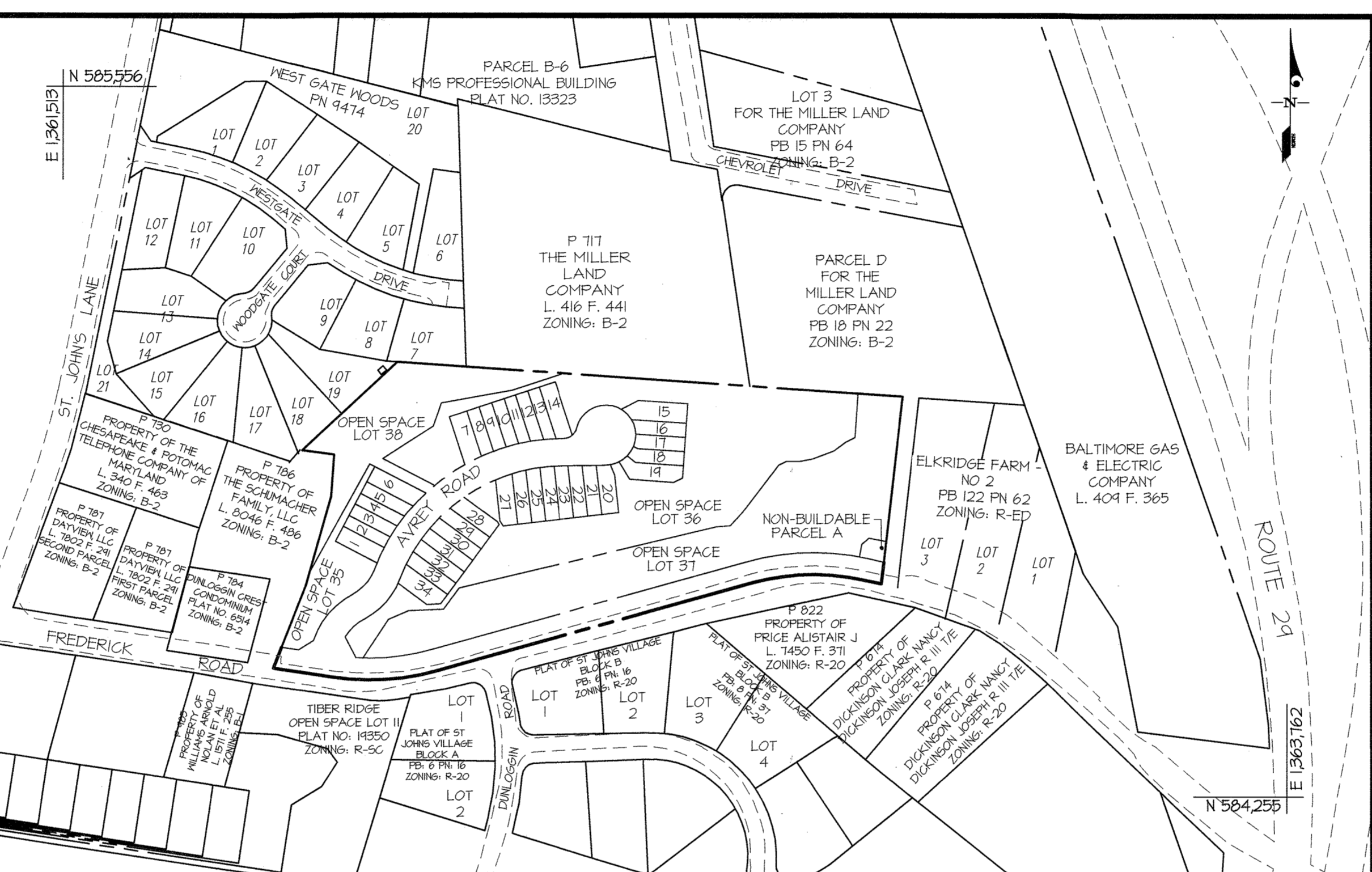


GENERAL NOTES

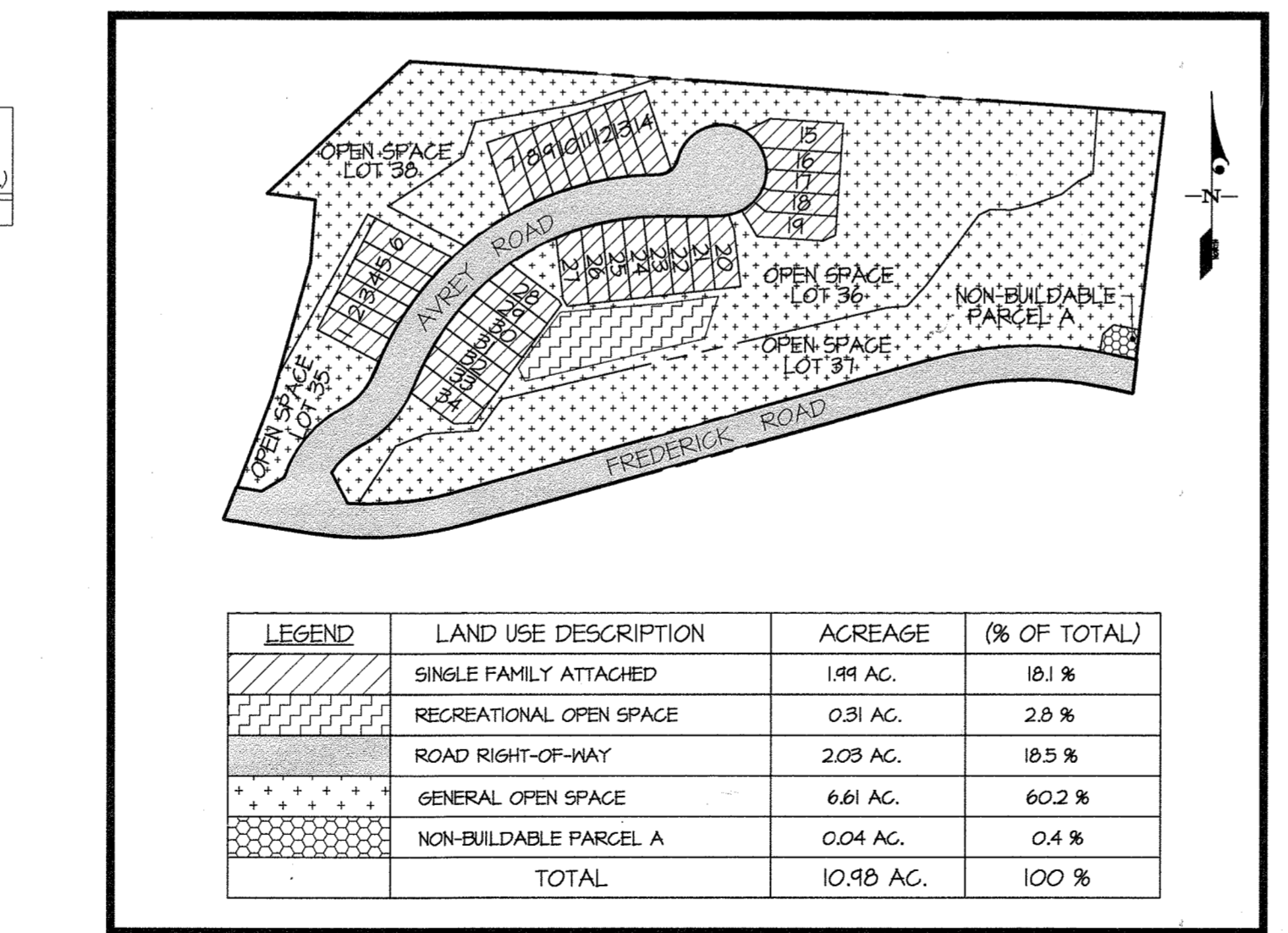
- 1. ZONING: THE SUBJECT PROPERTIES ARE ZONED R-SC PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN.
2. PREVIOUS DEPARTMENT OF PLANNING AND ZONING FILE NUMBERS: SDF-01-054(VOIDED), SDF-08-060 (VOIDED), F-08-022(VOIDED), F-08-181 (VOIDED), ECP-13-060, NP-14-056, SP-15-050.
3. SITE ANALYSIS: TOTAL AREA OF SITE: 10.98 ACRES; AREA OF 100 YR. FLOODPLAIN: 1.78 ACRES; AREA OF STEEP SLOPES (OUTSIDE OF FLOODPLAIN): 0.53 ACRES; NET AREA: 8.67 ACRES; AREA OF PROPOSED ROADWAY (PUBLIC): 2.03 ACRES; NO. OF SINGLE FAMILY ATTACHED LOTS: 34; AREA OF SINGLE FAMILY ATTACHED LOTS: 984 ACRES; TOTAL NUMBER OF LOTS: 38; NO. OF OPEN SPACE LOTS: 4; AREA OF OPEN SPACE: 6.42 ACRES; TOTAL APPROXIMATE LIMIT OF PROP. SITE DISTURBANCE: 6.8 ACRES (62% OF GROSS); OPEN SPACE REQUIREMENTS: OPEN SPACE REQUIRED: 25% OF GROSS AREA: 2.75 ACRES; OPEN SPACE PROVIDED: 6.42 ACRES; RECREATIONAL OPEN SPACE REQUIRED: 400 SF PER SFA LOT: 13,600 SF; RECREATIONAL OPEN SPACE PROVIDED: 13,604 SF (0.31 ACRES); THIS PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS MAINTENANCE HAVE BEEN PROCESSED.
7. THE CENTERLINE INVENTORY MAP DOES NOT SHOW ANY CENTERLINES WITHIN THE PROJECT LIMITS.
8. THE SCENIC ROADS MAP DOES NOT INDICATE ANY SCENIC ROADS IN THE VICINITY.
9. THE HISTORIC SITES MAP DOES NOT SHOW ANY HISTORICAL SITES WITHIN THE PROJECT LIMITS.
10. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY BENCHMARKS 24CA AND 24FA WERE USED FOR THIS PROJECT.
11. BOUNDARY INFORMATION IS FROM BOUNDARY SURVEYS BY GUTSCHICK, LITTLE, AND WEBER, P.A., DATED MARCH 2013.
12. SOILS DATA WAS TAKEN FROM THE SOIL SURVEY OF HOWARD COUNTY, MARYLAND ISSUED MARCH 2006.
13. THE EXISTING TOPOGRAPHY IS TAKEN FROM AERIAL TOPOGRAPHY PREPARED BY MCKENZIE-SMITHER DURING DECEMBER, 2012.
14. THE WETLANDS DELINEATION STUDY FOR THIS PROJECT WAS PREPARED BY KLEBASCO ENVIRONMENTAL, L.L.C., DATED OCTOBER 2, 2012 AND APPROVED ON JULY 11, 2013.
15. THE 100-YEAR FLOODPLAIN LIMITS FOR THIS PROJECT WERE TAKEN FROM THE FEMA FLOODPLAIN STUDY EFFECTIVE NOVEMBER 6, 2013.
16. A NOISE STUDY BY STANBRO ENGINEERING DATED APRIL 24, 2013 AND WAS APPROVED ON DECEMBER 16, 2013.
17. A TRAFFIC STUDY WAS PREPARED BY TRAFFIC GROUP IN A REPORT DATED APRIL 1, 2013 AND WAS APPROVED ON JULY 11, 2013.
18. THE GEO-TECHNICAL REPORT WAS PROVIDED BY HILLIS CARRIES DATED MAY 10, 2013. THIS STUDY WILL BE APPROVED AS PART OF THIS PLAN.
19. EXISTING UTILITIES WERE TAKEN FROM AVAILABLE HOWARD COUNTY RECORDS.
20. THE PROJECT IS WITHIN THE METRO DISTRICT.
21. WATER AND SEWER ARE PUBLIC PER CONTRACT NO. 14-4811-D. EXISTING CONTRACT NUMBERS: WATER: 10-M; SEWER: 31-5.
22. THE FOLLOWING STREAM BUFFERS HAVE BEEN PROVIDED: PERENNIAL STREAM: 15' BUFFER; THE STREAM BUFFERS ARE MEASURED FROM THE STREAM BANK.
23. THE REQUIRED LANDSCAPE BUFFER PLANTINGS ARE PROVIDED IN ACCORDANCE WITH SECTION 16.124 AND THE HOWARD COUNTY LANDSCAPE MANUAL. SEE SHEET #22 OF THIS PLAN SET FOR BUFFER (AND STREET TREE) PLANTINGS. THE REQUIRED LANDSCAPE SURETY (IN THE AMOUNT OF \$22,950.00) WILL BE POSTED WITH THE DEVELOPER AGREEMENT. STREET TREES ARE BONDED SEPARATE FROM BUFFER LANDSCAPING. THE SURETY OF \$4,400.00 (8 x \$550.00/TREE) FOR THE 10' STREET TREES WILL BE ADDRESSED WITH DED'S COST ESTIMATE. PER UNIT LANDSCAPING WILL BE ADDRESSED AT THE SDP STAGE.
24. NO GRADING, REMOVAL OF VEGETATION COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS UNLESS MAINTENANCE ARE APPROVED OR IT IS CONSIDERED A NECESSARY DISTURBANCE. DPZ HAS DETERMINED THAT THE WIDENING OF FREDERICK ROAD AND GILBERT EXTENSION ARE A NECESSARY DISTURBANCE IN ACCORDANCE WITH SUBSECTION 16.16(C) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
25. OPEN SPACE LOT 36 WILL CONTAIN ACTIVE RECREATIONAL AREAS IN ACCORDANCE WITH SECTION 16.141(4) OF THE SUBDIVISION REGULATIONS (8TH EDITION). THE RECREATIONAL SPACE REQUIREMENTS WILL BE MET BY PROVIDING THE REQUIRED AMOUNT OF OPEN SPACE LAND. NO FACILITIES ARE BEING PROPOSED AT THIS TIME.
26. THE FOREST CONSERVATION EASEMENT OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL WILL BE FULFILLED BY RETENTION OF 1,443.0 ACRES OF CREDITED EXISTING FOREST AND 1,647.0 ACRES OF AFFORESTATION / REFORESTATION FOR A TOTAL OF 3,090 ACRES TO BE RECORDED WITHIN FOREST CONSERVATION EASEMENTS WHICH EXCEED THE MINIMUM OF 3,074 ACRES REQUIRED FOR THIS SUBDIVISION. TWO (2) FOREST CONSERVATION EASEMENTS (FCE-1 with 0.9240 of an acre and FCE-2 with 2,201 acres) HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE CONSERVATION EASEMENTS HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED BY THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED. THE FOREST CONSERVATION SURETY IN THE AMOUNT OF \$35,894.00 IS POSTED WITH DEVELOPER'S AGREEMENT.
27. MINIMUM BUILDING SETBACK RESTRICTIONS FROM PUBLIC ROADS AND PROPERTY LINES WILL BE PROVIDED IN ACCORDANCE WITH THE ZONING REGULATIONS ADOPTED OCTOBER, 2013.
28. A PRE-SUBMISSION COMMUNITY MEETING WAS HELD FOR THIS PROJECT ON 11/05/2012 IN COMPLIANCE WITH SECTION 16.126 OF THE REGULATIONS.
29. THIS SITE IS IN THE TIBER RIVER WATERSHED AND 100 YEAR MANAGEMENT IS REQUIRED.
30. STORMWATER MANAGEMENT FOR THIS SITE WILL BE PROVIDED IN ACCORDANCE WITH CHAPTER 5 OF THE MDE STORMWATER DESIGN MANUAL. BASED ON TABLE 5.3, THIS SITE HAS A TARGET PE OF 1.0" IN ORDER TO FULFILL THE STORMWATER MANAGEMENT REQUIREMENTS A COMBINATION OF RAIN BARRELS (M-1), DRY WELLS (M-5), BIO-SWALES (M-8), AND MICRO-BIORETENTION (M-6) WILL BE USED. A SURFACE SAND FILTER (F-1) WILL BE USED TO PROVIDE ANY REMAINING ESD VOLUME NOT PROVIDED BY THE CHAPTER 5 DEVICES AND TO PROVIDE 100 YEAR MANAGEMENT FOR THE SITE. ALL PRACTICES WILL BE PRIVATELY OWNED AND MAINTAINED.

- 31. DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
A) WIDTH - 12' (6' SERVING MORE THAN ONE RESIDENCE)
B) SURFACE - 6" OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MIN)
C) GEOMETRY - MAX. 15% GRADE, MAX 10% GRADE CHANGE AND MIN. 45' TURNING RADIUS
D) STRUCTURE (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (125 LOADINGS)
E) DRAINAGE ELEMENTS - SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE
F) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE
PER ZONING SECTION 110.02, 10% OF THE TOTAL NUMBER OF UNITS MUST BE DEDICATED AS HEREIN.
32. NP-14-056, A MAJORITY REQUEST FROM SUBDIVISION SECTION 16.1205(A)(1), PROHIBITING REMOVAL OF A SPECIMEN TREE WAS APPROVED ON DECEMBER 16, 2013 UNDER THE FOLLOWING CONDITIONS:
1. MAJORITY APPROVAL APPLIES ONLY TO REMOVAL OF SPECIMEN TREE NO. 1 AS INDICATED BY THE MAJORITY EXHIBIT.
2. THE PETITIONER SHALL PROVIDE A (1) REPLACEMENT PLANTING ON SITE TO MITIGATE REMOVAL OF SPECIMEN TREE NO. 1. THE REPLACEMENT PLANTING(S) SHALL BE MADE PART OF THE LANDSCAPE PLAN AND SHALL CONSIST OF A SPECIES SIMILAR TO THE TREE REMOVED AND EQUAL OR GREATER THEN THE SIZES AND SPECIFICATIONS FOUND FOR SUCH PLANTINGS IN THE HOWARD COUNTY LANDSCAPE MANUAL. THE PETITIONER SHALL INDICATE AND IDENTIFY THE REPLACEMENT PLANTINGS ON THE LANDSCAPE PLAN.
34. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MEHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
35. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/ BUREAU OF ENGINEERING/ CONSTRUCTION INSPECTION DIVISION AT (410) 313-1800 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF PAVEMENT.
36. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-251-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
37. A. THE R-11 (S10P) SIGN AND THE STREET NAME SIGN (S15) 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) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
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 (4 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (2 GAUGE) - 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO (2) "QUICK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
38. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006), SECTION 55.A. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
39. THE PRELIMINARY PLAN (SP-13-013) HAS APPROVED ON JANUARY 30, 2014.
40. THE 65 DBA NOISE CONTOUR LINE DRAWN ON THIS SUBDIVISION PLAN IS ADVISORY AS REQUIRED BY THE HOWARD COUNTY DESIGN MANUAL, CHAPTER 5, REVISED FEBRUARY, 1992 AND CANNOT BE CONSIDERED TO EXACTLY LOCATE THE 65 DBA NOISE EXPOSURE. THE 65 DBA NOISE LINE ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS, BUILDERS AND FUTURE RESIDENTS THAT AREAS BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVELS ESTABLISHED BY THE U.S. DEPT. OF HOUSING AND URBAN DEVELOPMENT.
41. RECEIVING STREAM HAS A TMDL FOR SEDIMENT AND IS NOT A TIER II STREAM. ON THE APPROXIMATE SIDE OF THE STOP SIGN AND ALL OTHER TRAFFIC CONTROL SIGNS NOT ATTACHED TO A STREET LIGHT POLE, NO STREET TREE CAN BE PLANTED WITHIN 30' OF THE SIGN.
42. THE "B" STREET BUFFER FOR THE PERENNIAL STREAM IS GRANDFATHERED UNDER SP-13-013.
43. A JOINT FEDERAL/STATE APPLICATION FOR THE ALTERATION OF ANY FLOODPLAIN, WATERWAY, TIDAL OR NON-TIDAL WETLAND (OR BUFFER) IN MARYLAND HAS BEEN APPROVED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT ON FEBRUARY 21, 2010. HCE TRACKING NUMBER: 20100495 / IIT-NT-3550 FOR STREAM AND FLOODPLAIN DISTURBANCES.
44. RECREATIONAL OPEN SPACE AMENITIES SHALL BE DETERMINED AT THE SITE DEVELOPMENT PLAN STAGE.
45. ADDITIONAL AMENITY SPACE FEATURES AND SIGNAGE SHALL BE SHOWN ON THE FUTURE SITE DEVELOPMENT PLAN.
46. FOR FOREST CONSERVATION EASEMENT METES AND BOUNDS, SEE THE CORRESPONDING SUBDIVISION PLAN.

FINAL PLAN
TERRAPIN WOODS
Lots 1 - 34 & Open Space Lots 35 - 38 & NON-BUILDABLE PARCEL A



BENCHMARKS table with coordinates for 24CA and 24FA. LOCATION PLAN SCALE: 1"=200'



OVERALL LAND USE SCALE: 1"=200' table showing land use descriptions, acreage, and percentages of total area.

STORMWATER MANAGEMENT PRACTICE CHART and STORMWATER INFORMATION CHART tables showing lot numbers, addresses, and management practices.



LEGEND table defining symbols for contours, easements, floodplains, and other site features.

- SHEET INDEX listing various sheets including cover sheet, plan and profiles, details, and drainage area maps.

SITE ANALYSIS CHART table with columns for gross acreage, open space, public use, and limits of disturbance.

UNIT DENSITY TABULATION table showing zoning, gross area, and unit density metrics.

RECREATIONAL OPEN SPACE CHART table showing required vs provided open space and where provided.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS and HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING signatures and dates.

GLWGUTSCHICK LITTLE & WEBER, P.A. contact information and project details.

OWNER/PREPARED FOR, DEVELOPER, and PROFESSIONAL CERTIFICATION information.

PROFESSIONAL CERTIFICATION statement and signature of the engineer.

LOT COVERAGE table with columns for lot number, address, lot area, building area, and coverage percentage.

COVER SHEET information including scale, zoning, and G.L.W. file number.

TERRAPIN WOODS LOTS 1-34 & OPEN SPACE LOTS 35-38 & NON-BUILDABLE PARCEL A project title and location.

CURVE DATA CHART									
CURVE	STREET NAME	PC STA.	PT STA.	RADIUS	TANGENT	ARC	CHORD	BEARING	DELTA
C1	AVREY ROAD	0+38.24	1+51.00	120.00'	60.94'	112.77'	108.66'	N35°23'58"E	53°50'33"
C2	AVREY ROAD	1+51.00	2+30.55	110.00'	41.60'	79.55'	77.82'	N41°36'13"E	41°26'01"
C3	AVREY ROAD	2+30.55	6+50.56	350.00'	239.45'	420.01'	395.25'	N55°15'53"E	68°45'21"
C4	AVREY ROAD	6+50.56	7+36.24	113.50'	45.00'	85.69'	83.67'	N68°00'54"E	43°15'19"

STREET LIGHT LOCATIONS			
STREET	STATION	OFFSET	TYPE
AVREY ROAD	0+45	47.6' R	150 MATT
AVREY ROAD	1+12	18.1' L	150 MATT
AVREY ROAD	2+25	18.1' R	100 MATT
AVREY ROAD	4+05	18.1' L	100 MATT
AVREY ROAD	5+05	18.1' R	100 MATT
AVREY ROAD CUL-DE-SAC	2+33	4.0' R	150 MATT

NOTE:
ALL STREET LIGHTS ARE EITHER LED-100 OR LED-150 COLONIAL POST TOP FIXTURES MOUNTED ON A BLACK FIBERGLASS POLE.

AVREY ROAD CURB FLOW LINE ELEVATION TABLE							
PT. NO.	STATION	OFFSET	ELEV.	PT. NO.	STATION	OFFSET	ELEV.
03	0+49.8	14.44' L	347.22	10	2+24.8	14.44' R	354.62
03A	0+47.1	14.44' L	348.17	11	2+21.0	18.14' R	354.56
04	4+10.8	14.44' L	354.31	12	2+17.6	35.88' R	354.38
05	4+15.2	14.05' L	354.45	13	1+69.1	35.88' R	351.91
06	4+16.2	33.34' L	354.74	14	1+66.4	18.12' R	351.60
07	4+65.5	33.34' L	354.61	15	1+62.2	14.44' R	351.41
08	4+66.5	14.05' L	354.32	16	0+84.4	14.44' R	347.57
09	4+10.9	14.44' L	354.18				

NOTE:
THE AVREY ROAD CROSS SLOPE IS IN TRANSITION FROM FREDERICK ROAD TO POINTS 03A AND 16. BEGIN TYPICAL ROAD CROSS SLOPE AT THESE POINTS.

FREDERICK ROAD CURB FLOW LINE ELEVATION TABLE							
PT. NO.	STATION	OFFSET	ELEV.	PT. NO.	STATION	OFFSET	ELEV.
01	101+06.7	27.00' L	348.12	11	102+41.2	36.10' L	343.78
02	101+44.3	27.00' L	347.13	18	104+65.0	13.30' L	MEET EX.

REINFORCED CONCRETE WALK			
SECTION	STREET	START STA.	END STA.
1	AVREY ROAD	1+5	1+33
2	AVREY ROAD	1+05	1+30
3	AVREY ROAD CUL-DE-SAC	1+42	2+0

CONSTRUCTION DETAILS

(A) INSTALL GROUND MOUNTED SIGN

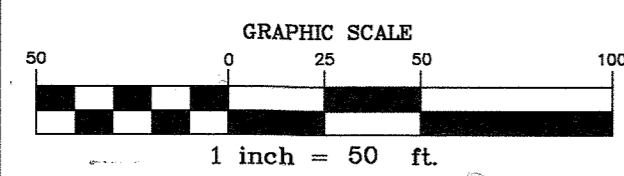
SIGNING NOTES:

- ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- ALL SIGN LOCATIONS WITHIN THE PUBLIC RIGHT OF WAY SHALL BE APPROVED BY THE HOWARD COUNTY TRAFFIC DIVISION (410-313-5152) PRIOR TO ANY INSTALLATIONS.

- NOTES:**
- ALL PROPOSED PAVEMENT ON AVREY ROAD IS TO BE HOWARD COUNTY P-2 PAVEMENT. THE WIDENING OF FREDERICK ROAD IS TO BE HOWARD COUNTY P-5 PAVEMENT. SEE SHEET 4 FOR PAVEMENT SECTION DETAILS.
 - SEE SHEET 22 FOR STREET TREE LOCATIONS.
 - TRANSITION TO 7" CURB AND GUTTER AT ALL INLETS PER HO.CO STD DETAIL R-3.06.
 - TRANSITION TO 7" CURB AND GUTTER AT ALL HEAD-IN PARKINGS.
 - SEE TYPICAL SECTIONS, SHEET 4, FOR ALL CURB TYPES.
 - ALL DRIVEWAY ENTRANCES ARE PER HO.CO STD DETAIL R-6.03.
 - SIDEWALK RAMP ARE PER DETAIL ON SHEET 4.
 - MSU DENOTES PUBLIC SIDEWALK MAINTENANCE, SEWER HOUSE CONNECTION, WATER HOUSE CONNECTION & UTILITY EASEMENT.
 - ALL ON-STREET PARKING IS TO BE VISITOR/OVERFLOW PARKING.
 - SEE SHEET 25 FOR LIMITS OF MILL & OVERLAY.
 - ALL ON-STREET HEAD IN PARKING SPACES ARE PRIVATELY OWNED AND MAINTAINED.
 - 4" CONDUIT WITH PULL STRING FOR STREET LIGHT CABLE INSTALLATION SHALL BE INSTALLED 18" TO 24" BELOW FINAL SURFACE.

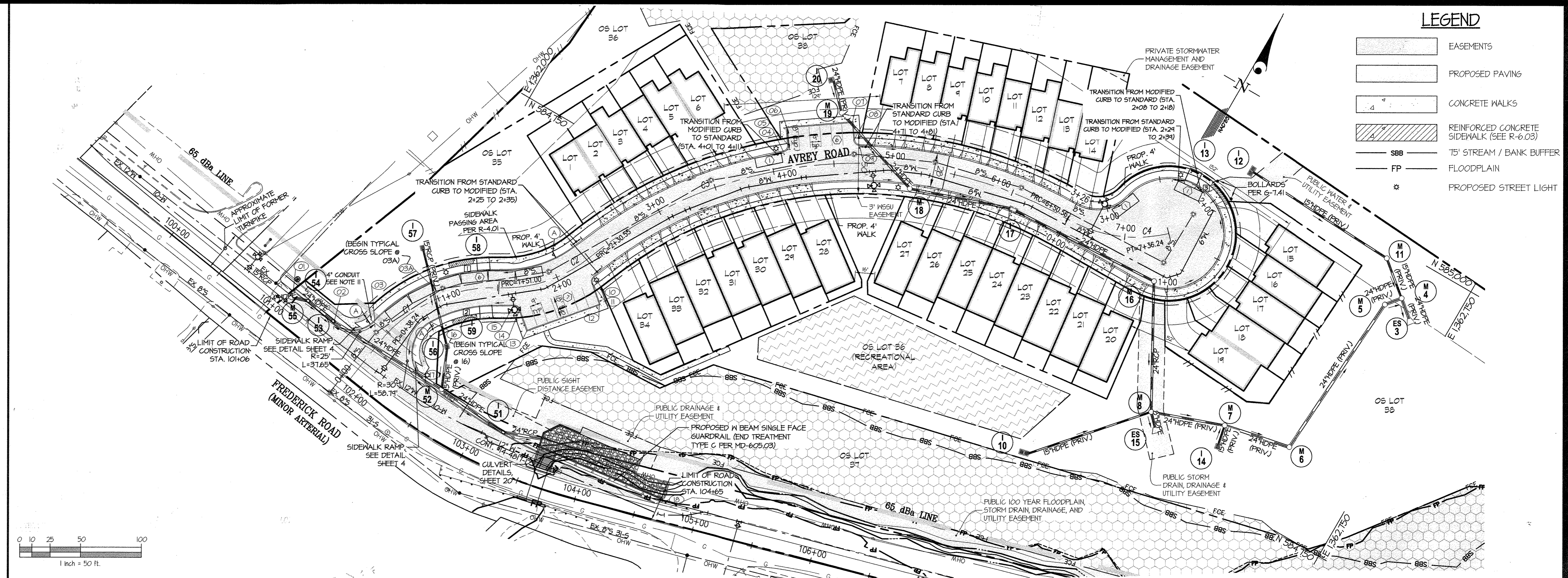
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Melvin
 Chief, Bureau of Highways
 Date: 4/26/18

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Karl St. Road
 Chief, Division of Land Development
 Date: 7-6-18
Cl. Chubb
 Chief, Development Engineering Division
 Date: 5-1-18



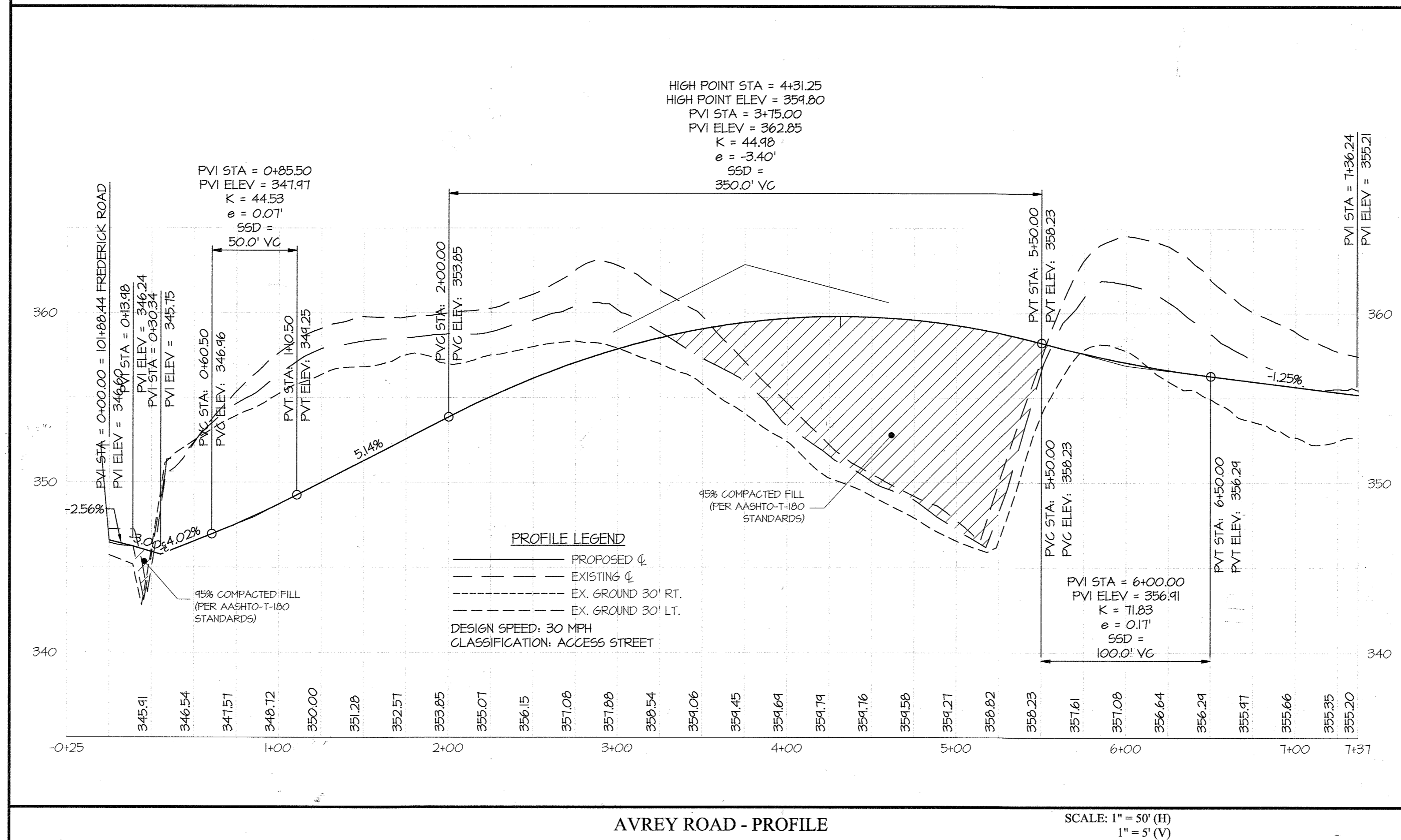
GLWGUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
 BURTONSVILLE, MARYLAND 20866
 TEL: 301-421-4024 FAX: 410-881-1820 DC/VA: 301-939-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.



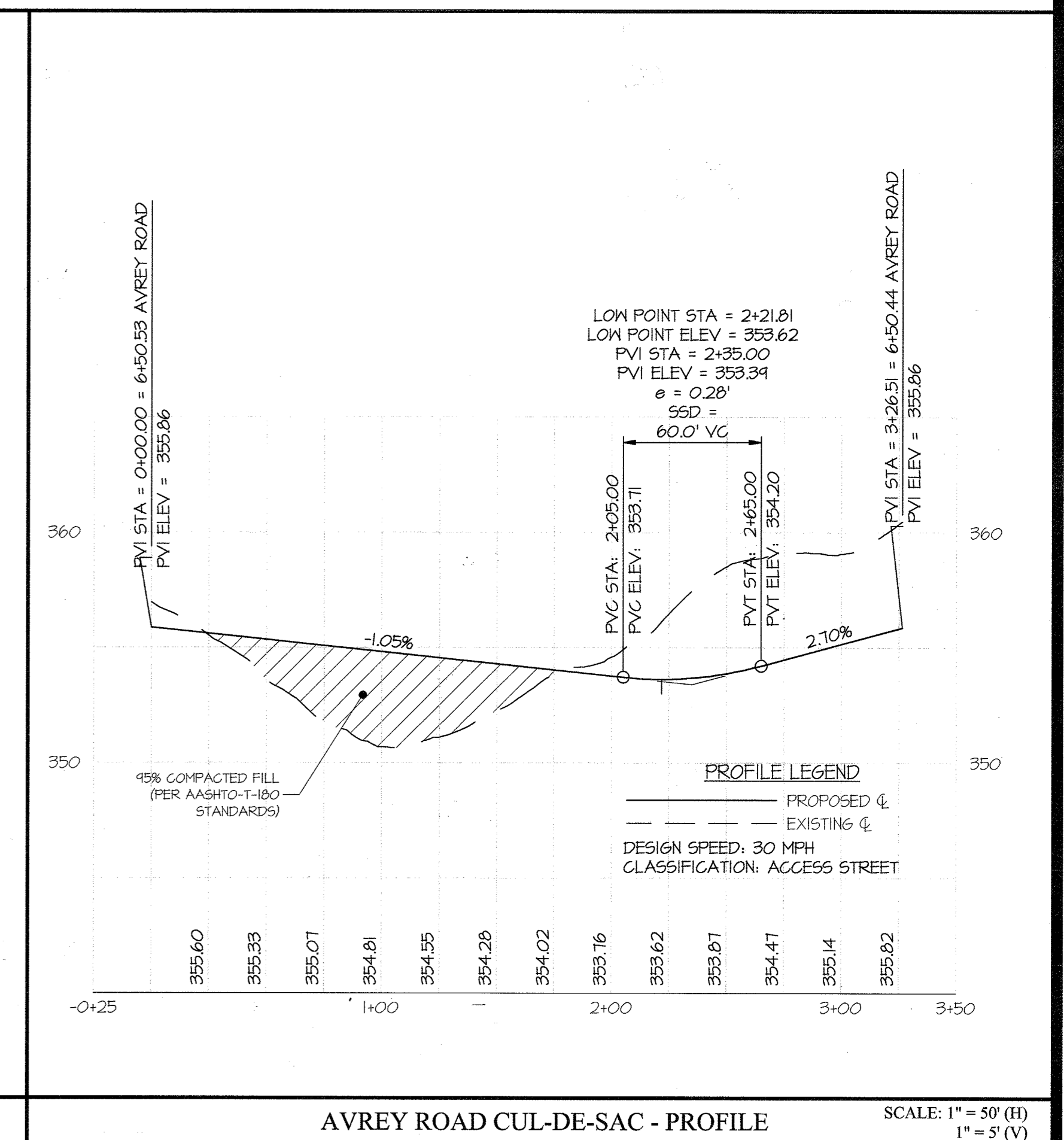
AVREY ROAD - PLAN

SCALE: 1" = 50'



