

FACILITY	Pe	1.8	Inches	DA	MDE Type	Total DA	Impervious Area	Qp	AT (SF)		Depth/Gal	Required	ESDv (CF)	Pe(Provided)	REV	Required	Provided	10-100 YR(CF)
									Required	Provided								
MBR-1	M-6	700	700	1.71	84	63	PASS	1.00	100	124	2.2	55	63	661	675			
MBR-2	M-6	700	700	1.71	84	63	PASS	1.00	100	124	2.2	55	63	661	675			
MBR-3	M-6	700	700	1.71	84	63	PASS	1.00	100	124	2.2	55	63	661	675			
MBR-4	M-6	700	700	1.71	84	63	PASS	1.00	100	124	2.2	55	63	661	675			
MBR-5	M-6	700	700	1.71	84	63	PASS	1.00	100	124	2.2	55	63	661	675			
MBR-6	M-6	700	700	1.71	84	63	PASS	1.00	100	124	2.2	55	63	661	675			
MBR-7	M-6	700	700	1.71	84	63	PASS	1.00	100	124	2.2	55	63	661	675			
MBR-8	M-6	700	700	1.71	84	63	PASS	1.00	100	124	2.2	55	63	661	675			
MBR-9	M-6	700	700	1.71	84	63	PASS	1.00	100	124	2.2	55	63	661	675			
MBR-10	M-6	700	700	1.71	84	63	PASS	1.00	100	124	2.2	55	63	661	675			
MBR-11	M-6	700	700	1.71	84	63	PASS	1.00	100	124	2.2	55	63	NA	NA			
MBR-12	M-6	700	700	1.71	84	63	PASS	1.00	100	124	2.2	55	63	NA	NA			
MBR-13	M-6	700	700	1.71	84	63	PASS	1.00	100	124	2.2	55	63	NA	NA			
MBR-14	M-6	700	700	1.71	84	63	PASS	1.00	100	124	2.2	55	63	NA	NA			
MBR-15	M-6	16,959	9,848	1.03	611	910	PASS	1.00	1457	1134	1.4	1394	1365	NA	NA			
Stone	Dia	M-5	3,500	3,500	1.71	-	NA	5.00	499	540	1.9	277	270	NA	NA			
TOTAL TREATED			30,259	24,058		1,787			3,352	3,410		2,447	2,413	6610	6750			
SITE TOTAL			30,259	24,058														

* FACILITY AREAS AND VOLUMES INDICATED ON THIS CHART ARE APPROXIMATE AND ARE TO BE EVALUATED AT THE NEXT PHASE OF THE DEVELOPMENT.

OPERATION AND MAINTENANCE SCHEDULE FOR LANDSCAPE INFILTRATION (M-3) MICRO-BIORETENTION (M-6), RAIN GARDENS (M-7), BIORETENTION SWALE (M-8), ENHANCED FILTERS (M-9)

- 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.

DESIGN NARRATIVE

This project is known Linden Avenue located on Tax Map 50, Parcel 400 & 481 and is 0.96 acres zoned R-12. The property comprises of 14 existing lots. There are 10 existing lots located along Linden Avenue and 4 lots along Park Avenue. The currently contains 3 dwelling and several garages. These structures are to be removed. The property slopes from the west to the east and is relatively steep. The site consists of type 'D' soils per the NRCS soils classification. The drainage area is Patapsco River Watershed (02-13-09), and is a Class I-P stream.

The target Pe for this site is 1.8 inch based on the imperviousness 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, as amended by Maryland's Stormwater Management Act of 2007. A Geotechnical analysis was performed on the property and concluded that the site is generally underlain by clayey soils. Based on that analysis, the selected methods to provide ESDv are; Micro-Bioretention (M-6) for each of the units, total of (14) and one micro bioretention facility (M-6) that will collect the runoff from the access alley in the rear of the units. Since the grade in the access alley range between 8-10%, we are providing trench drains within the pavement to minimize the velocity and to capture runoff at various locations along the driveway. The drains will outfall into a swale out-letting at the MBR. A stone diaphragm along the eastern edge of the alley is provided for the additional runoff that cannot drain to the micro bioretention facility.

