

SOLTESZ
Rockville Office
2 Research Pl., Suite 100
Rockville, MD 20850
(301) 948-2750

Stormwater Computation Sheet Version 2016.09.27 (TAH)

Date: 12/17/2021
Project Name: Heritage Gardens
Project No.: 2198-02-00
By: B.M.P.
Checked: F.D.

P₂ Target ESDs Computations

Property Target: Enter Study Point Area = 1332.988 sqft (See Technical Policy guidelines for details)
Enter Study Point Climate (Existing & Proposed) Impervious Area = 365.050 sqft
% of Impervious D.A. = 27.4%

HSG	RCN	Area (sqft)	Percentage	Target P ₂
A	38	0	0%	1.6 in
B	55	916,051	69%	1.6 in
C	70	0	0%	1.6 in
D	77	416,937	31%	1.2 in
Totals		1332,988	100%	1.5 in

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

ESDs Required Within LOD

Limit of Disturbance (LOD) Area (A) = 781,171 sqft
Enter LOD Proposed Impervious Area = 365,050 sqft
% of Impervious D.A. = 46.74%
Volume Runoff Coefficient, R_v = 0.462

HSG	RCN	Area (sqft)	Percentage
A	38	0	0%
B	44	489,14	62%
C	70	0	0%
D	77	282,027	36%
Totals		781,171	100%

LOD Area	Study Point Target P ₂ (in-ft)	Target ESDs (in-ft)	Target ESDs (in-ft)
781,171 sqft	1.5 in	1.019 ac-ft	44,384 cu-ft

Equations:
Target Design Runoff Volume, ESD_v = (P₂(Study Point) * R_v (LOD) * (A_{LOD}/43560)) / 12
Volume Runoff Coefficient, R_v(LOD) = (R_v(Study Point) * 0.05 + 0.009 ((Study Point)))

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Final ESD Summary Table

HSG	RCN	Area (sqft)	Percentage	Target P ₂
A	38	0	0%	1.6 in
B	55	916,051	69%	1.6 in
C	70	0	0%	1.6 in
D	77	416,937	31%	1.2 in
Totals		1,332,988	100%	1.5 in

Study Point Target Composite RCN for "Woods in Good Cond." = 62
Study Point Target P₂ (in.) = 1.5

Sum of Target ESD_v (ac-ft) = 1,000
Sum of Target ESD_v (cu-ft) = 44,384

Provided Treatment Summary

Study Point Target P ₂ (in.)	Provided P ₂ (in.)	% of Target ESD _v
1.5	1.51	102%
LOD Provided ESD _v (cu-ft)	45,421	
Excess ESD _v (cu-ft)	1,037	No Structural Volume Required

Equations
Target Design Runoff Volume, ESD_v = (P₂(Study Point) * R_v (LOD) * (A_{LOD}/43560)) / 12
Volume Runoff Coefficient, R_v(Study Point) = (R_v(Study Point) * 0.05 + 0.009 ((Study Point)))

