE ORIGINAL DRAINAGE PATTERNS.

AS A RESULT OF FULLY ADDRESSING THE ESD STORMWATER MANAGEMENT BY USE OF SWALES (M-8) AND POROUS PAVING (A-2) THE LAND CONDITIONS HAVE THEORETICALLY BEEN RETURNED TO WOODS IN GOOD CONDITION. THEREFORE, PROVIDING THE REDUCTION IN IMPERVIOUS AREAS THROUGH NON-STRUCTURAL PRACTICES WE HAVE MET THE ESD REQUIREMENTS FOR THIS SITE.

SEDIMENT AND EROSION CONTROL SHALL COMPLY WITH THE LATEST EDITION OF THE MDE STANDARDS AND SPECIFICATIONS FOR SEDIMENT CONTROL AND HAS BEEN LIMITED TO THE AREAS NECESSARY TO CONDUCT ESD PRACTICES AND ONSITE FUNCTIONALITY.

THIS SITE IS LESS THAN 40,000 SQUARE FEET; THEREFORE, THE SITE IS EXEMPT FROM THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION AND FOREST STAND DELINEATION REQUIREMENTS PER SECTION 16.1202(B)(1)(i) OF THE SUBDIVISION REGULATIONS FOR DEVELOPMENT ON LAND WHICH IS LESS THAN 40,000 SQUARE FEET IN SIZE.

IT IS CONCLUDED THAT ALL ESD TO THE MEP REQUIREMENTS AS DEFINED IN THE STORMWATER MANAGEMENT ACT OF 2007 HAVE BEEN MET FOR THE PROPOSED DEVELOPMENT. THE WATER QUALITY HAS BEEN PROVIDED BY THE IMPLEMENTATION OF (2) GRASS SWALES (M-8) AND POROUS PAVING (A-2) TO TREAT THE PROPOSED IMPERVIOUS ONSITE. ADDITIONAL SWM IS PROVIDED TO MEET THE REQUIRED 10 & 100-YEAR MANAGEMENT AND THE 3.5 HOUR 6.6 INCH MANAGEMENT ONSITE BY METHODS OF RETENTION WITHIN A STONE CHAMBER.

NOTE:
REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SUBDIVISION AND/OR SITE DEVELOPMENT PLAN STAGES. THEREFORE, THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED COMMENTS (INCLUDING THOSE THAT MAY ALTER OVERALL SITE DESIGN) AS THIS PROJECT PROGRESSES.

