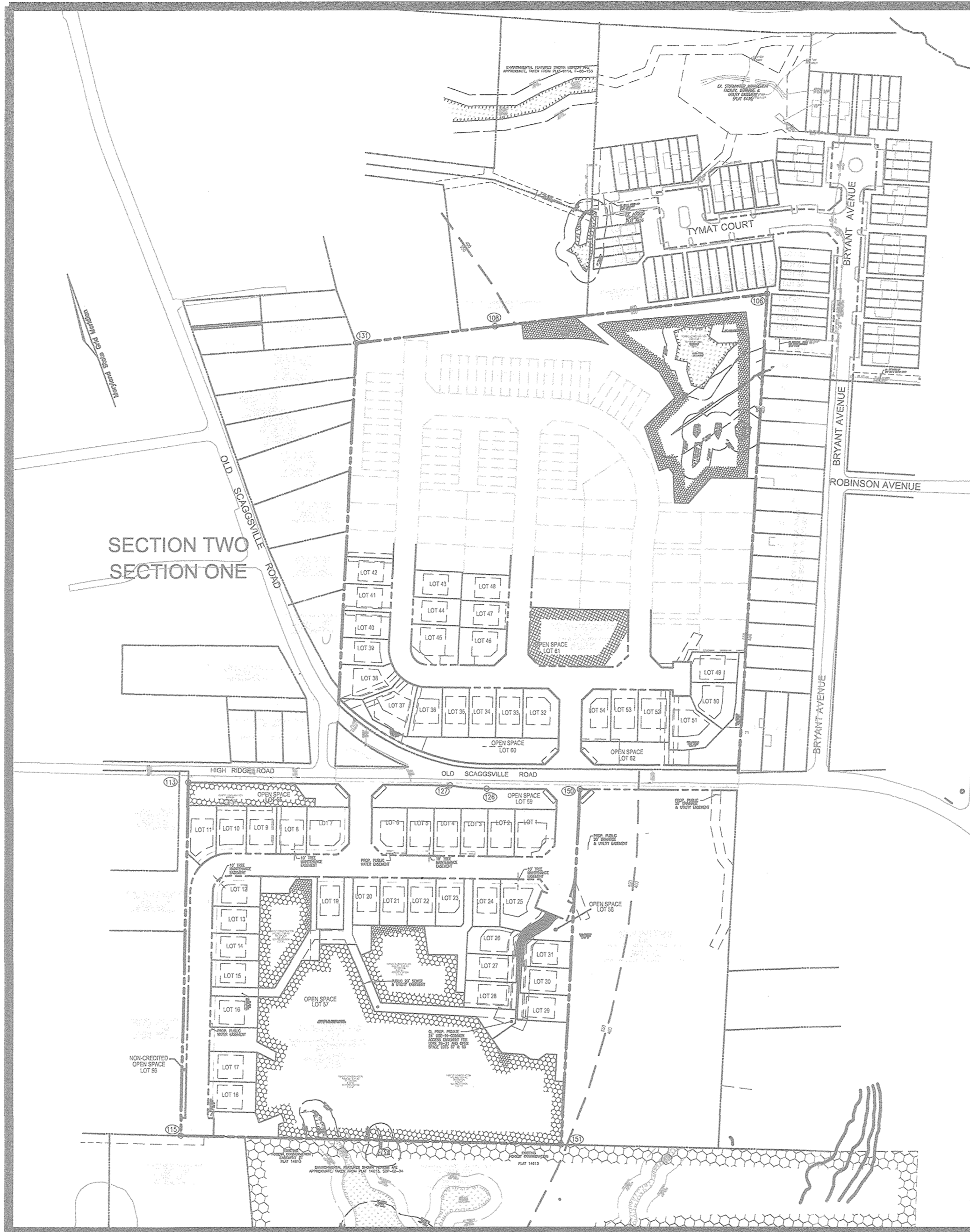


GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE UNLESS WAIVERS HAVE BEEN APPROVED.
- THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS:
 - MISS UTILITY 1-800-257-7777
 - VERIZON TELEPHONE COMPANY 1-800-254-4881
 - HOWARD COUNTY BUREAU OF UTILITIES 410-313-2586
 - AT&T CABLE LOCATION DIVISION 1-800-393-3553
 - B.G.&E. CO. CONDUIT SERVICES 410-880-4620
 - B.G.&E. CO. UNDERGROUND DAMAGE CONTROL 410-787-4620
 - STATE HIGHWAY ADMINISTRATION 410-531-5533
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK.
- AS SP13-007 RECEIVED APPROVAL PRIOR TO 10/6/2013, THE SUBJECT PROPERTY IS ZONED R-SC IN ACCORDANCE WITH 02/02/04 COMPREHENSIVE ZONING PLAN AND THE COMP. LITE ZONING REGULATIONS EFFECTIVE ON 7/28/04.
 - THE PROPERTY IS SUBJECT TO THE AMENDED 5TH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS EFFECTIVE 10/7/07
 - PROPERTY OUTLINE SHOWN HEREON IS BASED ON A BOUNDARY SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED FEBRUARY 2012.
 - TOPOGRAPHY SHOWN HEREON IS OBTAINED FROM AERIAL PHOTOGRAMMETRY COMPILED BY POTOMAC AERIAL SURVEYS INC. JANUARY 12, 2012.
 - THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 47H2 AND 47GC WERE USED FOR THIS PROJECT.
 - THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. DEVELOPMENT OR CONSTRUCTION OF THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PERMITS, OR BUILDING AND GRADING PERMITS.
 - TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL GROUNDS OR CEMETERIES LOCATED ON THIS PROPERTY.
 - THE ARE NO EXISTING HOMES ON THESE PARCELS.
 - SCAGGSVILLE ROAD IS CLASSIFIED AS A MINOR COLLECTOR.
 - THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT. WATER FOR THIS PROJECT IS TO BE PUBLIC EXTENSIONS OF CONTRACT NO. 1-W. SEWER FOR THIS PROJECT IS TO BE PUBLIC EXTENSIONS OF CONTRACT NO. 30-S AND CONTRACT NO. 30-3253.
 - SECTION ONE EXTENSIONS ARE DETAILED ON CONTRACT 24-4778-D
 - EXISTING UTILITIES LOCATED FROM ROAD CONSTRUCTION PLANS, TOPOGRAPHIC SURVEY, PUBLIC WATER AND AND SEWER EXTENSION PLANS, AND AS-BUILT DRAWINGS. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE.
 - ANY DAMAGE INCURRED TO THE EXISTING UTILITIES, DUE TO CONTRACTOR'S OPERATIONS, SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
 - ANY DAMAGE TO PUBLIC RIGHT-OF-WAY, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
 - THE PROPOSED UNITS SHALL HAVE AN AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM.
 - SOIL TYPES SHOWN HEREON ARE IN ACCORDANCE WITH THE WEB SOIL SURVEY - HOWARD COUNTY, MARYLAND.
 - THE OFFICIAL PRE-SUBMISSION COMMUNITY MEETING WAS HELD FOR THIS PROJECT ON FEBRUARY 28, 2012 AT SAINT VINCENT PALOTTI HIGH SCHOOL. ON APRIL 12, 2012 A SECOND, NON-OFFICIAL MEETING WAS HELD AT THE LAUREL COMMUNITY CENTER.
 - NO FLOODPLAINS EXIST ON SITE.
 - STEEP SLOPES ARE LOCATED AND SHOWN HEREON.
 - WETLANDS AND STREAMS SHOWN HEREON ARE BASED ON DELINEATION BY MCCARTHY & ASSOCIATES, INC., (DECEMBER 2011). THE REPORT WAS APPROVED OCTOBER 2012.
 - NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100-YEAR FLOODPLAIN.
 - THE PROPOSED SUBDIVISION (SECTION ONE) AND RELATED CONSTRUCTION WILL NOT IMPACT ENVIRONMENTAL FEATURES OR BUFFERS.
 - A FOREST STAND DELINEATION PLAN WAS PREPARED BY MCCARTHY & ASSOCIATES, INC., APRIL 2012 AND AMENDED OCTOBER 2012.
 - A TRAFFIC STUDY FOR THIS PROJECT PREPARED BY THE TRAFFIC GROUP, INC., DATED AUGUST 2012, WAS APPROVED 3/2013.
 - A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT. NOISE WALL MITIGATION CURRENTLY EXISTS ALONG INTERSTATE 95.
 - A GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY HILLIS CARNES ENGINEERING ASSOCIATES, INC., DATED AUGUST 2012.
 - AN ENVIRONMENTAL CONCEPT PLAN (ECP12-047) WAS APPROVED ON OCTOBER 1, 2012.
 - A PRELIMINARY EQUIVALENT SWITCH PLAN (ESP13-007) WAS APPROVED ON JULY 3, 2013.
 - STORMWATER MANAGEMENT FOR THIS PROJECT IS PROVIDED BY THE USE OF ALTERNATIVE SURFACES, NON STRUCTURAL PRACTICES & MICRO-SCALE PRACTICES IN ACCORDANCE WITH ENVIRONMENTAL SITE DESIGN CRITERIA. NON STRUCTURAL PRACTICES INCLUDE ROOFTOP DISCONNECTIONS, MICRO-SCALE PRACTICES INCLUDE MICRO-BARRIERS, SWALES, DRENCHERS, RAIN BARRELS AND RAIN GARDENS. ALTERNATIVE SURFACES INCLUDE PERMEABLE SURFACES, TYPICALLY ALTERNATIVE SURFACE, NON STRUCTURAL AND MICRO-SCALE FACILITIES (ON LOT WILL BE PRIVATELY OWNED AND MAINTAINED (H.O.A.), MICRO-SCALE FACILITIES MANAGING ROAD RUNOFF SHALL BE DESIGNATED AS PUBLICLY OWNED AND JOINTLY MAINTAINED FACILITIES (H.O.A.) AND HOWARD COUNTY. HOWARD COUNTY WILL MAINTAIN OUTLET STRUCTURES AND PIPES WHILE THE H.O.A. SHALL MAINTAIN MULCH, WEEDING, PLANTINGS, PERFORATED UNDERDRAINS, FEEDER PIPES, AND ROUTINE SOIL REPLACEMENT.
 - THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124(a)(1) OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A FINANCIAL SURVEY IN THE FORM OF A FINANCIAL SURVEY (FORM 87) FOR SHADE TREES AND 126 EVERGREENS), 6 SHRUBS (TRASH PAD LANDSCAPING) AND 6 SHADE TREES (SPECIMEN TREE REPLACEMENT) SHALL BE POSTED WITH THE DEVELOPERS AGREEMENT FOR THIS PLAN.
 - PUBLIC STREET TREES ARE PROVIDED FOR THIS PROJECT IN ACCORDANCE WITH SECTION 16.124(a)(1) OF THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL. FINANCIAL SURVEY (# 49,800) SHALL BE POSTED AS PART OF THIS FINAL PLAN. DEVELOPER'S AGREEMENT FOR THE REQUIRED 166 STREET TREES.
 - A FOREST CONSERVATION PLAN PREPARED BY ROBERT H. VOGEL ENGINEERING, INC. IS PART OF THIS FINAL PLAN.
 - FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL A PORTION OF THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY FOREST CONSERVATION MANUAL. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- A PORTION OF THE REQUIRED FOREST CONSERVATION WILL BE PROVIDED ON NON-BUILDABLE BULK PARCEL "B", WHICH WILL BECOME OPEN SPACE LOT 145 WITH PHASE II (F-14-023) AND SHALL MEET THE INTENT OF SECTION 16.1177 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
 - TOTAL FOREST CONSERVATION OBLIGATION OF THIS PROJECT TO BE FULFILLED BY ONSITE RETENTION OF 5.85 AC. (NO SURETY REQ). REFORESTATION OF 2.20 AC. AND PURCHASE OF 1.71 ACRES OF REFORESTATION CREDIT IN THE BRIGHTON HILL PROPERTY FOREST BANK SFP 11-056
 - FINANCIAL SURETY FOR THE REQUIRED REFORESTATION = \$47,916 (2.20 AC OR 95,832 SF @ \$0.50/SF) SHALL BE POSTED WITH THE DEVELOPERS AGREEMENT.
- IN ACCORDANCE WITH SECTION 16.121(A)(2) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS THE OPEN SPACE REQUIREMENTS FOR THIS RSC PROJECT IS 25% OF GROSS AREA (36,940 AC. GROSS AREA X 25% = 9,240 AC. REQUIRED).
 - OPEN SPACE LOTS 55, 56 AND 58 - 68 TO BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
 - TOTAL OPEN SPACE PROVIDED UNDER F14-023 SECTION ONE = 9.92 ACRES
 - ADDITIONAL OPEN SPACE SHALL BE PROVIDED UNDER F14-023 SECTION TWO
- THE RECREATIONAL OPEN SPACE AREA (OPEN SPACE LOT 61) IS DESIGNATED FOR THE RESIDENTS AND IS AN AREA AVAILABLE TO SIT, PICNIC, PLAY, DOG WALK AND ENJOY THE HOWARD AREA. REFER TO RECREATION OPEN SPACE TABULATION, THIS SHEET
- IN ACCORDANCE WITH DESIGN MANUAL - VOLUME 3, CHAPTER 2 - SECTION 2.3.B, PARKING IS REQUIRED AT TWO (2) SPACES PER UNIT OFF STREET PARKING TO INCLUDE GARAGE SPACE, DRIVEWAY AND PARKING PADS. GARAGES COUNT AS A FULL SPACE. SEE TABULATION BELOW
- ALL DRIVEWAY ENTRANCES SHOWN ON THIS PLAN SHALL BE PERMITTED UNDER THE PERMITS AND SHALL BE CONSTRUCTED TO MEET THE REQUIREMENTS OF SECTION 2.5 AND APPENDIX A OF DESIGN MANUAL, VOLUME III, WHICH REQUIRES AN 85TH PERCENTILE SPEED ROADWAY SECTION DESIGN. THE DIVISION APPROVED THE REQUEST. 1) BASED ON CONDITIONS MADE IN THE REQUEST. 2) THE ASSUMED 85TH PERCENTILE SPEED IS IN LINE WITH THE ACTUAL STUDY MADE BY THE ENGINEER AT THE NEXT INTERSECTION. 3) MINIMUM CURVE RADIUS HAS BEEN REDUCED WITHIN PROVIDING SPEED CONTROL WITHIN THIS PORTION OF THE SUBDIVISION. IT IS NOTED THAT ALL RAMP WITHIN THE SUBDIVISION MEETS THE HOWARD COUNTY FIRE DEPARTMENT REQUIREMENTS. THE REQUESTED WAIVER TO DESIGN MANUAL, VOLUME 4, DETAIL 81.02 HAS BEEN DEFERRED UNTIL THE SUBMISSION OF THIS FINAL PLAN.
- TRAFFIC CONTROL WILL BE PROVIDED FOR THE PROPOSED OLD SCAGGSVILLE ROAD IMPROVEMENTS IN ACCORDANCE WITH THE LATEST MUTCD. PATHWAY IMPROVEMENTS ALONG THE ENTIRE FRONTAGE OF THE PROJECT BOUNDARY, PEDESTRIAN CROSSING ACROSS OLD SCAGGSVILLE ROAD AND THE FINAL LOCATION OF SIDEWALKS AND CROSSINGS INTERIOR TO THE DEVELOPMENT ARE SHOWN HEREON.

FINAL ROAD CONSTRUCTION PLAN HIGH RIDGE MEADOWS - SECTION ONE

LOTS 1-54, OPEN SPACE LOTS 55 - 62
AND NON-BUILDABLE BULK PARCEL "A"
(SFD RESIDENTIAL)
OLD SCAGGSVILLE ROAD
HOWARD COUNTY, MARYLAND



LOCATION MAP

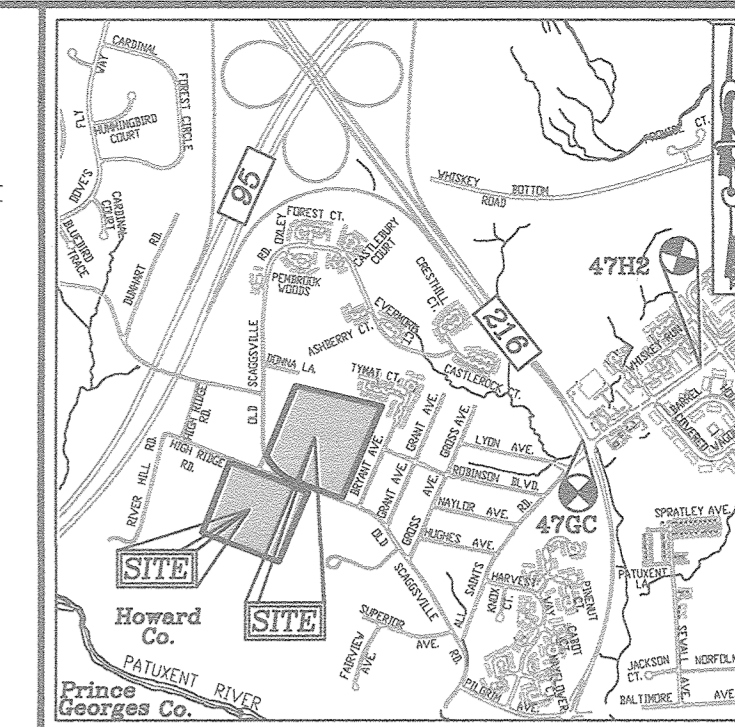
SCALE: 1"=200'

COORDINATE TABLE		
NO.	NORTH	EAST
106	529292.3586	1352130.3938
108	529432.1159	1351536.0210
111	529114.0484	1350547.6827
115	529281.5692	1350282.8157
126	528472.4761	1351168.1324
127	528077.4229	1351085.2728
131	529503.4582	1351232.1353
150	528400.0730	1351362.5859
151	527877.0247	1351085.2728
152	528074.8257	1350852.7125
153	528635.8856	1350867.5238
154	528576.1636	1351020.0205
155	528777.3625	1350976.9683
156	528283.7518	1351693.4094
164	52819.1942	1351708.7657
165	52854.3873	1351163.8283
166	52854.3873	135116.4299
167	528762.3875	1350920.6884

BENCHMARKS

HOWARD COUNTY BENCHMARK 47H2 (CONC. MON.)
N 529706.4221 E 1355445.3364 ELEV. 256.068
LOCATION: ALL SAINTS ROAD 2407+/- SOUTH OF NORTH
LAUREL ROAD 2.89 FEET FROM STORM DRAIN
INLET; 1' EAST OF CURB, 0.6 BELOW SURFACE

HOWARD COUNTY BENCHMARK 47GC (CONC. MON.)
N 528938.7281 E 1354235.6336 ELEV. 226.2772
LOCATION: MEDIAN ISLAND 29 FEET WEST OF ALL SAINTS
RD / RT 216 INTERSECTION; 1.4 FEET WEST
OF SOUTHWEST INTERIOR CORNER



VICINITY MAP

SCALE: 1"=2,000'
ADC MAP COORDINATE: 5169 61/5169 82
5169 C1/5169 C2

SHEET INDEX	
DESCRIPTION	SHEET NO.
COVER SHEET	1 OF 32
ROAD PROFILE AND PLAN DETAILS - OLD SCAGGSVILLE ROAD	2 OF 32
ROAD PROFILE AND PLAN DETAILS - CLARKE SPRINGS RIDGE DEER SPRINGS PLACE	3 OF 32
ROAD PROFILE AND PLAN DETAILS - TWIN FAWN TRAIL RUNNING DEER DRIVE	4 OF 32
ROAD PROFILE AND PLAN DETAILS - DEER VILLAGE DRIVE PEACE SPRINGS RIDGE	5 OF 32
SOILS MAP & PHASE 1 GRADING, SOIL EROSION AND SEDIMENT CONTROL PLAN	6 OF 32
SOILS MAP & PHASE 1 GRADING, SOIL EROSION AND SEDIMENT CONTROL PLAN	7 OF 32
SOILS MAP & PHASE 2 GRADING, SOIL EROSION AND SEDIMENT CONTROL PLAN	8 OF 32
SOILS MAP & PHASE 2 GRADING, SOIL EROSION AND SEDIMENT CONTROL PLAN	9 OF 32
GRADING, SOIL EROSION AND SEDIMENT CONTROL NOTES AND DETAILS	10 OF 32
GRADING, SOIL EROSION AND SEDIMENT CONTROL NOTES AND DETAILS	11 OF 32
SEDIMENT BASIN #4 - SEDIMENT TRAP #3 - NOTES & DETAILS	12 OF 32
STORM DRAIN DRAINAGE AREA MAP	13 OF 32
STORM DRAIN DRAINAGE AREA MAP	14 OF 32
STORM DRAIN PROFILES	15 OF 32
STORM DRAIN PROFILES	16 OF 32
STORM DRAIN PROFILES	17 OF 32
LANDSCAPE AND FOREST CONSERVATION PLAN	18 OF 32
LANDSCAPE AND FOREST CONSERVATION PLAN	19 OF 32
FOREST CONSERVATION PLAN	20 OF 32
LANDSCAPE AND FOREST CONSERVATION NOTES AND DETAILS	21 OF 32
ESDV - DRAINAGE AREA MAP SOUTH AREA	22 OF 32
ESDV - DRAINAGE AREA MAP NORTH AREA 2	23 OF 32
STORMWATER MANAGEMENT NOTES AND DETAILS	24 OF 32
STORMWATER MANAGEMENT NOTES AND DETAILS	25 OF 32
MICRO-BIORETENTION - PLANTING DETAILS	26 OF 32
OLD SCAGGSVILLE ROAD - TRAFFIC CIRCLE DETAILS	27 OF 32
PHASE ONE - MAINTENANCE OF TRAFFIC PLAN	28 OF 32
PHASE TWO - MAINTENANCE OF TRAFFIC PLAN	29 OF 32
DETOUR PLAN	30 OF 32
TRAFFIC CIRCLE - PAVEMENT MARKINGS, TRAFFIC SIGNS AND DETAILS	31 OF 32
SECTION ONE - TRAFFIC SIGNAGE & STREET LIGHT LOCATION PLAN	32 OF 32

SITE DATA

DEED REFERENCE: PARCEL 363; L 619 / F 519
ELECTION DISTRICT: 6TH
LOCATION: OLD SCAGGSVILLE ROAD
WEST OF BRYANT AVENUE
EXISTING ZONING:
R-SC
GROSS AREA: 36.94 AC
SECTION ONE: 23.90 AC +/-
SECTION TWO: 13.04 AC +/-
NON-BUILDABLE BULK PARCEL B

AREA OF 100 YEAR FLOODPLAIN: N/A
AREA OF STEEP SLOPES: 0.34 AC
AREA OF WETLANDS & BUFFERS: 1.61 AC
NET AREA (GROSS-STEEP SLOPES & FLOODPLAIN): 36.60 AC

BASE DENSITY:
4 LOTS PER NET ACRE (4X36.60): 146 LOTS

NUMBER OF PROPOSED RESIDENTIAL LOTS: 129 LOTS
SECTION 1 54 SFD
SECTION 2 27 SFD / 48 SFA

AREA OF PROPOSED RESIDENTIAL LOTS (SFD): 4.13 AC
AREA OF ROAD RIGHT OF WAY (ON-SITE): 18.86 AC
OPEN SPACE REQUIRED: 25% OF GROSS AREA = 9.24 AC
TOTAL AREA OF OPEN SPACE PROPOSED: 9.92 AC +/-
LIMIT OF DISTURBANCE: 20.0 AC
REQ OPEN SPACE: 300 SF/DWELLING UNIT x 54 = 16,200 SF
REC OPEN SPACE PROVIDED: 25,742 SF*
* SEE TABULATION HEREON

EXISTING USE OF SITE: RESIDENTIAL, SFD
PROPOSED USE OF SITE: SINGLE FAMILY DETACHED
PROPOSED WATER SYSTEM: PUBLIC
PROPOSED SEWER SYSTEM: PUBLIC
MINIMUM LOT AREA: 6,000 SF



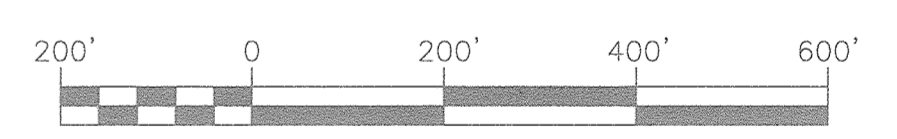
AS-BUILT CERTIFICATION

I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS

16193 T-18-19

OWNER: DANNY MIESSE, PERSONAL REPRESENTATIVE, ESTATE OF ARTHUR R. KRASKI, 9222 OLD SCAGGSVILLE ROAD, LAUREL, MD 20723-1730
ATTN: MR. DONALD B. REUWER, 443-367-0422

DEVELOPER: LAND DESIGN & DEVELOPMENT, INC., 5300 DORSEY HALL DRIVE, STE 102, ELLICOTT CITY, MARYLAND 21042-7819
ATTN: MR. DONALD B. REUWER, 443-367-0422



NO.	REVISION	DATE
11	REVISE TO SHOW CULVERT AND REVISE FOREST CONSERVATION	8-13-19
10	REVISE PLANS TO SHOW AS-BUILT CONDITION FOR MBR-IV	12/3/18
5	ADD 107 TREE MAINTENANCE EASEMENT, SHIFT MBR FACILITIES.	9/1/2015
4	MODIFY PAVEMENT SECTION.	3/7/2015
3	REVISE STORM DRAIN LAYOUT ALONG OLD SCAGGSVILLE ROAD	1/7/2015
2	REVISE SUBDIVISION NAME	7/18/14

PARKING TABULATION:

TOTAL NUMBER OF DWELLING UNITS PROPOSED : 54

1. OFF-STREET PARKING SPACES REQUIRED: 2 SPACES PER UNIT = 108 SPACES
PARKING SPACES PROVIDED:
SFD = 1 GARAGE/1 DRIVEWAY
1 SPACE IN GARAGE = 54 SPACES (FOR 54 UNITS)
2 SPACES ON DRIVEWAY = 108 SPACES (FOR 54 UNITS)
TOTAL OFF STREET PARKING SPACES PROVIDED: = 162 SPACES OFF-STREET

2. ON-STREET PARKING REQUIRED:
OVERFLOW / GUEST PARKING SPACES REQUIRED:
0.5 SPACES PER SFD UNIT X 54 = 27 SPACES REQUIRED
TOTAL OVERFLOW PARKING SPACES PROVIDED: = 54 SPACES (DRIVEWAYS)
* NOTE: ADDITIONAL UN-CALCULATED PARKING PROVIDED ON-STREET

APPROVED: DEPARTMENT OF PUBLIC WORKS

[Signature] 4/1/2016
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 3/28/16
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 5-5-16
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

GENERAL NOTES (CON'T)

- THIS PROJECT IS SUBJECT TO WF-13-080. ON MARCH 27, 2013, THE PLANNING DIRECTOR APPROVED THE REQUEST TO WAIVE SECTION 16.116(A) FOR DISTURBANCE TO STREAM, STREAM BUFFERS, WETLANDS AND WETLAND BUFFERS ON THE NORTHEAST PORTION OF THE PROJECT FOR A STORM DRAINAGE PIPE, AND SECTION 16.1205(A)(7) TO REMOVE UP TO 3 SPECIMEN TREES THE PLANNING DIRECTOR DENIED YOUR REQUEST TO WAIVE SECTION 16.120(B)(1)(V)(C) TO ALLOW PIPESTEM LOTS ON MULTIPLE SIDES OF A FRONTAGE LOT IN THE SAME SUBDIVISION.
- APPROVAL OF THE WAIVER TO SECTION 16.116(A) AND SECTION 16.1205(A)(7) IS SUBJECT TO THE FOLLOWING CONDITIONS:
 - ENVIRONMENTAL DISTURBANCE MUST BE LIMITED TO THE AREAS INDICATED ON THE WAIVER PETITION PLAN EXHIBIT, ANY EXPANSION OF THE DISTURBED AREA MAY REQUIRE ADDITIONAL WAIVER APPROVAL IF DETERMINED SIGNIFICANT.
 - PRIOR TO INITIATING ANY CONSTRUCTION ACTIVITIES THAT RESULT IN THE APPROVED ENVIRONMENTAL DISTURBANCES, ALL APPROVED FROM MDE, APPLICABLE SRC AGENCIES AND PERMISSIONS FROM ADJOINING/AFFECTED PROPERTY OWNERS MUST BE OBTAINED AND DOCUMENTED. COPIES OF DOCUMENTATION MUST BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING PRIOR TO THE FINAL PLAN APPROVAL (OR PRIOR TO SITE DEVELOPMENT PLAN APPROVAL AT THE DISCRETION OF THE DIVISION OF 022 (022).
 - PRIOR TO REMOVAL OF THE TWO OAK SPECIMEN TREES, PLEASE REVIEW THE PROPOSED DESIGN ALTERNATIVES RECOMMENDED BY THE DIVISION OF LAND DEVELOPMENT IN THE REVISED SUBMISSION COMMENTS DATED MARCH 28, 2013. INCORPORATE DESIGN RECOMMENDATIONS OR PROVIDE AMPLIFIED JUSTIFICATION TO THE DEPARTMENT OF PLANNING AND ZONING IF NOT FEASIBLE (LOSS OF LOT YIELD ALONE WILL NOT BE CONSIDERED AMPLIFIED JUSTIFICATION).
 - REMOVAL OF EACH SPECIMEN TREE WILL REQUIRE MITIGATION WITH THE PLANTING OF TWO NEW NATIVE SHADE TREES (OR UP TO 6 NEW SHADE TREES) WITH A MINIMUM 2-1/2" CALIPER TRUNK- SURETY OF THESE SHADE TREES SHALL BE INCORPORATED INTO THE LANDSCAPE PLAN WITHIN THE FINAL ROAD CONSTRUCTION DRAWINGS.
 - PRIOR TO REMOVING THE SILVER MAPLE SPECIMEN TREE ON THE NORTH PARCEL, THE DEVELOPER SHALL FIRST ATTEMPT DESIGN ALTERNATIVES THAT WOULD ALLOW PRESERVATION OF THE TREE. IF REMOVED, THE TWO TREES PLANTED FOR MITIGATION SHOULD BE PLACED WITHIN THE PROXIMITY OF THE REMOVED TREE OR AT LEAST ON THE PORTION OF THE PROPERTY BOUNDARY SHARED BY PARCEL 396.
- DENIAL OF THE WAIVER TO SECTION 16.120(B)(1)(V)(C) WAS BASED ON THE FOLLOWING REASONS:
 - EXTRAORDINARY CIRCUMSTANCES OR DESIGN CONSTRAINTS RESULTING IN SIGNIFICANT HARDSHIP WERE NOT INDICATED IN THE WAIVER JUSTIFICATION.
 - DESIGN ALTERNATIVES EXIST THAT WOULD PREVENT THE LOT BEING SURROUNDED ON FOUR SIDES BY PAVED DRIVE LANES. PLEASE SEE DLD COMMENTS DATED MARCH 28, 2013.
 - THE DESIGN PROPOSAL APPEARS GEARED TO ENSURING AN OPTIMAL LOT YIELD. THE DEVELOPER HAS THE OPTION OF INCORPORATING ADDITIONAL TOWNHOME LOTS TO OBTAIN DESIRED LOT YIELD IN THE PROPOSED SUBDIVISION DESIGN.
 - THE WAIVER, IF APPROVED WOULD NULLIFY THE INTENT AND PURPOSE OF THE REGULATIONS, WHICH IS TO ACHIEVE A WELL THOUGHT-OUT DESIGN THAT PROVIDES ORDERLY SUBDIVISION LAYOUT AND AVOIDS ORIENTATION AND PRIVACY PROBLEMS FOR NEW HOUSES ON PIPESTEM AND FRONTAGE LOTS. AS PROPOSED, LOT 74 WOULD HAVE LIMITED USABILITY AND PRIVACY. DLD RECOMMENDS A SUBDIVISION REDESIGN TO REMOVE AND RELOCATE LOTS 72, 73, AND 74 ELSEWHERE IN THE WETLANDS. IN LAYING OUT THE SUBDIVISION DESIGN, THE DEVELOPER SHOULD GIVE MORE CONSIDERATION TO THE ARRANGEMENT OF LOTS SO THAT PROPOSED HOUSES WILL NOT LOOK INTO NEIGHBORING REAR YARDS OF THE FRONT LOTS. EACH NEW LOT IN THE SUBDIVISION SHOULD INCORPORATE GOOD LOT DESIGN AND PLANNED AS TO THE SIZE, SHAPE AND ORIENTATION TO AVOID UNDESIRABLE VIEWS FROM ADJOINING LOTS. WAIVERS SHALL NOT BE USED TO ACHIEVE MAXIMUM LOT YIELD AT THE EXPENSE OF GOOD SUBDIVISION DESIGN.
- ON JUNE 3, 2013, A REQUEST FOR RECONSIDERATION WAS SUBMITTED WHICH AMENDED THE REQUESTED SPECIMEN TREES TO BE REMOVED. TO SPECIMEN TREES # 3 AND #4 PREVIOUSLY APPROVED TO BE REMOVED AND IN CONJUNCTION WITH THE REVISED LAYOUT, ARE NOW PROPOSED TO REMAIN. AS A RESULT OF THE REVISED LAYOUT, SPECIMEN TREE # 15 AND 16 (35'7" 37" TWIN TRUNK SOUTHERN RED OAK IN FAIR CONDITION) IS PROPOSED TO BE REMOVED.
- THE MAINTENANCE RESPONSIBILITIES OF THE TYPED LANDSCAPE REMAINING (OVER) LOCATED ON LOT 9 IS THE RESPONSIBILITY OF THE HOMEOWNERS ASSOCIATION (H.O.A.), NOT THE HOMEOWNER. THE MAINTENANCE RESPONSIBILITIES OF ANY PORTION OF THE RETAINING WALL WITHIN THE TWIN FAWN TRAIL RIGHT-OF-WAY IS THE RESPONSIBILITY OF THE HOMEOWNERS ASSOCIATION (H.O.A.)

50. FOREST CONSERVATION EASEMENTS 2 AND 3, PLAT 2350I

REQUIREMENT: 100% FOREST CONSERVATION EASEMENT 2. REQUIRED THE REMOVAL OF 185.5 SF AND FOREST CONSERVATION EASEMENT 3. REQUIRED THE REMOVAL OF 618.5 SF TO ACCOMMODATE AN EXPANSION OF THE EXISTING STORMWATER MANAGEMENT, DRAINAGE & UTILITY BASEMENT AS REQUIRED ON PLAT 2350H. THE REMOVAL OF THE DESCRIBED PORTIONS OF THE FOREST CONSERVATION EASEMENTS WILL BE MITIGATED BY A PAYMENT OF THE FOREST CONSERVATION ABANDONMENT FEE IN THE AMOUNT OF \$2,095 (1,628 SF X \$1.25 PER SQUARE FOOT).

NO AS-BUILT INFORMATION ON THIS SHEET

DEER SPRING - DENSITY TABULATION									
FINAL PLAN #	SECTION	GROSS AREA	FLOODPLAIN	STEEP SLOPES	NET AREA	UNITS ALLOWED	UNITS PROD.	OPEN REQ.	OPEN PROD.
F14-022	SEC. 1	36.84 ACRES	0.00 ACRES	0.34 ACRES	36.60 ACRES	146	54 SFD	9.24 ACRES	9.92 ACRES
F14-023	SEC. 2	13.04 ACRES	0.00 ACRES	0.34 ACRES	12.70 ACRES	48	48 SFA	0.00 ACRES	0.00 ACRES
TOTAL	-	0.00 ACRES	0.34 ACRES	36.60 ACRES	146	81 SFD	9.24 ACRES	14.57 ACRES	9.92 ACRES

** F14-022 - NON-BUILDABLE BULK PARCEL "B" RESUBDIVIDED UNDER F14-023 INTO 27 SFD / 48 SFA

RECREATION OPEN SPACE TABULATION:

TOTAL RECREATION OPEN SPACE REQUIRED FOR DEER SPRINGS SECTION ONE F14-022 AND SECTION TWO F14-023 = 43,500SF

TOWNHOMES SFA = 400 SF/UNIT X 48 UNITS = 19,200 SF
SINGLE FAMILY HOMES SFD = 300 SF/UNIT X 81 UNITS = 24,300 SF

- SECTION ONE F14-022 = 27 SFD X 300 SF = 16,200 SF REQUIRED
- SECTION TWO F14-023 = 54 SFD X 300 SF = 16,200 SF REQUIRED
- SECTION TWO F14-023 = 48 SFD X 400 SF = 19,200 SF REQUIRED

TOTAL RECREATION OPEN SPACE PROVIDED FOR DEER SPRINGS SECTION ONE AND SECTION TWO AS LISTED BELOW = 59,872 SF

RECREATION OPEN SPACE - SECTION ONE F14-022 = 25,742 SF PROVIDED
RECREATION OPEN SPACE - SECTION TWO F14-023 = 34,090 SF PROVIDED
TOTAL = 59,832 SF PROVIDED

* AMENITIES INCLUDE THE PROPOSED 1,420 LF OF 8" PATHWAY CONNECTION (1,420x8"=11,360SF) WHERE 33% OF RECREATION AREA = 1 SF OF PAVED PATH = 34,080 SF OF AMENITY CREDIT PROVIDED. THE PATHWAY IS PROVIDED THROUGH THE FOREST CONSERVATION OPEN SPACE HOWARD COUNTY OPEN SPACE LOT 57 FROM TWIN FAWN TRAIL TOWARD ADJOINING HIGH RIDGE PARK (MOSTLY ALONG THE SEWER ALIGNMENT)

RECREATION OPEN SPACE - SECTION TWO F14-023 = N/A
REQUIREMENT MET UNDER SECTION ONE F14-022

REVISED FINAL ROAD CONSTRUCTION PLAN

COVER SHEET

HIGH RIDGE MEADOWS - SEC. 1

LOTS 1 - 54, OPEN SPACE LOTS 55 - 68
AND NON-BUILDABLE BULK PARCEL "B"
A SUBDIVISION OF TAX MAP 50 PARCELS 363
AND A RESUBDIVISION OF TAX MAP 50 PARCELS 542
KRASKI PROPERTY NON-BUILDABLE BULK PARCEL "A" (PLAT 21919)

6TH ELECTION DISTRICT - TAX MAP: 50 GRID: 1
022 REFS: F-10-065, W-10-067, ECP-12-047,
W-11-000, SF 12-007

ZONED: R-SC
PARCELS: 363 & 542
HOWARD COUNTY, MARYLAND

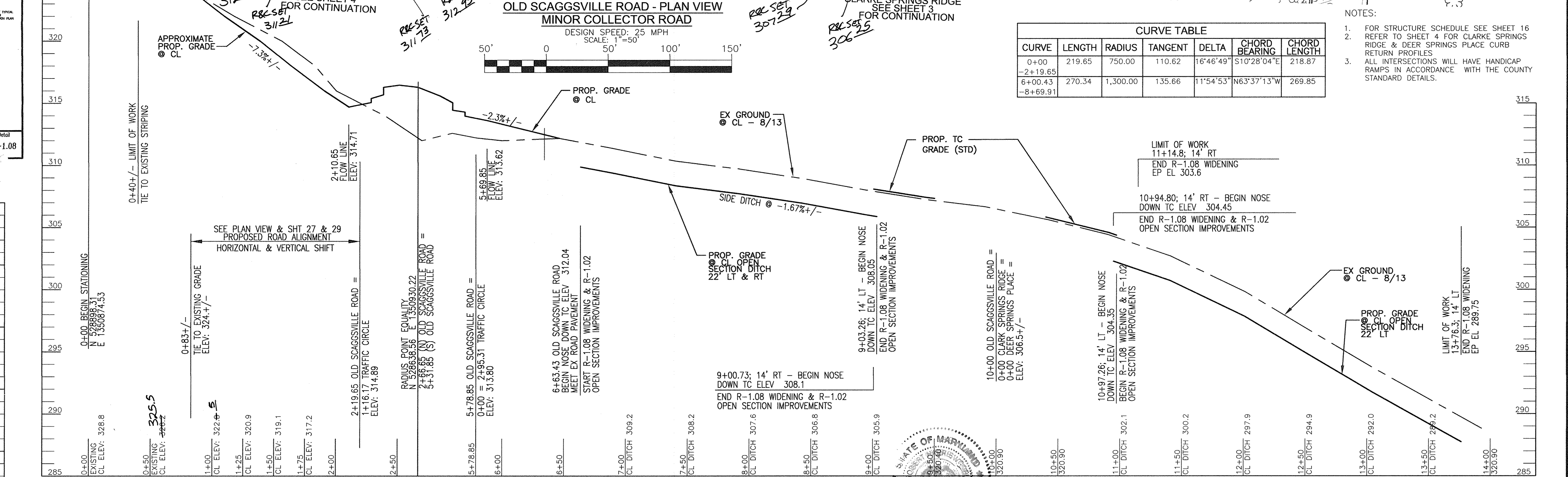
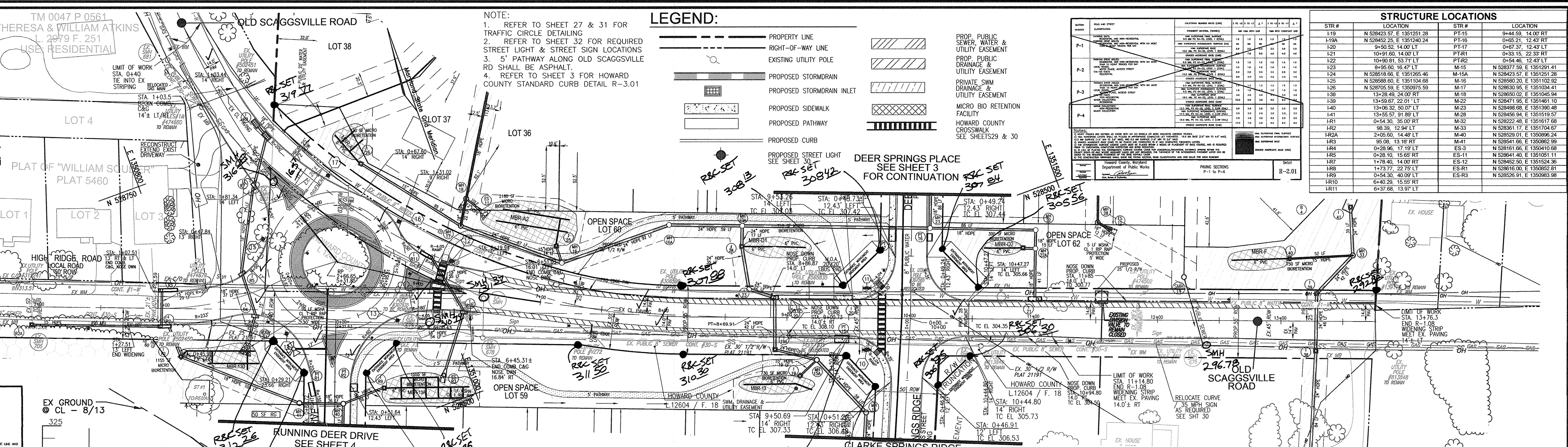
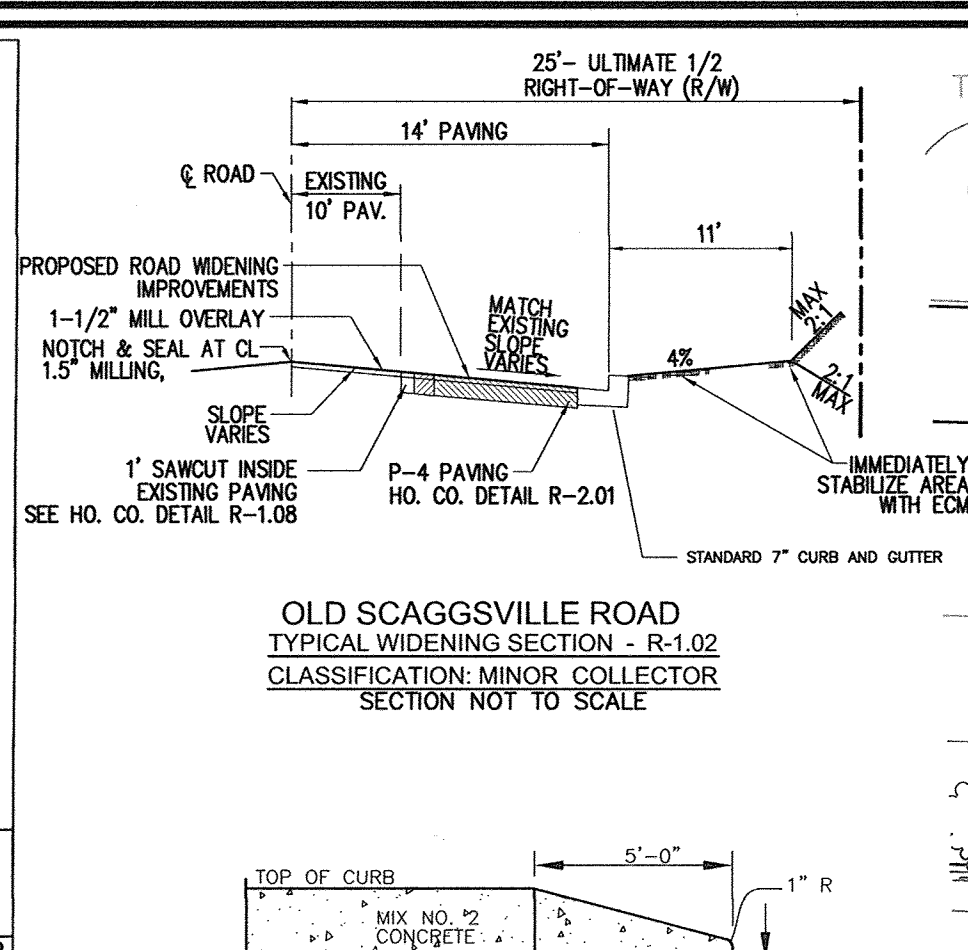
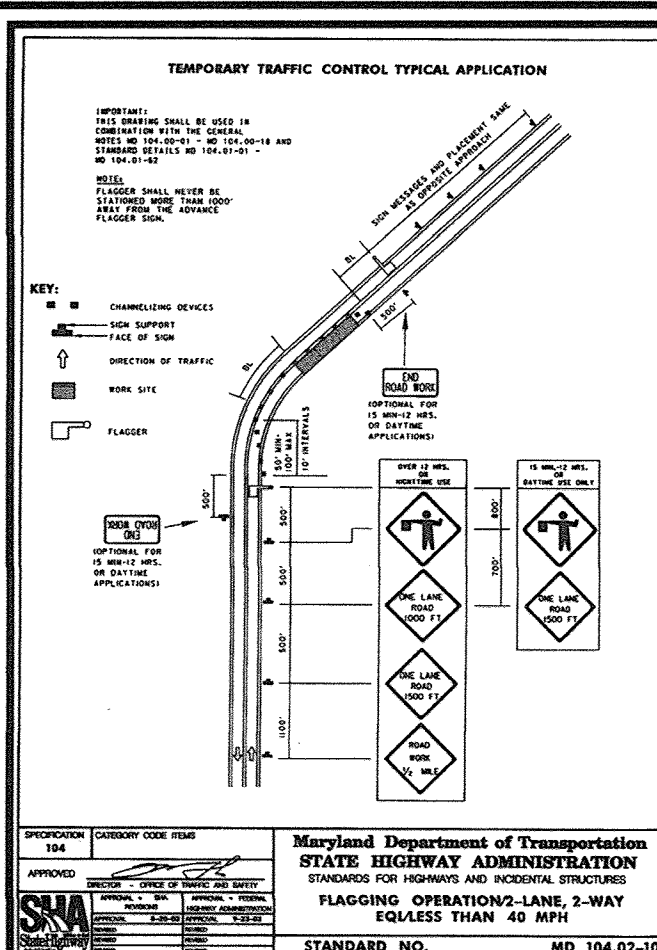
ROBERT H. VOGEL
ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS

8407 MAIN STREET
ELLICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

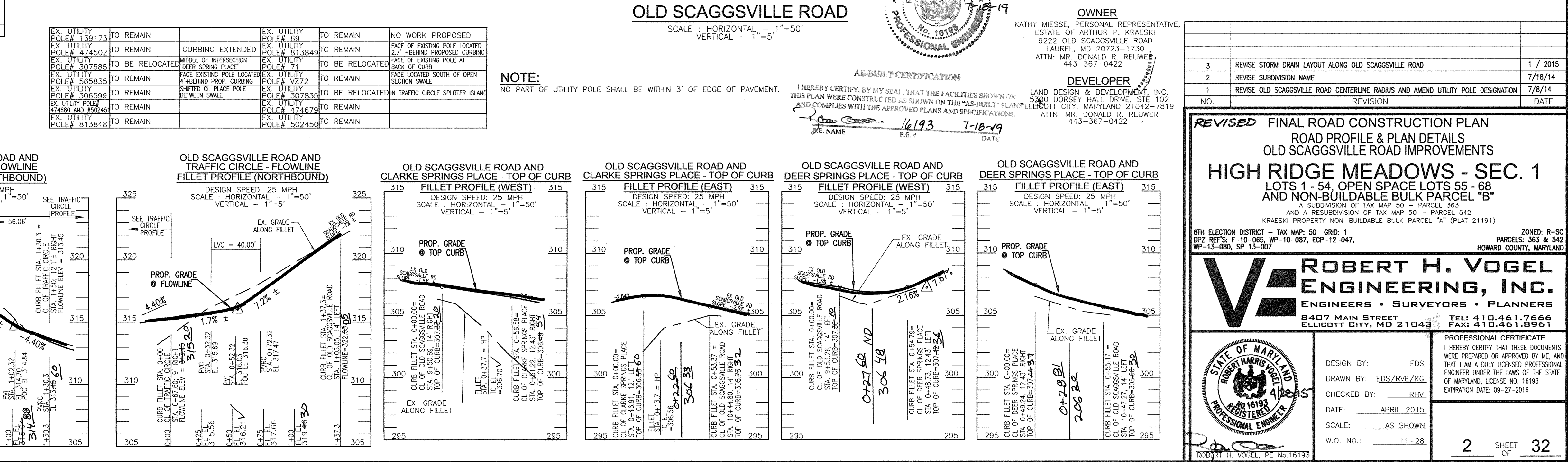
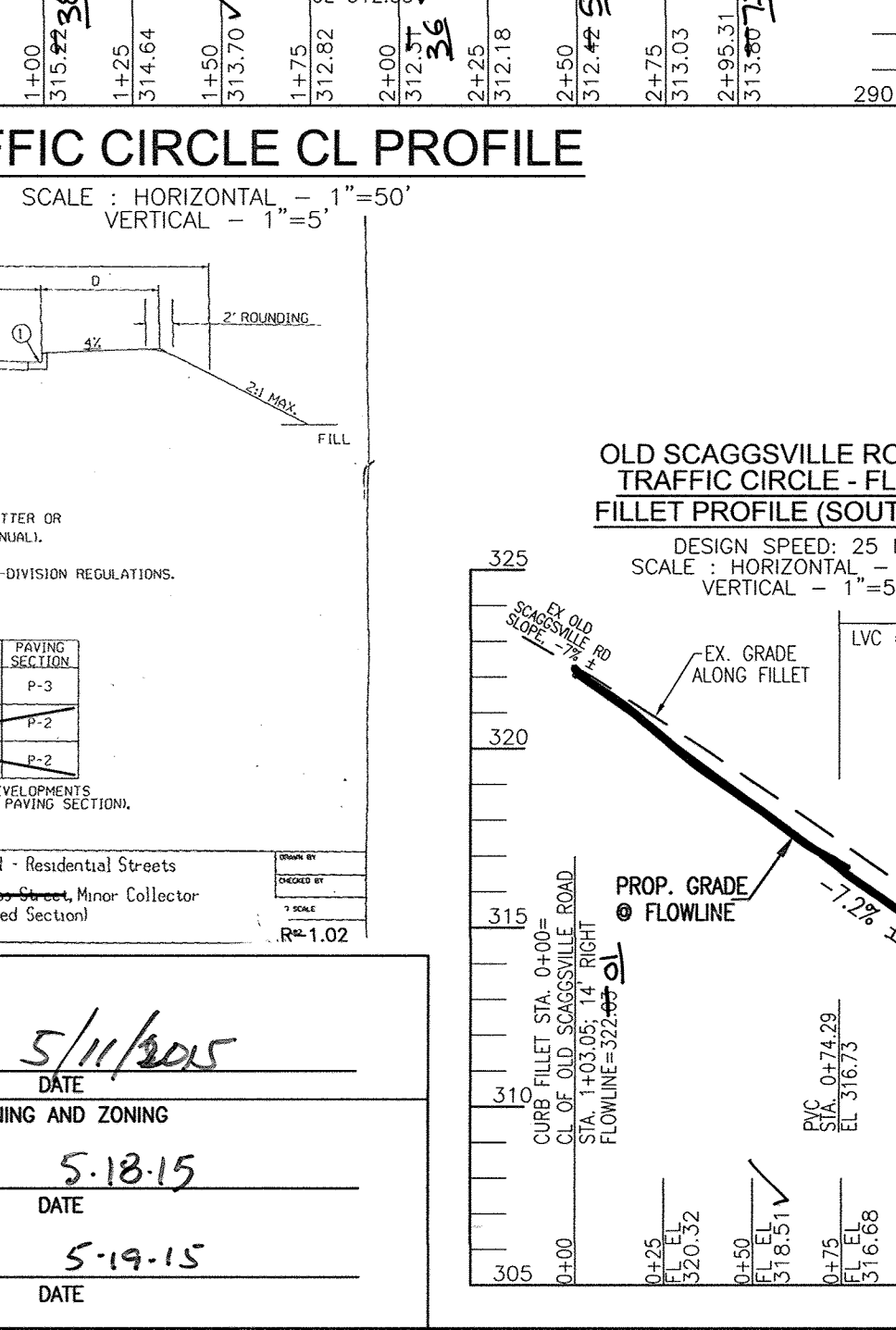
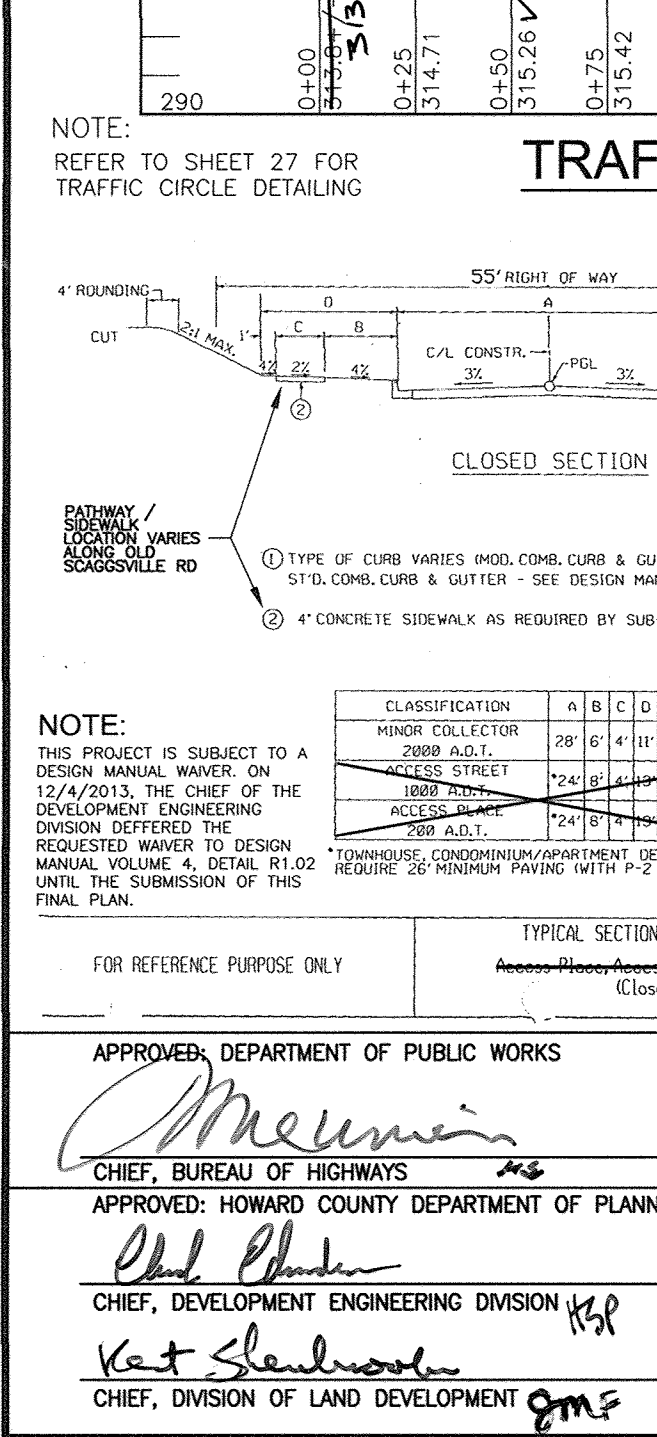
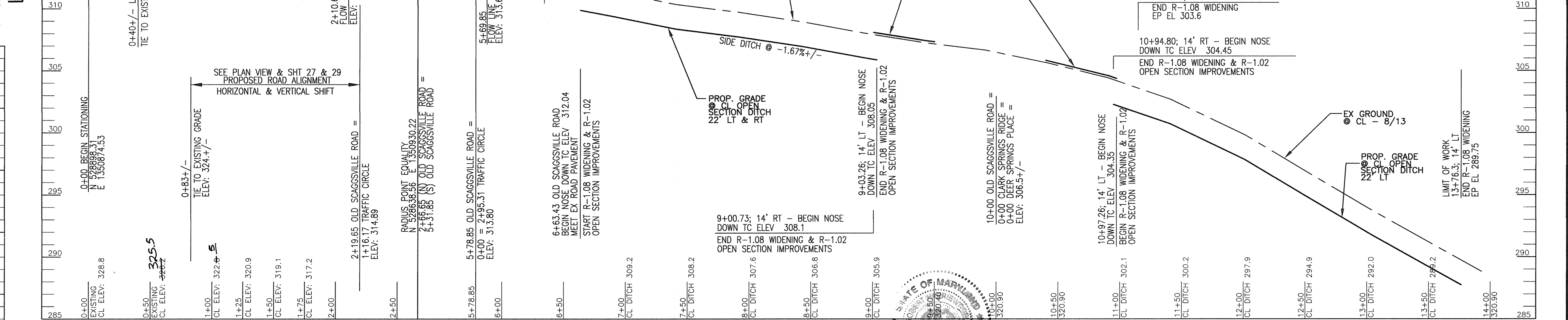
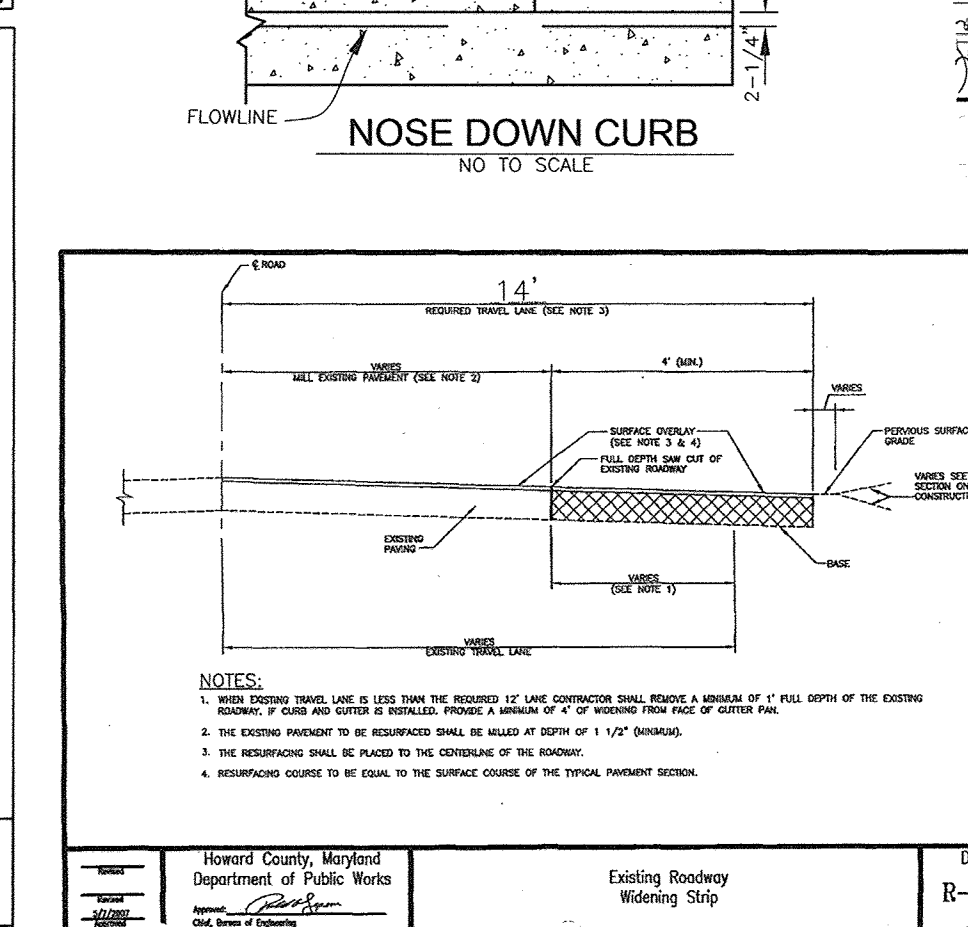
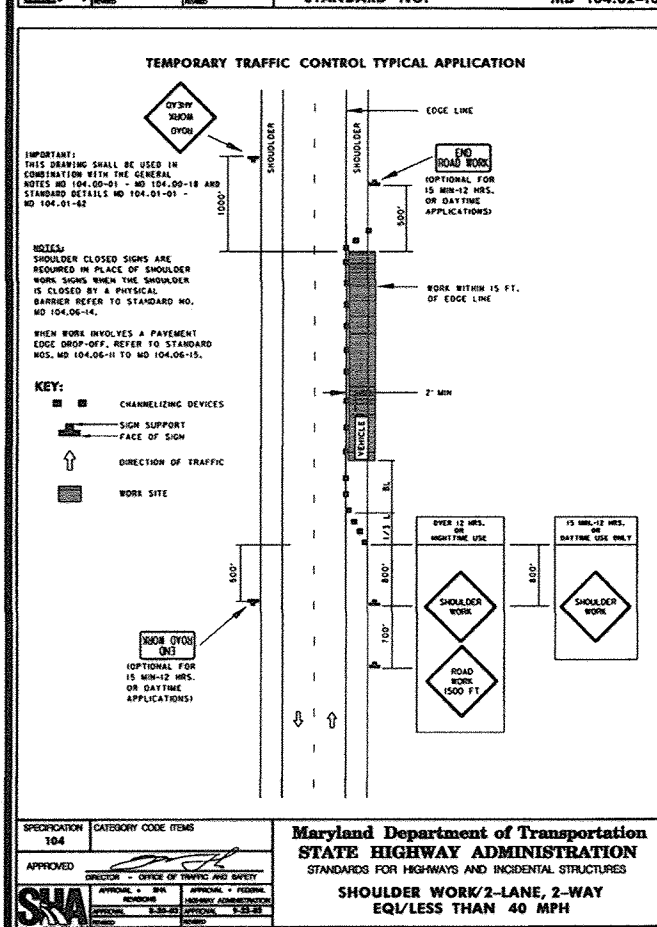
DESIGN BY: EDS
DRAWN BY: EDS/RVE/KG
CHECKED BY: RVH
DATE: SEPTEMBER 2015
SCALE: AS SHOWN
W.O. NO.: 11-28

