

### ECP DESIGN NARRATIVE

**NATURAL RESOURCES PROTECTION, ENHANCEMENT, AND PRESERVATION**  
 ALL NATURAL FEATURES HAVE BEEN DEPICTED ON THE EXISTING CONDITIONS PLAN. THE SITE CONTAINS AREAS OF WOODED VEGETATION. IMPACTS TO THE EXISTING WOODED AND VEGETATED AREAS WILL BE MINIMIZED DURING DEVELOPMENT. THERE ARE NO PRESENCE OF WETLANDS, STREAMS, ASSOCIATED BUFFERS OR FLOODPLAINS ON-SITE.

**MAINTENANCE OF NATURAL FLOW PATTERNS**  
 THE PROPOSED SITE DRAINAGE WILL MAINTAIN THE EXISTING CONDITION OF FLOW PATTERNS WHERE FEASIBLE DURING DEVELOPMENT EFFORTS. ALL DRAINAGE FROM THE PROPOSED DEVELOPMENT WILL BE DIRECTED TO THE EXISTING OUTFALL LOCATIONS.

**REDUCTION OF IMPERVIOUS AREAS THROUGH BETTER SITE DESIGN, ALTERNATIVE SURFACES, AND NON-STRUCTURAL PRACTICES**  
 THE PROPOSED DEVELOPMENT HAS MINIMIZED IMPERVIOUS SURFACES TO THOSE REQUIRED TO SUPPORT THE INTENDED LAND-USES (GAS PUMPS, PARKING SPACES, ACCESS AISLES, AND ASSOCIATED TI-INS TO EXISTING ROADS AND PARKING LOTS). THESE AREAS HAVE BEEN MINIMIZED TO PROVIDE MINIMUM ACCESS PATHS FOR VEHICLES AND PARKING AREAS.

**INTEGRATION OF EROSION AND SEDIMENT CONTROLS INTO STORMWATER STRATEGY**  
 SOIL EROSION AND SEDIMENT CONTROL PRACTICES HAVE BEEN DEVELOPED IN CONSIDERATION OF THE PROPOSED STORMWATER MANAGEMENT STRATEGIES. THE USE OF A TEMPORARY EARTH DIKE WILL BE USED FOR OFF-SITE CLEAN WATER DIVERSION. THE USE OF A STABILIZED CONSTRUCTION ENTRANCE WILL REDUCE SEDIMENT FROM BEING TRACKED OFF-SITE. TEMPORARY STABILIZATION PRACTICES (SEEDING AND STRAW, EROSION CONTROL MATTING, ETC) WILL BE IMPLEMENTED THROUGHOUT CONSTRUCTION PER SOIL EROSION AND SEDIMENT CONTROL STANDARDS AND SPECIFICATIONS.

**IMPLEMENTATION OF ESD PLANNING TECHNIQUES AND PRACTICES TO THE MEP**  
 THE PROPOSED ESD PRACTICES WERE LOCATED AND DESIGNED TO PROVIDE TREATMENT AS CLOSE TO THE SOURCE AS FEASIBLE. TO MINIMIZE REQUIRED TREATMENT ON-SITE, SITE PLANNING TECHNIQUES WERE UTILIZED TO MINIMIZE THE REQUIRED IMPERVIOUS SURFACE COVERAGE. CLOSED STORM DRAIN SYSTEMS HAVE BEEN MINIMIZED BY PROVIDING CURB CUTS TO THE MICRO BIO-RETENTION FACILITY TO CONVEY SITE DRAINAGE TO ENHANCE TREATMENT.

**PERMEABLE PAVEMENT MAY BE IMPLEMENTED WHERE FEASIBLE DURING FINAL SITE DESIGN; HOWEVER, DUE TO THE ANTICIPATED LIMITED INFILTRATION RATES OF THE "D"-TYPE SOILS, REQUIRED FILL LOCATIONS, CONSTRUCTION DISTURBANCES, AND EXCESSIVE "RUN-OFF" CONDITIONS, THE LOCATIONS WILL BE LIMITED.**

**NON-STRUCTURAL PRACTICES (DISCONNECTIONS) HAVE BEEN CONSIDERED NOT FEASIBLE WITHIN THE PROPOSED DEVELOPMENT DUE TO THE EXISTING TOPOGRAPHY AND EXCESSIVE DISCONNECTION LENGTHS THAT WOULD BE REQUIRED, ADDITIONAL DISTURBANCE WOULD BE REQUIRED TO ENSURE PROPER DISCONNECTION SLOPES.**

**MICRO-SCALE PRACTICES HAVE BEEN IMPLEMENTED TO THE MAXIMUM EXTENT PRACTICABLE DUE TO THE EXISTING ON-SITE SOILS, CONSTRUCTION DISTURBANCES, AND EXCESSIVE DRAINAGE AREAS. RAIN GARDENS AND LANDSCAPE INFILTRATION FACILITIES WERE NOT CONSIDERED FEASIBLE DUE TO THE EXISTING TOPOGRAPHY AND EXCESSIVE DRAINAGE AREAS. RAIN GARDENS AND LANDSCAPE INFILTRATION FACILITIES WERE NOT CONSIDERED FEASIBLE DUE TO THE EXISTING TOPOGRAPHY AND EXCESSIVE DRAINAGE AREAS. RAIN GARDENS AND LANDSCAPE INFILTRATION FACILITIES WERE NOT CONSIDERED FEASIBLE DUE TO THE EXISTING TOPOGRAPHY AND EXCESSIVE DRAINAGE AREAS.**