Individual Facility Summary

ESD Facility	Drainage Area sq. ft.	Imp. D.A. sq. ft.	% of Imp. Cover	Provided ESD _v cu. ft.	Type of Facility
ESD #1	14,187	4,359	31%	1,210	Bio Swale
ESD #2	19,159	4,629	24%	1,110	Micro Bioretention
ESD #3	18,899	9,506	51%	874	Micro Bioretention
ESD #4	12,898	4,994	39%	835	Micro Bioretention
ESD #5	9,904	4,850	49%	1,053	Micro Bioretention
ESD #6	18,589	5,582	46%	1,797	Micro Bioretention
ESD #7	14,082	6,247	44%	1,371	Micro Bioretention
ESD #8	16,602	10,246	62%	975	Micro Bioretention
ESD #9	10,118	3,543	35%	800	Micro Bioretention
ESD #9A	14,236	4,378	31%	905	Micro Bioretention
ESD #10	9,125	3,188	35%	717	Micro Bioretention
ESD #10A	11,709	6,946	59%	950	Micro Bioretention
ESD #11	9,405	3,405	36%	666	Micro Bioretention
ESD #11A	9,149	4,397	48%	740	Micro Bioretention
ESD #12	12,199	6,952	57%	848	Micro Bioretention
ESD #12A	17,396	10,890	63%	877	Micro Bioretention
ESD #13	15,000	7,361	49%	406	Micro Bioretention
ESD #13A	4,288	4,136	96%	853	Planter Box
ESD #14	9,506	3,814	40%	1,313	Bio Swale
ESD #14A	8,785	3,746	43%	1,128	Bio Swale
ESD #15	12,836	4,371	34%	991	Micro Bioretention
ESD #16	14,438	6,869	48%	1,496	Micro Bioretention
ESD #17	18,259	9,890	54%	2,069	Micro Bioretention
ESD #17A	3,209	3,036	95%	627	Planter Box
ESD #18	18,457	4,031	22%	966	Micro Bioretention
ESD #18A	18,813	8,198	44%	805	Bio Swale
ESD #19	12,289	7,208	59%	1,369	Micro Bioretention
ESD #19A	18,431	11,906	65%	766	Micro Bioretention
ESD #20	8,220	2,827	34%	640	Micro Bioretention
ESD #20A	7,079	3,283	46%	398	Micro Bioretention
ESD #21	13,311	7,900	59%	1,357	Micro Bioretention
ESD #22	12,106	2,631	22%	644	Micro Bioretention
ESD #23	16,855	10,140	60%	1,791	Micro Bioretention
ESD #24	13,836	3,268	24%	787	Enhanced Micro Bioretention
ESD #25	17,682	10,290	58%	1,118	Micro Bioretention
ESD #26	18,034	10,601	59%	1,293	Micro Bioretention
ESD #27	16,171	4,262	26%	881	Micro Bioretention
ESD #30	4,209	4,209	100%	650	Planter Box
ESD #31	4,209	4,209	100%	650	Planter Box
ESD #32	7,643	7,643	100%	1,289	Planter Box
ESD #33	5,487	5,487	100%	1,095	Planter Box
ESD #34	6,802	6,802	100%	1,400	Planter Box
ESD #35	1,972	1,972	100%	358	Planter Box
ESD #36	1,887	1,887	100%	347	Planter Box
ESD #37	4,682	4,682	100%	964	Planter Box
EX_BIO_#2	20,000	5,993	30%	1,222	Micro Bioretention
TOTALS	551,857 sqft	269,542 sqft		45,421 cu-ft	