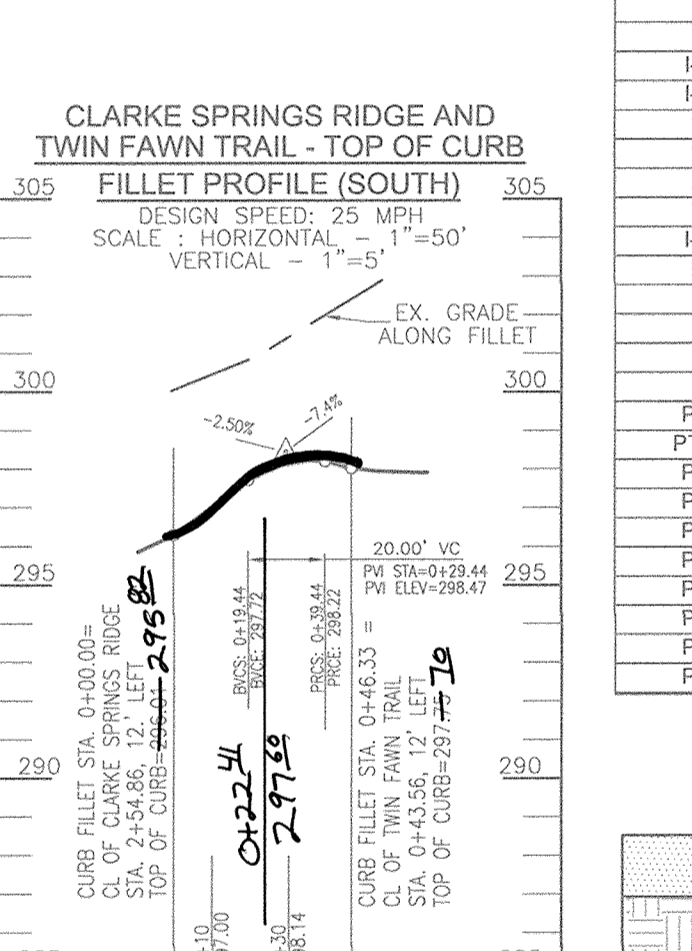
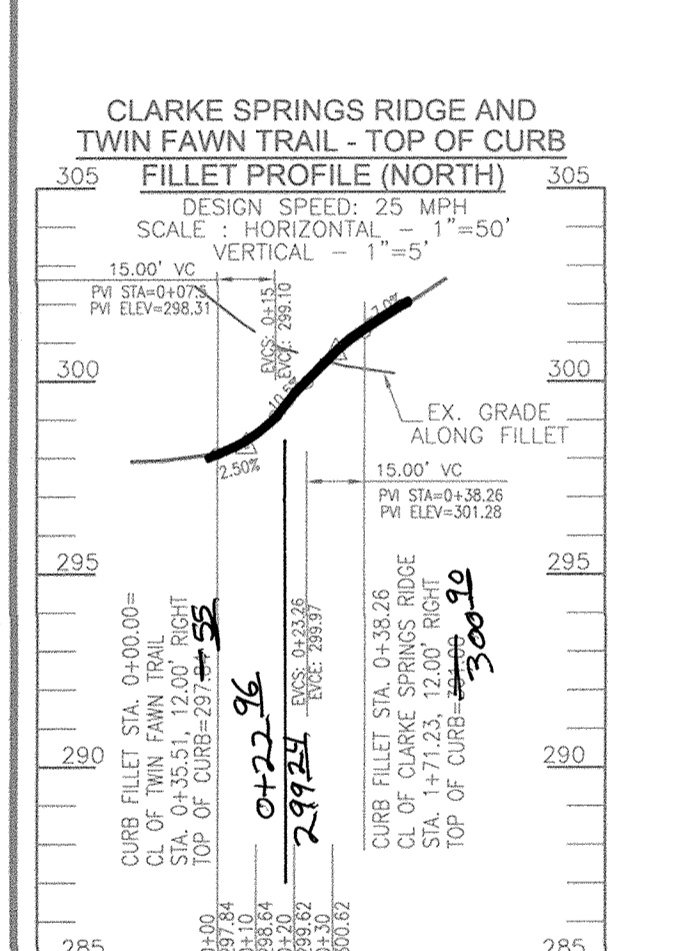
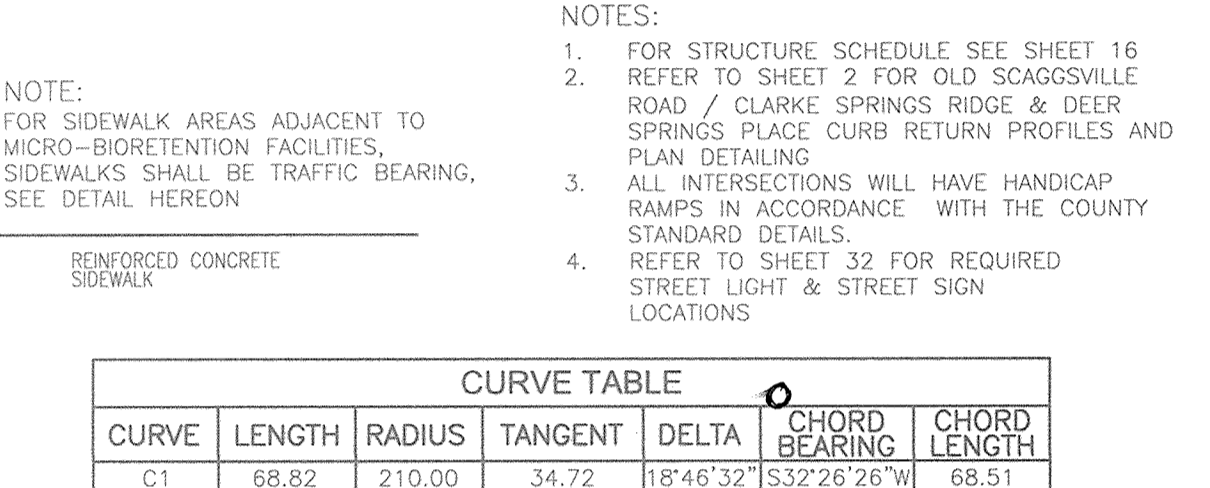
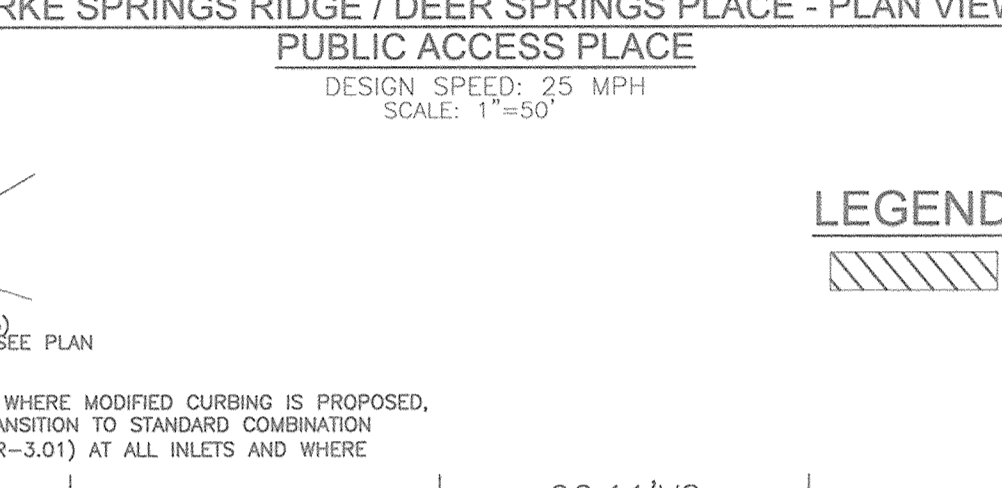
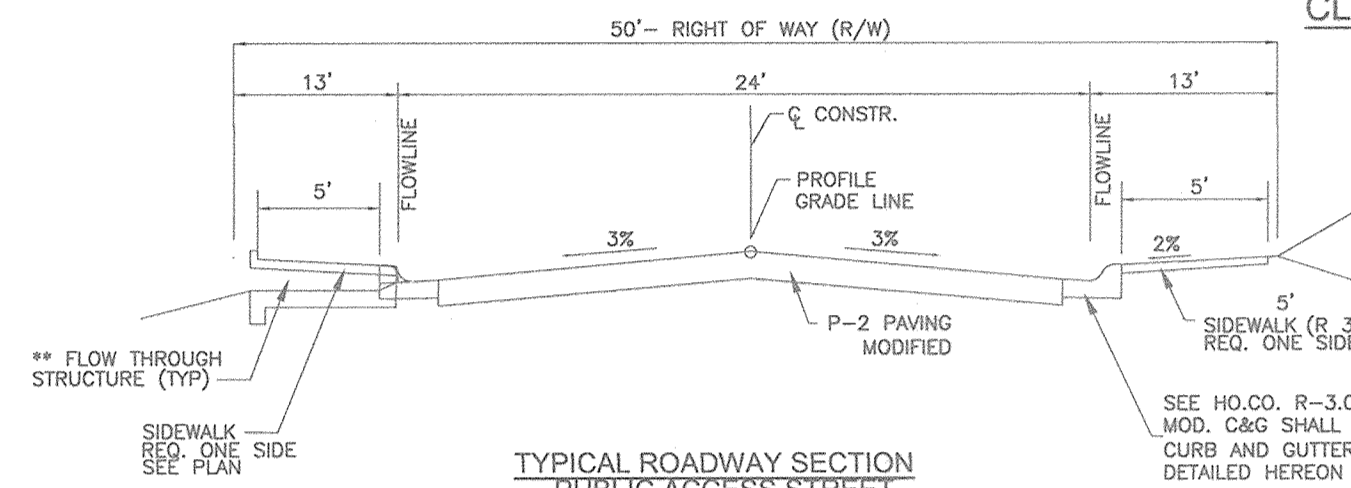
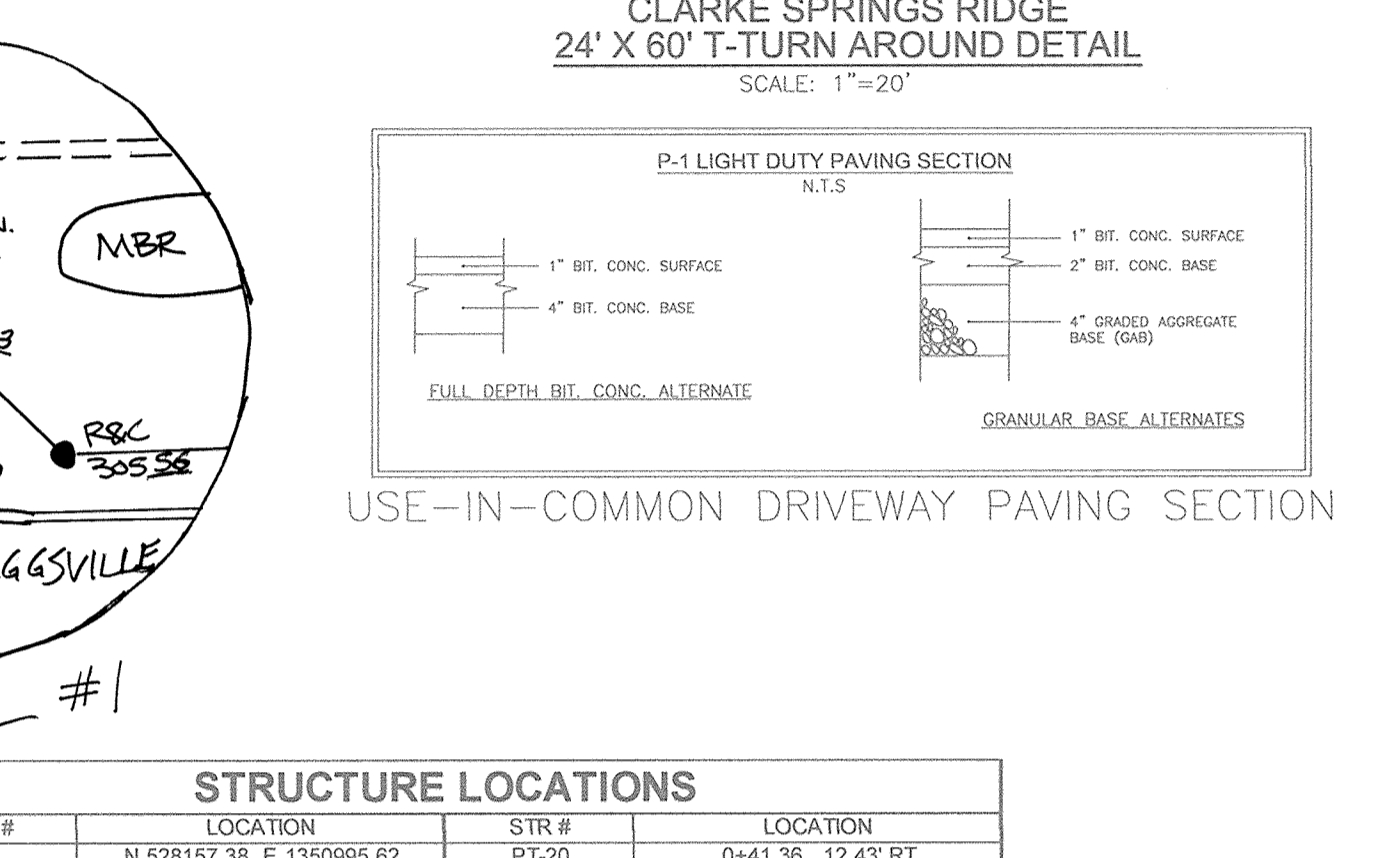
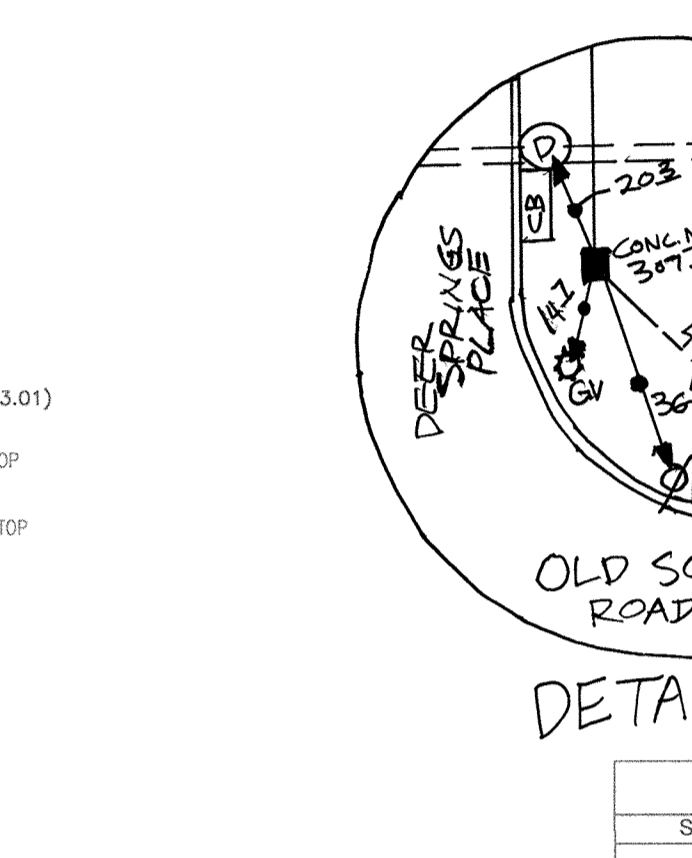
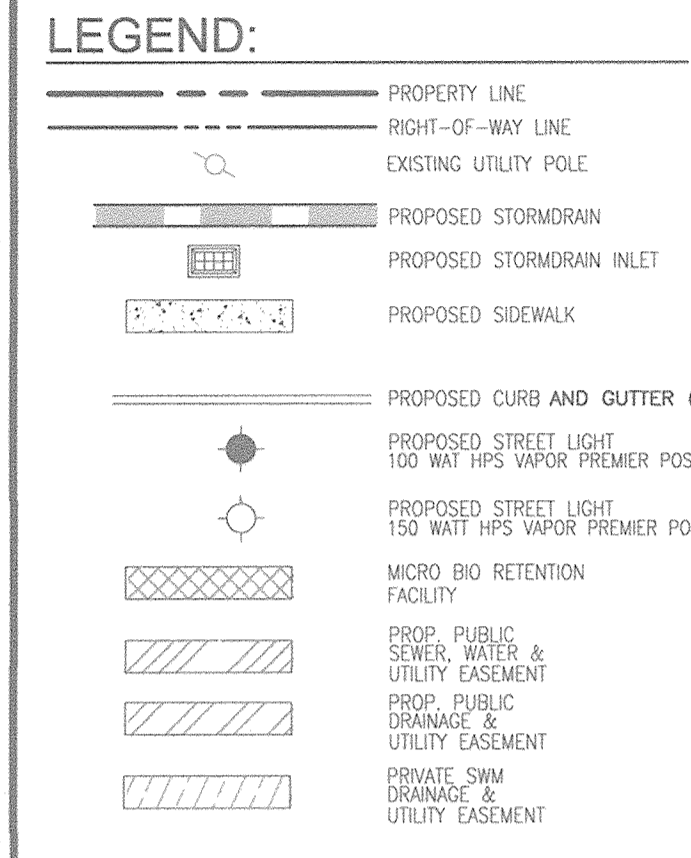
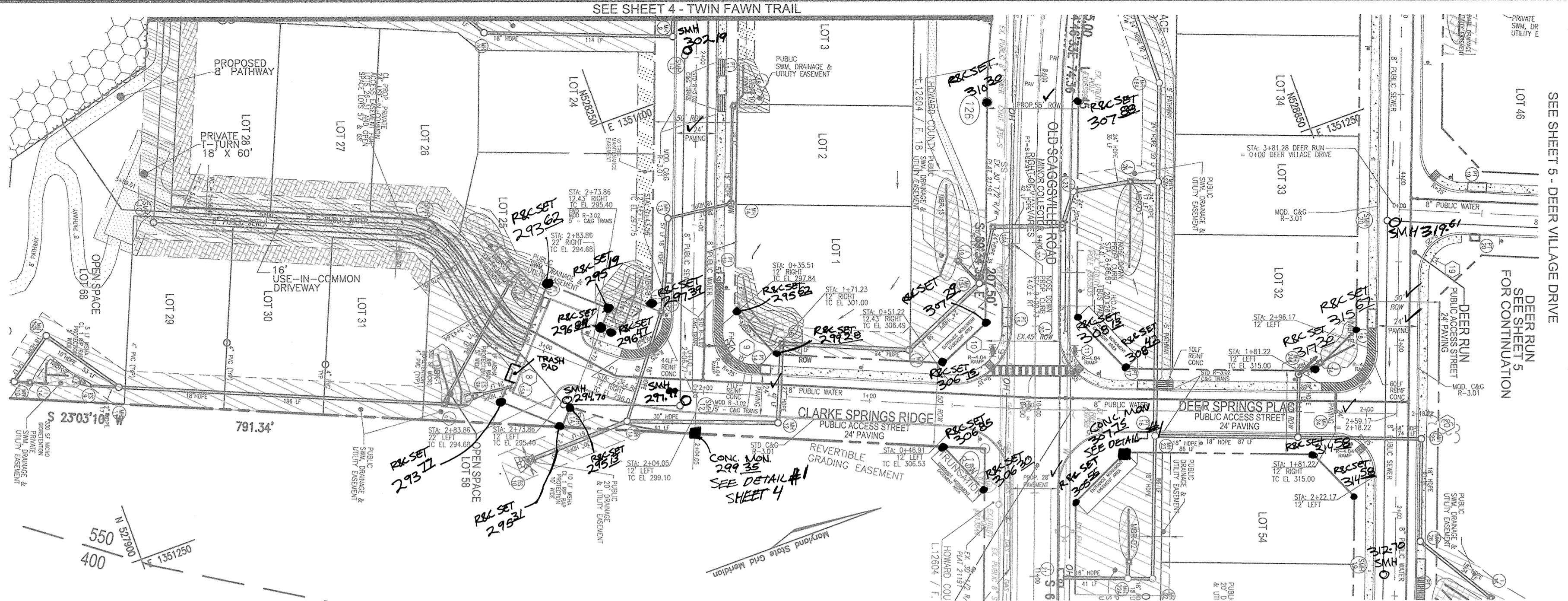
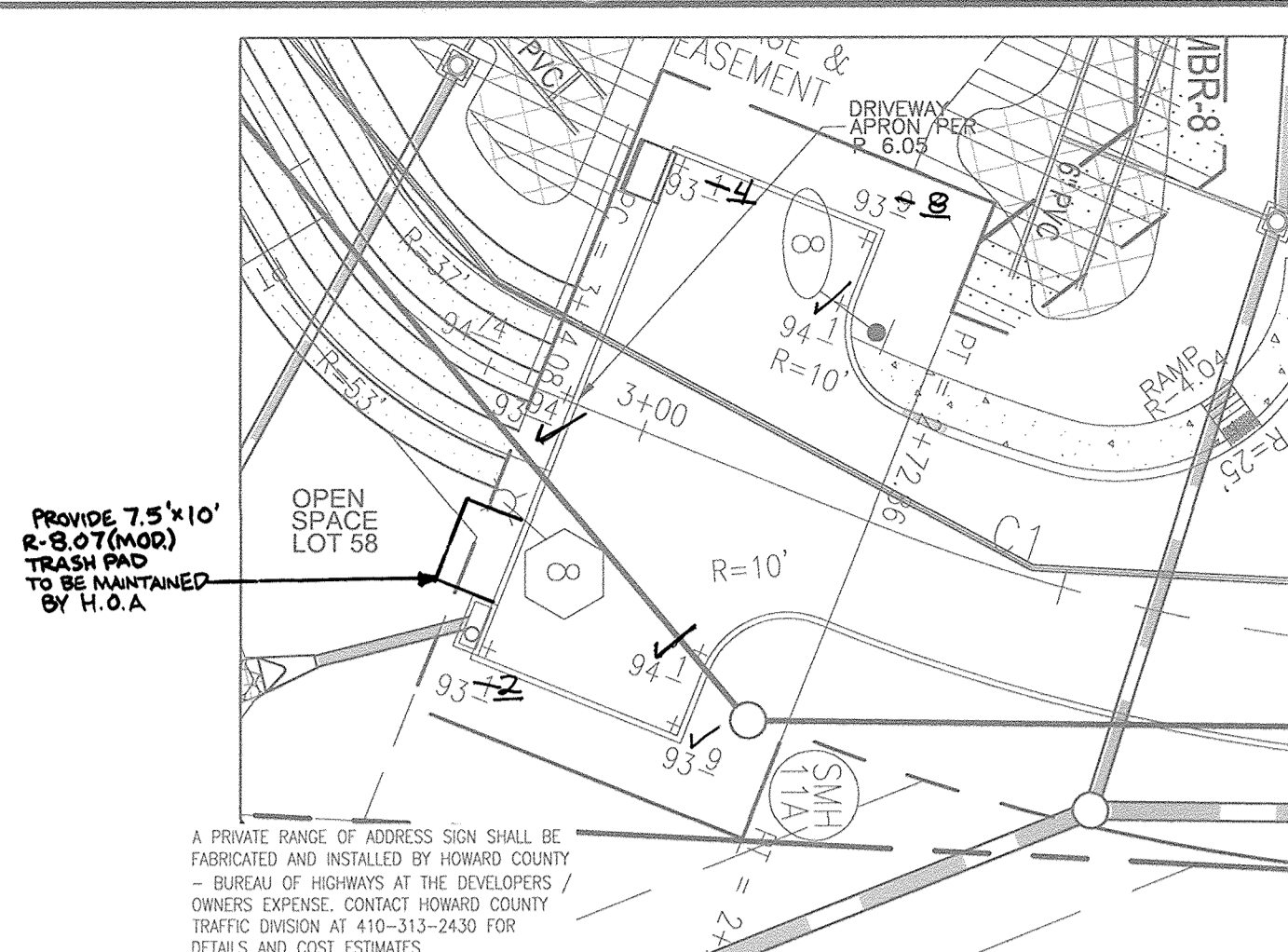
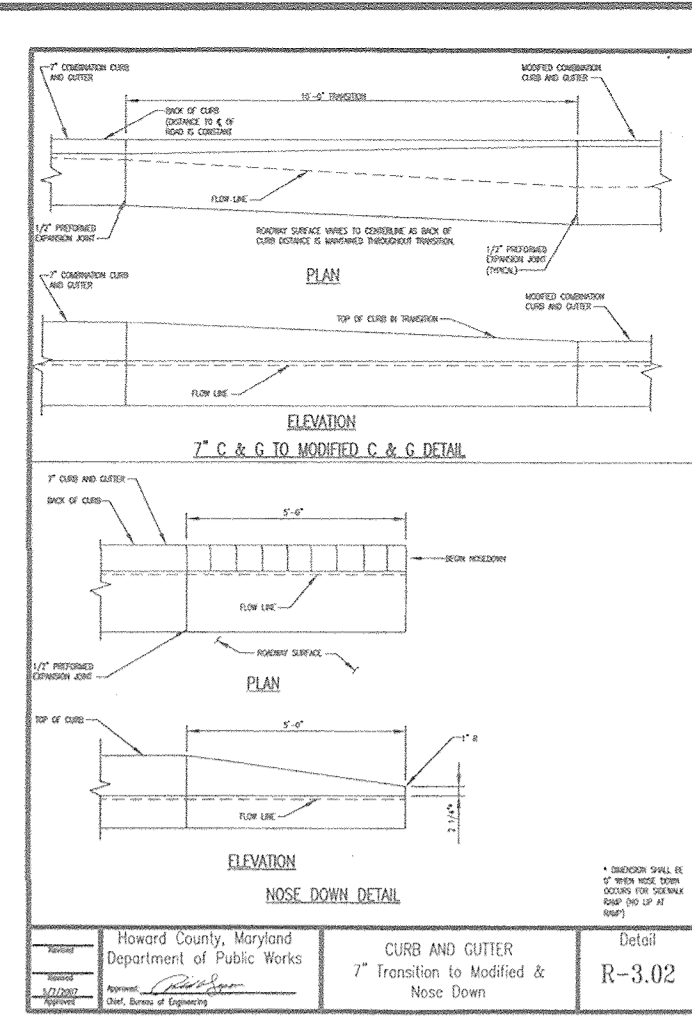
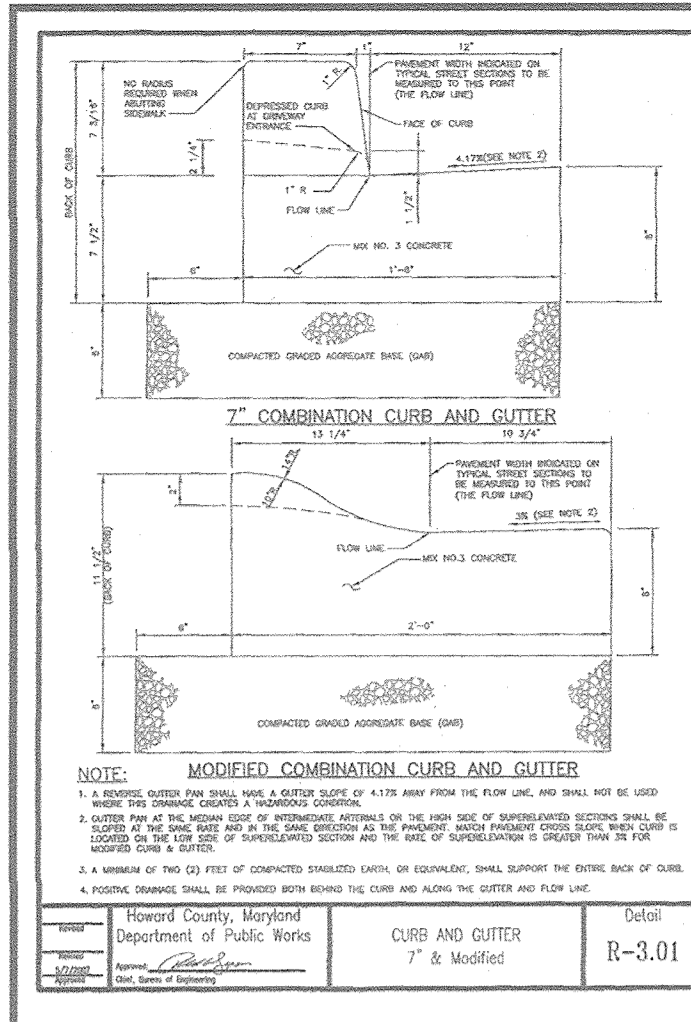
PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
EXPIRATION DATE: 09-27-2016

1 SHEET OF 32

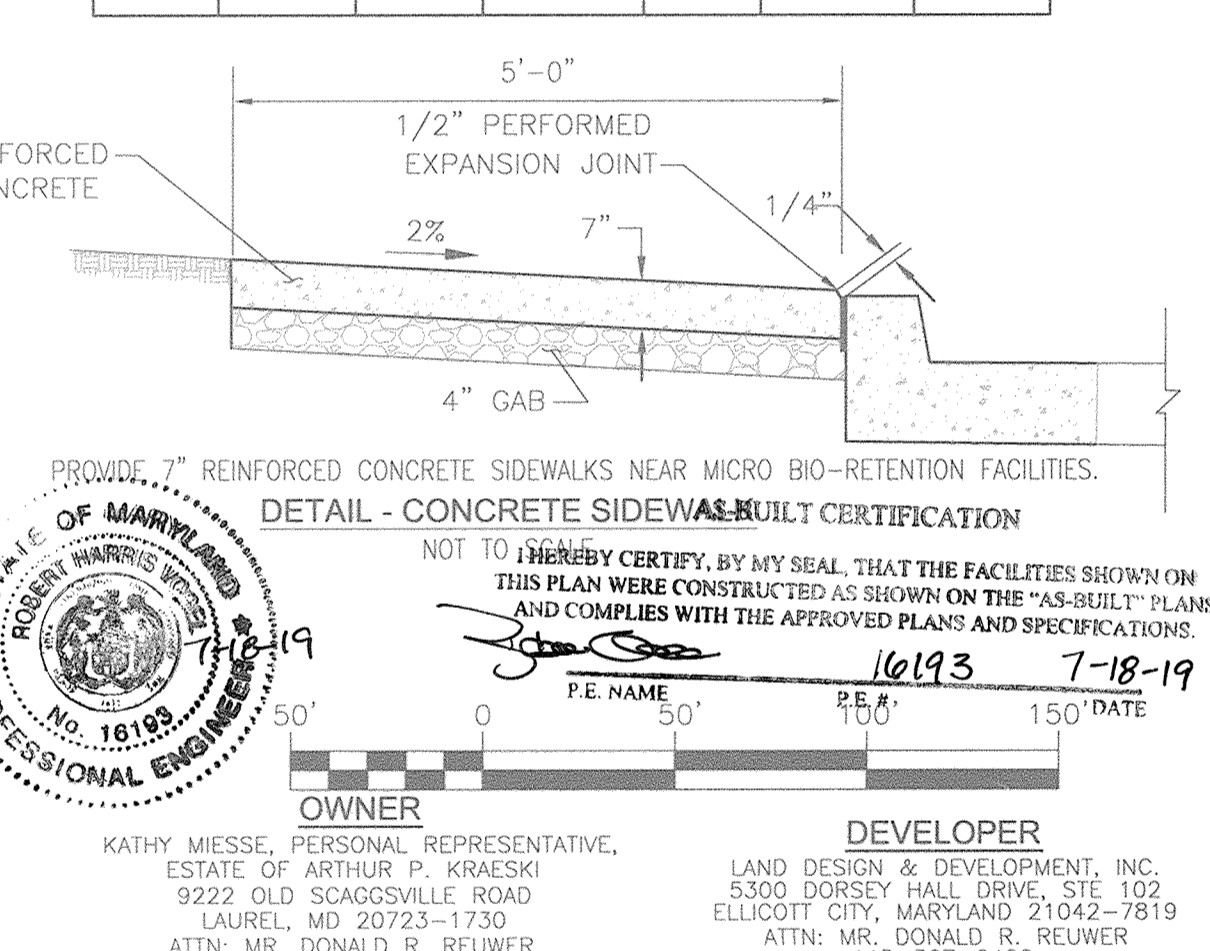
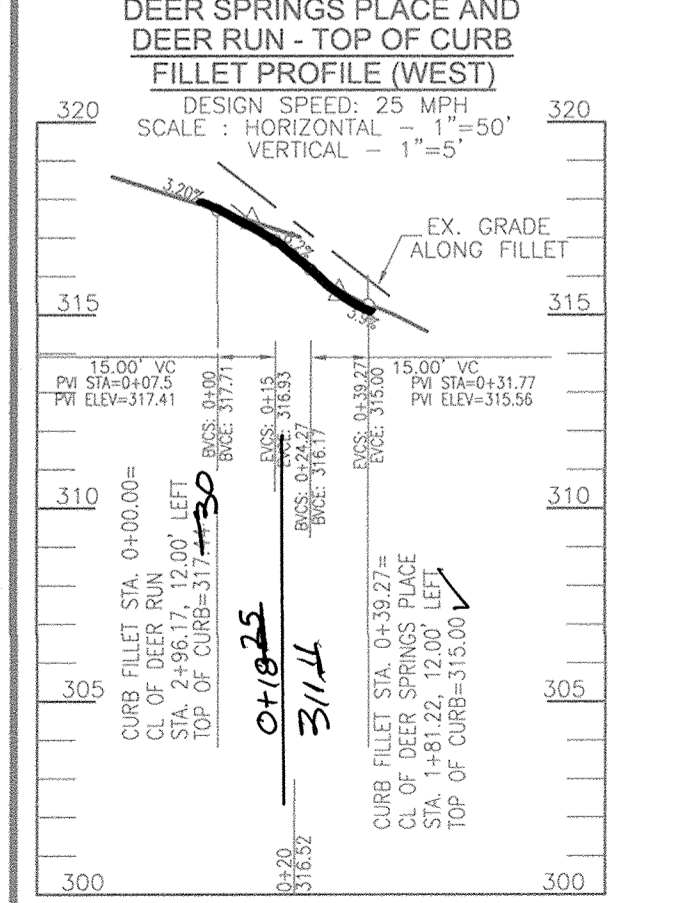
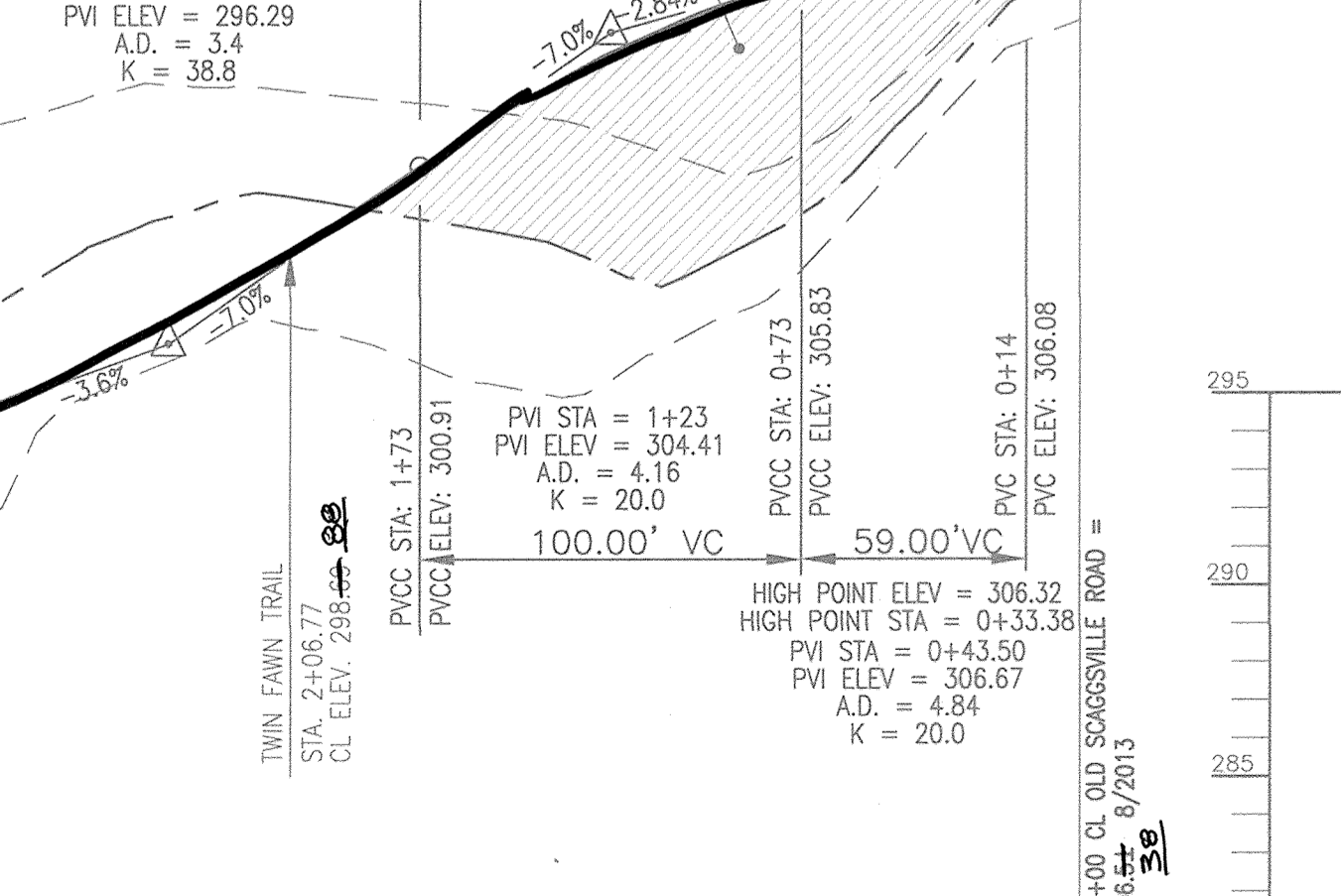
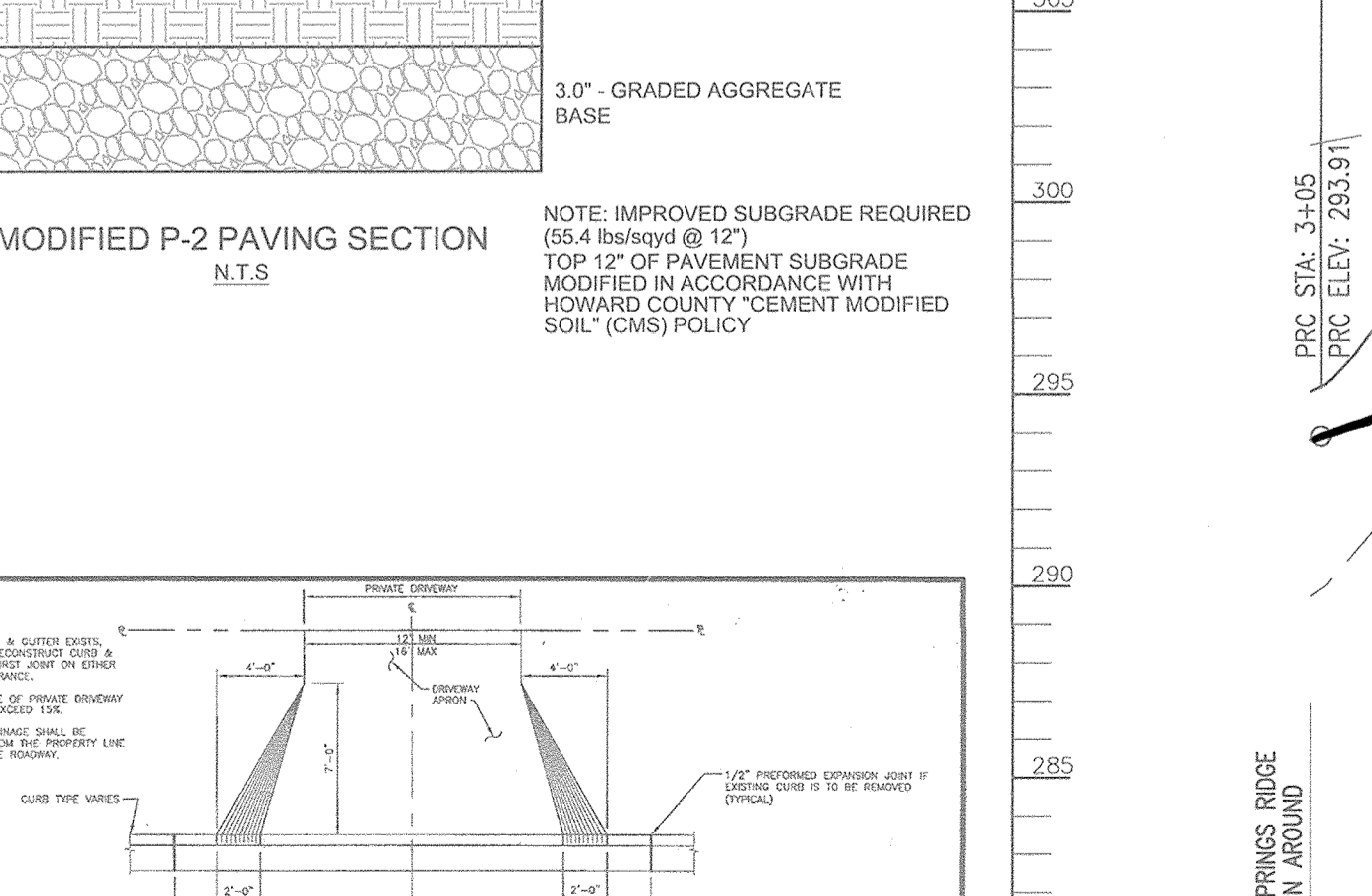
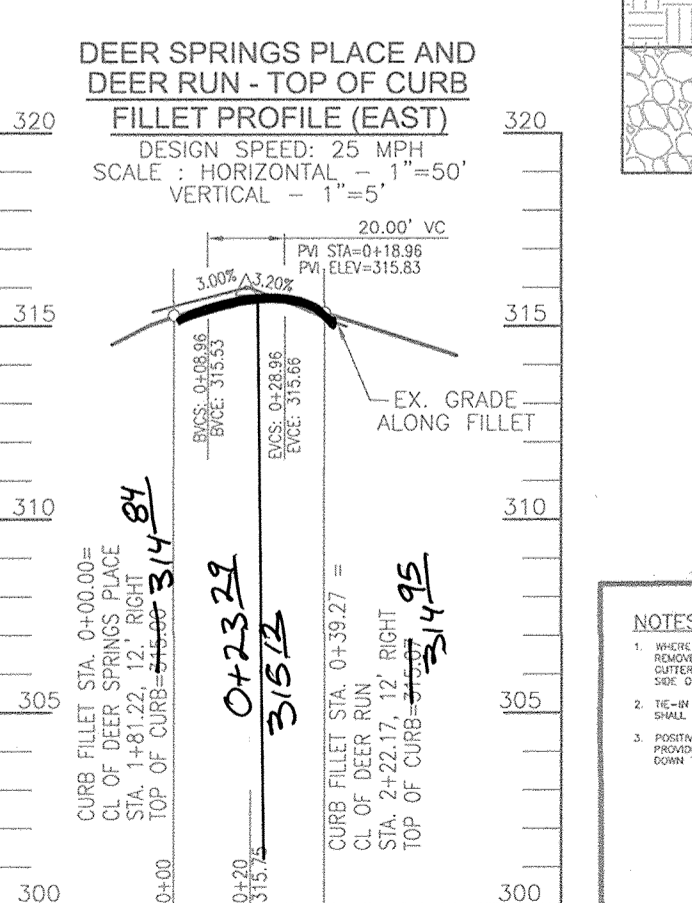
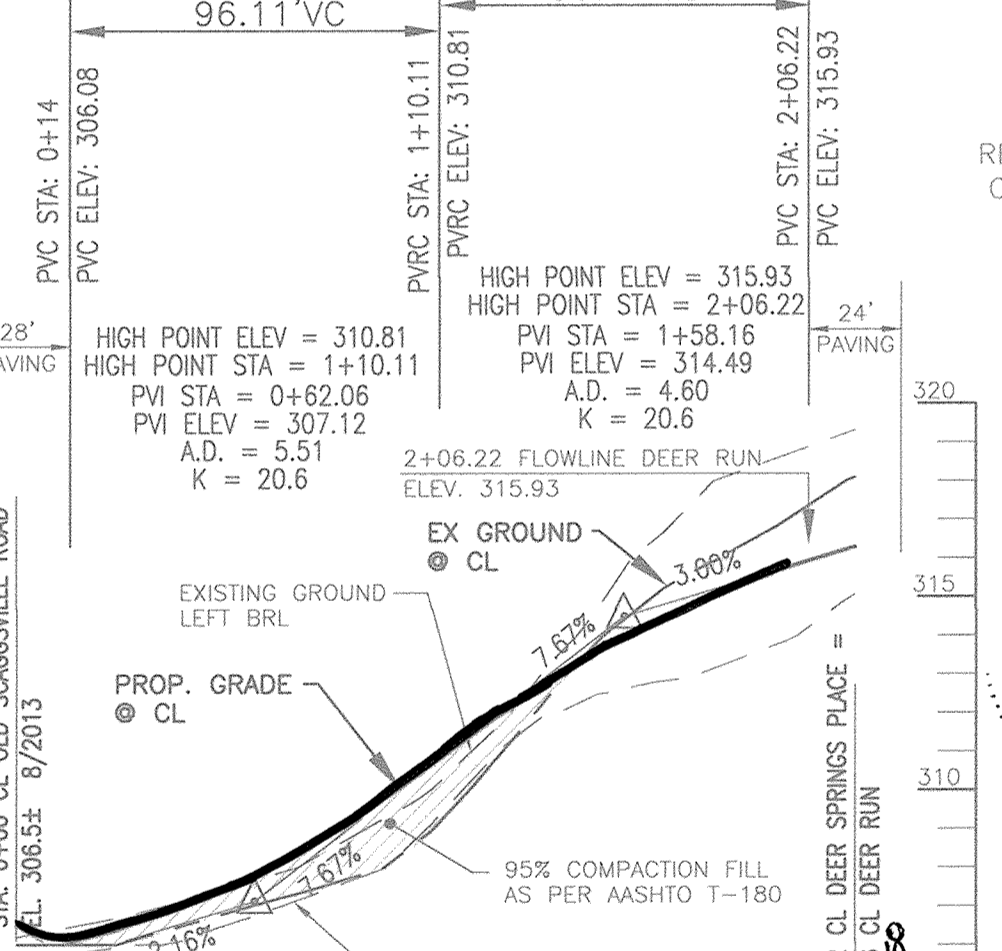
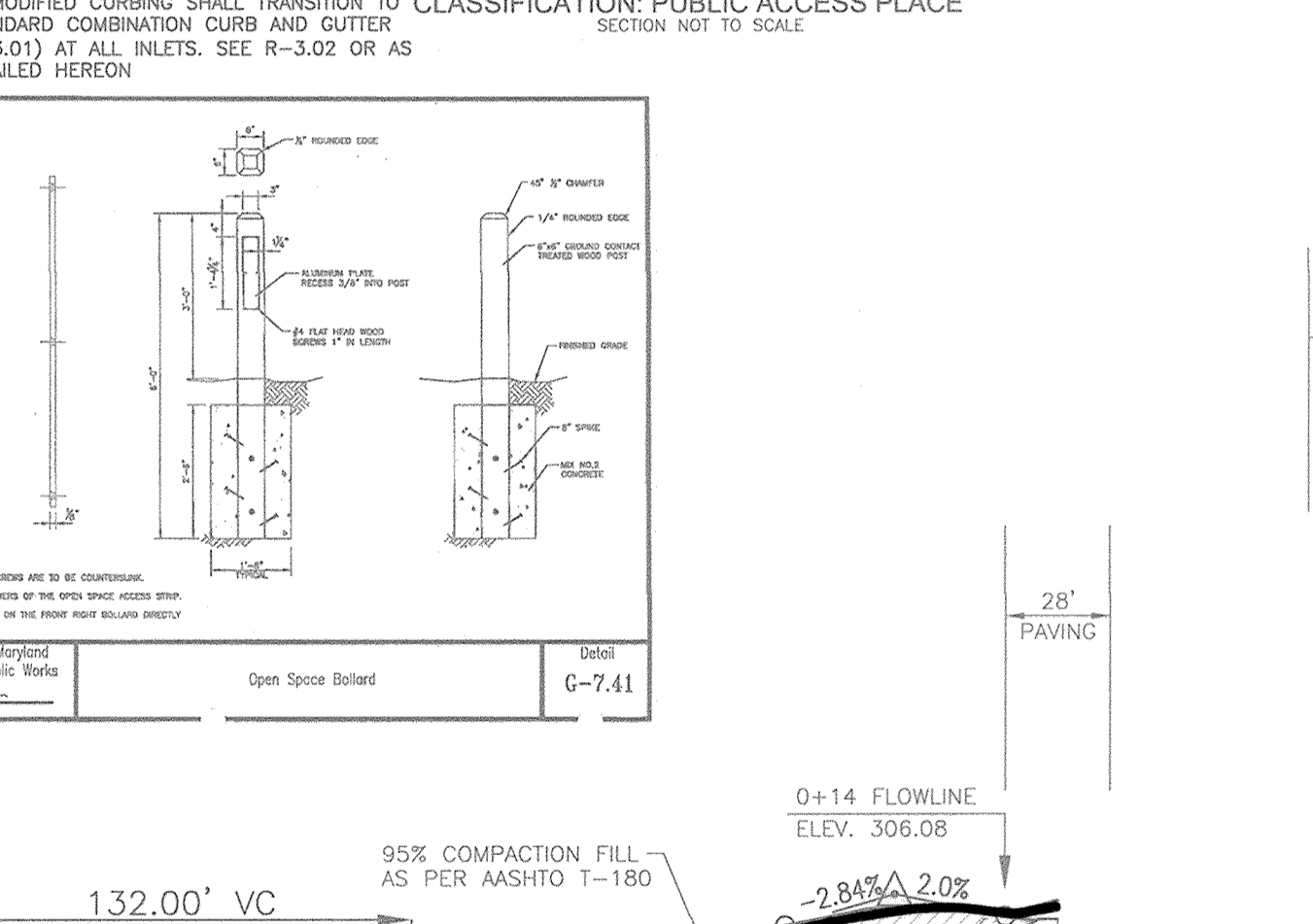


STATION	EXISTING CL	PROPOSED CL	GRADE
0+00	328.8	328.8	0.00%
0+50	328.8	328.8	0.00%
1+00	328.8	328.8	0.00%
1+50	328.8	328.8	0.00%
2+00	328.8	328.8	0.00%
2+50	328.8	328.8	0.00%
3+00	328.8	328.8	0.00%
3+50	328.8	328.8	0.00%
4+00	328.8	328.8	0.00%
4+50	328.8	328.8	0.00%
5+00	328.8	328.8	0.00%
5+50	328.8	328.8	0.00%
6+00	328.8	328.8	0.00%
6+50	328.8	328.8	0.00%
7+00	328.8	328.8	0.00%
7+50	328.8	328.8	0.00%
8+00	328.8	328.8	0.00%
8+50	328.8	328.8	0.00%
9+00	328.8	328.8	0.00%
9+50	328.8	328.8	0.00%
10+00	328.8	328.8	0.00%
10+50	328.8	328.8	0.00%
11+00	328.8	328.8	0.00%
11+50	328.8	328.8	0.00%
12+00	328.8	328.8	0.00%
12+50	328.8	328.8	0.00%
13+00	328.8	328.8	0.00%
13+50	328.8	328.8	0.00%
14+00	328.8	328.8	0.00%
14+50	328.8	328.8	0.00%
15+00	328.8	328.8	0.00%
15+50	328.8	328.8	0.00%
16+00	328.8	328.8	0.00%
16+50	328.8	328.8	0.00%
17+00	328.8	328.8	0.00%
17+50	328.8	328.8	0.00%
18+00	328.8	328.8	0.00%
18+50	328.8	328.8	0.00%
19+00	328.8	328.8	0.00%
19+50	328.8	328.8	0.00%
20+00	328.8	328.8	0.00%
20+50	328.8	328.8	0.00%
21+00	328.8	328.8	0.00%
21+50	328.8	328.8	0.00%
22+00	328.8	328.8	0.00%
22+50	328.8	328.8	0.00%
23+00	328.8	328.8	0.00%
23+50	328.8	328.8	0.00%
24+00	328.8	328.8	0.00%
24+50	328.8	328.8	0.00%
25+00	328.8	328.8	0.00%
25+50	328.8	328.8	0.00%
26+00	328.8	328.8	0.00%
26+50	328.8	328.8	0.00%
27+00	328.8	328.8	0.00%
27+50	328.8	328.8	0.00%
28+00	328.8	328.8	0.00%
28+50	328.8	328.8	0.00%
29+00	328.8	328.8	0.00%
29+50	328.8	328.8	0.00%
30+00	328.8	328.8	0.00%
30+50	328.8	328.8	0.00%
31+00	328.8	328.8	0.00%
31+50	328.8	328.8	0.00%
32+00	328.8	328.8	0.00%
32+50	328.8	328.8	0.00%
33+00	328.8	328.8	0.00%
33+50	328.8	328.8	0.00%
34+00	328.8	328.8	0.00%
34+50	328.8	328.8	0.00%
35+00	328.8	328.8	0.00%
35+50	328.8	328.8	0.00%
36+00	328.8	328.8	0.00%
36+50	328.8	328.8	0.00%
37+00	328.8	328.8	0.00%
37+50	328.8	328.8	0.00%
38+00	328.8	328.8	0.00%
38+50	328.8	328.8	0.00%
39+00	328.8	328.8	0.00%
39+50	328.8	328.8	0.00%
40+00	328.8	328.8	0.00%
40+50	328.8	328.8	0.00%
41+00	328.8	328.8	0.00%
41+50	328.8	328.8	0.00%
42+00	328.8	328.8	0.00%
42+50	328.8	328.8	0.00%
43+00	328.8	328.8	0.00%
43+50	328.8	328.8	0.00%
44+00	328.8	328.8	0.00%
44+50	328.8	328.8	0.00%
45+00	328.8	328.8	0.00%
45+50	328.8	328.8	0.00%
46+00	328.8	328.8	0.00%
46+50	328.8	328.8	0.00%
47+00	328.8	328.8	0.00%
47+50	328.8	328.8	0.00%
48+00	328.8	328.8	0.00%
48+50	328.8	328.8	0.00%
49+00	328.8	328.8	0.00%
49+50	328.8	328.8	0.00%
50+00	328.8	328.8	0.00%
50+50	328.8	328.8	0.00%
51+00	328.8	328.8	0.00%
51+50	328.8	328.8	0.00%
52+00	328.8	328.8	0.00%
52+50	328.8	328.8	0.00%
53+00	328.8	328.8	0.00%
53+50	328.8	328.8	0.00%
54+00	328.8	328.8	0.00%
54+50	328.8	328.8	0.00%
55+00	328.8	328.8	0.00%
55+50	328.8	328.8	0.00%
56+00	328.8	328.8	0.00%
56+50	328.8	328.8	0.00%
57+00	328.8	328.8	0.00%
57+50	328.8	328.8	0.00%
58+00	328.8	328.8	0.00%
58+50	328.8	328.8	0.00%
59+00	328.8	328.8	0.00%
59+50	328.8	328.8	0.00%
60+00	328.8	328.8	0.00%
60+50	328.8	328.8	0.00%
61+00	328.8	328.8	0.00%
61+50	328.8	328.8	0.00%
62+00	328.8	328.8	0.00%
62+50	328.8	328.8	0.00%
63+00	328.8	328.8	0.00%
63+50	328.8	328.8	0.00%
64+00	328.8	328.8	0.00%
64+50	328.8	328.8	0.00%
65+00	328.8	328.8	0.00%
65+50	328.8	328.8	0.00%
66+00	328.8	328.8	0.00%
66+50	328.8	328.8	0.00%
67+00	328.8	328.8	0.00%
67+50	328.8	328.8	0.00%
68+00	328.8	328.8	0.00%
68+50	328.8	328.8	0.00%
69+00	328.8	328.8	0.00%
69+50	328.8	328.8	0.00%
70+00	328.8	328.8	0.00%
70+50	328.8	328.8	0.00%
71+00	328.8	328.8	0.00%
71+50	328.8	328.8	0.00%
72+00	328.8	328.8	0.00%
72+50	328.8	328.8	0.00%
73+00	328.8	328.8	0.00%
73+50	328.8	328.8	0.00%
74+00	328.8	328.8	0.00%
74+50	328.8	328.8	0.00%
75+00	328.8	328.8	0.00%
75+50	328.8	328.8	0.00%
76+00	328.8	328.8	0.00%
76+50	328.8	328.8	0.00%
77+00	328.8	328.8	0.00%
77+50	328.8	328.8	0.00%
78+00	328.8	328.8	0.00%
78+50	328.8	328.8	0.00%
79+00	328.8	328.8	0.00%
79+50	328.8	328.8	0.00%
80+00	328.8	328.8	0.00%
80+50	328.8	328.8	0.00%
81+00	328.8	328.8	0.00%
81+50	328.8	328.8	0.00%
82+00	328.8	328.8	0.00%
82+50	328.8	328.8	0.00%
83+00	328.8	328.8	0.00%
83+50	328.8	328.8	0.00%
84+00	328.8	328.8	0.00%
84+50	328.8	328.8	0.00%
85+00	328.8	328.8	0.00%
85+50	328.8	328.8	0.00%
86+00	328.8	328.8	0.00%
86+50	328.8	328.8	0.00%
87+00	328.8	328.8	0.00%
87+50	328.8	328.8	0.00%
88+00	328.8	328.8	0.00%
88+50	328.8	328.8	0.00%
89+00	328.8	328.8	0.00%
89+50	328.8	328.8	0.00%
90+00	328.8	328.8	0.00%
90+50	328.8	328.8	0.00%
91+00	328.8	328.8	0.00%
91+50	328.8	328.8	0.00%
92+00	328.8	328.8	0.00%
92+50	328.8	328.8	0.00%
93+00	328.8	328.8	0.00%
93+50	328.8	328.8	0.00%
94+00	328.8	328.8	0.00%
94+50	328.8	328.8	0.00%
95+00	328.8	328.8	0.00%
95+50	328.8	328.8	0.00%
96+00	328.8	328.8	0.00%
96+50	328.8	328.8	0.00%
97+00	328.8	328.8	0.00%
97+50	328.8	328.8	0.00%
98+00	328.8	328.8	0.00%
98+50	328.8	328.8	0.00%
99+00	328.8	328.8	0.00%
99+50	328.8	328.8	0.00%
100+00	328.8	328.8	0.00%
100+50	328.8	328.8	0.00%

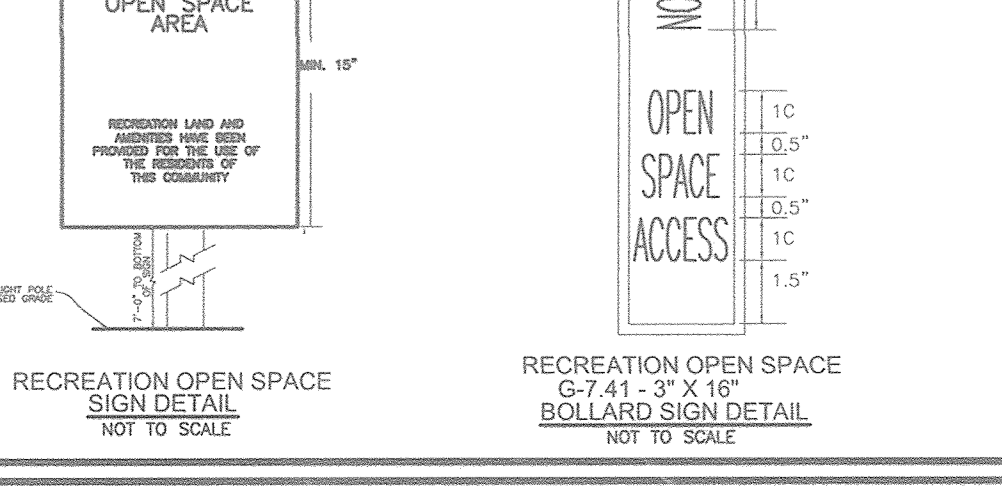
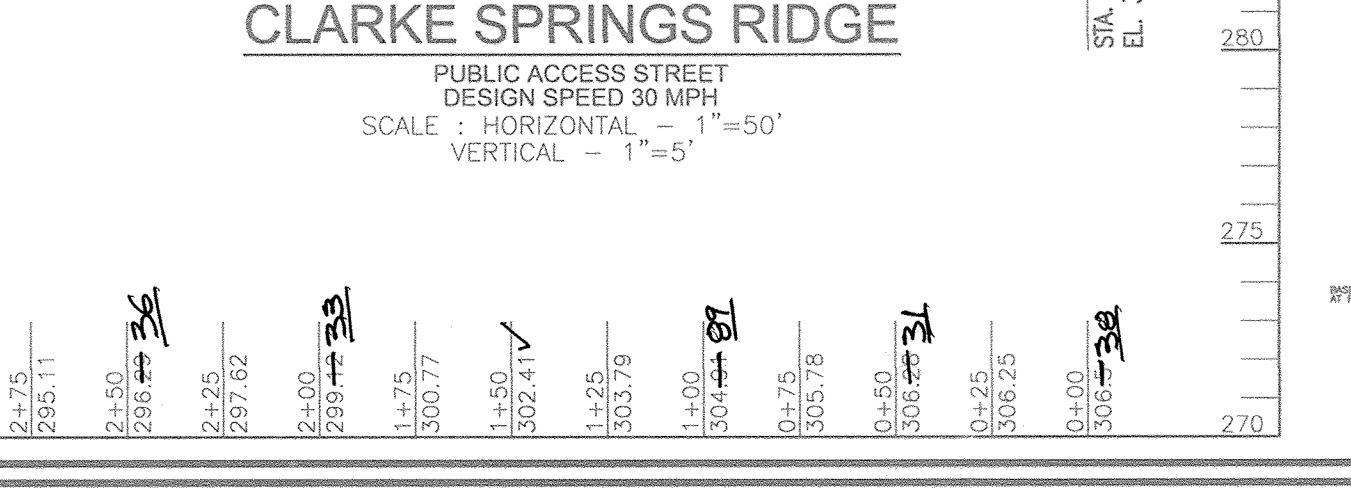
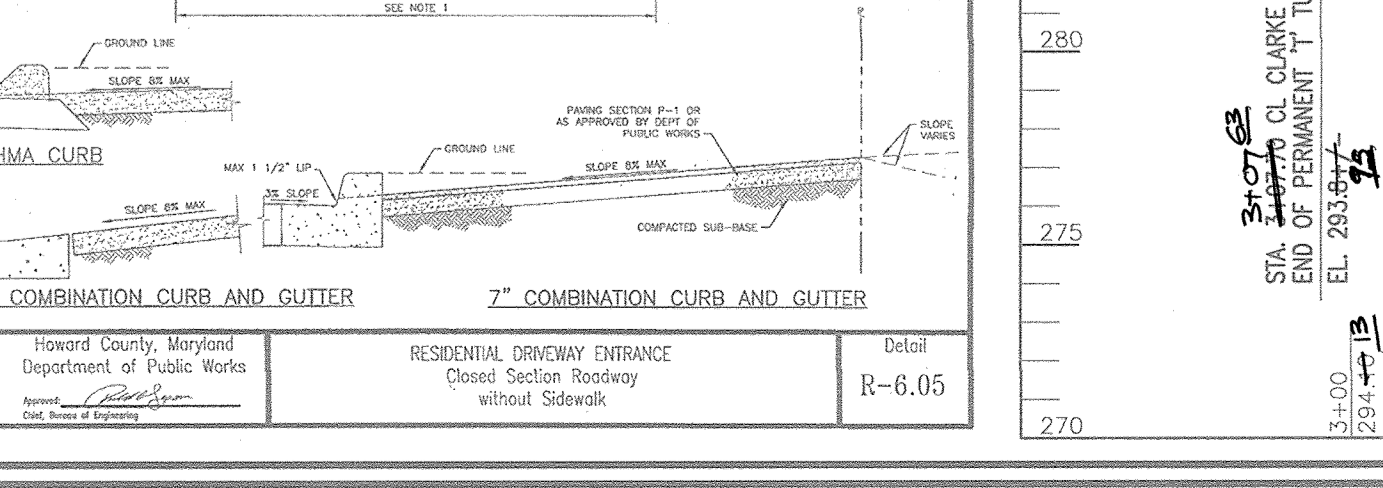
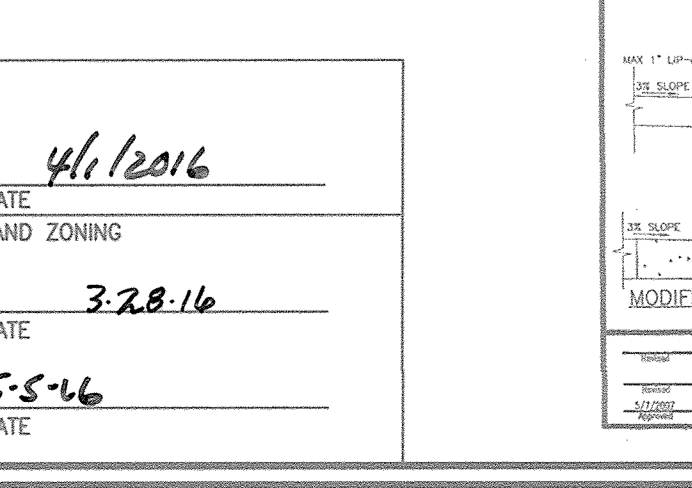




STR #	LOCATION	STR #	LOCATION
I-12	N 528157.38, E 1350995.62	PT-20	O+41.36, 12.43' RT
I-14	N 528783.12, E 1351127.47	PT-21	+66.73, 12.43' RT
I-15	N 528103.33, E 1351225.41	M-8	N 528201.99, E 1351024.80
I-15A	N 528146.79, E 1351231.02	M-9	N 528308.05, E 1351066.10
I-15B	N 528160.96, E 1351174.58	M-10	N 528784.47, E 1351123.78
I-16	N 528245.17, E 1351218.71	M-10A	N 528782.16, E 1351104.55
I-17	N 528245.17, E 1351218.71	M-11	N 528222.50, E 1351148.56
I-18	N 528328.20, E 1351117.59	M-11A	N 528203.24, E 1351272.98
I-19	N 528423.57, E 1351251.28	M-12	N 528288.32, E 1351220.92
I-19A	N 528452.25, E 1351240.24	M-13	N 528268.06, E 1351167.28
I-20	9+50.52, 14.00' LT	M-14	N 528308.77, E 1351172.06
I-21	10+91.60, 14.00' LT	M-15	N 528377.59, E 1351291.41
I-22	10+90.81, 53.71' LT	M-15A	N 528423.57, E 1351251.28
I-23	8+95.60, 16.47' LT	M-22	N 528471.95, E 1351461.10
I-24	N 528518.86, E 1351265.46	M-23	N 528498.68, E 1351380.48
PT-11	O+88.01, 12.43' RT	M-24	N 528579.04, E 1351421.14
PT-11A	3+07.91, 27.00' RT	M-24A	N 528592.98, E 1351385.89
PT-12	O+88.48, 12.43' RT	M-25	N 528649.26, E 1351447.49
PT-13	+143.68, 12.43' RT	M-26	N 528627.53, E 1351504.89
PT-14	+143.23, 12.43' RT	ES-6	N 528101.04, E 1350971.65
PT-15	9+44.59, 14.00' RT	ES-7	N 528188.81, E 1351022.53
PT-16	O+65.21, 12.43' RT	ES-8	N 527814.03, E 1351102.28
PT-17	O+67.37, 12.43' LT	ES-9	N 528708.85, E 1351141.74
PT-18	3+15.77, 12.43' LT	ES-9A	N 528127.53, E 1351227.64
PT-19	O+38.69, 12.43' LT	ES-10	N 528142.22, E 1351274.73



APPROVED: DEPARTMENT OF PUBLIC WORKS
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 DATE: 4/12/16
 DATE: 3-28-16
 DATE: 5-5-16



NO.	REVISION	DATE
9	REVISE PLANS TO RELOCATE TRASH PAD	10/2019
5	ADD 10' TREE MAINTENANCE EASEMENT. SHIFT MBR FACILITIES.	9/2015
4	MODIFY PAVEMENT SECTION.	3/2015
3	REVISE STORM DRAIN LAYOUT ALONG OLD SCAGGSVILLE ROAD	1/2015
2	REVISE SUBDIVISION NAME	7/18/14

REVISED FINAL ROAD CONSTRUCTION PLAN
 ROAD PROFILE & PLAN DETAILS
 CLARKE SPRINGS RIDGE
 DEER SPRINGS PLACE
 HIGH RIDGE MEADOWS - SEC. 1
 LOTS 1-54. OPEN SPACE LOTS 55-68
 AND NON-BUILDABLE BULK PARCEL "B"
 A SUBDIVISION OF TAX MAP 50 - PARCEL 363
 AND A RESUBDIVISION OF TAX MAP 50 - PARCEL 542
 KRAEUSER PROPERTY NON-BUILDABLE BULK PARCEL "A" (PLAT 21191)

