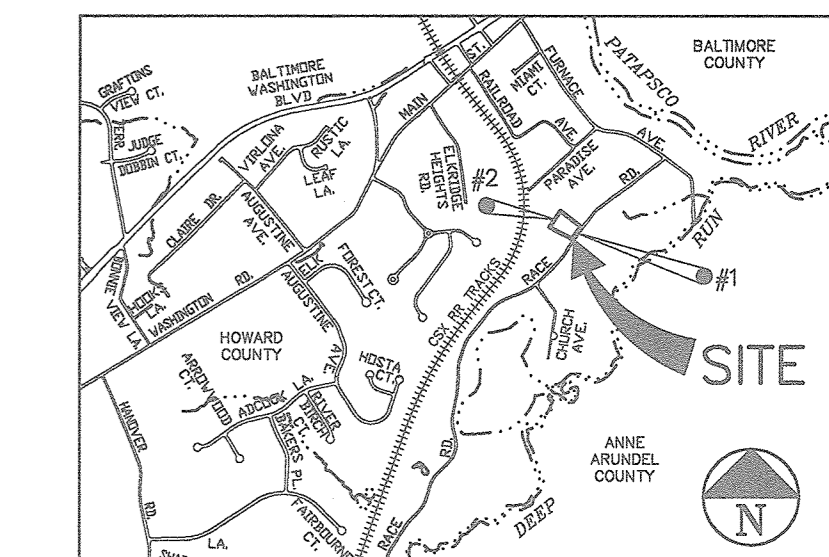


SUPPLEMENTAL PLANS HOBBS OVERLOOK LOTS 1 THRU 3 1st ELECTION DISTRICT HOWARD COUNTY, MD F-18-057

N/F
CSX TRANSPORTATION
TAX MAP-38 PARCEL-000
L.01938/F.181
ZONED: R-12

GENERAL NOTES:

- COORDINATES SHOWN HEREON ARE BASED ON THE NAD '83 MARYLAND COORDINATE SYSTEM AS ESTABLISHED BY GPS OBSERVATIONS BY BENCHMARK ENGINEERING, INC., WHICH ARE BASED ON THE MARYLAND STATE PLANE COORDINATE SYSTEM.
- PROPERTY BOUNDARY IS BASED ON A BOUNDARY SURVEY PERFORMED BY DATED NOVEMBER, 2017.
- SUBJECT PROPERTY IS ZONED R-12 PER THE OCTOBER 8, 2013 COMPREHENSIVE ZONING PLAN.
- THIS PLAN CONFORMS TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION REGULATIONS.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410)313-1880 AT LEAST FIVE(5) WORKING DAYS PRIOR TO START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNAGE SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM A TOPOGRAPHIC SURVEY PERFORMED BY BENCHMARK ENGINEERING, INC. DATED NOVEMBER, 2017 AND SUPPLEMENTED WITH HOWARD COUNTY DIGITAL G.S. THE CONTOUR INTERVAL IS TWO(2) FEET.
- THIS PROPERTY LIES WITHIN THE METROPOLITAN WATER, SEWER DISTRICT. WATER AND SEWER SERVICE WILL BE PRIVATE HOUSE CONNECTIONS UNDER AN A.D.O., CONNECTING INTO EX. CONTR #5-W & #11-S RESPECTIVELY.
- THIS SUBDIVISION IS SUBJECT TO SECTION 18.122.B OF THE HOWARD COUNTY CODE. PUBLIC WATER AND SEWERAGE ALLOCATION WILL BE GRANTED AT TIME OF ISSUANCE OF BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
- THERE ARE EXISTING STRUCTURES LOCATED ON THIS SITE TO BE REMOVED PRIOR TO PLAT RECORDATION. THE EX. HOUSE BUILT CIRCA 1925 IS NOT LISTED ON THE HOWARD COUNTY HISTORIC SITES INVENTORY.
- TO THE BEST OF OUR KNOWLEDGE THERE ARE NO CEMETERY LOCATIONS ON-SITE.
- THIS SITE DOES NOT ABUT A SCENIC ROAD.
- ALL AREAS ON THESE PLANS ARE "MORE OR LESS".
- BRL INDICATES BUILDING RESTRICTION LINE.
- UNLESS OTHERWISE NOTED AS "PRIVATE", ALL EASEMENTS ARE "PUBLIC".
- RESERVATION OF PUBLIC UTILITY EASEMENTS
DEVELOPER RESERVES AND GRANTS TO HIS SUCCESSORS AND ASSIGNS, ALL EASEMENTS SHOWN ON THIS PLAN FOR WATER, SEWER, STORM DRAINAGE, OTHER PUBLIC UTILITIES, LOCATED IN, ON, OVER AND THROUGH LOTS/PARCELS, ANY CONVEYANCES OF THE AFORESAID LOTS/PARCELS SHALL BE SUBJECT TO THE EASEMENTS HEREIN RESERVED, WHETHER OR NOT EXPRESSLY STATED IN THE DEED(S) CONVEYING SAID LOTS/PARCELS. THE DEVELOPER SHALL EXECUTE AND DELIVER DEEDS FOR THE EASEMENTS HEREIN RESERVED TO HOWARD COUNTY. UPON COMPLETION THE COUNTY SHALL ACCEPT THE EASEMENTS AND RECORD THE DEED(S) OF EASEMENT IN THE LAND RECORDS OF HOWARD COUNTY.
- THE FOREST CONSERVATION OBLIGATION FOR 6,969.6 SF (0.2 AC.) OF AFFORESTATION SHALL BE MET BY A FEE-IN-LIEU PAYMENT OF \$6,534.00.
- THE SIMPLIFIED FOREST STAND DELINEATION PLAN FOR THIS PROJECT WAS PREPARED BY BENCHMARK ENGINEERING, INC., DATED DECEMBER, 2017.
- THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY GEOTECHNICAL LABORATORIES, INC., DATED JANUARY, 2017.
- THE APP. SPEED STUDY FOR THIS PROJECT WAS PREPARED BY MARS GROUP, INC. DATED FEBRUARY, 2011 AND APPROVED WITH SUPPLEMENTAL PLANS.
- THE NOISE STUDY FOR THIS PROJECT WAS PREPARED BY THE MARS GROUP, INC. DATED FEBRUARY, 2018. THE 65DBA NOISE CONTOUR LINE DOES NOT IMPACT THE SITE AND THEREFORE IS NOT SHOWN ON THE PLANS.
- MSA HEIGHT APPROVAL LETTER WAS ISSUED JANUARY 29, 2018.
- ACCORDING TO ON-SITE OBSERVATION AND AVAILABLE DATA, THERE ARE NO STREAMS, WETLANDS, THEIR BUFFERS, OR 20% OR GREATER STEEP SLOPES WITH MORE THAN 20,000 SF OF CONTIGUOUS AREA LOCATED WITHIN THE PROJECT SITE.
- THERE ARE NO WETLANDS LOCATED ON-SITE AS OUTLINED IN A WETLAND CERTIFICATION LETTER PREPARED BY BENCHMARK ENGINEERING, INC., DATED DECEMBER, 2017.
- THERE IS AN EXISTING PERPETUAL EASEMENT FOR INCREASED 100-YEAR FLOODPLAIN (MSHA PLAT #50682) ALONG THE SITE PERMITTER FRONTING RACE ROAD. THIS IS ASSOCIATED WITH THE OFF-SITE 100-YEAR FLOODPLAIN DIRECTLY ACROSS THE ROADWAY.
- STORMWATER MANAGEMENT ENVIRONMENTAL DESIGN (ESD) HAS BEEN PROVIDED FOR THIS PROJECT IN ACCORDANCE WITH THE GUIDELINES ESTABLISHED BY THE MDE STORMWATER MANAGEMENT ACT OF 2009, AND THE H.C.O. DESIGN MANUAL VOL.1, CHAPTER 5, TO THE MAXIMUM EXTENT POSSIBLE (MEP). SWM FOR THIS PROJECT SHALL BE PROVIDED BY UTILIZING; (M-6) MICRO-BIOTRENTION.
- THE SWM FACILITIES MB-1 THRU MB-3 ON LOTS 1 THRU 3, RESPECTIVELY, SHALL BE PRIVATELY OWNED AND MAINTAINED; MB-4 ON LOT 1 SHALL BE JOINTLY MAINTAINED BY LOTS 1 THRU 3 AS IT PROVIDES SWM FOR THE USE-IN-COMMON DRIVE SERVING LOTS 1 THRU 3.
- FOR FLAG OR PIPESTEM LOTS, MAINTENANCE AND ROAD REPAIR SHALL BE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM LOT DRIVEWAY AND THE ROAD RIGHT-OF-WAY ONLY AND NOT ONTO THE FLAG OR PIPESTEM LOT DRIVEWAY.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
A) WIDTH - 12' (16' SERVING MORE THAN ONE RESIDENCE).
B) SURFACE - 8" OF COMPACT CRUSHER RUN BASE WITH 1-1/2" MIN. TAR & CHIP COATING.
C) GEOMETRY - MAX. 15% GRADE, MAX. 10% GRADE CHANGE & MIN. 45' TURNING RADIUS.
D) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (425 LOAD).
E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOODPLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY.
F) STRUCTURE CLEARANCES - MINIMUM 12 FEET.
G) MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE.
- A SHARED USE-IN-COMMON ACCESS, DRAINAGE, UTILITY & MAINTENANCE AGREEMENT FOR LOTS 1 THRU 3 SHALL BE RECORDED SIMULTANEOUSLY WITH THE PLAT IN THE LAND RECORDS OF HOWARD COUNTY, MD.
- THE LANDSCAPING SHOWN ON THIS PLAN IS PICTORIAL FOR REQUIREMENT PURPOSES ONLY. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING IN THE AMOUNT OF \$4,800 FOR 14 SHADE TREES & 4 EVERGREEN TREES, SHALL BE POSTED WITH THE APPROVED LS PLAN UNDER THE SUBSEQUENT SSP.
- THE OPEN SPACE REQUIREMENTS FOR THIS PROJECT (0.09 AC.) WILL BE FULFILLED BY A FEE-IN-LIEU PAYMENT OF (\$3,000 FOR 2 LOTS) OF OBLIGATION. RECREATIONAL OPEN SPACE IS NOT REQUIRED FOR THIS PROJECT AS THERE ARE LESS THAN 10 LOTS.
- THE COMMUNITY MEETING FOR THIS PROJECT WAS HELD AT THE ELKROGE VOLUNTEER FIRE DEPARTMENT ON OCTOBER 30, 2017 PER SECTION 18.128 OF THE H.C.O. SUBDIVISION & LAND DEVELOPMENT REGULATIONS.
- IN ACCORDANCE WITH SECTION 109.0.E OF THE ZONING REGULATIONS, THIS SUBDIVISION IS SUBJECT TO MODERATE INCOME HOUSING UNITS (MIHU). THE MODERATE INCOME HOUSING (MIHU) REQUIREMENT (COUNTY BILL 35-2013) SHALL BE FULFILLED BY A PAYMENT OF FEE-IN-LIEU IN AN AMOUNT THAT IS TO BE CALCULATED BY THE DEPARTMENT OF INSPECTIONS, LICENSES, & PERMITS AT THE TIME OF BUILDING PERMIT. THE FEE-IN-LIEU SHALL BE PAID TO THE DEPARTMENT OF INSPECTIONS, LICENSES, & PERMITS AT THE TIME OF BUILDING PERMIT ISSUANCE.
- A PRIVATE RANGE OF ADDRESS SIGN ASSEMBLY SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES.
- SHOULD A SEPTIC TANK BE FOUND DURING THE RE-DEVELOPMENT OF THIS PROPERTY, IT SHALL BE PROPERLY ABANDONED AND A REPORT PROVIDED TO THE BUREAU OF ENVIRONMENTAL HEALTH BY THE DEVELOPER.
- SHOULD A WELL BE FOUND DURING DEMOLITION OF EXISTING HOUSE, OR DURING OTHER CONSTRUCTION ACTIVITIES ASSOCIATED WITH REDEVELOPMENT OF THIS PROPERTY, THE BUREAU OF ENVIRONMENTAL HEALTH SHALL BE NOTIFIED IMMEDIATELY. BE ADVISED THAT ONLY A LICENSED WELL DRILLER HAS AUTHORITY TO SEAL (ABANDON) A WELL.
- THE OBLIGATION FOR APPROXIMATELY 160' OF SIDEWALK IMPROVEMENTS ALONG A PUBLIC ROADWAY WILL BE MET BY A FEE-IN-LIEU PAYMENT IN THE AMOUNT OF \$16,269.40



VICINITY MAP
SCALE: 1" = 2000'
ADC MAP 4937, GRID G-7

BENCH MARKS (NAD83)
TRAV. No. 1 ELEV.=33.992'
REBAR & CAP SET ON-SITE BY B.E.I.
AND CONFIRMED BY G.P.S.
N 562,921.9820' E 1,395,590.4390'
TRAV. No. 2 ELEV.=48.502'
REBAR & CAP SET ON-SITE BY B.E.I.
AND CONFIRMED BY G.P.S.
N 562,897.5170' E 1,395,445.6910'

SHEET INDEX	
SHEET	TITLE
1	TITLE SHEET
2	EXISTING CONDITIONS & SOILS MAP
3	SITE GRADING & UTILITY PLAN
4	ESD TO THE MEP STORMWATER MANAGEMENT DEVELOPED D.A. MAP, NOTES & DETAILS
5	STORMWATER MANAGEMENT PROFILES, NOTES, & DETAILS
6	STORM DRAINAGE AREA MAP
7	STORM DRAIN PROFILES, NOTES, & DETAILS
8	SIGHT DISTANCE ANALYSIS
9	LANDSCAPING PLAN AND FOREST CONSERVATION

LEGEND	
PRIVATE DRAINAGE, SWM, & UTILITY EASEMENT	
EXISTING PERPETUAL EASEMENT FOR INCREASED 100-YR FLOODPLAIN (MDSHA)	
PRIVATE USE-IN-COMMON ACCESS, DRAINAGE, UTILITY, & MAINTENANCE EASEMENT. THE EASEMENT IS FOR THE BENEFIT OF ACCESS FOR LOTS 1-3	
PRIVATE DRAINAGE & UTILITY EASEMENT	

MODERATE INCOME HOUSING UNITS (MIHU) ALLOCATION EXEMPTION TRACKING	
TOTAL NUMBER OF LOTS/UNITS PROPOSED	3
NUMBER OF MIHU REQUIRED	0.3
NUMBER OF MIHU PROVIDED ON-SITE (EXEMPT FROM AFFD ALLOCATIONS)	0
NUMBER OF AFFD ALLOCATIONS REQUIRED (REMAINING LOTS/UNITS)	2+
MIHU FEE-IN-LIEU (INDICATE LOT/UNIT NUMBERS)	1,2,6,3

*1 CREDIT IS GRANTED FOR THE EXISTING DWELLING

PLEASE NOTE THAT ALL LOT/RESIDENTIAL UNITS IN THIS SUBDIVISION ARE SUBJECT TO THE MIHU FEE-IN-LIEU REQUIREMENT THAT IS TO BE CALCULATED AND PAID TO THE DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS AT THE TIME OF BUILDING PERMIT ISSUANCE BY THE PERMIT APPLICANT.