Structural Treatment Summary

MATERIALS SPECIFICATIONS FOR BIO SWALE AND MICRO-BIO RETENTION

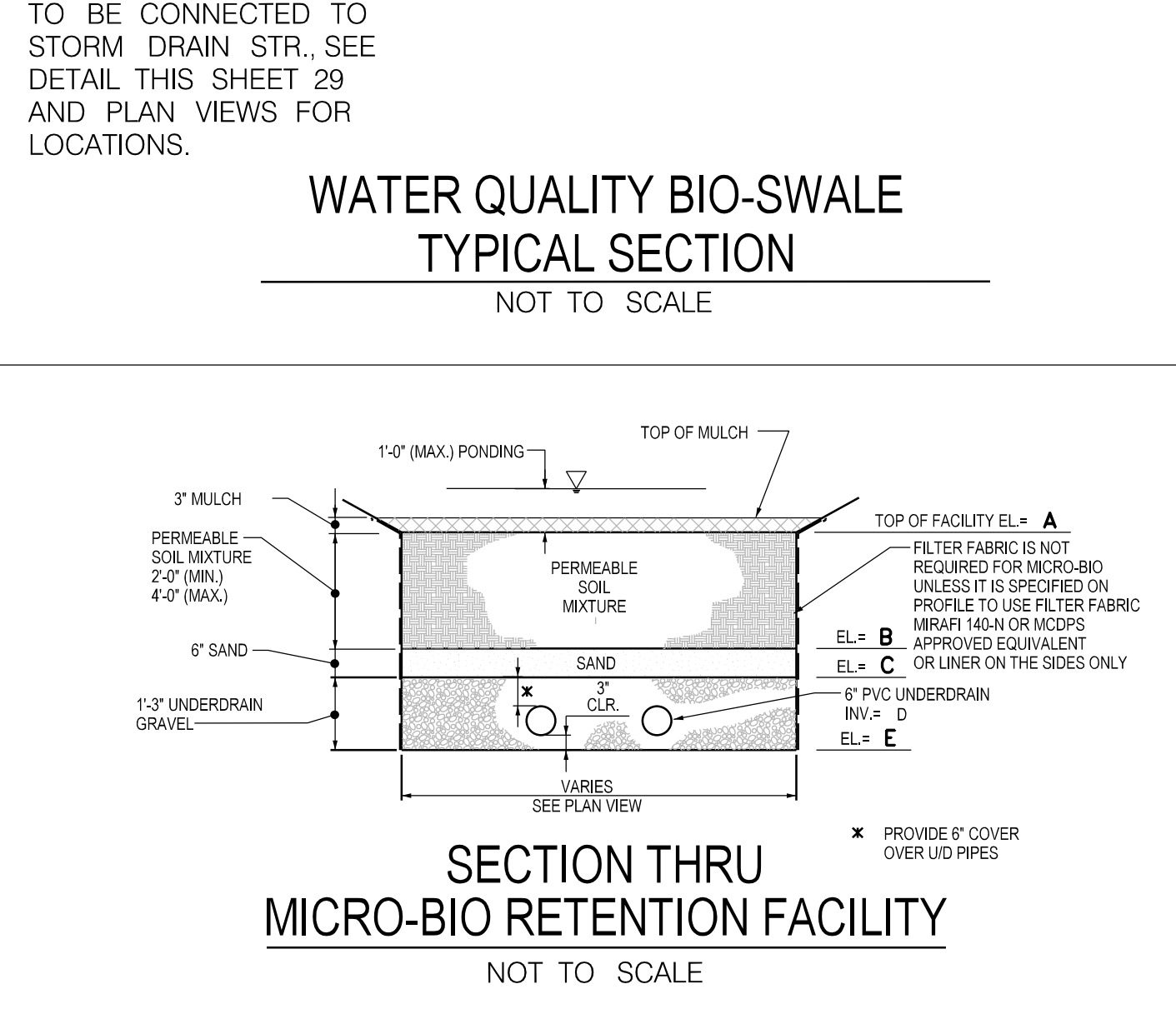
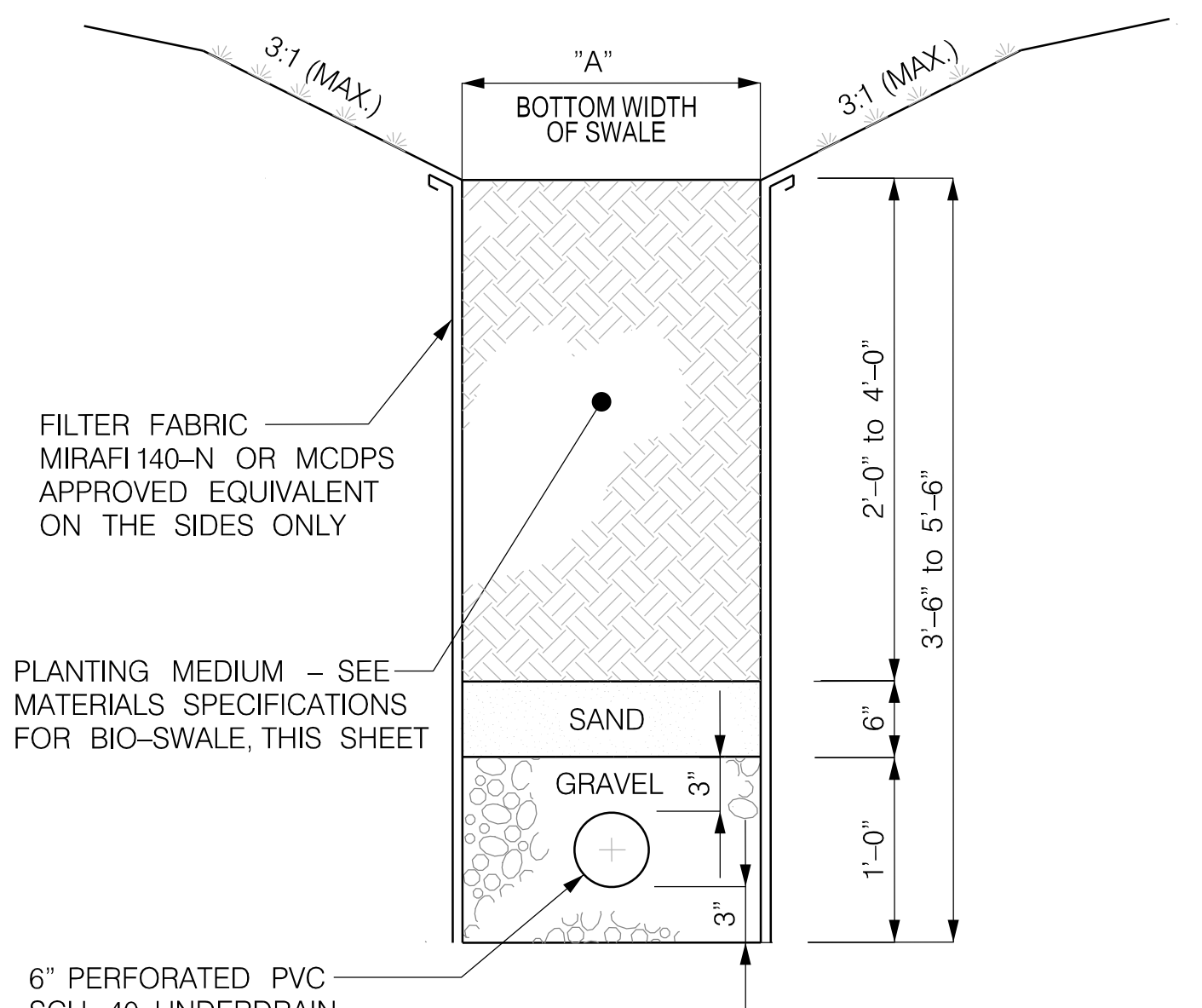
PLANTING MEDIUM:
1/3 PERLITE OR SOLITE, 1/3 COMPOST AND 1/3 TOPSOIL. THE PERLITE SHALL BE COARSE GRADE HORTICULTURAL PERLITE. THE COMPOST SHALL BE HIGH GRADE COMPOST FREE OF STONES AND PARTIALLY COMPOSTED WOODY MATERIAL. THE TOP SOIL SHALL MEET THE FOLLOWING MINIMUM CRITERIA: CONTAIN NO MORE THAN 10% CLAY, 10-25% SILTS AND 60-75% SAND. THE SOIL SHALL BE FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN 2 INCHES. THE FIRST LAYER OF THE PLANTING MEDIUM SHALL BE LIGHTLY FILLED TO MIX IT INTO THE SAND LAYER, SO AS NOT TO CREATE A DEFINITIVE BOUNDARY. THE PLANTING MATERIAL SHALL BE LIFTED AFTER PLACEMENT. ANY SETTLEMENT THAT OCCURS SHALL BE FILLED BACK TO THE DESIGN ELEVATION.