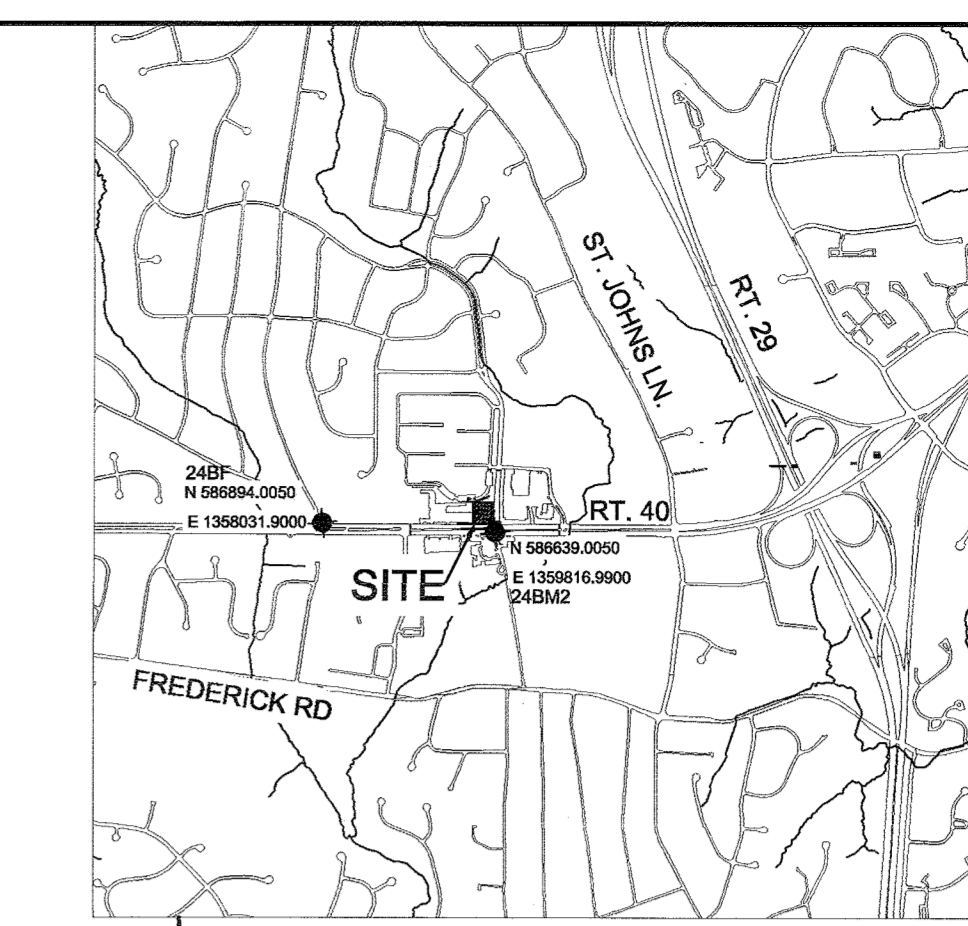
**AFTER EXHAUSTING THE IMPLEMENTATION OF MICRO-SCALE FACILITIES, ADDITIONAL CHAPTER 3 PRACTICES MAY BE UTILIZED TO MEET THE REMAINING STORMWATER MANAGEMENT REQUIREMENTS FOR THE SITE, INCLUDING QUANTITY CONTROL REQUIREMENTS.**

**STORMWATER QUALITY TREATMENT - ENVIRONMENTAL SITE DESIGN**  
 AS ADOPTED BY THE HOWARD COUNTY STORMWATER MANAGEMENT, GRADING, EROSION AND SEDIMENT CONTROL ORDINANCE, THE MARYLAND STORMWATER MANAGEMENT DESIGN MANUAL STATES THAT BECAUSE THE EXISTING ON-SITE IMPERVIOUS AREA IS MORE THAN 40% THIS PROJECT SHALL BE CONSIDERED RE-DEVELOPMENT.

**BASED ON THE PROPOSED 0.74 ACRES OF IMPERVIOUS AREAS TO BE DEVELOPED AS PART OF THIS PROJECT, THE IMPERVIOUS AREA REQUIRING TREATMENT WILL BE 0.37 AC (REFER TO APPENDIX D). BASED ON THE PROPOSED IMPERVIOUS AREAS AND THE UNDERLYING SOIL CONDITIONS, THE ESDV VOLUME ASSOCIATED WITH THIS AREA IS 1,414 CF; REFER TO APPENDIX C FOR ENVIRONMENTAL SITE DESIGN COMPUTATIONS. WATER QUALITY TREATMENT SHALL BE PROVIDED THROUGH THE IMPLEMENTATION OF ENVIRONMENTAL SITE DESIGN. ENVIRONMENTAL SITE DESIGN NON-STRUCTURAL PRACTICES WILL BE IMPLEMENTED TO THE MAXIMUM EXTENT PRACTICABLE (MEP); HOWEVER, IN AREAS WHERE PROPOSED LAND USE, ENVIRONMENTAL SITE DESIGN ADDITIONAL EASEMENT AND/OR RIGHT-OF-WAY CONSTRAINTS LIMIT ESD IMPLEMENTATION, NON-STRUCTURAL WATER QUALITY BMPs SHALL BE IMPLEMENTED TO TREAT THE REMAINING IMPERVIOUS AREAS. BASED ON FINAL SITE DESIGN AND GRADING REQUIREMENTS, A STRUCTURAL UNDERGROUND BMP MAY BE PROVIDED IN LIEU OF MICRO-BIORETENTION. THE STORMWATER FACILITIES WILL BE OWNED AND MAINTAINED BY PMIG 1027, LLC.**

**STORMWATER QUANTITY CONTROL - CHANNEL PROTECTION VOLUME**  
 AS THE PROPOSED PROJECT IMPLEMENTS ENVIRONMENTAL SITE DESIGN (ESD) TO THE MAXIMUM EXTENT PRACTICABLE, THERE ARE NOT ANY REMAINING CHANNEL PROTECTION REQUIREMENTS.

**STORMWATER QUANTITY CONTROL - OVERBANK FLOOD AND EXTREME STORM**  
 THROUGH RUNOFF FROM DRAINAGE AREAS 1B AND 2 WILL INCREASE BASED ON PROPOSED SITE DRAINAGE COURSES, THE TOTAL FLOW TO THE POINT OF INTEREST WILL BE REDUCED; THEREFORE, THERE IS ADEQUATE OUTFALL AND NO SITE ATTENUATION IS REQUIRED.