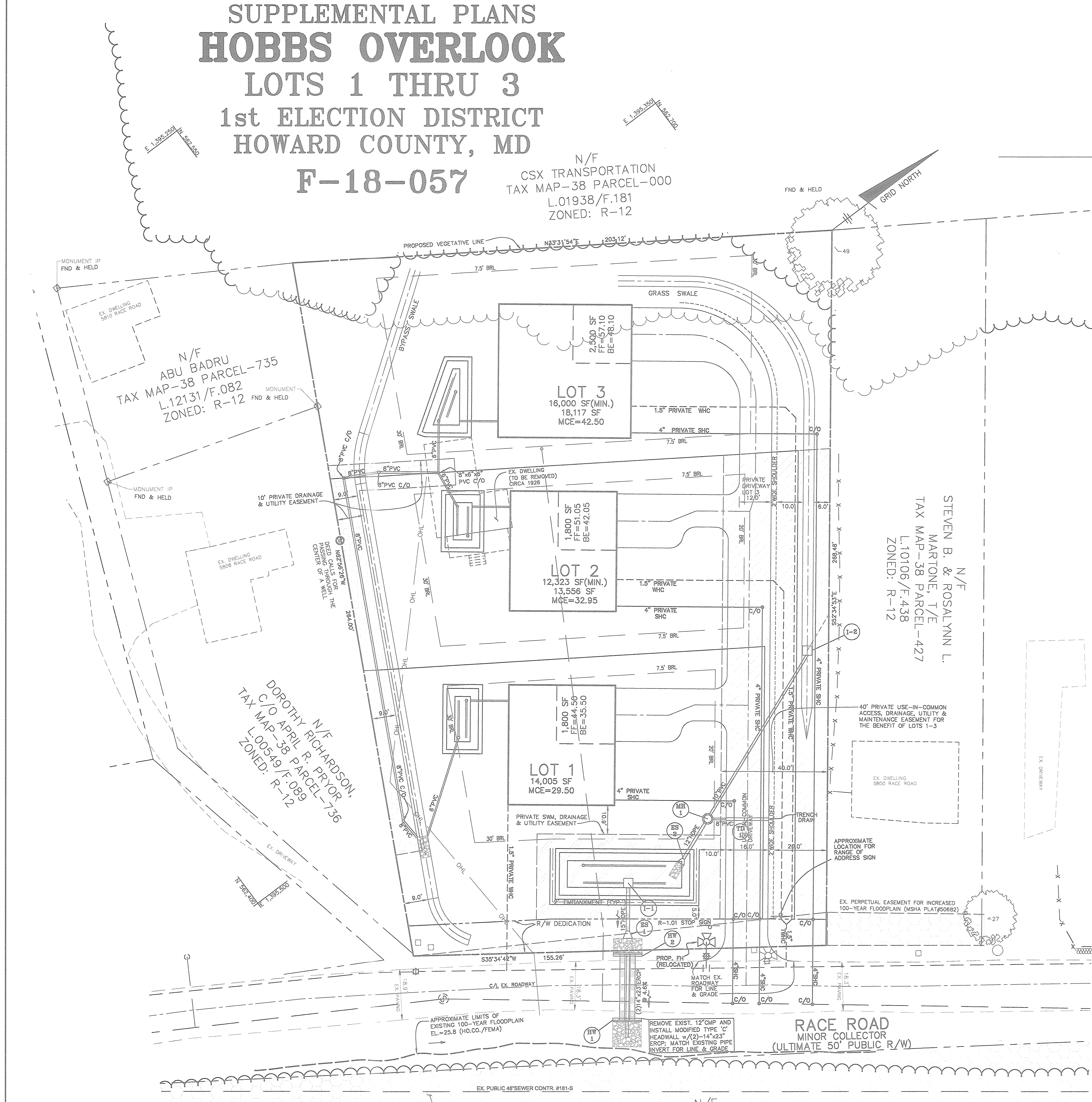
ESD STORMWATER MANAGEMENT SUMMARY TABLE															
LOT	MDE	Type	No.	DA (sq ft)	Imp Area (sq ft)	Rv	Pp Required	AT (cu ft)	ESDv (cu ft)	Pp Provided	REV	Ownership			
1	(M-6)	Micro-Bioretention	MB-1	4,500	1,800	40%	0.41	1.2	90	100	PASS	185	221	1.4	
2	(M-6)	Micro-Bioretention	MB-2	3,645	1,800	49%	0.49	1.2	73	98	PASS	180	224	1.5	141d
3	(M-6)	Micro-Bioretention	MB-3	6,825	2,500	38%	0.39	1.2	133	133	PASS	258	300	1.4	met via the ESD profiles
UC	(M-6)	Micro-Bioretention	MB-4	21,290	4,830	23%	0.25	1.2	133	430	PASS	541	742	1.6	Shared Private
Totals per individual Drainage Area				36,060	10,930	35%	0.37			1164			1486		
Totals per Overall Site				47,311	11,825	25%	0.28	1.2			1301			1486	

Notes:
1. The Pp required column is based on total site Pp calculation. The Rv is based on individual drainage area percent impervious (per DED).
2. The remaining 8% (895sf) of Impervious Area is the use-in-common drive connection which cannot be collected/tested on-site.

PROJECT BACKGROUND INFORMATION
PRESENT ZONING: R-12
LOCATION: TAX MAP 38 - GRID 4 - PARCEL 598
APPLICABLE DPZ FILE REFERENCES: EOP-18-021, L.17845/F.00045
DEED REFERENCES: P.8-L.9289/F.625, P.9-L.8014/F.604, P.13-L.8014/F.604

SITE DATA TABULATION

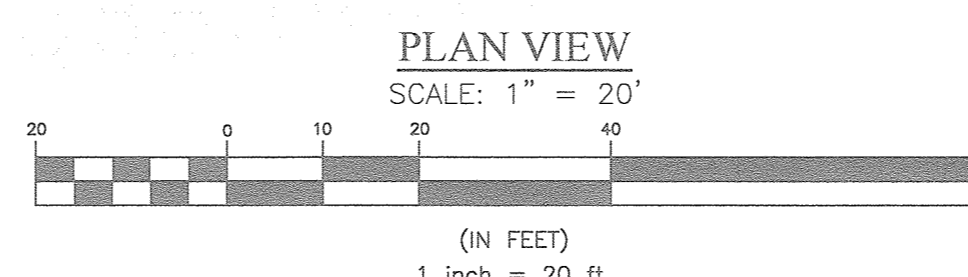
- AREA TABULATION
 - TOTAL AREA OF SITE 1.09± AC.
 - AREA OF 100 YEAR FLOODPLAIN 0.00± AC.
 - AREA OF STEEP SLOPES (25% OR GREATER) 0.00± AC.
 - NET AREA OF SITE 1.09± AC.
 - AREA OF THIS PLAN SUBMISSION 1.08± AC.
 - LIMIT OF DISTURBANCE (APPROX.) 1.02 AC.±
 - AREA OF PROPOSED BUILDABLE LOTS 1.05 AC.±
 - AREA OF OPEN SPACE LOTS 0.00 AC.±
 - AREA OF PROPOSED PUBLIC ROAD 0.00 AC.±
 - AREA OF PROPOSED PUBLIC R/W DEDICATION 0.04 AC.±
 - AREA OF FOREST 0.00 AC.±
- LOT TABULATION
 - NET AREA OF SITE 1.05 AC.±
 - ALLOWABLE RESIDENTIAL LOT HEREON 3
 - TOTAL NUMBER OF RESIDENTIAL LOTS PROPOSED ON THIS SUBMISSION 3
 - TOTAL NUMBER OF OPEN SPACE LOTS PROPOSED ON THIS SUBMISSION 0
- OPEN SPACE DATA
 - MINIMUM RESIDENTIAL LOT SIZE SELECTED 12,000 SF.
 - OPEN SPACE REQUIRED FOR TOTAL AREA OF SITE (2X OF 1.09 AC.) 0.087 AC.
 - TOTAL AREA OF PROPOSED OPEN SPACE LOTS PROVIDED WITH THIS SUBMISSION 0.00 AC. (FEE-IN-LIEU)
 - OPEN SPACE AREAS LESS THAN 35' IN WIDTH (NON-CREDITED) 0.00 AC.
 - TOTAL AREA OF OPEN SPACE MEETING MINIMUM OPEN SPACE REQUIREMENTS (CREDITED) 0.00 AC.
 - AREA OF RECREATIONAL OPEN SPACE REQUIRED 0 SF
 - TOTAL AREA OF RECREATIONAL OPEN SPACE PROVIDED 0 SF



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 3-8-19 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 3-13-19 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT

MINIMUM LOT SIZE CHART			
LOT NO.	GROSS AREA	PIPESTEM AREA	MIN. LOT SIZE
1	13,556 SF.	1,233 SF.	12,323 SF.
2	18,117 SF.	2,117 SF.	16,000 SF.

N/F
STATE OF MARYLAND
DEPT. OF FOREST & PARKS
TAX MAP-38 PARCEL-503
L.01219/F.221
ZONED: R-12



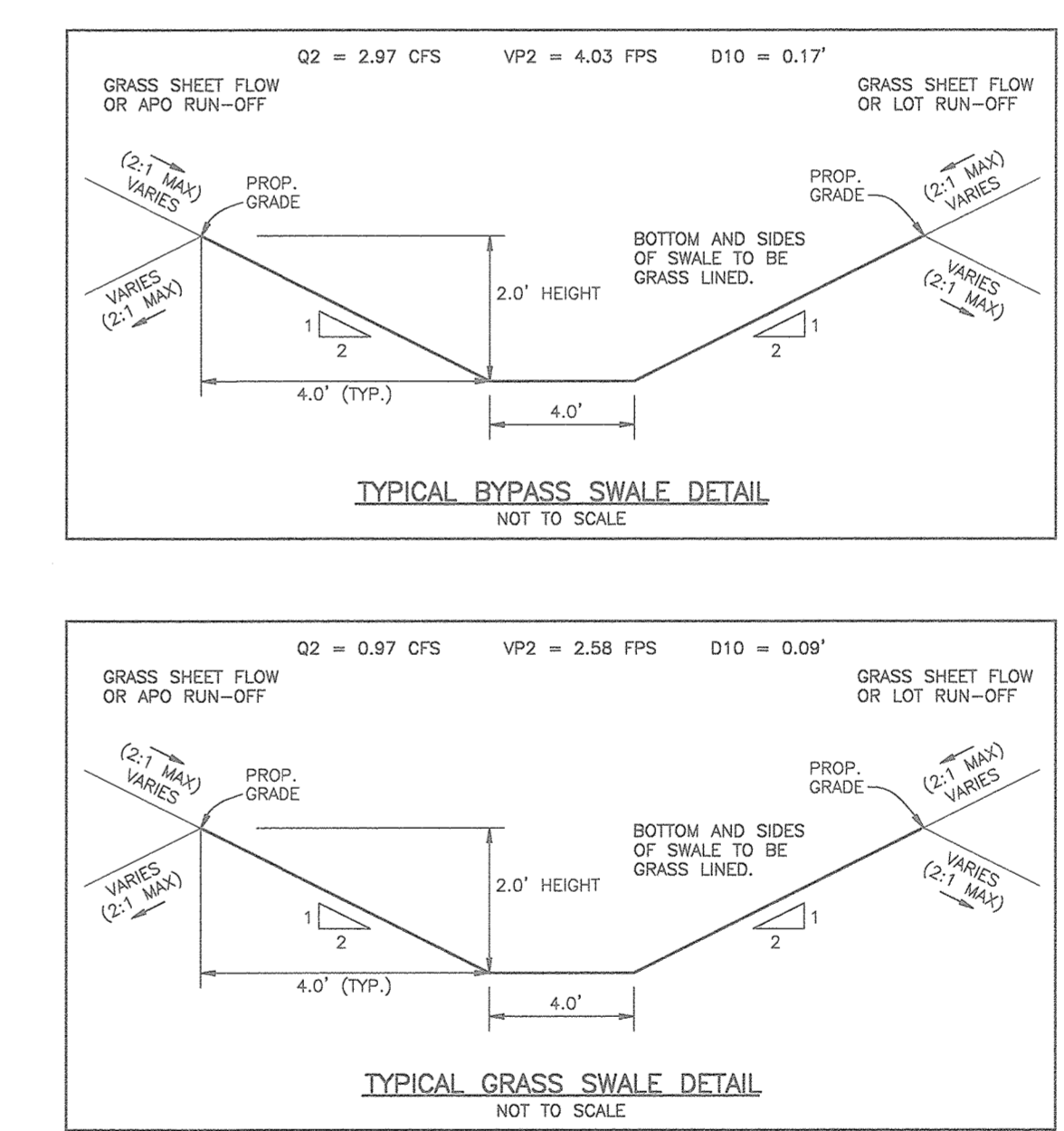
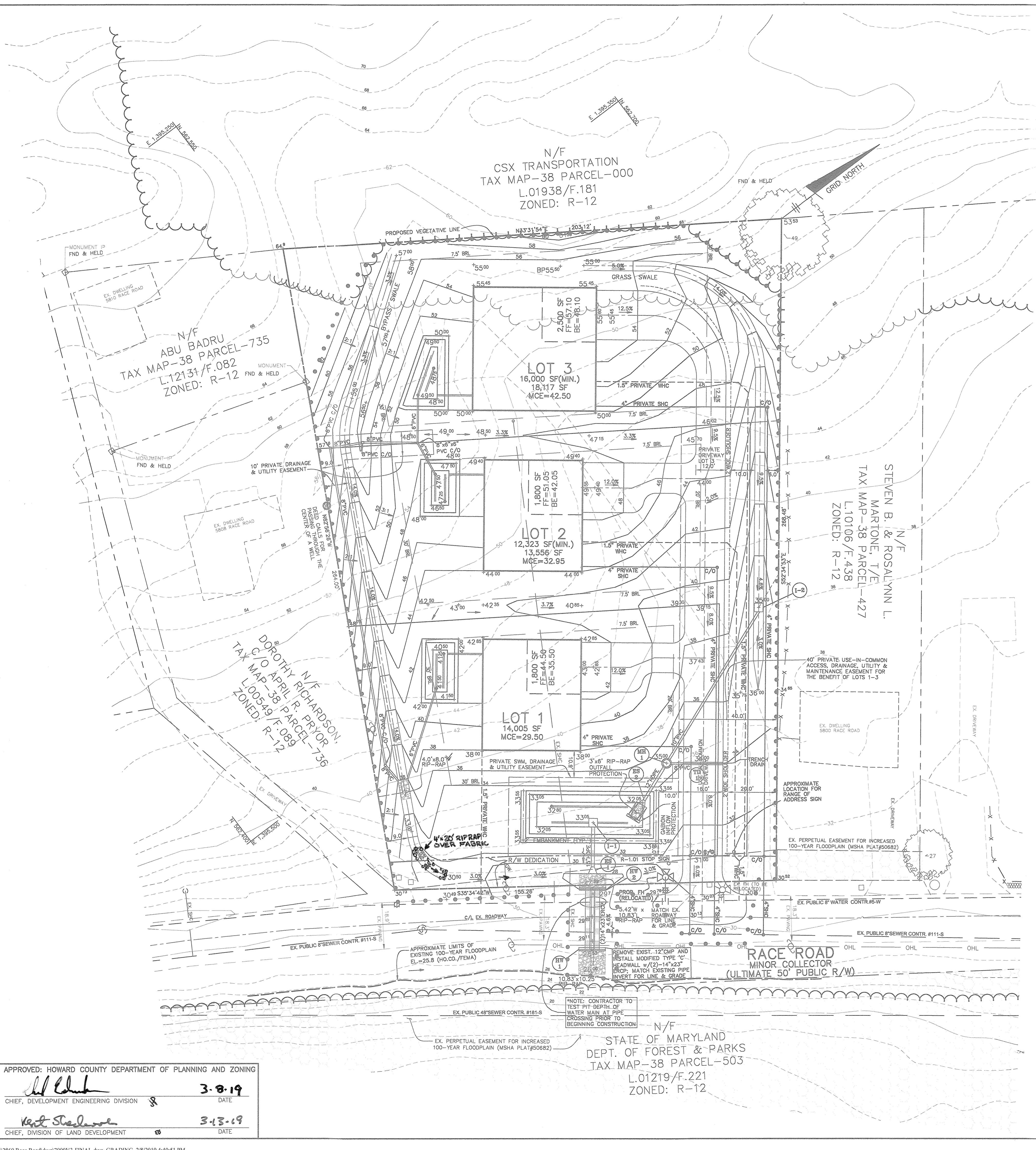
NOTE: THESE PLANS CANNOT BE USED FOR A GRADING PERMIT FOR LOT GRADING, SEDIMENT & EROSION CONTROL TO BE PROVIDED AT THE SITE DEVELOPMENT STAGE

NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE A SUITE 315 A ELLICOTT CITY, MARYLAND 21043
(P) 410-485-6105 (F) 410-485-6644
WWW.BEI-CIVILENGINEERING.COM

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. 22890, Expiration Date: 6-30-2019.