MULCH / SOD:
WHEN VEGETATED WITH GRASS, THE BIO SWALE DOES NOT REQUIRE A MULCH LAYER. A TYPICAL LOCATION FOR A GRASSED BIO SWALE WOULD BE IN PUBLIC RIGHT-OF-WAY. WHEN THE BIO SWALE IS LANDSCAPED WITH VEGETATION OTHER THAN GRASS, A MULCH LAYER IS REQUIRED. THE SURFACE MULCH LAYER WILL CONSIST OF STANDARD ASPE HARDWOOD MULCH. THE MULCH SHOULD BE APPLIED UNIFORMLY TO A DEPTH OF 3 INCHES. YEARLY REPLENISHING MAY BE NECESSARY. FINE BARK IS NOT ACCEPTABLE.

SAND:
A MINIMUM 6-INCH FINE AGGREGATE SAND LAYER SHALL BE PROVIDED BELOW THE PLANTING MEDIA. WASHED ASTM C-33 OR AASHTO M6 FINE AGGREGATE CONCRETE SAND IS REQUIRED PER MONTGOMERY COUNTY SAND SPECIFICATIONS. SAND MUST MEET ALL OF THE FOLLOWING CONDITIONS:
1. SAND MUST MEET GRADATION REQUIREMENTS FOR ASTM C-33 FINE AGGREGATE CONCRETE SAND. AASHTO M-6 GRADATION IS ALSO ACCEPTABLE.
2. SAND MUST BE SILICA BASED. NO LIMESTONE BASED PRODUCTS MAY BE USED. IF THE MATERIALS IS WHITE OR GRAY IN COLOR, IT IS PROBABLY NOT ACCEPTABLE.
3. SAND MUST BE CLEAN, NATURAL, UNWASHED SAND DEPOSITS MAY NOT BE USED. LIKEWISE, SAND THAT HAS BECOME CONTAMINATED BY IMPROPER STORAGE OR INSTALLATION PRACTICES WILL BE REJECTED.
4. MANUFACTURED SAND OR STONE DUST IS NOT ACCEPTABLE UNDER ANY CIRCUMSTANCE.