**VICINITY MAP**  
 SCALE: 1"=2000'  
 ADC MAP/GRID # 4815-G6

**SHEET LEGEND**

1 OF 2 EXISTING CONDITIONS AND INITIAL STAGE SESC PLAN  
 2 OF 2 CONCEPT STORMWATER MANAGEMENT AND FINAL STAGE SESC PLAN

**Existing Natural Resources:**

Federal	State	Local	Site Areas and Uses
N/A Wetlands	N/A Tidal and Non-tidal Wetlands of Special State Concern	N/A Steep Slopes (>15%)	0.92 LOD Area (AC)
N/A Major Waterways	N/A	N/A Highly Erodible Soils	0.74 Imp. Area (AC)
N/A Floodplains	N/A Wetland Buffers	N/A	0.18 Open Area (AC)
	N/A Stream Buffers	Y	Y Buildings
	N/A Perennial Streams	Y	Y Topography/Slopes
	N/A Floodplains	N/A	Y Roadways
	N/A Forest	N/A	Y Parking Lots
	N/A Forest Buffers	Y	Y Intermittent Streams
	N/A Critical Areas	Y	Y Vegetative Cover
		Y	Y Storm Drain
		Y	Y SWM Facilities
		Y	Y Water/Sewer
		Y	Y Existing Drainage Areas
		Y	Y Dry Utilities

N/A Not applicable, feature not present on site. No feature present on site but not shown due to lack of information.

**EXISTING CONDITIONS LEGEND**

---	PROPERTY LINE
- - - -	EXISTING MAJOR CONTOUR
- - - -	EXISTING MINOR CONTOUR
---	EXISTING CURB
---	EXISTING FENCE
- - - -	SOIL TYPE BOUNDARY
---	EXISTING TREE LINE
---	EXISTING PAVED AREA
---	EXISTING BUILDING
---	EXISTING TREES
---	EXISTING SIDEWALK
---	LIMITS OF DISTURBANCE
---	PROPOSED SUPER SILT FENCE
---	PROPOSED DIVERSION FENCE
---	PROPOSED INLET PROTECTION
---	PROPOSED STABILIZED CONSTRUCTION ENTRANCE

### GENERAL NOTES:

- 1) THE ACCOUNT IDENTIFIED FOR THE PROPERTY SHOWN HEREON IS 02-192691 AND IS ZONED "B-2-TNC" AS PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN.
- 2) TITLE REPORT WAS FURNISHED BY CARDINAL TITLE PROPERTY, LOT 1 RAMSBURG PROPERTY PLAT #094 ABSTRACT THRU 92916.
- 3) THE PROPERTY SHOWN HEREON IS BASED ON AN ACTUAL FIELD RUN SURVEY MADE ON THE GROUND AND ON THE EXISTING LAND RECORDS OF HOWARD COUNTY, MARYLAND.
- 4) AT THE TIME OF THIS SURVEY THERE WAS NO OBSERVABLE EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.
- 5) AT THE TIME OF THIS SURVEY THERE WAS NO OBSERVABLE EVIDENCE OF WETLANDS AREAS, WETLANDS BUFFERS, STREAMS, STREAM BUFFERS, FLOODPLAIN, FORESTS AND STEEP SLOPES AS DELINEATED BY APPROPRIATE AUTHORITIES.
- 6) UNLESS OTHERWISE INDICATED, LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND ARE BASED ON VISIBLE EVIDENCE AND UTILITY MAPS, IF PROVIDED.
- 7) THE PROPERTY SHOWN HEREON HAS NO DEFINED PARKING SPACES.
- 8) LOCATION OF PIPE IS APPROXIMATE INFORMATION FOR PIPE LOCATION IS FROM SDP 93111 RAMSBURG PROPERTY PLAT #094 AS STATIONARY CAR WAS ADDED.
- 9) THIS SURVEY WAS PREPARED BY MASER CONSULTING, P.A. ON AUGUST 28, 2016.
- 10) SURVEY WAS SUPPLEMENTED FOR OFF-SITE AREAS UTILIZING HOWARD COUNTY GIS DATA AND AERIAL IMAGERY.
- 11) APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN AND/OR RED-LINE REVISION PLAN. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE 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.
- 12) REFER TO THE VICINITY MAP FOR THE TWO (2) HOWARD COUNTY GEODETIC COORDINATES INCLUDING 2482 AND 2483.
- 13) THE EXISTING PROPERTY COMPRISES OF A +/- 208 SF FUEL SALES KIOSK, MOTOR VEHICLE FUEL FACILITY (4 MPD'S) AND A +/- 1,135 SF CAR WASH. THESE STRUCTURES ARE TO BE DEMOLISHED WITH THE PROPOSED FUTURE DEVELOPMENT.
- 14) WOODED VEGETATED AREAS ON-SITE ARE LESS THAN 10,000 SF. THEREFORE A SIMPLIFIED FOREST STAND DELINEATION PLAN WILL BE SUBMITTED FOR REVIEW AT THE TIME OF SITE DEVELOPMENT PLAN REVIEW TO DETERMINE THE EXTENT OF AFFORESTATION OWNED PER THE PROCEDURAL ALTERNATIVES OF THE HOWARD COUNTY FOREST CONSERVATION MANUAL. FOREST CONSERVATION WILL THEN BE MET BY A REQUEST FOR A FEE-IN-LIEU PAYMENT OWED WITH A WRITTEN JUSTIFICATION STATING WHY ON-SITE OR OFF-SITE PLANTING CANNOT BE REASONABLY ACHIEVED.
- 15) PORTION OF EXISTING WATERLINE (WHC) LOCATION AND SIZING IS BASED ON INFORMATION OBTAINED FROM AS-BUILT # 1 / 2015 AND PREVIOUSLY APPROVED UTILITIES U.S. 40 WATER SERVICE MAIN REPLACEMENT CAPITAL PROJECT NO. W-8311, CONTRACT NO. 44-4731, BY URS, LAST REVISED 02/03/2014.
- 16) PORTION OF EXISTING SANITARY (SHC) LOCATION AND SIZING IS BASED ON INFORMATION OBTAINED FROM PREVIOUSLY APPROVED PLANS TITLED SEWER MAIN EXTENSIONS CONTRACT 133-S, HOWARD COUNTY METROPOLITAN COMMISSION BY WHITMAN, REQUARDT & ASSOCIATES, DATED 2/28/07.
- 17) ON 5/21/2019, THE BOARD OF APPEALS APPROVED THE NON-CONFORMING USE PLAN (CASE NO. BA 18-0038N).
- 18) THERE ARE NO EXISTING SPECIEM TREES LOCATED ON-SITE.