AVREY ROAD - PROFILE

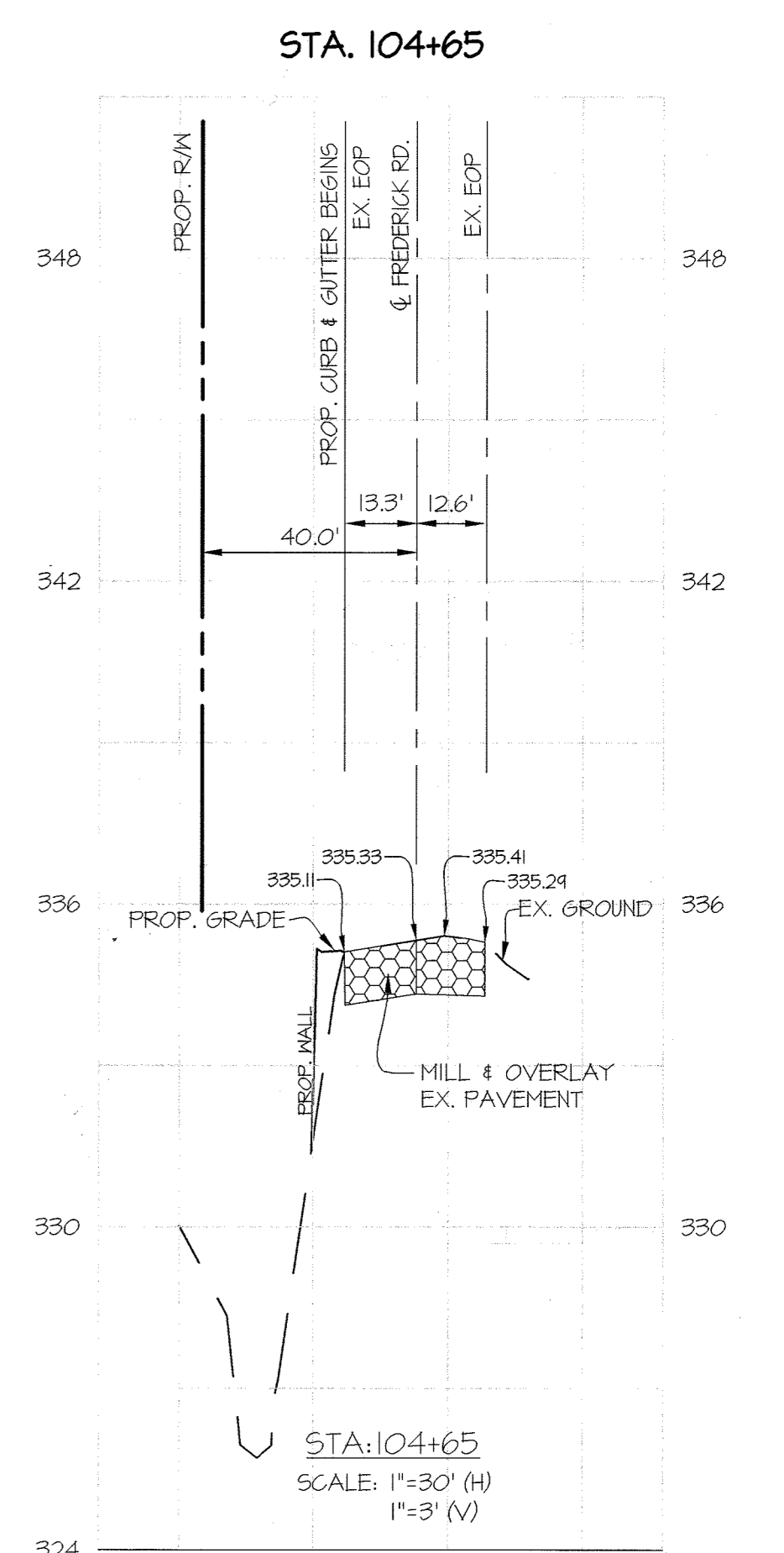
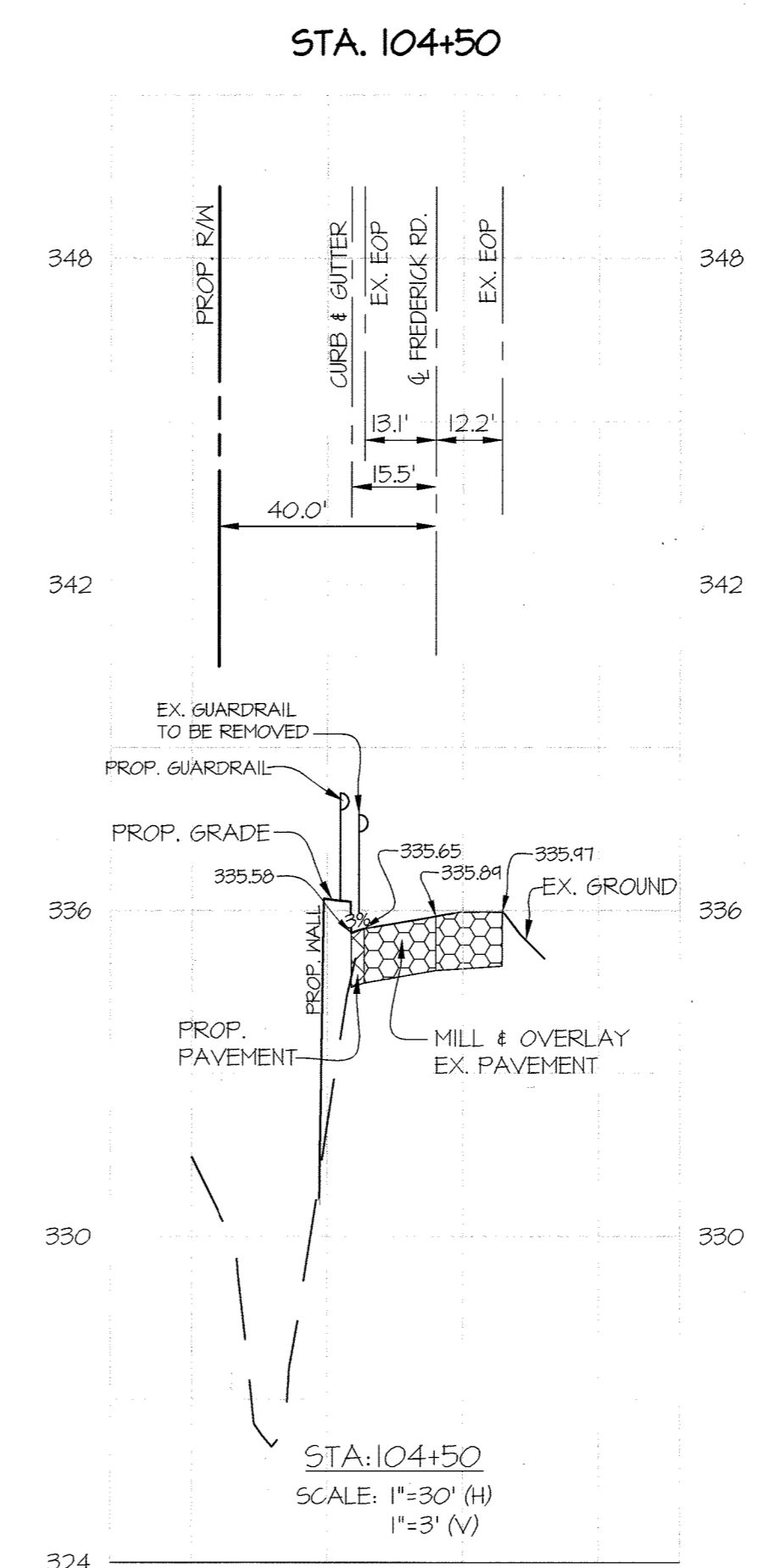
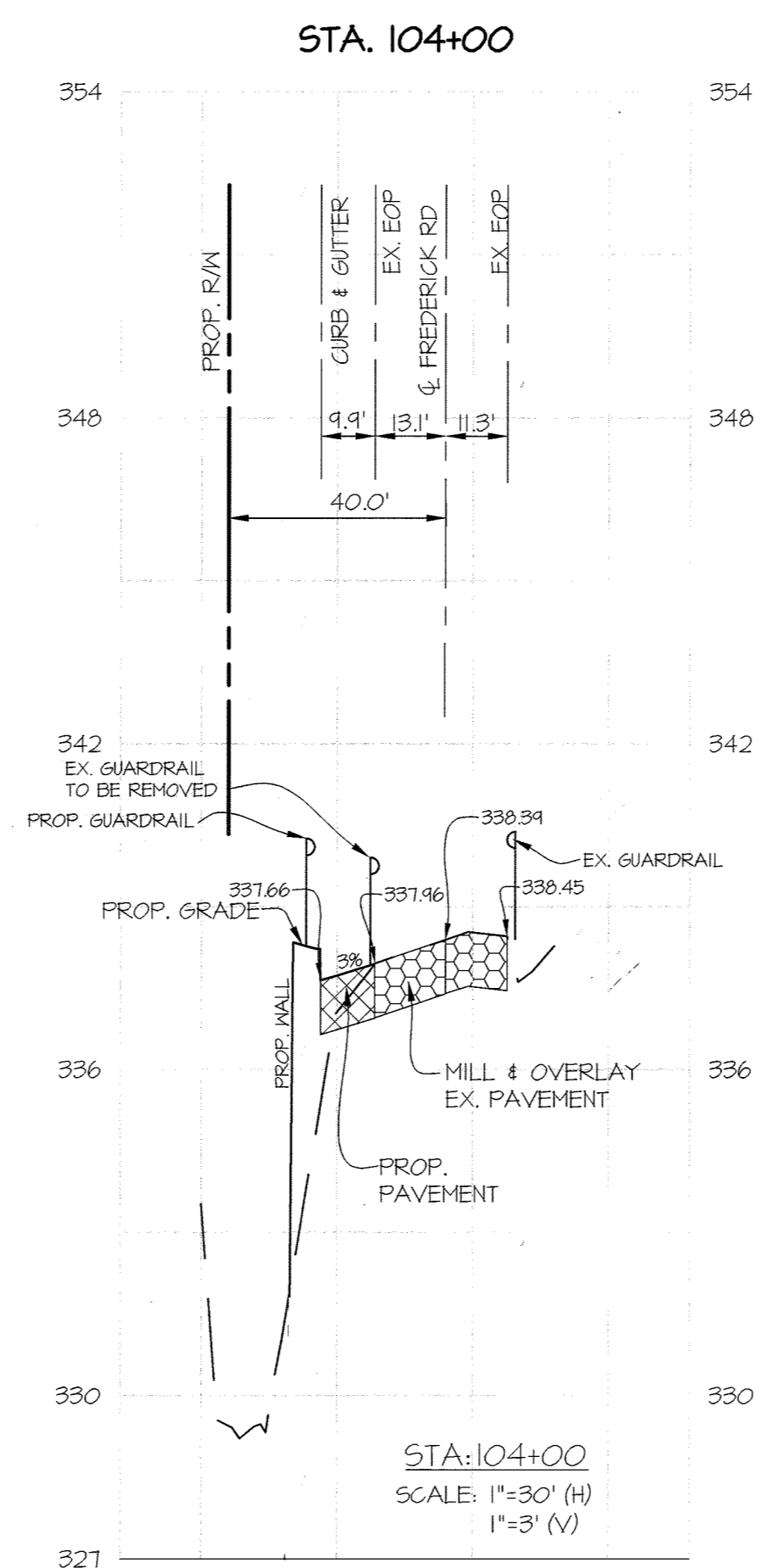
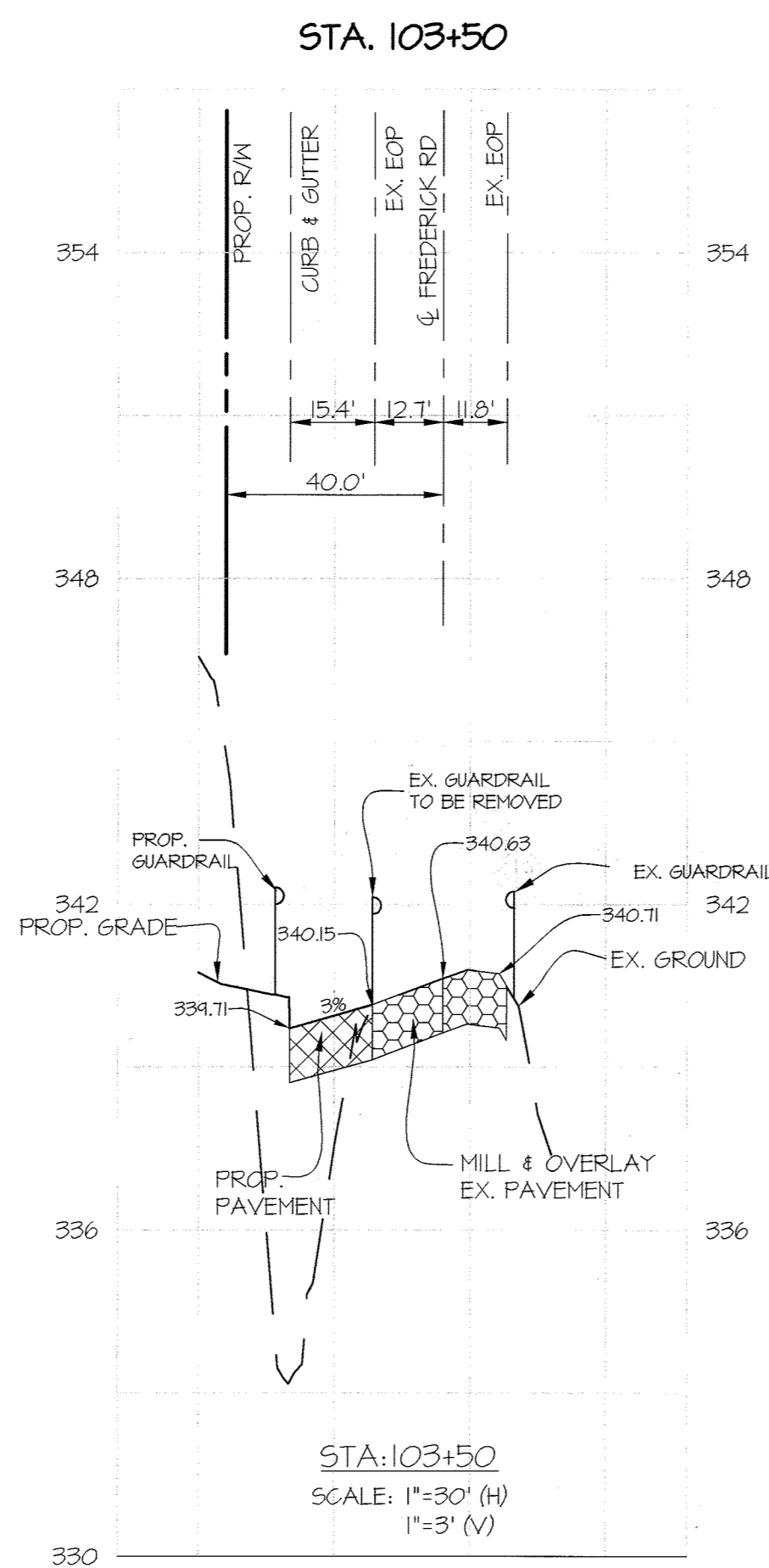
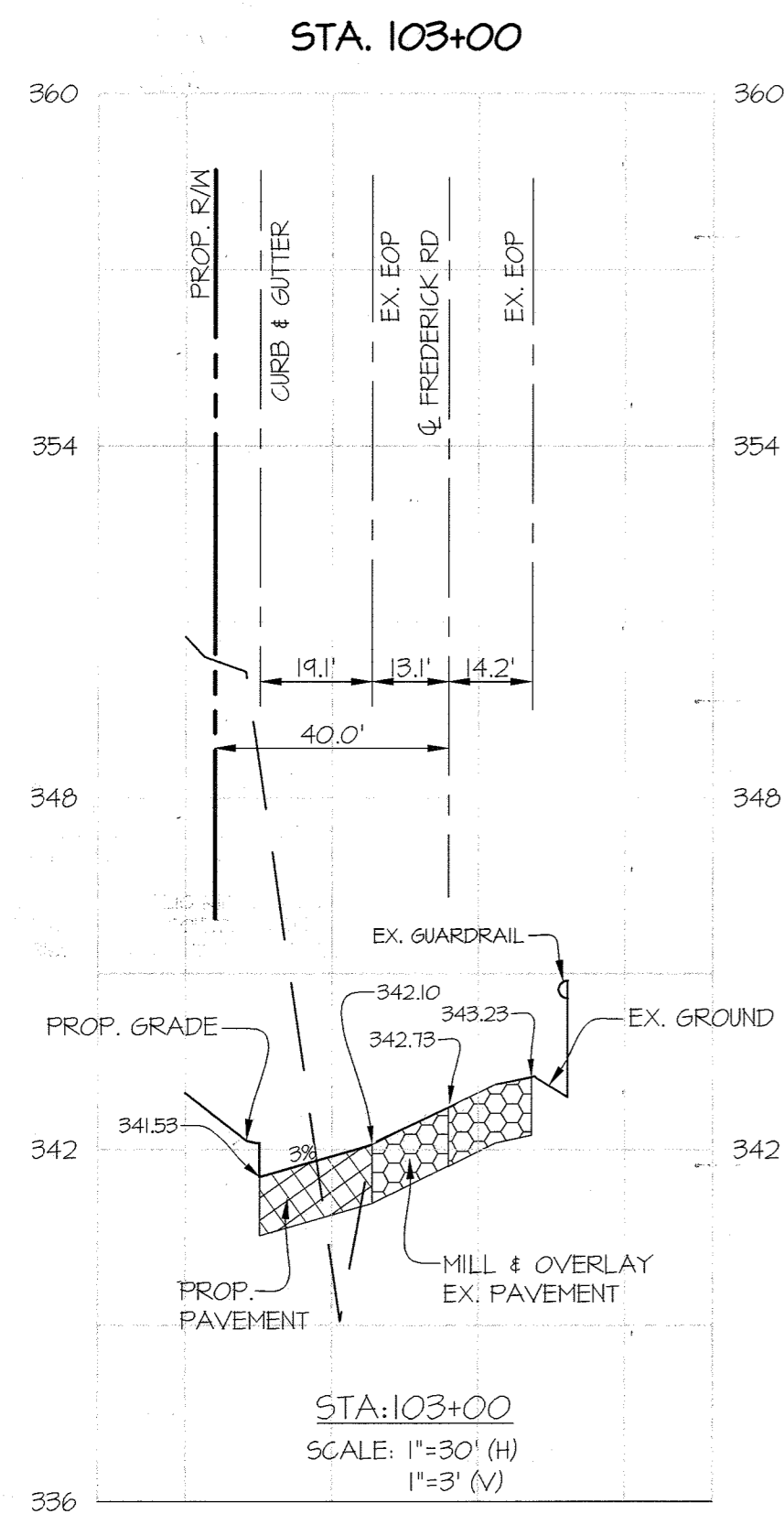
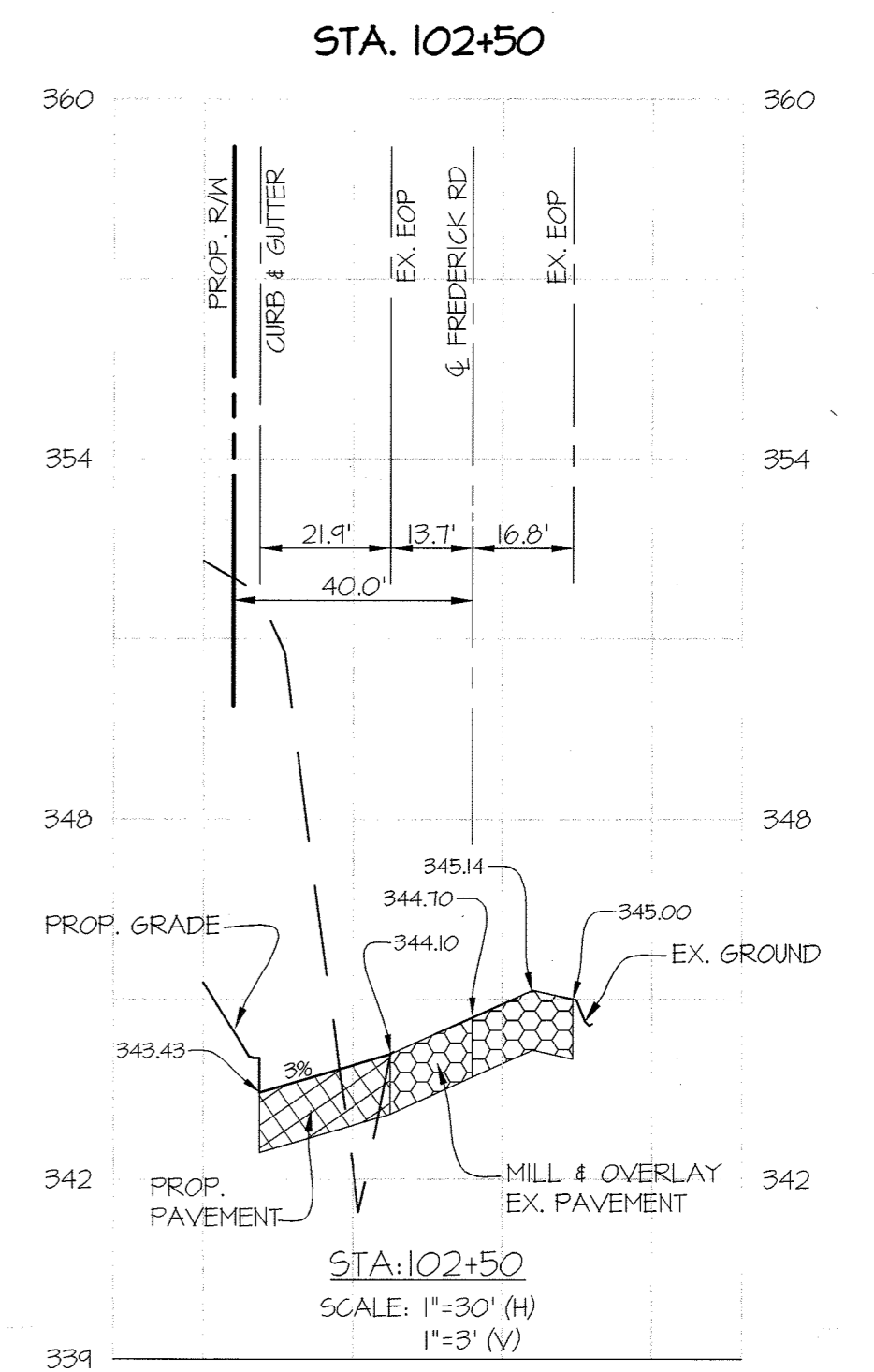
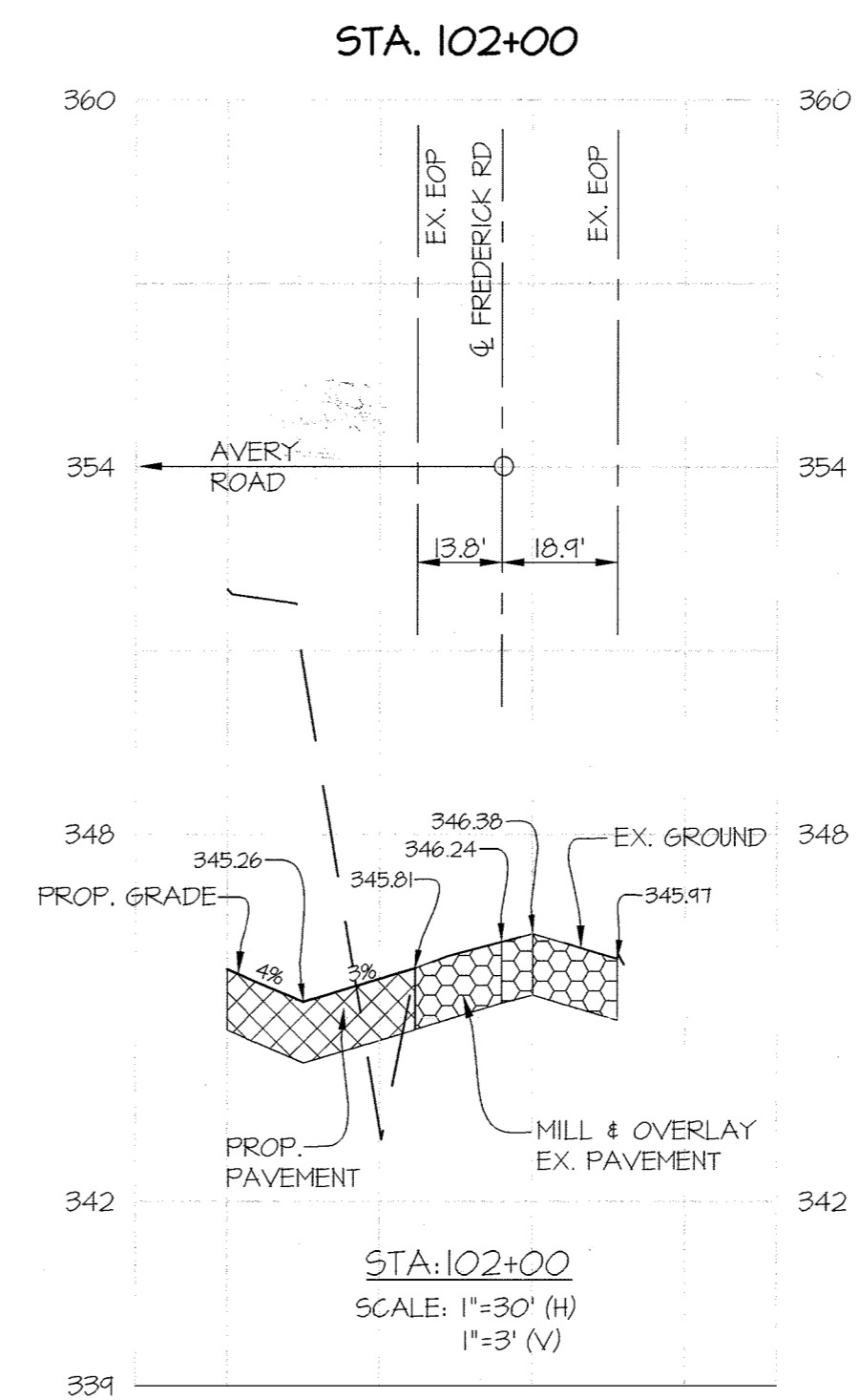
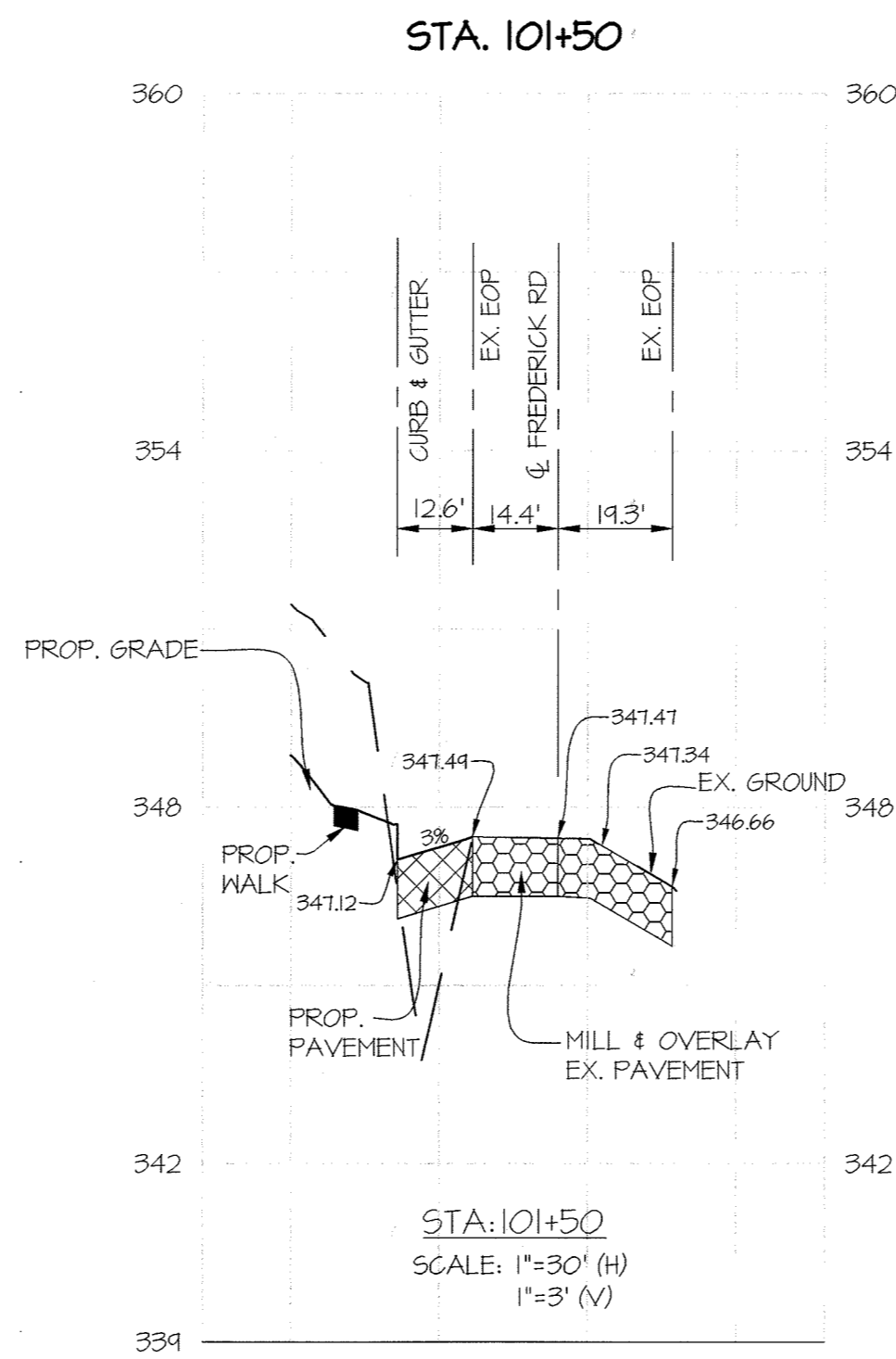
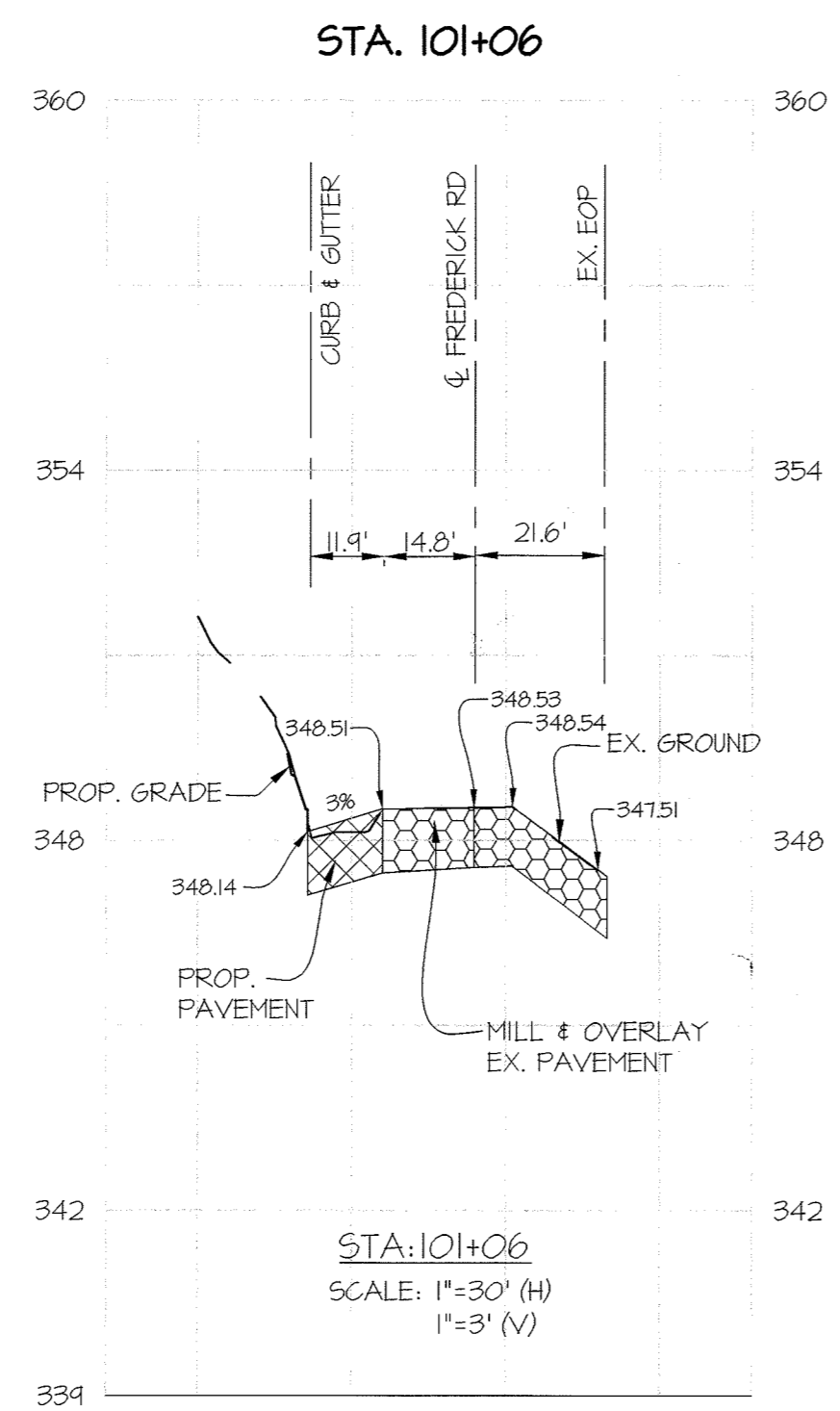
SCALE: 1" = 50' (H)
1" = 5' (V)



AVREY ROAD CUL-DE-SAC - PROFILE

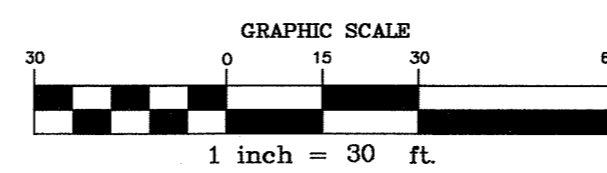
SCALE: 1" = 50' (H)
1" = 5' (V)

OWNER/ PREPARED FOR:				DEVELOPER:		PROFESSIONAL CERTIFICATION		AVREY ROAD - PLAN and PROFILES		
BVR INVESTMENTS LLC 1377 GOLD MINE LANE EVERGREEN, CO 80439				BRIAN ROBERTS 240-461-9172		I HEREBY CERTIFY THAT THESE PLANS 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. 12975 EXPIRATION DATE: MAY 26, 2018		TERRAPIN WOODS LOTS 1-34 & OPEN SPACE LOTS 35-38 & NON-BUILDABLE PARCEL A A SUBDIVISION OF PARCELS 115 & 117, LIBER 15723 FOLIO 16 AND IN PART A RESUBDIVISION OF LOTS 4-7, BLOCK A "ELKRIDGE FARM-NO.2" PLAT BK. 122 PLAT NO. 62 HOWARD COUNTY, MARYLAND		
SCALE	ZONING	G. L. W. FILE NO.		DATE		TAX MAP - GRID		SHEET		
AS SHOWN	R-SC	12039		MAR., 2018		24 - 11		2 OF 27		



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Mekuni
 Chief, Bureau of Highways
 4/25/18
 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Keatle O'neal
 Chief, Division of Land Development
 7-6-18
 Date
Chad Clark
 Chief, Development Engineering Division
 5-1-18
 Date



GLWGUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
 BURTONSVILLE, MARYLAND 20866
 TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-389-2524 FAX: 301-421-4186

DATE	REVISION	BY	APP'R.

OWNER/
 PREPARED FOR:
 BVR INVESTMENTS LLC
 1377 GOLD MINE LANE
 EVERGREEN, CO 80439
 BRIAN ROBERTS
 240-461-9172

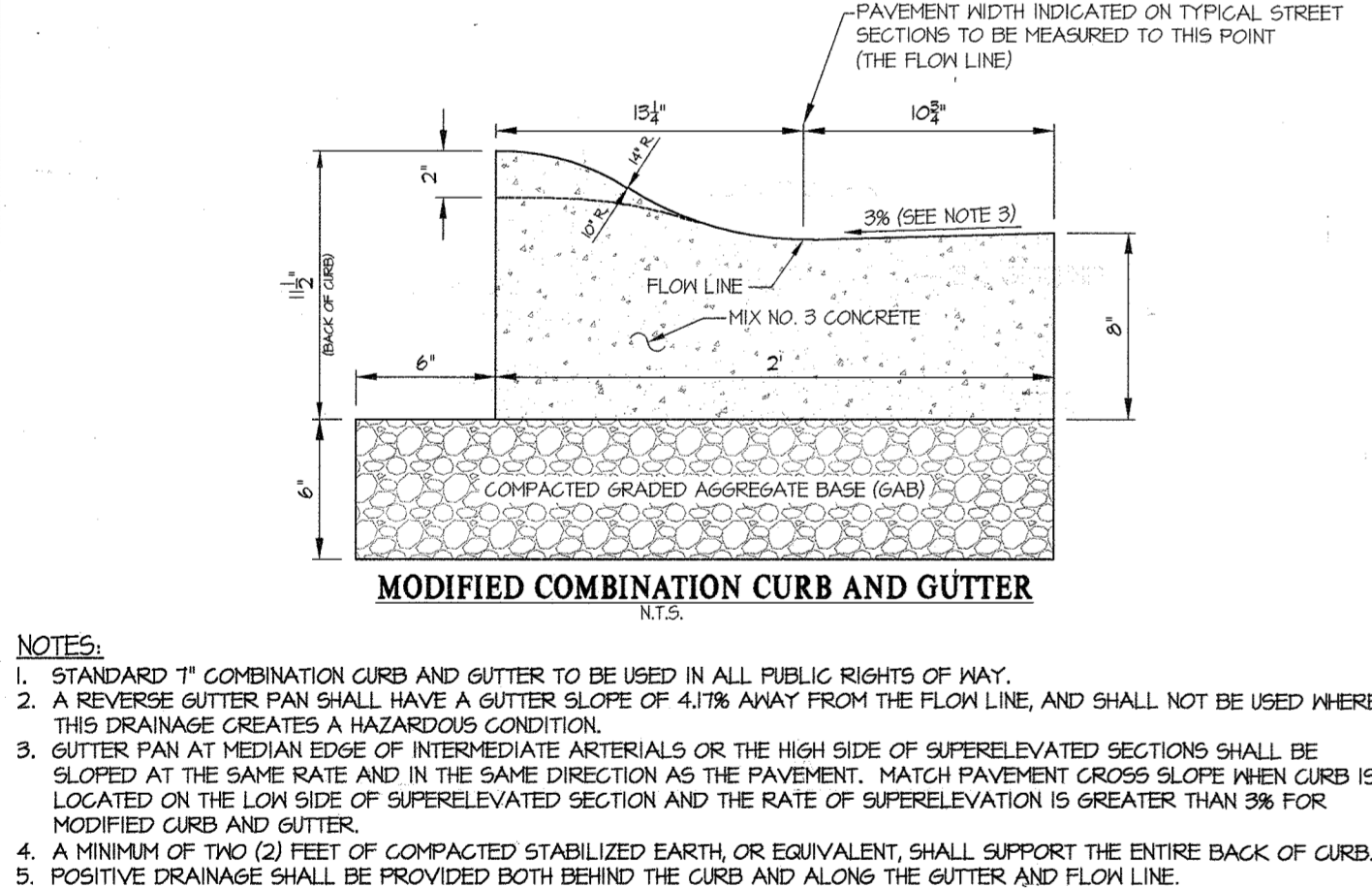
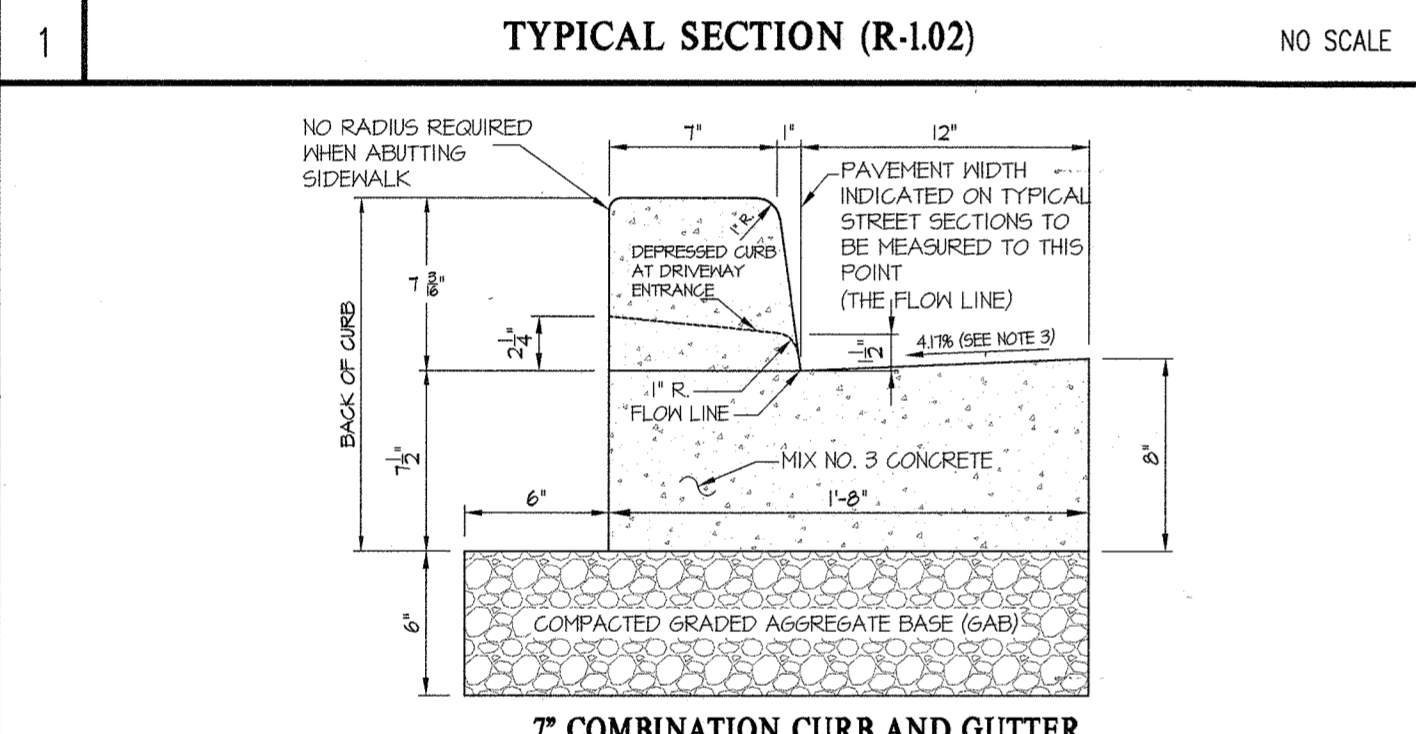
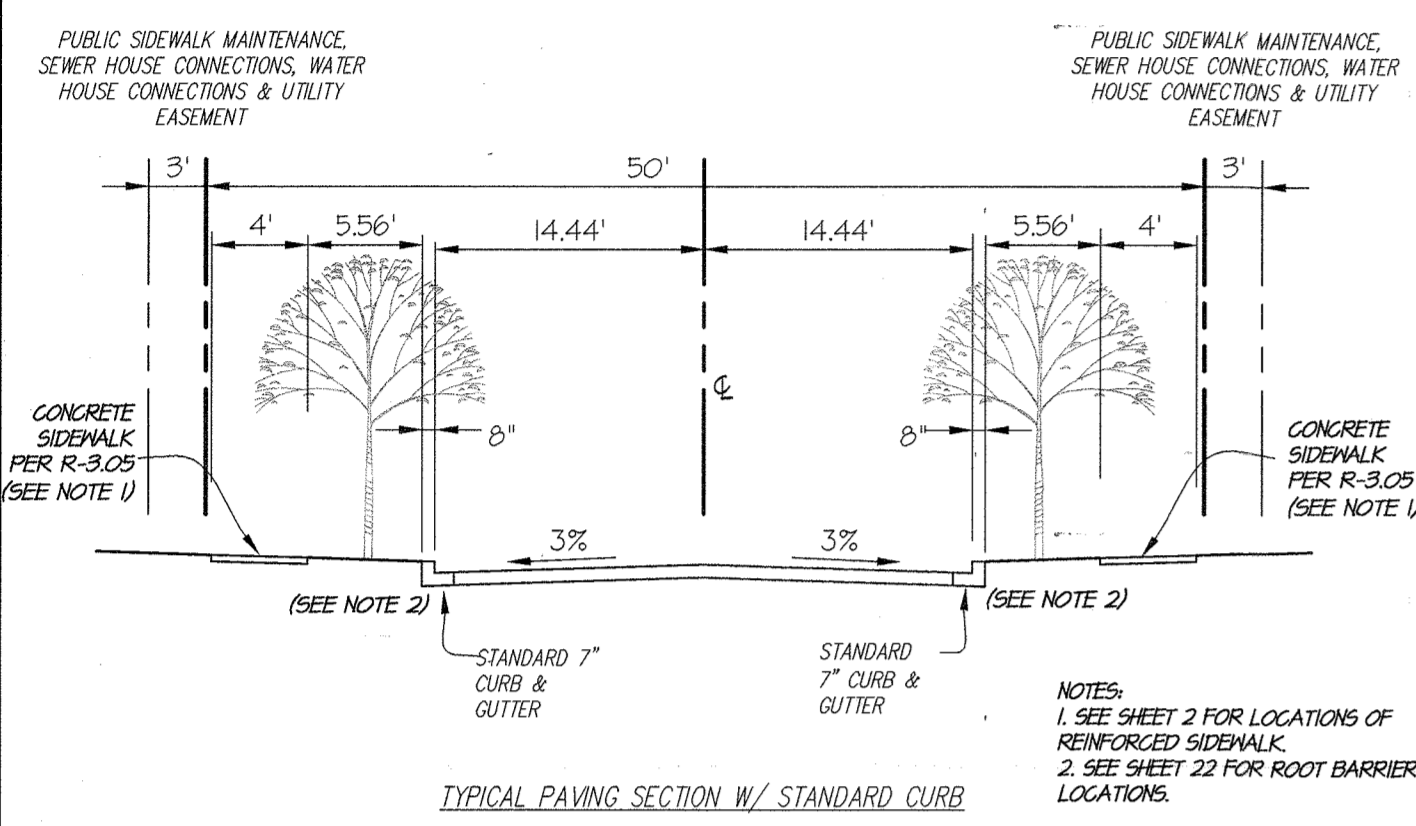
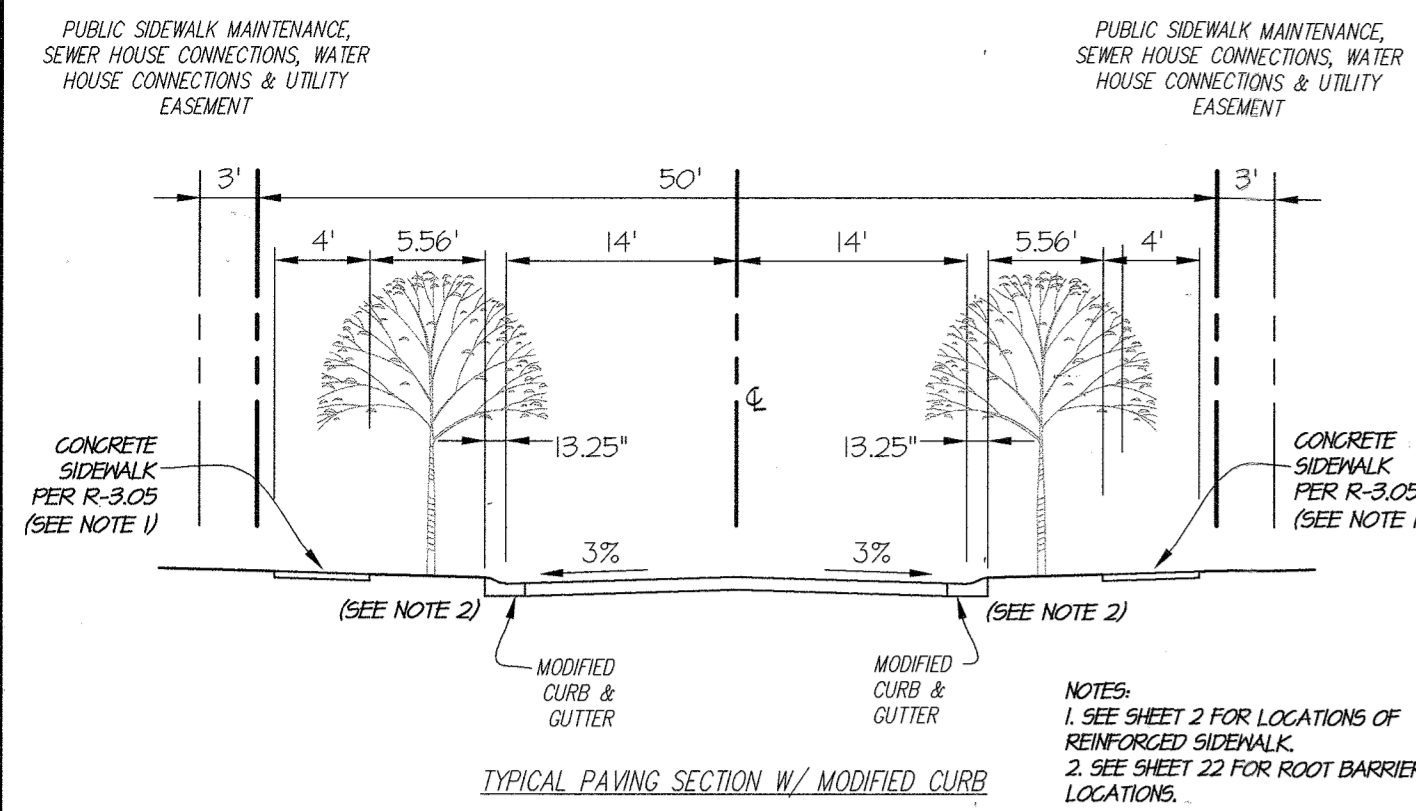
DEVELOPER:

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE PLANS
 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. 12975
 EXPIRATION DATE: MAY 28, 2018
4/21/18



FREDERICK ROAD CROSS SECTIONS
TERRAPIN WOODS
 A SUBDIVISION OF PARCELS 115 & 117, LIBER 15723 FOLIO 16 AND IN PART A RESUBDIVISION OF
 LOTS 4-7, BLOCK A "ELKRIDGE FARM-NO.2" PLAT BK. 122 PLAT NO. 62
 HOWARD COUNTY, MARYLAND
 ELECTION DISTRICT No. 2

SCALE	ZONING	G. L. W. FILE NO.
1"=30' (H) 1"=3' (V)	R-SC	12039
DATE	TAX MAP - GRID	SHEET
MAR., 2018	24 - 11	3 OF 27



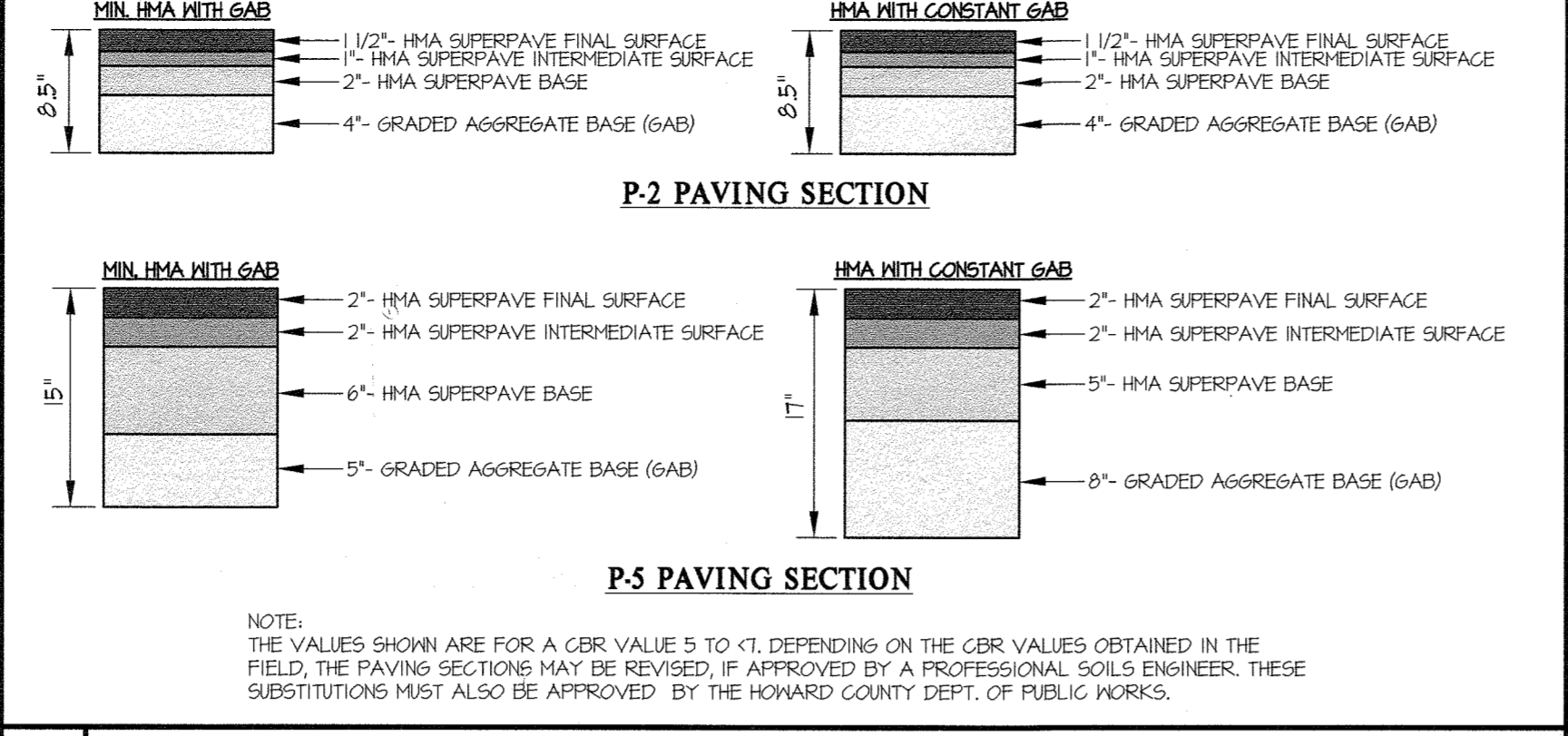
2 CURB DETAILS (R-3.01) NO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Cur, Bureau of Highways
 Date: 4/26/18

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Chief, Division of Land Development
 Date: 7-6-18

Chief, Development Engineering Division
 Date: 5-1-18

GLWGUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
 BURTONSVILLE, MARYLAND 20866
 TEL: 301-421-4024 BALT: 410-860-1620 DC/VA: 301-993-2524 FAX: 301-421-4186

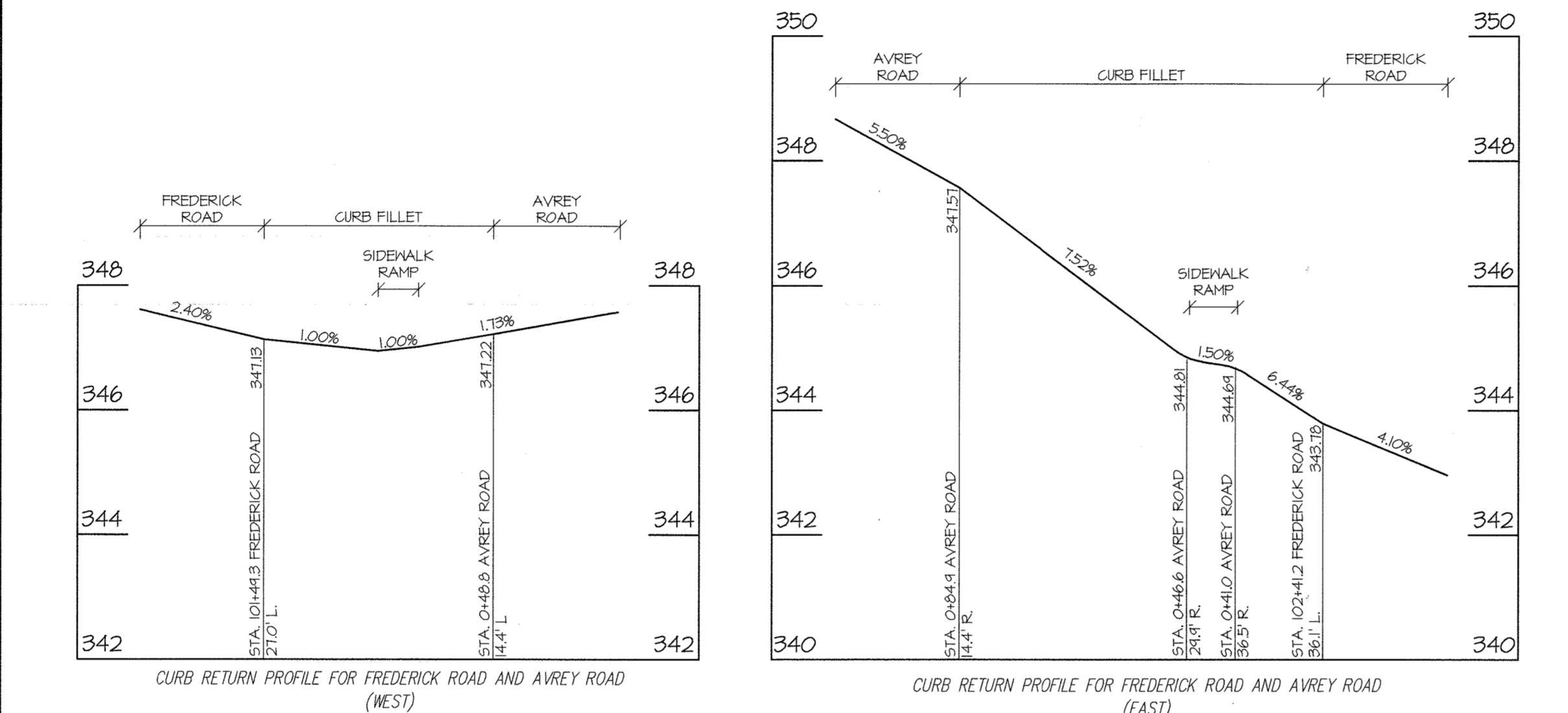


3 PAVING SECTIONS (R-2.01) NO SCALE

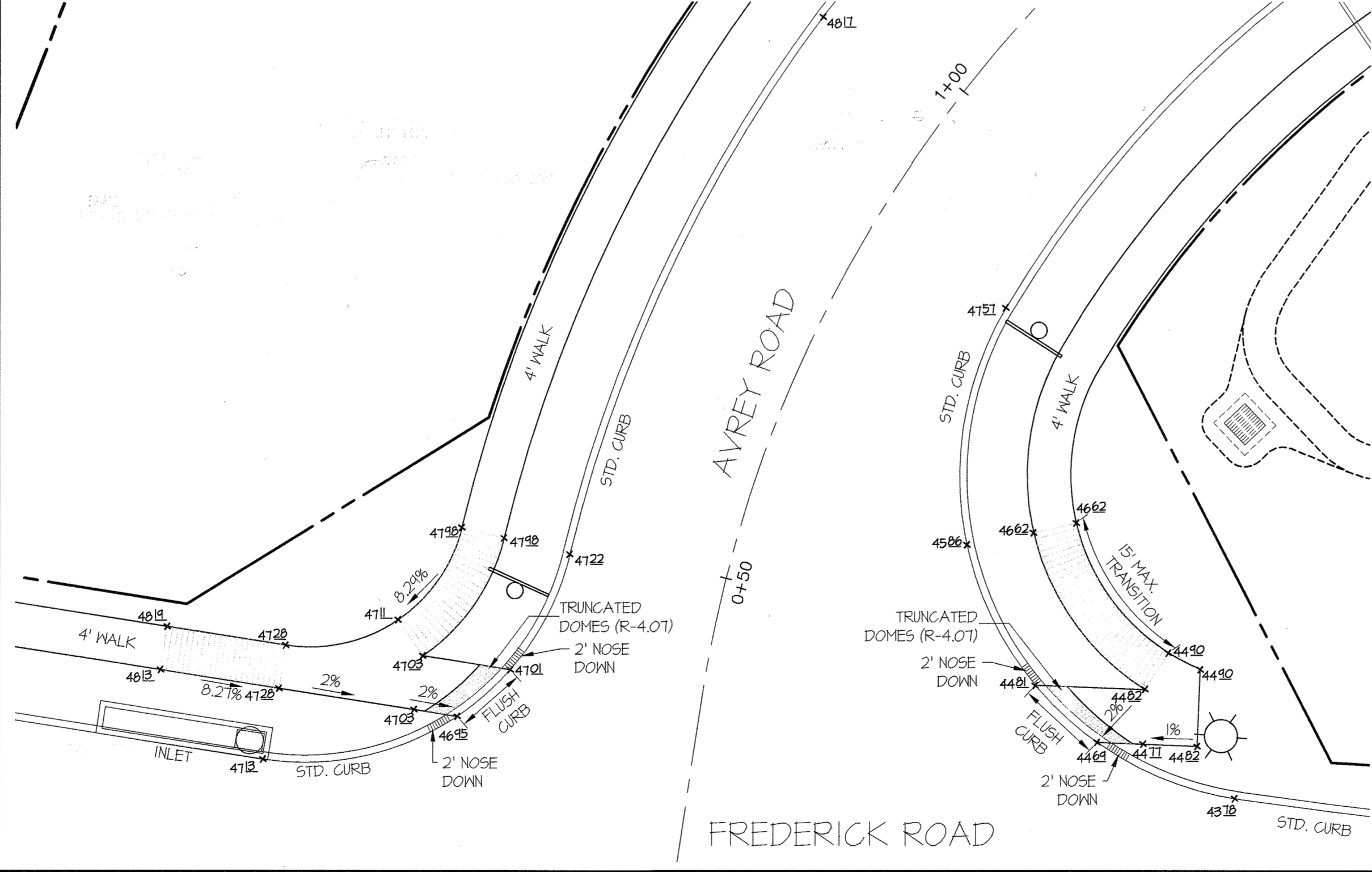
AVREY RD - INFORMATION

STATION	SECTION	CLASSIFICATION	DESIGN SPEED	PAVING SECTION
0+30 TO 2+25	TYP. 28' W/ STANDARD CURB	ACCESS STREET	30 MPH	P-2
2+25 TO 1+36	TYP. 28' W/ MODIFIED CURB	ACCESS STREET	30 MPH	P-2

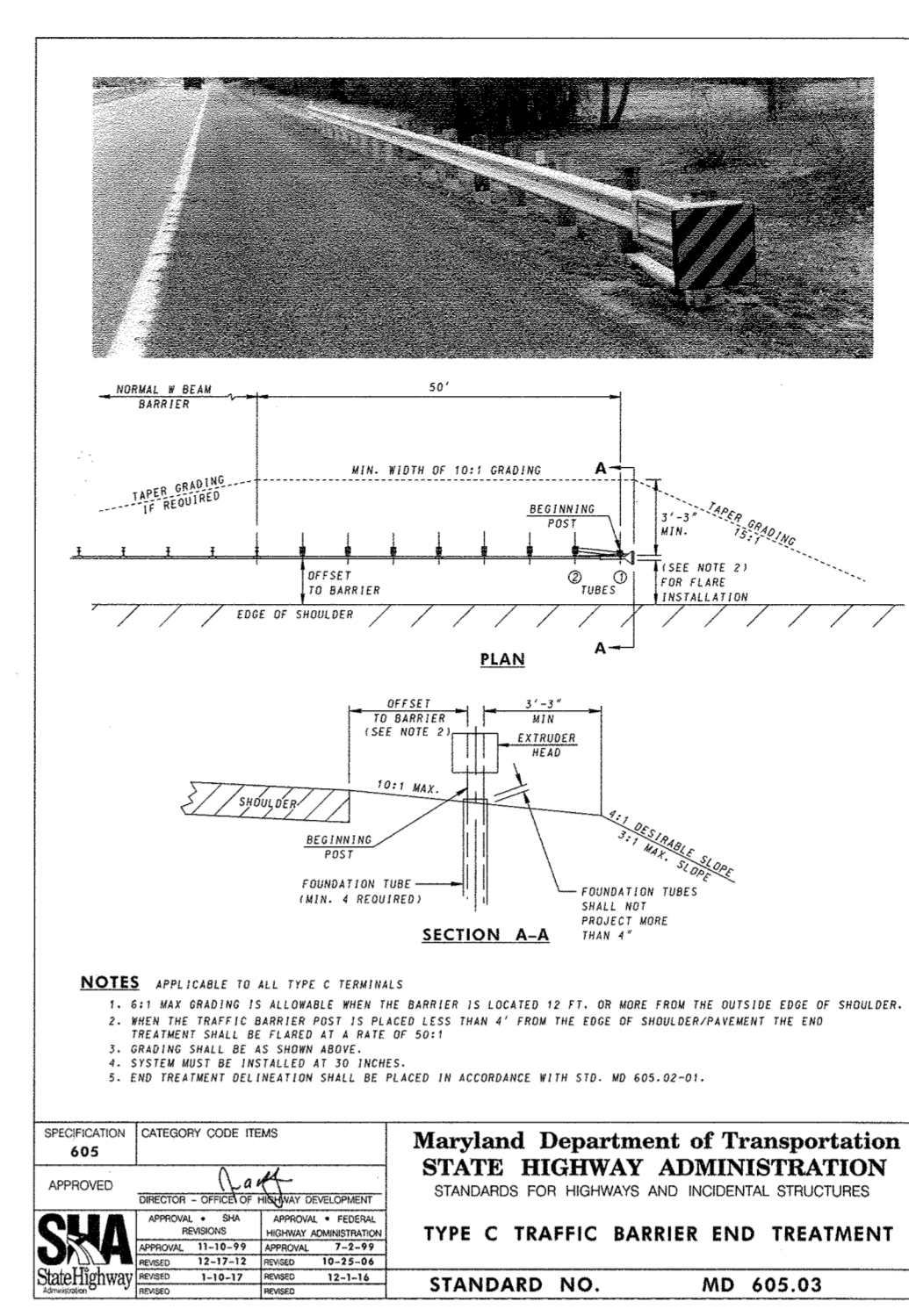
NOTE:
 1. AVREY ROAD BEGINS TYPICAL CROSS SLOPE AT C&B (L) AND C&B (R).
 2. SEE SHEET 2 FOR ADDITIONAL LOCATIONS OF CURB TRANSITIONS.