OWNER: GT FAMILY HOMES I, LLC 6800 DEERPATH ROAD SUITE 100 ELKROGE, MARYLAND 21075 410-592-2442	DEVELOPER: H&H ROCK COMPANIES 6800 DEERPATH ROAD SUITE 100 ELKROGE, MARYLAND 21075 410-592-2442	DESIGN: MCR DRAFT: MCR
HOBBS OVERLOOK		
LOTS 1 thru 3; A SUBDIVISION OF TAX MAP 38 PARCEL 598		
TAX MAP: 38 - GRID: 04 - PARCEL: 598 ZONED: R-12 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND		
TITLE SHEET		
DATE: FEBRUARY, 2019	BEI PROJECT NO. 2860	
SCALE: AS SHOWN	SHEET 1 OF 9	



TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT: THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES NO. 104-00-01 - NO. 104-00-18 AND STANDARD DETAILS NO. 104-01-01 - NO. 104-01-04.

NOTE: FLAGGER SHALL NEVER BE STATIONED MORE THAN 1000' AWAY FROM THE ADVANCE FLAGGER SIGN.

THE ENGINEER SHOULD CONSIDER ADDITIONAL ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELER ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- FLAGGER

APPROVED: [Signature]

MD 104.02-10

FOR RACE ROAD IMPROVEMENTS

LEGEND

SOILS CLASSIFICATION: *A&C*

SOILS DELINEATION:

EXISTING CONTOURS:

PROPOSED CONTOURS:

EXISTING VEGETATIVE LINE:

PROPOSED VEGETATIVE LINE:

EXISTING STRUCTURE:

PROPOSED STRUCTURE:

EXISTING PERPETUAL EASEMENT FOR INCREASED 100-YR FLOODPLAIN (MDSHA):

PROPOSED DRIVEWAY:

PROPOSED ESD-SWM PRACTICE:

LIMIT OF DISTURBANCE:

PROPOSED SHC:

PROPOSED WHC:

PROPOSED STORM DRAIN:

NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC.
 8480 BALTIMORE NATIONAL PIKE SUITE 315 • ELUCOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-6644
 WWW.BE-ENGINEERING.COM

HOBBS OVERLOOK
 LOTS 1 thru 3; A SUBDIVISION OF TAX MAP 38 PARCEL 598
 TAX MAP: 38 - GRID: 04 - PARCEL: 598
 ZONED: R-12
 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

SITE GRADING AND UTILITY PLAN

OWNER: GT FAMILY HOMES I, LLC
 6800 DEERPATH ROAD SUITE 100
 ELKRIDGE, MARYLAND 21075
 410-592-2442

DEVELOPER: H&H ROCK COMPANIES
 6800 DEERPATH ROAD SUITE 100
 ELKRIDGE, MARYLAND 21075
 410-592-2442

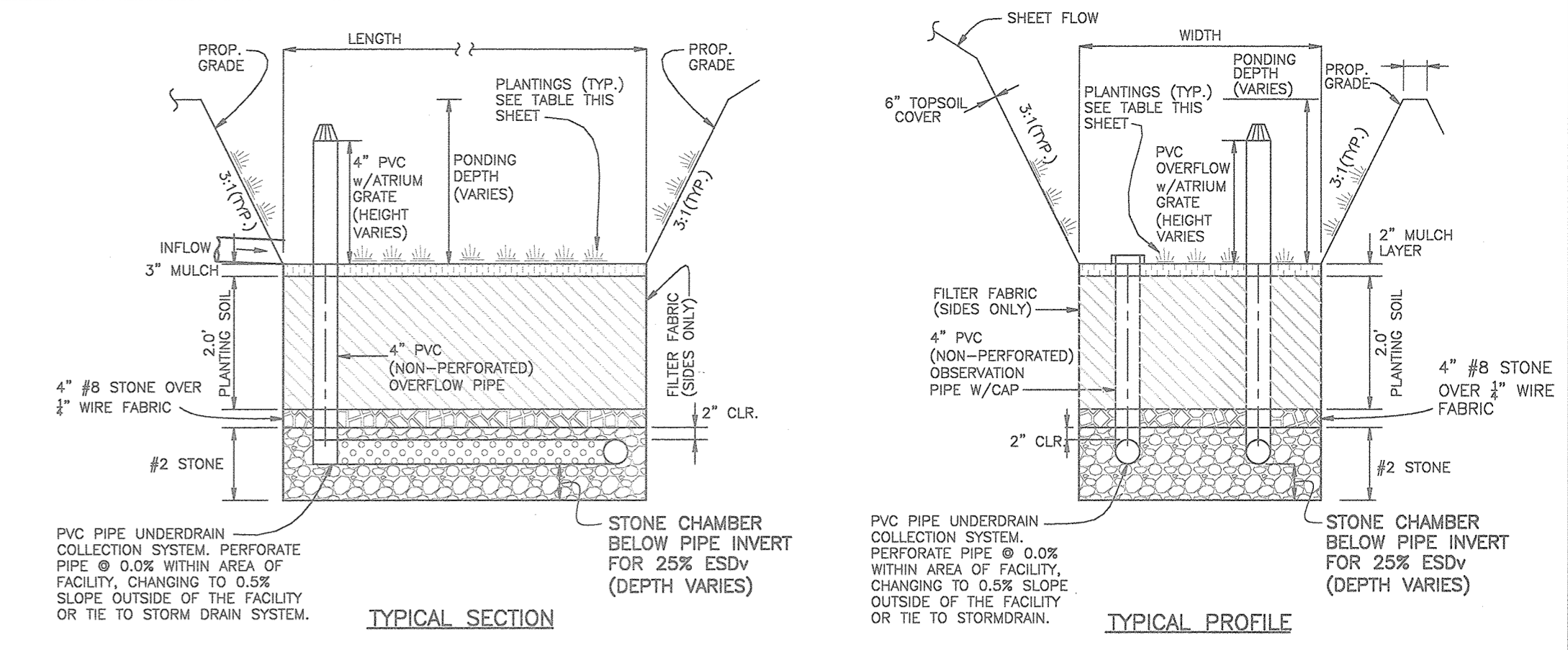
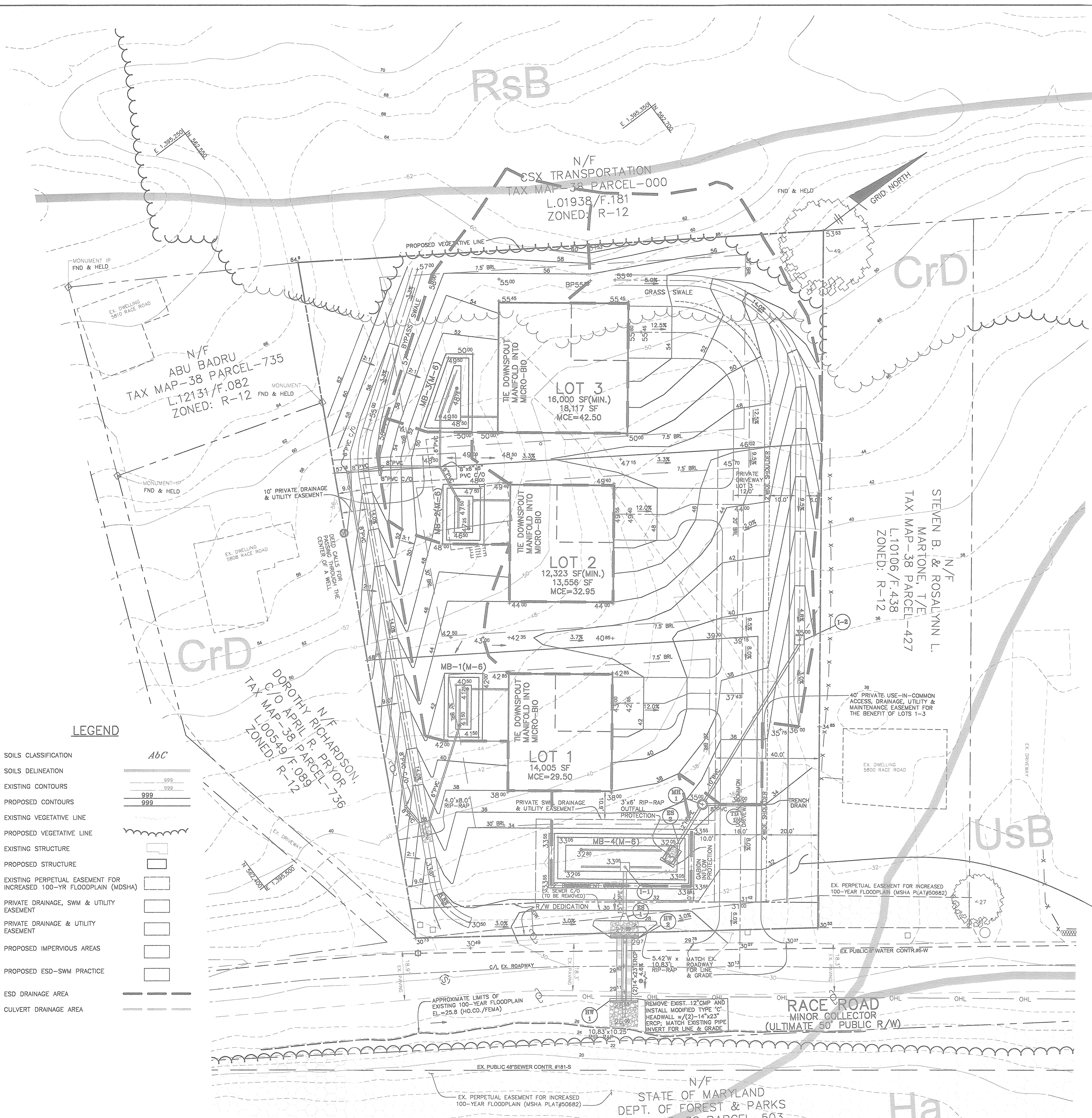
DESIGN: MCR DRAFT: MCR

DATE: FEBRUARY, 2019 SHEET PROJECT NO. 2860
 SCALE: AS SHOWN SHEET 3 OF 9

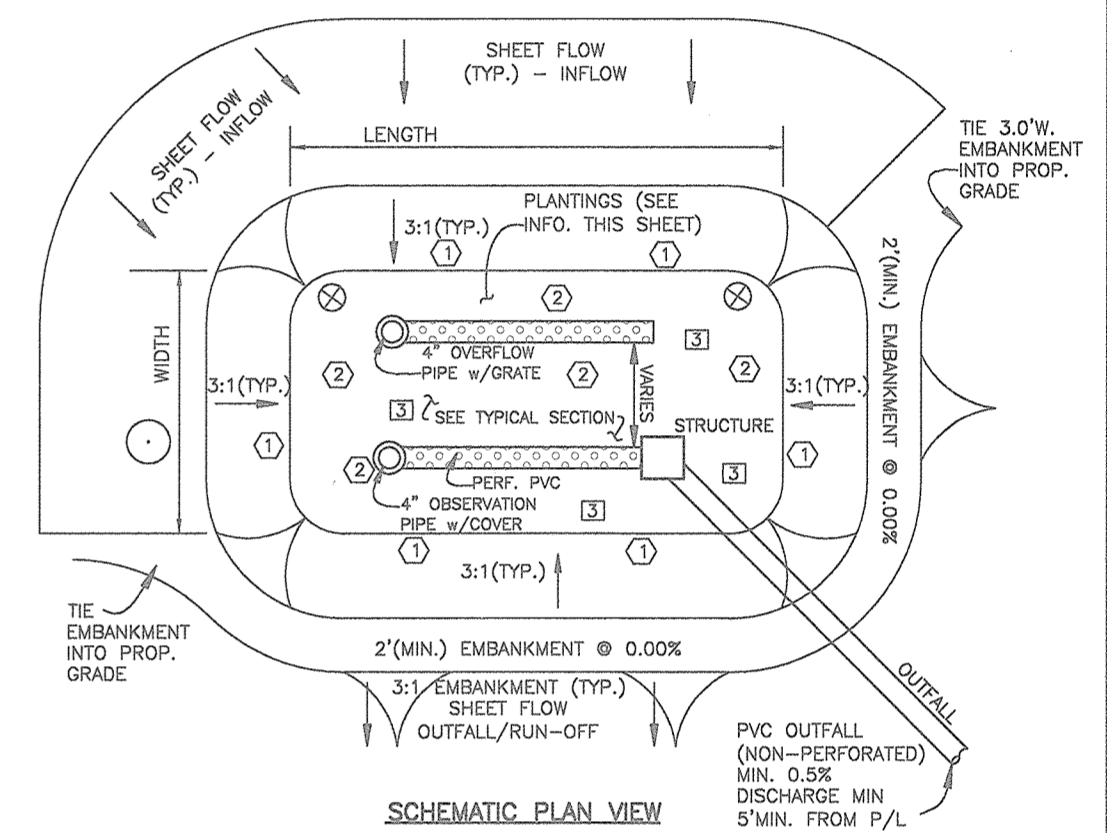
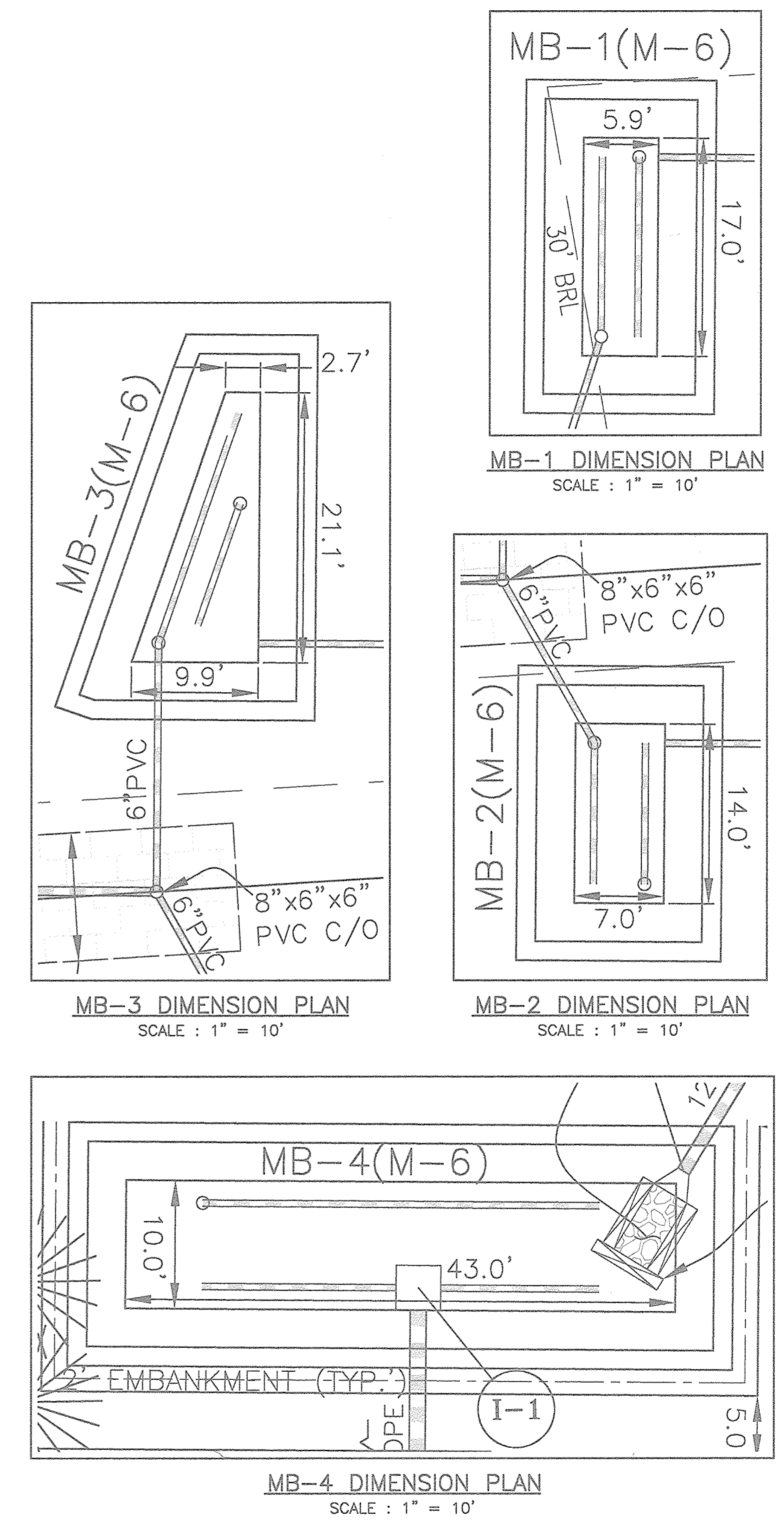
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 3-8-19
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 3-13-19
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE



