

**ENVIRONMENTAL CONCEPT PLAN 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, STEEP SLOPES, STREAM AND WETLAND AREAS LOCATED ON AND ADJACENT TO THE SITE. THE WETLANDS AREAS AND STREAM HAVE BEEN IDENTIFIED AND PRESERVED BY THE PROPOSED SITE DESIGN AND WILL NOT BE IMPACTED. IMPACTS TO THE EXISTING WOODED AND VEGETATED AREAS WILL BE MINIMIZED DURING DEVELOPMENT. THE 100-YEAR FLOODPLAIN IS LOCATED DOWNSTREAM OF THE SITE AND CAN BE FOUND ON THE EXISTING CONDITIONS PLAN.

**MAINTENANCE OF NATURAL FLOW PATTERNS**

THE PROPOSED SITE DRAINAGE WILL MAINTAIN THE EXISTING CONDITION OF FLOW PATTERNS WHEREVER FEASIBLE DURING DEVELOPMENT EFFORTS. ALL DRAINAGE FROM THE PROPOSED DEVELOPMENT WILL BE DIRECTED TO THE PROPOSED STORMWATER MANAGEMENT FACILITIES AND AS SHEET FLOW TO THE OUTFALL LOCATIONS. RIPRAP OUTFALL PROTECTION WILL BE PROVIDED AT THE CONCENTRATED DISCHARGE POINTS TO PREVENT EROSION AT THE DISCHARGE LOCATIONS.

**REDUCTION OF IMPERVIOUS AREAS THROUGH BETTER SITE DESIGN, ALTERNATIVE SURFACES, AND NON-STRUCTURAL PRACTICES**

THE PROPOSED DEVELOPMENT IS NEW DEVELOPMENT AND WILL INCREASE THE IMPERVIOUS AREA ON SITE. THE PROPOSED IMPERVIOUS SURFACES ARE THOSE REQUIRED TO SUPPORT THE INTENDED LAND USE (PARKING AREAS, DRIVEWAYS, AND ASSOCIATED TIE-INS TO EXISTING ROADS). 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 STABILIZED CONSTRUCTION ENTRANCE WILL REDUCE SEDIMENT FROM BEING TRACKED OFF-SITE. EARTH DIKES WILL DIRECT SURFACE RUNOFF TO THE TEMPORARY SEDIMENT BASIN. THE SEDIMENT BASIN WILL RETAIN SEDIMENT TO PROTECT DOWNSTREAM AREAS FROM RECEIVING SEDIMENT-LADEN RUNOFF. SUPER SILT FENCE WILL BE USED TO FILTER AND RETAIN SEDIMENT ON SITE. ALL SEDIMENT CONTROLS WILL BE IMPLEMENTED ON SITE 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 PROPOSED IMPERVIOUS SURFACE COVERAGE.

PERMEABLE PAVEMENT IS NOT FEASIBLE DUE TO REQUIRED FILL LOCATIONS, CONSTRUCTION DISTURBANCES, AND PROPOSED LAND USE.

NON-STRUCTURAL PRACTICES (DISCONNECTIONS) WILL BE IMPLEMENTED ALONG THE PROPOSED PERIMETER GRAVEL PATH WITH ADEQUATELY SIZED DISCONNECTION LENGTHS AND SLOPES.

MICRO-SCALE PRACTICES (MICRO-BIOTENTIONS) WILL BE IMPLEMENTED WITHIN THE PROPOSED DEVELOPMENT TO MEET THE STORMWATER MANAGEMENT REQUIREMENTS FOR THE SITE. THE PROPOSED DRAINAGE AREAS AND IMPERVIOUS AREAS TO THE MICRO-SCALE PRACTICES HAVE BEEN MINIMIZED TO THE EXTENT FEASIBLE BASED ON THE PROPOSED DEVELOPMENT TO ENSURE PROPER FUNCTION OF THE FACILITIES. MICRO-BIOTENTION FACILITIES WILL BE UTILIZED TO MEET THE REQUIRED ESDV FOR THE PROPOSED DEVELOPMENT PER HOWARD COUNTY STORMWATER MANAGEMENT REQUIREMENTS. NO ESDV WILL BE COUNTED IN THE SOIL MEDIA. ONLY IN THE PONDING ABOVE THE MEDIA. NO RECHARGE WILL BE PROVIDED IF THE FACILITY IS IN AN AREA OF FILL.

**STORMWATER QUALITY TREATMENT - ENVIRONMENT 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 LESS THAN 40% THIS PROJECT SHALL BE CONSIDERED NEW DEVELOPMENT AND DOES NOT QUALIFY FOR REDEVELOPMENT CREDITS.

BASED ON THE PROPOSED IMPERVIOUS AREAS AND THE UNDERLYING SOIL CONDITIONS, THE ESDV VOLUME ASSOCIATED WITH THIS AREA IS 79,166 CF. REFER TO APPENDIX B 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). NON-ROOFTOP DISCONNECT SHALL BE IMPLEMENTED TO TREAT THE PERIMETER GRAVEL PATH. CHAPTER 5 MICRO-SCALE FACILITIES (MICRO-BIOTENTIONS) SHALL BE IMPLEMENTED TO ACHIEVE THE REMAINING ESDV. ESD FACILITIES SHALL BE LOCATED IN AREAS WHERE PROPOSED LAND USE, ENVIRONMENTAL CONSTRAINTS, OR ADDITIONAL EASEMENT AND RIGHT-OF-WAY CONSTRAINTS ALLOW. CONTRIBUTING DRAINAGE AREA TO EACH FACILITY SHALL BE MINIMIZED TO THE EXTENT FEASIBLE BASED ON THE PROPOSED LAND USE AND TOPOGRAPHY. DUE TO SITE TIE-IN CONSTRAINTS AT THE EXISTING RIGHT-OF-WAY, AS MUCH AS POSSIBLE OF THE PROPOSED IMPERVIOUS AREA WILL BE TREATED BY ESD PRACTICES. PORTIONS OF THE PROPOSED IMPERVIOUS AREA NEAR THE SITE ENTRANCES WILL NOT BE TREATED, HOWEVER, THE REQUIRED ESDV IS ACHIEVED WITH THE PROPOSED PRACTICES ON SITE. THE STORMWATER FACILITIES WILL BE OWNED AND MAINTAINED BY THE OWNER.

**STORMWATER QUANTITY CONTROL - CHANNEL PROTECTION VOLUME**

ENVIRONMENTAL SITE DESIGN (ESD) TO THE MAXIMUM EXTENT PRACTICABLE IS PROVIDED BY ESD PRACTICES (NON-ROOFTOP DISCONNECT AND MICRO-BIOTENTION), AS THE PROPOSED PROJECT IMPLEMENTS ESD TO THE MEP, THERE ARE NOT ANY REMAINING CHANNEL PROTECTION REQUIREMENTS.

**STORMWATER QUANTITY CONTROL - OVERBANK FLOOD AND EXTREME STORM**

THE ADDITIONAL RUNOFF AS A RESULT OF THE DEVELOPMENT EFFORTS WILL BE MANAGED ON-SITE THROUGH A COMBINATION OF ESD AND ADEQUATE OUTFALL PROTECTION TO ENSURE THERE IS NO EROSION OR UNSAFE FLOODING CONDITIONS DOWNSTREAM. FOR THE EXTREME STORM, OVERLAND RELIEF IS PROVIDED TO THE DOWNSTREAM FLOODPLAIN. THE PROJECT IS LOCATED OUTSIDE OF THE TIBER BRANCH WATERSHED AND IS NOT UPSTREAM OF THE PATAPSCO RIVER, THEREFORE, 100-YEAR PEAK MANAGEMENT CONTROL IS NOT REQUIRED.

**Existing Natural Resources:**

Federal	State	Local	Site Areas and Uses
Y	Tidal and Nontidal Wetlands	Y	Sleep Slopes (>15%) 23.70 LOD Area (AC)
N/A	Major Waterways	N/A	Wetlands of Special State Concern 0.09 Imp. Area (AC)
Y	Floodplains	Y	Enhanced Stream Buffers 23.61 Open Area (AC)
Y	Stream Buffers	Y	Topography/Slopes N/A Buildings
N/A	Perennial Streams	N/A	Springs N/A Roadways
Y	Floodplains	N/A	Slopes N/A Parking Lots
Y	Forest	N/A	Intermittent Streams N/A Sidewalks
N/A	Forest Buffers	Y	Vegetative Cover N/A Storm Drain
N/A	Critical Areas	Y	Soils Y Storm Facilities
		N/A	Bedrock/Geology N/A Water/Sewer
		Y	Existing Drainage Areas N/A Dry Utilities
N/A	Not applicable, feature not present on site.	N	No, feature present on site but not shown due to lack of information.
Y	Yes, feature present on site and shown.		

**STANDARD STABILIZATION NOTE**

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:  
 a. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND  
 b. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

**GENERAL NOTES:**

- ALL EXISTING CONDITIONS ARE PROVIDED BY HOWARD COUNTY GIS DATA, PREVIOUSLY RECORDED PLATS, AND ALTA SURVEY.
- PROPERTY LINE OF SUBJECT PROPERTY IS ACCORDING TO RECORDED PLAT OF LOT A-1 (PLAT #23639).
- 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 THE HOWARD COUNTY SUBDIVISION PLAN AND LAND DEVELOPMENT REGULATIONS SHALL OCCUR AT THE SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN STAGES AND/OR RED-LINE REVISION PROCESS. THE APPLICATION 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.  
 HOWARD COUNTY GEODETIC COORDINATES REFERENCED IN VICINITY MAP:

STATION	NORTHING	EASTING	ELEVATION	DESCRIPTION
47G2	532938.964	1351224.095	364.210	X CUT
47E4	535846.138	1355431.196	338.909	CONC. MON.

# ENVIRONMENTAL CONCEPT PLAN

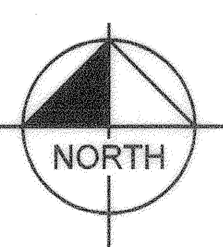
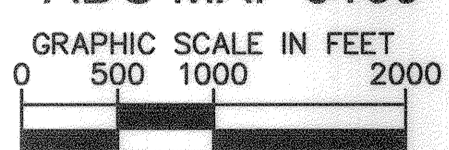
## EMERSON PROJECT

### ELECTION DISTRICT NO. 6

### HOWARD COUNTY, MD



**LOCATION PLAN**  
 SCALE: 1"=1000'  
 ADC MAP 5169



**LEGEND**

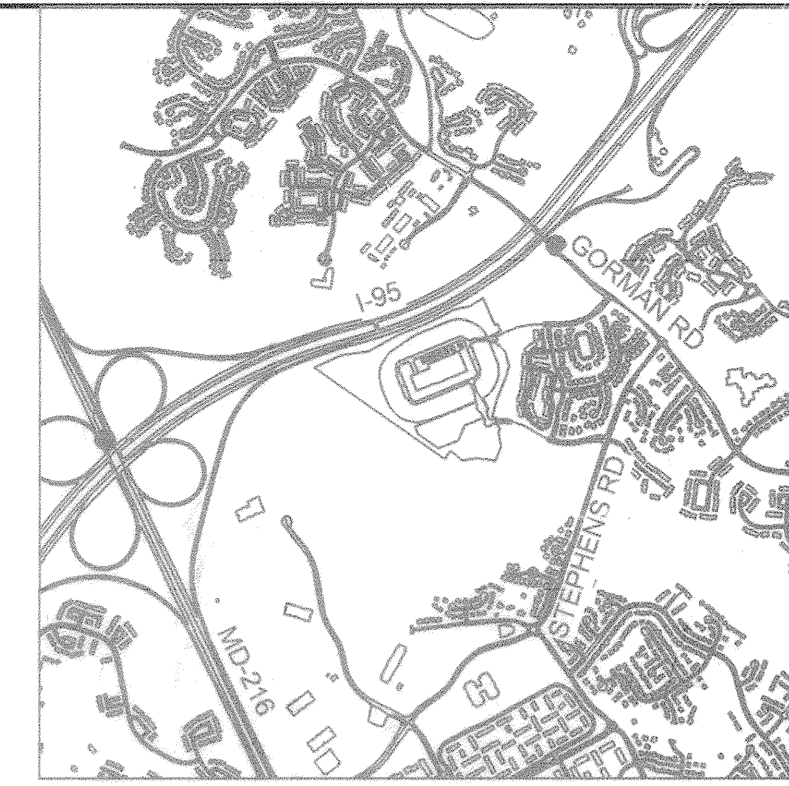
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---	100 YR FP
---	DELINEATION
---	STREAM BUFFER
---	TREELINE
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---	SLOPES GREATER THAN 15%
---	HIGHLY ERODIBLE SOILS
---	SUPER SILT FENCE
---	EARTH DIKE
---	EXISTING VEGETATION
---	DRAINAGE AREA DIVIDE

