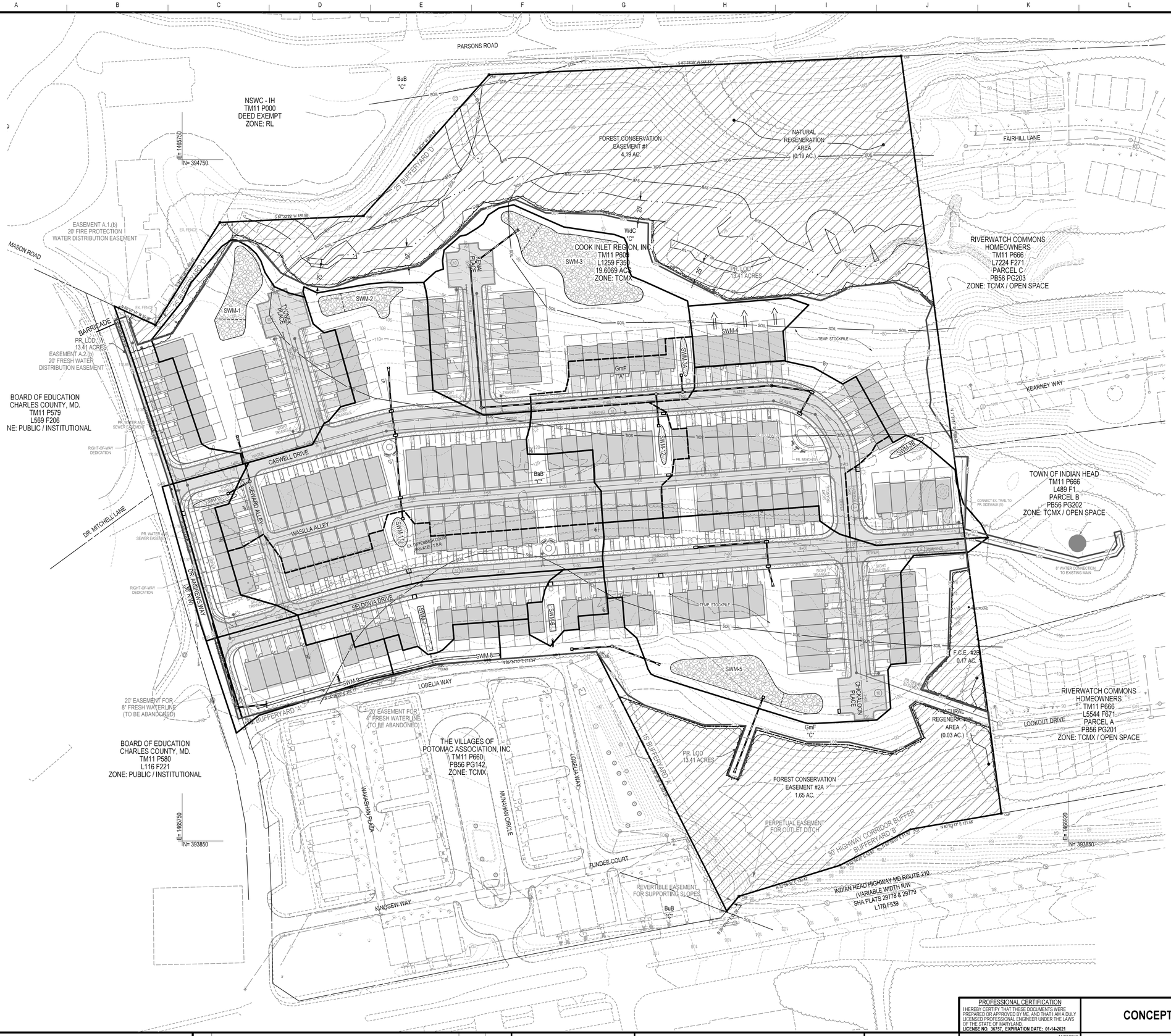

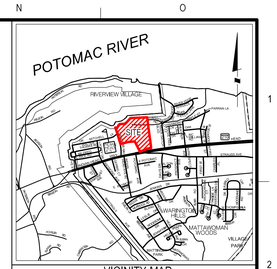

VICINITY MAP
SCALE: 1"=2000'