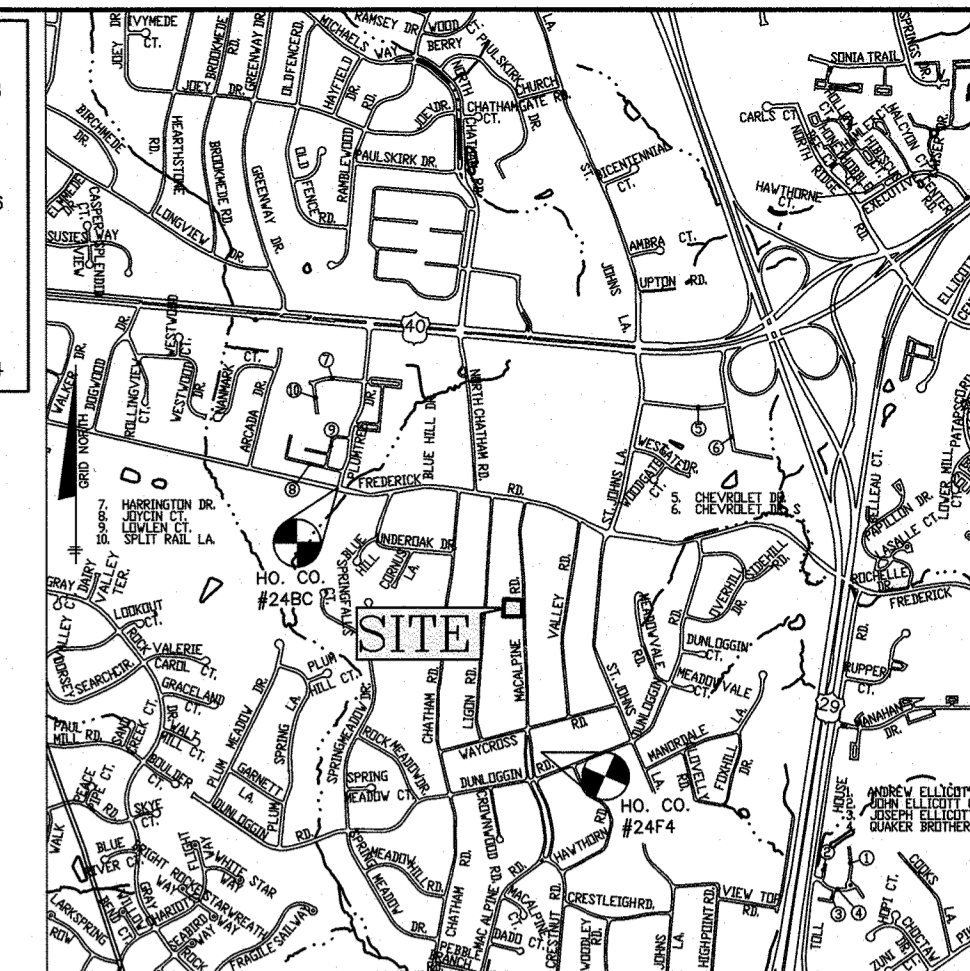
Site Analysis Data Sheet

Gross Site Area	0.40 ac
100yr Floodplain	0.00 ac
Slopes 15% or greater (On-Site)	0.00 ac
Wetlands	0.00 ac
Wetlands Buffer	0.00 ac
Forested Area	0.00 ac
Erodible Soils	0.00 ac
Limit of Disturbance	0.35 ac
Impervious Area	0.11 ac
Green Space	0.24 ac
Public Road Right-of-Way	0.00 ac
Site Use	RESIDENTIAL
Open Space	N/A

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 4/26/21