**SOIL LEGEND**

---	SOIL TYPE BOUNDARY	"K" VALUE
GhB	GLENELG-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES (HSG B)	0.28
UuB	URBAN LAND-UDORTHEMETS COMPLEX, 0 TO 8 PERCENT SLOPES (HSG D)	0.32

**ADDRESS CHART**

LOT/PARCEL #	STREET ADDRESS
PARCEL 996, LOT 1	9320 BALTIMORE NATIONAL PIKE, ELLICOTT CITY, MD 21042

**PERMIT INFORMATION CHART**

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.
N/A	N/A	PARCEL 996, LOT 1
PLAT # OR LF: 10 / 94	GRID # 4	ZONING B-2-TNC
TAX MAP NO. 24	ELECT DISTRICT 2	CENSUS TRACT 6022
WATER CODE 772-W	SEWER CODE 130-S	

**SITE ANALYSIS DATA CHART**

TOTAL PROJECT AREA:	0.915 ACRES (39,886 S.F.)
ZONING:	B-2-TNC (BUSINESS: GENERAL, TRADITIONAL NEIGHBORHOOD CENTER OVERLAY)
EXISTING USES:	MOTOR VEHICLE FUELING FACILITY (4 MPD'S); 208 S.F. FUEL SALES KIOSK; 1,135 S.F. CAR WASH
PROPOSED USES:	MOTOR VEHICLE FUELING FACILITY (6 MPD'S); 2,866 S.F. CONVENIENCE STORE
LOD AREA:	1.04 ACRES
GREEN OPEN AREA:	0.30 ACRES
PROPOSED IMPERVIOUS AREA:	0.74 ACRES
WETLAND AREA:	0 ACRES
WETLAND BUFFER AREA:	0 ACRES
STREAM AREA:	0 ACRES
STREAM BUFFER AREA:	0 ACRES
FLOODPLAIN AREA:	0 ACRES
FOREST AREA:	0 ACRES
STEEP SLOPE AREA:	0 ACRES

**EXISTING CONDITIONS AND INITIAL STAGE SESC PLAN**  
 SCALE: 1"=30'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Chad Johnson*  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 10.1.19

*Vera LaJara*  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 9/24/19

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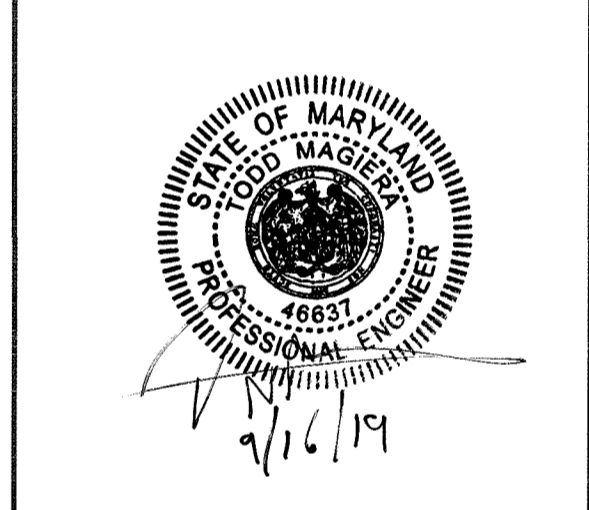
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 1215 E FORT AVE, SUITE 304  
 BALTIMORE, MD 21230  
 CONTACT: NICHOLAS LEFFNER, P.E.  
 PHONE: 443-743-3470  
 WWW.KIMLEY-HORN.COM

PMIG 1027, LLC  
 2359 RESEARCH COURT  
 WOODBRIDGE, VA 22192  
 PHONE: 703-494-5800

NO.	REVISIONS	DATE	BY

9320 BALTIMORE NATIONAL PIKE  
 HOWARD COUNTY, MARYLAND  
 TAX MAP NO. 24, PARCEL 996  
 ZONING: B-2-TNC  
 SECOND ELECTION DISTRICT