HOWARD COUNTY RECREATION OPEN SPACE AREA

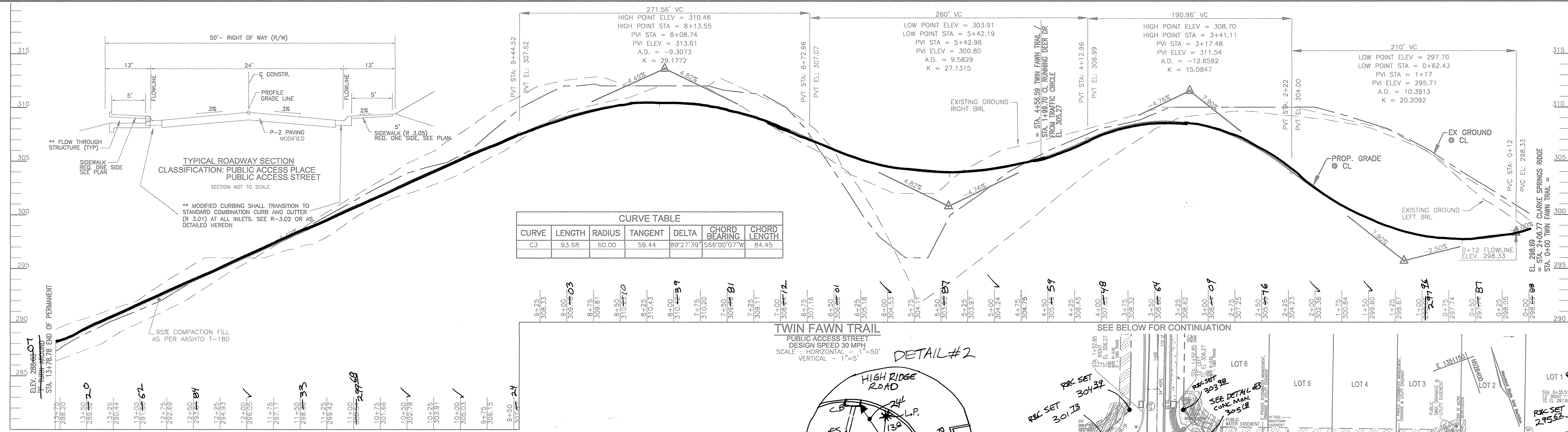
ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET, ELICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8963

DESIGN BY: EDS
 DRAWN BY: EDS/RVE/KG
 CHECKED BY: RHV
 DATE: SEPTEMBER 2015
 SCALE: AS SHOWN
 W.O. NO.: 11-28

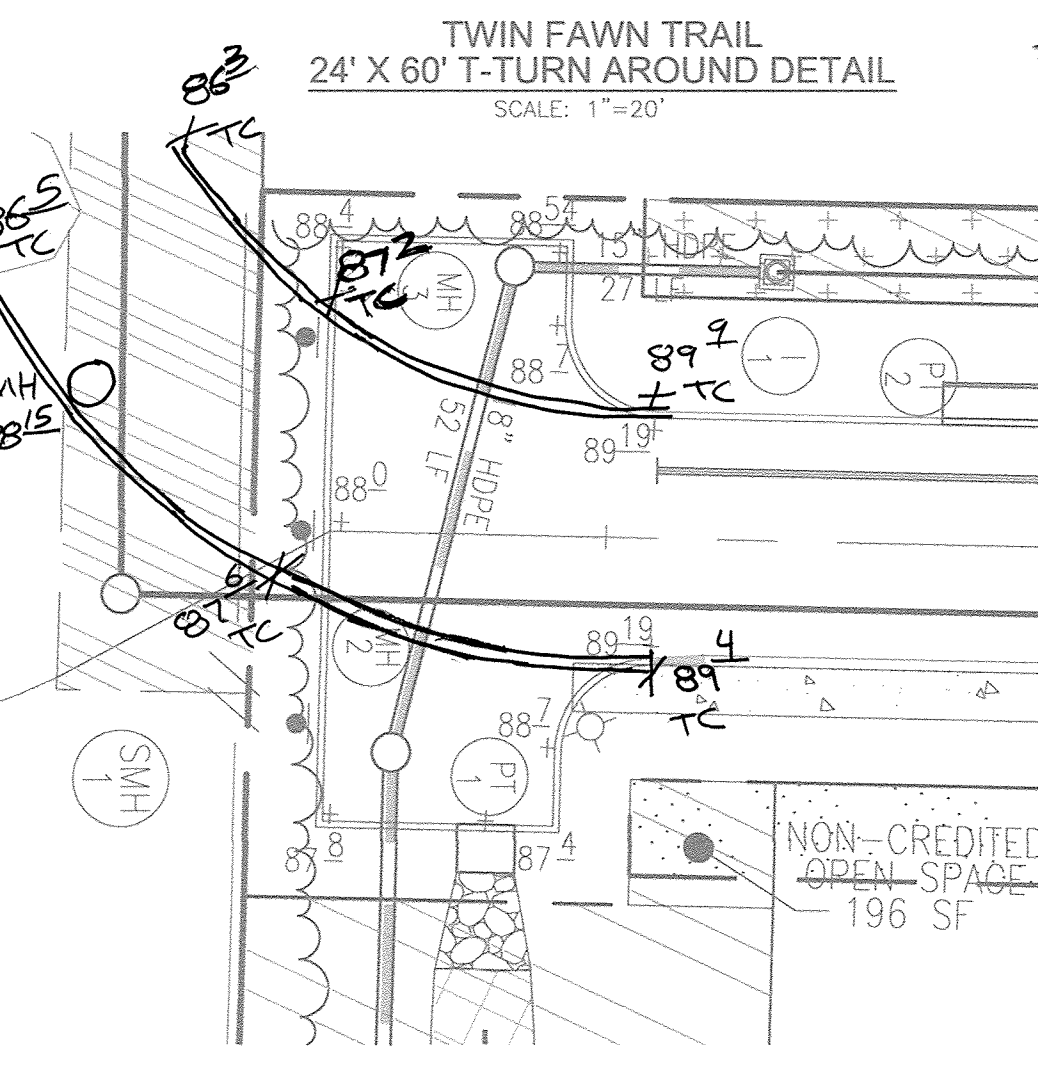
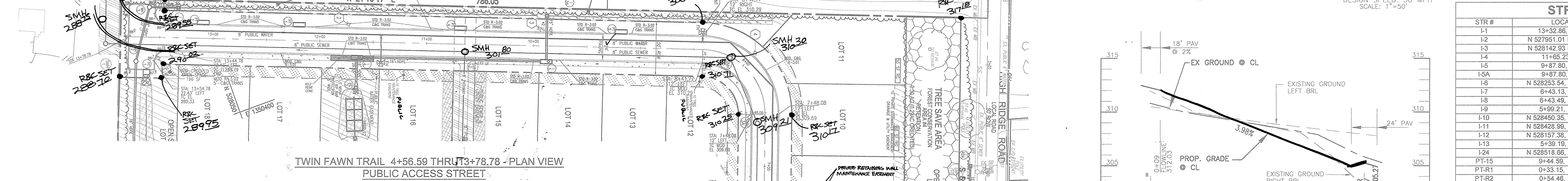
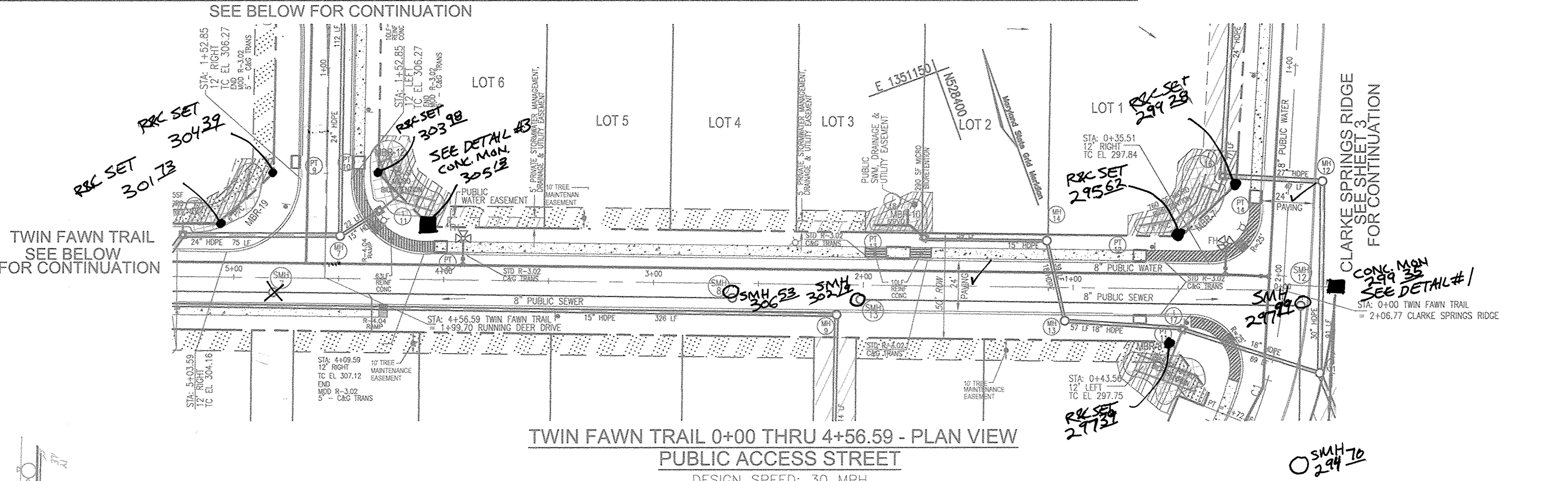
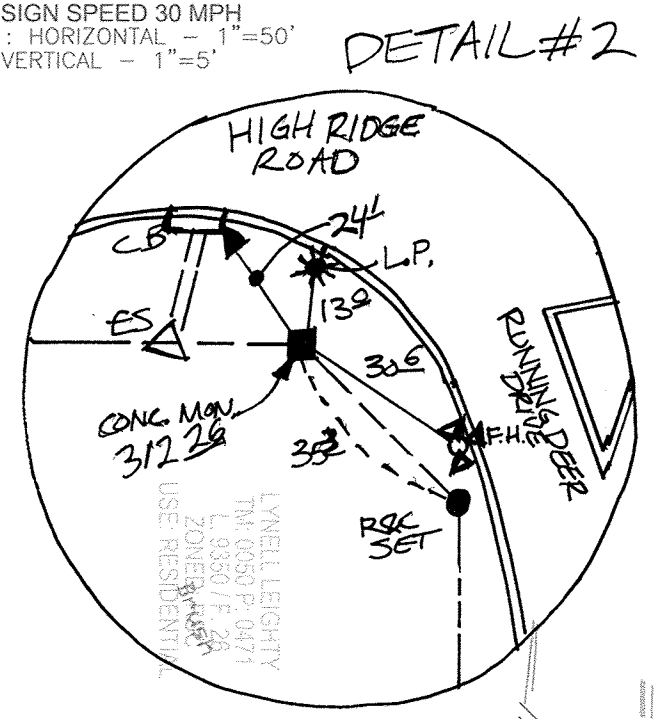
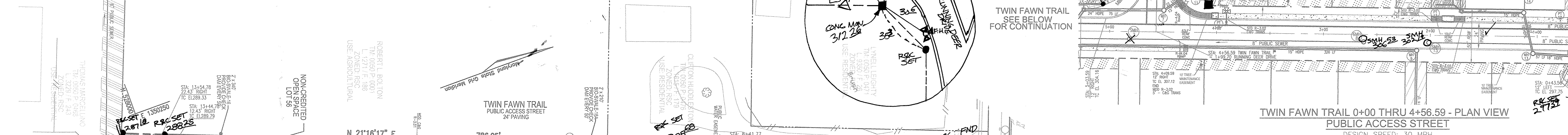
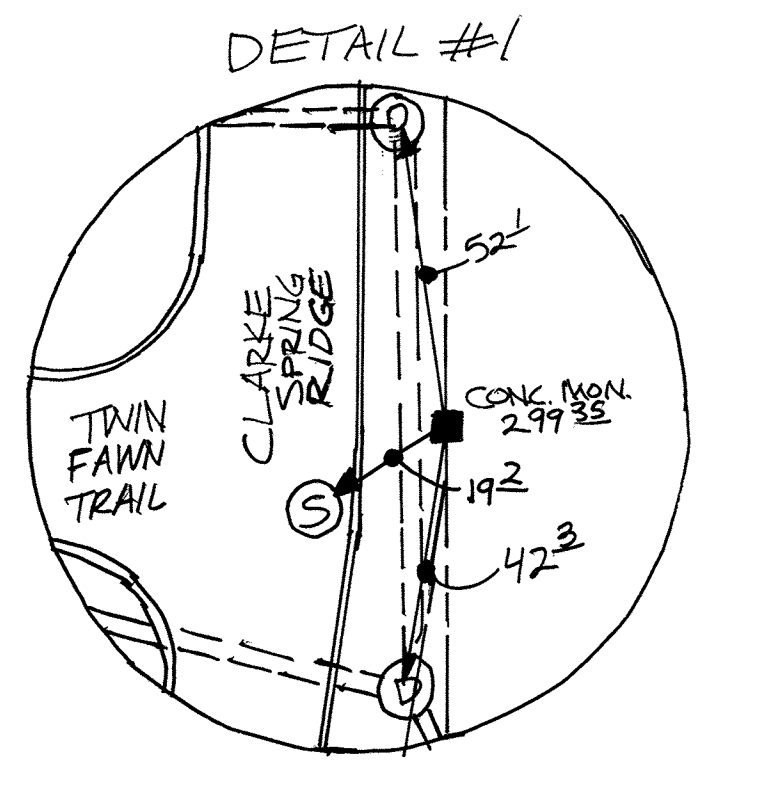
PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
 EXPIRATION DATE: 09-27-2016

3 SHEET OF 32

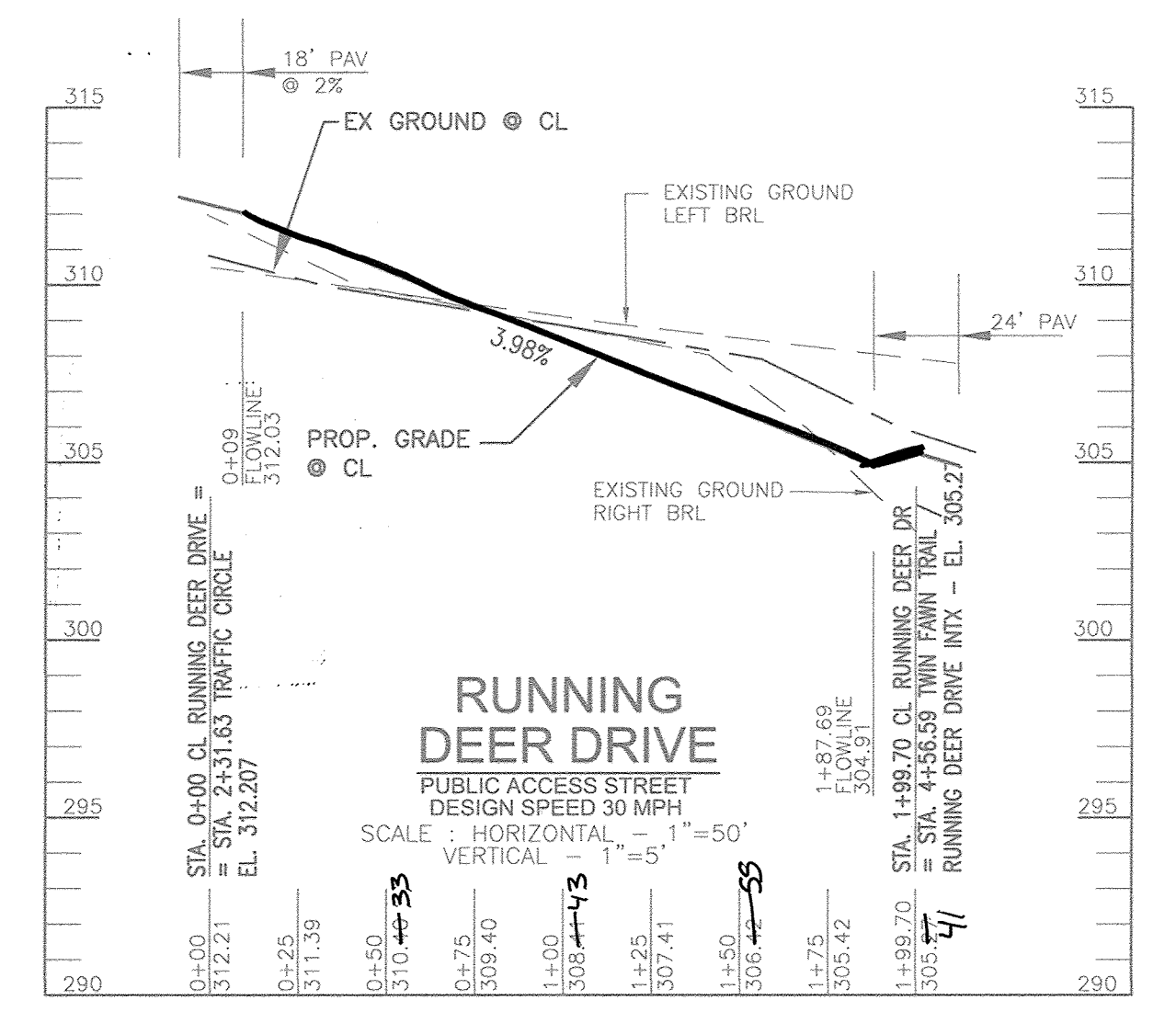
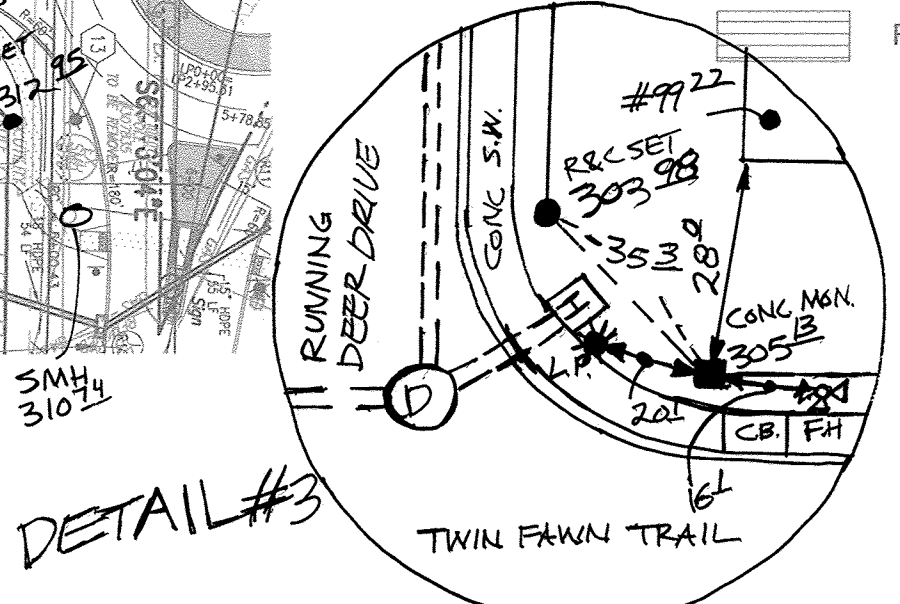
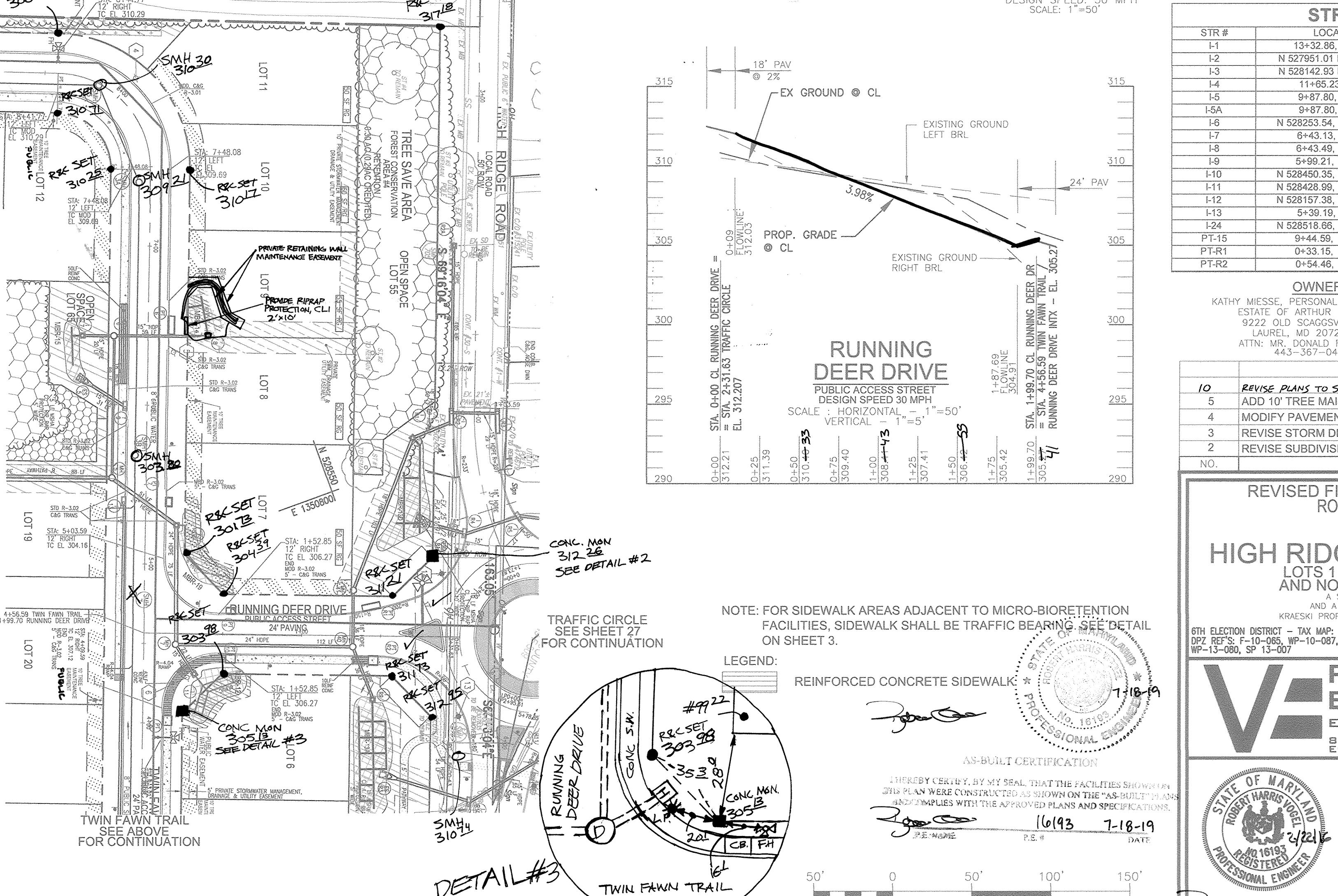
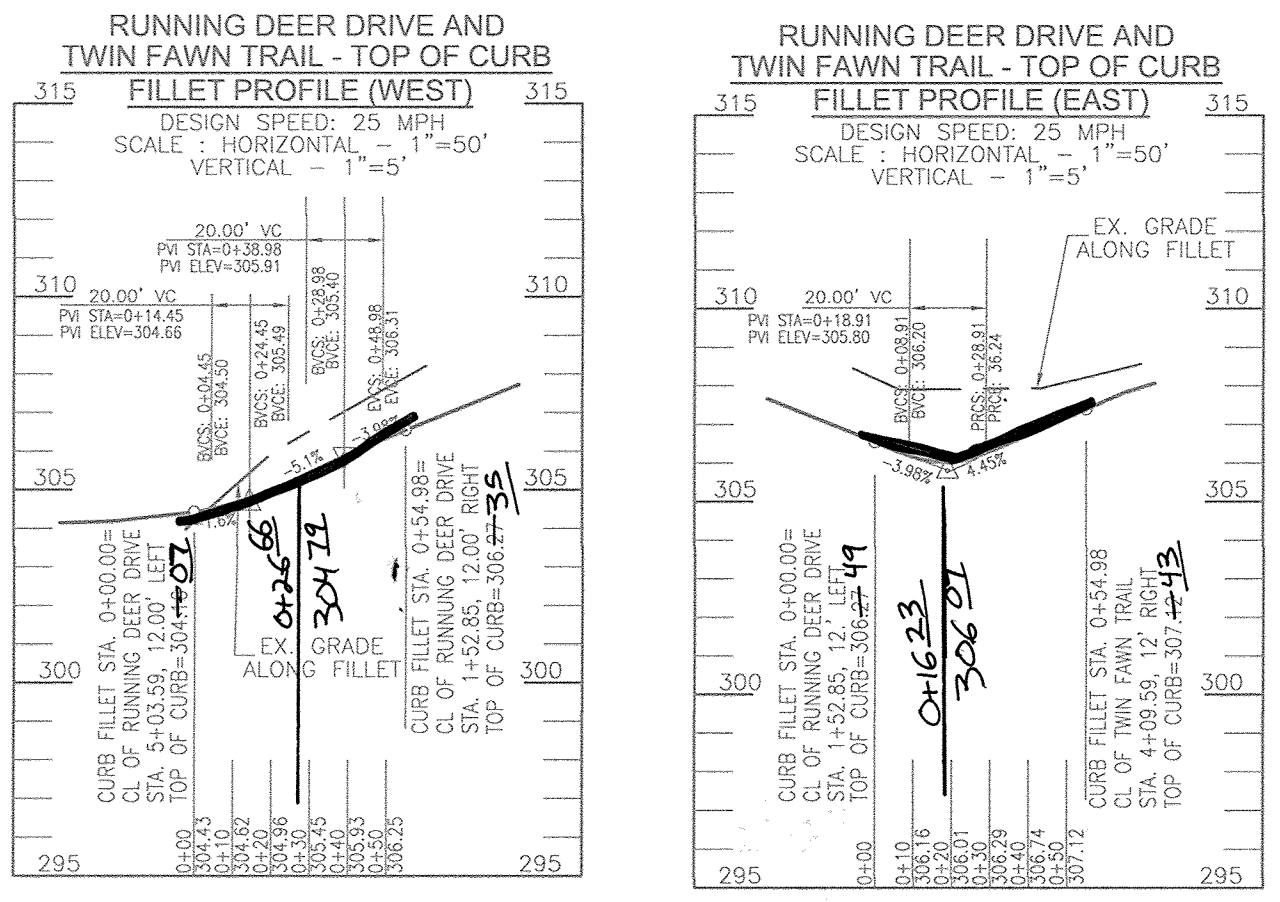
AS-BUILT-DECEMBER 2018



- NOTES:
- FOR STRUCTURE SCHEDULE SEE SHEET 16
 - ALL INTERSECTIONS WILL HAVE HANDICAP RAMPS IN ACCORDANCE WITH THE COUNTY STANDARD DETAILS.
 - REFER TO SHEET 32 FOR REQUIRED STREET LIGHT & STREET SIGN LOCATIONS



NOTE
THE MAINTENANCE OF THE TIERED WALL (MBR-14) LOCATED ON LOT 9 IS THE RESPONSIBILITY OF THE HOMEOWNERS ASSOCIATION (H.O.A.)
REFER TO NOTE 30 & 49, SHEET 1 / SCHEDULE ON SHEET 26



STR #	LOCATION	STR #	LOCATION
I-1	13+32.86, 27.80 RT	M-1	N 527937.84, E 1350415.21
I-2	N 527951.01 E 1350415.27	M-2	N 527974.46, E 1350322.06
I-3	N 528142.93 E 1350459.80	M-3	N 528003.67, E 1350279.17
I-4	11+65.23, 13.1' LT	M-4	N 528288.90, E 1350983.84
I-5	9+87.80, 13.1' LT	M-4A	N 528288.90, E 1350983.84
I-5A	9+87.80, 28.03' LT	M-5	N 528422.20, E 1350744.30
I-6	N 528253.64, E 1350787.37	M-6	N 528034.79, E 1350960.72
I-7	6+43.13, 41.46' LT	M-7	N 528424.15, E 1350856.55
I-8	6+43.49, 37.61' LT	M-8	N 528201.90, E 1351024.80
I-9	5+99.21, 12.43' LT	M-9	N 528308.05, E 1351086.10
I-10	N 528450.35, E 1350786.29	M-40	N 528529.01, E 1350866.24
I-11	N 528428.99, E 1350878.09	M-41	N 528541.66, E 1350862.99
I-12	N 528157.39, E 1350956.62	ES-1	N 527939.36, E 1350463.00
I-13	5+39.10, 12.43' LT	ES-2	N 52804.96, E 1350511.91
I-24	N 528518.66, E 1351265.46	ES-3	N 528161.66, E 1350410.68
PT-15	9+44.59, 14.00' RT	ES-4	N 528282.47, E 1350691.41
PT-R1	0+33.15, 22.33' RT	ES-R1	N 528616.00, E 1350852.81
PT-R2	0+54.46, 12.43' LT	ES-R3	N 528526.91, E 1350983.88

OWNER
KATHY MESSER, PERSONAL REPRESENTATIVE,
ESTATE OF ARTHUR P. KRAESKI
9222 OLD SCAGGSVILLE ROAD
LAUREL, MD 20723-1730
ATTN: MR. DONALD R. REUWER
443-367-0422

DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
5300 DORSEY HALL DRIVE, STE 102
ELICOTT CITY, MARYLAND 21042-7819
ATTN: MR. DONALD R. REUWER
443-367-0422

NO.	REVISION	DATE
10	REVISE PLANS TO SHOW AS-BUILT CONDITION FOR MBR-14	12/3/18
5	ADD 10' TREE MAINTENANCE EASEMENT, SHIFT MBR FACILITIES.	9/2015
4	MODIFY PAVEMENT SECTION.	3/2015
3	REVISE STORM DRAIN LAYOUT ALONG OLD SCAGGSVILLE ROAD	1/2015
2	REVISE SUBDIVISION NAME	7/18/14

**REVISED FINAL ROAD CONSTRUCTION PLAN
ROAD PROFILE & PLAN DETAILS
TWIN FAWN TRAIL
RUNNING DEER DRIVE
HIGH RIDGE MEADOWS - SEC. 1
LOTS 1 - 54, OPEN SPACE LOTS 55 - 68
AND NON-BUILDABLE BULK PARCEL "B"**

8TH ELECTION DISTRICT - TAX MAP 50, GRID 1
SPZ 803-S-10-00-06, WP-10-067, ECP-12-047,
WP-13-080, SP 13-007

ZONED: R-3C
PARCELS: 363 & 542
HOWARD COUNTY, MARYLAND

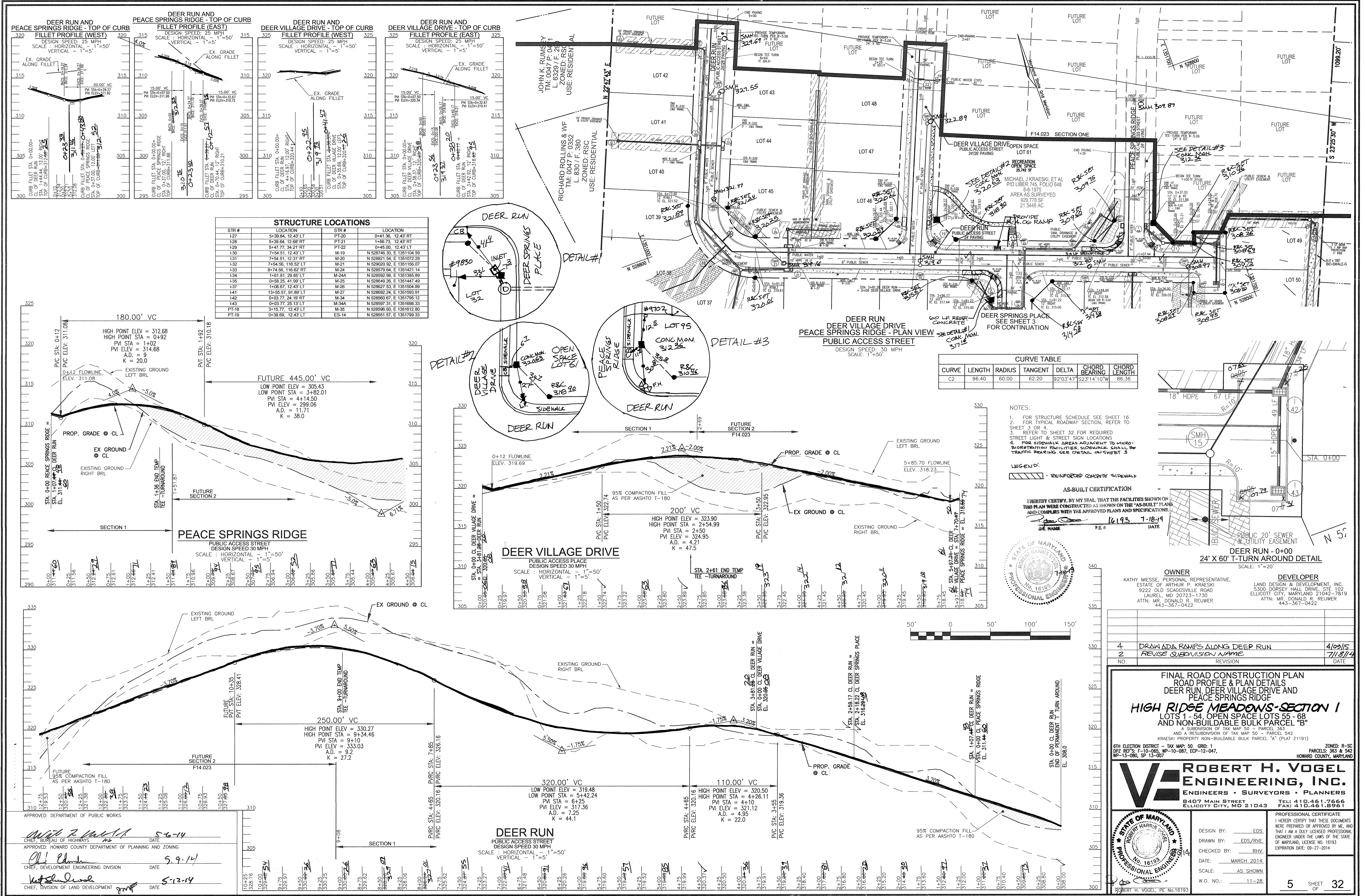
ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

DESIGN BY: EDS
DRAWN BY: EDS/RVC/KG
CHECKED BY: RHY
DATE: SEPTEMBER 2015
SCALE: AS SHOWN
W.O. NO.: 11-28

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
EXPIRATION DATE: 09-27-2016

4 SHEET OF 32

APPROVED: DEPARTMENT OF PUBLIC WORKS
4/1/2016
CHIEF, BUREAU OF HIGHWAYS
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
3-28-16
CHIEF, DEVELOPMENT ENGINEERING DIVISION
5-6-16
CHIEF, DIVISION OF LAND DEVELOPMENT



FINAL ROAD CONSTRUCTION PLAN
ROAD PROFILE & PLAN DETAILS
DEER RUN, DEER VILLAGE DRIVE AND PEACE SPRINGS RIDGE
HIGH RIDGE MEADOWS - SECTION 1
 LOTS 1 - 54, OPEN SPACE LOTS 55 - 68 AND NON-BUILDABLE BULK PARCEL "B"
 AND A RESUBDIVISION OF TAX MAP 50 - PARCEL 542
 KRAESKI PROPERTY NON-BUILDABLE BULK PARCEL "A" (PLAT 21191)

6TH ELECTION DISTRICT - TAX MAP: 50 GRD: 1 ZONED: R-SC
 DPZ REF'S: F-10-065, WP-10-087, ECP-12-047, PARCELS: 363 & 542
 WP-11-080, SP 13-007 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET TEL: 410.461.7666
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2014

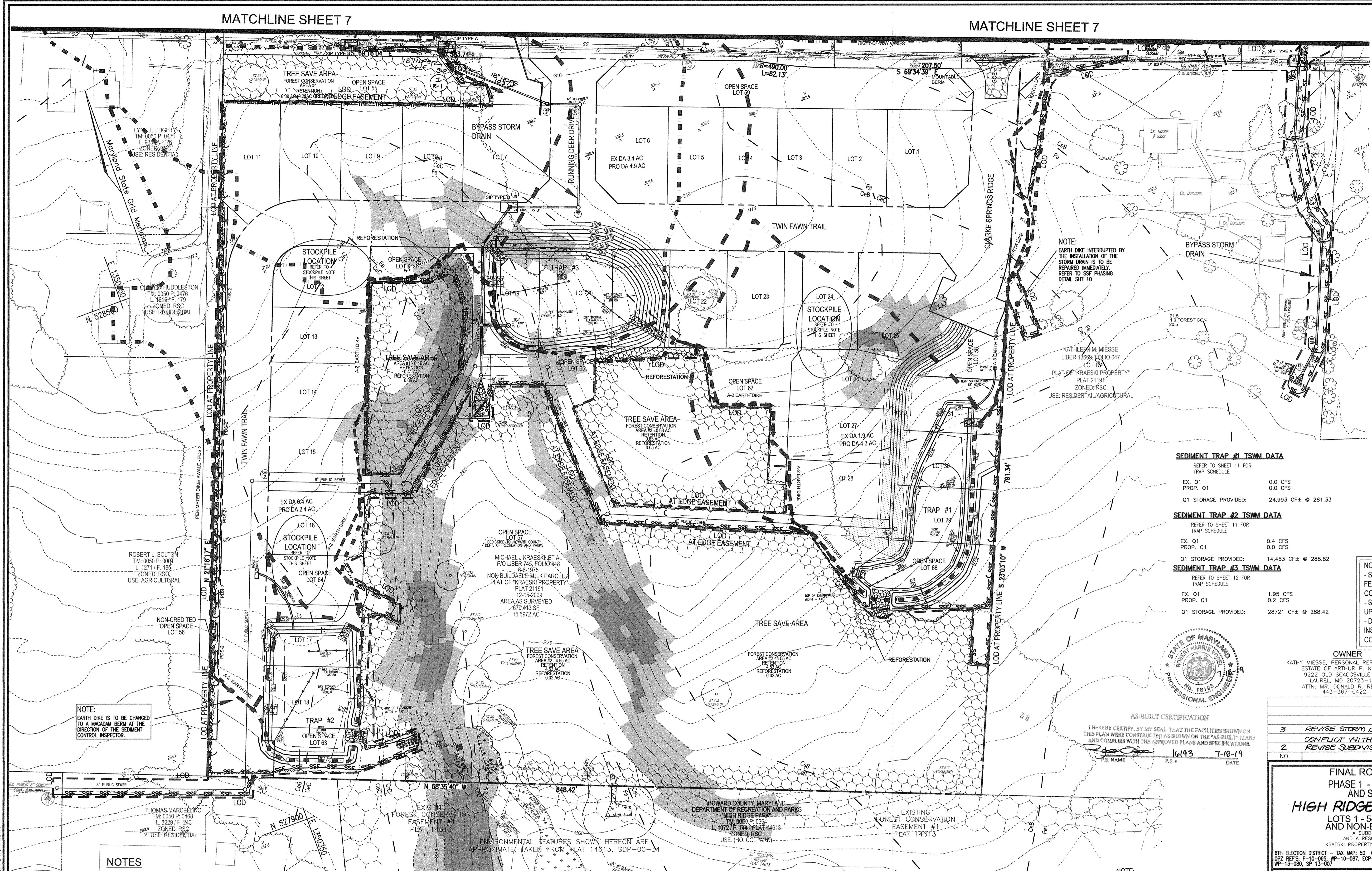
DESIGN BY: EDS
 DRAWN BY: EDS/RHV
 CHECKED BY: RHV
 DATE: MARCH 2014
 SCALE: AS SHOWN
 W.O. NO.: 11-28

5 SHEET OF 32

AS-BUILT - DECEMBER 2018 F 14-022

LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING TREELINE
- PROPOSED STORMDRAIN
- PROPOSED STORMDRAIN INLET
- PROPOSED TREELINE
- WATER ZONE DIVIDE
- EX MODERATE SLOPES
- EX STEEP SLOPES
- EXISTING SPECIMEN TREE
- PROPOSED FOREST CONSERVATION RETENTION AREA
- PROPOSED STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED SUPER SILT FENCE
- PROPOSED SILT FENCE
- PROPOSED INLET PROTECTION
- PROPOSED TREE PROTECTION FENCE
- EARTH DIKE
- PERIMETER DIKE SWALE (POS-2)
- PROPOSED 10' CONTOUR
- PROPOSED DRAINAGE DIVIDE
- EXISTING DRAINAGE DIVIDE



NOTE:
EARTH DIKE INTERRUPTED BY THE INSTALLATION OF THE STORM DRAIN IS TO BE REPAIRED IMMEDIATELY. REFER TO SSF PHASING DETAIL SHIT 10

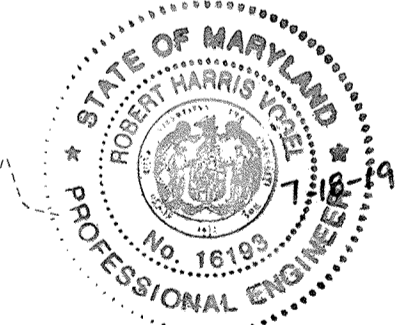
KATHLEEN M. MIESSE
LIBER 15665-0410 047
LOT 18
PLAT OF "KRAESKI PROPERTY"
PLAT 21191
ZONED: RSC
USE: RESIDENTIAL/AGRICULTURAL

SEDIMENT TRAP #1 TSSW DATA
REFER TO SHEET 11 FOR TRAP SCHEDULE
EX. Q1 PROP. Q1 0.0 CFS 0.0 CFS
Q1 STORAGE PROVIDED: 24,993 CF ± @ 281.33

SEDIMENT TRAP #2 TSSW DATA
REFER TO SHEET 11 FOR TRAP SCHEDULE
EX. Q1 PROP. Q1 0.4 CFS 0.0 CFS
Q1 STORAGE PROVIDED: 14,453 CF ± @ 288.82

SEDIMENT TRAP #3 TSSW DATA
REFER TO SHEET 12 FOR TRAP SCHEDULE
EX. Q1 PROP. Q1 1.95 CFS 0.2 CFS
Q1 STORAGE PROVIDED: 28721 CF ± @ 288.42

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



AS-BUILT CERTIFICATION
I HEREBY CERTIFY BY MY SEAL THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLY WITH THE APPROVED PLANS AND SPECIFICATIONS.
DATE: 6/19/19 7-16-19

OWNER: KATHY MIESSE, PERSONAL REPRESENTATIVE, ESTATE OF ARTHUR P. KRAESKI, 9222 OLD SCAGGSVILLE ROAD, LAUREL, MD 20723-1730
DEVELOPER: LAND DESIGN & DEVELOPMENT, INC., 5300 DORSEY HALL DRIVE, STE 102, ELLICOTT CITY, MARYLAND 21042-7819

NO.	REVISION	DATE
3	REVISE STORM DRAIN ALIGNMENT TO AVOID CONFLICT WITH OTHER UTILITIES	3/12/15
2	REVISE SUBDIVISION NAME	7/18/14

FINAL ROAD CONSTRUCTION PLAN
PHASE 1 - GRADING AND SOIL EROSION, AND SEDIMENT CONTROL PLAN
HIGH RIDGE MEADOWS-SECTION 1
LOTS 1 - 54, OPEN SPACE LOTS 55 - 68 AND NON-BUILDABLE BULK PARCEL "B"
A SUBDIVISION OF TAX MAP 50 - PARCEL 542
AND A RESUBDIVISION OF TAX MAP 50 - PARCEL 542
KRAESKI PROPERTY NON-BUILDABLE BULK PARCEL "A" (PLAT 21191)

6TH ELECTION DISTRICT - TAX MAP: 50 GRID: 1
DPZ REF'S: F-10-065, WP-10-087, ECP-12-047, WFL-12-080, SF 13-007
ZONED: R-SC
PARCELS: 363 & 542
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET, ELLICOTT CITY, MD 21043
TEL: 410.461.7666 FAX: 410.461.8961

DESIGN BY: EDS/RVS
DRAWN BY: EDS/RVS
CHECKED BY: RHV
DATE: MARCH 2014
SCALE: AS SHOWN
W.O. NO.: 11-28

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
EXPIRATION DATE: 09-27-2014

6 SHEET OF 32

NOTE:
EARTH DIKE IS TO BE CHANGED TO A MACADAM BERM AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

NOTES

- REFER TO SHEET 11 FOR SEQUENCE OF CONSTRUCTION
- REFER TO SHEET 11 & 12 FOR TRAP SCHEDULE/DETAILS
- REFER TO SHEETS 10 & 11 FOR STANDARD DETAILS AND STABILIZATION NOTES

NOTE:
THIS PLAN MAY NOT BE USED TO OBTAIN PERMITS FOR HOUSE CONSTRUCTION.

PHASE 1 - GRADING PLAN
SCALE: 1"=50'
50' 0 50' 100' 150'

NOTE:
LOCATE STOCKPILE AS SHOWN HEREON OR AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR. STOCKPILES EXCEEDING 15 FEET IN HEIGHT SHALL BE BENCHED. SEE STABILIZATION SPECS. SHEET 10

NOTE:
ALL EARTH DIKES AND/OR ALL SEDIMENT CONTROLS INTERRUPTED BY THE INSTALLATION OF A STORM DRAIN ARE TO BE REPAIRED IMMEDIATELY.

NO AS-BUILT INFORMATION ON THIS SHEET

MAPPED SOILS TYPES

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	MOISTURE REGIMEN	Kw RANGE*	PERCENT SAND	PERCENT SILT	PERCENT CLAY	PERCENT ORGANIC
CbD	CHILLUM LOAM, 2 TO 5 PERCENT SLOPES	B	NO	0.15 - 0.37	NO	NO	NO	NO	NO
CcC	CHILLUM LOAM, 5 TO 10 PERCENT SLOPES	B	NO	0.15 - 0.37	PARTIAL	NO	NO	NO	NO
CfD	CROOM & EVERSOB, 10 TO 15 PERCENT SLOPES	C	NO	0.28	NO	NO	NO	NO	NO
Fd	FALCUTHEM SANDY LOAM, 0 TO 2 PERCENT SLOPES	D	YES	0.02 - 0.24	NO	NO	NO	NO	NO
SfB	SASSAPARAS GRAVELLY SANDY LOAM, 2 TO 5 PERCENT SLOPES	B	NO	0.17 - 0.24	NO	NO	NO	NO	NO
SfD	SASSAPARAS AND CROOM SOILS, 10 TO 15 PERCENT SLOPES	B	NO	0.32 - 0.37	PARTIAL	NO	NO	NO	NO
UcB	URBAN LANG-CHILLUM-BELTSVILLE COMPLEX, 0 TO 5 PERCENT SLOPES	D	NO	0.37	NO	NO	NO	NO	NO

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
K-FACTOR = Kw @ 0-4" DEPTH
* BASED UPON ESTIMATED CUTS

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

APPROVED: DEPARTMENT OF PUBLIC WORKS
DATE: 5-6-14
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
DATE: 5-9-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 5-12-14
CHIEF, DIVISION OF LAND DEVELOPMENT

BY THE DEVELOPER:
"I" WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."
DATE: 4/11/14
SIGNATURE OF DEVELOPER

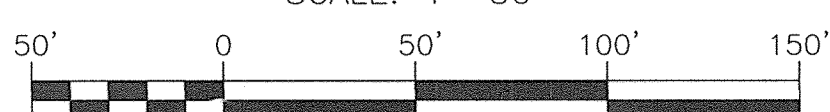
BY THE ENGINEER:
"I" HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
DATE: 4/12/14
SIGNATURE OF ENGINEER

HOWARD COUNTY, MARYLAND
DEPARTMENT OF RECREATION AND PARKS
HIGH RIDGE PARK
T.M. 0050 P. 0324
L. 1072 / F. 148 - PLAT 14613
ZONED: RSC
USE: (HO. CO. PARK)

DATE: 4/17/14
SIGNATURE OF ENGINEER

PHASE 1 - GRADING PLAN

SCALE: 1"=50'

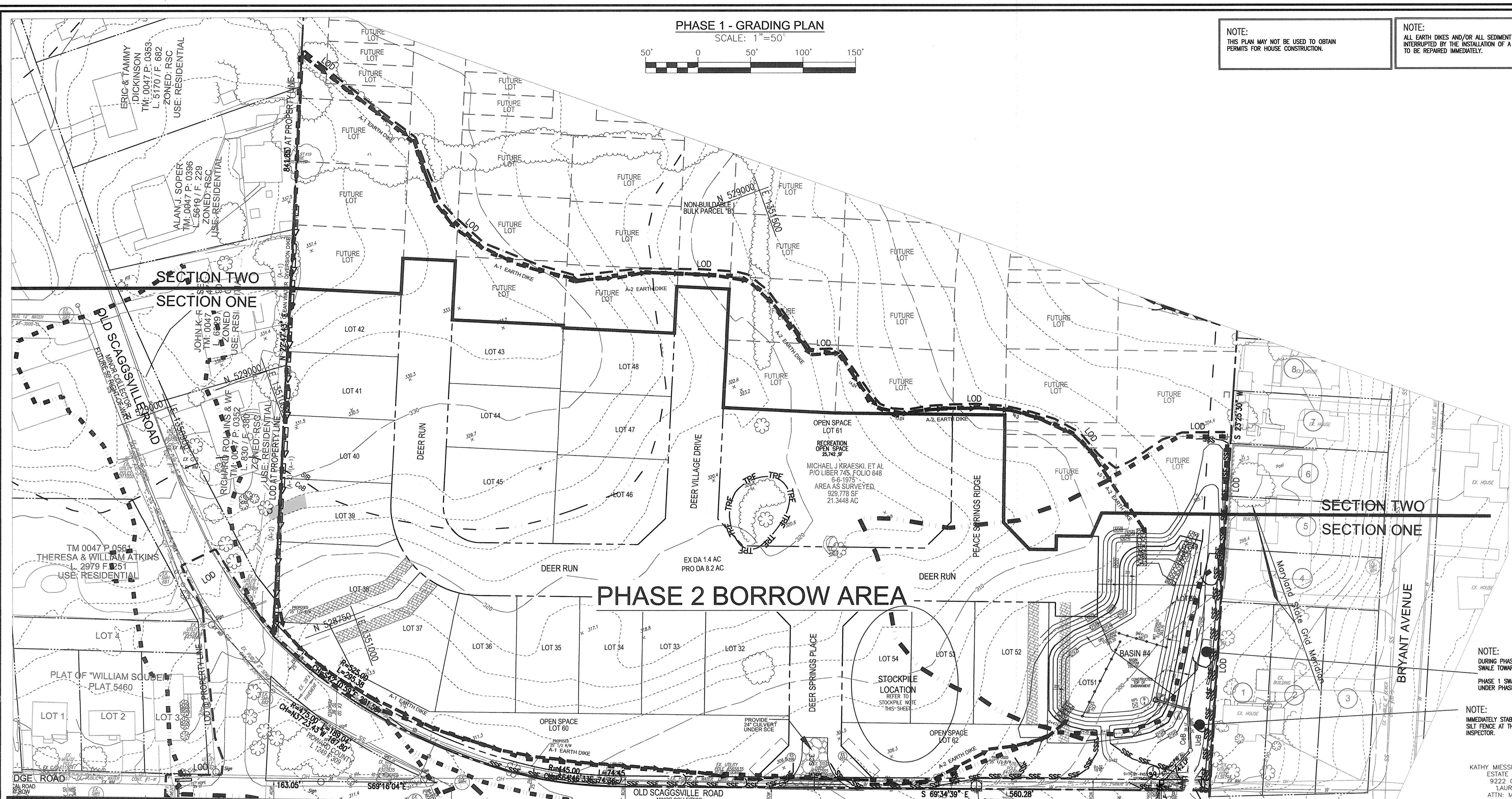


NOTE:
THIS PLAN MAY NOT BE USED TO OBTAIN PERMITS FOR HOUSE CONSTRUCTION.

NOTE:
ALL EARTH DIKES AND/OR ALL SEDIMENT CONTROLS INTERRUPTED BY THE INSTALLATION OF A STORM DRAIN ARE TO BE REPAIRED IMMEDIATELY.

LEGEND:

	PROPERTY LINE
	RIGHT-OF-WAY LINE
	ADJACENT PROPERTY LINE
	EXISTING CURB AND GUTTER
	EXISTING LIGHT POLE
	EXISTING UTILITY POLE
	EXISTING MAILBOX
	EXISTING SIGN
	EXISTING SANITARY MANHOLE
	EXISTING SANITARY LINE
	EXISTING CLEANOUT
	EXISTING FIRE HYDRANT
	EXISTING WATER LINE
	EXISTING TREELINE
	PROPOSED STORM DRAIN
	PROPOSED STORM DRAIN INLET
	PROPOSED TREELINE
	WATER ZONE DIKE
	EX MODERATE SLOPES
	EX STEEP SLOPES
	EXISTING SPECIMEN TREE
	PROPOSED FROST RETENTION AREA
	PROPOSED 10' CONTOUR
	PROPOSED 2' CONTOUR
	PROPOSED STABILIZED CONSTRUCTION ENTRANCE
	PROPOSED SUPER SILT FENCE
	PROPOSED LIMIT OF DISTURBANCE
	PROPOSED TREE PROTECTION FENCE
	PROPOSED DRAINAGE DIKE
	EXISTING DRAINAGE DIKE
	EARTH DIKE
	PROPOSED STANDARD INLET PROTECTION
	CLEAN WATER DIVERSION DIKE



PHASE 2 BORROW AREA

NOTE:
DURING PHASE 1, PROVIDE EROSION CONTROL MATTING IN SWALE TOWARD 1-38.
PHASE 1 SWALE SHALL BE CONVERTED TO A BIOSWALE UNDER PHASE 2

NOTE:
IMMEDIATELY STABILIZE WITH PERMANENT STABILIZATION LOCATE SILT FENCE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

OWNER:
KATHY MIESSE, PERSONAL REPRESENTATIVE,
ESTATE OF ARTHUR P. KRAESKI,
9222 OLD SCAGGSVILLE ROAD
LAUREL, MD 20723-1730
ATTN: MR. DONALD R. REUWER
443-367-0422

DEVELOPER:
LAND DESIGN & DEVELOPMENT, INC.
5300 DORSEY HALL DRIVE, STE 102
ELLCOTT CITY, MARYLAND 21042-7819
ATTN: MR. DONALD R. REUWER
443-367-0422

MATCHLINE SHEET 6

MATCHLINE SHEET 6

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, swales, 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.

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

MAPPED SOILS TYPES

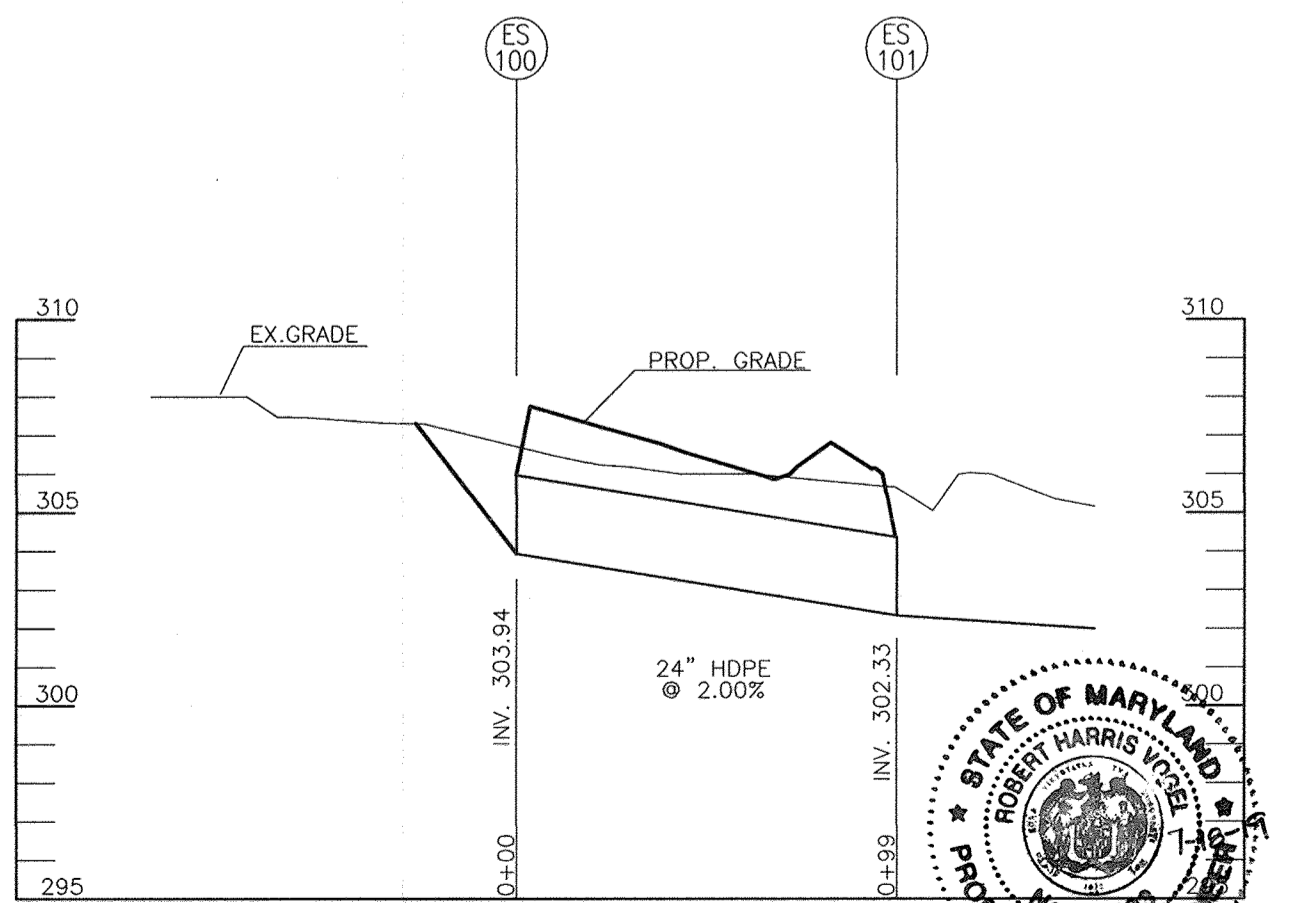
SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
CeB	CHILLUM LOAM, 2 TO 5 PERCENT SLOPES	B	NO	0.15	0.37	NO	NO	NO	NO
CcC	CHILLUM LOAM, 5 TO 10 PERCENT SLOPES	B	NO	0.15	0.37	PARTIAL	NO	NO	NO
CdD	CHILLUM & GIESBORN, 10 TO 15 PERCENT SLOPES	C	NO	0.28	0.37	NO	NO	NO	NO
Fs	FALLSTON SANDY LOAM, 0 TO 2 PERCENT SLOPES	D	YES	0.02	0.24	NO	NO	NO	NO
SfB	SASSAFRAS GRAVELLY SANDY LOAM, 2 TO 5 PERCENT SLOPES	B	NO	0.17	0.24	NO	NO	NO	NO
SfD	SASSAFRAS AND CHILLUM, 10 TO 15 PERCENT SLOPES	B	NO	0.32	0.37	PARTIAL	NO	NO	NO
LcH	URBAN LOAM-CHILLUM-RELTONA COMPLEX, 0 TO 5 PERCENT SLOPES	D	NO	0.37	0.37	NO	NO	NO	NO

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
K-FACTOR = $K_w @ 0.4'$ DEPTH
* BASED UPON ESTIMATED CUTS

NOTE:
HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL EROSION FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

NOTES

- REFER TO SHEET 11 FOR SEQUENCE OF CONSTRUCTION
- REFER TO SHEET 12 FOR BASIN DETAILS



STORM DRAIN PROFILE
TEMPORARY PIPE UNDER SCE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

NOTE:
CONTRACTOR TO PROVIDE IMMEDIATE REPAIR OF ANY EARTH DIKES INTERRUPTED DURING CONSTRUCTION.

BASIN # 4 SEE SHT 12

FACILITY TYPE: TEMPORARY BASIN
EX. DRAINAGE AREA: 1.4 AC.
PROP. DRAINAGE AREA: 8.2 AC.
TOTAL WET STORAGE REQ'D: 14,760 CF
TOTAL DRY STORAGE REQ'D: 14,760 CF
TOTAL STORAGE REQUIRED: 29,520 CF
TOTAL WET STORAGE PRVD: 15,282 CF
TOTAL DRY STORAGE PRVD: 15,790 CF
TOTAL STORAGE PROVIDED: 31,072 CF
BOTTOM ELEV.: 292.00
CREST ELEVATION: 297.00
WET STORAGE ELEVATION: 292.00-293.70
DRY STORAGE ELEVATION: 293.70-295.20
TOTAL STORAGE DEPTH: 3.2' (292.0-295.2)
TOP OF EMBANKMENT: 300.00 (SETTLED)
CLEANOUT ELEVATION: 292.50
SIDE SLOPES: 3:1 INSIDE
3:1 OUTSIDE
8'

EMERGENCY SPILLWAY:
Q1 (EX.): 0.1 CFS
Q1 (BASIN): 0.6 CFS *
*THROUGH DEWATER DEVICE ORIFICE
1 YR TSSW WSEL = 298.78
10 YR TSSW WSEL = 298.16
BAFFLE DESIGN: SEE SHT 12

AS-BUILT CERTIFICATION

I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLAN AND COMPLY WITH THE APPROVED PLANS AND SPECIFICATIONS.

DATE: 7-18-19
P.E. # 16193
R.E. NAME: [Signature]

APPROVED: DEPARTMENT OF PUBLIC WORKS

Michael J. [Signature] 5-6-14
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad [Signature] 5-9-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Walt [Signature] 5-12-14
CHIEF, DIVISION OF LAND DEVELOPMENT

BY THE DEVELOPER:

K. Stetschenko 4/11/14
SIGNATURE OF DEVELOPER

BY THE ENGINEER:

John R. [Signature] 4/21/14
SIGNATURE OF ENGINEER

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

John R. [Signature] 4/17/14
HOWARD S.C.D.

NO.	REVISION	DATE
3	REVISE STORM DRAIN ALIGNMENT TO AVOID CONFLICT WITH OTHER UTILITIES	3/12/15
2	REVISE SUBDIVISION NAME	7/18/14

FINAL ROAD CONSTRUCTION PLAN
PHASE 1 - GRADING AND SOIL EROSION, AND SEDIMENT CONTROL PLAN
HIGH RIDGE MEADOWS - SECTION 1
LOTS 1 - 54, OPEN SPACE LOTS 55 - 68 AND NON-BUILDABLE BULK PARCEL "B"
A SUBDIVISION OF TAX MAP 50 - PARCELS 363 AND 364
AND A RESUBDIVISION OF TAX MAP 50 - PARCELS 542 AND 543 (PLAT 21191)
KRAESKI PROPERTY NON-BUILDABLE BULK PARCEL "A" (PLAT 21191)

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLCOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

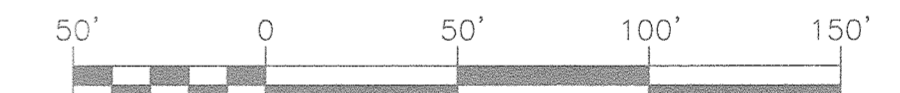
DESIGN BY: EDS./RVS
DRAWN BY: EDS./RVS
CHECKED BY: RHV
DATE: MARCH 2014
SCALE: AS SHOWN
W.O. NO.: 11-28

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
EXPIRATION DATE: 09-27-2014

7 SHEET OF 32

LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING TREELINE
- PROPOSED STORMDRAIN
- PROPOSED STORMDRAIN INLET
- PROPOSED TREELINE
- WATER ZONE DIVIDE
- EX MODERATE SLOPES
- EX STEEP SLOPES
- EXISTING SPECIMEN TREE
- PROPOSED FOREST CONSERVATION RETENTION AREA
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED SUPER SILT FENCE
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED TREE PROTECTION FENCE
- PROPOSED DRAINAGE DIVIDE
- EXISTING DRAINAGE DIVIDE
- EARTH DIKE
- PERMETER DIKE SWALE
- STANDARD INLET PROTECTION
- 10' BUFFER FROM SENER / WATER UTILITY



OWNER
KATHY MIESSE, PERSONAL REPRESENTATIVE,
ESTATE OF ARTHUR P. KRASKI
9222 OLD SCAGGSVILLE ROAD
LAUREL, MD 20723-1730
ATTN: MR. DONALD R. REJWER
443-367-0422

DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
5300 DORSEY HALL DRIVE, STE 102
ELICOTT CITY, MARYLAND 21042-7819
ATTN: MR. DONALD R. REJWER
443-367-0422

9	REVISE THE PLANS TO RELOCATE TRASH PAD	10/2019
6	REVISE PLANS DUE TO DRY UTILITY LOCATIONS	8/9/16
5	ADD 10' TREE MAINTENANCE EASEMENT, SHIFT MBR FACILITIES	9/2015
3	REVISE STORM DRAIN LAYOUT ALONG OLD SCAGGSVILLE ROAD	1/2015
2	REVISE SUBDIVISION NAME	7/18/14
NO.	REVISION	DATE

NOTE: THE CULVERT AND RIP RAP OUTFALL ARE CONTAINED WITHIN A "PRIVATE DRAINAGE AND UTILITY BASEMENT". THE MAINTENANCE RESPONSIBILITIES OF THE CULVERT AND RIP RAP OUTFALL ARE THE RESPONSIBILITY OF THE HOMEOWNERS ASSOCIATION (HOA).

NOTES

- REFER TO SHEET 11 FOR SEQUENCE OF CONSTRUCTION
- REFER TO SHEETS 11 & 12 FOR STANDARD DETAILS AND STABILIZATION NOTES
- SUPER SILT FENCE CAN BE SUBSTITUTED WITH STANDARD SILT FENCE WITH PERMISSION FROM SEDIMENT CONTROL INSPECTOR.

1/2	REVISE TO SHOW AN UNDERDRAIN FOR RAINGARDEN ON LOT 28	11-25-19
1/1	REVISE TO SHOW CULVERT AND REVISE FOREST CONSERVATION	8-13-19
1/0	REVISE PLANS TO SHOW AS-BUILT CONDITION FOR MBR-14	7/25/18
	REVISION	DATE

MAPPED SOILS TYPES						
SYMBOL	NAME / DESCRIPTION	GROUP	HYDRO	PERCENT INCLUSION	Kw RANGE*	PERCENT PROTECTIVE
CsB	CHILLUM LOAM, 2 TO 5 PERCENT SLOPES	B	NO	0.15 - 0.37	NO	NO
CsC	CHILLUM LOAM, 5 TO 10 PERCENT SLOPES	B	NO	0.15 - 0.37	PARTIAL	NO
CsD	CHILLUM LOAM, 10 TO 15 PERCENT SLOPES	C	NO	0.28	NO	NO
Fs	FALLINGSBORO SANDY LOAM, 0 TO 2 PERCENT SLOPES	D	YES	0.02 - 0.24	NO	NO
SsB	SASARATUS GRAVELLY SANDY LOAM, 2 TO 5 PERCENT SLOPES	B	NO	0.17 - 0.24	NO	NO
SsD	SASARATUS AND CHERRY SOILS, 10 TO 15 PERCENT SLOPES	B	NO	0.32 - 0.37	PARTIAL	NO
UcB	URUNK LIND-CHELUM-BELTSVILLE COMPLEX, 0 TO 3 PERCENT SLOPES	D	NO	0.37	NO	NO

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
*K-FACTOR = Kw @ 0-4" DEPTH
*BASED UPON ESTIMATED CUTS

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

PHASE 2 - GRADING PLAN
SCALE: 1"=50'



NOTE:
THIS PLAN MAY NOT BE USED TO OBTAIN PERMITS FOR HOUSE CONSTRUCTION.