- UNDERDRAIN, OVERFLOW AND OUTFALL NOTES**
1. THE LAST CLEAN-OUT LOCATION WITHIN EACH MICRO-BIORETENTION FACILITY SHALL BE FITTED WITH A NON-CLOSING SURFACE DRAIN (EXAMPLE: 4" ABS ROOF DRAIN W/CAST ALUMINUM DOME) AT THE POND SURFACE ELEVATION INDICATED IN THE CORRESPONDING TABLE ELEV. 2.
 2. THE PVC WITHIN THE FACILITY SHALL BE PERFORATED.
 3. THE UNDER-DRAIN AND PIPE TO OUTFALL SHALL BE INSTALLED TO A MINIMUM DEPTH OF 2' BELOW FINISHED GRADE AND SHALL MAINTAIN A MINIMUM 0.5% SLOPE AND MAINTAIN A MINIMUM OF 1' OF SEPARATION AT ALL CROSSINGS.



STANDARD MICRO-BIORETENTION DETAILS
NOT TO SCALE

LEGEND

SOILS CLASSIFICATION: 16c

SOILS DELINEATION: 999

EXISTING CONTOURS: 999

PROPOSED CONTOURS: 999

EXISTING VEGETATIVE LINE: [Symbol]

PROPOSED VEGETATIVE LINE: [Symbol]

EXISTING STRUCTURE: [Symbol]

PROPOSED STRUCTURE: [Symbol]

EXISTING PERPETUAL EASEMENT FOR INCREASED 100-YR FLOODPLAIN (MDSA): [Symbol]

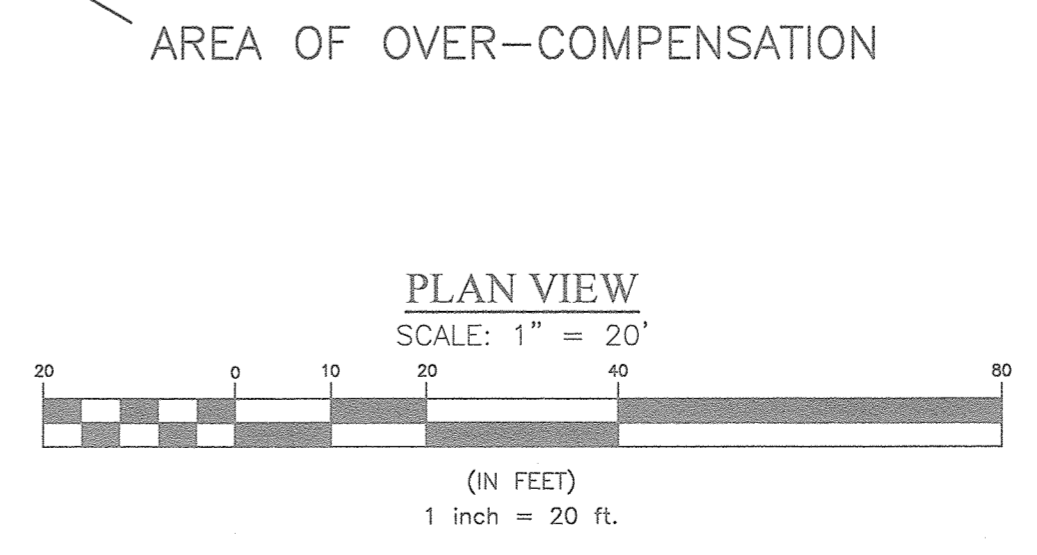
PRIVATE DRAINAGE, SWM & UTILITY EASEMENT: [Symbol]

PROPOSED IMPERVIOUS AREAS: [Symbol]

PROPOSED ESD-SWM PRACTICE: [Symbol]

ESD DRAINAGE AREA: [Symbol]

CULVERT DRAINAGE AREA: [Symbol]



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad... 3-8-19
CHIEF, DEVELOPMENT ENGINEERING DIVISION

V... 2-13-19
CHIEF, DIVISION OF LAND DEVELOPMENT

N/F STATE OF MARYLAND
DEPT. OF FOREST & PARKS
TAX MAP-38 PARCEL-503
L.01219/F.221
ZONED: R-12

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND

SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALTERNATE GROUP	NAME	k-VALUE
CrD		C		CROOM AND EVESBORO SOILS, 10 TO 15 PERCENT SLOPES	0.28/0.15
Rsb		C		RUSSETT FINE SANDY LOAM, 2 TO 5 PERCENT SLOPES	0.24

NO.	DATE	REVISION
<p>BENCHMARK ENGINEERS, INC. 8480 BALTIMORE NATIONAL PIKE SUITE 315 • ELLICOTT CITY, MARYLAND 21043 (P) 410-485-8105 (F) 410-485-6644 WWW.BE-CIVILENGINEERING.COM</p>		
<p>OWNER: GT FAMILY HOMES I, LLC 6800 DEERPATH ROAD SUITE 100 ELKRIDGE, MARYLAND 21075 410-592-2442</p>		<p>HOBB'S OVERLOOK LOTS 1 thru 3; A SUBDIVISION OF TAX MAP 38 PARCEL 598</p>
<p>DEVELOPER: H&H ROCK COMPANIES 6800 DEERPATH ROAD SUITE 100 ELKRIDGE, MARYLAND 21075 410-592-2442</p>		<p>TAX MAP: 38 - GRID: 04 - PARCEL: 598 ZONED: R-12 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND</p>
<p>E.S.D. TO THE M.E.P. STORMWATER MANAGEMENT DEVELOPED D.A. MAP, NOTES & DETAILS</p>		
<p>DATE: FEBRUARY, 2019 SCALE: AS SHOWN</p>		<p>BEI PROJECT NO. 2860 SHEET 4 OF 9</p>

CONSTRUCTION SPECIFICATIONS

Table B.4.1 Materials Specifications for Micro-Bioretention, Rain Gardens & Landscape Infiltration-

Material	Specifications	Size	Notes
Planting soil	loamy sand (8-65%) & compost (2-40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 3974)	n/a	seed 6 months, minimum no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 3 OR NO. 9 (1/4" TO 3/8")	n/a
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 37 OR NO. 6 (1/8" TO 3/4")	n/a
Underdrain piping	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 holes per row; minimum of 3" of gravel over pipe; not necessary underdrain pipe. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth.
Stone (stone reservoir)	MSMA Min No. 3, P. = 3000 psi @ 28 days, normal weight, air-entrained, reinforcing to meet ASTM A618-09	n/a	Stone testing of precast-in-place concrete required; 28 day strength and slump test; all concrete designs (cast-in-place or precast) not using previously approved State or local standard require design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 308.2R(9), vertical loading (1H-10 or 15-20); allowable horizontal loading (based on soil permeability and analysis of potential cracking).
Seed	AASHTO M-6 or ASTM C-33	0.02" to 0.04"	Seed substitutions such as Dichaea and Cynopone (AASHTO) #10 are not acceptable. No calcium carbonate or dolomite sand substitutions are acceptable. No "rock dust" can be used for seed.

B.4.C Specifications for Micro-Bioretention, Rain Gardens, Landscape Infiltration & Infiltration Berms

- Material Specifications:**
The allowable materials to be used in these practices are detailed in Table B.4.1.
- 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 Content - Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy sand (50%-65%) and compost (5% 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 into the soil to increase or decrease pH.

It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoses to remove original soil. If practices are excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf 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 a chisel plow, ripper, or subsoiler. These tilling operations are to refracture the soil profile through the 12 inch compaction zone. Subsoiler 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 bioretention 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.

Plant Material:
Recommended plant material for micro-bioretention practices can be found in Appendix A, Section A.2.3.

Plant Installation:
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 per 1000 square feet.

Underdrains:
Underdrains should meet the following criteria:

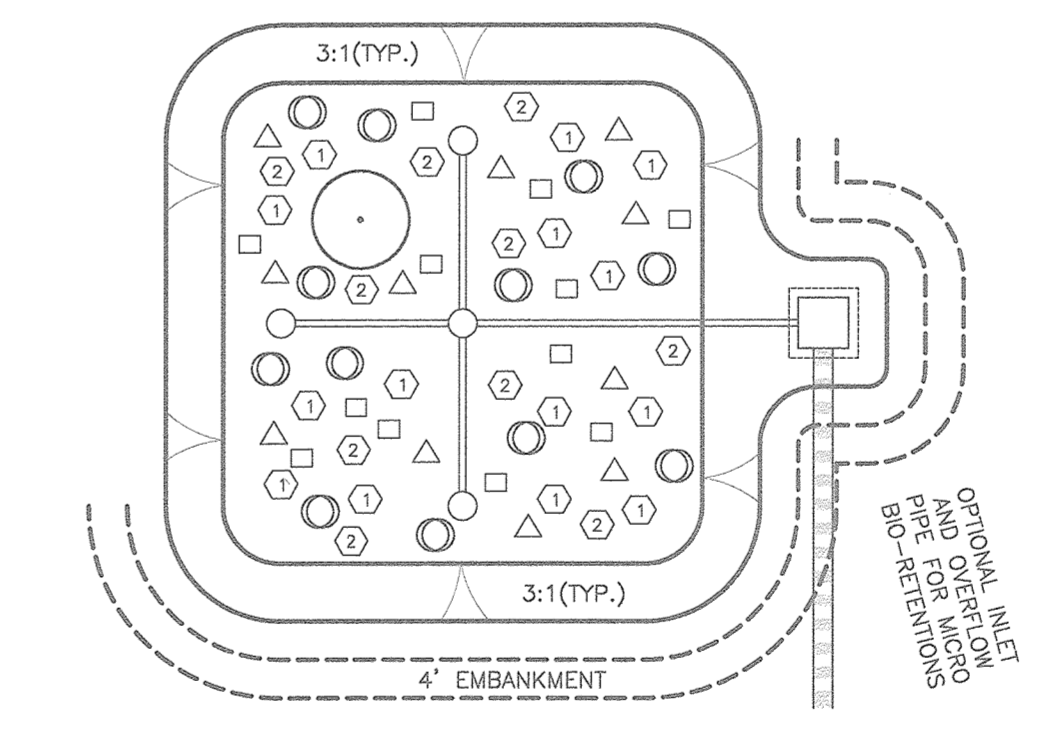
- Pipe- Should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTM F 758, Type PS 28, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).
- Perforations - If perforated pipe is used, perforations should be 1/4" diameter located 6" 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. 37 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 1,000 square feet) to provide a clean-out port and monitor performance of the filter.
- A 4" layer of pea gravel (1/4" to 3/4" stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24".

The 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).

Miscellaneous:
These practices may not be constructed until all contributing drainage area has been stabilized.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED (M-3) LANDSCAPE INFILTRATION (M-6) MICRO-BIORETENTION

- The Owner shall maintain the plant material, mulch layer and soil layer annually. Maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning. Acceptable replacement plant material is limited to the following: 2000 Maryland Stormwater Design Manual Volume II, Table A.4.1 and 2.
- The Owner shall perform a plant inspection in the spring and in the fall of each year. During the inspection, the Owner shall remove dead and diseased vegetation considered beyond treatment, replace dead plant material with acceptable replacement plant material, treat diseased trees and shrubs, and replace all deficient stakes and wires.
- The Owner shall inspect the mulch each spring. The mulch shall be replaced every two to three years. The previous mulch layer shall be removed the new layer is applied.
- The Owner shall correct soil erosion on an as needed basis, with a minimum of once per month and after each heavy storm.