LEGEND

EXISTING CONTOUR	80	WETLAND	WL
PROPOSED CONTOUR	80	WETLAND BUFFER	WB
EXISTING TREELINE		STREAM VALLEY BUFFER	SVB
PROPOSED TREELINE		LIMITS OF DISTURBANCE (LOD)	LOD
PROPOSED FOREST CONS. EASEMENT		EX. ROADWAY	
PROP. DRAINAGE DIVIDE		PR. ASPHALT	
PROP. INTERMEDIATE DRAINAGE DIVIDE		PR. HOUSES	
SOIL BOUNDARY	SOIL	PROPOSED N-3 SHEETFLOW TO CONSERVATION	
SOIL LABEL	Pu "D"	PROPOSED M-8 BIOSWALE	
PROP. PROPERTY LINE		PROPOSED M-8 GRASS SWALE	
SOIL BORING	SWM#1	PROPOSED M-6 MICRO-BIORETENTION	
WATERS OF US		PROPOSED M-2 SUBMERGED GRAVEL WETLAND	
STREAM VALLEY BUFFER	SVB		

SHEET INDEX

1. CONCEPTUAL STORMWATER MANAGEMENT PLAN
2. CONCEPTUAL STORMWATER MANAGEMENT COMPUTATIONS

GENERAL NOTES

1. LOCATION:
   TAX MAP 11, PARCEL 609
   NORTH SIDE OF MD ROUTE 210, INDIAN HEAD, MD

2. ZONING:
   TCMX (TOWN CENTER MIXED USE)
   HC (HIGHWAY CORRIDOR OVERLAY)
   THIS SITE DOES NOT FALL WITHIN THE CRITICAL AREA.

3. SITE TABULATION:
   TOTAL SITE ACREAGE = 19.61 AC.
   EXISTING FOREST COVER = 17.54 AC.

4. BOUNDARY:
   A BOUNDARY SURVEY WAS COMPLETED BY SOLTESZ, INC. 2019

5. TOPOGRAPHY:
   (2) CONTOUR INTERVAL TOPOGRAPHY SHOWN ON THIS PLAN WAS TAKEN FROM AERIAL TOPOGRAPHIC DATA FILES SUPPLEMENTED WITH SOLTESZ FIELD RUN TOPOGRAPHY (2019) AND GIS DATA FILES FROM CHARLES COUNTY.

6. FLOODPLAIN:
   THERE IS NO 100-YEAR FLOODPLAIN ON THE SITE, PER FEMA FIRM PANEL #24017C013D, DATED 5/4/15.

7. WETLANDS & STREAMS:
   STREAMS AND NON-TIDAL WETLANDS WERE FIELD DELINEATED BY BRAY HILL, LLC IN MARCH 2019 AND FIELD LOCATED BY SOLTESZ, INC. IN MAY 2019.

8. SOILS:
   SOILS INFORMATION SHOWN ON THIS PLAN IS FROM THE NRCS WEB SOIL SURVEY FOR CHARLES COUNTY, MARYLAND.

9. WATERSHED:
   THE SITE FALLS WITHIN THE MIDDLE POTOMAC RIVER WATERSHED.

10. CODE AND ORDINANCE COMPLIANCE:
    ALL CONSTRUCTION AND SITE IMPROVEMENTS ARE TO COMPLY WITH THE LOCAL AND STATE CODES AND ORDINANCES APPLICABLE AT THE TIME OF PERMITTING. A CONCEPT PLAN WAS APPROVED FOR THE SUBJECT PROPERTY ON 8/17/16.

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SOLTESZ, INC.

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Rockville
Lanham
Waldorf
Leonardtown
Frederick
Soltesz DC, LLC

www.soltesznco.com

NO.	REVISIONS	BY	DATE

DATE: OCTOBER 2019 | CAD STANDARDS VERSION: V8 - NCS
DESIGNED: MFP, TCS | TECHNICIAN: TCS | CHECKED: MFP

MISS UTILITY NOTE

INFORMATION CONCERNING EXISTING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND UTILITY CROSSINGS BY DIGGING TEST PITS BY HAND. WELL IN ADVANCE OF THE START OF EXCAVATION. CONTACT "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF EXCAVATION. IF CLEARANCES ARE LESS THAN SHOWN ON THIS PLAN OR TWELVE (12) INCHES, WHICHEVER IS LESS, CONTACT THE ENGINEER AND THE UTILITY COMPANY BEFORE PROCEEDING WITH CONSTRUCTION. CLEARANCES LESS THAN NOTED MAY REQUIRE REVISIONS TO THIS PLAN.