**Sheet List Table**

Sheet Number	Sheet Title
1 OF 12	COVER SHEET
2 OF 12	OVERALL EXISTING CONDITIONS & INITIAL SESC PLAN
3 OF 12	EXISTING CONDITIONS & INITIAL SESC PLAN
4 OF 12	EXISTING CONDITIONS & INITIAL SESC PLAN
5 OF 12	EXISTING CONDITIONS & INITIAL SESC PLAN
6 OF 12	EXISTING CONDITIONS & INITIAL SESC PLAN
7 OF 12	OVERALL PHASING PLAN
8 OF 12	OVERALL SWM CONCEPT PLAN
9 OF 12	SWM CONCEPT PLAN
10 OF 12	SWM CONCEPT PLAN
11 OF 12	SWM CONCEPT PLAN
12 OF 12	SWM CONCEPT PLAN

**Site Soil Table**

Mapping Unit, Name	K value	Description
CeC, Chillum loam (5-10% slopes)	0.43	Well drained yellowish red to brownish soil. Parent material is silty eolian deposits and/or fluviomarine sediments.
ChB, Chillum-Russett loams (2-5% slopes)	0.43	Moderately well drained yellowish brown (Russett) and yellowish red to brownish (Chillum) soils. Parent material is silty eolian deposits and/or fluviomarine sediments and loamy fluviomarine sediments.
ChC, Chillum-Russett loams (5-10% slopes)	0.43	Moderately well drained yellowish brown (Russett) and yellowish red to brownish (Chillum) soils. Parent material is silty eolian deposits and/or fluviomarine sediments and loamy fluviomarine sediments.
GgB, Glenelig loam (3-8% slopes)	0.37	Well drained strong brown to yellowish brown to yellowish red (Glenelig) soils. Parent material is residuum weathered from mica schist.
GmB, Glenwile silt loam (3-8% slopes)	0.55	Moderately well drained yellowish brown to brown (Glenwile) soils. Parent material is Colluvium derived from metamorphic rock over schist, gneiss or phyllite residuum.
MaC, Manor loam (8-15% slopes)	0.32	Well drained brown to dark yellowish brown to variegated olive brown soils.
RcC, Russet fine sandy loam (5-10% slopes)	0.43	Moderately well drained brown to yellowish brown (Russet) soils. Parent material is loamy fluviomarine sediments.



**VICINITY MAP**  
 SCALE: 1" = 2000'

**SITE ANALYSIS DATA CHART**

TOTAL PROJECT AREA:	43.113 ACRES (1,877,984 SF)
ZONING:	PEC-MXD-3 (PLANNED EMPLOYMENT CENTER)
EXISTING USES:	OPEN SPACE / FARMLAND
PROPOSED USES:	DATA CENTER FACILITY
LOD AREA:	27.72 ACRES
GREEN OPEN AREA:	16.96 ACRES
PROPOSED IMPERVIOUS AREA:	12.30 ACRES
WETLAND AREA:	0.80 ACRES
WETLAND BUFFER AREA:	0.65 ACRES
STREAM AREA:	0 ACRES
STREAM BUFFER AREA:	0.35 ACRES
FLOODPLAIN AREA:	1.58 ACRES
STEEP SLOPE AREA (>15%):	1.91 ACRES

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APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	3/8/21	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	3/3/21	DATE

**ADDRESS CHART**

LOT/PARCEL #	STREET ADDRESS
PARCEL 1078, LOT A-1	9501 ETERNAL RINGS DRIVE, LAUREL, MD 20723

**PERMIT INFORMATION CHART**

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO. PARCEL 1078, LOT A-1
PLAT # OR L/F #23639	GRID #08 ZONING PEC-MXD-3	TAX MAP NO. 47 ELECT DISTRICT 6
WATER CODE	SEWER CODE	CENSUS TRACT

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**COVER SHEET**

**EMERSON PROJECT**

**1 OF 12**

ECP-21-012

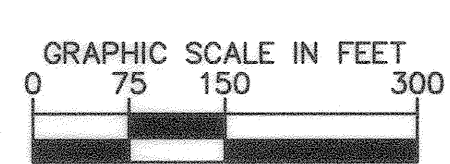
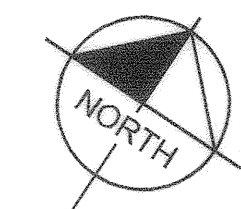




**VICINITY MAP**  
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**EXISTING & INITIAL SESC LEGEND**

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	3/8/21
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
	3/3/21
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE

**ADDRESS CHART**

LOT/PARCEL #	STREET ADDRESS
PARCEL 1078, LOT A-1	9501 ETERNAL RINGS DRIVE, LAUREL, MD 20723

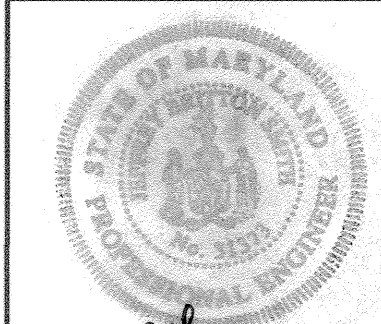
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SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO. PARCEL 1078, LOT A-1
PLAT # OR L/F #23639	GRID # 08 ZONING PEC-MXD-3	TAX MAP NO. 47 ELECT DISTRICT 6 CENSUS TRACT
WATER CODE	SEWER CODE	

No.	REVISIONS	DATE	BY

**Kimley»Horn**

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PROFESSIONAL CERTIFICATION (HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.)

EXPIRATION DATE: 02/28/2028

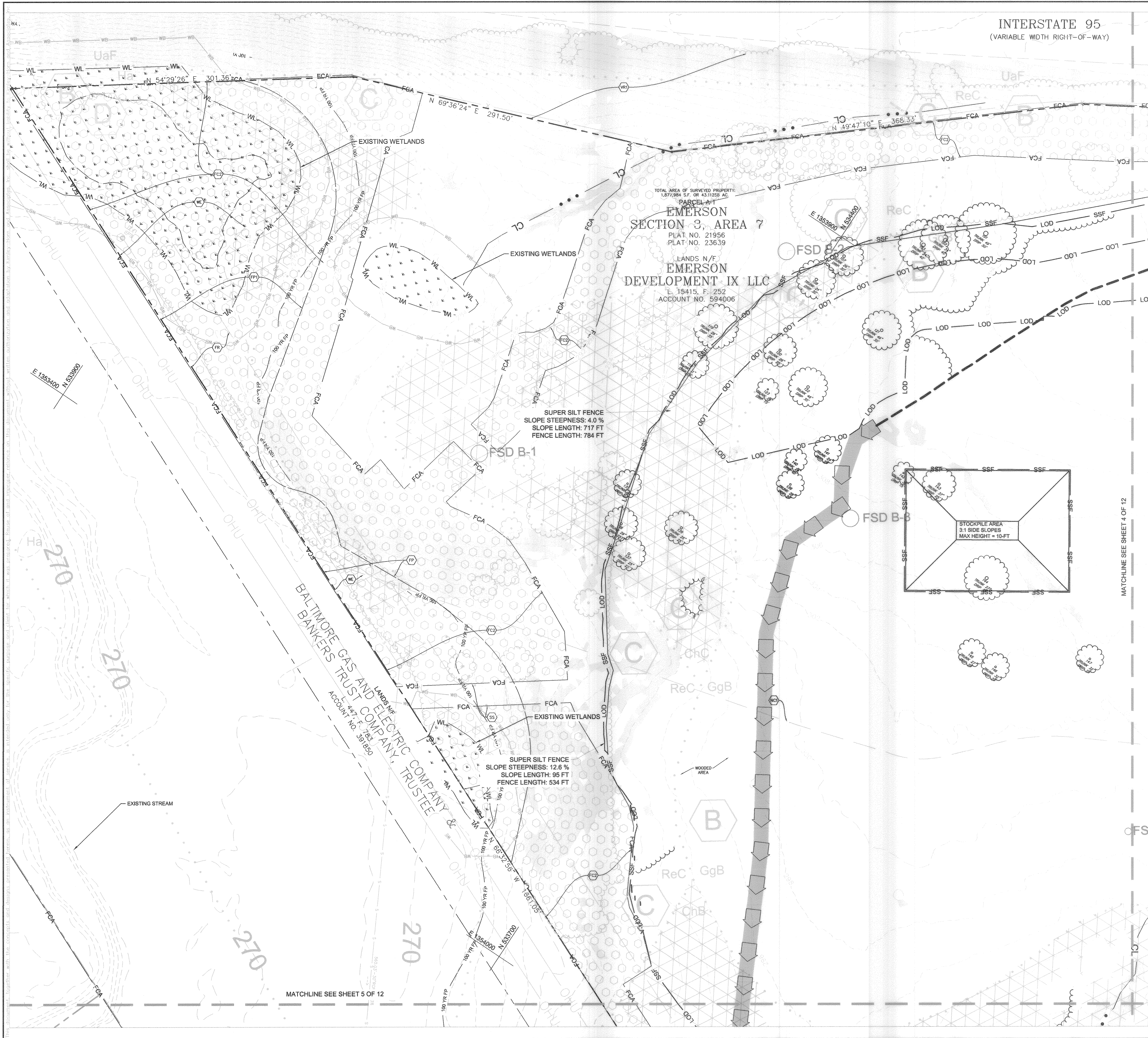
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DATE	10/07/2020
SCALE	AS SHOWN
DESIGNED BY	KKW
DRAWN BY	KKW
CHECKED BY	KTB

**OVERALL EXISTING CONDITIONS & INITIAL SESC PLAN**

**EMERSON PROJECT**

HOWARD COUNTY MARYLAND





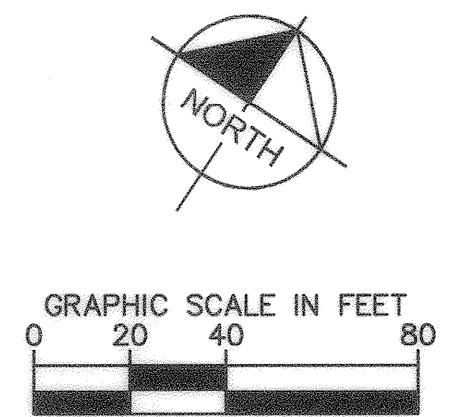
INTERSTATE 95  
(VARIABLE WIDTH RIGHT-OF-WAY)