NOTE:
THE MAINTENANCE OF THE TIERED WALL (MBR-14) LOCATED ON LOT 9 IS THE RESPONSIBILITY OF THE HOMEOWNERS ASSOCIATION (H.O.A.)
REFER TO NOTE 30 & 49, SHEET 1 / SCHEDULE ON SHEET 26

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION
CHIEF, DIVISION OF LAND DEVELOPMENT

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

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

AS-BUILT CERTIFICATION
I HEREBY CERTIFY, BY MY SEAL, THAT THE FACTS AND INFORMATION THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN, AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS.
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

REVISED FINAL ROAD CONSTRUCTION PLAN
PHASE 2 - GRADING AND SOIL EROSION,
AND SEDIMENT CONTROL PLAN
HIGH RIDGE MEADOWS - SEC. 1
LOTS 1 - 54, OPEN SPACE LOTS 55 - 68
AND NON-BUILDABLE BULK PARCEL "B"

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET, ELLICOTT CITY, MD 21043
TEL: 410.461.7666 FAX: 410.461.8961

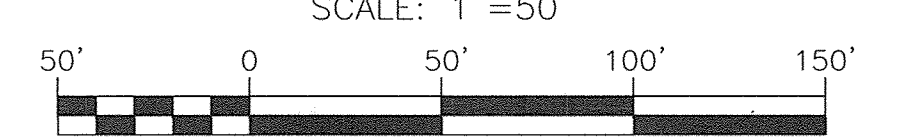
DESIGN BY: EDS
DRAWN BY: EDS/RVE/KG
CHECKED BY: RHV
DATE: SEPTEMBER 2015
SCALE: AS SHOWN
W.O. NO.: 11-28

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
EXPIRATION DATE: 09-27-2016

MAPPED SOILS TYPES		GROUP	HYDRIC	PERCENT MOISTURE	Kw RANGE*	PERCENT PORE WATER	PERCENT ORGANIC MATTER	PERCENT SAND	PERCENT SILT	PERCENT CLAY	PERCENT COBBLES	PERCENT GRAVEL
C6B	CHILLUM LOAM, 2 TO 5 PERCENT SLOPES	B	NO	NO	0.15 - 0.37	NO	NO	NO	NO	NO	NO	NO
C6C	CHILLUM LOAM, 5 TO 10 PERCENT SLOPES	B	NO	NO	0.15 - 0.37	PARTIAL	NO	NO	NO	NO	NO	NO
C7D	CROOM & EYEBROOD, 10 TO 15 PERCENT SLOPES	C	NO	NO	0.28	NO	NO	NO	NO	NO	NO	NO
F6	FALLSINGTON SANDY LOAM, 0 TO 2 PERCENT SLOPES	D	YES	NO	0.02 - 0.24	NO	NO	NO	NO	NO	NO	NO
S1B	SASSPARAGS GRAVELLY SAND, 2 TO 5 PERCENT SLOPES	B	NO	NO	0.17 - 0.24	NO	NO	NO	NO	NO	NO	NO
S1D	SASSPARAGS AND CROWN SOILS, 10 TO 15 PERCENT SLOPES	B	NO	NO	0.32 - 0.37	PARTIAL	NO	NO	NO	NO	NO	NO
UCB	URBAN LAND-CHILLUM-BELTSVILLE COMPLEX, 0 TO 5 PERCENT SLOPES	D	NO	NO	0.37	NO	NO	NO	NO	NO	NO	NO

TAKEN FROM: USDA, SCS-WE8 SOIL SURVEY, HOWARD COUNTY
 K-FACTOR = Kw 0-4 DEPTH
 * BASED UPON ESTIMATED CUTS

PHASE 1 - GRADING PLAN



Standard Stabilization Note

Following initial soil disturbance or re-disturbance, permanent or temporary stabilization must be completed within:

- Three (3) calendar days as to the surface of all perimeter dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and
- Seven (7) calendar days as to all other disturbed or graded areas on the project site not under active grading.

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

LEGEND:

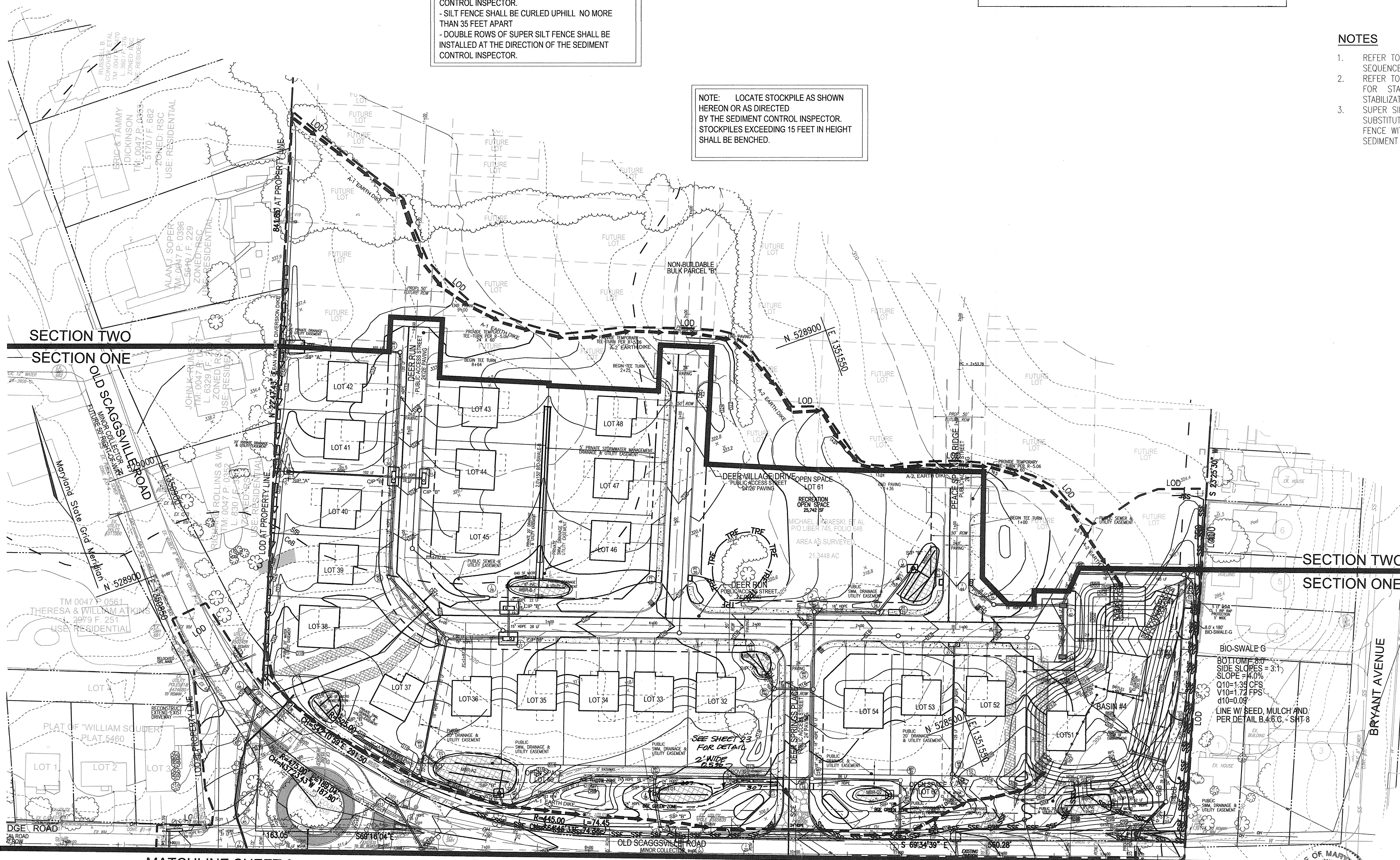
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	ADJACENT PROPERTY LINE
	EXISTING CURB AND GUTTER
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	EXISTING MAILBOX
	EXISTING SIGN
	EXISTING SANITARY MANHOLE
	EXISTING SANITARY LINE
	EXISTING CLEANOUT
	EXISTING FIRE HYDRANT
	EXISTING WATER LINE
	EXISTING TREE LINE
	PROPOSED STORMDRAIN
	PROPOSED STORMDRAIN INLET
	PROPOSED TREE LINE
	WATER ZONE DIVIDE
	EX MODERATE SLOPES
	EX STEEP SLOPES
	EXISTING SPECIMEN TREE
	PROPOSED FROST CONSERVATION RETENTION AREA
	PROPOSED 10' CONTOUR
	PROPOSED 2' CONTOUR
	PROPOSED STABILIZED CONSTRUCTION ENTRANCE
	PROPOSED SUPER SILT FENCE
	PROPOSED LIMIT OF DISTURBANCE
	PROPOSED TREE PROTECTION FENCE
	PROPOSED DRAINAGE DIVIDE
	EXISTING DRAINAGE DIVIDE
	EARTH DIKE
	PERIMETER DIKE SWALE
	STANDARD INLET PROTECTION
	10' BUFFER FROM SEWER/WATER UTILITY

- NOTES**
- REFER TO SHEET 11 FOR SEQUENCE OF CONSTRUCTION
 - REFER TO SHEETS 11 & 12 FOR STANDARD DETAILS AND STABILIZATION NOTES
 - SUPER SILT FENCE CAN BE SUBSTITUTED WITH STANDARD SILT FENCE WITH PERMISSION FROM SEDIMENT CONTROL INSPECTOR.

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

NOTE: LOCATE STOCKPILE AS SHOWN HEREON OR AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR. STOCKPILES EXCEEDING 15 FEET IN HEIGHT SHALL BE BENCHED.

NOTE:
 ALL EARTH DIKES AND/OR ALL SEDIMENT CONTROLS INTERRUPTED BY THE INSTALLATION OF A STORM DRAIN ARE TO BE REPAIRED IMMEDIATELY.



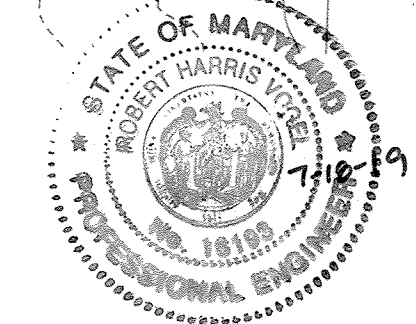
OWNER
 KATHY MIESSE, PERSONAL REPRESENTATIVE,
 ESTATE OF ARTHUR P. KRAESKI
 9222 OLD SCAGGSVILLE ROAD
 LAUREL, MD 20723-1730
 ATTN: MR. DONALD R. REUWER
 443-367-0422

DEVELOPER
 LAND DESIGN & DEVELOPMENT, INC.
 5300 DORSEY HALL DRIVE, SITE 102
 ELLICOTT CITY, MARYLAND 21042-7819
 ATTN: MR. DONALD R. REUWER
 443-367-0422

NO.	REVISION	DATE
8	MODIFY TO ADD A FRENCH DRAIN BEHIND EXISTING INLET PILE	11/10/17
3	REVISE STORM DRAIN LAYOUT ALONG OLD SCAGGSVILLE ROAD	1 / 2015
2	REVISE SUBDIVISION NAME	7/18/14
1	REVISE OLD SCAGGSVILLE ROAD CENTERLINE RADIUS AND AMEND UTILITY POLE DESIGNATION	7/8/14

REVISED FINAL ROAD CONSTRUCTION PLAN
PHASE 2 - GRADING AND SOIL EROSION, AND SEDIMENT CONTROL PLAN
HIGH RIDGE MEADOWS - SEC. 1
 LOTS 1 - 54, OPEN SPACE LOTS 55 - 68
 AND NON-BUILDABLE BULK PARCEL "B"
 A SUBDIVISION OF TAX MAP 50 - PARCEL 542
 AND A RESUBDIVISION OF TAX MAP 50 - PARCEL 542
 KRAESKI PROPERTY NON-BUILDABLE BULK PARCEL "A" (PLAT 21191)

6TH ELECTION DISTRICT - TAX MAP: 50 GRID: ZONED: R-SC
 DPZ REF'S: F-10-065, W-10-087, E-9-12-047, PARCELS: 363 & 542
 W-13-080, SP 13-007 HOWARD COUNTY, MARYLAND



APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] 5/18/2015
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 5-18-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 5-19-15
 CHIEF, DIVISION OF LAND DEVELOPMENT

BY THE DEVELOPER:
 "I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."
 [Signature] 4/28/15
 SIGNATURE OF DEVELOPER DATE

BY THE ENGINEER:
 "I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."
 [Signature] 4/28/15
 SIGNATURE OF ENGINEER DATE

NOTE:
 THIS PLAN MAY NOT BE USED TO OBTAIN PERMITS FOR HOUSE CONSTRUCTION.

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 [Signature] 5/15/15
 HOWARD S.C.D. DATE

AS-BUILT CERTIFICATION

I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLY WITH THE APPROVED PLANS AND SPECIFICATIONS.

[Signature] 16193 7-18-19
 R.E. NAME P.E. # DATE

NOTE:
 CONTRACTOR TO PROVIDE IMMEDIATE REPAIR OF ANY EARTH DIKES INTERRUPTED DURING CONSTRUCTION.

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

DESIGN BY: EDS
 DRAWN BY: EDS/RVE/KKG
 CHECKED BY: RHY
 DATE: APRIL 2015
 SCALE: AS SHOWN
 W.O. NO.: 11-28

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
 EXPIRATION DATE: 09-27-2016

9 SHEET OF 32

**HOWARD SOIL CONSERVATION DISTRICT
STANDARD SEDIMENT CONTROL NOTES**

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION, (311-1855).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RESTABILIZATION, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 3 CALENDAR DAYS FOR ALL PERMANENT SEDIMENT CONTROL STRUCTURES, Dikes, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATING CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
5. SITE ANALYSIS:

TOTAL AREA OF SITE	36.9 ACRES
AREA DISTURBED	20.4 ACRES
AREA TO BE ROOFED OR PAVED	6.4 ACRES
AREA TO BE VEGETATIVELY STABILIZED	13.6 ACRES
TOTAL CUT	13.6 CU. YDS.
TOTAL FILL	33.900 CU. YDS.
OFFSITE WASH/BORROW AREA LOCATION	ON SITE
6. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
7. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
8. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERMANENT EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIECE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITH ONE WORKING DAY, WHICHEVER IS SHORTER.
10. A PROJECT IS TO BE SCHEDULED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM AREA OF 20 ACRES PER GRADING ACTIVITY) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES COLLECTIVELY MAY BE DISTURBED AT A GIVEN TIME.
11. ESTIMATE ONLY CONTRACTOR SHALL VERIFY QUANTITIES TO HIS OWN SATISFACTION. AREA INCLUDES EXISTING OLD SCAGSVILLE ROAD RIGHT-OF-WAY.

**B-4-4 STANDARDS AND SPECIFICATIONS
FOR
TEMPORARY STABILIZATION**

- DEFINITION**
TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.
- PURPOSE**
TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.
- CONDITIONS WHERE PRACTICE APPLIES**
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.
- CRITERIA**
1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN THIS TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
 2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
 3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONG AS PRESCRIBED IN SECTION B-4-3.11.1 AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)		LIME RATE
					N	P ₂ O ₅ / K ₂ O	
1	COOL SEASON ANNUAL PERENNIAL OR QUAIL	40 LB / AC	MAY 15 TO OCT 15	1/2 IN.	435 LB/AC (10 LB PER 1000 SF)	2 TONS/AC (90 LB PER 1000 SF)	2 TONS/AC (90 LB PER 1000 SF)
2	WARM SEASON FOXTAIL MILLET OR QUAIL	30 LB / AC	MAY 15 TO JUL 31	1/2 IN.			

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

SIGNATURE OF DEVELOPER: *[Signature]* DATE: 4/14/14

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

SIGNATURE OF ENGINEER: *[Signature]* DATE: 4/17/14

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

APPROVED: DEPARTMENT OF PUBLIC WORKS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

APPROVED: *[Signature]* DATE: 5.9.14

APPROVED: *[Signature]* DATE: 5.12.14

**B-4-5 STANDARDS AND SPECIFICATIONS
FOR
PERMANENT STABILIZATION**

- DEFINITION**
TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.
- PURPOSE**
TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS.
- CONDITIONS WHERE PRACTICE APPLIES**
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.
- CRITERIA**
1. SEED MIXTURES
 - A. GENERAL USE
 1. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FLOW ON TABLE B.2, ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
 2. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAMS, OR SLOPES FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
 3. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
 4. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY URINE FERTILIZER (46-0-0) AT 3-1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS MIXTURE PER THE AREA OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.
 2. TURFGRASS MIXTURES
 - A. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
 - B. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE, ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
 - C. KENTUCKY BLUEGRASS/PRENNAL RYE: FULL SUN MIXTURE; FOR USE IN AREAS THAT RECEIVE HIGH MAINTENANCE.
 - D. KENTUCKY BLUEGRASS/PRENNAL RYE: FULL SUN MIXTURE; FOR USE IN AREAS THAT RECEIVE MEDIUM TO INTERMEDIATE MAINTENANCE. CERTIFIED PERENNIAL BLUEGRASS CULTIVARS/ CERTIFIED KENTUCKY BLUEGRASS SEEDING RATES: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
 - E. KENTUCKY BLUEGRASS/PRENNAL RYE: FULL SUN MIXTURE; FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTERMEDIATE MAINTENANCE. CERTIFIED PERENNIAL BLUEGRASS CULTIVARS/ CERTIFIED KENTUCKY BLUEGRASS SEEDING RATES: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
 - F. TALL FESCUE/ACTIVITY GRASS: FULL SUN MIXTURE; FOR USE IN DRINKING PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MAINTENANCE IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS: 65 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS: 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
 - G. KENTUCKY BLUEGRASS/PRENNAL RYE: SHADE MIXTURE; FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS; FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MAINTAINED TURF AREAS. RECOMMENDED MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS: 30 TO 40 PERCENT AND CERTIFIED PINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1 1/2 TO 3 POUNDS PER 1000 SQUARE FEET.
 2. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES
 - WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 10 TO OCTOBER 1 (HARDNESS ZONES: SB, 6A)
 - CENTRAL MD: MARCH 15 TO AUGUST 15, AUGUST 15 TO OCTOBER 15 (HARDNESS ZONES: 6B) SOUTHERN MD, EASTERN SHORE: MAY 15 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDNESS ZONES: 7A, 7B)
 3. TALL FESCUE/ACTIVITY GRASS: FULL SUN MIXTURE; FOR USE IN DRINKING PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MAINTENANCE IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS: 65 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS: 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
 4. KENTUCKY BLUEGRASS/PRENNAL RYE: SHADE MIXTURE; FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS; FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MAINTAINED TURF AREAS. RECOMMENDED MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS: 30 TO 40 PERCENT AND CERTIFIED PINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1 1/2 TO 3 POUNDS PER 1000 SQUARE FEET.

**B-4-4 STANDARDS AND SPECIFICATIONS
FOR
TEMPORARY STABILIZATION**

- DEFINITION**
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.
- PURPOSE**
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.
- CONDITIONS WHERE PRACTICE APPLIES**
TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.
- CRITERIA**
1. ALL SEEDS MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN 12 MONTHS PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
 2. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GRASS IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWES.
 3. INCULCANTS: THE INCULCANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF INOCULANT FROM BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INCULCANTS MUST NOT BE USED WITH THE DATE INDICATED ON THE CONTAINER. ADD FRESH INCULCANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO PUT INCULCANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INCULCANT LESS EFFECTIVE.
 4. SOIL AND SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL, UNLESS SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
 5. APPLY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
 1. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1 PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
 2. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
 3. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
 1. FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; PHOS (PHOSPHORUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE.
 2. USE ONLY ONE GROUND AGRICULTURAL LIMESTONE (UP TO 1 TONS PER ACRE) WHICH IS APPLIED BY HYDROSEEDING. NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURN OR HORNBURN LIME WHEN HYDROSEEDING.
 3. LIME AND FERTILIZER ON SITE AND SEED HANDLED AND APPLIED WITHOUT INTERRUPTION.
 4. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.
 6. MULCHING
 1. MULCH MATERIALS (IN ORDER OF PREFERENCE)
 1. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, LIME, OAT, OR BARLEY AND REASONABLY DRY IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND MUST BE MOSTLY, MOLLY, CAROL, DECATUR, OR EXCESSIVELY DUSTY. NOTE: ONLY STERILE STRAW MULCH IS ALLOWED IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
 2. WOOD CELLULOSE FIBER MULCH (WCM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM PHYSICAL STATE.
 2. WCM IS TO BE DRY GREEN OR CONTAIN A GREEN DYE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORM SPREAD SLURRY. WCM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
 3. WCM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A FLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
 4. WCM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATIONS THAT WILL BE PHYTO-TOXIC.
 5. WCM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.
 2. APPLICATION
 1. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
 2. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A DEPTH OF 1 TO 2 INCHES ON SLOPES AND 2 TO 3 INCHES ON FLATTER SURFACE. WHEN USING MULCH ANCHORING TACK, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
 3. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MAX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 3. ANCHORING
 1. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MUST BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD.
 1. A MULCH ANCHORING TOOL: IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM DEPTH OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, IT WOULD CAUSE EROSION.
 2. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MAX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 3. SYNTHETIC BINDERS SUCH AS ACRYLIC CLIP (ACRO-TACK), DCA-70, PETROSET, TERMA TAC, OR OTHER APPROVED EQUIPMENT MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. CARE OF EQUIPMENT SHOULD BE HEARD AT THE EXITS WHERE WIND CATCHES MULCH, SUCH AS VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
 4. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 30 TO 3,000 FEET LONG.

PERMANENT SEEDING SUMMARY

NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)		LIME RATE
					N	P ₂ O ₅ / K ₂ O	
1	COOL SEASON TALL FESCUE PERENNIAL BLUEGRASS	1.5 TO 2.0 LB / AC	MAY 15 TO OCT 15	1/2 IN.	45 LB/AC (10 LB PER 1000 SF)	90 LB/AC (2 LB PER 1000 SF)	2 TONS/AC (90 LB PER 1000 SF)
2	WARM SEASON FOXTAIL MILLET OR QUAIL	30 LB / AC	MAY 15 TO JUL 31	1/2 IN.			

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

SIGNATURE OF DEVELOPER: *[Signature]* DATE: 4/17/14

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

APPROVED: DEPARTMENT OF PUBLIC WORKS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

APPROVED: *[Signature]* DATE: 5.9.14

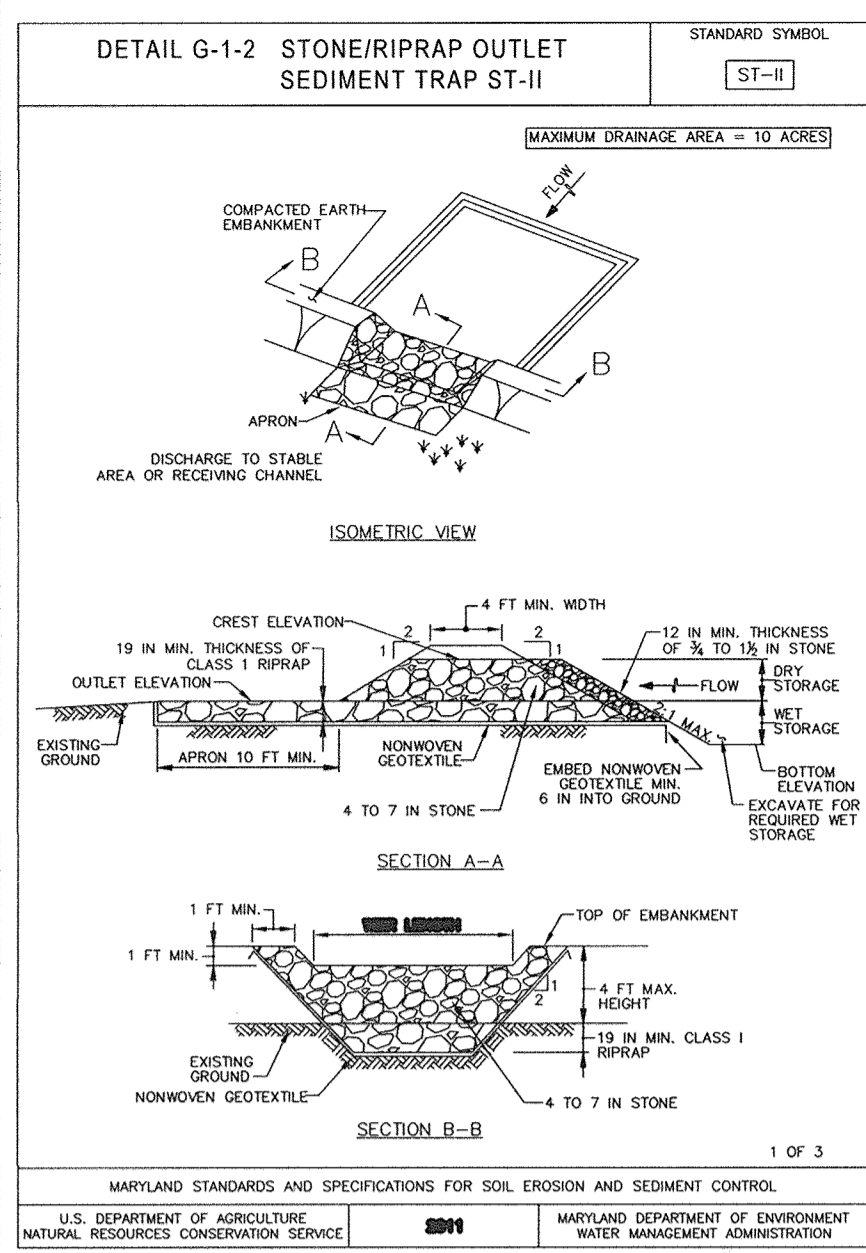
APPROVED: *[Signature]* DATE: 5.12.14

**R-4-2 STANDARDS AND SPECIFICATIONS
FOR
SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS**

- DEFINITION**
THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.
- PURPOSE**
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.
- CONDITIONS WHERE PRACTICE APPLIES**
WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.
- CRITERIA**
1. SOIL PREPARATION
 1. TEMPORARY STABILIZATION
 1. SEEDING PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS, OR IMPROVED MOUNTAIN CONSTRUCTION EQUIPMENT. WORKING FROM APPROVED PLAN, THE SOIL IS DISKED. IT MUST NOT BE ROLLED OR GRASSED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
 2. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
 3. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
 2. PERMANENT STABILIZATION
 - A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
 1. SOIL PH BETWEEN 6.0 AND 7.0.
 2. SOLUBLE SALTS LESS THAN 300 PARTS PER MILLION (PPM).
 3. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRANDED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IS GRASSLAND SOILS WHICH DO NOT CONTAIN A HIGHER PERCENT OF CLAY. A MOUNTAIN BERM IS REQUIRED WHEN SEED IS NOT PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT SOIL) AT LEAST 6 INCHES DEEP OVER THE ENTIRE SURFACE.
 5. MAINTAIN ENTRANCE A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT, ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAR SURFACE, MOUNTAIN BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE, DEBRIS, GRASS, OR OTHER MATERIALS TRACKED ONTO ADJACENT ROADWAY BY WADING, SCRAPE, AND/OR SHEETING. WADING, SCRAPE, AND/OR SHEETING MUST BE TRACKED OUTWARD TO MAINTAIN CLEAR SURFACE. IF NOT ACCEPTABLE, UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL STRUCTURE.
 - B. THE RESULTS OF A SOIL TEST
 1. SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
 1. SOIL PH BETWEEN 6.0 AND 7.0.
 2. SOLUBLE SALTS LESS THAN 300 PARTS PER MILLION (PPM).
 3. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRANDED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IS GRASSLAND SOILS WHICH DO NOT CONTAIN A HIGHER PERCENT OF CLAY. A MOUNTAIN BERM IS REQUIRED WHEN SEED IS NOT PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT SOIL) AT LEAST 6 INCHES DEEP OVER THE ENTIRE SURFACE.
 5. MAINTAIN ENTRANCE A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT, ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAR SURFACE, MOUNTAIN BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE, DEBRIS, GRASS, OR OTHER MATERIALS TRACKED ONTO ADJACENT ROADWAY BY WADING, SCRAPE, AND/OR SHEETING. WADING, SCRAPE, AND/OR SHEETING MUST BE TRACKED OUTWARD TO MAINTAIN CLEAR SURFACE. IF NOT ACCEPTABLE, UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL STRUCTURE.
 2. SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST
 1. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RANGE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE ROCKS, LIMB STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A WOOD CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT SOIL APPLICATION.
 2. PREPARATION TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SURFACE. WHERE SITE CONDITIONS WILL NOT PERMIT SOIL APPLICATION, SEEDING LOOSENESS MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.
 2. TOPSOILING
 1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW NUTRIENTS TOXIC TO PLANTS, AND/OR ARE NOT SUITABLE FOR SEED APPLICATION.
 2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
 3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUOUS SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - D. THE SOIL IS SO SHALLOW THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
 - E. SLOPES ARE STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
 4. SOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
 1. TOPSOIL MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN 12 MONTHS PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
 2. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GRASS IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWES.
 3. INCULCANTS: THE INCULCANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF INOCULANT FROM BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INCULCANTS MUST NOT BE USED WITH THE DATE INDICATED ON THE CONTAINER. ADD FRESH INCULCANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO PUT INCULCANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INCULCANT LESS EFFECTIVE.
 4. SOIL AND SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL, UNLESS SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
 5. APPLY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
 1. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1 PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
 2. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
 3. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
 1. FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; PHOS (PHOSPHORUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE.
 2. USE ONLY ONE GROUND AGRICULTURAL LIMESTONE (UP TO 1 TONS PER ACRE) WHICH IS APPLIED BY HYDROSEEDING. NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURN OR HORNBURN LIME WHEN HYDROSEEDING.
 3. LIME AND FERTILIZER ON SITE AND SEED HANDLED AND APPLIED WITHOUT INTERRUPTION.
 4. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.
 6. MULCHING
 1. MULCH MATERIALS (IN ORDER OF PREFERENCE)
 1. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, LIME, OAT, OR BARLEY AND REASONABLY DRY IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND MUST BE MOSTLY, MOLLY, CAROL, DECATUR, OR EXCESSIVELY DUSTY. NOTE: ONLY STERILE STRAW MULCH IS ALLOWED IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
 2. WOOD CELLULOSE FIBER MULCH (WCM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM PHYSICAL STATE.
 2. WCM IS TO BE DRY GREEN OR CONTAIN A GREEN DYE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORM SPREAD SLURRY. WCM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
 3. WCM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A FLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
 4. WCM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATIONS THAT WILL BE PHYTO-TOXIC.
 5. WCM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.

**B-4-3 STANDARDS AND SPECIFICATIONS
FOR
SEEDING AND MULCHING**

- DEFINITION**
THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.
- PURPOSE**
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.
- CONDITIONS WHERE PRACTICE APPLIES**
TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.
- CRITERIA**
1. ALL SEEDS MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN 12 MONTHS PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
 2. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GRASS IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWES.
 3. INCULCANTS: THE INCULCANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF INOCULANT FROM BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INCULCANTS MUST NOT BE USED WITH THE DATE INDICATED ON THE CONTAINER. ADD FRESH INCULCANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO PUT INCULCANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INCULCANT LESS EFFECTIVE.
 4. SOIL AND SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL, UNLESS SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
 5. APPLY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
 1. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1 PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
 2. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
 3. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
 1. FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; PHOS (PHOSPHORUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE.
 2. USE ONLY ONE GROUND AGRICULTURAL LIMESTONE (UP TO 1 TONS PER ACRE) WHICH IS APPLIED BY HYDROSEEDING. NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURN OR HORNBURN LIME WHEN HYDROSEEDING.
 3. LIME AND FERTILIZER ON SITE AND SEED HANDLED AND APPLIED WITHOUT INTERRUPTION.
 4. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.
 6. MULCHING
 1. MULCH MATERIALS (IN ORDER OF PREFERENCE)
 1. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, LIME, OAT, OR BARLEY AND REASONABLY DRY IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND MUST BE MOSTLY, MOLLY, CAROL, DECATUR, OR EXCESSIVELY DUSTY. NOTE: ONLY STERILE STRAW MULCH IS ALLOWED IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
 2. WOOD CELLULOSE FIBER MULCH (WCM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM PHYSICAL STATE.
 2. WCM IS TO BE DRY GREEN OR CONTAIN A GREEN DYE



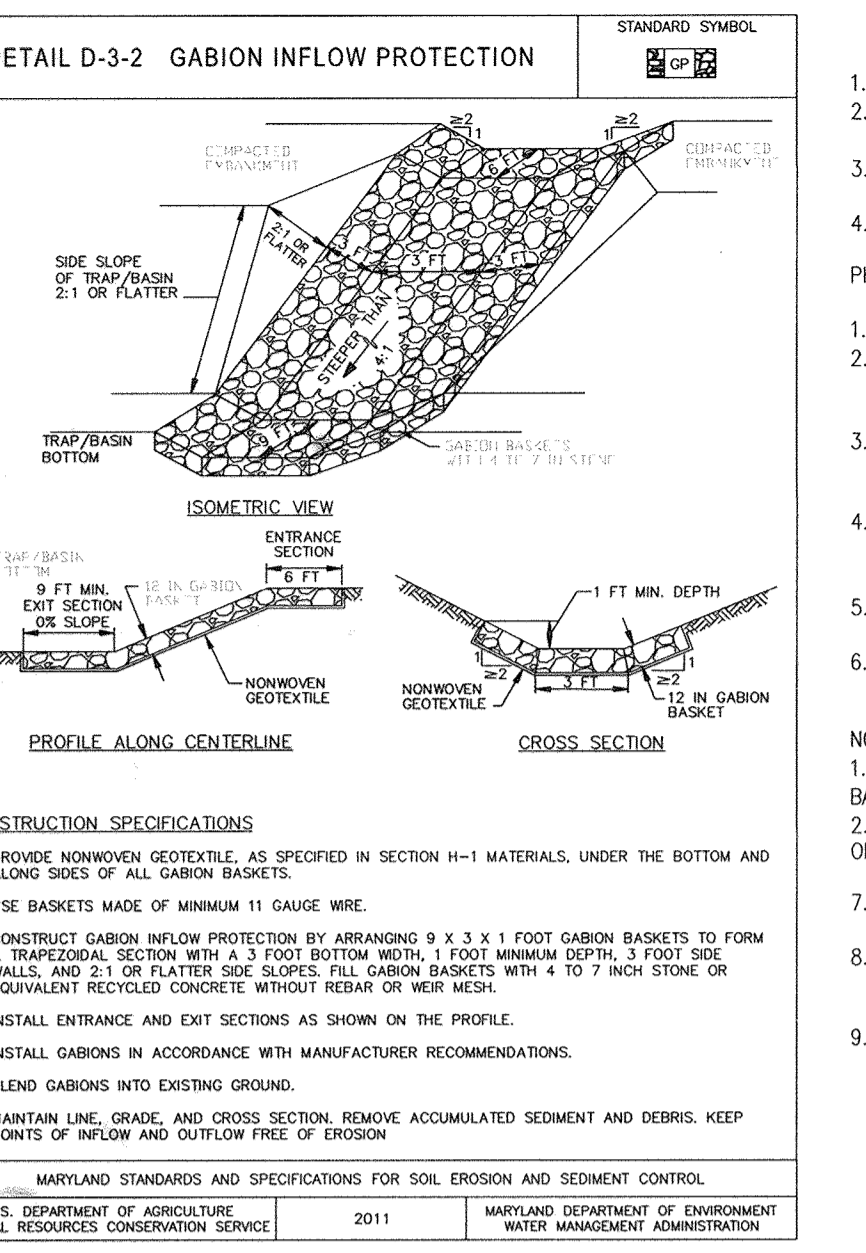
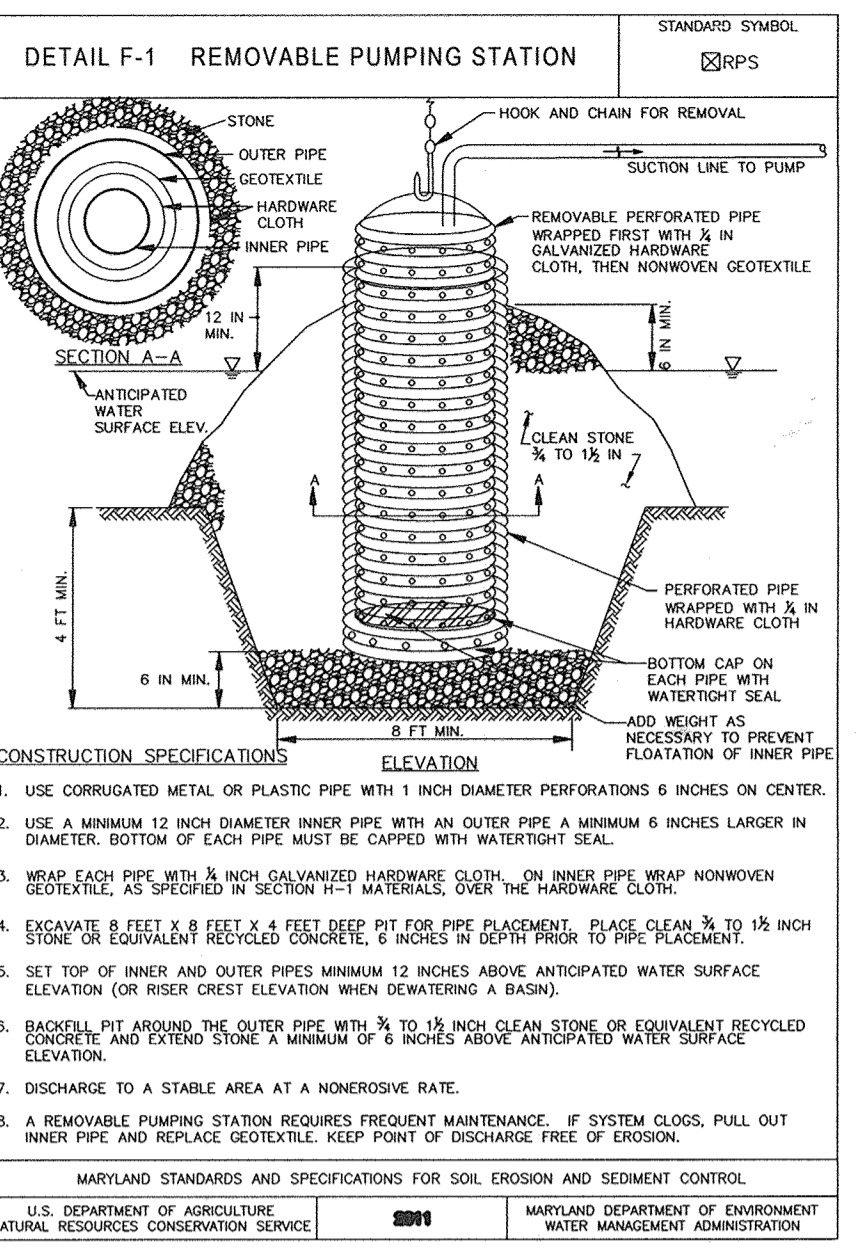
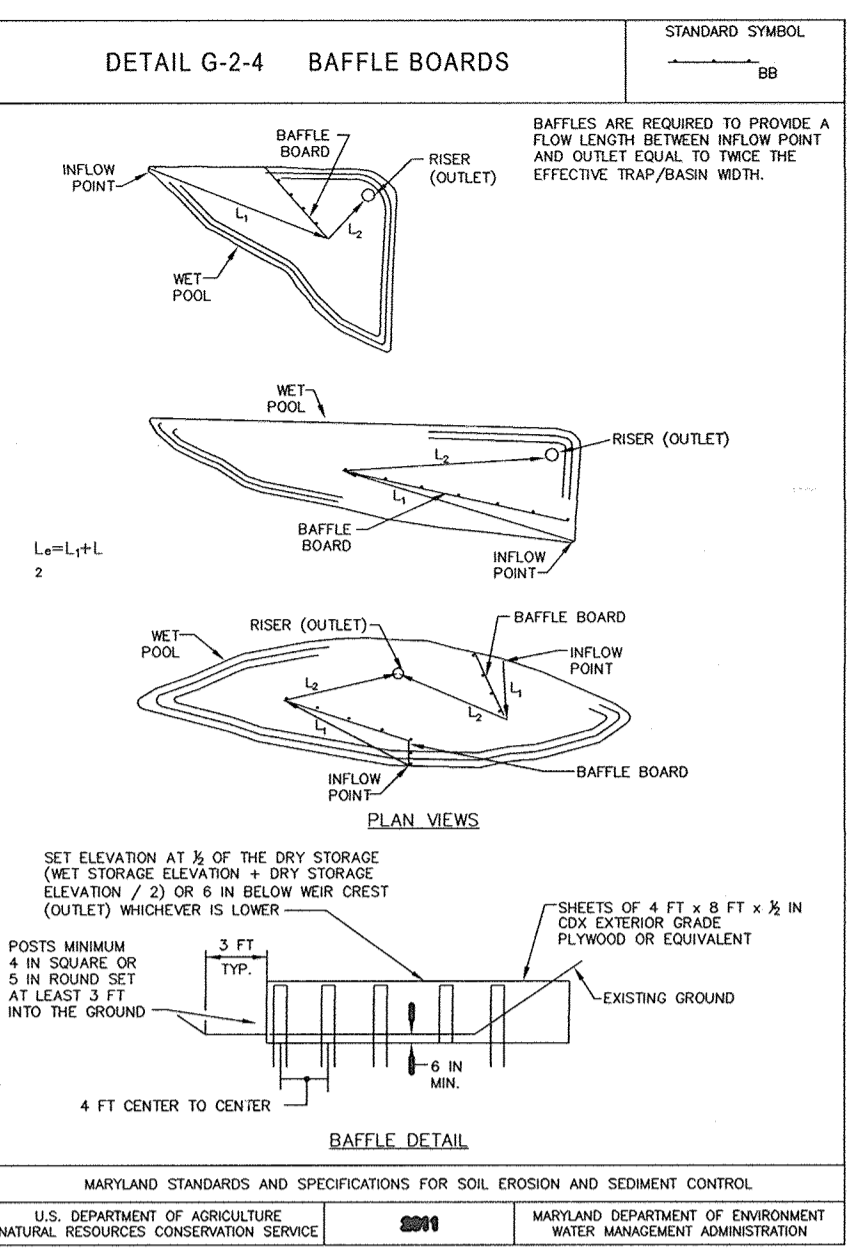
STONE/RIPPRAP OUTLET SEDIMENT TRAP ST-II, TRAP NO. 1

DRAINAGE AREA - INITIAL	1.3	ACRES
DRAINAGE AREA - INTERIM	1.9	ACRES
DRAINAGE AREA - FINAL	4.3	ACRES
TOTAL STORAGE REQUIRED	15,480	CF
TOTAL STORAGE PROVIDED	16,778	CF
NET STORAGE REQUIRED	7,740	CF
NET STORAGE PROVIDED	7,940	CF
DRY STORAGE REQUIRED	7,740	CF
DRY STORAGE PROVIDED	8,838	CF
EXISTING GROUND ELEVATION AT OUTLET	279.00	FT
TRAP BOTTOM ELEVATION	278.00	FT
TRAP BOTTOM DIMENSIONS * APPROX	50' X 175' +/-	FT X FT
WEIR LENGTH	20.0	FT
WEIR CREST (DRY STORAGE) ELEVATION	282.00	FT
CLEANOUT ELEVATION	278.50	FT
TOP OF EMBANKMENT ELEVATION	283.00	FT
SIDE SLOPE	2: 1	H:V RATIO
EMBANKMENT TOP WIDTH	4'	FT
OUTLET PROTECTION - LENGTH	10	FT
OUTLET PROTECTION - DEPTH	19	IN

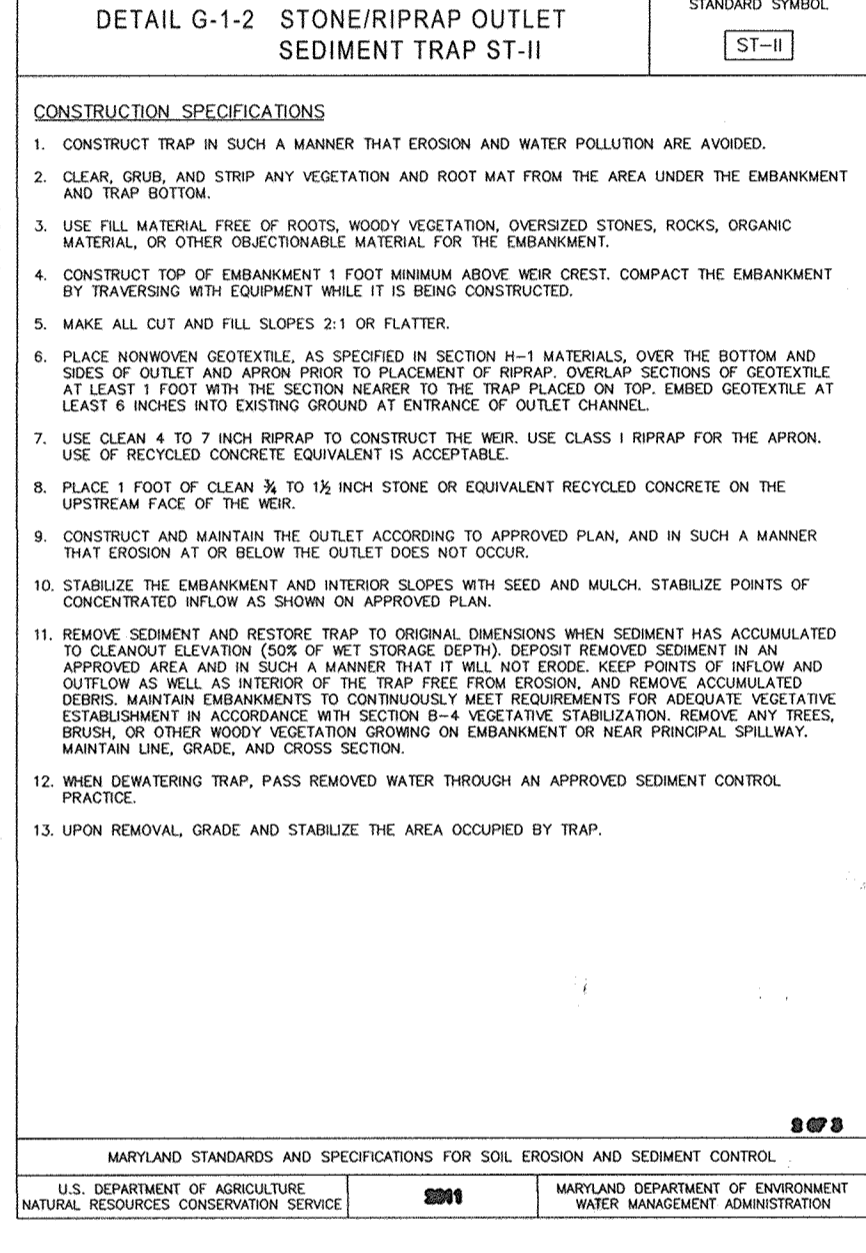
BAFFLE DESIGN

AREA WEI STORAGE EL = 8880 SF
 $We = (A/2) \cdot 0.5$
 $MIN Le = We \cdot X = 134'$

GM INFLOW
 $L1 = 76'$
 $L2 = 63'$
 PROVIDED Le = 139' WEST



- SEQUENCE OF CONSTRUCTION**
- PHASE 1
- OBTAIN GRADING PERMIT. - 1 DAY
 - DEVELOPER / CONTRACTOR SHALL REQUEST A PRE-CONSTRUCTION MEETING WITH THE APPROPRIATE ENFORCEMENT AUTHORITY PRIOR TO BEGINNING CONSTRUCTION. (1 DAY)
 - NOTIFY HOWARD COUNTY BUREAU OF INSPECTIONS AND PERMITS (410-313-1880) AT LEAST 24 HOURS BEFORE STARTING WORK. (1 DAY)
 - STAKEOUT LIMITS OF DISTURBANCE. - 3 DAYS
- PHASE 2
- CLEAR & GRUB REMAINING SITE WITHIN THE LIMITS OF DISTURBANCE. - 5 DAYS
 - COMPLETE TRAFFIC CIRCLE CONSTRUCTION TO INCLUDE TEMPORARY TRAFFIC PATTERNS IN ACCORDANCE WITH DETAILS SHOWN HEREIN. - 3 WEEKS
 - COMPLETE SITE MASS GRADING AS SHOWN HEREON, BRINGING SITE TO ROAD SUBGRADE ELEVATIONS AND COMPACTED FILLS FOR PROPOSED HOME CONSTRUCTION. - 3 WEEKS
 - WITH MASS GRADING COMPLETE, STABILIZE THOSE AREAS WITH PERMANENT SEEDING MIXTURE AND STRAW MULCH OR AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR. - 2 DAYS
 - INSTALL REMAINING STORM DRAIN SYSTEMS AND INLET PROTECTION AS WORK PROGRESSES. INSTALL STORM DRAIN OVERDERSIONS TO TRAPS AS SHOWN HEREON (INLET A, 13, 15) - 1 MONTH
 - WITH TRAFFIC CIRCLE CONSTRUCTION COMPLETE AND STORM DRAINS IN PLACE, WITH APPROVAL OF HOWARD COUNTY TRAFFIC AND C.I.C., PROCEED WITH OLD SCAGGSVILLE ROAD WIDENING TO INCLUDE OPEN SECTION GRADING. DISTURBANCE SHALL BE MANAGED TO AND THIS CAN BE COMPLETED ON A DAILY BASIS. STABILIZE THOSE AREAS WITH PERMANENT SEEDING MIXTURE AND STRAW MULCH OR AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR. - 1 WEEK
 - INSTALL WATER MAIN & SEWER EXTENSIONS. ALLOW FOR CONTINUED CONFORMANCE OF SEDIMENT LAID WATER TO THE TRAPS. - 1 MONTH
 - TRAPS SHALL REMAIN AS DIRECTED BY SEDIMENT CONTROL INSPECTOR AND SHALL BE BACKFILLED WITH PERMANENT SEEDING MIXTURE AND STRAW MULCH OR AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR AND/OR AS FILL SLOPES / PHASE 2 GRADING OPERATIONS ARE COMPLETED.
 - WITH PHASE 2 GRADING COMPLETE, IMMEDIATELY STABILIZE WITH PERMANENT SEEDING MIXTURE AND STRAW MULCH. - DAILY
 - INSTALL CURB & GUTTER, BASE COURSE PAVEMENT, PATHWAY AND SIDEWALKS - 2 WEEKS
 - UPON COMPLETION OF ABOVE STORM DRAINS AND WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, PROCEED TO ITEM 8.
 - CLEAR & GRUB AREA COMMON TO THE THREE (3) SEDIMENT TRAPS ON THE SOUTH SIDE OF OLD SCAGGSVILLE ROAD AND THE SEDIMENT BASIN ON THE NORTH SIDE OF OLD SCAGGSVILLE ROAD. - 5 DAYS
 - CONSTRUCT SEDIMENT TRAP #1, #2, #3 AND BASIN #4 PER THE DETAILS AND SPECIFICATIONS SHOWN HEREON. EXCAVATED MATERIAL SHALL BE STOCKPILED OR USED AS FILL MATERIAL PER THE OVERALL SITE GRADING PROPOSAL (PHASE 2). EARTH DIKES AND PERIMETER DIKE/SWALES SHALL BE CONSTRUCTED AT THE SAME TIME AS THE SEDIMENT TRAPS. EARTH DIKES (TEMPORARY CHANNELS) SHALL BE LINED WITH TEMPORARY SOIL STABILIZATION MATTING. TEMPORARY MATTING IS MADE WITH DECOMPOSABLE (6 MONTH) NATURAL OR MANMADE FIBERS OF UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND IS SMOOTHER RESISTING. EXCAVATED MATERIAL SHALL BE STOCKPILED OR USED AS FILL MATERIAL PER THE OVERALL SITE GRADING PROPOSAL (PHASE 2).
 - NO SITE GRADING (PHASE 2) OR CLEARING IS ALLOWED UNTIL THE MATERIALS NECESSARY TO CONSTRUCT THE BASIN ARE ON SITE
 - STABILIZE THE DISTURBED AREAS FROM THE AFOREMENTIONED DISTURBANCES WITH TEMPORARY SEEDING MIXTURE AND STRAW MULCH - 1 DAY
 - THE SEDIMENT TRAP SHALL BE REMOVED FROM THE SEDIMENT TRAPS WHEN THE CLEANOUT ELEVATION HAS BEEN REACHED. - 2 DAYS
 - THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON THE SEDIMENT AND EROSION CONTROLS SHOWN HEREON AFTER EACH RAINFALL AND ON A DAILY BASIS - 1 DAY
 - THE SEDIMENT TRAPS SHALL BE DETAILED BY PUMPING. THE ACCUMULATED SEDIMENT FROM THE TRAPS SHALL BE PLACED UP GRADE FROM THE STRUCTURE IN SUCH A MANNER AS NOT TO INTERFERE WITH CONSTRUCTION OPERATIONS OR CAUSE EROSION DOWN GRADE FROM THE STRUCTURE. - 2 DAYS
 - WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, PROCEED TO PHASE 2.



STONE/RIPPRAP OUTLET SEDIMENT TRAP ST-II, TRAP NO. 2

DRAINAGE AREA - INITIAL	0.4	ACRES
DRAINAGE AREA - INTERIM	0.4	ACRES
DRAINAGE AREA - FINAL	2.4	ACRES
TOTAL STORAGE REQUIRED	8,640	CF
TOTAL STORAGE PROVIDED	4,320	CF
NET STORAGE REQUIRED	4,320	CF
NET STORAGE PROVIDED	4,320	CF
DRY STORAGE REQUIRED	9,632	CF
EXISTING GROUND ELEVATION AT OUTLET	271.30	FT
TRAP BOTTOM ELEVATION	270.00	FT
TRAP BOTTOM DIMENSIONS * APPROX	45' X 145'	FT X FT
WEIR LENGTH	20	FT
WEIR CREST (DRY STORAGE) ELEVATION	272.50	FT
CLEANOUT ELEVATION	270.70	FT
TOP OF EMBANKMENT ELEVATION	274.00	FT
SIDE SLOPE	2: 1	H:V RATIO
EMBANKMENT TOP WIDTH	4'	FT
OUTLET PROTECTION - LENGTH	10	FT
OUTLET PROTECTION - DEPTH	19	IN

BAFFLE DESIGN

AREA WEI STORAGE EL = 9424 SF
 $We = (A/2) \cdot 0.5$
 $MIN Le = We \cdot X = 137'$

GM INFLOW
 $L1 = 60'$
 $L2 = 78'$
 PROVIDED Le = 138' WEST

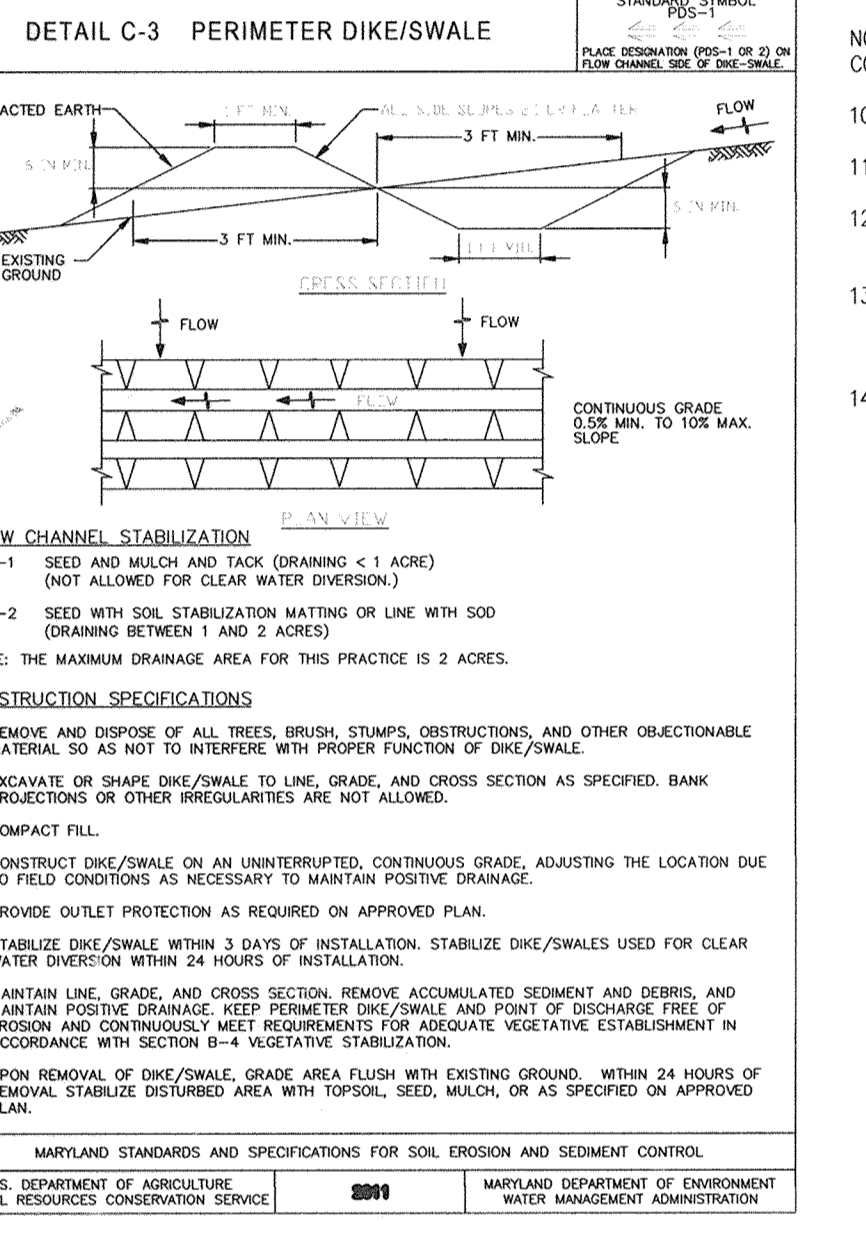
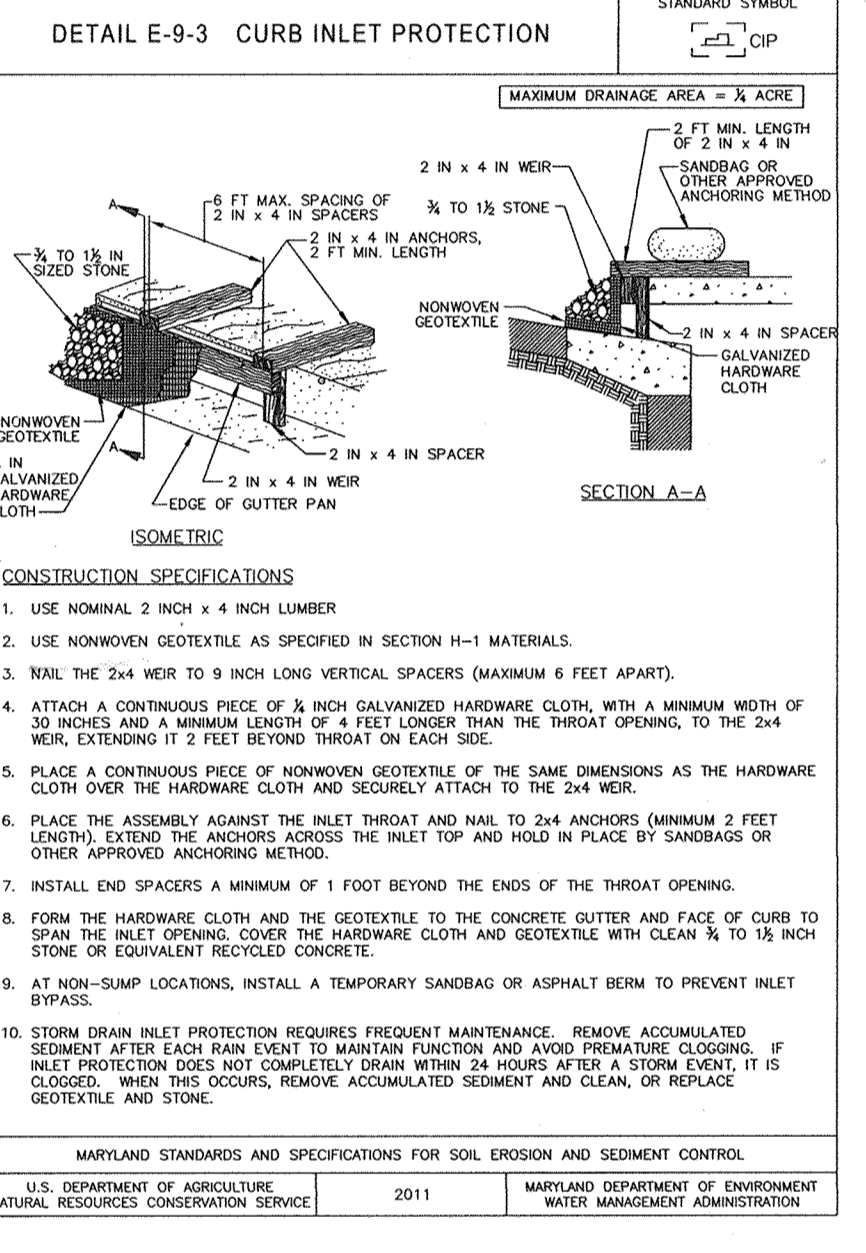
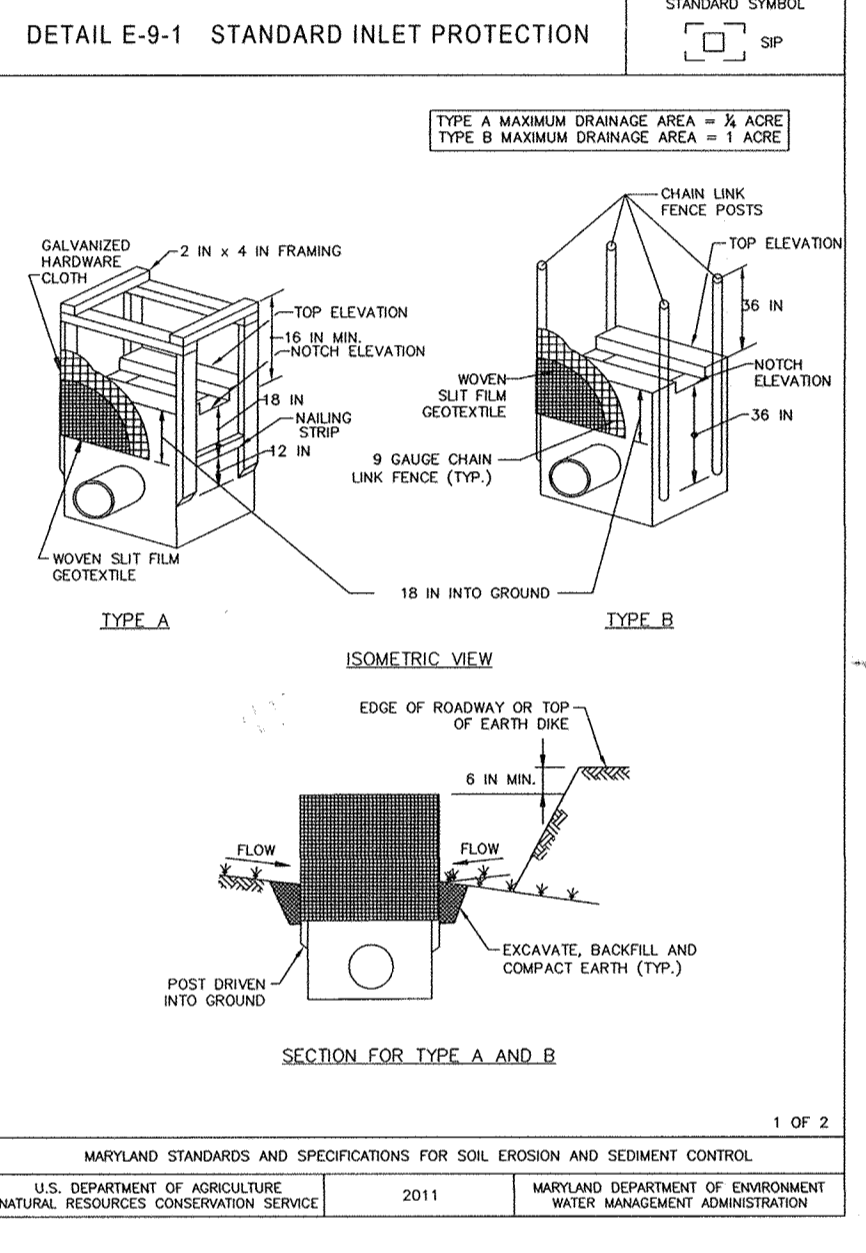


Table 1: Temporary Seeding for Soil Stabilization

Plant Species	Seeding Rate*		Recommended Seeding Dates by Plant Hardiness Zone**	
	Bare	By/1000 SF (Depth)	5b and 6a	6b, 7a and 7b
Cool-Season Grasses				
Annual Ryegrass (<i>Lolium perenne</i> var. multiflorum)	40	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 15 to May 15; Aug 15 to Nov 30
Berly (<i>Elymus vulgaris</i>)	96	3.2	Mar 15 to May 31; Aug 1 to Sep 30	Mar 15 to May 15; Aug 15 to Nov 30
Clas (<i>Lolium arvense</i>)	72	1.7	Mar 15 to May 31; Aug 1 to Sep 30	Mar 15 to May 15; Aug 15 to Nov 30
Whale (<i>Festuca arvensis</i>)	120	2.8	Mar 15 to May 31; Aug 1 to Sep 30	Mar 15 to May 15; Aug 15 to Nov 30
Crested Ryegrass (<i>Lolium perenne</i>)	112	2.8	Mar 15 to May 31; Aug 1 to Sep 30	Mar 15 to May 15; Aug 15 to Nov 30
Warm-Season Grasses				
Frontal Millet (<i>Digitaria pruriens</i>)	30	0.7	Jun 1 to Jul 31	May 16 to Jul 31
Red Millet (<i>Pennisetum glaucum</i>)	20	0.5	Jun 1 to Jul 31	May 16 to Jul 31

NOTES:

- Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect recent seed germination and purity, as noted. Adjustments are usually not needed for the cool-season grasses.
- Seeding rates listed above are for temporary seedings, when planted alone. When planted in a mixture with permanent seed mixtures, use 1/3 of the seeding rate listed above for the temporary seeding. For warm-season grasses (annual ryegrass, pearl millet, frontal millet), do not exceed more than 70% the weight of the overall permanent seedling mix. Cool-season grasses should not be used as a warm-season, unless planting will occur in the fall before the warm-season seedling. Cool-season grasses should be planted in the fall before the warm-season grasses, and should be used as a warm-season, use a 1/3 of the rate listed above.
- Use the recommended species for warm-season grasses.
- For sandy soils, plant seeds to a depth 1/2 inch above.
- The planting dates listed are averages for the Zone and may require adjustment to reflect local conditions, especially for the boundaries of the zone.