4 CURB RETURN PROFILES SCALE: 1\"/>



5 SIDEWALK RAMP DETAILS SCALE: 1\"/>

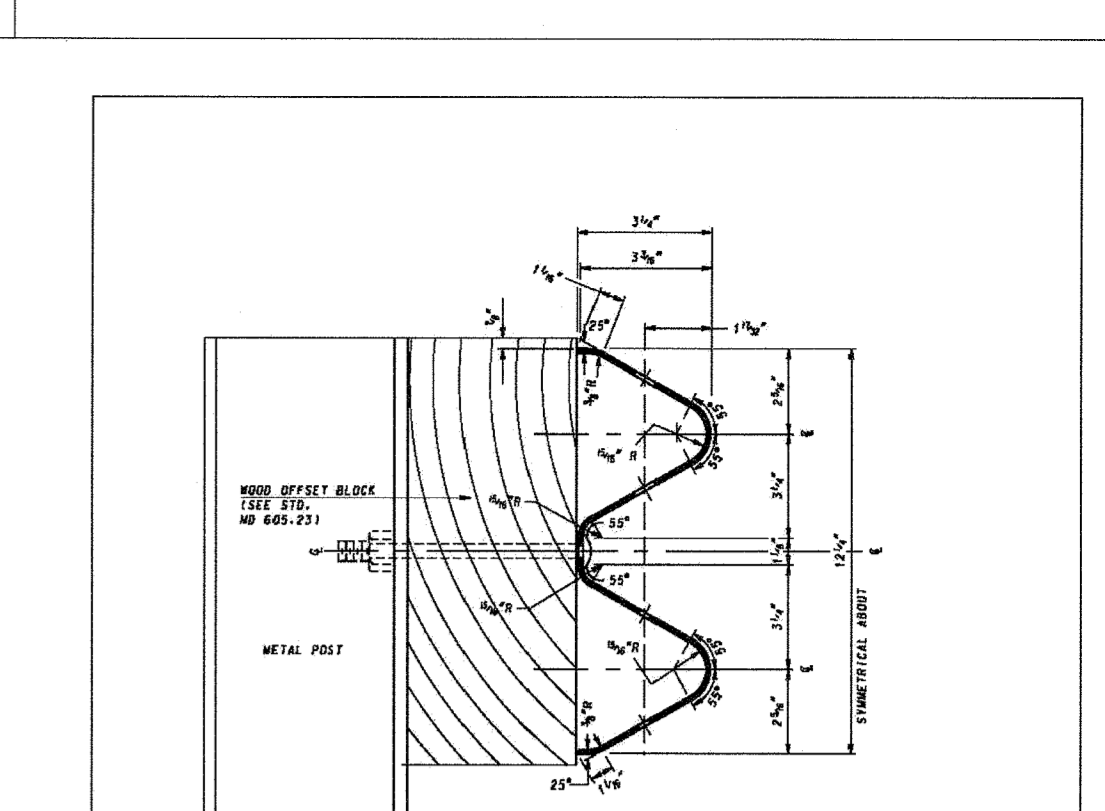


NOTES
 1. ALL MAX GRADING IS ALLOWABLE WHEN THE BARRIER IS LOCATED 12 FT. OR MORE FROM THE OUTSIDE EDGE OF SHOULDER.
 2. WHEN THE TRAFFIC BARRIER POST IS PLACED LESS THAN 4' FROM THE EDGE OF SHOULDER/PAVEMENT THE END TREATMENT SHALL BE FINISHED AT A DASH OF POST.
 3. GRADING SHALL BE AS SHOWN ABOVE.
 4. SYSTEM MUST BE INSTALLED AT 90 DEGREES.
 5. END TREATMENT DELINEATION SHALL BE PLACED IN ACCORDANCE WITH STD. NO 605-02-01.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Cur, Bureau of Highways
 Date: 4/26/18

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Chief, Division of Land Development
 Date: 7-6-18

Chief, Development Engineering Division
 Date: 5-1-18



W BEAM DETAIL MATERIAL: 12 GA. STEEL

NOTES
 1. BEAM ELEMENTS ARE FINISHED SHARP CORNERS. CONCRETE OR CONVEY TO RADIUS BETWEEN 20 FT. & 100 FT.
 2. WHEN THE TRAFFIC BARRIER POST IS PLACED LESS THAN 4' FROM THE EDGE OF SHOULDER/PAVEMENT THE END TREATMENT SHALL BE FINISHED AT A DASH OF POST.
 3. FOR OFFSET OFFSET BLOCKS SEE NOTE 6 ON MD 605-01.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Cur, Bureau of Highways
 Date: 4/26/18

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Chief, Division of Land Development
 Date: 7-6-18

Chief, Development Engineering Division
 Date: 5-1-18

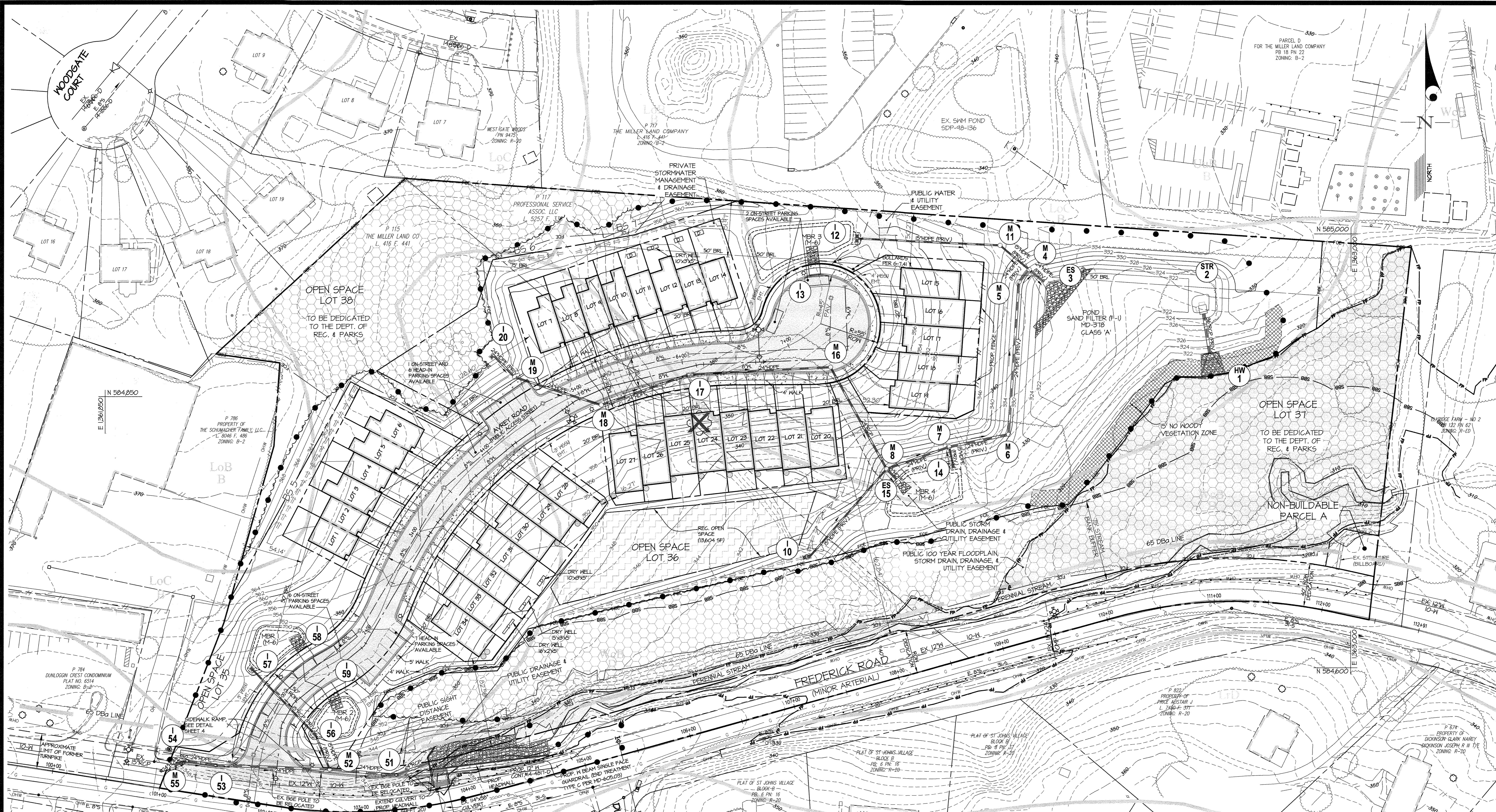
Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION
 STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
TYPE C TRAFFIC BARRIER END TREATMENT
 STANDARD NO. MD 605.03

Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION
 STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
TRAFFIC BARRIER W BEAM SINGLE FACE
 STANDARD NO. MD 605.22

ROAD DETAILS

TERRAPIN WOODS
 LOTS 1-34 & OPEN SPACE LOTS 35-38 & NON-BUILDABLE PARCEL A
 A SUBDIVISION OF PARCELS 115 & 117, LIBER 15723 FOLIO 16 AND IN PART A RESUBDIVISION OF LOTS 4-7, BLOCK A "ELKRIDGE FARM-NO.2" PLAT BK. 122 PLAT NO. 62
 HOWARD COUNTY, MARYLAND

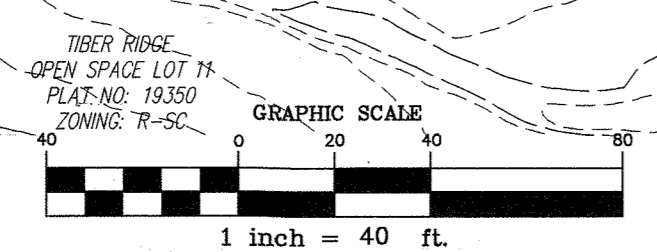
SCALE	ZONING	G. L. W. FILE NO.
AS SHOWN	R-SC	12039
DATE	TAX MAP - GRID	SHEET
MAR., 2018	24 - 11	4 OF 27



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
M. Meunier 4/6/18
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
K. DeLoach 7-6-18
 Chief, Division of Land Development Date

Ch. Chubb 5-1-18
 Chief, Development Engineering Division Date



GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
 BURTONSVILLE, MARYLAND 20866
 TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.

OWNER / PREPARED FOR:
 BVR INVESTMENTS LLC
 1377 GOLD MINE LANE
 EVERGREEN, CO 80439

BRIAN ROBERTS
 240-461-9172

DEVELOPER:
 PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975, EXPIRATION DATE: MAY 26, 2018

4/6/18 *Ch. Chubb*

GRADING PLAN and SOILS MAP

TERRAPIN WOODS
 LOTS 1-34 & OPEN SPACE LOTS 35-38 & NON-BUILDABLE PARCEL A
 A SUBDIVISION OF PARCELS 115 & 117, LIBER 15723 FOLIO 16 AND IN PART A RESUBDIVISION OF LOTS 4-7, BLOCK A "ELKRIDGE FARM-NO.2" PLAT BK. 122 PLAT NO. 62

HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE NO.
1"=40'	R-SC	12039
DATE	TAX MAP - GRID	SHEET
MAR., 2018	24 - 11	5 OF 27

200 GAL RAIN BARREL (M-1) (PRIVATELY OWNED AND MAINTAINED) ⇒ ⇒ ⇒ SWALE

DRY WELL (M-5) (8"X4" UNLESS OTHERWISE NOTED) (MAXIMUM DRAINAGE AREA = 1,000 SF) (PRIVATELY OWNED AND MAINTAINED)

NOTES:
 1. MESH DENOTES PUBLIC SIDEWALK MAINTENANCE, SEWER HOUSE CONNECTION, WATER HOUSE CONNECTION & UTILITY EASEMENT.
 2. ALL STORM DRAIN IS PUBLIC UNLESS NOTED OTHERWISE

SOILS (on site)
 Map Unit Symbol
 LoB Legore-Montalto-Urban land, 0 to 8 percent slopes Type B K Factor 0.28 Hydric Rating No
 LoC Legore-Montalto-Urban land complex, 8 to 15 percent slopes B 0.28 No
 MCB Watching silt loam, 3 to 8 percent slopes, stony D 0.28 Partially

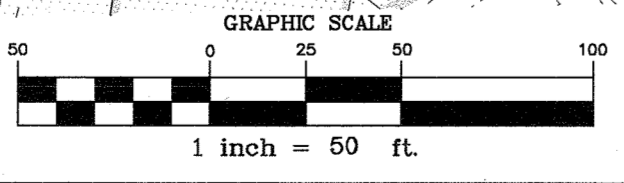
RIVER STA.	ELEV.
1+90	318.10
2+45	318.10
4+12	318.10
4+75	318.10
5+46	318.00
6+62	321.90
7+67	323.10
8+59	325.20
9+48	328.00
10+42	331.20
11+36	334.30
12+20	336.60
12+66	340.30
13+40	340.20



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
M. M. M. 4/6/2018
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
V. L. O. 7-6-18
 Chief, Division of Land Development Date

C. H. C. 5-1-18
 Chief, Development Engineering Division Date



C' FACTOR COMPUTATIONS			
STRUCTURE	AREA (AC)	C'	IMPERVIOUS
I-10	0.84	0.54	50%
I-12	0.46	0.60	60%
I-13	0.97	0.77	85%
I-14	0.23	0.34	20%
I-17	0.23	0.77	85%
I-20	3.73	0.34	20%
I-51	0.43	0.67	70%
I-53	0.04	0.67	70%
I-54	1.98	0.77	85%
I-56	0.06	0.34	20%
I-57	0.28	0.34	20%
I-58	0.33	0.77	85%
I-59	0.41	0.77	85%

LEGEND	
	STORM DRAIN DRAINAGE DIVIDE
	B' TYPE SOILS
	D' TYPE SOILS

GLWGUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
 BURTONSVILLE, MARYLAND 20866
 TEL: 301-421-4024 BALT: 410-863-1820 DC/VA: 301-986-2524 FAX: 301-421-4186

DATE	REVISION	BY	APP'R.

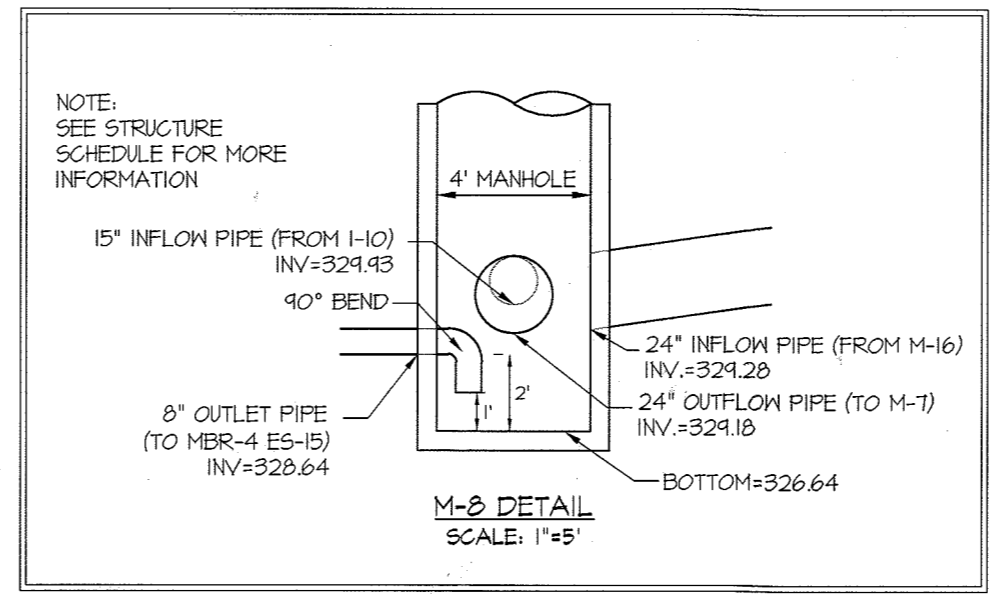
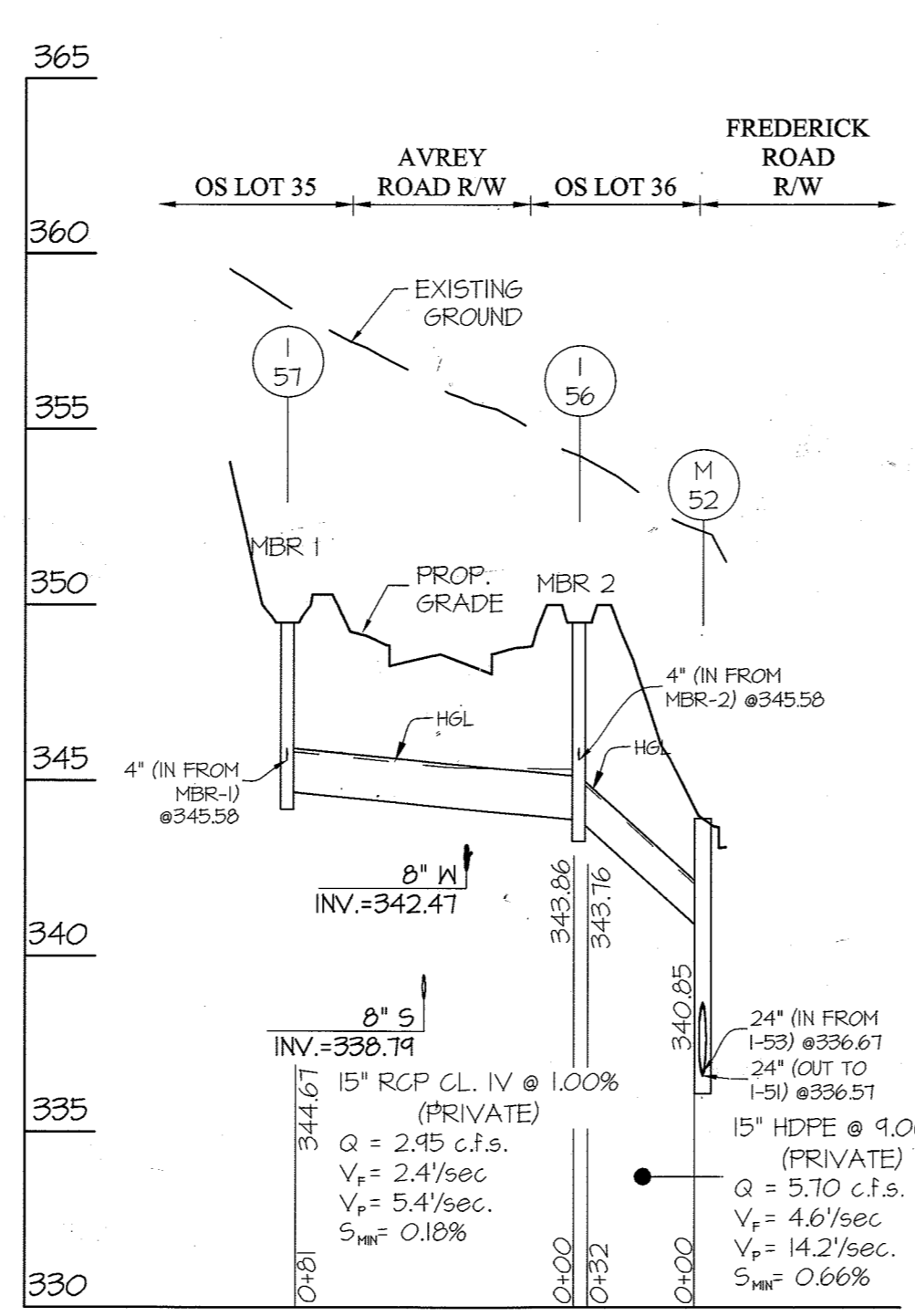
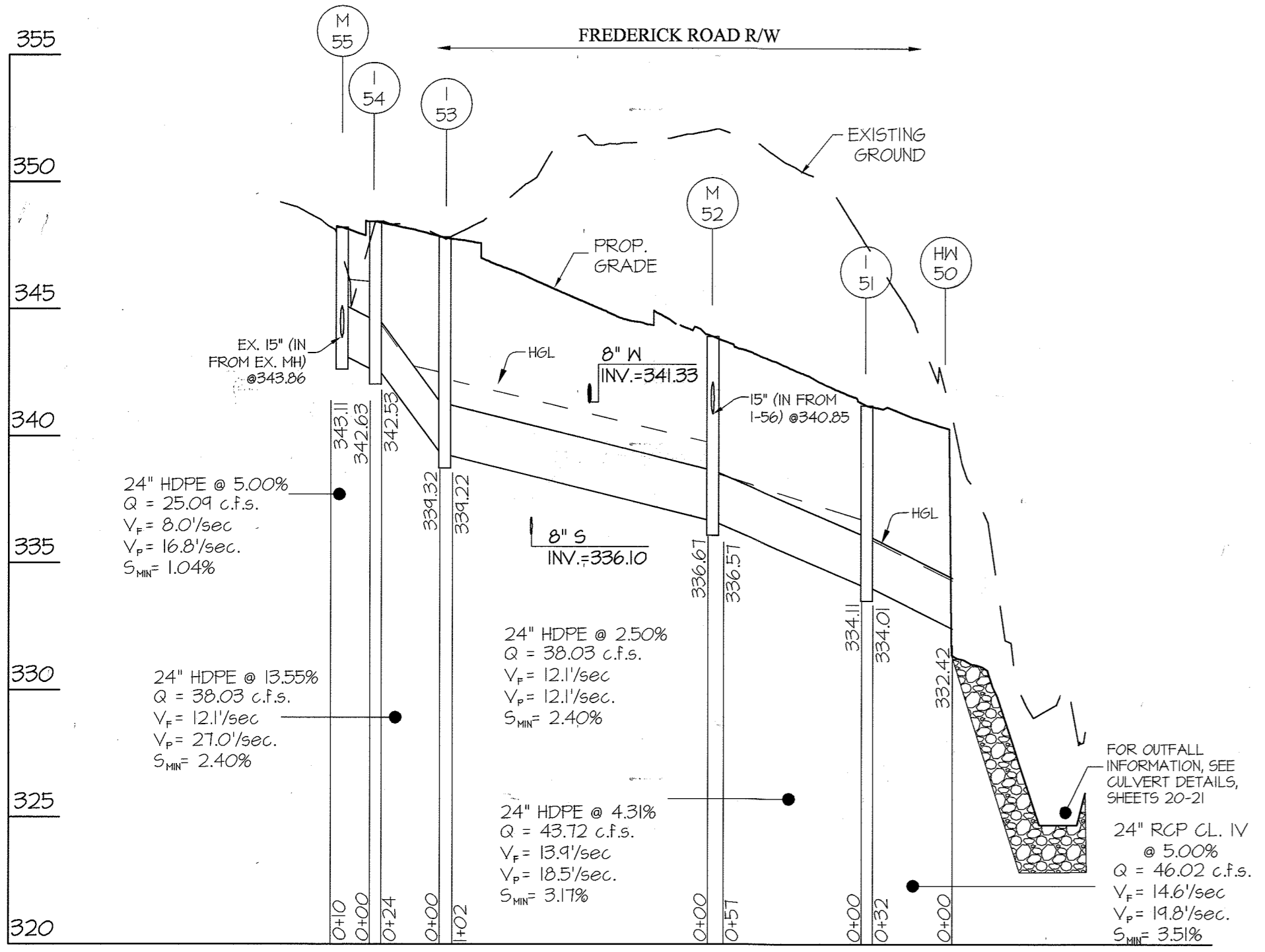
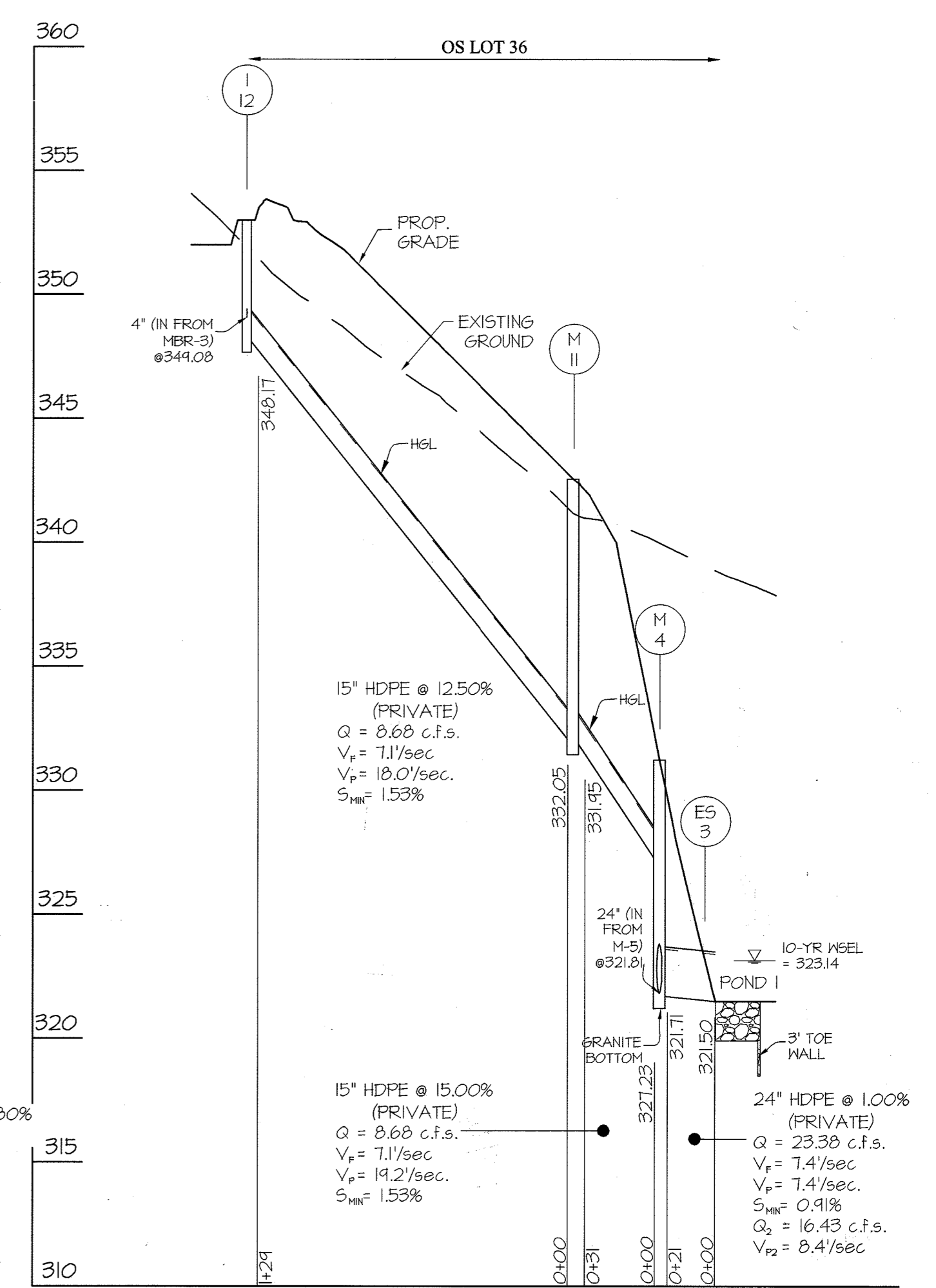
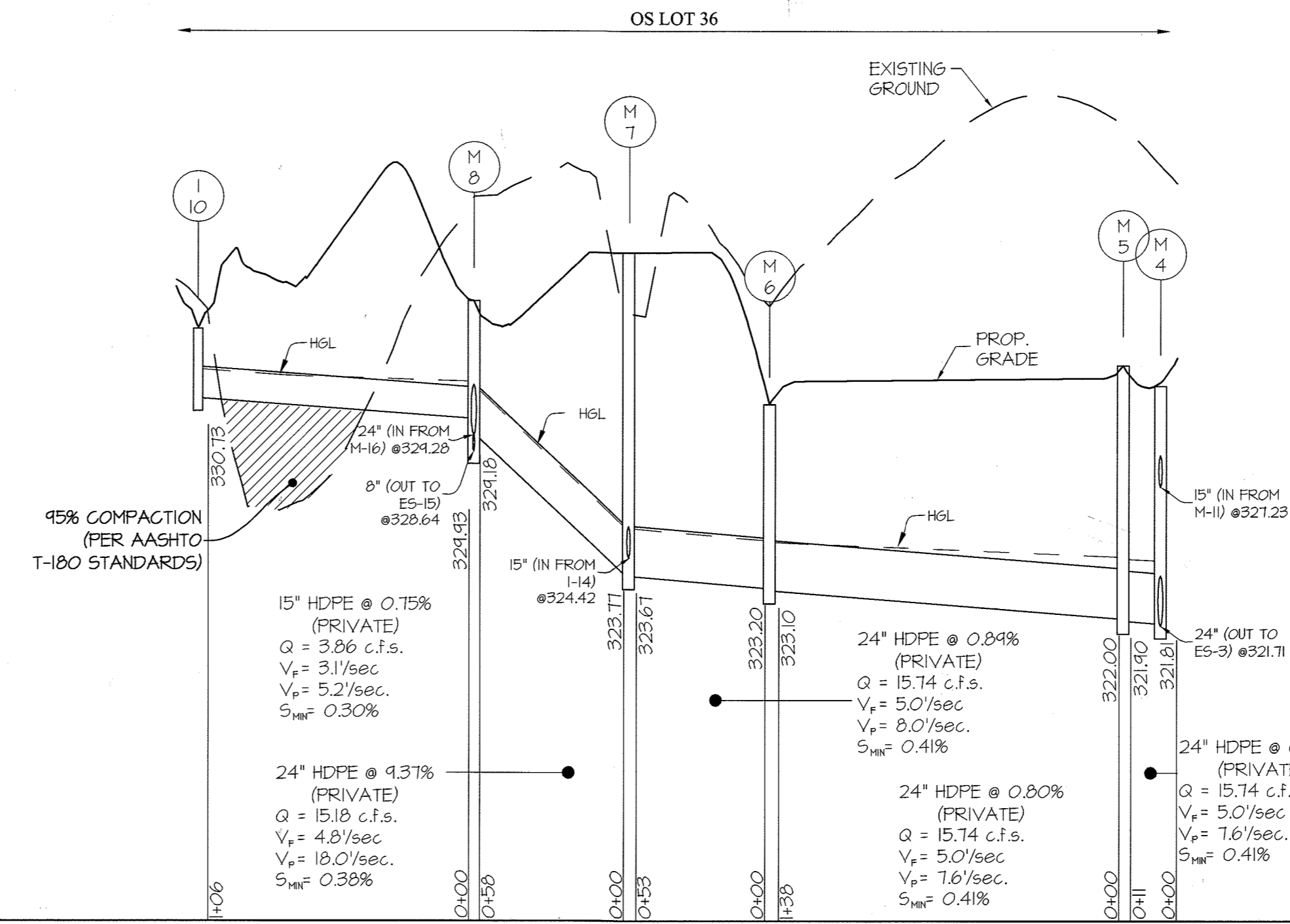
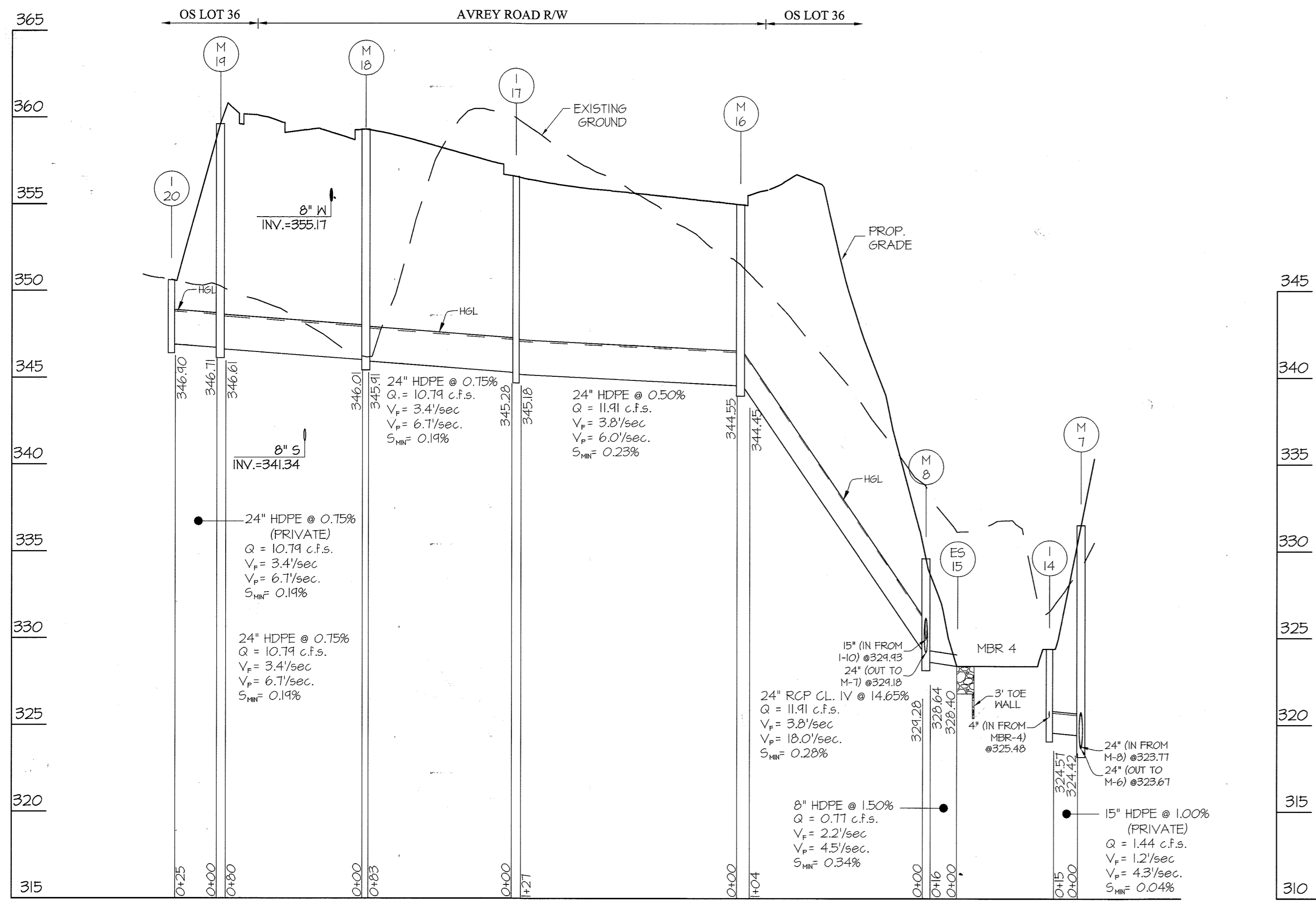
OWNER/
 PREPARED FOR:
 BVR INVESTMENTS LLC
 1377 GOLD MINE LANE
 EVERGREEN, CO 80439
 BRIAN ROBERTS
 240-461-9172

DEVELOPER:
 PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975, EXPIRATION DATE: MAY 26, 2018.
 4/2/18 *[Signature]*

STORM DRAIN DRAINAGE AREA MAP
TERRAPIN WOODS
 LOTS 1-34 & OPEN SPACE LOTS 35-38 & NON-BUILDABLE PARCEL A
 A SUBDIVISION OF PARCELS 115 & 117, LIBER 15723 FOLIO 16 AND IN PART A RESUBDIVISION OF LOTS 4-7, BLOCK A "ELKRIDGE FARM-NO.2" PLAT BK. 122 PLAT NO. 62
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE NO.
1"=50'	R-SC	12039
DATE	TAX MAP - GRID	SHEET
MAR., 2018	24 - 11	6 OF 27



THIS PIPE SCHEDULE IS FOR THE STORM DRAIN ON SHEET 1 ONLY. FOR THE PIPE SCHEDULE FOR ESD FACILITIES, SEE SHEET 12.

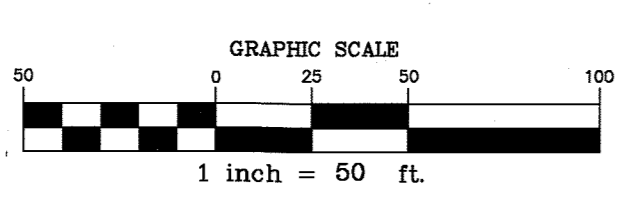
SIZE	TYPE	QUANTITY (L)	REMARKS
8"	HDPE	16	PUBLIC
15"	RCP CL. IV	81	PRIVATE
15"	HDPE	315	PRIVATE
24"	RCP CL. IV	136	PUBLIC
24"	HDPE	483	PUBLIC
24"	HDPE	306	PRIVATE

NO	TYPE	WIDTH (INSIDE)	TOP ELEVATION						STD. DETAIL	LOCATIONS	PRIVATE/ PUBLIC
			PROPOSED		AS-BUILT		INVERT				
			UPPER	LOWER	UPPER	LOWER	UPPER	LOWER			
I-9A	COG-10 INLET	11'-0"	351.1	350.51	---	---	---	---	MD SHA-374.68	N 584.584 E 1362.054	PUBLIC
I-9B	COG-10 INLET	11'-0"	351.1	350.65	---	---	---	---	MD SHA-374.68	N 584.609 E 1362.094	PUBLIC
I-5T	5' INLET	2'-15"	344.50	---	345.58	344.67	---	---	HO. CO. D-4.22	N 584.591 E 1361.886	PRIVATE
I-56	5' INLET	2'-15"	344.50	---	345.58	343.76	---	---	HO. CO. D-4.22	N 584.591 E 1362.043	PRIVATE
I-54	COG-15 INLET	2'-6"	342.63	348.31	342.63	342.59	---	---	MD SHA-374.31	N 584.584 E 1361.920	PUBLIC
I-58	COG-15 INLET	2'-6"	342.63	347.71	342.63	342.22	---	---	MD SHA-374.31	N 584.584 E 1361.946	PUBLIC
I-5I	COG-15 INLET	2'-6"	341.81	341.16	341.81	341.01	---	---	MD SHA-374.31	N 584.584 E 1362.115	PUBLIC
I-20	DOUBLE 5' INLET	2'-15"	350.62	---	---	---	---	---	HO. CO. D-4.23	N 584.688 E 1362.208	PRIVATE
I-17	DOUBLE 5' INLET	2'-15"	356.61	356.41	345.28	345.18	---	---	HO. CO. D-4.23	N 584.684 E 1362.390	PUBLIC
I-14	5' INLET	2'-15"	324.40	---	325.48	324.57	---	---	HO. CO. D-4.22	N 584.186 E 1362.633	PRIVATE
I-13	COG-10 INLET	11'-0"	354.21	---	---	---	---	---	MD SHA-374.68	N 584.462 E 1362.505	PUBLIC
I-12	DOUBLE 5' INLET	2'-15"	353.00	---	349.08	348.17	---	---	HO. CO. D-4.23	N 584.496 E 1362.544	PRIVATE
I-10	DOUBLE 5' INLET	2'-15"	333.50	---	---	330.75	---	---	HO. CO. D-4.23	N 584.102 E 1362.498	PRIVATE
M-55	STANDARD MANHOLE	4'-0"	348.11	---	343.86	343.11	---	---	HO. CO. G-5.12	N 584.510 E 1361.918	PUBLIC
M-52	STANDARD MANHOLE	4'-0"	343.90	---	340.85	336.51	---	---	HO. CO. G-5.12	N 584.507 E 1362.051	PUBLIC
M-11	STANDARD MANHOLE	4'-0"	339.61	---	346.71	346.61	---	---	HO. CO. G-5.12	N 584.668 E 1362.228	PRIVATE
M-16	STANDARD MANHOLE	4'-0"	334.31	---	346.01	345.91	---	---	HO. CO. G-5.12	N 584.842 E 1362.308	PUBLIC
M-16	STANDARD MANHOLE	4'-0"	354.41	---	344.55	344.45	---	---	HO. CO. G-5.12	N 584.877 E 1362.520	PUBLIC
M-11	STANDARD MANHOLE	4'-0"	342.56	---	332.05	331.95	---	---	HO. CO. G-5.12	N 584.990 E 1362.676	PRIVATE
M-8	DIVERSION MANHOLE	4'-0"	334.64	---	324.93	328.64	---	---	HO. CO. G-5.12	N 584.183 E 1362.572	PUBLIC
M-7	STANDARD MANHOLE	4'-0"	336.51	---	324.42	323.61	---	---	HO. CO. G-5.12	N 584.804 E 1362.624	PRIVATE
M-6	STANDARD MANHOLE	4'-0"	330.44	---	323.20	323.10	---	---	HO. CO. G-5.12	N 584.815 E 1362.684	PRIVATE
M-5	STANDARD MANHOLE	4'-0"	332.05	---	320.00	321.40	---	---	HO. CO. G-5.12	N 584.456 E 1362.644	PRIVATE
M-4	STANDARD MANHOLE	5'-0"	331.23	---	321.23	321.11	---	---	HO. CO. G-5.13	N 584.961 E 1362.703	PRIVATE
ES-15	END SECTION	0'-8"	324.01	---	---	328.40	---	---	---	N 584.710 E 1362.584	PUBLIC
ES-3	END SECTION	2'-0"	323.50	---	---	323.50	---	---	HO. CO. D-5.11	N 584.953 E 1362.720	PRIVATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways
 Date: 4/25/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Chief, Division of Land Development
 Date: 7-6-18

APPROVED: Chief, Development Engineering Division
 Date: 5-1-18



GLWGUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3509 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
 BURTONSVILLE, MARYLAND 20866
 TEL: 301-421-4024 BALT: 410-860-1820 DC/VA: 301-588-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.