KHA PROJECT NO.: 114021001  
 SCALE: AS SHOWN  
 DATE: 09/16/19  
 DESIGNED BY: KMR  
 DRAWN BY: KMR  
 CHECKED BY: NJL



**ENVIRONMENTAL CONCEPT PLAN**

ELLICOTT CITY (STATION MD-108)  
 PREPARED FOR PMIG 1027, LLC

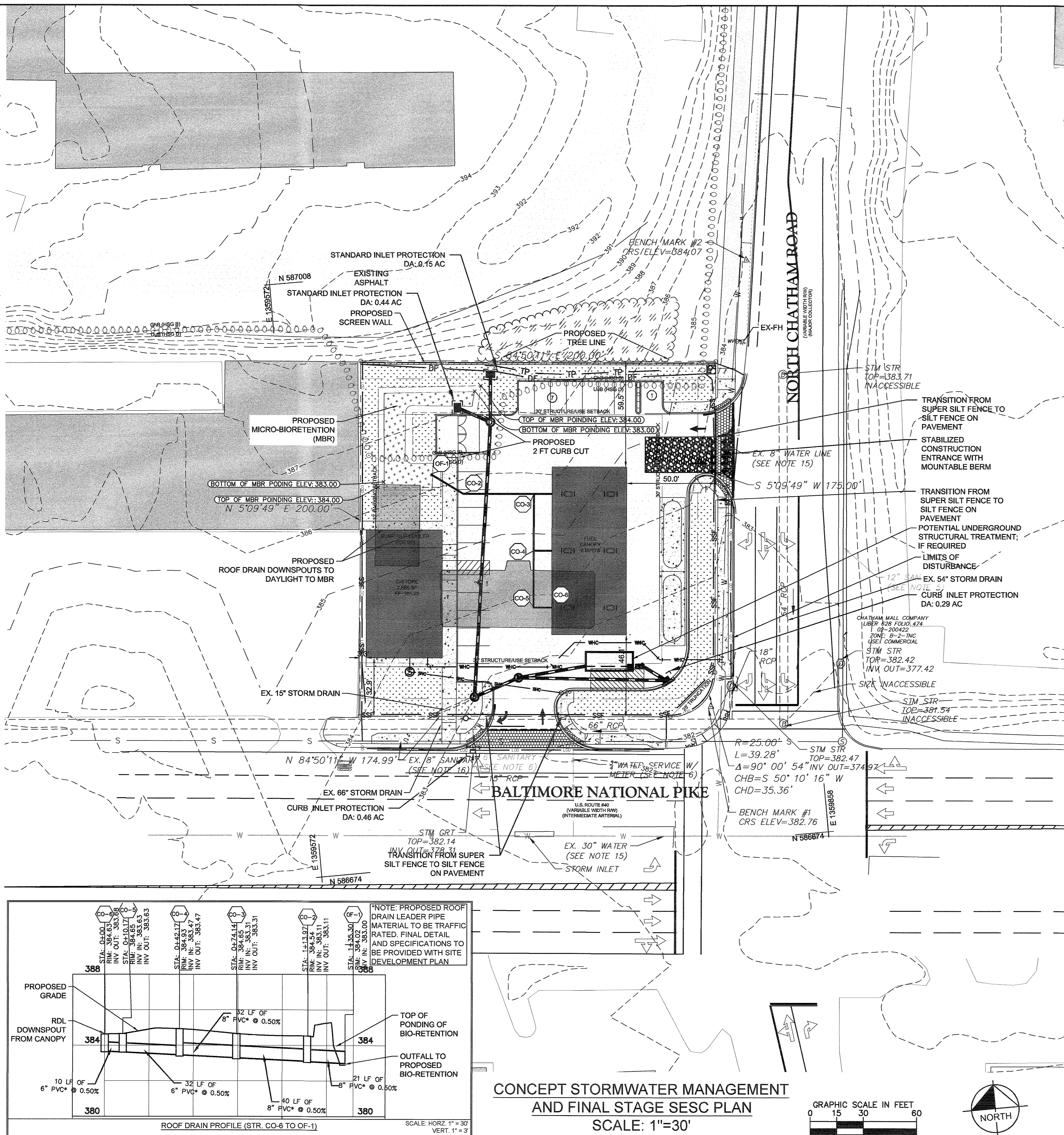
HOWARD COUNTY MARYLAND

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: 46637 EXP: 04/12/2021

**EXISTING CONDITIONS AND INITIAL STAGE SESC PLAN**

SHEET NUMBER  
 1 OF 2

Prepared By: J. W. J. Date: 09/16/19  
 Checked By: J. W. J. Date: 09/16/19  
 Drawn By: J. W. J. Date: 09/16/19  
 This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Release of any information contained herein for any other purpose without the written consent of Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



**Kimley-Horn**

Per MDE SWM Design Manual  
 Site Name: PMG Ellicott City Date: 07/11/19  
 Project #: 114021001 By: JRW  
 County: Howard County Checked: TJM

Stormwater Management - Environmental Site Design

**Site Drainage Area Data:**

Project Site Area:	0.73	acres
Project Area RCN:	0.73	acres
Project Limit of Work Area, A:	1.88	acres
Existing Impervious Area:	0.73	acres
Existing % Impervious, I:	72%	
Proposed Impervious Area:	0.74	acres
Proposed % Impervious, I:	71%	
Imp Area to Treat, A <sub>i</sub> :	0.37	acres

*> 40%, therefore Redevelopment*

**Step 2. Determine Required Treatment Volume**

**A. Determine Target P<sub>e</sub> & ESDv Using Table 5.3 (MDE SWM Manual Section 5-page 5.21)**

Redevelopment  
 I = 36%  
 R<sub>v</sub> = 0.05 + (0.009 \* I)  
 R<sub>v</sub> = 0.375  
 ESDv = [(P<sub>e</sub>) (R<sub>v</sub>) (A) ] / 12  
 P<sub>e</sub> = 1.00 inch [Determine P<sub>e</sub> from Table 5.3]

**B. Determine SWM Treatment Provided**

ESD Practice	Drainage Area (ac)	Imp. Area Treated (ac)	Volume Treated (cf)
Micro-Bio-retention	0.47	0.37	1583
<b>Total</b>	<b>0.37 acres</b>	<b>1583 cf</b>	<b>1583</b>
			Provided
			Required