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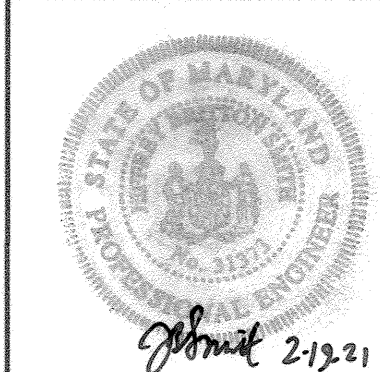
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<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	3-8-21 DATE
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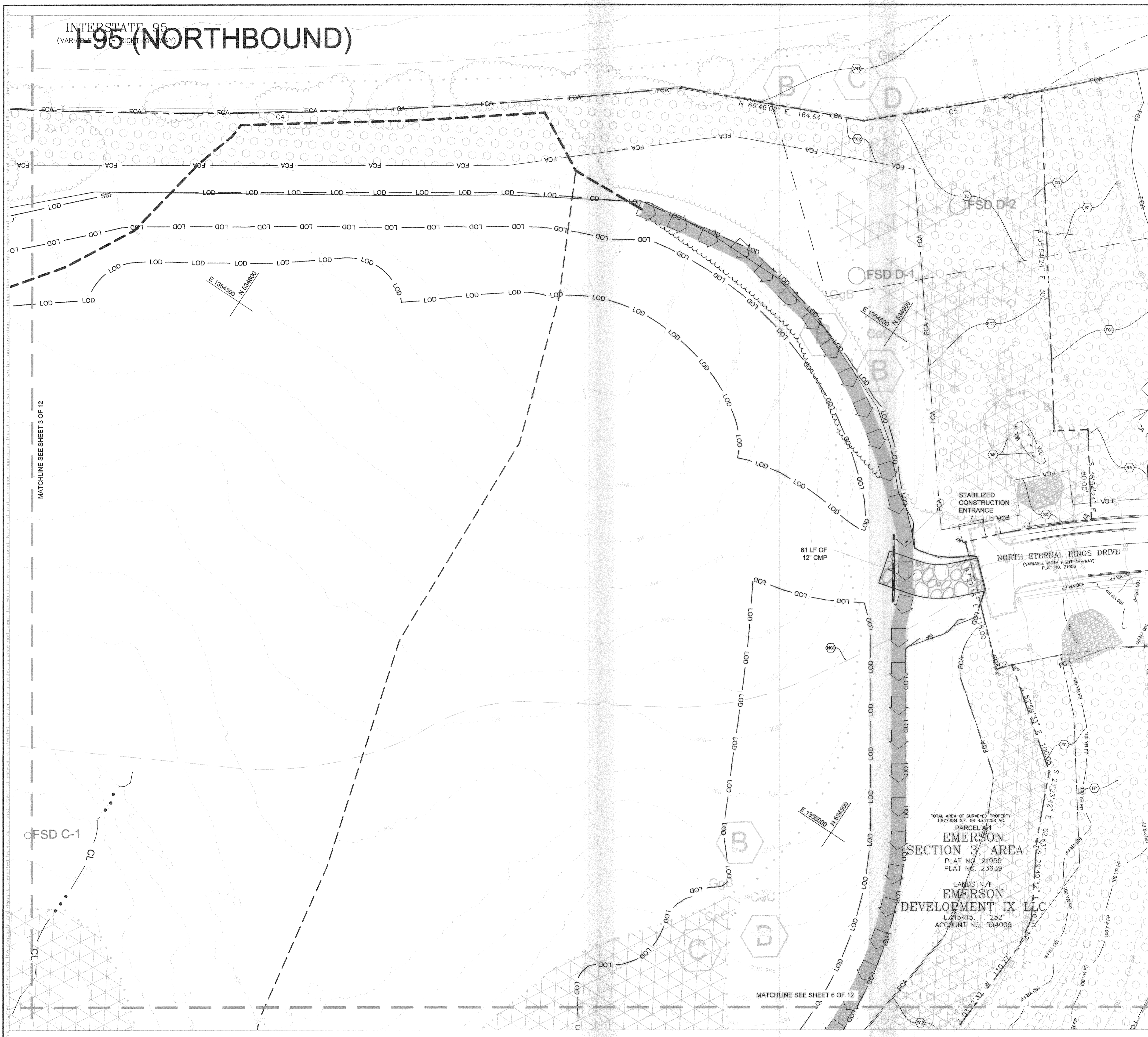
KHA PROJECT	110718001
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SCALE	AS SHOWN
DESIGNED BY	KKW
DRAWN BY	KKW
CHECKED BY	KTB

**EXISTING CONDITIONS & INITIAL SESC PLAN**

**EMERSON PROJECT**  
SHEET NUMBER  
**3 OF 12**



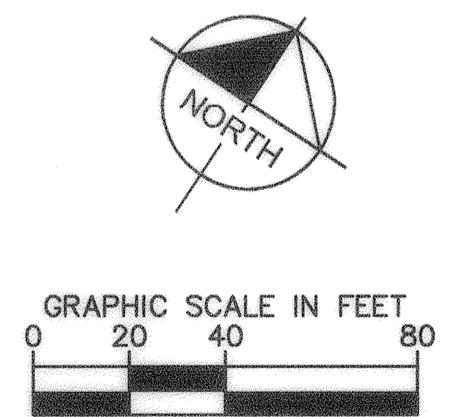
INTERSTATE 95  
(VARIABLE WIDTH RIGHT-OF-WAY)  
**I-95 (NORTHBOUND)**



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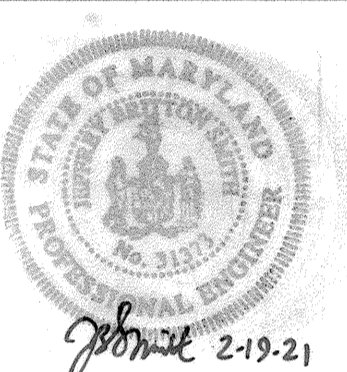
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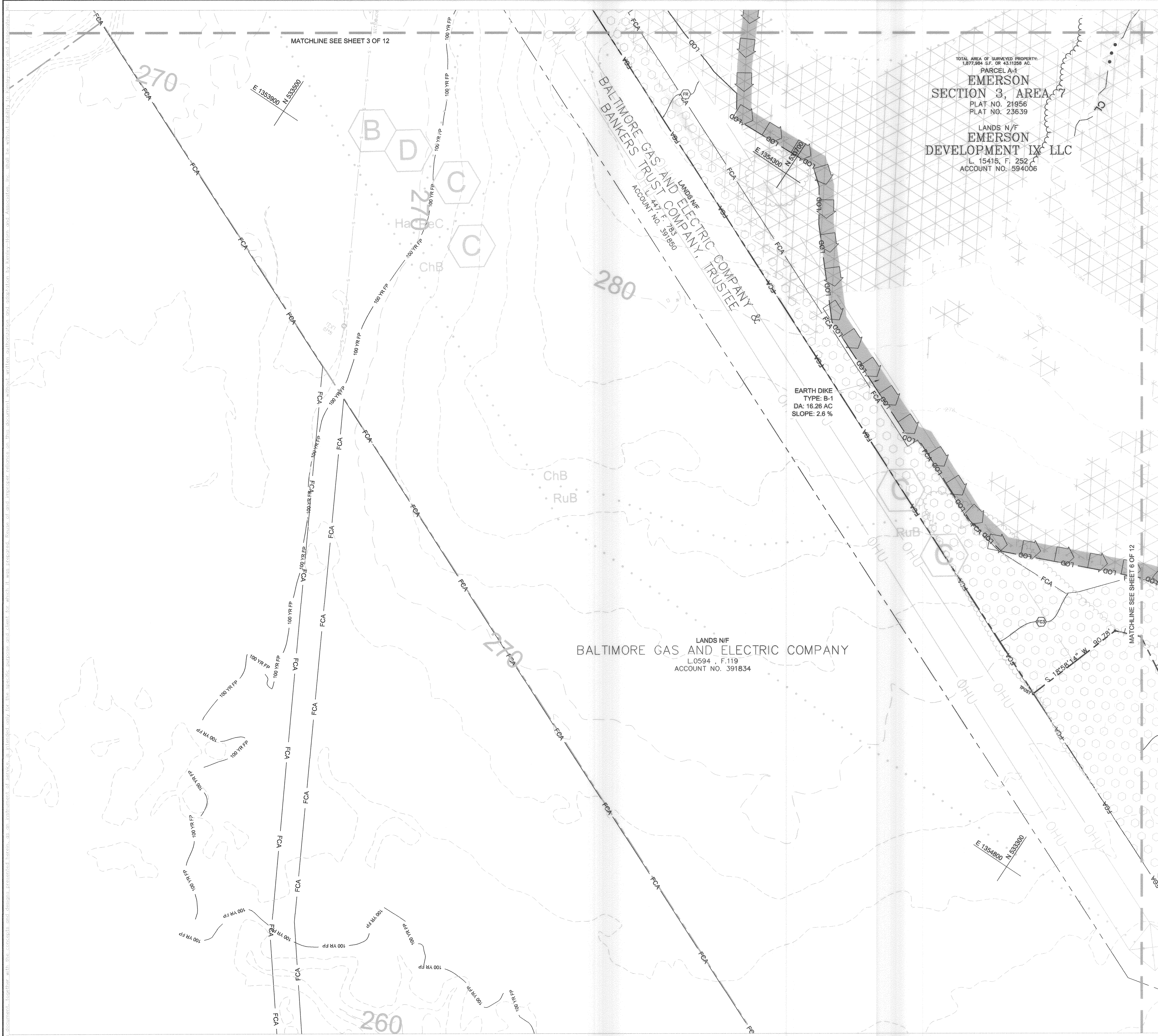
EXPIRATION DATE	3/31/23
DESIGNED BY	KKW
DRAWN BY	KKW
CHECKED BY	KTB

**EXISTING CONDITIONS & INITIAL SESC PLAN**

**EMERSON PROJECT**  
MARYLAND  
HOWARD COUNTY

SHEET NUMBER  
**4 OF 12**

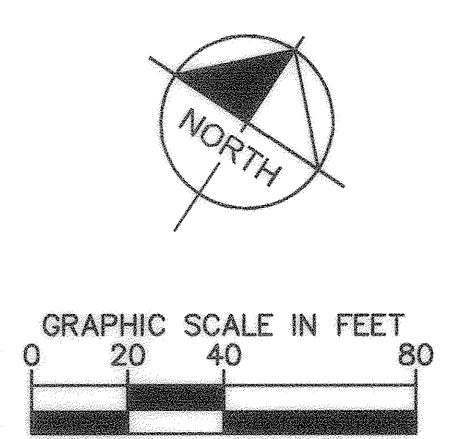




**VICINITY MAP**  
SCALE: 1" = 2000'

**EXISTING & INITIAL SESC LEGEND**

- CL --- PROPERTY LINE
- CL --- STREAM CENTER LINE
- 100 YR FP --- 100 YEAR FLOODPLAIN DELINEATION
- SB --- STREAM BUFFER
- TREELINE --- TREELINE
- ADJACENT PROPERTY LINE --- ADJACENT PROPERTY LINE
- SOIL DIVIDE --- SOIL DIVIDE
- EXISTING MAJOR CONTOUR --- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR --- EXISTING MINOR CONTOUR
- EXISTING VERIZON LINE --- EXISTING VERIZON LINE
- EXISTING OVERHEAD ELECTRIC --- EXISTING OVERHEAD ELECTRIC
- EXISTING WATER LINE --- EXISTING WATER LINE
- EXISTING CABLE --- EXISTING CABLE
- EXISTING FENCE --- EXISTING FENCE
- EXISTING SEWER LINE --- EXISTING SEWER LINE
- WETLAND BUFFER --- WETLAND BUFFER
- WETLAND --- WETLAND
- FOREST CONSERVATION AREA --- FOREST CONSERVATION AREA
- EXISTING TELECOMMUNICATION STRUCTURE --- EXISTING TELECOMMUNICATION STRUCTURE
- EXISTING SEWER MANHOLE --- EXISTING SEWER MANHOLE
- EXISTING UTILITY POLE --- EXISTING UTILITY POLE
- EXISTING GUY WIRE --- EXISTING GUY WIRE
- EXISTING WATER VALVE --- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT --- EXISTING FIRE HYDRANT
- EXISTING SIGN --- EXISTING SIGN
- EXISTING TREE --- EXISTING TREE
- EXISTING GAS VALVE --- EXISTING GAS VALVE
- HYDROLOGIC SOIL GROUP --- HYDROLOGIC SOIL GROUP
- SLOPES GREATER THAN 15% --- SLOPES GREATER THAN 15%
- HIGHLY ERODIBLE SOILS --- HIGHLY ERODIBLE SOILS
- SUPER SILT FENCE --- SUPER SILT FENCE
- EARTH DIKE --- EARTH DIKE
- EXISTING VEGETATION --- EXISTING VEGETATION
- DRAINAGE AREA DIVIDE --- DRAINAGE AREA DIVIDE



CALL 48 HOURS BEFORE YOU DIG  
**811**  
IT'S THE LAW! DIAL 811  
Know what's below. Call before you dig.