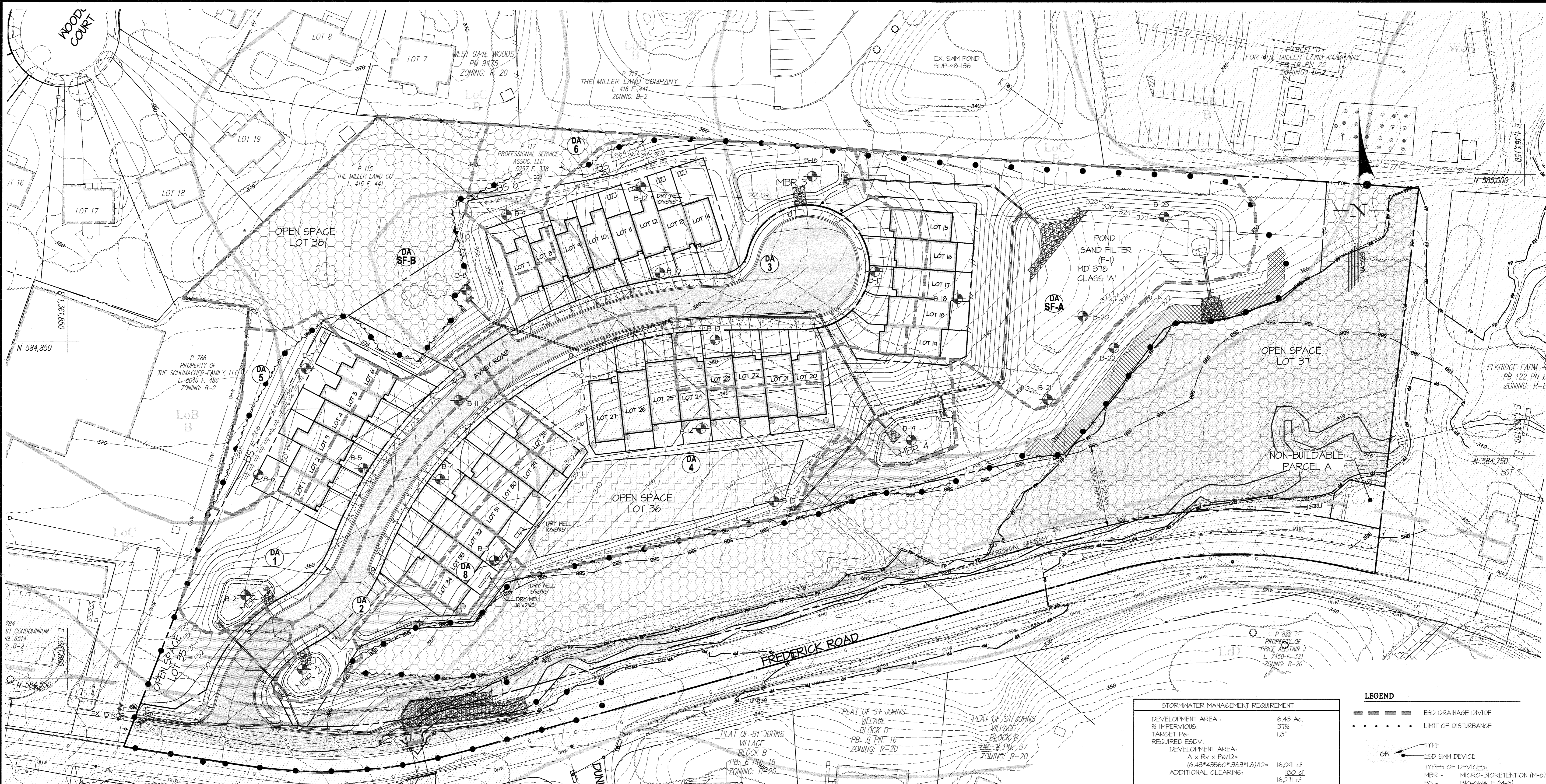
OWNER/PREPARED FOR:
 BVR INVESTMENTS LLC
 1377 GOLD MINE LANE
 EVERGREEN, CO 80439

DEVELOPER:
 BRIAN ROBERTS
 240-461-9172

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE PLANS 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. 12975
 EXPIRATION DATE: MAY 26, 2018

STORM DRAIN PROFILES
TERRAPIN WOODS
 LOTS 1-34 & OPEN SPACE LOTS 35-38 & NON-BUILDABLE PARCEL A
 A SUBDIVISION OF PARCELS 115 & 117, LIBER 15723 FOLIO 16 AND IN PART A RESUBDIVISION OF LOTS 4-7, BLOCK A "ELKRIDGE FARM-NO.2" PLAT BK. 122 PLAT NO. 62
 ELECTION DISTRICT No. 2
 HOWARD COUNTY, MARYLAND

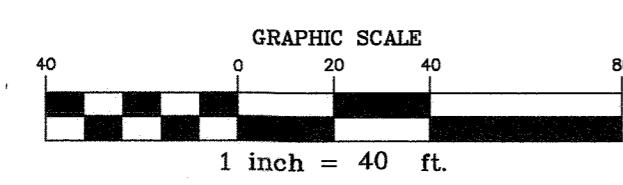
SCALE	ZONING	G. L. W. FILE NO.
1" = 50' (H) 1" = 5' (V)	R-SC	12039
DATE	TAX MAP - GRID	SHEET
MAR., 2018	24 - 11	7 OF 27



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] 4/6/2018
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
[Signature] 7-6-18
 Chief, Division of Land Development Date

[Signature] 5-1-18
 Chief, Development Engineering Division Date



SOILS (on site)	Map Unit Symbol	Map Unit Name	Type	K Factor
LoB		Legore-Montalto-Urban land, 0 to 8 percent slopes	B	0.28
LoC		Legore-Montalto-Urban land complex, 8 to 15 percent slopes	B	0.28
McB		Watching silt loam, 3 to 8 percent slopes, stony	D	0.28

AREA NO.	AREA (SF)	IMPERVIOUS	ESDv (CF) PROVIDED	Pe PROVIDED
MBR 1	25,100	48%	1,410	1.40
MBR 2	20,491	67%	1,260	1.13
MBR 3	62,217	64%	4,539	1.40
MBR 4	55,811	39%	3,320	1.78
BS 5	15,103	34%	1,165	2.58
BS 6	9,458	16%	398	2.59
DA 8	3,442	75%	207	1.00
SI*	88,087	7%	4,530	---
TOTAL	278,709	37%	16,829	1.90

DEVELOPMENT AREA :	6.43 Ac.
% IMPERVIOUS:	37%
TARGET Pe:	1.8"
REQUIRED ESDv:	
DEVELOPMENT AREA:	
A x Rv x Pe/12=	16,091 cf
ADDITIONAL CLEARING:	180 cf
	16,271 cf
PROVIDED RECHARGE BY BIO-SWALES:	2,303 cf

DEVELOPMENT AREA :	6.43 Ac.
% IMPERVIOUS:	37%
TARGET Pe:	1.8"
REQUIRED ESDv:	
DEVELOPMENT AREA:	
A x Rv x Pe/12=	16,091 cf
ADDITIONAL CLEARING:	180 cf
	16,271 cf

SAND FILTER (F-1):	4,530 CU-FT
RAIN BARRELS (M-1):	348 CU-FT
DRY WELLS (M-5):	466 CU-FT
MICRO-BIORETENTION (M-6)	9,102 CU-FT
BIO-SWALE (M-8):	2,303 CU-FT
TOTAL:	16,829 CU-FT
Pe Provided = 1.90"	

- LEGEND**
- ESD DRAINAGE DIVIDE
 - LIMIT OF DISTURBANCE
 - TYPE
 - ESD SWM DEVICE
 - TYPES OF DEVICES:
 - MBR - MICRO-BIORETENTION (M-6)
 - BS - BIO-SWALE (M-8)
 - 200 GAL RAIN BARREL (M-1) (PRIVATELY OWNED AND MAINTAINED)
 - DRY WELL (M-5) (PRIVATELY OWNED AND MAINTAINED)
 - STORMWATER BORING
 - B' TYPE SOILS
 - D' TYPE SOILS

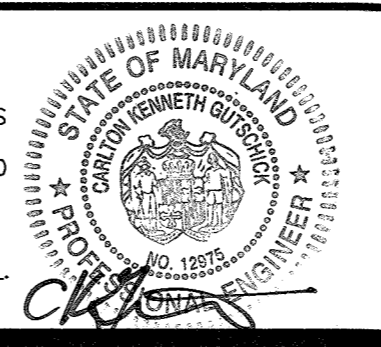
GLWGUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
 BURTONSVILLE, MARYLAND 20866
 TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APP'R.

OWNER/PREPARED FOR:
 BVR INVESTMENTS LLC
 1377 GOLD MINE LANE
 EVERGREEN, CO 80439

DEVELOPER:
 BRIAN ROBERTS
 240-461-9172

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE PLANS 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. 12975
 EXPIRATION DATE: MAY 26, 2018
 4/2/18



ESD DRAINAGE AREA MAP

TERRAPIN WOODS
 LOTS 1-34 & OPEN SPACE LOTS 35-38 & NON-BUILDABLE PARCEL A
 A SUBDIVISION OF PARCELS 115 & 117, LIBER 15723 FOLIO 16 AND IN PART A RESUBDIVISION OF LOTS 4-7, BLOCK "ELKRIDGE FARM-NO.2" PLAT BK. 122 PLAT NO. 62
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE NO.
1"=40'	R-SC	12039
DATE	TAX MAP - GRID	SHEET
MAR, 2018	24 - 11	8 OF 27



AREA = 10.92 ac
CN = 68
EX 1
TC = 0.11 hrs

LEGEND

- DRAINAGE DIVIDE
- B' TYPE SOILS
- D' TYPE SOILS
- TC PATH
- ③ DRAINAGE AREA LABEL

EXISTING DRAINAGE AREA SUMMARY

	Q1 (cfs)	Q10 (cfs)	Q100 (cfs)
STUDY POINT 1	4.5	22.6	58.8

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Melvin
 Chief, Bureau of Highways
 Date: 4/25/18

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Kent
 Chief, Division of Land Development
 Date: 7-6-18

Ch
 Chief, Development Engineering Division
 Date: 5-1-18

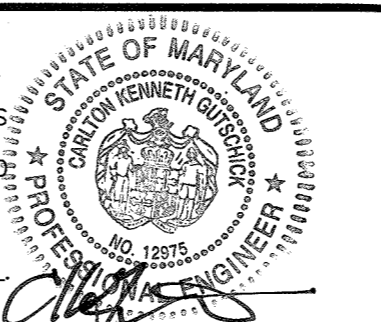
GLWGUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
 BURTONSVILLE, MARYLAND 20866
 TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-888-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.

OWNER/
PREPARED FOR:
BVR INVESTMENTS LLC
1377 GOLD MINE LANE
EVERGREEN, CO 80439
BRIAN ROBERTS
240-461-9172

DEVELOPER:

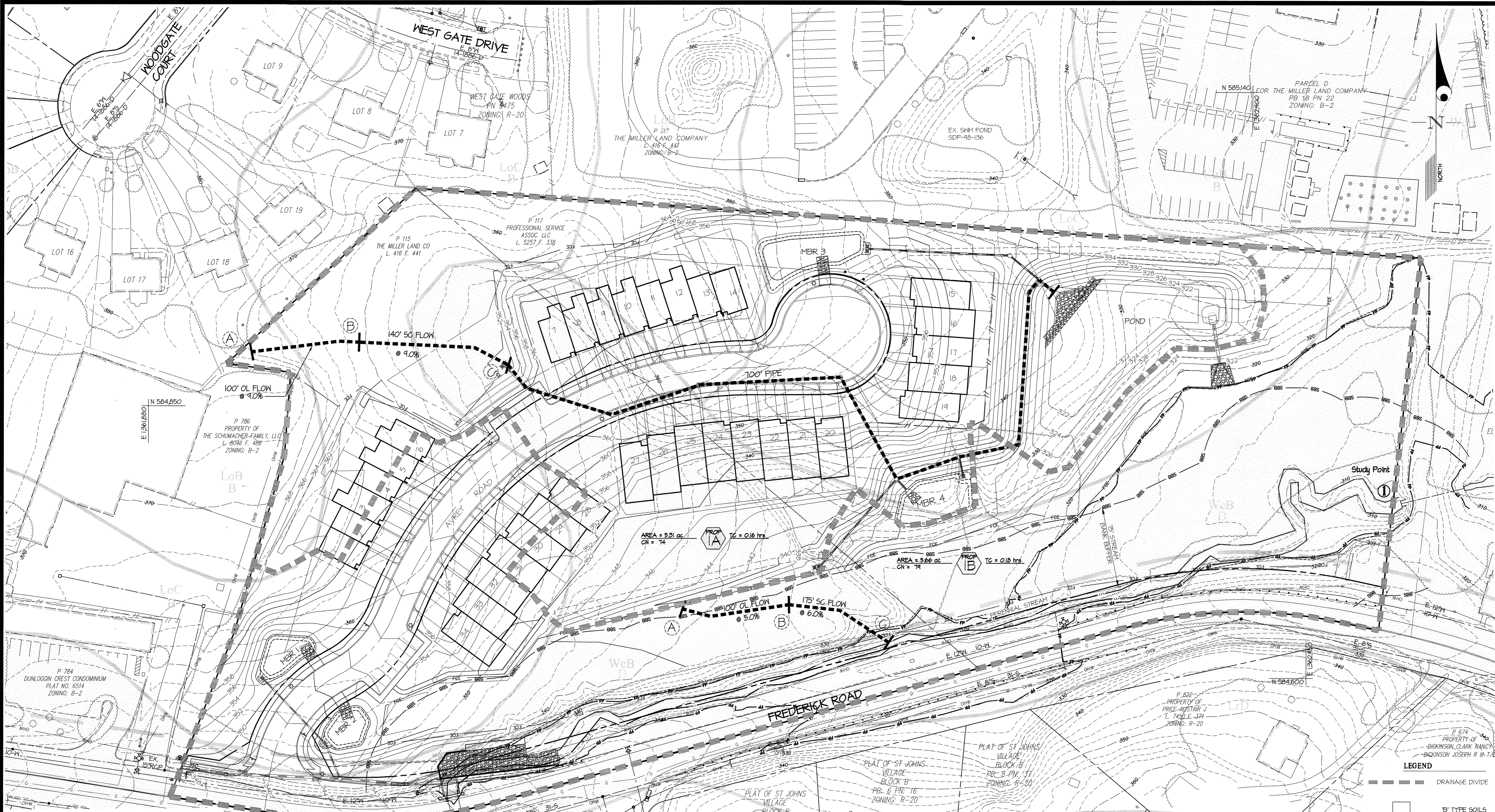
PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE PLANS
 WERE PREPARED OR APPROVED BY
 ME, AND THAT I AM A DULY LICENSED
 PROFESSIONAL ENGINEER UNDER THE
 LAWS OF THE STATE OF MARYLAND,
 LICENSE NO. 12975
 EXPIRATION DATE: May 26, 2018
 4/2/18



EXISTING CONDITION (SITE ONLY) DRAINAGE AREA MAP

TERRAPIN WOODS
 LOTS 1-34 & OPEN SPACE LOTS 35-38 & NON-BUILDABLE PARCEL A
 A SUBDIVISION OF PARCELS 115 & 117, LIBER 15723 FOLIO 16 AND IN PART A RESUBDIVISION OF
 LOTS 4-7, BLOCK A "ELKRIDGE FARM-NO.2" PLAT BK. 122 PLAT NO. 62
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE NO.
1"=40'	R-SC	12039
DATE	TAX MAP - GRID	SHEET
MAR., 2018	24 - 11	9 OF 27

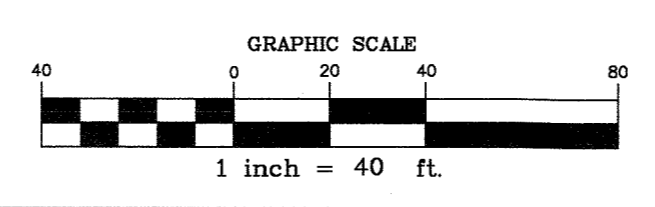


LEGEND

- DRAINAGE DIVIDE
- B' TYPE SOILS
- D' TYPE SOILS
- TC PATH
- ③ DRAINAGE AREA LABEL

PROPOSED DRAINAGE AREA SUMMARY

SITE ONLY STUDY POINT I ANALYSIS	Q10 (cfs)		Q100 (cfs)	
	EX.	PROP.	EX.	PROP.
	22.6	21.1	50.8	53.3



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Melanie 4/6/2018
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Vatche Ovchak 7-16-18
 Chief, Division of Land Development Date

Chad 5-1-18
 Chief, Development Engineering Division Date

TIBER RIDGE
 OPEN SPACE LOT 11
 PLAT NO: 19350
 ZONING: R-SC

PLAT OF ST JOHNS VILLAGE
 BLOCK A
 PB: 6 PN: 16
 ZONING: R-20
 LOT 7

GLWGUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
 BURTONSVILLE, MARYLAND 20866
 TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-889-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.

OWNER/
 PREPARED FOR:
 BVR INVESTMENTS LLC
 1377 GOLD MINE LANE
 EVERGREEN, CO 80439
 BRIAN ROBERTS
 240-461-9172

DEVELOPER:
 PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE PLANS 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. 12975
 EXPIRATION DATE: May 26, 2018
 4/2/18 *CLW*

PROPOSED (SITE ONLY) STORMWATER MANAGEMENT DRAINAGE AREA MAP

TERRAPIN WOODS
 LOTS 1-34 & OPEN SPACE LOTS 35-38 & NON-BUILDABLE PARCEL A
 A SUBDIVISION OF PARCELS 115 & 117, LIBER 15723 FOLIO 16 AND IN PART A RESUBDIVISION OF LOTS 4-7, BLOCK A "ELKRIDGE FARM-NO.2" PLAT BK. 122 PLAT NO. 62
 HOWARD COUNTY, MARYLAND
 ELECTION DISTRICT No. 2

SCALE	ZONING	G. L. W. FILE NO.
1"=40'	R-SC	12039
DATE	TAX MAP - GRID	SHEET
MAR, 2018	24 - 11	10 OF 27



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Maureen 4/25/18
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Kent DeLoach 7-6-18
 Chief, Division of Land Development Date

Chad 5-1-18
 Chief, Development Engineering Division Date

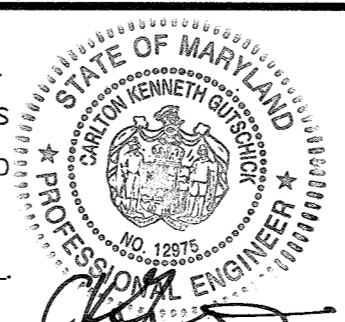
GLWGUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
 BURTONSVILLE, MARYLAND 20866
 TEL: 301-421-4024 BALT: 410-883-1820 DC/VA: 301-589-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.

OWNER/
 PREPARED FOR:
 BVR INVESTMENTS LLC
 1377 GOLD MINE LANE
 EVERGREEN, CO 80439
 BRIAN ROBERTS
 240-461-9172

DEVELOPER:
 PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS
 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. 12975
 EXPIRATION DATE: May 26, 2018
 4/2/18



NOTE: FOR OFFSITE DRAINAGE AREAS (1, 2, AND 8), SEE SWM REPORT, APPENDIX J.

		Q100 (cfs)
OVERALL WATERSHED STUDY POINT 1 ANALYSIS	EX. 1 PROP.	614.4 612.0

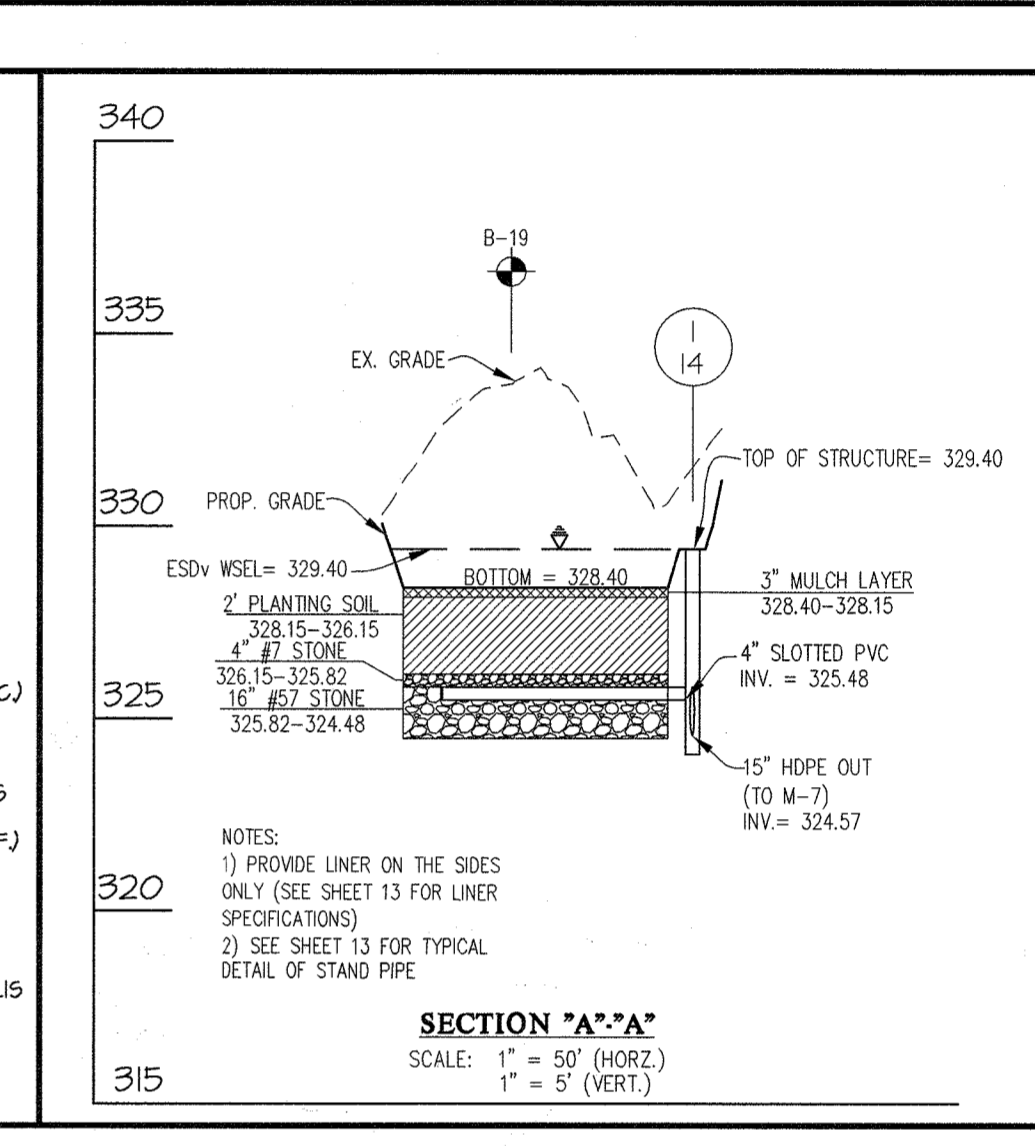
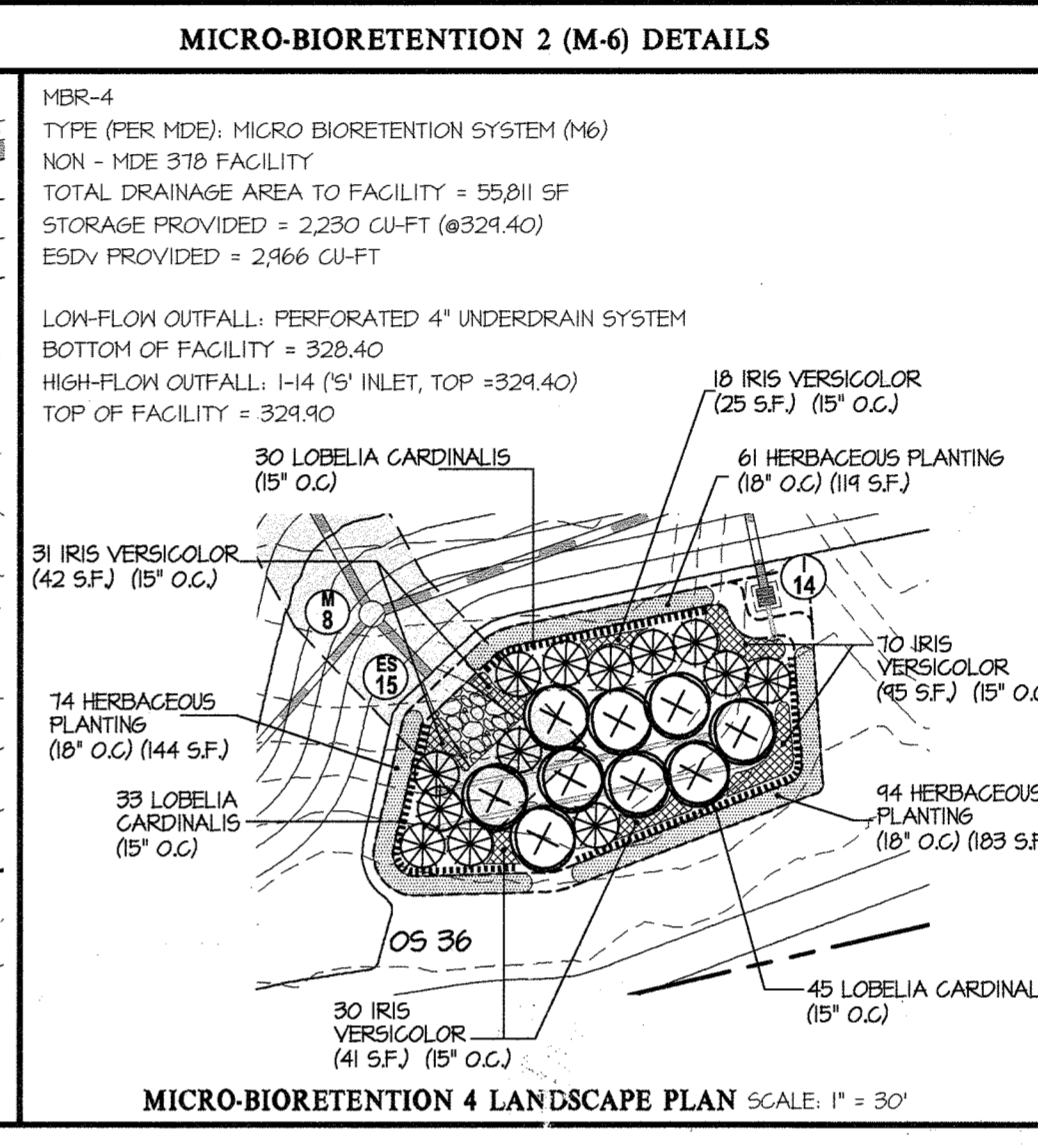
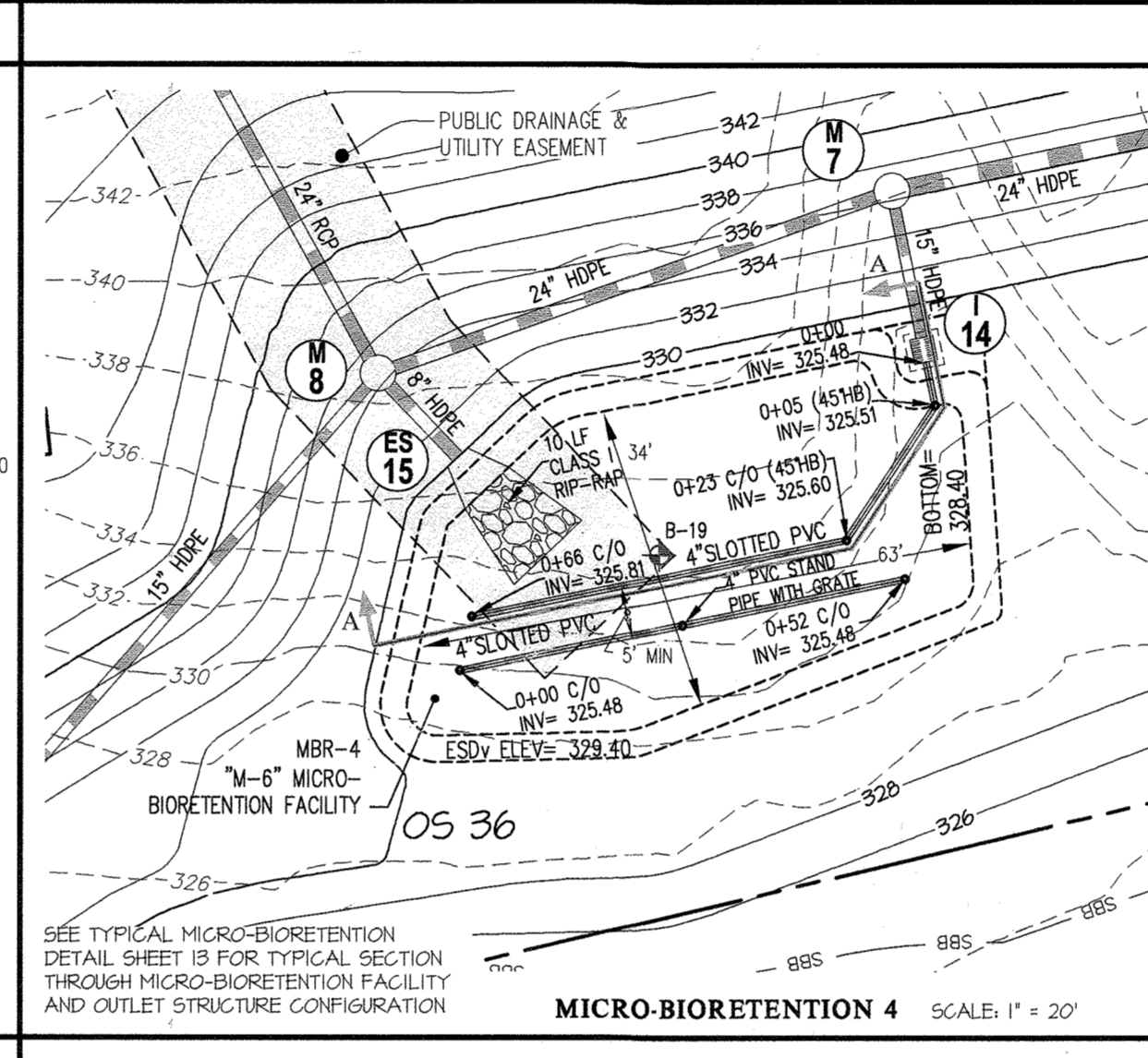
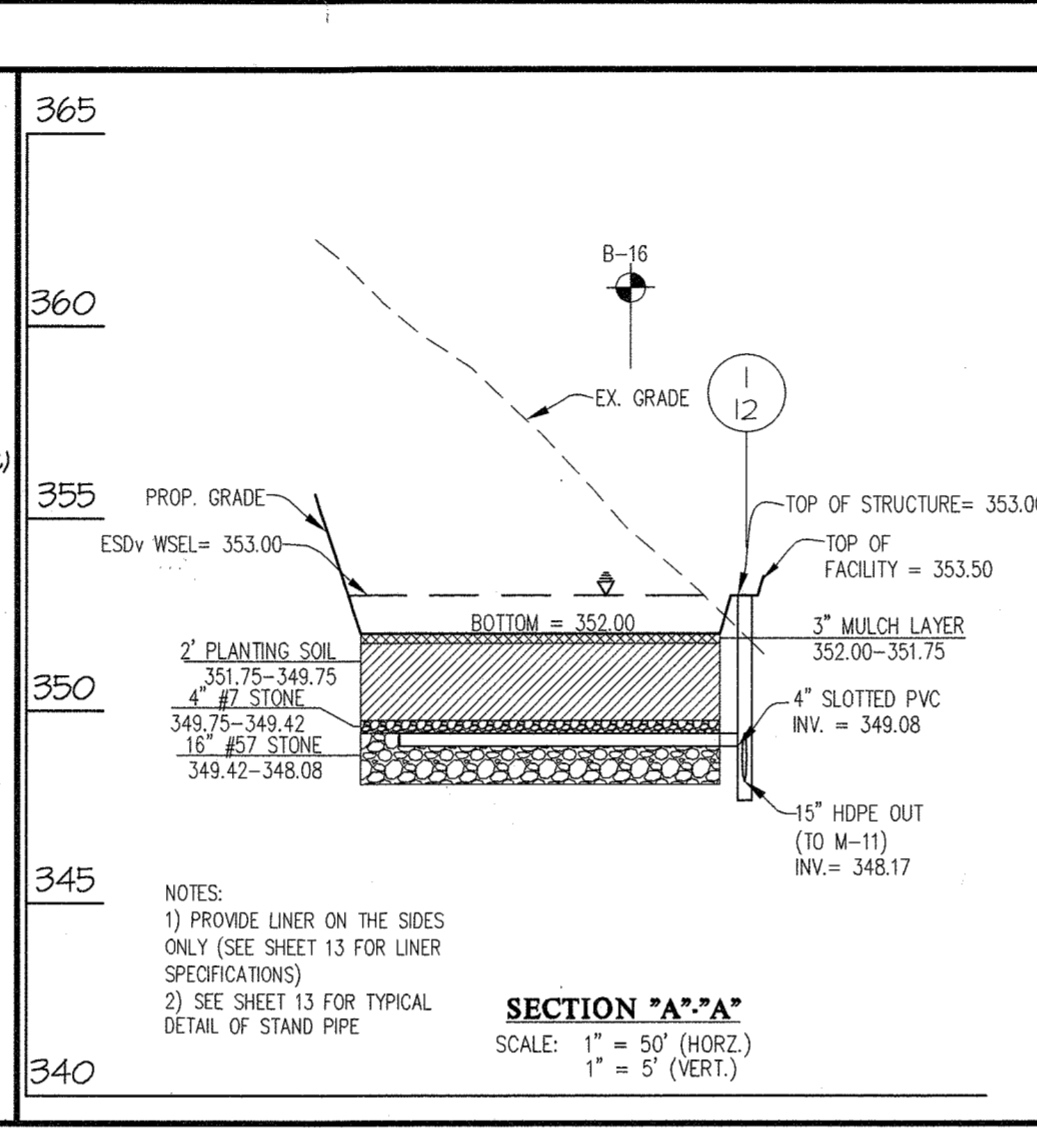
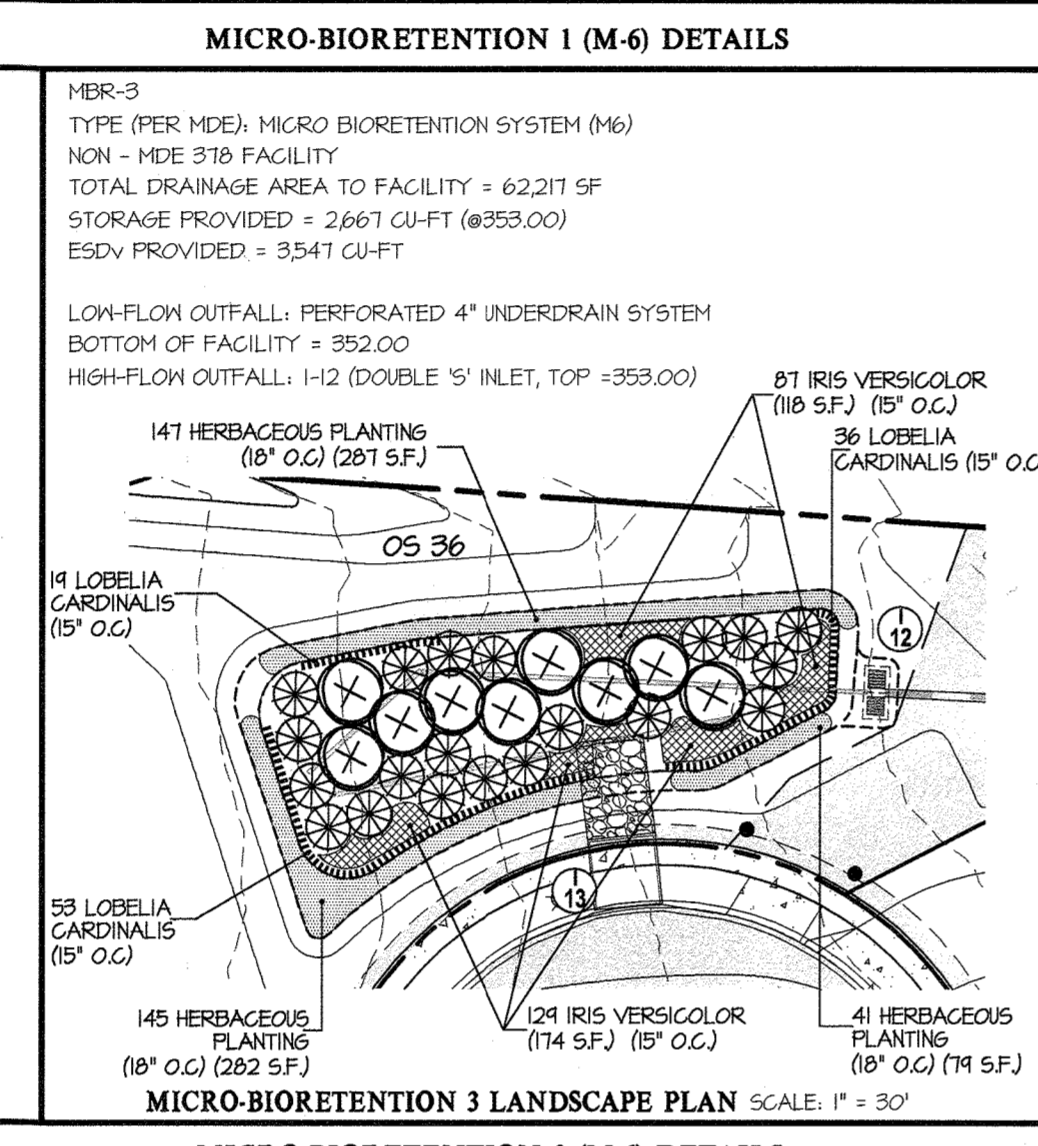
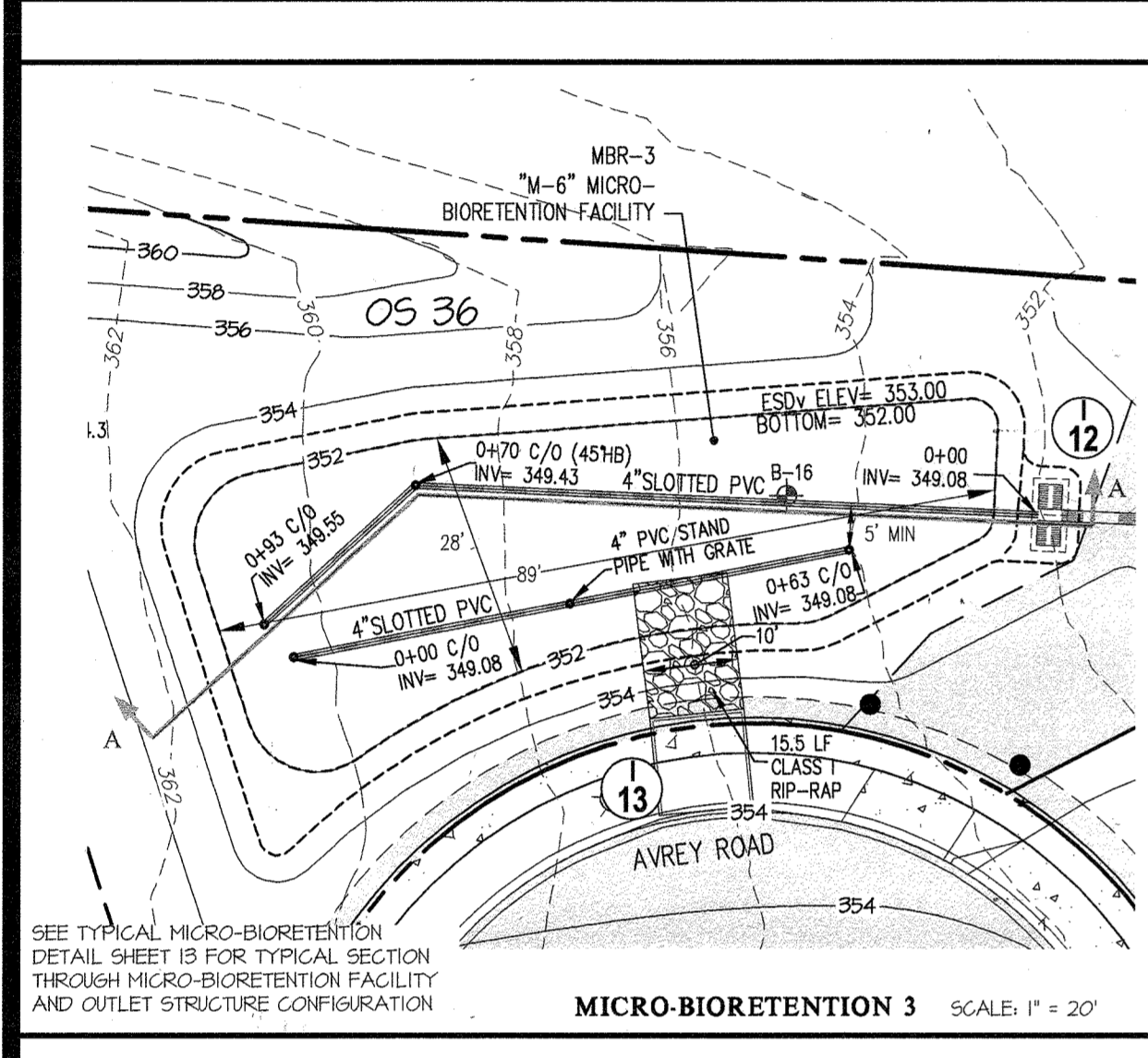
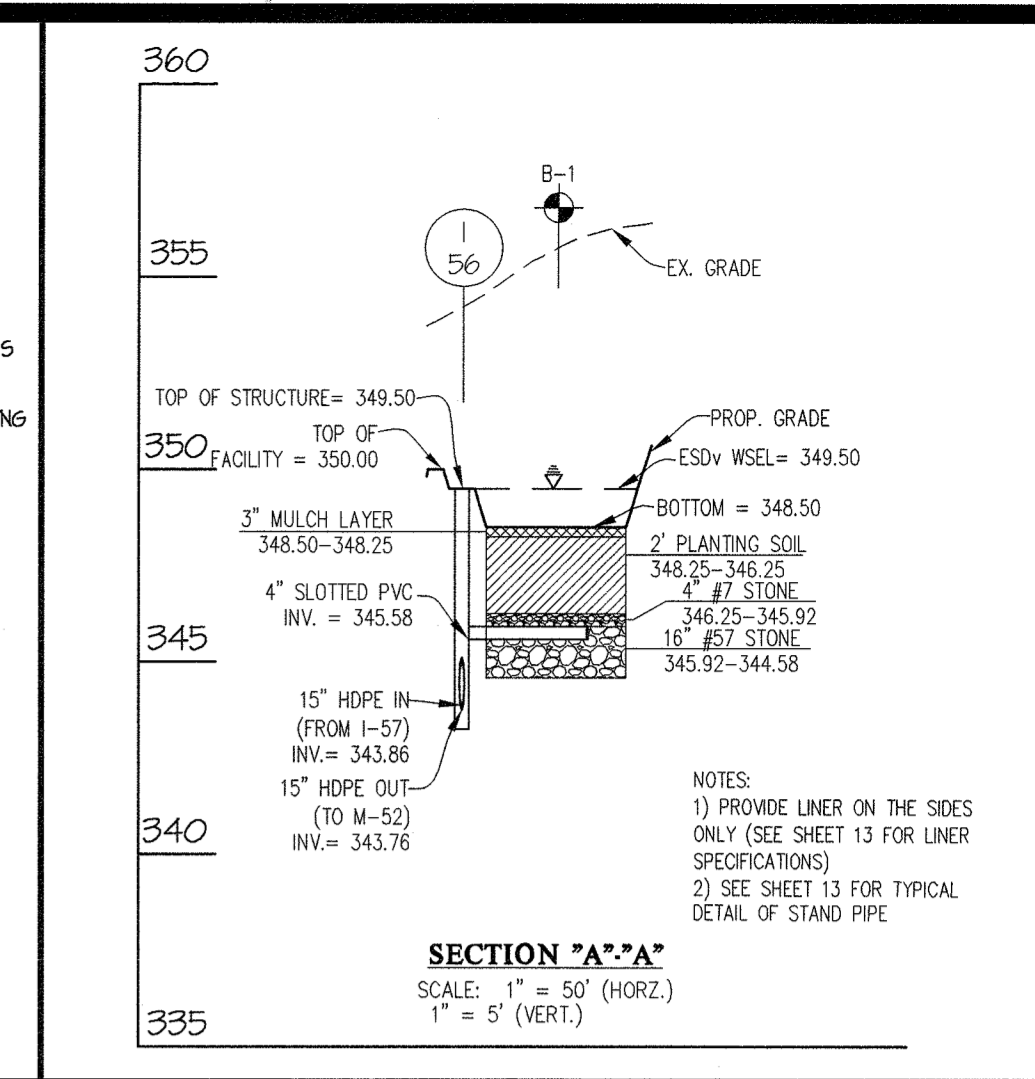
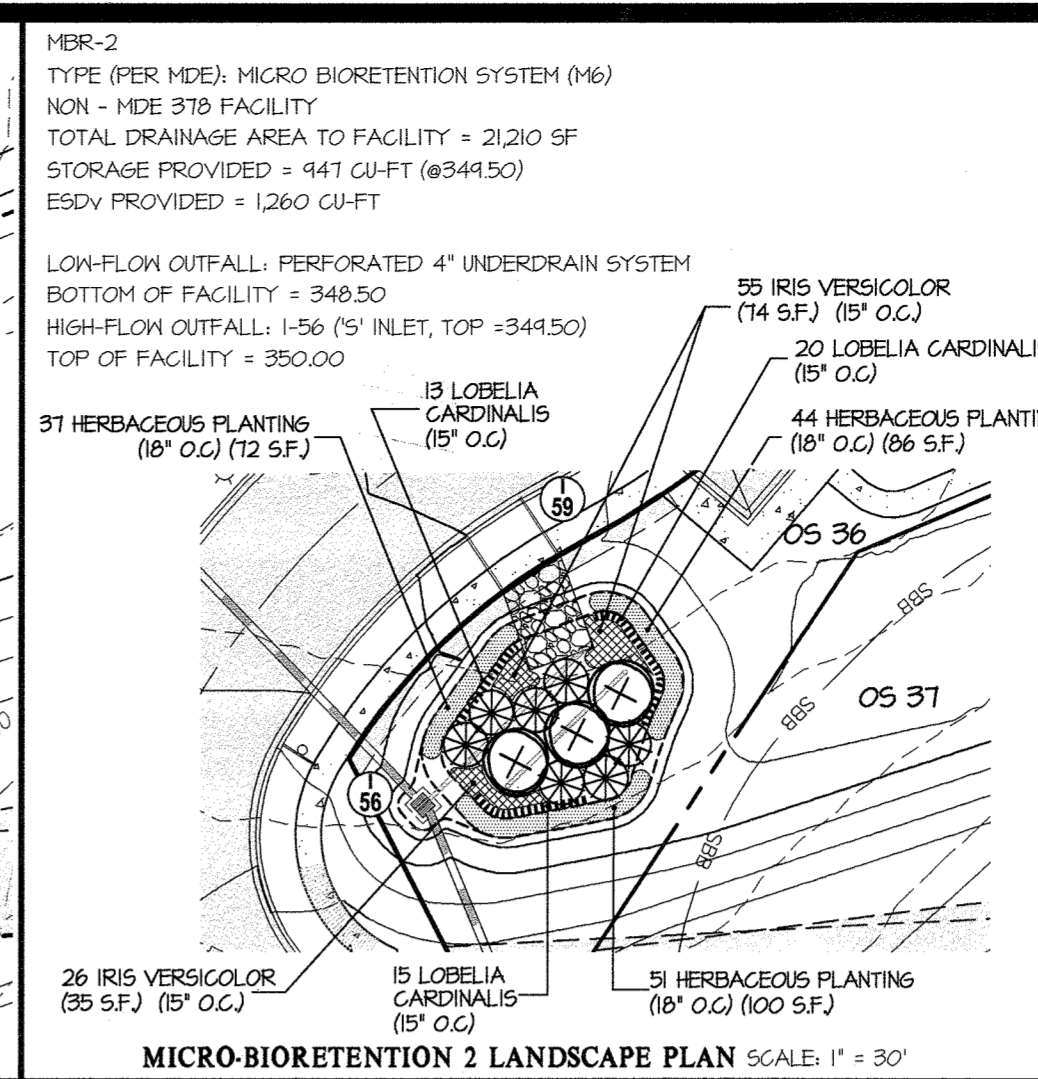
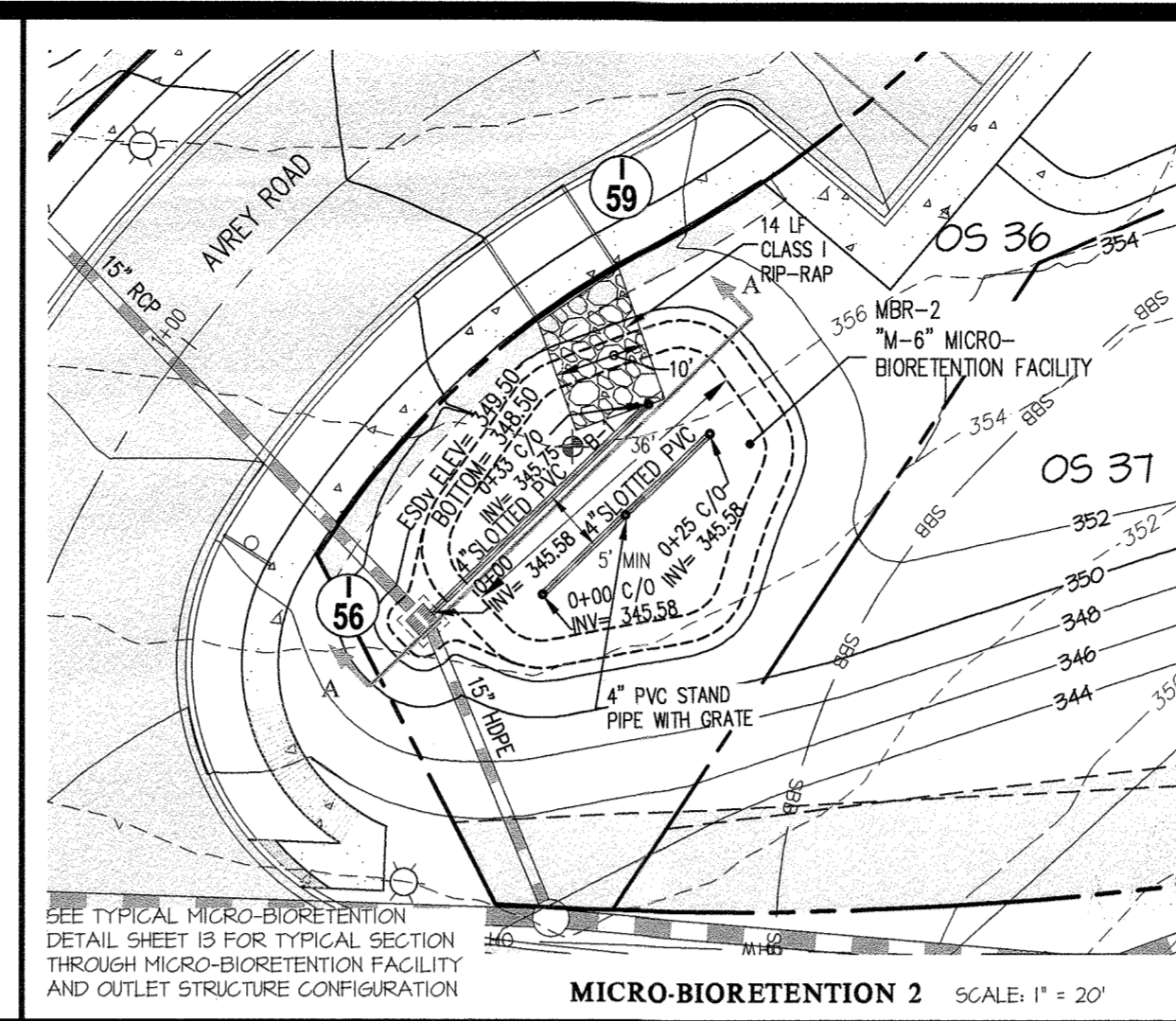
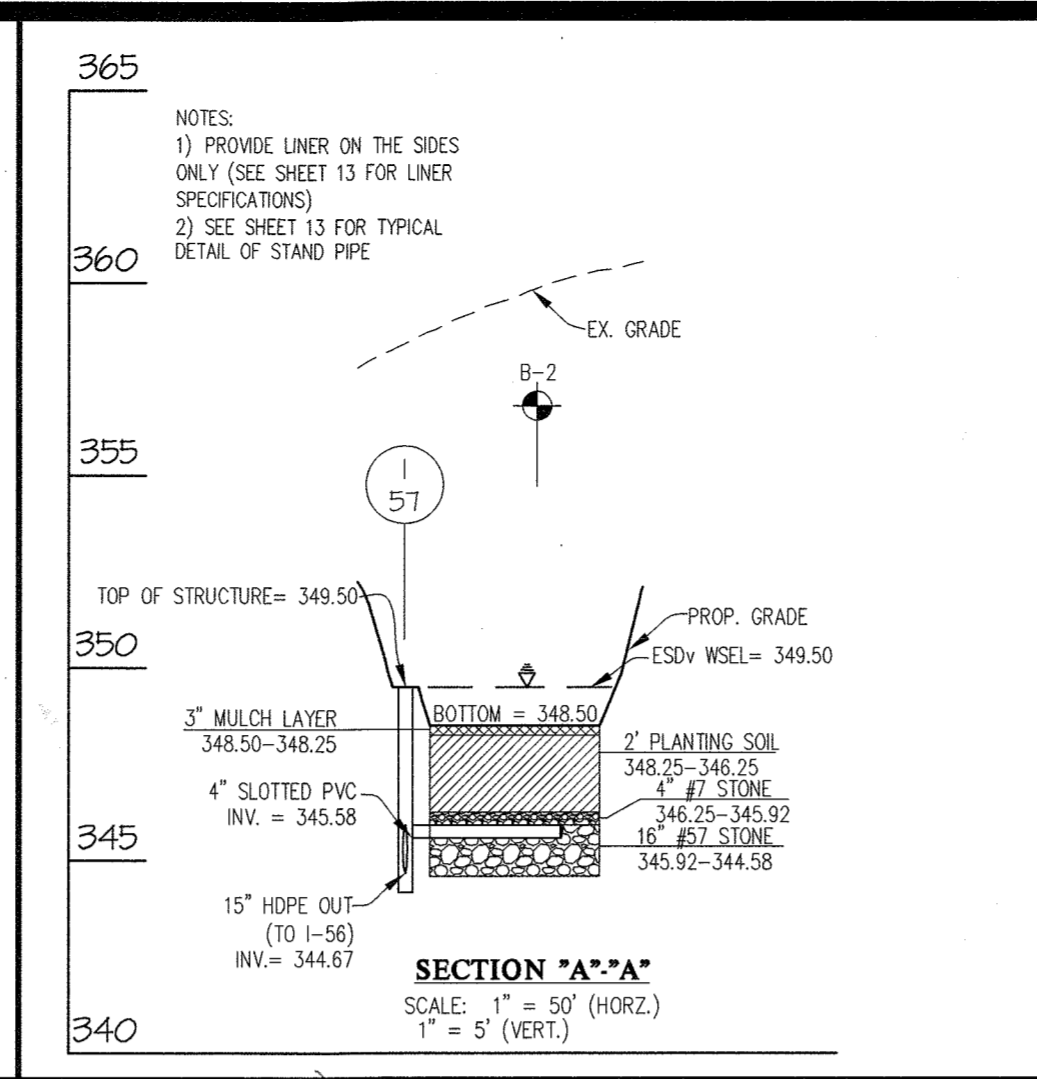
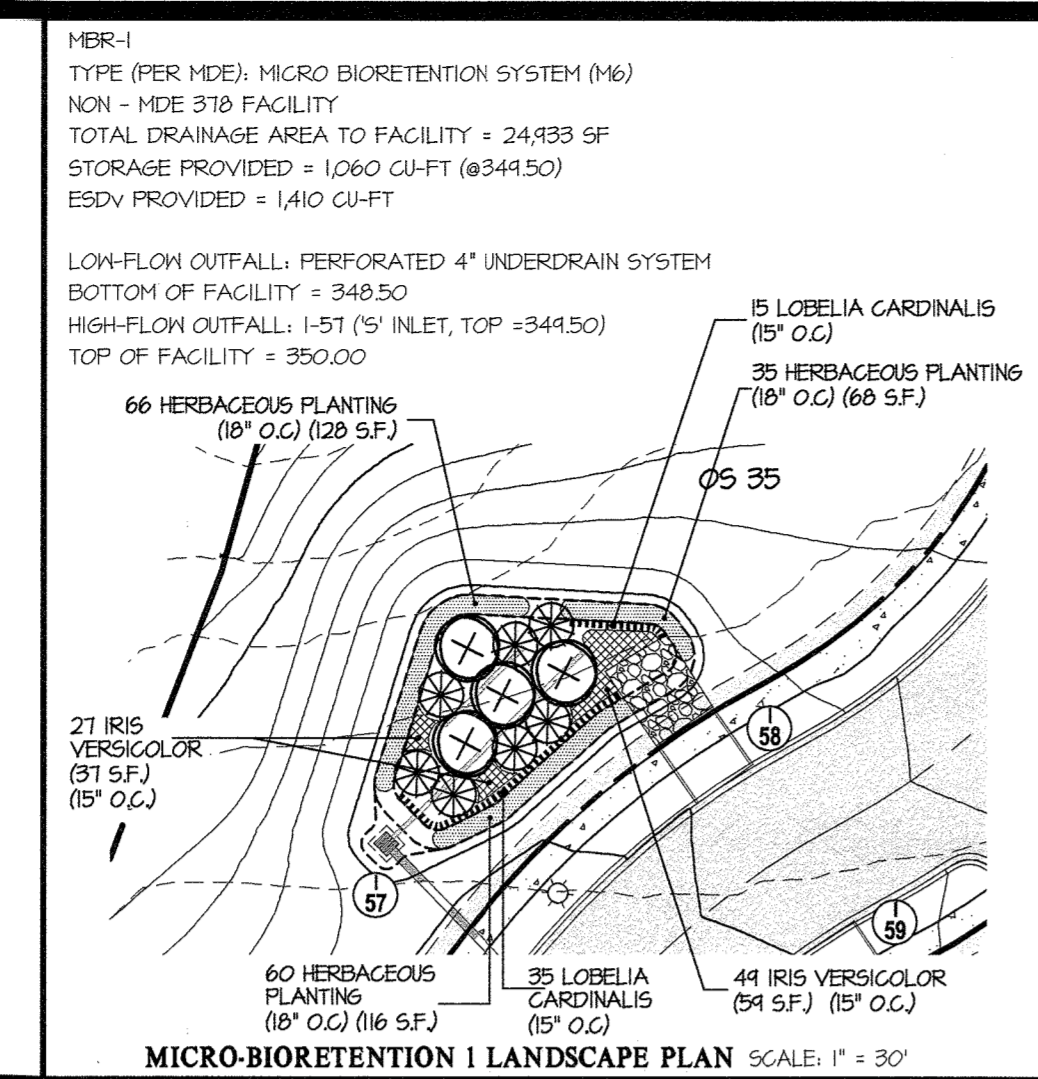
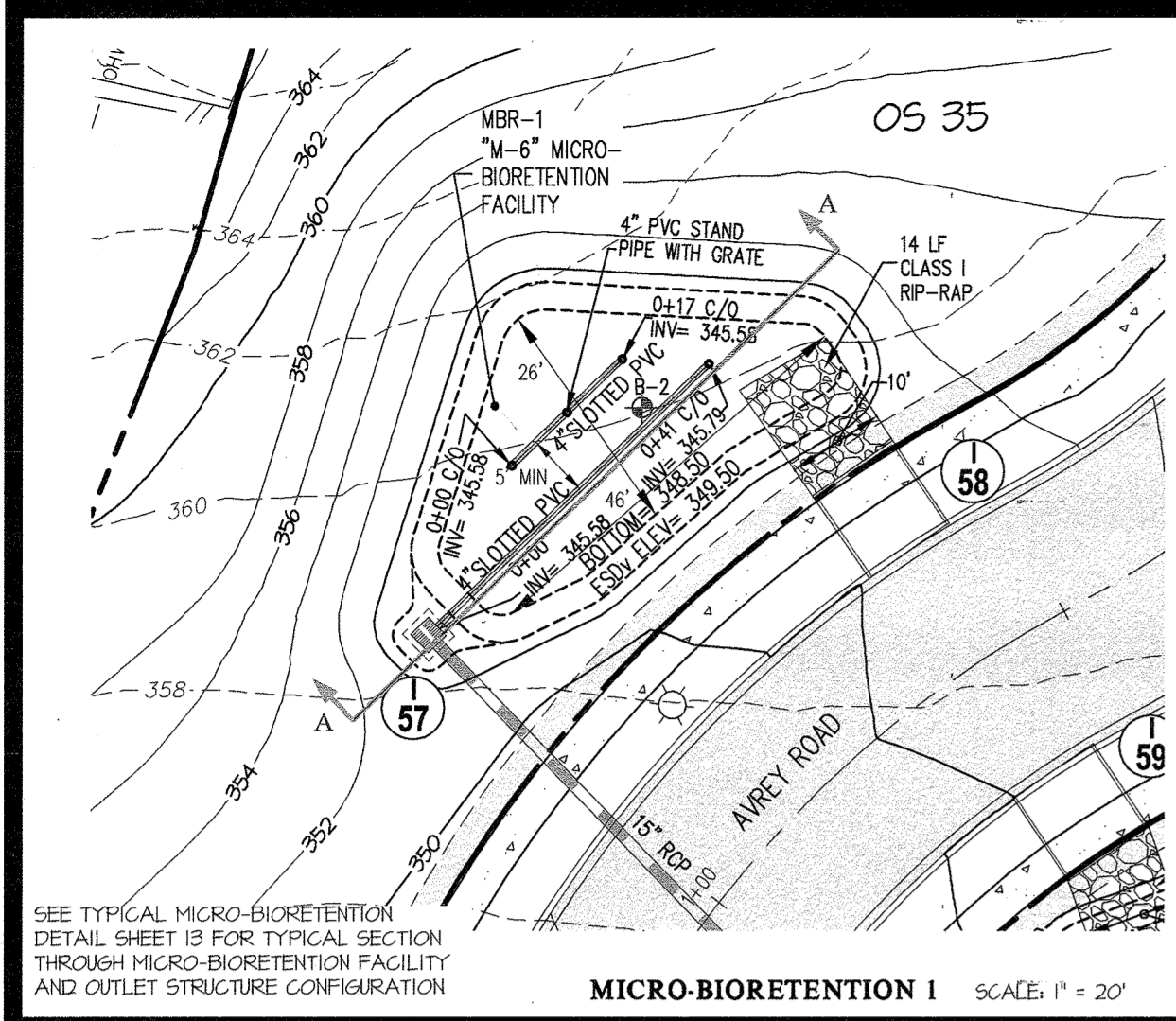
PROPOSED OVERALL SWM DRAINAGE AREA MAP
TERRAPIN WOODS
 LOTS 1-34 & OPEN SPACE LOTS 35-38 & NON-BUILDABLE PARCEL A
 A SUBDIVISION OF PARCELS 115 & 117, LIBER 15723 FOLIO 16 AND IN PART A RESUBDIVISION OF
 LOTS 4-7, BLOCK A "ELKRIDGE FARM-NO.2" PLAT BK. 122 PLAT NO. 62
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE NO.
1"=60'	R-SC	12039
DATE	TAX MAP - GRID	SHEET
MAR., 2018	24 - 11	11 OF 27