**Confirm Stormwater Management Treatment**  
 Target ESDv = 1414 cf  
 Prov'd ESDv = 1583 cf OK

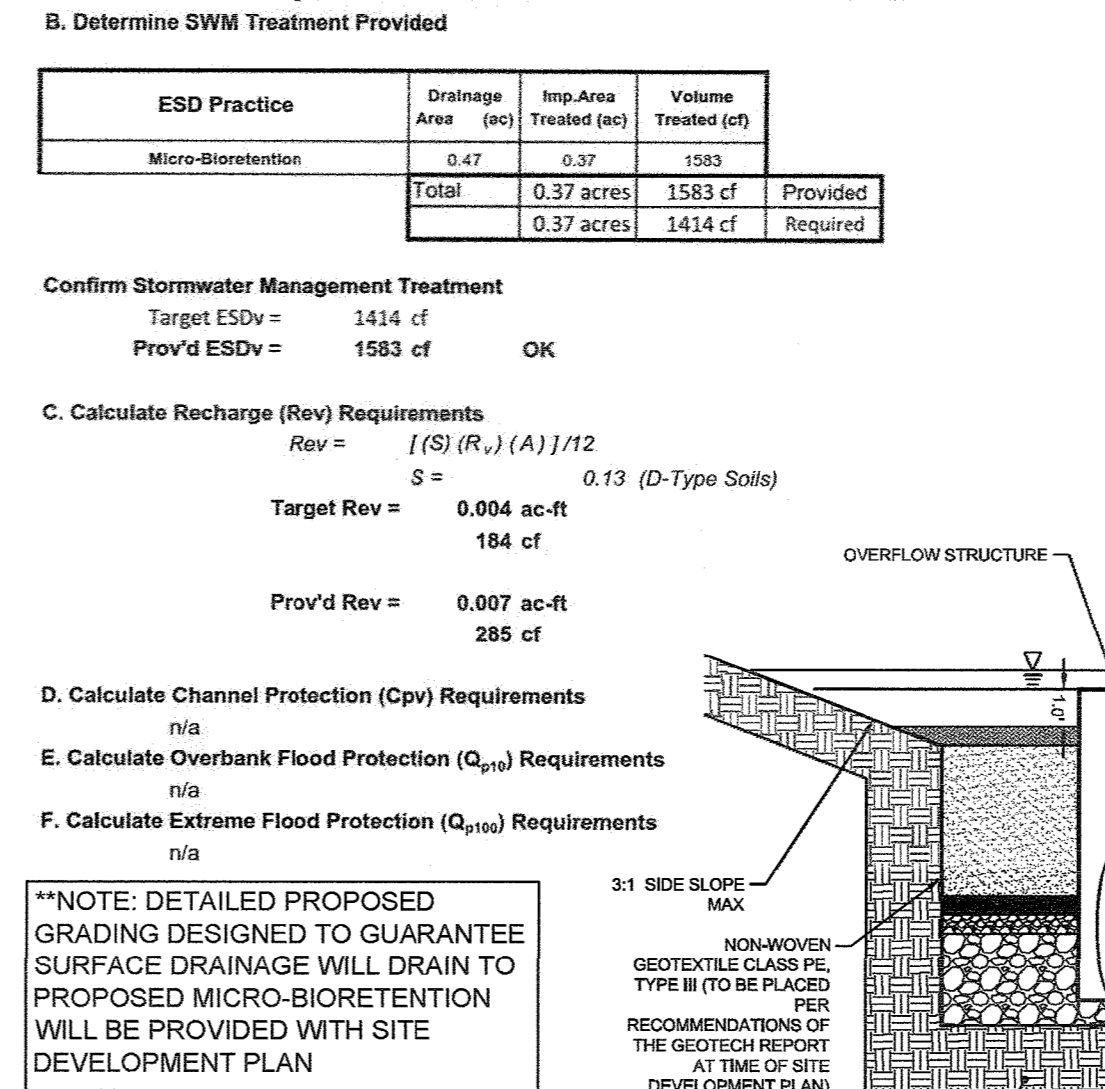
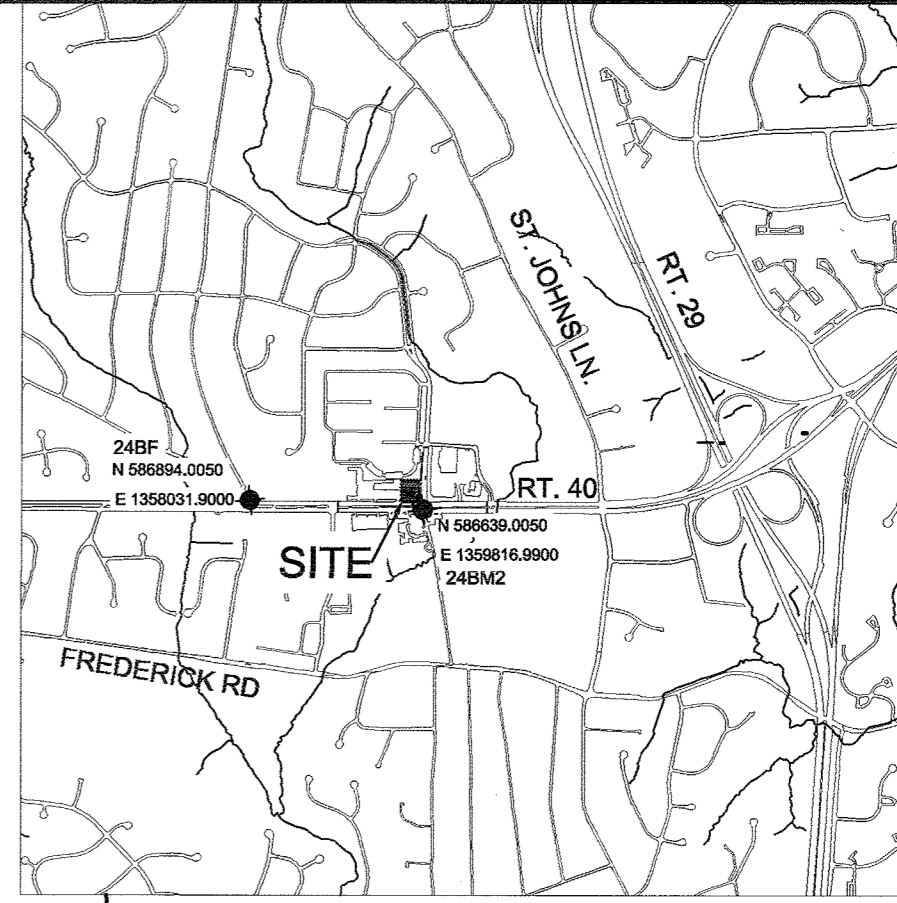
**C. Calculate Recharge (Rev) Requirements**  
 Rev = [(S) (R<sub>v</sub>) (A) ] / 12  
 S = 0.13 (D-Type Soils)  
 Target Rev = 0.004 ac-ft  
 184 cf  
 Prov'd Rev = 0.007 ac-ft  
 285 cf

**D. Calculate Channel Protection (C<sub>pv</sub>) Requirements**  
 n/a

**E. Calculate Overbank Flood Protection (C<sub>of</sub>) Requirements**  
 n/a

**F. Calculate Extreme Flood Protection (C<sub>ef</sub>) Requirements**  
 n/a

**\*\*NOTE: DETAILED PROPOSED GRADINGS DESIGNED TO GUARANTEE SURFACE DRAINAGE WILL DRAIN TO PROPOSED MICRO-BIO-RETENTION WILL BE PROVIDED WITH SITE DEVELOPMENT PLAN**



