GENERAL NOTES

THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS ALTERNATIVE COMPLIANCE HAVE BEEN APPROVED. THIS ENVIRONMENTAL CONCEPT PLAN IS SUBJECT TO THE FOLLOWING DPZ FILES: PS017, CONTRACT 2-W, CONTRACT 14-1381-D, WP-19-026. THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON A FIELD SURVEY BY VOGEL ENGINEERING + TIMMONS GROUP, DATED 04/19/19, AND SUPPLEMENTED BY HOWARD COUNTY GIS.

THE PROJECT BOUNDARY IS BASED ON A FIELD RUN BOUNDARY PERFORMED BY VOGEL ENGINEERING + TIMMONS GROUP, DATED

THE COORDINATES AND ELEVATIONS SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM, HOWARD COUNTY CONTROL STATION 38DA

AND 38GA WERE USED FOR THIS PROJECT. THE SUBJECT PROPERTY IS ZONED R-12 IN ACCORDANCE WITH THE ZONING REGULATIONS EFFECTIVE ON OCT. 06, 2013, AND IS SUBJECT TO SUBDIVISION AND LAND DEVELOPMENT REGULATIONS EFFECTIVE OCT. 07, 2007 PER COUNCIL BIL 47-2007 & 48-2007. DEVELOPMENT OR CONSTRUCTION ON THIS PROPERTY MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, ALTERNATIVE COMPLIANCE PETITION

APPLICATION OR BUILDING/GRADING PERMIT APPLICATIONS. THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT

AND TO IDENTIFY ALL ENVIRONMENTAL FEATURES ON THE SITE.

- WATER FOR THIS PROJECT SHALL BE FROM AN EXTENSION OF CONTRACT NO. #2-W. - SEWER FOR THIS PROJECT SHALL BE FROM THE PROPOSED EXTENSION OF CONTRACT NO. #14-1381-D.
- WATER AND SEWER SERVICE WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 18.122.B OF THE HOWARD COUNTY CODE. ALLOCATIONS WILL BE GRANTED AT TIME OF ISSUANCE OF BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME. THIS SITE IS NOT LOCATED IN A HISTORIC DISTRICT.

NO RARE, THREATENED OR ENDANGERED SPECIES OR THEIR HABITATS WERE OBSERVED ON THE PROPERT NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAM(S) OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS. THERE ARE NO "FLOODPLAIN" AREAS LOCATED WITHIN THE DEVELOPMENT AREA.

THERE ARE NO STEEP SLOPES, 25% OR GREATER ON THIS SITE.

THE PROJECT SITE WAS EVALUATED FOR THE PRESENCE OF ENVIRONMENTAL FEATURES AND A LETTER HAS BEEN PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. C/O MR. JOHN CANOLES, DATED DECEMBER 18, 2019. MR. CANOLES NOTED THAT THE THE PROPERTY IS CURRENTLY DOMINATED BY OVERGROWN LAWN, SCATTERED LANDSCAPING AND ORNAMENTALS, AND A SINGLE SPECIMEN SIZED TREE, BUT NO FOREST OR ANY OTHER REGULATED ENVIRONMENTAL FEATURES WERE FOUND WITHIN THE LIMITS OF THE DEVELOPMENT AREA FOR THIS PROJECT.

1. THIE SUBJECT PROPERTY PROJECT IS LESS THAN 40,000 S.F., AND THEREFORE IS NOT SUBJECT TO THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION, INCLUDING THE PROTECTION OF SPECIMEN TREES.

3. A LANDSCAPE PLAN SHALL BE PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL AT THE SITE DEVELOPMENT PLAN STAGE.

16. THERE ARE O S.F. (0.00 AC.) AREA OF WETLANDS PRESENT WITHIN THE DEVELOPMENT AREA PER SITE EVALUATION BY ECO-SCIENCE PROFESSIONALS, INC., JULY 2019.

THERE ARE 0 S.F. (0.00 AC.) AREA OF OPEN SPACE PRESENT. OPEN SPACE IS NOT REQUIRED FOR A MINOR SUBDIVISION.
GEOTECHNICAL INVESTIGATIONS SHALL BE COMPLETED AS PART OF THE SITE DEVELOPMENT PLAN SUBMISSION.
REFERENCE WP-19-026 APPROVED MARCH 07, 2019 TO WAIVE SECTION 16.147 OF THE HOWARD COUNTY
SUBDIVISION AND LAND DEVELOPMENT REGULATIONS TO NOT REQUIRE RIGHT OF WAY DEDICATION AND ALLOW A RECONFIGUATION

OF THE EXISTING 3 LOTS CONDITIONS OF APPROVAL . AN ADJOINER DEED TO ADJUST/RECONFIGURE LOTS 13, 14 AND 15 (0.45 ACRES) STATED IN THIS REQUEST MUST BE