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 5.17.21

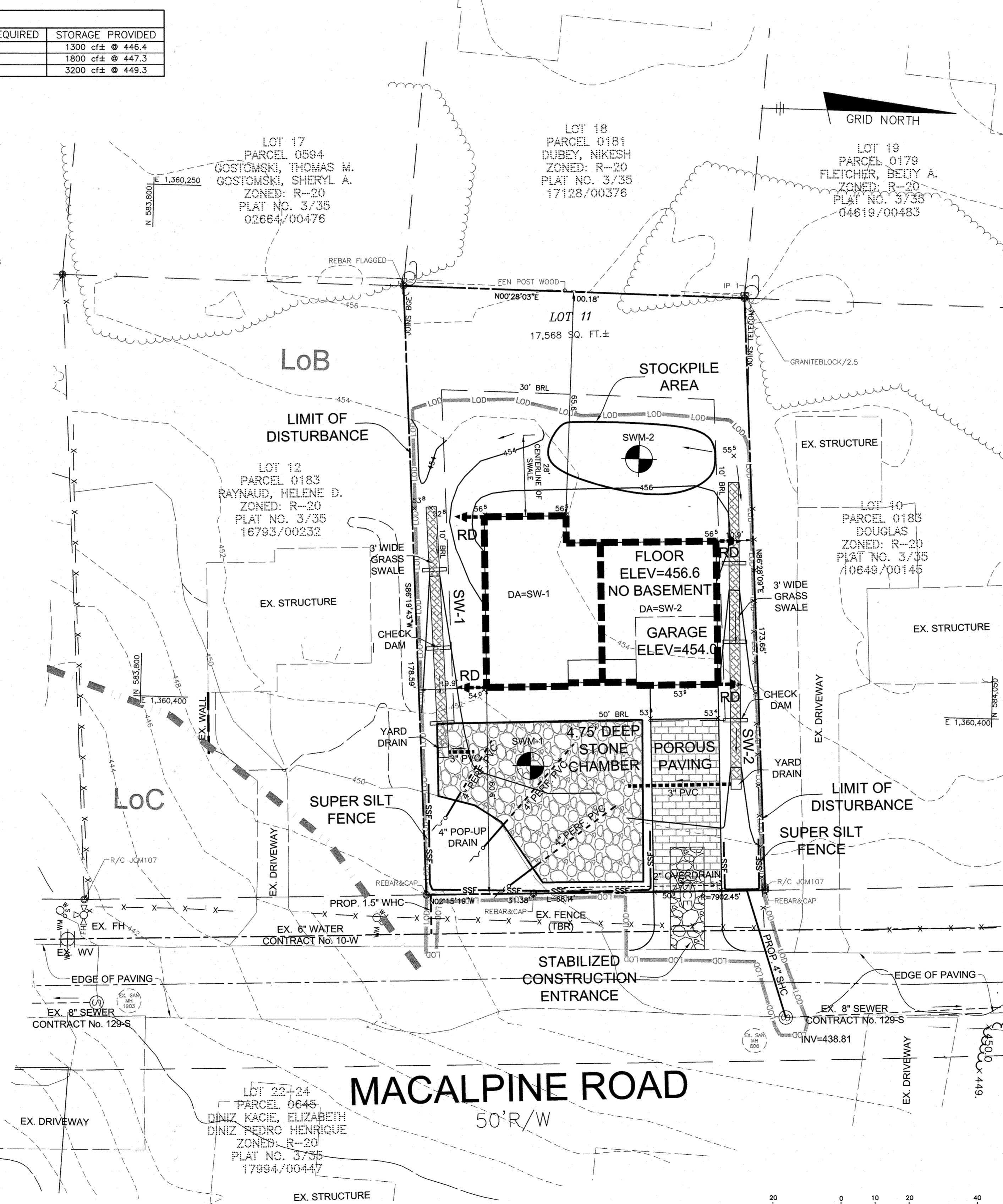
BENCH MARKS NAD '83	
HO. CO. 24F4	ELEV. 386.118
STAMPED DISC ON CONCRETE MONUMENT, AT MACALPINE ROAD SOUTH OF WAYCROSS ROAD	
N 582,298.642	E 1,360,571.016
HO. CO. 24BC	ELEV. 364.798
STAMPED DISC ON CONCRETE MONUMENT, ENTRANCE TO H.C. LIBRARY, FREDERICK ROAD	
N 585,058.416	E 1,358,312.254