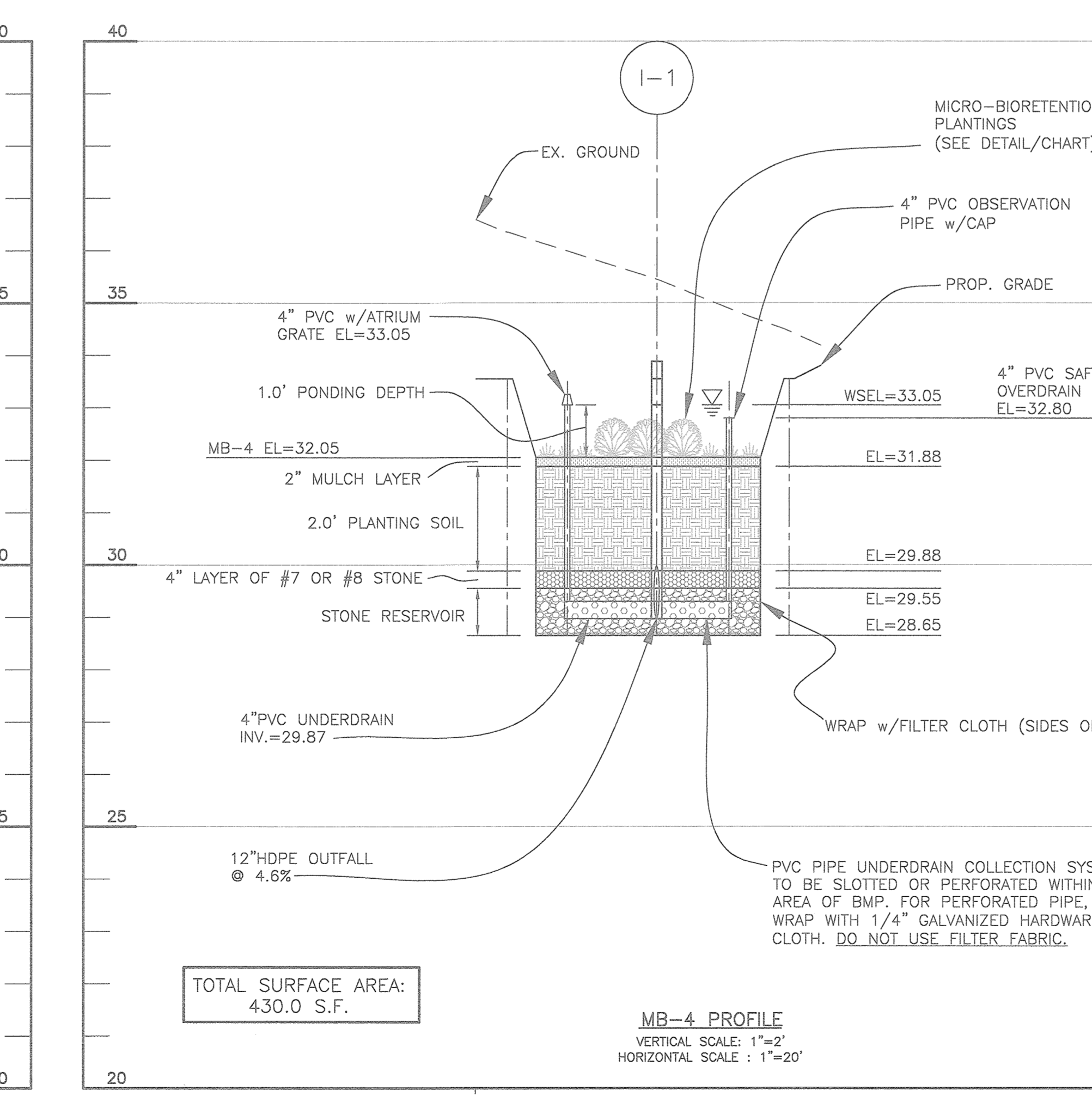
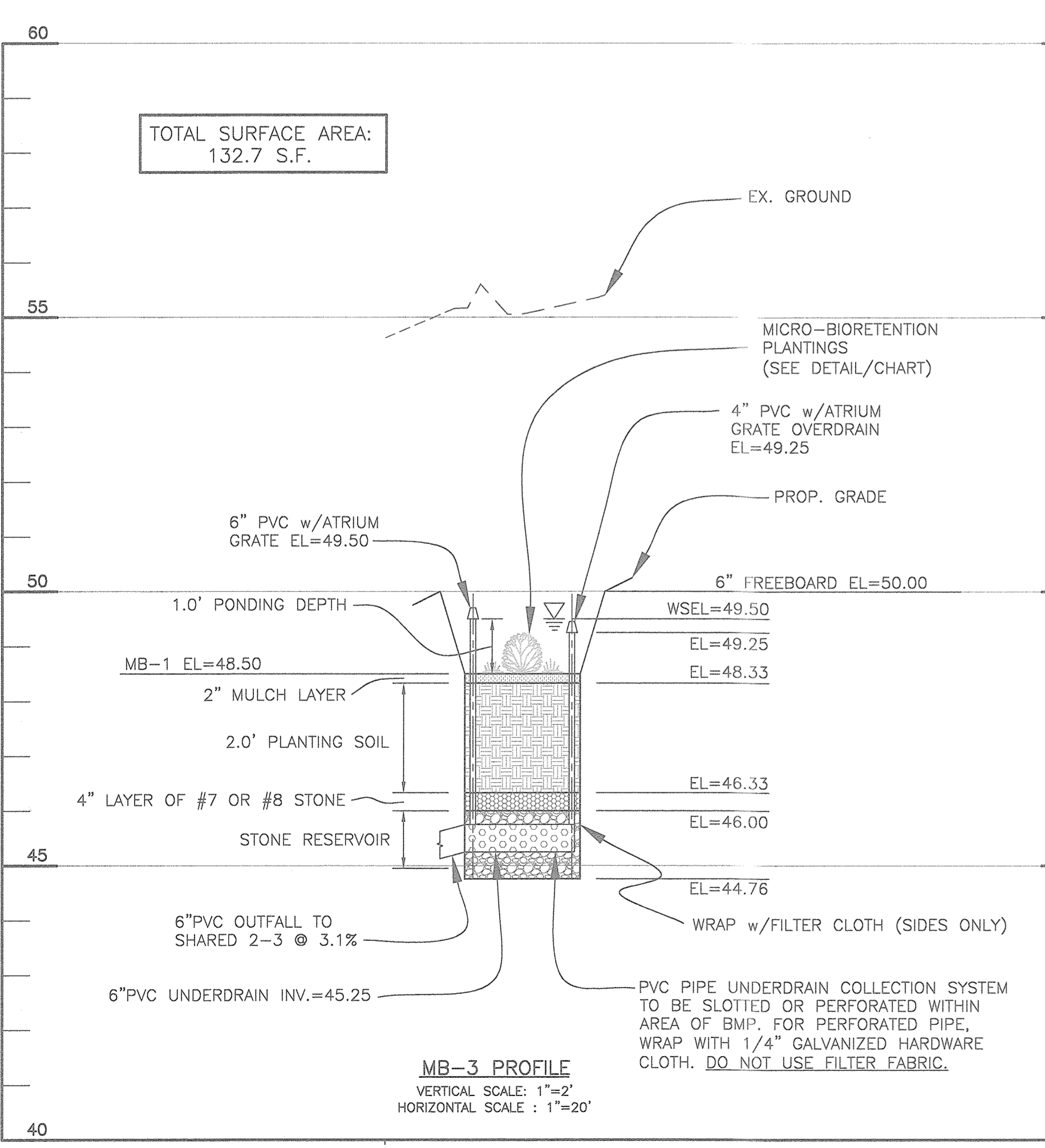
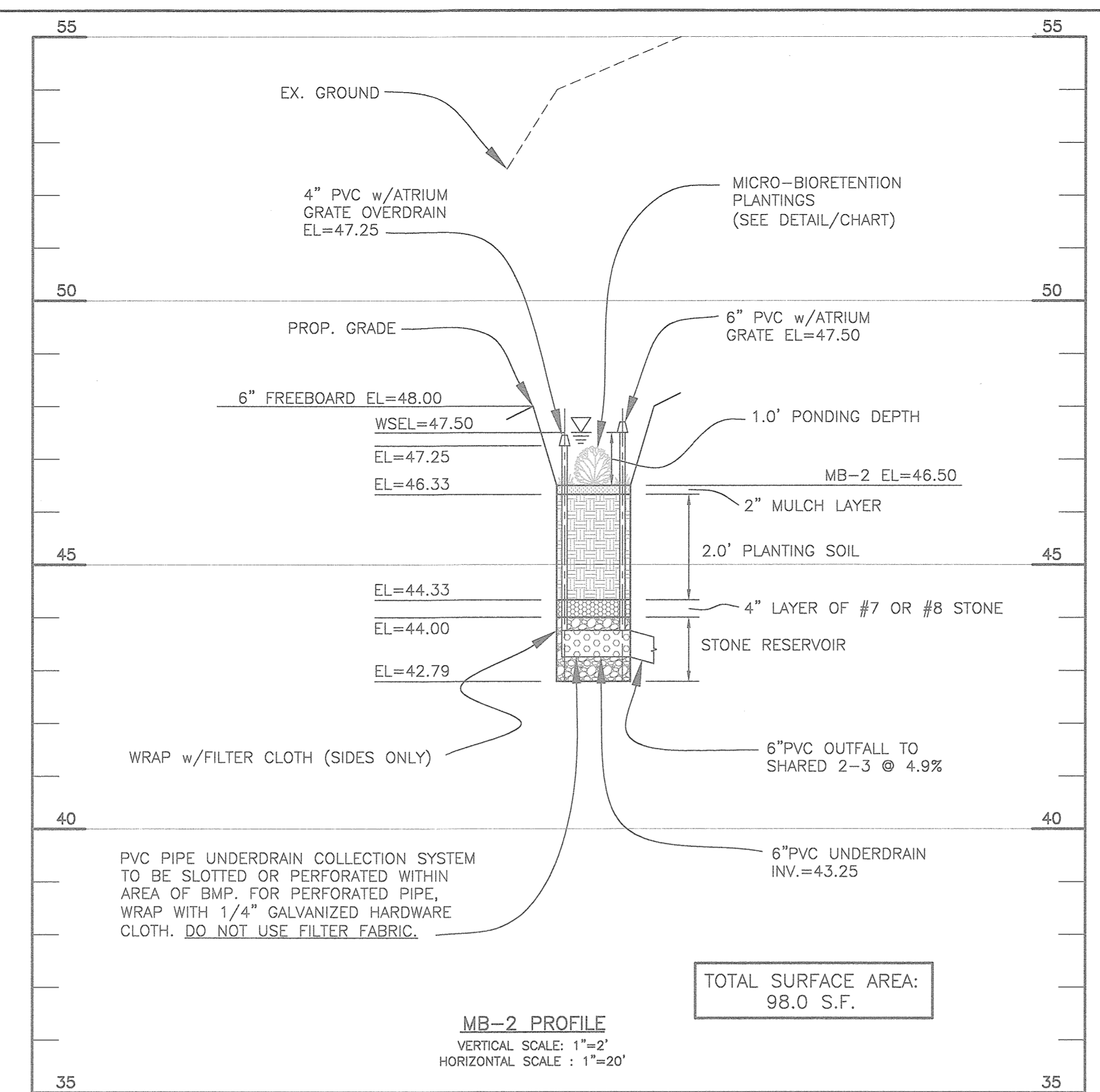
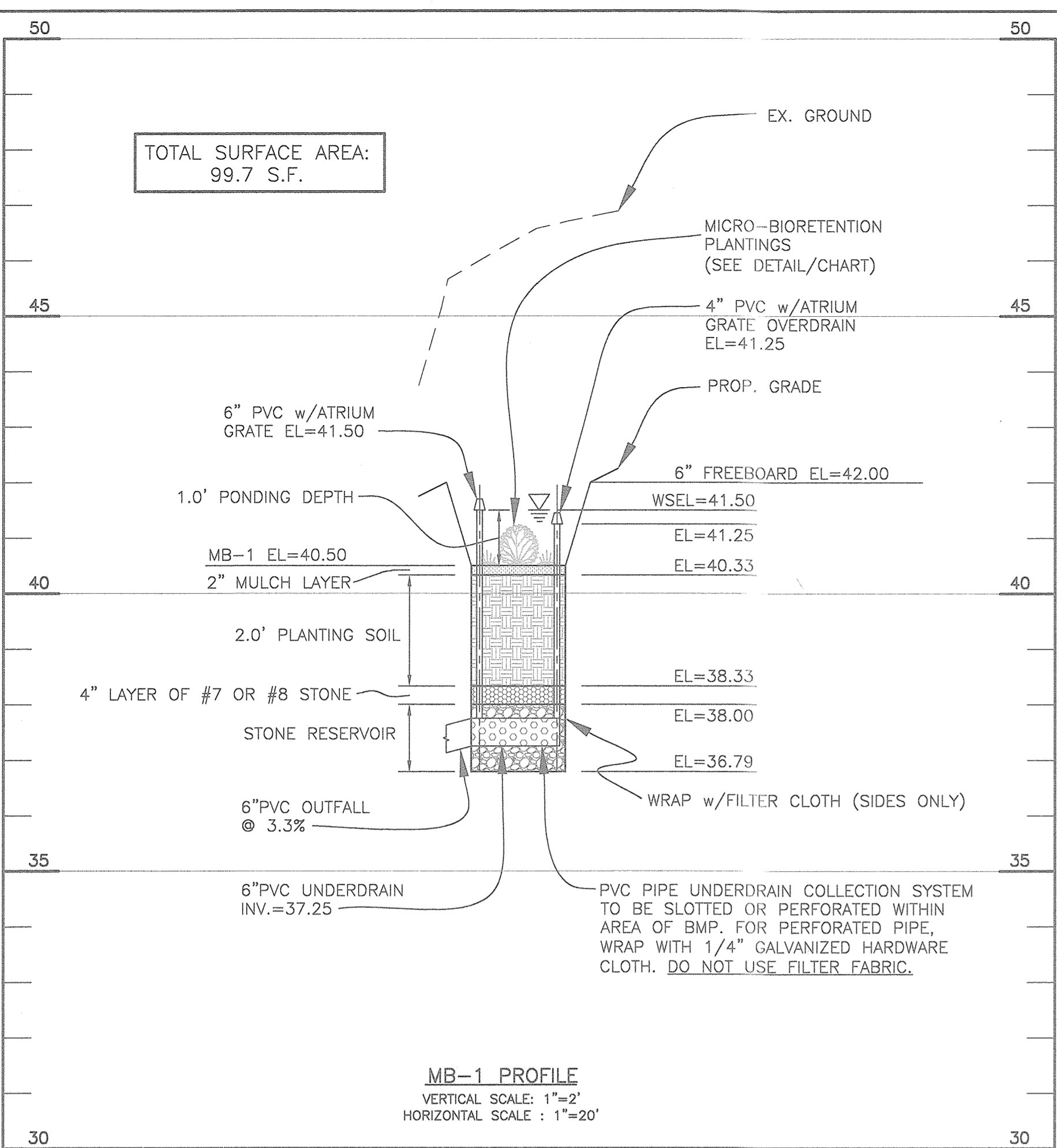
PLANTING LEGEND

SYMBOL	NAME
①	LOBELIA CARDINALIS
②	LOBELIA SIPHILITICA
□	CAREX STRICTA
△	IRIS VERSICOLOR
○	LIATRIS SPICATA
●	ILEX VERTICILLATA

SCHEMATIC PLANTING DETAIL FOR (M-6) PRACTICES
NOT TO SCALE

(M-6) Micro Bio-Retention Landscaping Chart

PLANT NAME	COMMON NAME	TYPE	SIZE	Surface Area					TOTAL
				MB-1	MB-2	MB-3	MB-4	1630.5	
Ilex verticillata	Common Winterberry	shrub	2.5'-3' ht	2	3	3	8	16	
Lobelia cardinalis	Cardinal flower	perennial herbaceous plant	quart bulb	17	17	22	52	109	
Lobelia siphilitica	Great Blue Lobelia	perennial herbaceous plant	quart bulb	17	17	22	52	109	
Carex stricta	Uplight Sedge	grass	quart bulb	17	17	22	52	109	
Irises versicolor	Blue Water Iris	perennial herbaceous plant	quart bulb	17	17	22	52	109	
Liatis spicata	Prairie Gay Feather	perennial herbaceous plant	quart bulb	17	17	22	52	109	



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 3-8-19 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 3-13-19 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT

NO.	DATE	REVISION
 8480 BALTIMORE NATIONAL PIKE A SUITE 315 A ELLICOTT CITY, MARYLAND 21043 (P) 410-485-8105 (F) 410-485-6844 WWW.BEI-CVLENGINEERING.COM		
OWNER: GT FAMILY HOMES I, LLC 6800 DEERPATH ROAD SUITE 100 ELKCRIDGE, MARYLAND 21075 410-592-2442		HOBS OVERLOOK LOTS 1 thru 3; A SUBDIVISION OF TAX MAP 38 PARCEL 598 TAX MAP: 38 - GRID: 04 - PARCEL: 598 ZONED: R-12 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND
DEVELOPER: H&H ROCK COMPANIES 6800 DEERPATH ROAD SUITE 100 ELKCRIDGE, MARYLAND 21075 410-592-2442		STORMWATER MANAGEMENT PROFILES, NOTES, & DETAILS DATE: FEBRUARY, 2019 BEI PROJECT NO. 2860 SCALE: AS SHOWN SHEET 5 OF 9