RECORDED WITH THE HOWARD COUNTY LAND RECORDS WITHIN 120 DAYS OF THE DATE OF THIS ALTERNATIVE COMPLIANCE PETITION APPROVAL (ON OR BEFORE JULY 5TH, 2019). THE DEED SHALL REFERENCE THIS ALTERNATIVE COMPLIANCE PETITION FILE NUMBER (WP-19-026). A COPY OF THE RECORDED DEED WITH AN EXHIBIT THAT DISPALYS THE RECONFIGURED LOTS MUST BE SUBMITTED TO THE DIVISION OF LAND DEVELOPMENT AFTER THE DEED IS RECORDED. APPROVAL OF THIS ALTERNATIVE COMPLIANCE PETITION IS FOR THE STATED 3 LOTS (LOTS 13, 14 AND 15) INCLUDED IN THIS PETITION. THIS APPROVAL DOES NOT GRANT THE PETITIONER/PROPERTY OWNER THE ABILITY TO CREATE ADDITIONAL LOTS. EACH OF THE RECONFIGURED LOTS MUST REMAIN AT 6,600 SF AND MAY NOT BE REDUCED IN SIZE PRIOR TO THE APPLICATION FOR LAND DEVELOPEMENT, THE PETITIONER/PROPERTY OWNER MUST SUBMIT AN ENVIRONMENTAL CONCEPT PLAN TO DEMONSTRATE THAT STORMWATER MANAGEMENT PRACTICES ON THESE LOTS CAN COMPLY WITHTHE REGULATIONS

A SITE DEVELOPMENT PLAN (SDP) WILL BE REQUIRED FOR THE DEVELOPMENT OF THE THREE LOTS, AS PART OF THAT THE EXISTING HOUSE (6480 ANDERSON AVENUE) MUST BE REMOVED/DEMOLISHED PRIOR TO THE RECORDATION OF THE NEW ADJOINER DEED TRANSFER. PHOTOS OF HOUSE REMOVAL MUST BE SUBMITTED TO THIS DIVISION AS PROOF. 20. ANDERSON AVENUE IS CLASSIFIED AS A LOCAL ROAD. RAILROAD AVENUE IS AN UNPAVED PUBLIC RIGHT OF WAY. SITE ACCESS SHALL BE VIA PRIVATE DRIVEWAYS FROM ANDERSON AVENUE.

A TRAFFIC STUDY IS NOT REQUIRED FOR THIS PROJECT THIS PROJECT IS EXEMPT FROM AN ADEQUATE ROADS FACILITIES TEST STUDY, AS IT IS A RECONFIGURATION OF EXISTING, PREVIOUSLY

TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL GROUNDS, OR CEMETERIES, LOCATED WITHIN THE DEVELOPMENT AREA. THE EXISTING HOUSE LOCATED IN THE SOUTH—EAST CORNER OF THE PROJECT SITE, IS A DESIGNATED HISTORIC STRUCTURE, AND SHALL BE REMOVED/DEMOLISHED AS REQUIRED BY WP-19-026. NO OTHER HISTORIC STRUCTURES EXIST ON SITE.

. STORMWATER MANAGEMENT FOR THE PROJECT SHALL BE PROVIDED BY MEANS OF RAIN GARDENS (M-7), RAIN BARRELS (M-1) AND CREDITS FOR ROOFTOP DISCONNECT, AT THE TIME OF INDIVIDUAL HOUSE CONSTRUCTION.
. SEDIMENT AND EROSION CONTROLS WILL BE PROVIDED FOR THIS SITE BY ON LOT PERIMETER CONTROLS.
. THERE ARE 0.00 AC. OF HIGHLY ERODIBLE SOILS ON THIS SITE.
. DRIVEWAY ACCESS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS

TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS: A) WIDTH- 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE).

B) SURFACE - 6 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING. (1-1 1/2" MIN.)) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% CHANGE AND MINIMUM OF 45-FOOT TURNING RADIUS. STRUCTURES (CULVERT/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING).

E) DRAINAGE ELEMENTS-CAPABLE OF SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE F) STRUCTURE CLEARANCES-MINIMUM 12 FEET.) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.

28. A PRE-SUBMISSION COMMUNITY MEETING IS NOT REQUIRED FOR CONSTRUCTION OF A HOME ON AN EXISTING LOT.
29. MIHU'S ARE REQUIRED FOR THIS PROJECT. THE DEVELOPER WILL PAY A FEE-IN-LIEU TO ADDRESS THIS REQUIREMENT. DECLARATION OF COVENANTS SHALL BE RECORDED WITH THE SITE DEVELOPMENT PLAN AND SIMULANEOUSLY WITH THE PRIVATE STORMWATER DEVICES LOCATED ON THESE LOTS. ALL STORMWATER DEVICES SHALL BE PRIVATE. ALL STORMWATER DEVICES SHALL BE LOCATED WITHIN THE PRIVATE LOTS, AND OWNED AND MAINTAINED BY THE HOMEOWNER.

SHC ELEVATIONS SHOWN ARE LOCATED AT THE PROPERTY LINE. 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 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.

ENVIRONMENTAL SITE DESIGN NARRATIVE

IN ACCORDANCE WITH THE DEVELOPMENT ENGINEERING DIVISION ECP CHECKLIST ITEM III.K.