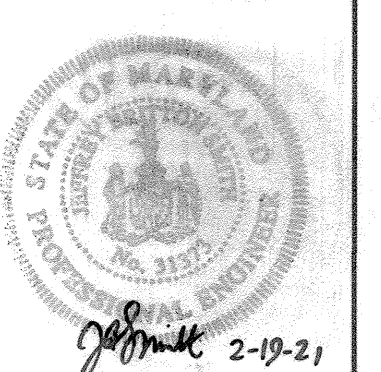
APPROVED:	DEPARTMENT OF PLANNING AND ZONING
<i>[Signature]</i>	3/8/21
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
<i>[Signature]</i>	3/13/21
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE

ADDRESS CHART	
LOT/PARCEL #	STREET ADDRESS
PARCEL 1078, LOT A-1	9501 ETERNAL RINGS DRIVE, LAUREL, MD 20723

PERMIT INFORMATION CHART					
SUBDIVISION NAME		SECTION/AREA		LOT/PARCEL NO. PARCEL 1078, LOT A-1	
PLAT # OR L/F #23639	GRID # 08	ZONING PEC-MXD-3	TAX MAP NO. 47	ELECT DISTRICT 6	CENSUS TRACT
WATER CODE			SEWER CODE		

NO.	REVISIONS	DATE	BY

**Kimley»Horn**  
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1801 PORTER ST., SUITE 401, BALTIMORE, MD 21230  
PHONE: 443-743-3470  
WWW.KIMLEY-HORN.COM



KHA PROJECT	110718001
DATE	10/07/2020
SCALE AS SHOWN	KKW
DESIGNED BY	KKW
DRAWN BY	KKW
CHECKED BY	KTB

**EXISTING CONDITIONS & INITIAL SESC PLAN**

**EMERSON PROJECT**  
MARYLAND  
HOWARD COUNTY

SHEET NUMBER  
**5 OF 12**

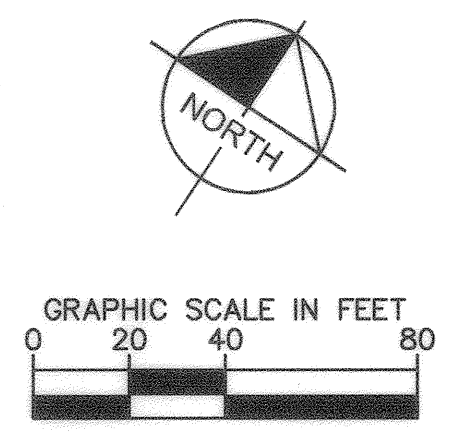




**VICINITY MAP**  
SCALE: 1" = 2000'

**EXISTING & INITIAL SESC LEGEND**

	PROPERTY LINE
	STREAM CENTER LINE
	100 YEAR FLOODPLAIN DELINEATION
	STREAM BUFFER
	TREELINE
	ADJACENT PROPERTY LINE
	SOIL DIVIDE
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	EXISTING VERIZON LINE
	EXISTING OVERHEAD ELECTRIC
	EXISTING WATER LINE
	EXISTING CABLE
	EXISTING FENCE
	EXISTING SEWER LINE
	WETLAND BUFFER
	WETLAND
	FOREST CONSERVATION AREA
	EXISTING TELECOMMUNICATION STRUCTURE
	EXISTING SEWER MANHOLE
	EXISTING UTILITY POLE
	EXISTING GUY WIRE
	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
	EXISTING SIGN
	EXISTING TREE
	EXISTING GAS VALVE
	HYDROLOGIC SOIL GROUP
	SLOPES GREATER THAN 15%
	HIGHLY ERODIBLE SOILS
	SUPER SILT FENCE
	EARTH DIKE
	EXISTING VEGETATION
	DRAINAGE AREA DIVIDE



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APPROVED:	DEPARTMENT OF PLANNING AND ZONING
	3-8-21
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
	3/3/21
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE

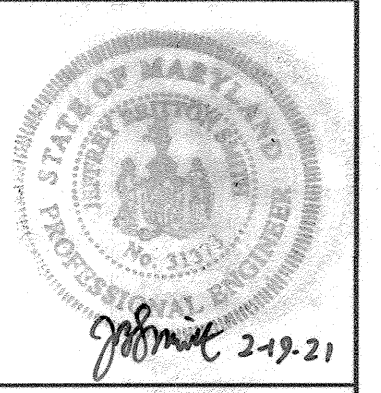
ADDRESS CHART	
LOT/PARCEL #	STREET ADDRESS
PARCEL 1078, LOT A-1	9501 ETERNAL RINGS DRIVE, LAUREL, MD 20723

PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO. PARCEL 1078, LOT A-1			
PLAT # OR L/F #23639	GRID #08	ZONING PEC-MXD-3	TAX MAP NO. 47	ELECT DISTRICT 6	CENSUS TRACT
WATER CODE	SEWER CODE				

No.	REVISIONS	DATE	BY

**Kimley-Horn**

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PHONE: 443-743-3470  
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EXPIRATION DATE: 06/25/2020

KHA PROJECT: 110718001  
DATE: 10/07/2020  
SCALE: AS SHOWN  
DESIGNED BY: KKW  
DRAWN BY: KKW  
CHECKED BY: KTB

**EXISTING CONDITIONS & INITIAL SESC PLAN**

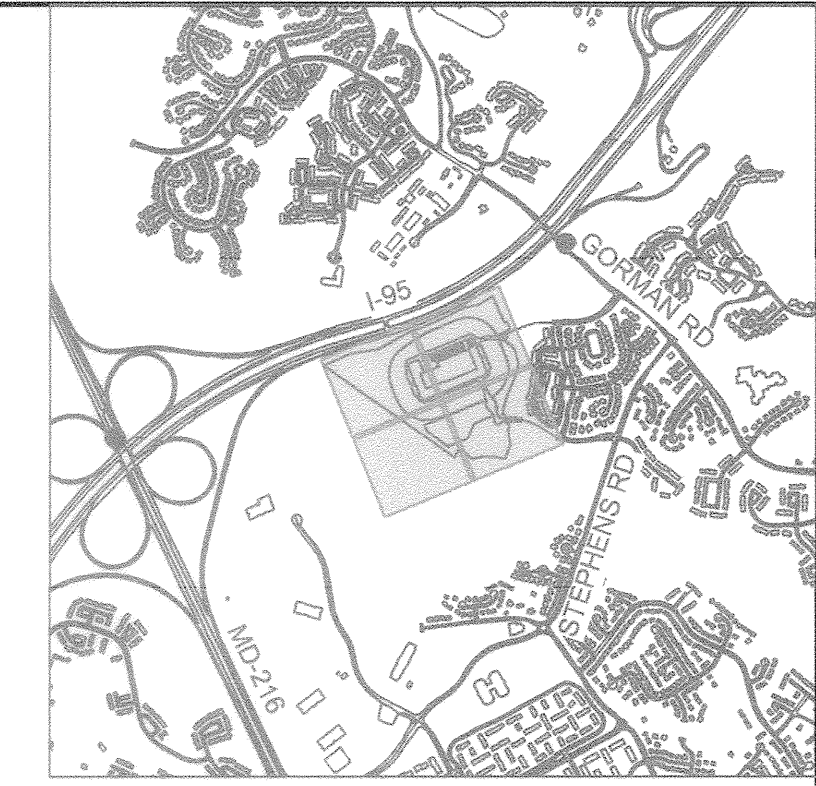
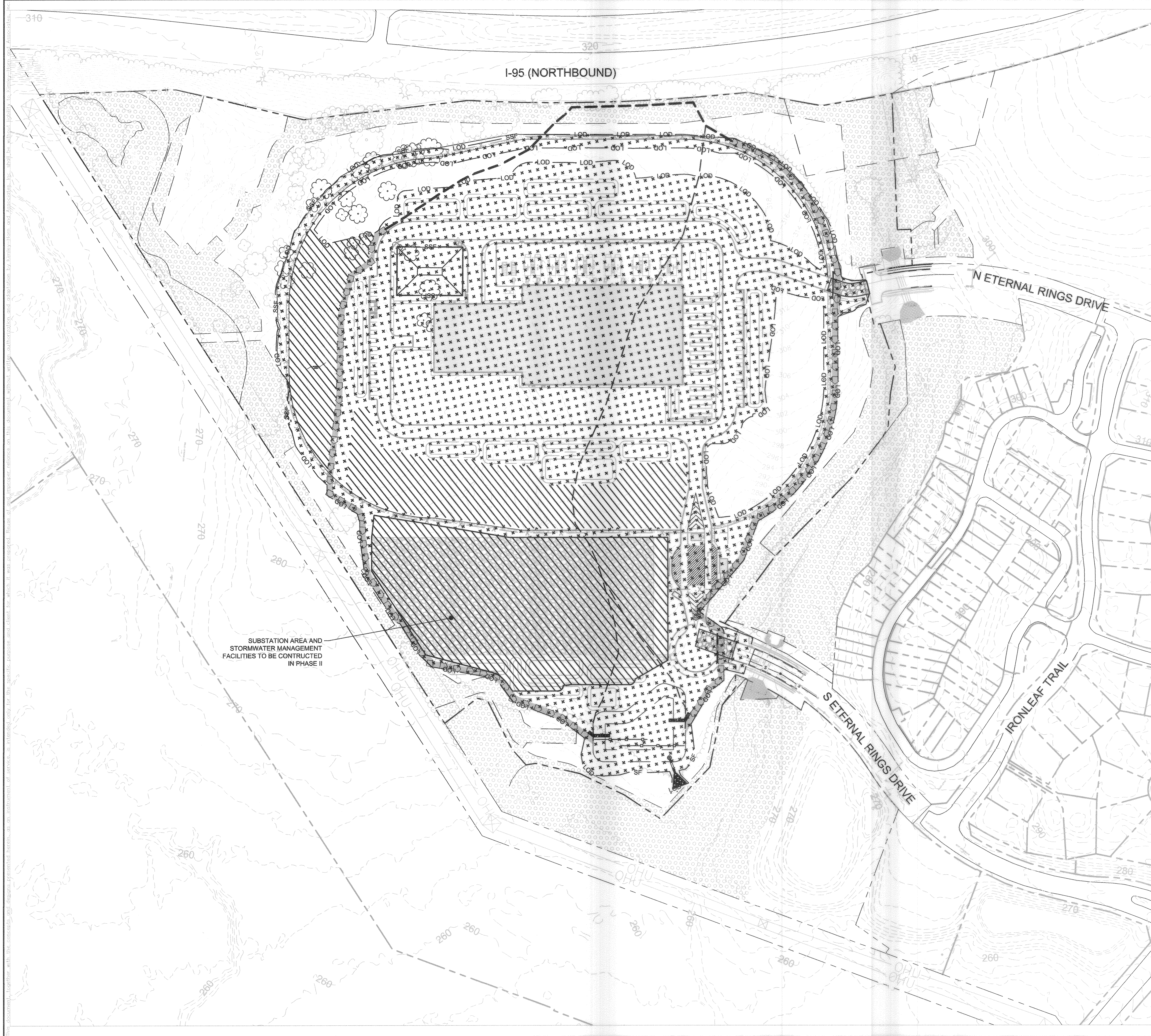
**EMERSON PROJECT**

