

GENERAL NOTES

- 1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
2. SUBJECT PROPERTY ZONED RR-DEO PER THE 10-6-2013 COMPREHENSIVE ZONING PLAN.
3. THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
4. 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. 341A AND 341B WERE USED FOR THIS PROJECT.
5. TRACT BOUNDARY IS BASED ON FIELD RUN BOUNDARY SURVEY PERFORMED ON OR ABOUT SEPTEMBER, 2013 BY BENCHMARK ENGINEERING, INC.
6. TOPOGRAPHY SHOWN IS BASED ON FIELD-RUN SURVEY PERFORMED ON OR ABOUT AUGUST, 2017 BY BENCHMARK ENGINEERING, INC.
7. EXISTING UTILITIES SHOWN ARE BASED ON FIELD LOCATIONS BY BENCHMARK ENGINEERING, INC., HOWARD COUNTY GIS, AND SP-07-013.
8. WETLAND AND FOREST STAND DELINEATION WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC., DATED MARCH 2018.
9. THE GEOTECHNICAL REPORT WAS PREPARED BY HILLIUS-CARNES ENGINEERING ASSOCIATES, INC. IN APRIL, 2007 AND BY GEOLAB GEOTECHNICAL LABORATORIES, INC. IN OCTOBER, 2013.
10. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS, THEIR REQUIRED BUFFERS, 100YR FLOODPLAIN, STEEP SLOPES OR FOREST CONSERVATION EASEMENTS. EXCEPTS APPROVED BY THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
11. THE 100-YEAR FLOODPLAIN STUDY WAS PREPARED BY BENCHMARK ENGINEERING, INC. IN MARCH, 2018.
12. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO CEMETERIES OR HISTORIC STRUCTURES LOCATED ON THIS SITE.
13. THIS SITE IS NOT LOCATED WITHIN THE METROPOLITAN DISTRICT. WATER AND SEWER WILL BE PRIVATE ON-SITE FACILITIES AND IN ACCORDANCE WITH THE PERCOLATION CERTIFICATION PLAN APPROVED AS PART OF SP-07-013 AND AS REVISED.
14. A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
15. A TRAFFIC STUDY IS NOT REQUIRED FOR THIS MINOR SUBDIVISION, IT IS EXEMPTED PER HOWARD COUNTY DESIGN VOLUME III, ROADS AND BRIDGES, SECTION 4.7(B)(5).
16. STORMWATER MANAGEMENT ENVIRONMENTAL SITE DESIGN (ESD) HAS BEEN PROVIDED TO THE MAXIMUM EXTENT PRACTICAL (MEP). THE DECLARATION OF CONVENANTS SHALL BE RECORDED FOR ON-LOT DEVICES AND ALL SHARED SWM DEVICES SHALL BE PRIVATELY OWNED AND MAINTAINED IN ACCORDANCE WITH MAINTENANCE EASEMENT AGREEMENT.
17. THIS SUBDIVISION COMPLIES WITH THE REQUIREMENTS OF SECTION 16.200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION VIA THE ON-SITE RETENTION OF 3.07 ACRES OF FOREST WITHIN A FOREST CONSERVATION EASEMENT, BY THE ON-SITE REFORESTATION OF 5.27 ACRES AND BY USE OF 0.30 ACRES OF A FOREST BANK. SURETY, IN THE AMOUNT OF \$144,781.00 MUST BE POSTED WITH DEVELOPER'S AGREEMENT. A REDLINE REVISION TO THE SITE DEVELOPMENT PLAN FOR REVIEW A PRKLA, SDP-14-005, IS REQUIRED TO SHOW THE USE OF 0.30 ACRES OF REFORESTATION.
18. LANDSCAPING IS PROVIDED WITH A CERTIFIED LANDSCAPE PLAN IN ACCORDANCE ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. FINANCIAL POSTING OF SURETY FOR REQUIRED LANDSCAPING IN ACCORDANCE WITH SECTION 16.124 OF THE LANDSCAPE MANUAL IN THE AMOUNT OF \$22,500 FOR 51 PERIMETER SHADE TREES AND 24 MITIGATION TREES FOR REMOVAL OF SPECIMEN TREES (WP-18-099). FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED WITH THE GRADING PERMIT IN THE FOLLOWING AMOUNTS: LOT 1 \$3,900.00 FOR 13 SHADE TREES; FOR LOT 2 \$1,500.00 FOR 5 SHADE TREES; LOT 3 \$17,100.00 FOR 57 SHADE TREES; LOT 4 \$0.00.
19. 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.
20. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
21. A) THE R1-1 (STOP) SIGN AND THE STREET NAME SIGN (SMS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED. B) THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430) C) ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). D) ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED (QUICK PUNCH) SQUARE TUBE POST (14 GA) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GA) - 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO (2) HOLES ABOVE GROUND LEVEL.
22. THE EXISTING STRUCTURES TO BE REMOVED LOCATED ON LOTS 1-4 ARE TO BE REMOVED PRIOR TO THE SUBMITTAL OF THE RECORD PLAT FOR SIGNATURE.
23. THIS AREA DESIGNATES A PRIVATE SEWAGE DISPOSAL AREA OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED. THIS SEWAGE DISPOSAL AREA SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE DISPOSAL AREA. RECORDED OF A REVISED SEWAGE DISPOSAL AREA SHALL NOT BE NECESSARY.

- 24. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
25. ALL WELLS AND SEPTIC FIELDS WITHIN 100 FEET OF THE PROPERTY HAVE BEEN SHOWN.
26. ALL WELLS ARE TO BE DRILLED PRIOR TO SUBMITTAL OF THE RECORD PLAT FOR SIGNATURE. IT IS THE DEVELOPERS RESPONSIBILITY TO SCHEDULE THE WELL DRILLING PRIOR TO THE FINAL PLAT SUBMISSION. IT WILL NOT BE CONSIDERED "GOVERNMENT DELAY" IF THE WELL DRILLING HOLDS UP THE HEALTH DEPARTMENT'S SIGNATURE OF THE RECORD PLAT.
27. THE PRESERVATION OBLIGATION FOR THE CLUSTER SUBDIVISION IS DEFERRED UNTIL THE FURTHER SUBDIVISION OF LOT 3 PER ZONING REGULATION 105.0.G(1)(h). THIS SUBDIVISION CREATES A PRESERVATION OBLIGATION OF 8.96 ACRES FOR LOTS 1, 2 & 4.
28. WAIVER PETITION WP-13-075, A REQUEST TO WAIVE SUBSECTIONS 16.144(K)(3)(I) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS WAS APPROVED ON DECEMBER 20, 2012 SUBJECT TO THE FOLLOWING CONDITIONS:
1. THE ENVIRONMENTAL CONCEPT PLAN WAS SUBMITTED 30-DAYS PRIOR TO THE SUBMISSION OF THE FINAL PLAN.
2. THE FINAL PLAN SUBMISSION WAS SUBMITTED TO DPZ ON JULY 28, 2013.
3. COMPLIANCE WITH PREVIOUS COMMENTS FROM THE DEVELOPING ENGINEERING DIVISION AND THE HEALTH DEPARTMENT.
29. WAIVER PETITION WP-14-006, A REQUEST TO WAIVE SUBSECTIONS 16.144(K)(3)(I) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS WAS APPROVED ON AUGUST 22, 2013 SUBJECT TO THE FOLLOWING CONDITIONS:
1. THE APPLICANT MUST REDISEGN THE STORMWATER MANAGEMENT FOR THIS SUBDIVISION TO MEET THE CURRENT ENVIRONMENTAL SITE DESIGN (ESD) REQUIREMENTS, AND THEREFORE, THE MAY 4, 2013 MDE GRAND-FATHERING DEADLINE IS NO LONGER APPLICABLE TO THIS PROJECT'S DEADLINE.
2. THE ENVIRONMENTAL CONCEPT PLAN MUST BE APPROVED PRIOR TO THE SUBMISSION OF THE FINAL PLAN.
3. THE FINAL PLAN SUBMISSION WAS SUBMITTED TO DPZ ON JANUARY 28, 2014.
4. COMPLIANCE WITH PREVIOUS COMMENTS FROM THE DEVELOPING ENGINEERING DIVISION AND THE HEALTH DEPARTMENT PER WP-13-075.
5. ADVISORY: FUTURE REQUESTS FOR ADDITIONAL EXTENSIONS TO THE VARIOUS DEADLINE DATES WILL NOT BE GRANTED.
30. WAIVER PETITION (WP-14-053) WAS APPROVED ON JANUARY 6, 2014 TO SECTION 16.116(a)(1) AND 16.116(a)(2)(i) WHICH STATES GRADING, REMOVAL OF VEGETATIVE COVER AND TREES, PAVING AND NEW STRUCTURES SHALL NOT BE PERMITTED WITHIN 25' OF A WETLAND AND WITHIN 50' OF AN INTERMITTENT STREAMBANK; SECTION 16.120(b)(4)(iii) WHICH PROHIBITS STREAM BUFFERS ON RESIDENTIAL LOTS LESS THAN 10 ACRES; AND SECTION 16.1205(a)(10) WHICH CONSIDERS SPECIMEN TREES A PRIORITY. SINCE SP-07-013 RECEIVED SIGNATURE APPROVAL ON OCTOBER 10, 2008 PRIOR TO THE STATES ADOPTION OF SB-666 IT WAS DETERMINED THAT THE WAIVER FOR SPECIMEN TREE REMOVAL IS NOT REQUIRED SINCE THIS PROJECT WOULD BE CONSIDERED GRAND-FATHERED. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
1. THE APPLICANT MUST CONTACT MDE FOR ANY NECESSARY PERMITS FOR DISTURBANCES TO THE ENVIRONMENTAL FEATURES. THE MDE TRACKING PERMIT NUMBER MUST BE ADDED TO ALL PLAN SUBMISSIONS.
2. COMPLIANCE WITH PREVIOUS COMMENTS FROM THE DEVELOPING ENGINEERING DIVISION ISSUED UNDER F-14-048 AND EOP-13-072.
3. ON ALL FUTURE SUBDIVISION PLANS AND BUILDING PERMIT PLANS, PROVIDE A BRIEF DESCRIPTION OF WAIVER PETITION WP-14-053, AS A GENERAL NOTE TO INCLUDE REQUESTS, SECTIONS OF THE REGULATIONS AND DATE.
4. THE LIMIT OF DISTURBANCE WITHIN THE WETLANDS/STREAMBANK BUFFER IS THE MINIMUM NECESSARY TO AFFORD RELIEF AS SHOWN ON THE F-14-048 ROAD CONSTRUCTION DRAWINGS.
31. WAIVER PETITIONS WP-13-075, WP-14-006, AND WP-14-053 HAVE EXCEEDED THE MILESTONE DATES ASSOCIATED WITH THEIR VALIDITY.
32. 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' SERVING MORE THAN ONE RESIDENCE.
B) SURFACE - 6" OF COMPACT CRUSHER RUN BASE WITH TAR AND 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 (H25 LOAD)
E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD PLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY.
F) STRUCTURE CLEARANCES - MINIMUM 12 FEET. G) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
33. PREVIOUS HOWARD COUNTY FILE NUMBERS: ECP-13-077, SP-07-013, F-14-048, WP-13-075, WP-14-006, WP-14-053, WP-18-099.
34. THE APPROVAL AND USE OF THE SEWAGE DISPOSAL AREAS (SDA) FOR LOTS 1 AND 2 AS ILLUSTRATED HEREON IS PREDICATED UPON THE PREMISE THAT THE POND SHALL BE DRAINED AND THAT THE BANK OF THE REMAINING INTERMITTENT STREAM SHALL BE AT LEAST 100 FEET DISTANCE FROM THE SDA FOR LOTS 1 AND 2, RESPECTIVELY, PRIOR TO HEALTH DEPARTMENT SIGNATURE OF THE RECORD PLAT. THE BOUNDARIES OF THE SDA FOR LOTS 1 AND 2 SHALL BE MARKED AND HEALTH DEPARTMENT INSPECTORS SHALL CONFIRM THAT THE DISTANCES FROM THE RESPECTIVE SDA TO THE INTERMITTENT STREAM BANK ARE AT LEAST 100 FEET.
35. THE STRUCTURE WITHIN THE LOT 1 SEWAGE DISPOSAL AREA MUST BE REMOVED WITH MINIMAL DISTURBANCE TO THE SOIL RESOURCE. A HEALTH DEPARTMENT INSPECTOR SHALL INSPECT THE SEWAGE DISPOSAL AREA AFTER REMOVAL OF THE STRUCTURE AND PRIOR TO HEALTH DEPARTMENT SIGNATURE OF THE RECORD PLAT.
36. WATER SAMPLES FROM WELLS INSTALLED FOR LOTS 1, 2, AND 4 MUST BE ANALYZED FOR VOLATILE ORGANIC COMPOUNDS (VOC) PRIOR TO RELEASE OF USE AND OCCUPANCY BY THE HEALTH DEPARTMENT.
37. ALTERNATIVE COMPLIANCE, WP-18-099, HAS BEEN APPROVED BY HOWARD COUNTY DIRECTOR OF PLANNING AND ZONING DATED JUNE 13, 2018.
APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
1. THE ALTERNATIVE COMPLIANCE PETITION NUMBER (WP-18-099) AND ITS CONDITIONS OF APPROVAL MUST BE ADDED TO ALL SUBDIVISION PLANS AND FINAL PLAT, F-18-081.
2. THE DEVELOPER SHALL PLANT TWENTY-FOUR (24) 3" MINIMUM CALIPER NATIVE SHADE TREES IN ADDITION TO THE REQUIRED PERIMETER LANDSCAPING TO MITIGATE THE REMOVAL OF THE SPECIMEN TREES WILL BE BOUNDED WITH THE DEVELOPER'S AGREEMENT UNDER THE FINAL SUBDIVISION PLAN.
3. PROTECTIVE MEASURES SHALL BE UTILIZED DURING CONSTRUCTION TO PROTECT THE SPECIMEN TREES THAT ARE PROPOSED TO REMAIN. INCLUDE DETAILS OF THE PROPOSED TREE PROTECTION MEASURES ON THE FINAL PLAN.
4. THE ALTERNATIVE COMPLIANCE APPROVAL APPLIES ONLY TO THE TWELVE (12) SPECIMEN TREES ON THE PROPERTY IS NOT PERMITTED UNLESS IT CAN BE SUFFICIENTLY DEMONSTRATED BY THE APPLICANT TO BE JUSTIFIED.
5. NO DISTURBANCE SHALL BE PERMITTED WITHIN ENVIRONMENTAL FEATURES AND REQUIRED BUFFERS EXCEPT FOR THE NECESSARY ENVIRONMENTAL DISTURBANCES FOR THE USE--IN-COMMON DRIVEWAY ENTRANCE AS SHOWN ON FINAL PLAN, F-18-081.

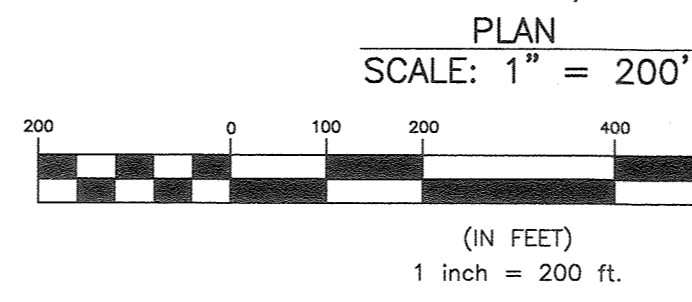
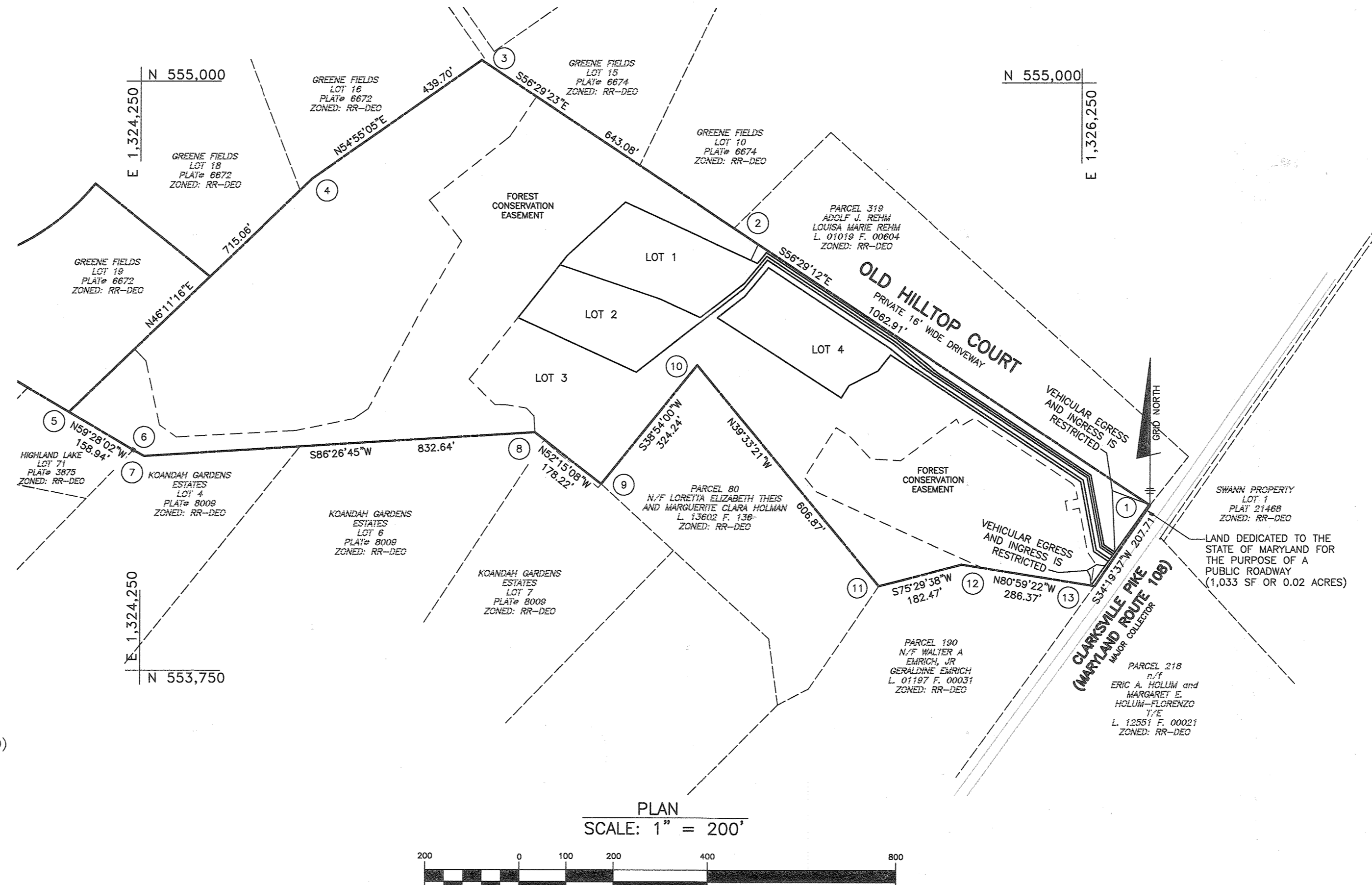
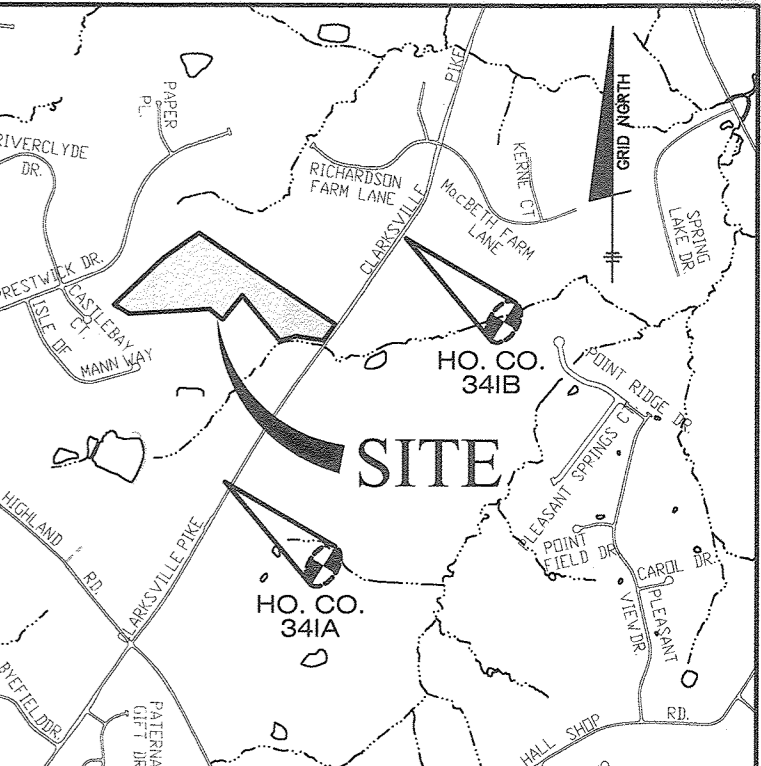
- 38. THE EXISTING WELL, HO-81-1246, SHALL BE SEALED AND THE WELL ABANDONMENT REPORT SUBMITTED TO THE HEALTH DEPARTMENT PRIOR TO HEALTH DEPARTMENT SIGNATURE OF THE RECORD PLAT.
39. ALL WELLS ESTABLISHED IN THIS SUBDIVISION MUST BE SAMPLED AT YIELD TEST AND SAMPLES ANALYZED FOR RADIUM AND/OR DEGRADATION PRODUCTS GROSS ALPHA AND GROSS BETA.
40. THE DEVELOPER REQUESTED A WAIVER TO DESIGN MANUAL, VOLUME III, SECTION 2.6.B, THAT REQUIRES A SHARED DRIVEWAY THAT CROSSES A 100-YEAR FLOODPLAIN TO BE A PUBLIC ACCESS PLACE AND THE DRAINAGE ELEMENT WITHIN THE 100-YEAR FLOODPLAIN TO OVERTOP THE EXISTING DRIVEWAY BY NO MORE THAN 1". BASED ON THE INFORMATION PROVIDED WITH THE SUBMITTED, HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING HAS APPROVED THE REQUEST IN LETTER DATED 02/01/18.
41. THE REQUESTED WETLAND PERMITS FOR THE NEARBY ROAD GRADING AND ROAD CONSTRUCTION HAS BEEN APPROVED. THE LETTER OF APPROVAL HAS AN EFFECTIVE DATE OF FEBRUARY 3, 2021. THE TRACT NUMBER IS 20-14-7261/26051411.

Table with 5 columns: SYMBOL, HYDRIC GROUP, HYDROLOGIC GROUP, ALTERNATE GROUP, NAME, k-VALUE. Rows include GgB, GnB, GoB, GgC, GgB with corresponding values for GLENELG LOAM, GLENVILLE-BAILE SILT LOAM, GLENVILLE-CODORUS SILT LOAMS, and GLADSTONE LOAM.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. Chief, Development Engineering Division: 5-3-19. Chief, Division of Land Development: 6-3-19.

SUPPLEMENTAL PLAN CLARKSVILLE CROSSING LOTS 1 THRU 4 TAX MAP 34, GRID 23, PARCEL 301 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

HOWARD COUNTY BENCHMARKS. 341A: N 553,271.9128 E 1,325,838.7488 ELEV. 471.944. 341B: N 554,973.5233 E 1,327,078.7699 ELEV. 442.801.



Specimen Tree Chart

Table with 5 columns: Key (X#), Species, Size (in dbh), CRZ (feet radius), Comments. Lists 46 tulip poplar trees with varying sizes and notes on fair dieback.

BOUNDARY COORDINATES table with 3 columns: POINT #, NORTHING, EASTING. Lists 13 points around the perimeter of the lots.

MINIMUM LOT SIZE CHART table with 4 columns: LOT, GROSS AREA (SF), PIPESTEM AREA (SF), MINIMUM LOT SIZE (SQUARE FEET, ACRES). Shows requirements for lots 1 through 4.

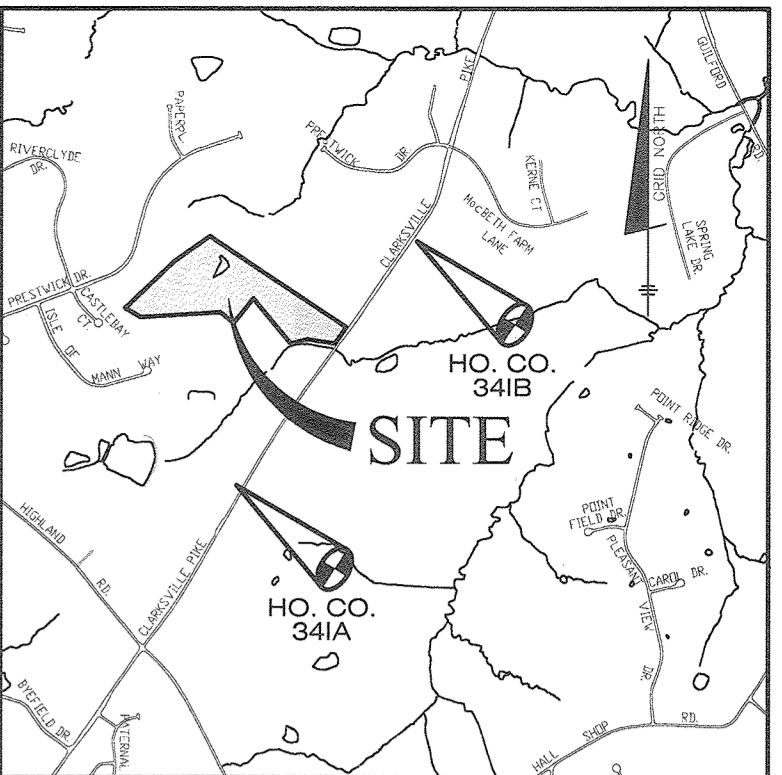
STORMWATER MANAGEMENT PRACTICES table with 5 columns: LOT NO., ADDRESS, NON-ROOFTOP DISCONNECT (N-2), DRYWELLS (M-5), MICRO-BIORETENTION (M-6). Lists practices for lots 1 through 4.

LEGEND table listing various symbols and line styles used in the plan, such as SOILS CLASSIFICATION, EXISTING CONTOURS, PROPOSED CONTOURS, and various easements.

SHEET INDEX table with 2 columns: NO., DESCRIPTION. Lists 15 sheets including cover sheet, site map, and various management plans.