1. THE NATURAL AREAS ON THE PROJECT SITE ARE LOCATED TOWARD THE PROJECT BOUNDARIES. THERE ARE NO STREAMS, FOREST, STEEP SLOPES, WETLANDS OR THEIR BUFFERS ON SITE AND NO DISTURBANCE TO ANY SUCH NATURAL FEATURES IS PROPOSED

2. NO DISTURBANCE TO THE NATURAL DRAINAGE PATTERNS IS PROPOSED.

3. THE CONCEPTUAL REDUCTION IN IMPERVIOUS AREA THROUGH BETTER SITE DESIGN IS ACHIEVED THROUGH THE ENVIRONMENTAL SITE DESIGN (ESD) FOR THE PROJECT. THE ESD CONCEPT INCLUDES THE USE OF MICRO-SCALE PRACTICES TO INCLUDE RAIN GARDEN FACILITIES (M-7), RAIN BARRELS (M-1) AND CREDITS FOR

4. SEDIMENT CONTROL FOR THIS SPECIFIC SITE PLAN WILL BE PROVIDED THROUGH THE USE OF PERIMETER CONTROLS INCLUDING DIVERSION FENCE, SUPER SILT FENCE, EARTH DIKE AND TEMPORARY OUTLET STRUCTURES. SEDIMENT CONTROL SHALL BE IN ACCORDANCE WITH CURRENT REQUIREMENTS AND SHALL BE APPROVED BY THE HOWARD SOIL CONSERVATION DISTRICT.

. STORMWATER MANAGEMENT FOR THE PROJECT HAS BEEN CONCEPTUALLY MET THROUGH THE USE OF 3-RAIN GARDEN FACILITIES (M-7), AND 6 RAIN BARRELS (M-1) AS WELL AS CREDITS FOR ROOFTOP DISCONNECT. THE RESULTS OF THE ENVIRONMENTAL SITE DESIGN FOR THIS PROJECT WILL REFLECT "WOODS IN GOOD CONDITION".

PROVIDED = 869 CU.FT.

. AT THIS CONCEPT STAGE OF DEVELOPMENT, NO WAIVER PETITIONS FOR THE STORMWATER MANAGEMENT DESIGN ARE REQUIRED.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

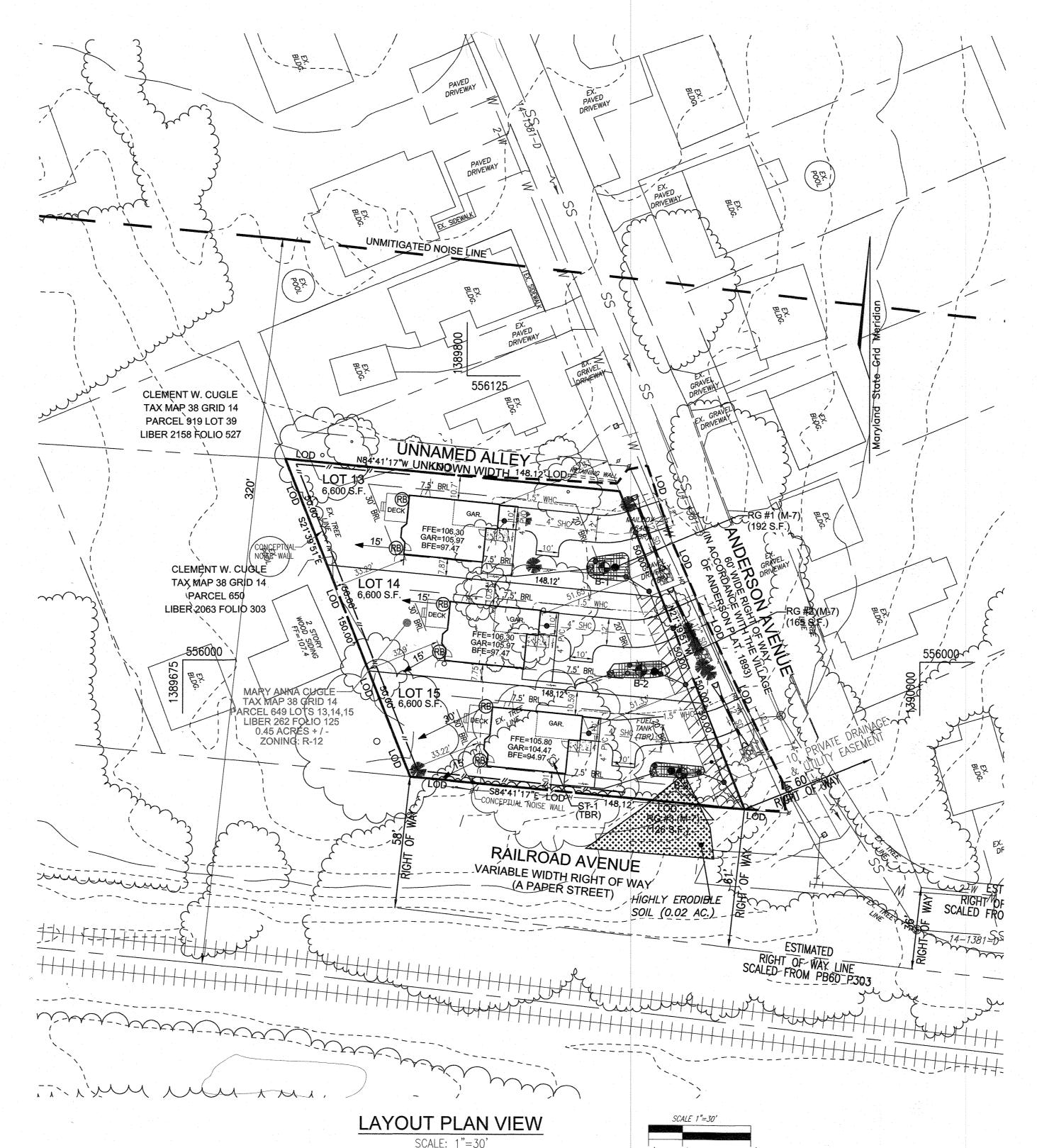
CHIÉF, DEVELOPMENT ENGINEERING DIVISION 😥

CHIEF, DIVISION OF LAND DEVELOPMENT

TARGET PE = 1.60"

TARGET ESDv = 867 CU.FT.

