

**SHEET INDEX**

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**ADDRESS CHART**

LOT	ADDRESS
1	6203 ELKRISE PLACE
2	6207 ELKRISE PLACE
3	6211 ELKRISE PLACE
4	6212 ELKRISE PLACE
5	6208 ELKRISE PLACE
6	6204 ELKRISE PLACE
7	6200 ELKRISE PLACE

**ESD - SWM PRACTICES**

LOT NUMBER	ADDRESS	MICRO BIO-RETENTION (M-B) QUANTITY	SURFACE SAND FILTER (S-F) QUANTITY	DRY WELLS (M-S)
1	6203 ELKRISE PLACE ELKRIDGE MD, 21075	1	0	0
2	6207 ELKRISE PLACE ELKRIDGE MD, 21075	1	0	0
3	6211 ELKRISE PLACE ELKRIDGE MD, 21075	1	0	0
4	6212 ELKRISE PLACE ELKRIDGE MD, 21075	1	0	1
5	6208 ELKRISE PLACE ELKRIDGE MD, 21075	1	0	0
7	6204 ELKRISE PLACE ELKRIDGE MD, 21075	1	0	0
O.S. 8	ELKRISE PLACE ELKRIDGE MD, 21075	0	1	0

**LEGEND**

PROPERTY BOUNDARY	---
ADJACENT PROPERTY OWNER	---
EXISTING EASEMENT	- - - -
PROPOSED EASEMENT	- . . . -
PROPOSED LOT LINE	---
SOILS CLASSIFICATION	Mo.D
SOILS DELINEATION	---
EXISTING WOODS LINE	~~~~~
PROPOSED TREE LINE	---
EXISTING WATER MAIN	---
EXISTING SEWER MAIN	---
EXISTING GAS LINE	---
EXISTING STORM DRAIN	---
PROPOSED STORM DRAIN	---
PROPOSED HOUSE	[Outline]

**SITE DATA TABULATION**

- GENERAL SITE DATA
  - PRESENT ZONING: R-12
  - LOCATION: TAX MAP 38 - GRID B - PARCEL 198
  - APPLICABLE DPZ FILE REFERENCES: ECP-18-026, S-18-004, WP-19-079, HPC-18-06, P-19-002, F-20-041, CONTR #14-5100-D
  - DEED REFERENCE: L17498 / F.00062  
PLAT REFERENCE: 25845-25846
  - PROPOSED USE OF SITE: 6 NEW SINGLE FAMILY DETACHED RESIDENCES, RETENTION OF 1 EXISTING SINGLE FAMILY DETACHED RESIDENCE.
  - PROPOSED WATER AND SEWER: PUBLIC WATER AND PUBLIC SEWER.
- AREA TABULATION
  - TOTAL AREA OF SITE.....2.32 Ac.±
  - AREA OF 100 YEAR FLOODPLAIN (APPROX.).....0.00 Ac.±
  - AREA OF STEEP SLOPES (25% OR GREATER).....0.09 Ac.±  
Less than 20,000 sf.
  - NET AREA OF SITE.....2.32 Ac.±
  - AREA OF THIS PLAN SUBMISSION.....2.32 Ac.±
  - LIMIT OF DISTURBANCE (APPROX.).....1.69 Ac.±
  - AREA OF PROPOSED BUILDABLE LOTS.....2.13 Ac.±
  - AREA OF OPEN SPACE LOTS.....0.19 Ac.±
  - AREA OF PROPOSED PUBLIC ROAD.....0.00 Ac.±
  - AREA OF PROPOSED PUBLIC R/W DEDICATION.....0.00 Ac.±

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

4-9-21 DATE  
 2/24/22 DATE  
 2/29/22 DATE

**SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND**

SYMBOL	HYDRIC	HYDROLOGIC GROUP / ALTERNATE GROUP	NAME	K-VALUE
RSC	C		RUSSETT FINE SANDY LOAM S TO 10 PERCENT SLOPES	0.49
RSB	C		RUSSETT FINE SANDY LOAM, TO 15 PERCENT SLOPES	0.43
UDB	D	B/C	URBAN LAND-CHILLUM-BELTSVILLE COMPLEX 0 TO 5 PERCENT SLOPES	0.37
UDC	D	B/C	URBAN LAND-CHILLUM-BELTSVILLE COMPLEX 5 TO 15 PERCENT SLOPES	0.37

\* INDICATES HYDRIC SOILS  
 \*\* HIGHLY ERODIBLE SOILS: SOILS WITH K OF 0.35 OR GREATER AND ON GRADES 5% OR STEEPER, OR SOILS ON GRADES 15% OR GREATER.  
 SOILS ARE TAKEN FROM THE NRCS WEB SOIL SURVEY APRIL 2017, MAP 20.

# SITE DEVELOPMENT PLAN

## ELKRISE HILL

### LOTS 1-7, OPEN SPACE LOT 8

### 1ST ELECTION DISTRICT

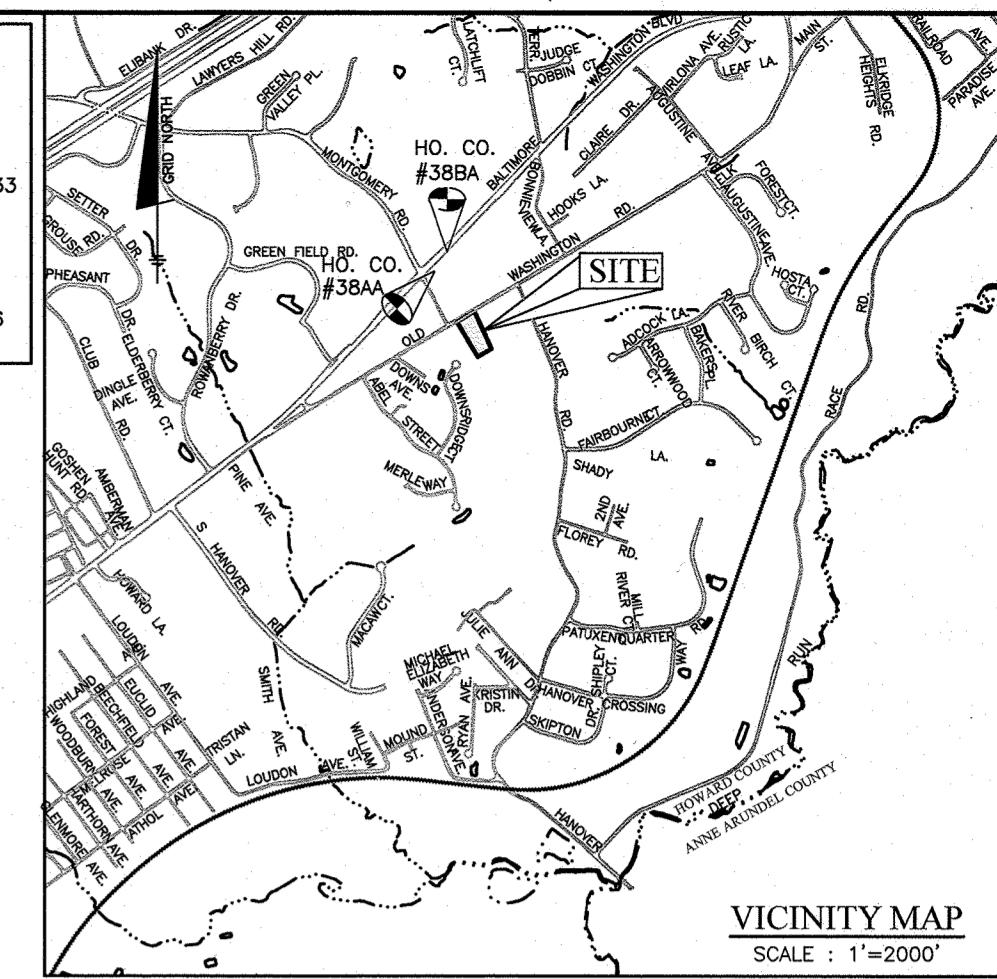
## HOWARD COUNTY, MARYLAND

**BOUNDARY COORDINATES**

POINT #	NORTHING	EASTING
1	56058.1055	1389972.6792
2	560685.7049	1390135.8054
3	560227.5017	1390408.6009
4	560130.5810	1390245.6660

**MINIMUM LOT SIZE CHART**

LOT NO.	GROSS AREA	PIPESTEM AREA	MIN. LOT SIZE
1	13,734 SF	1,202 SF	12,532 SF
2	13,365 SF	1,365 SF	12,000 SF
3	13,918 SF	1,826 SF	12,092 SF
4	13,535 SF	1,534 SF	12,001 SF
5	13,038 SF	1,028 SF	12,010 SF
6	13,044 SF	500 SF	12,544 SF