Project information block including OWNER (Clarksville NL LLC), DEVELOPER (Rock Realty, Inc.), BENCHMARK ENGINEERING, INC. logo and contact info, and project details like TAX MAP, GRID, PARCEL, and ZONING.

HOWARD COUNTY BENCHMARKS
 341A: N 553,271.9128 E 1,325,838.7488 ELEV. 471.944
 341B: N 554,973.5233 E 1,327,078.7699 ELEV. 442.801

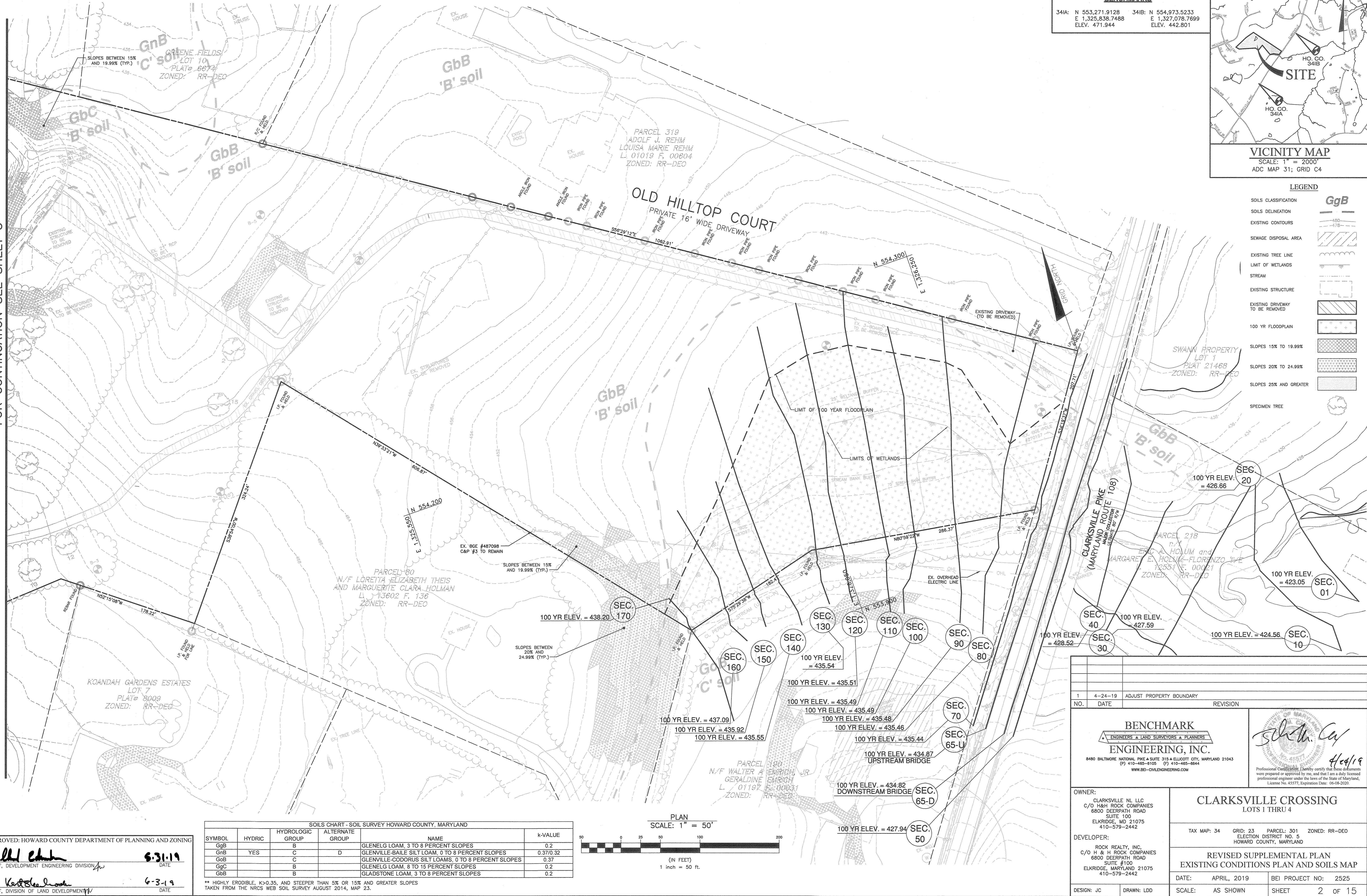


VICINITY MAP
 SCALE: 1" = 2000'
 ADC MAP 31; GRID C4

LEGEND

- SOILS CLASSIFICATION **GgB**
- SOILS DELINEATION
- EXISTING CONTOURS
- SEWAGE DISPOSAL AREA
- EXISTING TREE LINE
- LIMIT OF WETLANDS
- STREAM
- EXISTING STRUCTURE
- EXISTING DRIVEWAY TO BE REMOVED
- 100 YR FLOODPLAIN
- SLOPES 15% TO 19.99%
- SLOPES 20% TO 24.99%
- SLOPES 25% AND GREATER
- SPECIMEN TREE

FOR CONTINUATION SEE SHEET 3

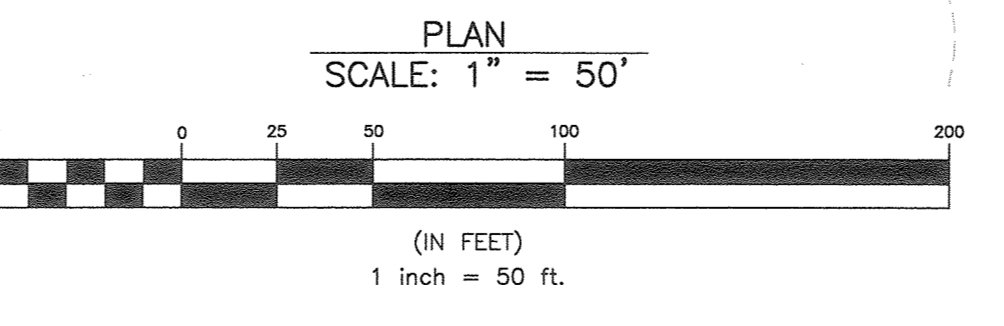


APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 6-31-19
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 6-3-19
 CHIEF, DIVISION OF LAND DEVELOPMENT

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND

SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALTERNATE GROUP	NAME	K-VALUE
GgB		B	D	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	0.2
GbB	YES	C		GLENVILLE-BAILE SILT LOAM, 0 TO 8 PERCENT SLOPES	0.37/0.32
GbC		C		GLENVILLE-CODORUS SILT LOAMS, 0 TO 8 PERCENT SLOPES	0.37
GgC		B		GLENELG LOAM, 8 TO 15 PERCENT SLOPES	0.2
GbB		B		GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	0.2

** HIGHLY ERODIBLE, K>0.35, AND STEEPER THAN 5% OR 15% AND GREATER SLOPES TAKEN FROM THE NRCS WEB SOIL SURVEY AUGUST 2014, MAP 23.



NO.	DATE	REVISION
1	4-24-19	ADJUST PROPERTY BOUNDARY

BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS
 8480 BALTIMORE NATIONAL PIKE & SUITE 315 & ELLICOTT CITY, MARYLAND 21043
 (P) 410-468-9105 (F) 410-468-6944
 WWW.BE-ENGINEERING.COM

[Signature] 4/24/19
 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. 43577, Expiration Date: 06-08-2020.

CLARKSVILLE CROSSING
 LOTS 1 THRU 4

TAX MAP: 34 GRID: 23 PARCEL: 301 ZONED: RR-DEO
 ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

REVISOR SUPPLEMENTAL PLAN
 EXISTING CONDITIONS PLAN AND SOILS MAP

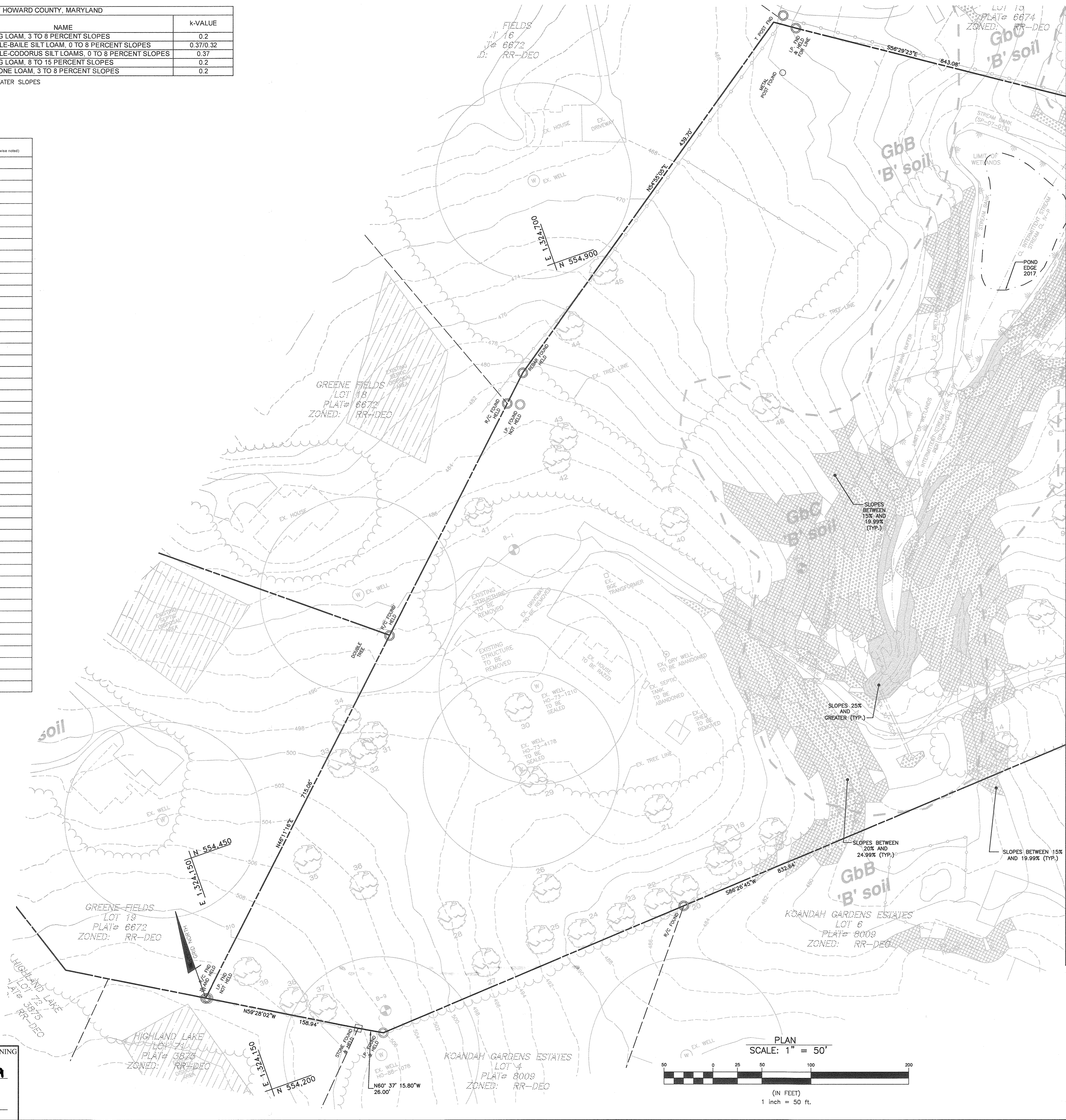
DATE: APRIL, 2019 BEI PROJECT NO: 2525
 SCALE: AS SHOWN SHEET 2 OF 15

SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALTERNATE GROUP	NAME	K-VALUE
GgB		B		GLENELG LOAM, 3 TO 8 PERCENT SLOPES	0.2
GnB	YES	C	D	GLENVILLE-BAILE SILT LOAM, 0 TO 8 PERCENT SLOPES	0.37/0.32
GcB		C		GLENVILLE-CODORUS SILT LOAMS, 0 TO 8 PERCENT SLOPES	0.37
GcC		B		GLENELG LOAM, 8 TO 15 PERCENT SLOPES	0.2
GcB		B		GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	0.2

** HIGHLY ERODIBLE, K>0.35, AND STEEPER THAN 5% OR 15% AND GREATER SLOPES TAKEN FROM THE NRCS WEB SOIL SURVEY AUGUST 2014, MAP 23.

Specimen Tree Chart

Key (X#)	Species	Size (in dbh)	CRZ (feet radius)	Comments (good condition unless otherwise noted)
1	Tulip poplar	31	46.5	
2	Tulip poplar	36	54	
3	Tulip poplar	31	46.5	
4	Tulip poplar	40	60	
5	Red oak	33	49.5	
6	Tulip poplar	30	45	
7	Red oak	30	45	
8	Red oak	30	45	
9	Tulip poplar	33	49.5	
10	Red oak	31	46.5	
11	Red oak	36	54	
12	Red oak	30	45	
13	Tulip poplar	35	52.5	
14	Red oak	37	55.5	
15	Tulip poplar	32	48	
16	Tulip poplar	33	49.5	Fair, dieback noted
17	Tulip poplar	32	48	
18	Tulip poplar	32	48	
19	Tulip poplar	34	51	
20	Tulip poplar	35	52.5	
21	Tulip poplar	30	45	
22	Tulip poplar	30	45	
23	Tulip poplar	36	54	
24	Tulip poplar	30	45	
25	Tulip poplar	39	58.5	
26	Tulip poplar	32	48	Fair, dieback noted
27	Tulip poplar	34	51	
28	Tulip poplar	31	46.5	
29	Tulip poplar	32	48	
30	Tulip poplar	30	45	
31	Tulip poplar	31	46.5	
32	Tulip poplar	33	49.5	
33	Tulip poplar	30	45	
34	Tulip poplar	31	46.5	
35	Tulip poplar	30	45	
36	Tulip poplar	34	51	
37	Tulip poplar	34	51	
38	Tulip poplar	33	49.5	
39	Tulip poplar	31	46.5	
40	Tulip poplar	31	46.5	
41	Tulip poplar	30	45	
42	Tulip poplar	30	45	
43	Tulip poplar	32	48	
44	Tulip poplar	75	112.5	fair, dieback noted
45	Tulip poplar	62	93	fair, dieback noted
46	Tulip poplar	31	46.5	



LEGEND

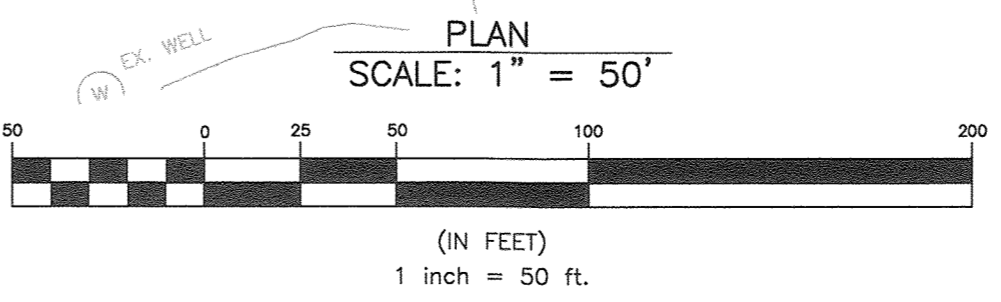
SOILS CLASSIFICATION	GgB
SOILS DELINEATION	---
EXISTING CONTOURS	---
SEWAGE DISPOSAL AREA	///
EXISTING TREE LINE	~
LIMIT OF WETLANDS	- - -
STREAM	—
EXISTING STRUCTURE	□
EXISTING DRIVEWAY TO BE REMOVED	▨
100 YR FLOODPLAIN	□
SLOPES 15% TO 19.99%	▨
SLOPES 20% TO 24.99%	▨
SLOPES 25% AND GREATER	▨
SPECIMEN TREE	○

FOR CONTINUATION SEE SHEET 2

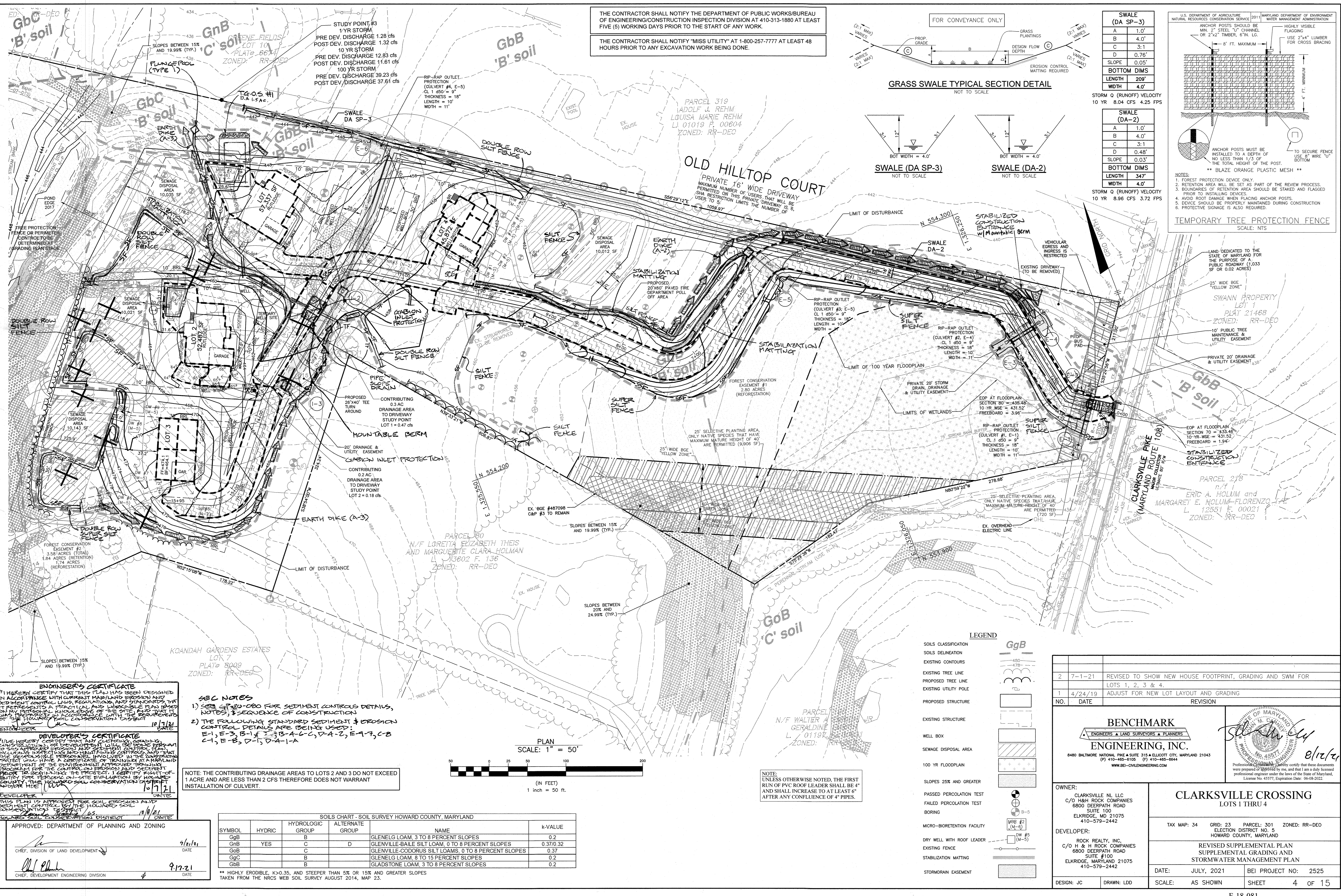
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 5-31-19
CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 6-3-19
CHIEF, DIVISION OF LAND DEVELOPMENT

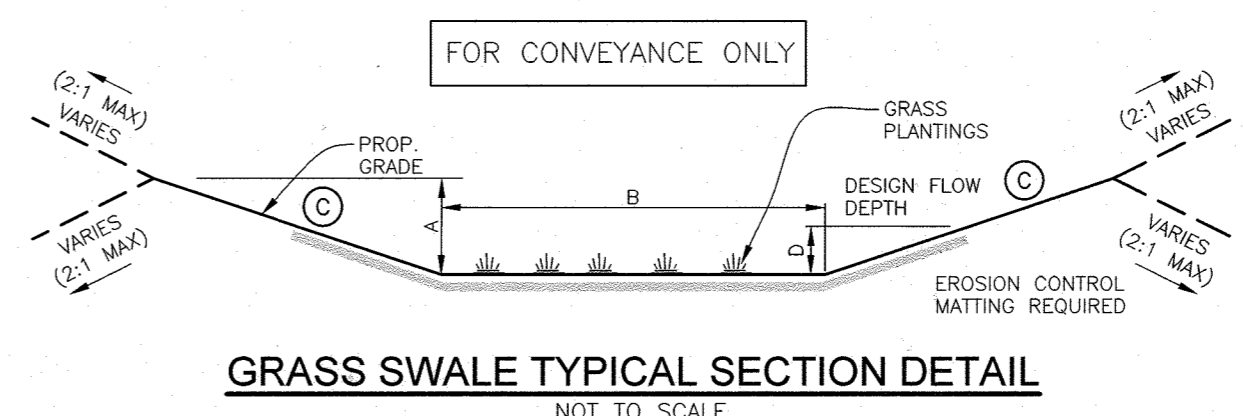


NO. 1	DATE 4/24/19	REVISION New Boundary
<p align="center">BENCHMARK ENGINEERING, INC. ENGINEERS & LAND SURVEYORS & PLANNERS 8480 BALTIMORE NATIONAL PIKE & SUITE 315 A ELLICOTT CITY, MARYLAND 21043 (P) 410-465-8105 (F) 410-465-0844 WWW.BE-CIVILENGINEERING.COM</p>		
<p align="center"><i>[Signature]</i> PROFESSIONAL ENGINEER 4/24/19 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. 45577, Expiration Date: 06-08-2020.</p>		
OWNER: CLARKSVILLE NL LLC C/O H & H ROCK COMPANIES 6800 DEERPATH ROAD SUITE 100 ELKBRIDGE, MD 21075 410-579-2442	<p align="center">CLARKSVILLE CROSSING LOTS 1 THRU 4</p>	
DEVELOPER: ROCK REALTY, INC. C/O H & H ROCK COMPANIES 6800 DEERPATH ROAD SUITE #100 ELKBRIDGE, MARYLAND 21075 410-579-2442	<p>TAX MAP: 34 GRID: 23 PARCEL: 301 ZONED: RR-DEO ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND</p>	
<p align="center">REVISED SUPPLEMENTAL PLAN EXISTING CONDITIONS PLAN AND SOILS MAP</p>		
DESIGN: JC	DRAWN: LDD	SCALE: AS SHOWN SHEET 3 OF 15



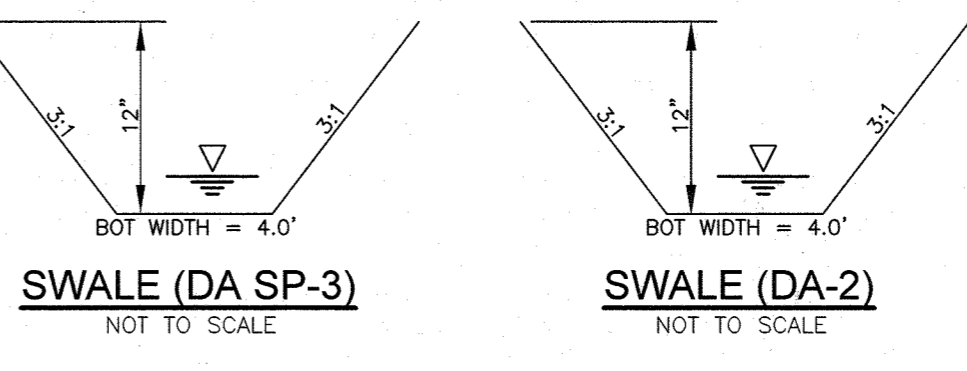
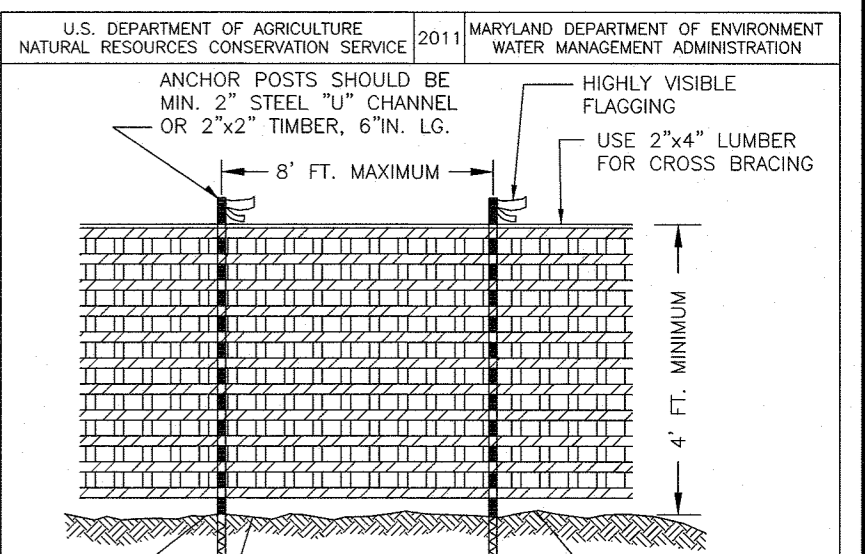
THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF ANY WORK.

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



SWALE (DA SP-3)	
A	1.0'
B	4.0'
C	3:1
D	0.75'
SLOPE	0.05'
BOTTOM DIMS	
LENGTH	209'
WIDTH	4.0'

STORM Q (RUNOFF) VELOCITY
10 YR 8.04 CFS 4.25 FPS



SWALE (DA-2)	
A	1.0'
B	4.0'
C	3:1
D	0.48'
SLOPE	0.03'
BOTTOM DIMS	
LENGTH	347'
WIDTH	4.0'

STORM Q (RUNOFF) VELOCITY
10 YR 8.96 CFS 3.72 FPS

STUDY POINT #3
1 YR STORM
PRE DEV. DISCHARGE 1.28 cfs
POST DEV. DISCHARGE 1.32 cfs
10 YR STORM
PRE DEV. DISCHARGE 12.83 cfs
POST DEV. DISCHARGE 11.61 cfs
100 YR STORM
PRE DEV. DISCHARGE 39.23 cfs
POST DEV. DISCHARGE 37.61 cfs

RIP-RAP OUTLET PROTECTION (CULVERT #1, E-5)
CL 1 d50 = 9"
THICKNESS = 18"
LENGTH = 10'
WIDTH = 11'

PARCEL 319
ADOLF J. REHM
LOUISA MARIE REHM
LJ 01019 F. 00604
ZONED: RR-DEO

OLD HILLTOP COURT
PRIVATE 16' WIDE DRIVEWAY
MAXIMUM NUMBER OF USERS THAT WILL BE PERMITTED ON THIS PRIVATE DRIVEWAY IS 6.
SHA RESTRICTION LIMITS THE NUMBER OF USER TO 5.