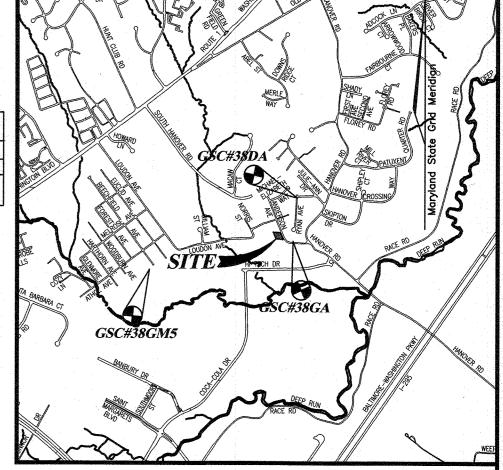
ENVIRONMENTAL CONCEPT PLAN ANDERSON VILLAGE LOTS 13-15 LIBER 262 / FOLIO 125



BENCHMARKS

HOWARD COUNTY BENCHMARK 38DA N 556,796.278 E 1,390,221.54 ELEV.: 126.141 HOWARD COUNTY BENCHMARK 38GA N 555.897.300 E 1,390132.183 ELEV.: 80.862'

SHEET INDEX	
DESCRIPTION	SHEET NO.
COVER SHEET AND LAYOUT PLAN	1 OF 2
GRADING, EROSION AND SEDIMENT CONTROL PLAN, ESDV DRAINAGE AREA MAP AND DETAILS	2 OF 2



SITE DATA

TAX MAP 38, BLOCK 14, PARCEL 649 1ST ELECTION DISTRICT PRESENT ZONING: R-12 RESIDENTIAL TOTAL AREA OF PROPERTY: 0.50 AC. (EX. LOTS 13, 14 & 15) DPZ REFERENCES: WP-19-026 DEED/PLAT REFERENCES: L.262 / F.125

PLAT NO. N/A AREA MANAGED BY ESDV: 22,488 S.F./0.52 AC. (THIS PLAN) *DEVELOPMENT AREA/LOD EXTENDS OUTSIDE LIMITS OF PARCÉL USE OF PROPOSED STRUCTURES (THIS PLAN): SINGLE FAMILY RESIDENTIAL

*TOTAL BUILDING COVERAGE WITHIN THE DEVELOPMENT AREA: 2,988 SF (0.686 AC. OR 13.19%) *PAVED AREA WITHIN THE DEVELOPMENT AREA: 2,805 SF (0.644 AC. OR 12.38%)

LIMIT OF DISTURBED AREA (THIS PLAN): 22,488 S.F. / 0.5163 AC *WFTI ANDS ON SITE: 0.00 A *WETLAND BUFFERS ON SITE: 0.00 AC. *STREAMS AND THEIR BUFFERS ON SITE: 0.00 AC. *AREA OF 100 YEAR FLOODPLAIN: 0.00 AC. *AREA OF EXISTING FOREST ON SITE: 0.00 AC *AREA OF MDE STEEP SLOPES (20% OR GREATER)

*AREA OF ERODIBLE SOILS: 1058 SF / 0.02 AC. *IMPERVIOUS AREA: 5,803 S.F. (0.1332 AC. OR 25.80% *GREEN/OPEN AREA: 16,685 S.F. (0.383 AC. OR 74.20%) NOTE *WITHIN LIMITS OF DEVELOPMENT AREA ONLY

SWM TEST PIT RESULTS:

TEST PITS WERE EXCAVATED, OBSERVED AND CERTIFIED BY VOGEL ENGINEERING + TIMMONS GROUP ON JULY 24, 2019

B-3: 8' DEEP, NO ROCK OR WATER ENCOUNTERED

B-1: 8' DEEP, NO ROCK OF WATER ENCOUNTERED B-2: 9' DEEP, NO ROCK OR WATER ENCOUNTERED

VICINITY MAP SCALE: 1"=2000

ADC MAP COORDINATES: MAP 35, GRID E-4

LEGEND

	EXISTING CONTOUR
406	PROPOSED CONTOUR
	EXISTING CURB AND GUTTER
	PROPOSED CURB AND GUTTER
	EXISTING UTILITY POLE
OHOH	EXISTING OVERHEAD UTILITY LINE
	EXISTING LIGHT POLE
\square	EXISTING MAILBOX
	EXISTING SIGN
S	EXISTING SANITARY MANHOLE
SS	EXISTING SANITARY LINE
000	EXISTING CLEANOUT
FH .	EXISTING FIRE HYDRANT
W	EXISTING WATER LINE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	EXISTING TREELINE
+++++++++++++++++++++++++++++++++++++++	EXISTING RAILROAD TRACKS