**GENERAL NOTES**

- THIS PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- SUBJECT PROPERTY ZONED R-12 PER THE 10-06-2013 COMPREHENSIVE ZONING PLAN.
- DEED REFERENCE: 17498/00062. PLAT REFERENCE: 25845-25846.
- THE EXISTING TOPOGRAPHY ON-SITE IS TAKEN FROM FIELD SURVEY WITH 2 FOOT CONTOUR INTERVALS PREPARED BY BENCHMARK ENGINEERING, INC. DATED APRIL, 2017. SURROUNDING TOPOGRAPHY IS TAKEN FROM HOWARD COUNTY GIS.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENTS NO. 38AA AND 38BA WERE USED FOR THIS PROJECT.
- PROJECT BOUNDARY IS BASED ON A FIELD RUN BOUNDARY SURVEY PERFORMED BY BENCHMARK ENGINEERING, INC. DATED APRIL, 2017.
- THIS LOT WILL UTILIZE A CUSTOM SEDIMENT AND EROSION PLAN SINCE THE LIMIT OF DISTURBANCE IS FOR MORE THAN ONE LOT.
- PUBLIC WATER MAIN WILL CONNECT TO CONTRACT 44-0906, DRAINAGE IS MIDDLE PATUXENT.
- PUBLIC SEWER MAIN WILL CONNECT TO CONTRACT 22-S, DRAINAGE IS MIDDLE PATUXENT.
- THERE IS ONE EXISTING DWELLING ON SITE ON LOT 6. IT IS TO BE RETAINED.
- EXISTING UTILITIES ARE BASED ON FIELD SURVEY LOCATIONS, CONTRACT DRAWINGS AND HOWARD COUNTY GIS.
- WATER AND SEWER SERVICE TO THESE LOTS WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 18.122-B OF THE HOWARD COUNTY CODE.
- PUBLIC WATER AND SEWER ALLOCATION WILL BE GRANTED AT TIME OF ISSUANCE OF BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
- A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- TRAFFIC STUDY WAS PREPARED BY MARS GROUP ON MAY 3, 2017 AND APPROVED UNDER THE REVIEW OF S-18-004.
- FREE FLOW SPEED STUDY WAS PREPARED BY MARS GROUP ON MAY 10, 2017 AND THE SIGHT DISTANCE ANALYSIS WAS APPROVED UNDER S-18-004.
- THE FOREST STAND DELINEATION WAS PERFORMED BY ECO-SCIENCE PROFESSIONALS, INC. THERE IS ONE SPECIMEN TREE LOCATED JUST OFF SITE AND THE TREE IS TO REMAIN. THE FSD WAS APPROVED UNDER S-18-004.
- THERE ARE NO WETLANDS, STREAMS, THEIR REQUIRED BUFFERS, 100-YEAR FLOODPLAIN OR STEEP SLOPES LOCATED ON THE SITE.
- TO THE BEST OF OUR KNOWLEDGE AND BELIEF THERE ARE NO CEMETERIES ON-SITE. THE EXISTING DWELLING ON-SITE IS HISTORIC AND IS LISTED ON THE HISTORIC SITES INVENTORY AS HO-803 AS PART OF THE OLD WASHINGTON ROAD SURVEY DISTRICT.
- EOP-18-026 WAS APPROVED BY DEVELOPMENT ENGINEERING DIVISION PER LETTER DATED APRIL 23, 2018. THE ORIGINAL MYLARS WERE SIGNED ON 10/17/18.
- THE REQUIRED PRESUBMISSION COMMUNITY MEETING WAS HELD ON MARCH 12, 2018 AT 6:00PM AT MELVILLE CHAPEL LMC.
- THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT AND PUBLIC WATER AND SEWER SHALL BE UTILIZED WITHIN THIS DEVELOPMENT.
- A PRIVATE RANGE OF ADDRESS SIGN ASSEMBLY SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE PER FINAL CONSTRUCTION PLANS F-20-041.
- THE FOREST CONSERVATION REQUIREMENTS FOR THIS SUBDIVISION HAVE BEEN ADDRESSED PRIOR TO RECORDATION OF THE FINAL SUBDIVISION PLAT AND WERE PROVIDED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.1200 OF THE SUBDIVISION REGULATIONS AND FOREST CONSERVATION MANUAL. THE FOREST CONSERVATION OBLIGATION FOR THIS SUBDIVISION WAS SATISFIED BY THE USE OF AN OFFSITE MITIGATION BANK AT PARCEL 2, PROPERTY OF FOREVER A FARM, LLC, FOREST MITIGATION BANK PLAN, SDP-14-005. FOREST MITIGATION, IN THE AMOUNT OF 2.4 ACRES, AT THE FOREST BANK (FULFILLING 1.2 ACRES OF OBLIGATION) WILL FULFILL THE FOREST OBLIGATION FOR THIS PROJECT. THE USE OF THE FOREST BANK WILL BE PROCESSED AS A REDLINE REVISION TO THE SDP-14-005 PLAN. THIS PLAN IS GRANDFATHERED TO THE FOREST CONSERVATION REGULATIONS IN EFFECT PRIOR TO COUNCIL BILL CB62-2019 ACCORDING TO SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, SECTION 16.102(H) BECAUSE A PRELIMINARY PLAN, P-19-002, WAS APPROVED ON AUGUST 19, 2019.
- THIS DEVELOPMENT WAS APPROVED AS IN ACCORDANCE WITH SECTION 16.127 - RESIDENTIAL INFILL DEVELOPMENT - OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. THE DEVELOPER OF THIS PROJECT CREATES COMPATIBILITY WITH THE EXISTING NEIGHBORHOOD THROUGH THE USE OF ENHANCED PERIMETER LANDSCAPING, BERMS, FENCES, SIMILAR HOUSING UNIT TYPES AND THE DIRECTIONAL ORIENTATION OF THE PROPOSED HOUSES.
- THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL 45-2003 AND THE ZONING REGULATIONS, AS AMENDED BY COUNCIL BILL 75-2003. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION, OR BUILDING/GRADING PERMIT.
- LANDSCAPING FOR LOTS 1-8 WAS PROVIDED IN ACCORDANCE WITH A CERTIFIED LANDSCAPE PLAN INCLUDED WITH THE ROAD CONSTRUCTION PLAN SET; IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING IN THE AMOUNT OF \$8,700 FOR 25 SHADE TREES AND 8 EVERGREEN TREES, WAS POSTED IN ACCORDANCE WITH THE APPROVED FINAL LANDSCAPE PLAN. SURETY FOR THE EXISTING 6 STREET TREES WAS POSTED WITH THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$2,250.00 UNDER F-20-041.
- THE PROJECT IS SUBJECT TO SECTION 13.402 OF THE COUNTY CODE FOR MODERATE INCOME HOUSING UNITS (MIHU).
- THERE ARE HIGHLY ERODIBLE SOILS WITHIN THE PROPERTY LIMITS.
- OPEN SPACE LOT 8 IS NON-CREDITED AND OPEN SPACE REQUIREMENTS WERE PROVIDED WITH A FEE-IN-LIEU OF OPEN SPACE OF \$1500 PER LOT FOR SIX LOTS UNDER F-20-041, PER RECREATION AND PARKS REVIEW. A TOTAL FEE-IN-LIEU OF \$9,000.00 WAS PAID.
- THIS PLAN WENT BEFORE THE HISTORIC PRESERVATION COMMISSION FOR ADVISORY COMMENTS ON FEBRUARY 1, 2018 IN CASE HPC-18-06. THE COMMENTS OFFERED INCLUDE A REQUEST TO MOVE THE PROPOSED DRIVEWAY FURTHER FROM THE EAST SIDE OF THE HISTORIC STRUCTURE. THE DRIVEWAY HAS BEEN RECONFIGURED. THE HOUSE AND BUILDING ARE TO REMAIN. HISTORIC SITE INVENTORY NUMBER HO-803.
- THE R1-1 ("STOP") SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
- ANY TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MMUTCD).
- ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2-1/2" GALVANIZED STEEL PERFORATED "QUICK PUNCH", SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- 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 THE START OF WORK.
- UTILITIES TO THE EXISTING HOUSE MAY HAVE TO BE RELOCATED IN ORDER TO PROVIDE SERVICE TO THE HOUSE WHEN NOT BEING LOCATED ON DIFFERENT LOT OR WITHIN.
- A DESIGN MANUAL WAIVER TO SECTION 2.6.A, 2.6.B AND APPENDIX 'A' FROM THE DESIGN MANUAL VOLUME III TO ALLOW A TOTAL OF 7 LOTS TO ACCESS OLD WASHINGTON ROAD VIA A 16' PRIVATE USE-IN-COMMON DRIVEWAY HAS BEEN APPROVED SUBJECT TO SUFFICIENT SIGHT DISTANCE PROVIDED AT OLD WASHINGTON ROAD AND APPROVAL DATE BY HOWARD COUNTY DPW IS MARCH 26, 2019.
- ALTERNATIVE COMPLIANCE, WP-19-079, TO SECTION 16.920(C)(2), TO ALLOW LOT 7 ACCESS TO THE PUBLIC ROAD VIA EASEMENTS THROUGH LOT 6 AND OPEN SPACE LOT 8 INSTEAD OF REQUIRING AN ADDITIONAL ACCESS POINT USING LOT 7'S ROAD FRONTAGE, WAS CONDITIONALLY APPROVED BY THE DIRECTOR OF PLANNING AND ZONING ON JUNE 7, 2019. THE CONDITIONS OF APPROVAL ARE:
  - INDICATE THIS ALTERNATIVE COMPLIANCE FILE NUMBER (WP-19-079), SECTIONS, REQUEST, ACTION, DATE AND CONDITIONS OF APPROVAL ON ALL SUBMITTED PLANS, INCLUDING P-19-002.
  - COMPLIANCE WITH ANY CONDITIONS AND COMMENTS FROM DPW REGARDING APPROVAL OF THE DESIGN MANUAL WAIVER TO ALLOW 7 USERS ON A PRIVATE USE-IN-COMMON DRIVEWAY.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS OF FIRE AND EMERGENCY VEHICLE PER THE FOLLOWING MINIMUM REQUIREMENTS:
  - WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE);
  - SURFACE - 6 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MINIMUM);
  - GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND 45 FOOT TURNING RADIUS;
  - STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H2S LOADING);
  - DRAINAGE ELEMENTS - SAFELY PASSING THE 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE;
  - MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE.
- THE PRIVATE MAINTENANCE ACCESS AGREEMENT FOR LOTS 1-7 AND FOR LOTS 6 AND 7 WAS RECORDED SIMULTANEOUSLY WITH THE RECORDATION OF THE PLAT. SEE L. 20928 F. 137.
- FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND A ROAD RIGHT-OF-WAY LINE AND NOT INTO THE PIPESTEM LOT DRIVEWAY.
- STORMWATER MANAGEMENT SHALL BE PROVIDED FOR THIS PROJECT BASED ON GUIDELINES ESTABLISHED BY THE 2008 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II AS AMENDED BY THE STORMWATER MANAGEMENT ACT OF 2007. ENVIRONMENTAL SITE DESIGN METHODS SHALL BE UTILIZED, INCLUDING MICRO-BIOTRETENTION (M-B), AND DRY WELLS (M-S) PRACTICES.
- IF THERE ARE ANY EXISTING WELLS OR SEPTIC SYSTEMS ON THE PROPERTY THEY MUST BE PROPERLY ABANDONED WITH DOCUMENTATION SUBMITTED TO THE HEALTH DEPARTMENT.
- DPZ RELATED FILE NUMBERS: ECP-18-026, S-18-004, P-19-002, WP-19-079, HPC-18-06, F-20-041, CONTR. #14-5100-D
- THERE IS AN EXISTING DWELLING/STRUCTURE(S) ON LOT 6 TO REMAIN. NO NEW BUILDINGS, EXTENSIONS OR ADDITIONS TO THE EXISTING DWELLING ARE TO BE CONSTRUCTED AT A DISTANCE LESS THAN THE ZONING REGULATION REQUIREMENTS.
- THE OPEN SPACE WAS DEDICATED TO A PROPERTY OWNERS ASSOCIATION FOR THE RESIDENTS OF THIS SUBDIVISION AND RECORDING REFERENCES OF THE ARTICLES OF INCORPORATION AND RESTRICTIONS ARE SHOWN ON THE FINAL PLAT.
- IN ACCORDANCE WITH SECTION 128.0 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS, OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS, PORCHES, OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK.

**MODERATE INCOME HOUSING UNITS (MIHU) ALLOCATION EXEMPTIONS TRACKING**

Total Number of Lots/Units Proposed	7
Number of MIHU Required	0.7
Number of MIHU Provided Onsite (exempt from APFO allocations)	0
Number of APFO Allocations Required (remaining lots/units)	6
MIHU Fee-in-Lieu (indicate lot/unit numbers)	1-5, 7

**PERMIT INFORMATION CHART**

SUBDIVISION NAME:	SECTION/AREA:	PARCEL:
ELKRISE HILL LOTS 1 - 7		198
DEED: L. 17498 F. 00062	BLOCK No. 08	ZONE: R-12
	TAX MAP: 38	ELECTION DISTRICT: 01
	CENSUS TRACT: 601201	

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. 65575, Expiration Date: 06-08-2022.

**BENCHMARK ENGINEERS & LAND SURVEYORS PLANNERS ENGINEERING, INC.**  
 8480 BALTIMORE NATIONAL PIKE SUITE 315 ELLICOTT CITY, MARYLAND 21043  
 (P) 410-465-6105 (F) 410-465-6644  
 WWW.BE-CIVILENGINEERING.COM

10/18/21

OWNER/BUILDER:  
 HARMONY BUILDERS INC  
 4228 COLUMBIA ROAD  
 ELLICOTT CITY, MD 21042  
 410-461-0833

**ELKRISE HILL**  
 LOTS 1-7 AND NON-CREDITED OPEN  
 SPACE LOT 8 (PLAT No. 25845-25846)

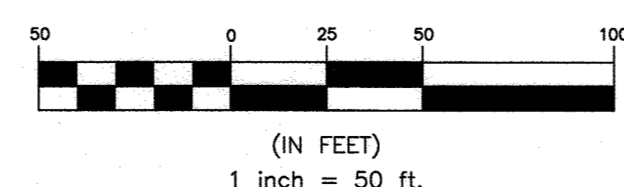
TAX MAP: 38, GRID: 08, PARCEL: 198, ZONED: R-12  
 ELKRIDGE, MD 21075  
 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