LAND DEDICATED TO THE STATE OF MARYLAND FOR THE PURPOSE OF PUBLIC ROADWAY (1,033 SF OR 0.02 ACRES)

SWANN PROPERTY
LOT 1
PLAT 21468
ZONED: RR-DEO

PRIVATE 20' DRAINAGE & UTILITY EASEMENT

EOP AT FLOODPLAIN SECTION 70 = 433.48'
10 YR WSE = 431.52'
FREEBOARD = 1.94'

PARCEL 278
N/F
ERIC A. HOLM and
MARGARET E. NOLAN-FLORENZO
L 12551 E. 00021
ZONED: RR-DEO

ENGINEER'S CERTIFICATE
I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS AND THAT I HAVE PREPARED A PROFESSIONAL ENGINEERING PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE AND THAT I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND.

10/17/21 DATE

DEVELOPER'S CERTIFICATE
I HEREBY CERTIFY THAT ANY GRADING, GRASSING, OR OTHER EROSION CONTROL MEASURES WILL BE DONE IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLAN AND THAT I HAVE PREPARED A PROFESSIONAL ENGINEERING PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE AND THAT I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND.

10/17/21 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

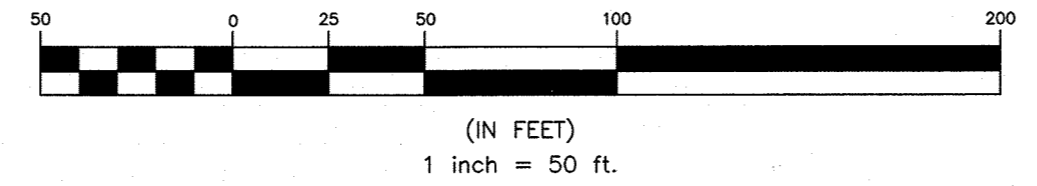
9/21/21 DATE

9/17/21 DATE

- SEC NOTES**
- SEE 4120-080 FOR SEDIMENT CONTROLS DETAILS, NOTES, & SEQUENCE OF CONSTRUCTION
 - THE FOLLOWING STANDARD SEDIMENT & EROSION CONTROL DETAILS ARE BEING USED:
E-1, E-3, B-1, B-2, B-4, G-C, D-A-2, E-7, C-B, C-1, E-8, D-1, D-A-1-A

NOTE: THE CONTRIBUTING DRAINAGE AREAS TO LOTS 2 AND 3 DO NOT EXCEED 1 ACRE AND ARE LESS THAN 2 CFS THEREFORE DOES NOT WARRANT INSTALLATION OF CULVERT.

PLAN
SCALE: 1" = 50'



NOTE: UNLESS OTHERWISE NOTED, THE FIRST RUN OF PVC ROOF LEADER SHALL BE 4" AND SHALL INCREASE TO AT LEAST 6" AFTER ANY CONFLUENCE OF 4" PIPES.

LEGEND

SOILS CLASSIFICATION	GgB
SOILS DELINEATION	---
EXISTING CONTOURS	~
EXISTING TREE LINE	⌒
PROPOSED TREE LINE	⌒
EXISTING UTILITY POLE	⊙
PROPOSED STRUCTURE	□
EXISTING STRUCTURE	□
WELL BOX	⊙
SEWAGE DISPOSAL AREA	▨
100 YR FLOODPLAIN	+
SLOPES 25% AND GREATER	⊕
PASSED PERCOLATION TEST	⊕
FAILED PERCOLATION TEST	⊕
BORING	⊕
MICRO-BIORETENTION FACILITY	⊕
DRY WELL WITH ROOF LEADER	⊕
EXISTING FENCE	⊕
STABILIZATION MATTING	⊕
STORMDRAIN EASEMENT	⊕

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND

SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALTERNATE GROUP	NAME	K-VALUE
GgB		B	D	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	0.2
GnB	YES	C	D	GLENVILLE-BAILE SILT LOAM, 0 TO 8 PERCENT SLOPES	0.37/0.32
GoB		C	D	GLENVILLE-CODORUS SILT LOAMS, 0 TO 8 PERCENT SLOPES	0.37
GgC		B	D	GLENELG LOAM, 8 TO 15 PERCENT SLOPES	0.2
GgB		B	D	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	0.2

** HIGHLY ERODIBLE, K>0.35, AND STEEPER THAN 5% OR 15% AND GREATER SLOPES TAKEN FROM THE NRCS WEB SOIL SURVEY AUGUST 2014, MAP 23.

NO.	DATE	REVISION
2	7-1-21	REVISED TO SHOW NEW HOUSE FOOTPRINT, GRADING AND SWM FOR LOTS 1, 2, 3 & 4.
1	4/24/19	ADJUST FOR NEW LOT LAYOUT AND GRADING

BENCHMARK ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE & SUITE 315 ELLICOTT CITY, MARYLAND 21043
(P) 410-465-8105 (F) 410-465-8644
WWW.BE-ENGINEERING.COM

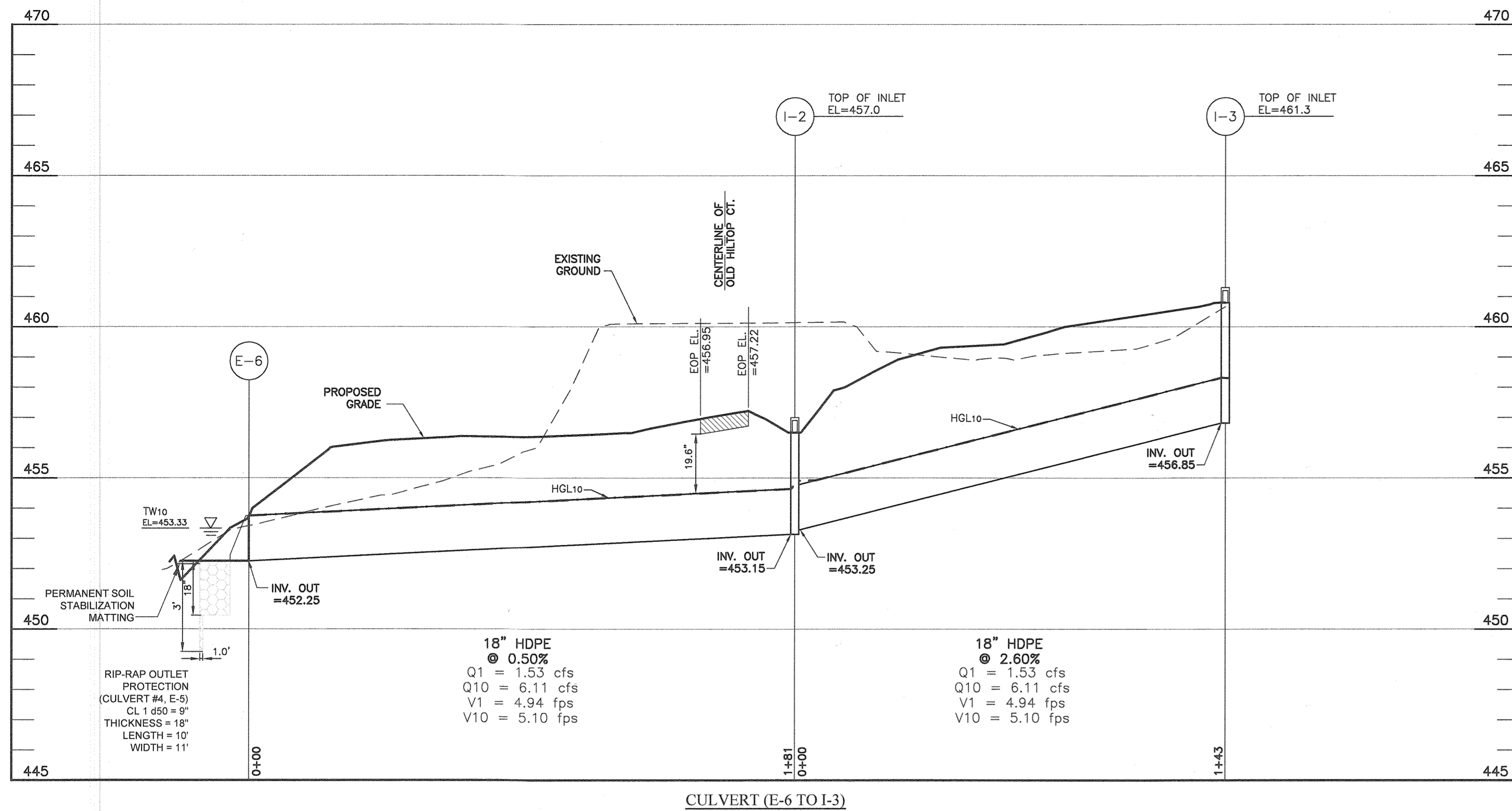
CLARKSVILLE CROSSING
LOTS 1 THRU 4

TAX MAP: 34 GRID: 23 PARCEL: 301 ZONED: RR-DEO
ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

OWNER: CLARKSVILLE NL LLC
C/O H&H ROCK COMPANIES
6800 DEERPATH ROAD
SUITE 100
ELKRDGE, MD 21075
410-579-2442

DEVELOPER: ROCK REALTY, INC.
C/O H & H ROCK COMPANIES
6800 DEERPATH ROAD
SUITE #100
ELKRDGE, MARYLAND 21075
410-579-2442

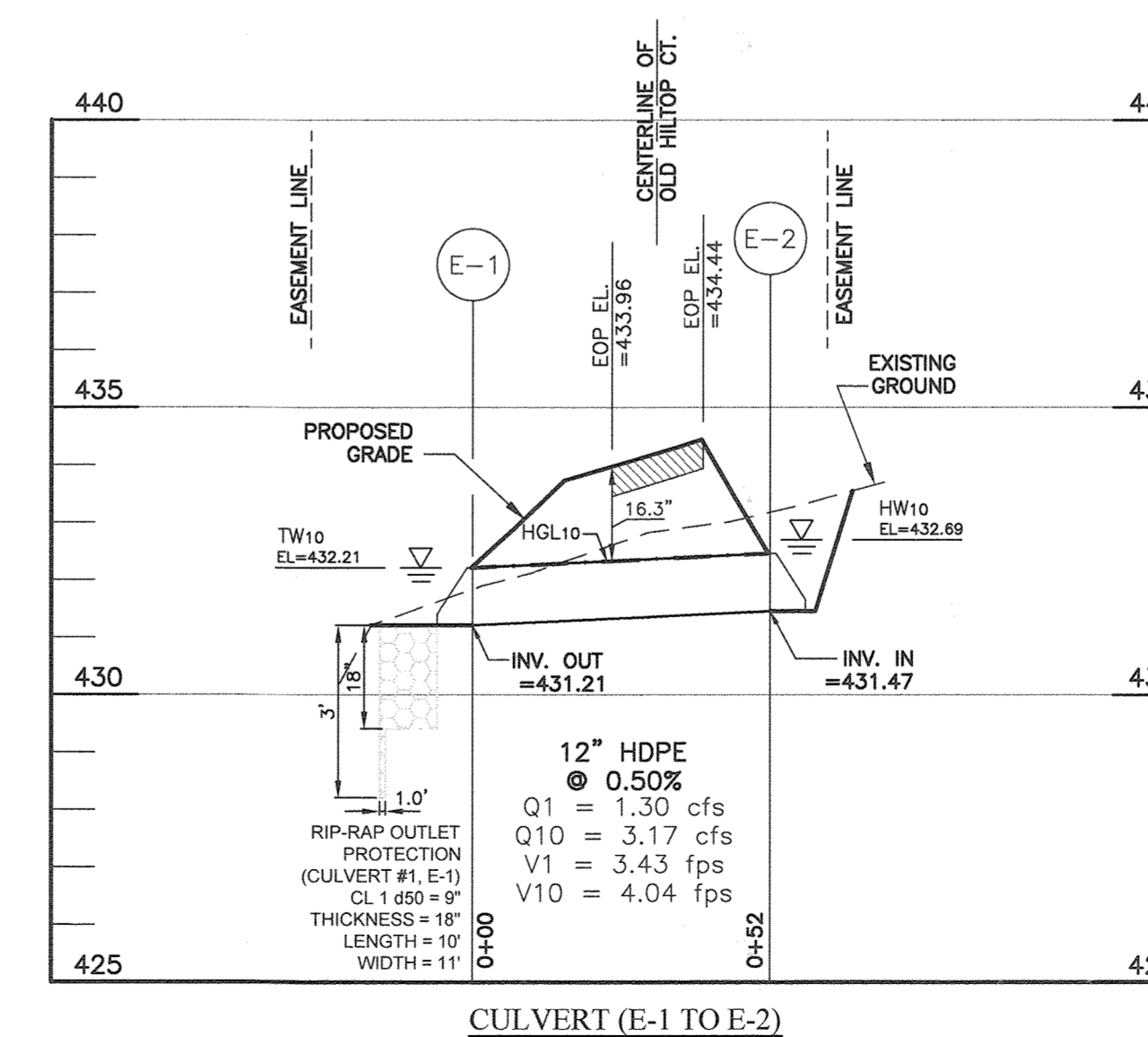
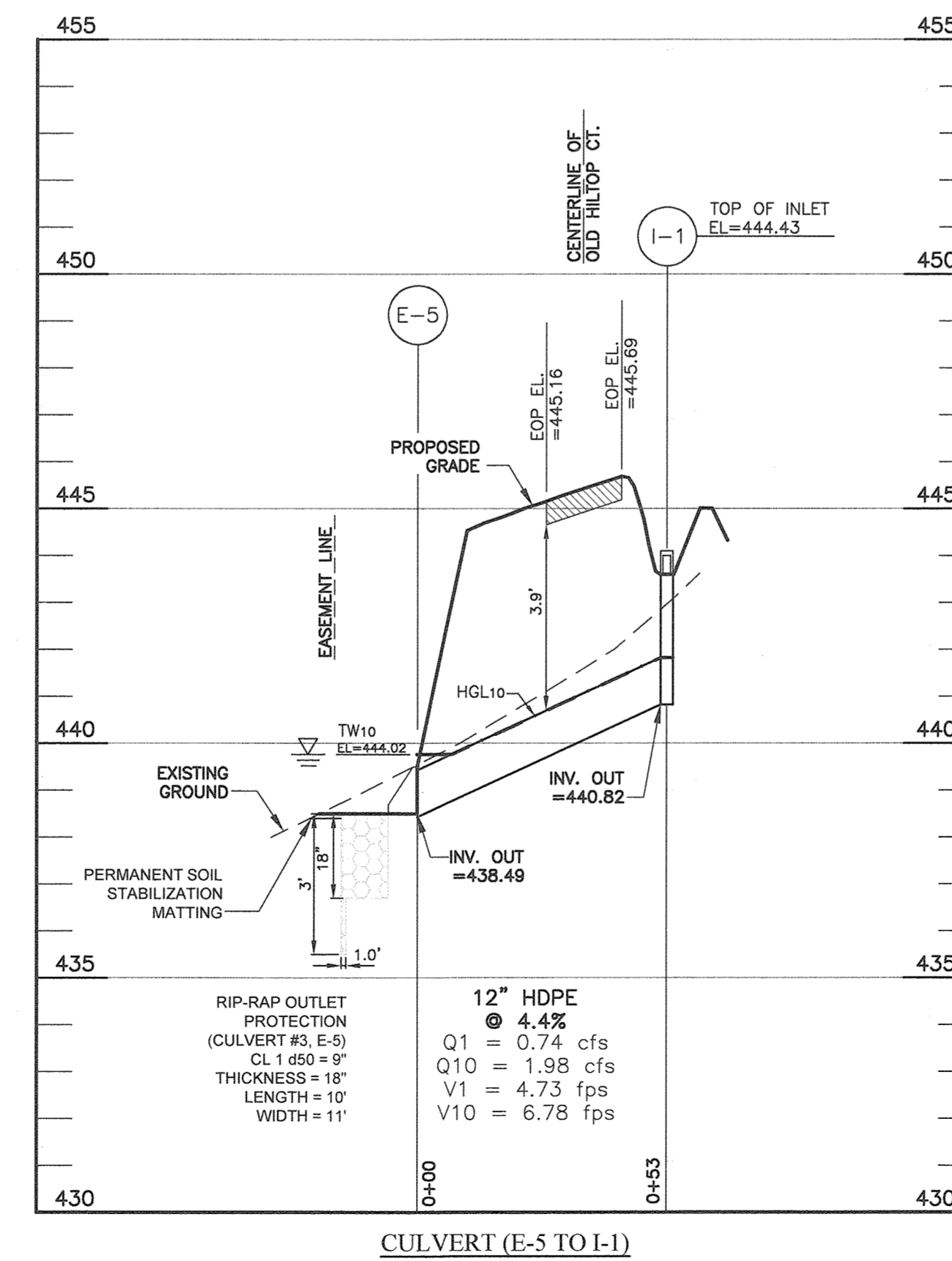
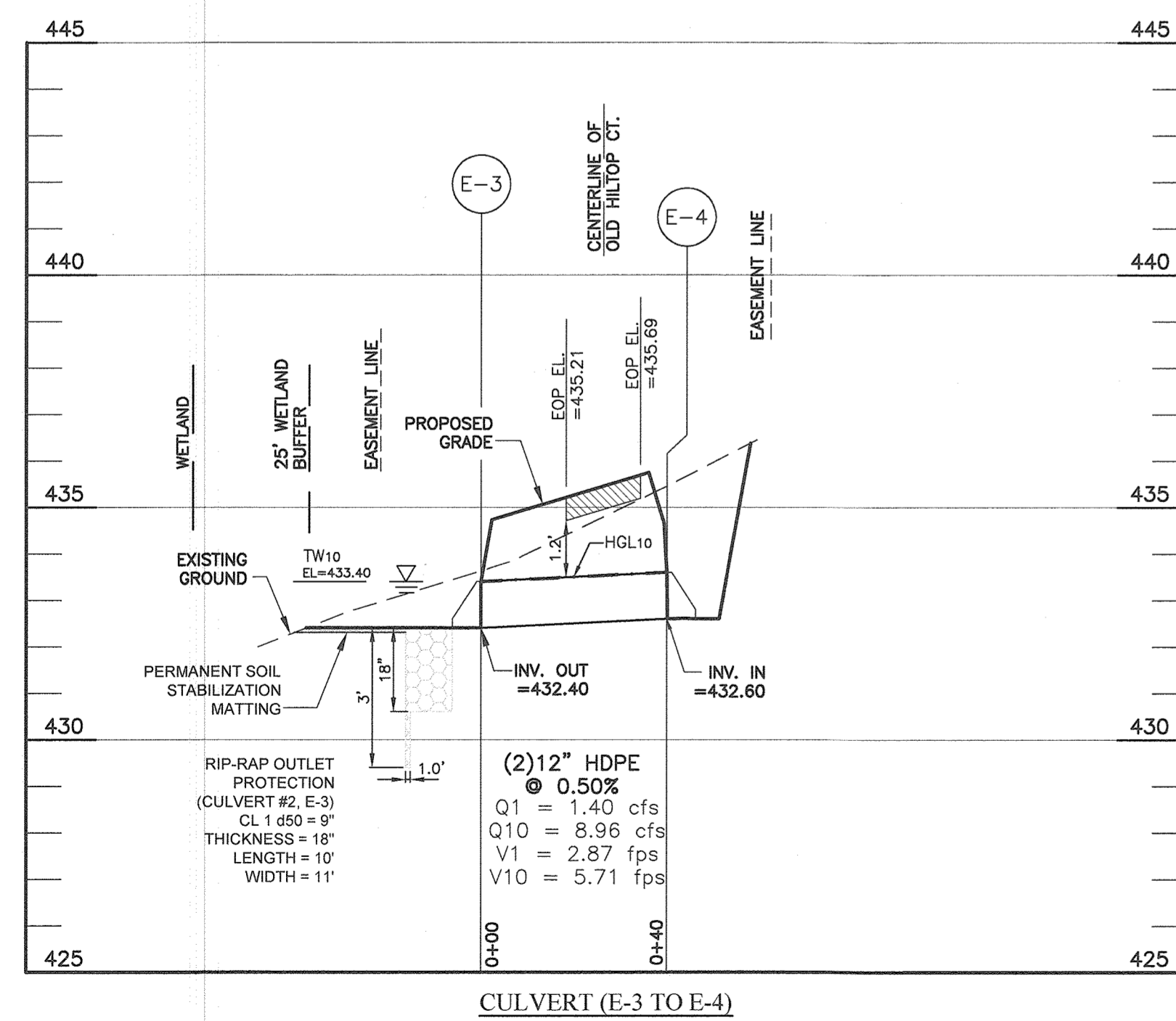
DATE: JULY, 2021 BEI PROJECT NO: 2525
SCALE: AS SHOWN SHEET 4 OF 15



STORM DRAIN STRUCTURE SCHEDULE					
STRUCTURE NO.	TYPE	HO. CO. STD. DETAIL	LOCATION	INVERT IN	INVERT OUT
END SECTION					
E-1	12" HDPE	N/A	N 553,976.54 E 1,326,305.89	-	431.21
E-2	12" HDPE	N/A	N 554,019.10 E 1,326,335.57	431.47	-
E-3	12" HDPE	N/A	N 554,119.52 E 1,326,261.58	-	432.40
E-4	12" HDPE	N/A	N 554,126.91 E 1,326,300.89	432.60	-
E-5	18" HDPE	N/A	N 554,298.17 E 1,326,015.16	-	438.49
E-6	18" HDPE	N/A	N 554,630.59 E 1,325,588.17	-	452.25
INLET					
I-1	'D' INLET	D-4.10	N 554,349.32 E 1,325,985.14	-	440.82
I-2	'D' INLET	D-4.10	N 554,491.20 E 1,325,472.87	453.25	453.15
I-3	'D' INLET	D-4.10	N 554,403.32 E 1,325,360.68	-	456.85
I-4	'D' INLET	D-4.10	N 554,554.41 E 1,325,253.61	456.76	458.58

PIPE SCHEDULE			
PIPE	SIZE / MAT'L	LENGTH	SLOPE
E-1 TO E-2	12" HDPE	51.89'	0.50%
E-3 TO E-4	(2) 12" HDPE	40.00'	0.50%
E-5 TO I-1	12" HDPE	53.0'	4.4%
E-6 TO I-2	18" HDPE	180.89'	0.50%
I-2 TO I-3	18" HDPE	142.56'	2.60%

DISCHARGE SUMMARY TABLE		
	1yr (cfs)	10yr (cfs)
CULVERT (E-1 TO E-2)	1.30	3.17
CULVERT (E-3 TO E-4)	1.40	8.96
CULVERT (E-5 TO I-1)	0.68	3.20
CULVERT (E-6 TO I-2)	1.01	3.69
CULVERT (I-2 TO I-3)	0.57	2.52



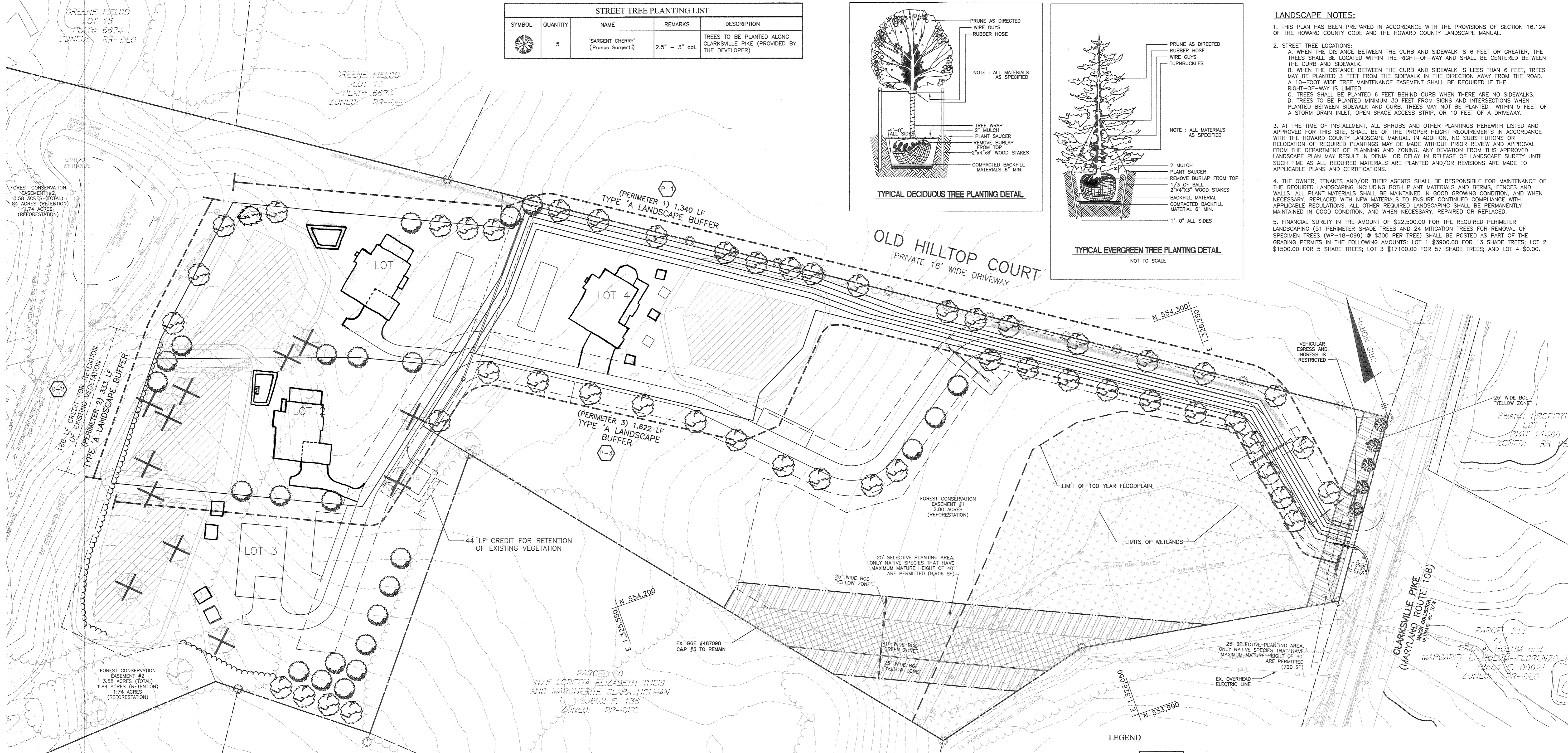
- CULVERT (E-1 TO E-2)
DA = 0.69 AC RCN = 86
Tc = 0.17 Hr
- CULVERT (E-3 TO E-4)
DA = 4.39 AC RCN = 64
Tc = 0.17 Hr
- CULVERT (E-5 TO I-1)
DA = 1.29 AC RCN = 68
Tc = 0.17 Hr
- CULVERT (E-6 TO I-2)
DA = 1.21 AC RCN = 73
Tc = 0.17 Hr
- CULVERT (I-2 TO I-3)
DA = 0.97 AC RCN = 69
Tc = 0.17 Hr