MARYLAND  
HOWARD COUNTY

SHEET NUMBER  
**6 OF 12**

ECP-21-012

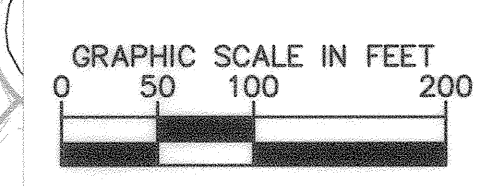




**VICINITY MAP**  
SCALE: 1" = 2000'

**EXISTING & INITIAL SESC LEGEND**

- CL — PROPERTY LINE
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- EXISTING GAS VALVE
- HYDROLOGIC SOIL GROUP
- SLOPES GREATER THAN 15%
- HIGHLY ERODIBLE SOILS
- SUPER SILT FENCE
- EARTH DIKE
- EXISTING VEGETATION
- DRAINAGE AREA DIVIDE
- PHASE I (18.99 AC)
- PHASE II (7.88 AC)



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APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 [Signature] CHIEF, DEVELOPMENT ENGINEERING DIVISION 3-8-21 DATE  
 [Signature] CHIEF, DIVISION OF LAND DEVELOPMENT 3/3/21 DATE

**ADDRESS CHART**

LOT/PARCEL #	STREET ADDRESS
PARCEL 1078, LOT A-1	9501 ETERNAL RINGS DRIVE, LAUREL, MD 20723

**PERMIT INFORMATION CHART**

SUBDIVISION NAME		SECTION/AREA	LOT/PARCEL NO. PARCEL 1078, LOT A-1
PLAT # OR L/F #23639	GRID # 08	ZONING PEC-MXD-3	TAX MAP NO. 47
ELECT DISTRICT 6		CENSUS TRACT	
WATER CODE		SEWER CODE	

NO.	REVISIONS	DATE	BY

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 LICENSE NO. 31373  
 EXPIRATION DATE 05/31/2023  
 KHA PROJECT 110718001  
 DATE 10/07/2020  
 SCALE AS SHOWN  
 DESIGNED BY CJC  
 DRAWN BY CJC  
 CHECKED BY KTB

**OVERALL PHASING PLAN**

**EMERSON PROJECT**  
 MARYLAND  
 HOWARD COUNTY  
 SHEET NUMBER  
**7 OF 12**



Kimley-Horn  
 Per MDE SWM Design Manual  
 Site Name: Emerson Project Date: 10/08/20  
 Project #: 110718001 By: KKW  
 County: Howard County Checked: N/A  
 Stormwater Management - Environmental Site Design

Site Drainage Area Data:

Step 1. Determine Area Requiring Treatment	
Project Site Area:	48.77 acres
Project Limit of Work Area, A:	77.50 acres
Existing Impervious Area:	6.99 acres
Existing % Impervious, I:	9%
Proposed Impervious Area:	11.93 acres
Proposed % Impervious, I:	43%
Imp Area to Treat, A <sub>i</sub> :	11.93 acres

< 40%, therefore New Development

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)  
 New Development  
 $I = 43%$   
 $R_v = 0.05 = (0.009 \cdot I)$   
 $R_v = 0.439$   
 $ESDv = [(P_v)(R_v)(A)]/12$   
 $P_e = 1.80$  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)
Bioretention	7.11	11.23	79174
Non-Reseal Disconnect	0.47	0.47	1880
<b>Total</b>	<b>11.80</b> acres	<b>80354</b> cf	<b>Provided</b>
	11.83 acres	79166 cf	Required

Confirm Stormwater Management Treatment  
 Target ESDv = 79166 cf  
 Prov'd ESDv = 80354 cf OK

C. Calculate Recharge (Rev) Requirements  
 $Rev = [(S)(R_v)(A)]/12$   
 $S = 0.21$  (60% B-Type Soils, 38% C-Type Soils, 2% D-Type Soils)  
 Target Rev = 0.212 ac-ft  
 9236 cf  
 Prov'd Rev = 0.247 ac-ft  
 10768 cf

D. Calculate Channel Protection (Cpv) Requirements  
 n/a

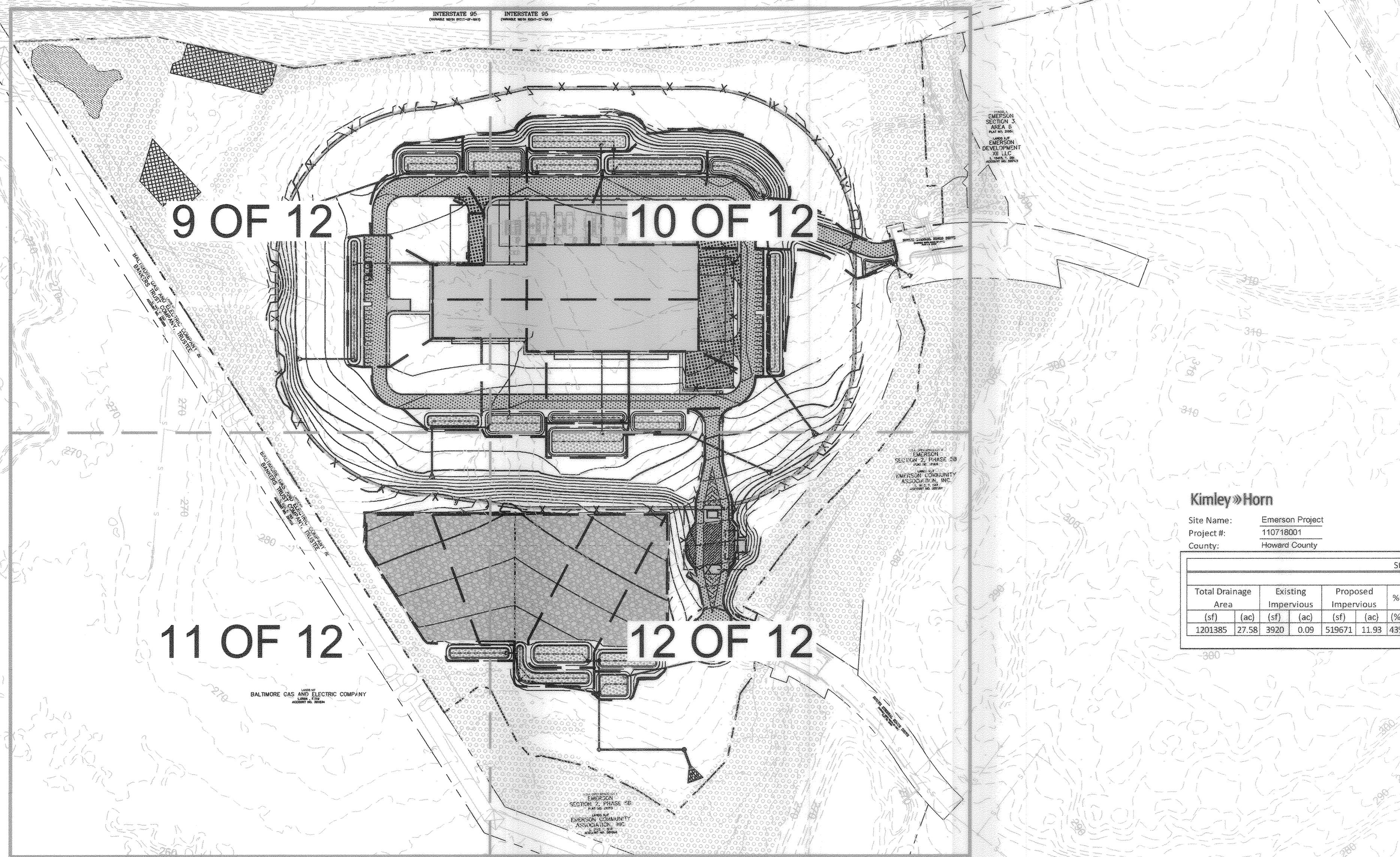
E. Calculate Overbank Flood Protection (Q<sub>ov</sub>) Requirements  
 n/a

F. Calculate Extreme Flood Protection (Q<sub>ext</sub>) Requirements  
 n/a

Kimley-Horn  
 Site Name: Emerson Project Date: 10/08/20  
 Project #: 110718001 By: KKW  
 County: Howard County Checked: N/A

Stormwater Management - Environmental Site Design Summary

Total Drainage Area (sf)	Existing Impervious (sf)	Proposed Impervious (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>ov</sub> Req'd (cf)										
1201385	27,58	3920	0.09	519671	11.93	43%	0.44	1.8	55	79166	1.817	9236	0.212	514101	11.80	80354	1.845	10768	0.247	55	N/A	N/A



### SWM LEGEND

- PROPERTY LINE
- LIMIT OF DISTURBANCE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- BIORETENTION
- FACILITY DRAINAGE AREA BOUNDARY
- IMPERVIOUS AREA

GRAPHIC SCALE IN FEET: 0, 75, 150, 300

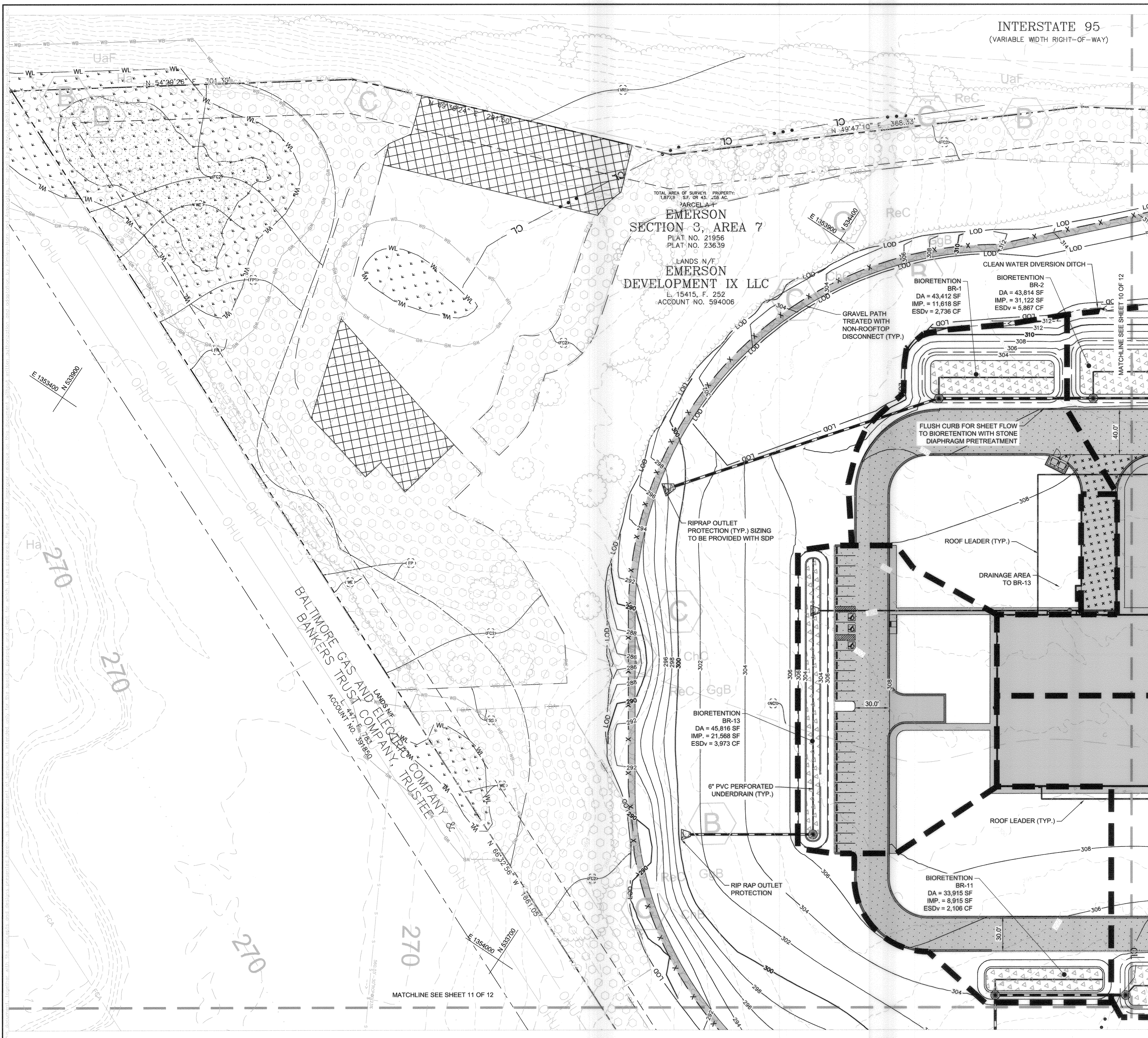
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Kimley-Horn  
 Site Name: Emerson Project Date: 10/08/20  
 Project #: 110718001 By: KKW  
 County: Howard County Checked: N/A