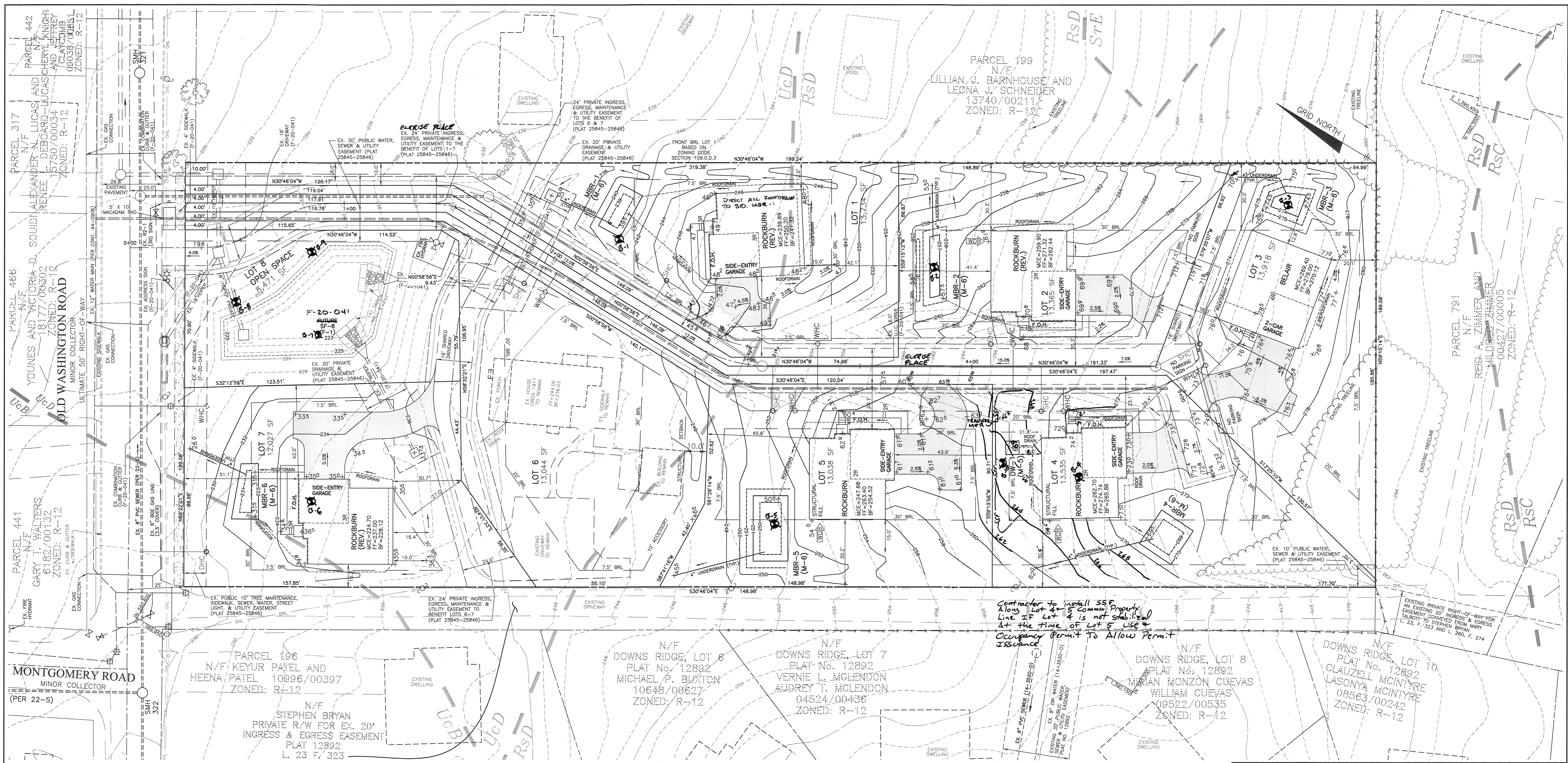
SITE DEVELOPMENT PLAN  
 COVER SHEET

RELEVANT FILE NUMBERS:  
 ECP-18-026, S-18-004, WP-19-079, P-19-002, HPC-18-06, F-20-041, CONTR. #14-5100-D

DATE: OCTOBER, 2021 BEI PROJECT NO: 2818  
 SCALE: AS SHOWN SHEET 1 OF 9

**PLAN VIEW**





APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

11/9/22 DATE

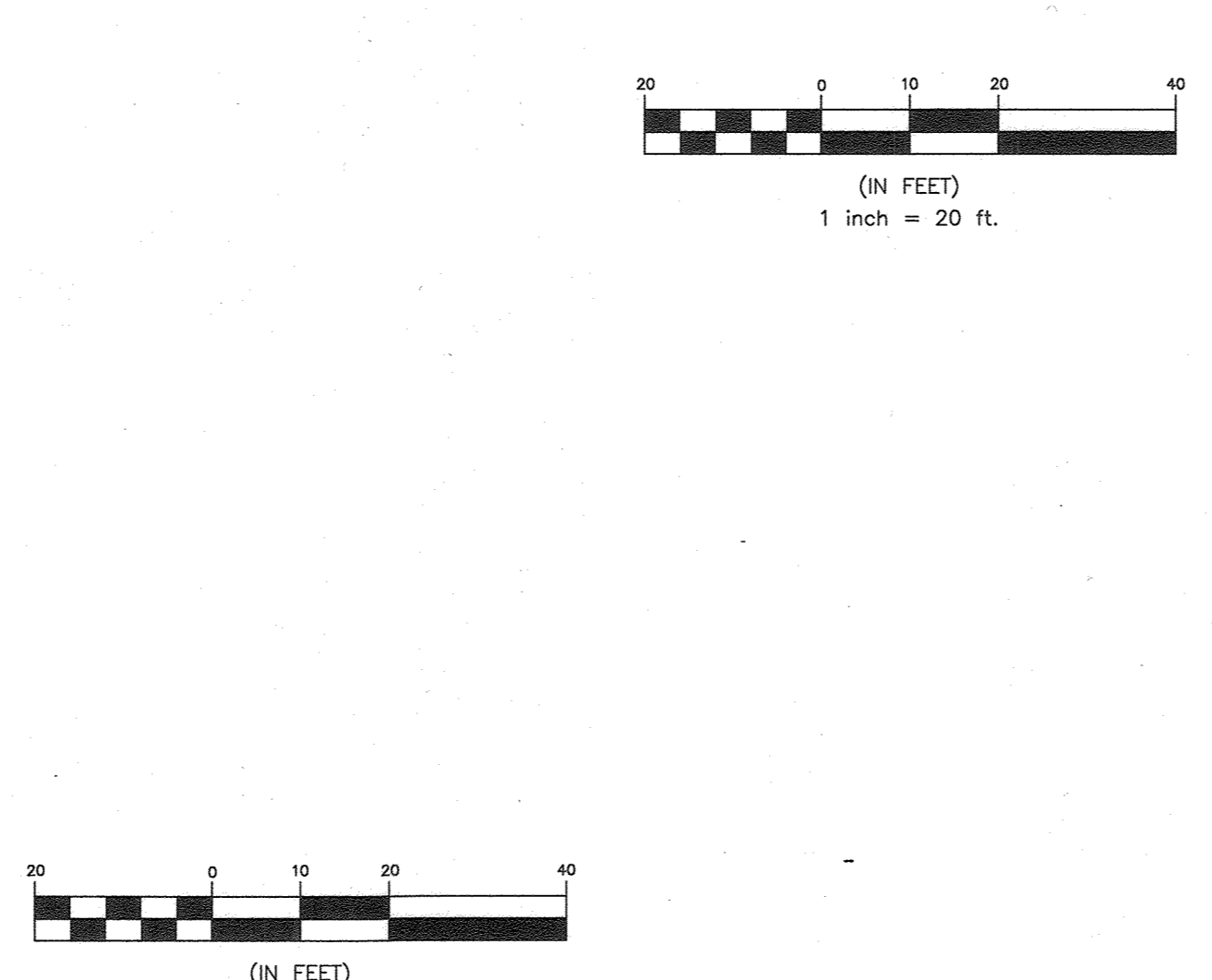
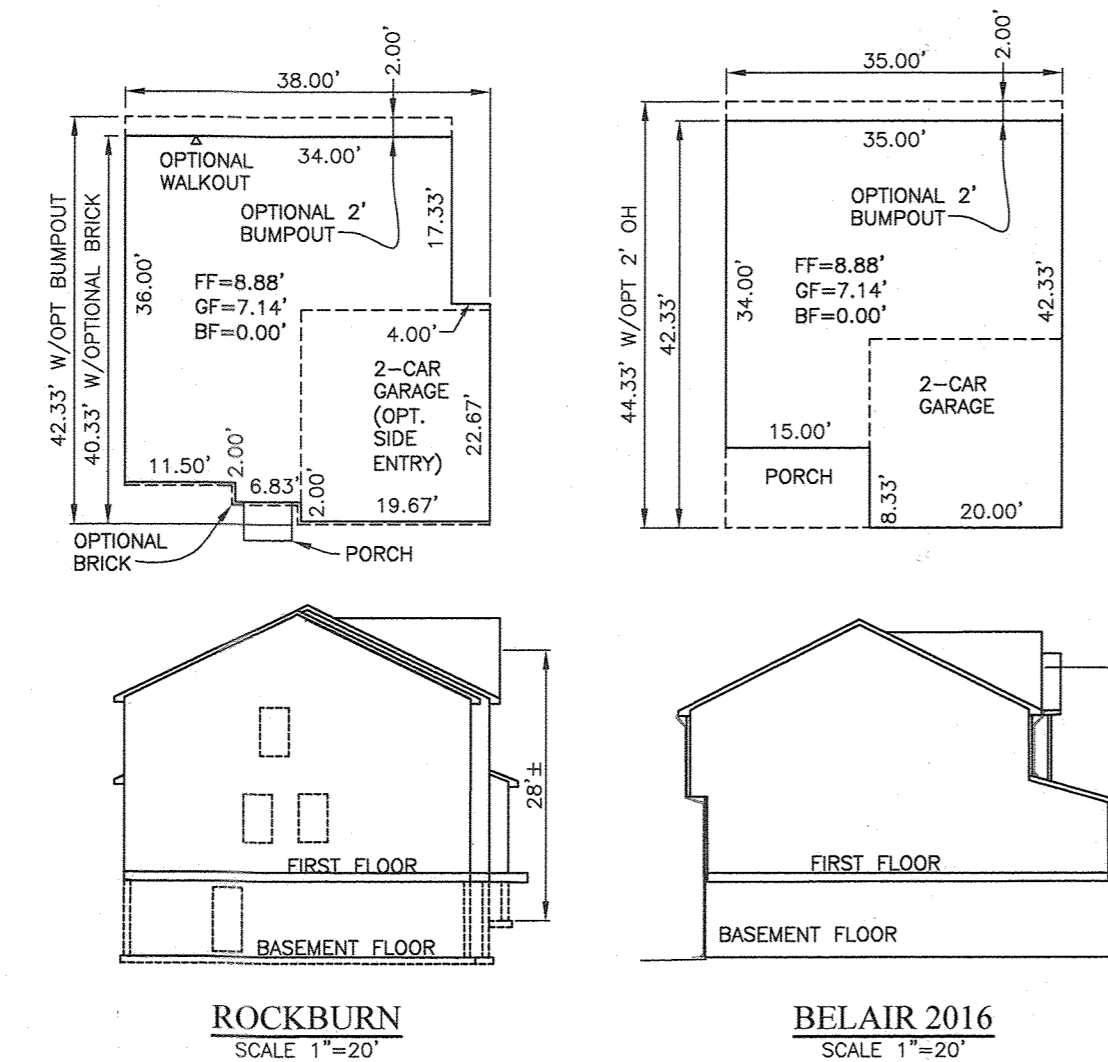
12/1/22 DATE

2/24/23 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT

DIRECTOR



Contractor to install 55F Along Lot 4 & 5 Common Property Line IF Lot 4 is not stabilized at the time of Lot 5 use & Occupancy Permit to Allow Permit Issuance.

TEST LOCATION	GROUND ELEV.	DEPTH	BOTTOM ELEV.	FACILITY	FACILITY BOTTOM	CLEARANCE DIST.	REQUIRE
B-1	240.2	9	231.2	MBR-1	236.8	5.6	4
B-2	258.4	6	248.4	MBR-2	257.8	6.2	4
B-3	276.3	9.5	265.8	MBR-3	271.8	5.9	4
B-4	264.2	6	258.2	MBR-4	266.8	8.5	4
B-5	249.8	10	239.8	MBR-5	247.8	8.0	4
B-6	252.6	8	224.6	MBR-6	228.8	4.2	4
B-7	228.2	11	217.2	SF-1	219.3	2.0	2
B-8	224.3	7	217.3	SF-1	219.3	2.0	2
B-9	226.2	7	217.2	SF-1	219.3	2.0	2
B-10	260.0	5	255.0	PW-1	257.0	4.0	4

2	3-26-24	Revise Grades on Lot 4 as per As-Built
1	12-6-23	Remove Driveway Culvert Lot 1, Flow Over Driveway
NO.	DATE	REVISION

**BENCHMARK ENGINEERING, INC.**  
 ENGINEERS & LAND SURVEYORS & PLANNERS  
 8480 BALTIMORE NATIONAL PIKE SUITE 315 A ELLICOTT CITY, MARYLAND 21043  
 (P) 410-465-6105 (F) 410-465-6644  
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OWNER/BUILDER: HARMONY BUILDERS INC  
 4228 COLUMBIA ROAD  
 ELLICOTT CITY, MD 21042  
 410-461-0833

**ELKRISE HILL**  
 LOTS 1-7 AND NON-CREDITED OPEN SPACE LOT 8 (PLAT No. 25845-25846)

TAX MAP: 38, GRID: 08, PARCEL: 198, ZONED: R-12  
 ELKRISE, MD 21075  
 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

SITE DEVELOPMENT PLAN  
 SITE DEVELOPMENT PLAN

DATE: OCTOBER, 2021 BEI PROJECT NO: 2818  
 SCALE: AS SHOWN SHEET 2 OF 9

Detail G-1-1: Pipe Outlet Sediment Trap ST-1  
 Pipe Outlet Sediment Trap ST-1, Trap No. 1

Drainage Area - Initial	1.0	Acres
Drainage Area - Interim	2.0	Acres
Drainage Area - Final	2.0	Acres
Disturbed Area	1.90	Acres
Total Storage Required	7092.00	CF
Total Storage Provided	7164.00	CF
Wet Storage Required	3546.00	CF
Wet Storage Provided	3546.00	CF
Dry Storage Required	3546.00	CF
Dry Storage Provided	3618.00	CF
Trap Bottom Elevation	222.00	FT
Trap Bottom Dimensions	57.8 x 36.6	FT x FT
Riser Crest (Dry Storage) Elevation	225.00	FT
Outlet (Wet Storage) Elevation	223.74	FT
Cleanout Elevation	222.99	FT
Top of Embankment Elevation	226.00	FT
Side Slope	3	H:1 V Ratio
Embankment Top Width	3	FT
Principal Spillway Material	HDPE	
Barrel, Riser, Anti-Seep Collar	HDPE	
Riser Interior	42	IN
Barrel Diameter	18	IN
Trask Rack Width	50.4	IN/SIDE
Trash Rack Height	18	IN
Anti-Seep Collar Dimensions	6.75	FT
Outlet Protection - Length	NA	FT
Outlet Protection - Width	NA	FT
Outlet Protection - Depth	NA	IN

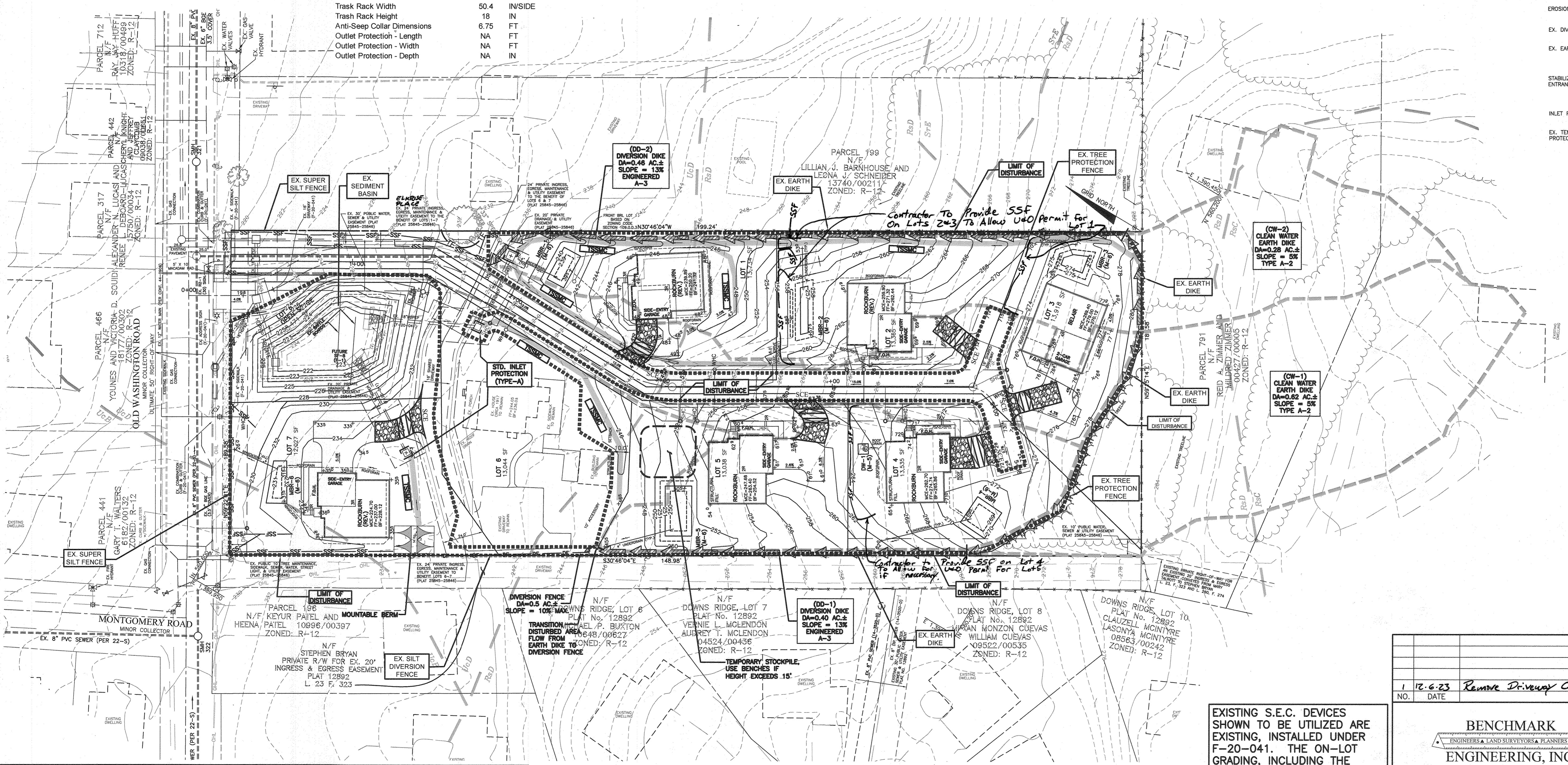
SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND

SYMBOL	HYDRIC	HYDROLOGIC GROUP (ALTERNATE GROUP)	NAME	K-VALUE
RSD	C		RUSSETT FINE SANDY LOAM, 5 TO 10 PERCENT SLOPES	0.43
RSD	C		RUSSETT FINE SANDY LOAM, 10 TO 15 PERCENT SLOPES	0.43
UCB	D	B/C	URBAN LAND-CHILLUM-BELTSVILLE COMPLEX, 0 TO 5 PERCENT SLOPES	0.37
UCD	D	B/C	URBAN LAND-CHILLUM-BELTSVILLE COMPLEX, 5 TO 15 PERCENT SLOPES	0.37

\* INDICATES HYDRIC SOILS  
 \*\* HIGHLY ERODIBLE SOILS: SOILS WITH K OF 0.35 OR GREATER AND ON GRADES 5% OR STEEPER; OR SOILS ON GRADES 15% OR GREATER.  
 SOILS ARE TAKEN FROM THE NRCS WEB SOIL SURVEY APRIL 2017, MAP 20.

LEGEND

- SOILS CLASSIFICATION *MaD*
- SOILS DELINEATION
- EXISTING CONTOURS (BEI 05/17)
- EXISTING WOODS LINE
- EXISTING STRUCTURE
- LIMIT OF DISTURBANCE
- EX. SUPER SILT FENCE
- EX. SILT FENCE
- SEDIMENT CONTROL DRAINAGE DIVIDE
- EROSION CONTROL MATTING
- EX. DIVERSION FENCE
- EX. EARTH DIKE
- STABILIZED CONSTRUCTION ENTRANCE
- INLET PROTECTION
- EX. TEMPORARY TREE PROTECTION FENCE



Contractor To Provide SSF On Lots 2&3 To Allow U40 Permit For Lot 1

Contractor To Provide SSF on Lot 4 To Allow for U40 Permit For Lots 5&6

NO.	DATE	REVISION
1	12.6.23	Remove Driveway Culvert Lot 1. Provide internal SEC.