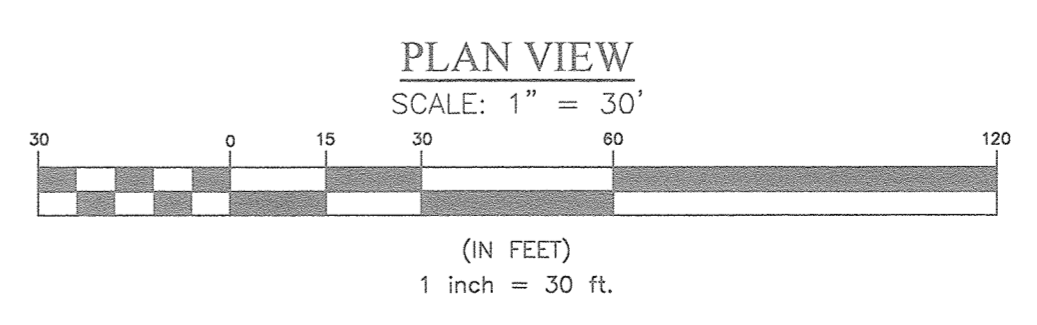


STORM DRAIN DRAINAGE AREA CHART					
INLET #	ZONING (Z)	AREA (Ac) (A)	"C" FACTOR (C)<25	"C" FACTOR (C)>25	% IMPERVIOUS (P)
HW-2	R-12	1.33	0.38	0.44	29.0
I-1	R-12	0.06	0.36	0.47	38.0
I-2	R-12	0.29	0.57	0.70	59.4

LEGEND

SOILS CLASSIFICATION	AbC
SOILS DELINEATION	---
EXISTING CONTOURS	---
PROPOSED CONTOURS	---
EXISTING VEGETATIVE LINE	~~~~~
PROPOSED VEGETATIVE LINE	~~~~~
EXISTING STRUCTURE	[]
PROPOSED STRUCTURE	[]
EXISTING PERPETUAL EASEMENT FOR INCREASED 100-YR FLOODPLAIN (MDSHA)	[]
PRIVATE DRAINAGE, SWM & UTILITY EASEMENT	[]
PROPOSED IMPERVIOUS AREAS	[]

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND					
SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALTERNATE GROUP	NAME	k-VALUE
CrD		C		CRROOM AND EVESBORO SOILS, 10 TO 15 PERCENT SLOPES	0.28/0.15
RsB		C		RUSSETT FINE SANDY LOAM, 2 TO 5 PERCENT SLOPES	0.24

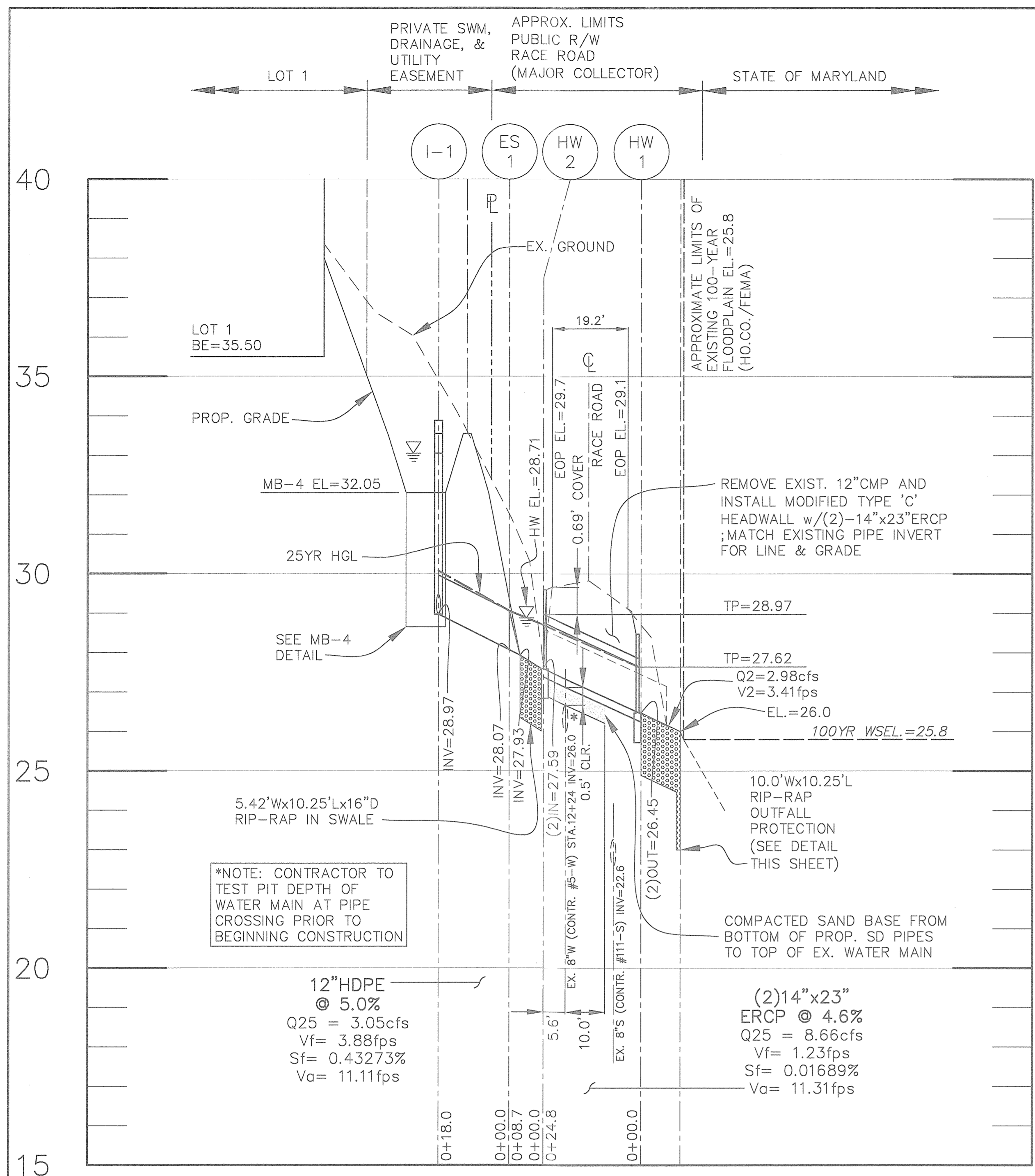


APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

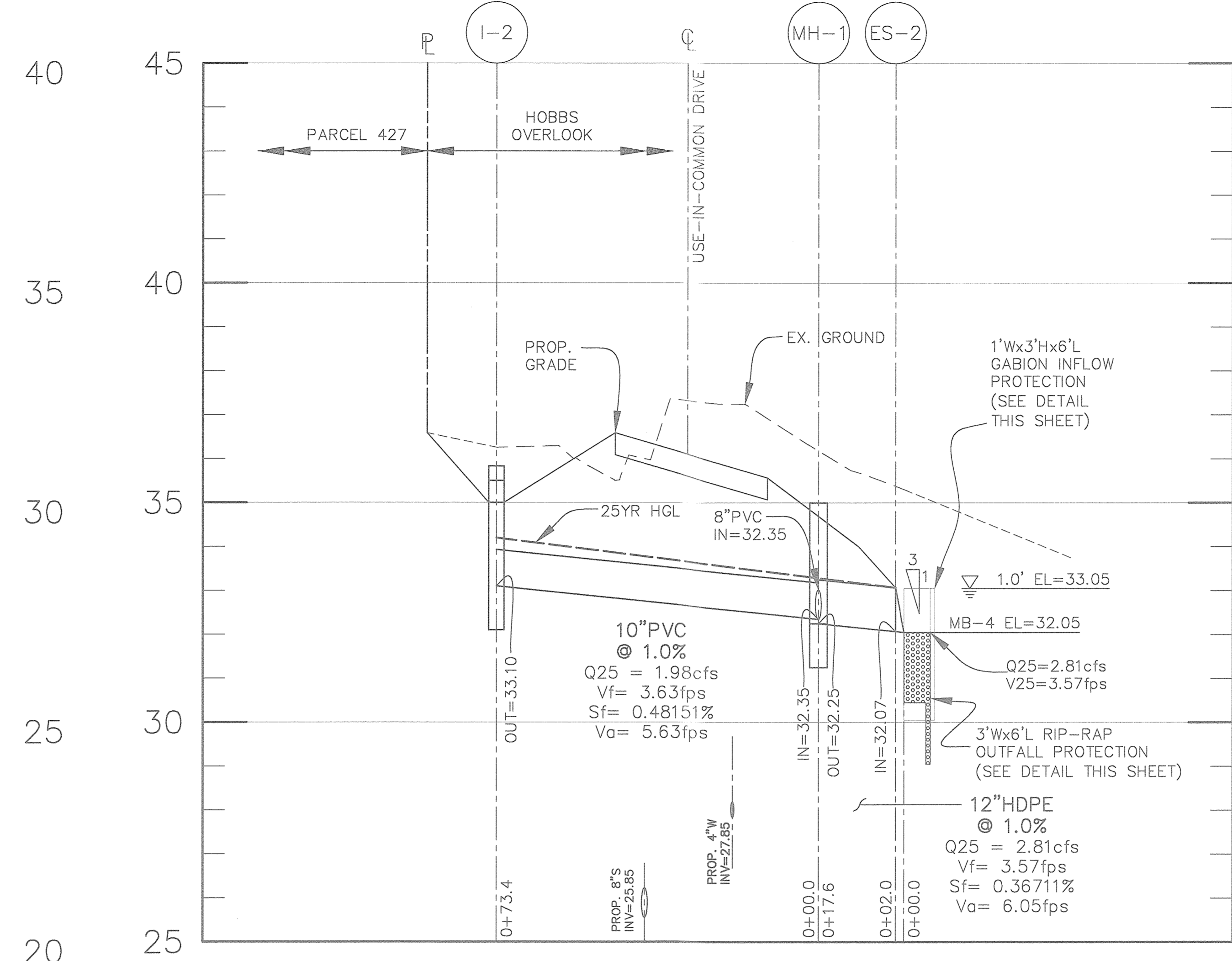
Howard 3-8-19
 CHIEF, DEVELOPMENT ENGINEERING DIVISION JP DATE

Kent 3-13-19
 CHIEF, DIVISION OF LAND DEVELOPMENT GS DATE

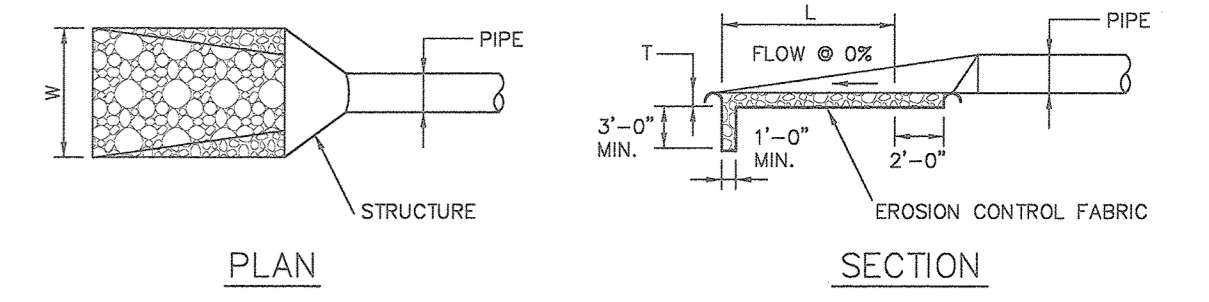
NO. DATE REVISION	
BENCHMARK ENGINEERING, INC. 6460 BALTIMORE NATIONAL PIKE & SUITE 315 A ELLICOTT CITY, MARYLAND 21043 (P) 410-465-8105 (F) 410-465-6844 WWW.BEI-CMLEENGINEERING.COM	
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 22336, Expiration Date: 6-30-2019.	
OWNER:	HOBBS OVERLOOK LOTS 1 thru 3; A SUBDIVISION OF TAX MAP 38 PARCEL 598
DEVELOPER:	TAX MAP: 38 - GRID: 04 - PARCEL: 598 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND
STORM DRAINAGE AREA MAP, NOTES & DETAILS	
DATE:	FEBRUARY, 2019 BEI PROJECT NO. 2860
DESIGN: MCR DRAFT: MCR	SCALE: AS SHOWN SHEET 6 OF 9



**STORM DRAIN PROFILE
MB-1 THRU TWIN 15" HDPE CULVERT**
VERTICAL SCALE: 1"=2'
HORIZONTAL SCALE: 1"=20'



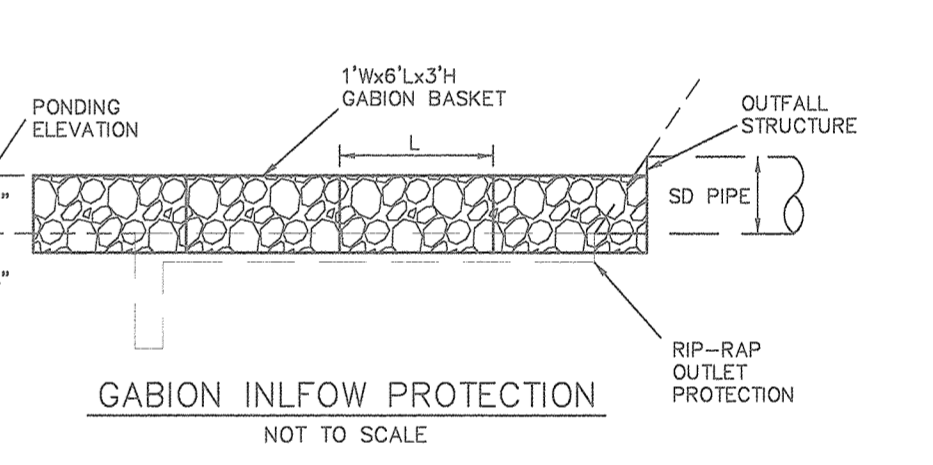
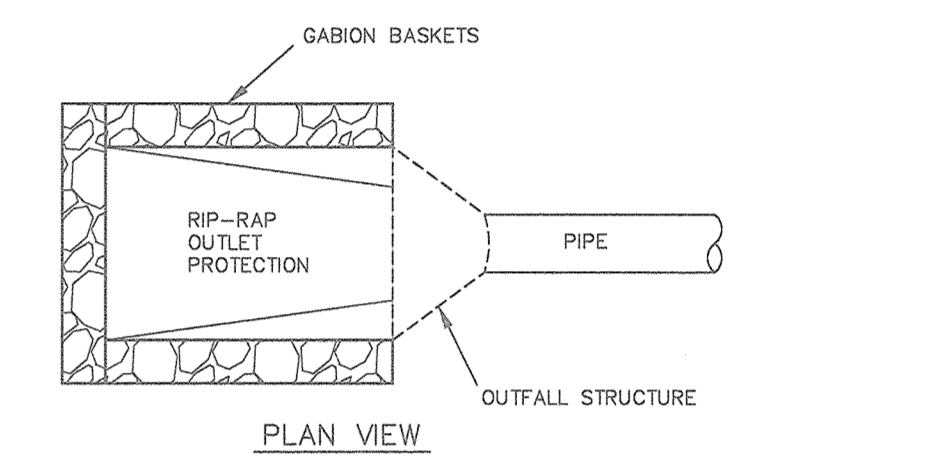
**STORM DRAIN PROFILE (PRIVATE)
I-2 (SWALE TO MB-1)**
VERTICAL SCALE: 1"=2'
HORIZONTAL SCALE: 1"=20'



STRUCTURE	d50	LENGTH(L)	WIDTH(W)	THICK(T)	SHA CLASS
ES-1	9.5'	6' @ 0%	3' @ 0%	19"	I
HW-2	9.5'	10.25' @ 0%	10.0' @ 4.8%	19"	I

OUTLET PROTECTION DETAIL
NOT TO SCALE

- CONSTRUCTION SPECIFICATIONS**
1. THE SUBGRADE FOR THE FILTER, RIP-RAP, OR GABIION SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
 2. THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED RESPECTIVELY IN THE RIP-RAP OR FILTER.
 3. GEOTEXTILE CLASS C28 OR BETTER SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE REPAIRED BY PLACING ANOTHER PIECE OF GEOTEXTILE FABRIC OVER THE DAMAGED AREA OR BY COMPLETELY REPLACING THE GEOTEXTILE FABRIC. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC SHALL BE A MINIMUM OF ONE FOOT.
 4. STONE FOR THE RIP-RAP OR GABIION OUTLETS MAY BE PLACED BY EQUIPMENT. THEY SHALL BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. THE STONE FOR THE RIP-RAP OR GABIION OUTLETS SHALL BE BELIEVED AND PLACED IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. RIP-RAP SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE FILTER, BLANKET OR GEOTEXTILE FABRIC. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.
 5. THE STONE SHALL BE PLACED SO THAT IT BLENDS IN WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN THE FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.