#### ESD Treatment Summary

ESD ID	Type of Practice	Total Drainage Area, DA (sf)	Imp Area (sf)	Imp Area Treated (sf)	R <sub>v</sub>	Target Rainfall Depth (inches)	Length (ft)	Width (ft)	A <sub>i</sub> (Prov'd) (sf)	Ponding Depth (ft)	Check Dam Height (ft)	Surface Storage (sf)	Filter Depth (ft)	Porosity (n)	ESDv Obtained (cf)	ESDv (Max)* (cf)	ESDv Prov'd (cf)	Rev Prov'd (cf)	C <sub>ov</sub> (cf)	Pe Prov'd	
BR-1	M-6: Micro-Bioretenation	42412	1,96	11618	0.27	0.27	276	0.29	1,80	-	-	4400	0.77	1	N/A	4400	5867	6738	8867	880	2.28
BR-2	M-6: Micro-Bioretenation	43814	1,91	32122	0.74	0.74	736	0.71	1,80	-	-	3365	668	1	N/A	3365	4487	4889	4989	675	2.60
BR-3	M-6: Micro-Bioretenation	27868	0,64	19421	0,46	0,46	796	0,48	1,80	-	-	4545	983	1	N/A	4545	6460	6767	6460	960	2,48
BR-4	M-6: Micro-Bioretenation	49688	1,16	21848	0,73	0,73	646	0,63	1,80	-	-	4845	1172	1	N/A	4845	6460	8877	6460	960	1,96
BR-5	M-6: Micro-Bioretenation	58,590	1,56	40732	0,84	0,84	706	0,68	1,80	-	-	2800	636	1	N/A	2800	3467	3364	3364	820	2,40
BR-6	M-6: Micro-Bioretenation	51,765	0,73	18,437	0,35	0,35	496	0,49	1,80	-	-	4900	946	1	N/A	4900	6533	6723	6533	780	2,82
BR-7	M-6: Micro-Bioretenation	47259	1,09	21893	0,73	0,73	676	0,68	1,80	-	-	2960	676	1	N/A	2960	3947	3645	3645	862	2,80
BR-8	M-6: Micro-Bioretenation	33741	0,77	18920	0,39	0,39	696	0,56	1,80	-	-	1470	813	1	N/A	1470	1948	1641	1641	294	2,60
BR-9	M-6: Micro-Bioretenation	28629	0,59	14480	0,18	0,18	226	0,28	1,80	-	-	2760	846	1	N/A	2760	3012	4667	4667	0	2,80
BR-10	M-6: Micro-Bioretenation	42207	0,97	21022	0,48	0,48	626	0,50	1,80	-	-	2060	679	1	N/A	2060	2747	2160	2160	0	2,60
BR-11	M-6: Micro-Bioretenation	33915	0,76	8910	0,20	0,20	226	0,28	1,80	-	-	6685	1014	1	N/A	6685	8913	8995	8995	1337	2,60
BR-12	M-6: Micro-Bioretenation	10674	1,16	38690	0,89	0,89	774	0,74	1,80	-	-	2090	917	1	N/A	2090	3072	4702	4702	9	2,20
BR-13	M-6: Micro-Bioretenation	48818	1,06	21668	0,46	0,46	676	0,47	1,80	-	-	2295	789	1	N/A	2295	3066	2778	3066	460	1,91
BR-14	M-6: Micro-Bioretenation	39415	0,96	34616	0,79	0,79	886	0,84	1,80	-	-	2290	680	1	N/A	2290	3053	4180	3953	488	1,91
BR-15	M-6: Micro-Bioretenation	28961	0,67	18768	0,48	0,48	686	0,68	1,80	-	-	3028	848	1	N/A	3028	4233	4944	4233	728	1,64
BR-16	M-6: Micro-Bioretenation	47293	1,09	20927	0,50	0,50	626	0,80	1,80	-	-	3418	1335	1	N/A	3418	4673	19188	4673	680	1,50
BR-17	M-6: Micro-Bioretenation	48724	1,63	47462	1,32	1,32	886	0,82	1,80	-	-	2153	896	1	N/A	2153	2871	7501	2871	451	1,50
BR-18	M-6: Micro-Bioretenation	30684	0,98	36088	0,83	0,83	846	0,81	1,80	-	-	695	692	1	N/A	695	927	2195	927	139	1,10
BR-19	M-6: Micro-Bioretenation	28964	0,68	18983	0,23	0,23	226	0,40	1,80	-	-	2942	-	-	N/A	N/A	N/A	N/A	N/A	-	1,50
DC	N-2: Non-Reseal Disconnect	29422	0,47	29422	0,47	0,47	906	0,36	1,80	-	-	-	-	-	-	-	-	-	-	-	-

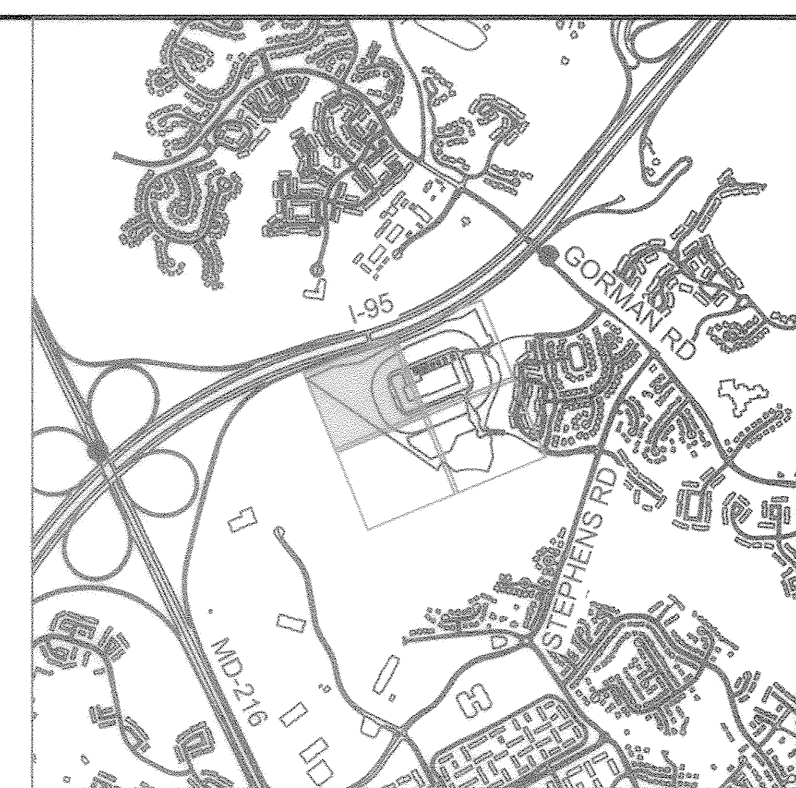




INTERSTATE 95  
(VARIABLE WIDTH RIGHT-OF-WAY)

TOTAL AREA OF SURVEY PROPERTY:  
1,877.97 S.F. OR 43.258 AC.  
PARCEL A-1  
**EMERSON**  
SECTION 3, AREA 7  
PLAT NO. 21956  
PLAT NO. 23639  
LANDS N/F  
**EMERSON**  
**DEVELOPMENT IX LLC**  
L. 15415, F. 252  
ACCOUNT NO. 594006

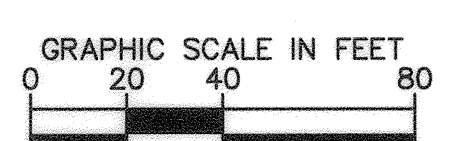
BALTIMORE GAS AND ELECTRIC COMPANY TRUSTEE  
LANDS N/F  
**BALTIMORE GAS AND ELECTRIC COMPANY TRUSTEE**  
ACCOUNT NO. 581880



**VICINITY MAP**  
SCALE: 1" = 2000'

**SWM LEGEND**

- LOD ---
  - XXX ---
  - XXX ---
  - ▭
  - ▭
- PROPERTY LINE
  - LIMIT OF DISTURBANCE
  - PROPOSED MAJOR CONTOUR
  - PROPOSED MINOR CONTOUR
  - BIORETENTION
  - FACILITY DRAINAGE AREA BOUNDARY
  - IMPERVIOUS AREA



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Know what's below. Call before you dig.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

	3-8-21
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
	3/3/21
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE

**ADDRESS CHART**

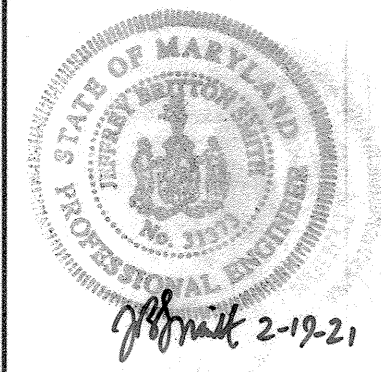
LOT/PARCEL #	STREET ADDRESS
PARCEL 1078, LOT A-1	9501 ETHERNAL RINGS DRIVE, LAUREL, MD 20723

**PERMIT INFORMATION CHART**

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO. PARCEL 1078, LOT A-1
PLAT # OR L/F #23639	GRID # 08 ZONING PEC-MXD-3	TAX MAP NO. 47 ELECT DISTRICT 6
WATER CODE	SEWER CODE	CENSUS TRACT