EXISTING S.E.C. DEVICES SHOWN TO BE UTILIZED ARE EXISTING, INSTALLED UNDER F-20-041. THE ON-LOT GRADING, INCLUDING THE PERIMETER SWALES, IS TO BE COMPLETED PER THE SDP AND NOT THE FINAL PLANS

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

*Alexander Brothie* 10/27/21  
 HOWARD SOIL CONSERVATION DISTRICT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Chad Clark* 11/9/21  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Steve Conner* 2/24/23  
 CHIEF, DIVISION OF LAND DEVELOPMENT

*John M. Carney* 10/18/21  
 ENGINEER - JOHN M. CARNEY #4557

DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

*W. S. Solt* 10/19/21  
 DEVELOPER

ENGINEER'S CERTIFICATE

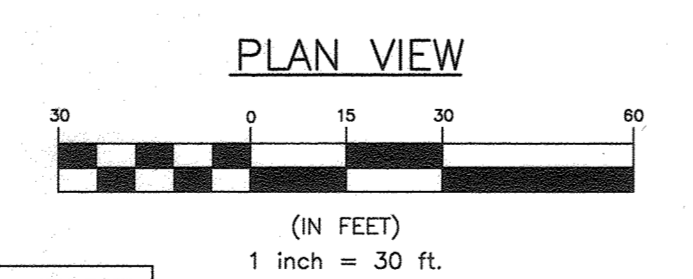
I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*John M. Carney* 10/18/21  
 ENGINEER - JOHN M. CARNEY #4557

THIS PLAN IS FOR EROSION & SEDIMENT CONTROL PURPOSES ONLY.

THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.

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 THE START OF ANY WORK.



BENCHMARK ENGINEERING, INC.  
 8480 BALTIMORE NATIONAL PIKE SUITE 315 ELLICOTT CITY, MARYLAND 21043  
 (P) 410-465-6105 (F) 410-465-6644  
 WWW.BE-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. 49777, Expiration Date: 05-08-2022.

*John M. Carney* 10/18/21

OWNER/BUILDER:  
 HARMONY BUILDERS INC  
 4228 COLUMBIA ROAD  
 ELLICOTT CITY, MD 21042  
 410-461-0833

ELKRISE HILL  
 LOTS 1-7 AND NON-CREDITED OPEN SPACE LOT 8 (PLAT No. 25845-25846)

TAX MAP: 38, GRID: 08, PARCEL: 198, ZONED: R-12  
 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

SITE DEVELOPMENT PLAN  
 GRADING, SEDIMENT AND EROSION CONTROL PLAN

RELEVANT FILE NUMBERS:  
 ECP-18-026, S-18-004, WP-19-079,  
 P-18-002, HPG-18-006, F-20-041,  
 CONTR.#14-5100-D

DATE: OCTOBER, 2021 BEI PROJECT NO: 2818  
 SCALE: AS SHOWN SHEET 3 OF 9

B-4.3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

The application of seed and mulch to establish vegetative cover. To protect disturbed soils from erosion during and at the end of construction. To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

- 1. Specifications
a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project.

- 2. Application
a. Dry Seeding: This includes use of conventional dry or broadcast spreaders.
b. Ditch or Cut-slope Seeding: Mechanized seeders that apply and cover seed with soil.

- 3. Anchoring
a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed in preference), depending upon the size of the area and erosion hazard.

1. WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERMITS ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER: [Signature] DATE: 10-17-21

ENGINEER'S CERTIFICATE: [Signature] DATE: 10/18/21

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. CHIEF, DIVISION OF LAND DEVELOPMENT. DATE: 10/27/21

DIRECTOR: [Signature] DATE: 2/24/22

B-4.4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

To stabilize disturbed soils with vegetation for up to 6 months. To use fast growing vegetation that provides cover on disturbed soils. Exposed soils where ground cover is needed for a period of 6 months or less.

- 1. Selected one or more of the species or seed mixtures listed in Table B-1 for the appropriate Plant Hardness Zone (from Figure B-3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths.

2. Turfgrass Mixtures
a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.

- 3. Soil
a. General Specifications
i. Classes of turfgrass must be Maryland State Certified. Soil labels must be made available to the job foreman and inspector.

4. DUST CONTROL
Definition: The process of preparing the soils to sustain permanent vegetative stabilization. Purpose: To provide a suitable soil medium for vegetative growth.

B-4.2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

To stabilize disturbed soils with permanent vegetation. To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils. Exposed soils where ground cover is needed for 6 months or more.

- 1. General Use
a. Select one or more of the species or mixtures listed in Table B-3 for the appropriate Plant Hardness Zone (from Figure B-3) and based on the site condition or purpose based on Table B-2.

2. Turfgrass Mixtures
a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.

3. Soil
a. General Specifications
i. Classes of turfgrass must be Maryland State Certified. Soil labels must be made available to the job foreman and inspector.

B-4 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

Using vegetation as cover to protect exposed soil from erosion. To promote the establishment of vegetation on exposed soil. On all disturbed areas not stabilized by other methods.

- 1. A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-3133-1855 after the future LDD and protected areas are marked clearly in the field.

Table B-1: Temporary Seeding for Site Stabilization. Columns: Plant Species, Seeding Rate 1/ (lb/ac), Seeding Rate 2/ (lb/1000ft2), Seeding Depth 2/ (inches), Recommended Seeding Dates by Plant Hardness Zone 3/ (5b and 6a, 6b, 7a and 7b).

Table B-2: Permanent Seeding Summary. Columns: Hardness Zone (from Figure B-3), Seed Mixture (from Table B-3), Seeding Rate (lb/ac), Seeding Dates, Seeding Depths, Fertilizer Rate (10-20-20), Lime Rate.

Table B-3: Stockpile Area. Columns: No., Species, Application Rate (lb/ac), Seeding Dates, Seeding Depths, Fertilizer Rate (N, P205, K2O), Lime Rate (tons/ac).

HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

1. A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-3133-1855 after the future LDD and protected areas are marked clearly in the field.

- 4. All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

Table with 2 columns: Item, Value. Total Area of Site: 2.33 Acres. Area Disturbed: 1.69 Acres. Area to be roofed or paved: 0.32 Acres.

7. Any additional control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

- 11. Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit) at a time.

16. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.

SEQUENCE OF CONSTRUCTION

- 1. Obtain building permit. (day 1)
2. Hold on-site pre-construction meeting. Identify any hazardous conditions on-site. (day 2)
3. Install site perimeter controls, if any. (day 3)

- 4. All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

\*# IN ORDER TO ALLOW FOR THE ISSUANCE OF USE AND OCCUPANCY PERMITS FOR DOWNSLOPE LOTS THE CONTRACTOR IS TO INSTALL SUPER SILT FENCE ON THE COMMON PROPERTY LINE OF THE UPHILL LOTS.

\*# COORDINATE CONSTRUCTION OF STORM DRAIN IN OLD WASHINGTON WITH P-20-041.

10. Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction.

12. Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved water structure.

14. All silt fence and super silt fence shall be placed on the contour, and be embanked at 25' minimum intervals, with lower ends curved uphill by 2' in elevation.

16. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.

17. Final grade lot and upon approval from the Howard County Sediment Control Inspector, remove all sediment control devices stabilize in accordance with the PERMANENT seeded notes.

18. Upon final stabilization of all disturbed areas on lots 1-7, and with the approval of the Howard County Sediment Control Inspector, convert the sediment trap to the surface sand filter per F-20-041. (day 11-110)

19. Final grade lot and upon approval from the Howard County Sediment Control Inspector, remove all sediment control devices stabilize in accordance with the PERMANENT seeded notes.

20. Final grade lot and upon approval from the Howard County Sediment Control Inspector, remove all sediment control devices stabilize in accordance with the PERMANENT seeded notes.

21. Final grade lot and upon approval from the Howard County Sediment Control Inspector, remove all sediment control devices stabilize in accordance with the PERMANENT seeded notes.

22. Final grade lot and upon approval from the Howard County Sediment Control Inspector, remove all sediment control devices stabilize in accordance with the PERMANENT seeded notes.

23. Final grade lot and upon approval from the Howard County Sediment Control Inspector, remove all sediment control devices stabilize in accordance with the PERMANENT seeded notes.

NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF WORK

- Individual House
1. Obtain building permit. (day 1)
2. Hold on-site pre-construction meeting. Identify any hazardous conditions on-site. (day 2)

- 3. Install site perimeter controls, if any. (day 3)
4. All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

\*# IN ORDER TO ALLOW FOR THE ISSUANCE OF USE AND OCCUPANCY PERMITS FOR DOWNSLOPE LOTS THE CONTRACTOR IS TO INSTALL SUPER SILT FENCE ON THE COMMON PROPERTY LINE OF THE UPHILL LOTS.