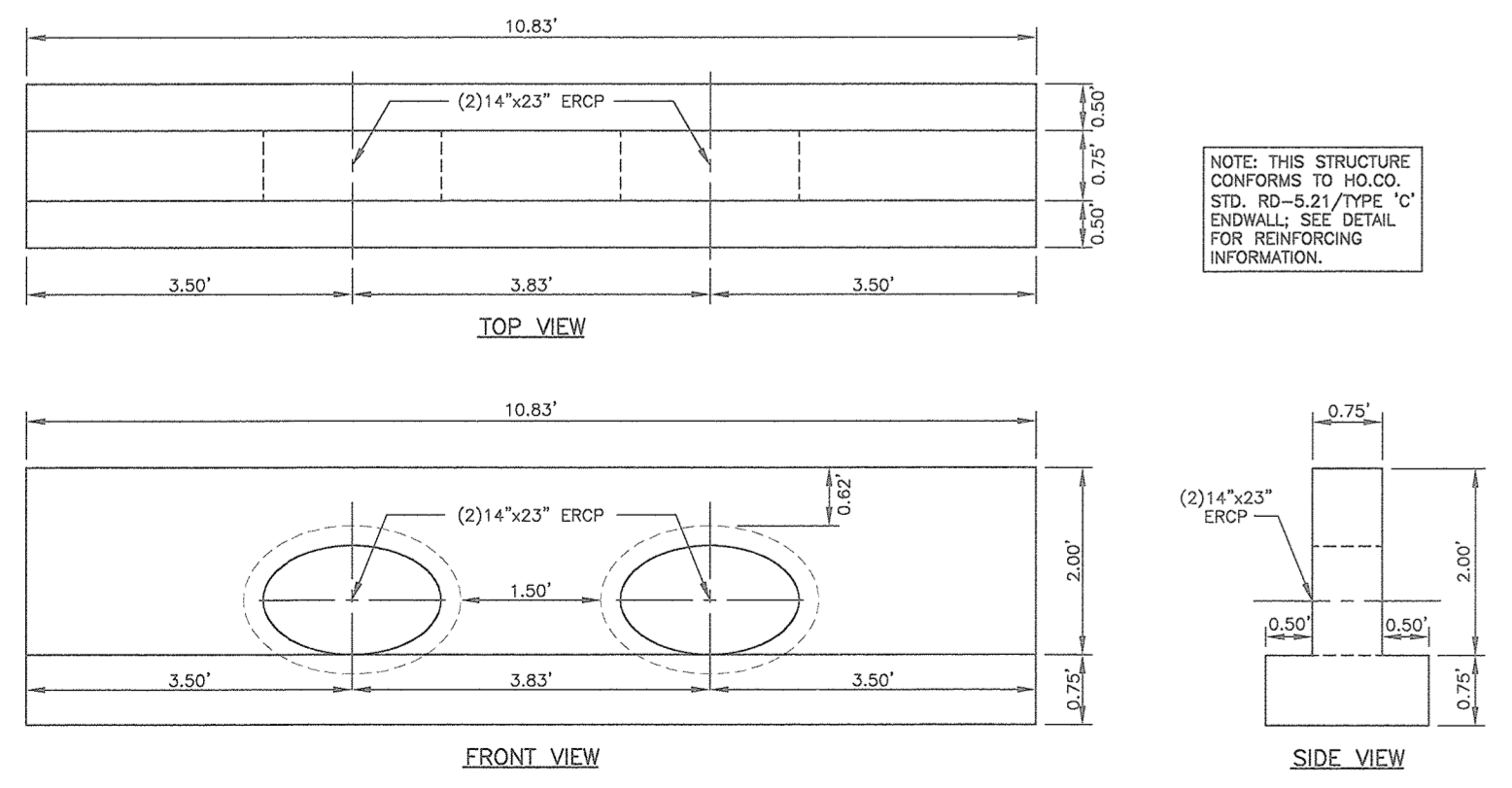
GABIION INFLOW PROTECTION
NOT TO SCALE

SIZE	TYPE	LENGTH (L.F.)	MAINTENANCE
14"x23"	ERCPC	49.6	PUBLIC
12"	HDPE	19.6	PRIVATE
10"	PVC	73.4	PRIVATE
8"	PVC	181.3	PRIVATE
6"	PVC	2.7	PRIVATE
4"	PVC	72.5	PRIVATE

All hdpe pipes shall have smooth interior. No interior corrugations.

STRUCTURE	TYPE	LOCATION	INVERT IN	INVERT OUT	TOP ELEV.	THROAT ELEV.	STD. DETAIL	MAINTENANCE
INLETS								
I-1	'D' Pre-Cast	N 562,515.83 E 1,395,577.79	-	-	28.97	33.88	D-4.10	PRIVATE
I-2	'D' Pre-Cast	N 562,622.03 E 1,395,548.55	-	-	33.00	35.83	D-4.10	PRIVATE
TD-1	NDS Trench Drain	N 562,566.03 E 1,395,585.54	-	-	32.40	34.00	Manufacturer Specs.	PRIVATE
MANHOLES								
MH-1	4'dia. Pre-Cast	N 562,554.22 E 1,395,576.50	32.35	32.35	32.25	-	G-5.12	PRIVATE
END SECTIONS								
ES-1	HDPE End Section	N 562,504.89 E 1,395,592.09	28.03	-	28.00	29.03	Manufacturer Specs.	PRIVATE
ES-2	HDPE End Section	N 562,537.63 E 1,395,583.03	32.10	-	32.05	33.10	Manufacturer Specs.	PRIVATE
HEADWALLS								
HW-1	Modified Type 'C'	N 562,499.63 E 1,395,598.97	27.59	27.59	-	29.59	See Detail	PUBLIC
HW-2	Modified Type 'C'	N 562,484.57 E 1,395,618.66	-	-	28.45	28.45	See Detail	PUBLIC

STRUCTURE LOCATION FOR MANHOLES IS AT THE CENTER OF THE MANHOLE RIM.
STRUCTURE LOCATION FOR END SECTIONS IS AT THE CONNECTION OF THE PIPE AND THE STRUCTURE
STRUCTURE LOCATION FOR HEADWALLS IS AT THE MIDPOINT OF THE FACE OF THE STRUCTURE
PRECAST STRUCTURES MEETING HS-20 LOADING MAY BE USED.



MODIFIED HEADWALL DETAIL
SCALE: 1"=2'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 3.8.19 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 3.13.19 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT

NO.	DATE	REVISION

BENCHMARK ENGINEERS, INC.
 ENGINEERS - LAND SURVEYORS - PLANNERS
 6840 BALTIMORE NATIONAL PIKE SUITE 315 • ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-6844
 WWW.BEI-CVLENGINEERING.COM

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. 22390, Expiration Date: 6-30-2019.

OWNER:
 GT FAMILY HOMES I, LLC
 6800 DEERPATH ROAD
 SUITE 100
 ELKRIDGE, MARYLAND 21075
 410-592-2442

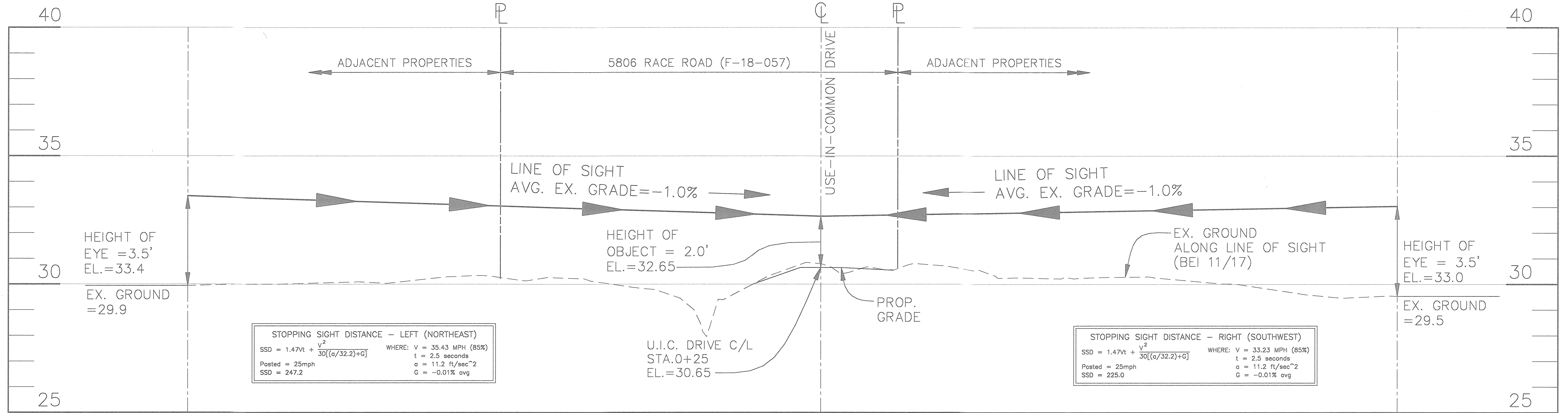
HOBBS OVERLOOK
 LOTS 1 thru 3; A SUBDIVISION OF
 TAX MAP 38 PARCEL 598

DEVELOPER:
 H&H ROCK COMPANIES
 6800 DEERPATH ROAD
 SUITE 100
 ELKRIDGE, MARYLAND 21075
 410-592-2442

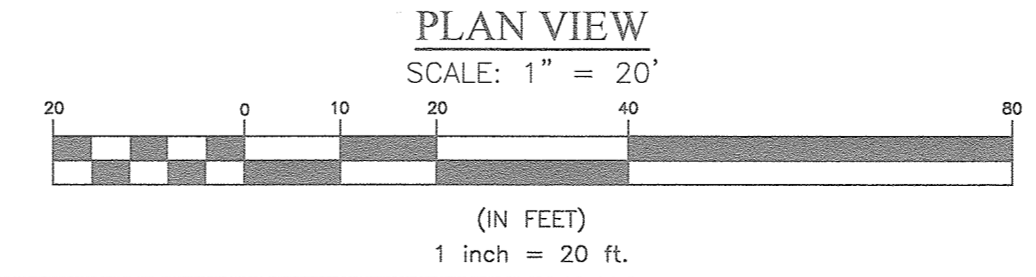
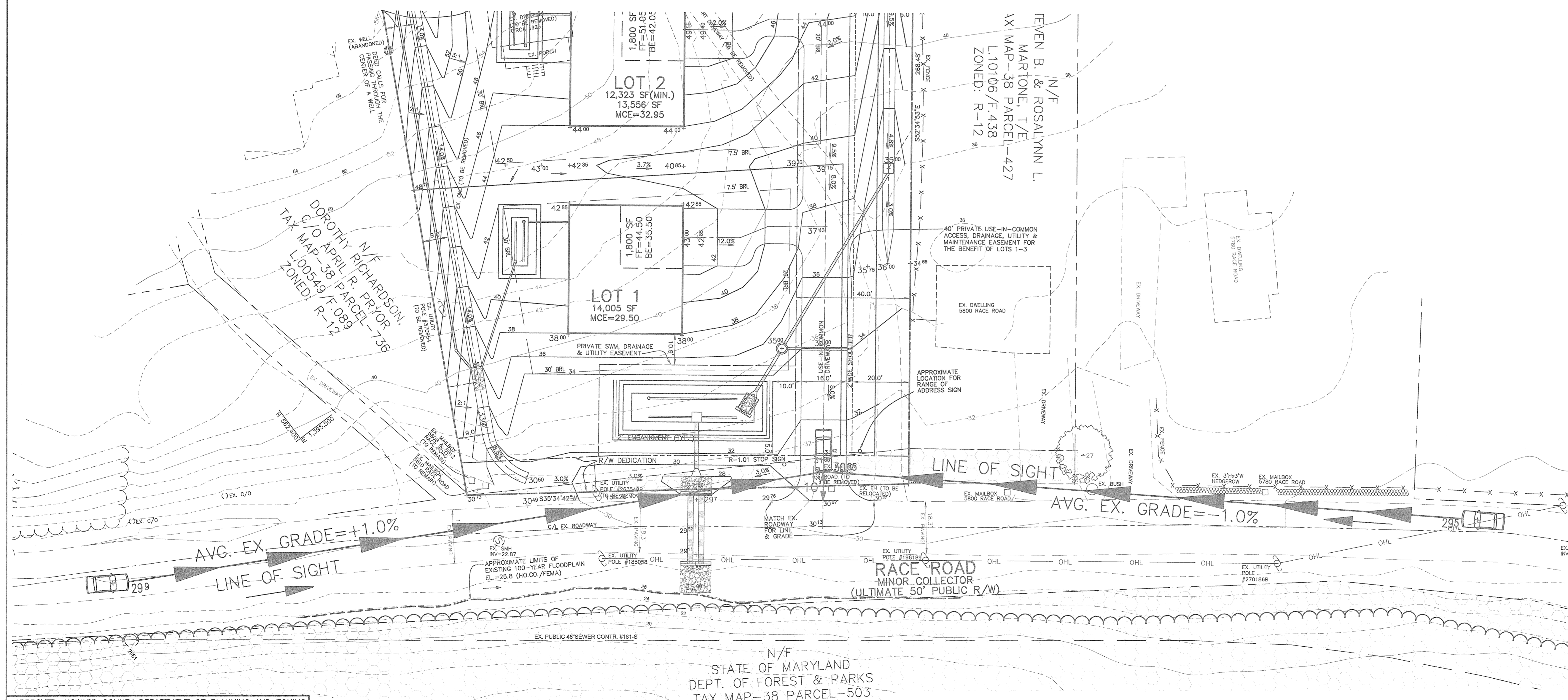
TAX MAP: 38 - GRID: 04 - PARCEL: 598
 ZONED: R-12
 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

DATE: FEBRUARY, 2019
 SCALE: AS SHOWN

BEI PROJECT NO. 2860
 SHEET 7 OF 9



SIGHT DISTANCE ANALYSIS - PROFILE
 VERTICAL SCALE: 1" = 2'
 HORIZONTAL SCALE: 1" = 20'