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

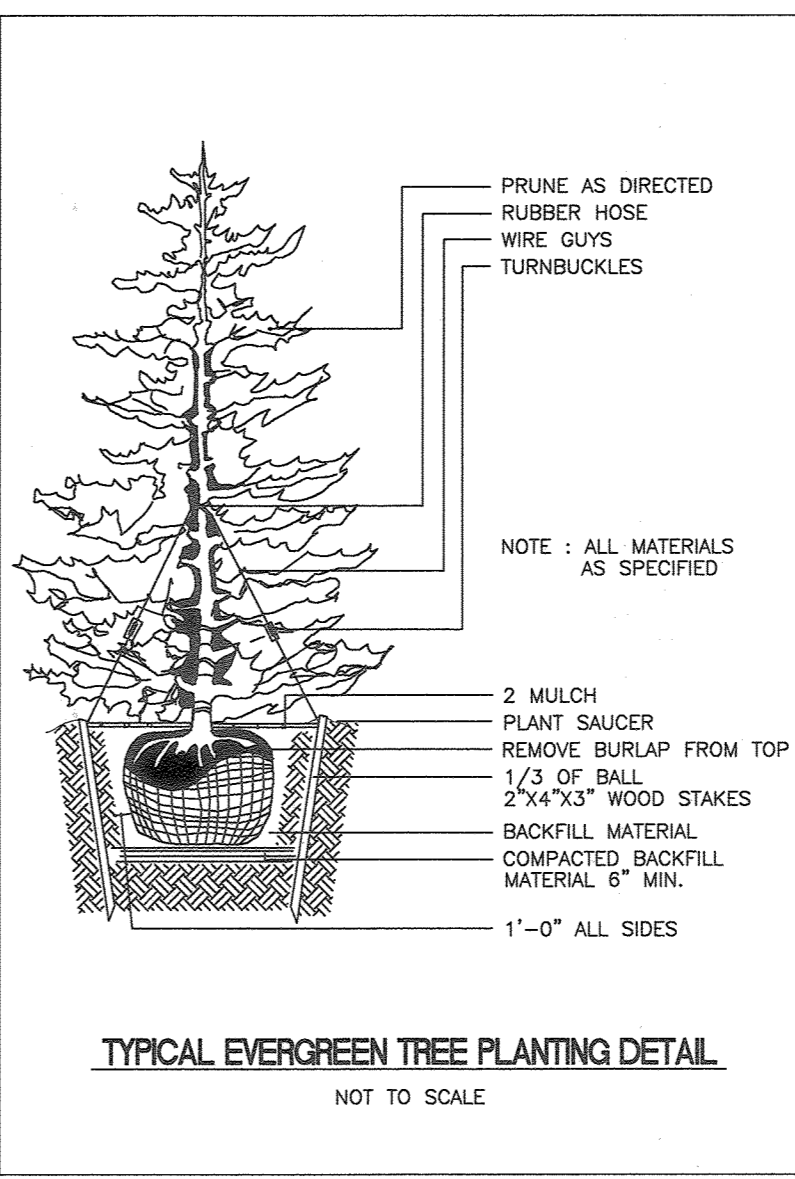
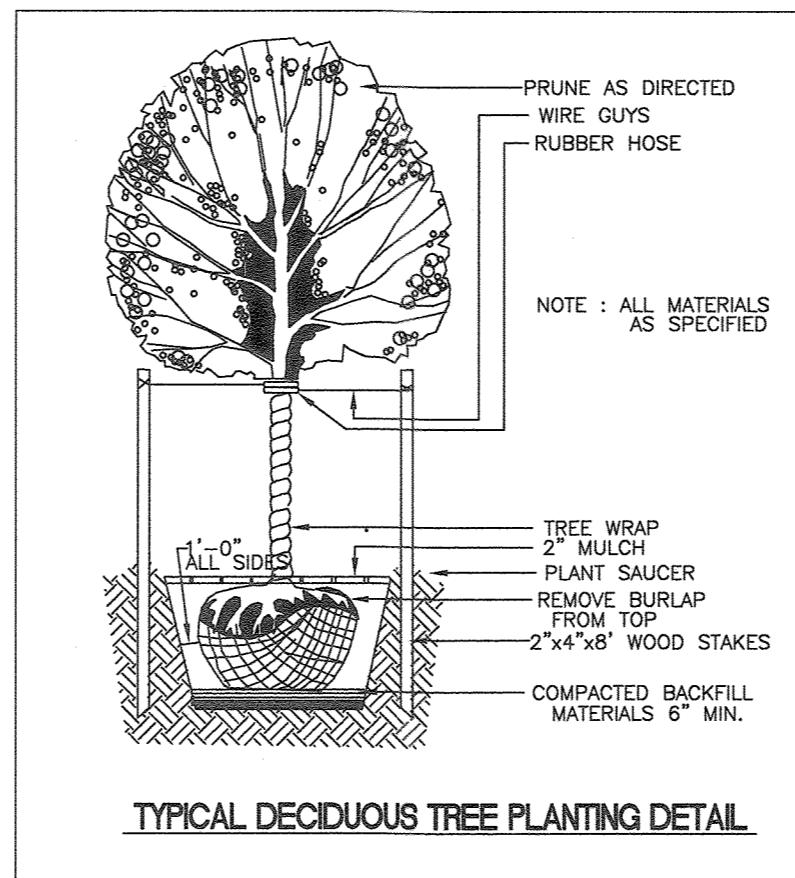
[Signature] 5-31-19
CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 6-3-19
CHIEF, DIVISION OF LAND DEVELOPMENT

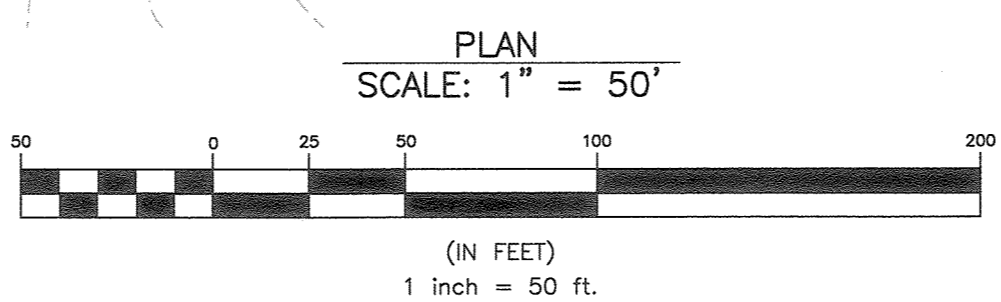
2 7-1-21 REVISED TO INCLUDE NEW INLET (I-4) LOT 2. 1 4/24/19 Adjust Profiles and Sheet numbers	
NO.	DATE
REVISION	
840 BALTIMORE NATIONAL PIKE & SUITE 315 A ELIJAH CITY, MARYLAND 21043 (P) 410-460-8105 (F) 410-460-6944 WWW.BE-ENGINEERING.COM	
OWNER: CLARKSVILLE NL LLC C/O H&H ROCK COMPANIES 6800 DEERPATH ROAD SUITE 100 ELKRIDGE, MD 21075 410-579-2442	
CLARKSVILLE CROSSING LOTS 1 THRU 4	
DEVELOPER: ROCK REALTY, INC. C/O H & H ROCK COMPANIES 6800 DEERPATH ROAD SUITE #100 ELKRIDGE, MARYLAND 21075 410-579-2442	
REVISED SUPPLEMENTAL PLAN SUPPLEMENTAL PLAN STORM DRAIN PROFILES	
DESIGN: JC	DRAWN: LDD
DATE: APRIL, 2019	BEI PROJECT NO: 2525
SCALE: AS SHOWN	SHEET 6 OF 15



STREET TREE PLANTING LIST				
SYMBOL	QUANTITY	NAME	REMARKS	DESCRIPTION
	5	'SARGENT CHERRY' (Prunus Sargentii)	2.5" - 3" cal.	TREES TO BE PLANTED ALONG CLARKSVILLE PIKE (PROVIDED BY THE DEVELOPER)



- LANDSCAPE NOTES:**
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL.
 - STREET TREE LOCATIONS:**
 - WHEN THE DISTANCE BETWEEN THE CURB AND SIDEWALK IS 6 FEET OR GREATER, THE TREES SHALL BE LOCATED WITHIN THE RIGHT-OF-WAY AND SHALL BE CENTERED BETWEEN THE CURB AND SIDEWALK.
 - WHEN THE DISTANCE BETWEEN THE CURB AND SIDEWALK IS LESS THAN 6 FEET, TREES MAY BE PLANTED 3 FEET FROM THE SIDEWALK IN THE DIRECTION AWAY FROM THE ROAD. A 10-FOOT WIDE TREE MAINTENANCE EASEMENT SHALL BE REQUIRED IF THE RIGHT-OF-WAY IS LIMITED.
 - TREES SHALL BE PLANTED 6 FEET BEHIND CURB WHEN THERE ARE NO SIDEWALKS.
 - TREES TO BE PLANTED MINIMUM 30 FEET FROM SIGNS AND INTERSECTIONS WHEN PLANTED BETWEEN SIDEWALK AND CURB. TREES MAY NOT BE PLANTED WITHIN 5 FEET OF A STORM DRAIN INLET, OPEN SPACE ACCESS STRIP, OR 10 FEET OF A DRIVEWAY.
 - 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 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 CERTIFICATIONS.
 - THE OWNER, TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BEMS, 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.
 - FINANCIAL SURETY IN THE AMOUNT OF \$22,500.00 FOR THE REQUIRED PERIMETER LANDSCAPING (51 PERIMETER SHADE TREES AND 24 MITIGATION TREES FOR REMOVAL OF SPECIMEN TREES (WP-18-099) @ \$300 PER TREE) SHALL BE POSTED AS PART OF THE GRADING PERMITS IN THE FOLLOWING AMOUNTS: LOT 1 \$3900.00 FOR 13 SHADE TREES; LOT 2 \$1500.00 FOR 5 SHADE TREES; LOT 3 \$17100.00 FOR 57 SHADE TREES; AND LOT 4 \$0.00.



PERIMETER LANDSCAPE PLANTING LIST				
SYMBOL	QUANTITY	NAME	REMARKS	DESCRIPTION
	51	CLADRASIS KENTUCKEA LUTEA (Yellowwood)	2.5" - 3" cal.	SHADE TREES FOR INTERNAL LANDSCAPING REQUIREMENT TO BE PROVIDED AS PART OF THE DDP DEVELOPERS AGREEMENT
	24	QUERCUS RUBRA (Red Oak)	3" cal. (min.)	SHADE TREES AS MITIGATION FOR REMOVAL OF SPECIMEN TREES (WP-18-099)

SCHEDULE A PERIMETER LANDSCAPE EDGE				
CATEGORY	ADJACENT TO PERIMETER PROPERTIES			TOTAL
	①	②	③	
PERIMETER NO. / LANDSCAPE TYPE	A	A	A	
	1:60 shade	1:60 shade	1:60 shade	
LINEAR FEET OF PERIMETER (FRONTAGE/ROADWAY)	1340	333	1622	3295
CREDIT FOR EXISTING VEGETATION: NO OR YES (w/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	YES	YES	210
	--	166	44	
LINEAR FEET OF REQUIRED PERIMETER LANDSCAPING	1340	167	1578	3085
CREDIT FOR WALL, FENCE OR BERM: NO OR YES (w/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	
	--	--	--	
NUMBER OF PLANTS REQUIRED: SHADE TREES 1:60 OTHER TREES (2:1 SUBSTITUTE) SHRUBS	22	3	28	51
	--	--	--	
NUMBER OF PLANTS PROVIDED: SHADE TREES 1:60 EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTE) SHRUBS (10:1 SUBSTITUTE) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	22	3	28*	51
	--	--	--	
	--	--	--	
	--	--	--	
	--	--	--	

*NOTE: 4 SHADE TREES IN PERIMETER 3 ARE MOVED TO THE OPENING IN THE TREE LINE AT THE BOUNDARY FOR GREATEST VISUAL MITIGATION FOR KOANDAH GARDENS ESTATE, LOT 7. 4 SHADE TREES IN PERIMETER 3 ARE MOVED TO BE ADJACENT TO THE PRIVATE SHARED DRIVEWAY.

STREET TREE SCHEDULE		
LINEAR FEET OF RIGHT-OF-WAY	CLARKSVILLE PIKE PUBLIC ROAD	TOTAL
183	0	
183	0	
TREE SIZE MEDIUM 1:40 LF		
TREES REQUIRED	5	5

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND					
SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALTERNATE GROUP	NAME	k-VALUE
GgB	YES	B	D	GLENNELG LOAM, 3 TO 8 PERCENT SLOPES	0.2
GgB	YES	C	D	GLENNVILLE-BAILE SILT LOAM, 0 TO 8 PERCENT SLOPES	0.37/0.32
GgC		B		GLENNVILLE-CODORUS SILT LOAMS, 0 TO 8 PERCENT SLOPES	0.37
GgC		B		GLENNELG LOAM, 8 TO 15 PERCENT SLOPES	0.2
GgB		B		GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	0.2

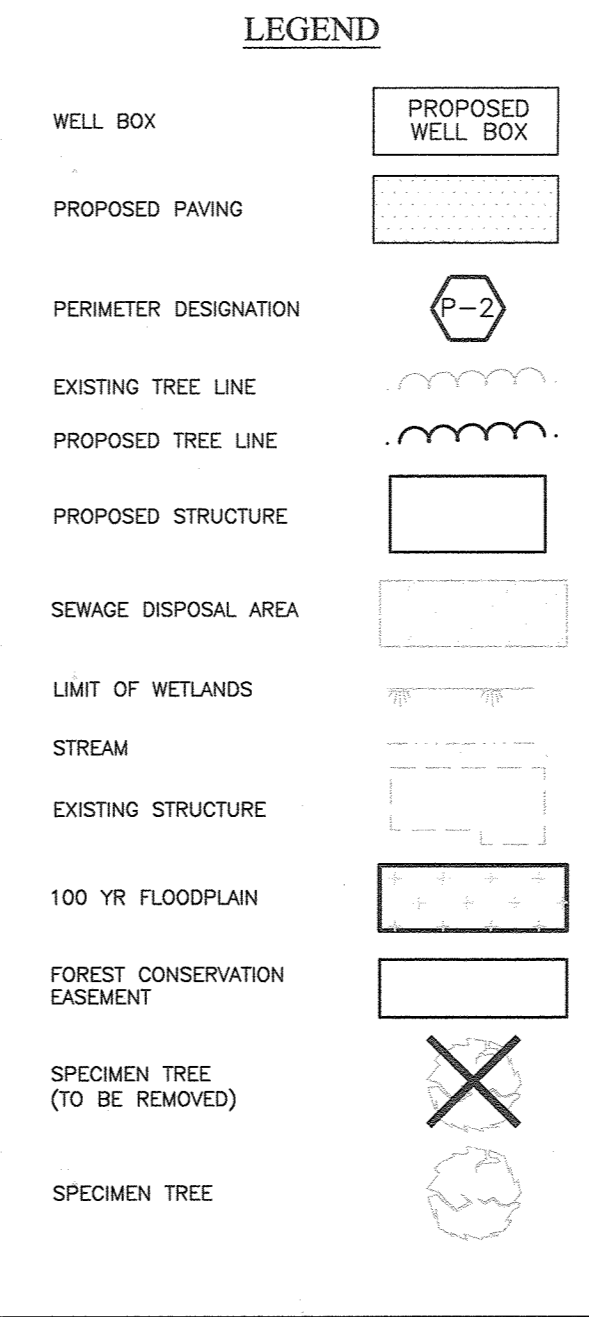
** HIGHLY ERODIBLE, K<0.35, AND STEEPER THAN 5% OR 15% AND GREATER SLOPES TAKEN FROM THE NRCS WEB SOIL SURVEY AUGUST 2014, MAP 23.

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.

DEVELOPER: ROCK REALTY, INC. DATE: 4/21/19

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
KENT SANDERSON, CHIEF, DIVISION OF LAND DEVELOPMENT, DATE: 6-3-19
AL EDWARDS, CHIEF, DEVELOPMENT ENGINEERING DIVISION, DATE: 6-3-19



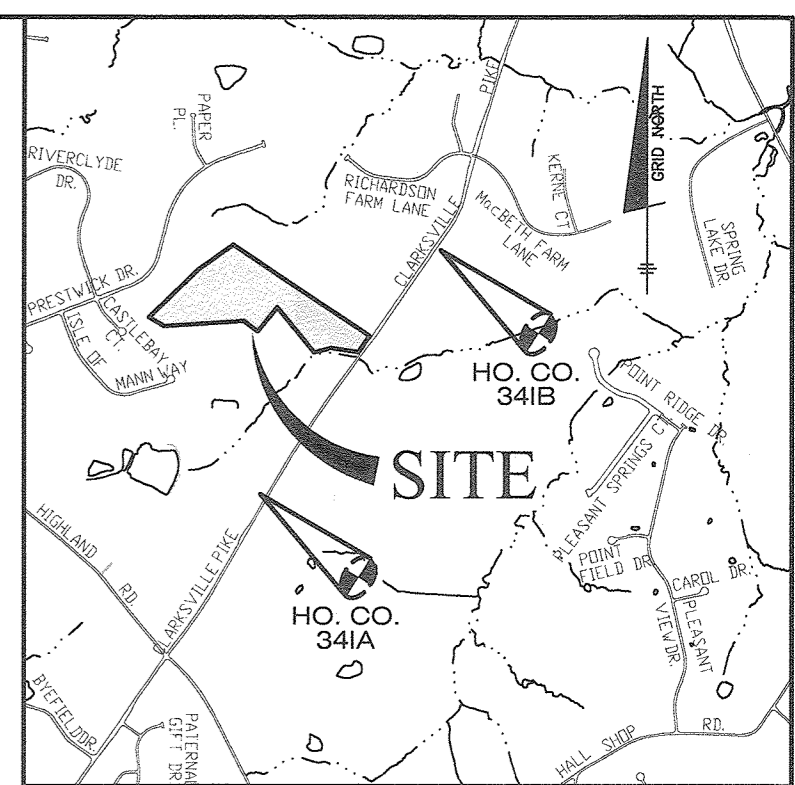
2 7-1-21 REVISED TO SHOW NEW HOUSE FOOTPRINT FOR LOTS 1, 2 & 4 1 4/21/19 Adjust For new Lot Layout		
NO.	DATE	
BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE & SUITE 315 A ELLOOTTY CITY, MARYLAND 21043 (P) 410-445-9105 (F) 410-445-6944 WWW.BEI-CVLENGINEERING.COM		
OWNER: CLARKSVILLE NL LLC C/O H&H ROCK COMPANIES 6800 DEERPATH ROAD SUITE 100 ELKRIDGE, MD 21075 410-579-2442		CLARKSVILLE CROSSING LOTS 1 THRU 4 TAX MAP: 34 GRID: 23 PARCEL: 301 ZONED: RR-DEO ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND
DEVELOPER: ROCK REALTY, INC. C/O H & H ROCK COMPANIES 6800 DEERPATH ROAD SUITE #100 ELKRIDGE, MARYLAND 21075 410-579-2442		REVISED SUPPLEMENTAL PLAN SUPPLEMENTAL LANDSCAPE PLAN, NOTE AND DETAILS DATE: APRIL, 2019 BEI PROJECT NO: 2525 SCALE: AS SHOWN SHEET 7 OF 15
DESIGN: JC	DRAWN: LDD	

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND					
SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALTERNATE GROUP	NAME	k-VALUE
GgB		B		GLENELG LOAM, 3 TO 8 PERCENT SLOPES	0.2
GnB	YES	C	D	GLENVILLE-BAILE SILT LOAM, 0 TO 8 PERCENT SLOPES	0.37/0.32
GcB		C		GLENVILLE-CODORUS SILT LOAMS, 0 TO 8 PERCENT SLOPES	0.37
GcC		B		GLENELG LOAM, 8 TO 15 PERCENT SLOPES	0.2
GbB		B		GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	0.2

** HIGHLY ERODIBLE, K>0.35, AND STEEPER THAN 5% OR 15% AND GREATER SLOPES TAKEN FROM THE NRCS WEB SOIL SURVEY AUGUST 2014, MAP 23.

LEGEND

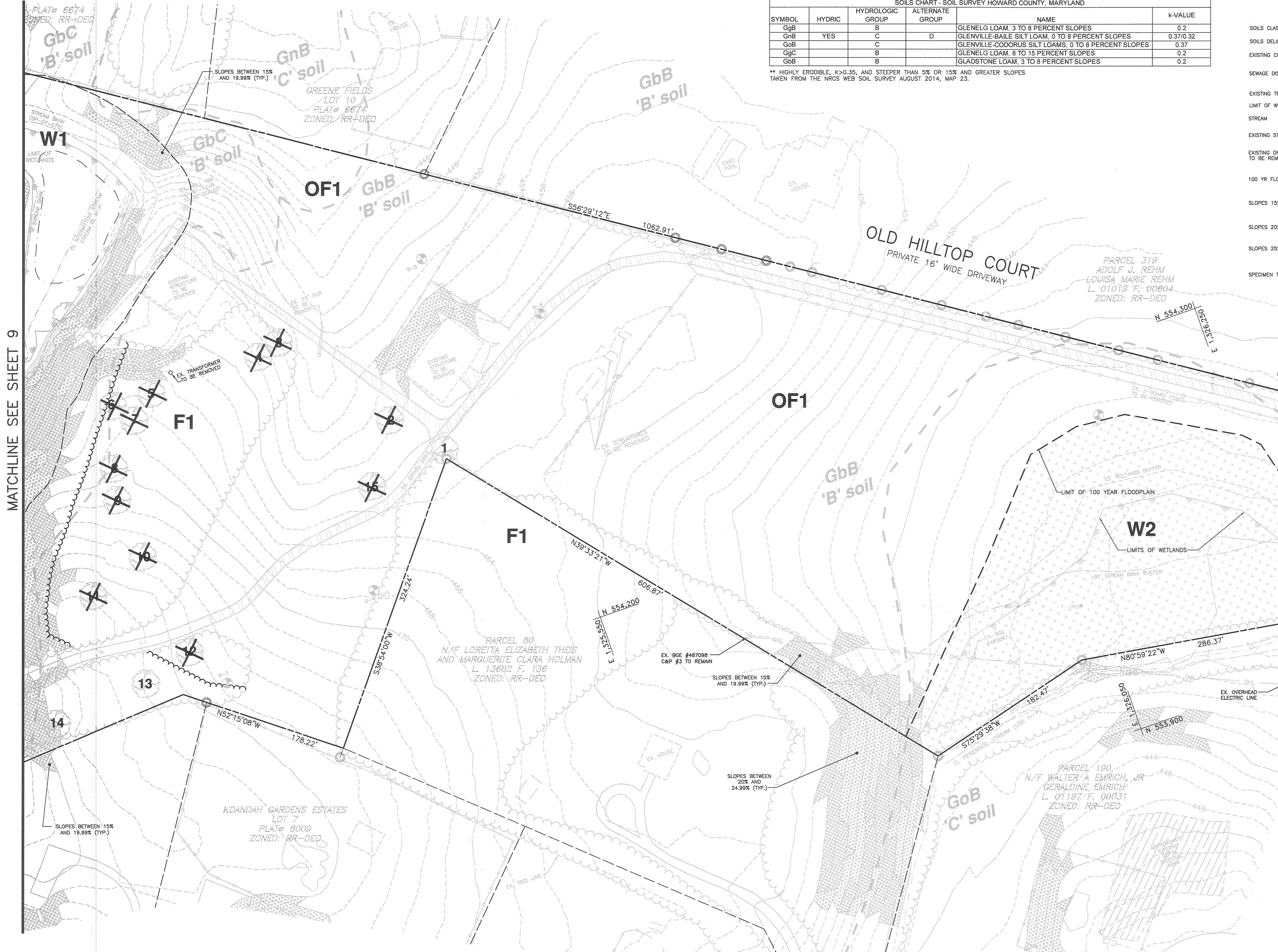
- SOILS CLASSIFICATION **GgB**
- SOILS DELINEATION
- EXISTING CONTOURS
- SEWAGE DISPOSAL AREA
- EXISTING TREE LINE
- LIMIT OF WETLANDS
- STREAM
- EXISTING STRUCTURE
- EXISTING DRIVEWAY TO BE REMOVED
- 100 YR FLOODPLAIN
- SLOPES 15% TO 19.99%
- SLOPES 20% TO 24.99%
- SLOPES 25% AND GREATER
- SPECIMEN TREE



VICINITY MAP
SCALE: 1" = 2000'
ADC MAP 31; GRID C4

HOWARD COUNTY BENCHMARKS

341A: N 553,271.9128 341B: N 554,973.5233
E 1,325,838.7488 E 1,327,078.7899
ELEV. 471.944 ELEV. 442.801



MATCHLINE SEE SHEET 9

NO.	DATE	REVISION
1	4-24-19	ADJUST PROPERTY BOUNDARY, EXISTING CONDITIONS, ETC.

BENCHMARK ENGINEERS, INC.
ENGINEERS & LAND SURVEYORS & PLANNERS
8480 BALTIMORE NATIONAL PIKE & SUITE 315 & ELLICOTT CITY, MARYLAND 21043
(P) 410-485-8105 (F) 410-485-8644
WWW.BEI-CIVILENGINEERING.COM

John Canoles
Professional Certification. I hereby certify that the 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. 45377, Expiration Date: 06/08/2020.