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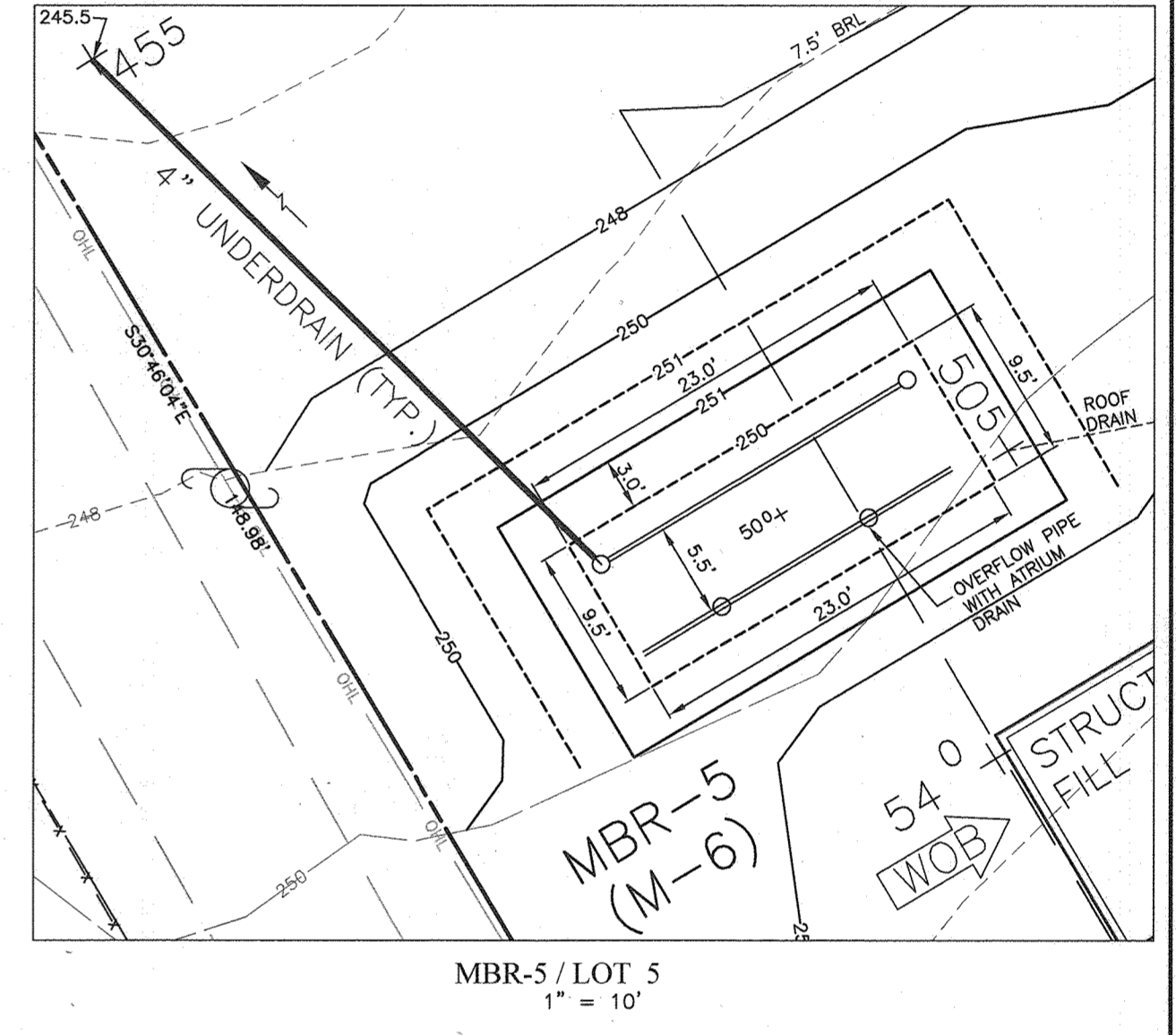
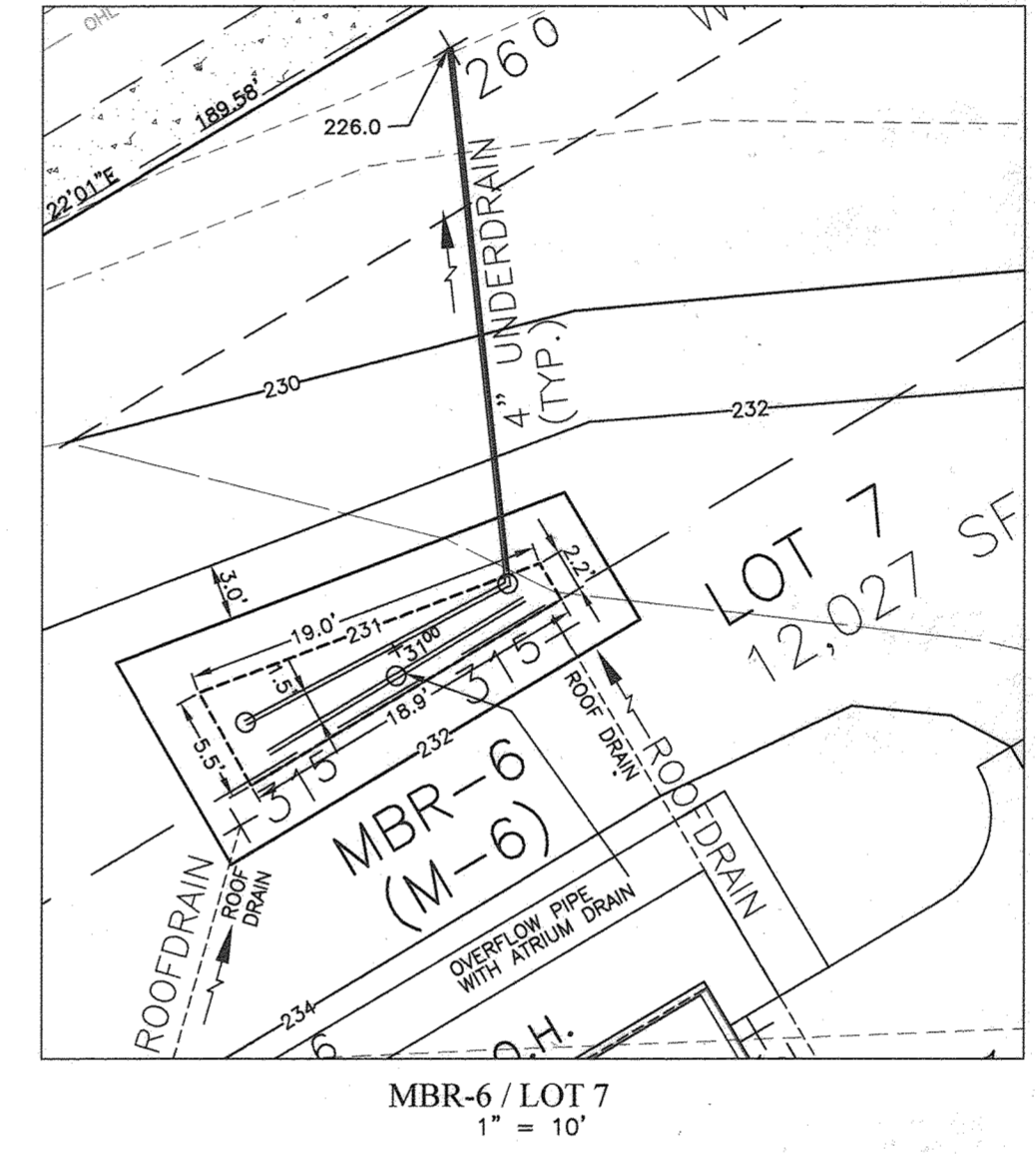
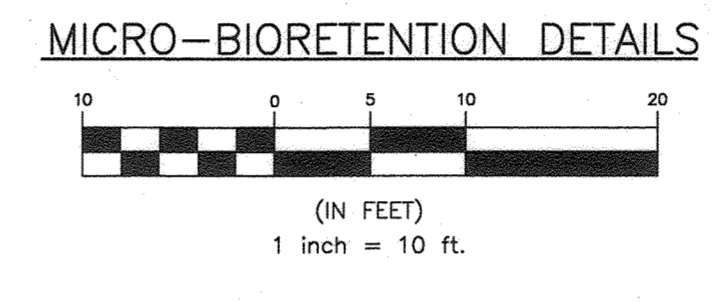
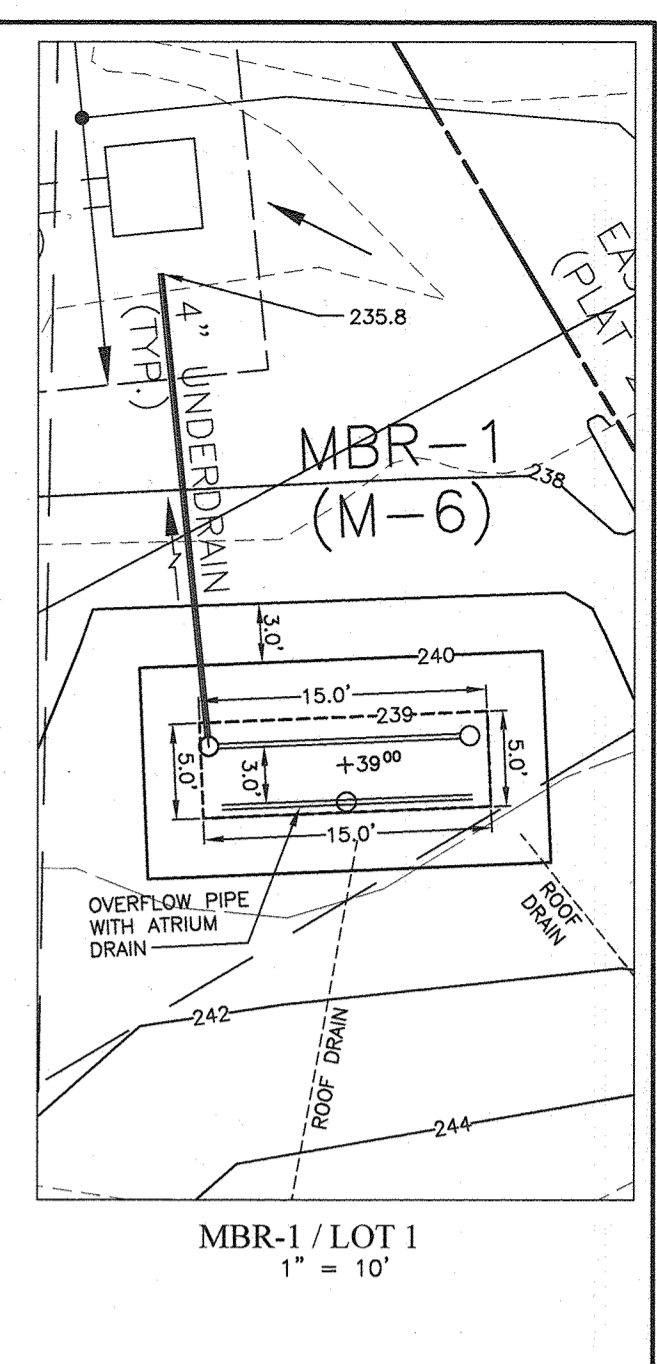
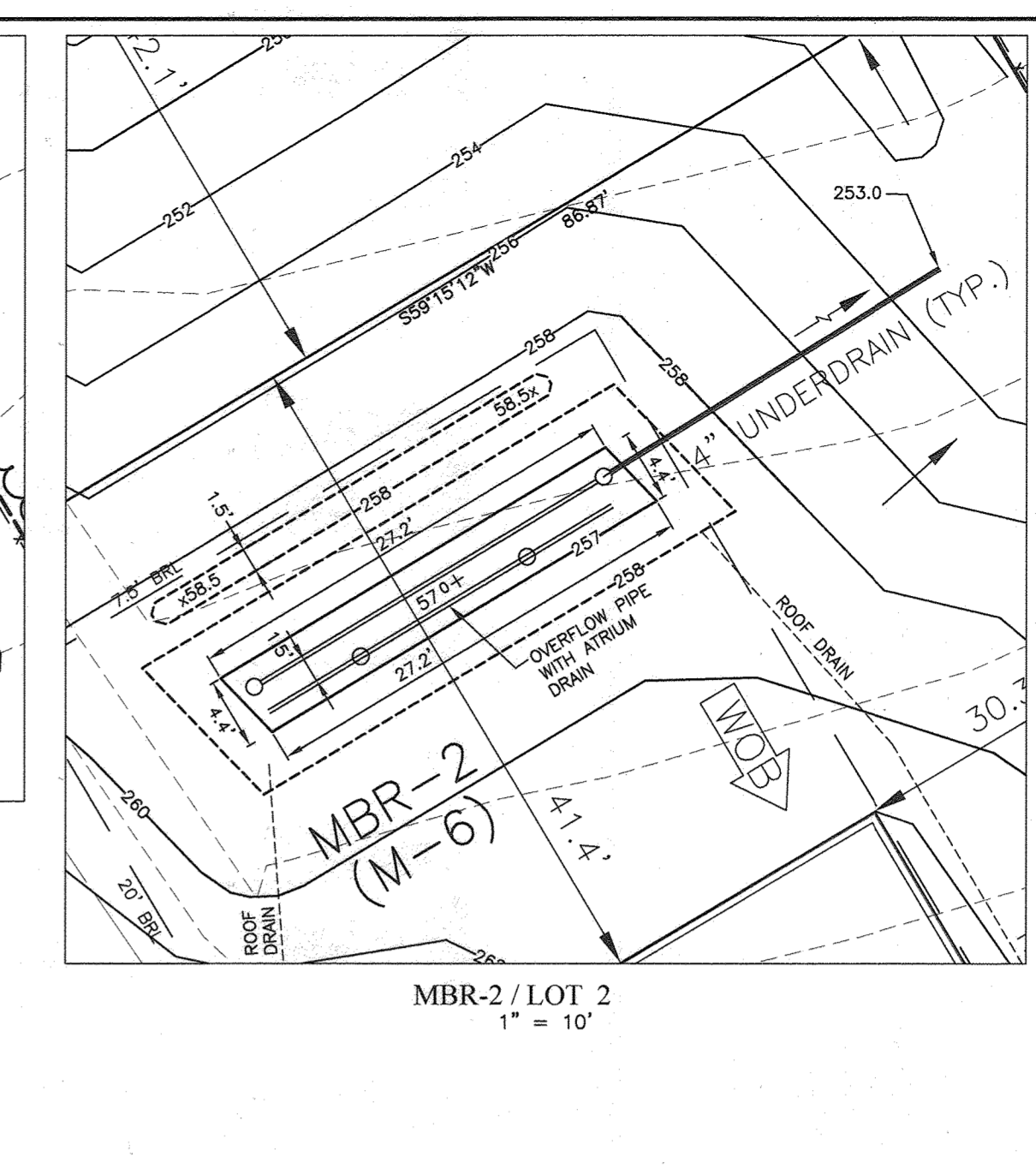
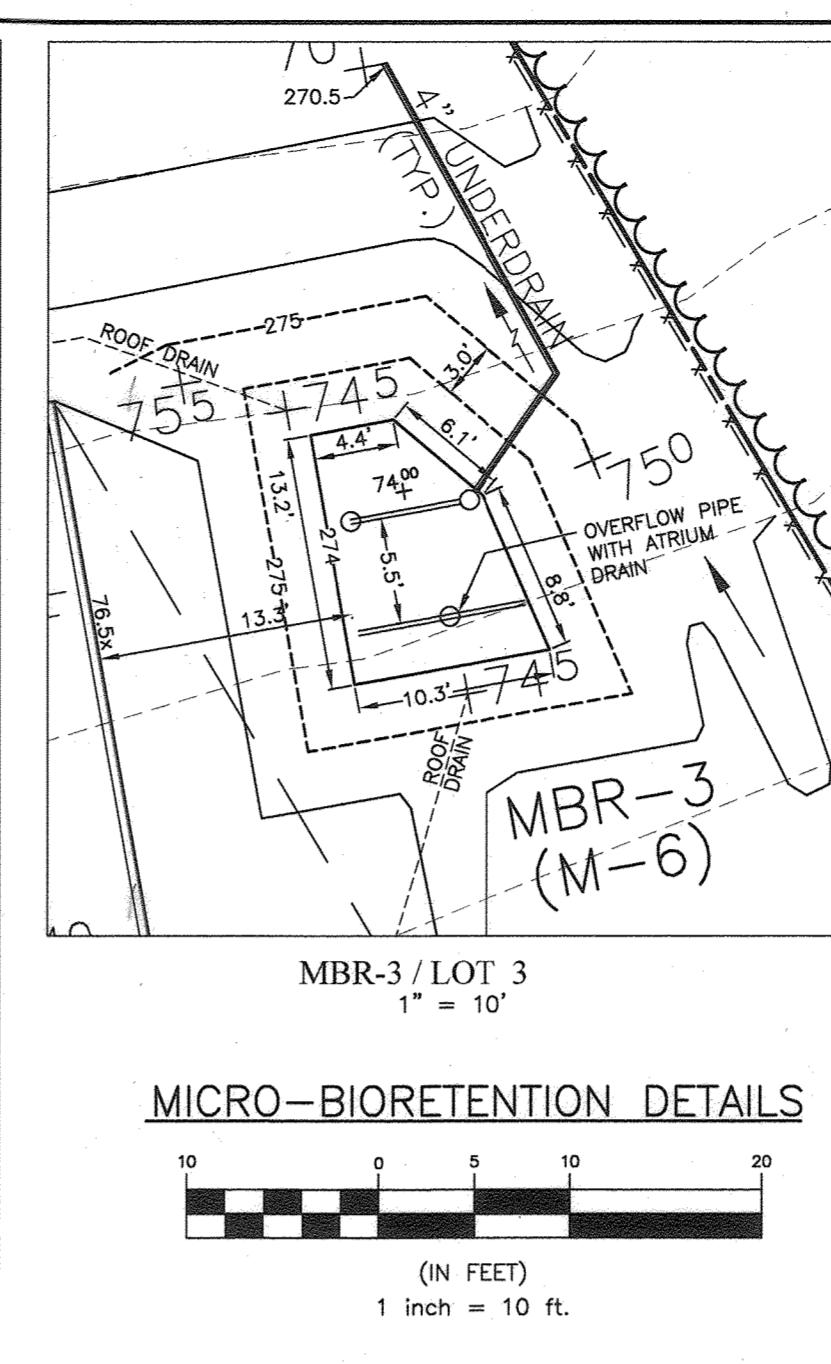
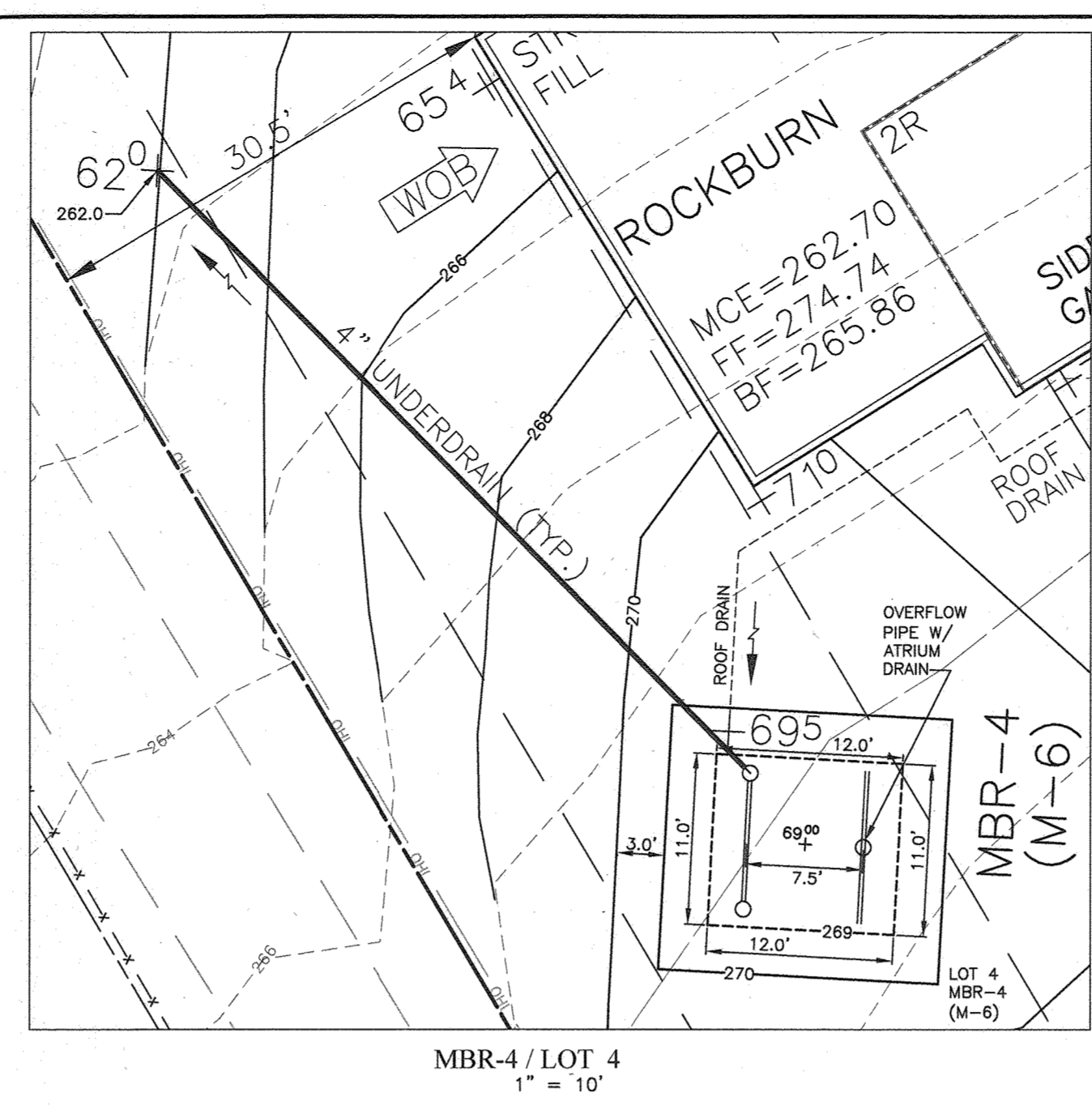
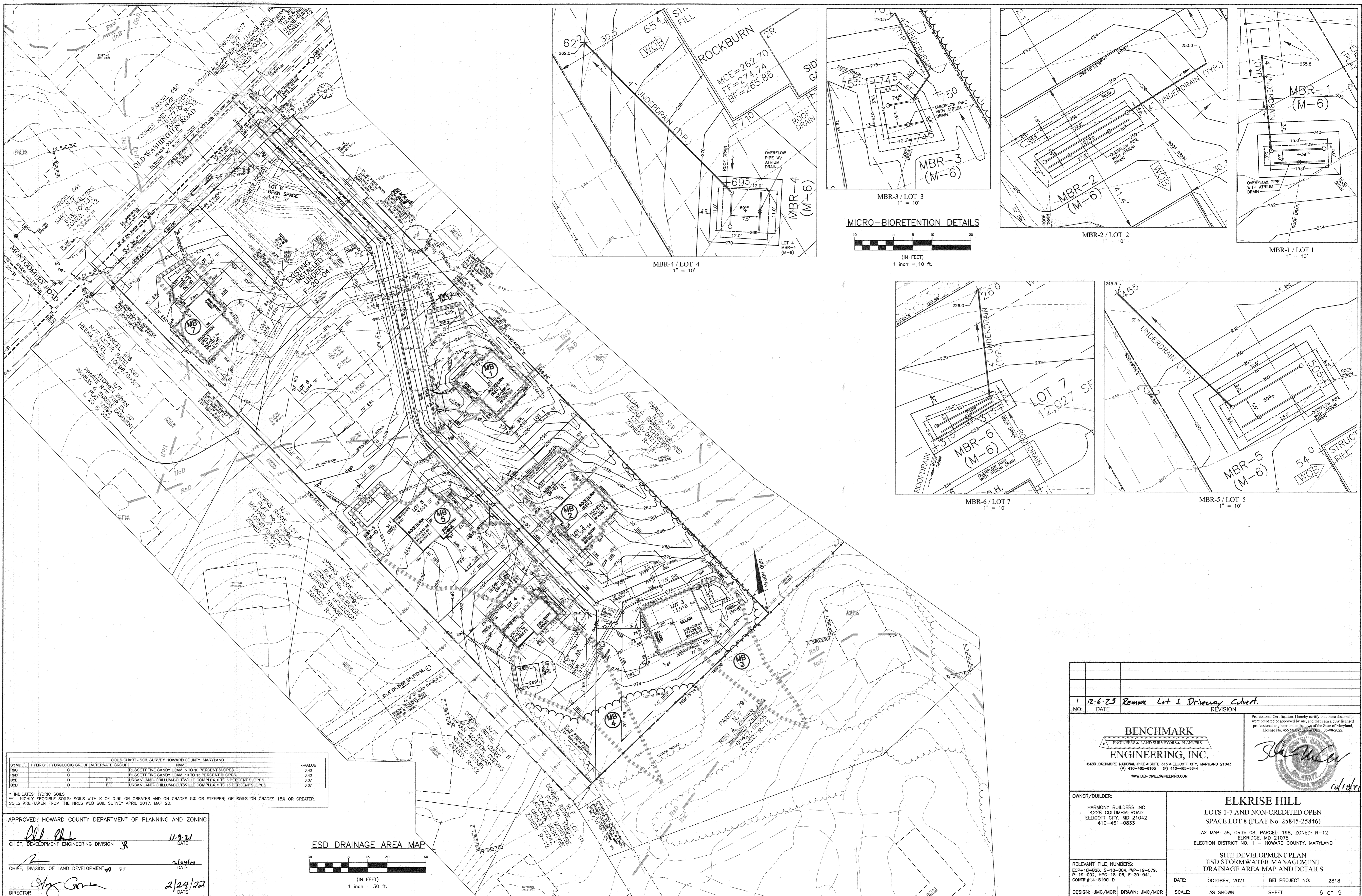
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23. Final grade lot and upon approval from the Howard County Sediment Control Inspector, remove all sediment control devices stabilize in accordance with the PERMANENT seeded notes.