BY THE DEVELOPER:

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

[Signature] 4/4/14

BY THE ENGINEER:

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

[Signature] 4/17/14

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

[Signature] 4/17/14

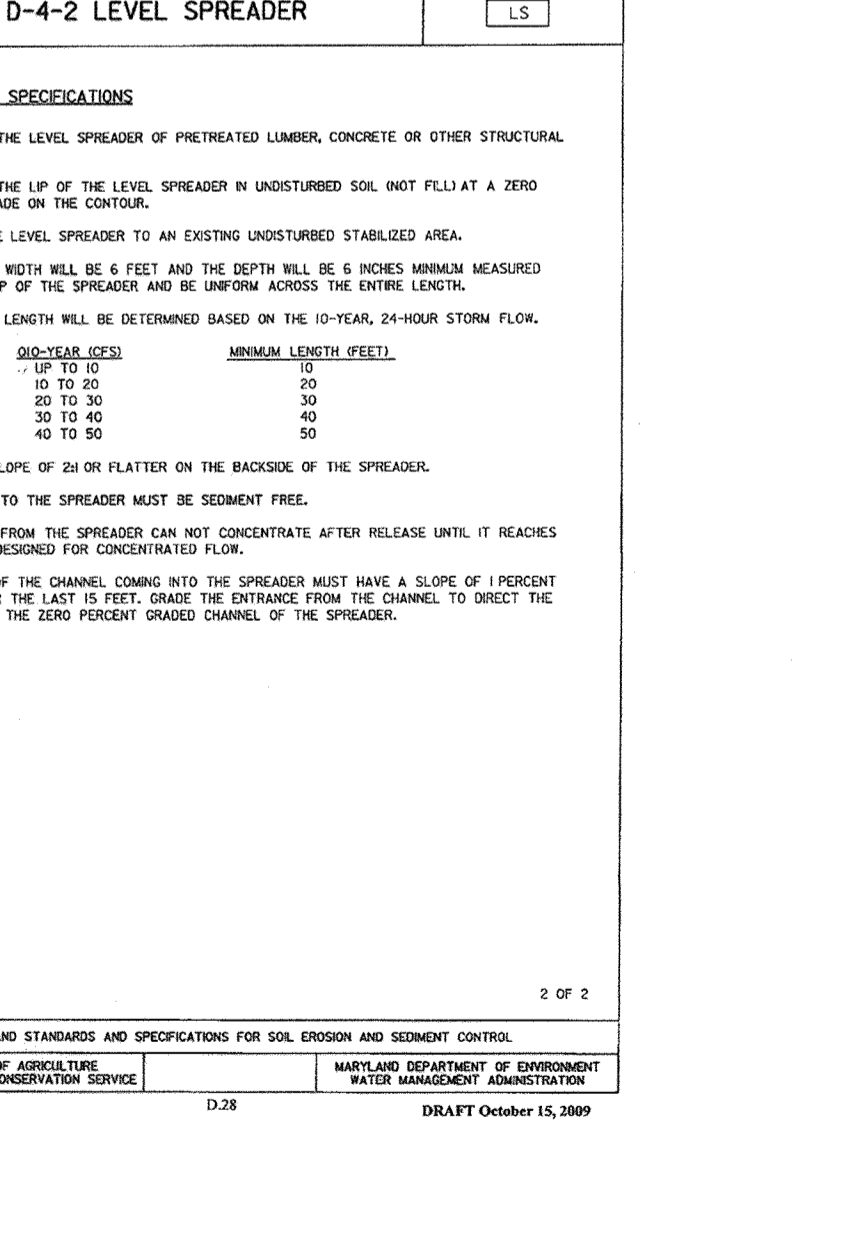
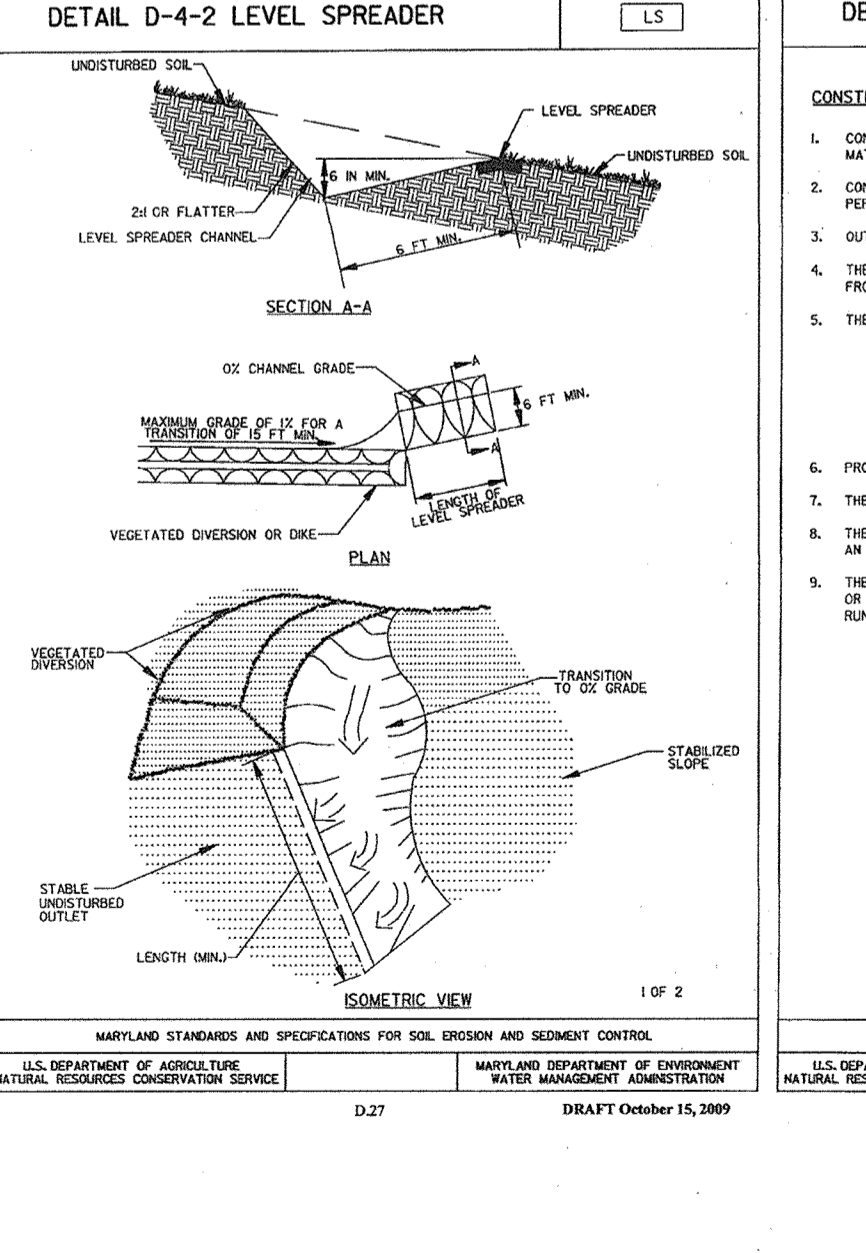
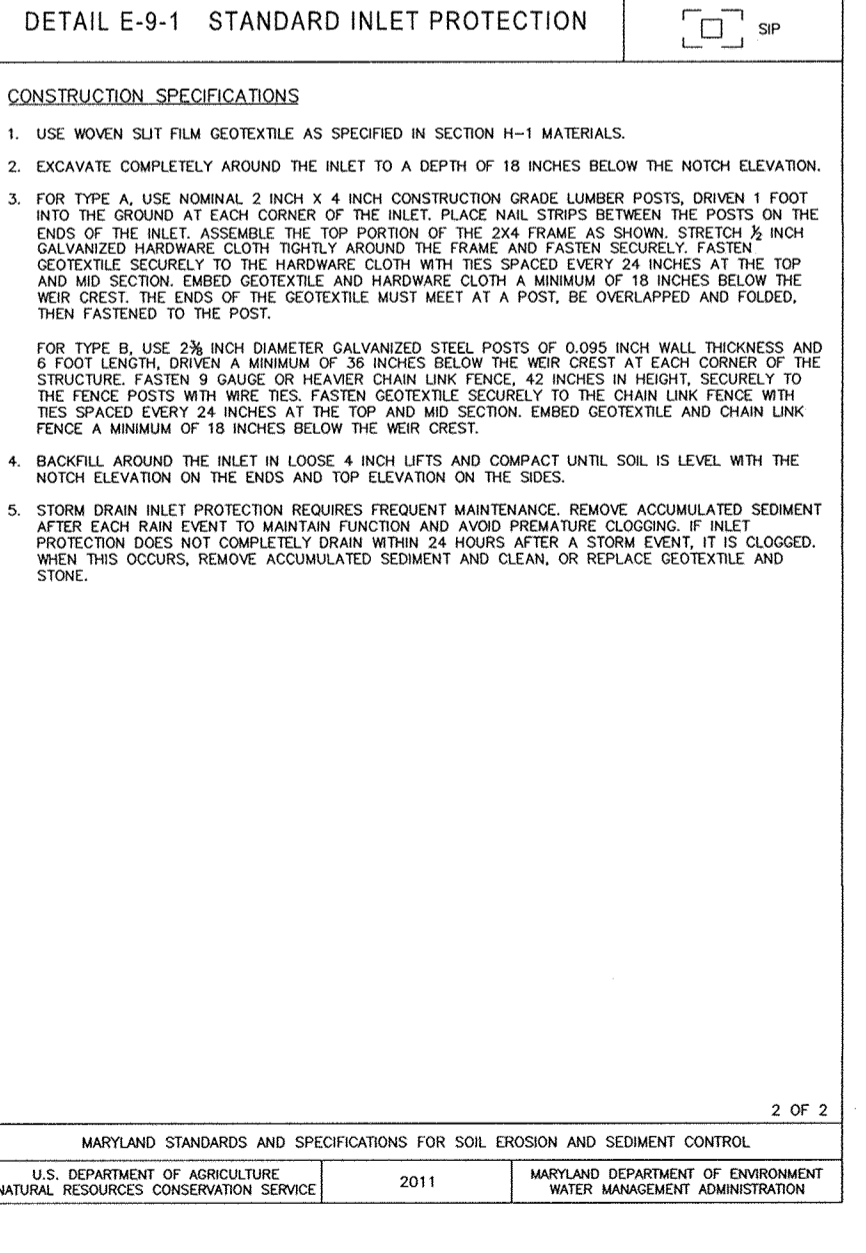
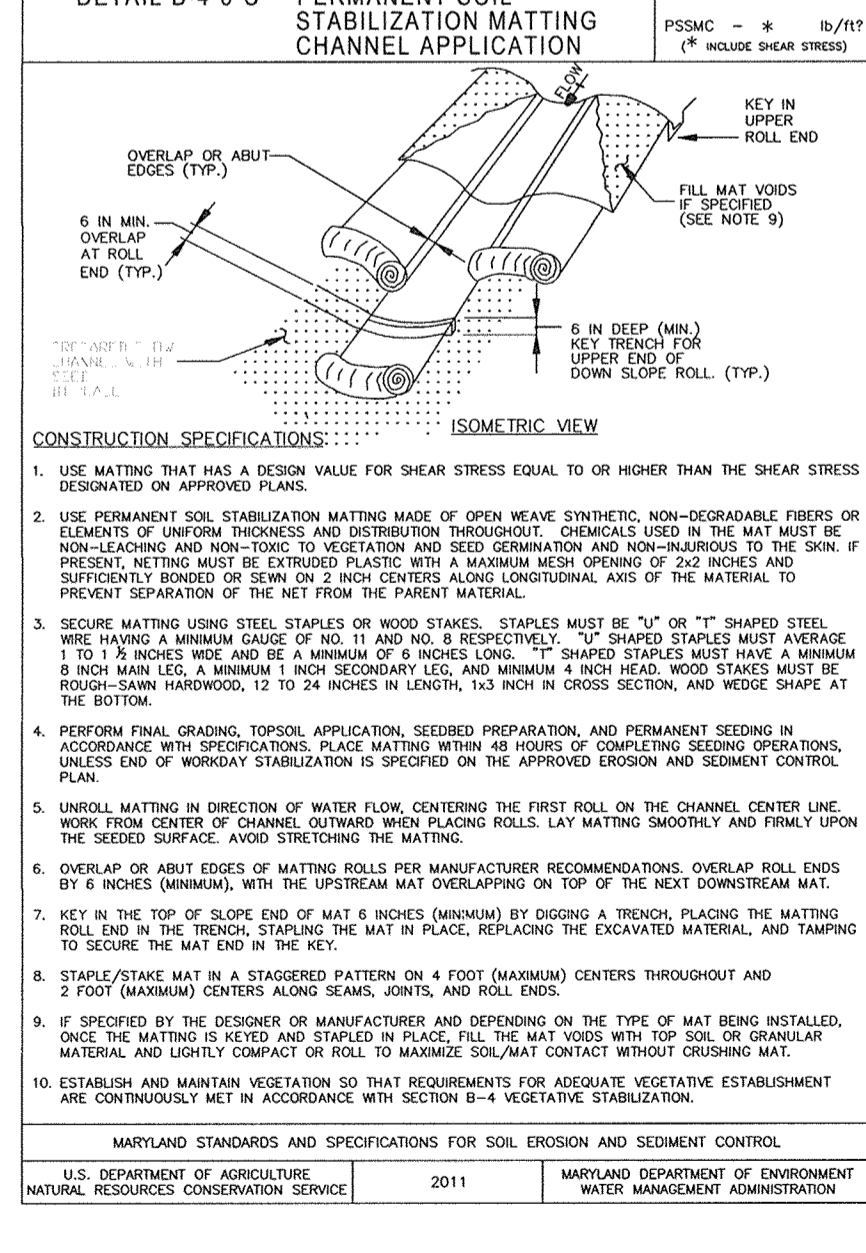
APPROVED: DEPARTMENT OF PUBLIC WORKS

[Signature] 5-6-14

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 5-9-14

[Signature] 5-12-14



OWNER

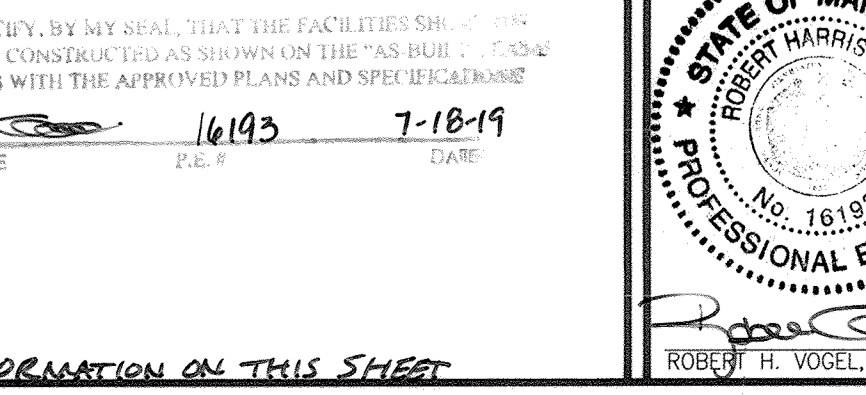
KATHY MIESSE, PERSONAL REPRESENTATIVE,
 ESTATE OF ARTHUR P. KRASCIAK
 9222 OLD SCAGGSVILLE ROAD
 LAUREL, MD 20723-1730
 ATTN: MR. DONALD R. REUWER
 443-367-0422

DEVELOPER

LAND DESIGN & DEVELOPMENT, INC.
 5300 DORSEY HALL DRIVE, STE 102
 ELLICOTT CITY, MARYLAND 21117
 ATTN: DONALD R. REUWER
 443-367-0422

NO. 2 REVISION SUBDIVISION NAME 7/18/14

NO. REVISION DATE



FINAL ROAD CONSTRUCTION PLAN

GRADING AND SOIL EROSION, AND SEDIMENT CONTROL PLAN - DETAILS

HIGH RIDGE MEADOWS-SECTION 1

LOTS 1 - 54, OPEN SPACE LOTS 55 - 68 AND NON-BUILDABLE BULK PARCEL "B"

A SUBDIVISION OF TAX MAP 50 PARCEL 363 AND A RESUBDIVISION OF TAX MAP 50 PARCEL 542 KRASCIAK PROPERTY NON-BUILDABLE BULK PARCEL "A" (PLAT 21191)

6TH ELECTION DISTRICT - TAX MAP 50 GRID: 1
 602' N 85° 10' E 100'-00', WP-10-067, ECP-12-047,
 13'-080, SP 13-007

ZONED: R-5C
 PARCELS: 363 & 542
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.

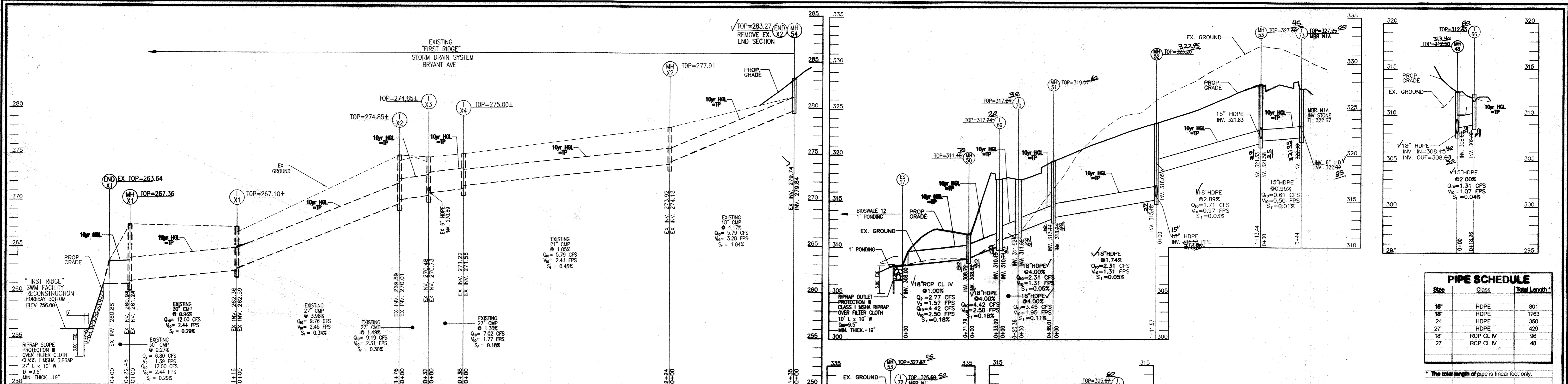
ENGINEERS • SURVEYORS • PLANNERS

8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

DESIGN BY: EDS/RVS
 DRAWN BY: EDS/RVS
 CHECKED BY: RHV
 DATE: MARCH 2014
 SCALE: AS SHOWN
 W.O. NO.: 11-2014

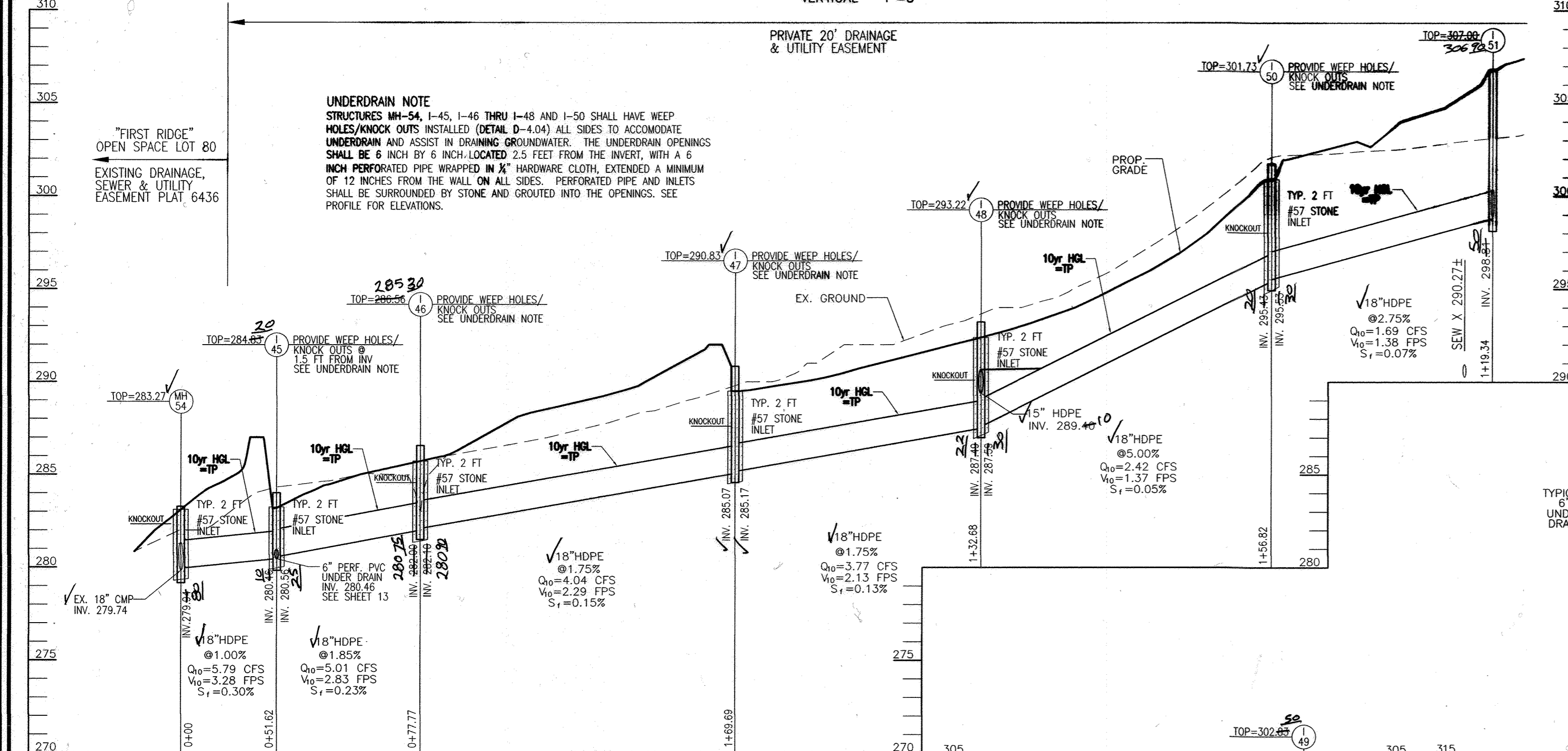
PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2014

11 SHEET OF 32

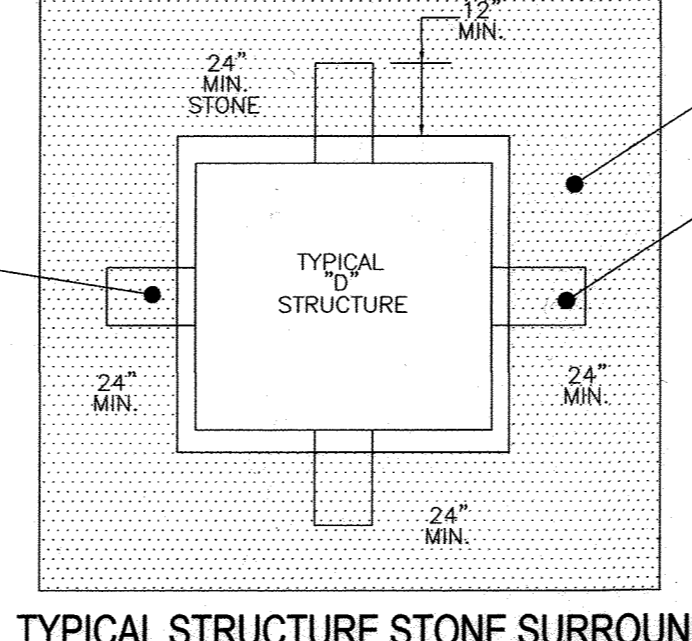
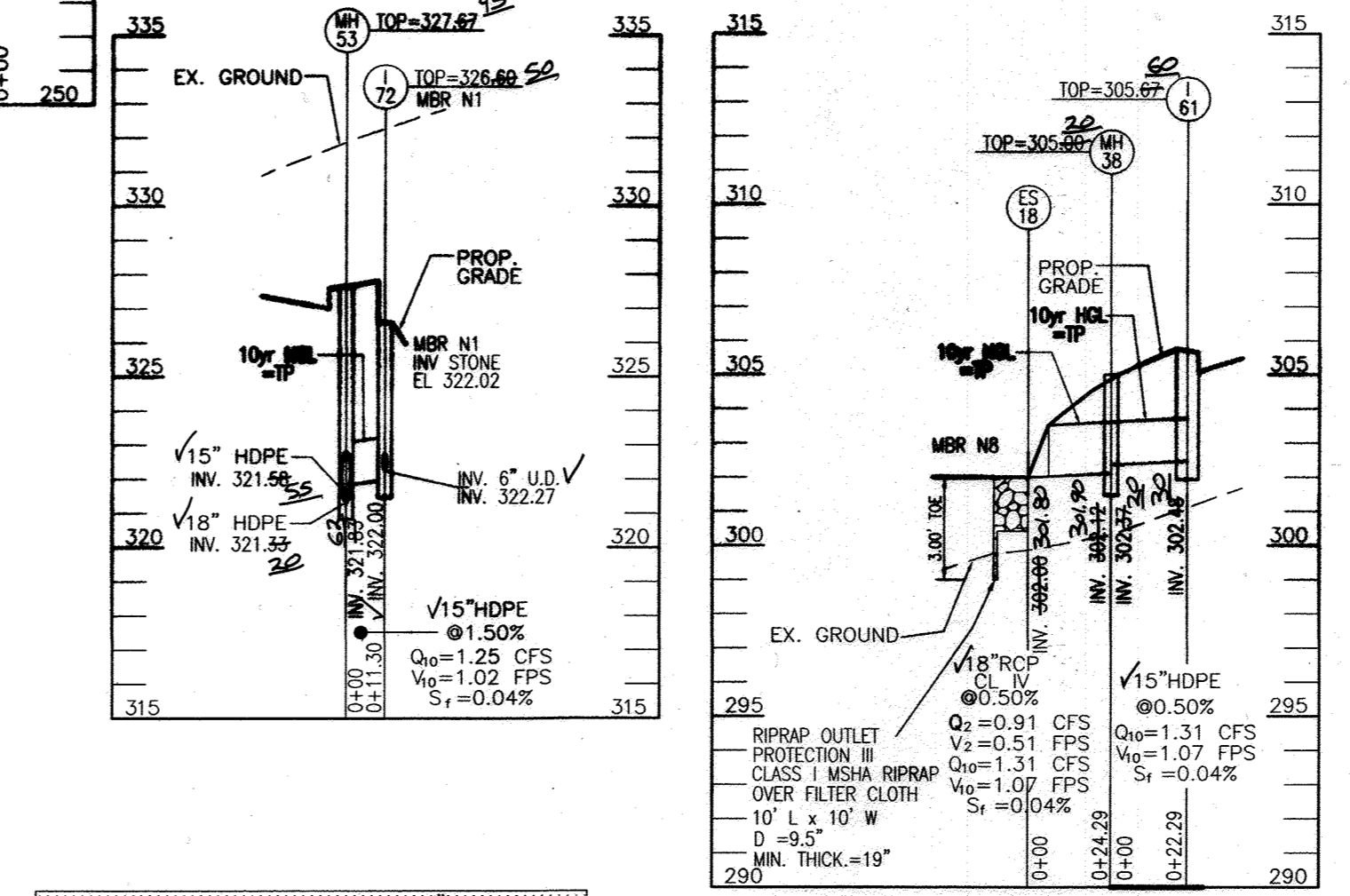


FIRST RIDGE EXISTING STORM DRAIN PROFILE

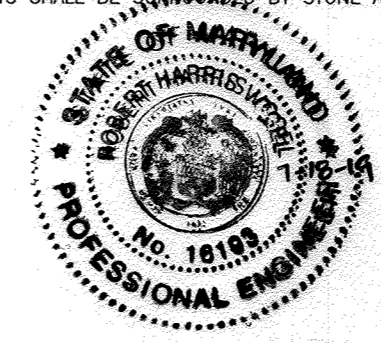
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



UNDERDRAIN NOTE
STRUCTURES MH-54, I-45, I-46 THRU I-48 AND I-50 SHALL HAVE WEEP HOLES/KNOCK OUTS INSTALLED (DETAIL D-4.04) ALL SIDES TO ACCOMMODATE UNDERDRAIN AND ASSIST IN DRAINING GROUNDWATER. THE UNDERDRAIN OPENINGS SHALL BE 6 INCH BY 6 INCH LOCATED 2.5 FEET FROM THE INVERT, WITH A 6 INCH PERFORATED PIPE WRAPPED IN 1/2" HARDWARE CLOTH, EXTENDED A MINIMUM OF 12 INCHES FROM THE WALL ON ALL SIDES. PERFORATED PIPE AND INLETS SHALL BE SURROUNDED BY STONE AND GROUTED INTO THE OPENINGS. SEE PROFILE FOR ELEVATIONS.



TYPICAL STRUCTURE STONE SURROUND
N.T.S.

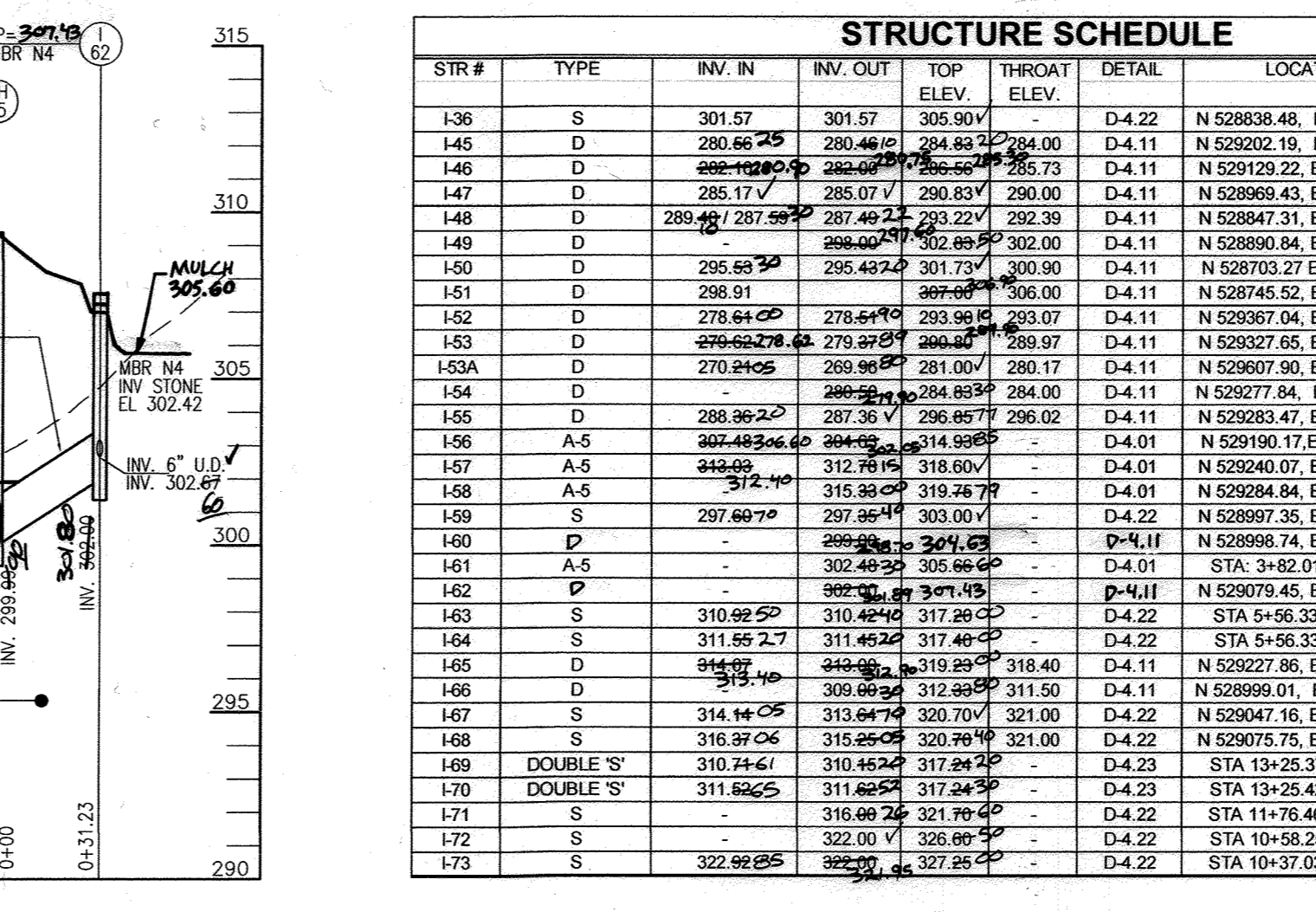
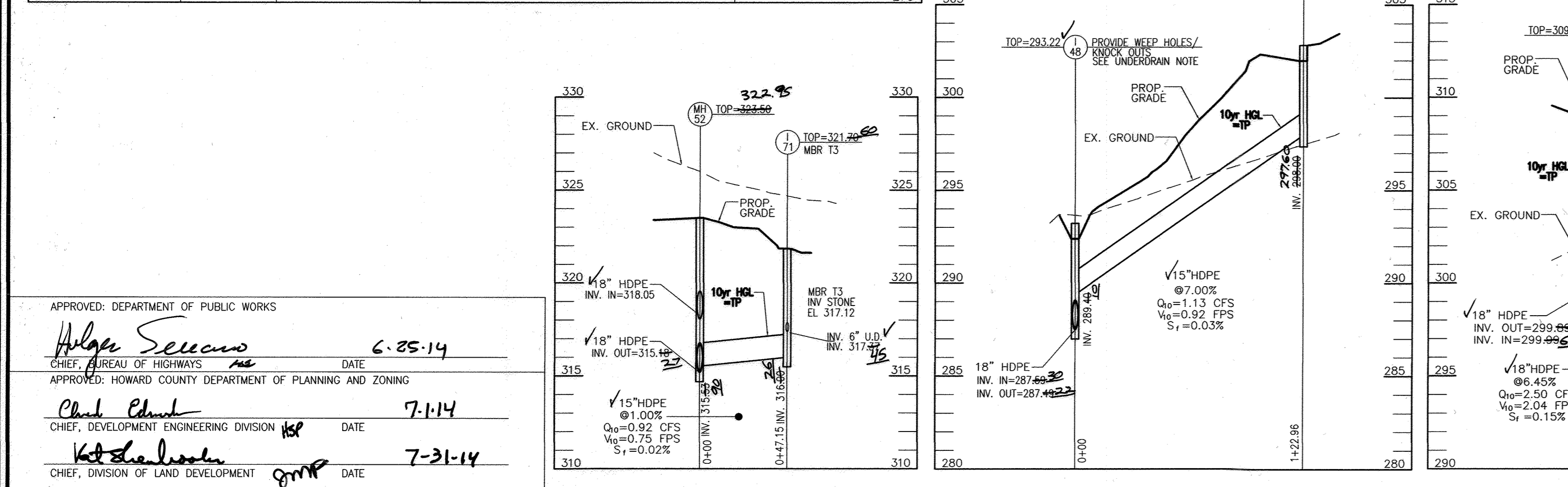


AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS.
P.E. NAME: *Robert H. Vogel* P.E.#: 16193 DATE: 7-15-17

STR #	TYPE	INV. IN	INV. OUT	TOP ELEV.	THROAT ELEV.	DETAIL	LOCATION	REMARKS
MH-27A	48" MANHOLE	301.30	301.11	308.16	-	G 5.12	N 528793, E 1351632	
MH-27B	48" MANHOLE	300.83	300.83	300.82	-	G 5.12	N 528779, E 1351666	
MH-36	60" MANHOLE	280.68	280.68	286.99	-	G 5.13	N 529884.93, E 1352116.74	
MH-36A	60" MANHOLE	280.10	280.23	282.00	282.00	G 5.13	N 529884.93, E 1352116.74	26" H/S 262.30
MH-36B	48" MANHOLE	270.85	270.40	274.30	-	G 5.12	N 529895.45, E 1352095.98	
MH-37	60" MANHOLE	287.29	287.29	274.80	-	G 5.13	N 529738.95, E 1351872.31	
MH-38	48" MANHOLE	302.22	302.22	305.00	-	G 5.12	N 529832.1, E 1351751.87	
MH-39	48" MANHOLE	276.04	276.04	280.20	-	G 5.12	N 529384.13, E 1351725.43	G-5.11 / G-5.16
MH-39A	48" MANHOLE	278.45	278.34	287.85	-	G 5.12	N 529366.75, E 1351735.66	G-5.11 / G-5.16
MH-40	48" MANHOLE	288.06	287.85	288.65	287.15	G 5.12	N 529291.44, E 1351779.82	
MH-41	48" MANHOLE	301.70	298.75	315.60	-	G 5.12	N 529219.95, E 1351686.78	
MH-42	48" MANHOLE	292.69	292.69	299.00	-	G 5.12	N 529206.97, E 1351835.39	
MH-43	48" MANHOLE	292.34	292.34	298.00	-	G 5.12	N 529151.86, E 1351846.93	
MH-44	48" MANHOLE	298.40	298.18	296.08	-	G 5.12	N 529114.25, E 1351762.93	
MH-45	48" MANHOLE	298.97	299.60	300.20	-	G 5.12	N 529099.52, E 1351694.30	
MH-46	48" MANHOLE	300.63	300.63	304.80	-	G 5.12	N 529146.32, E 1351638.09	
MH-47	48" MANHOLE	312.74	312.40	319.00	-	G 5.12	N 529241.67, E 1351424.64	
MH-48	48" MANHOLE	308.19	308.09	312.50	-	G 5.12	N 529017.18, E 1351584.23	308.30 308.30
MH-50	48" MANHOLE	308.62	308.62	311.40	-	G 5.12	N 529446.95, E 1351379.78	
MH-51	48" MANHOLE	313.84	313.40	319.00	-	G 5.12	N 529403.23, E 1351313.60	
MH-52	48" MANHOLE	318.06	318.56	315.40	-	G 5.12	N 529300.37, E 1351270.37	318.50 318.50
MH-53	48" MANHOLE	321.07	321.07	327.90	-	G 5.12	N 529195.80, E 1351226.42	327.80 327.80
MH-54	48" MANHOLE	279.84	279.84	283.20	-	G 5.12	N 529192.04, E 1352116.31	

OWNER
KATHY MIESSE, PERSONAL REPRESENTATIVE,
ESTATE OF ARTHUR P. KRAESKI,
9222 OLD SCAGGSVILLE ROAD
LAUREL, MD 20723-1730
ATTN: MR. DONALD R. REULWER
443-367-0422

DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
5300 DORSEY HALL DRIVE, STE 102
ELLICOTT CITY, MARYLAND 21042-7819
ATTN: MR. DONALD R. REULWER
443-367-0422



STR #	TYPE	INV. IN	INV. OUT	TOP ELEV.	THROAT ELEV.	DETAIL	LOCATION	REMARKS
I-36	S	301.57	301.57	305.90	-	D-4.22	N 528838.48, E 1351639.11	
I-45	D	290.80	290.40	294.85	294.00	D-4.11	N 529206.19, E 1352085.70	OPEN ALL 4 SIDES
I-46	D	288.10	288.10	295.73	-	D-4.11	N 529129.22, E 1352039.82	OPEN ALL 4 SIDES
I-47	D	285.17	285.07	290.83	290.00	D-4.11	N 528969.43, E 1351981.67	OPEN ALL 4 SIDES
I-48	D	289.40	287.99	293.22	292.39	D-4.11	N 528847.31, E 1351929.81	OPEN ALL 4 SIDES
I-49	D	288.00	287.89	302.00	-	D-4.11	N 528890.84, E 1351814.81	OPEN ALL 4 SIDES
I-50	D	295.69	295.43	301.70	300.90	D-4.11	N 528703.27, E 1351867.82	OPEN ALL 4 SIDES
I-51	D	288.91	288.91	306.00	-	D-4.11	N 529745.52, E 1351756.20	OPEN ALL 4 SIDES
I-52	D	278.64	278.64	293.07	-	D-4.11	N 529367.04, E 1351768.90	OPEN ALL 4 SIDES
I-53	D	279.62	279.62	290.00	289.97	D-4.11	N 529237.65, E 1351914.55	OPEN ALL 4 SIDES
I-53A	D	270.20	269.95	281.00	280.17	D-4.11	N 529607.90, E 1351818.06	OPEN 3 SIDES (S, E, W)
I-54	D	288.00	288.00	294.85	294.00	D-4.11	N 529277.84, E 1352084.21	OPEN ALL 4 SIDES
I-55	D	288.80	287.30	296.77	296.02	D-4.11	N 529658.74, E 1351769.44	OPEN ALL 4 SIDES
I-56	A-5	302.48	302.48	314.99	-	D-4.01	N 529190.17, E 1351662.08	OPEN ALL 4 SIDES
I-57	A-5	313.84	312.70	318.00	-	D-4.01	N 529240.07, E 1351569.34	OPEN ALL 4 SIDES
I-58	A-5	315.80	315.80	319.70	-	D-4.01	N 529284.84, E 1351403.11	OPEN ALL 4 SIDES
I-59	S	297.80	297.80	303.00	-	D-4.22	N 529977.35, E 1351760.05	OPEN ALL 4 SIDES
I-60	D	309.80	309.80	317.20	-	D-4.11	N 529698.74, E 1351703.72	OPEN ALL 4 SIDES
I-61	A-5	302.48	302.48	305.60	-	D-4.01	STA: 3+82.01, 12.43 RT	OPEN ALL 4 SIDES
I-62	D	302.48	302.48	307.45	-	D-4.11	N 529070.45, E 1351670.38	OPEN ALL 4 SIDES
I-63	S	310.60	310.60	317.80	-	D-4.22	STA 5+56.33, 32.82 RT	OPEN ALL 4 SIDES
I-64	S	311.55	311.55	317.40	-	D-4.22	STA 5+56.33, 30.03 LT	OPEN ALL 4 SIDES
I-65	D	304.80	304.80	318.40	-	D-4.11	N 529227.86, E 1351402.85	OPEN ALL 4 SIDES
I-66	D	309.80	309.80	311.50	-	D-4.11	N 529999.01, E 1351582.39	OPEN ALL 4 SIDES
I-67	S	314.10	313.64	320.70	321.00	D-4.22	N 529047.16, E 1351513.05	OPEN ALL 4 SIDES
I-68	S	316.97	316.97	321.00	-	D-4.22	N 529075.75, E 1351444.95	OPEN ALL 4 SIDES
I-69	DOUBLE 'S'	310.74	310.74	317.20	-	D-4.23	STA 13+25.37, 10.18 RT	OPEN ALL 4 SIDES
I-70	DOUBLE 'S'	311.62	311.62	317.20	-	D-4.23	STA 13+25.37, 10.18 LT	OPEN ALL 4 SIDES
I-71	S	316.00	316.00	320.00	-	D-4.22	STA 11+76.46, 30.09 RT	OPEN ALL 4 SIDES
I-72	S	322.00	322.00	326.00	-	D-4.22	STA 10+58.25, 27.30 LT	OPEN ALL 4 SIDES
I-73	S	322.85	322.85	327.85	-	D-4.22	STA 10+37.03, 25.00 RT	OPEN ALL 4 SIDES

APPROVED: DEPARTMENT OF PUBLIC WORKS
Alfon Seccano 6-25-14
CHIEF, BUREAU OF HIGHWAYS
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Clark Church 7-1-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION
Kat Shalinski 7-31-14
CHIEF, DIVISION OF LAND DEVELOPMENT

FINAL ROAD CONSTRUCTION PLAN
STORM DRAIN PROFILES
HIGH RIDGE MEADOWS - SECTION 2
LOTS 69 - 143 AND OPEN SPACE LOTS 144 - 147
A RESUBDIVISION OF
DEER SPRINGS - SECTION ONE, NON-BUILDABLE BULK PARCEL "B"

6TH ELECTION DISTRICT
TAX MAP: 50 GRID: 1
DPZ REF: 10-065, WP-10-087, ECP-12-047,
WP-13-080, SP 13-007, F 14-022

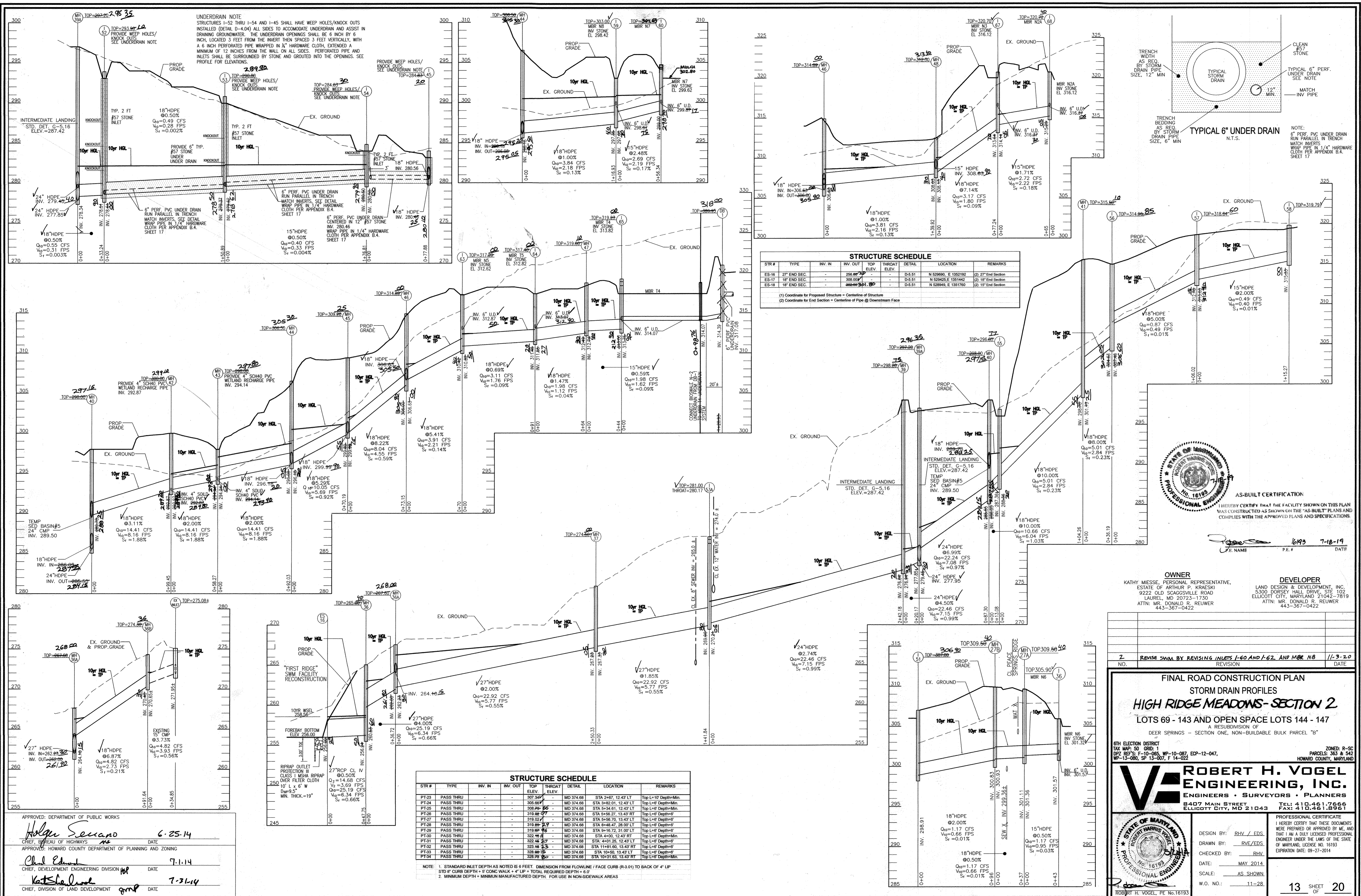
ZONED: R-SC
PARCELS: 363 & 542
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

DESIGN BY: RHY / EDS
CHECKED BY: RHY
DATE: MAY 2014
SCALE: AS SHOWN
W.O. NO.: 11-28

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS, WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
EXPIRATION DATE: 09-27-2014

12 SHEET OF 20



UNDERDRAIN NOTE
 STRUCTURES 1-52 THRU 1-54 AND 1-45 SHALL HAVE WEEP HOLES/KNOCK OUTS INSTALLED (DETAIL D-404) ALL SIDES TO ACCOMMODATE UNDERDRAIN AND ASSIST IN DRAINING GROUNDWATER. THE UNDERDRAIN OPENINGS SHALL BE 6 INCH BY 6 INCH, LOCATED 3 FEET FROM THE INVERT THEN SPACED 3 FEET VERTICALLY, WITH A 6 INCH PERFORATED PIPE WRAPPED IN 1/4" HARDWARE CLOTH, EXTENDED A MINIMUM OF 12 INCHES FROM THE WALL ON ALL SIDES. PERFORATED PIPE AND INLETS SHALL BE SURROUNDED BY STONE AND GROUTED INTO THE OPENINGS. SEE PROFILE FOR ELEVATIONS.

STRUCTURE SCHEDULE

STR #	TYPE	INV. IN	INV. OUT	THROAT ELEV.	DETAIL	LOCATION	REMARKS
ES-16	27" END SEC.	-	-	-	D-5.51	N 829940, E 1352192	27" End Section
ES-17	18" END SEC.	-	-	-	D-5.51	N 829425, E 1351442	18" End Section
ES-18	18" END SEC.	-	-	-	D-5.51	N 828940, E 1351760	18" End Section

(1) Coordinate for Proposed Structure = Centerline of Structure
 (2) Coordinate for End Section = Centerline of Pipe @ Downstream Face

STRUCTURE SCHEDULE

STR #	TYPE	INV. IN	INV. OUT	TOP ELEV.	THROAT ELEV.	DETAIL	LOCATION	REMARKS
PT-23	PASS THRU	-	-	307.34	-	MD 374.68	STA 2+67, 12.43' LT	Top L ^w Depth=Min.
PT-24	PASS THRU	-	-	306.99	-	MD 374.68	STA 3+82.01, 12.43' LT	Top L ^w Depth=Min.
PT-25	PASS THRU	-	-	306.64	-	MD 374.68	STA 4+96.91, 12.43' LT	Top L ^w Depth=Min.
PT-26	PASS THRU	-	-	316.00	-	MD 374.68	STA 5+56.27, 13.43' RT	Top L ^w Depth=Min.
PT-27	PASS THRU	-	-	319.02	-	MD 374.68	STA 6+56.70, 13.43' RT	Top L ^w Depth=Min.
PT-28	PASS THRU	-	-	318.00	-	MD 374.68	STA 8+48.47, 28.00' LT	Top L ^w Depth=Min.
PT-29	PASS THRU	-	-	319.00	-	MD 374.68	STA 9+16.72, 31.00' LT	Top L ^w Depth=Min.
PT-30	PASS THRU	-	-	322.16	-	MD 374.68	STA 4+00, 12.43' RT	Top L ^w Depth=Min.
PT-31	PASS THRU	-	-	322.46	-	MD 374.68	STA 4+01.25, 12.43' RT	Top L ^w Depth=Min.
PT-32	PASS THRU	-	-	323.48	-	MD 374.68	STA 11+81.69, 13.43' RT	Top L ^w Depth=Min.
PT-33	PASS THRU	-	-	328.00	-	MD 374.68	STA 10+50, 13.43' LT	Top L ^w Depth=Min.
PT-34	PASS THRU	-	-	328.76	-	MD 374.68	STA 10+31.83, 13.43' RT	Top L ^w Depth=Min.

NOTE: 1. STANDARD INLET DEPTH AS NOTED IS 6 FEET. DIMENSION FROM FLOWLINE / FACE CURB (R-3.01) TO BACK OF 4" LIP STD 6" CURB DEPTH + 3" CONC. WALK + 4" LIP = TOTAL REQUIRED DEPTH = 6' 0"
 2. MINIMUM DEPTH = MINIMUM MANUFACTURED DEPTH. FOR USE IN NON-SIDEWALK AREAS

AS-BUILT CERTIFICATION
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS.

DATE: 7-18-19

OWNER
 KATHY MIESSE, PERSONAL REPRESENTATIVE,
 ESTATE OF ARTHUR P. KRAESKI
 9222 OLD SCAGSVILLE ROAD
 LAUREL, MD 20723-1730
 ATTN: MR. DONALD R. REUWER
 443-367-0422

DEVELOPER
 LAND DESIGN & DEVELOPMENT, INC.
 9222 OLD SCAGSVILLE ROAD
 LAUREL, MD 20723-1730
 ATTN: MR. DONALD R. REUWER
 443-367-0422

FINAL ROAD CONSTRUCTION PLAN
STORM DRAIN PROFILES
HIGH RIDGE MEADOWS - SECTION 2
 LOTS 69 - 143 AND OPEN SPACE LOTS 144 - 147
 A RESUBDIVISION OF
 DEER SPRINGS - SECTION ONE, NON-BUILDABLE BULK PARCEL "B"

6TH ELECTION DISTRICT
 TAX MAP 50 GRID: 1
 DPZ REFS: F-10-065, WP-10-087, EC-12-047,
 WP-13-080, SP 13-007, F 14-022

ZONED: R-SC
 PARCELS: 363 & 542
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERS, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8161

DESIGN BY: RHV / EDS.
 DRAWN BY: RVE/EDS.
 CHECKED BY: RHV.
 DATE: MAY 2014.
 SCALE: AS SHOWN.
 W.O. NO.: 11-28.

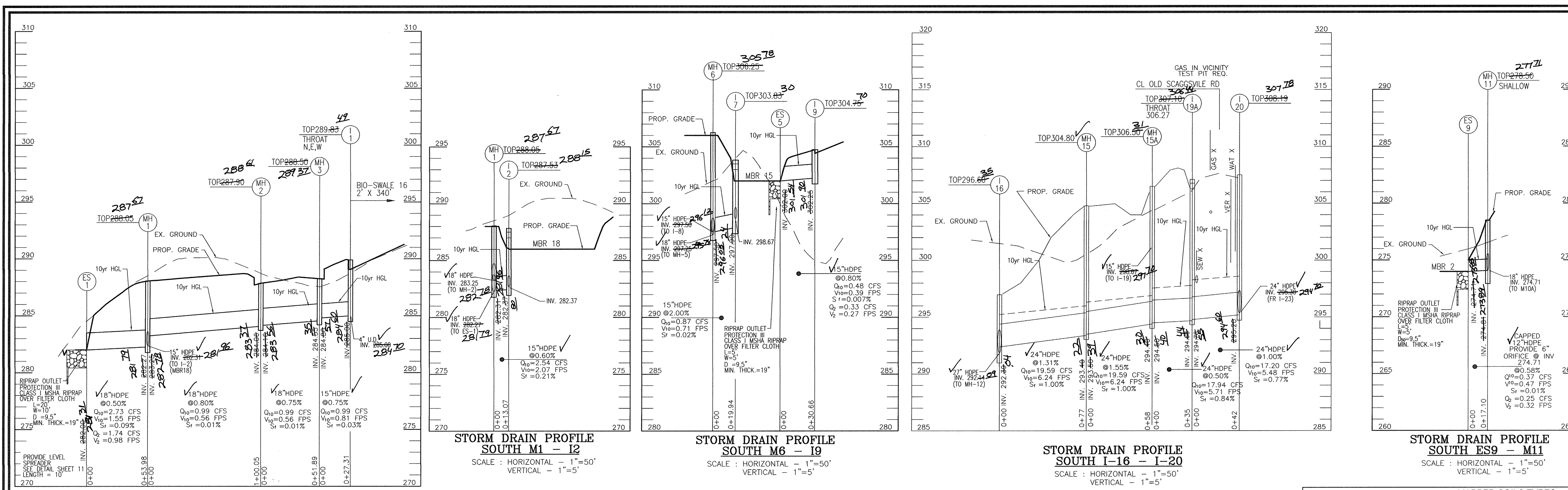
PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
 EXPIRATION DATE: 09-27-2014

13 SHEET OF 20

APPROVED: DEPARTMENT OF PUBLIC WORKS
Holger Sevano 6.25.14
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Chad Edwards 7.1.14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

Katshelwood 7.3.14
 CHIEF, DIVISION OF LAND DEVELOPMENT



LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- SOILS
- EXISTING TREELINE
- EXISTING TREES
- DA-3 DRAINAGE DIVIDE
- DRAINAGE AREA DESIGNATION
- PROPOSED STORMDRAIN
- PROPOSED STORMDRAIN INLET
- PUBLIC SEWER WATER & UTILITY EASEMENT
- PUBLIC DRAINAGE & UTILITY EASEMENT
- DRAINAGE AREA #
- INLET ZONING % IMPERVIOUS
- PRIVATE SWM DRAINAGE & UTILITY EASEMENT

MAPPED SOILS TYPES

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	PERCENT	PERCENT	PERCENT	PERCENT
CB	CHILLUM LOAM, 2 TO 5 PERCENT SLOPES	B	NO	0.15	0.37	NO	NO
CC	CHILLUM LOAM, 5 TO 10 PERCENT SLOPES	B	NO	0.15	0.37	PARTIAL	NO
CD	CHILLUM & EVELSON, 0 TO 15 PERCENT SLOPES	C	NO	0.28	NO	NO	NO
DE	FALLSINGTON SANDY LOAM, 0 TO 2 PERCENT SLOPES	D	YES	0.02	0.24	NO	NO
DR	SASSAPARAG GRANULY SANDY LOAM, 2 TO 5 PERCENT SLOPES	B	NO	0.17	0.24	NO	NO
SD	SASSAPARAG AND CROOK SOILS, 0 TO 15 PERCENT SLOPES	B	NO	0.32	0.37	PARTIAL	NO
UB	URBAN LAND-CHILLUM-BELTSVILLE COMPLEX, 0 TO 5 PERCENT SLOPES	D	NO	0.37	NO	NO	NO

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
K-FACTOR = K_v @ 0'-4' DEPTH
* BASED UPON ESTIMATED CUTS

NOTE: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K_v GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

AS-BUILT CERTIFICATION

I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS.