**ESD Treatment Summary**

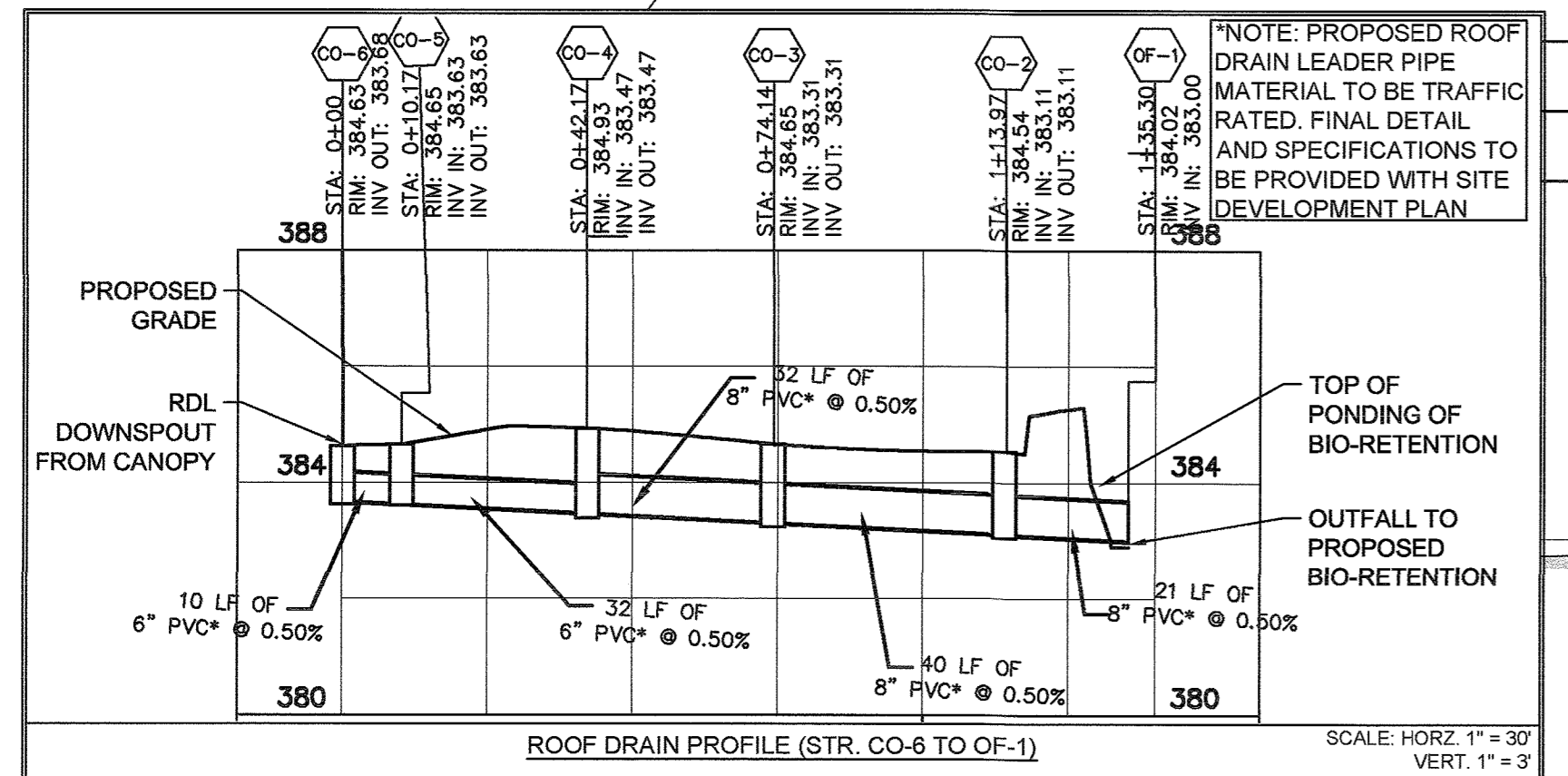
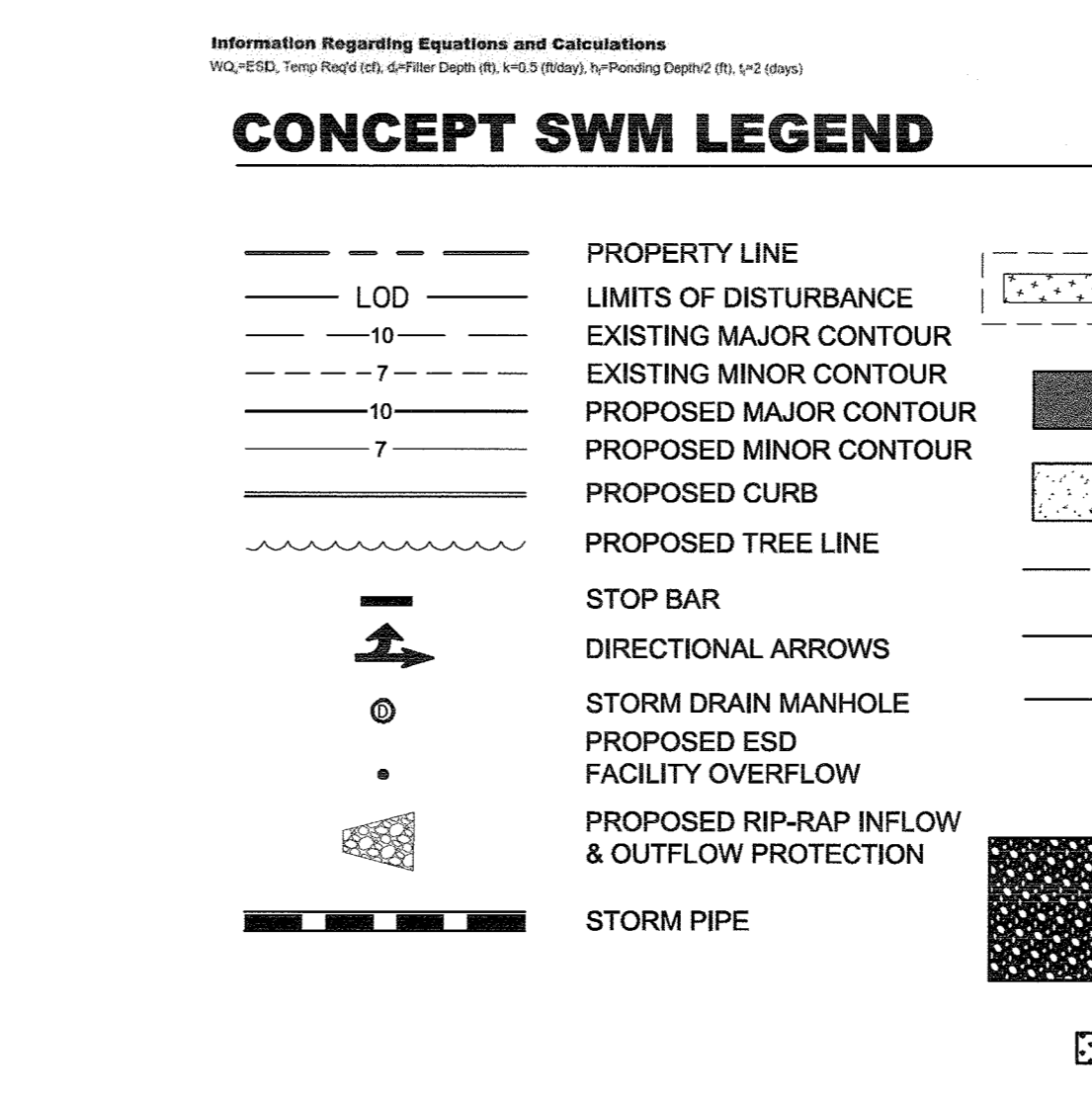
ESD ID	Type of ESD	Total Drainage Area (ac)		Imp. Area Treated (ac)	Volume Treated (cf)	Recharge (cf)	C <sub>pv</sub> Req'd (cf)	C <sub>of</sub> Req'd (cf)	C <sub>ef</sub> Req'd (cf)
		(A)	(B)						
MBR1	MicroBio	0.37	0.37	0.37	1583	1583	1583	1583	1583
<b>Total</b>		<b>0.37</b>	<b>0.37</b>	<b>0.37</b>	<b>1583</b>	<b>1583</b>	<b>1583</b>	<b>1583</b>	<b>1583</b>