OWNER:
CLARKSVILLE NL LLC
C/O H&H ROCK COMPANIES
6800 DEERPATH ROAD
SUITE 100
ELKRIDGE, MD 21075
410-579-2442

DEVELOPER:
ROCK REALTY, INC.
C/O H & H ROCK COMPANIES
6800 DEERPATH ROAD
SUITE #100
ELKRIDGE, MARYLAND 21075
410-579-2442

CLARKSVILLE CROSSING
LOTS 1 THRU 4

TAX MAP: 34 GRID: 23 PARCEL: 301 ZONED: RR-DEO
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

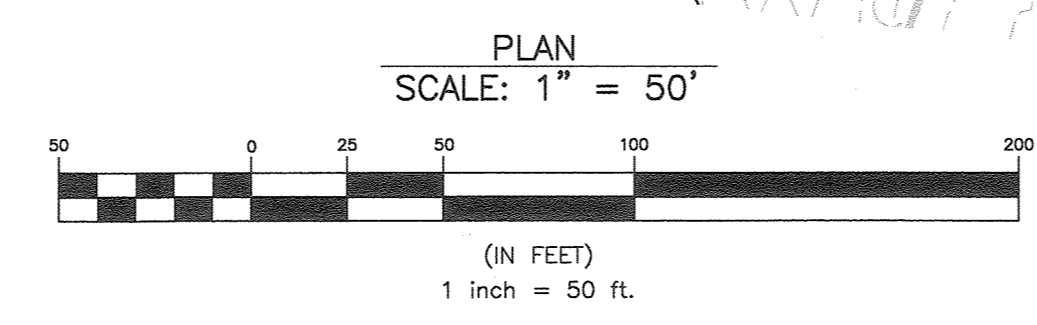
REVISED SUPPLEMENTAL PLAN
FOREST STAND DELINEATION PLAN

DATE: APRIL, 2019 BEI PROJECT NO: 2525
SCALE: AS SHOWN SHEET 8 OF 15

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Kurt Schaefer
CHIEF, DIVISION OF LAND DEVELOPMENT
6-3-19 DATE

W. J. ...
CHIEF, DEVELOPMENT ENGINEERING DIVISION
5-31-19 DATE



Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS
1100 MAIN ST. SUITE 100, MARYLAND 20877

PLAN PREPARED BY:
John Canoles
JOHN CANOLES
MD DNR FCA QUALIFIED PROFESSIONAL

Forest Stand Data

Key	Community Type	Acreage (n/a)	Dominant Vegetation	General Condition	Priority Acreage
F1	Mix oak-Poplar	7.9	Liriodendron tulipifera, Quercus rubra, Quercus alba, Fagus grandiflora,	Good	1.4 +/- buffers slopes

See accompanying report for complete stand descriptions
 * Approximately 1.0 acres of offsite forest area is currently present within 100 feet of the property

FSD NOTES:

- No rare, threatened or endangered species, or their habitats, were observed on the property.
- Surrounding land use is medium density residential development.
- Approximately 1.0 acre of forest is currently present within 100 feet of the subject property. This forest occurs on private residential lots.
- The site lies within the Use IV-P watershed of the Carroll's Run (02-13-11). The wetlands will require a 25 foot buffer, intermittent streams 50 foot buffers, and perennial stream channels require a 100 foot buffer.
- No historic elements or cemeteries are known to occur on the property.
- There is 2.1 +/- acres of 100 year floodplain present on the property.
- There are steep slopes present on the site.
- Specimen trees are present on the subject property. Forty-six specimen trees have been identified outside of the stream buffers.

FOREST CONSERVATION WORKSHEET

Clarksville Crossing

Computations by: BEI JOB No. 2525 Date: 1/2/2019

NET TRACT AREA:

A. Total tract area	24.6 ac.
B. Other deductions (floodplain)	2.1 ac.
C. Net Tract Area	22.5 ac.

LAND USE CATEGORY:
 Select category (AR, MDR, ID, HDR, MPD, CI) MDR

D. Afforestation Threshold 20% x "F" = 4.5 ac.
E. Conservation threshold 25% x "F" = 5.6 ac.

EXISTING FOREST COVER:

F. Existing forest cover	7.9 ac.
G. Area of forest above afforestation threshold	3.4 ac.
H. Area of forest above conservation threshold	2.3 ac.

BREAK EVEN POINT:

I. Forest retention above threshold with no mitigation	6.1 ac.
J. Clearing permitted without mitigation	1.8 ac.

PROPOSED FOREST CLEARING:

K. Total area of forest to be cleared	4.8 ac.
L. Total area of forest to be retained	3.1 ac.

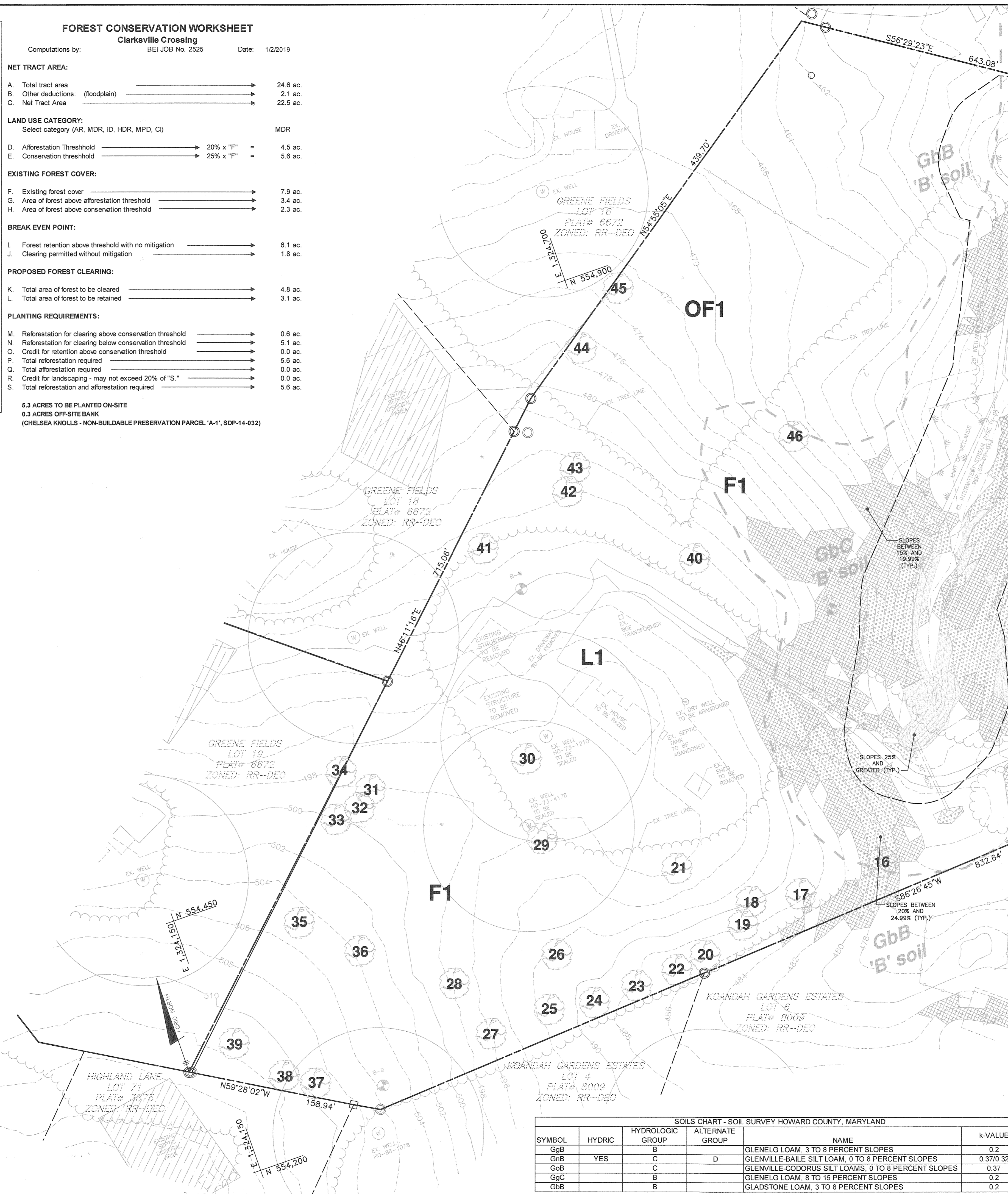
PLANTING REQUIREMENTS:

M. Reforestation for clearing above conservation threshold	0.6 ac.
N. Reforestation for clearing below conservation threshold	5.1 ac.
O. Credit for retention above conservation threshold	0.0 ac.
P. Total reforestation required	5.6 ac.
Q. Total afforestation required	0.0 ac.
R. Credit for landscaping - may not exceed 20% of "S."	0.0 ac.
S. Total reforestation and afforestation required	5.6 ac.

5.3 ACRES TO BE PLANTED ON-SITE
 0.3 ACRES OFF-SITE BANK
 (CHELSEA KNOLLS - NON-BUILDABLE PRESERVATION PARCEL 'A-1', SDP-14-032)

Specimen Tree Chart

Key (X#)	Species	Size (n.d.b.)	CRZ (feet radius)	Comments (good condition unless otherwise noted)
1	Tulip poplar	31	46.5	
2	Tulip poplar	36	54	
3	Tulip poplar	31	46.5	
4	Tulip poplar	40	60	
5	Red oak	33	49.5	
6	Tulip poplar	30	45	
7	Red oak	30	45	
8	Red oak	30	45	
9	Tulip poplar	33	49.5	
10	Red oak	31	46.5	
11	Red oak	36	54	
12	Red oak	30	45	
13	Tulip poplar	35	52.5	
14	Red oak	37	55.5	
15	Tulip poplar	32	48	
16	Tulip poplar	33	49.5	Fair, dieback noted
17	Tulip poplar	32	48	
18	Tulip poplar	32	48	
19	Tulip poplar	34	51	
20	Tulip poplar	35	52.5	
21	Tulip poplar	30	45	
22	Tulip poplar	30	45	
23	Tulip poplar	36	54	
24	Tulip poplar	30	45	
25	Tulip poplar	39	58.5	
26	Tulip poplar	32	48	Fair, dieback noted
27	Tulip poplar	34	51	
28	Tulip poplar	31	46.5	
29	Tulip poplar	32	48	
30	Tulip poplar	30	45	
31	Tulip poplar 31	31	46.5	
32	Tulip poplar	33	49.5	
33	Tulip poplar	30	45	
34	Tulip poplar	31	46.5	
35	Tulip poplar	30	45	
36	Tulip poplar	34	51	
37	Tulip poplar	34	51	
38	Tulip poplar	33	49.5	
39	Tulip poplar	31	46.5	
40	Tulip poplar	31	46.5	
41	Tulip poplar	30	45	
42	Tulip poplar	30	45	
43	Tulip poplar	32	48	
44	Tulip poplar	75	112.5	fair, dieback noted
45	Tulip poplar	62	93	fair, dieback noted
46	Tulip poplar	31	46.5	



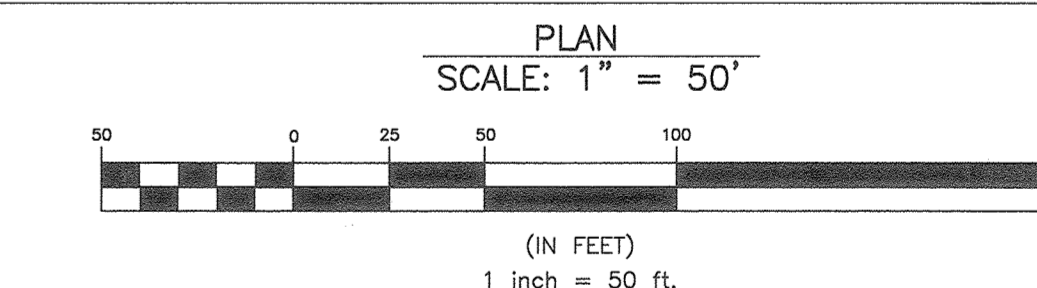
LEGEND

- SOILS CLASSIFICATION GgB
- SOILS DELINEATION
- EXISTING CONTOURS
- SEWAGE DISPOSAL AREA
- EXISTING TREE LINE
- LIMIT OF WETLANDS
- STREAM
- EXISTING STRUCTURE
- EXISTING DRIVEWAY TO BE REMOVED
- 100 YR FLOODPLAIN
- SLOPES 15% TO 19.99%
- SLOPES 20% TO 24.99%
- SLOPES 25% AND GREATER
- SPECIMEN TREE 1

MATCHLINE SEE SHEET 8

Eco-Science Professionals, Inc.
 CONSULTING ECOLOGISTS
 1100 WOODBURN DRIVE, SUITE 100, ELK RIDGE, MD 21075
 (P) 410-465-6105 (F) 410-465-8644
 WWW.ECO-SCIENCE-PROFESSIONALS.COM

PLAN PREPARED BY: *[Signature]*
 JOHN GANDLES
 MD DNR FCA QUALIFIED PROFESSIONAL



1	4-24-19	ADJUST PROPERTY BOUNDARY, FOREST DATA, ETC.
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) 410-465-8644
 WWW.BEI-CIVILENGINEERING.COM

[Signature]
 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. 45577, Expiration Date: 06/08/2020.

CLARKSVILLE CROSSING
 LOTS 1 THRU 4

TAX MAP: 34 GRID: 23 PARCEL: 301 ZONED: RR-DEO
 ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

REVISED SUPPLEMENTAL PLAN
FOREST STAND DELINEATION PLAN

DATE: APRIL, 2019 BEI PROJECT NO: 2525
 SCALE: AS SHOWN SHEET 9 OF 15

OWNER: CLARKSVILLE NLLC
 C/O H&H ROCK COMPANIES
 6800 DEERPATH ROAD
 SUITE 100
 ELK RIDGE, MD 21075
 410-579-2442

DEVELOPER: ROCK REALTY, INC.
 C/O H & H ROCK COMPANIES
 6800 DEERPATH ROAD
 SUITE #100
 ELK RIDGE, MARYLAND 21075
 410-579-2442

DESIGN: JC DRAWN: LDD

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND

SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALTERNATE GROUP	NAME	K-VALUE
GgB		B		GLENELG LOAM, 3 TO 8 PERCENT SLOPES	0.2
GbB	YES	C	D	GLENVILLE BAILE SILT LOAM, 0 TO 8 PERCENT SLOPES	0.370 32
GgC		C		GLENVILLE-CODORUS SILT LOAMS, 0 TO 8 PERCENT SLOPES	0.37
GgC		B		GLENELG LOAM, 8 TO 15 PERCENT SLOPES	0.2
GbB		B		GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	0.2

** HIGHLY ERODIBLE, K=0.35, AND STEEPER THAN 5% OR 15% AND GREATER SLOPES TAKEN FROM THE NRCS WEB SOIL SURVEY AUGUST 2014, MAP 23.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

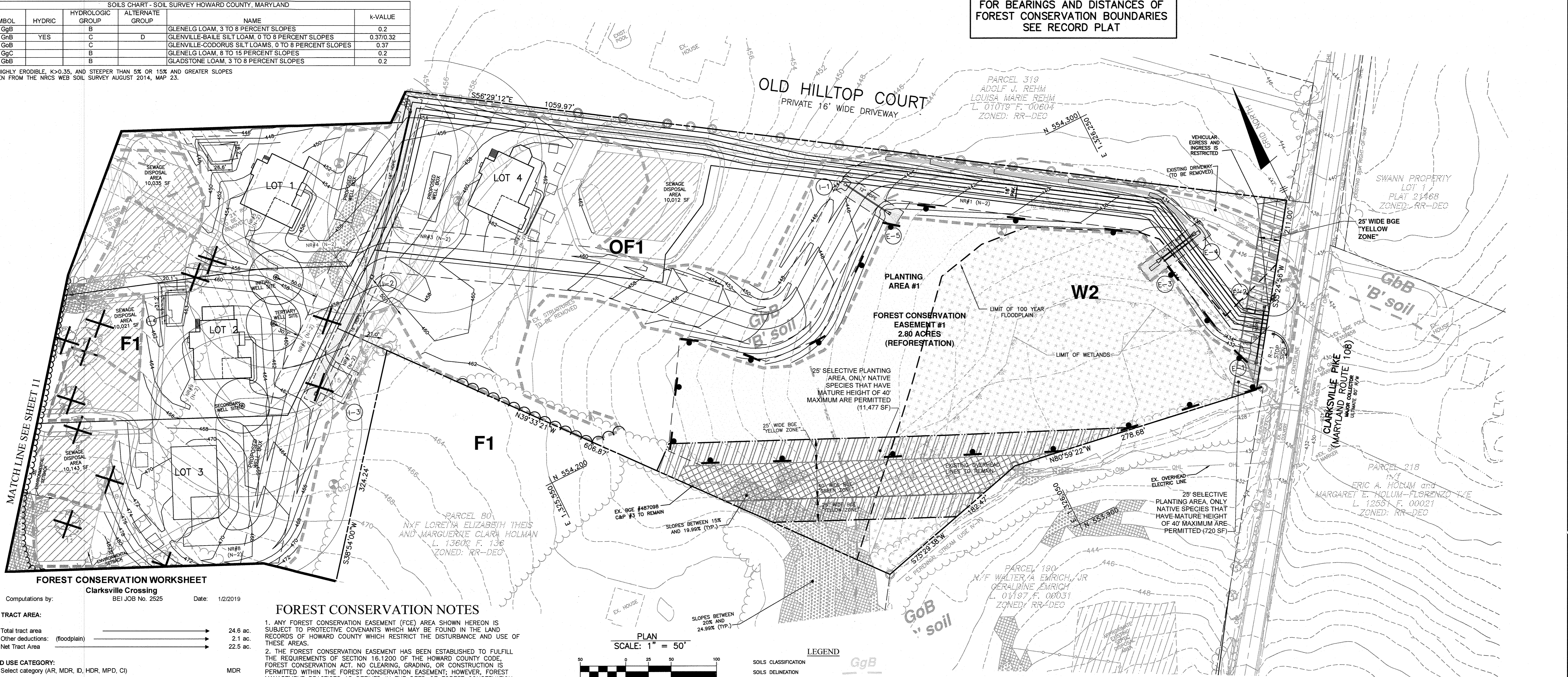
[Signature] 6-3-19 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 9-31-19 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND					
SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALTERNATE GROUP	NAME	K-VALUE
GgB		B		GLENELG LOAM, 3 TO 8 PERCENT SLOPES	0.2
GnB	YES	C	D	GLENVILLE-BAILE SILT LOAM, 0 TO 8 PERCENT SLOPES	0.37/0.32
GoB		C		GLENVILLE-CODORUS SILT LOAMS, 0 TO 8 PERCENT SLOPES	0.37
GgC		B		GLENELG LOAM, 8 TO 15 PERCENT SLOPES	0.2
GgB		B		GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	0.2

** HIGHLY ERODIBLE, K>0.35, AND STEEPER THAN 5% OR 15% AND GREATER SLOPES TAKEN FROM THE NRCS WEB SOIL SURVEY AUGUST 2014, MAP 23.

FOR BEARINGS AND DISTANCES OF FOREST CONSERVATION BOUNDARIES SEE RECORD PLAT



FOREST CONSERVATION WORKSHEET

Computations by: **Clarksville Crossing** BEI JOB No. 2525 Date: 1/2/2019

NET TRACT AREA:

A. Total tract area	24.6 ac.
B. Other deductions: (floodplain)	2.1 ac.
C. Net Tract Area	22.5 ac.

LAND USE CATEGORY:
Select category (AR, MDR, ID, HDR, MPD, CI)

D. Afforestation Threshold	20% x "F"	4.5 ac.
E. Conservation threshold	25% x "F"	5.6 ac.

EXISTING FOREST COVER:

F. Existing forest cover	7.9 ac.
G. Area of forest above afforestation threshold	3.4 ac.
H. Area of forest above conservation threshold	2.3 ac.

BREAK EVEN POINT:

I. Forest retention above threshold with no mitigation	6.1 ac.
J. Clearing permitted without mitigation	1.8 ac.

PROPOSED FOREST CLEARING:

K. Total area of forest to be cleared	4.8 ac.
L. Total area of forest to be retained	3.1 ac.

PLANTING REQUIREMENTS:

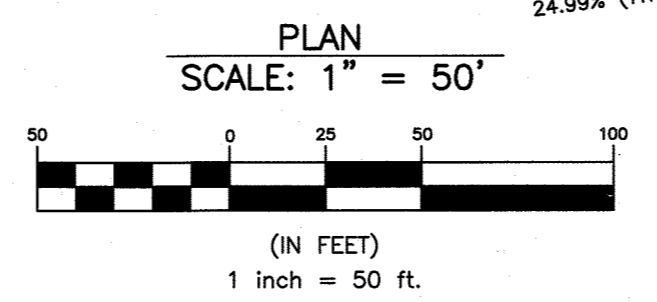
M. Reforestation for clearing above conservation threshold	0.6 ac.
N. Reforestation for clearing below conservation threshold	5.1 ac.
O. Credit for retention above conservation threshold	0.0 ac.
P. Total reforestation required	5.6 ac.
Q. Total afforestation required	0.0 ac.
R. Credit for landscaping - may not exceed 20% of "S."	0.0 ac.
S. Total reforestation and afforestation required	5.6 ac.

5.3 ACRES TO BE PLANTED ON-SITE
0.3 ACRES OFF-SITE BANK
(CHELSEA KNOLLS - NON-BUILDABLE PRESERVATION PARCEL 'A-1', SDP-14-032)

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 9/2/21 DATE
 9/17/21 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

FOREST CONSERVATION NOTES

- ANY FOREST CONSERVATION EASEMENT (FCE) AREA SHOWN HEREON IS SUBJECT TO PROTECTIVE COVENANTS WHICH MAY BE FOUND IN THE LAND RECORDS OF HOWARD COUNTY WHICH RESTRICT THE DISTURBANCE AND USE OF THESE AREAS.
- THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE, FOREST CONSERVATION ACT. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- LIMITS OF DISTURBANCE SHALL BE RESTRICTED TO AREAS OUTSIDE THE LIMIT OF TEMPORARY FENCING OR THE FCE BOUNDARY, WHICHEVER IS GREATER.
- THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENT, EXCEPT AS PERMITTED BY HOWARD COUNTY DPZ. NO STOCKPILES, PARKING AREAS, EQUIPMENT CLEANING AREA, ETC. SHALL OCCUR WITHIN THE FOREST CONSERVATION EASEMENT.
- TEMPORARY FENCING SHALL BE USED TO PROTECT FOREST RESOURCES DURING CONSTRUCTION. THE FENCING SHALL BE PLACED ALONG ALL FCE RETENTION BOUNDARIES WHICH OCCUR WITHIN 50 FEET OF THE PROPOSED LIMITS OF DISTURBANCE THAT DOES NOT ALREADY HAVE A SUPER SILT FENCE PROPOSED.
- PERMANENT SIGNAGE SHALL BE PLACED 50'-100' APART ALONG THE BOUNDARIES OF ALL FOREST CONSERVATION EASEMENTS. THIS SIGNAGE SHALL STAY IN PERPETUITY.
- PORTIONS OF THE SITE OCCURRING WITHIN THE 100-YEAR FLOODPLAIN ARE NOT INCLUDED AS PART OF THE NET TRACT AREA OF THE SITE. AREAS OF FLOODPLAIN FOREST OCCURRING WITHIN THE LIMITS OF A FOREST CONSERVATION EASEMENT WILL BE PROTECTED BY THE EASEMENT RESTRICTIONS BUT HAVE NOT BEEN CREDITED TOWARD THE PROJECTS FCA OBLIGATIONS.
- THE FOREST CONSERVATION WATERSHED FOR THIS PROJECT IS 02-13-09.
- THERE ARE NO RARE, THREATENED OR ENDANGERED SPECIES LOCATED ON THIS SITE. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO HISTORIC STRUCTURES LOCATED ON THIS SITE. THERE ARE 46 SPECIMEN TREES LOCATED ON THIS SITE AS DESIGNATED ON THE FOREST STAND DELINEATION PLAN. SEE CHART ON THE NEXT SHEET.
- THE AREA WITHIN THE BGE GREEN ZONE IS NOT INCLUDED AS A PLANTING AREA FOR FOREST CONSERVATION EASEMENT #1. THE AREA WITHIN THE 25' YELLOW ZONE IS DESIGNED FOR NATIVE SPECIES WITH A MATURE HEIGHT OF 40' OR LESS.
- SPECIMEN TREES 2-12 AND 15 ARE PROPOSED TO BE REMOVED BECAUSE OF HOUSE, DRIVEWAY OR SEPTIC INSTALLATION. AN ALTERNATIVE COMPLIANCE REQUEST HAS BEEN SUBMITTED WITH FINAL PLANS.
- THIS PLAN WILL REQUIRE 0.3 ACRES OF REFORESTATION TO BE OBTAINED FROM A FOREST MITIGATION BANK. THE DEVELOPER WILL HAVE A REDLINE REVISION OF SDP-14-032 PROCESSED TO SHOW THE USE OF 0.3 ACRES OF THE FOREVER A FARM FOREST BANK.
- THIS SUBDIVISION COMPLIES WITH THE REQUIREMENTS OF SECTION 16.200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION VIA THE ON-SITE RETENTION OF 3.07 ACRES OF FOREST WITHIN A FOREST CONSERVATION EASEMENT AND BY THE ON-SITE REFORESTATION OF 5.27 ACRES AND 0.3 ACRES OF THE FOREVER A FARM FOREST BANK SDP-14-005. SURETY, IN THE AMOUNT OF \$114,781.00 MUST BE POSTED WITH THE DPW DEVELOPER'S AGREEMENT.



LEGEND

SOILS CLASSIFICATION	GgB
SOILS DELINEATION	490
EXISTING CONTOURS	480
PROPOSED CONTOURS	478
EXISTING TREE LINE	
PROPOSED TREE LINE	
LIMIT OF DISTURBANCE	
DRAINAGE AREA	
PROPOSED STRUCTURE	
EXISTING STRUCTURE	
WELL BOX	
SEWAGE DISPOSAL AREA	
NON ROOFTOP DISCONNECT	
100 YR FLOODPLAIN	
SLOPES 15% TO 19.99%	
SLOPES 20% TO 24.99%	
SLOPES 25% AND GREATER	
SPECIMEN TREE (TO BE REMOVED)	X
SPECIMEN TREE	
FOREST CONSERVATION EASEMENT	
FOREST CONSERVATION SIGNAGE	

Eco-Science Professionals, Inc.
 CONSULTING ECOLOGISTS
 410.465.6105
 410.465.6444
 www.ecosciencengr.com

PLAN PREPARED BY: *[Signature]*
 JOHN CAROLLES
 MD ONE FCA QUALIFIED PROFESSIONAL

NO.	DATE	REVISION
2	7-1-21	REVISED TO SHOW NEW HOUSE FOOTPRINT, GRADING, LOD AND SWM FOR LOTS 1, 2, 3 & 4.
1	4-24-19	ADJUST PROPERTY BOUNDARY, LOT LAYOUT, GRADING, DRIVEWAY, ETC.