UNDERDRAIN PIPE:
THE UNDERDRAIN PIPE CONSIST OF 6-INCH DIAMETER SCHEDULE 40 OR STRONGER PERFORATED PVC PIPE AT 0.00% SLOPE. THE UNDERDRAIN PIPE WILL BE PLACED WITHIN GRAVEL LAYER. A MINIMUM OF THREE INCHES OF GRAVEL MUST BE PLACED UNDER THE PIPE, WITH A MINIMUM OF 3 INCHES OF GRAVEL OVER THE PIPE. PERFORATIONS MUST BE 3/8 INCH IN DIAMETER AND MUST BE LOCATED 4 INCHES ON CENTER, EVERY 90° ALL AROUND THE PIPE. PERFORATED PIPE MUST BEGIN AT LEAST 1" INSIDE THE FILTER MEDIA. FILTER FABRIC MUST NOT BE WRAPPED AROUND THE UNDERDRAIN PIPE.

GRAVEL LAYER:
THE GRAVEL LAYER SHALL BE CLEAN COARSE AGGREGATE AND MUST MEET MSHA SIZE #7 (TABLE 901A) AND SHALL BE 12-INCHES IN DEPTH. NO GEOTEXTILE OR FILTER FABRIC IS ALLOWED TO BE PLACED HORIZONTALLY ANYWHERE WITHIN THE FILTER MEDIA, EXCEPT AT DRIVEWAY CROSSINGS, AS SHOWN IN THE TYPICAL SECTION.



DIMENSION SCHEDULE

LOCATION	"A"	"B"	"C"	"D"	"E"	"F"	SURFACE AREA (SQUARE FEET)
AS-BUILT							

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Rockville
Lanham
Waldorf
Leopardtown
Frederick
Soltesz DC, LLC

Engineering
Surveying
Planning
Environmental Sciences

NO. DATE
DESIGNED: TR JULY 2021
CHECKED: TS

REVISIONS
NO. DATE
1. CAD STANDARDS VERSION: V8 - NCS
2. TECH STANDARD: TR

MISS 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 UTILITIES CROSSINGS BY DIGGING TEST PITS BY HAND, WELL IN ADVANCE OF THE START OF EXCAVATION. CONTACT "MS UTILITY" AT 1-800-777-7777 48 HOURS PRIOR TO THE START OF EXCAVATION. IF CLEARANCES ARE LESS THAN SHOWN ON THIS PLAN OR TWICE (2) INCHES, WHOEVER 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
Heritage Gardens Land, LLC
5283 Corporate Drive
Suite 300
Frederick, MD 21703
(301) 895-6614 x104
Michael Wiley

THIS PLAN IS FOR STORMWATER MANAGEMENT PURPOSES ONLY

THE EXCAVATOR IS RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF CHAPTER 36A OF THE MONTGOMERY COUNTY CODE

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. 30287 EXPIRATION DATE: 05/18/2022

MAP: TAX MAP GRID: ZONING CATEGORY:
FQ31 RE-2
WBSC 20P SHEET: XXXX
SITE DATUM: XXXX
HORIZONTAL: NAD 83/99
VERTICAL: NGVD 29

12/17/21

STORMWATER MANAGEMENT COMPUTATIONS & DETAILS

STORMWATER MANAGEMENT CONCEPT PLAN
HERITAGE POTOMAC
PARCELS P950, P896 OF OUT CLAGGETT FOLLY & PARCEL B GLEN VISTA

6TH ELECTION DISTRICT, MONTGOMERY COUNTY, MARYLAND

SHEET 6 OF 6
PROJECT NO. 2198-02-00

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