LEGEND

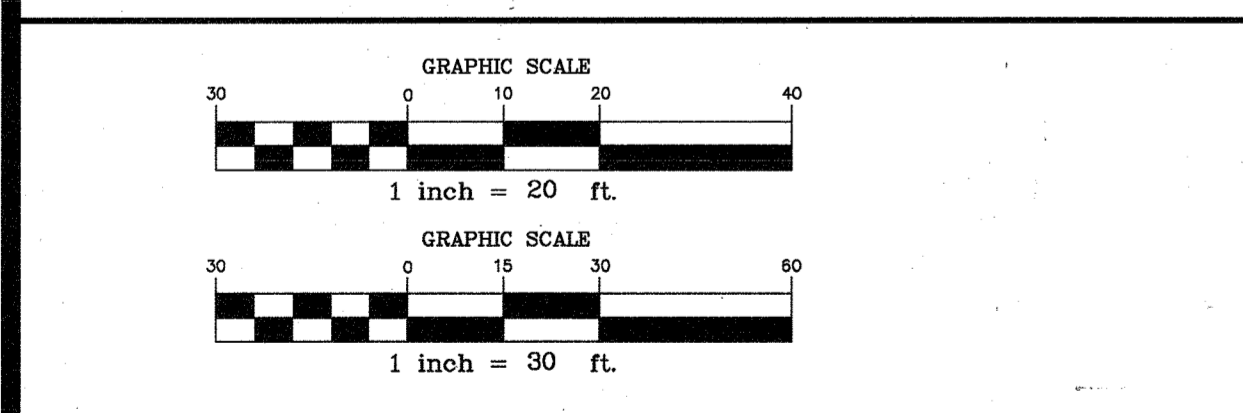
- DRAINAGE DIVIDE
- B' TYPE SOILS
- D' TYPE SOILS
- TC PATH
- ③ DRAINAGE AREA LABEL

PROPOSED DRAINAGE AREA SUMMARY



SYMBOL	QTY.	NAMES (BOTANICAL / SCIENTIFIC)	SIZE	ROOT/COMMENTS
SHRUBS (SEE SHEET 13 FOR SHRUB AND HERBACEOUS PLANTING DETAILS)				
25		CORNUS SERICEA 'RUBY' / RUBY RED OSIER DOGWOOD	18"-24" SFR.	CONTAINER
41		ITEA VIRGINICA 'HENRY'S GARNET' / VIRGINIA SHEETSPIRE	18"-24" SFR.	CONTAINER
HERBACEOUS (SEE SHEET 13 FOR SHRUB AND HERBACEOUS PLANTING DETAILS)				
055		PROVIDE AN EVEN MIX OF EACH PLANTS IN EACH BED: HERMERCALLIS 'STRAWBERRY CANDY' DAYLILY, HERMERCALLIS 'JOAN SENIOR' DAYLILY, RUDBECKIA HIRTA / BLACK-EYED SUSAN	18" O.C. (MAX)	CONTAINER
314		LOBELIA CARDINALIS / CARDINAL FLOWER	15" O.C. (MAX)	PLUGS/PLANTS (plant in single row at bottom of slope)
522		IRIS VERSICOLOR / BLUE FLAG	15" O.C. (MAX)	PLUGS/PLANTS

SIZE (INCHES)	TYPE	QUANTITY (L.F.)	REMARKS
4	SLOTTED PVC	340	
4	PVC	14	



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways
 Date: 4/25/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Chief, Division of Land Development
 Date: 7-6-18

Chief, Development Engineering Division
 Date: 5-1-18

GLWGUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3509 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
 BURTONSVILLE, MARYLAND 20866
 TEL: 301-421-4024 FAX: 301-421-4186

DATE	REVISION	BY	APPR.

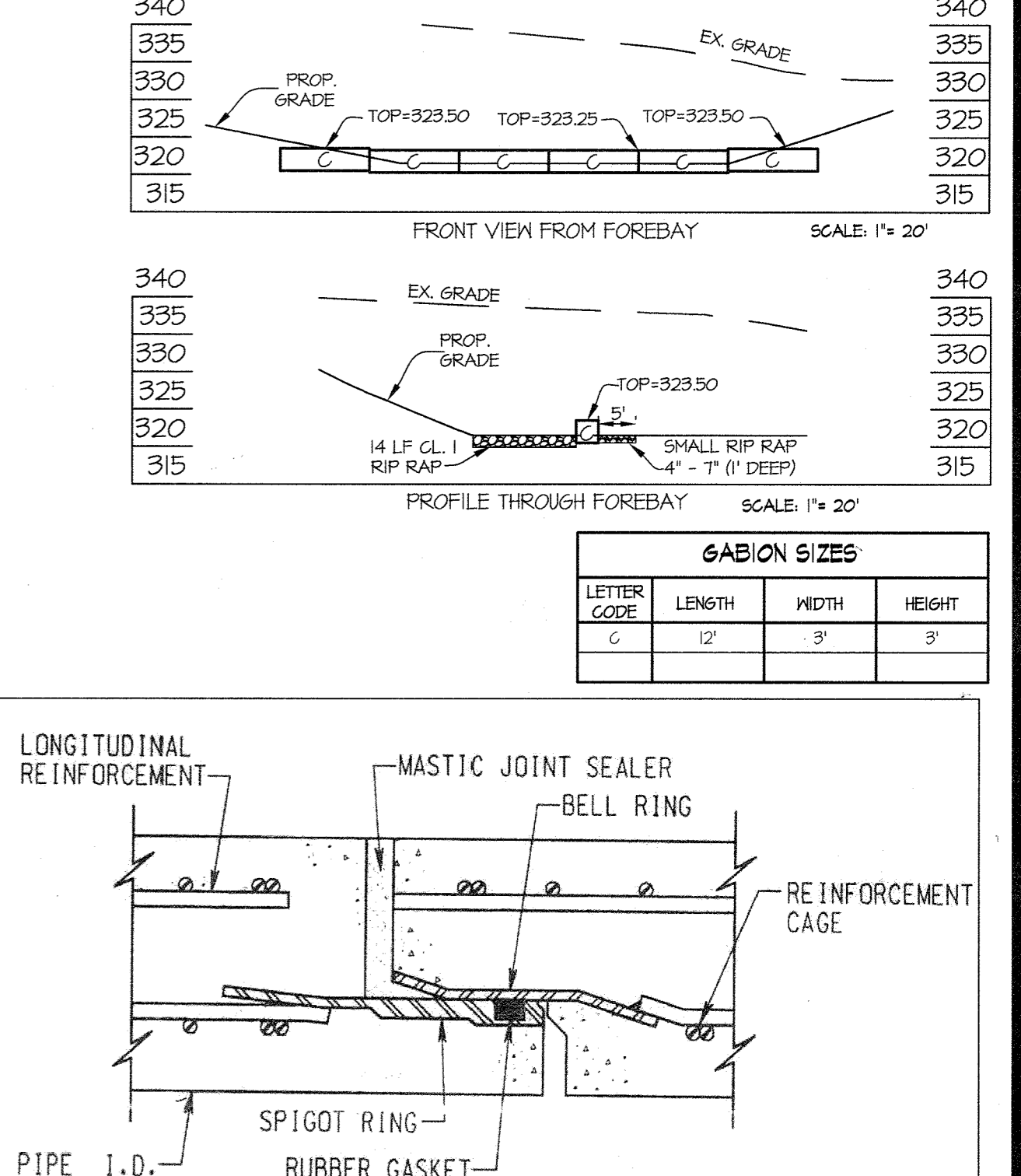
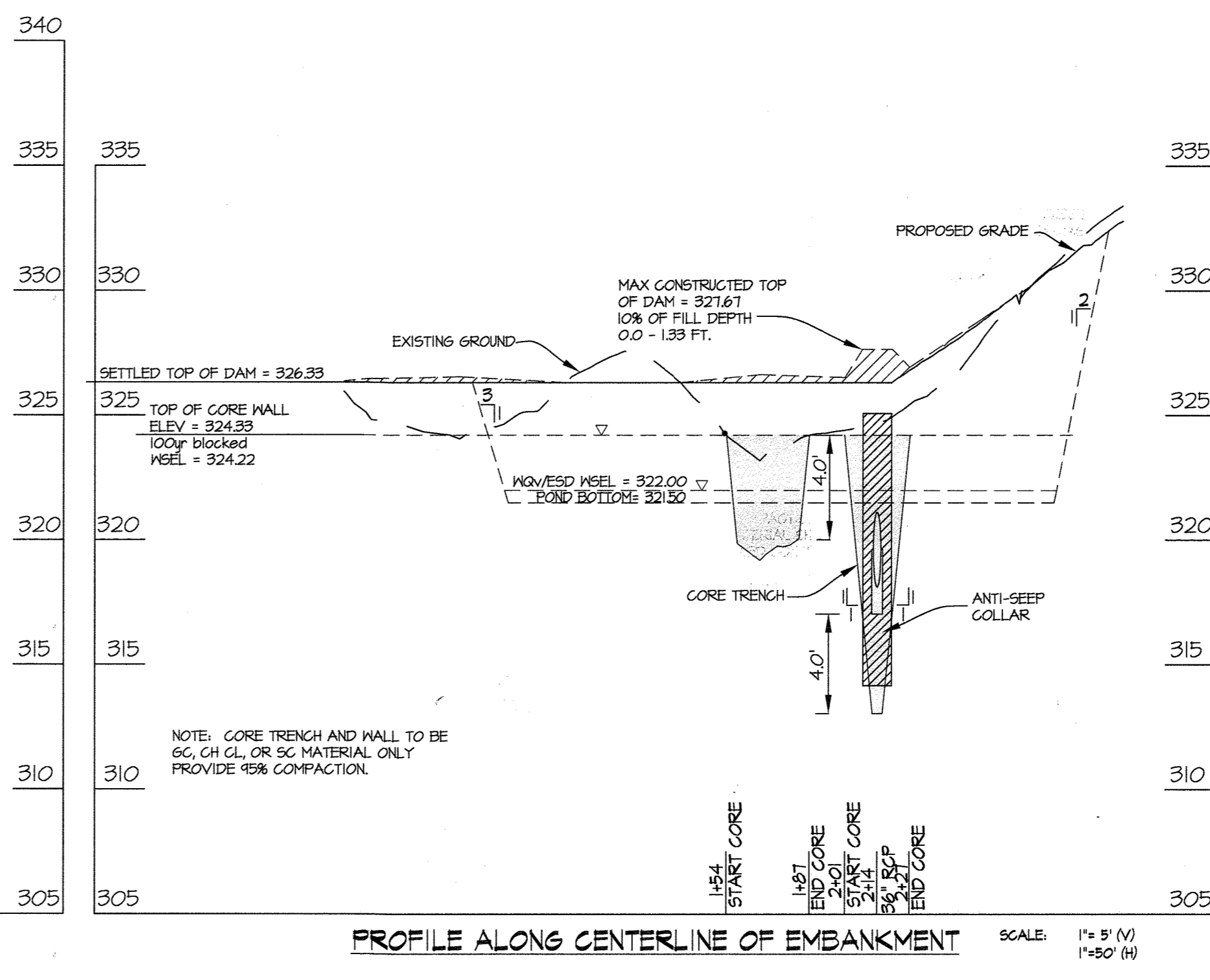
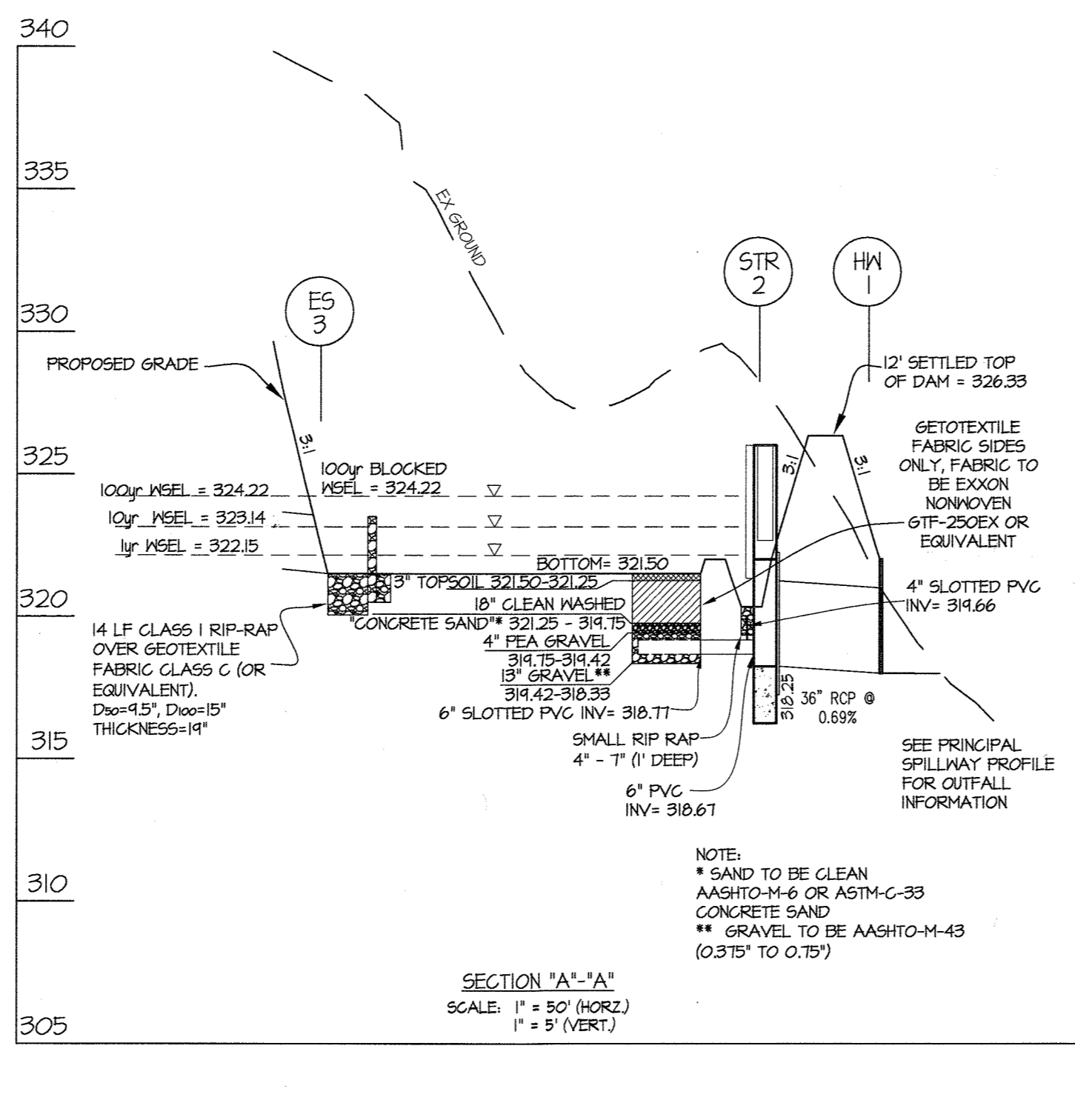
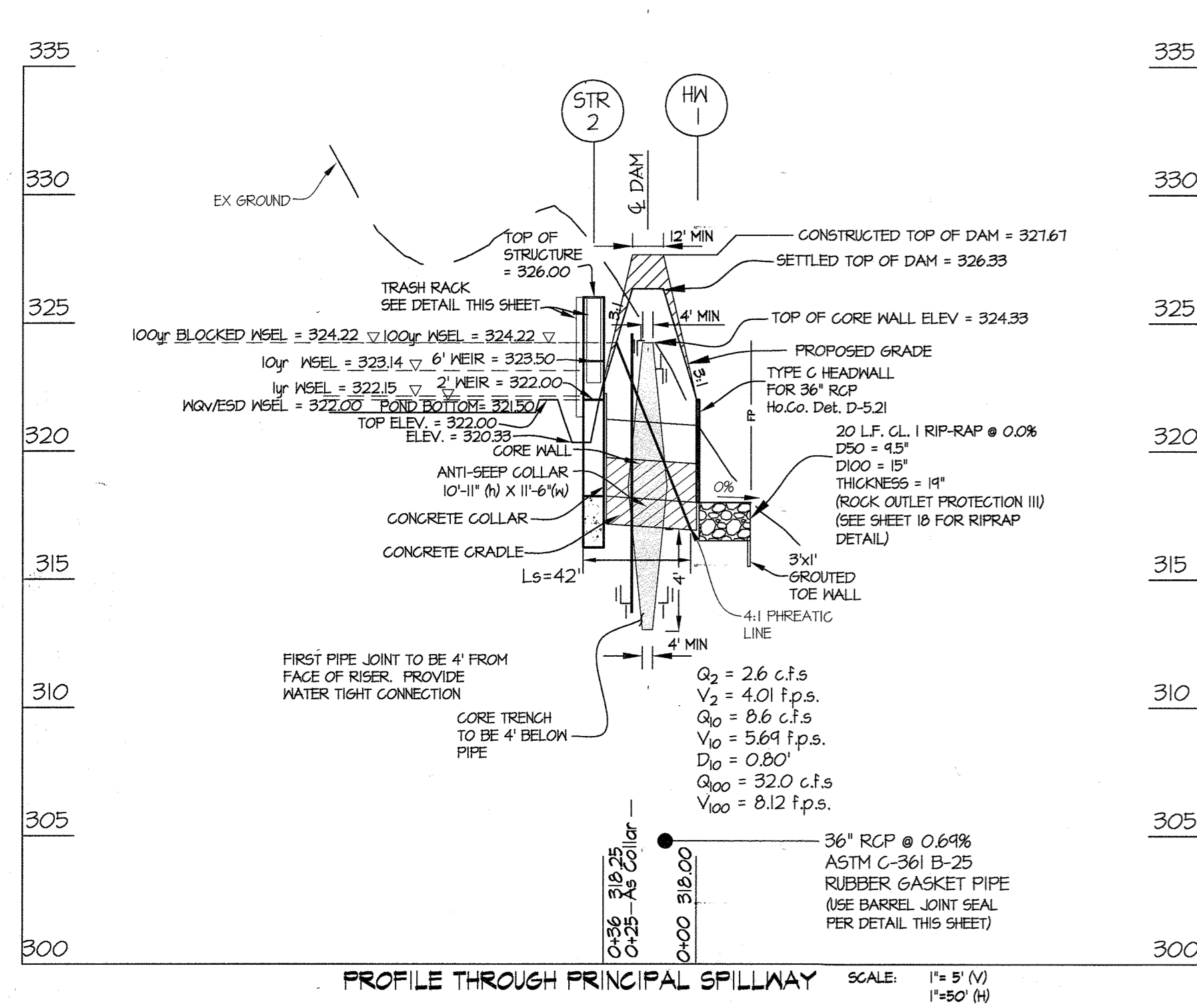
OWNER/
 PREPARED FOR:
 BVR INVESTMENTS LLC
 1377 GOLD MINE LANE
 EVERGREEN, CO 80439
 BRIAN ROBERTS
 240-481-9172

DEVELOPER:
 PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE PLANS 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. 12975
 EXPIRATION DATE: MAY 26, 2018
 4/2/18

ESD DETAILS

TERRAPIN WOODS
 LOTS 1-34 & OPEN SPACE LOTS 35-38 & NON-BUILDABLE PARCEL A
 A SUBDIVISION OF PARCELS 115 & 117, LIBER 15723 FOLIO 16 AND IN PART A RESUBDIVISION OF LOTS 4-7, BLOCK A "ELKRIDGE FARM-NO.2" PLAT BK. 122 PLAT NO. 62
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE NO.
AS SHOWN	R-SC	12039
DATE	TAX MAP - GRID	SHEET
MAR., 2018	24 - 11	12 OF 27



SWM POND SUMMARY TABLE

Type (per MDE) = Sand Filter (F)
MDE 316 Hazard Class A
Drainage Area To Facility:
Prop-2A = 1.70 acres, CN = 73, Tc = 0.21 hrs

MGV/ESDV Provided = 4530 cu-ft
MGV/ESDV MESEL = 322.00
CPV Provided = N/A

Rev Required: 2,256 cf
Rev Provided by Bioswales (2,303 cf)

100-YR Proposed (Prop-2A) Qp = 61.2 cfs
100-YR MESEL = 324.22
Blocked 100-YR Proposed (Prop-2A) Qp = 61.3 cfs
Blocked 100-YR MESEL = 324.22

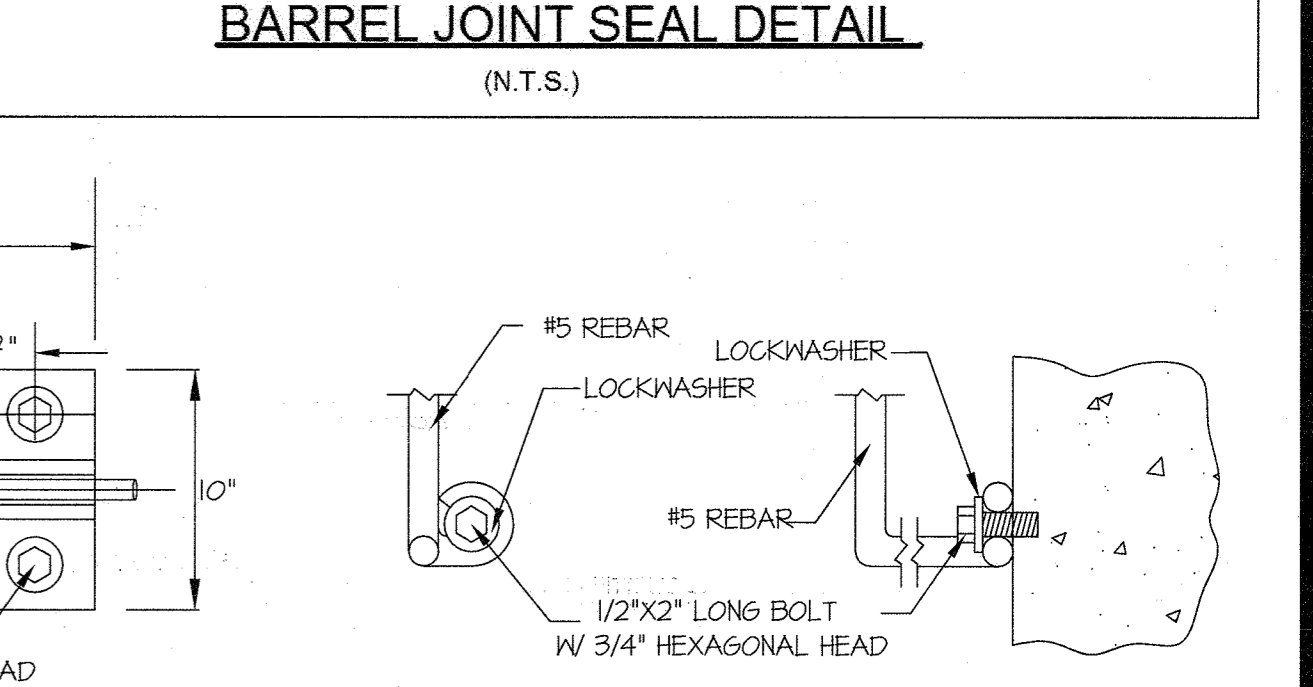
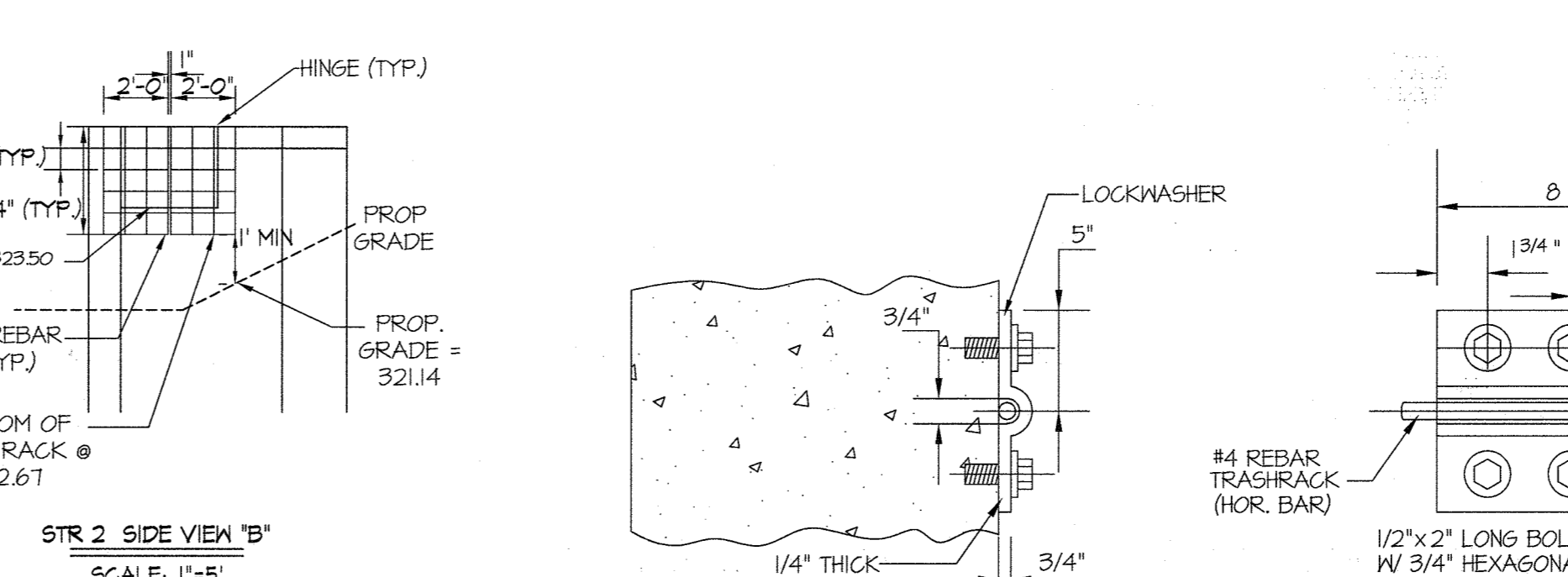
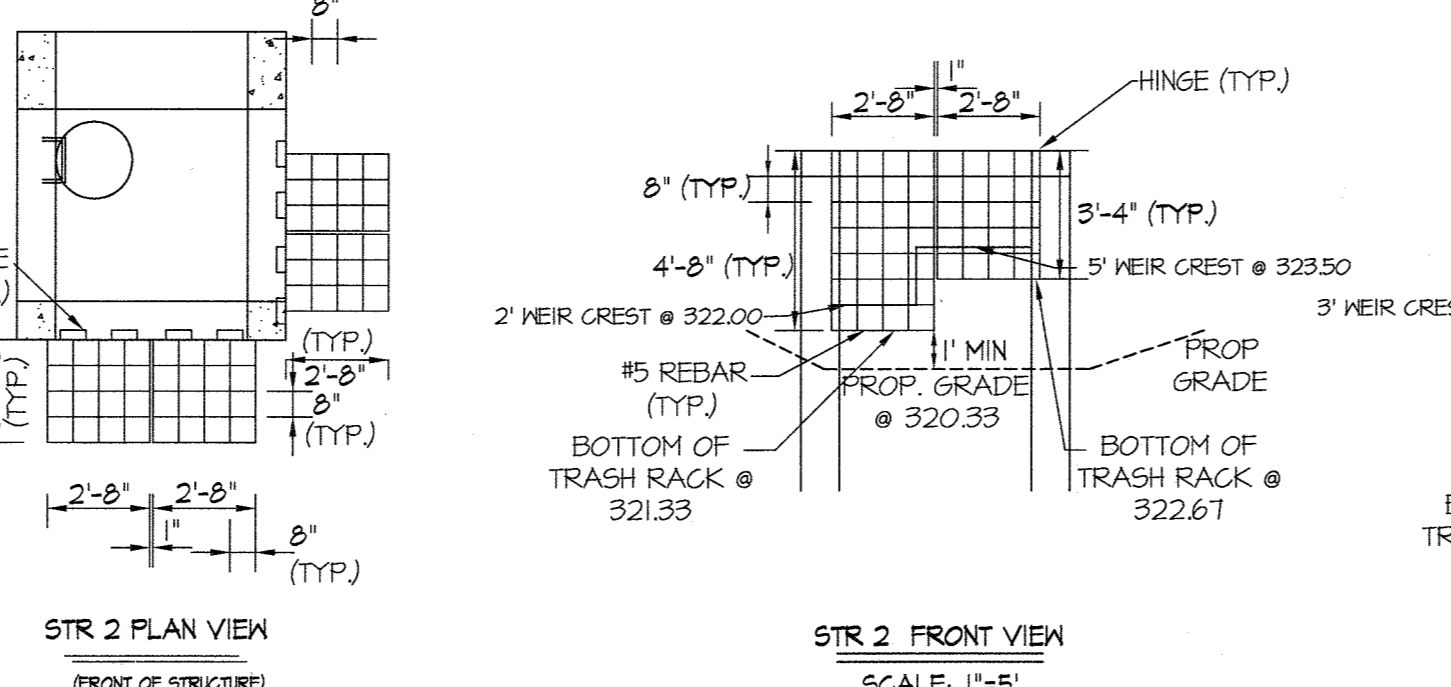
Outfall: Precast Riser Structure to 36" RCP
T.O.D. = 326.33

B.3.A SAND FILTER SPECIFICATIONS

- MATERIAL SPECIFICATIONS FOR SAND FILTERS
THE AVAILABLE MATERIALS FOR SAND FILTER CONSTRUCTION ARE DETAILED IN TABLE B.3.1. (SHEET 15)
- SAND FILTER TESTING SPECIFICATIONS
UNDERGROUND SAND FILTERS, FACILITIES WITHIN SENSITIVE GROUNDWATER AQUIFERS, AND FILTERS DESIGNED TO SERVE URBAN HOT SPOTS ARE TO BE TESTED FOR WATER TIGHTNESS PRIOR TO PLACEMENT OF FILTER MEDIA. ENTRANCES AND EXITS SHOULD BE PLUGGED AND THE SYSTEM COMPLETELY FILLED WITH WATER TO DEMONSTRATE WATER TIGHTNESS. WATER TIGHTNESS MEANS NO LEAKAGE FOR A PERIOD OF 8 HOURS.
ALL OVERFLOW WEIRS, MULTIPLE ORIFICES AND FLOW DISTRIBUTION SLOTS ARE TO BE FIELD-TESTED TO VERIFY ADEQUATE DISTRIBUTION OF FLOW.
- SAND FILTER CONSTRUCTION SPECIFICATIONS
PROVIDE SUFFICIENT MAINTENANCE ACCESS (I.E., 12-FOOT-WIDE ROAD WITH LEGALLY RESCORDED EASEMENT). VEGETATED ACCESS ROADS ARE TO BE A MAXIMUM OF 10% GRAVEL SLOPES TO 15% PAVED SLOPES TO 25%.
ABSOLUTELY NO RUNOFF IS TO ENTER THE FILTER UNTIL ALL CONTRIBUTING DRAINAGE AREAS HAVE BEEN STABILIZED.
SURFACE OF FILTER BED IS TO BE LEVEL.
ALL UNDERGROUND SAND FILTERS SHOULD BE CLEARLY DELINEATED WITH SIGNS SO THAT THEY MAY BE LOCATED WHEN MAINTENANCE IS DUE.
SURFACE SAND FILTERS MAY BE PLANTED WITH APPROPRIATE GRASSES; SEE APPENDIX A.
"POCKET" SAND FILTERS (AND RESIDENTIAL BIORETENTION FACILITIES TREATING AREAS LARGER THAN AN ACRE) SHALL BE SIZED WITH A STONE "WINDOW" THAT COVERS APPROXIMATELY 10% OF THE FILTER AREA. THIS "WINDOW" SHALL BE FILLED FEA GRAVEL (3/4 INCH STONE).

S.D. PIPE SUMMARY TABLE

SIZE (IN)	TYPE	QUANTITY (L.F.)	REMARKS
4	SLOTTED PVC	4	SCHEDULE 40
6	SLOTTED PVC	22	SCHEDULE 40
6	PVC	14	SCHEDULE 40
36	RCP	36	ASTM C-361 B-25



STRUCTURE SCHEDULE

NO.	TYPE	WIDTH (INSIDE)	TOP ELEVATION		INVERT ELEVATION		STANDARD DETAIL	OWNERSHIP & MAINTENANCE	NOTES
			UPPER	LOWER	UPPER	LOWER			
HN-1	TYPE C HEADWALL	--	322.00		318.00	terminal	HO. CO. D-5-21	PRIVATE	
STR-2	PER DETAIL	5'	326.00		318.25	PER DETAIL, SHEET 14		PRIVATE	

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN THE USDA, SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-318). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

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

[Signature] 4/4/18
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] 4/25/2018
Chief, Bureau of Highways DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
[Signature] 7-6-18
Chief, Division of Land Development DATE

[Signature] 5-1-18
Chief, Development Engineering Division DATE

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I SHALL ENGAGE A MARYLAND REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION, AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."

[Signature] 3/30/18
SIGNATURE OF DEVELOPER/BUILDER DATE

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, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

[Signature] 4/1/18
SIGNATURE OF ENGINEER DATE

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Tiber Woods, Boring No. B-20, Location: Ellicott City, Maryland, Job # 13135A

Elevation/Depth	SOIL SAMPLE OR SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	N.M.K.	SPT Blows	SPT Blow/foot	
							C	F
328.1	D	Brown, damp, very soft, SILT, some sand	SWM Pond 1-inch topsoil	6		5-21	10	30
327.5	D	Brown, damp, stiff, sandy SILT		6		9-11-12	23	
326.5	D	Yellow, white, brown and black, damp, hard, sandy SILT, little decomposed rock fragments	No groundwater encountered while drilling	13		8-11-15	20	
325.5	D			5		50"	50"	
324.5	D			14		29-27-30	57	
323.5	D			10		25-32-35	67	

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Tiber Woods, Boring No. B-21, Location: Ellicott City, Maryland, Job # 13135A

Elevation/Depth	SOIL SAMPLE OR SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	N.M.K.	SPT Blows	SPT Blow/foot	
							C	F
328.1	D	Brown, damp, medium stiff, SILT, some sand	SWM Pond 1-inch topsoil	7		2-3-3	6	
327.5	D	Brown, damp, dense, silty SAND		12		17-18-20	38	
326.5	D	Brown, damp, dense, silty SAND, some rock fragments	No groundwater encountered while drilling	14		21-16-27	43	
325.5	D		Auger refusal at 7' 0" below 30" towards Frederick Road and encountered refusal at 8' 0"					
324.5	D		Bottom of boring at 14.4 feet					

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Tiber Woods, Boring No. B-22, Location: Ellicott City, Maryland, Job # 13135A

Elevation/Depth	SOIL SAMPLE OR SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	N.M.K.	SPT Blows	SPT Blow/foot	
							C	F
328.1	D	Brown, damp, medium stiff to stiff sandy SILT	SWM Pond 1-inch topsoil	7		2-3-4	6	
327.5	D			10		9-12-15	27	
326.5	D	Brown, damp, very dense, silty SAND and rock fragments	No groundwater encountered while drilling	10		8-12-13	25	
325.5	D			5		50"	50"	
324.5	D			7		44-50-5"	50"	
323.5	D		Backfilled after 24 hours					
322.5	D		Bottom of boring at 13.9 feet					

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Tiber Woods, Boring No. B-23, Location: Ellicott City, Maryland, Job # 13135A

Elevation/Depth	SOIL SAMPLE OR SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	N.M.K.	SPT Blows	SPT Blow/foot	
							C	F
328.1	D	Brown, damp, loose, silty SAND	Micro-Boosteron 1-inch topsoil	8		2-1-4	5	
327.5	D	White, yellow, brown and black, damp, dense to very dense, silty SAND, little decomposed rock fragments	No groundwater encountered while drilling	10		17-20-23	43	
326.5	D			12		19-27-39	66	
325.5	D					17-24-31	55	
324.5	D		Backfilled after 24 hours					
323.5	D		Bottom of boring at 13.9 feet					

GLWGUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 FAX: 410-860-1820 DC/VA: 301-886-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.