. PROPOSED TREELINE

LIMIT OF DISTURBANCE LOD **∞** — — — 1.5" WATER HOUSE CONNECTION 4" SEWER HOUSE CONNECTION STORM DRAIN AND END SECTION

> ROOF DRAIN / UNDER DRAIN RAIN GARDEN (M-7)

PROPOSED RAIN BARREL PROPOSED NOISE WALL

HIGHLY ERODIBLE SOIL SPECIMEN TREE CHART

KEY SPECIES SIZE | CRZ CONDITION COMMENTS 40" 60" RED CEDAR GOOD TO BE REMOVED * A REQUEST FOR ALTERNATIVE COMPLIANCE WILL BE SUBMITTED AT SDP STAGE, IF REQUIRED.

OWNER/DEVELOPER

MAIN STREET BUILDERS C/O JOSEPH SNODGRASS 5705 LANDING ROAD ELKRIDGE, MARYLAND 21075 (410) 796-2003

REVISION

ENVIRONMENTAL CONCEPT PLAN COVER SHEET AND LAYOUT PLAN

ANDERSON VILLAGE LOTS 13-15 6480 ANDERSON AVENUE

TAX MAP 38 BLOCK 14 1ST ELECTION DISTRICT

ZONED: R-12 PARCEL 649 HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING

LIBER 262 / FOLIO 125

TIMMONS GROUP 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043 P: 410.461.7666 F: 410.461.8961 www.timmons.com



DESIGN BY:	GAH -
DRAWN BY:	GAH
CHECKED BY:	RHV
DATE:	JUNE 2020
SCALE:	AS SHOWN
W.O. NO.:	04-33
	i i

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 DF MARYLAND, LICENSE NO. 16193 XPIRATION DATE: 09-27-2022

THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1.

2. FILTERING MEDIA OR PLANTING SOIL THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05. THE PLANTING SOIL SHALL BE TESTED

AND SHALL MEET THE FOLLOWING CRITERIA: * SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION). * ORGANIC CONTEN - MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60 %-65%) AND COMPOST (35% TO 40%) OR SANDY LOAM (30%), COARSE SAND (30%), AND COMPOST (40%).

* CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%. * PH RANGE - SHOULD BE BETWEEN 5.5 - 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED IN TO THE SOIL THERE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, AND IDDITIONAL TESTS OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKPILED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.

IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL, WHEN POSSIBLE. USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.

COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHISEL PLOW, RIPPER, ON SUBSOILER, THESE TILLING OPERATIONS ARE TO REFRACTURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE. WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE. WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.

4. PLANT MATERIAL RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.

COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA. DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE. ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION. TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.

GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS. THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT A MINIMUM, IMPEDES THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS

6. UNDERDRAINS

- UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA: * PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTMF 758, TYPE PS 28, OR AASHTO-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OF HDPE). * PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4x4) GALVANIZED HARDWARE CLOTH.
- * GRAVEL THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN. * THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE. * A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,0000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER. * A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT