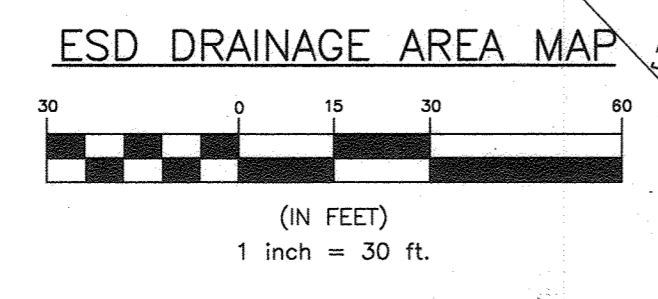
SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND			
SYMBOL	HYDRIC	HYDROLOGIC GROUP (ALTERNATE GROUP)	K VALUE
R1c	C	RUSSETT FINE SANDY LOAM, 5 TO 10 PERCENT SLOPES	0.43
R1d	C	RUSSETT FINE SANDY LOAM, 10 TO 15 PERCENT SLOPES	0.43
U1B	D	URBAN LAND-CHILLUM-BELTSVILLE COMPLEX, 0 TO 5 PERCENT SLOPES	0.37
U1D	D	URBAN LAND-CHILLUM-BELTSVILLE COMPLEX, 5 TO 15 PERCENT SLOPES	0.37

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION 11/9/21  
 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 2/24/22  
 DATE

DIRECTOR 2/24/22  
 DATE



1 12-6-23 Remove Lot 1 Driveway Culvert. NO. DATE REVISION	
<b>BENCHMARK</b> ENGINEERS & LAND SURVEYORS & PLANNERS <b>ENGINEERING, INC.</b> 8480 BALTIMORE NATIONAL PIKE & SUITE 315 A ELLICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6844 WWW.BEI-CVLENGINEERING.COM	
RELEVANT FILE NUMBERS: ECP-18-026, S-18-004, WP-19-079, P-19-002, HPC-19-06, F-20-041, CONTR.#14-5100-D	
OWNER/BUILDER: HARMONY BUILDERS INC 4228 COLUMBIA ROAD ELLICOTT CITY, MD 21042 410-461-0833	<b>ELKRISE HILL</b> LOTS 1-7 AND NON-CREDITED OPEN SPACE LOT 8 (PLAT No. 25845-25846) TAX MAP: 38, GRID: 08, PARCEL: 198, ZONED: R-12 ELKRIDGE, MD 21075 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND
DATE: OCTOBER, 2021 SCALE: AS SHOWN	BEI PROJECT NO: 2818 SHEET 6 OF 9

CONSTRUCTION SPECIFICATIONS

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

1. Material Specifications:

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.

Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification)

There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts.

3. Compaction:

It is very important to minimize compaction of both the base of bioretention practices and the required backfill.

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.

Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the optional sand layer.

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.

When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin.

4. Plant Material:

Recommended plant material for micro-bioretenion practices can be found in Appendix A, Section A.2.3.

5. 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.

Rootstock of the plant material shall be kept moist during transport and on-site storage.

Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only.

Grasses and legume seed should be drilled into the soil to a depth of at least one inch.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling.

6. Underdrains:

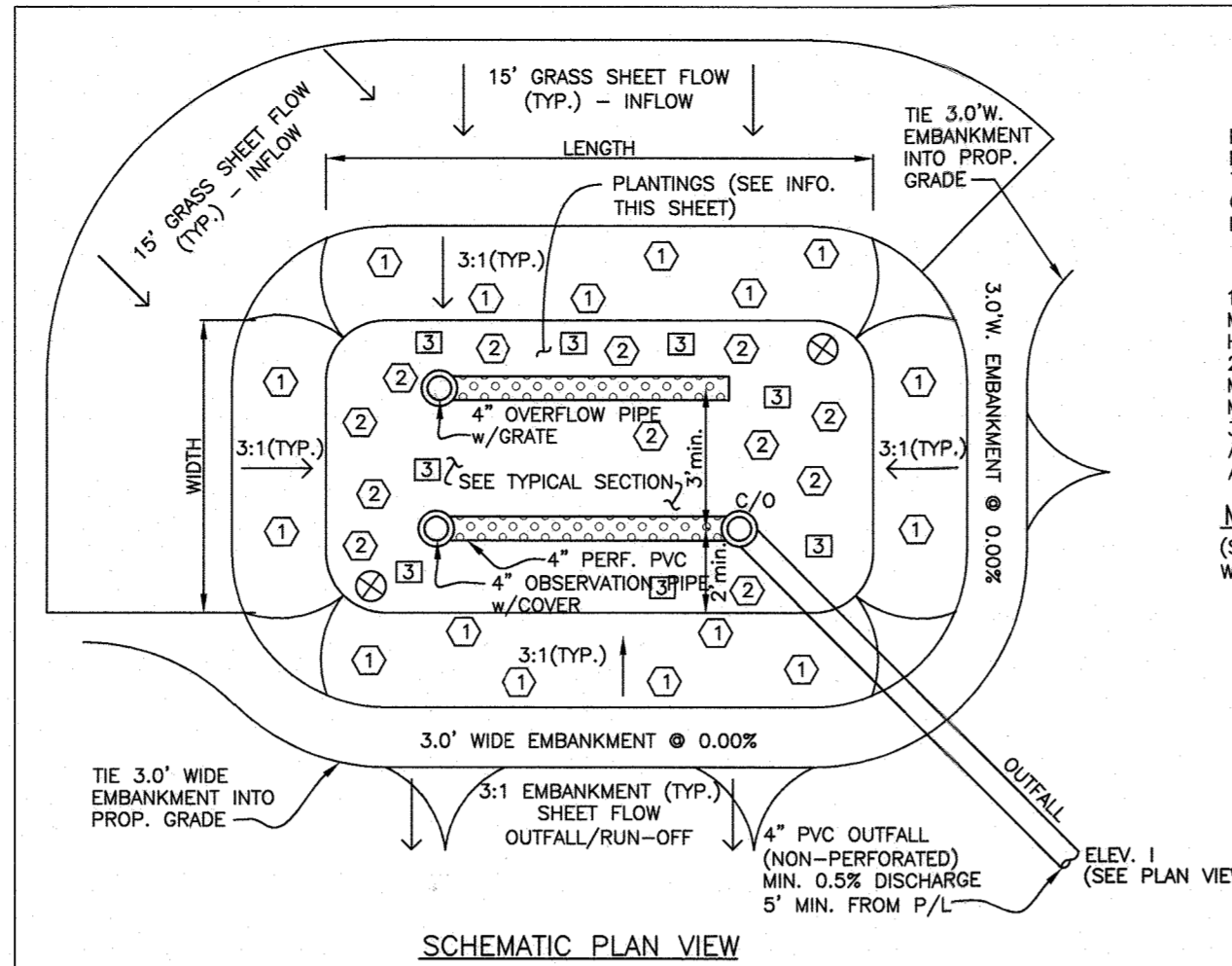
Underdrains should meet the following criteria:

- 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 main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%.