OWNER/PREPARED FOR:
BVR INVESTMENTS LLC
1377 GOLD MINE LANE
EVERGREEN, CO 80439

DEVELOPER:
BRIAN ROBERTS
240-461-9172

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975

EXPIRATION DATE: MAY 26, 2018

[Signature] 4/2/18

STORMWATER MANAGEMENT POND DETAILS

TERRAPIN WOODS
LOTS 1-34 & OPEN SPACE LOTS 35-38 & NON-BUILDABLE PARCEL A
A SUBDIVISION OF PARCELS 115 & 117, LIBER 15723 FOLIO 16 AND IN PART A RESUBDIVISION OF LOTS 4-7, BLOCK A "ELKRIK FARM-NO.2" PLAT BK. 122 PLAT NO. 62
ELECTION DISTRICT No. 2

SCALE	ZONING	G. L. W. FILE NO.
AS SHOWN	R-SC	12039
DATE	TAX MAP - GRID	SHEET
MAR., 2018	24 - 11	15 OF 27

SEDIMENT CONTROL LEGEND

- 400 --- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING TREELINE
- SB STREAM BUFFER
- FP 100 YEAR FLOODPLAIN
- LIMIT OF DISTURBANCE
- EARTH DIKE
- TIME OF CONCENTRATION (EXISTING)
- TIME OF CONCENTRATION (INTERIM)
- SF PROPOSED SILT FENCE
- SSF PROPOSED SUPERSILT FENCE
- TEMPORARY SMALE
- SCE STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED TEMPORARY STOCKPILE AREA
- GM GABION INFLOW PROTECTION
- RRP RIPRAP INFLOW PROTECTION
- EROSION CONTROL MATTING PER DETAIL B-4-6-C (SHEAR STRESS ≤ 1.0 LB/SF)
- EROSION CONTROL MATTING PER DETAIL B-4-6-B (SHEAR STRESS ≤ 1.5 LB/SF)
- HIGHLY ERODIBLE SOIL (PER HSCD, SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K, GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.)
- CIP CURB INLET PROTECTION
- SIP STANDARD INLET PROTECTION (TYPE B)

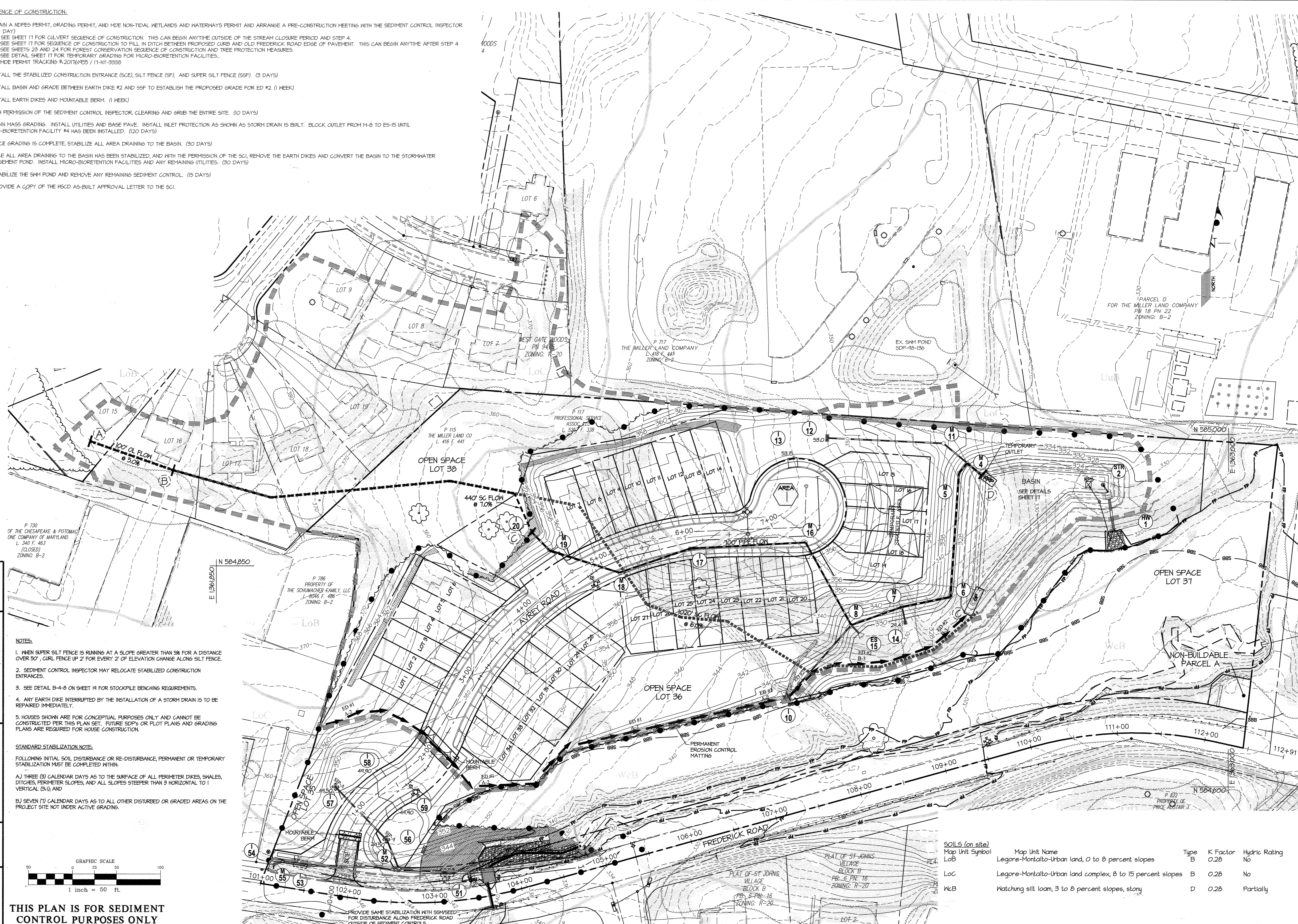
DRAINAGE AREA INFORMATION

CONDITION	AREA NO.	AREA (AC.)	CN	T _C (HOURS)
EXISTING	1	12.75	77	0.24
INTERIM	1	12.75	87	0.21

T_{CO}S
 AREA: 3360 SF
 STORAGE NEEL: 331.75
 STORAGE VOLUME REQUIRED: 164 CF
 STORAGE VOLUME PROVIDED: 170 CF

SEQUENCE OF CONSTRUCTION

- OBTAIN A NIDES PERMIT, GRADING PERMIT, AND MDE NON-TIDAL WETLANDS AND WATERWAYS PERMIT AND ARRANGE A PRE-CONSTRUCTION MEETING WITH THE SEDIMENT CONTROL INSPECTOR (SCI) (1 DAY)
 NOTE: SEE SHEET 17 FOR CULVERT SEQUENCE OF CONSTRUCTION. THIS CAN BEGIN ANYTIME OUTSIDE OF THE STREAM CLOSURE PERIOD AND STEP 4. SEE SHEET 17 FOR SEQUENCE OF CONSTRUCTION TO FILL IN DITCH BETWEEN PROPOSED CURB AND OLD FREDERICK ROAD EDGE OF PAVEMENT. THIS CAN BEGIN ANYTIME AFTER STEP 4. SEE SHEETS 23 AND 24 FOR FOREST CONSERVATION SEQUENCE OF CONSTRUCTION AND TREE PROTECTION MEASURES. SEE DETAIL SHEET 17 FOR TEMPORARY GRADING FOR MICRO-BIORETENTION FACILITIES. MDE PERMIT TRACKING #20170455 / 17-NY-3536
- INSTALL THE STABILIZED CONSTRUCTION ENTRANCE (SCE), SILT FENCE (SF), AND SUPER SILT FENCE (SSF). (3 DAYS)
- INSTALL BASIN AND GRADE BETWEEN EARTH DIKE #2 AND SSF TO ESTABLISH THE PROPOSED GRADE FOR ED #2. (1 WEEK)
- INSTALL EARTH DIKES AND MOUNTABLE BERM. (1 WEEK)
- WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, CLEARING AND GRUB THE ENTIRE SITE. (10 DAYS)
- BEGIN MASS GRADING. INSTALL UTILITIES AND BASE PAVE. INSTALL INLET PROTECTION AS SHOWN AS STORM DRAIN IS BUILT. BLOCK OUTLET FROM M-8 TO ES-15 UNTIL MICRO-BIORETENTION FACILITY #4 HAS BEEN INSTALLED. (120 DAYS)
- ONCE GRADING IS COMPLETE, STABILIZE ALL AREA DRAINING TO THE BASIN. (30 DAYS)
- ONCE ALL AREA DRAINING TO THE BASIN HAS BEEN STABILIZED, AND WITH THE PERMISSION OF THE SCI, REMOVE THE EARTH DIKES AND CONVERT THE BASIN TO THE STORMWATER MANAGEMENT POND. INSTALL MICRO-BIORETENTION FACILITIES AND ANY REMAINING UTILITIES. (30 DAYS)
- STABILIZE THE SWM POND AND REMOVE ANY REMAINING SEDIMENT CONTROL. (15 DAYS)
- PROVIDE A COPY OF THE HSCD AS-BUILT APPROVAL LETTER TO THE SCI.



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

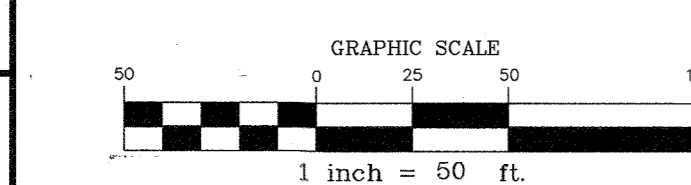
DEVELOPER'S/BUILDER'S CERTIFICATE
 I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I SHALL ENGAGE A MARYLAND REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION, AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR IDEP.

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, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways
 Date: 4/25/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Chief, Division of Land Development
 Date: 7-6-18

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Chief, Development Engineering Division
 Date: 5-1-18



THIS PLAN IS FOR SEDIMENT CONTROL PURPOSES ONLY

DATE	REVISION	BY	APPR.

- NOTES:**
- WHEN SUPER SILT FENCE IS RUNNING AT A SLOPE GREATER THAN 5% FOR A DISTANCE OVER 50', CURB FENCE UP 2' FOR EVERY 2' OF ELEVATION CHANGE ALONG SILT FENCE.
 - SEDIMENT CONTROL INSPECTOR MAY RELOCATE STABILIZED CONSTRUCTION ENTRANCES.
 - SEE DETAIL B-4-6 ON SHEET 17 FOR STOCKPILE BENCHING REQUIREMENTS.
 - ANY EARTH DIKE INTERRUPTED BY THE INSTALLATION OF A STORM DRAIN IS TO BE REPAIRED IMMEDIATELY.
 - HOUSES SHOWN ARE FOR CONCEPTUAL PURPOSES ONLY AND CANNOT BE CONSTRUCTED PER THIS PLAN SET. FUTURE SDPs OR PLOT PLANS AND GRADING PLANS ARE REQUIRED FOR HOUSE CONSTRUCTION.

STANDARD STABILIZATION NOTE:

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

- A) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SMALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
- B) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

PROVIDE SAME STABILIZATION WITH SMALE/SEED FOR DISTURBANCE ALONG FREDERICK ROAD OUTSIDE OF SEDIMENT CONTROLS

OWNER/ PREPARED FOR: BVR INVESTMENTS LLC 1377 GOLD MINE LANE EVERGREEN, CO 80439 BRIAN ROBERTS 240-481-9172	DEVELOPER:	PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE PLANS 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. 12975 EXPIRATION DATE: MAY 26, 2018 4/2/18
---	-------------------	---

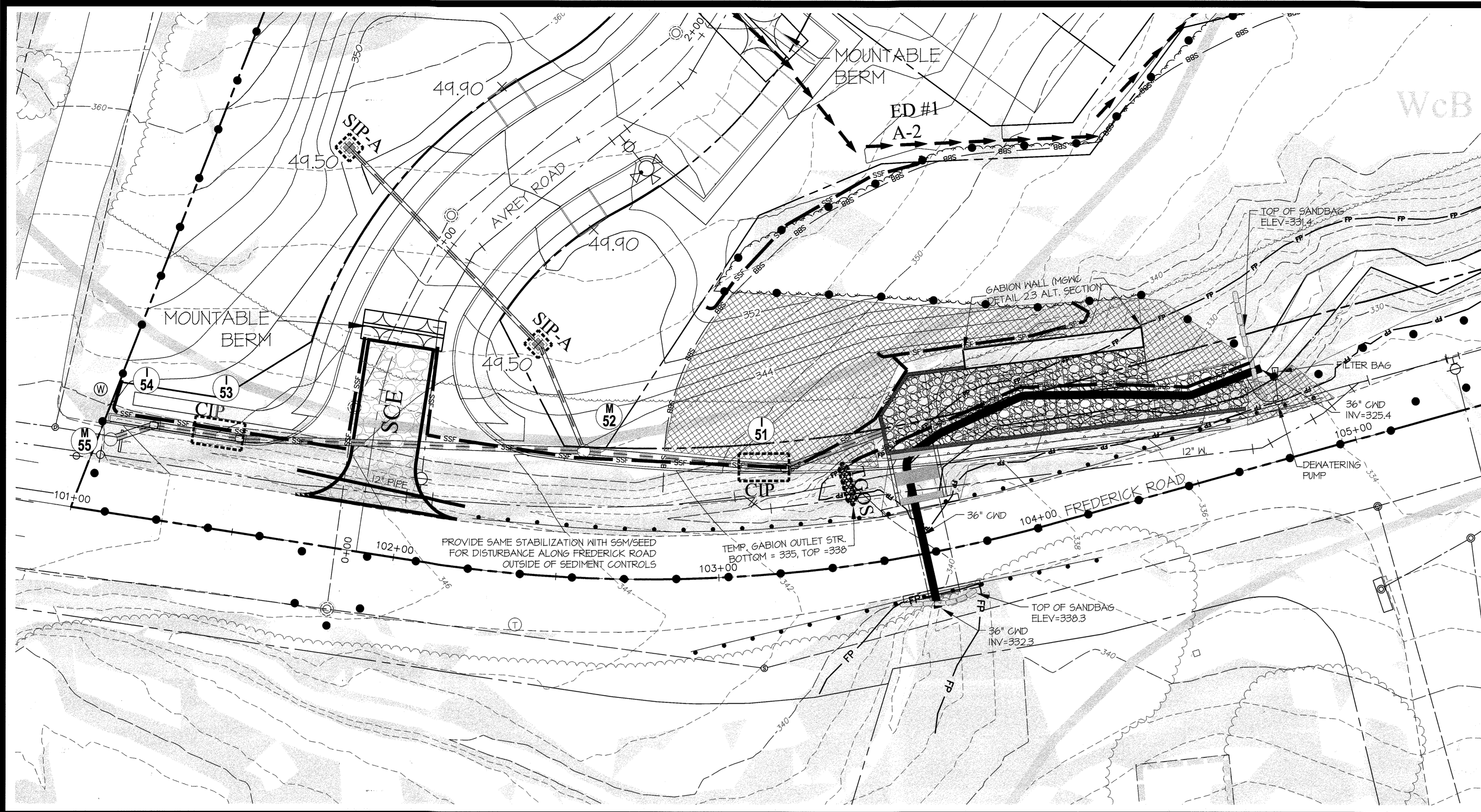
SEDIMENT CONTROL PLAN and DRAINAGE AREA MAP

TERRAPIN WOODS
 LOTS 1-34 & OPEN SPACE LOTS 35-38 & NON-BUILDABLE PARCEL A
 A SUBDIVISION OF PARCELS 115 & 117, LIBER 15723 FOLIO 16 AND IN PART A RESUBDIVISION OF LOTS 4-7, BLOCK A "ELKRIDGE FARM-NO.2" PLAT BK. 122 PLAT NO. 62
 HOWARD COUNTY, MARYLAND

SCALE: 1"=50'
 ZONING: R-SC
 G. L. W. FILE No. 12039

DATE: MAR., 2018
 TAX MAP - GRID: 24 - 11
 SHEET: 16 OF 27

SOILS (on site)	Map Unit Name	Type	K Factor	Hydic Rating
LoB	Legore-Montalto-Urban land, 0 to 8 percent slopes	B	0.28	No
LoC	Legore-Montalto-Urban land complex, 8 to 15 percent slopes	B	0.28	No
WcB	Waching silt loam, 3 to 8 percent slopes, stony	D	0.28	Partially



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

1) NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.

2) 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.

3) 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.

4) 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.

5) 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.

6) RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.

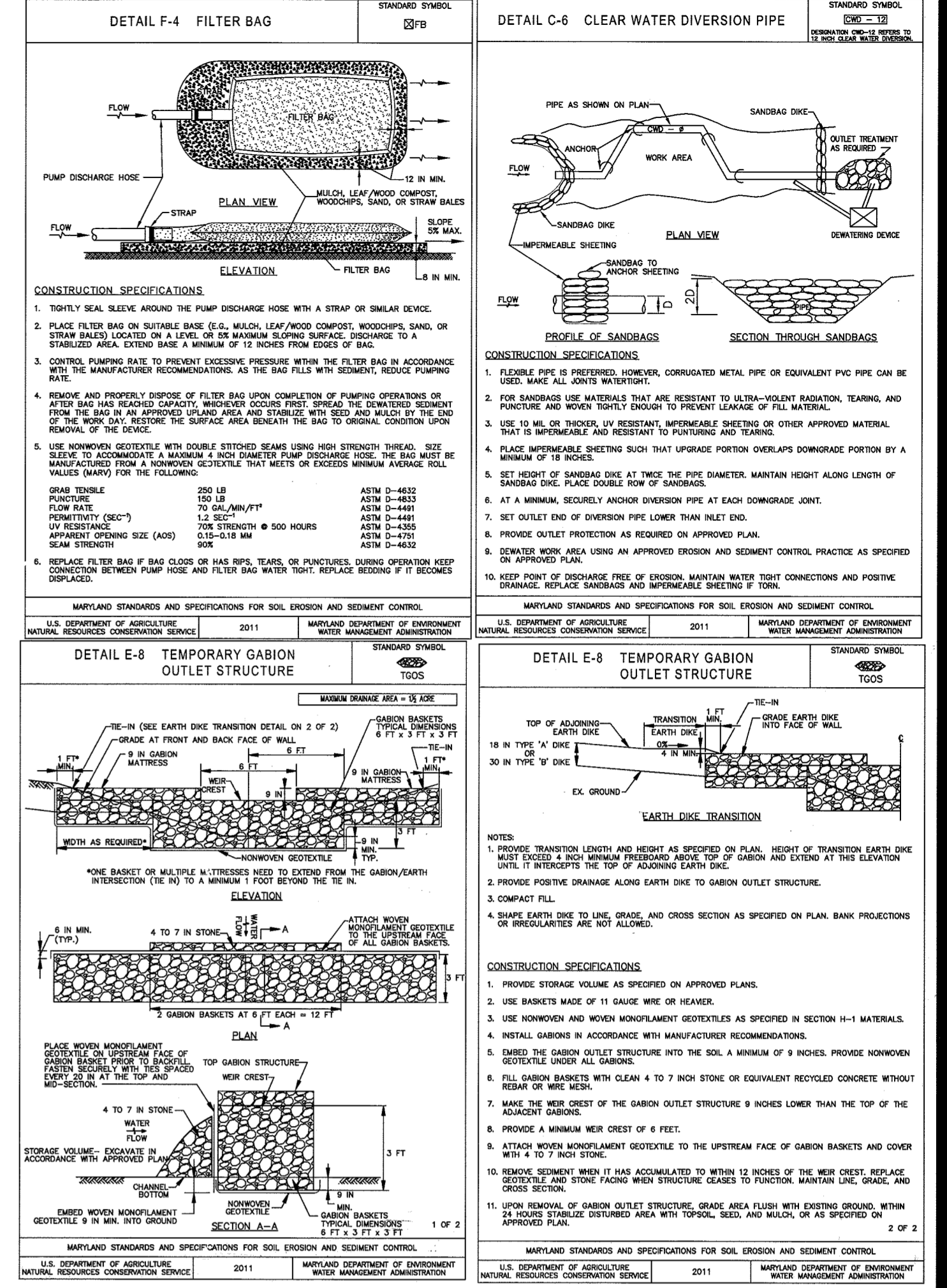
7) ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL REGRASS (LOLUM MULTIFLORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM SP.), OATS (AVENA SP.), AND/OR RYE (SECALE GRAEAL). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE 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 PESCUE 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.

8) AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST-CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.

9) TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM. USE 1 WATER: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR.

10) STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.

11) 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.



SEDIMENT CONTROL FOR CULVERT SCALE: 1" = 20'

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

[Signature] 4/1/18
HOWARD SOIL CONSERVATION DISTRICT DATE

DEVELOPER'S/BUILDER'S CERTIFICATE
I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I SHALL ENGAGE A MARYLAND REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION, AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

[Signature] 3/30/18
SIGNATURE OF DEVELOPER/BUILDER DATE

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, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

[Signature] 4/2/18
SIGNATURE OF ENGINEER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] 4/25/2018
Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
[Signature] 7-6-18
Chief, Division of Land Development Date

[Signature] 5-1-18
Chief, Development Engineering Division Date

SEQUENCE OF CONSTRUCTION FOR CULVERT EXTENSION:

NOTE: STREAM IS A USE I STREAM. NO DISTURBANCE TO STREAM BANKS IS ALLOWED BETWEEN MARCH 1 - JUNE 15. NOTIFY MDE'S COMPLIANCE PROGRAM 5 DAYS BEFORE STARTING AUTHORIZED WORK AT 301-665-2250. ANY DISTURBANCE OUTSIDE OF THE LIMITS OF THE SEDIMENT CONTROLS MUST BE STABILIZED AT THE END OF EACH DAY.

1. INSTALL SUPER SILT FENCE (SSF) AS SHOWN. (2 DAYS)
2. GRADE AREA BEHIND (UPHILL) OF SSF. (10 DAYS)
3. INSTALL THE CLEAR WATER DIVERSION PIPE WITH SAND BAGS AS SHOWN. (3 DAYS)
4. GRADE THE AREA WITHIN THE VICINITY OF THE HEADWALL. (3 DAYS)
5. INSTALL THE HEADWALL, BOX CULVERT, GABION WALL, STORM DRAIN AND 12" WATER. (30 DAYS)
6. INSTALL RIP RAP. (5 DAYS)
7. STABILIZE THE AREA OF DISTURBANCE. (2 DAYS)
8. ONCE THE AREA HAS BEEN STABILIZED AND WITH THE PERMISSION OF THE SOI, REMOVE THE CLEAR WATER DIVERSION SYSTEM. (2 DAYS)

SEQUENCE OF CONSTRUCTION FOR FILLING IN DITCH BETWEEN FREDERICK ROAD EX. EDGE OF PAVEMENT AND PROPOSED CURB:

ANY DISTURBANCE OUTSIDE OF THE LIMITS OF THE SEDIMENT CONTROLS MUST BE STABILIZED AT THE END OF EACH DAY.

1. INSTALL STORM DRAIN FROM HEADWALL TO M-55. IF HEADWALL AND RIP RAP ARE NOT INSTALLED YET, PROVIDE TEMPORARY OUTFALL AT STREAM WITH 10 LF OF ROCK OUTLET PROTECTION, TYPE 2 (5 DAYS)
2. INSTALL TEMPORARY ASPHALT BERM ALONG EXISTING EDGE OF PAVEMENT TO PREVENT ROAD RUNOFF FROM ENTERING WORK AREA (1 DAY)
3. INSTALL THE TEMPORARY GABION OUTLET STRUCTURE (TGOS). (1 DAY)
4. GRADE THE AREA BETWEEN THE EX. EDGE OF PAVEMENT AND PROPOSED CURB. REMOVE 12" PIPE UNDER STABILIZED CONSTRUCTION ENTRANCE AND RELOCATED STABILIZED CONSTRUCTION AS NECESSARY. INSTALL INLET PROTECTION AT I-55 AND I-51 ONCE THE AREA HAS BEEN BROUGHT TO GRADE. (3 DAYS)
5. STABILIZE THE WORK AREA. (2 DAYS)
6. ONCE ALL OF THE AREA TO THE TGOS HAS BEEN FULLY STABILIZED REMOVE THE TGOS, DO ANY REMAINING GRADING IN THE VICINITY OF THE TGOS AND IMMEDIATELY STABILIZE. (2 DAYS)

NOTES:

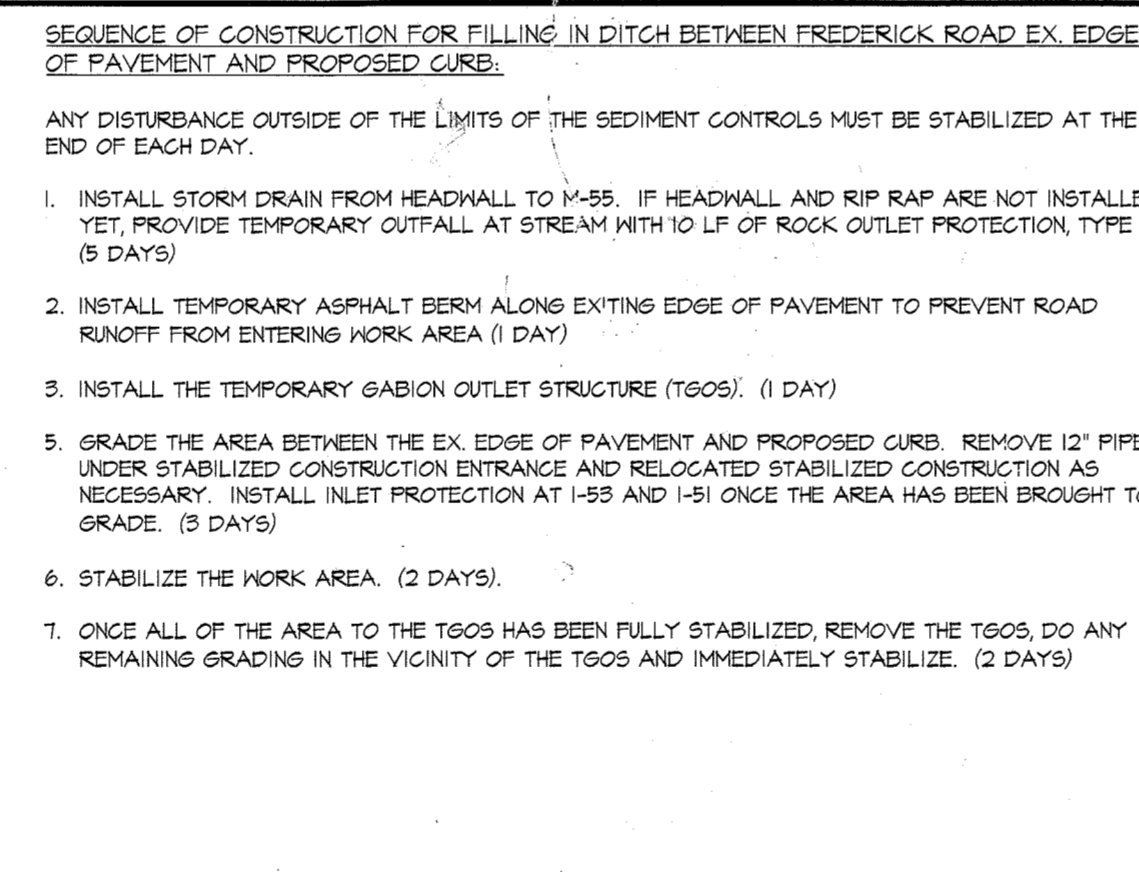
1. WHEN SUPER SILT FENCE IS RUNNING AT A SLOPE GREATER THAN 5% FOR A DISTANCE OVER 50', CURL FENCE UP 2' FOR EVERY 2' OF ELEVATION CHANGE ALONG SILT FENCE.
2. SEDIMENT CONTROL INSPECTOR MAY RELOCATE STABILIZED CONSTRUCTION ENTRANCES.
3. SEE DETAIL B-4-8 ON SHEET 14 FOR STOCKPILE BENCHING REQUIREMENTS.
4. ANY EARTH DIKE INTERRUPTED BY THE INSTALLATION OF A STORM DRAIN IS TO BE REPAIRED IMMEDIATELY.

STANDARD STABILIZATION NOTE:

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

A) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SNALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 (VERTICAL), (3:1), AND

B) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.



SEQUENCE OF CONSTRUCTION FOR FILLING IN DITCH BETWEEN FREDERICK ROAD EX. EDGE OF PAVEMENT AND PROPOSED CURB:

ANY DISTURBANCE OUTSIDE OF THE LIMITS OF THE SEDIMENT CONTROLS MUST BE STABILIZED AT THE END OF EACH DAY.

1. INSTALL STORM DRAIN FROM HEADWALL TO M-55. IF HEADWALL AND RIP RAP ARE NOT INSTALLED YET, PROVIDE TEMPORARY OUTFALL AT STREAM WITH 10 LF OF ROCK OUTLET PROTECTION, TYPE 2 (5 DAYS)
2. INSTALL TEMPORARY ASPHALT BERM ALONG EXISTING EDGE OF PAVEMENT TO PREVENT ROAD RUNOFF FROM ENTERING WORK AREA (1 DAY)
3. INSTALL THE TEMPORARY GABION OUTLET STRUCTURE (TGOS). (1 DAY)
4. GRADE THE AREA BETWEEN THE EX. EDGE OF PAVEMENT AND PROPOSED CURB. REMOVE 12" PIPE UNDER STABILIZED CONSTRUCTION ENTRANCE AND RELOCATED STABILIZED CONSTRUCTION AS NECESSARY. INSTALL INLET PROTECTION AT I-55 AND I-51 ONCE THE AREA HAS BEEN BROUGHT TO GRADE. (3 DAYS)
5. STABILIZE THE WORK AREA. (2 DAYS)
6. ONCE ALL OF THE AREA TO THE TGOS HAS BEEN FULLY STABILIZED REMOVE THE TGOS, DO ANY REMAINING GRADING IN THE VICINITY OF THE TGOS AND IMMEDIATELY STABILIZE. (2 DAYS)

NOTES:

1. WHEN SUPER SILT FENCE IS RUNNING AT A SLOPE GREATER THAN 5% FOR A DISTANCE OVER 50', CURL FENCE UP 2' FOR EVERY 2' OF ELEVATION CHANGE ALONG SILT FENCE.
2. SEDIMENT CONTROL INSPECTOR MAY RELOCATE STABILIZED CONSTRUCTION ENTRANCES.
3. SEE DETAIL B-4-8 ON SHEET 14 FOR STOCKPILE BENCHING REQUIREMENTS.
4. ANY EARTH DIKE INTERRUPTED BY THE INSTALLATION OF A STORM DRAIN IS TO BE REPAIRED IMMEDIATELY.

STANDARD STABILIZATION NOTE:

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

A) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SNALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 (VERTICAL), (3:1), AND

B) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

THIS PLAN IS FOR SEDIMENT CONTROL PURPOSES ONLY

GLWGUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-589-2524 FAX: 301-421-4186

DATE REVISION BY APPR.

OWNER/
PREPARED FOR:
BVR INVESTMENTS LLC
1377 GOLD MINE LANE
EVERGREEN, CO 80439

DEVELOPER:
BRIAN ROBERTS
240-461-9172

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 12975
EXPIRATION DATE: MAY 26, 2018

TERRAPIN WOODS
LOTS 1-34 & OPEN SPACE LOTS 35-38 & NON-BUILDABLE PARCEL A
A SUBDIVISION OF PARCELS 115 & 117, LIBER 15723 FOLIO 16 AND IN PART A RESUBDIVISION OF LOTS 4-7, BLOCK A "ELKCRIDGE FARM-NO.2" PLAT BK. 122 PLAT NO. 62
ELECTION DISTRICT No. 2

SCALE ZONING G. L. W. FILE NO.
AS SHOWN R-SC 12039

DATE TAX MAP - GRID SHEET
MAR., 2018 24 - 11 17 OF 27

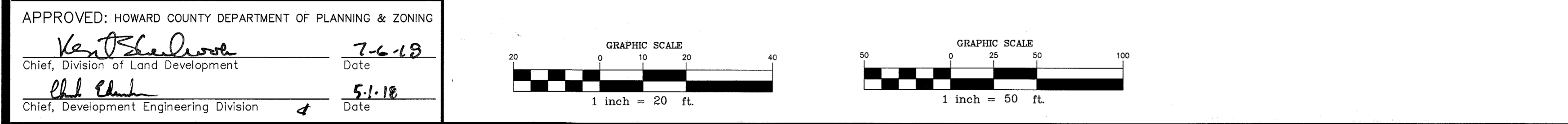
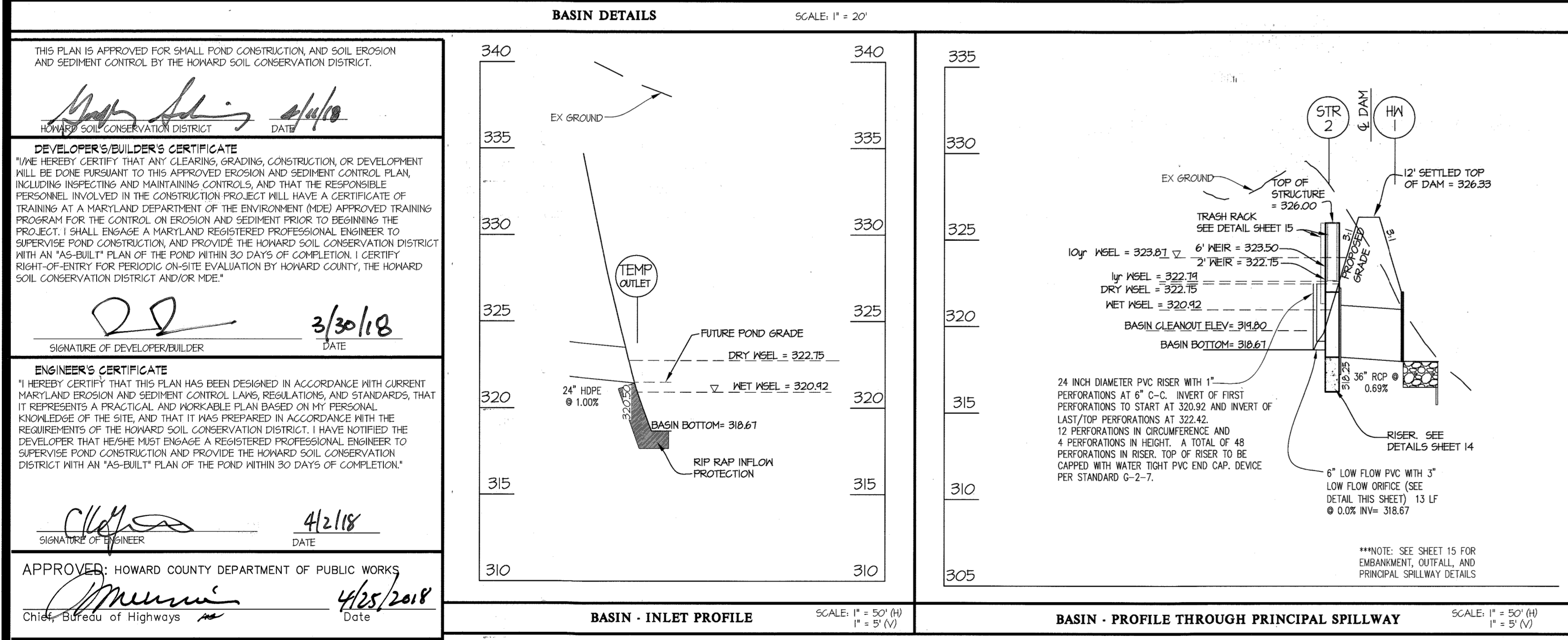
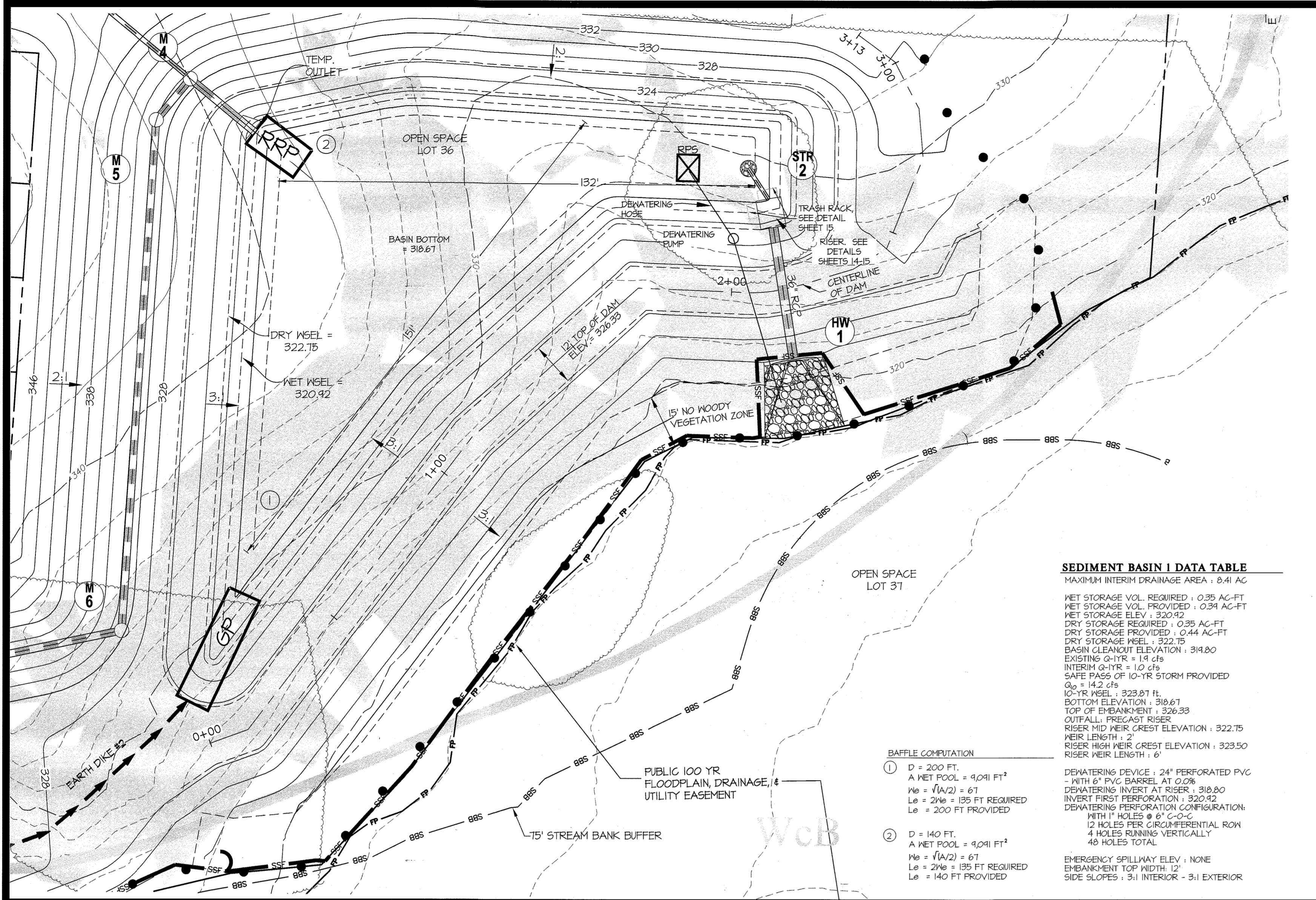
SEDIMENT CONTROL NOTES and DETAILS

SCALE ZONING G. L. W. FILE NO.
AS SHOWN R-SC 12039

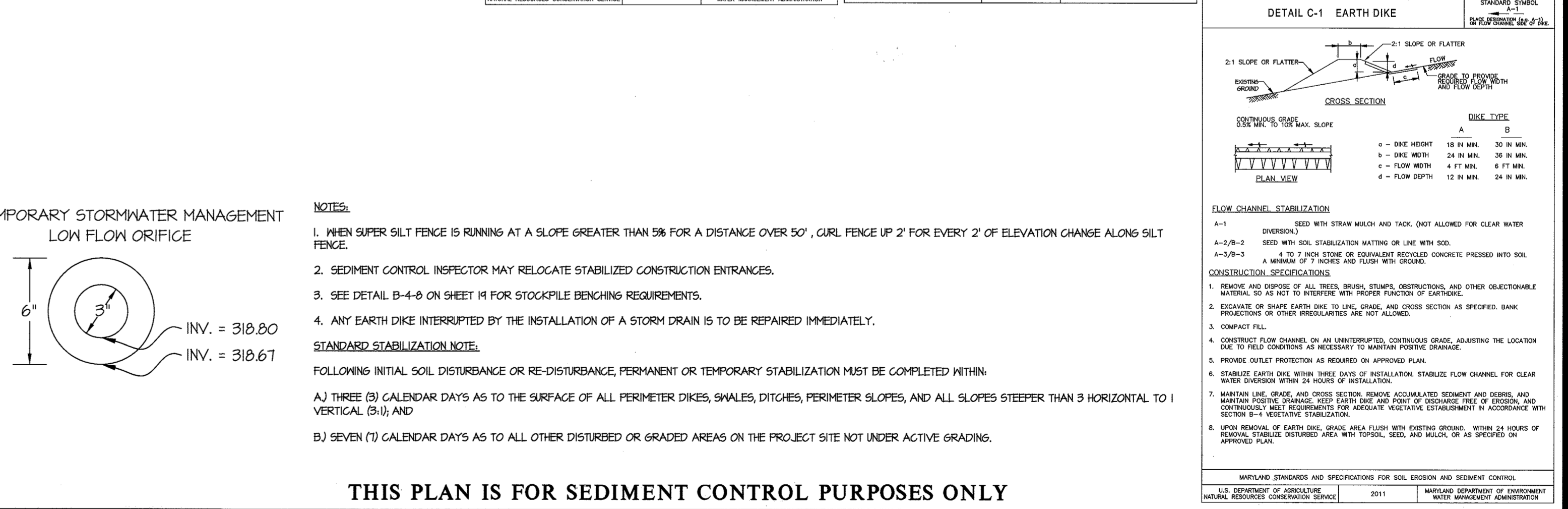
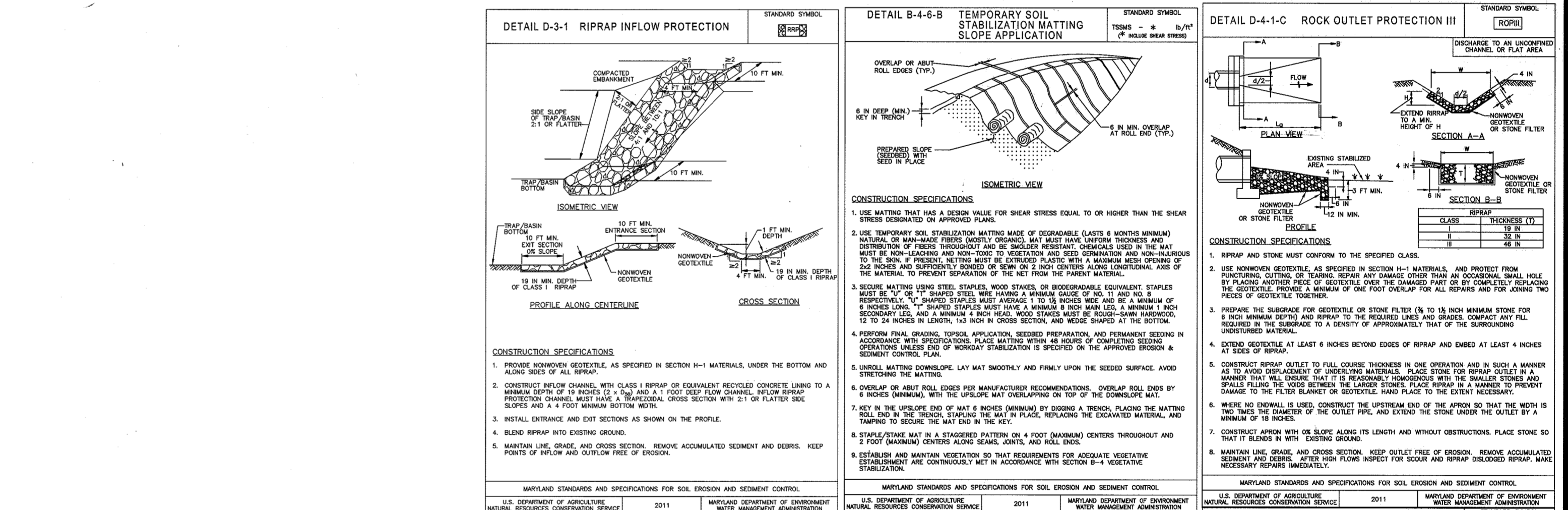
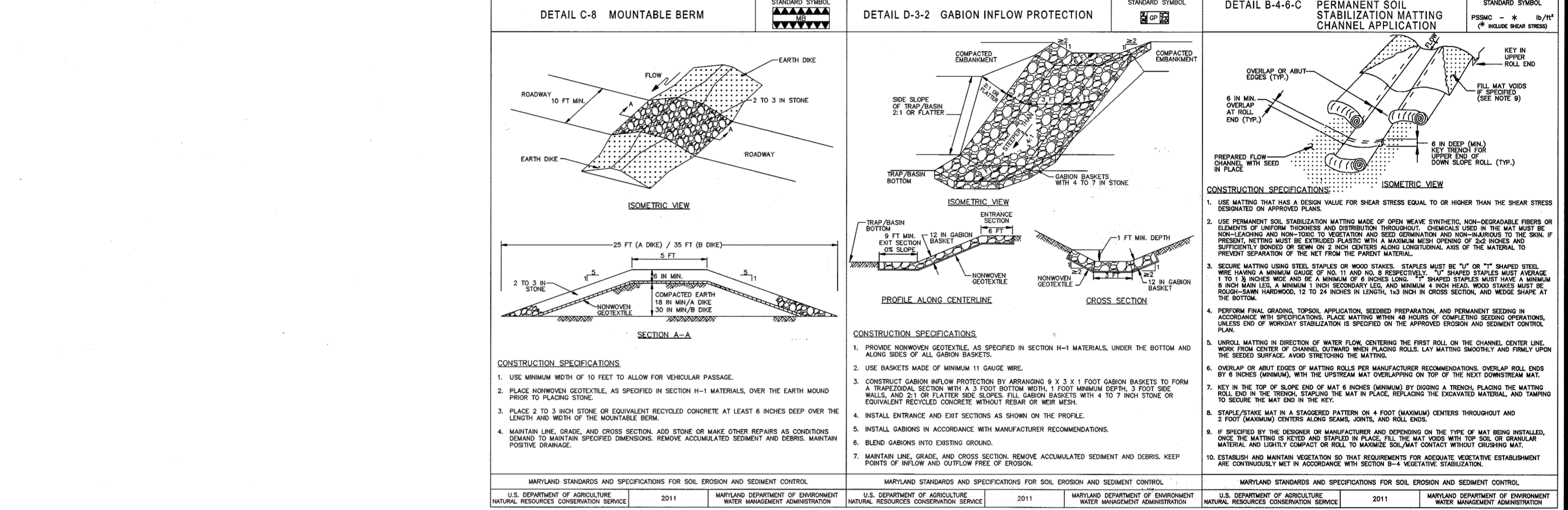
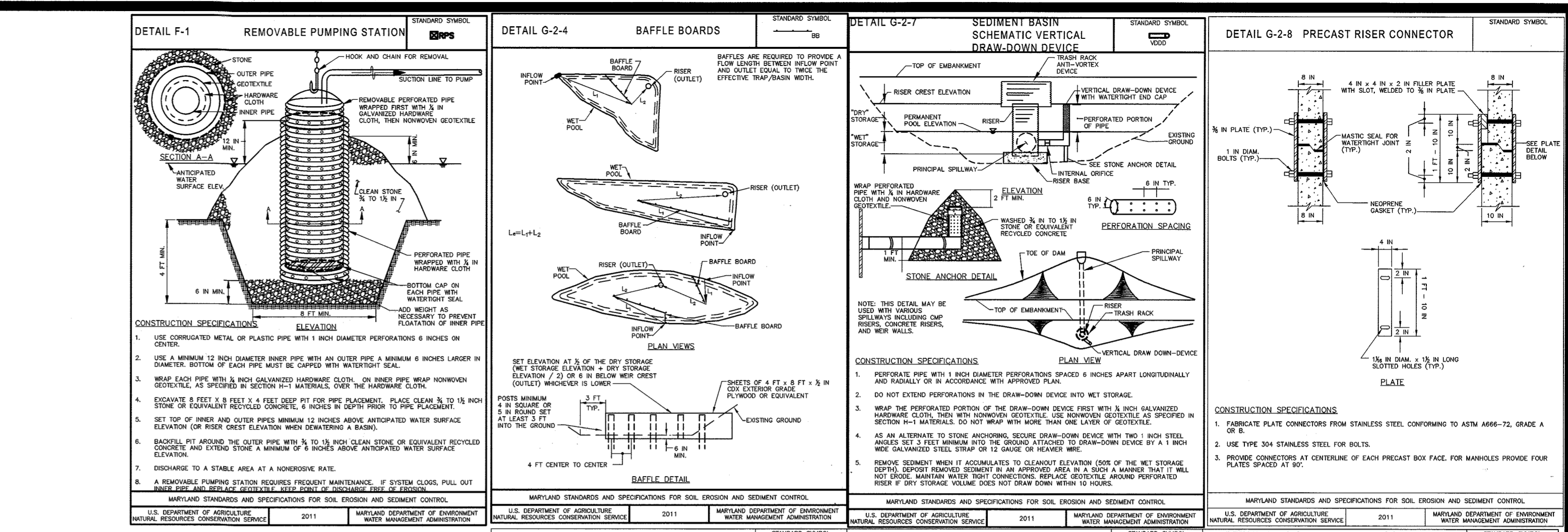
DATE TAX MAP - GRID SHEET
MAR., 2018 24 - 11 17 OF 27

SCALE ZONING G. L. W. FILE NO.
AS SHOWN R-SC 12039

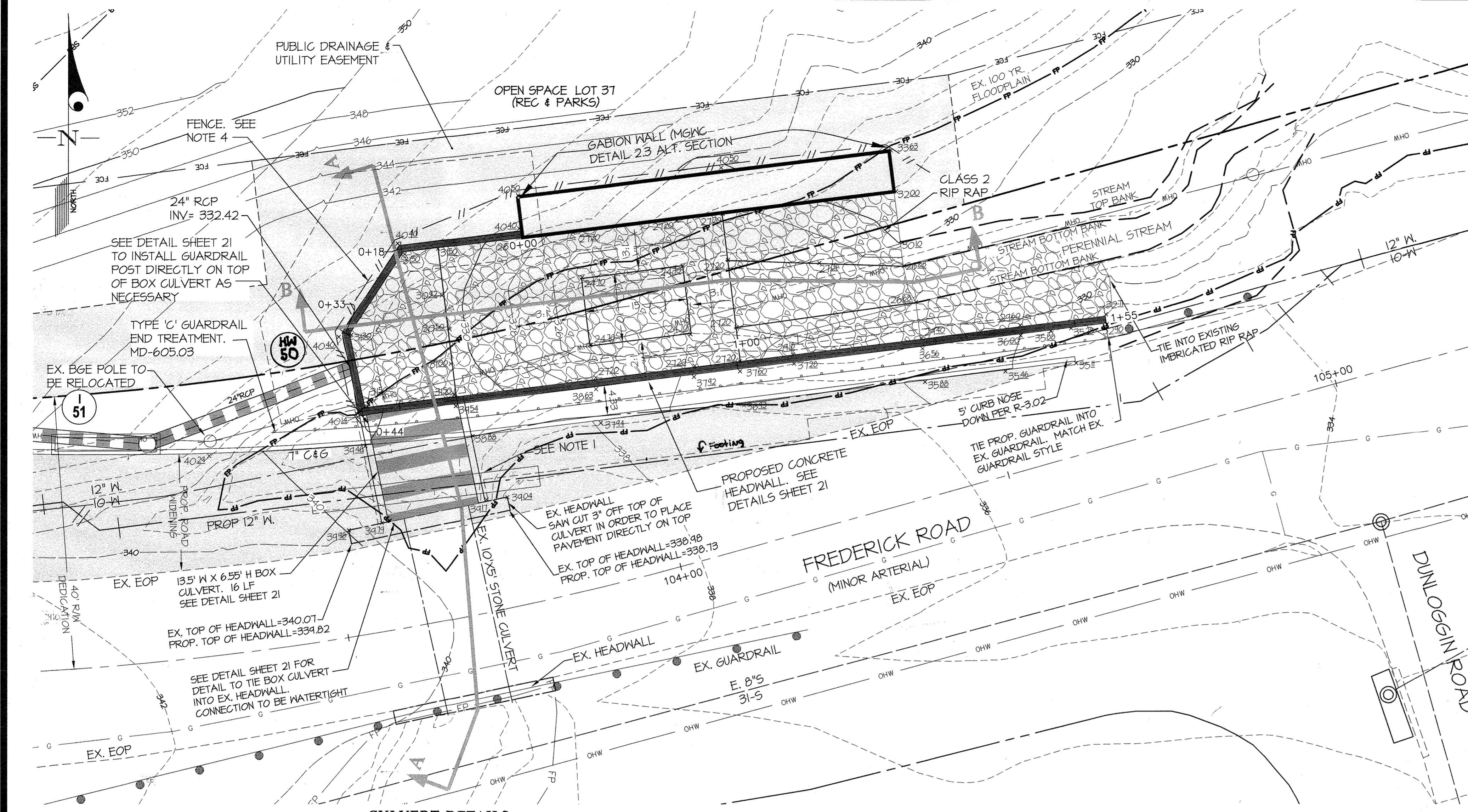
DATE TAX MAP - GRID SHEET
MAR., 2018 24 - 11 17 OF 27



OWNER/ PREPARED FOR:	DEVELOPER:	PROFESSIONAL CERTIFICATION
BVR INVESTMENTS LLC 1377 GOLD MINE LANE EVERGREEN, CO 80439	BRIAN ROBERTS 240-461-9172	I HEREBY CERTIFY THAT THESE PLANS 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. 12975 EXPIRATION DATE: MAY 26, 2018



SCALE	ZONING	G. L. W. FILE NO.
AS SHOWN	R-SC	12039
DATE	TAX MAP - GRID	SHEET
MAR., 2018	24 - 11	18 OF 27



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-graded 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	3/4 in (19 mm)
35-70	No. 10
20-30	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. See Figure 3.1. This chart is based on a maximum slope of 2H:1V. The stone gradations for Classes I - III are found in Table 3.1b.