OWNER/DEVELOPER/APPLICANT

ELM STREET DEVELOPMENT
181 HARRY S TRUMAN PARKWAY
SUITE 275
ANNAPOLIS, MD 21401
PHONE # (410) 266-9700

CONTACT NAME: DOUG MEEKER

ZONING CATEGORY:	WAS CATEGORY:
TCMX	PUBLIC / TOIH
TAX MAP / PARCEL	GRID
11 / 609	15
SITE DATUM HORIZONTAL: VERTICAL:	LIBER / FOLIO
	1259 / 350

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. 39757, EXPIRATION DATE: 01-14-2021

11/26/2019

STATE OF MARYLAND MICHAEL PATRICK NO. 39757 PROFESSIONAL ENGINEER

CONCEPTUAL STORMWATER MANAGEMENT PLAN

CONCEPTUAL STORMWATER MANAGEMENT PLAN
ANCHORAGE SUBDIVISION
TAX MAP 11, GRID 15, PARCEL 609

SEVENTH (7th) ELECTION DISTRICT, CHARLES COUNTY, MARYLAND

1" = 50'

SHEET 1 OF 2

PROJECT NO. 0675-44-01

P:\06754401\Planning\Concl\Sheet_Files\Step 1\01_CONCEPT_SWM.shtSCALE= 50.0000 sf / in. User= mprzybocki PLTdrv= PDF_Special_150.pltcfg Pentbl= TEXT_SUB.tbl 11/26/2019 2:08:39 PM

The Stormwater Management Act of 2007 requires proposed developments to implement ESD to the maximum extent practicable (MEP). Various techniques were considered for this site. M-6 Micro-Bioretention, M-8 Swales, N-3 Sheetflow to Conservation, and M-2 Submerged Gravel Wetlands have been considered at this time to provide water quality treatment. Additional ESDs for water quality treatment in the form of rooftop disconnect credits may be evaluated as part of the Step 2 SWM design stage when more detailed site grading is designed. Additional ESD and/or revisions to the devices reflected on the Step 1 Plan may also be incorporated into the Step 2 plan when additional design work is completed.

The Step 1 ESD's volume proposed/provided exceeds the site target PE of 1.8" and water quality requirement for the site development. As such, water quality and quantity are met on-site. A summary of the required ESDv is provided below. Individual facility detailed computations shall be provided at Step 2.

Checked MFP

Anchorage Subdivision
ESDv COMPUTATIONS

LOD

Enter Total LOD of Property Area = **584,116 sq-ft**
Enter Total Impervious Area = **311,295 sq-ft**
% of Impervious D.A., I = **53.3%**
Volumetric Runoff Coefficient, Rv = 0.510 (Rv = 0.05 + 0.009 (I))

HSG	RCN	Area (sqft)	Percentage	Target P_E	Min. ESDv Req. (cu-ft)	Target ESDv (ac-ft)	Target ESDv (cu-ft)
A	38	137,337 sq-ft	24%	2.0 in	-	0.278 ac-ft	12,123 cu-ft
B	55		0%	1.8 in	-		
C	70	446,779 sq-ft	76%	1.8 in	-	0.815 ac-ft	35,495 cu-ft
D	77		0%	1.8 in			
Totals		584,116 sq-ft	100%	1.8 in	25,781 cu-ft	1.093 ac-ft	47,618 cu-ft