BENCHMARK ENGINEERING, INC.
 ENGINEERS & LAND SURVEYORS & PLANNERS
 8480 BALTIMORE NATIONAL PIKE SUITE 315 ELICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-6444
 www.bb-civilengineering.com

Professional Engineer Seal: *[Signature]*
 No. 45571
 State of Maryland
 License No. 45571, Expiration Date: 06-08-2022

CLARKSVILLE CROSSING
 LOTS 1 THRU 4

OWNER: CLARKSVILLE NL LLC
 C/O H&H ROCK COMPANIES
 6800 DEERPATH ROAD
 SUITE 100
 ELKRDGE, MD 21075
 410-579-2442

DEVELOPER: ROCK REALTY, INC.
 C/O H & H ROCK COMPANIES
 6800 DEERPATH ROAD
 SUITE #100
 ELKRDGE, MARYLAND 21075
 410-579-2442

TAX MAP: 34 GRID: 23 PARCEL: 301 ZONED: RR-DEO
 ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

REVISED SUPPLEMENTAL PLAN
 FOREST CONSERVATION PLAN AND NOTES

DATE: JULY, 2021 BEI PROJECT NO: 2525
 SCALE: AS SHOWN SHEET 10 OF 15

2/25/2021 Clarksville Crossing.dwg/2021 revised for redline.dwg SHEET 10 OF 8/11/2021 2:14:57 PM

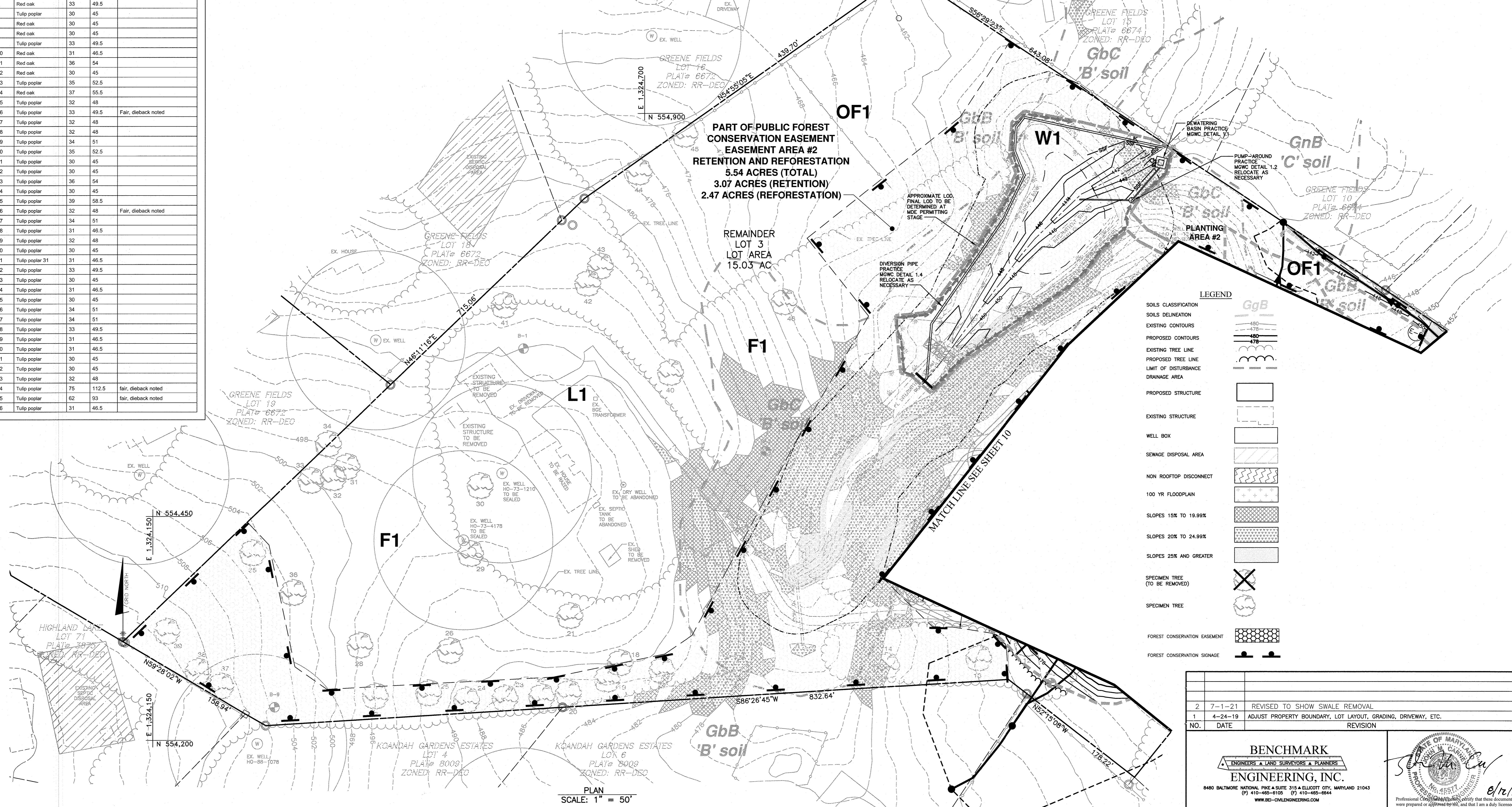
Specimen Tree Chart

Key (X#)	Species	Size (in dbh)	CRZ (feet radius)	Comments (good condition unless otherwise noted)
1	Tulip poplar	31	46.5	
2	Tulip poplar	36	54	
3	Tulip poplar	31	46.5	
4	Tulip poplar	40	60	
5	Red oak	33	49.5	
6	Tulip poplar	30	45	
7	Red oak	30	45	
8	Red oak	30	45	
9	Tulip poplar	33	49.5	
10	Red oak	31	46.5	
11	Red oak	36	54	
12	Red oak	30	45	
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14	Red oak	37	55.5	
15	Tulip poplar	32	48	
16	Tulip poplar	33	49.5	Fair, dieback noted
17	Tulip poplar	32	48	
18	Tulip poplar	32	48	
19	Tulip poplar	34	51	
20	Tulip poplar	35	52.5	
21	Tulip poplar	30	45	
22	Tulip poplar	30	45	
23	Tulip poplar	36	54	
24	Tulip poplar	30	45	
25	Tulip poplar	39	58.5	
26	Tulip poplar	32	48	Fair, dieback noted
27	Tulip poplar	34	51	
28	Tulip poplar	31	46.5	
29	Tulip poplar	32	48	
30	Tulip poplar	30	45	
31	Tulip poplar 31	31	46.5	
32	Tulip poplar	33	49.5	
33	Tulip poplar	30	45	
34	Tulip poplar	31	46.5	
35	Tulip poplar	30	45	
36	Tulip poplar	34	51	
37	Tulip poplar	34	51	
38	Tulip poplar	33	49.5	
39	Tulip poplar	31	46.5	
40	Tulip poplar	31	46.5	
41	Tulip poplar	30	45	
42	Tulip poplar	30	45	
43	Tulip poplar	32	48	
44	Tulip poplar	75	112.5	fair, dieback noted
45	Tulip poplar	62	93	fair, dieback noted
46	Tulip poplar	31	46.5	

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND

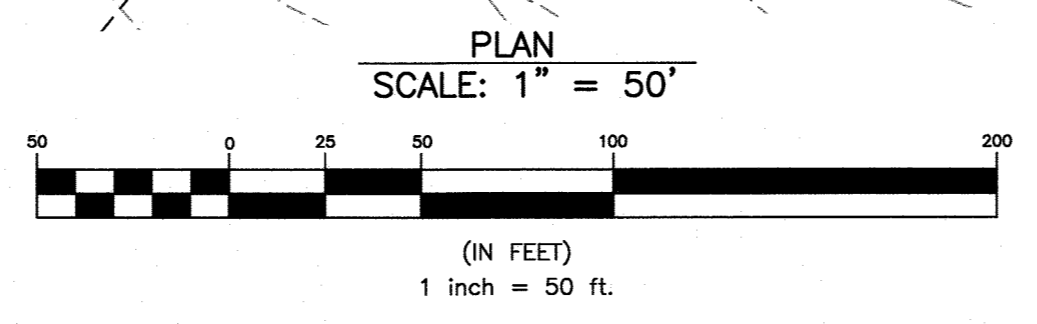
SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALTERNATE GROUP	NAME	k-VALUE
GgB		B		GLENELG LOAM, 3 TO 8 PERCENT SLOPES	0.2
GnB	YES	C	D	GLENVILLE-BAILE SILT LOAM, 0 TO 8 PERCENT SLOPES	0.37/0.32
GcB		C		GLENVILLE-CODORUS SILT LOAMS, 0 TO 8 PERCENT SLOPES	0.37
GgC		B		GLENELG LOAM, 8 TO 15 PERCENT SLOPES	0.2
GbB		B		GLADSTONE LOAM, 3 TO 6 PERCENT SLOPES	0.2

** HIGHLY ERODIBLE, K>0.35, AND STEEPER THAN 5% OR 15% AND GREATER SLOPES TAKEN FROM THE NRCS WEB SOIL SURVEY AUGUST 2014, MAP 23.



LEGEND

SOILS CLASSIFICATION	GgB
SOILS DELINEATION	—
EXISTING CONTOURS	—
PROPOSED CONTOURS	—
EXISTING TREE LINE	—
PROPOSED TREE LINE	—
LIMIT OF DISTURBANCE	—
DRAINAGE AREA	—
PROPOSED STRUCTURE	□
EXISTING STRUCTURE	□
WELL BOX	□
SEWAGE DISPOSAL AREA	□
NON ROOFTOP DISCONNECT	□
100 YR FLOODPLAIN	□
SLOPES 15% TO 19.99%	□
SLOPES 20% TO 24.99%	□
SLOPES 25% AND GREATER	□
SPECIMEN TREE (TO BE REMOVED)	⊗
SPECIMEN TREE	⊙
FOREST CONSERVATION EASEMENT	□
FOREST CONSERVATION SIGNAGE	—



SITE DATA TABULATION

1. TOTAL AREA OF SITE.....	24.6± AC.
2. AREA OF 100 YEAR FLOODPLAIN.....	2.1± AC.
3. NET AREA OF SITE.....	22.5± AC.
4. TOTAL FOREST ON NET AREA.....	7.9± AC.

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS
1710 ROCK HILL RD. SUITE 100, ELK RIDGE, MD 21075
Tel: 410-485-7888 Fax: 410-485-7889
www.ecosciencenetwork.com

PLAN PREPARED BY:
JOHN CAROLIS
MD DWR FCA QUALIFIED PROFESSIONAL

NO.	DATE	REVISION
2	7-1-21	REVISED TO SHOW SWALE REMOVAL
1	4-24-19	ADJUST PROPERTY BOUNDARY, LOT LAYOUT, GRADING, DRIVEWAY, ETC.

BENCHMARK ENGINEERING, INC.
ENGINEERS • LAND SURVEYORS • PLANNERS
8450 BALTIMORE NATIONAL PIKE & SUITE 315 A ELK RIDGE CITY, MARYLAND 21043
(P) 410-485-8105 (F) 410-485-8844
WWW.BEI-CVLENGINEERING.COM

Professional Seal: JOHN CAROLIS, License No. 45577, Expiration Date: 06-08-2022.

OWNER: CLARKSVILLE NI, LLC
C/O H&H ROCK COMPANIES
6800 DEERPATH ROAD
SUITE 100
ELK RIDGE, MD 21075
410-579-2442

DEVELOPER: ROCK REALTY, INC.
C/O H & H ROCK COMPANIES
6800 DEERPATH ROAD
SUITE #100
ELK RIDGE, MARYLAND 21075
410-579-2442

CLARKSVILLE CROSSING
LOTS 1 THRU 4

TAX MAP: 34 GRID: 23 PARCEL: 301 ZONED: RR-DEO
ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

REVISED SUPPLEMENTAL PLAN
FOREST CONSERVATION PLAN

DATE: JULY, 2021 BEI PROJECT NO: 2525
SCALE: AS SHOWN SHEET 11 OF 15

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature]
CHIEF, DEVELOPMENT ENGINEERING DIVISION

DATE: 7/21/21
DATE: 9.17.21

FOR BEARINGS AND DISTANCES OF FOREST CONSERVATION BOUNDARIES SEE RECORD PLAT

TC SUMMARY TABLE TO STUDY POINT 3		
	EXISTING	DEVELOPED
SHEET FLOW, A-B	100' @ 4.0%	100' @ 4.0%
SHALLOW CONCENTRATED, B-C	166' @ 7.0%	96' @ 5.6%
CHANNEL, C-D	501' @ 6.0%	261' @ 3.5%
CHANNEL, D-E	330' @ 1.5%	330' @ 1.5%
CHANNEL, E-F	234' @ 5.1%	234' @ 5.1%

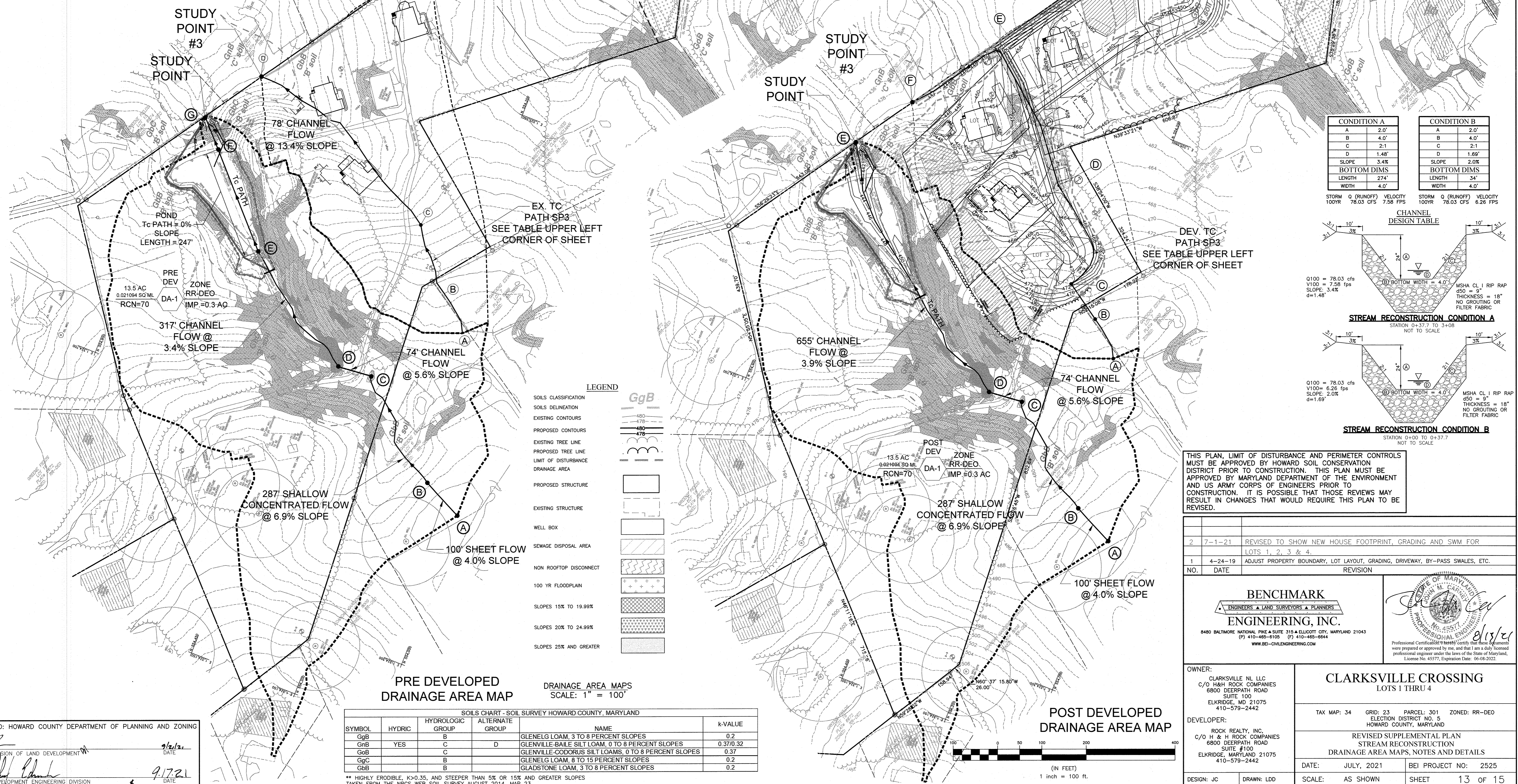
NOTES:
 1: STREAM CLOSURE SHALL BE BETWEEN MARCH 1ST AND MAY 31ST.
 2: ALL SWALES SHALL BE LINED WITH EROSION CONTROL MATTING IF THEY ARE NOT LINED WITH RIP-RAP.
 3: CONTRACTOR SHALL CURL ALL ENDS OF SF/SSF UPHILL BY 2' IN ELEVATION AND AS DIRECTED BY THE COUNTY INSPECTOR.
 4: CONTRACTOR SHALL MAINTAIN POSITIVE FLOW FROM DRIVEWAY GRADES AND SUMPS TO INLETS BY EARTH DIKE AND SWALES.
 5: THIS PLAN, LIMIT OF DISTURBANCE AND PERIMETER CONTROLS MUST BE APPROVED BY HOWARD SOIL CONSERVATION DISTRICT PRIOR TO CONSTRUCTION. THIS PLAN MUST BE APPROVED BY MARYLAND DEPARTMENT OF THE ENVIRONMENT AND US ARMY CORPS OF ENGINEERS PRIOR TO CONSTRUCTION. IT IS POSSIBLE THAT THOSE REVIEWS MAY RESULT IN CHANGES THAT WOULD REQUIRE THIS PLAN TO BE REVISED.

DA = 6.00 AC EX. DA SP 3 RCN = 63
 Tc 1 = 0.27 Hr
 Tc 10 = 0.19 Hr

DA = 5.59 AC DEV. DA SP 3 RCN = 64
 Tc 1 = 0.30 Hr
 Tc 10 = 0.20 Hr

13.8 AC POST DEV ZONE RR-DEO DA-1 IMP = 0.3 AC RCN=70

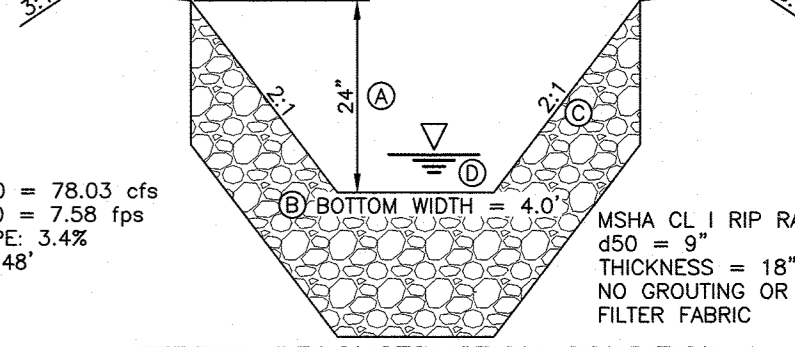
TIME OF CONCENTRATION Tc PATH A-B



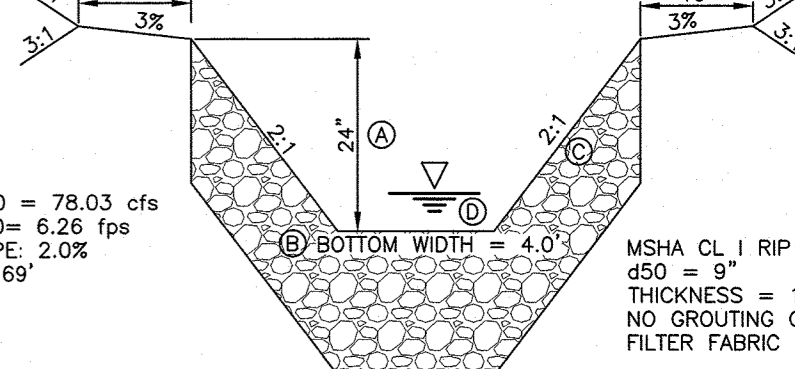
CONDITION A			CONDITION B		
A	2.0'		A	2.0'	
B	4.0'		B	4.0'	
C	2:1		C	2:1	
D	1.48'		D	1.69'	
SLOPE	3.4%		SLOPE	2.0%	
BOTTOM DIMS			BOTTOM DIMS		
LENGTH	274'		LENGTH	34'	
WIDTH	4.0'		WIDTH	4.0'	

STORM Q (RUNOFF) VELOCITY 100YR 78.03 CFS 7.58 FPS

STORM Q (RUNOFF) VELOCITY 100YR 78.03 CFS 6.26 FPS



STREAM RECONSTRUCTION CONDITION A STATION 0+37.7 TO 3+08 NOT TO SCALE



STREAM RECONSTRUCTION CONDITION B STATION 0+00 TO 0+37.7 NOT TO SCALE

THIS PLAN, LIMIT OF DISTURBANCE AND PERIMETER CONTROLS MUST BE APPROVED BY HOWARD SOIL CONSERVATION DISTRICT PRIOR TO CONSTRUCTION. THIS PLAN MUST BE APPROVED BY MARYLAND DEPARTMENT OF THE ENVIRONMENT AND US ARMY CORPS OF ENGINEERS PRIOR TO CONSTRUCTION. IT IS POSSIBLE THAT THOSE REVIEWS MAY RESULT IN CHANGES THAT WOULD REQUIRE THIS PLAN TO BE REVISED.

NO.	DATE	REVISION
2	7-1-21	REVISED TO SHOW NEW HOUSE FOOTPRINT, GRADING AND SWM FOR LOTS 1, 2, 3 & 4.
1	4-24-19	ADJUST PROPERTY BOUNDARY, LOT LAYOUT, GRADING, DRIVEWAY, BY-PASS SWALES, ETC.

BENCHMARK ENGINEERING, INC.
 ENGINEERS & LAND SURVEYORS & PLANNERS
 6480 BALTIMORE NATIONAL PIKE & SUITE 315 & ELICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-6644
 WWW.BE-ENGINEERING.COM

Professional Engineer Seal
 Professional Certificate # 18577 certifies 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. 45577, Expiration Date: 06-08-2022.

OWNER: CLARKSVILLE NL LLC
 C/O H&H ROCK COMPANIES
 6800 DEERPATH ROAD
 SUITE 100
 ELKDRIDGE, MD 21075
 410-579-2442

DEVELOPER: ROCK REALTY, INC.
 C/O H & H ROCK COMPANIES
 6800 DEERPATH ROAD
 SUITE #100
 ELKDRIDGE, MARYLAND 21075
 410-579-2442

DESIGN: JC DRAWN: LDD

CLARKSVILLE CROSSING
 LOTS 1 THRU 4

TAX MAP: 34 GRID: 23 PARCEL: 301 ZONED: RR-DEO
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

REVISED SUPPLEMENTAL PLAN
 STREAM RECONSTRUCTION
 DRAINAGE AREA MAPS, NOTES AND DETAILS

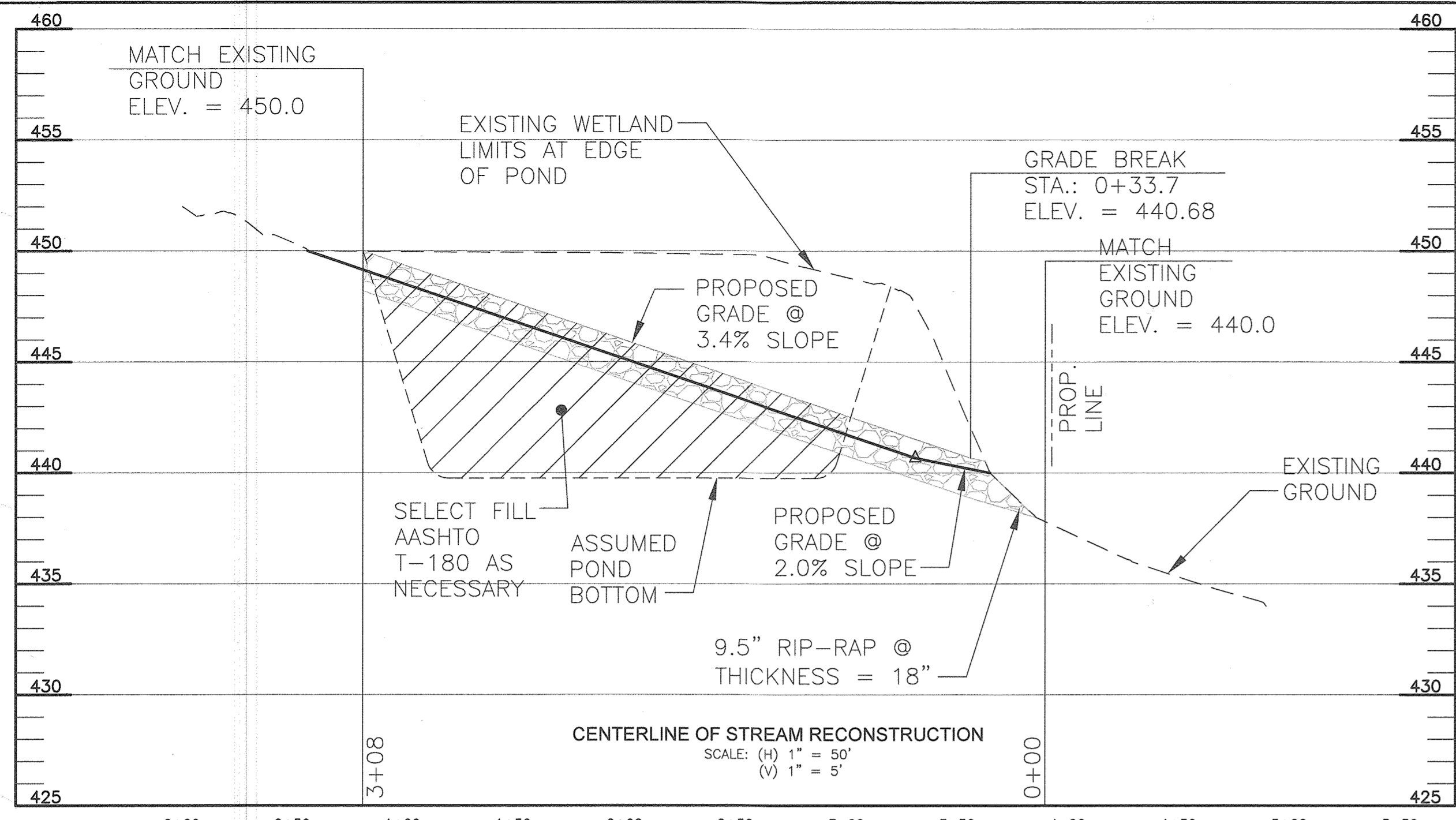
DATE: JULY, 2021 BEI PROJECT NO: 2525
 SCALE: AS SHOWN SHEET 13 OF 15

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND

SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALTERNATE GROUP	NAME	k-VALUE
GgB		B	D	GLENNELG LOAM, 3 TO 8 PERCENT SLOPES	0.2
GgB	YES	C	D	GLENNVILLE-BAILE SILT LOAM, 0 TO 8 PERCENT SLOPES	0.37/0.32
GgB		C		GLENNVILLE-CODORUS SILT LOAMS, 0 TO 8 PERCENT SLOPES	0.37
GgC		B		GLENNELG LOAM, 8 TO 15 PERCENT SLOPES	0.2
GgB		B		GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	0.2