SLOPE PROTECTION AND STABILIZATION TECHNIQUES MARYLAND DEPARTMENT OF THE ENVIRONMENT WATERWAY CONSTRUCTION GUIDELINES REVISED NOVEMBER 2000

PAGE 2.1-1

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)	100 100
II	700 lb (320 kg) 20 lb (10 kg)	100 100
III	2000 lb (910 kg) 40 lb (20 kg)	100 100

Uniform-graded riprap should incorporate angular rock to promote interlocking.

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

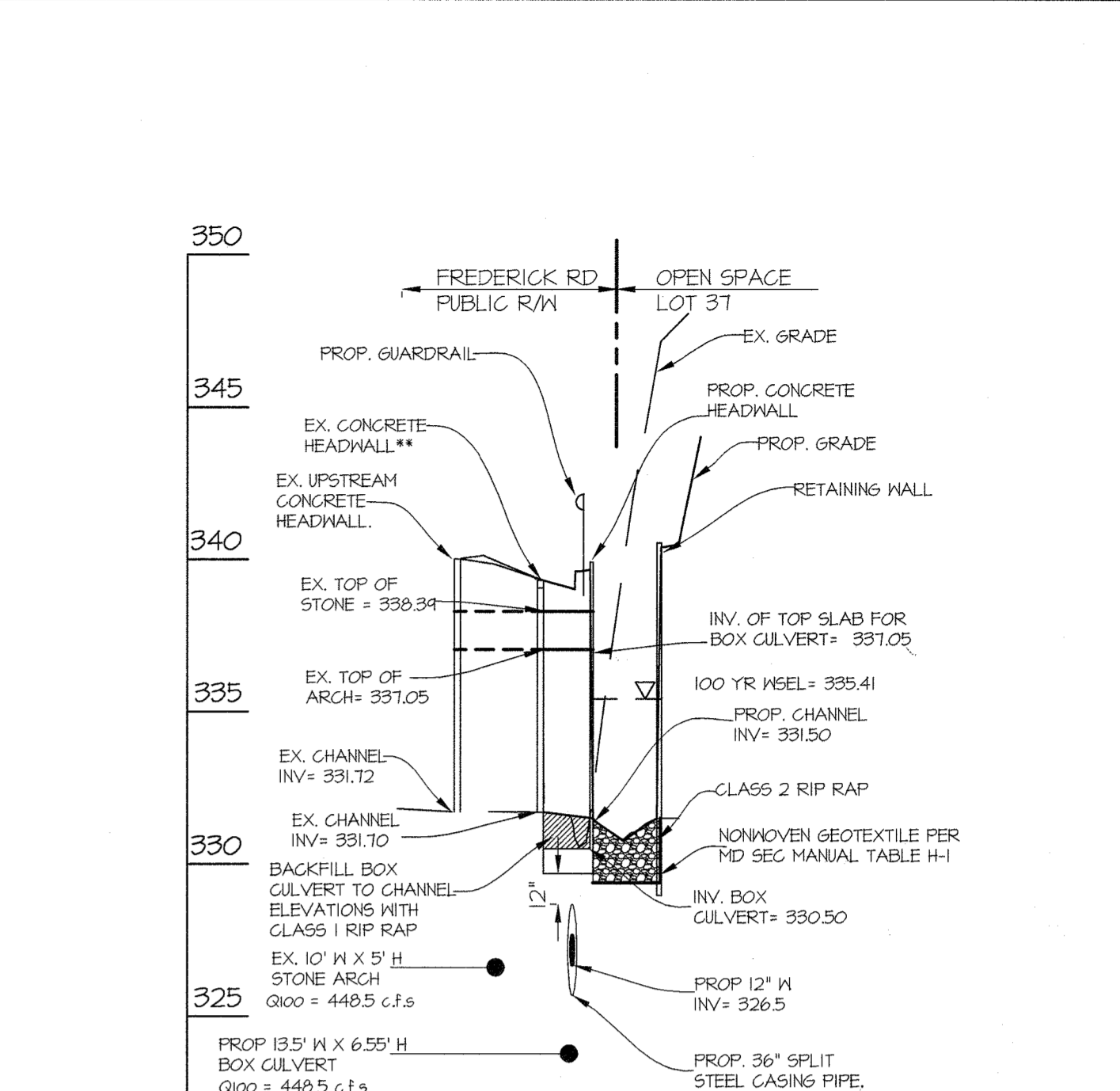
INSTALLATION GUIDELINES
All erosion and sediment control devices, including dewatering basins, should be implemented as the first order of business according to a plan approved by the WMA or local authority. Once a slope stabilization project is initiated, preparation and placement of the riprap should immediately follow the initial disturbance to minimize the chance for further slope degradation. The recommended construction procedure for riprap is as follows beginning with initial slope preparations (refer to Detail 2.1):

1. The contractor should install all sediment and erosion control devices as the first order of business.
2. Excavation should be made in reasonably close conformity with the existing stream slope and bed.
3. All fill in the subgrade should be compacted to a density approximating that of the surrounding undisturbed material.
4. 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.
5. The filter layer or blanket 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.
6. 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.
7. Any excavation voids existing along the edges of the completed slope and channel protection should be backfilled and compacted.
8. 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.

SLOPE PROTECTION AND STABILIZATION TECHNIQUES MARYLAND DEPARTMENT OF THE ENVIRONMENT WATERWAY CONSTRUCTION GUIDELINES REVISED NOVEMBER 2000

PAGE 2.1-2



NOTES:

1. PROVIDE 36" SPLIT STEEL CASING PIPE BELOW BOX CULVERT FOR PROPOSED 12" W.
2. STREAM IS A USE CLASS I. THE STREAM CHANNEL MAY NOT BE DISTURBED BETWEEN MARCH 1 - JUNE 15.
3. SPOT SHOTS GIVEN AT WALLS ARE THE GROUND ELEVATION AT THE TOP AND BOTTOM OF THE WALLS. SEE STRUCTURAL DETAILS FOR TOP OF WALL ELEVATIONS.
4. PROVIDE FENCE PER HOWARD COUNTY CODE ALONG TOP OF HEADWALL FROM BEGINNING OF GABION WALL TO STATION 0+44. SEE PLAN FOR LOCATION. FENCE SHALL BE A MINIMUM OF THIRTY-SIX INCHES IN HEIGHT, AND THE OPENINGS IN THE FENCE OR RAIL MUST BE SMALL ENOUGH TO PREVENT THE PASSAGE OF A FOUR INCH SPHERE. FENCES MUST BE STABLE ENOUGH TO WITHSTAND 200 LBS OF CONCENTRATED LOADING APPLIED HORIZONTALLY ANY POINT. FENCE TYPE SHALL NOT OBSTRUCT SIGHT. FENCE PER HOWARD COUNTY DETAIL 6-7.21 (MIN. HEIGHT 36") OR APPROVED EQUAL.

MGWC 2.3: GABIONS

Rigid engineering technique for bank stabilization

DESCRIPTION
The work should consist of protecting streambanks against erosive currents with stone-filled wire baskets.

EFFECTIVE USES & LIMITATIONS
Gabion revetments should be used rationally in high velocity streams (i.e., Roman stream types A1-A6, refer to Table 3). Additionally, the use of gabion baskets should be limited to areas outside of the base flow channel.

MATERIAL SPECIFICATIONS
Materials for gabion basket construction and installation should meet the following requirements:

- Filter Fabric: synthetic filter cloth may be used occasionally based on the 1994 MD Standards and Specifications for Soil Erosion and Sediment Control.
- Stone: acceptable stone diameters should be a function of the basket thickness as given below.
- Galvanneal: wire used for form gabion basket should be PVC coated to prevent corrosion.

Table 2.3: Suggested Stone Diameters for Design Basket Thickness

Basket Thickness	Stone Diameter
6 in (150 mm)	3-5 in (80-130 mm)
8 in (225 mm)	4-7 in (100-180 mm)
12 in (300 mm)	4-7 in (100-180 mm)
18 in (450 mm)	4-7 in (100-180 mm)
36 in (910 mm)	4-12 in (100-300 mm)

Approximate Cost (\$1999)
\$90 per linear foot

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. Refer to Maryland's 1994 Standards and Specifications for Soil Erosion and Sediment Control. The recommended construction procedure for gabions is as follows (refer to Detail 2.3):

1. The stream should be diverted according to a WMA recommended measure, and the construction area should be dewatered during placement of the gabion revetment's foundation (See Section 1: Temporary Instream Construction Measures, Maryland's Guidelines to Waterway Construction).
2. Excavation, including cutoff walls and a stable foundation, should be made in reasonably close conformity with the existing stream slope such that the placed baskets prevent undermining from water flow and overtopping from land surface pressure. The foundation should accommodate the placement of at least one layer of gabion baskets below the channel invert elevation. The subgrade should be smooth, firm, and free from protruding.

SLOPE PROTECTION AND STABILIZATION TECHNIQUES MARYLAND DEPARTMENT OF THE ENVIRONMENT WATERWAY CONSTRUCTION GUIDELINES REVISED NOVEMBER 2000

PAGE 2.3-1

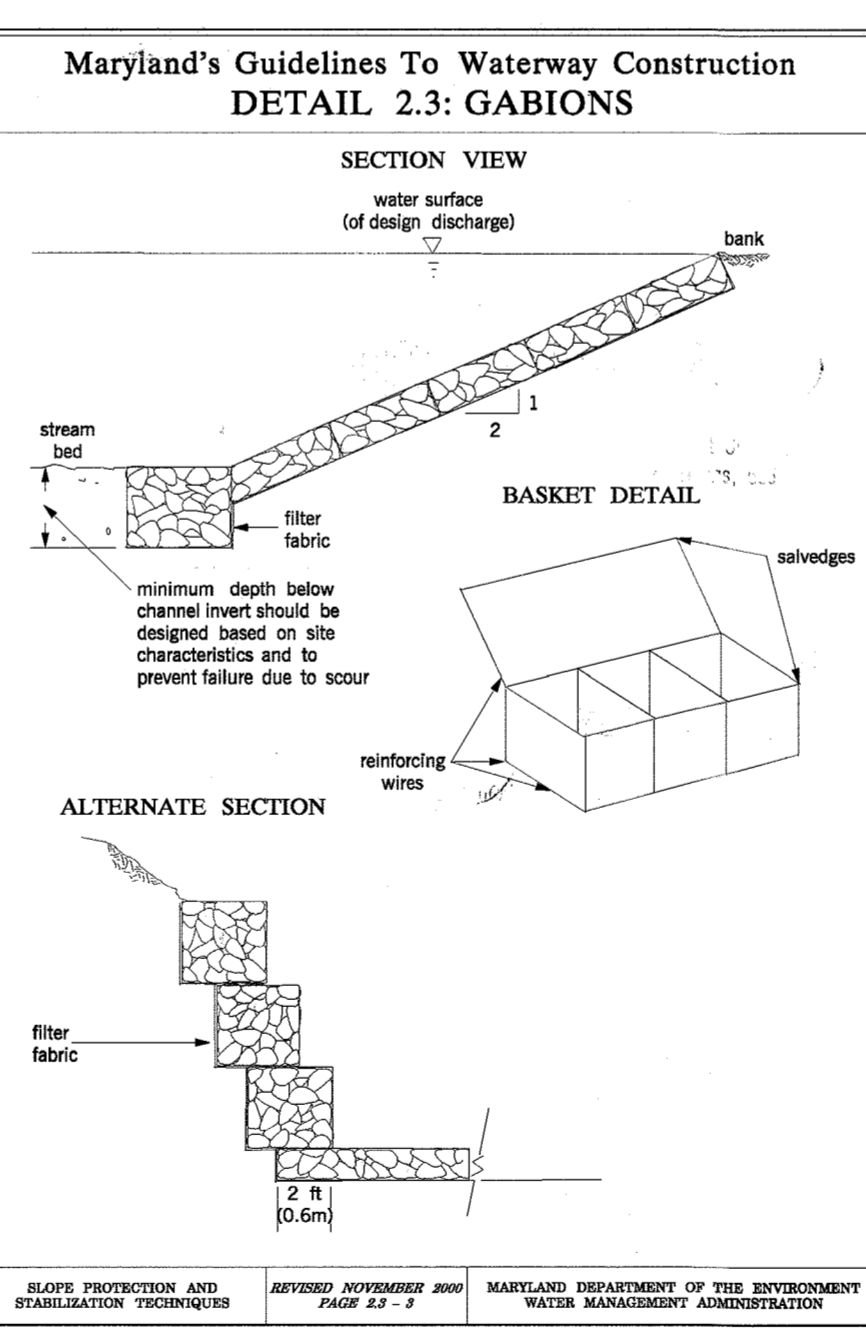
MGWC 2.3: GABIONS

objects or voids that would affect the proper positioning of the wire baskets or damage the filter cloth.

3. Filter fabric should be carefully and loosely placed on the prepared subgrade and secured. Adjacent strips should overlap a minimum of 8 inches (200 mm). To avoid damaging the filter cloth, care should be exercised in placing, stretching, and holding the empty basket units in good alignment. If the filter fabric is torn or damaged, it should be repaired or replaced.
4. Placement of the wire basket units should begin with the cutoff walls. The empty wire baskets should be set on the prepared subgrade and filter fabric, and the vertical ends should be bonded together with wire ties as a spacing that is adequate to permit stretching of the units for installation purposes. Stones, zinc, or other acceptable materials should be used to ensure a good alignment of the empty wire basket units. Ties may be required to guard against rotational overturning of the streambed.
5. The empty baskets should be filled carefully with stone placed by hand or machine, in a minimum of two courses, to assure good alignment with a minimum of voids between stones and to avoid bulging of the mesh. The maximum height from which the stone may be dropped into the wire mesh should be 3 feet (1 meter). Care should be taken in placing the top layer of stone to assure a uniform surface that avoiding any bulging of the lid mesh. After a basket unit has been filled, its lid should be bent over until it meets the end of the unit. The lid should then be secured to the sides and ends with wire ties. When a complete basket unit cannot be installed on slopes or channels because of space limitations, the basket unit should be cut to fit in a manner approved by the WMA.
6. All excavation voids existing along the edges of the completed gabions should be backfilled and permanently stabilized in accordance with an approved sediment and erosion control plan.

SLOPE PROTECTION AND STABILIZATION TECHNIQUES MARYLAND DEPARTMENT OF THE ENVIRONMENT WATERWAY CONSTRUCTION GUIDELINES REVISED NOVEMBER 2000

PAGE 2.3-2



MARYLAND'S GUIDELINES TO WATERWAY CONSTRUCTION DETAIL 2.1: RIPRAP

SECTION VIEW
Water Surface (of design discharge)

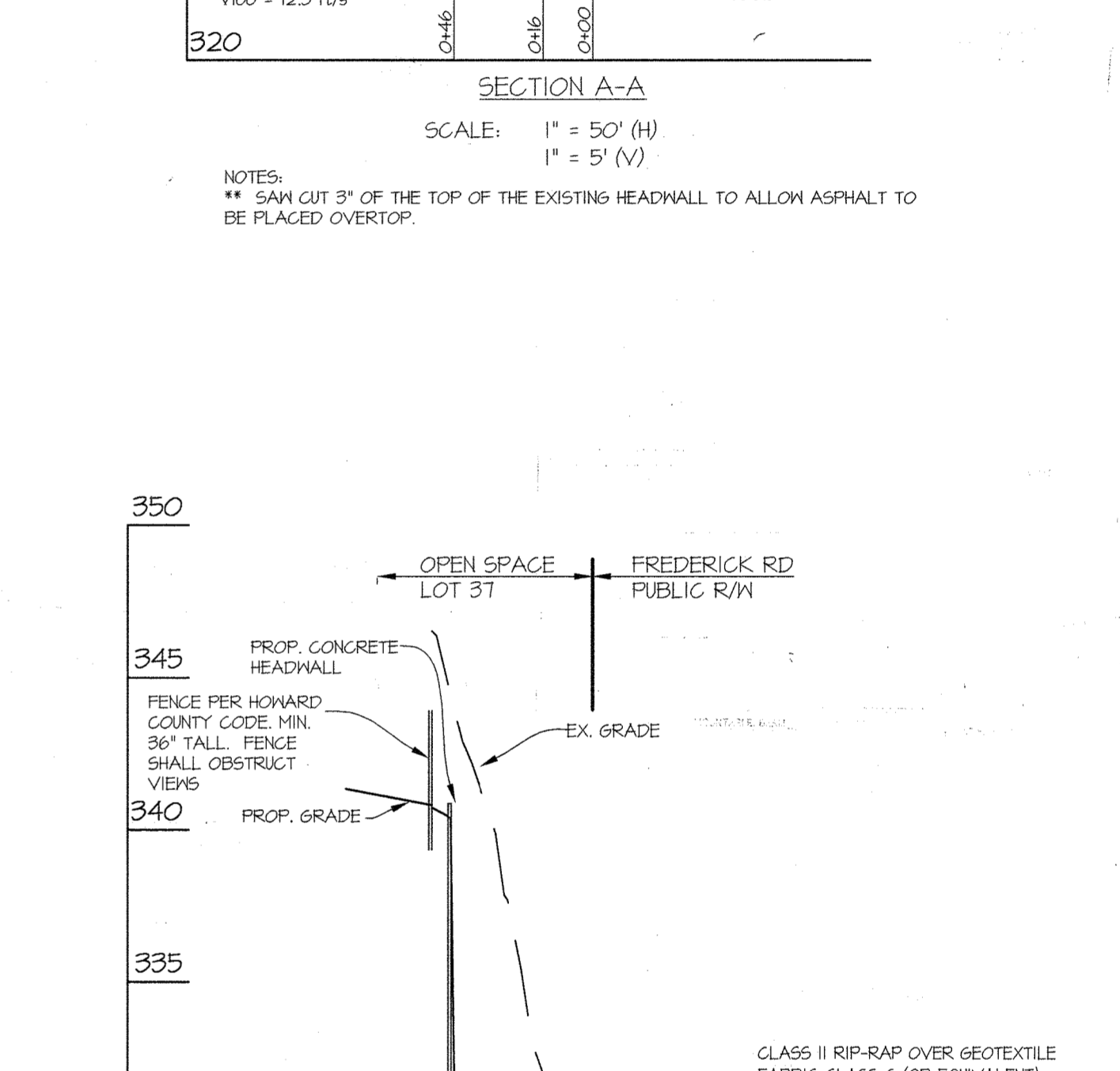
Riprap Layer - typical thickness is the greater of: 12 inches (30 cm), the upper limit of D₅₀ and 1.5 times the upper limit of D₁₀₀; median stone size, D₅₀, shall be based on bankfull discharge.

Filter Layer - gravel filter should be approximately 1/2 the thickness of the riprap layer; the gravel gradation is a function of the median sizes of the riprap and base material; filter fabric may be used instead of gravel.

Toe Trench - minimum toe trench depth below channel invert shall be designed based on site characteristics and to prevent failure due to scour.

SLOPE PROTECTION AND STABILIZATION TECHNIQUES MARYLAND DEPARTMENT OF THE ENVIRONMENT WATERWAY CONSTRUCTION GUIDELINES REVISED NOVEMBER 2000

PAGE 2.1-4



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Melanie
Chief, Bureau of Highways
4/25/2018
Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
K. O. Shook
Chief, Division of Land Development
7-6-18
Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
A. J. Church
Chief, Development Engineering Division
5-1-18
Date

NOTE: STREAM DISTURBANCE HAS BEEN APPROVED BY MDE ON FEBRUARY 21, 2018. TRACKING #: 201761955 / 17-NI-3338

SEE SHEET 17 FOR SEQUENCE OF CONSTRUCTION

GLWGUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3509 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-860-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE: _____ REVISION: _____ BY: _____ APPR: _____

DATE	REVISION	BY	APPR.

OWNER/
PREPARED FOR:
BVR INVESTMENTS LLC
1377 GOLD MINE LANE
EVERGREEN, CO 80439

BRIAN ROBERTS
240-481-9172

DEVELOPER:

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 12975
EXPIRATION DATE: MAY 26, 2018



CULVERT DETAILS

TERRAPIN WOODS
LOTS 1-34 & OPEN SPACE LOTS 35-38 & NON-BUILDABLE PARCEL A
A SUBDIVISION OF PARCELS 115 & 117, LIBER 15723 FOLIO 16 AND IN PART A RESUBDIVISION OF LOTS 4-7, BLOCK A "ELKRIDGE FARM-NO.2" PLAT BK. 122 PLAT NO. 62
ELECTION DISTRICT NO. 2

SCALE	ZONING	G. L. W. FILE NO.
AS SHOWN	R-SC	12039
DATE	TAX MAP - GRID	SHEET
MAR., 2018	24 - 11	20 OF 27

GENERAL STRUCTURAL NOTES

A. BUILDING CODES AND STANDARDS

1. THE FOLLOWING CODES AND STANDARDS, INCLUDING ALL SPECIFICATION REFERENCED WITHIN, SHALL APPLY TO THE DESIGN, CONSTRUCTION, QUALITY CONTROL AND SAFETY OF ALL WORK PERFORMED ON THE PROJECT.
 - a. "INTERNATIONAL BUILDING CODE - 2015", INTERNATIONAL CODE COUNCIL
 - b. "MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES", (ASCE/SEI 1-10) AMERICAN SOCIETY OF CIVIL ENGINEERS.
2. ADDITIONAL CODES FOR MATERIALS SHALL BE FOUND IN THE APPROPRIATE SECTIONS THAT FOLLOW. SEE THOSE SECTIONS FOR THE APPLICABLE CODES.

B. DESIGN LOADS

1. NEW ROADWAY HL-43 (AASHTO)
2. LATERAL EARTH PRESSURE
 - a. BRACED WALLS 60 PSF/FT DEPTH
 - b. RETAINING WALLS 45 PSF/FT DEPTH

C. FOUNDATION / EARTHWORK

1. DESIGN DATA:
 - a. FOUNDATIONS HAVE BEEN DESIGNED WITH AN ASSUMED BEARING CAPACITY OF 2000 PSF
 - b. BEARING CAPACITY TO BE VERIFIED BY GEOTECHNICAL ENGINEER PRIOR TO CONCRETE PLACEMENT.
 - c. ALL FOUNDATIONS SHALL BEAR A MINIMUM OF 2'-6" BELOW GRADE. IN CASE OF CONFLICT, NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER IN ADVANCE OF ANY CONSTRUCTION TO ALLOW FOR ADJUSTMENT.
3. GENERAL
 - a. CONTRACTOR SHALL VERIFY ALL EXISTING FIELD CONDITIONS THAT MAY AFFECT THE INSTALLATION OF THE FOUNDATION SYSTEM AS SHOWN PRIOR TO STARTING WORK. SEE ALSO NOTES UNDER THE "CONSTRUCTION" SECTION.
 - b. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES, EXISTING STRUCTURES, ETC., WHETHER INDICATED OR NOT, WHICH MAY BE AFFECTED BY THE CONSTRUCTION PROCESS.
 - c. CONCRETE FOR FOUNDATIONS SHALL BE POURED ON THE SAME DAY SUBGRADE APPROVAL IS GIVEN BY THE GEOTECHNICAL ENGINEER.
4. BACKFILL
 - a. ALL BACKFILL SHALL BE ACCOMPLISHED USING MATERIAL APPROVED BY THE GEOTECHNICAL ENGINEER, WITH OPTIMUM MOISTURE CONTENT FOR COMPACTING AND SHALL BE FREE OF DEBRIS.
5. STRUCTURAL FILL
 - a. INSPECTION OF ANY COMPACTED STRUCTURAL FILL SHALL BE PERFORMED BY A QUALIFIED GEOTECHNICAL ENGINEER.
 - b. APPROVED MATERIAL SHOULD BE PLACED IN LIFTS NOT EXCEEDING 8 INCHES ON LOOSE THICKNESS. MOISTURE CONDITIONED AS REQUIRED TO ACHIEVE COMPACTION TO A MINIMUM OF 95% OF THE MAXIMUM DENSITY OBTAINED IN ACCORDANCE WITH ASTM SPECIFICATION D-698 (STANDARD PROCTOR) FOR FILL BELOW FOOTINGS.

D. CONSTRUCTION

1. GENERAL
 - a. THIS DRAWING REPRESENTS THE COMPLETED PROJECT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ALLOWABLE CONSTRUCTION LOADS AND TO PROVIDE PROPER DESIGN AND CONSTRUCTION OF FORMWORK, STAGING, BRACING, SHEETING AND SHORING, ETC.
 - b. WORK NOT INCLUDED ON THE DRAWINGS BUT IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PLACES ELSEWHERE ON THE DRAWING SHALL BE REPEATED.
 - c. IMPLEMENTING JOB SITE SAFETY AND CONSTRUCTION PROCEDURES ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

E. CONCRETE

1. CODES
 - a. "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, ACI 318", AMERICAN CONCRETE INSTITUTE.
 - b. "SPECIFICATIONS FOR STRUCTURAL CONCRETE, ACI 301".
 - c. "MANUAL OF STANDARD PRACTICE", CONCRETE REINFORCING STEEL INSTITUTE.
2. MATERIALS
 - a. THE FOLLOWING ASTM STANDARDS AND DESIGN STRESSES SHALL BE USED FOR THE APPROPRIATE MATERIALS USED IN THE CONSTRUCTION OF THIS PROJECT.

APPLICATION	f _c @ 28 DAYS	WEIGHT (PCF)	w/c (MAX)
ALL CONCRETE	5000	145	0.45

PUMP MIXES: MAXIMUM WATER/CEMENT RATIO MUST BE MAINTAINED. IF ADDITIONAL WORKABILITY IS REQUIRED FOR PUMPED PLACEMENT, THE HIGH OR MID-RANGE WATER REDUCERS SHALL BE USED IN LIEU OF ADDITIONAL WATER. WATER HELD BACK AT THE PLANT SHALL BE NOTED ON THE BATCH TICKET AND RECORDED ON THE INSPECTOR'S REPORT WHEN SAMPLE CYLINDERS ARE MADE.

- b. CEMENT: ASTM C150, TYPE II FOR CONCRETE IN CONTACT WITH EARTH
- c. CEMENT SUBSTITUTES: ASTM C595, TYPE IS (LIMIT TO 50% MAX OF CEMENTITIOUS CONTENT BY WEIGHT)
- d. AGGREGATES: ASTM C33 (NORMAL WEIGHT)
- e. AIR: AIR-ENTRAINING ADMIXTURE TO COMPLY WITH ASTM C260. ALL CONCRETE 5% ± 1% *AIR CONTENT OF TROWEL FINISHED FLOORS SHALL NOT EXCEED 3%
- f. REINFORCEMENT: DEFORMED REINFORCING BARS ASTM A615, GRADE 60

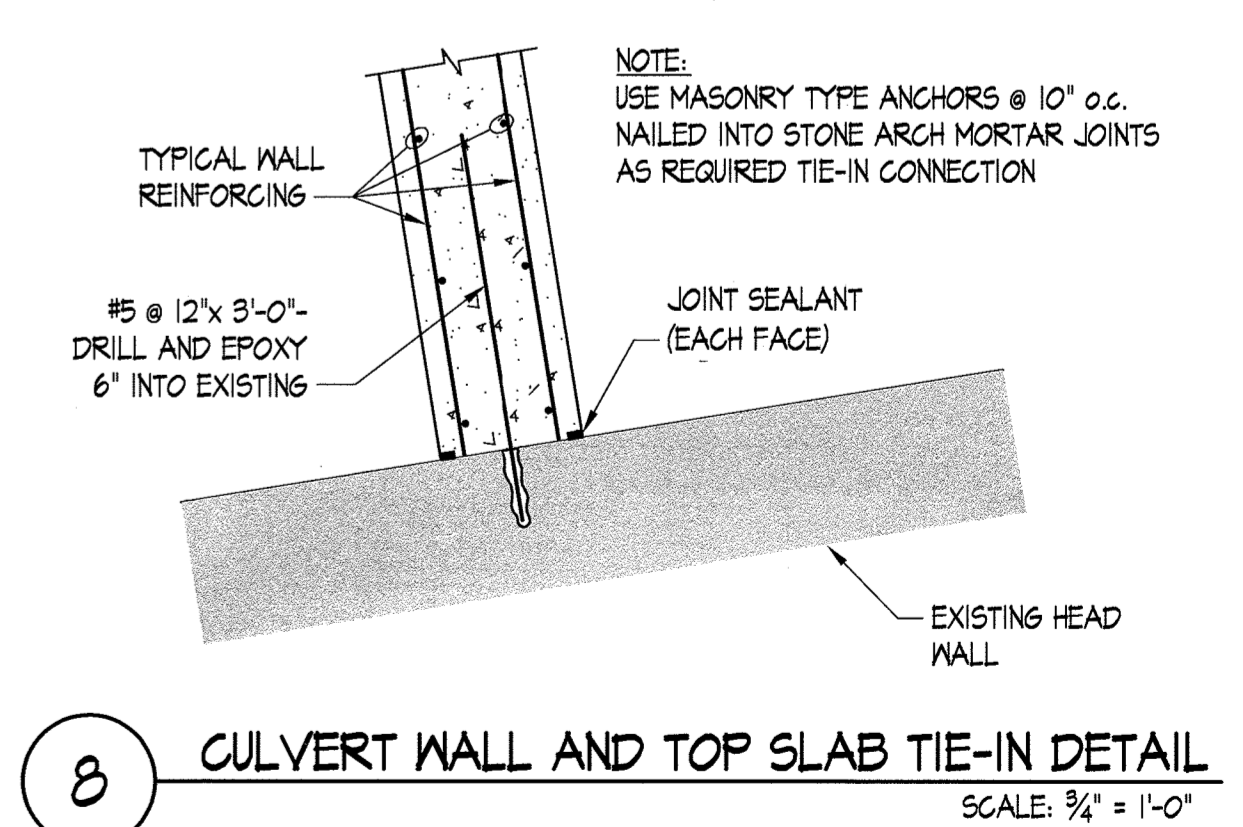
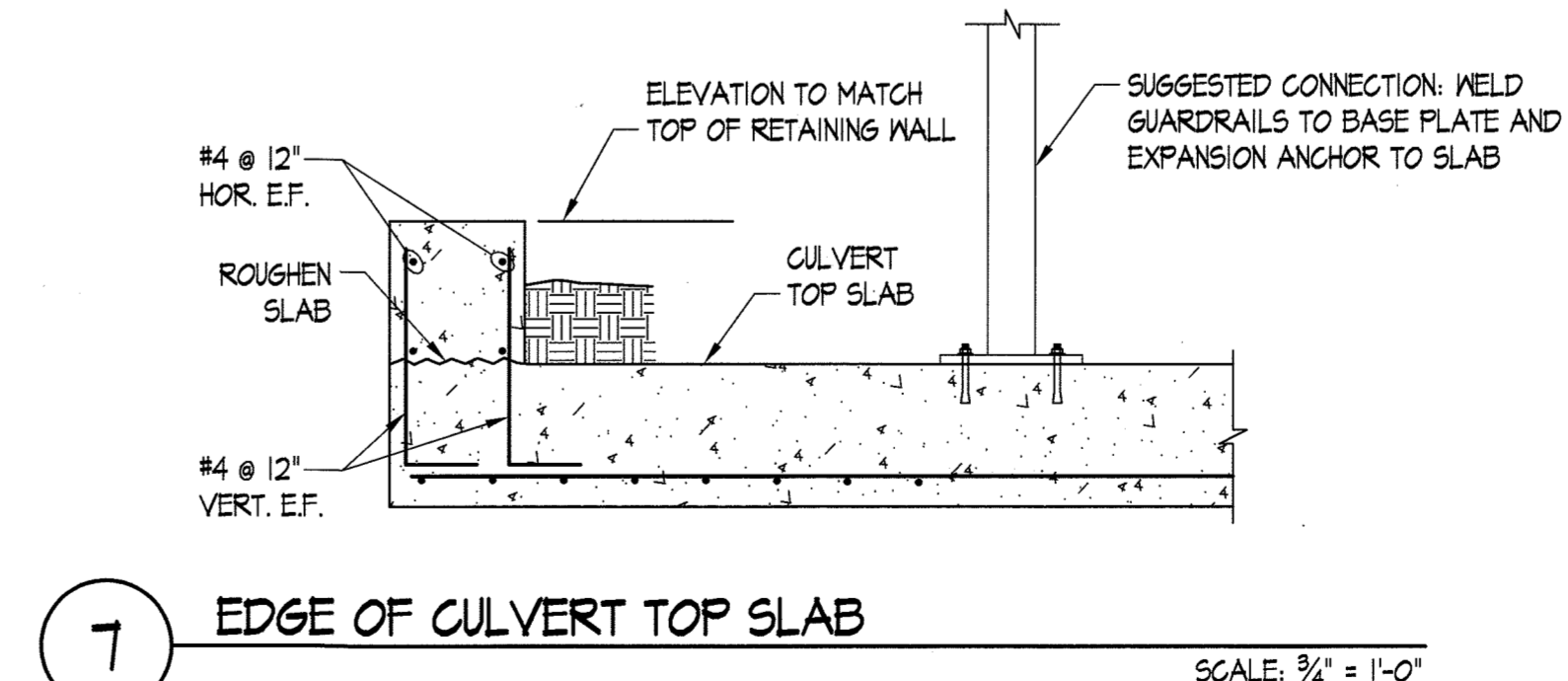
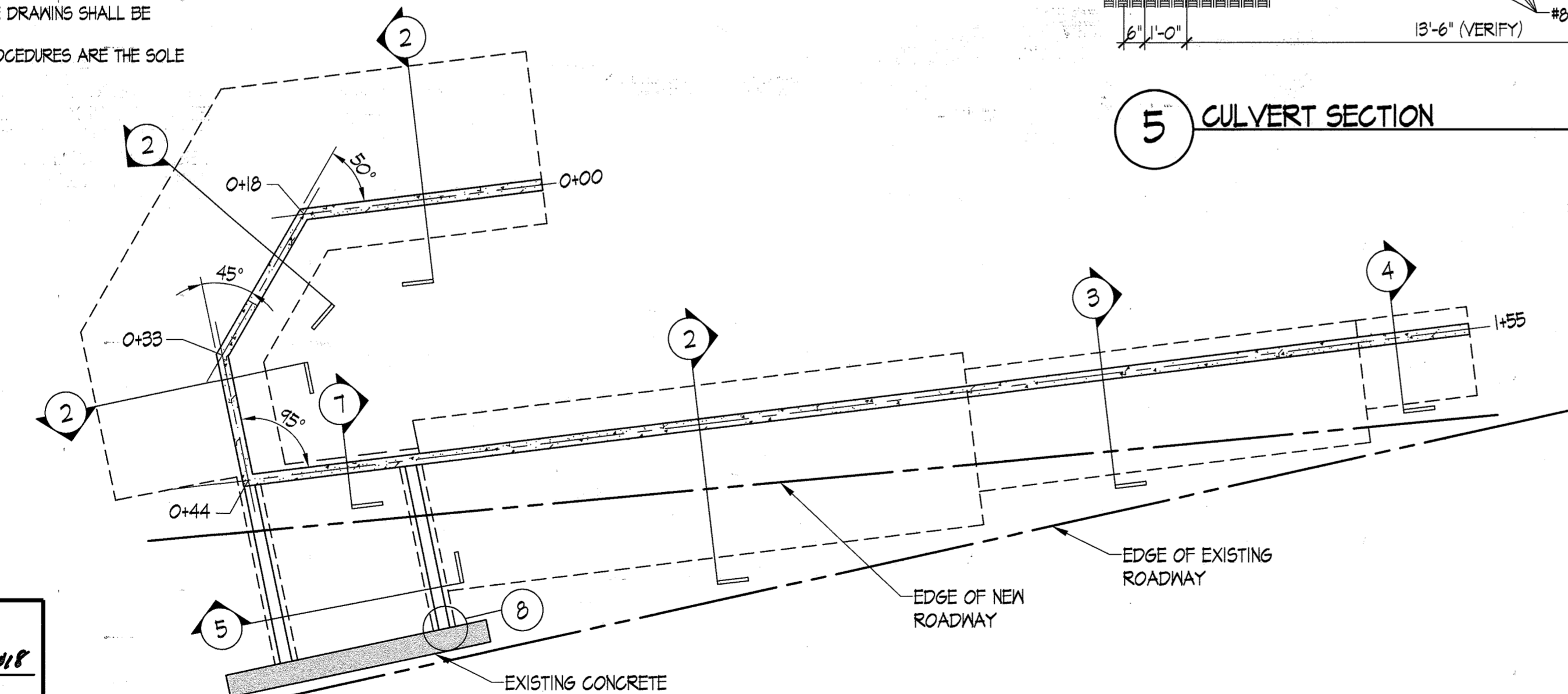
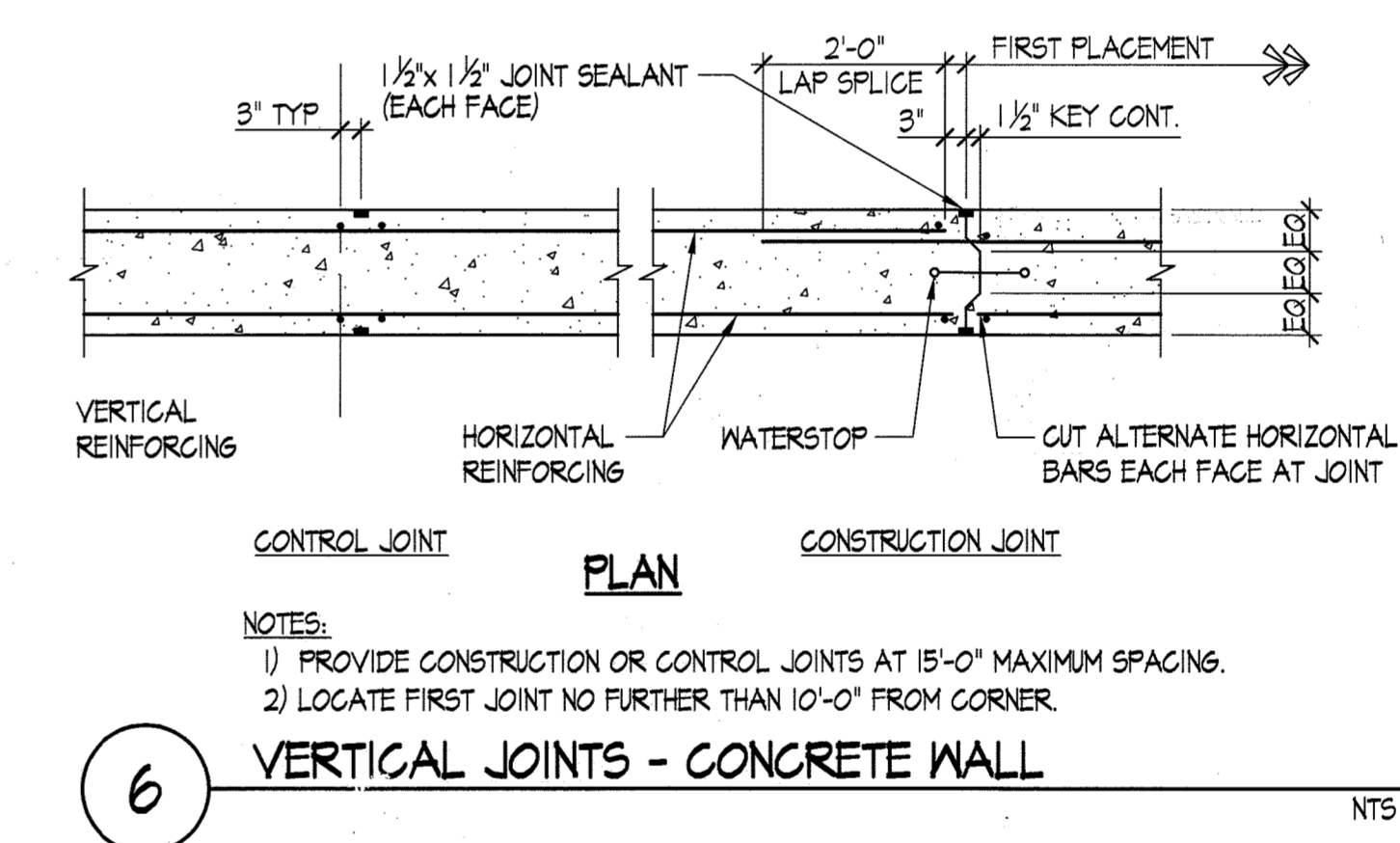
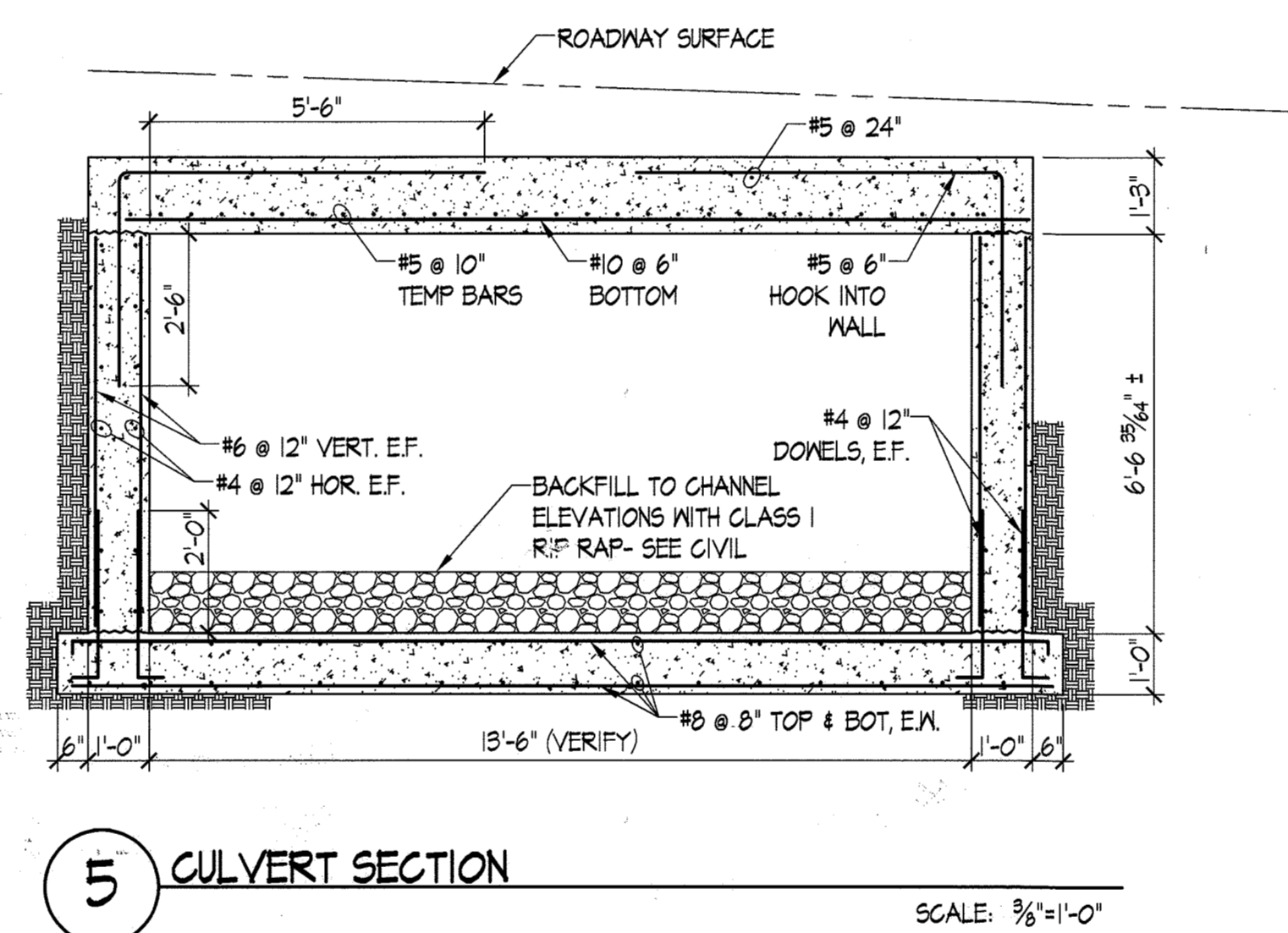
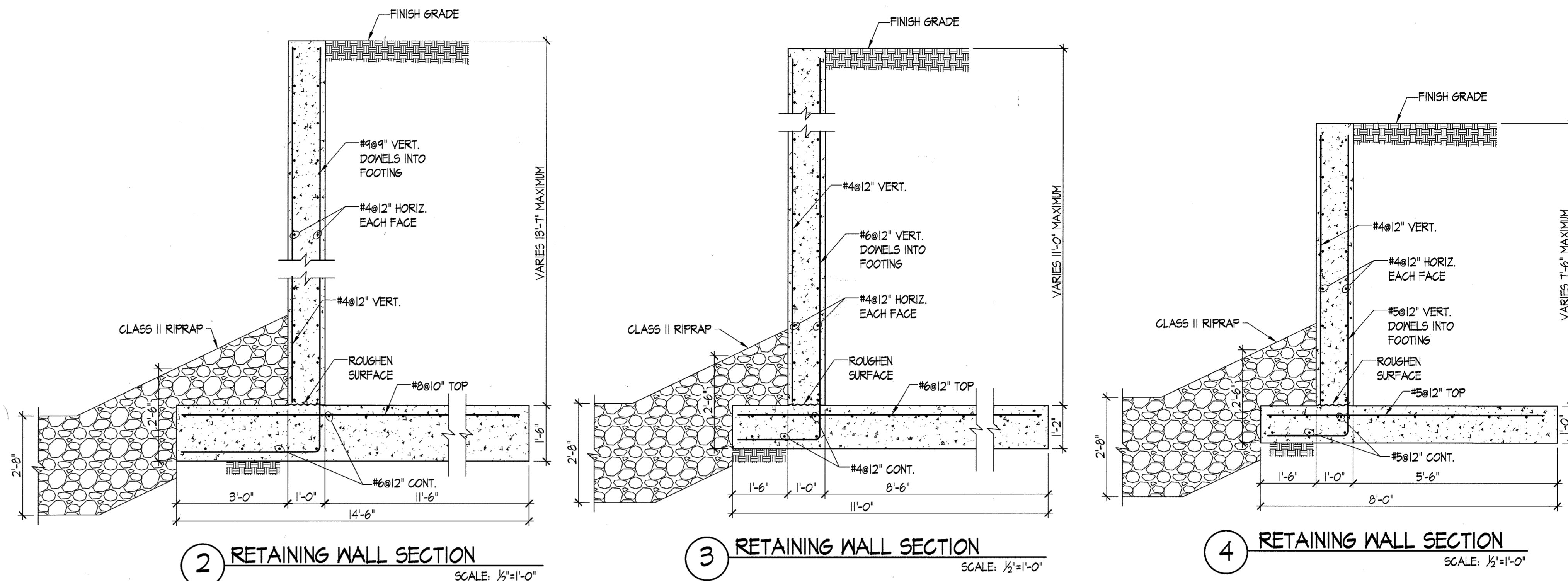
3. CAST-IN-PLACE

- a. REINFORCING STEEL CLEAR COVER SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
 - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
 - CONCRETE EXPOSED TO EARTH OR WEATHER #6 BARS AND LARGER 2" #5 BARS AND SMALLER 2"
- b. ALL FORMWORK SHALL BE DESIGNED BY THE CONTRACTOR'S ENGINEER REGISTERED IN THE PROJECT'S JURISDICTION.

7. INSPECTION AND TESTING

- a. A TESTING AGENCY SHALL BE ENGAGED TO PROVIDE SERVICES AS INDICATED BELOW AND SUBMIT REPORTS.
- b. CAST-IN-PLACE CONCRETE:
 - (1) THE AGENCY SHALL INSPECT THE FORM WORK AND REINFORCING STEEL PLACEMENT FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS AND SHOP DRAWINGS. THE AGENCY SHALL MONITOR ALL STRUCTURAL CONCRETE PLACEMENT FOR CONFORMANCE WITH APPLICABLE ACI REQUIREMENTS.
 - (2) SAMPLE FRESH CONCRETE IN ACCORDANCE WITH ASTM C172. MOLD TEST CYLINDERS IN ACCORDANCE WITH ASTM C31.
 - (3) THE FOLLOWING NUMBER OF TEST CYLINDERS SHALL BE CAST FOR EACH DAY'S POUR OR EACH 50 CUBIC YARDS, WHICHEVER RESULTS IN MORE TEST CYLINDERS. (4" DIA x 8" TALL CYLINDERS)

FOR FOOTINGS, SLAB AND WALLS:
3 @ 7 DAYS, LAB CURED
3 @ 28 DAYS, LAB CURED



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 [Signature] 4/25/2018
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 [Signature] 7-6-18
 Chief, Division of Land Development Date

[Signature] 5-1-18
 Chief, Development Engineering Division Date

DES. NMH	DRN. NMH	CHK. MUG	DATE	REVISION	BY	APPR.