**Notes and Equations**

(1) Required to minimize on-site disturbance, structural underground BMP may be provided in lieu of micro-bio-retention during final stormwater management design.  
 (2) S<sub>1</sub> = 10% Area 1700-18  
 (3) R<sub>v</sub> = 0.05 + (0.009 \* I)  
 (4) Target Retention Depth = Overall Site Target Retention Depth & S<sub>1</sub>  
 (5) Not Calculated Individually For Each Facility  
 (6) A (Impervious Length \* Width)  
 (7) A (Impervious \* Total Storage) 2% (per MDE Manual)  
 (8) P<sub>e</sub> Req'd = ESDv (Impervious \* 12) / (R<sub>v</sub> \* DA)  
 (9) Rev Req'd = Proposed Filter Area \* Overall Depth Below Underdrain (ft)

(10) Filter Storage = A (ft<sup>2</sup>) \* Filter Depth \* Porosity  
 (11) ESDv Storage = Surface Storage  
 (12) ESDv Storage = ESDv Storage \* 75%  
 (13) ESDv Storage = (2.4 \* R<sub>v</sub> \* DA) / 12  
 (14) ESDv Storage = Minimum of ESDv Storage and ESDv (Inch)  
 (15) P<sub>e</sub> Req'd = ESDv (Impervious \* 12) / (R<sub>v</sub> \* DA)  
 (16) Rev Req'd = Proposed Filter Area \* Overall Depth Below Underdrain (ft)

(17) (Per MDE Manual 75% Temporary Storage Required for Treatment)  
 (18) Maximum Storage for 1 yr storm event, P = 2.4"



Stormwater Management - Environmental Site Design Summary

Total Drainage Area (sf)	Existing Impervious Area (sf)	Proposed Impervious Area (sf)	% Rev	Target P <sub>e</sub>	Target RCN	ESD Req'd (Overall Site) (cf)	R <sub>v</sub> Req'd (Overall Site) (cf)	Impervious Area Treated (sf)	ESD Prov'd (Individual) (cf)	R <sub>v</sub> Prov'd (Individual) (cf)	Prov'd RCN	C <sub>pv</sub> Req'd (cf)									
45307	1.04	32505	0.75	2.2564	0.74	71%	1.0	70	2616	0.060	340	0.008	16071	0.37	1583	0.036	285	0.007	70	N/A	N/A

\* Proposed Impervious is less than existing impervious

APPROVED: DEPARTMENT OF PLANNING AND ZONING

10.1.19 DATE

9/24/19 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT

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**Kimley-Horn**

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 1215 E FORT AVE, SUITE 304  
 BALTIMORE, MD 21230  
 CONTACT: NICHOLAS LEFFNER, P.E.  
 PHONE: 443-743-3470  
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 CHECKED BY: TM



**ENVIRONMENTAL CONCEPT PLAN**

**ELLICOTT CITY (STATION MD-108)**  
 PREPARED FOR  
 PMIG 1027, LLC

HOWARD COUNTY MARYLAND

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**CONCEPT STORMWATER MANAGEMENT AND FINAL STAGE SESC PLAN**

SHEET NUMBER  
**2 OF 2**

**ADDRESS CHART**

LOT/PARCEL #	STREET ADDRESS
PARCEL 996, LOT 1	9320 BALTIMORE NATIONAL PIKE, ELLICOTT CITY, MD 21042

**PERMIT INFORMATION CHART**

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WATER CODE 772-W	SEWER CODE 130-S				