Since a portion of this site drains to the Deep Run (Units located on Lots 1-10) 10 and 100 year management is required. The volume required will be accommodated below the MBR outfall underdrain by providing the storage within the stone below the micro-bioretention facilities for those lots.

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 micro-bioretention opposed to structural practices altering the drainage patterns and limiting concentrated flows. Utilizing micro bioretention facilities, a nonstructural practice, makes for a better site design as well as maintaining the original drainage patterns.

As a result of fully addressing the stormwater management by use of micro bioretention 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.

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. Outfalls generally correspond with the natural drainage patterns for the site.

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 micro bioretention (M-6) to treat most of the proposed impervious onsite.

It is anticipated that this site will meet the forest conservation requirements by offsite planting.

NOTE: APPROVAL OF THIS ECP PLAN DOES NOT CONSTITUTE ANY APPROVALS OF SUBSEQUENT AND ASSOCIATED SUBDIVISION PLAN, SITE DEVELOPMENT PLAN OR BUILDING PERMIT PLAN. REVIEW OF SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SUBDIVISION AND/OR SITE DEVELOPMENT PHASES. THE APPLICANT/CONSULTANT SHOULD REQUEST ADDITIONAL AND MORE DETAILED COMMENTS (INCLUDING THOSE THAT MAY ALTER OVERALL SITE DESIGN) AS THIS PROJECT PROGRESSES.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 3-31-21
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