APPROVED: *[Signature]* 1693 7-18-14
NAME P.E.# DATE

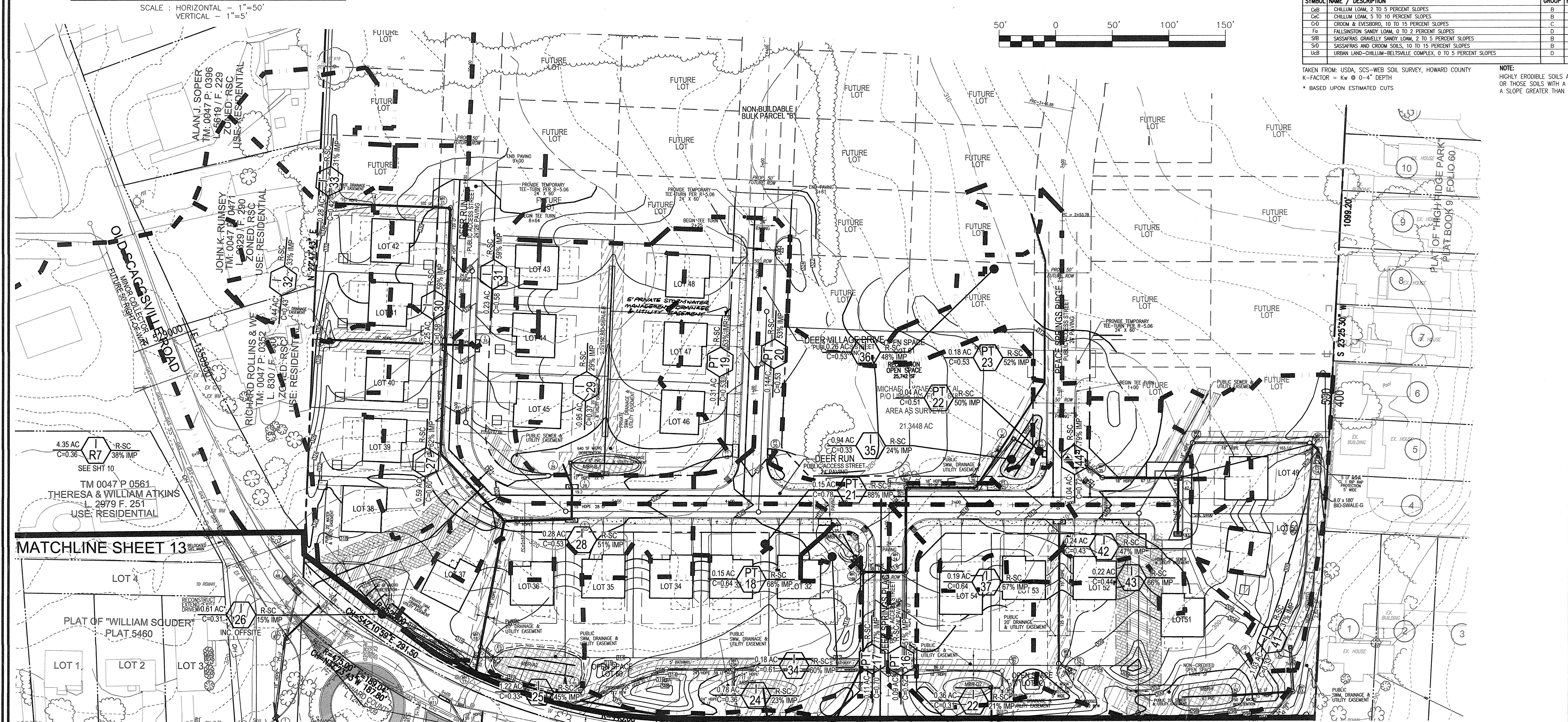
APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 5/18/15
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] 5-19-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: DIVISION OF LAND DEVELOPMENT
[Signature] 5-19-15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

OWNER
KATHY MIESSE, PERSONAL REPRESENTATIVE,
ESTATE OF ARTHUR P. KRAESKI
9222 OLD SCAGGSVILLE ROAD
LAUREL, MD 20723-1730
ATTN: MR. DONALD R. REUWER
443-367-0422

DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
5300 DORSEY HALL DRIVE, STE. 102
ELLICOTT CITY, MARYLAND 21042-7819
ATTN: MR. DONALD R. REUWER
443-367-0422



NO.	REVISION	DATE
3	REVISE STORM DRAIN LAYOUT ALONG OLD SCAGGSVILLE ROAD	1 / 2015
2	REVISE SUBDIVISION NAME	7/18/14

REVISED FINAL ROAD CONSTRUCTION PLAN
STORM DRAIN DRAINAGE AREA MAP
NORTH AREA

HIGH RIDGE MEADOWS - SEC. 1
LOTS 1 - 54, OPEN SPACE LOTS 55 - 68
AND NON-BUILDABLE BULK PARCEL "B"

A SUBDIVISION OF TAX MAP 50 - PARCEL 363
AND A RESUBDIVISION OF TAX MAP 50 - PARCEL 542
KRAESKI PROPERTY NON-BUILDABLE BULK PARCEL "A" (PLAT 21191)

6TH ELECTION DISTRICT - TAX MAP 50, GRD. 1
DPZ REF'S: F-10-065, WP-10-087, ECP-12-047, PARCELS: 363 & 542
WP-13-080, SP 13-007 HOWARD COUNTY, MARYLAND

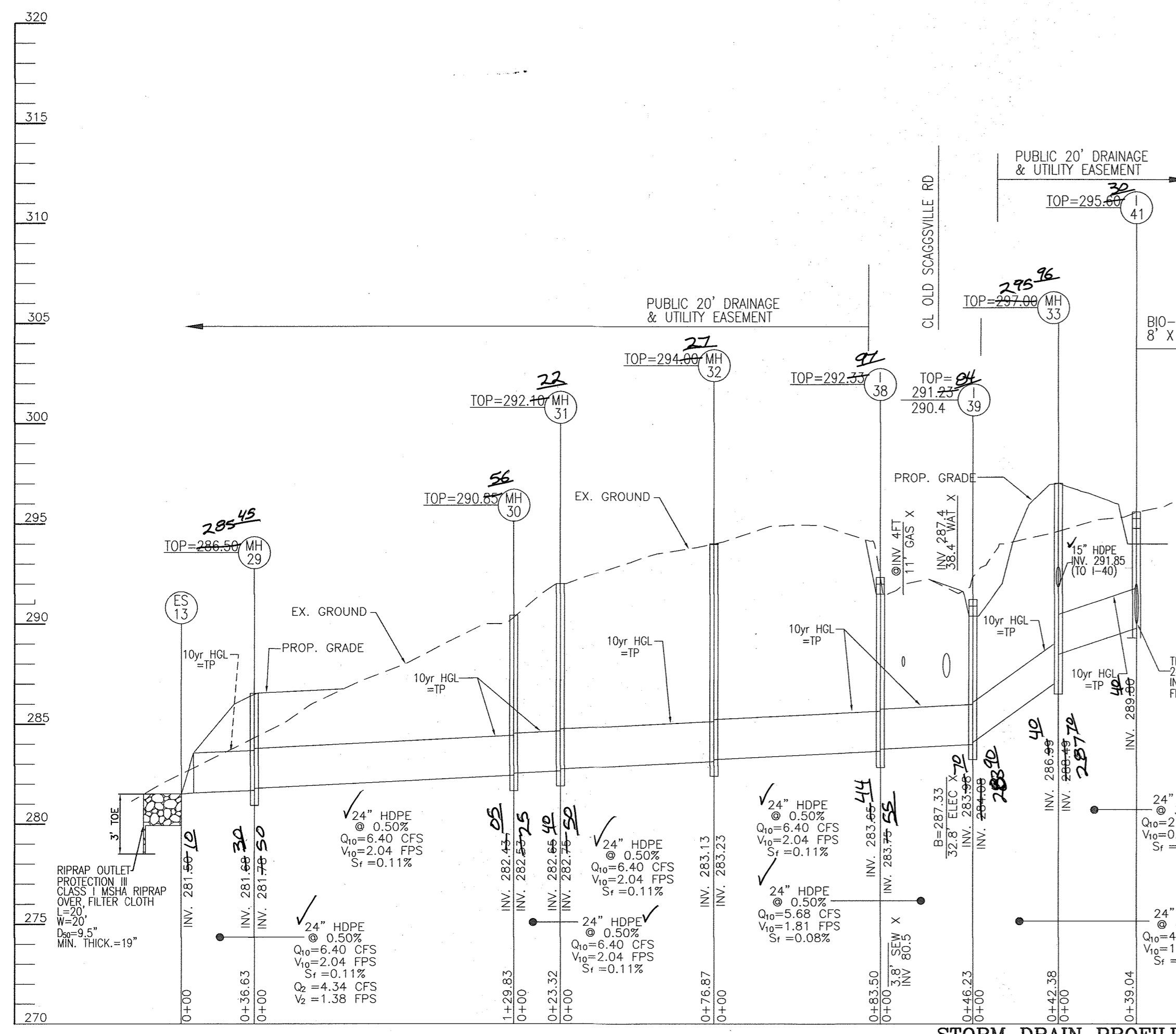
ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410-461-7666 FAX: 410-461-1896

DESIGN BY: EDS
DRAWN BY: EDS/RVE/KG
CHECKED BY: RAV
DATE: APRIL 2015
SCALE: AS SHOWN
W.O. NO.: 11-28

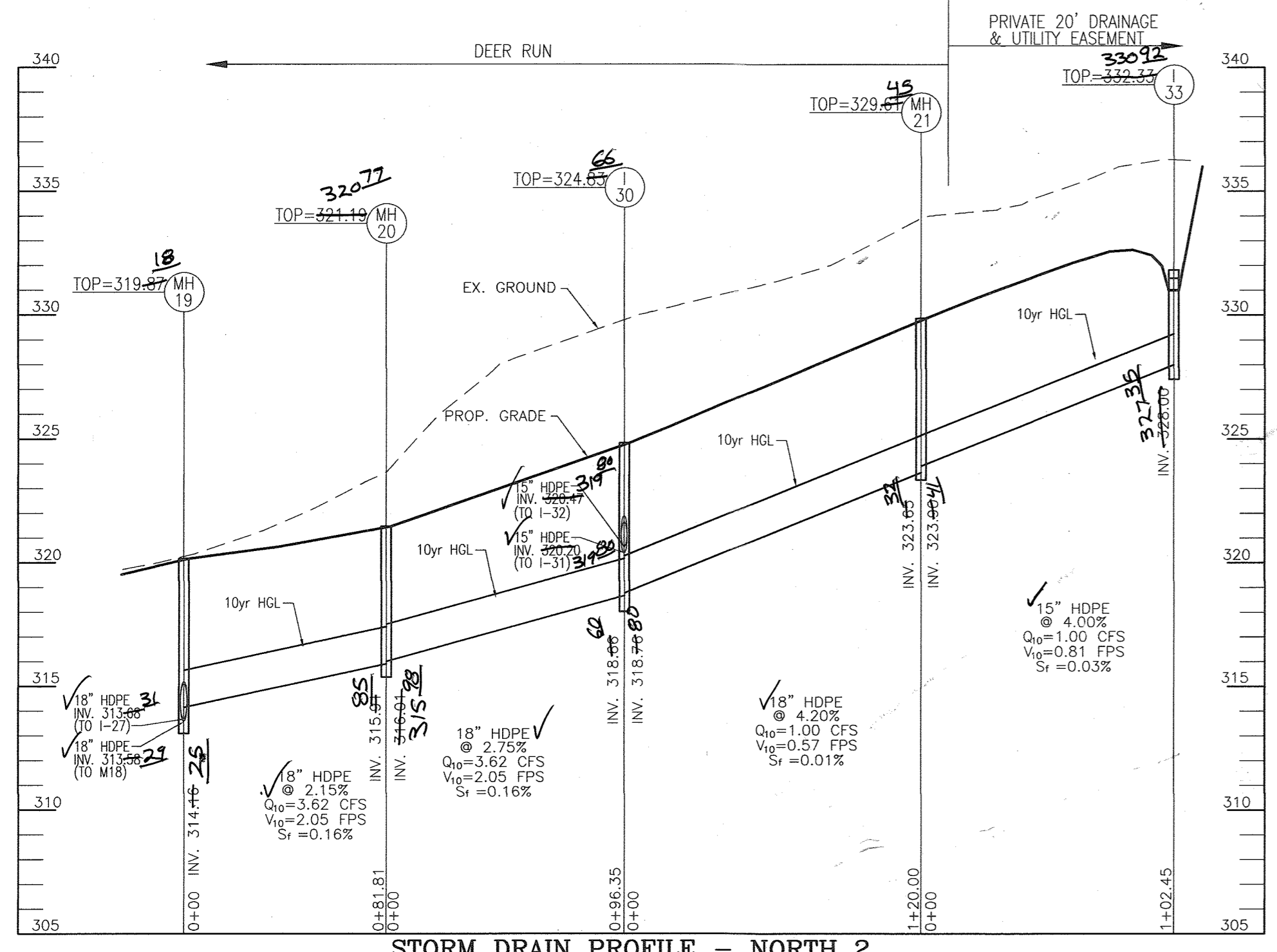
PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2016

14 SHEET OF 32

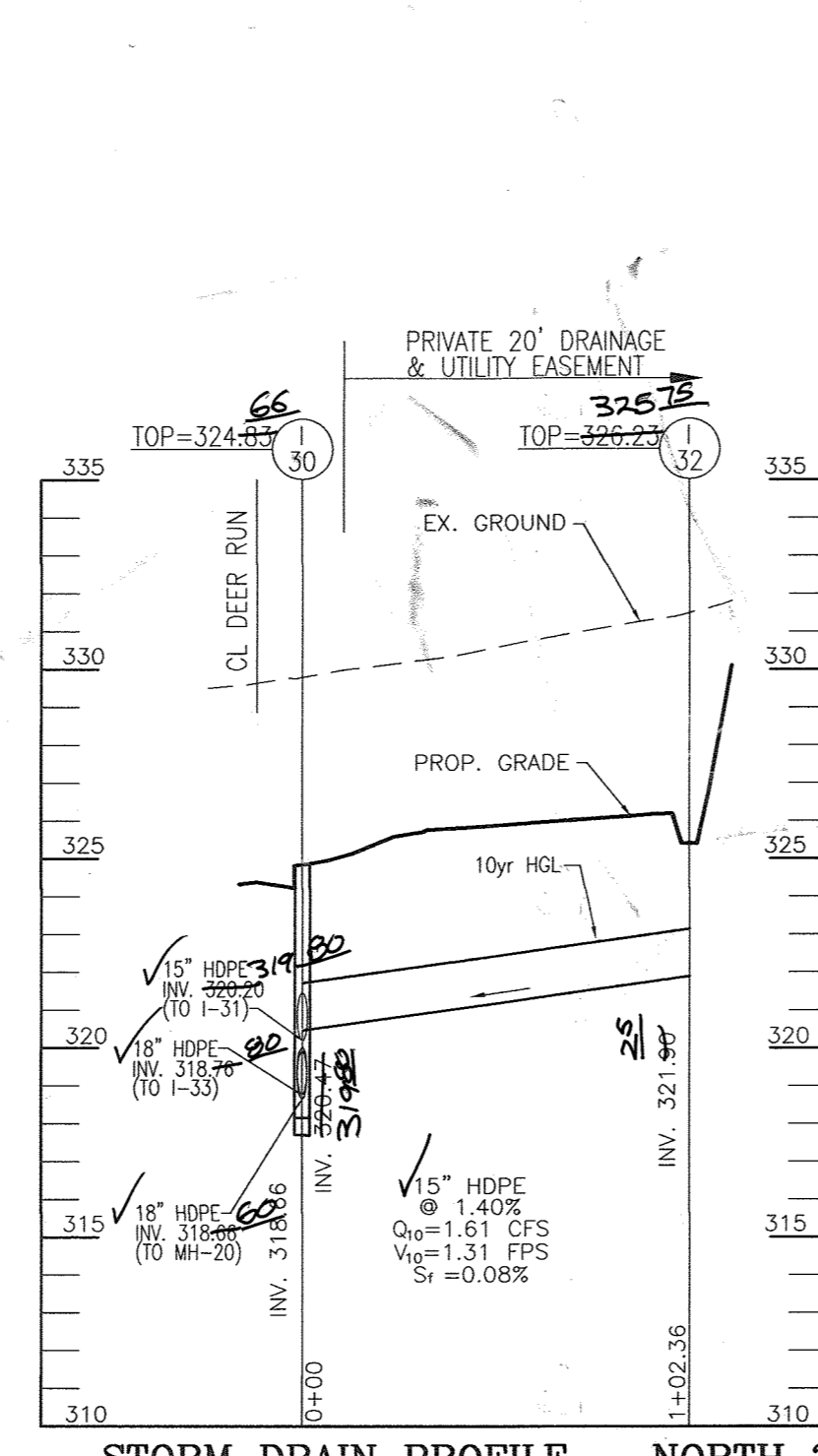
AS-BUILT-DECEMBER 2018 F-14-022



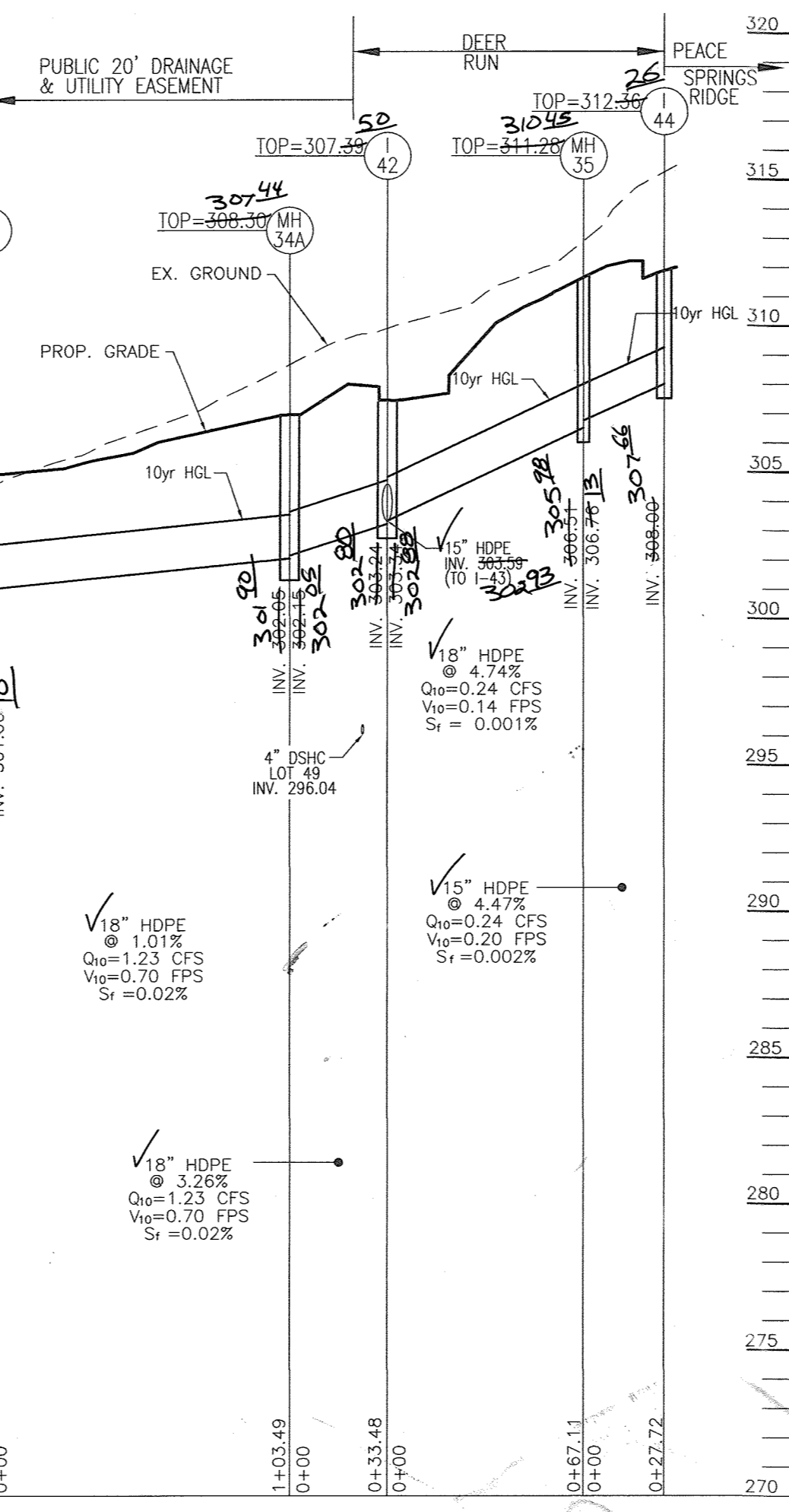
STORM DRAIN PROFILE - NORTH 2
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



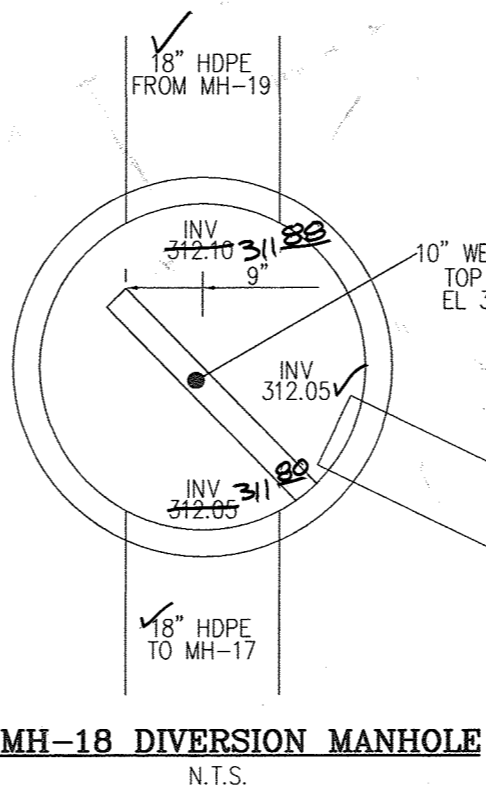
STORM DRAIN PROFILE - NORTH 2
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



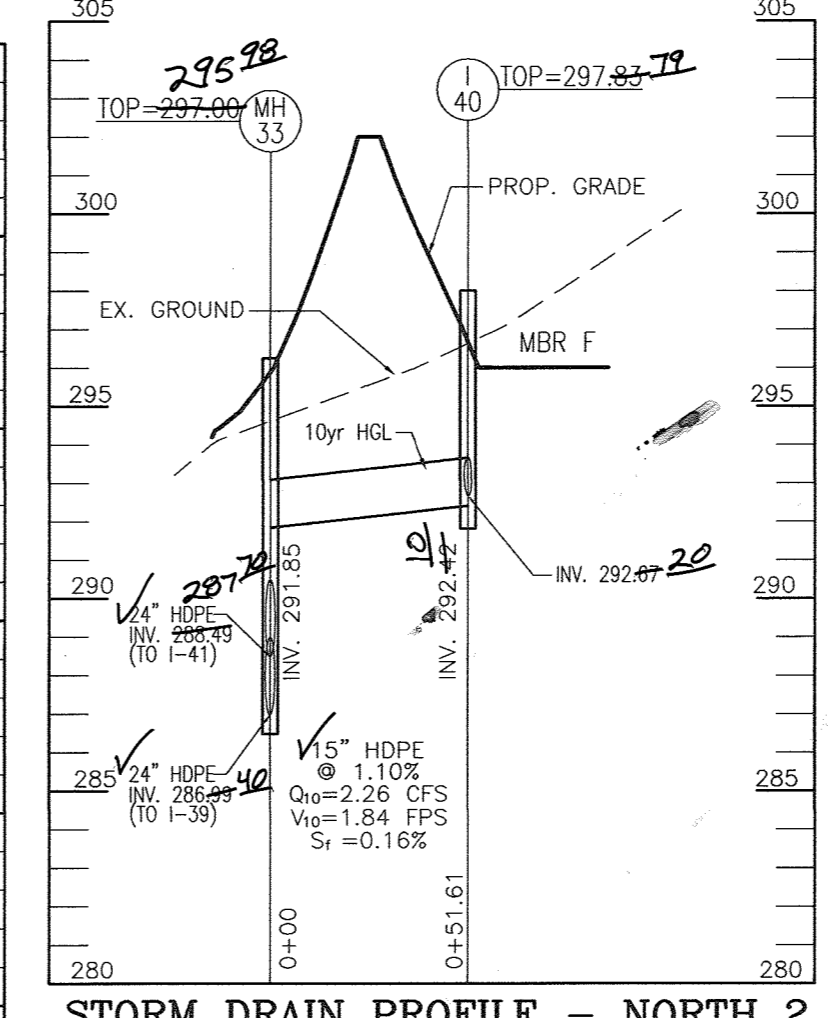
STORM DRAIN PROFILE - NORTH 2
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



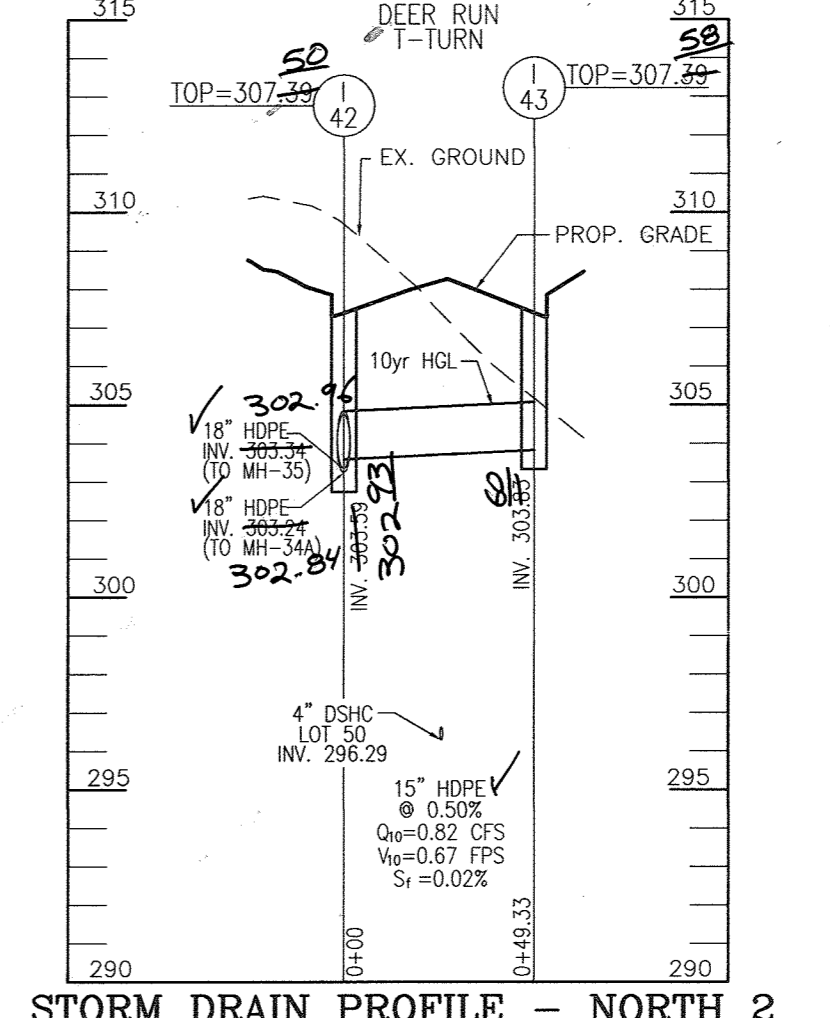
STORM DRAIN PROFILE - NORTH 2
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



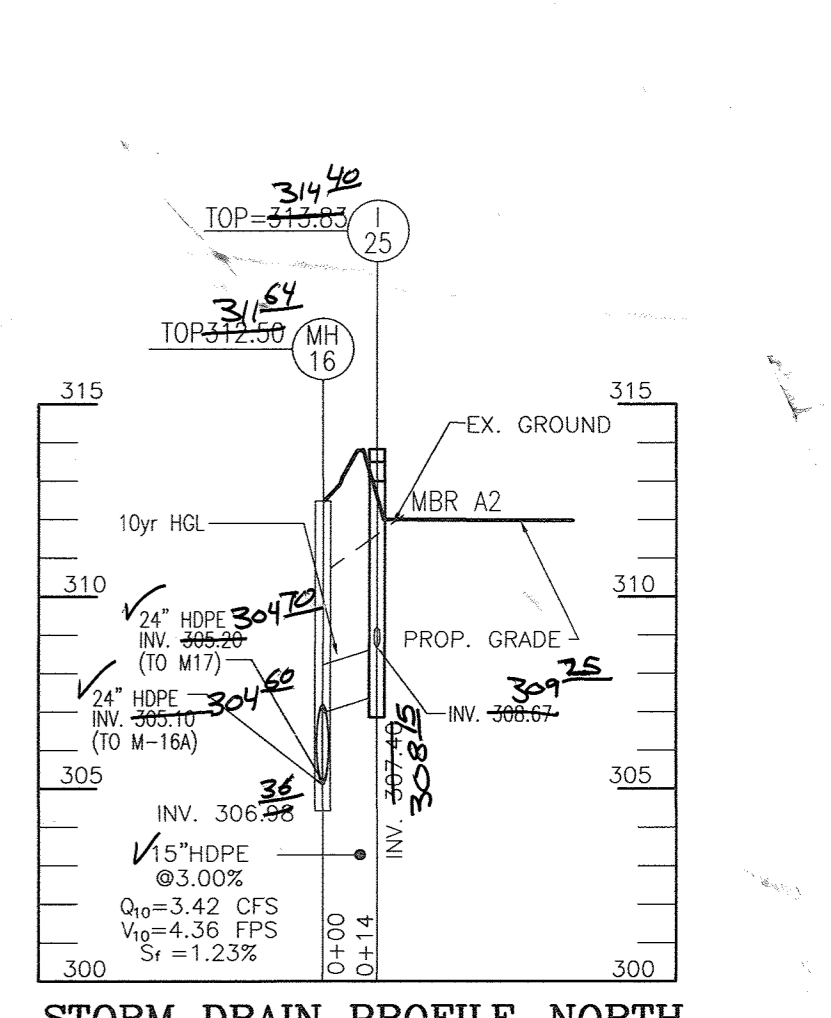
MH-18 DIVERSION MANHOLE
N.T.S.



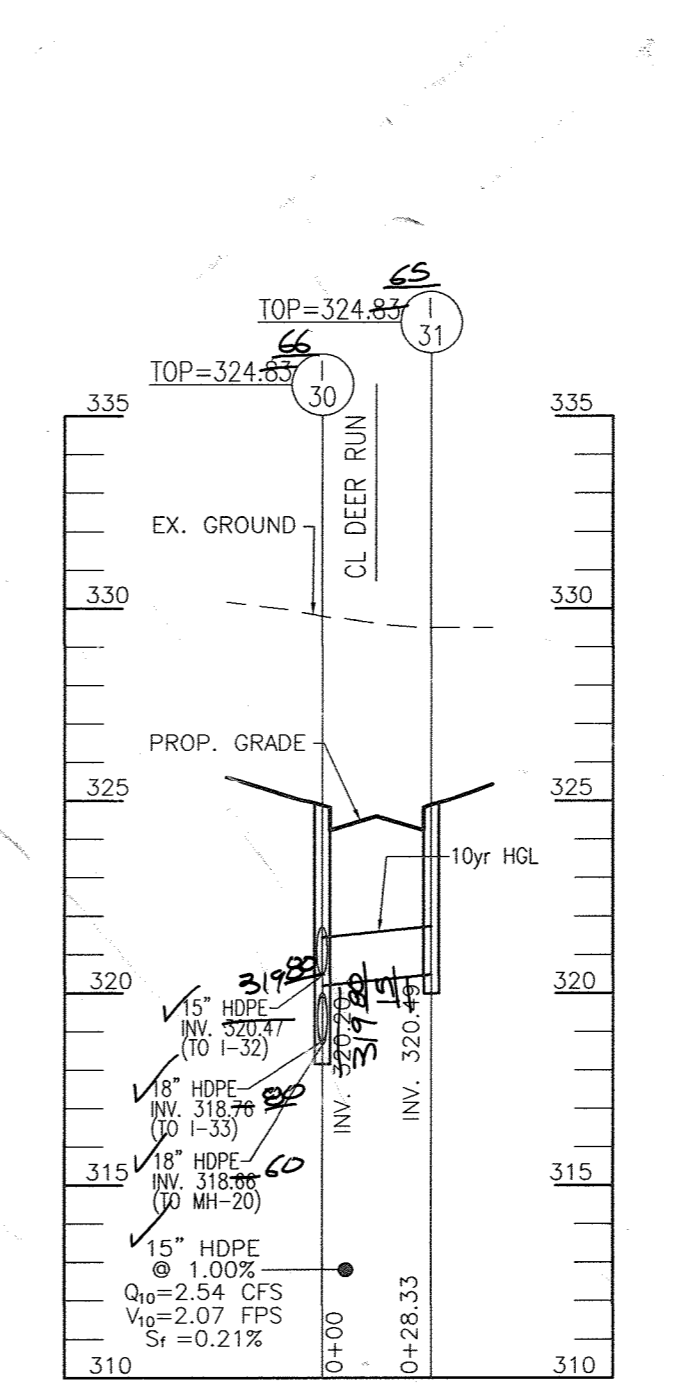
STORM DRAIN PROFILE - NORTH 2
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



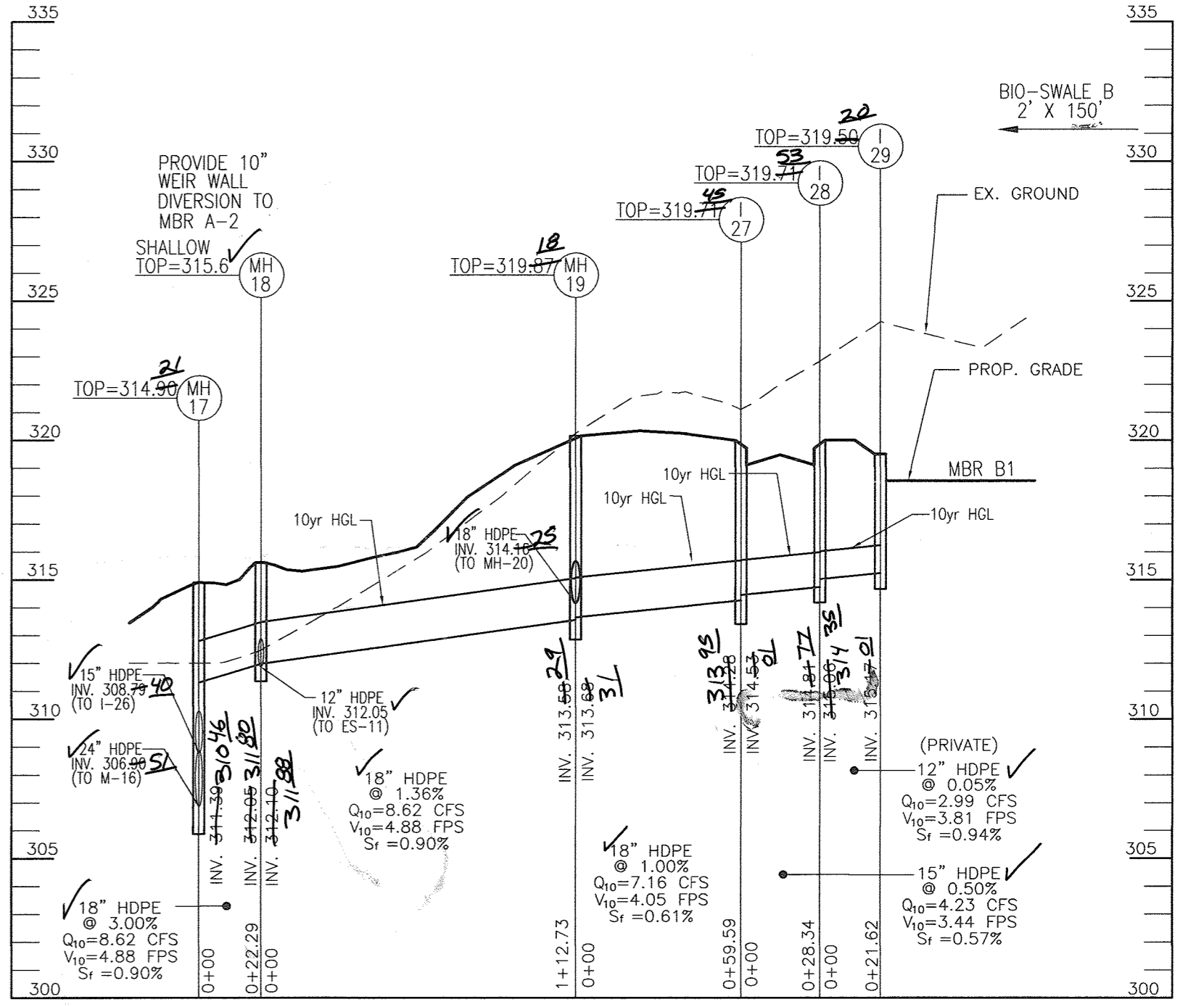
STORM DRAIN PROFILE - NORTH 2
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



STORM DRAIN PROFILE - NORTH 2
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



STORM DRAIN PROFILE - NORTH 2
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



STORM DRAIN PROFILE - NORTH 2
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



AS-BUILT CERTIFICATION
I HEREBY CERTIFY BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLY WITH THE APPROVED PLANS AND SPECIFICATIONS.
P/E NAME: Robert H. Vogel DATE: 11/19/15

OWNER
KATHY MIESSE, PERSONAL REPRESENTATIVE,
ESTATE OF ARTHUR P. KRAESKI
9222 OLD SCAGSVILLE ROAD
LAUREL, MD 20723-1730
ATTN: MR. DONALD R. REUWER
443-367-0422

DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
5300 DORSEY HALL DRIVE, STE 102
ELICOTT CITY, MARYLAND 21042-7819
ATTN: DONALD R. REUWER
443-367-0422

NO.	REVISION	DATE
3	REVISE STORM DRAIN PROFILES	1/2015
2	REVISE SUBDIVISION NAME	7/18/14
1		

REVISED FINAL ROAD CONSTRUCTION PLAN
STORM DRAIN PROFILES
HIGH RIDGE MEADOWS - SEC. 1
LOTS 1 - 54, OPEN SPACE LOTS 55 - 68
AND NON-BUILDABLE BULK PARCEL "B"
A SUBDIVISION OF TAX MAP 50 - PARCEL 363
AND A RESUBDIVISION OF TAX MAP 50 - PARCEL 542
KRAESKI PROPERTY NON-BUILDABLE BULK PARCEL "A" (PLAT 21191)

6TH ELECTION DISTRICT - TAX MAP 50 GRID: 1
DPZ REFS: F-10-08, WP-10-087, ECP-12-047,
WP-13-080, SP-13-007

ZONED: R-SC
PARCELS: 363 & 542
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
EXPIRATION DATE: 09-27-2016

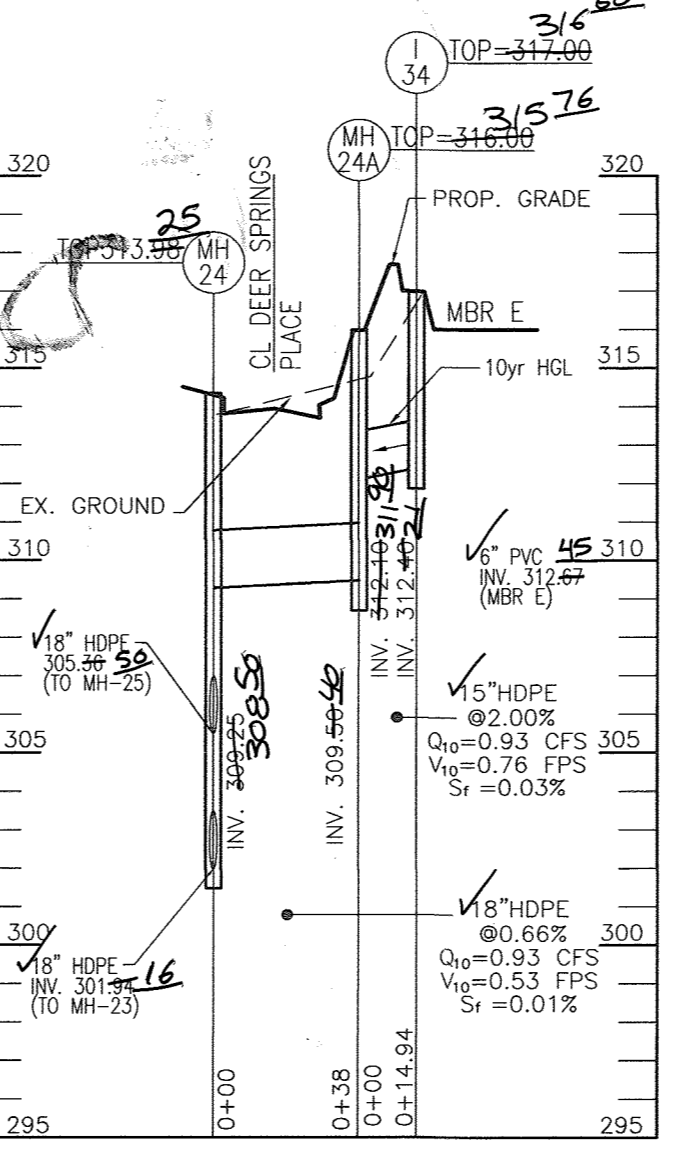
DESIGN BY: E.D.S.
DRAWN BY: E.D.S./R.V.E./K.G.
CHECKED BY: R.H.V.
DATE: APRIL 2015
SCALE: AS SHOWN
W.D. NO.: 11-28

15 SHEET OF 32

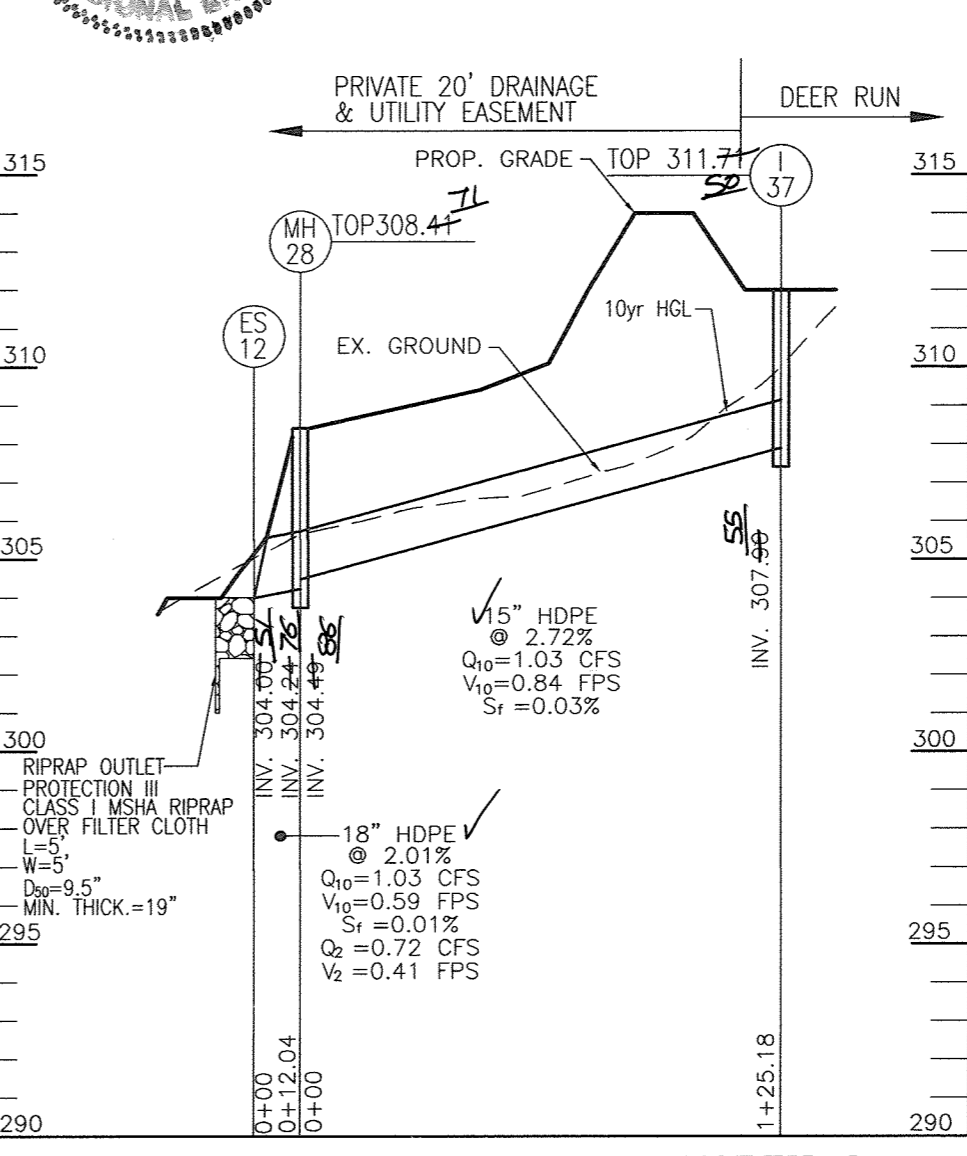
APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 5/11/2015
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] 5-18-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION

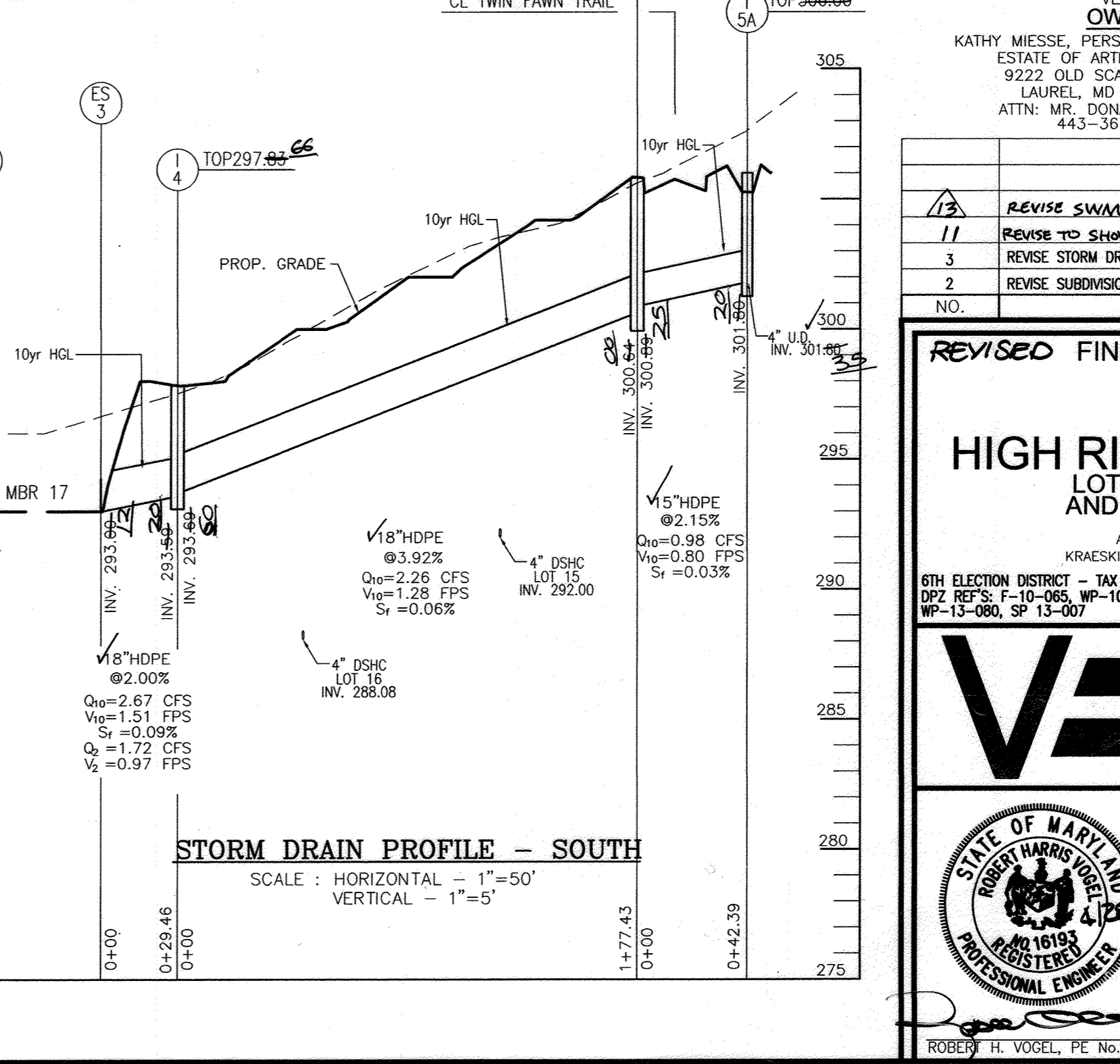
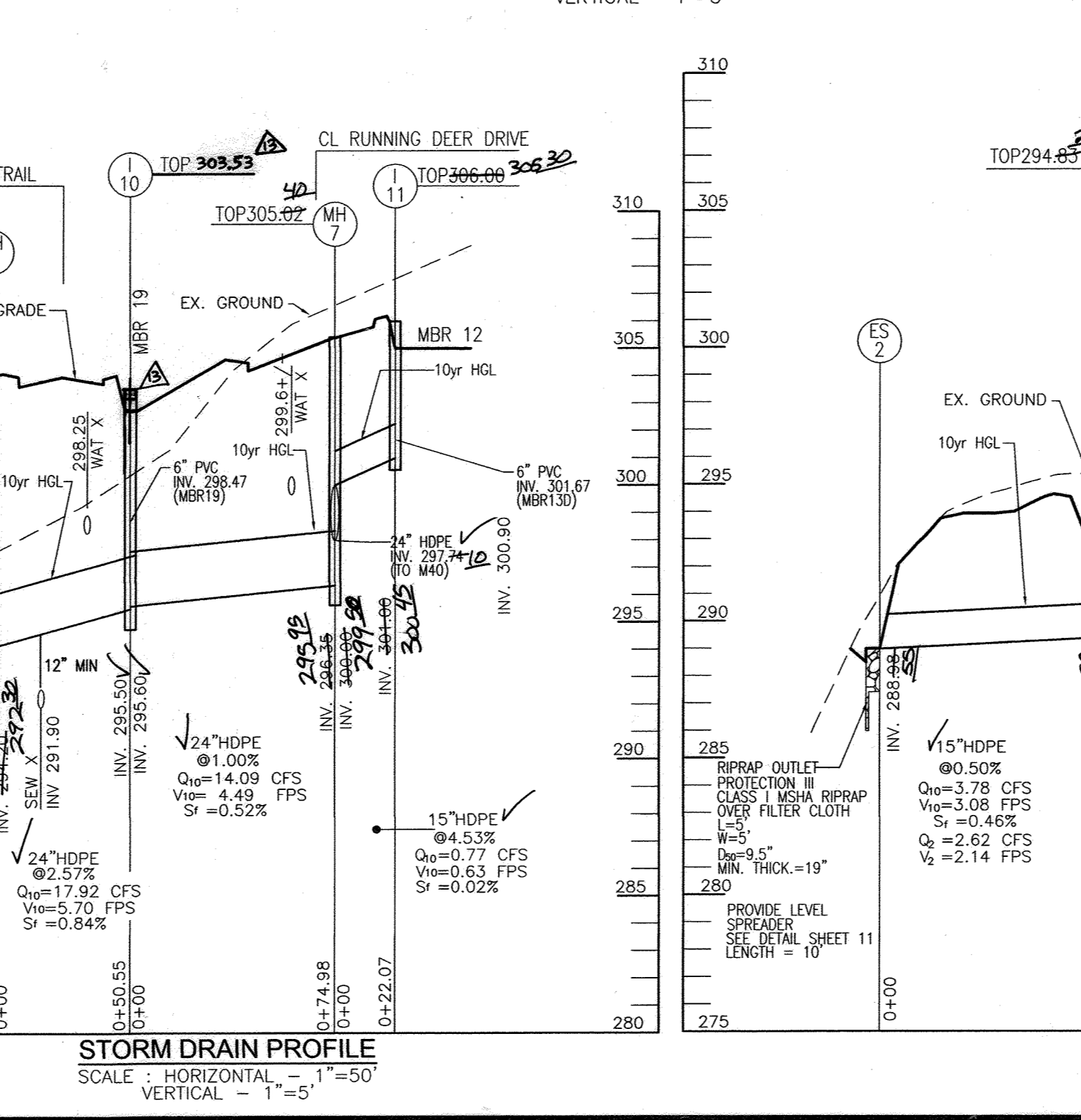
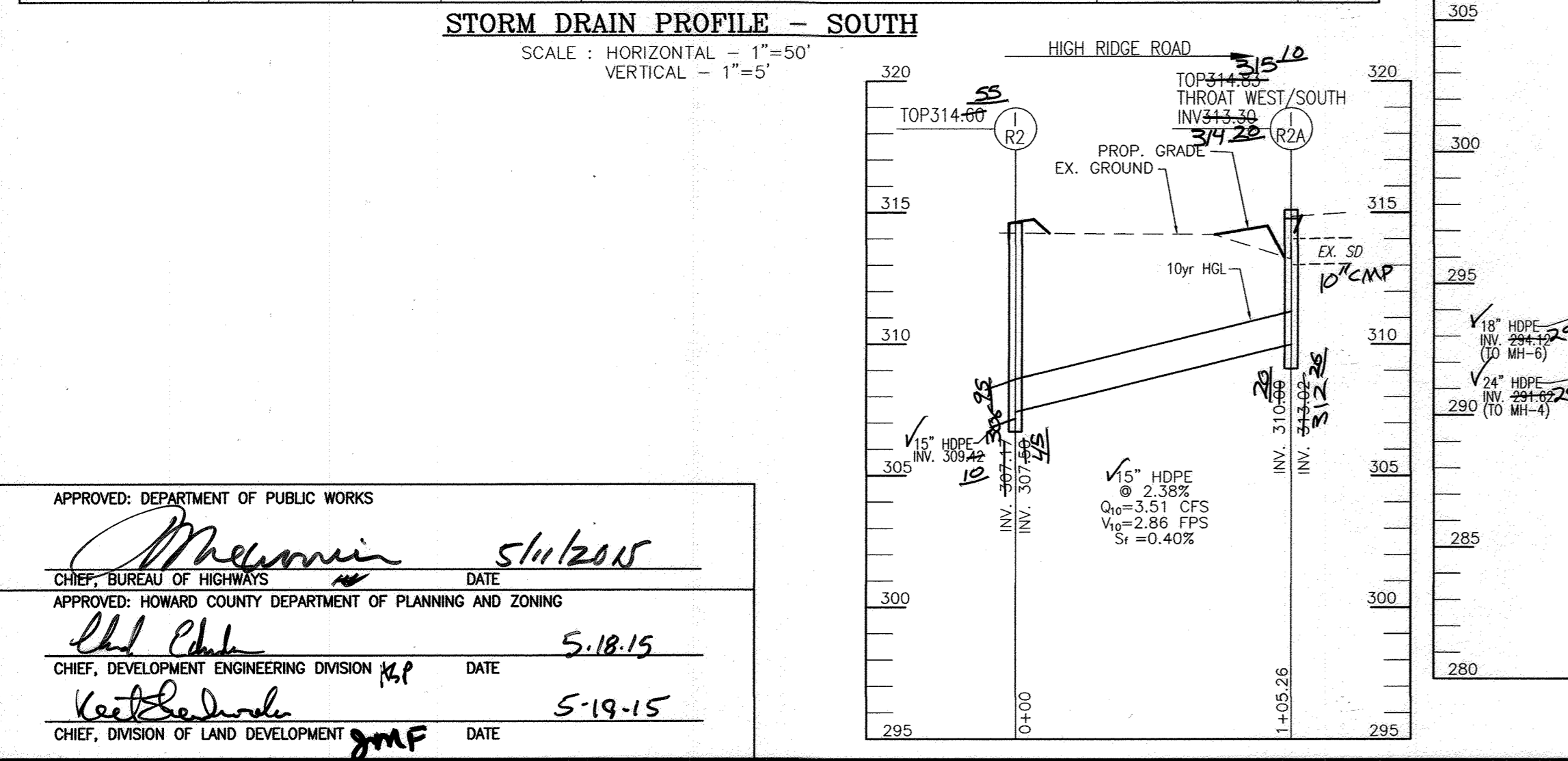
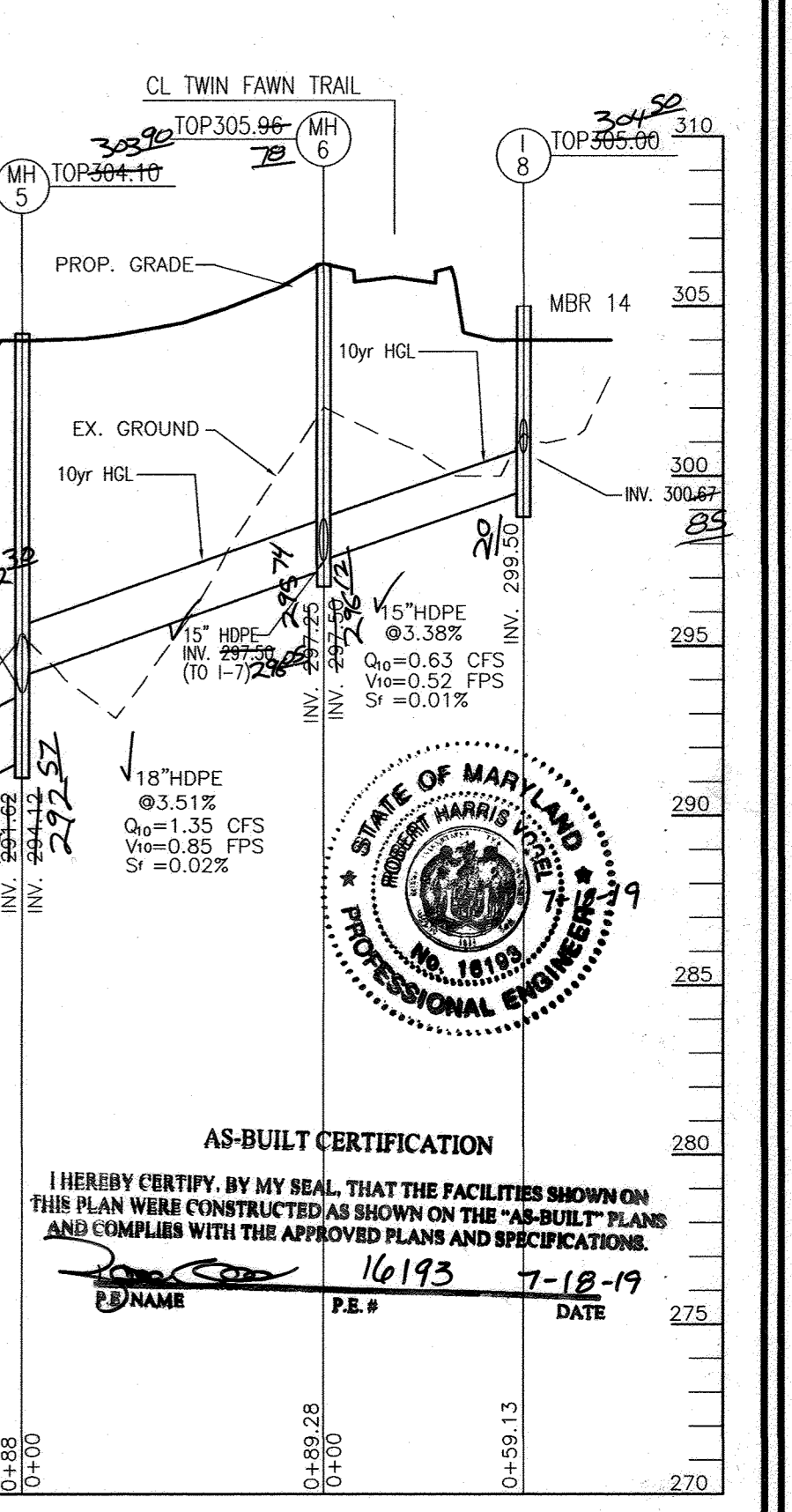
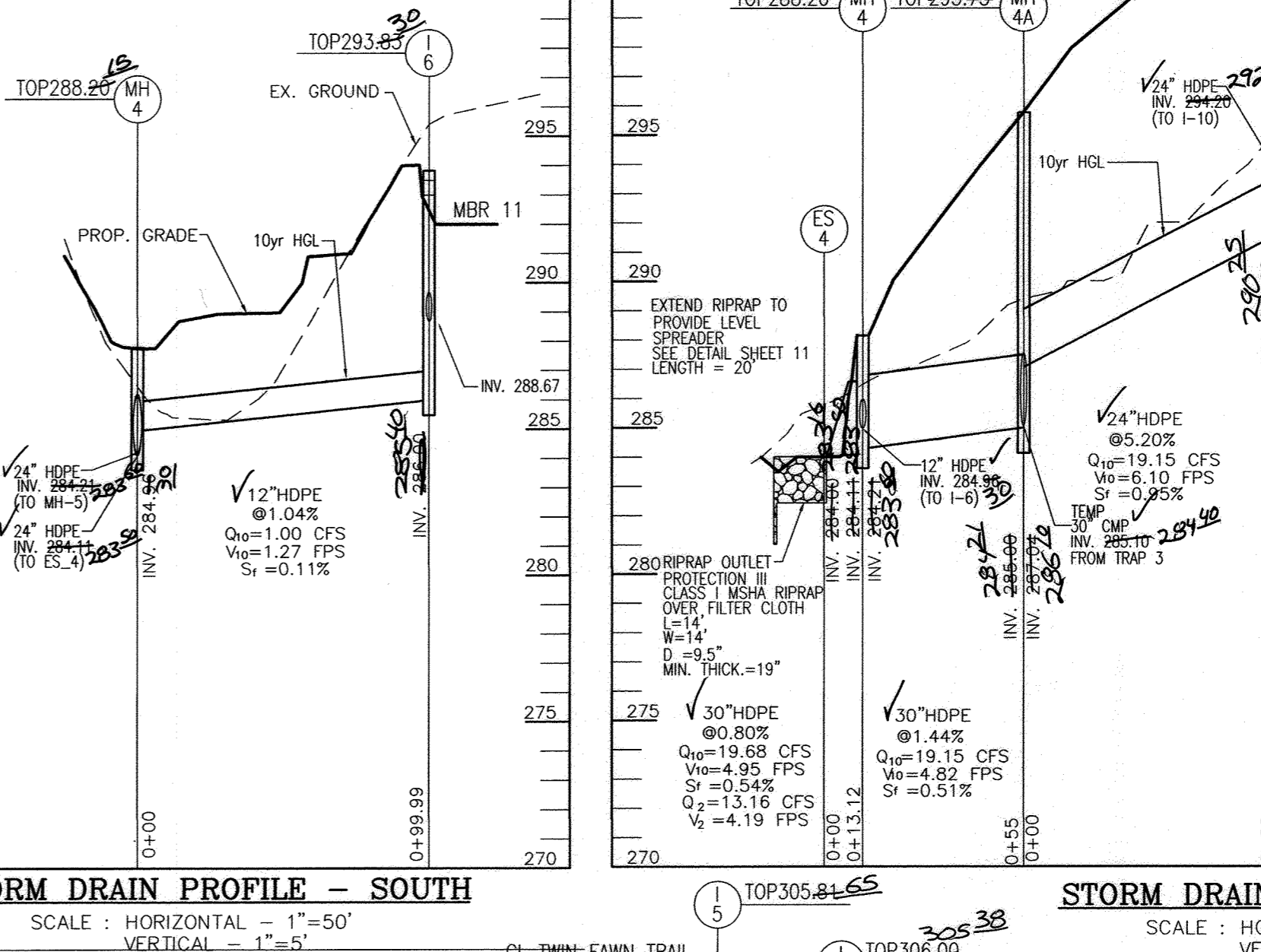
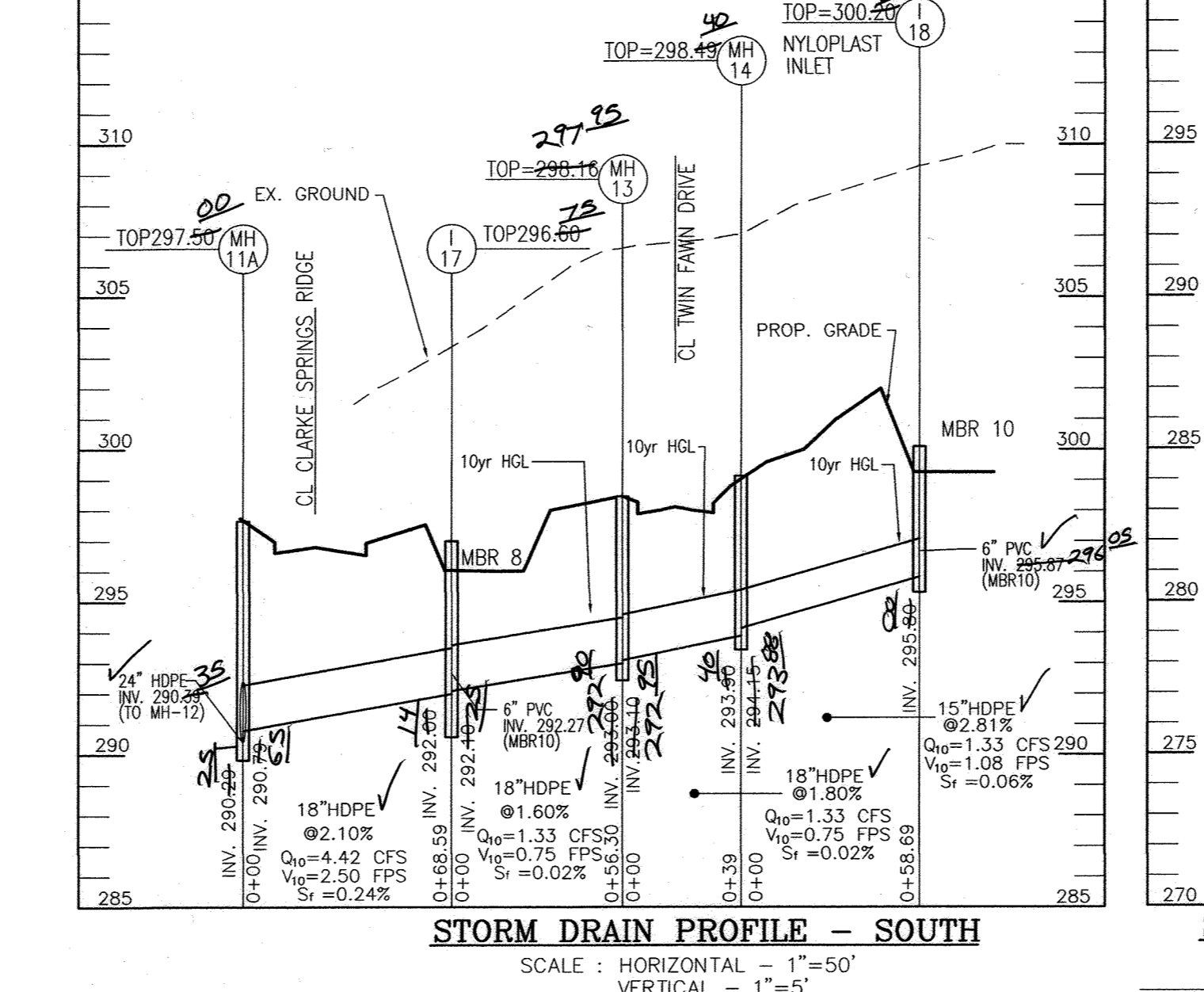
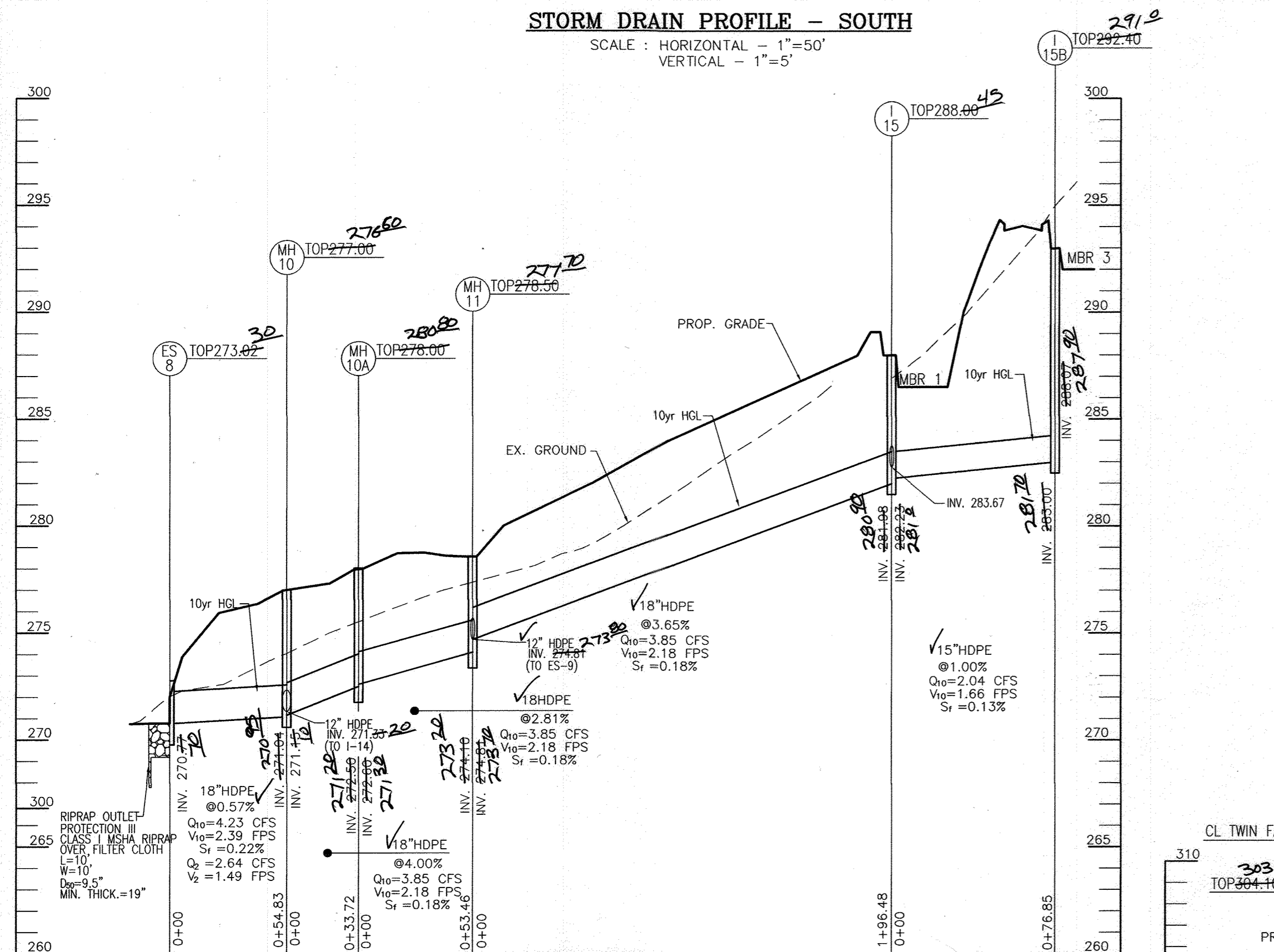
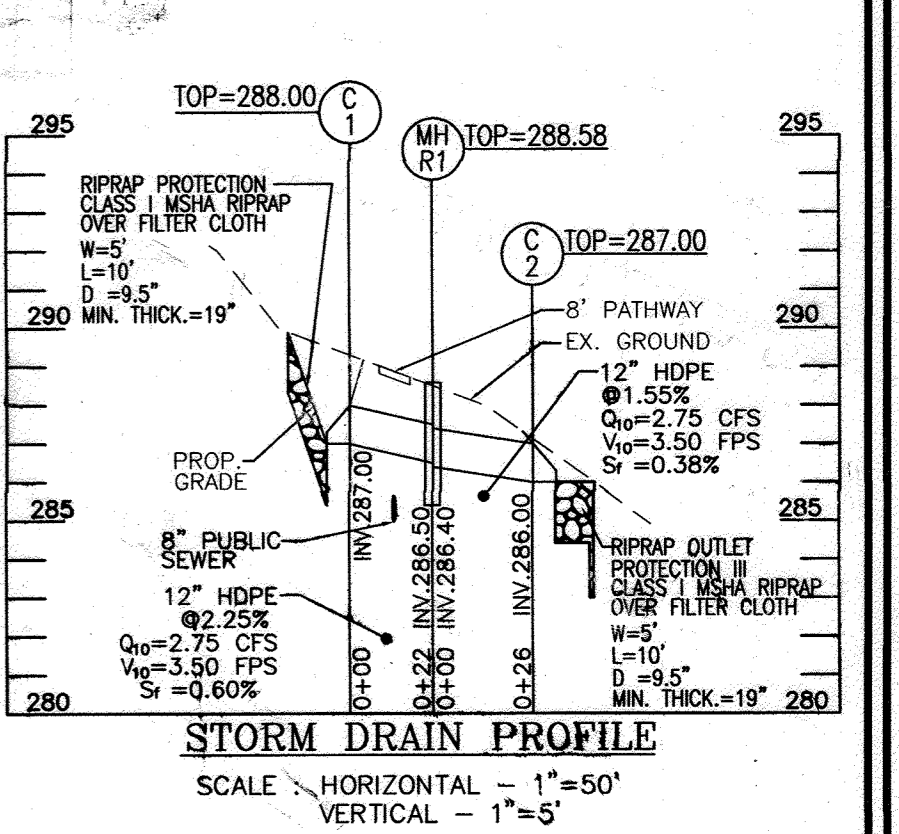
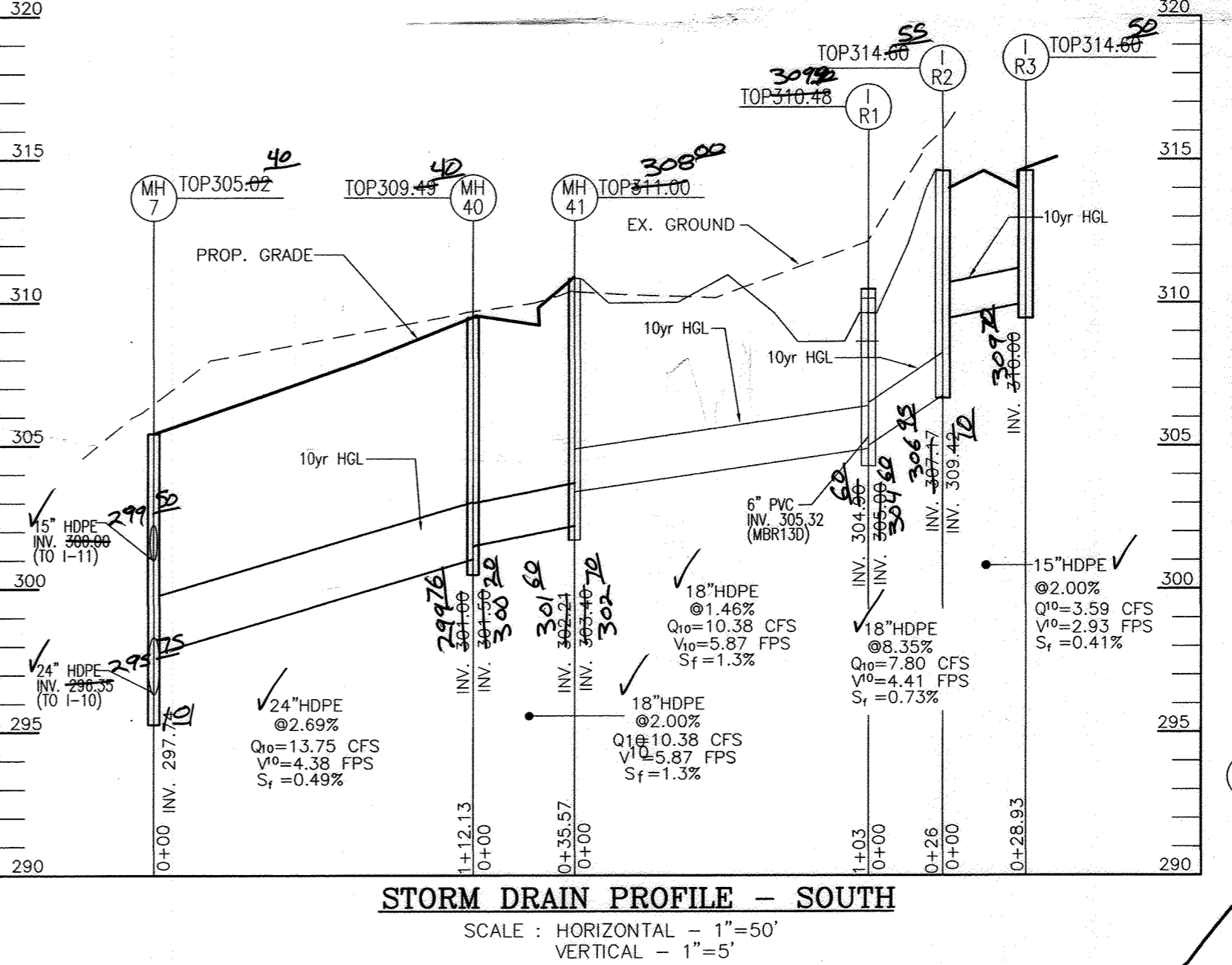
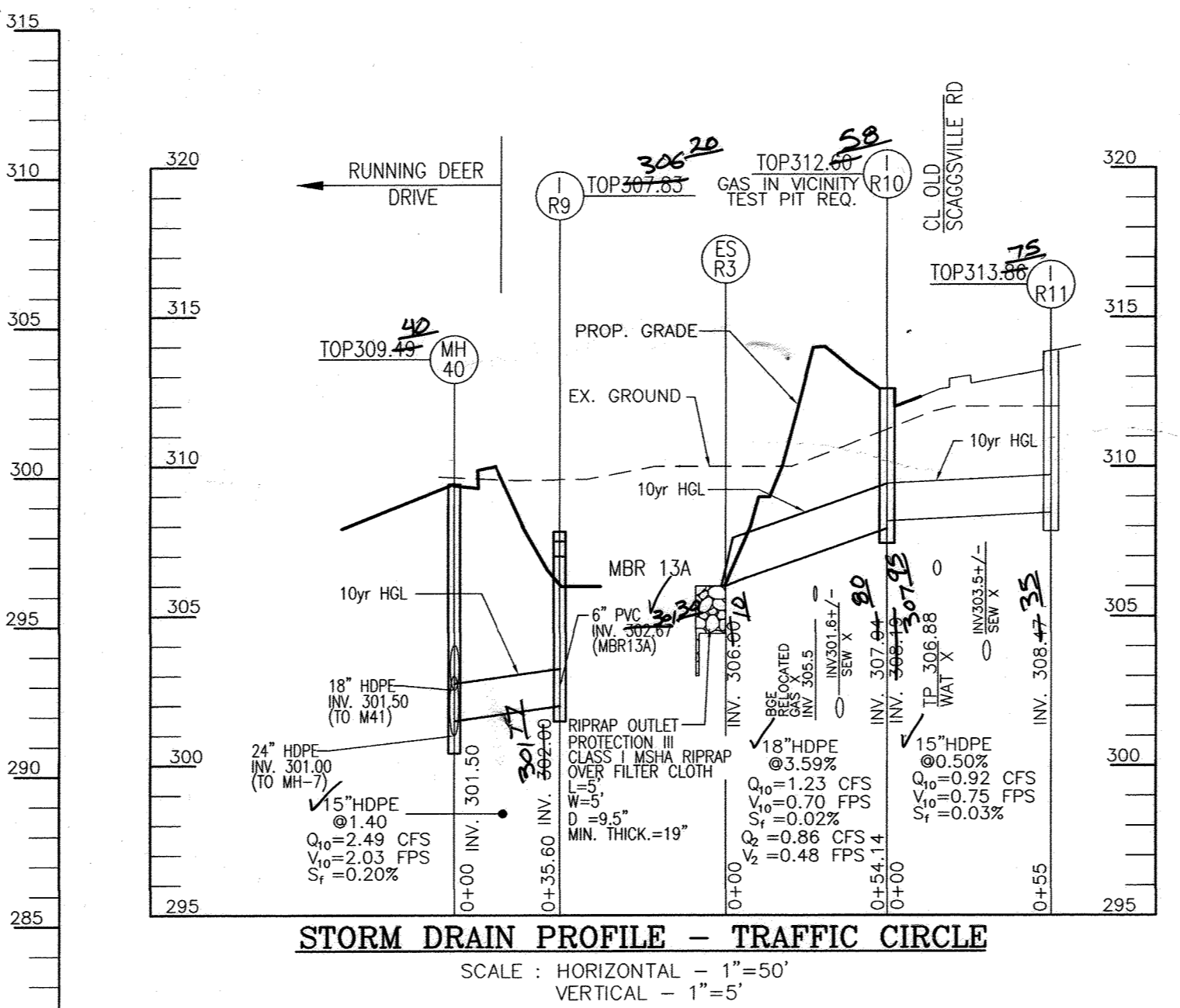
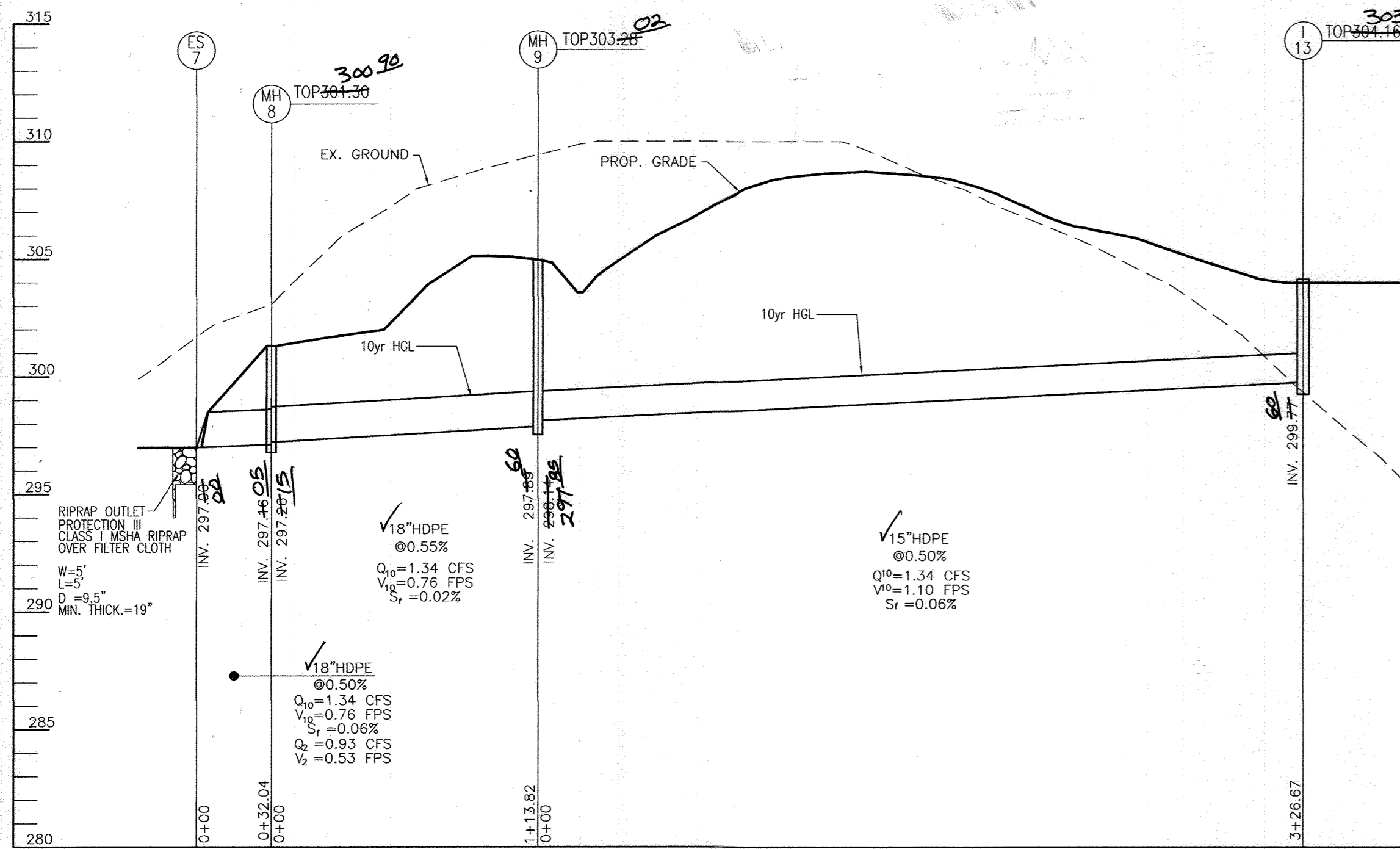
[Signature] 5-19-15
CHIEF, DIVISION OF LAND DEVELOPMENT