** HIGHLY ERODIBLE, K>0.35, AND STEEPER THAN 5% OR 15% AND GREATER SLOPES TAKEN FROM THE NRCS WEB SOIL SURVEY AUGUST 2014, MAP 23.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 7/2/21
 DATE: 9/17/21



LEGEND

SOILS CLASSIFICATION
 SOILS DELINEATION
 EXISTING CONTOURS
 PROPOSED CONTOURS
 EXISTING TREE LINE
 PROPOSED TREE LINE
 LIMIT OF DISTURBANCE
 DRAINAGE AREA

PROPOSED STRUCTURE

EXISTING STRUCTURE

WELL BOX

SEWAGE DISPOSAL AREA

NON ROOFTOP DISCONNECT

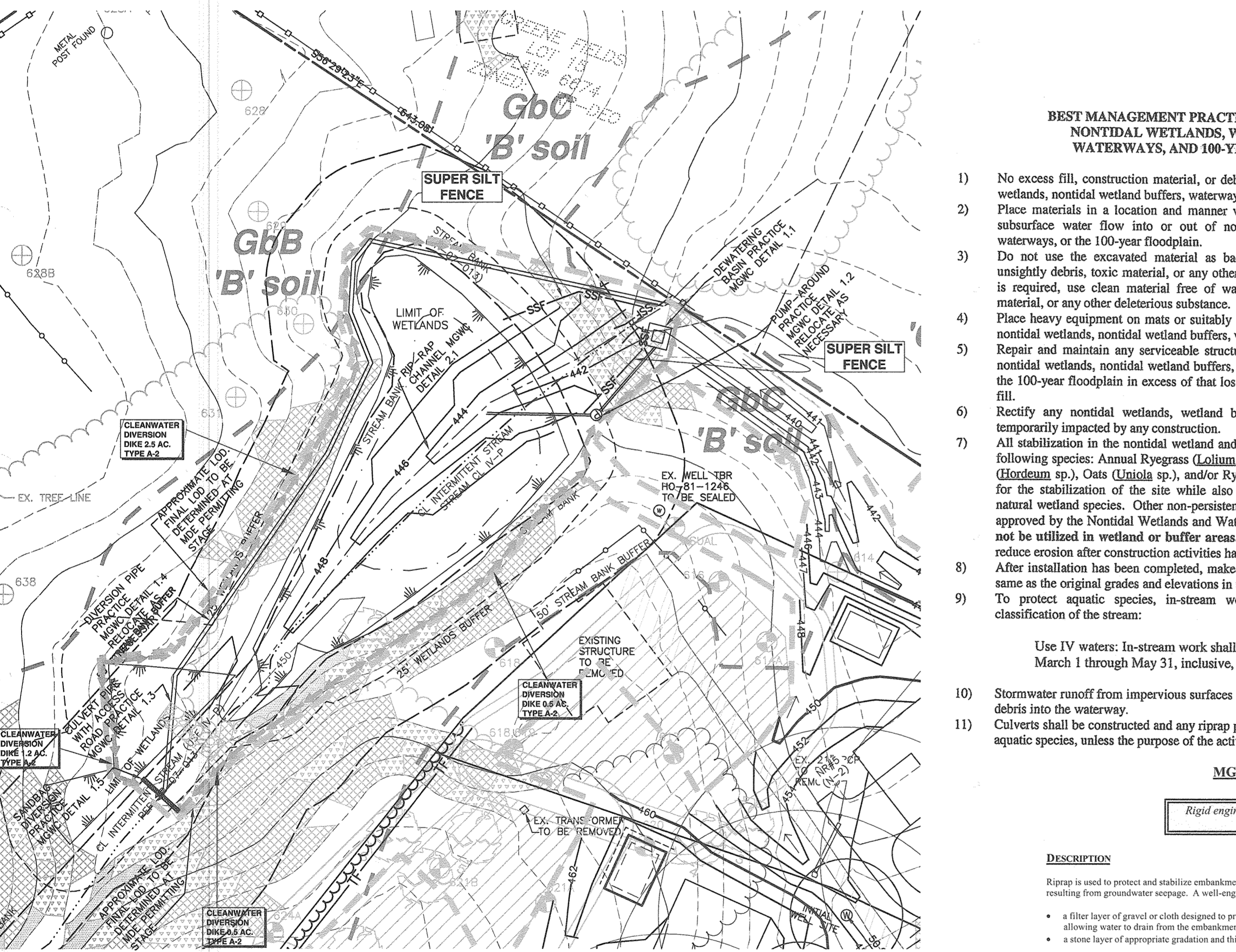
100 YR FLOODPLAIN

SLOPES 15% TO 19.99%

SLOPES 20% TO 24.99%

SLOPES 25% AND GREATER

NOTES: 1. USE SALVAGED MATERIALS FROM THE EXISTING POND BOTTOM AS THE INVERT MATERIAL OF THE CHANNEL TO THE EXTENT POSSIBLE.
 2. SMALL SALVAGED MATERIAL FROM THE POND BOTTOM SHALL BE PLACED IN THE RIP-RAP. WATER IS INTENDED TO FLOW ON THE SURFACE OF THE RIP-RAP. CLOG WITH NATIVE MATERIALS OR WITH SIMILARLY SIZED NEW MATERIALS.



BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS

- No excess fill, construction material, or debris shall be stockpiled or stored in nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
 - Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
 - Do not use the excavated material as backfill if it contains waste metal products, unsightly debris, toxic material, or any other deleterious substance. If additional backfill is required, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substance.
 - Place heavy equipment on mats or suitably operate the equipment to prevent damage to nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
 - Repair and maintain any serviceable structure or fill so there is no permanent loss of nontidal wetlands, nontidal wetland buffers, or waterways, or permanent modification of the 100-year floodplain in excess of that lost under the originally authorized structure or fill.
 - Rectify any nontidal wetlands, wetland buffers, waterways, or 100-year floodplain temporarily impacted by any construction.
 - All stabilization in the nontidal wetland and nontidal wetland buffer shall consist of the following species: Annual Ryegrass (*Lolium multiflorum*), Millet (*Setaria italica*), Barley (*Hordeum sp.*), Oats (*Avena sp.*), and/or Rye (*Secale cereale*). These species will allow for the stabilization of the site while also allowing for the voluntary revegetation of natural wetland species. Other non-persistent vegetation may be acceptable, but must be approved by the Nontidal Wetlands and Waterways Division. Kentucky 31 fescue shall not be utilized in wetland or buffer areas. The area should be seeded and mulched to reduce erosion after construction activities have been completed.
 - After installation has been completed, make post-construction grades and elevations the same as the original grades and elevations in temporarily impacted areas.
 - To protect aquatic species, in-stream work is prohibited as determined by the classification of the stream:
- Use IV waters: In-stream work shall not be conducted during the period March 1 through May 31, inclusive, during any year.
- Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.
 - Culverts shall be constructed and any riprap placed so as not to obstruct the movement of aquatic species, unless the purpose of the activity is to impound water.

MGWC 2.1: RIPRAP

Rigid engineering technique for bank stabilization

DESCRIPTION
 Riprap is used to protect and stabilize embankment soils from the erosive forces of flowing water and piping forces resulting from groundwater seepage. A well-engineered riprap system should consist of the following:

- a filter layer of gravel or cloth designed to prevent soil movement into or through the riprap layer while allowing water to drain from the embankment, and
- a stone layer of appropriate gradation and thickness to resist the shearing forces of channelized water.

EFFECTIVE USES & LIMITATIONS
 When properly designed and installed, riprap is an effective method where soil conditions, water turbulence and velocity, expected vegetative cover, and groundwater conditions are such that the soil may erode under the design flow conditions. Some common areas of riprap applicability are:

- diversion channel banks and/or bottoms,
- roadside ditches,
- drop structure outlets, and
- laterally expanding banks threatening infrastructure or personal property.

Additionally, properly graded riprap forms a flexible, self-healing cover which can be easily repaired in localized areas by the timely replacement of stone. Uniform-grade riprap can also be used with a geotextile filter cloth.

Filter cloth should only be utilized when the bank material is noncohesive such as sand or gravel.

MATERIAL SPECIFICATIONS
 Filters: Material and design specifications for granular filters are found in Table 3.1a.

Table 3.1a: Granular Filter Material Grading Specifications

% less than	U.S. Standard sieve size
100	2 1/2 in (64 mm)
85-100	1 in (25 mm)
60-100	1/2 in (13 mm)
35-70	No. 10
20-50	No. 40
3-20	No. 200

The thickness of the filter should not be less than 6 inches (15 cm). Generally, filters that are one-half the thickness of the riprap layer are satisfactory.

Synthetic filter cloth may be used cautiously based on the 1994 MD Standards and Specifications for Soil Erosion and Sediment Control.

- Riprap: The maximum diameter or weight of stone for riprap should be based upon the design flow velocity using Figure 2.1. This chart is based on a maximum slope of 20:1. The stone gradations for Classes I, II are found in Table 3.1b.

NOTES:
 1: STREAM CLOSURE SHALL BE BETWEEN MARCH 1ST AND MAY 31ST.
 2: ALL SWALES SHALL BE LINED WITH EROSION CONTROL MATTING IF THEY ARE NOT LINED WITH RIP-RAP.
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MGWC 2.1: RIPRAP

Table 3.1b: Stone Gradations for Riprap Stone Classes

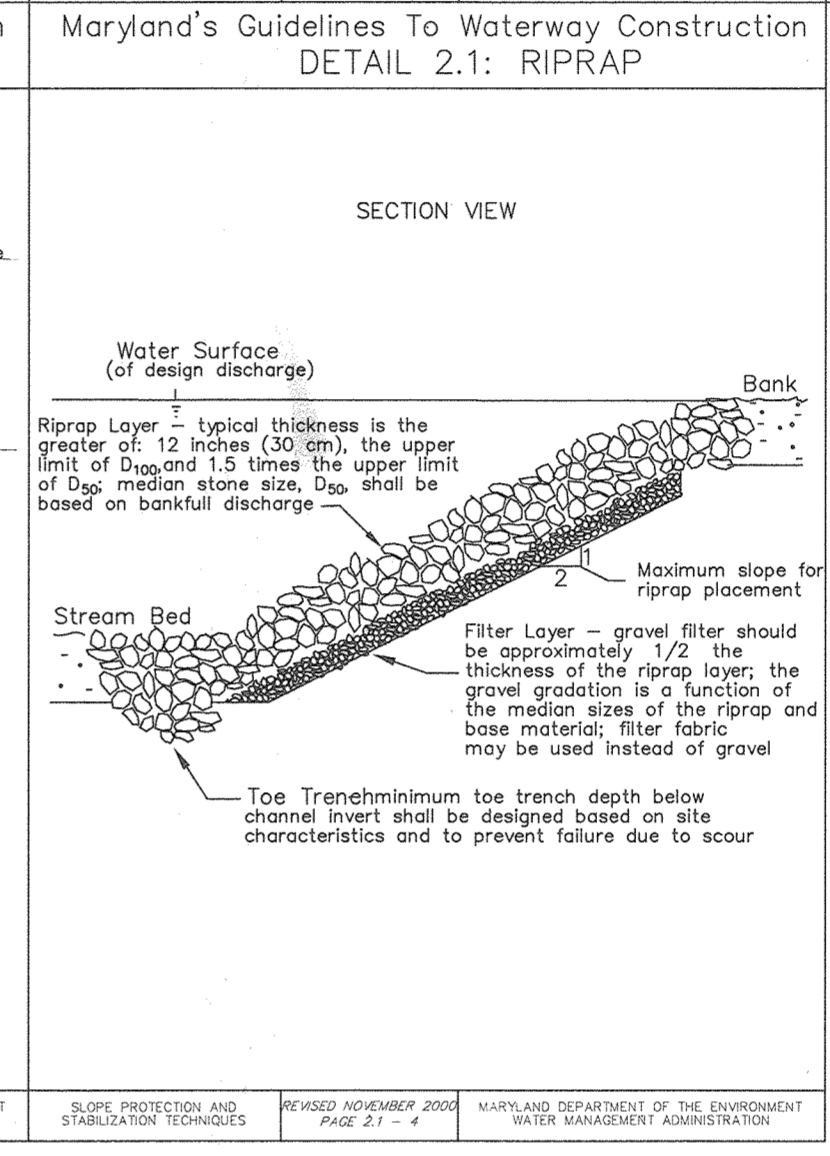
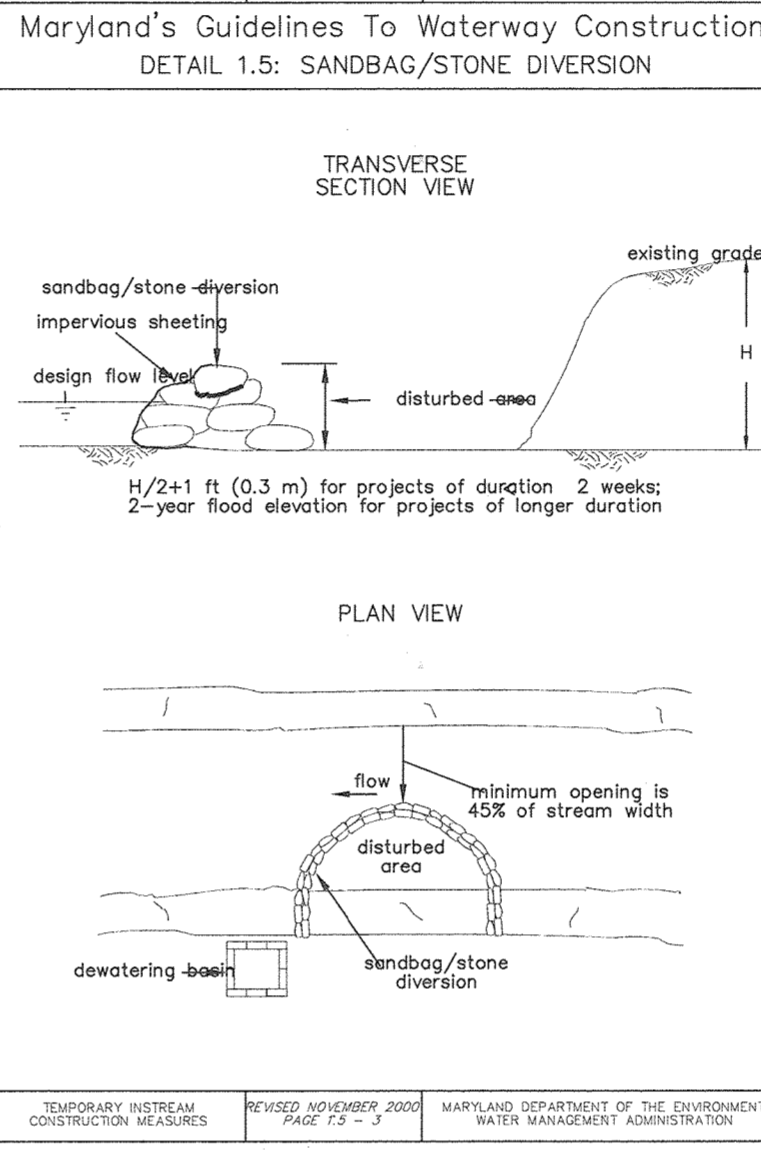
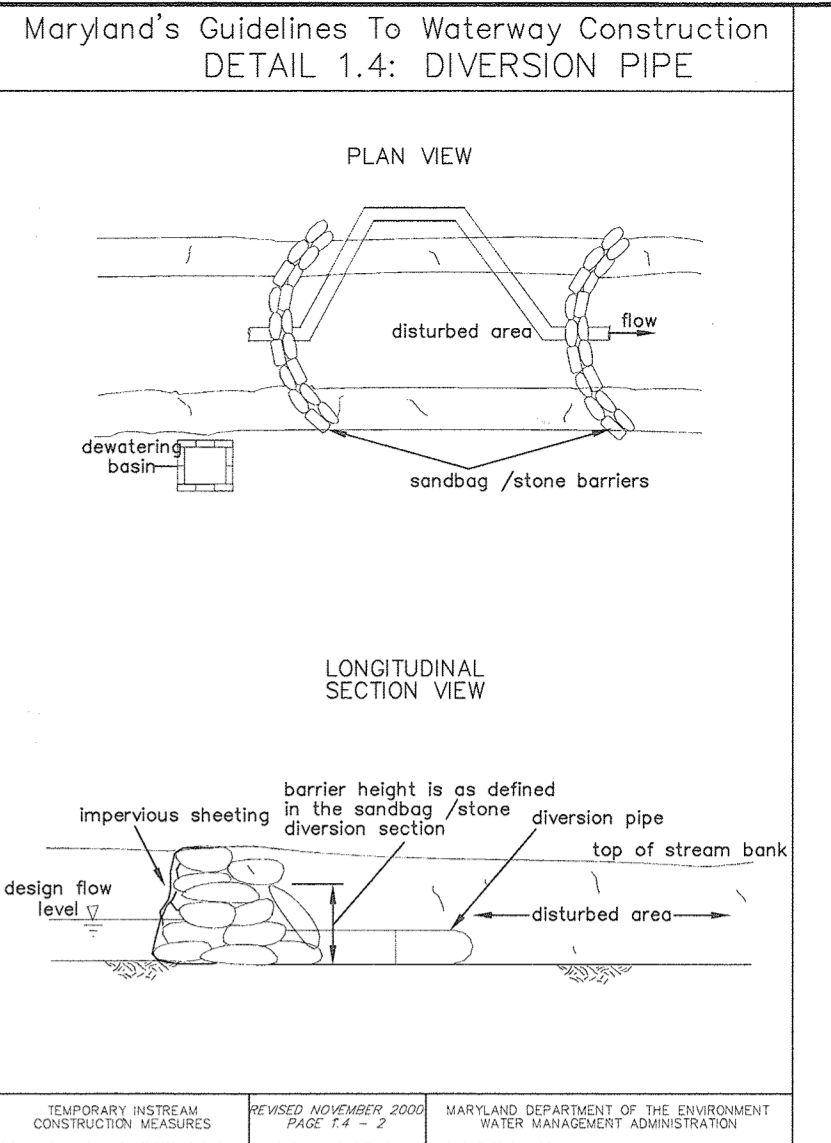
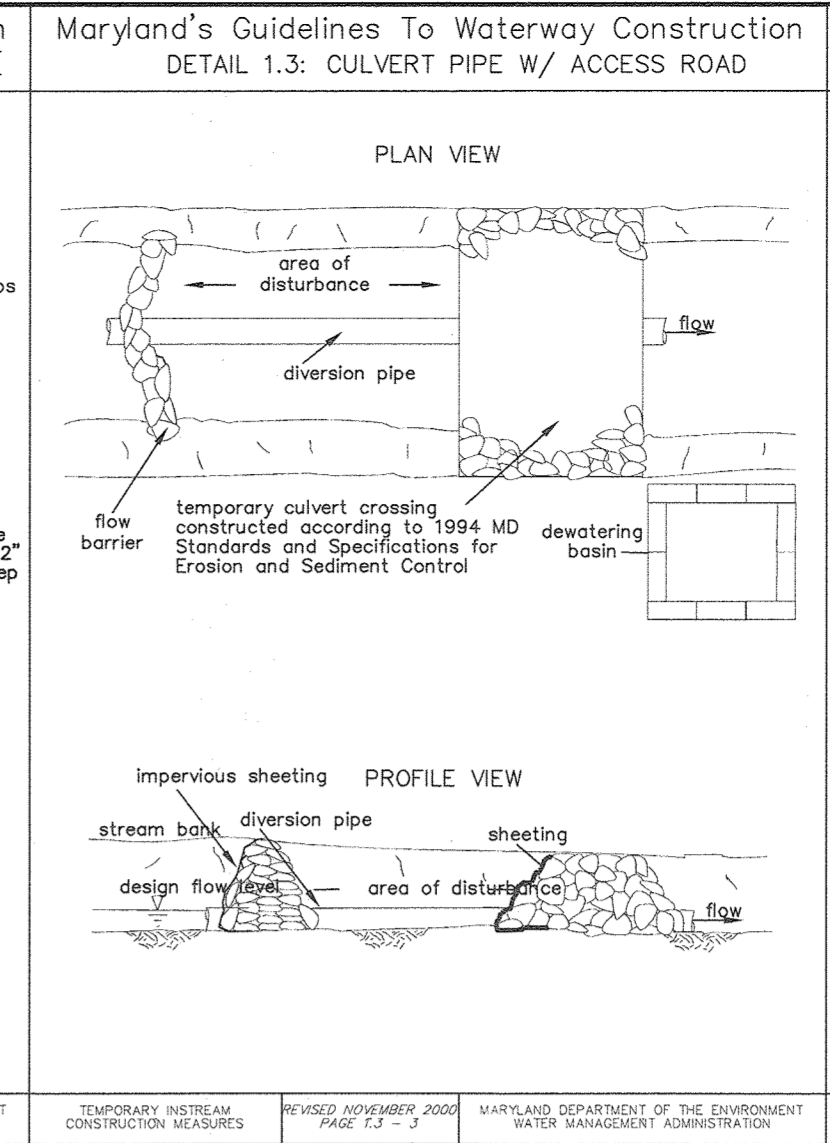
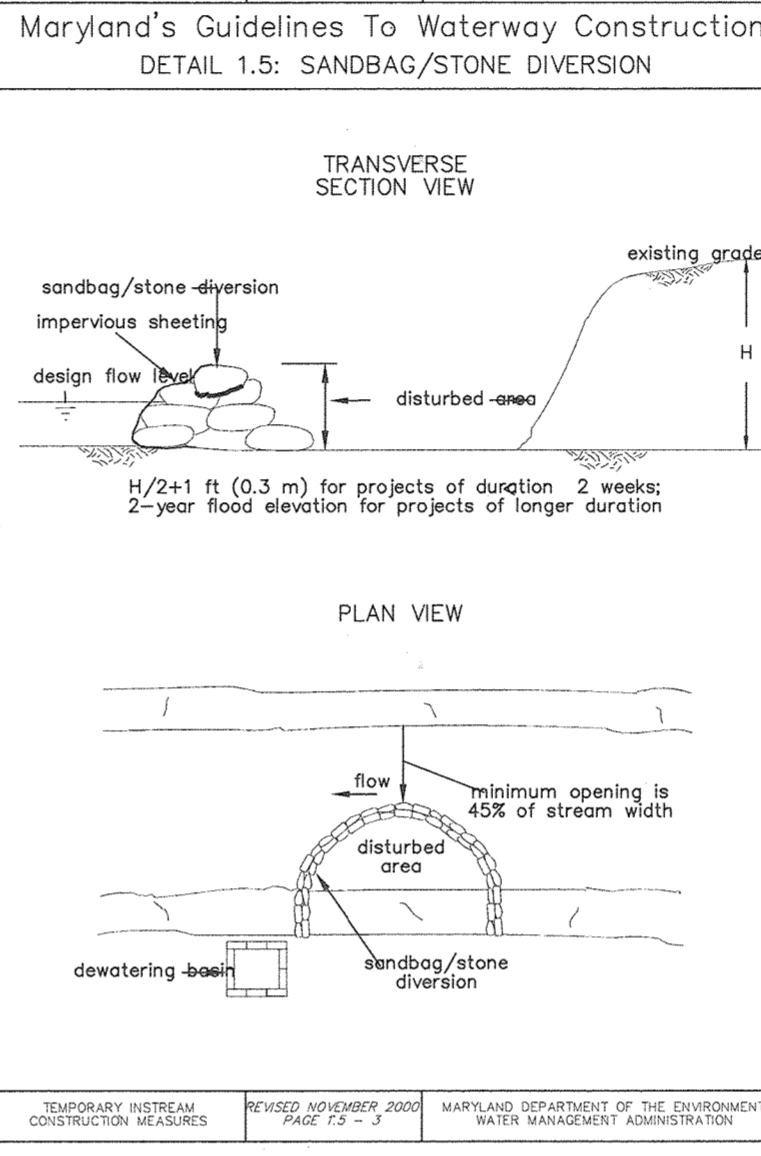
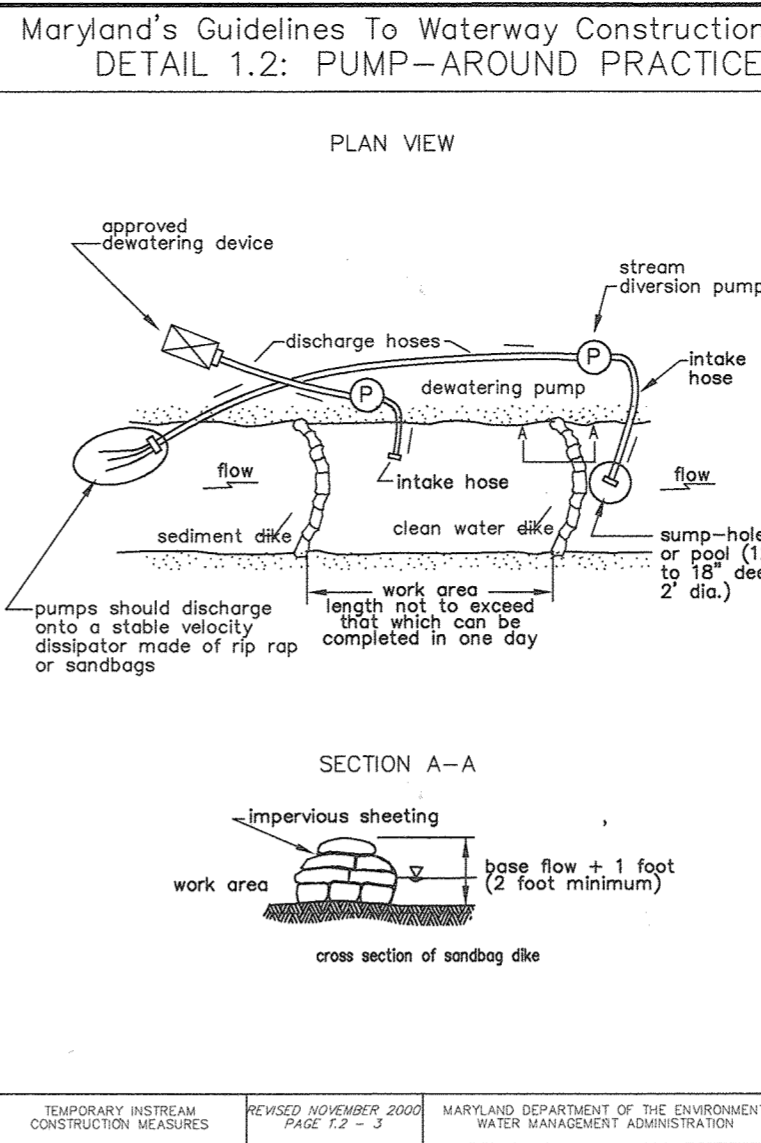
Class	Size	% Total Weight - Given Size
I	150 lb (70 kg) 2 lb (1 kg)	100 10 max
II	700 lb (320 kg) 20 lb (10 kg)	100 10 max
III	2000 lb (910 kg) 40 lb (20 kg)	100 10 max

Uniform-grade riprap should incorporate angular rocks to promote interlocking.