ENVIRONMENTAL CONCEPT PLAN

LINDEN AVENUE

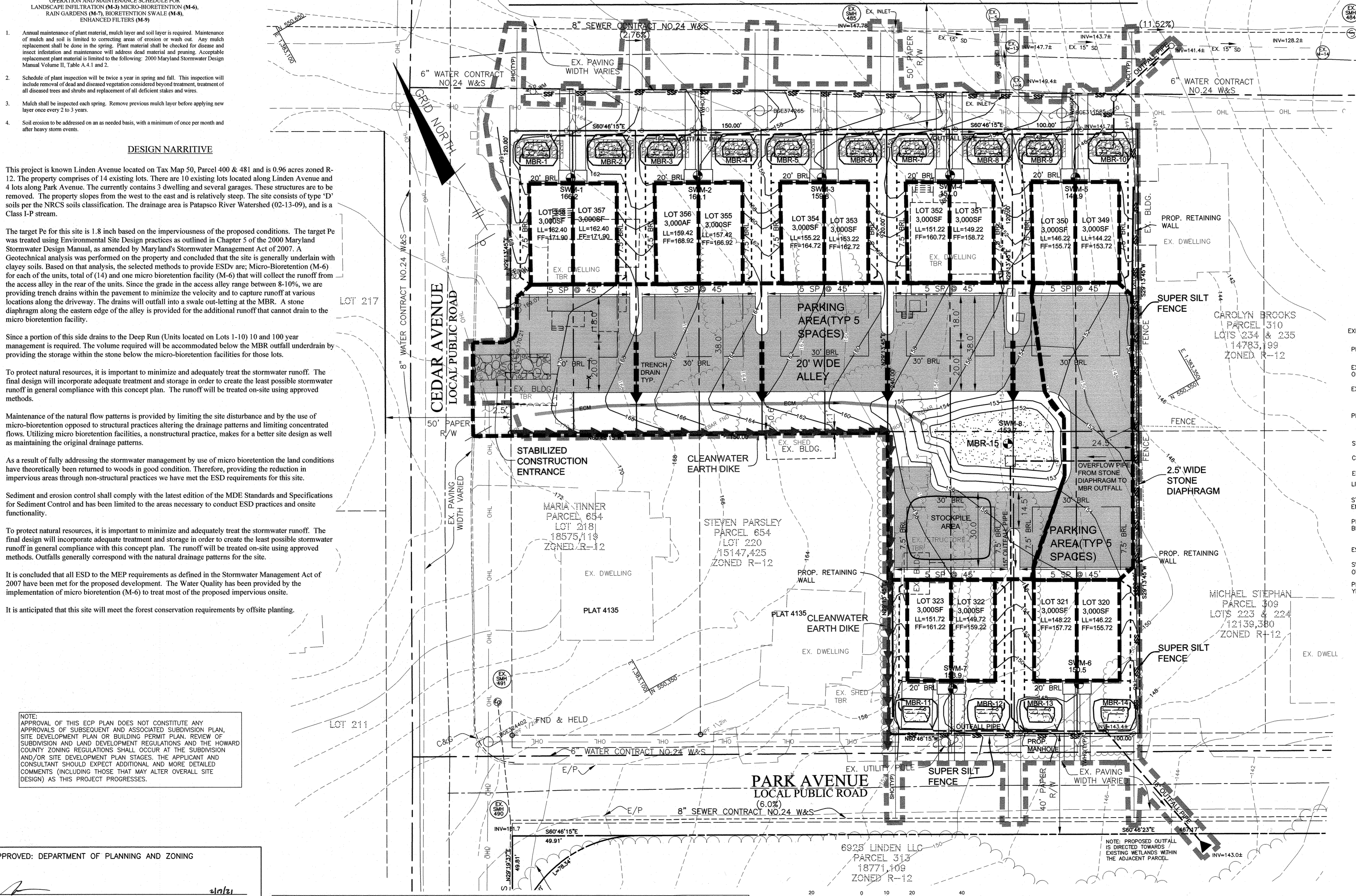
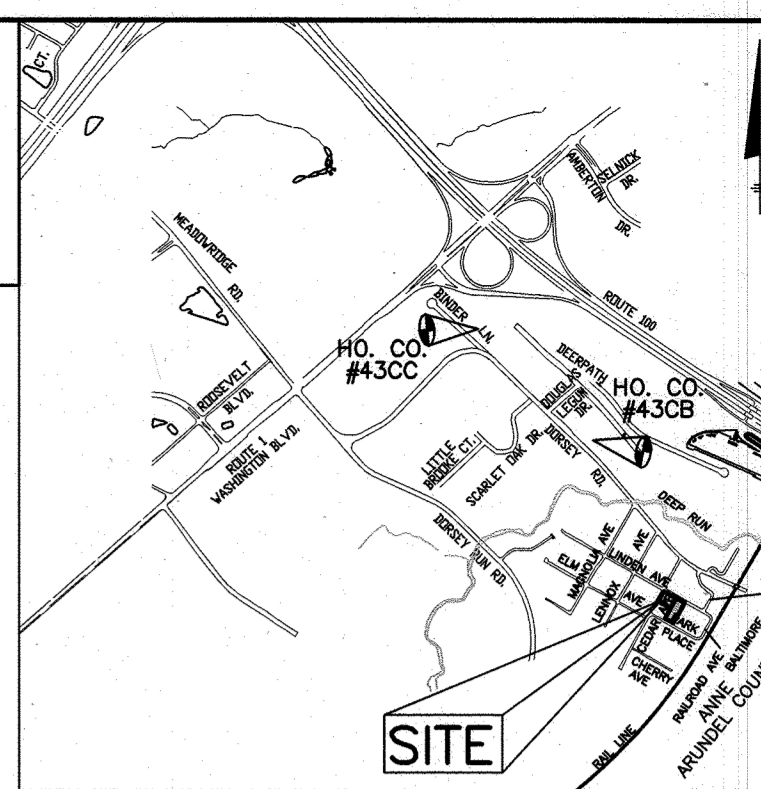
LOTS 320-323 & 349-358

1ST ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

LINDEN AVENUE LOCAL PUBLIC ROAD

HO. CO. No. 43CC	ELEV. 163.697
BINDER LANE	E 1381152.910
N 553201.436	ELEV. 144.435
HO. CO. No. 43CB	ELEV. 144.435
RT-103 (DORSEY ROAD)	E 1382282.508
N 552084.214	