STORM DRAIN PROFILE - NORTH 2
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



STORM DRAIN PROFILE - NORTH 2
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



AS-BUILT CERTIFICATION
I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLY WITH THE APPROVED PLANS AND SPECIFICATIONS.

DATE: 7-18-19
P.E. NAME: [Signature]

REVISIONS

NO.	REVISION	DATE
13	REVISE SWIM BY REVISING INLET 1-10	11-3-20
11	REVISE TO SHOW CULVERT AND REVISE FOREST CONSERVATION	8-13-19
3	REVISE STORM DRAIN PROFILES	1/2015
2	REVISE SUBDIVISION NAME	7/18/14

REVISED FINAL ROAD CONSTRUCTION PLAN
STORM DRAIN PROFILES
HIGH RIDGE MEADOWS - SEC. 1
LOTS 1 - 54, OPEN SPACE LOTS 55 - 68
AND NON-BUILDABLE BULK PARCEL "B"
A SUBDIVISION OF TAX MAP 50 - PARCEL 363
AND A RESUBDIVISION OF TAX MAP 50 - PARCEL 542
KRAESKI PROPERTY NON-BUILDABLE BULK PARCEL "A" (PLAT 21191)
6TH ELECTION DISTRICT - TAX MAP 50 GRID: 1
CPZ REGS: P-10-08, MP-10-08T, ECP-12-04T, PARCELS: 363 & 542
12-08, SF 13-00T, HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET, ELLICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
EXPIRATION DATE: 09-27-2016

DESIGN BY: EDS
DRAWN BY: EDS/RVE/KG
CHECKED BY: RHW
DATE: APRIL 2015
SCALE: AS SHOWN
W.D. NO.: 11-28

17 SHEET OF 32

APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] DATE: 5-11-2015
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] DATE: 5-18-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] DATE: 5-19-15
CHIEF, DIVISION OF LAND DEVELOPMENT

THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 18.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$ 47,340 FOR THE PERIMETER LANDSCAPING (REQUIRED BY SHADE TREES AND 128 EVERGREENS), 8 SHRUBS (TRASH PAD LANDSCAPING) AND 6 SHADE TREES (SPECIMEN TREE REPLACEMENT) SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT FOR THIS PLAN.

LANDSCAPE & FOREST CONSERVATION PLAN
SCALE: 1"=50'

NOTES

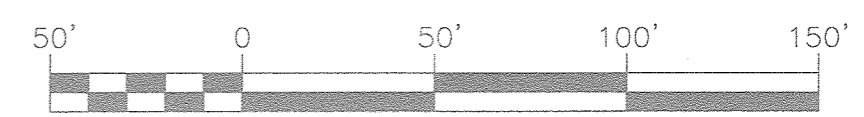
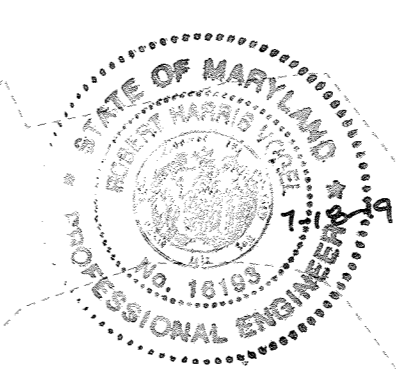
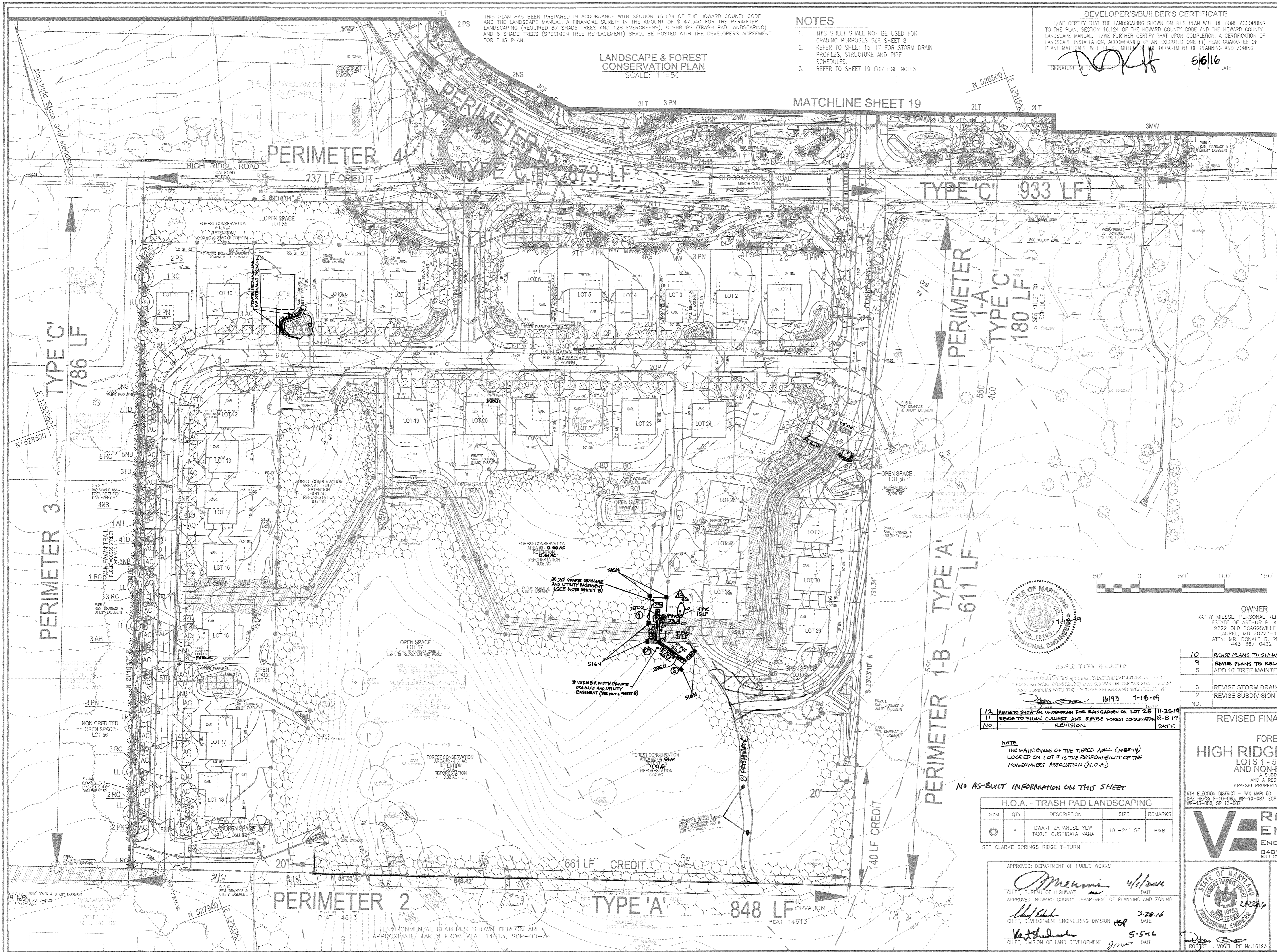
1. THIS SHEET SHALL NOT BE USED FOR GRADING PURPOSES SEE SHEET B
2. REFER TO SHEET 15-17 FOR STORM DRAIN PROFILES, STRUCTURE AND PIPE SCHEDULES.
3. REFER TO SHEET 19 FOR BGE NOTES

DEVELOPER'S/BUILDER'S CERTIFICATE
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 18.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

SIGNATURE OF DEVELOPER: *[Signature]* DATE: 6/6/16

LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANDUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- SOLS BOUNDARY
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- PROPOSED SIDEWALK
- PROPOSED LIGHT POLE
- PROPOSED SHADE TREE
- PROPOSED EVERGREEN TREE
- PROPOSED SHRUBS
- LANDSCAPE PERIMETER
- MICRO BIO RETENTION FACILITY
- BIO SWALE
- EXISTING SPECIMEN TREE
- EXISTING SPECIMEN TREE TO BE REMOVED
- WATER ZONE DIVIDE
- PRIVATE 24' USE-IN-COMMON ACCESS EASEMENT
- PROP. PUBLIC SEWER WATER & UTILITY EASEMENT
- PROP. PUBLIC DRAINAGE & UTILITY EASEMENT
- BGE ZONE
- FOREST CONSERVATION EASEMENT
- RESTORATION AREA EASEMENT
- TIP: FOREST CONSERVATION EASEMENT SIGN
- PRIVATE SWM DRAINAGE & UTILITY EASEMENT
- RECREATION OPEN SPACE
- 10' TREE MAINTENANCE EASEMENT
- PUBLIC SWM DRAINAGE & UTILITY EASEMENT



REVISIONS

NO.	REVISION	DATE
10	REVISE PLANS TO SHOW AS-BUILT CONDITION FOR MBR-14	12/3/18
9	REVISE PLANS TO RELOCATE TRASH PAD	10/12/18
8	ADD 10' TREE MAINTENANCE EASEMENT, SHIFT MBR FACILITIES.	9/1/2015
3	REVISE STORM DRAIN LAYOUT ALONG OLD SCAGGSVILLE ROAD	1/1/2015
2	REVISE SUBDIVISION NAME	7/18/14
1		

H.O.A. - TRASH PAD LANDSCAPING

SYM.	QTY.	DESCRIPTION	SIZE	REMARKS
⊙	8	DWARF JAPANESE YEW TAXUS CUSPIDATA NANA	18"-24" SP	B&B

SEE CLARKE SPRINGS RIDGE T-TURN

APPROVED: DEPARTMENT OF PUBLIC WORKS

[Signature] 4/1/2016
CHIEF, BUREAU OF HIGHWAYS DATE

[Signature] 3/28/16
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 5-5-16
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

OWNER
KATHY MIESSE, PERSONAL REPRESENTATIVE,
ESTATE OF ARTHUR P. KRASKI
9222 OLD SCAGGSVILLE ROAD
LAUREL, MD 20723-1730
ATTN: MR. DONALD R. REWLER
443-367-0422

DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
5300 DORSEY HALL DRIVE, STE 102
ELICOTT CITY, MARYLAND 21042-7819
ATTN: MR. DONALD R. REWLER
443-367-0422

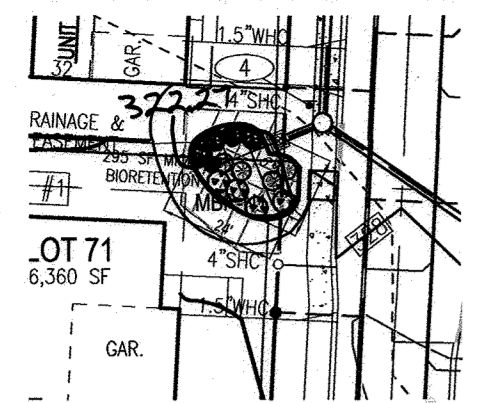
REVISED FINAL ROAD CONSTRUCTION PLAN
LANDSCAPE AND FOREST CONSERVATION PLAN
HIGH RIDGE MEADOWS - SEC. 1
LOTS 1 - 54, OPEN SPACE LOTS 55 - 68
AND NON-BUILDABLE BULK PARCEL "B"
A SUBDIVISION OF TAX MAP 50 - PARCELS 343
AND A REVISION OF TAX MAP 50 - PARCELS 342
KRASKI PROPERTY NON-BUILDABLE BULK PARCEL "A" (PLAT 21191)

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

DESIGN BY: EDS
DRAWN BY: EDS/RVE/KG
CHECKED BY: RHY
DATE: SEPTEMBER 2015
SCALE: AS SHOWN
W.O. NO.: 11-28

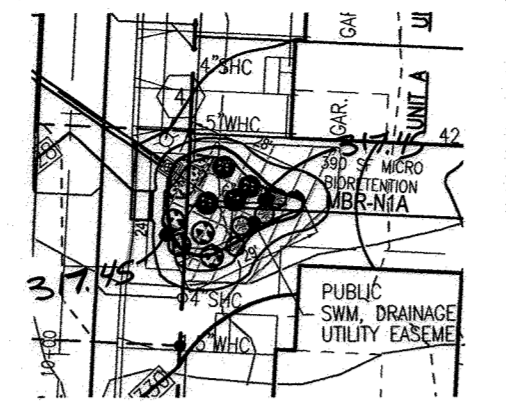
PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
EXPIRATION DATE: 09-29-2016

MBR #N1 - PLANTING DETAIL:



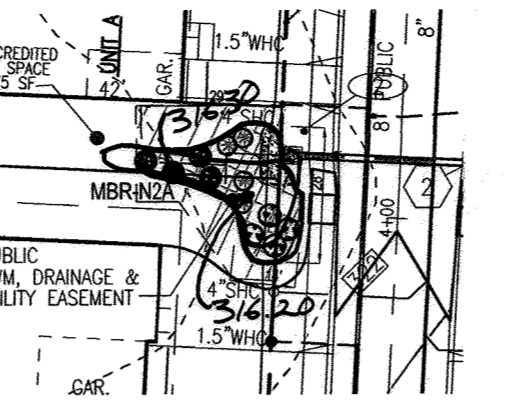
MICRO-BIORETENTION #N1 PLANTING SCHEDULE				
QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS	
4	VIBURNUM TRILOBUM AMERICAN HICHBUSH CRANBERRY	5 GALLON	CONT	
4	ILEX GLABRA INKBERRY	3 GALLON	CONT	
4	SPICEBUSH LINDERA BENZOIN	3 GALLON	CONT	
295 SF X 75% X .0229 STEMS PER SQUARE FOOT = 6 PLANTS REQUIRED 6 PROVIDED				

MBR #N1A - PLANTING DETAIL:



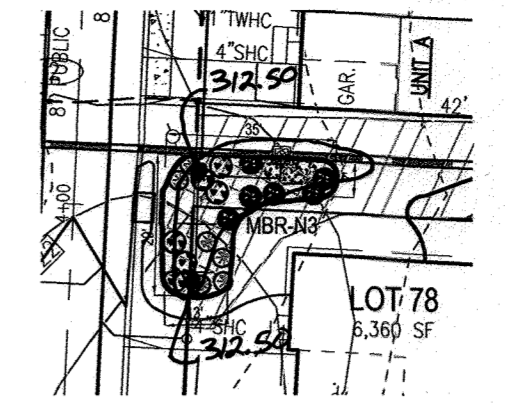
MICRO-BIORETENTION #N1A PLANTING SCHEDULE				
QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS	
4	VIBURNUM TRILOBUM AMERICAN HICHBUSH CRANBERRY	5 GALLON	CONT	
4	ILEX GLABRA INKBERRY	3 GALLON	CONT	
4	SPICEBUSH LINDERA BENZOIN	3 GALLON	CONT	
50	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.	
390 SF X 75% X .0229 STEMS PER SQUARE FOOT = 7 PLANTS REQUIRED 7 PROVIDED				

MBR #N2A - PLANTING DETAIL:



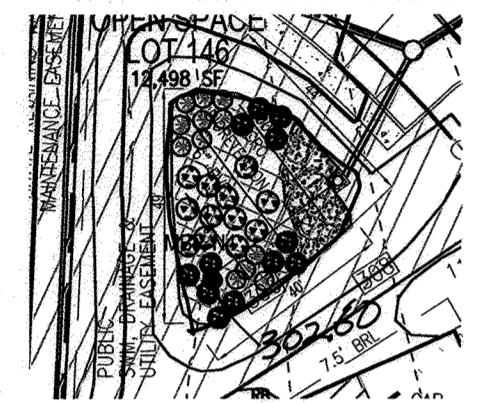
MICRO-BIORETENTION #N2A PLANTING SCHEDULE				
QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS	
4	VIBURNUM TRILOBUM AMERICAN HICHBUSH CRANBERRY	5 GALLON	CONT	
4	ILEX GLABRA INKBERRY	3 GALLON	CONT	
4	SPICEBUSH LINDERA BENZOIN	3 GALLON	CONT	
50	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.	
410 SF X 75% X .0229 STEMS PER SQUARE FOOT = 7 PLANTS REQUIRED 7 PROVIDED				

MBR #N3 - PLANTING DETAIL:



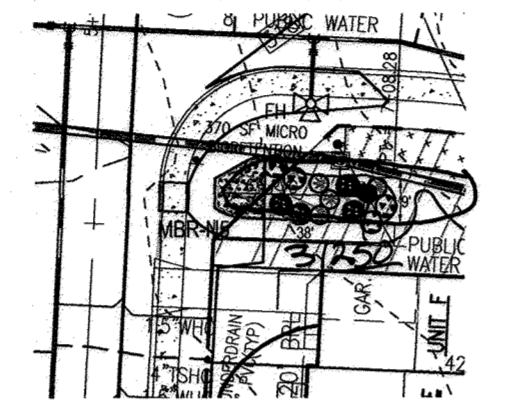
MICRO-BIORETENTION #N3 PLANTING SCHEDULE				
QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS	
6	VIBURNUM TRILOBUM AMERICAN HICHBUSH CRANBERRY	5 GALLON	CONT	
6	ILEX GLABRA INKBERRY	3 GALLON	CONT	
6	SPICEBUSH LINDERA BENZOIN	3 GALLON	CONT	
50	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.	
570 SF X 75% X .0229 STEMS PER SQUARE FOOT = 10 PLANTS REQUIRED 10 PROVIDED				

MBR #N4 - PLANTING DETAIL:



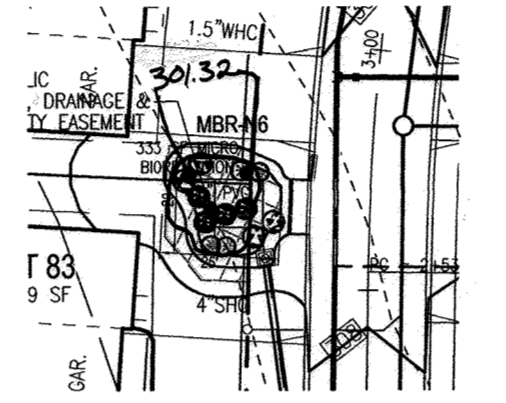
MICRO-BIORETENTION #N4 PLANTING SCHEDULE				
QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS	
12	VIBURNUM TRILOBUM AMERICAN HICHBUSH CRANBERRY	5 GALLON	CONT	
12	ILEX GLABRA INKBERRY	3 GALLON	CONT	
12	SPICEBUSH LINDERA BENZOIN	3 GALLON	CONT	
250	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.	
1300 SF X 75% X .0229 STEMS PER SQUARE FOOT = 23 PLANTS REQUIRED 23 PROVIDED				

MBR #N5 - PLANTING DETAIL:



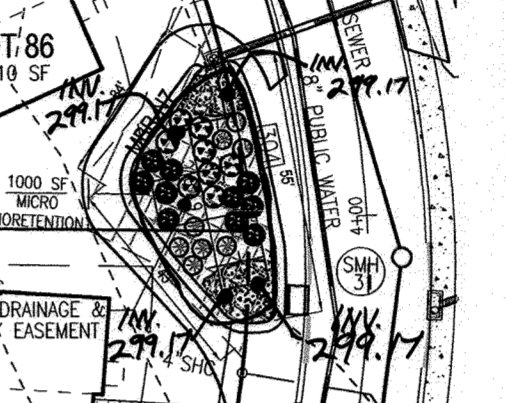
MICRO-BIORETENTION #N5 PLANTING SCHEDULE				
QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS	
4	VIBURNUM TRILOBUM AMERICAN HICHBUSH CRANBERRY	5 GALLON	CONT	
4	ILEX GLABRA INKBERRY	3 GALLON	CONT	
4	SPICEBUSH LINDERA BENZOIN	3 GALLON	CONT	
100	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.	
370 SF X 75% X .0229 STEMS PER SQUARE FOOT = 7 PLANTS REQUIRED 8 PROVIDED				

MBR #N6 - PLANTING DETAIL:



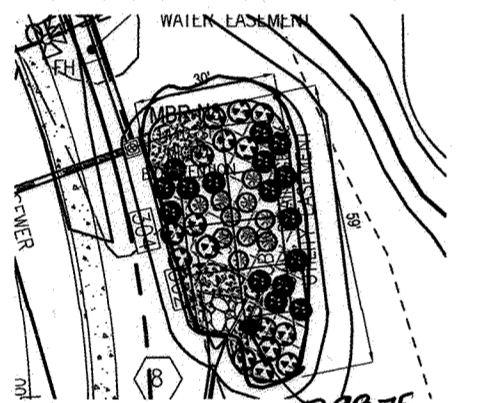
MICRO-BIORETENTION #N6 PLANTING SCHEDULE				
QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS	
4	VIBURNUM TRILOBUM AMERICAN HICHBUSH CRANBERRY	5 GALLON	CONT	
4	ILEX GLABRA INKBERRY	3 GALLON	CONT	
4	SPICEBUSH LINDERA BENZOIN	3 GALLON	CONT	
333 SF X 75% X .0229 STEMS PER SQUARE FOOT = 6 PLANTS REQUIRED 6 PROVIDED				

MBR #N7 - PLANTING DETAIL:



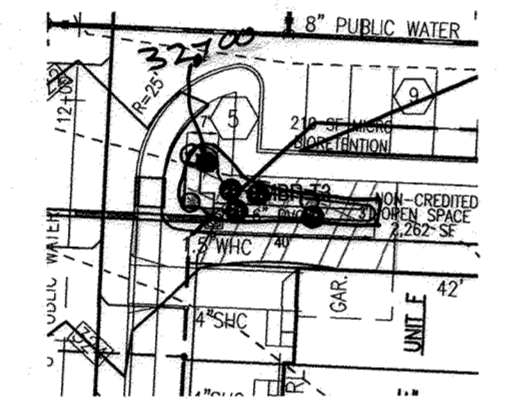
MICRO-BIORETENTION #N7 PLANTING SCHEDULE				
QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS	
8	VIBURNUM TRILOBUM AMERICAN HICHBUSH CRANBERRY	5 GALLON	CONT	
8	ILEX GLABRA INKBERRY	3 GALLON	CONT	
10	SPICEBUSH LINDERA BENZOIN	3 GALLON	CONT	
250	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.	
1000 SF X 75% X .0229 STEMS PER SQUARE FOOT = 18 PLANTS REQUIRED 18 PROVIDED				

MBR #N8 - PLANTING DETAIL:



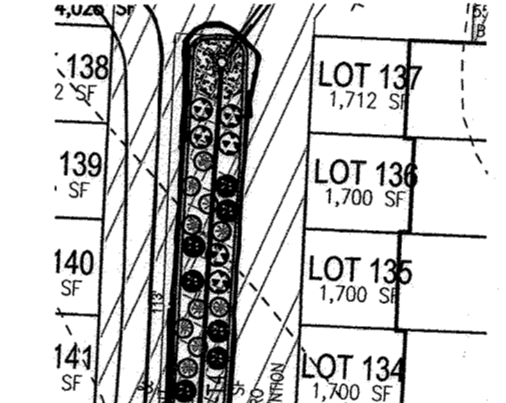
MICRO-BIORETENTION #N8 PLANTING SCHEDULE				
QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS	
16	VIBURNUM TRILOBUM AMERICAN HICHBUSH CRANBERRY	5 GALLON	CONT	
10	ILEX GLABRA INKBERRY	3 GALLON	CONT	
16	SPICEBUSH LINDERA BENZOIN	3 GALLON	CONT	
250	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.	
1490 SF X 75% X .0229 STEMS PER SQUARE FOOT = 26 PLANTS REQUIRED 26 PROVIDED				

MBR #T3 - PLANTING DETAIL:



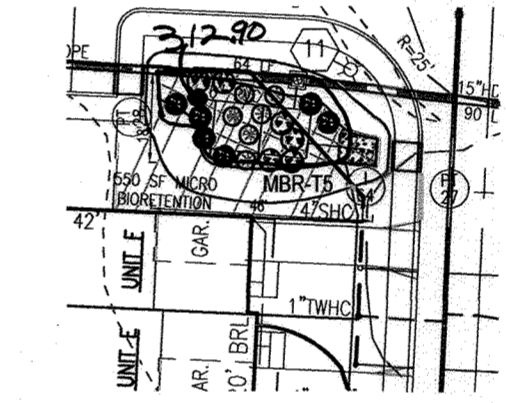
MICRO-BIORETENTION #T3 PLANTING SCHEDULE				
QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS	
2	VIBURNUM TRILOBUM AMERICAN HICHBUSH CRANBERRY	5 GALLON	CONT	
2	ILEX GLABRA INKBERRY	3 GALLON	CONT	
4	SPICEBUSH LINDERA BENZOIN	3 GALLON	CONT	
210 SF X 75% X .0229 STEMS PER SQUARE FOOT = 4 PLANTS REQUIRED 4 PROVIDED				

MBR #T4 - PLANTING DETAIL:



MICRO-BIORETENTION #T4 PLANTING SCHEDULE				
QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS	
10	VIBURNUM TRILOBUM AMERICAN HICHBUSH CRANBERRY	5 GALLON	CONT	
10	ILEX GLABRA INKBERRY	3 GALLON	CONT	
10	SPICEBUSH LINDERA BENZOIN	3 GALLON	CONT	
200	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.	
1100 SF X 75% X .0229 STEMS PER SQUARE FOOT = 19 PLANTS REQUIRED 19 PROVIDED				

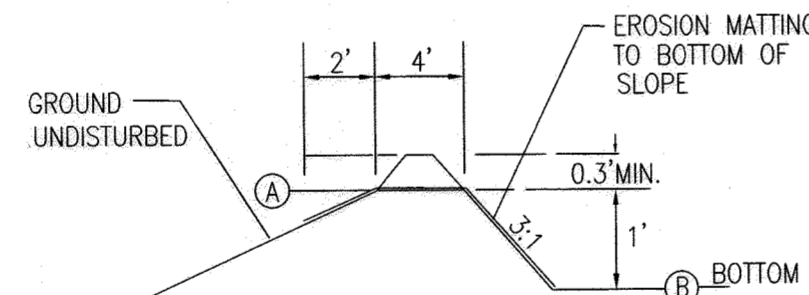
MBR #N7 - PLANTING DETAIL:



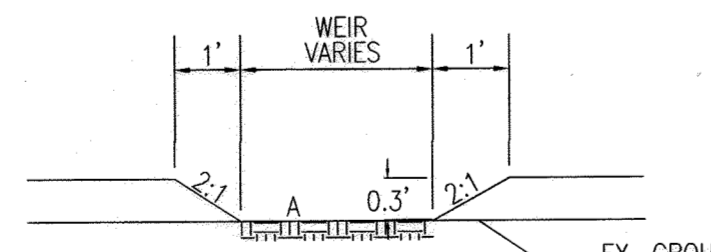
MICRO-BIORETENTION #N7 PLANTING SCHEDULE				
QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS	
6	VIBURNUM TRILOBUM AMERICAN HICHBUSH CRANBERRY	5 GALLON	CONT	
6	ILEX GLABRA INKBERRY	3 GALLON	CONT	
6	SPICEBUSH LINDERA BENZOIN	3 GALLON	CONT	
50	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.	
550 SF X 75% X .0229 STEMS PER SQUARE FOOT = 10 PLANTS REQUIRED 10 PROVIDED				

"MICRO-BIORETENTION" PLANTING SCHEDULE NOTES:

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT ANN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HOWARD COUNTY PLANTING SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF PLANT MATERIAL MAY VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLANT DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.
- MICROBIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF 1000 STEMS PER PLANTED ACRE (.0229 STEMS PER SQUARE FOOT). ABOVE PLANTING RATIOS ARE TO BE APPLIED TO THE AREAS PROVIDED IN THE ESSV SUMMARY.
- FILTER AREA SHALL BE 50% COVERED BY PLANTINGS AT FULL GROWTH.



TYPICAL SPILLWAY SECTION
NOT TO SCALE



TYPICAL SPILLWAY PROFILE
NOT TO SCALE

DETAILS OF WEIR OUTLET
MICRO-BIORETENTION

APPROVED: DEPARTMENT OF PUBLIC WORKS

Robert Selous 6-25-14
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad E. ... 7-1-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

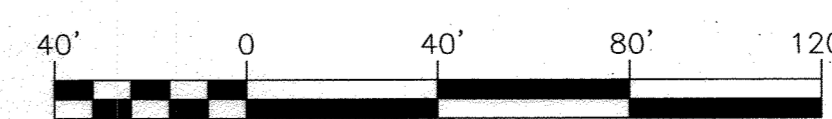
Robert Selous 7-31-14
CHIEF, DIVISION OF LAND DEVELOPMENT DATE



AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS.

Robert H. Vogel 16193 7-18-14
P.E. # DATE



OWNER
KATHY MIESSE, PERSONAL REPRESENTATIVE,
ESTATE OF ARTHUR P. KRAESKI
9222 OLD SCAGOSVILLE ROAD
LAUREL, MD 20723-1730
ATTN: MR. DONALD R. REUWER
443-367-0422

DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
5300 DORSEY HALL DRIVE, SITE 102
ELLICOTT CITY, MARYLAND 21042-7819
ATTN: MR. DONALD R. REUWER
443-367-0422

NO.	REVISION	DATE
2	REVISE SWIM BY REVISING INLETS I-60 AND I-62 AND MBR NB	11-3-20

FINAL ROAD CONSTRUCTION PLAN
MICRO-BIORETENTION - PLANTING DETAILS
HIGH RIDGE MEADOWS-SECTION 2
LOTS 69 - 143 AND OPEN SPACE LOTS 144 - 147
A RESUBDIVISION OF
DEER SPRINGS - SECTION ONE, NON-BUILDABLE BULK PARCEL "B"

6TH ELECTION DISTRICT
TAX MAP: 50 GRID: 1
DPZ REF'S: F-10-065, WP-10-067, ECP-12-047,
WP-13-060, SP 13-007, P 14-022

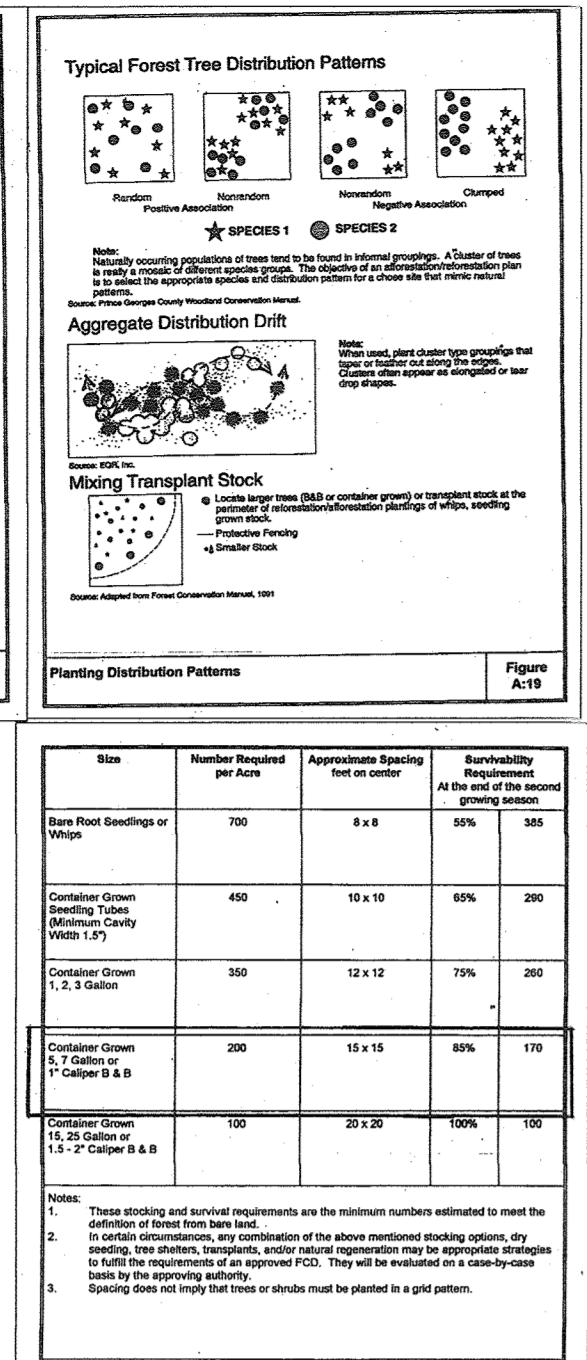
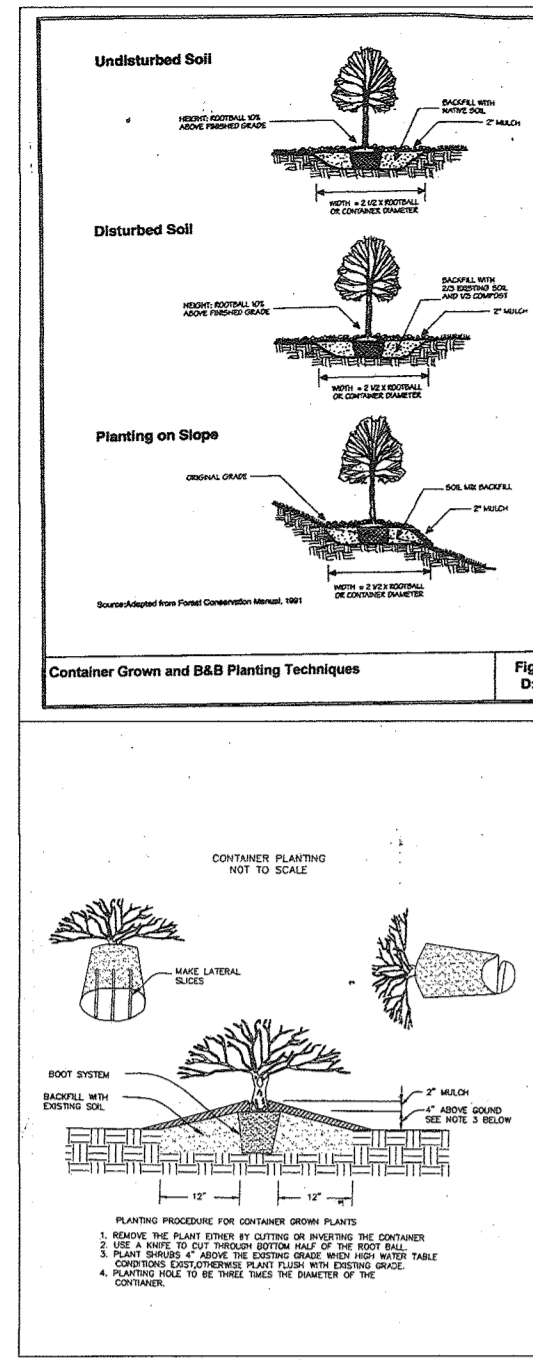
ZONED: R-3C
PARCELS: 363 & 342
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET TEL: 410.461.7666
ELLICOTT CITY, MD 21043 FAX: 410.461.8961

DESIGN BY: RHY / EDS.
DRAWN BY: RVE / EDS.
CHECKED BY: RHY
DATE: MAY 2014
SCALE: AS SHOWN
W.O. NO.: 11-28

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
EXPIRATION DATE: 09-27-2014

19 SHEET OF 20



HOWARD COUNTY FOREST CONSERVATION WORKSHEET

ZONED R-SC NET TRACT AREA:

A. TOTAL TRACT AREA (PROJECT TOTAL) = 36.94 AC.
 B. AREA WITHIN 100 YEAR FLOODPLAIN = 0.00 AC.
 C. AREA IN PRESERVATION PARCEL = 0.00 AC.
 D. NET TRACT AREA = 36.94 AC.

LAND USE CATEGORY

INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY. ZONED R-SC

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

E. AFFOREST THRESHOLD 15% X 36.94 = 5.54 AC
 F. CONSERVATION THRESHOLD 20% X 36.94 = 7.39 AC

EXISTING FOREST COVER:

G. EXISTING FOREST COVER = 10.74 AC (FSD REPORT)
 H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD = 5.20 AC
 I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD = 3.35 AC

BREAK EVEN POINT:

(2 X I) + F = BREAK EVEN POINT (0 AC)

J. FOREST RETENTION WITH NO MITIGATION = 8.06 AC
 K. CLEARING PERMITTED WITHOUT MITIGATION = 2.68 AC

PROPOSED FOREST CLEARING:

L. TOTAL AREA OF FOREST TO BE CLEARED = 4.89 AC
 M. TOTAL AREA OF FOREST TO BE RETAINED = 5.86 AC (IN FCE)

PLANTING REQUIREMENTS:

N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD (L X 2) = 0.84 AC
 P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD = 3.08 AC
 Q. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD (M-F) = 0.00 AC
 R. TOTAL REFORESTATION REQUIRED (N+P-Q) = 3.91 AC
 S. TOTAL AFFORESTATION REQUIRED = 0.00 AC
 T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED = 3.91 AC (1)

Klebasco Environmental, LLC
 8373 Piney Orchard Parkway, Suite 207
 Odenton, Maryland 21113
 Phone: (410) 672-5990
 FAX: (410) 672-5993

Plan prepared by:
Kenneth R. Wallis 4-5-14
 Kenneth R. Wallis
 Qualified Professional
 ColMar 06.19.06.01

FOREST CONSERVATION EASEMENT TABLE

EASEMENT	RETENTION CREDITED	RETENTION NON-CREDITED	REFORESTATION CREDITED	TOTAL
FCE#1	0.41 AC	0.05 AC	0.46 AC	0.46 AC
FCE#2	4.51 AC	0.02 AC	4.63 AC	4.63 AC
FCE#3	0.6252 AC	0.0458 AC	0.67 AC	0.67 AC
FCE#4	0.29 AC	0.01 AC	0.30 AC	0.30 AC
FCE#5A	-	1.93 AC	1.93 AC	1.93 AC
FCE#5B	-	0.15 AC	0.15 AC	0.15 AC
TOTALS	5.9352 AC	0.01 AC	2.20 AC	8.04 AC

NOTE: 3.91 AC - 2.20 AC = 1.71 AC OFFSITE OBLIGATION
 * EASEMENT AREA EXPANDED TO COVER SPECIMEN TREE #1
 OFFSITE REFORESTATION OBLIGATION PROVIDED AT BRIGHTON MILL PROPERTY
 FOREST BANK BY ECO-TONE INC. REFER TO SDP 11-056
 REFER TO SHEET 1, GENERAL NOTE 50 FOR A REVISION TO FOREST CONSERVATION EASEMENTS 2 AND 3

REFORESTATION PLANT SCHEDULE FOREST CONSERVATION EASEMENTS 2.20 ACRES

EASEMENT #1: 0.05 AC. (REFORESTATION) @ 200 TREES/AC. = 10 TREES

QTY.	BOTANICAL NAME	SIZE	SPACING
2	ACER RUBRUM RED MAPLE	1" CAL.	15' x 15'
2	PLATANUS OCCIDENTALIS AMERICAN SYCAMORE	1" CAL.	15' x 15'
2	CORNUS KOUSA KOUSA DOGWOOD	1" CAL.	15' x 15'
4	QUERCUS RUBRA RED OAK	1" CAL.	15' x 15'

EASEMENT #2: 0.02 AC. (REFORESTATION) @ 200 TREES/AC. = 4 TREES

QTY.	BOTANICAL NAME	SIZE	SPACING
1	ACER RUBRUM RED MAPLE	1" CAL.	15' x 15'
1	PLATANUS OCCIDENTALIS AMERICAN SYCAMORE	1" CAL.	15' x 15'
1	CORNUS KOUSA KOUSA DOGWOOD	1" CAL.	15' x 15'
1	QUERCUS RUBRA RED OAK	1" CAL.	15' x 15'

EASEMENT #3: 0.05 AC. (REFORESTATION) @ 200 TREES/AC. = 10 TREES

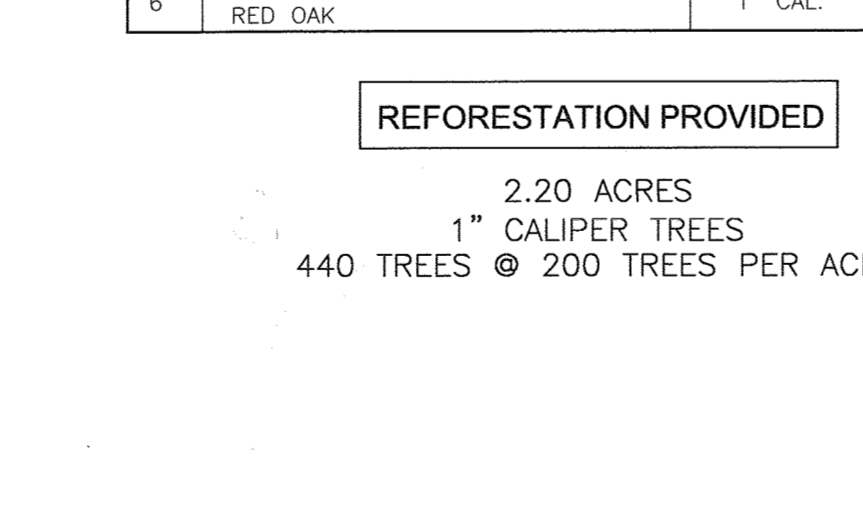
QTY.	BOTANICAL NAME	SIZE	SPACING
3	PLATANUS OCCIDENTALIS AMERICAN SYCAMORE	1" CAL.	15' x 15'
1	CIRCIUS CANADENSIS RED BUD	1" CAL.	15' x 15'
1	CORNUS KOUSA KOUSA DOGWOOD	1" CAL.	15' x 15'
5	QUERCUS RUBRA RED OAK	1" CAL.	15' x 15'

EASEMENT #5A: 1.93 AC. (REFORESTATION) @ 200 TREES/AC. = 386 TREES

QTY.	BOTANICAL NAME	SIZE	SPACING
77	ACER RUBRUM RED MAPLE	1" CAL.	15' x 15'
77	PLATANUS OCCIDENTALIS AMERICAN SYCAMORE	1" CAL.	15' x 15'
77	CIRCIUS CANADENSIS RED BUD	1" CAL.	15' x 15'
77	CORNUS KOUSA KOUSA DOGWOOD	1" CAL.	15' x 15'
77	QUERCUS RUBRA RED OAK	1" CAL.	15' x 15'

EASEMENT #5B: 0.15 AC. (REFORESTATION) @ 200 TREES/AC. = 30 TREES

QTY.	BOTANICAL NAME	SIZE	SPACING
6	ACER RUBRUM RED MAPLE	1" CAL.	15' x 15'
6	PLATANUS OCCIDENTALIS AMERICAN SYCAMORE	1" CAL.	15' x 15'
6	CIRCIUS CANADENSIS RED BUD	1" CAL.	15' x 15'
6	CORNUS KOUSA KOUSA DOGWOOD	1" CAL.	15' x 15'
6	QUERCUS RUBRA RED OAK	1" CAL.	15' x 15'



SCHEDULE A PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAYS AND PERIMETER PROPERTIES								TOTAL
	1-A	1-B	2	3	4	5	6	PRO-BA	
PERIMETER FRONTAGE DESIGNATION	180	611	848	786	873*	933*	330*	260*	
LINEAR FEET OF ROADWAY FRONTAGE PERIMETER	NO	YES	NO	NO	NO	NO	NO	NO	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	140	661	237	NO	NO	NO	NO	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	NO	NO	NO	
NUMBER OF PLANTS REQUIRED	180	471	187	140	836	140	140	160	87
SHADE TREES	140	140	140	140	140	140	140	140	140
EVERGREEN TREES	120	120	120	120	120	120	120	120	120
SHRUBS	-	-	-	-	-	-	-	-	-
NUMBER OF PLANTS PROVIDED	SEE NOTE	8	4	11	40	47	40	6	3
SHADE TREES	NOTE	-	-	-	24*	48*	-	-	72
EVERGREEN TREES	-	-	-	-	-	-	-	-	-
OTHER TREES (2:1 SUBSTITUTION)	-	-	-	-	-	-	-	-	-
SHRUBS (10:1 SUBSTITUTION)	-	-	-	-	-	-	-	-	-
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED	-	-	-	-	-	-	-	-	-

* SHADE TREES ARE TO BE SUBSTITUTED WITH SMALLER TREES AT 2:1 AS REQUIRED BY THE BGE PLANTING ZONES
 ** REMAINING PORTION (6-A - 218 & 8 - 839) PROVIDED ON SECTION TWO (P14-023)
 NOTE: 1. THE HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING DETERMINED THE STREET TREE REQUIREMENT WOULD FULFILL THE LANDSCAPE OBLIGATIONS IN THIS AREA SINCE ONLY A STREET IS PROPOSED TO BE CONSTRUCTED AT THIS LOCATION AND THERE IS LIMITED PLANTING AREA

THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$ 47,340 FOR THE PERIMETER LANDSCAPING (REQUIRED 87 SHADE TREES AND 128 EVERGREENS), 8 SHRUBS (TRASH PAIL LANDSCAPING) AND 6 SHADE TREES (SPECIMEN TREE REPLACEMENT) SHALL BE POSTED WITH THE DEVELOPERS AGREEMENT FOR THIS PLAN.

LANDSCAPE SCHEDULE NOTE:

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT ASB SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HRD PLANTING SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
- CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

PERIMETER LANDSCAPE SCHEDULE - REQUIRED PLANTING

SYM	KEY	QUAN.	BOTANICAL NAME	SIZE	CAT
SHADE					
AR	11	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	2 1/2"-3" CAL.	B & B
BG	6	NYSSA SYLVATICA BLACK GUM		2 1/2"-3" CAL.	B & B
GT	4	GLEDITSIA TRIACANTHOS INERMIS 'IMPERIAL'	'IMPERIAL' THORNLESS HONEY LOCUST	2 1/2"-3" CAL.	B & B
LL	11	TILIA CORDATA 'GREENSPIRE'	LITTLELEAF LINDEN	2 1/2"-3" CAL.	B & B
EVERGREENS					
PS	14	PINUS STROBUS EASTERN WHITE PINE		8' HT.	B & B
NS	27	ILEX 'NELLIE R. STEVENS'	NELLIE R. STEVENS HOLLY (BGE COMPLIANT)	5'-6" HT.	B & B
RC	34	JUNIPERUS VIRGINIANA EASTERN RED CEDAR (BGE COMPLIANT)		5'-6" HT.	B & B
AH	31	ILEX OPACA AMERICAN HOLLY (BGE COMPLIANT)		5'-6" HT.	B & B
PN	25	PINUS NIGRA AUSTRIAN PINE		8' HT.	B & B
SMALL					
LT	24	LAGERSTROEMIA TUSCARORA TUSCARORA CRAPPE MYRTLE (BGE COMPLIANT)		4'-6" HT. (MAX. HEIGHT 25')	B & B
CF	23	CORNUS FLORIDA 'RUBRA'	RED FLOWERING DOGWOOD	8'-10' HT.	B & B
MW	25	CARPINUS CAROLINIANA MUSCLEWOOD (BGE COMPLIANT)			B & B
SHRUBS					
NB	30	MYRTICA PENNSYLVANICA NORTHERN BAYBERRY		2'-2 1/2' HT.	B & B
TD	50	TAXUS MEDIA 'DENSIFORMIS'	DENSIFORMIS YEW	2 1/2"-3" HT.	B & B

STREET TREE CALCULATIONS

STREET NAME	LINEAR FEET	NO. REQUIRED	NO. PROVIDED
CLARKE SPRINGS RIDGE	616/40	16	16
TWIN FAWN TRAIL (1)	912/40	23	23
TWIN FAWN TRAIL (2)	1845/40	46	46
RUNNING DEER DRIVE	400/40	10	10
DEER SPRINGS PLACE	436/40	11	11
DEER RUN 87OLF	1740/40	44	44
DEER VILLAGE DRIVE 22OLF	440/40	11	11
PEACE SPRINGS RIDGE	200/40	5	5
TOTAL		166	166

SECTION TWO (F-14-023) WILL PROVIDE THE REMAINING STREET TREE REQUIREMENT (90) OF 256 TREES TOTAL

PUBLIC STREET TREES ARE PROVIDED FOR THIS PROJECT IN ACCORDANCE WITH SECTION 16.124(6)(1) OF THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL. FINANCIAL SURETY (\$ 49,800) SHALL BE POSTED AS PART OF THIS FINAL PLAN DEVELOPER'S AGREEMENT FOR THE REQUIRED 166 STREET TREES.

STREET TREE PLANTING SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	REM.
AC	72	ACER RUBRUM 'ARMSTRONG'	ARMSTRONG COLUMBAR RED MAPLE	2 1/2"-3" CAL. B & B
AS	11	ACER SACCHARUM GREEN MOUNTAIN SUGAR MAPLE		2 1/2"-3" CAL. B & B
QP	78	QUERCUS PHELLOS WILLOW OAK		2 1/2"-3" CAL. B & B
GT	5	GLEDITSIA TRIACANTHOS INERMIS 'IMPERIAL'	'IMPERIAL' THORNLESS HONEY LOCUST	2 1/2"-3" CAL. B & B

NOTE:
 - A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.

SPECIMEN TREE REPLACEMENT - PLANTING SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	REM.
BO	4	QUERCUS MACROCARPA BUR OAK	2 1/2"-3" CAL.	B & B
AB	2	ACER RUBRUM 'BOWHALL'	BOWHALL RED MAPLE	2 1/2"-3" CAL. B & B

NOTE:
 - REPLACEMENT TREES PER THE REMOVAL OF SPECIMEN TREE 15, 16 AND 19. PLANTED AS PART OF THIS F14-022 PLAN

REFORESTATION AREA MONITORING NOTES

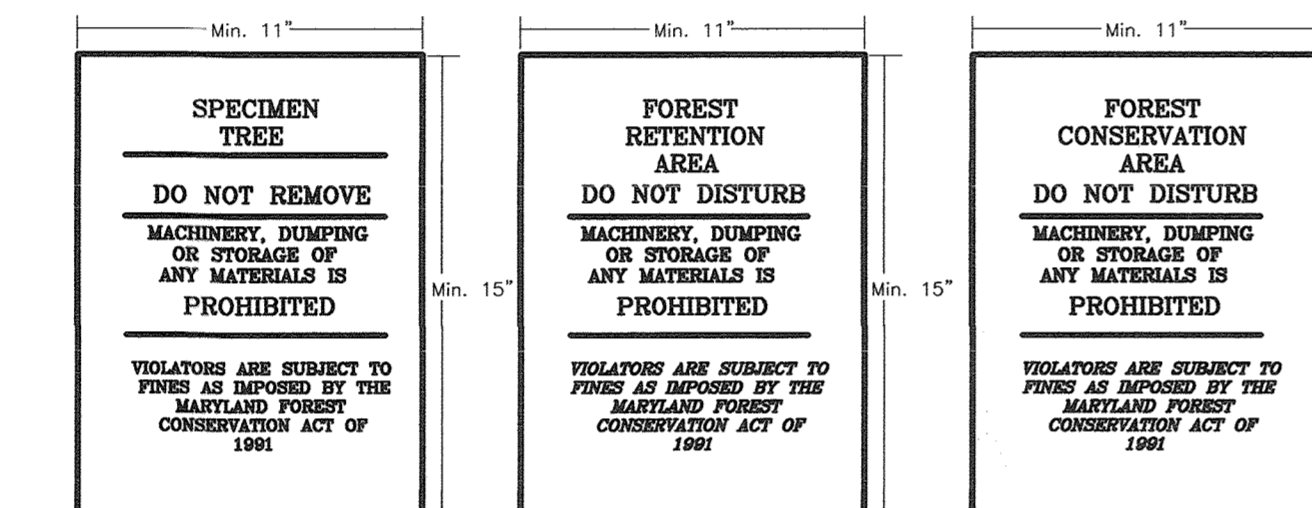
- MONTHLY VISITS DURING THE FIRST GROWING SEASON ARE TO ASSESS THE SUCCESS OF THE PLANTINGS AND TO DETERMINE IF SUPPLEMENTAL WATERING, PEST CONTROL OR OTHER ACTIONS ARE NECESSARY. EARLY SPRING VISITS WILL DOCUMENT WINTER KILL AND AUTUMN VISITS WILL DOCUMENT SUMMER KILL.
- THE MINIMUM SURVIVAL RATE SHALL BE 75% OF THE TOTAL NUMBER OF TREES PLANTED PER ACRE AT THE END OF THE TWO YEAR MAINTENANCE PERIOD. WILD TREE SEEDLINGS FROM NATURAL REGENERATION ON THE PLANTING SITE MAY BE COUNTED UP TO 50% TOWARD THE TOTAL SURVIVAL NUMBER IF THE ARE HEALTHY NATIVE SPECIES AT LEAST 12 INCHES TALL.
- SURVIVAL WILL BE DETERMINED BY A STRATIFIED RANDOM SAMPLING OF THE PLANTINGS. THE SPECIES COMPOSITION OF THE SAMPLE POPULATION SHOULD BE PROPORTIONATE TO THE AMOUNT OF EACH SPECIES IN THE ENTIRE PLANTING TO BE SAMPLED.
- EFFECTIVE MONITORING WILL ASSESS PLANT SURVIVABILITY DURING THE FIRST GROWING SEASON AND MAKE RECOMMENDATIONS FOR REINFORCEMENT PLANTINGS IF REQUIRED AT THAT TIME.

REFORESTATION PLANTING NOTES

- AFFORESTATION AREAS MAY BE PLANTED AS SOON AS REASONABLE TO DO SO. LATE WINTER-EARLY SPRING PLANTINGS ARE PREFERRED. EARLIEST PLANTING DATES WILL VARY FROM YEAR TO YEAR BUT PLANTING MAY GENERALLY BEGIN AS SOON AS THE GROUND IS NO LONGER FROZEN. ALTERNATE PLANTING DATES MAY BE CONSIDERED AS CONDITION WARRANTS.
- SOIL AMENDMENTS AND FERTILIZATION RECOMMENDATIONS WILL BE MADE BASED UPON THE RESULTS OF SOIL ANALYSIS FOR NITROGEN, PHOSPHORUS, POTASSIUM, ORGANIC MATTER CONTENT AND pH. IF REQUIRED, FERTILIZER WILL BE PROVIDED USING A SLOW RELEASE SOLUBLE 16-8-16 ANALYSIS DESIGNER TO LAST 5-8 YEARS CONTAINED IN POLYETHYLENE PERFORATED BAGS SUCH AS MANUFACTURED BY ADCO WORKS, P.O. BOX 310 HOLLIS, N.Y. 11423 OR APPROVED EQUAL.
- PLANT MATERIALS WILL BE PLANTED IN ACCORDANCE WITH THE PLANTING DETAILS AND PLANT SCHEDULE.
- PLANT MATERIAL SHALL BE NURSERY GROWN AND INSPECTED PRIOR TO PLANTING. PLANTS NOT CONFORMING TO THE AMERICAN STANDARD FOR NURSERY STOCK SPECIFICATIONS FOR SIZE, FORM, VIGOR OR ROOTS, OR DUE TO TRUNK WOUNDS, BREAKAGE, DESICCATION, INSECT OR DISEASE MUST BE REPLACED.
- PLANTING STOCK MUST BE PROTECTED FROM DESICCATION AT ALL TIMES PRIOR TO PLANTING. MATERIALS HELD FOR PLANTING SHALL BE MOISTENED AND PLACED IN COOL SHADY AREAS UNTIL READY FOR PLACEMENT.
- NEWLY PLANTED TREES MAY REQUIRE WATERING AT LEAST ONCE PER WEEK DURING THE FIRST GROWING SEASON DEPENDING ON RAINFALL IN ORDER TO GET ESTABLISHED. THE INITIAL PLANTING OPERATION SHOULD ALLOW FOR WATERING DURING INSTALLATION TO COMPLETELY SOAK BACKFILL MATERIAL.
- MULCH SHALL BE APPLIED IN ACCORDANCE WITH THE DIAGRAM PROVIDED AND SHALL CONSIST OF COMPOSTED, SHREDDED HARDWOOD BARK MULCH, FREE OF WOOD ALCOHOL.
- ALL NURSERY STOCK TO BE SPRAYED WITH DEER REPELLENT CONTAINING BITREX, SUCH AS REPELLEX. ALL NURSERY STOCK TO BE GROWN WITH DEER REPELLENT TABLETS IN GROWING MEDIUM, SUCH AS REPELLEX TABLETS.