No.	REVISIONS	DATE	BY

**Kimley»Horn**  
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3173  
LICENSE NO. 91210293  
EXPIRATION DATE

KHA PROJECT	110718001	DATE	10/07/2020	SCALE	AS SHOWN	DESIGNED BY	KKW	DRAWN BY	KKW	CHECKED BY	KTB
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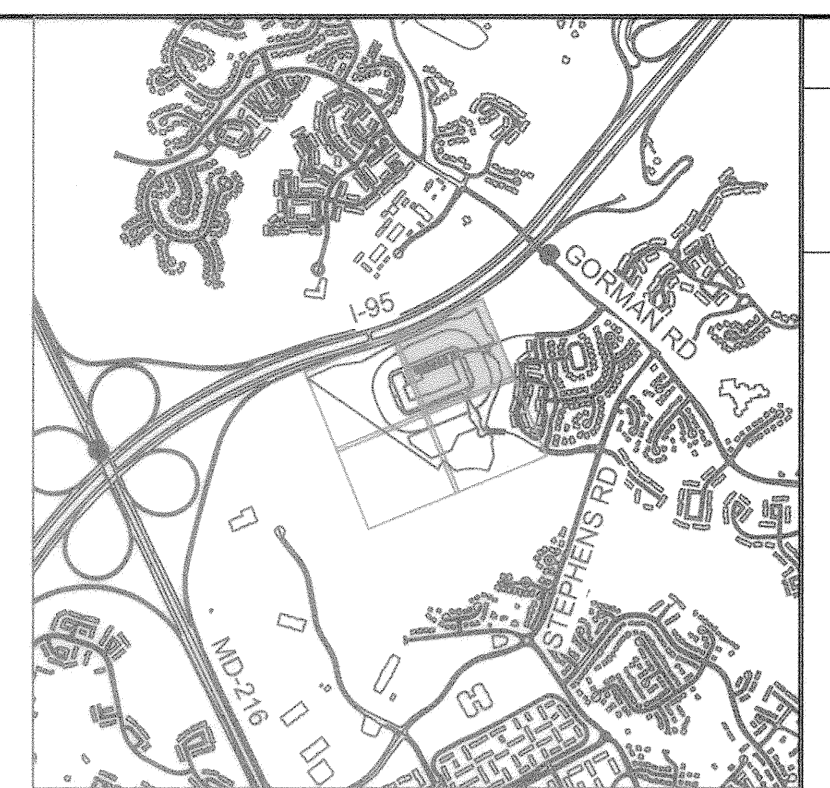
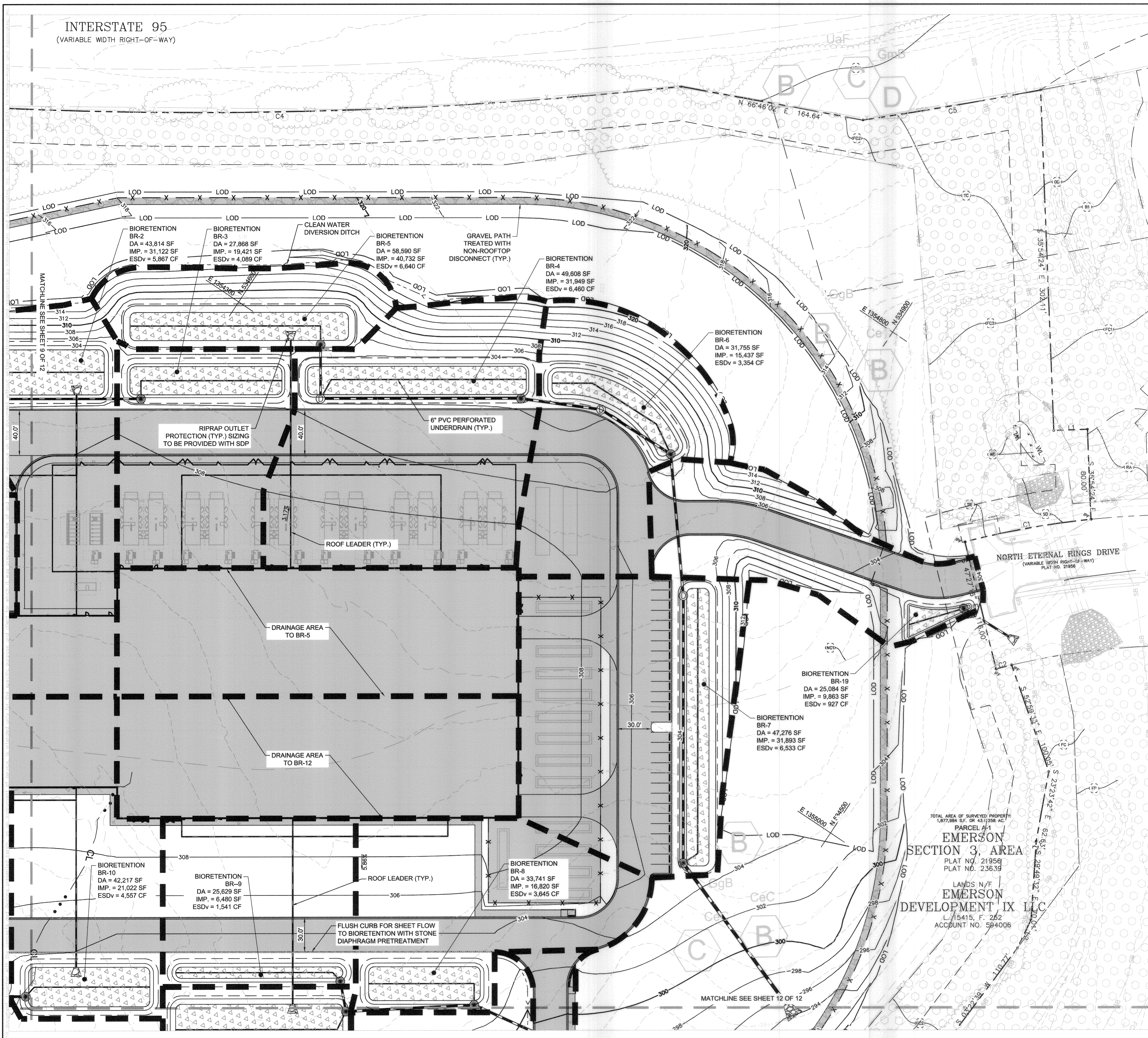
**SWM CONCEPT PLAN**

**EMERSON PROJECT**  
MARYLAND  
HOWARD COUNTY

SHEET NUMBER  
**9 OF 12**



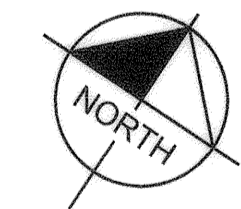
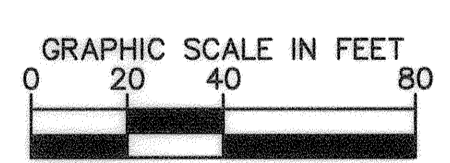
INTERSTATE 95  
(VARIABLE WIDTH RIGHT-OF-WAY)



**VICINITY MAP**  
SCALE: 1" = 2000'

**SWM LEGEND**

- LOD
  - XXX
  - XXX
  - ▭ BIORETENTION
  - ▭ FACILITY DRAINAGE AREA BOUNDARY
  - ▭ IMPERVIOUS AREA
- PROPERTY LINE  
LIMIT OF DISTURBANCE  
PROPOSED MAJOR CONTOUR  
PROPOSED MINOR CONTOUR  
BIORETENTION  
FACILITY DRAINAGE AREA BOUNDARY  
IMPERVIOUS AREA



CALL 48 HOURS BEFORE YOU DIG  
**811**  
IT'S THE LAW! Dial 811 Know what's below. Call before you dig.

APPROVED: *[Signature]* DEPARTMENT OF PLANNING AND ZONING  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 3-8-21  
CHIEF, DIVISION OF LAND DEVELOPMENT *[Signature]* DATE: 3/12/21

**ADDRESS CHART**

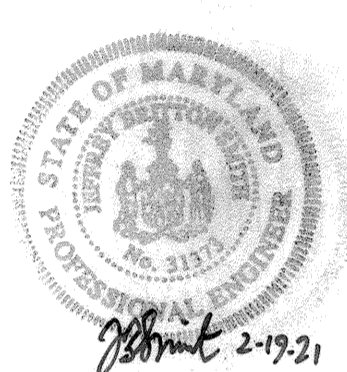
LOT/PARCEL #	STREET ADDRESS
PARCEL 1078, LOT A-1	9501 ETHERNAL RINGS DRIVE, LAUREL, MD 20723

**PERMIT INFORMATION CHART**

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO. PARCEL 1078, LOT A-1
PLAT # OR L/F #23639	GRID # 08 ZONING PEC-MXD-3	TAX MAP NO. 47 ELECT DISTRICT 6 CENSUS TRACT
WATER CODE	SEWER CODE	

NO.	REVISIONS	DATE	BY

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1801 PORTER ST., SUITE 401, BALTIMORE, MD 21230  
PHONE: 443-743-3470  
WWW.KIMLEY-HORN.COM



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LICENSE NO. 9173  
EXPIRATION DATE: 01/21/2023

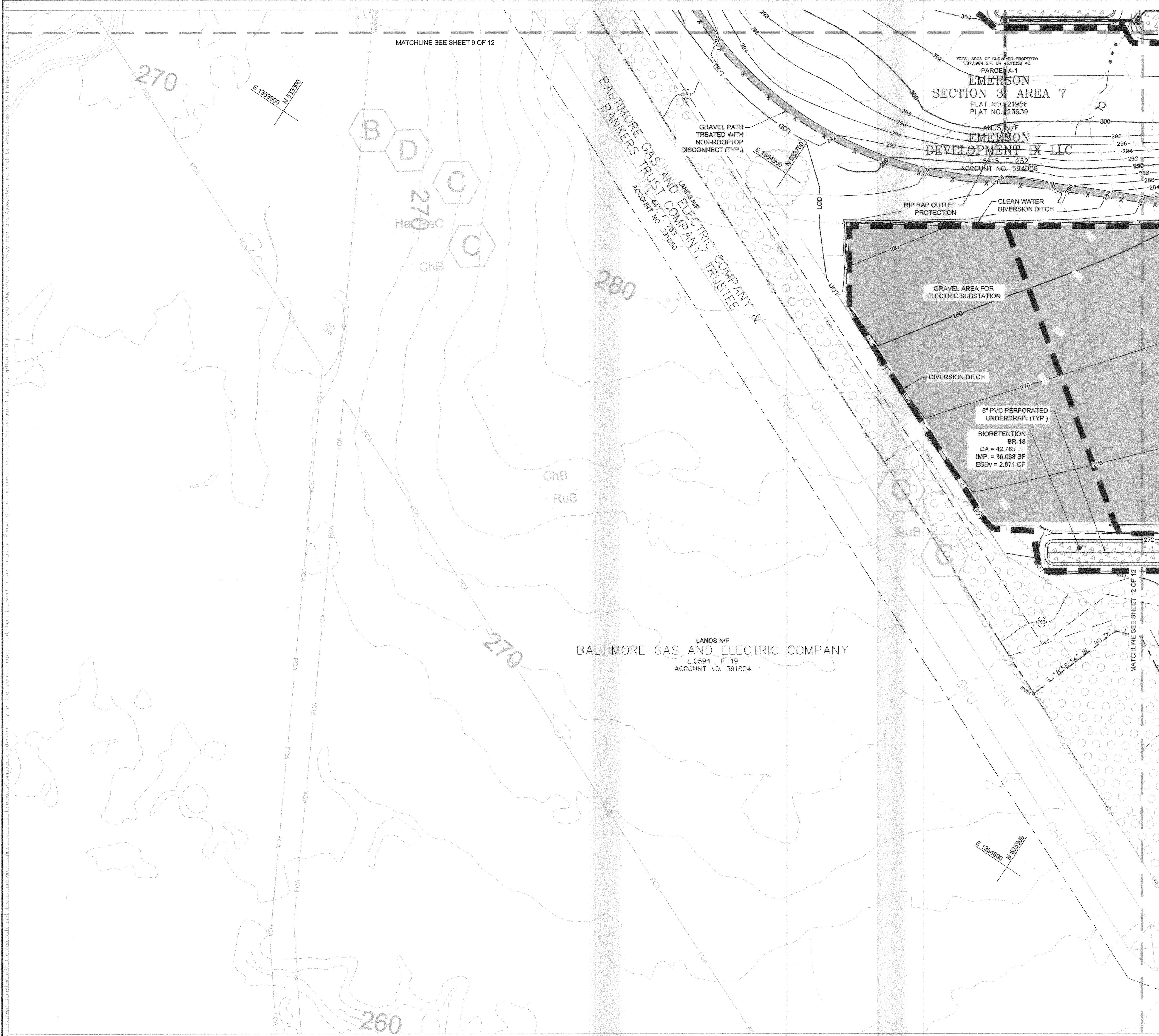
KKH PROJECT 110718001  
DATE 10/07/2020  
SCALE AS SHOWN  
DESIGNED BY KKW  
DRAWN BY KKW  
CHECKED BY KTB