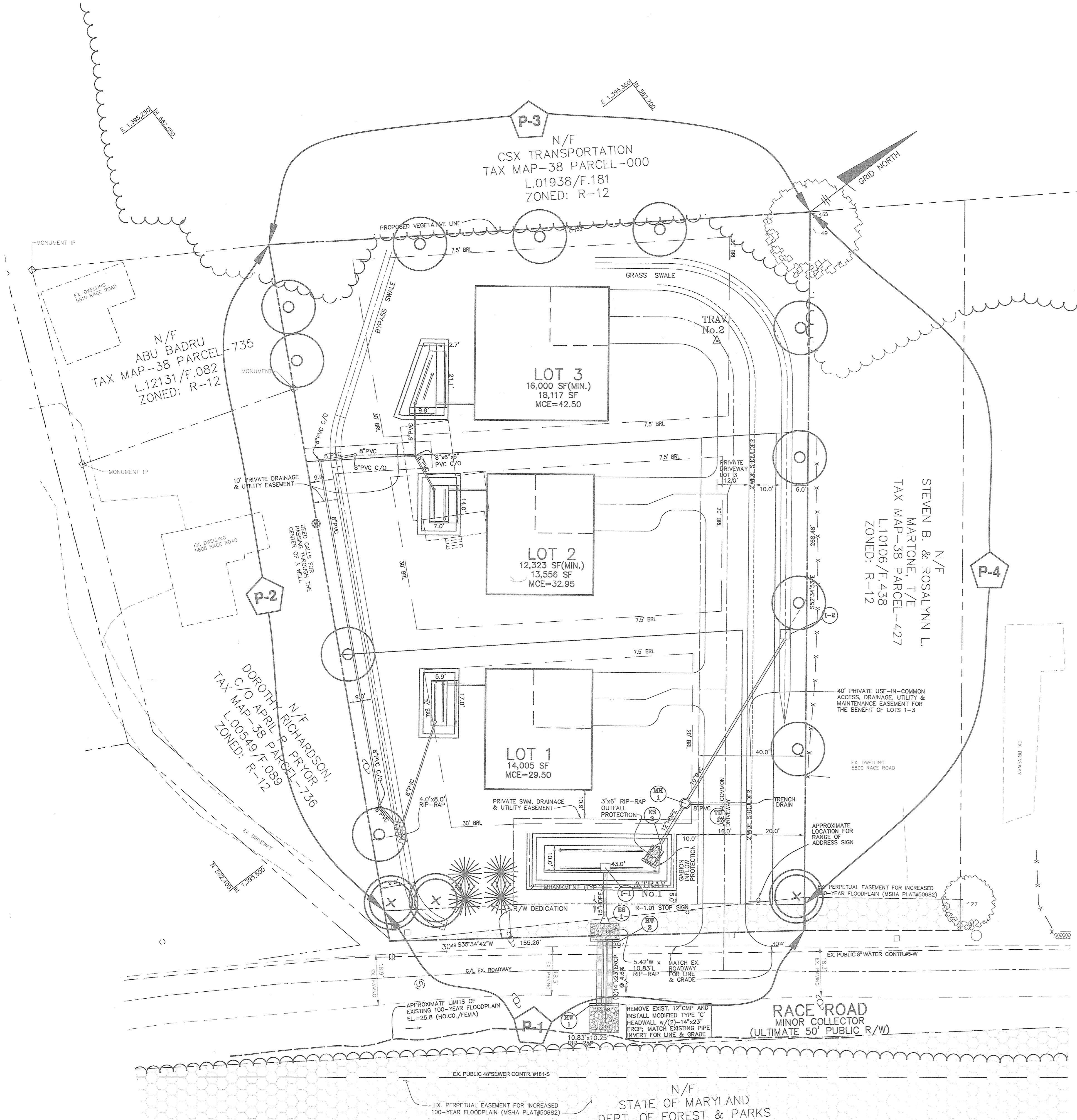


APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 3-8-19 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 3-13-19 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT

NO.	DATE	REVISION

BENCHMARK
 ENGINEERS - LAND SURVEYORS - PLANNERS
ENGINEERING, INC.
 8480 BALTIMORE NATIONAL PIKE SUITE 315 • ELLICOTT CITY, MARYLAND 21043
 (P) 410-485-8105 (F) 410-465-6644
 WWW.BEI-CIVILENGINEERING.COM

OWNER: GT FAMILY HOMES I, LLC 6800 DEERPATH ROAD SUITE 100 ELKRIDGE, MARYLAND 21075 410-592-2442	HOBBS OVERLOOK LOTS 1 thru 3; A SUBDIVISION OF TAX MAP 38 PARCEL 598 TAX MAP: 38 - GRID: 04 - PARCEL: 598 ZONED: R-12 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND
DEVELOPER: H&H ROCK COMPANIES 6800 DEERPATH ROAD SUITE 100 ELKRIDGE, MARYLAND 21075 410-592-2442	
DESIGN: MCR DRAFT: MCR	SIGHT DISTANCE ANALYSIS DATE: FEBRUARY, 2019 BEI PROJECT NO. 2860 SCALE: AS SHOWN SHEET 8 OF 9

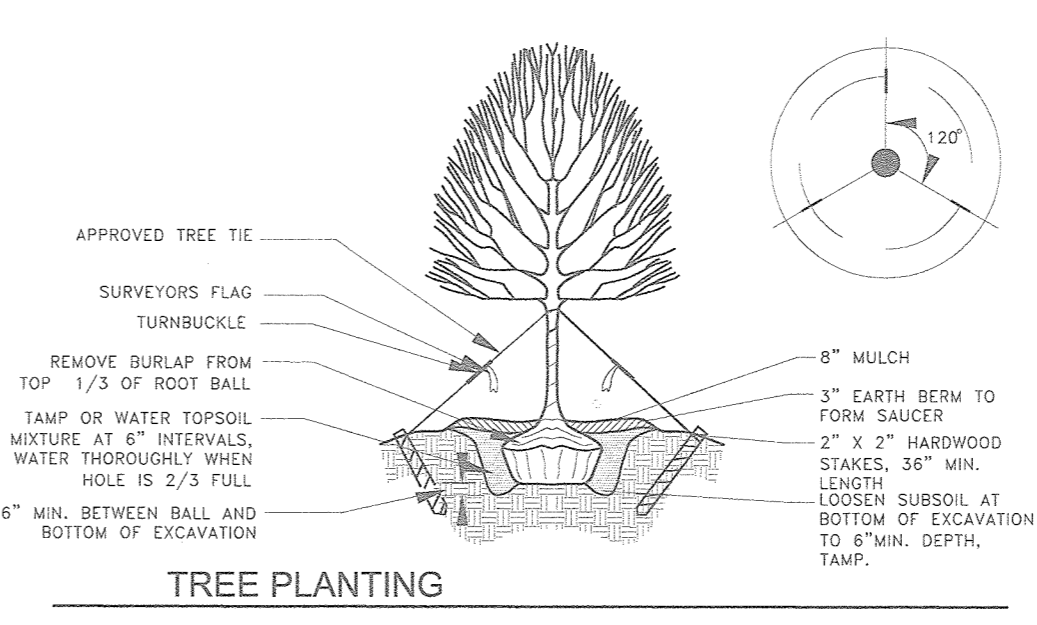
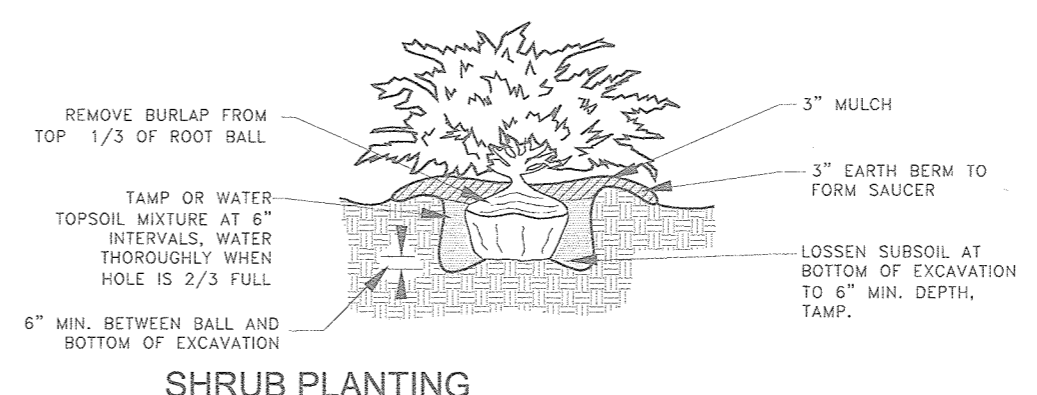
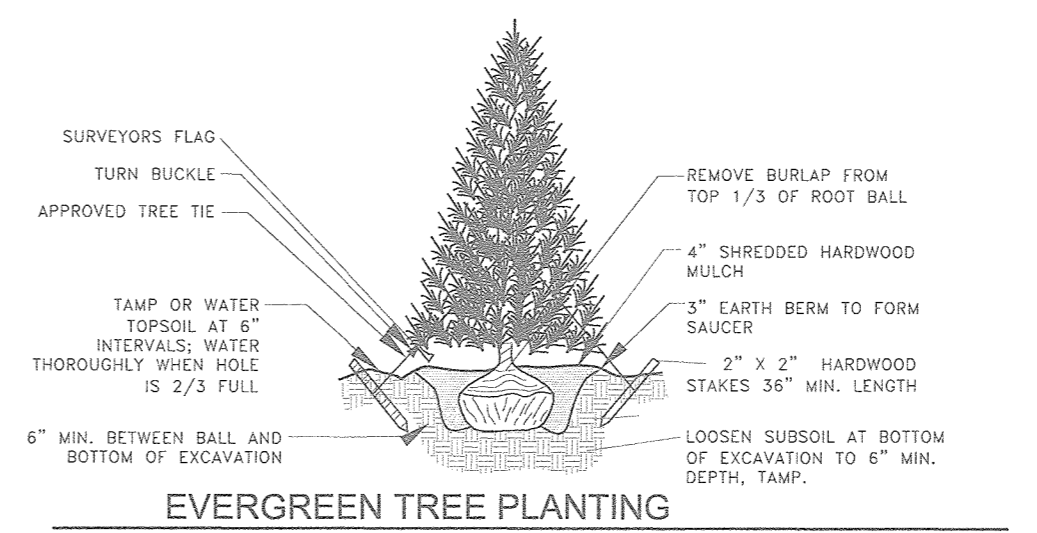


SCHEDULE A PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAY	YES	NO	NO	NO
PERIMETER NO.	ADJACENT TO PERIMETER PROPERTIES	NO	YES	YES	YES
LANDSCAPE TYPE		1:50	1:80	1:80	1:80
LINEAR FEET OF PERIMETER (FROM EDGE/ROADWAY)		157.3	252.6	203.1	258.7
CREDIT FOR EXISTING VEGETATION:					
NO OR YES (✓/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)		NO	NO	NO	NO
CREDIT FOR WALL, FENCE OR BERM:					
NO OR YES (✓/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)		NO	NO	NO	NO
TOTALS					
NUMBER OF PLANTS REQUIRED:					
SHADE TREES		3	4	3	4
EVERGREEN TREES		4	0	0	0
OTHER TREES (2:1 SUBSTITUTE)		0	0	0	0
SHRUBS		0	0	0	0
NUMBER OF PLANTS PROVIDED:					
SHADE TREES		3	4	3	4
EVERGREEN TREES		4	0	0	0
OTHER TREES (2:1 SUBSTITUTE)		0	0	0	0
SHRUBS (10:1 SUBSTITUTE) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)		0	0	0	0

PERIMETER LANDSCAPE PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS
○	11	QUERCUS RUBRA (Northern Red Oak)	2-1/2" - 3" cal.
+	3	ACER RUBRUM ARMSTRONG (Armstrong Columnar Red Maple)	2-1/2" - 3" cal.
☼	4	PINUS STROBUS (Eastern White Pine)	6" - 8" ht.



LANDSCAPING NOTES

- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
- THE LANDSCAPING SHOWN ON THIS PLAN IS PICTORIAL FOR REQUIREMENT PURPOSES ONLY. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING IN THE AMOUNT OF \$4,800 FOR 14 SHADE TREES & 4 EVERGREEN TREES, SHALL BE POSTED WITH THE APPROVED LS PLAN UNDER THE SUBSEQUENT SDP.
- THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION AND WHEN NECESSARY, REPAIRED OR REPLACED.
- AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.

FOREST CONSERVATION WORKSHEET
VERSION 1.0
(Enter in Yellow Cells)

NET TRACT AREA:

A. Total tract area	=	1.09
B. Area within 100 year floodplain	=	0.00
C. Area to remain in agricultural production	=	0.00
D. Net tract area	=	1.09

LAND USE CATEGORY: (from table 3.2.1, page 40, Manual)

Input the number "1" under the appropriate land use zoning, and limit to only one entry.

ARA	MDR	IDA	HDR	MPD	CIA
0	0	0	1	0	0

E. Afforestation Threshold	15% x D =	0.20
F. Conservation Threshold	20% x D =	0.20

EXISTING FOREST COVER:

G. Existing forest cover (excluding floodplain)	=	0.00
H. Area of forest above afforestation threshold	=	0.00
I. Area of forest above conservation threshold	=	0.00

BREAK EVEN POINT (BEP):

J. Forest retention above threshold with no mitigation (BEP)	=	0.00
K. Clearing permitted without mitigation	=	0.00

PROPOSED FOREST CLEARING:

L. Total area of forest to be cleared	=	0.00
M. Total area of forest to be retained	=	0.00

PLANTING REQUIREMENTS:

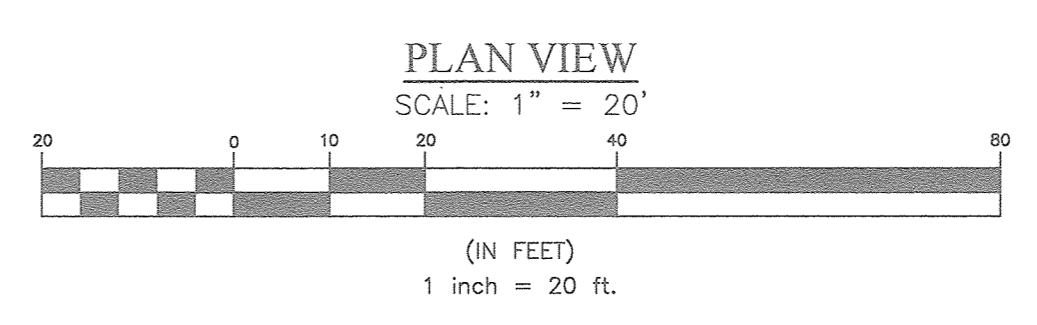
N. Reforestation for clearing above conservation threshold	=	0.00	1.0 ⁿ	1.0 ⁿ
P. Reforestation for clearing below conservation threshold	=	0.00		
Q. Credit for retention above conservation threshold	=	0.00		
R. Total reforestation required	=	0.00	1.0 ⁿ	1.0 ⁿ
S. Total afforestation required	=	0.20		
T. Total reforestation and afforestation required	=	0.20		

SEE SHEET 5 FOR INTERNAL ESD/SWM PLANTINGS

OWNER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION OF A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

GT FAMILY HOMES I, LLC
DATE: 2/14/19



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 3-8-19

Chief
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 3-13-19

N/F
STATE OF MARYLAND
DEPT. OF FOREST & PARKS
TAX MAP-38 PARCEL-503
L.01219/F.221
ZONED: R-12

NO.	DATE	REVISION

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer in the State of Maryland, License No. 12-19-19.

BENCHMARK ENGINEERS, INC.
ENGINEERS, LAND SURVEYORS, PLANNERS
8480 BALTIMORE NATIONAL PIKE SUITE 315 • ELLICOTT CITY, MARYLAND 21043
(P) 410-485-8105 (F) 410-485-6644
WWW.BEI-CVLENGINEERING.COM

HOBBS OVERLOOK
LOTS 1 thru 3; A SUBDIVISION OF TAX MAP 38 PARCEL 598
TAX MAP: 38 - GRID: 04 - PARCEL: 598
ZONED: R-12
ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

LANDSCAPING PLAN & FOREST CONSERVATION

OWNER: GT FAMILY HOMES I, LLC
6800 DEERPATH ROAD SUITE 100 ELK RIDGE, MARYLAND 21075 410-592-2442

DEVELOPER: H&H ROCK COMPANIES
6800 DEERPATH ROAD SUITE 100 ELK RIDGE, MARYLAND 21075 410-592-2442

DATE: FEBRUARY, 2019 BEI PROJECT NO. 2860
DESIGN: MCR DRAFT: MCR SCALE: AS SHOWN SHEET 9 OF 9