Approximate Cost (\$1999): \$78 per linear ft.

INSTALLATION GUIDELINES

- All erosion and sediment control devices, including dewatering basins, should be implemented as the first order of business according to a plan approved by the WMA or local authority. Once a slope stabilization project is initiated, preparation and placement of the riprap should immediately follow the initial disturbance to minimize the chances for further slope degradation. The recommended construction procedure for riprap is as follows beginning with initial slope preparations (refer to Detail 2.1):
- The contractor should install all sediment and erosion control devices as the first order of business.
- Excavation should be made in reasonably close conformity with the existing stream slope and bed.
- All fill in the subgrade should be compacted to a density approximating that of the surrounding undisturbed material.
- Provisions must be made to anchor the riprap at the stream bed so as to provide protection against undermining. If this cannot be accomplished by creating a toe trench, an alternative method of protection must receive prior written approval from the WMA or local authority.
- The filter layer or blankets should be placed immediately after slope preparation.
 - The stone for granular filters should be spread in a uniform layer to the specified depth. Where more than one layer is employed, they should be spread such that there is minimal mixing.
 - When cloth filters are used, special care should be taken not to damage the fabric during riprap placement.
- Riprap placement should begin with the toe. The larger stones, as specified by the design gradation, should be placed in the toe and along the perimeter of the slope and channel protection. The riprap should be placed with suitable equipment in such a manner as to produce a reasonably graded mass of stones with zero drop height. The placing of stones that cause extensive segregation is not allowed. Where appropriate, a low flow channel shall be constructed through the riprap.
- Any excavation voids existing along the edges of the completed slope and channel protection should be backfilled and compacted.
- All disturbed areas should be permanently stabilized in accordance with an approved sediment and erosion control plan.
- Note: The use of rock vanes (MGWC 3.3: Rock Vanes) should be considered to redirect high-velocity flows at the toe.

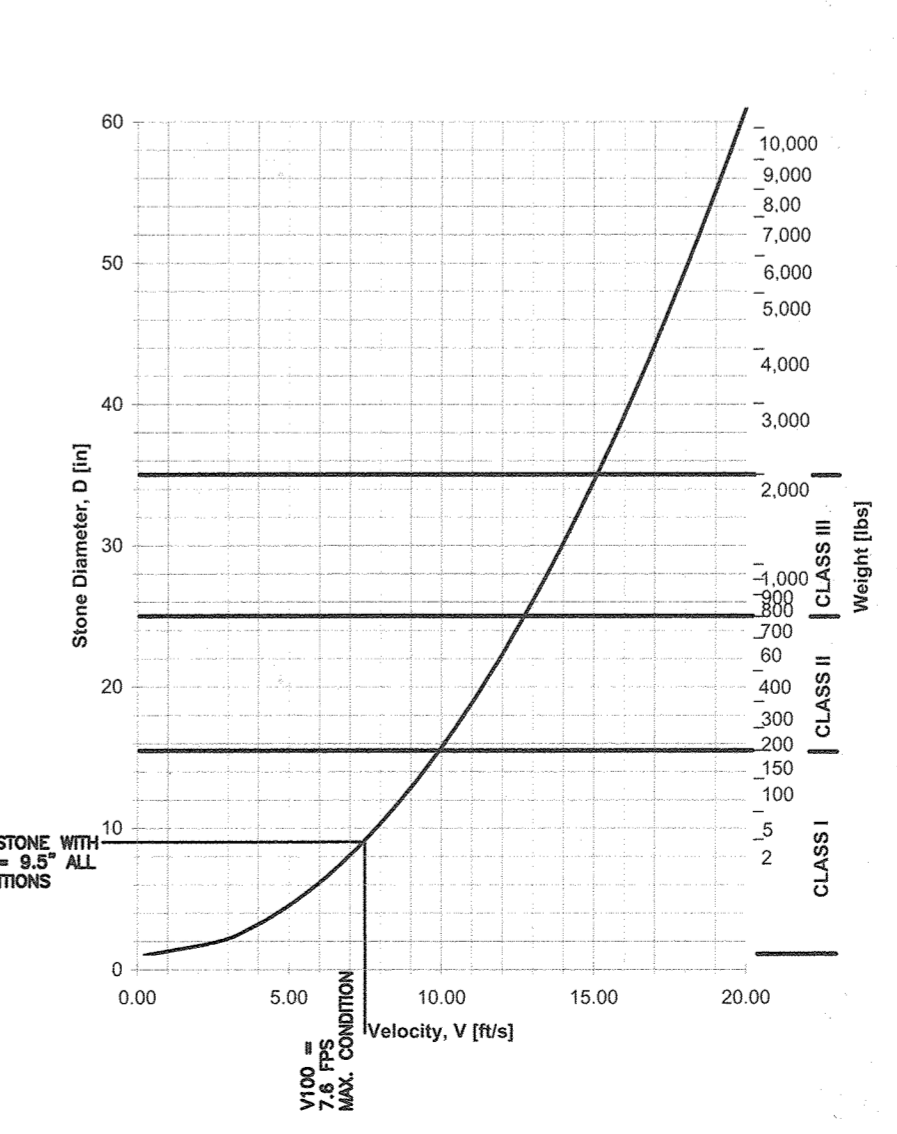


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Sequence of Construction for Intermittent Stream Reconstruction

- Obtain grading permit. A letter of Authorization from MDE must be obtained prior to disturbances to the stream, floodplain or wetlands for the driveway and stream reconstruction. Stream closure shall be between March 1st and May 31st.
- Install sediment and erosion control measures at the driveway location and the pond reach.
- With the approval of the Howard County Inspector install the storm drain inlets, pipes and outlet protection that divert flow from crossing the driveway (I-1 to E-1 and I-2 to E-2). Install the swales that lead to the inlets and stabilize with matting. Fill for the driveway and filter strip, install sub-base and base course of pavement.
- With the approval of the Howard County Inspector install the sandbag diversion and the diversion pipe around the pond. Do not breach the embankment of the pond below the current water level. Install the pump-around practice and dewatering basin or filter bag as necessary. Drain the pond.
- With the approval of the Howard County Sediment Control Inspector remove non-compatible soil and mulch. Salvage material that could be used as the invert of the final channel from the pond bottom if possible. Fill and compact the pond area to the top of channel bank. Maintain and use pumps, dewatering basin and filter bags as necessary. breach the embankment, and remove the existing riser, any low flow pipes and existing principal spillway. Install the rip-rap channel, using the salvaged material to form or clog the channel invert.
- With the approval of the Howard County Sediment Control Inspector remove the pump-around practice, dewatering basin and filter bags. Remove the sandbag diversion and the pipe diversion of the stream to allow flow in the new stream bed. If necessary fill any areas of the pipe diversion that were cut, return to original grade.
- With the approval of the Howard County Sediment Control Inspector, remove remaining sediment control devices and stabilize disturbed areas in accordance with the permanent seed/soil notes.

FIGURE 2.1: RIPRAP DIAMETER AS A FUNCTION OF STREAM VELOCITY (BASED ON ISHBAS EQUATION)



1		4-24-19	ADJUST PROPERTY BOUNDARY, LOT LAYOUT, GRADING, DRIVEWAY, ETC.
NO.	DATE	REVISION	
<p>BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS 8480 BALTIMORE NATIONAL PIKE & SUITE 315 A ELLICOTT CITY, MARYLAND 21043 (P) 410-465-4105 (F) 410-465-6444 WWW.BEI-CIVILENGINEERING.COM</p>			
OWNER:		CLARKSVILLE NL LLC C/O H&H ROCK COMPANIES 6800 DEERPATH ROAD ELK RIDGE, MD 21075 410-579-2442	
DEVELOPER:		ROCK REALTY INC. C/O H & H ROCK COMPANIES 6800 DEERPATH ROAD SUITE #100 ELK RIDGE, MARYLAND 21075 410-579-2442	
TAX MAP: 34		GRID: 23	PARCEL: 301
ELECTION DISTRICT NO. 5		HOWARD COUNTY, MARYLAND	
<p>CLARKSVILLE CROSSING LOTS 1 THRU 4</p>			
<p>REVISED SUPPLEMENTAL PLAN STREAM RECONSTRUCTION, NOTE, DETAILS, PLAN AND PROFILE</p>			
DATE:	APRIL, 2019	BEI PROJECT NO.:	2525
DESIGN:	JC	DRAWN:	LDD
SCALE:	AS SHOWN	SHEET:	14 OF 15

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Kent Shuler
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 6-3-19

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature]
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 5/31/19

NOTES:
 THE FOLLOWING STANDARDS (CONSTRUCTION AND TEMPORARY TRAFFIC CONTROL) ARE REQUIRED FOR THIS PROJECT:

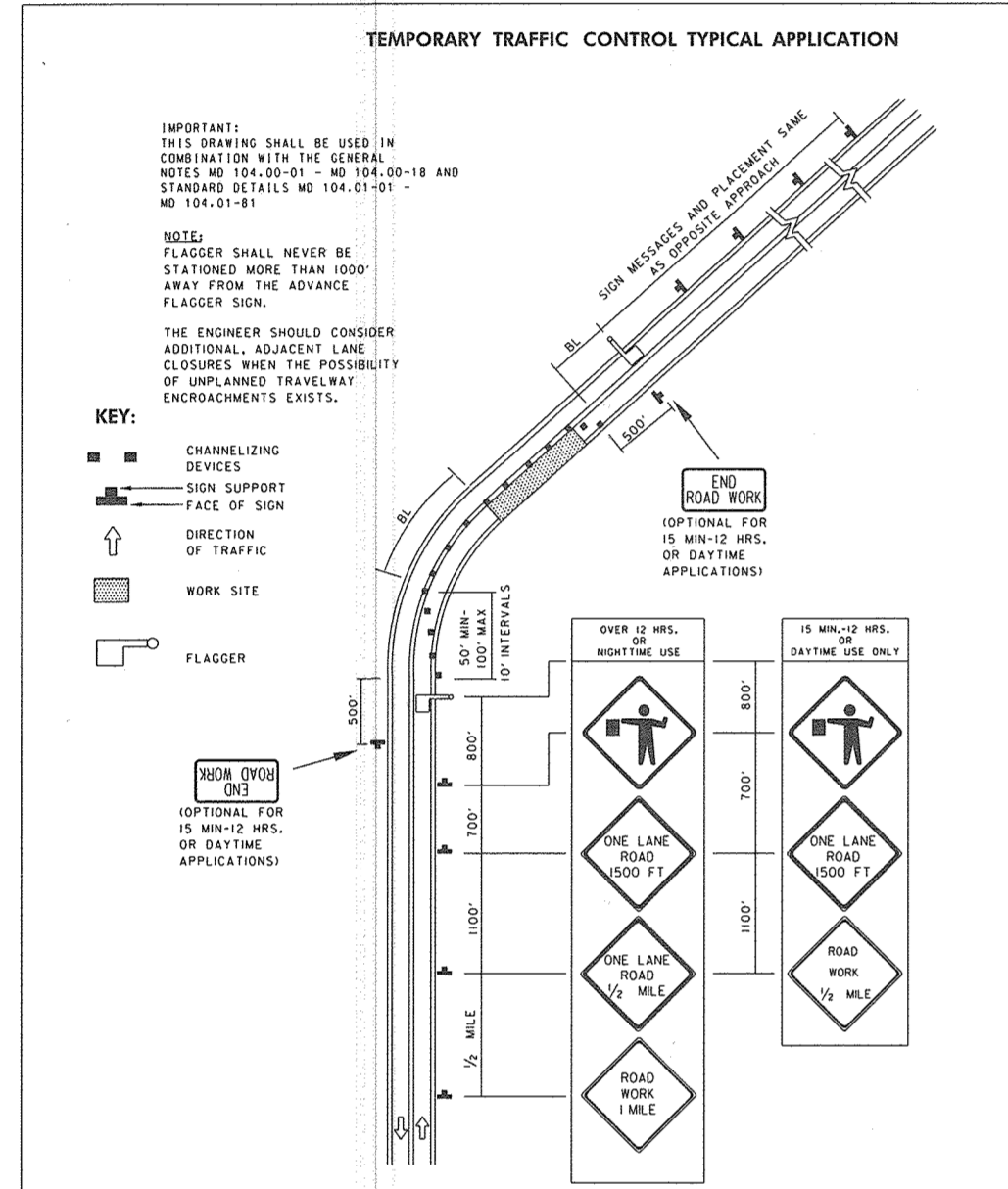
- MD 104.02-09 - FLAGGING OPERATION /2-LANE, 2-WAY GREATER THAN 40 MPH.
- MD 605.13 - TYPE L TRAFFIC BARRIER ANCHORAGE.
- MD 605.20 - TRAFFIC BARRIER END TREATMENT

FOR ALL STANDARDS REFERRED TO ON THE PLANS THE CONTRACTOR MUST GO TO THE BOOK OF STANDARDS WHICH WILL HAVE THE MOST CURRENT VERSION. THE BOOK OF STANDARDS CAN BE ACCESS AT: <http://apps.roads.maryland.gov/business/sha/bizstdsoecs.desManualStdPub/publicationsonline/ohd/bookstd/index.asp>

ALL ITEMS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT VERSION OF THE REFERENCED STANDARDS AT THE TIME OF CONSTRUCTION.

NOTES:

1. OCLARKSVILLE PIKE IS AN URBAN MINOR ARTERIAL RUNNING IN AN NORTH/ SOUTH DIRECTION.
2. THE POSTED SPEED LIMIT ALONG CLARKSVILLE PIKE IS 45 MPH.
3. CONTRACTOR SHALL SAWCUT EXISTING ROAD AT LIMIT OF SHA PAVING PRIOR TO MILL AND OVERLAY.
4. DRAINAGE AREA NORTH OF PROPOSED ENTRANCE FLOWS INTO PROPOSED INLET I-1.
5. DRAINAGE AREA SOUTH OF PROPOSED ENTRANCE FLOWS ALONG THE WEST SIDE OF CLARKSVILLE PIKE TOWARDS EXISTING BOX CULVERT.
6. THERE NO IDENTIFIABLE UNDERGROUND UTILITIES WITHIN THE LIMITS OF SHA PROPOSED ENTRANCE.
7. ALLOWABLE WORK HOURS ALONG MD 108 SHALL BE IN ACCORDANCE WITH THE ACCESS PERMIT.

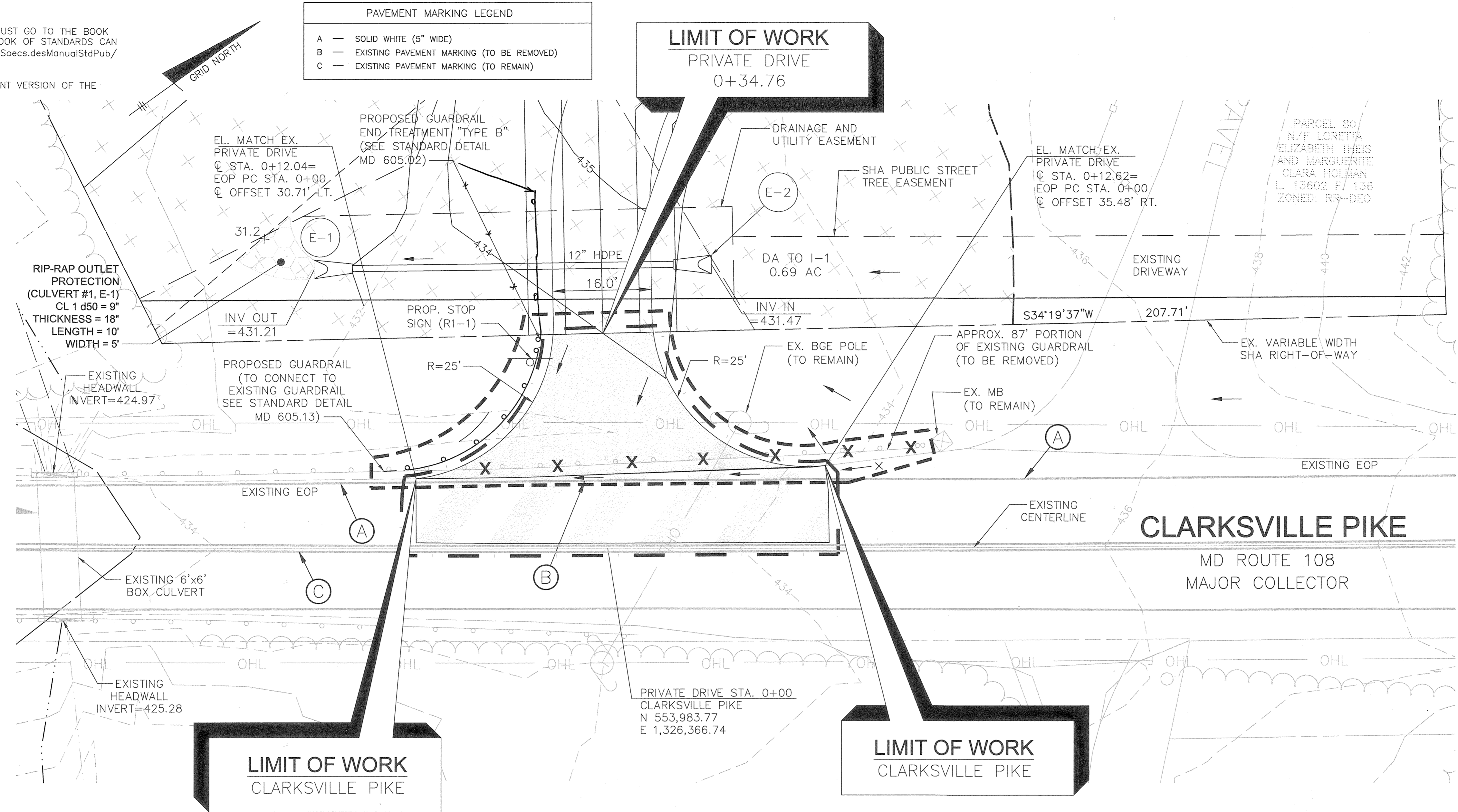


SPECIFICATION	CATEGORY CODE ITEMS
104	104.02-09

NOTE: IN THE EVENT FLAGGING IS REQUIRED REFER TO THE LATEST FLAGGING OPERATION STANDARD DETAIL MD 104.02-10.

PAVEMENT MARKING LEGEND

A	SOLID WHITE (5" WIDE)
B	EXISTING PAVEMENT MARKING (TO BE REMOVED)
C	EXISTING PAVEMENT MARKING (TO REMAIN)



NOTE: SEE STORM DRAIN PROFILE SHEET 6 OF 15 FOR STORM DRAIN DESIGN
 NOTE: SEE DRAINAGE MAP SHEET 1 OF 1 FOR DRAINAGE AREA TO CULVERT #1

LEGEND

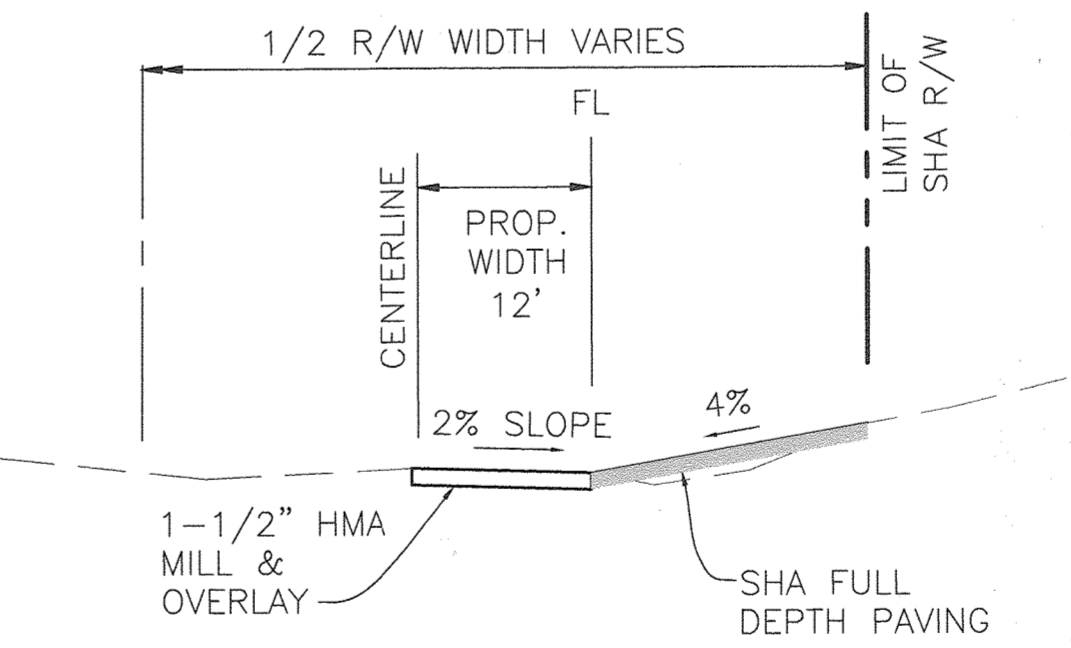
[Pattern]	PAVEMENT FULL DEPTH
[Pattern]	MILL & OVERLAY/ WEDGE & LEVEL
[Line]	SHA LIMIT OF PAVING
[Line]	SHA STD. NO. MD 605.13 TYPE L TRAFFIC BARRIER END TREATMENT
[Line]	SHA LIMIT OF DISTURBANCE
[Arrow]	FLOW ARROWS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 5-31-19 DATE
 [Signature] 6-3-19 DATE

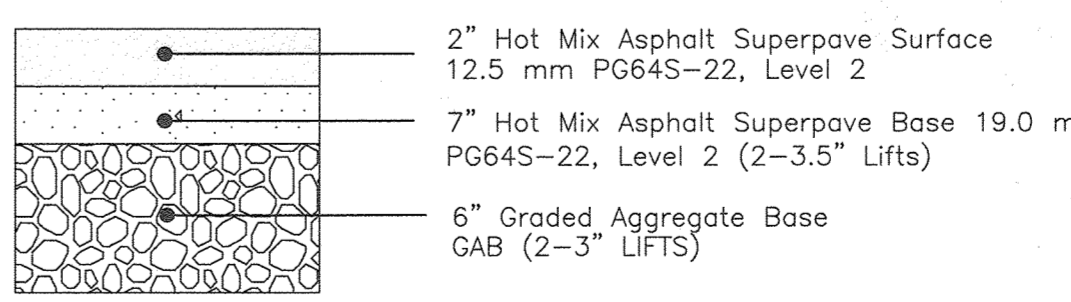
APPROVED: [Signature] 5-31-19 DATE
 Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION
 STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
 TYPE L TRAFFIC BARRIER ANCHORAGE
 STANDARD NO. MD 605.13

APPROVED: [Signature] 5-31-19 DATE
 Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION
 STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
 TRAFFIC BARRIER W BEAM END SECTIONS
 STANDARD NO. MD 605.20

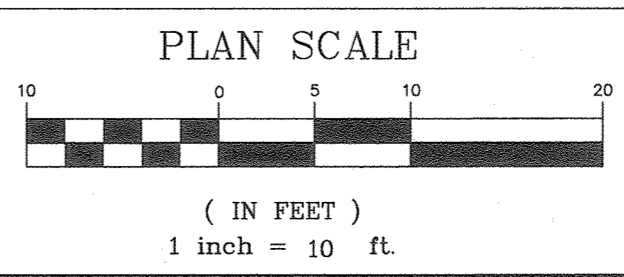
APPROVED: [Signature] 5-31-19 DATE
 Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION
 STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
 TRAFFIC BARRIER W BEAM, SHORT RADIIUS
 STANDARD NO. MD 605.52



TYPICAL ROADWAY SECTION MD-108 (CLARKSVILLE PIKE) MAJOR COLLECTOR-POSTED SPEED: 45 MPH NOT TO SCALE



FULL DEPTH PAVING DETAIL NOT TO SCALE



4/21/19 Revise sheets in set, move S.D. profile to Sheet 6.

NO. DATE REVISION

BENCHMARK ENGINEERING, INC.
 ENGINEERS & LAND SURVEYORS & PLANNERS
 8400 BALTIMORE NATIONAL PIKE & SUITE 315 A ELLCOTT CITY, MARYLAND 21043
 (P) 410-465-8108 (F) 410-465-8644
 WWW.BEI-CIVLENGINEERING.COM

[Signature]
 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. 45577, Expiration Date: 06-08-2020.

OWNER: CLARKSVILLE NL LLC
 C/O H&H ROCK COMPANIES
 6800 DEERPATH ROAD SUITE 100
 ELKRIDGE, MD 21075
 410-579-2442

DEVELOPER: ROCK REALTY, INC.
 C/O H & H ROCK COMPANIES
 6800 DEERPATH ROAD SUITE #100
 ELKRIDGE, MARYLAND 21075
 410-579-2442

DESIGN: JC DRAWN: LDD

CLARKSVILLE CROSSING
 LOTS 1 THRU 4

TAX MAP: 34 GRID: 23 PARCEL: 301 ZONED: RR-DEO
 ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

REVISED SUPPLEMENTAL PLAN
 STATE HIGHWAY ACCESS PERMIT ENTRANCE PLAN

DATE: APRIL, 2019 BEI PROJECT NO: 2525
 SCALE: AS SHOWN SHEET 15 OF 15