7. Miscellaneous:

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

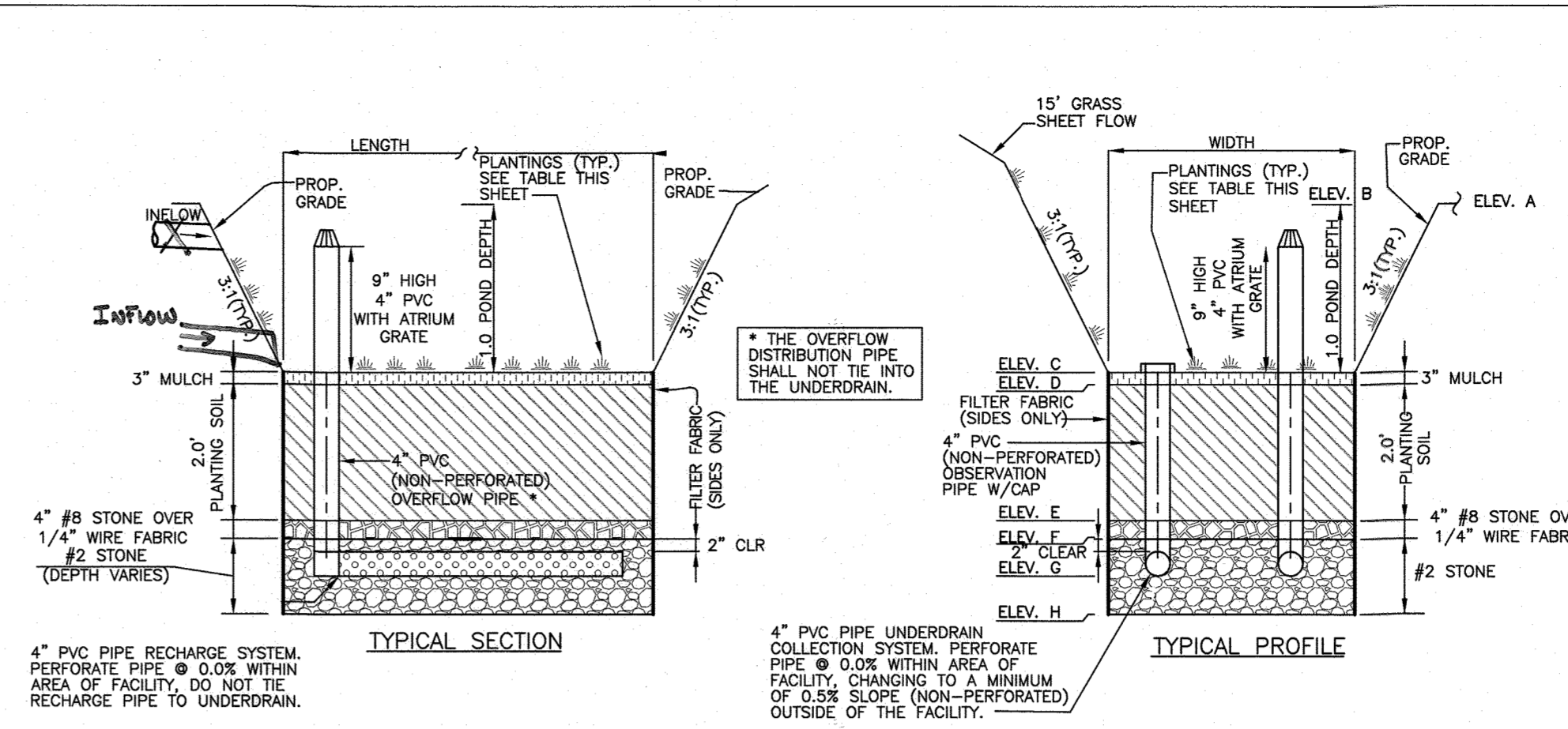


NOTE: FACILITIES MUST BE CONSTRUCTED WITH IMPERMEABLE LINER WHEN INSTALLED WITHIN THE 100' WELL RADIUS.

MICROBIORETENION PLANTING DATA

MICROBIORETENION PLANTING SCHEDULE

- 1 VINCA MINOR (COMMON PERIWINKLE)
2 AJUSTA REPTAS (CREEPING BUNGLEDWEED)
3 IRIS VERSICOLOR (IRIS)
CALLUNA VULGARIS (HEATHER) (2 PER FACILITY)



MICRO-BIORETENION DETAILS (TYPICAL) NOT TO SCALE

BIO-RETENTION DIMENSION LEGEND table with columns for FACILITY and NAME, listing layers A through I.

CONSTRUCTION SPECIFICATIONS B.4.C SPECIFICATIONS FOR MICRO-BIORETENION, RAIN GARDENS, LANDSCAPE INFILTRATION & INFILTRATION BERMS

1. MATERIAL SPECIFICATIONS: 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.

3. COMPACTION: IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENION PRACTICES AND THE REQUIRED BACKFILL.

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

5. 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.

6. 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 MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%.

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

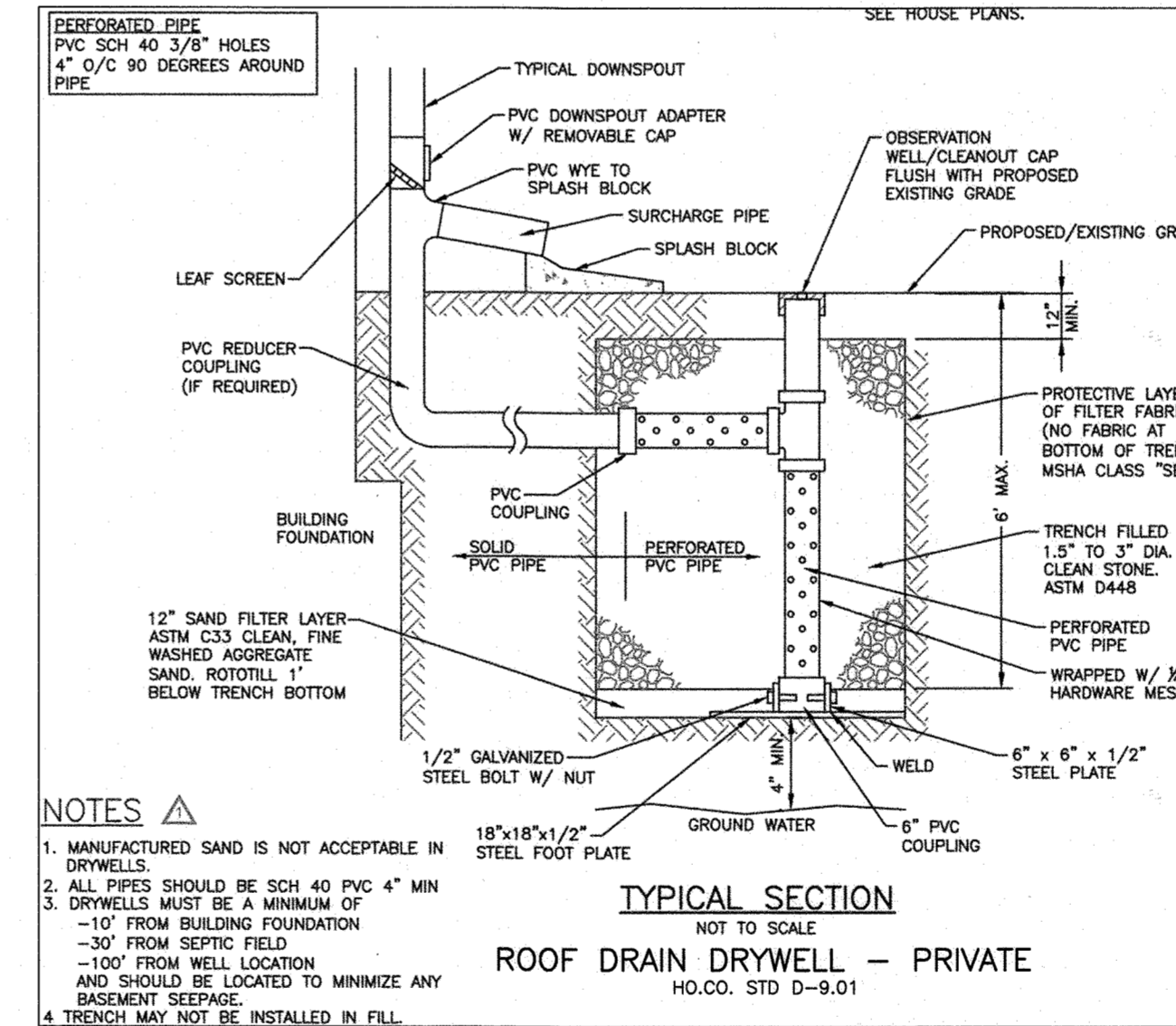
OPERATION AND MAINTENANCE SCHEDULE FOR MICRO-BIORETENION (M-6)

- A. 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.

BIORETENION FACILITIES table with columns for FACILITY, ELEVATIONS (SEE TYPICAL BIORETENION DETAIL), FILTER LENGTH (ft), WIDTH (ft), AREA (sq ft), PLANTINGS (1, 2, 3), and LINER REQ'D.

MATERIALS & SPECIFICATIONS FOR MICRO-BIORETENION

Table with columns for MATERIAL, SPECIFICATION, SIZE, and NOTES, detailing requirements for soil, mulch, underdrain piping, and liners.



ROOF DRAIN DRYWELL - PRIVATE HO.CO. STD. D-9-01

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED (M-5) DRY WELLS

- 1. The monitoring wells and structures shall be inspected on a quarterly basis and after every large storm event.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OF ROOFTOP RUNOFF (N-1), DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)

- A. MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS.

ESD STORMWATER MANAGEMENT SUMMARY TABLE with columns for Practice, DA (sf), Imp Area (sf), % Imp, Rv, and various metrics for Required/Provided, % DA?, and Ownership.

\* Provided Q10 = 7237 of

- This storage is all the areas of Micro-Bioretenions and the total storage provide within the composite "F-1"

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING form with signature lines for Chief, Development Engineering Division and Director.

BENCHMARK ENGINEERING, INC. logo and project information including owner/builder details, site development plan notes, and design/drawn information.

SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALTERNATE GROUP	NAME	K-VALUE
R&D		C		RUSSETT FINE SANDY LOAM, 5 TO 10 PERCENT SLOPES	0.43
UcB		D		RUSSETT FINE SANDY LOAM, 10 TO 15 PERCENT SLOPES	0.43
UcD		D	B/C	URBAN LAND-CHILLUM-BELTSVILLE COMPLEX 0 TO 5 PERCENT SLOPES	0.37
			B/C	URBAN LAND-CHILLUM-BELTSVILLE COMPLEX 5 TO 15 PERCENT SLOPES	0.37

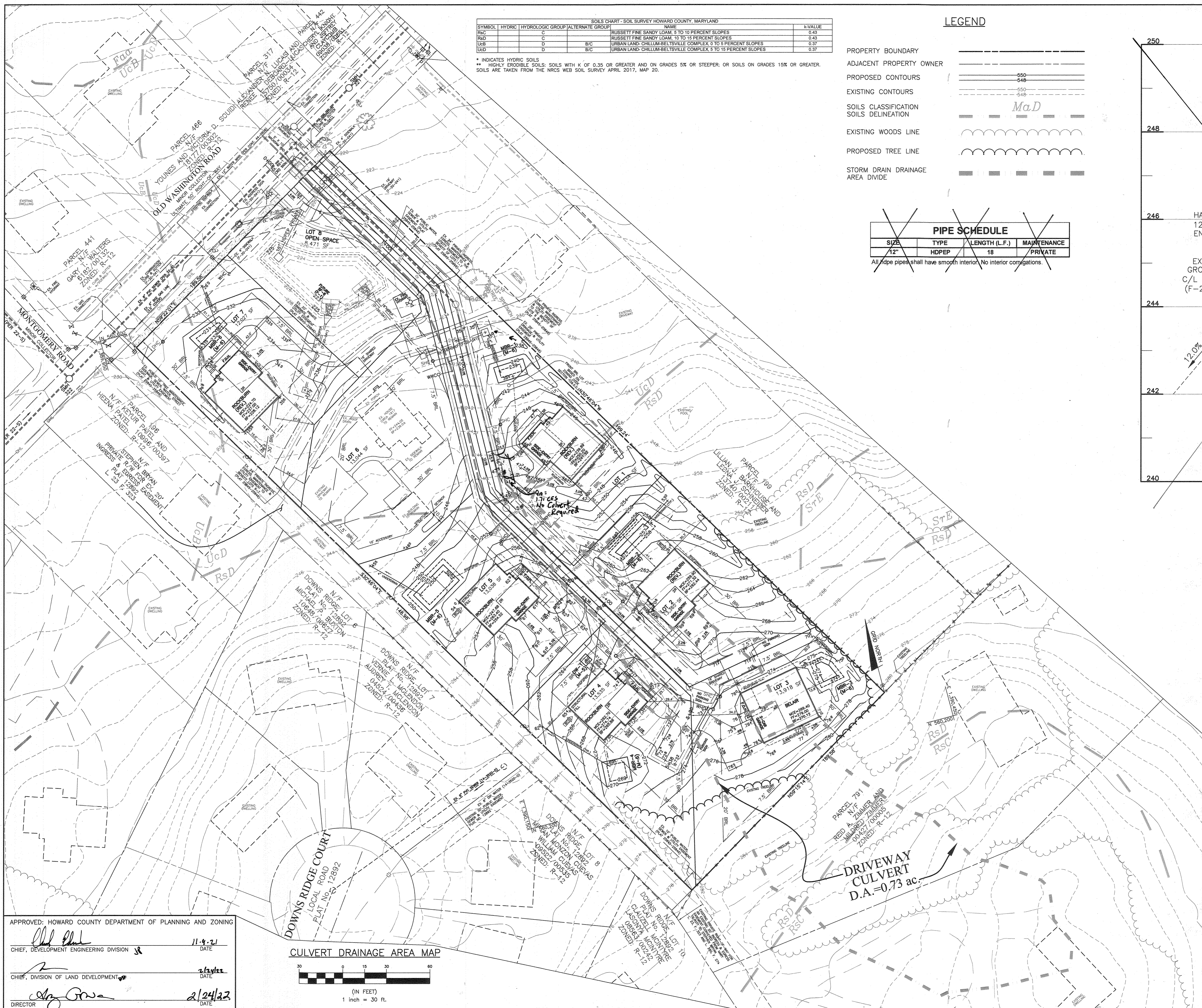
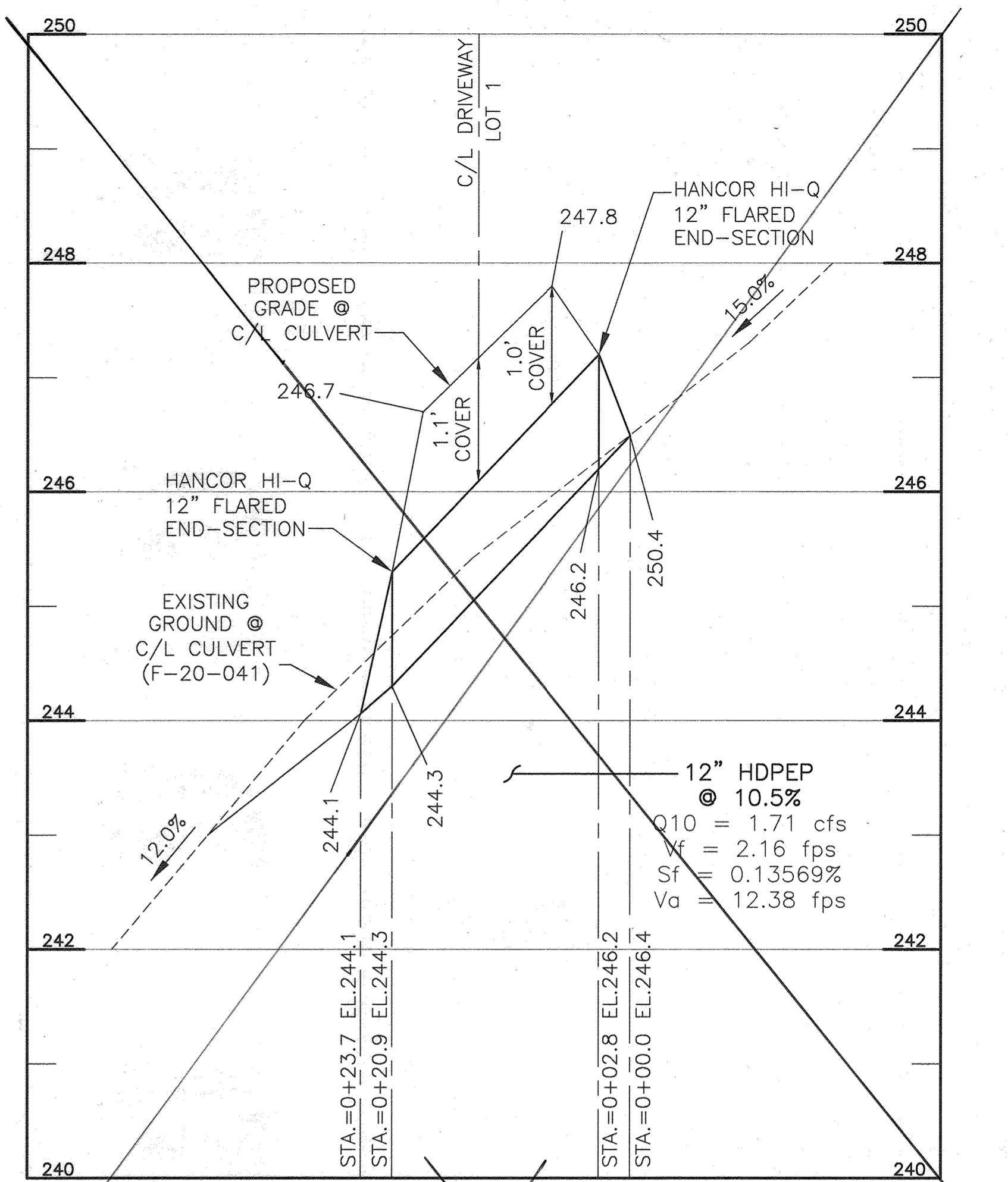
\*\* INDICATES HYDRIC SOILS: SOILS WITH K OF 0.35 OR GREATER AND ON GRADES 5% OR STEEPER; OR SOILS ON GRADES 15% OR GREATER. SOILS ARE TAKEN FROM THE NRCS WEB SOIL SURVEY APRIL 2017, MAP 20.