Equations
Target Design Runoff Volume, ESDv = (PE * Rv *(A/43560)) / 12

Composite RCN for "Woods in Good Cond." = **62**

SOLTESZ
401 Post Office Road, Suite 103
Waldorf, MD 20602
(301) 870-2166

Date	10/7/2019
Project Name	Anchorage
Project No.	0675-44-01
By	TCS
Checked	MFP

On-Site ESDv Summary Table

Area	Drainage Area sq. ft.	Limits of Facility sq. ft.	Imp. D.A. sq. ft.	% of Imp. Cover	A Soil	B Soil	C Soil	D Soil	Target PE (in.) Table 5.3	Provided P_E (in.)	Rv	Target ESDv cu. ft.	Provided ESDv cu. ft.	Excess ESDv cu. ft.	Reduced RCN	Type of Facility	Filter Area D.A.
SWM-1	59,505	4,112	30,361	48%	9%	0%	91%	0%	1.8	2.70	0.48	4,576	6,853	2,277	67	M-2 Submerged Gravel Wetland	6.9%
SWM-2	120,949	2,311	81,884	66%	17%	0%	83%	0%	2.0	0.92	0.65	13,537	6,122	0	88	M-2 Submerged Gravel Wetland	1.9%
SWM-3	150,698	9,537	92,680	57%	51%	0%	49%	0%	2.0	2.37	0.57	15,147	17,983	2,836	54	M-2 Submerged Gravel Wetland	6.3%
SWM-3A	11,698	410	8,992	74%	100%	0%	0%	0%	2.2	1.33	0.72	1,595	964	0	61	M-6 Micro Bioretention	3.5%
SWM-3B	18,383	410	9,743	52%	0%	0%	100%	0%	1.8	1.19	0.52	1,456	964	0	78	M-6 Micro Bioretention	2.2%
SWM-4	4,800	N/A	4,800	100%	0%	0%	100%	0%	2.2	1.00	0.95	836	380	0	89	N-3 Sheetflow to Conservation	N/A
SWM-5	85,782	5,500	49,919	55%	0%	0%	100%	0%	1.8	2.67	0.54	7,424	11,000	3,576	70	M-2 Submerged Gravel Wetland	6.4%
SWM-6	6,703	280	4,518	65%	0%	0%	100%	0%	2.0	2.60	0.63	736	956	220	70	M-8 BioSwale	4.2%
SWM-7	20,219	480	14,736	71%	0%	0%	98%	0%	2.0	1.03	0.69	2,328	1,229	0	80	M-8 BioSwale	2.4%
SWM-8	5,062	429	1,612	29%	0%	0%	100%	0%	1.6	1.12	0.31	230	161	0	161	M-8 Grass Swale	8.5%
SWM-9	19,627	555	10,252	51%	0%	0%	100%	0%	1.8	0.24	0.51	1,535	208	0	208	M-8 Grass Swale	2.8%
SWM-10	15,699	452	8,920	55%	0%	0%	100%	0%	2.0	1.44	0.55	1,473	1,062	0	74	M-6 Micro Bioretention	2.9%
SWM-11	31,095	628	21,118	67%	0%	0%	100%	0%	2.0	0.86	0.65	3,432	1,476	0	84	M-6 Micro Bioretention	2.0%
SWM-12	19,840	410	14,854	73%	0%	0%	100%	0%	2.0	0.80	0.71	2,397	964	0	84	M-6 Micro Bioretention	2.1%

Area	Drainage Area sq. ft.	Limits of Facility sq. ft.	Imp. D.A. sq. ft.	% of Imp. Cover	A Soil	B Soil	C Soil	D Soil	Target PE (in.) Table 5.3	Provided P_E (in.)	Rv	Target ESDv cu. ft.	Provided ESDv cu. ft.	Excess ESDv cu. ft.	Reduced RCN
DA. A	584,116	N/A	311,295	53.3%	24%	0%	76%	0%	1.8	1.95	0.53	47,618	50,322	8,910	62
									Totals for all Drainage Areas			47,618	50,322	8,910	

Total Site Target Composite RCN for "Woods in Good Cond." = **62**
Total Site Reduced Composite RCN for "Woods in Good Cond." = **62**

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. 36757, EXPIRATION DATE: 01-14-2021

11/26/2019

STATE OF MARYLAND · MICHAEL PRZYBOCKI · No. 36757 · PROFESSIONAL ENGINEER

CONCEPTUAL STORMWATER MANAGEMENT COMPUTATIONS

CONCEPTUAL STORMWATER MANAGEMENT PLAN
ANCHORAGE SUBDIVISION
TAX MAP 11, GRID 15, PARCEL 609
SEVENTH (7th) ELECTION DISTRICT, CHARLES COUNTY, MARYLAND

1" = N.T.S.
SHEET 2 OF 2
PROJECT NO. 0675-44-01

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ZONING CATEGORY: TCMX	W&S CATEGORY: PUBLIC / TOIH
TAX MAP / PARCEL: 11 / 609	GRID: 15
SITE DATUM HORIZONTAL: ____ VERTICAL: ____	LIBER / FOLIO: 1259 / 350

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