GENERAL NOTES

- THE TOPOGRAPHY AND BOUNDARY SHOWN HEREON ARE BASED ON A FIELD RUN SURVEY DATED APRIL 2019 BY BENCHMARK ENGINEERING, INC.
- THE PROPERTY IS KNOWN AS TAX MAP 43, GRID 06, PARCEL 400 & 481. THE TOTAL PROPERTY AREA IS APPROXIMATELY 42,000 SF / 0.96 ACRES.
- THE PROPERTY IS ZONED R-12 PER THE 10.06.13 COMPREHENSIVE ZONING PLAN.
- THE EXISTING HOUSES LOCATED ON THE PROPERTY AND DRIVEWAYS ARE TO BE REMOVED.
- LIMIT OF DISTURBANCE=1.16AC±
- STORMWATER MANAGEMENT FOR THIS SITE WILL BE PROVIDED BY MICRO BIRETENTION FOR THE UNIT ROOFTOPS AND A MICRO BIRETENTION FACILITY FOR THE DRIVEWAY AND PARKING AREAS. SINCE A PORTION OF THIS SITE DRAINS TO THE DEEP RUN, UNITS LOCATED ON LOTS 1-10, PER SECTION 5.2.1 OF THE DESIGN MANUAL 10 YEAR AND 100 YEAR MANAGEMENT IS REQUIRED.
- THESE LOTS ARE EXISTING LOTS KNOWN AS LENOX PARK RECORDED AS PLATBOOK 83 PAGE 315 DATED FEBRUARY 4, 1907.
- A TRAFFIC STUDY IS NOT REQUIRED FOR THIS DEVELOPMENT SINCE THE LOTS ARE EXISTING AND NO NEW LOTS ARE TO BE CREATED.
- THERE ARE NO FLOODPLAINS, STREAMS, STEEP SLOPES OR WETLANDS LOCATED ON THIS SITE.
- A GEOTECHNICAL ANALYSIS WAS PROVIDED BY ECS DATED SEPTEMBER, 2020.
- THE UNIT SHOWN ON LOT 358 INDICATES THAT A VARIANCE REQUEST TO THE SIDE SETBACK WILL BE REQUIRED. THIS WILL BE RESOLVED PRIOR TO BUILDING PERMIT ISSUANCE FOR LOT 358.

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING SLOPES 15% OR GREATER
- EXISTING STRUCTURE
- PROPOSED HOUSE
- SUPER SILT FENCE
- CLEANWATER EARTH DIKE
- EROSION CONTROL MATTING
- LIMIT OF DISTURBANCE
- STABILIZED CONSTRUCTION ENTRANCE
- PROP. MICRO BIRETENTION FACILITY
- ESD DRAINAGE AREA
- SWM BORINGS (BY OTHERS)
- PROP. 10-100 YEAR FACILITY

Gross Site Area	0.96 ac
100yr Floodplain	0.00 ac
Slopes 15% or greater (On-Site)	0.11 ac
Wetlands	0.00 ac
Wetlands Buffer	0.00 ac
Forested Area	0.00 ac
Erodible Soils	0.00 ac
Limit of Disturbance	1.16 ac
Impervious Area	0.53 ac
Green Space	0.63 ac
Public Road Right-of-Way	0.00 ac
Site Use	RESIDENTIAL
Open Space	N/A

NO.	DATE	REVISION

BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.
 8480 BALTIMORE NATIONAL PIKE & SUITE 315 ELICOTT CITY, MARYLAND 21043
 (P) 410-465-8105 (F) 410-465-8644
 WWW.BE-CVLENGINEERING.COM

OWNER:
 6925 LINDEN LLC & LINDEN M & K II LLC
 502 WASHINGTON AVENUE SUITE 800 TOWSON, MD 21204

DEVELOPER:
 6925 LINDEN LLC & LINDEN M & K II LLC
 502 WASHINGTON AVENUE SUITE 800 TOWSON, MD 21204

LINDEN AVENUE
 LENOX PARK
 LOTS 320-323 & 349-358

TAX MAP: 43 PARCELS: 400 & 481
 ZONED: R-12
 ELECTION DISTRICT NO. 1ST HOWARD COUNTY, MARYLAND

ENVIRONMENTAL CONCEPT PLAN

DATE: JANUARY 2021 BEI PROJECT NO. 2954
 SCALE: AS SHOWN SHEET 1 OF 1

SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALTERNATE GROUP	NAME	K-VALUE
UCD		D	B/C	URBAN LAND-CHILLUM-BELTSVILLE COMPLEX 5 TO 15 PERCENT SLOPES	