MIGRATION OF FINES IN TO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS

THIS MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

7. MISCELLANEOUS THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

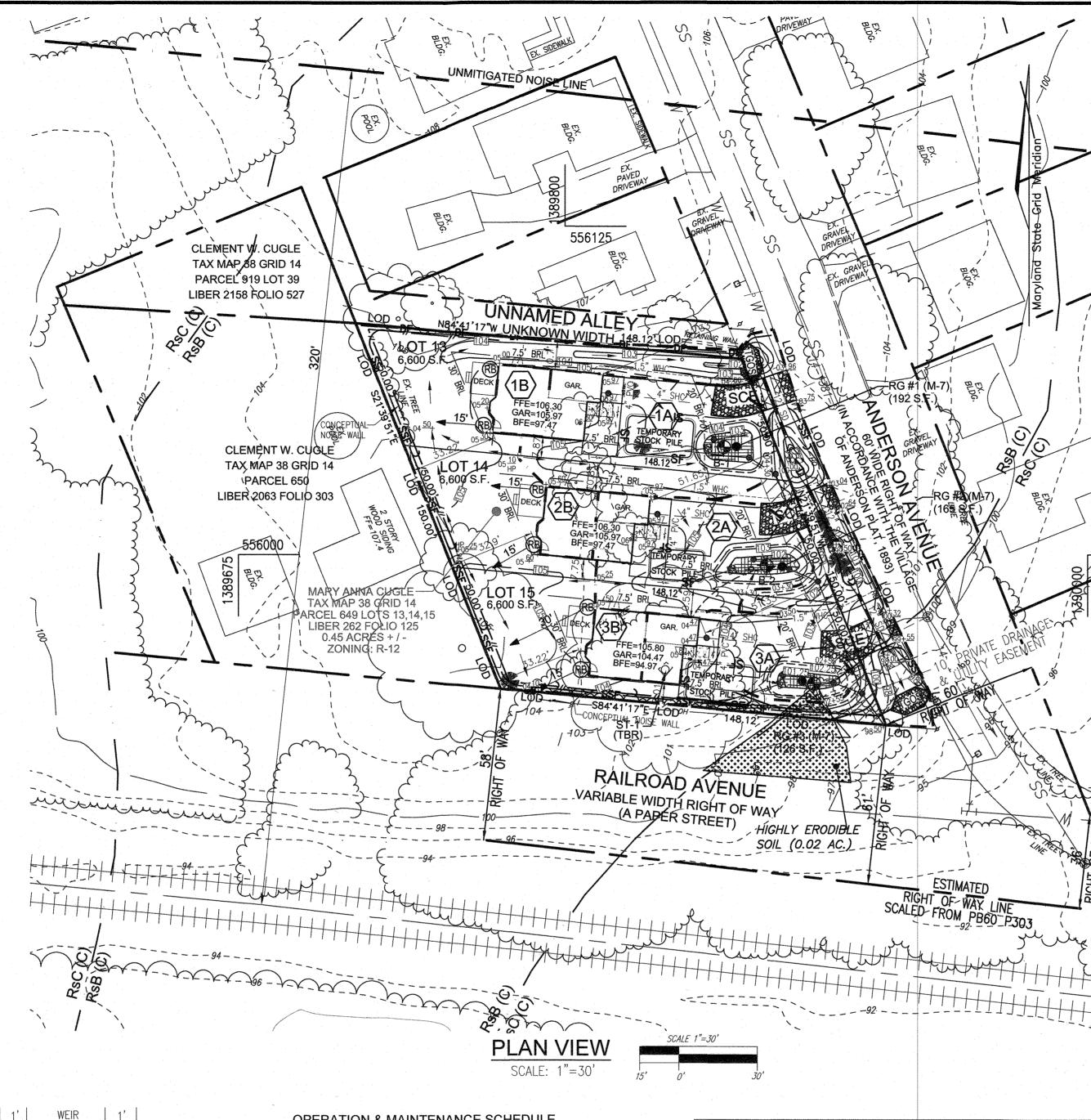
Material	Specification	Size	Landscape Infiltration-					
Plantings	see Appendix A, Table A.4	n/a	Notes plantings are site-specific					
Planting soil [2' to 4' deep]	loamy sand (60 - 65%) & compost (35 40%) or sandy loam (30%),	n/a	USDA soil types loamy sand or sandy loam; clay content					
1	coarse sand (30%) & compost (40%)							
Organic content	Min. 10% by dry weight (ASTM D 2974)							
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips					
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")						
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"						
Geotextile		n/a	PE Type 1 nonwoven					
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")						
Underdrain pipinជ្រ	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 h row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with galvanized hardware cloth					
Poured in place concrete (if required)	MSHA Mix No. 3; €, ≈ 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast- or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved professional structural engineer licensed in the State of h - design to include meeting ACI Code 350.R/89; vertical [H-10 or H-20]; allowable horizontal loading (based on s pressures); and amalysis of potential cracking.					
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AAS #10 are not acceptable. No calcium carbonated or dolom substitutions are acceptable. No "rock dust" can be used					

- SILT FENCE IS TO BE REPLACED WITH SUPER SILT FENCE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR. - SILT FENCE SHALL BE CURLED UPHILL NO MORE THAN 35 FEET APART - DOUBLE ROWS OF SUPER SILT FENCE SHALL BE INSTALLED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

EITHER PERMANENT OR TEMPORARY STABILIZATION IS TO BE APPLIED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR REGARDLESS OF DAYS/DATES IN THE STANDARD SEDIMENT CONTROL NOTES AND/OR SEEDING SPECIFICATIONS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Z.23.20 DEVELOPMENT ENGINEERING DIVISION CHIEF, DIVISION OF LAND DEVELOPMENTS



LEGEND ----- EXISTING CONTOUR RAIN GARDEN (M-7)= = = = = = = = EXISTING CURB AND GUTTER PROPOSED SIDEWALK/UNIT LEAD WALK PROPOSED CURB AND GUTTER PROPOSED RIP-RAP EXISTING UTILITY POLE ● — — — 1.5" WATER HOUSE CONNECTION EXISTING LIGHT POLE 4" SEWER HOUSE CONNECTION EXISTING MAILBOX STORM DRAIN AND END SECTION EXISTING SIGN ROOF DRAIN / UNDER DRAIN EXISTING SANITARY MANHOLE STABILIZED CONSTRUCTION EXISTING SANITARY LINE EXISTING CLEANOUT DIVERSION FENCE EXISTING FIRE HYDRANT - SSF SUPER SILT FENCE — W — EXISTING WATER LINE - PROPERTY LINE RIGHT-OF-WAY LINE TEMPORARY GABION OUTLET STRUCTURE PROPOSED TREELINE ESDv DRAINAGE AREA LABEL RSC (C) SOIL TEST PIT LOCATION HIGHLY ERODIBLE SOIL

	MAPPED SOILS TYPES - CLARKSVILLE NW /	LIVERIO	DDIVE	<15% SLOPE			
SYMBOL	NAME / DESCRIPTION	GROUP	K-FACTOR	HYDRIC	HYDRIC INCLUSIONS	FARMLAND	W/ EROSION POTENTIAL
RsB	RUSSETT FINE SANDY LOAM, 2 TO 5 PERCENT SLOPES	С	.43	NO	NO	YES	NO
RSC	RUSSETT FINE SANDY LOAM, 5 TO 10 PERCENT SLOPES	С	.43	NO	NO	*YES	YES
			·				

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY

*FARMLAND OF STATEWIDE IMPORTANCE

HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITHA SLOPE GREATER THAN 5 PERCENT.