ADC MAP 20, GRID E8
VICINITY MAP
SCALE: 1"=2000'

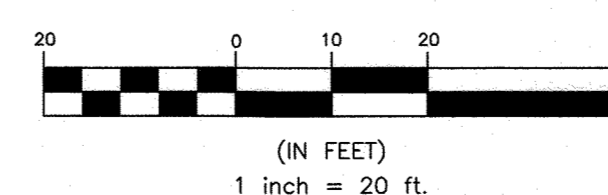
GENERAL NOTES

- SUBJECT PROPERTY IS ZONED R-20 PER THE 10-6-2013 COMPREHENSIVE ZONING PLAN.
- THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, DATED OCTOBER 7, 2007.
- PROJECT LIMITS ARE BASED ON A BOUNDARY SURVEY PERFORMED BY BENCHMARK ENGINEERING, INC., ON OR ABOUT DECEMBER 2018.
- TOPOGRAPHY SHOWN HEREON IS BASED ON FIELD SPOT ELEVATIONS SURVEY PREPARED BY BENCHMARK ENGINEERING, INC., DATED DECEMBER 2018 AND IS AT A CONTOUR INTERVAL OF 2'.
- THE COORDINATES SHOWN HEREON ARE BASED UPON HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 24BC AND 24F4 WERE USED FOR THIS PROJECT.
- THERE ARE NO STEEP SLOPES (25% OR GREATER) IN EXCESS OF 20,000 SF ON THIS SITE.
- THERE ARE NO FLOODPLAINS, STREAMS, WETLANDS OR THEIR BUFFERS LOCATED ON THIS SITE.
- TO THE BEST OF OUR KNOWLEDGE THERE ARE NO CEMETERIES OR HISTORIC STRUCTURES LOCATED ON THIS SITE.
- A NOISE STUDY IS NOT REQUIRED FOR THIS SITE.
- THIS SITE IS LOCATED WITHIN THE METROPOLITAN DISTRICT AND THE PLANNED SERVICE AREA. WATER AND SEWER WILL BE PUBLIC.
- THE SITE AREA IS LESS THAN 40,000 SF. THEREFORE, THE SITE SHALL BE EXEMPT FROM THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION AND FOREST STAND DELINEATION PER SECTION 16.1202(B)(1)(i) OF THE SUBDIVISION REGULATIONS FOR DEVELOPMENT ON LAND WHICH IS LESS THAN 40,000 SF IN SIZE.
- THIS SUBDIVISION WAS CREATED PRIOR TO THE EFFECTIVE DATE OF THE 1993 EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE ENACTMENT OF THE LANDSCAPE MANUAL AND THESE LOTS ARE CONSIDERED INTERNAL TO THE DEVELOPMENT. LANDSCAPING IS NOT REQUIRED.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY 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 100 YEAR FLOODPLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY.
 - STRUCTURE CLEARANCES - MINIMUM 12 FEET.
 - MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
- 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.
- IN ACCORDANCE WITH SECTION 16.108.(b)(28.1)(v), A PRE-SUBMISSION COMMUNITY MEETING FOR THIS PROJECT IS NOT REQUIRED, AS THIS PROJECT IS PART OF A RECORDED SUBDIVISION THAT AUTHORIZED AN EQUAL OR GREATER NUMBER OF RESIDENTIAL UNITS THAN PROPOSED ON THIS PLAN.
- 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.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- EXISTING UTILITIES SHOWN ARE BASED ON A FIELD SURVEY, HOWARD COUNTY GIS, AND INFORMATION OF RECORD.
- ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE BUILDER'S EXPENSE. CONTRACTOR SHALL ADJUST ELEVATIONS OF STRUCTURES AS NECESSARY.
- SHC ELEVATIONS SHALL BE THE RESPONSIBILITY OF THE OWNER.
- STORMWATER MANAGEMENT METHODS ARE DESIGNED BASED ON THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I AND II. TREATMENT IS PROVIDED USING ENVIRONMENTAL SITE DESIGN METHODS, INCLUDING GRASS SWALES (M-8) AND POROUS PAVING (A-2). THE FACILITIES SHALL BE PRIVATELY OWNED AND MAINTAINED BY THE LOT OWNER. THIS SITE IS ALSO SUBJECT TO COUNCIL BILL CR#123-2019 THAT REQUIRES 10 YEAR & 100 YEAR MANAGEMENT AND MANAGEMENT OF THE 3.5 HOUR 6.6 INCH STORM EVENT. THE SITE PROVIDES THE REQUIRED 10 YEAR, 100 YEAR AND THE 3.5 HOUR 6.6 INCH MANAGEMENT BY THE USE OF RETENTION WITHIN A STONE CHAMBER.
- BRL INDICATES ZONING BUILDING RESTRICTION LINE, OTHER RESTRICTIONS MAY APPLY.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY.
- THE STAKING OF FOUNDATIONS PRIOR TO CONSTRUCTION TO ENSURE COMPLIANCE WITH REGULATORY BUILDING RESTRICTION LINES IS RECOMMENDED.
- TEMPORARY OR PERMANENT SEEDING AND STABILIZATION IS TO BE PERFORMED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR OR AT THE TIME FRAME PROVIDED WITHIN THE 2011 MD STANDARDS & SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL; WHICHEVER IS MORE STRINGENT.
- FOR DRIVEWAY ENTRANCE DETAIL, SEE HOWARD COUNTY STANDARDS DETAIL 6.06.
- IF ANY WELL OR SEPTIC ARE FOUND BEFORE AND OR DURING CONSTRUCTION THEY MUST BE PROPERLY ABANDONED WITH DOCUMENTATION SENT TO THE HEALTH DEPT.
- PREVIOUS HOWARD COUNTY FILE REFERENCE: PLAT BOOK 3, FOLIO 35 DATED OCTOBER 9, 1946.
- A GEOTECHNICAL ANALYSIS WAS PREPARED BY GEOLAB, INC. DATED SEPTEMBER 2020.



LEGEND

EXISTING CONTOURS	---368---
PROPOSED CONTOURS	---370---
SOILS DELINEATION	GbC
SOILS BOUNDARY	---
EXISTING FENCE	-X-X-
PROPOSED HOUSE	□
SUPER SILT FENCE	SSF
EROSION CONTROL MATTING	---E---
LIMIT OF DISTURBANCE	---
STABILIZED CONSTRUCTION ENTRANCE	---S---
DRAINAGE AREA TO DRYWELL	---
SWM BORINGS	○
GRASS SWALE (M-8)	---
POROUS PAVING (A-2)	---
STONE CHAMBER (10-100 STORAGE)	---



NO.	DATE	REVISION

BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL, PHE & SUITE 315 ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6102 (F) 410-465-6644
WWW.BE-CVAENGINEERING.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. 22391, Expiration Date: 6-30-2021.

OWNER/DEVELOPER:		MACALPINE	
KAMIL ISMAIL 4317 TEMORA MANOR LANE ELLICOTT CITY, MD 21042 410.418.8717		LOT 11	
TAX MAP: 24 GRID: 11 PARCEL: 182 3640 MACALPINE ROAD ZONED: R-20 ELECTION DISTRICT NO. 2ND HOWARD COUNTY, MARYLAND		RESIDENTIAL ENVIRONMENTAL CONCEPT PLAN	
DATE: APRIL 2021	BEI PROJECT NO. 2944	SHEET 1 OF 1	
DESIGN: JCO	DRAFT: JCO	SCALE: AS SHOWN	SHEET 1 OF 1