**LEGEND**

- PROPERTY BOUNDARY
- ADJACENT PROPERTY OWNER
- PROPOSED CONTOURS
- EXISTING CONTOURS
- SOILS CLASSIFICATION
- SOILS DELINEATION
- EXISTING WOODS LINE
- PROPOSED TREE LINE
- STORM DRAIN DRAINAGE AREA DIVIDE

PIPE SCHEDULE			
SIZE	TYPE	LENGTH (L.F.)	MAINTENANCE
12"	HDPEP	18	PRIVATE

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

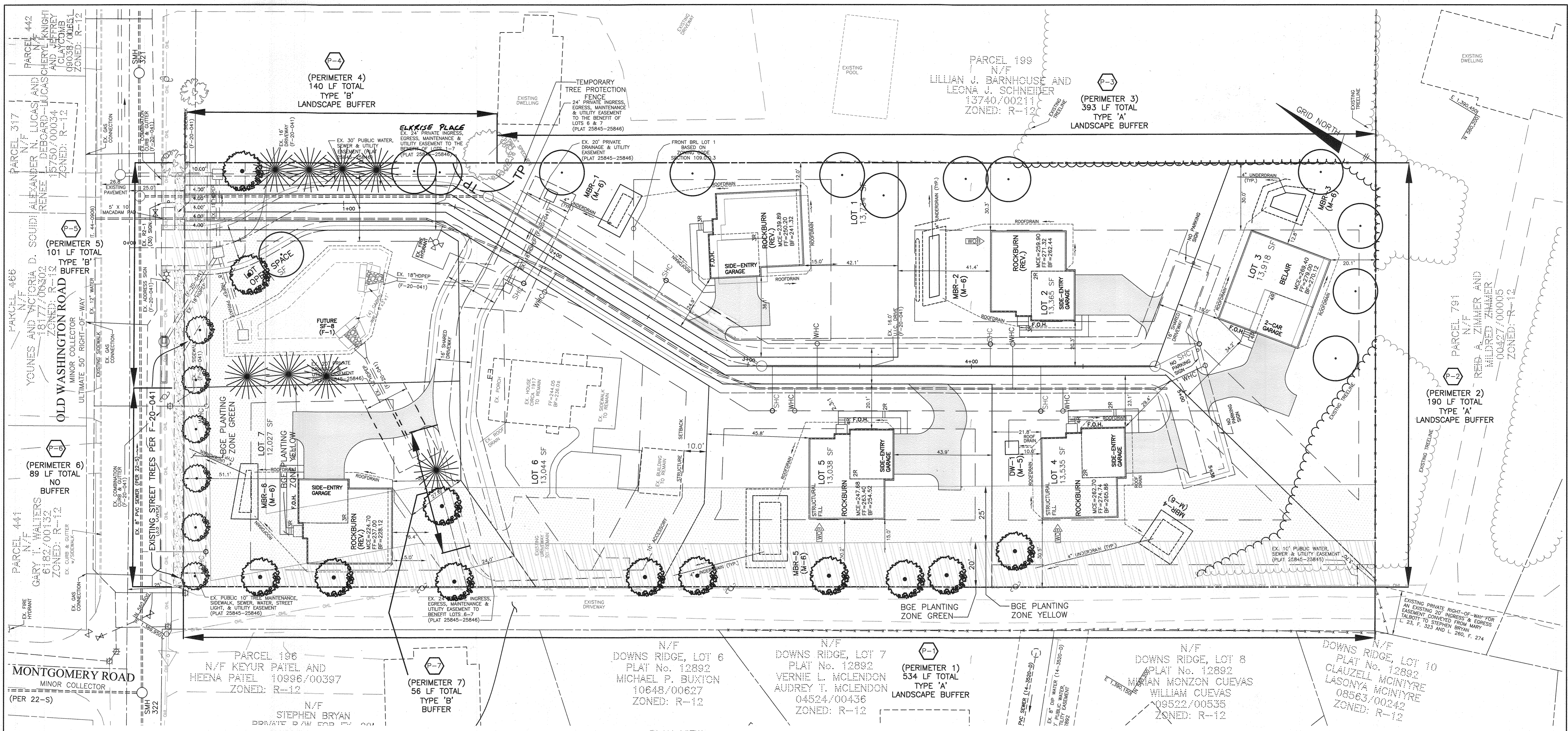


APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: *[Signature]* 11-9-21  
 Chief, Division of Land Development: *[Signature]* 2/24/22  
 Director: *[Signature]* 2/24/22

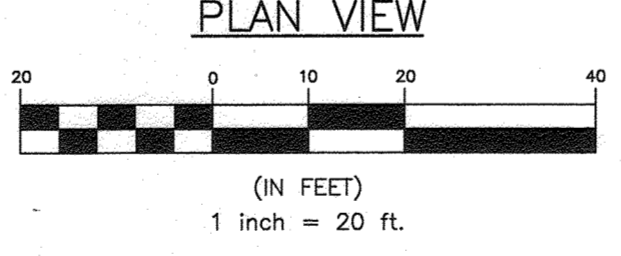
12-6-23 Remove Lot 1 Driveway Culvert	
NO.	REVISION
<b>BENCHMARK ENGINEERING, INC.</b> ENGINEERS & LAND SURVEYORS & PLANNERS 8480 BALTIMORE NATIONAL PIKE & SUITE 315 A ELLICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-8844 WWW.BE-CIVLENGINEERING.COM	
OWNER/BUILDER:	ELKRISE HILL
HARMONY BUILDERS INC 4228 COLUMBIA ROAD ELLICOTT CITY, MD 21042 410-461-0833	LOTS 1-7 AND NON-CREDITED OPEN SPACE LOT 8 (PLAT No. 25845-25846)
RELEVANT FILE NUMBERS: ECP-18-028, S-18-004, WP-19-079, F-18-002, HFC-18-06, F-20-041, CONTR#14-5100-D	TAX MAP: 38, GRID: 08, PARCEL: 198, ZONED: R-12 ELKRIDGE, MD 21075 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND
DESIGN: JMC/MCR DRAWN: JMC/MCR	SITE DEVELOPMENT PLAN LOT-1 DRIVEWAY CULVERT DRAINAGE AREA MAP AND PROFILE
DATE: OCTOBER, 2021	DATE: OCTOBER, 2021
SCALE: AS SHOWN	BEI PROJECT NO: 2818
	SHEET 8 OF 9





**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 \$8,700 FOR 25 SHADE TREES AND 8 EVERGREEN TREES, WAS POSTED IN ACCORDANCE WITH THE APPROVED FINANCIAL PLAN. THE REQUIRED FINANCIAL SURETY AND DEVELOPERS AGREEMENT WERE COMPLETED UNDER F-20-041.
- 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 HEREWIT 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 PLANTING 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.
- NO CREDIT IS TAKEN FOR THE RETAINED WOODED AREA AT THE SOUTHERN MOST CORNER.



**LEGEND**

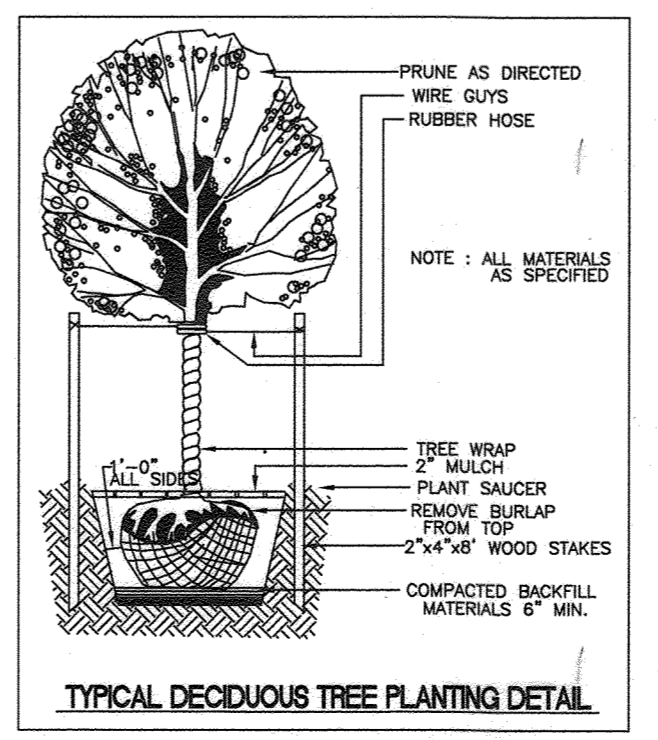
- SOILS CLASSIFICATION *MaD*
- SOILS DELINEATION
- EXISTING WOODS LINE
- PROPOSED WOODS LINE
- EXISTING STRUCTURE
- BGE PLANTING ZONE: GREEN
- BGE PLANTING ZONE: YELLOW

**SCHEDULE A PERIMETER LANDSCAPE EDGE**

CATEGORY	ADJACENT TO PERIMETER PROPERTIES	P-1	P-2	P-3	P-4	P-5	P-6	P-7	TOTAL
PERIMETER NO. / LANDSCAPE TYPE		A	A	A	B	B	NONE		
LINEAR FEET OF PERIMETER (FRONTAGE/ROADWAY)		1:60 shade	1:60 shade	1:60 shade	1:50 shade	1:50 shade	1:50 shade	1:50 shade	1257
CREDIT FOR EXISTING VEGETATION: NO OR YES (w/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)		NO	NO	NO	NO	NO	NO	NO	
LINEAR FEET OF REQUIRED PERIMETER LANDSCAPING		534	190	393	140	101	89	56	1257
CREDIT FOR WALL, FENCE OR BERM: NO OR YES (w/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)		NO	NO	NO	NO	NO	NO	NO	
NUMBER OF PLANTS REQUIRED:									
SHADE TREES (1:60)		9	3	7	3	2	1	25	8
EVERGREEN TREES - OTHER TREES (2:1 SUBSTITUTE)									
SHRUBS (10:1 SUBSTITUTE)									
NUMBER OF PLANTS PROVIDED:									
SHADE TREES		9	3	7	3	2	1	25	8
EVERGREEN TREES - OTHER TREES (2:1 SUBSTITUTE)									
SHRUBS (10:1 SUBSTITUTE)									
OTHER TREES (10:1 SUBSTITUTE)									
CREDITS BELOW IF NEEDED									

**PERIMETER LANDSCAPE PLANTING LIST**

SYMBOL	QUANTITY	NAME	REMARKS	DESCRIPTION
	12	ACER GINNALA (AMUR MAPLE)	2.5" - 3" cal.	TO BE PLANTED ALONG THE PERIMETER PROVIDED BY THE DEVELOPER
	8	JUNIPERIS VIRGINIANA CULTIVARS (RED CEDAR)	6' - 8' HT.	TO BE PLANTED ALONG THE PERIMETER OUTSIDE THE BGE GREEN ZONE (PROVIDED BY THE DEVELOPER)
	13	ACER RUBRUM 'RED SUNSET' (RED MAPLE)	2.5" - 3" cal.	TO BE PLANTED ALONG THE PERIMETER OUTSIDE THE BGE GREEN AND YELLOW ZONES (PROVIDED BY THE DEVELOPER)



**DEVELOPER'S/BUILDER'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 SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND 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.

*W. S. Carter*  
 10-19-21  
 HARMONY BUILDERS  
 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Chadwick*  
 11-9-21  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE

*Allyson*  
 2/24/22  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE

**BENCHMARK ENGINEERING, INC.**  
 ENGINEERS & LAND SURVEYORS & PLANNERS  
 8480 BALTIMORE NATIONAL PIKE SUITE 315 A ELLICOTT CITY, MARYLAND 21043  
 (P) 410-465-6105 (F) 410-465-6644  
 WWW.BEI-CVLENGINEERING.COM

**ELKRISE HILL**  
 LOTS 1-7 AND NON-CREDITED OPEN SPACE LOT 8 (PLAT No. 25845-25846)

TAX MAP: 38, GRID: 08, PARCEL: 198, ZONED: R-12  
 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

**SITE DEVELOPMENT PLAN**  
 LANDSCAPE PLAN, NOTES AND DETAILS

DATE: OCTOBER, 2021 BEI PROJECT NO: 2818  
 SCALE: AS SHOWN SHEET 9 OF 9

OWNER/BUILDER:  
 HARMONY BUILDERS INC  
 4228 COLUMBIA ROAD  
 ELLICOTT CITY, MD 21042  
 410-461-0833

RELEVANT FILE NUMBERS:  
 ECP-18-028, S-18-004, WP-19-079,  
 P-19-002, HFC-18-006, F-20-041,  
 CONTR.#14-5100-D

DESIGN: JMC/MCR DRAWN: JMC/MCR