ESD_V DRAINAGE AREA SUMMARY TABLE

	DA	% IMPERV	Rv	DA	ESDv	MINIMUM	MAXIMUM	VOLUME	AREA SF	PERV AREA	IMP AREA	RECHARGE	RECHARGE
		and the state of t			REQ	VOLUME	VOLUME	PROVIDED				VOL. REQ.	VOL. PROV.
	1A	38.32	0.3949	0.09	197	123	319	255	3734	2303	1431	64	64
	1B	100.00	0.9500	0.01	68	42	110	62	533	0	533	0	0
	2A	37.01	0.3831	0.07	162	101	263	236	3167	1995	1172	55	55
	2B	100.00	0.9500	0.01	68	42	110	70	533	0	533	0	. 0
	3A	54.81	0.5433	0.05	150	94	243	168	2067	934	1133	42	42
	3B	100.00	0.9500	0.01	68	42	110	78	533	0	533	0	0
		*TOTAL ESDV BY SUBAREA 711						869		Control	**TOTAL:	161	161
		*TOTAL ES	Dv REQUI	RED FOR SI	TE =	867				Over School			
Sinceres	METHODISENTAPOLINICA MINISTRE ETMONE	**TOTAL R	ev REQUI	RED FOR SI	TE=	69		nderk for mit gestelligen werden meer frank in deze wegen fan en gestellijk verde krijgst meerd deze				manmannan filipitan serinan kanan pamera ke sa hakata bahasa serina bak sa kasan kaban.	

			ENVIRONMENTAL SITE DESIGN PRACTICE											
DRAINAGE	AREA	FACILITY	PERMEABLE	ADD UNDER	ROOFTOP	RAIN	BIO	GRAVEL	GREEN	MICRO BIO/	ADD UNDER	Recharge	ESDv	
AREA#	TREATED	NUMBER	PAVEMENT	PERM. PAVE	DISCONNECT	BARREL	SWALE	TRENCH	ROOF	RAIN GARDEN	RAIN GARDEN	Volume (Rev)	VOLUME	
1 (A&B)	4267	RG-#1	0	0	8	54	0	0	0	255	0	64	317	
2 (A&B)	3700	RG-#2	0	.0	16	54	0	0	0	236	0	55	306	
3 (A&B)	2600	RG-#3	0	0	24	54	0	0	0	168	0	42	246	
And the state of t		SUBTOTAL 1	0	0	48	162	0	0	0	659	0	161	869	
		TOTALS:	0	0	48	162	0	0	0	659	0	161	869	
and in the second and the second of the seco														
SDv REQUIR	ED			867	CF						TOTAL ESC	V PROVIDED:	869	



EROSION MATTING

RESEVOIR

TO BOTTOM OF

TYPICAL SPILLWAY PROFILE

NOT TO SCALE

TYPICAL SPILLWAY SECTION

ROUND PLASTIC— ATRIUM GRATE

(M-7) RAIN GARDEN (OVERFLOW)

3" MULCH─\

ELEV.

ELEV. F-

18" PLANTING SOIL (SEE PLANTING SOIL

4" PEA GRAVEL-(1/8"-3/8" STONE)

CHARACTERISTICS

UNDISTURBED GROUND

1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF SHALL BE DONE IN THE SPRING, PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD

MATERIAL AND PRUNING. 2. SCHEDULE OF PLANT INSPECTION WILL BE TWIST A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DECEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DEFICIENT STAKES AND WIRES.

3. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.

18" PLANTING SOI (SEE PLANTING SOI

4" PEA GRAVEL-

(1/8"-3/8" STONE)

CHARACTERISTICS

4. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

3" MULCH

(M-7) RAIN GARDEN (UNDERDRAIN)

ATRIUM GRATE —— 6" SOLID PVC OUTFALL STAND PIPE --- 6" SOLID PVC OUTFALL -ROTOTILL AND SAND AUGMENTATION IN BOTTOM TO PREVENT COMPACTION

ANDERSON VILLAGE LOTS 13-15

	MICRO-BIORETENTION / RAIN GARDEN DATA CHART												
MBR Facility	Ponding Depth (ft.)	Ponding/ Grate Elevation ELEV. A	Top of	Mulch	1	1	Depth of Stone (Esdv) (ft.)	Bottom of Stone (ESDv) ELEV. F	Invert of Underdrain INV. ELEV. H	Depth of Stone (Rev) (ft.)	Bottom of Stone (Rev) ELEV. G	Surface Area (S.F.)	Approx. Dimensions (at midpoint)
RG-#1	1.00	104.00	103.00	102.75	101.25	100.92	0.67	100.25	100.34	0.83	99.42	192	11' x 19'
RG-#2	1.00	103.00	102.00	101.75	100.25	99.92	1.00	98.92	99.17	0.83	98.09	165	7' x 26'
RG-#3	1.00	102.25	101.25	101.00	99.50	99.17	0.67	98.5	98.59	0.83	97.67	126	6' x 24'