OWNER & PREPARED FOR:	PROFESSIONAL CERTIFICATION
BVR INVESTMENTS LLC 1377 GOLD MINE LANE EVERGREEN, CO 80439	I HEREBY CERTIFY THAT THESE PLANS 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. 12258 EXPIRATION DATE: 04/15/2020
BRIAN ROBERTS 240-461-9172	[Signature]

CULVERT & HEADWALL DETAILS

TERRAPIN WOODS
 LOTS 1-34 & OPEN SPACE LOTS 34-38 & NON-BUILDABLE PARCEL A
 L. 416 F. 441 & L. 5257 F. 338
 PARCEL 115 & 117

SCALE	ZONING	G. L. W. FILE NO.
SCALE	R-SC	12039
DATE	TAXITILE	SHEET
MARCH 2018	24 - 11	21 OF 27

S:\DWG\2017\17014.02 - Terrapin Woods Culvert.dwg, 17014.02 SHEET.dwg, 10:05 AM, PLOTTED BY: Michael Goss, 3/28/2018 10:38 AM, LAST SAVE: 3/22/2017 10:05 AM

- LANDSCAPE PLAN NOTES:**
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE & THE HOWARD COUNTY LANDSCAPE MANUAL.
 - CONTRACTOR SHALL NOTIFY ALL UTILITIES AT LEAST (5) FIVE DAYS BEFORE STARTING WORK. ALL GENERAL NOTES, ESPECIALLY THOSE REGARDING UTILITIES, ON SHEET NO.1 SHALL APPLY.
 - FIELD VERIFY UNDERGROUND UTILITY LOCATIONS AND EXISTING CONDITIONS BEFORE STARTING PLANTING WORK. CONTACT CONSTRUCTION MANAGER OR OWNER IF ANY RELOCATIONS ARE REQUIRED.
 - PLANT QUANTITIES SHOWN ON THE PLANT LIST ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON THE PLAN AND THOSE SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE PLAN SHALL TAKE PRECEDENCE.
 - ALL PLANT MATERIAL SHALL BE FULL HEAVY, WELL FORMED, SYMMETRICAL, AND CONFORM TO THE A.A.N. SPECIFICATIONS. ALL PLANT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND THE PLANTING DETAILS ON THIS SHEET.
 - NO SUBSTITUTION SHALL BE MADE WITHOUT PRIOR APPROVAL FROM HOWARD COUNTY DPZ AND THE OWNER OR HIS REPRESENTATIVE.
 - ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES BUT NOT OTHERWISE PLANTED, PAVED, OR MULCHED SHALL BE SOODED OR SEEDED IN ACCORDANCE WITH FERMENATE SEEDING PER MDC 2001 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. A MINIMUM OF 4" OF TOPSOIL SHALL BE PROVIDED TO ALL PLANTING AREAS.
 - THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING IF HE/SHE ENCOUNTERS SOIL DRAINAGE CONDITIONS THAT MAY BE DETRIMENTAL TO THE GROWTH OF THE PLANTS.
 - ALL EXPOSED EARTH WITHIN THE LIMITS OF PLANTING BEDS SHALL BE MULCHED WITH SHREDDED HARDWOOD MULCH PER THE PLANTING DETAILS.
 - DO NOT PLANT TREES IN PUBLIC WATER & SEWER UTILITY EASEMENTS.
 - SCHEDULES "A, B & D" ARE PROVIDED FOR LANDSCAPE SURETY CALCULATION PURPOSES. SCHEDULE-C RESIDENTIAL INTERNAL LANDSCAPING IS DEFERRED TO THE 50P-STAGE FOR THE SFA LOTS. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPZ DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$22,500.00 FOR THE FOLLOWING REQUIRED LANDSCAPE PLANTINGS (not including street trees which are bonded separately):
 - \$ 1750.00 FOR 50 EVERGREEN TREES AT #150.00/TREE
 - \$ 15000.00 FOR 50 SHADE TREES AT #300.00/TREE
 - TO REQUEST A LANDSCAPE INSPECTION TO OBTAIN THE RELEASE OF THE POSTED LANDSCAPE SURETY, SUBMIT A WRITTEN REQUEST OF LANDSCAPE INSPECTION, ALONG WITH A COPY OF THE ONE YEAR LANDSCAPE PLANT WARRANTY, TO THE DIVISION OF LAND DEVELOPMENT, HO. CO. DEPT. OF PLANNING AND ZONING.
 - SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIFER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.
 - THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERRMS, 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 INSTALLATION, ALL SHRUBS AND OTHER PLANTINGS HEREIN LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPING MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS 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 THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.
 - WHEN THE DISTANCE BETWEEN THE CURB AND THE SIDEWALK IS LESS THAN 6 FEET, AND WHERE TREES ARE PLANTED CLOSER THAN 5 FEET TO THE SIDEWALK, A BIOLOGIC ROOT INHIBITOR BARRIER OR PHYSICAL CONTAINER BARRIER SHALL BE REQUIRED.

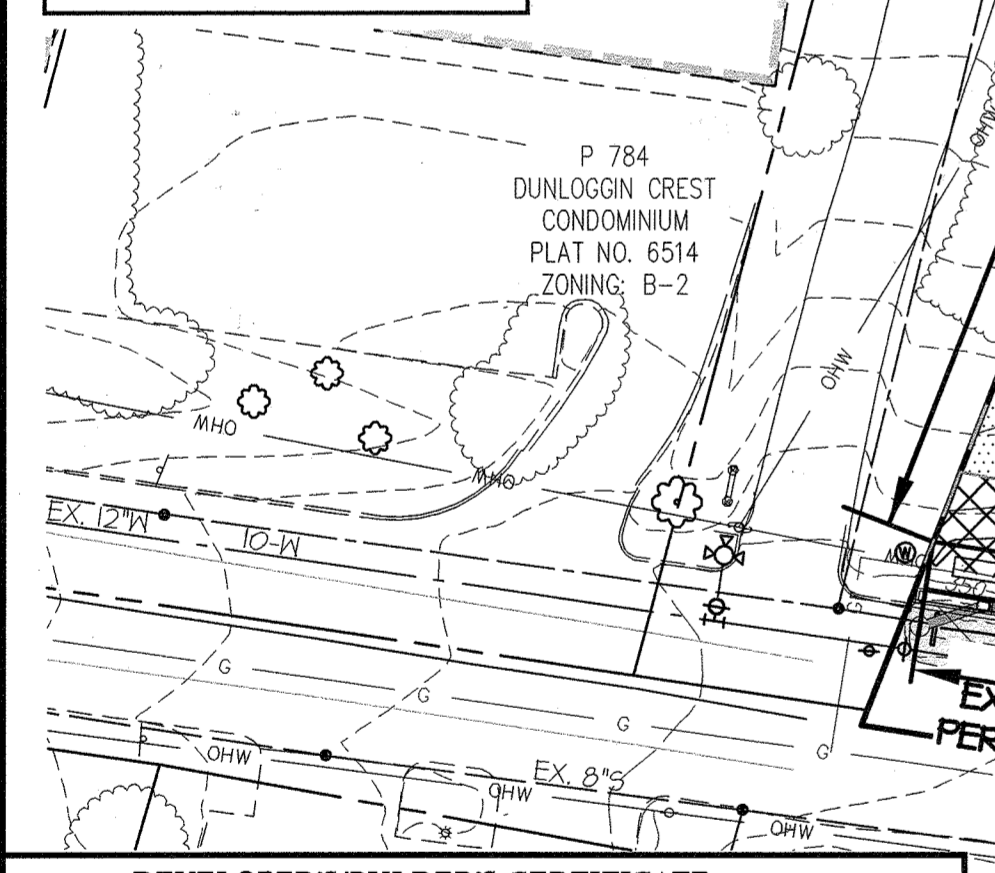
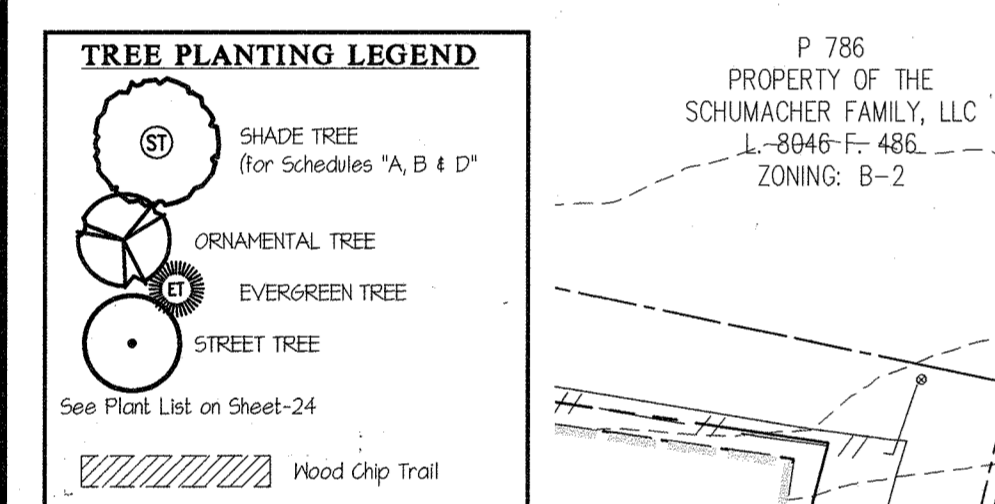
TO REQUEST A LANDSCAPE INSPECTION TO OBTAIN THE RELEASE OF THE POSTED LANDSCAPE SURETY, SUBMIT A WRITTEN REQUEST OF LANDSCAPE INSPECTION, ALONG WITH A COPY OF THE ONE YEAR LANDSCAPE PLANT WARRANTY, TO THE DIVISION OF LAND DEVELOPMENT, HO. CO. DEPT. OF PLANNING AND ZONING.

SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIFER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.

THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERRMS, 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 INSTALLATION, ALL SHRUBS AND OTHER PLANTINGS HEREIN LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPING MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS 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 THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.

WHEN THE DISTANCE BETWEEN THE CURB AND THE SIDEWALK IS LESS THAN 6 FEET, AND WHERE TREES ARE PLANTED CLOSER THAN 5 FEET TO THE SIDEWALK, A BIOLOGIC ROOT INHIBITOR BARRIER OR PHYSICAL CONTAINER BARRIER SHALL BE REQUIRED.



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 CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION ACCOMPANIED BY AN EVASITED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

NAME: *DD* DATE: 3/30/18

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways Date: 4/25/18

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Chief, Division of Land Development Date: 7-6-18

Chief, Development Engineering Division Date: 5-1-18

GLWGUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
 BURTONSVILLE, MARYLAND 20866
 TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

SCHEDULE-A: PERIMETER LANDSCAPE EDGE

PERIMETER	LAND USE	ADJACENT LAND USE	TYPE OF BUFFER	LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER (prior to credits, if any)	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) DESCRIBE BELOW IF NEEDED.	CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) DESCRIBE BELOW IF NEEDED.	NUMBER OF PLANTS REQUIRED	HOW REQUIRED BUFFER IS BEING PROVIDED	
							SHADE TREES EVERGREEN TREES SHRUBS		
EXTERNAL PERIMETER 1	SFA SIDE/REAR	ROADWAY	1' Buffer	56'	NO	NO	1 3 0	2 Ornamental trees & 3 Evg. trees	
EXTERNAL PERIMETER 2	SFA SIDE/REAR	ROADWAY	1' Buffer	1024'	YES, 564' Ex. Forest (465' to be planted)	NO	12 23 0	10 Shd. trees, 23 Evg. trees* & 6 Om. trees	
EXTERNAL PERIMETER 3	SFA	RESIDENTIAL (SFD)	1' Buffer	305'	NO	NO	8 15 0	8 Shd. trees & 15 Evg. trees*	
EXTERNAL PERIMETER 4	SFA	OTHER	'A' Buffer	118'	NO	NO	2 0 0	2 SHADE TREES	
EXTERNAL PERIMETER 5	SWM POND	OTHER	'B' Buffer	250'	NO	NO	0 0 0	PROVIDED BY SCHEDULE-D: SWM-PERIMETER 2	
EXTERNAL PERIMETER 6	SFA	OTHER	'A' Buffer	436'	NO	NO	1 0 0	1 SHADE TREE	
EXTERNAL PERIMETER 7	SFA	RESIDENTIAL (SFD)	1' Buffer	364'	YES, 364' Ex. Forest	NO	0 0 0	EXISTING FOREST RETENTION	
EXTERNAL PERIMETER 8	SFA	OTHER	'A' Buffer	421'	NO	NO	1 0 0	3 Shd. trees & 8 Om. trees	
TOTAL TREES REQUIRED FOR SCH-A:							31	41	

*Some are located to interior higher ground for more effective screening.

SCHEDULE-B: PARKING LOT INTERNAL LANDSCAPING

NUMBER OF PARKING SPACES	IS COMMON SURFACE PARKING SPACES
NUMBER OF TREES REQUIRED (at 1 shade tree per 10 spaces)	2 + 1 MITIGATION TREE PER WP-14-C06
NUMBER OF TREES PROVIDED Shade Trees Other trees (at 2:1 substitution)	3 0

SCHEDULE-D: STORMWATER MANAGEMENT AREA

PERIMETER	LAND USE	ADJACENT LAND USE	TYPE OF BUFFER	LINEAR FEET OF SWM PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) DESCRIBE BELOW IF NEEDED.	CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) DESCRIBE BELOW IF NEEDED.	NUMBER OF PLANTS REQUIRED	HOW REQUIRED BUFFER IS BEING PROVIDED	
							SHADE TREES EVERGREEN TREES SHRUBS		
SWM PERIMETER 1	SWM FACILITY	RESIDENTIAL	'B' Buffer	248'	NO	NO	5 6 0	6 SHADE TREES & 6 EVERGREEN TREES	
SWM PERIMETER 2	SWM FACILITY	COMMERCIAL	'B' Buffer	250'	NO	NO	5 6 0	6 SHADE TREES & 6 EVERGREEN TREES	
SWM PERIMETER 3	SWM FACILITY	RES/COMMERCIAL	'C' Buffer	402'	NO	NO	NO	PROVIDED BY SCHEDULE-A: EXTERNAL PERIMETER 2 & 3	
TOTAL TREES REQUIRED FOR SCH-D:							10	12	

PUBLIC STREET TREE REQUIREMENTS

LOCATION	LINEAR FT.	TREE QUANTITY REQUIRED	TREE QUANTITY PROVIDED
AVREY RD.	Twice 156 LF (1 Station) less 117' parking bays and less 823' SFA Driveways = 532'	18 (at approx. 30' spacing)	18

STREET TREE GENERAL NOTES:

- MAINTAIN THE FOLLOWING MINIMUM DISTANCE WHEN PLANTING STREET TREES:
 - 20' FROM STREET LIGHTS.
 - 30' FROM STREET SIGNS AND ROAD INTERSECTIONS.
 - 5' FROM A FIRE HYDRANT OR A STORM DRAIN INLET
 - 10' FROM A DRIVEWAY
- STREET TREES ARE BONDED SEPARATE FROM BUFFER LANDSCAPING. THE SURETY OF \$ 5,400.00 (18 x \$300.00/TREE) FOR THE 18 STREET TREES WILL BE ADDRESSED WITH DED'S COST ESTIMATE.
- SEE SHEET-24 FOR PLANT LIST (for street trees & buffer landscape trees)
- WHEN THE DISTANCE BETWEEN THE CURB AND THE SIDEWALK IS LESS THAN 6 FEET, AND WHERE TREES ARE PLANTED CLOSER THAN 5 FEET TO THE SIDEWALK, A BIOLOGIC ROOT INHIBITOR BARRIER OR PHYSICAL CONTAINER BARRIER SHALL BE REQUIRED.

THIS PLAN IS FOR PLANTING PURPOSES ONLY

STATE OF MARYLAND
 Michael B. Tran
 REGISTERED ARCHITECT
 933
 L. 10834E
 4-2-18

LANDSCAPE AND STREET TREE PLAN

TERRAPIN WOODS
 LOTS 1-34 & OPEN SPACE LOTS 35-38 & NON-BUILDABLE PARCEL A
 A SUBDIVISION OF PARCELS 115 & 117, LIBER 15723 FOLIO 16 AND IN PART A RESUBDIVISION OF LOTS 4-7, BLOCK A "ELKRIDGE FARM-NO.2" PLAT BK. 122 PLAT NO. 62
 ELECTION DISTRICT No. 2 HOWARD COUNTY, MARYLAND

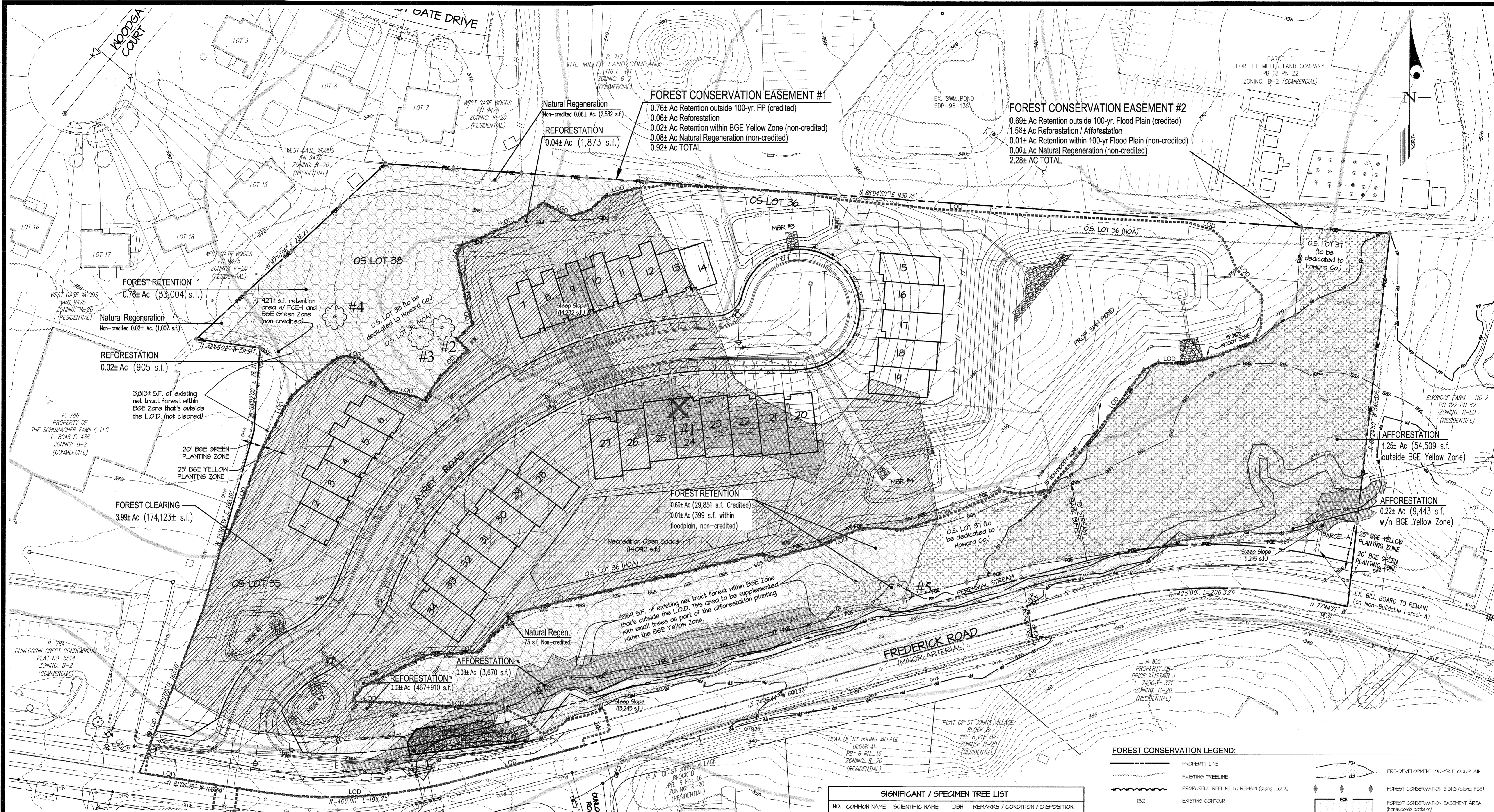
SCALE: 1"=40'
 ZONING: R-SC
 G. L. W. FILE NO.: 12039

DATE: MAR., 2018
 TAX MAP - GRID: 24 - 11
 SHEET: 22 OF 27

OWNER/PREPARED FOR: BVR INVESTMENTS LLC 1377 GOLD MINE LANE EVERGREEN, CO 80439 BRIAN ROBERTS 240-461-9172

DEVELOPER: BVR INVESTMENTS LLC

DATE: _____ REVISION: _____ BY: _____ APPR: _____



FOREST CONSERVATION EASEMENT #1
 Natural Regeneration
 Non-credited 0.06± Ac. (2,532 s.f.)
 REFORESTATION
 0.04± Ac (1,873 s.f.)
 0.76± Ac Retention outside 100-yr. FP (credited)
 0.06± Ac Reforestation
 0.02± Ac Retention within BGE Yellow Zone (non-credited)
 0.08± Ac Natural Regeneration (non-credited)
 0.92± Ac TOTAL

FOREST CONSERVATION EASEMENT #2
 0.69± Ac Retention outside 100-yr. Flood Plain (credited)
 1.58± Ac Reforestation / Afforestation
 0.01± Ac Retention within 100-yr Flood Plain (non-credited)
 0.00± Ac Natural Regeneration (non-credited)
 2.28± AC TOTAL

FOREST RETENTION
 0.76± Ac (33,004 s.f.)

Natural Regeneration
 Non-credited 0.02± Ac. (1,007 s.f.)

REFORESTATION
 0.02± Ac (905 s.f.)

FOREST CLEARING
 3.99± Ac (174,123± s.f.)

FOREST RETENTION
 0.69± Ac (29,851 s.f. Credited)
 0.01± Ac (399 s.f. within floodplain, non-credited)

Natural Regen.
 73 s.f. Non-credited

REFORESTATION
 0.03± Ac (467,490 s.f.)

AFFORESTATION
 0.08± Ac (3,670 s.f.)

AFFORESTATION
 1.25± Ac (54,509 s.f. outside BGE Yellow Zone)

AFFORESTATION
 0.22± Ac (9,443 s.f. w/n BGE Yellow Zone)

FOREST CONSERVATION LEGEND:

- PROPERTY LINE
- EXISTING TREELINE
- PROPOSED TREELINE TO REMAIN (along L.O.D.)
- EXISTING CONTOUR
- PROPOSED CONTOUR
- LOD
- GRADING LIMIT OF DISTURBANCE (L.O.D.)
- STEEP SLOPE > 25%
- SOIL DELINEATION & TYPE
- STREAM & STREAM BANK
- SBB
- STREAM BANK BUFFER
- NWZ
- NON WOODY ZONE (for SPM Pond Embankment)
- TP
- TREE PROTECTION FENCE
- PRE-DEVELOPMENT 100-YR FLOODPLAIN
- FOREST CONSERVATION SIGNS (along FCE)
- FOREST CONSERVATION EASEMENT AREA (honeycomb pattern)
- FOREST RETENTION (cross-hatching within FCE)
- NET TRACT FOREST CLEARING (square netting pattern)
- FOREST PLANTINGS (plus-symbol hatching within FCE)
- SPECIMEN TREE LOCATIONS (an 'X' denotes those to be removed)

SIGNIFICANT / SPECIMEN TREE LIST

NO.	COMMON NAME	SCIENTIFIC NAME	DBH	REMARKS / CONDITION / DISPOSITION
1	black walnut	Juglans nigra	32"	Good (to be removed*)
2	silver maple	Acer saccharum	32"	Good (to remain)
3	silver maple	Acer saccharum	31"	Poor - vine cover, poor form (to remain)
4	silver maple	Acer saccharum	32"	Good (to remain)
5	silver maple	Acer saccharum	60"	Very Poor - crown dieback, broken limbs, multi-trunk, heavy vine cover (to remain)

*MP-14-056, A WAIVER REQUEST FROM SUBDIVISION SECTION 16.1205(a)(7), PROHIBITING REMOVAL OF A SPECIMEN TREE WAS APPROVED ON DECEMBER 16, 2013 UNDER THE FOLLOWING CONDITIONS:
 1. WAIVER APPROVAL APPLIES ONLY TO REMOVAL OF SPECIMEN TREE NO. 1 AS INDICATED BY THE WAIVER EXHIBIT.
 2. THE PETITIONER SHALL PROVIDE A 1:1 REPLACEMENT PLANTING ON-SITE TO MITIGATE REMOVAL OF SPECIMEN TREE NO. 1. THE REPLACEMENT PLANTING(S) SHALL BE MADE PART OF THE LANDSCAPE PLAN AND SHALL CONSIST OF A SPECIES SIMILAR TO THE TREE REMOVED AND EQUAL OR GREATER THAN THE SIZES AND SPECIFICATIONS FOUND FOR SUCH PLANTINGS IN THE HOWARD COUNTY LANDSCAPE MANUAL. THE PETITIONER SHALL INDICATE AND IDENTIFY THE REPLACEMENT PLANTINGS ON THE LANDSCAPE PLAN.

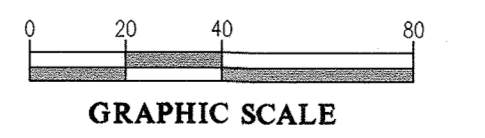
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways
 4/25/18
 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Chief, Division of Land Development
 7-6-18
 Date

Chief, Development Engineering Division
 5-1-18
 Date

FOR BEARINGS & DISTANCES ALONG THE FOREST CONSERVATION EASEMENT SEE THE COMPANION RECORD PLAT UNDER THE SAME FILE NUMBER (P-16-001).

NARRATIVE:
 MOST OF THE FLOOD PLAN AND STREAM BUFFER AREAS ON THIS SITE ARE NOT FORESTED; THEREFORE, THESE ENVIRONMENTAL AREAS ARE TOP PRIORITY FOR AFFORESTATION BY THIS DEVELOPMENT. THE PART OF THIS SITE THAT COULD BE DEVELOPED HAS A FOREST. CONSEQUENTLY, CLEARING A PORTION OF THE EXISTING FOREST IS UNAVOIDABLE. THE RESULTING AFFORESTATION/REFORESTATION PLANTINGS FOR THIS PROJECT WILL PRIMARILY BE IN THE FLOOD PLAN AND STREAM BUFFER AREAS OF THIS SITE.



STATE OF MARYLAND
 Michael B. Tran
 REGISTERED LANDSCAPE ARCHITECT
 4-2-18

GLWGUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3609 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
 BURTONSVILLE, MARYLAND 20866
 TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.

OWNER/
 PREPARED FOR:
 BVR INVESTMENTS LLC
 1377 GOLD MINE LANE
 EVERGREEN, CO 80439
 BRIAN ROBERTS
 240-461-9172

DEVELOPER:
 BVR INVESTMENTS LLC
 1377 GOLD MINE LANE
 EVERGREEN, CO 80439
 BRIAN ROBERTS
 240-461-9172

FOREST CONSERVATION PLAN
TERRAPIN WOODS
 LOTS 1-34 & OPEN SPACE LOTS 35-38 & NON-BUILDABLE PARCEL A
 A SUBDIVISION OF PARCELS 115 & 117, LIBER 15723 FOLIO 16 AND IN PART A RESUBDIVISION OF
 ELECTION DISTRICT No. 2 LOTS 4-7, BLOCK A "ELKRIDGE FARM-NO2" PLAT BK. 122 PLAT NO. 62
 HOWARD COUNTY, MARYLAND

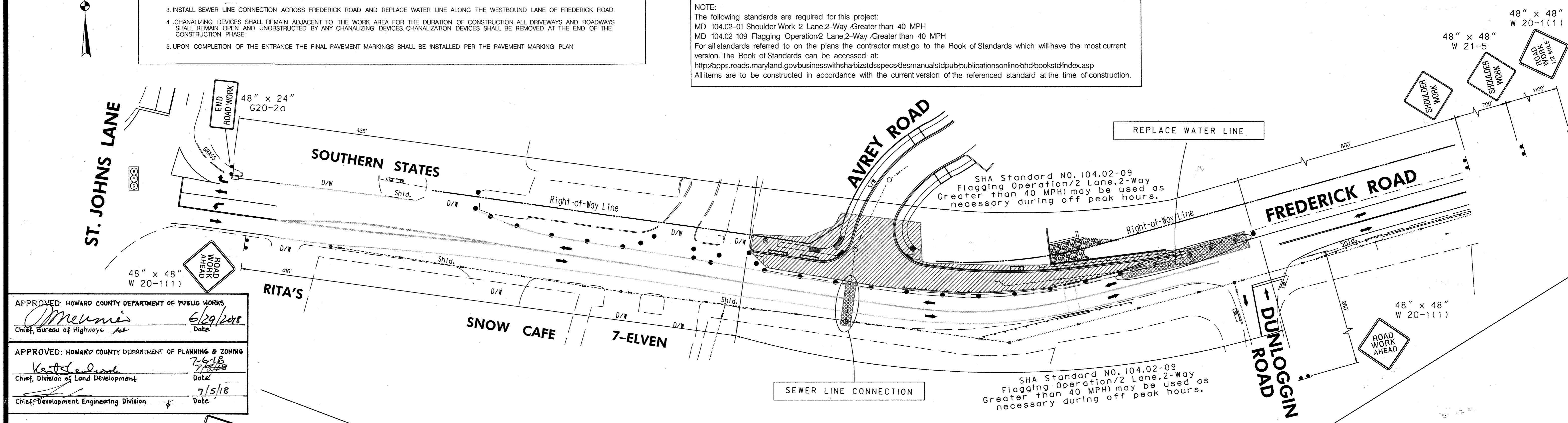
SCALE	ZONING	G. L. W. FILE NO.
1"=40'	R-SC	12039
DATE	TAX MAP - GRID	SHEET
MAR., 2018	24 - 11	23 OF 27

MAINTENANCE OF TRAFFIC PLAN FOR ROAD IMPROVEMENT AND UTILITIES

- SEQUENCE OF OPERATION**
1. INSTALL ADVANCE WARNING SIGNS AND SET TEMPORARY TRAFFIC CONTROL DEVICES
 2. BUILD ENTRANCE AT AVREY ROAD AND SIDEWALK RAMPS
 3. INSTALL SEWER LINE CONNECTION ACROSS FREDERICK ROAD AND REPLACE WATER LINE ALONG THE WESTBOUND LANE OF FREDERICK ROAD.
 4. CHANALIZING DEVICES SHALL REMAIN ADJACENT TO THE WORK AREA FOR THE DURATION OF CONSTRUCTION ALL DRIVEWAYS AND ROADWAYS SHALL REMAIN OPEN AND UNOBSTRUCTED BY ANY CHANALIZING DEVICES. CHANALIZATION DEVICES SHALL BE REMOVED AT THE END OF THE CONSTRUCTION PHASE.
 5. UPON COMPLETION OF THE ENTRANCE THE FINAL PAVEMENT MARKINGS SHALL BE INSTALLED PER THE PAVEMENT MARKING PLAN

NOTE:
 The following standards are required for this project:
 MD 104.02-01 Shoulder Work 2 Lane, 2-Way, Greater than 40 MPH
 MD 104.02-109 Flagging Operation 2 Lane, 2-Way, Greater than 40 MPH
 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 accessed at:
<http://apps.roads.maryland.gov/businesswithshabizstdsspecs/desmanualstdpub/publicationonline/bhd/bookstd/index.asp>
 All items are to be constructed in accordance with the current version of the referenced standard at the time of construction.

Drop Off Policy
 Contractor to maintain less than 2.5 in. of drop-off during periods of non-construction. Use appropriate standard. See General Note No: 13.

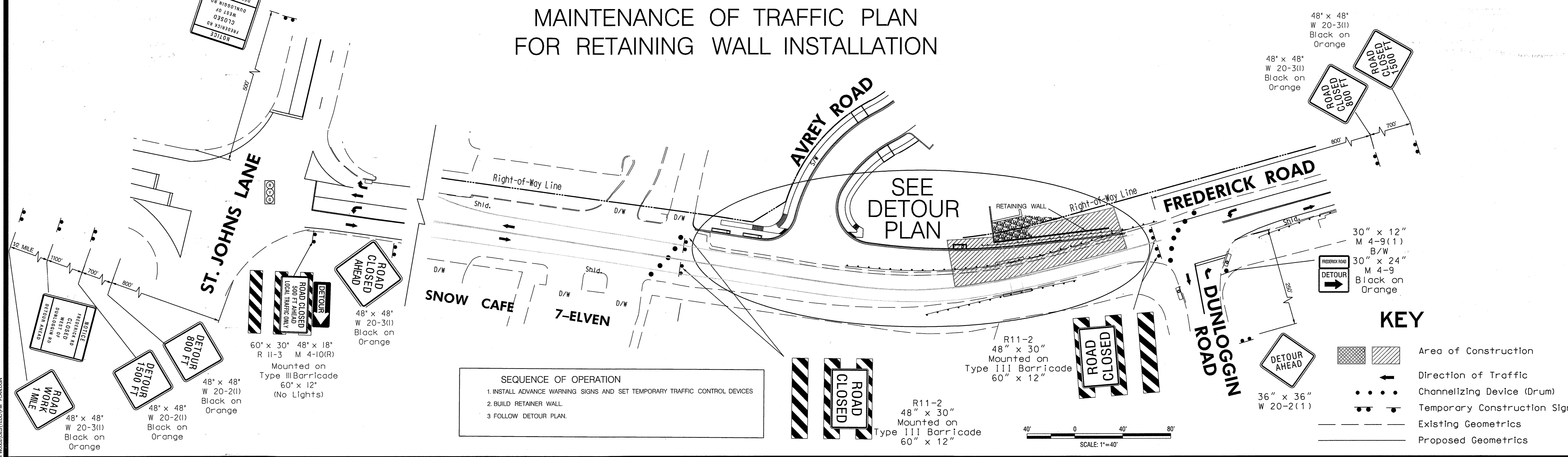


APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] 6/29/2018
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
[Signature] 7/5/18
 Chief, Division of Land Development Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
[Signature] 7/5/18
 Chief, Development Engineering Division Date

MAINTENANCE OF TRAFFIC PLAN FOR RETAINING WALL INSTALLATION



- SEQUENCE OF OPERATION**
1. INSTALL ADVANCE WARNING SIGNS AND SET TEMPORARY TRAFFIC CONTROL DEVICES
 2. BUILD RETAINER WALL.
 3. FOLLOW DETOUR PLAN.

KEY

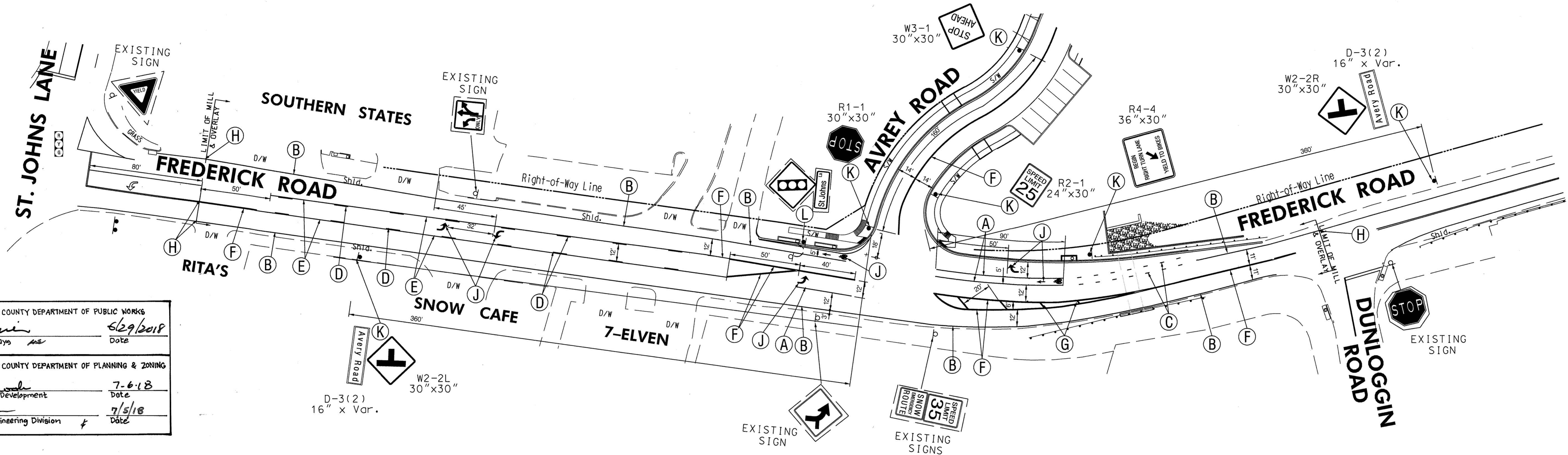
- Area of Construction
- Direction of Traffic
- Chanalizing Device (Drum)
- Temporary Construction Sign
- Existing Geometrics
- Proposed Geometrics

<p>The Traffic Group, Inc. Suite 11 9900 Franklin Square Drive Baltimore, Maryland 21236 410-931-6800 1-800-668-8411 Fax: 410-931-6801 www.trafficgroup.com "Merging Innovation and Excellence" ®</p>	DES. F.H.	DRN. F.H.	CHK. J.D.	DATE	REVISION	BY	APPR.	PREPARED FOR: BIR INVESTMENTS, LLC 137 GOLD MINE LANE EVERGREEN, CO 80439 BRIAN ROBERTS 240-461-9172	PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE PLANS 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. 9172 EXPIRATION DATE: 6/28/2019	MAINTENANCE OF TRAFFIC PLAN TERRAPIN WOODS LOTS 1-34 & OPEN SPACE LOTS 35-38 & NON-BUILDABLE PARCEL A A SUBDIVISION OF PARCELS 115 & 117, LIBER 15723 FOLIO 16 AND IN PART A RESUBDIVISION OF LOTS 4-7, BLOCK A 'ELKRIDGE FARM -NO 2' PLAT BK. 122 PLAT NO. 62 HOWARD COUNTY, MARYLAND	SCALE 1" = 40' DATE JUNE, 2018	ZONING R-SC TAX MAP - GRID 24-11	G.L.W. FILE No. 12039 SHEET 25 of 27
	ELECTION DISTRICT NO. 2	SCALE 1" = 40' DATE JUNE, 2018	ZONING R-SC TAX MAP - GRID 24-11	G.L.W. FILE No. 12039 SHEET 25 of 27									

NOTES:

1. ALL PERMANENT SIGNS SHALL BE FIELD LOCATED BY THE TRAFFIC DIVISION.
3. ALL PAVEMENT MARKINGS SHALL BE LAID-OUT BY THE TRAFFIC DIVISION.
- 3 CONTACT HOWARD COUNTY TRAFFIC (410-313-5752) AT LEAST ONE WEEK PRIOR TO SIGNS AND MARKINGS INSTALLATION

SIGNING AND MARKING PLAN



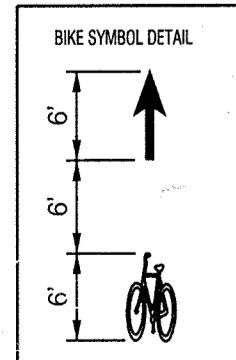
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways
 Date: 6/29/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Chief, Division of Land Development
 Date: 7-6-18

Chief, Development Engineering Division
 Date: 7/5/18

CONSTRUCTION DETAILS

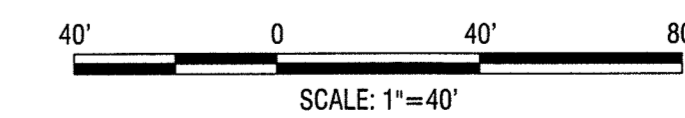
- INSTALL 5 IN. SOLID WHITE THERMOPLASTIC PAVEMENT MARKING FOR LANE LINE.
- INSTALL 5 IN. SOLID WHITE THERMOPLASTIC PAVEMENT MARKING FOR EDGE LINE.
- INSTALL 5 IN. DOTTED (3 FT. SEGMENT, 9 FT. GAP) WHITE THERMOPLASTIC PAVEMENT MARKING FOR LANE LINE.
- INSTALL 5 IN. BROKEN (10 FT. SEGMENT, 30 FT. GAP) YELLOW THERMOPLASTIC PAVEMENT MARKING FOR LANE LINE.
- INSTALL 5 IN. SOLID YELLOW THERMOPLASTIC PAVEMENT MARKING FOR CENTER LINE.
- INSTALL 5 IN. SOLID DOUBLE YELLOW THERMOPLASTIC PAVEMENT MARKING FOR CENTER LINE.
- INSTALL 12 IN. SOLID YELLOW THERMOPLASTIC PAVEMENT MARKING FOR GORE AREA.
- TIE TO EXISTING PAVEMENT MARKING.
- INSTALL WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING SYMBOL.
- INSTALL GROUND MOUNTED SIGN.
- RELOCATE EXISTING GROUND MOUNTED SIGN.



MATERIAL LIST

Equipment to be furnished and installed by the Contractor. All equipment in this list shall have catalog cuts submitted for approval prior to installation.

QUANTITY	UNITS	DESCRIPTION
1590	LF	5 IN. WIDE HEAT APPLIED THERMOPLASTIC PAVEMENT MARKING - WHITE.
1890	LF	5 IN. WIDE HEAT APPLIED THERMOPLASTIC PAVEMENT MARKING - YELLOW.
30	LF	12 IN. WIDE HEAT APPLIED THERMOPLASTIC PAVEMENT MARKING - YELLOW.
3	EA	HEAT APPLIED THERMOPLASTIC PAVEMENT MARKING SYMBOL (LEFT ARROW) - WHITE.
1	EA	HEAT APPLIED THERMOPLASTIC PAVEMENT MARKING SYMBOL (RIGHT ARROW) - WHITE.
2	EA	HEAT APPLIED THERMOPLASTIC PAVEMENT MARKING SYMBOL (BIKE & ARROW) - WHITE.
1	EA	30 IN. X 30 IN. R1-1 SIGN FOR GROUND MOUNTING.
2	EA	16 IN. X VAR. D3-(2) 3 SIGN FOR GROUND MOUNTING.
1	EA	30 IN. X 30 IN. W2-2 R SIGN FOR GROUND MOUNTING.
1	EA	30 IN. X 30 IN. W2-2 L SIGN FOR GROUND MOUNTING.
1	EA	24 IN. X 30 IN. R2-1 SIGN FOR GROUND MOUNTING.
1	EA	36 IN. X 30 IN. R4-4 SIGN FOR GROUND MOUNTING.
130	LF	2 IN. GALVANIZED STEEL PERFORATED SQUARE TUBE POST (14 GAUGE (SEE GENERAL NOTE FOR INSTALLATION))
1	EA	RELOCATE GROUND MOUNTED SIGN.



The Traffic Group, Inc.
 Suite H
 9900 Franklin Square Drive
 Baltimore, Maryland 21236
 410-931-6600 1-800-583-8411 Fax: 410-931-6601
 www.trafficgroup.com
 "Merging Innovation and Excellence"

DES. F.H.	DRN. F.H.	CHK. J.D.	DATE	REVISION	BY	APPR.

PREPARED FOR:
 BVR INVESTMENTS LLC
 1377 GOLD MINE LANE
 EVERGREEN, CO 80439
 BRIAN ROBERTS
 240-461-9172

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE PLANS 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. 31757, EXPIRATION DATE: 6/28/2019



SIGNING AND MARKING PLAN

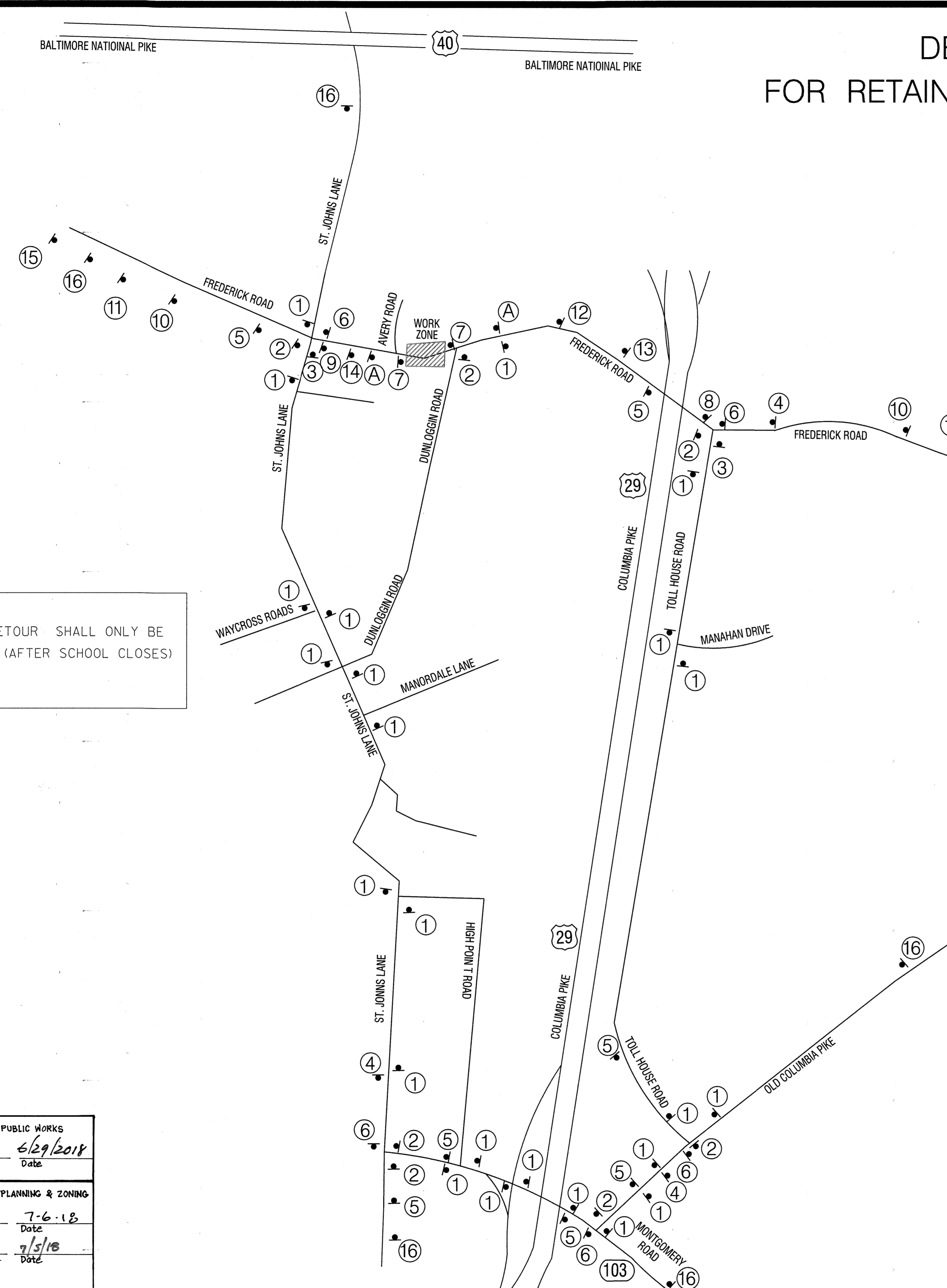
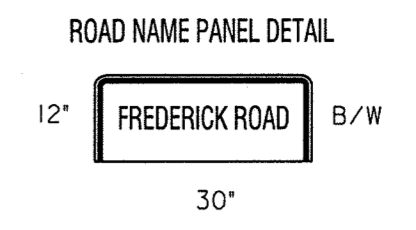
TERRAPIN WOODS
 LOTS 1-34 & OPEN SPACE LOTS 35-38 & NON-BUILDABLE PARCEL A
 A SUBDIVISION OF PARCELS 115 & 117, LIBER 15723 FOLIO 16 AND IN
 PART A RESUBDIVISION OF LOTS 4-7, BLOCK A "ELK RIDGE FARM - NO 2"
 PLAT BK 122 PLAT NO. 62

ELECTION DISTRICT NO. 2

HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE NO.
1" = 40'	R-SC	12039
DATE	TAX MAP - GRID	SHEET
JUNE, 2018	24-11	26 of 27

DETOUR PLAN FOR RETAINER WALL INSTALATION



SPECIAL NOTE:
THE WORK REQUIRING THE DETOUR SHALL ONLY BE PERFORMED FROM MID JUNE (AFTER SCHOOL CLOSES) TO LABOR DAY WEEKEND.

<p>1</p> <p>30" x 12" M 4-9(I) B/W 30" x 24" M 4-9 Mod. Black on Orange</p>	<p>2</p> <p>30" x 12" M 4-9(I) B/W 30" x 24" M 4-9 Black on Orange</p>	<p>3</p> <p>30" x 12" M 4-9(I) B/W 24" x 18" M 4-9a Black on Orange</p>	<p>4</p> <p>30" x 12" M 4-9(I) B/W 30" x 24" M 4-9 Black on Orange</p>	<p>5</p> <p>30" x 12" M 4-9(I) B/W 30" x 24" M 4-9 Black on Orange</p>
<p>6</p> <p>30" x 12" M 4-9(I) B/W 30" x 24" M 4-9 Black on Orange</p>	<p>7</p> <p>R11-2 48" x 30" Mounted on Type III Barricade 60" x 12" (2 IN EACH DIRECTION)</p>	<p>8</p> <p>48" x 18" M 4-10(L) BK/O 60" x 30" R 11-3 BK/W Mounted on Type III Barricade 60" x 12" (No Lights)</p>	<p>9</p> <p>48" x 18" M 4-10(R) BK/O 60" x 30" R 11-3 BK/W Mounted on Type III Barricade 60" x 12" (No Lights)</p>	<p>10</p> <p>48" x 48" W 20-2(I) Black on Orange</p>
<p>11</p> <p>48" x 48" W 20-2(I) Black on Orange</p>	<p>12</p> <p>48" x 48" W 20-3(I) Black on Orange</p>	<p>13</p> <p>48" x 48" W 20-3(I) Black on Orange</p>	<p>14</p> <p>48" x 48" W 20-3(I) Black on Orange</p>	<p>15</p> <p>48" x 48" W 20-3(I) Black on Orange</p>
<p>16</p> <p>60" MAX</p>	<p>A</p> <p>60" MAX</p>			

SIGN "A" MUST BE INSTALLED 2 WEEKS PRIOR TO CLOSURE.

* TRAFFIC DIVISION WILL SUPPLY PHONE "

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Mummi 6/29/2018
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Kent DeLoach 7-6-18
 Chief, Division of Land Development Date

[Signature] 7/5/18
 Chief, Development Engineering Division Date

The Traffic Group, Inc.
 Suite H
 9900 Franklin Square Drive
 Baltimore, Maryland 21228
 410-931-6600 1-800-583-8411 Fax: 410-931-6601
 www.trafficgroup.com
 "Merging Innovation and Excellence"

DES. F.H.	DRN. F.H.	CHK. J.D.	DATE	REVISION	BY	APPR.

PREPARED FOR:
 BR INVESTMENTS LLC
 137 GOLD MINE LANE
 EVERGREEN, CO 80439
 BRIAN ROBERTS
 248-491-9172

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE PLANS 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. 31757 EXPIRATION DATE: 6/28/2019

DETOUR PLAN
TERRAPIN WOODS
 LOTS 1-34 & OPEN SPACE LOTS 35-38 & NON-BUILDABLE PARCEL A
 A SUBDIVISION OF PARCELS 115 & 117, LIBER 15723 FOLIO 16 AND IN
 PART A RESUBDIVISION OF LOTS 4-7, BLOCK A "ELK RIDGE FARM - NO 2"
 PLAT BK. 122 PLAT NO. 62
 ELECTION DISTRICT NO. 2
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE NO.
N/A	R-SC	12039
DATE	TAX MAP - GRID	SHEET
JUNE, 2018	24-11	27 of 27