**SWM CONCEPT PLAN**

**EMERSON PROJECT**  
MARYLAND  
HOWARD COUNTY

SHEET NUMBER  
**10 OF 12**

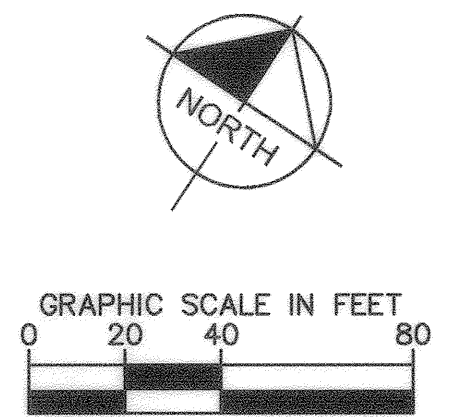
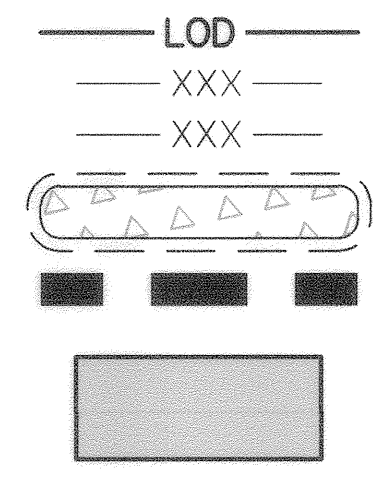




**VICINITY MAP**  
SCALE: 1" = 2000'

**SWM LEGEND**

- PROPERTY LINE
- LIMIT OF DISTURBANCE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- BIORETENTION
- FACILITY DRAINAGE AREA BOUNDARY
- IMPERVIOUS AREA



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*[Signature]* CHIEF, DEVELOPMENT ENGINEERING DIVISION **3-8-21** DATE

*[Signature]* CHIEF, DIVISION OF LAND DEVELOPMENT **3/8/21** DATE

**ADDRESS CHART**

LOT/PARCEL #	STREET ADDRESS
PARCEL 1078, LOT A-1	9501 ETHERNAL RINGS DRIVE, LAUREL, MD 20723

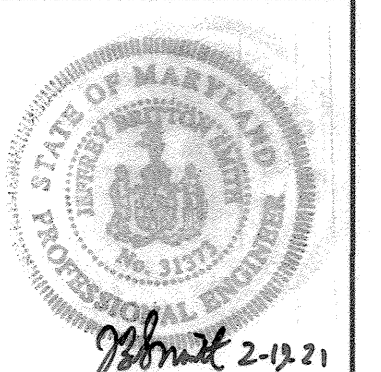
**PERMIT INFORMATION CHART**

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO. PARCEL 1078, LOT A-1
PLAT # OR L/F #23639	GRID # 08 ZONING PEC-MXD-3 TAX MAP NO. 47 ELECT DISTRICT 6	CENSUS TRACT
WATER CODE	SEWER CODE	

NO.	REVISIONS	DATE	BY

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LICENSE NO. 31373  
EXPIRATION DATE 02/28/2023

KHA PROJECT 110718001	DATE 10/07/2020	SCALE AS SHOWN	DESIGNED BY KKW	DRAWN BY KKW	CHECKED BY KTB
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**SWM CONCEPT PLAN**

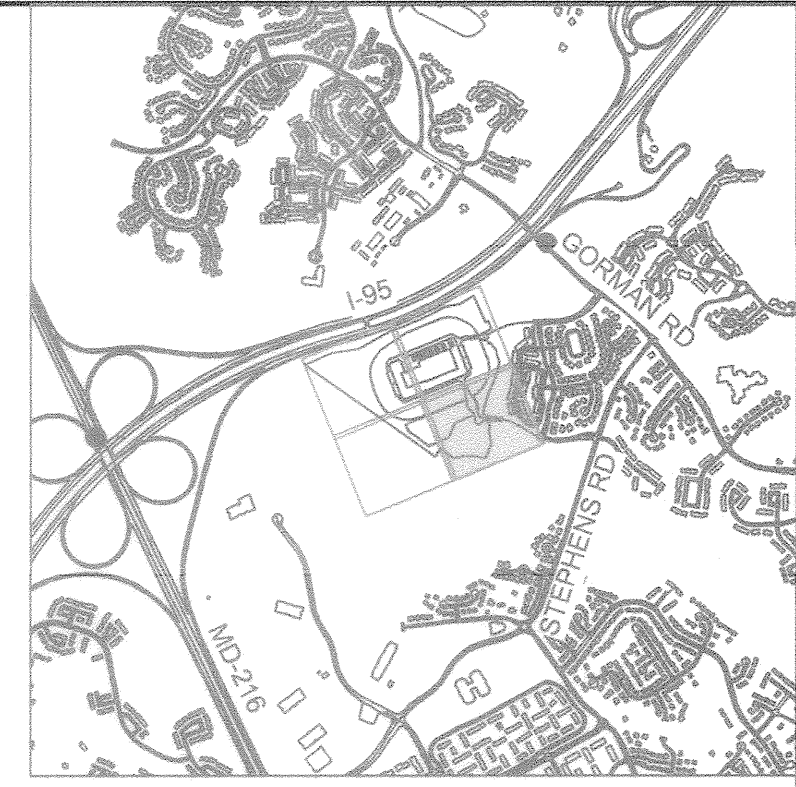
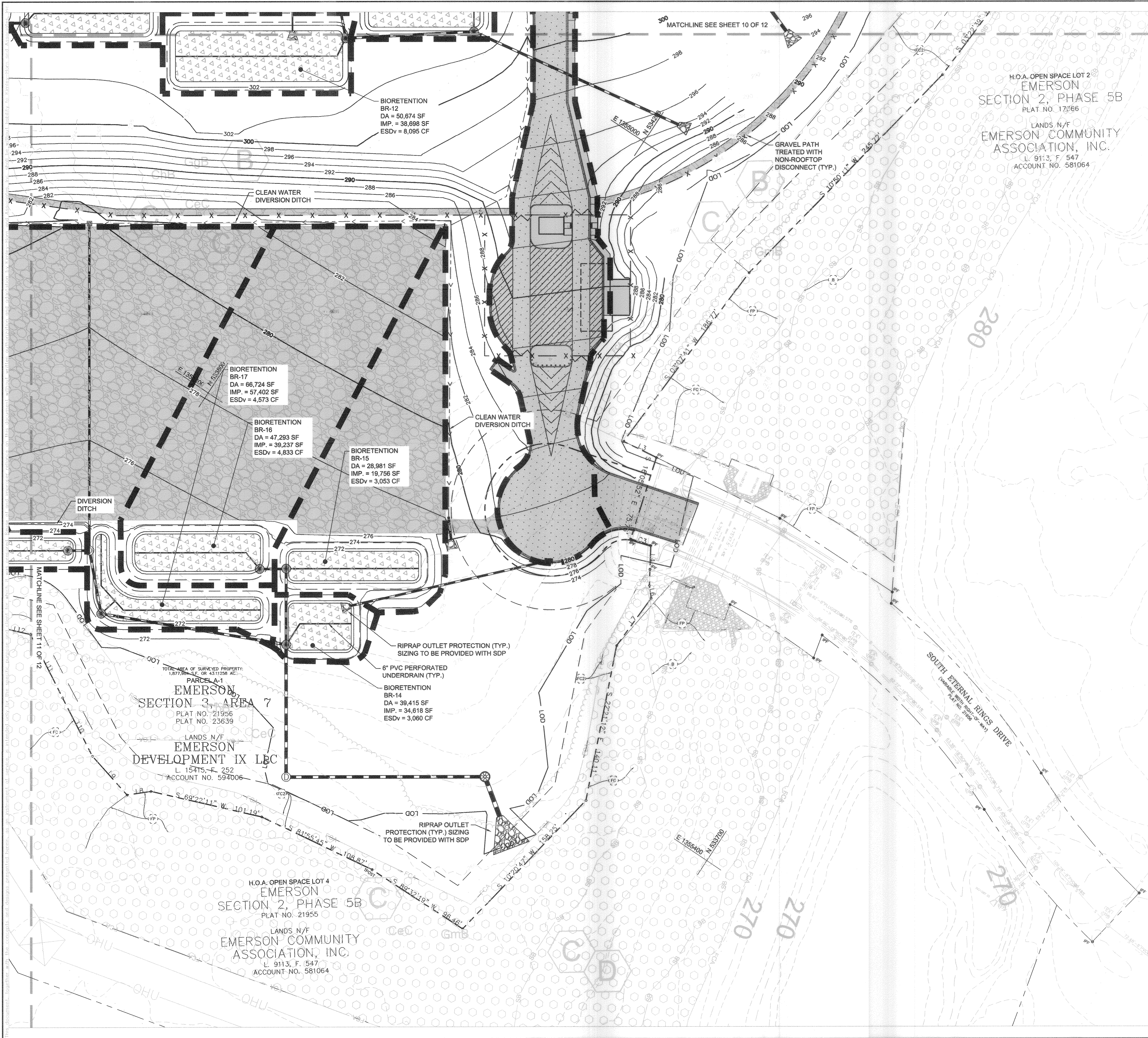
**EMERSON PROJECT**

HOWARD COUNTY MARYLAND

SHEET NUMBER **11 OF 12**

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**VICINITY MAP**  
SCALE: 1" = 2000'

**SWM LEGEND**

- PROPERTY LINE
- LOD
- XXX
- XXX
- BIORETENTION
- FACILITY DRAINAGE AREA BOUNDARY
- IMPERVIOUS AREA

No.	REVISIONS	DATE	BY

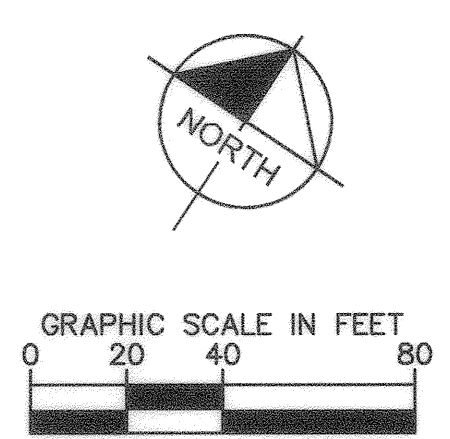
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KHA PROJECT	DATE	SCALE	AS SHOWN	DESIGNED BY	DRAWN BY	CHECKED BY
110718001	10/07/2020	AS SHOWN	KKW	KKW	KKW	KTIB

**SWM CONCEPT PLAN**



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APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	3-8-21 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	3/3/21 DATE

**ADDRESS CHART**

LOT/PARCEL #	STREET ADDRESS
PARCEL 1078, LOT A-1	9501 ETHERNAL RINGS DRIVE, LAUREL, MD 20723

**PERMIT INFORMATION CHART**

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO. PARCEL 1078, LOT A-1
PLAT # OR L/F #23639	GRID #08 ZONING PEC-MXD-3	TAX MAP NO. 47 ELECT DISTRICT 6
WATER CODE	SEWER CODE	CENSUS TRACT

**EMERSON PROJECT**  
MARYLAND  
HOWARD COUNTY  
SHEET NUMBER  
**12 OF 12**