ESDV COMPUTATIONS

								1	-	-	T	T	I :	1			1	-	
	SITE DEVELOPA	ABLE AREA:	***************************************	1	0.52	AC		22488	SF	-		-	forman and a second		-	Designed by:	gah		-
Permit Parameter anno anno anno anno anno anno anno ann	TARGET Pe:		rege / r me and describe and received all all and an extension of		1.60	IN				- Control of the Cont				Date: 6/9/20					
	SITE IMPERVIO	OUS:			26.58	PERCENT			-					***************************************	Checked by: rhv			-	
	SITE Rv:				0.2892										Date:				
***************************************	SITE ESDV REQ	UIRED:			867	CF +/-													
/=0.05+0.009)	XI																		
min=1.0" rair	emmeermeelijk verseermeermeelijk verseer		material and all delivers of the delivers of t	(1.0x0.95x	NO. POPOSIONI SPRINCINO CONTRA MEDICAL PRODUCTION CONTRA														
nax= 1yr rain	nfall=2.6"			(2.6x0.95x	A)/12												- Pro-		
DA	% IMPERV	Rv	DA	DA	MINIMUM	MAXIMUM	1.6"	VOLUME	IMPERV	IMPERV	GREEN	Recharge	Recharge			REMARKS			
# .			(SF)	(AC)	VOLUME	VOLUME	VOLUME	PROVIDED*	(SF)	(AC)	AREA	Required	Provided		100		Annual Property of the Propert		
1A	38.32	0.3949	3734	0.09	123	319	197	255	1431	0.03	0.05	64	64	MICROSC	ALE MICR	O-BIO RETENTION	(M-6)		
RG-#1														255	1	92 SF MBR @ 1.0 PON	IDING		- Laborate Park
LOT 13														0	AD	DITIONAL STONE	0.00	x	0.3
														64	255	Rev Recharge	0.83	x	0.4
1B	100.00	0.9500	533	0.01	42	110	68	54	533	0.01	0.00	0	0	54	CF RAINBARREL			(2 EACH LO)T)
LOT 13								8						7.92	15 LF	ROOFTOP DISCON	NECT		
					+			<u> </u>			<u> </u>	 							
2A	37.01	0.3831	3167	0.07	101	263	162	236	1172	0.03	0.05	55	55		SCALE MICRO-BIO RETENTION (M-6)				
RG-#2								ļ			ļ			220	165 SF MBR @ 1.0 PONDING			ļ	
LOT 14			-	 					na elektriani entropy (di incompresso)					16	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	DITIONAL STONE	0.33	X	0.3
2B	100.00	0.9500	533	0.01	42	110	CD	F.A.	F22	0.01	1000	 		55	165 CF	Rev Recharge	0.83	XX	0.4
LOT 14	100.00	0.9500	533	0.01	42	110	68	54	533	0.01	0.00	0	0	7.92	15 LF	RAINBARREL ROOFTOP DISCON	NIFCT	(2 EACH LO)T)
10114					***			8	 			-		7.92	15 LF	ROOFTOP DISCON			
					-									1.32	13 LF	NOUPTUP DISCUN	NECI	-	
3A	54.81	0.5433	2067	0.05	94	243	150	168	1133	0.03	0.01	42	42	MICROSC	ALE MICR	O-BIO RETENTION	(M-6)		
RG-#3								an gaile de familie de la familie (not de familie de fa				APPARTED BY ALLESS CONT. SPECIAL SPACE SPA		168	-	26 SF MBR @ 1.0 PON			
LOT 15													***************************************	0	AD	DITIONAL STONE	0.00	X	0.3
														42	126	Rev Recharge	0.83	x	0.4
3B	100.00	0.9500	533	0.01	42	110	68	54	533	0.01	0.00	0	0	54	CF	RAINBARREL		(2 EACH LO)T)
LOT 15								8						7.92	15 LF	ROOFTOP DISCON	NECT		- Indiana de la companya de la compa
								16						15.83	30 LF	ROOFTOP DISCON	NECT		
							-										-		
TOTALS	50.49	0.5044	10567	0.24	444	1155	711	869	5335	0.12	0.11	69	161		District Control	-	100		1

OWNER/DEVELOPER MAIN STREET BUILDERS C/O JOSEPH SNODGRASS 5705 LANDING ROAD ELKRIDGE, MARYLAND 21075 (410) 796-2003

ENVIRONMENTAL CONCEPT PLAN GRADING, EROSION AND SEDIMENT CONTROL PLAN AND ESDV DRAINAGE AREA MAP **ANDERSON VILLAGE LOTS 13-15**

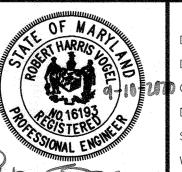
6480 ANDERSON AVENUE LIBER 262 / FOLIO 125 ZONED: R-12 PARCEL 649 HOWARD COUNTY, MARYLAND

XX MAP 38 BLOCK 14 ST ELECTION DISTRICT

VOGEL ENGINEERING

TIMMONS GROUP

3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043 P: 410.461.7666 F: 410.461.8961 www.timmons.com



DESIGN BY:	GAH
DRAWN BY:	GAH
CHECKED BY:	RHV
DATE:	JUNE 2020
SCALE:	AS SHOWN
W.O. NO.:	04-33

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. 16193 EXPIRATION DATE: 09-27-2022.

DATE