CONSTRUCTION PERIOD PROTECTION AND MANAGEMENT NOTES FOR FOREST CONSERVATION

- PRE-CONSTRUCTION PHASE**
- FOR RETENTION AREAS, INSTALL BLAZE ORANGE FENCE AND RETENTION SIGNS BEFORE CONSTRUCTION BEGINS.
 - FENCING SHALL BE MAINTAINED IN GOOD CONDITION AND PROMPTLY REPAIRED OR RESTORED AS THE SITUATION WARRANTS.
 - A QUALIFIED TREE CARE EXPERT SHALL DETERMINE IF ROOT PRUNING IS REQUIRED ALONG THE LIMIT OF DISTURBANCE. ROOT PRUNE TREES AS REQUIRED. WATER ANY ROOT-PRUNED TREES IMMEDIATELY AFTER ROOT-PRUNING AND MONITOR FOR SIGNS OF STRESS DURING CONSTRUCTION.
- CONSTRUCTION PHASE**
- NO DISTURBANCE OR DUMPING IS ALLOWED INSIDE THE TREE RETENTION AREA. ALL EQUIPMENT SHALL BE OPERATED, STAGED OR STORED INSIDE THE TREE RETENTION AREA INCLUDING TREE CANOPIES.
 - IN THE EVENT OF A PROTECTED TREE BEING MONITORED FOR SIGNS OF STRESS AND WATERING IS NEEDED.
- POST-CONSTRUCTION PHASE**
- IN THE DIRECTION OF A QUALIFIED TREE CARE EXPERT, DAMAGES TO RETAINED TREES SHALL BE REPAIRED BY THE CONTRACTOR.
 - FENCE REMOVAL AND STABILIZATION SHALL BE AS PER THE SEDIMENT AND EROSION CONTROL PLAN.
 - POST CONSTRUCTION MANAGEMENT PROGRAM (FOREST CONSERVATION MANUAL)
 - INSPECTION
 - NOTICE OF TWO YEAR GROWING SEASON MANAGEMENT PROGRAM
 - MANAGEMENT OF RETENTION AREAS
 - MANAGEMENT OF REFORESTATION AREAS (WATERING SCHEDULE, FERTILIZING, CONTROL OF INVASIVES AND PROTECTION FROM PESTS, DISEASES AND MECHANICAL INJURY)
 - REPLACEMENT OF DEAD MATERIAL
 - EDUCATION OF NEW RESIDENTS
 - DO NOT REMOVE SIGNS



NOTE:

- BOTTOM OF SIGNS TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE.
- SIGNS TO BE PLACED APPROXIMATELY 50-100 FEET APART. CONDITIONS ON SITE AFFECTING VISIBILITY MAY WARRANT PLACING SIGNS CLOSER OR FARTHER APART. WHERE SIGNS ARE TO BE PLACED AT THE REAR OF PROPOSED LOTS, SPACING SHALL BE APPROX. 25'-30'+/-
- ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.
- ALL FOREST CONSERVATION SIGNAGE SHALL BE IN PLACE FOR PERPETUITY.
- SIGN LOCATION SYMBOL =

FOREST CONSERVATION AREA SIGNS

SEQUENCE OF CONSTRUCTION-FOREST CONSERVATION

- PRE-CONSTRUCTION MEETING / SITE WALK WITH CONTRACTORS AND OTHER RESPONSIBLE PARTIES TO DEFINE PROTECTION MEASURES TO BE UTILIZED AND TO POINT OUT PARTICULAR TREES TO BE SAVED.
- STAKE OUT LIMITS OF DISTURBANCE AND TREE PROTECTION FENCING LOCATIONS.
- INSTALL TREE PROTECTION FENCING; FENCING TO BE INSPECTED BY THE PROJECT ENGINEER OR THE PROJECT ECOLOGIST AND HOWARD COUNTY PLANNING AND ZONING.
- PROCEED WITH TREE REMOVAL AND SITE IMPROVEMENTS AS PER APPROVED SEDIMENT CONTROL PLAN - TO BE INSPECTED BY HOWARD COUNTY PLANNING AND ZONING.
- TEMPORARY TREE PROTECTION DEVICES SHALL BE REMOVED AFTER ALL FINISHED GRADING AND UTILITY CONSTRUCTION HAS OCCURRED AND WITH APPROVAL FROM THE HOWARD COUNTY OFFICE OF PLANNING AND ZONING.

FOREST RETENTION AREAS AND NOTES

- THE WETLANDS AND WETLAND BUFFERS ARE LOCATED ON AN OPEN SPACE LOT.
- NO RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED ON THIS SITE.
- FORESTED AREAS ADJACENT TO FLOODPLAINS AND STREAM BUFFERS ARE SUBSTANTIALLY RETAINED IN OPEN SPACE LOTS.
- CHANGES IN GRADING AND RUNOFF WITHIN CONSTRUCTION/INSTALLATION AREAS WILL NOT ADVERSELY AFFECT THE SOILS WITHIN THE FOREST RETENTION AREA. SEDIMENT CONTROL MEASURES WILL REDIRECT CONCENTRATED FLOW RUNOFF TO STORMWATER MANAGEMENT FACILITIES. RETAIN SEDIMENT WITHIN THE CONSTRUCTION SITE, AND/OR REDIRECT CLEAR WATER AWAY FROM CONSTRUCTION AREAS.
- THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

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 CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Signature of Developer: *R. Shitnikov* Date: *4/1/14*

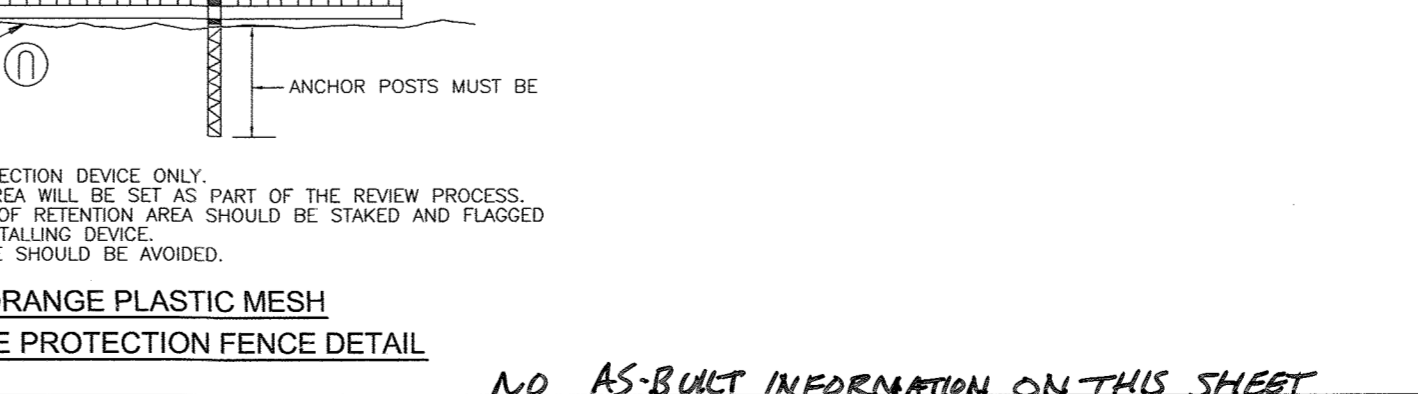
APPROVED: DEPARTMENT OF PUBLIC WORKS

Signature: *W. J. ...* Date: *5-6-14*

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Signature: *...* Date: *5-9-14*

Signature: *...* Date: *5-12-14*



BLAZE ORANGE PLASTIC MESH TYPICAL TREE PROTECTION FENCE DETAIL

NO AS-BUILT INFORMATION ON THIS SHEET

AS-BUILT CERTIFICATION

I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THE "AS-BUILT" DRAWING AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS.

Signature: *...* P.E. NAME
 Signature: *...* P.E. # 16193 DATE 7-18-14

OWNER
 KATHY MIESSE, PERSONAL REPRESENTATIVE,
 ESTATE OF ARTHUR P. KRAESKI
 9222 OLD SCAGSVILLE ROAD
 LAUREL, MD 20723-1730
 ATTN: MR. DONALD R. REUWER
 443-367-0422

DEVELOPER
 LAND DESIGN & DEVELOPMENT, INC.
 3300 DORSEY HALL DRIVE, STE 1022
 ELLICOTT CITY, MARYLAND 21042-7819
 ATTN: MR. DONALD R. REUWER
 443-367-0422

GENERAL NOTES

1. STEEP SLOPES ARE AS SHOWN HEREON
2. IN ACCORDANCE WITH THE WILDLIFE & HERITAGE SERVICE, THERE ARE NO STATE OR FEDERAL RECORDS FOR RARE, THREATENED OR ENDANGERED SPECIES WITHIN THE BOUNDARIES OF THE PROJECT SITE AS DELINEATED.
3. THIS PROJECT IS SUBJECT TO WP-13-080. ON MARCH 27, 2013, THE PLANNING DIRECTOR APPROVED THE REQUEST, TO WAIVE SECTION 16.118(A) FOR DISTURBANCE TO STREAM, STREAM BUFFERS, WETLANDS AND WETLAND BUFFERS ON THE NORTHEAST PORTION OF THE PROJECT FOR A STORM DRAINAGE PIPE, AND SECTION 16.1205(A)(2) TO REMOVE UP TO 3 SPECIMEN TREES THE PLANNING DIRECTOR DENIED YOUR REQUEST TO WAIVE SECTION 16.1205(B)(V)(C) TO ALLOW PIPESTEM LOTS ON MULTIPLE SIDES OF A FRONTAGE LOT IN THE SAME SUBDIVISION.

- APPROVAL OF THE WAIVER TO SECTION 16.118(A) AND SECTION 16.1205(A)(2) IS SUBJECT TO THE FOLLOWING CONDITIONS:
 1. ENVIRONMENTAL DISTURBANCE MUST BE LIMITED TO THE AREAS INDICATED ON THE WAIVER PETITION PLAN EXHIBIT, ANY EXPANSION OF THE DISTURBED AREA MAY REQUIRE ADDITIONAL WAIVER APPROVAL IF DETERMINED SIGNIFICANT.
 2. PRIOR TO INITIATING ANY CONSTRUCTION ACTIVITIES THAT RESULT IN THE APPROVED ENVIRONMENTAL DISTURBANCES, ALL APPROVALS FROM MDE, APPLICABLE SRC AGENCIES AND PERMISSIONS FROM ADJOINING/AFFECTED PROPERTY OWNERS MUST BE OBTAINED AND DOCUMENTED. COPIES OF DOCUMENTATION MUST BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING PRIOR TO THE FINAL PLAN APPROVAL (OR PRIOR TO SITE DEVELOPMENT PLAN APPROVAL, AT THE DISCRETION OF DPZ).
 3. PRIOR TO REMOVAL OF THE TWO OAK SPECIMEN TREES, PLEASE REVIEW THE PROPOSED DESIGN ALTERNATIVES RECOMMENDED BY THE DIVISION OF LAND DEVELOPMENT IN THE REVISED SUBMISSION COMMENTS DATED MARCH 28, 2013. INCORPORATE DESIGN RECOMMENDATIONS OR PROVIDE AMPLE JUSTIFICATION TO THE DEPARTMENT OF PLANNING AND ZONING IF NOT FEASIBLE. (LOSS OF LOT YIELD ALONE WILL NOT BE CONSIDERED AMPLE JUSTIFICATION).
 4. REMOVAL OF EACH SPECIMEN TREE WILL REQUIRE MITIGATION WITH THE PLANTING OF TWO NEW NATIVE SHADE TREES (FOR UP TO 6 NEW SHADE TREES) WITH A MINIMUM 7-1/2" CALIPER TRUNK - SURETY OF THESE SHADE TREES SHALL BE INCORPORATED INTO THE LANDSCAPE SURETY WITH THE FINAL ROAD CONSTRUCTION DRAWINGS.
 5. PRIOR TO REMOVING THE SILVER MAPLE SPECIMEN TREE ON THE NORTH PARCEL, THE DEVELOPER SHALL FIRST ATTEMPT DESIGN ALTERNATIVES THAT WOULD ALLOW PRESERVATION OF THE TREE. IF REMOVED, THE TWO TREES PLANTED FOR MITIGATION SHOULD BE PLACED WITHIN THE PROXIMITY OF THE REMOVED TREE OR AT LEAST ON THE PORTION OF THE PROPERTY BOUNDARY SHARED BY PARCEL 396.

DENIAL OF THE WAIVER TO SECTION 16.1205(B)(V)(C) WAS BASED ON THE FOLLOWING REASONS:

1. EXTRAORDINARY CIRCUMSTANCES OR DESIGN CONSTRAINTS RESULTING IN SIGNIFICANT HARDSHIP WERE NOT INDICATED IN THE WAIVER JUSTIFICATION.
2. DESIGN ALTERNATIVES EXIST THAT WOULD PREVENT THE LOT BEING SURROUNDED ON FOUR SIDES BY PAVED DRIVE LANES. PLEASE SEE OLD COMMENTS DATED MARCH 28, 2013.
3. THE DESIGN PROPOSAL APPEARS GEARED TO ENSURING AN OPTIMAL LOT YIELD. THE DEVELOPER HAS THE OPTION OF INCORPORATING ADDITIONAL TOWNHOME LOTS TO OBTAIN DESIRED LOT YIELD IN THE PROPOSED SUBDIVISION DESIGN.
4. THE WAIVER, IF APPROVED WOULD "MULTIPLY" THE INTENT AND PURPOSE OF THE REGULATIONS, WHICH IS TO ACHIEVE A WELL THOUGHT-OUT DESIGN THAT PROVIDES ORDERLY SUBDIVISION LAYOUT AND AVOIDS ORIENTATION AND PRIVACY PROBLEMS FOR NEW HOUSES ON PIPESTEM AND FRONTAGE LOTS. AS PROPOSED, LOT 74 WOULD HAVE LIMITED USABILITY AND PRIVACY. OLD RECOMMENDS A SUBDIVISION REDESIGN TO REMOVE AND RELOCATE LOTS 72, 73, AND 74 ELSEWHERE IN THE DEVELOPMENT. IN LAYING OUT THE SUBDIVISION DESIGN, THE DEVELOPER SHOULD GIVE MORE CONSIDERATION TO THE ARRANGEMENT OF LOTS SO THAT PROPOSED HOUSES WILL NOT LOOK INTO NEIGHBORING REAR YARDS OF THE FRONT LOTS. EACH NEW LOT IN THE SUBDIVISION SHOULD INCORPORATE GOOD LOT DESIGN AND PLANNED AS TO THE SIZE, SHAPE AND ORIENTATION TO AVOID UNDESIRABLE VIEWS FROM ADJOINING LOTS. WAIVERS SHALL NOT BE USED TO ACHIEVE MAXIMUM LOT YIELD AT THE EXPENSE OF GOOD SUBDIVISION DESIGN.

ON JUNE 3, 2013, A REQUEST FOR RECONSIDERATION WAS SUBMITTED WHICH AMENDED THE REQUESTED SPECIMEN TREES TO BE REMOVED. TO SPECIMEN TREES # 3 AND #4 PREVIOUSLY APPROVED TO BE REMOVED AND IN CONJUNCTION WITH THE REVISED LAYOUT, ARE NOW PROPOSED TO REMAIN. AS A RESULT OF THE REVISED LAYOUT, SPECIMEN TREE # 15 AND 16 (35' / 37' TWIN TRUNK SOUTHERN RED OAK IN FAIR CONDITION) IS PROPOSED TO BE REMOVED.

KLEASKI ENVIRONMENTAL, LLC
 6575 TOWNLEY ORCHARD PARKWAY, SUITE 207
 BETHESDA, MD 20813
 PHONE: 410-672-5990
 FAX: 410-672-5990
 DATE: 4-3-14
KENNETH R. WALLIS
 QUALIFIED PROFESSIONAL
 COMMAR 08.19.06.01

Specimen Tree List for the 9222 Old Scaggsville Road

Number	Common Name	Species Name	DBH (inches)	Condition
1	white oak	Quercus alba	31	Fair
2	white oak	Quercus alba	38	Fair
3	white oak	Quercus alba	38	Fair
4	white oak	Quercus alba	38	Good
5	black oak	Quercus velutina	31	Good
6	yellow-poplar	Liriodendron tulipifera	38	Good
7	yellow-poplar	Liriodendron tulipifera	39	Good
8	yellow-poplar	Liriodendron tulipifera	41	Good
9	yellow-poplar	Liriodendron tulipifera	47	Fair
10	yellow-poplar	Liriodendron tulipifera	30	Fair
11	southern red oak	Quercus falcata	31	Fair
12	yellow-poplar	Liriodendron tulipifera	33	Fair
13	white oak	Quercus alba	35	Fair
14	yellow-poplar	Liriodendron tulipifera	30	Good
15	southern red oak	Quercus falcata	35	Fair
16	southern red oak	Quercus falcata	37	Fair
17	yellow-poplar	Liriodendron tulipifera	35	Good
18	yellow-poplar	Liriodendron tulipifera	32	Fair
19	silver maple	Acer saccharinum	32	Good
20	chestnut oak	Quercus montana	33	Fair
21	yellow-poplar	Liriodendron tulipifera	54	Good
22	chestnut oak	Quercus montana	32	Fair
23	white oak	Quercus alba	31	Good
24	black oak	Quercus velutina	35	Good
25	black oak	Quercus velutina	30	Poor-Fair
26	white oak	Quercus alba	31	Good

- * SPECIMEN TREE #15 / 16 REMOVAL FOR PROPOSED LOT
- * SPECIMEN TREE #19 REMOVAL BASED UPON REQUIRED PROPOSED GRADES / CUT SLOPE

APPROVED: DEPARTMENT OF PUBLIC WORKS
W. Paul 5-6-14
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Chad Clark 5-9-14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
K. Stenwood 5-12-14
 CHIEF, DIVISION OF LAND DEVELOPMENT

FOREST CONSERVATION AREA # 5B
 0.15 ACRES
 REFORESTATION 0.15 AC

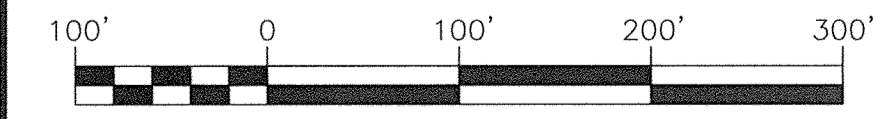
FOREST CONSERVATION AREA # 5A
 1.93 ACRES
 REFORESTATION 1.93 AC

FOREST CONSERVATION AREA # 4
 0.29 ACRES
 RETENTION: 0.29 AC

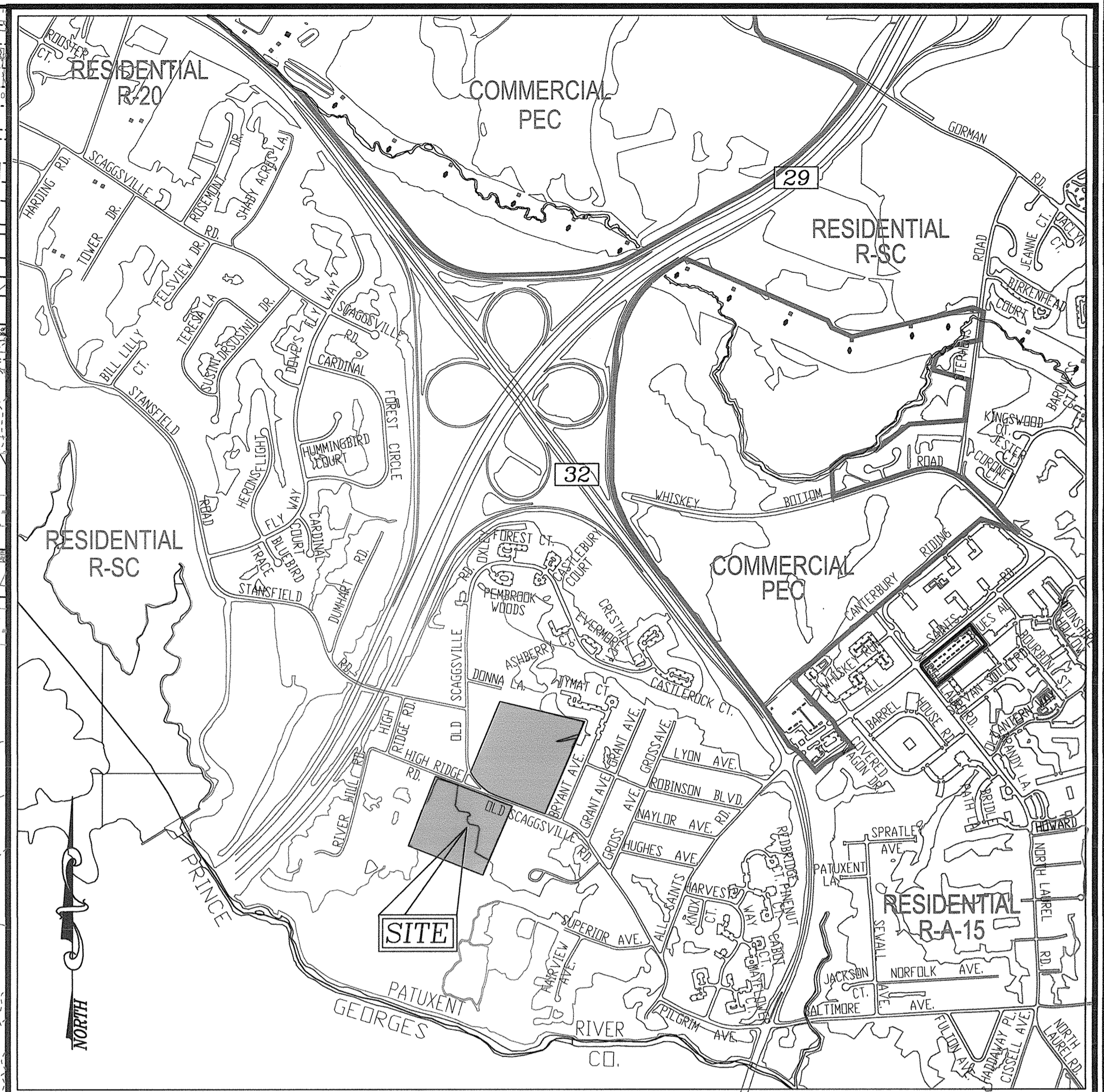
FOREST CONSERVATION AREA # 3
 0.68 ACRES
 RETENTION: 0.63 AC
 REFORESTATION 0.05 AC

FOREST CONSERVATION AREA # 2
 4.55 ACRES
 RETENTION: 4.53 AC
 REFORESTATION 0.02 AC

FOREST CONSERVATION AREA # 1
 0.46 ACRES
 RETENTION: 0.41 AC
 REFORESTATION 0.05 AC



PLAN SCALE
 1" = 100'



GENERAL NOTES

WATERSHED NAME: PATUXENT RIVER UPPER
 WATERSHED NUMBER: 2131104

A. GROSS SITE AREA: 36.94 AC.
 NET SITE AREA: 36.60 AC.
 B. AREA OF 100-YEAR FLOODPLAIN: 0.00 AC.
 C. AREA OF WETLANDS AND BUFFERS(ONSITE): 1.12 AC.*
 AREA OF STREAM AND BUFFERS(ONSITE): 0.68 AC.*
 D. AREA OF > 25% STEEP SLOPES: 0.34 AC.
 E. EXISTING FOREST: 10.74 AC.
 F. ZONED: R-SC
 G. EXISTING USE: FARMLAND
 H. PROPOSED USE: RESIDENTIAL

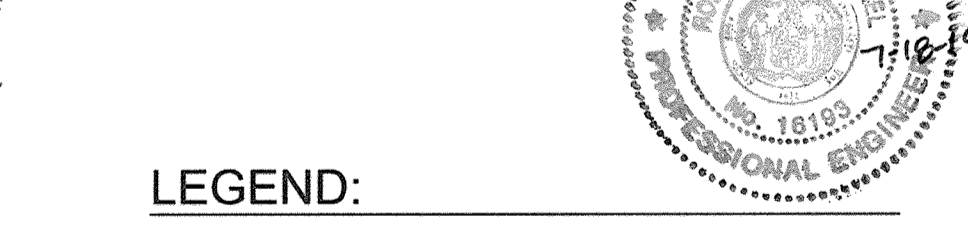
* WETLAND & STREAM BUFFERS OVERLAP, TOTAL ON-SITE ENVIRONMENTAL AREAS= 1.61 AC.

VICINITY MAP
 SCALE: 1"=1,000'
 ADC MAP COORDINATE: 5189 B1/5169 B2
 5169 C1/5169 C2

BENCHMARKS
 HOWARD COUNTY BENCHMARK 47H2 (CONC. MON.)
 N 529706.4221 E 1355445.3364 ELEV. 256.066
 LOCATION: ALL SAINTS ROAD, 240' +/- SOUTH OF NORTH LAUREL ROAD 2.89 FEET FROM STORM DRAIN INLET; 1' EAST OF CURB, 0.6 BELOW SURFACE

AS-BUILT CERTIFICATION
 HOWARD COUNTY BENCHMARK 47C6 (CONC. MON.)
 N 529706.4221 E 1354223.5536 ELEV. 226.272
 LOCATION: MEDIUM ISLAND 29 FEET WEST OF ALL SAINTS RD RT 216 INTERSECTION; 1.4 FEET WEST OF SOUTHWEST INLET CORNER

DATE: 10/13/14
 NAME: P.E. #



LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING TREELINE
- EXISTING TREES
- PROPOSED SIDEWALK
- PROPOSED TREELINE
- MICRO BIO RETENTION FACILITY
- EXISTING SPECIMEN TREE
- EXISTING SPECIMEN TREE TO BE REMOVED
- FOREST CONSERVATION EASEMENT
- TYP. FOREST CONSERVATION EASEMENT SIGN

OWNER
 KATHY MIESSE, PERSONAL REPRESENTATIVE,
 ESTATE OF ARTHUR P. KRASKI
 9222 OLD SCAGGSVILLE ROAD
 LAUREL, MD 20723-1730
 ATTN: MR. DONALD R. REUWER
 443-367-0422

DEVELOPER
 LAND DESIGN & DEVELOPMENT, INC.
 5300 DORSEY HALL DRIVE, STE 102
 ELLICOTT CITY, MARYLAND 21117
 ATTN: MR. DONALD R. REUWER
 443-367-0422

NO.	REVISION	DATE
2	REVISE SUBDIVISION NAME	7/18/14

FINAL ROAD CONSTRUCTION PLAN
FOREST CONSERVATION PLAN
HIGH RIDGE MEADOWS - SECTION 1
 LOTS 1 - 54, OPEN SPACE LOTS 55 - 68
 AND NON-BUILDABLE BULK PARCEL "B"
 SUBDIVISION OF TAX MAP 50 PARCEL 542
 AND A RESUBDIVISION OF TAX MAP 50 PARCEL 542
 KRAESKI PROPERTY NON-BUILDABLE BULK PARCEL "A" (PLAT 21191)

6TH ELECTION DISTRICT - TAX MAP 50 GRID: 1
 10-05, WP-10-087, ECP-12-047,
 WP-13-080, SP 13-007

ZONED: R-SC
 PARCELS: 383 & 542
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL
ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2014

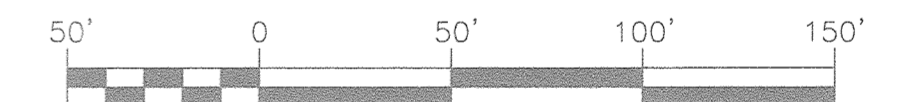
DESIGN BY: EDS/RVS
 DRAWN BY: EDS/RVS
 CHECKED BY: RHV
 DATE: MARCH 2014
 SCALE: AS SHOWN
 W.O. NO.: 11-28

21 SHEET OF 32

AS-BUILT-DECEMBER 2018

LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING TREETRINE
- PROPOSED STORMDRAIN
- PROPOSED STORMDRAIN INLET
- PROPOSED TREETRINE
- WATER ZONE DIVIDE
- EX MODERATE SLOPES
- EX STEEP SLOPES
- EXISTING SPECIMEN TREE
- PROPOSED FROST RETENTION AREA
- NON-STRUCTURAL ROOFTOP DISCONNECTS
- MICRO-SCALE PRACTICE BIO-SWALE
- NON-STRUCTURAL PROP. PERMEABLE ROOFTOP TO PERMEABLE SURFACE SUBBASE
- MICRO-SCALE PRACTICE MICRO BIURETENTION / BIURETENTION
- ROOFTOP DISCONNECTS TO DRYWELL
- 200 GAL RAIN BARREL
- ROOFTOP DISCONNECTS FLOW PATH
- ROOFTOP DISCONNECTS RAIN BARREL
- PROPOSED DRYWELL
- DRAINAGE DIVIDE
- DRAINAGE AREA DESIGNATION
- DA-3
- 10' TREE MAINTENANCE EASEMENT
- PUBLIC SIMM DRAINAGE & UTILITY EASEMENT



OWNER
 KATHY MIESSE, PERSONAL REPRESENTATIVE,
 ESTATE OF ARTHUR P. KRAESKI
 9222 OLD SCAGGSVILLE ROAD
 LAUREL, MD 20723-1730
 ATTN: MR. DONALD R. REUWER
 443-367-0422

DEVELOPER
 LAND DESIGN & DEVELOPMENT, INC.
 5300 DORSET HALL DRIVE, STE 109
 ELLICOTT CITY, MARYLAND 21042-7819
 ATTN: MR. DONALD R. REUWER
 443-367-0422

NO.	REVISION	DATE
10	REVISE PLANS TO SHOW AS-BUILT CONDITION FOR MBR-14	12/3/18
9	REVISE PLANS TO RELOCATE TRASH PAD	10/2018
5	ADD 10' TREE MAINTENANCE EASEMENT, SHIFT MBR FACILITIES.	9 / 2015
4	MODIFY PAVEMENT SECTION.	3 / 2015
3	REVISE STORM DRAIN LAYOUT ALONG OLD SCAGGSVILLE ROAD	1 / 2015
2	REVISE SUBDIVISION NAME	7/18/14

REVISED FINAL ROAD CONSTRUCTION PLAN
 ESDv - DRAINAGE AREA MAP - SOUTH AREA
HIGH RIDGE MEADOWS - SEC. 1
 LOTS 1 - 54, OPEN SPACE LOTS 55 - 69
 AND NON-BUILDABLE BULK PARCEL "B"
 A SUBDIVISION OF TAX MAP 50 - PARCEL 363
 AND A RESUBDIVISION OF TAX MAP 50 - PARCEL 542
 KRAESKI PROPERTY NON-BUILDABLE BULK PARCEL "A" (PLAT 21191)
 6TH ELECTION DISTRICT - TAX MAP: 50, GRD: 1, PARCELS: 363 & 542
 DPZ REF'S: F-10-085, WP-10-087, ECP-12-047, WP-13-080, SP 13-007
 ZONED: R-C
 HOWARD COUNTY, MARYLAND

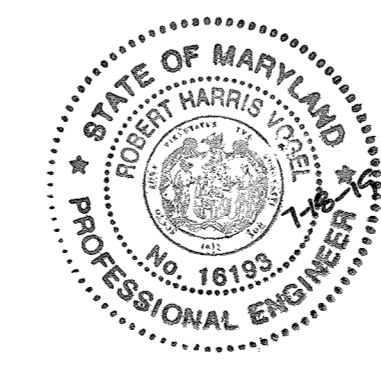
ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET, ELLICOTT CITY, MD 21043
 TEL: 410-461-7666
 FAX: 410-461-8996

DESIGN BY: EDS
 DRAWN BY: EDS/RVE/KG
 CHECKED BY: RHY
 DATE: SEPTEMBER 2015
 SCALE: AS SHOWN
 W.O. NO.: 11-28

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18193
 EXPIRATION DATE: 09-27-2016

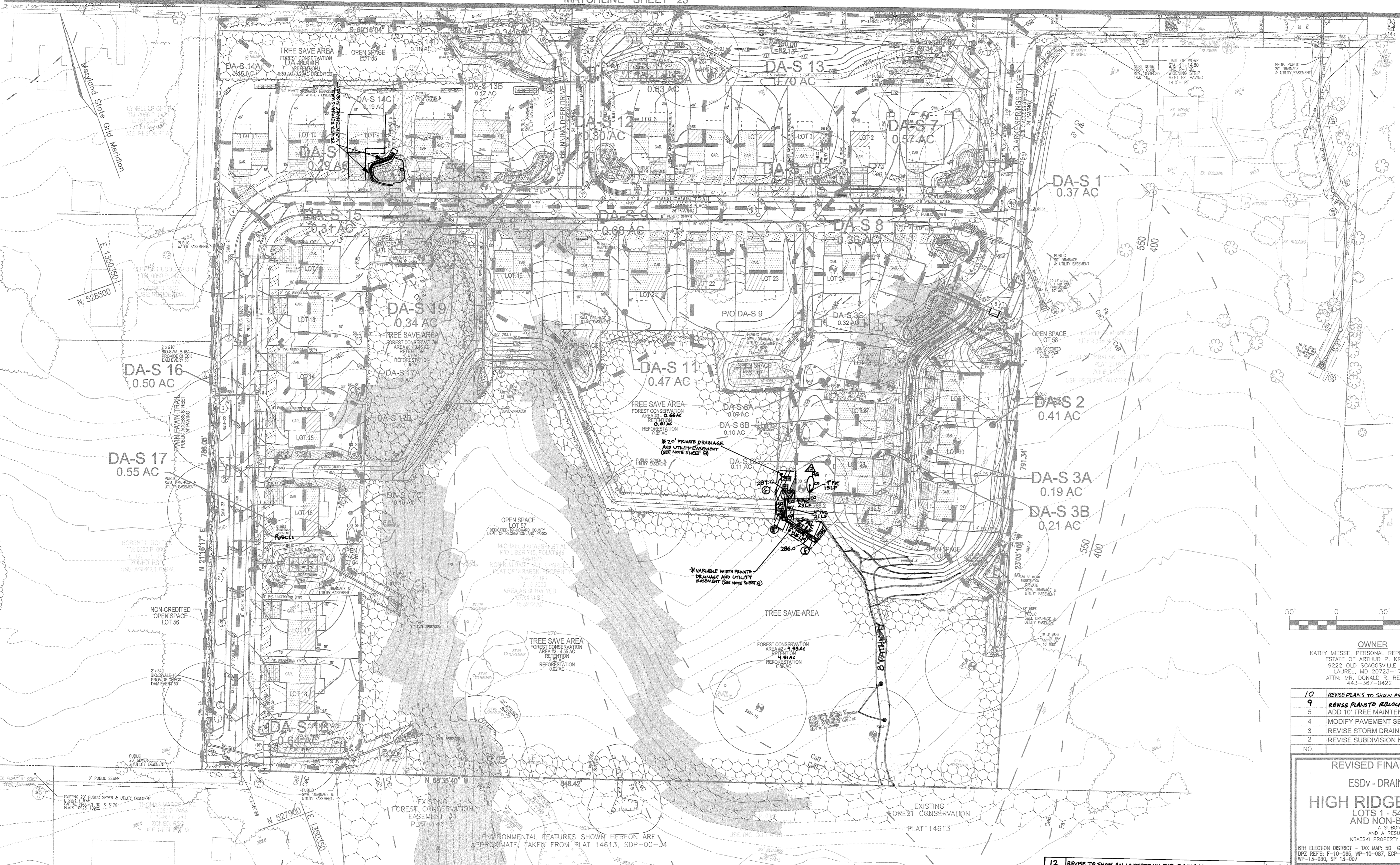
22 SHEET OF 32

NO.	REVISION	DATE
12	REVISE TO SHOW AN UNDERDRAIN FOR RAINGARDEN ON LOT 28	11-25-19
11	REVISE TO SHOW CULVERT AND REVISE FOREST CONSERVATION	8-3-19



AS-BUILT CERTIFICATION
 I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLY WITH THE APPROVED PLANS AND SPECIFICATIONS.
 R. H. VOGEL
 P.E. NAME: R. H. VOGEL P.E.#: 18193 DATE: 7-18-19

NO AS-BUILT INFORMATION ON THIS SHEET



NOTE:
 ESDv EQUAL TO PE = 1.6" IS PROVIDED WITHIN EACH SUB DRAINAGE AREA

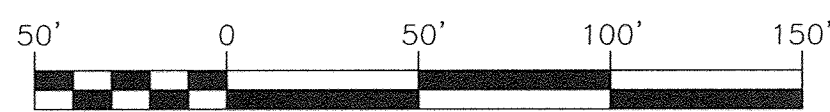
NOTE:
 THE MAINTENANCE OF THE TIERED WALL (NBR-14) LOCATED ON LOT 9 IS THE RESPONSIBILITY OF THE HOMEOWNERS ASSOCIATION (H.O.A.)

APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] 4/1/2016
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 3-28-16
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 5-5-16
 CHIEF, DIVISION OF LAND DEVELOPMENT

ESDv - DRAINAGE AREA MAP
 SCALE: 1"=50'

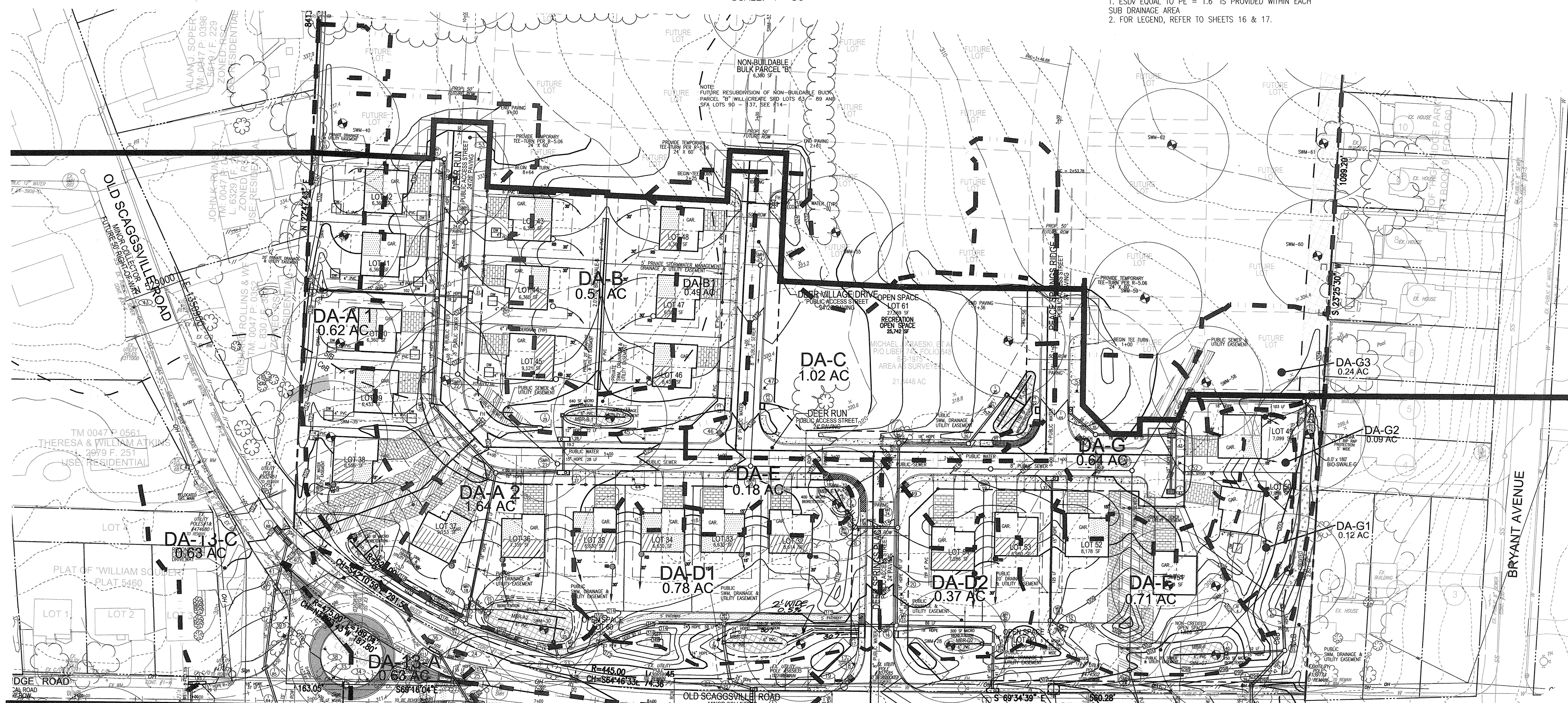


ESDv - DRAINAGE AREA MAP
SCALE: 1"=50'

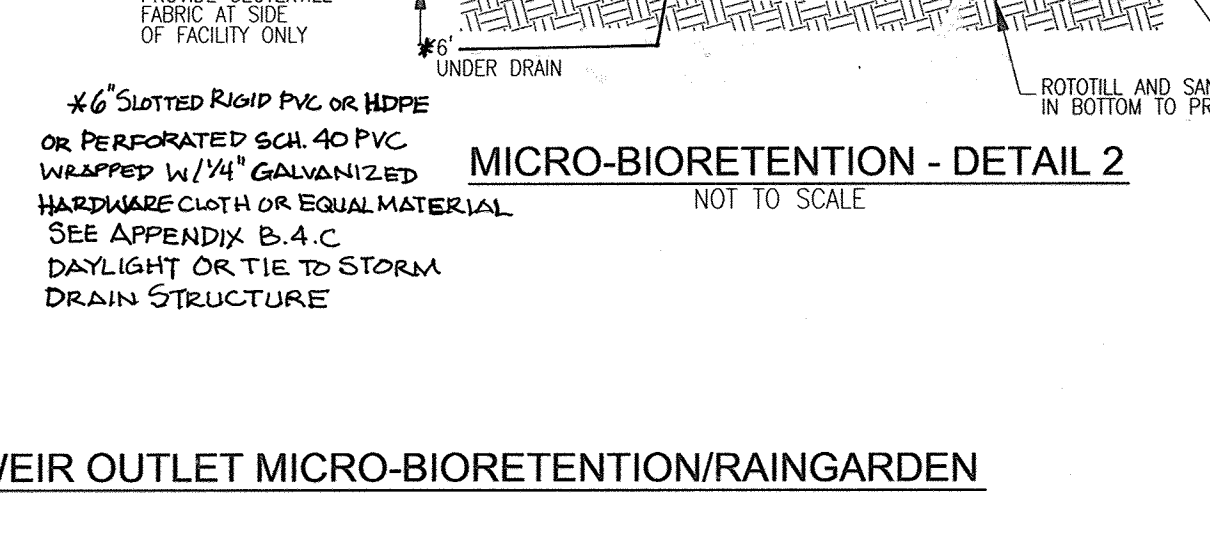
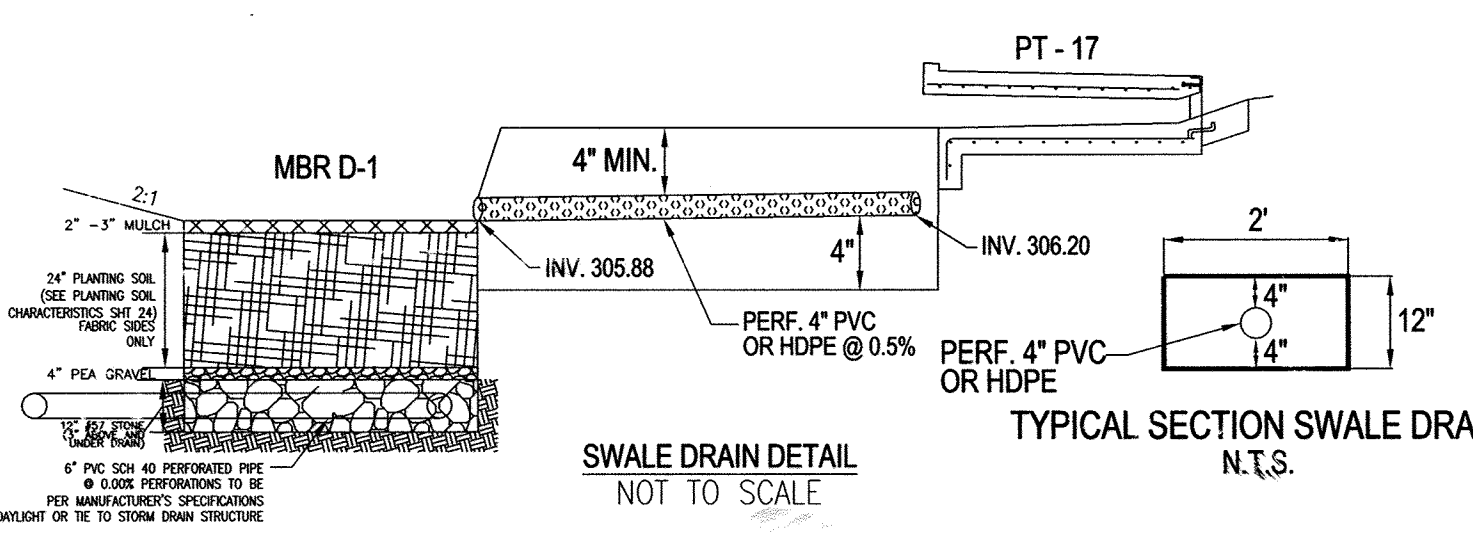
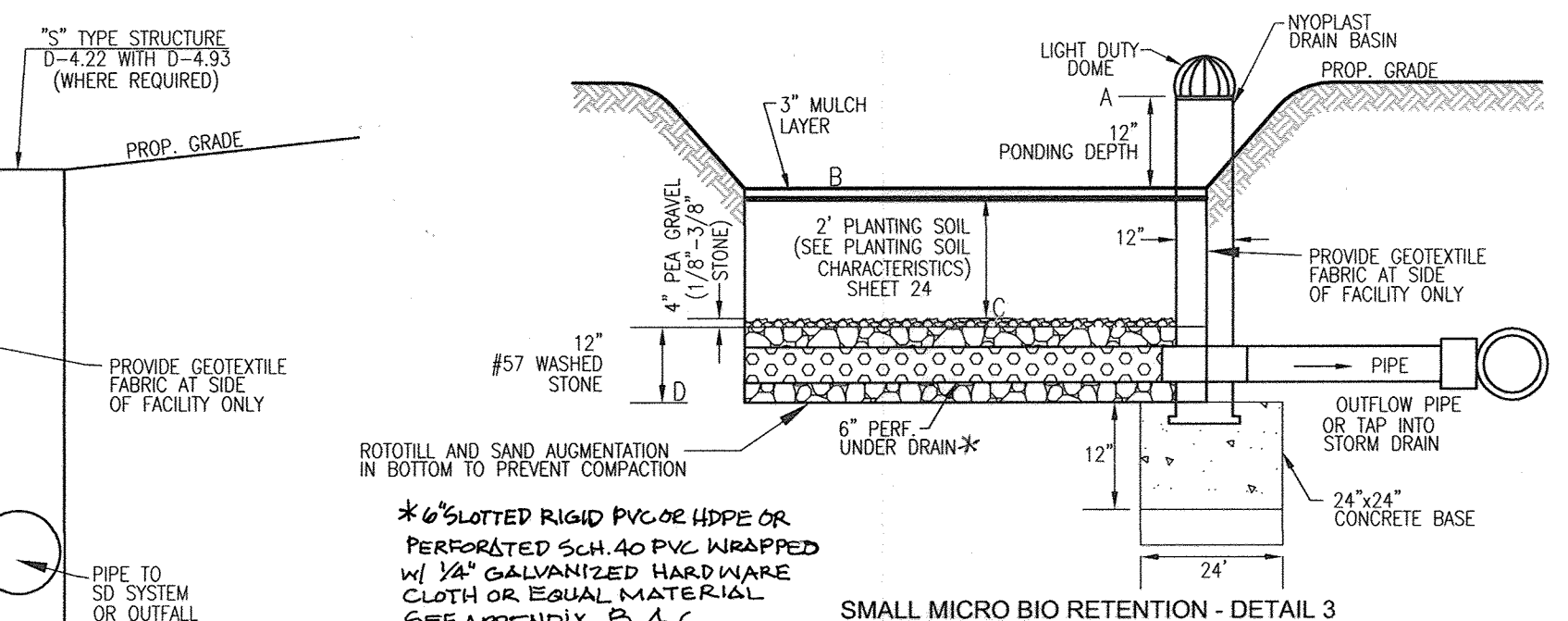
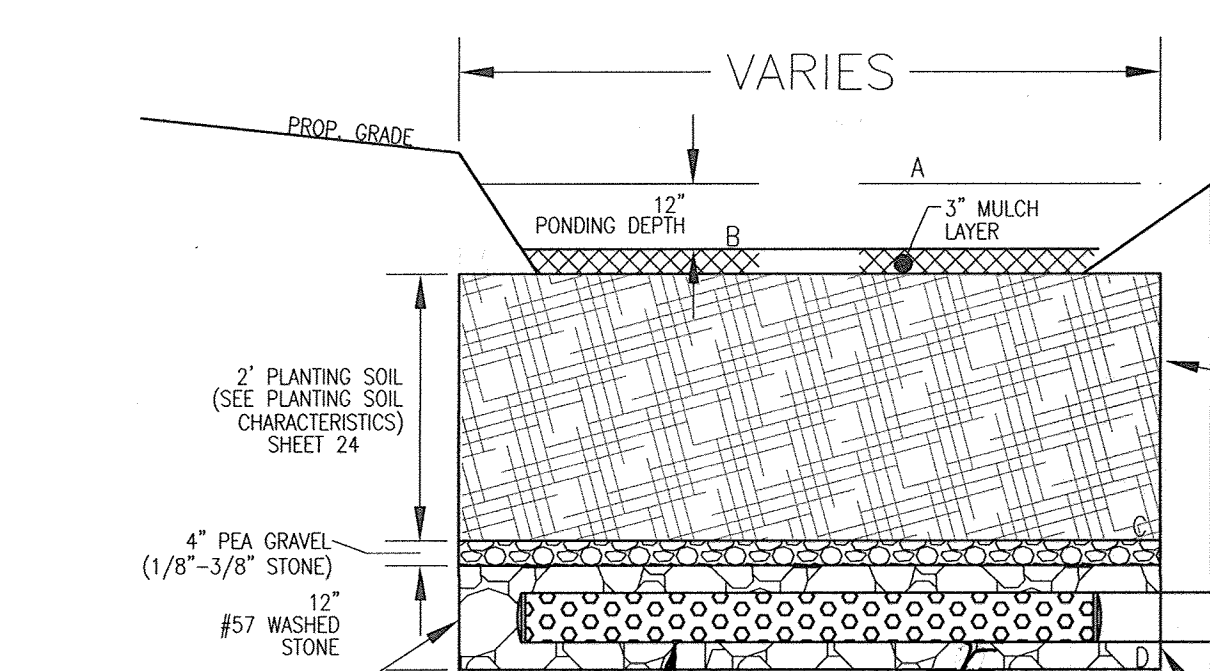
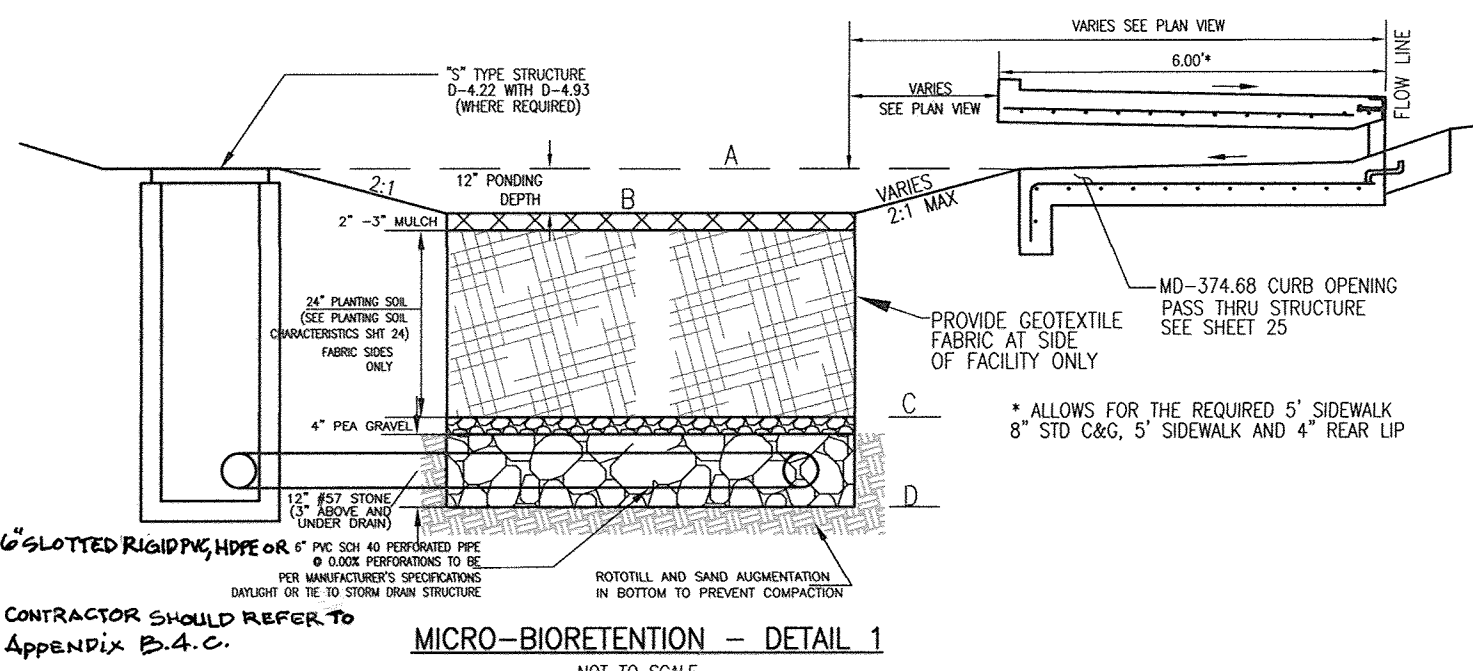
NOTE:
1. ESDv EQUAL TO PE = 1.6" IS PROVIDED WITHIN EACH SUB DRAINAGE AREA
2. FOR LEGEND, REFER TO SHEETS 16 & 17.

LEGEND:

- PROPERTY LINE
- - - RIGHT-OF-WAY LINE
- - - ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING TRENCH
- PROPOSED STORMDRAIN
- PROPOSED STORMDRAIN INLET
- PROPOSED TRENCHLINE
- W 550 / 400 WATER ZONE DIVIDE
- EX MODERATE SLOPES
- EX STEEP SLOPES
- EXISTING SPECIMEN TREE
- PROPOSED FROST RETENTION AREA
- NON-STRUCTURAL ROOFTOP DISCONNECTS
- MICRO-SCALE PRACTICE BIO-SWALE
- NON-STRUCTURAL PROP. PERMEABLE SURFACE ROAD / DRIVEWAY ROOFTOP TO PERMEABLE SURFACE SUBBASE
- MICRO-SCALE PRACTICE MICRO BIORETENTION / BIORETENTION
- ROOFTOP DISCONNECTS TO DRYWELL
- 200 GAL RAIN BARREL
- ROOFTOP DISCONNECTS FLOW PATH
- ROOFTOP DISCONNECTS RAIN BARREL
- PROPOSED DRYWELL
- DA-3 DRAINAGE DIVIDE
- DA-3 DRAINAGE AREA DESIGNATION



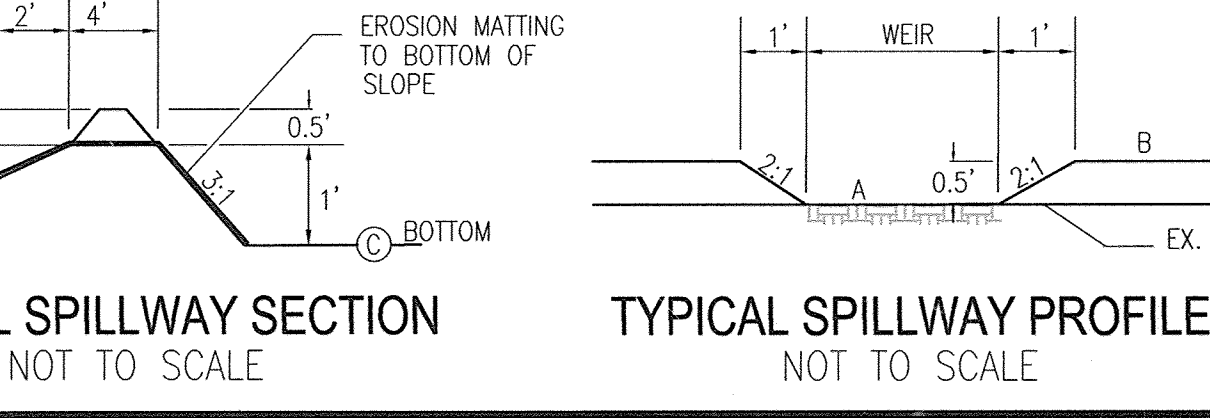
MATCHLINE SHEET 22



ON-LOT DRYWELL - DESIGN ELEVATION CHART
NOT TO SCALE

SWM DA	DW LOT #	NUMBER OF DW'S	PROP GRADE OVER	TOP STONE	INV. STONE	SURFACE SIZE FTXFT	DEPTH FT
S-3C	24 R	2	296.00	295.00	291.00	8.5X8.5	4
	24 R	1	295.00	294.00	290.00	8.5X8.5	4
	25	1	294.20	293.20	289.20	8.5X8.5	4
S-7	1	1	299.00	298.00	294.00	8.5X8.5	4
	2	1	301.50	300.50	296.50	8.5X8.5	4
A-1/A-2	38 R	1	319.00	318.00	314.00	6X6	4
	39 R	2	322.00	321.00	317.00	6X6	4
	40 R	2	320.00	319.00	315.00	6X6	4
	41 R	2	327.00	326.00	322.00	6X6	4
	42 R	2	325.00	324.00	320.00	6X6	4
	43 R	2	331.80	330.80	326.80	6X6	4
	44	1	328.50	327.50	323.50	8X8	4
	45	1	328.00	327.00	323.00	8X8	4
	46	1	325.00	324.00	320.00	8X8	4
	47	1	322.00	321.00	317.00	8X8	4
G-1	50	1	305.50	304.50	300.50	8X8	4

APPROVED: DEPARTMENT OF PUBLIC WORKS
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 DATE: 5-18-15
 DATE: 5-19-15



OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DRYWELL (M-5)
 A. THE OWNER SHALL INSPECT & CLEAN ANNUALLY, INCLUDING PIPES, GUTTERS, DOWNPOUTS AND FILTERS.
 B. PONDING STANDING WATER OR ALGAL GROWTH ON THE TOP OF A DRYWELL MAY INDICATE FAILURE DUE TO SEDIMENTATION IN THE GRAVEL MEDIA. IF WATER PONDING FOR MORE THAN 48 HOURS AFTER A MAJOR STORM OR MORE THAN SIX INCHES OF SEDIMENT HAS ACCUMULATED, THE GRAVEL MEDIA SHOULD BE EXCAVATED AND REPLACED.



AS-BUILT CERTIFICATION
 I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLY WITH THE APPROVED PLANS AND SPECIFICATIONS.
 P.E. NAME: [Signature] P.E. # 16193 DATE: 7-18-19

OWNER
 KATHY MIESSE, PERSONAL REPRESENTATIVE,
 ESTATE OF ARTHUR P. KRAESKI
 9222 OLD SCAGGSVILLE ROAD
 LAUREL, MD 20723-1730
 ATTN: MR. DONALD R. REUWER
 443-367-0422

DEVELOPER
 LAND DESIGN & DEVELOPMENT, INC.
 5300 DORSEY HALL DRIVE, STE 102
 ELLICOTT CITY, MARYLAND 21104-7819
 ATTN: MR. DONALD R. REUWER
 443-367-0422

NO.	REVISION	DATE
8	MODIFY TO ADD A FRENCH DRAIN BEHIND EX. INLET P.C.T.	11/8/17
4	MODIFY SWM DETAILS	04/09/15
3	REVISE STORM DRAIN LAYOUT ALONG OLD SCAGGSVILLE ROAD	1 / 2015
2	REVISE SUBDIVISION NAME	7/18/14

REVISED FINAL ROAD CONSTRUCTION PLAN
 ESDv - DRAINAGE AREA MAP - NORTH AREA 2
HIGH RIDGE MEADOWS - SEC. 1
 LOTS 1-54, OPEN SPACE LOTS 55-68
 AND NON-BUILDABLE BULK PARCEL "B"
 A SUBDIVISION OF TAX MAP 50 - PARCEL 363
 AND A RESUBDIVISION OF TAX MAP 50 - PARCEL 542
 KRAESKI PROPERTY NON-BUILDABLE BULK PARCEL "A" (PLAT 21191)

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410-461-7666
 FAX: 410-461-18951

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2016

DESIGN BY: EDS/RVE/KG
 DRAWN BY: EDS/RVE/KG
 CHECKED BY: RHW
 DATE: APRIL 2015
 SCALE: AS SHOWN
 W.O. NO.: 11-28

APPENDIX B.4.C SPECIFICATIONS FOR MICRO-BIORETENTION, RAIN GARDEN, LANDSCAPE INFILTRATION & INFILTRATION BERMS

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

2. FILTERING MEDIA OR PLANTING SOIL
 THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVIDE A HINDERANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOxious WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.
 THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:
 • SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION).
 • ORGANIC CONTENT - MINIMUM 1.0% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (35% TO 40%) OR SANDY LOAM (30%), COMPOST SAND (30%), AND COMPOST (40%).
 • CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.
 • PH RANGE - SHOULD BE BETWEEN 5.5 - 7.0. AMMONIUMS (E.G., UREA, IRON SULFATE PLUS SULFUR) MAY BE MIXED IN TO THE SOIL TO INCREASE OR DECREASE PH.

THIS SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, AND ADDITIONAL TESTS OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE SPECIFIED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.

3. COMPACTION
 IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING LOADERS, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TIRE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LOGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.
 COMPACTION CAN BE ALLEVATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO RESTRICTURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT. ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE.
 WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE.
 WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.

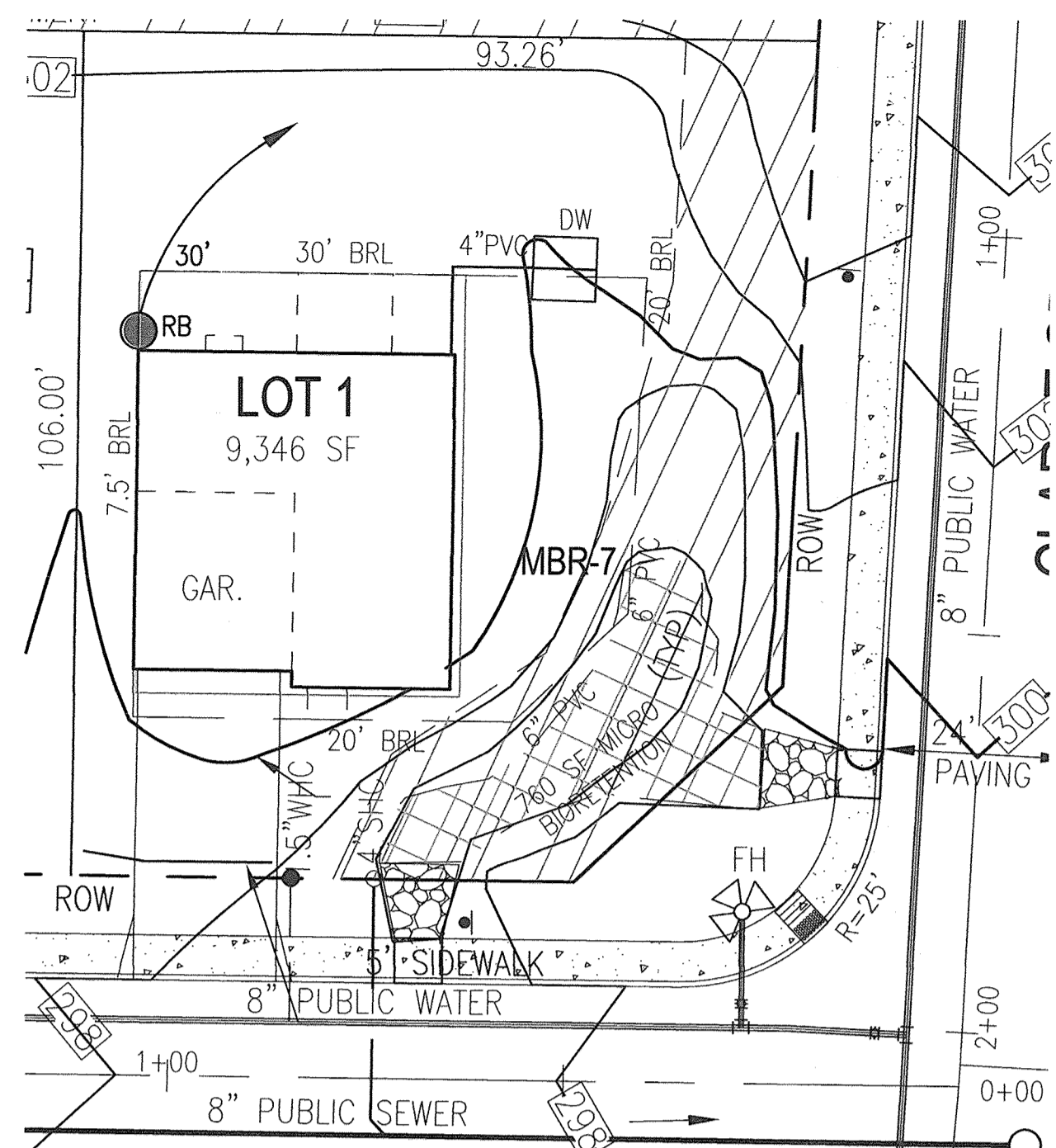
4. PLANT MATERIAL
 RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.

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

THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFERS, OR AT A MINIMUM, IMPEDS THIS GOAL. ONLY 40% FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.

6. UNDERDRAINS
 UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:
 • PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F58, TYPE PS 28, OR AASHTO M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OF HDPE).
 • PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 44) GALVANIZED HARDWARE CLOTH.
 • GRAVEL - THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.
 • THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.
 • A SLOTTED, NON-PERFORATED UNDERDRAIN WILL BE PROVIDED (ONE PER EVERY 1,000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.
 • A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".
 THIS MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5% OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

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



TYPICAL HOUSE SWM PRACTICE DETAIL
 SCALE: 1"=20'

BUSHMAN BRT205 (205 GALLON) RAIN HARVESTING SYSTEM OR EQUIVALENT RAIN BARREL DETAIL
 NOT TO SCALE

- OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED RAINWATER HARVESTING (M-1)**
- THE OWNER SHALL EMPTY BARRELS ON A MONTHLY BASIS AND CLEAN BARREL WITH A HOSE.
 - THE OWNER SHALL VERIFY INTEGRITY OF LEAF SCREENS, GUTTERS, DOWNSPOUTS, SPIGOTS, AND MOSQUITO SCREENS, AND CLEAN AND REMOVE ANY DEBRIS.
 - THE OWNER SHALL REPLACE DAMAGED COMPONENTS AS NEEDED.
 - THE OWNER SHALL ALLOW THE BARREL TO DRAIN BY BOTTOM SPIGOT DURING THE WINTER SEASON.

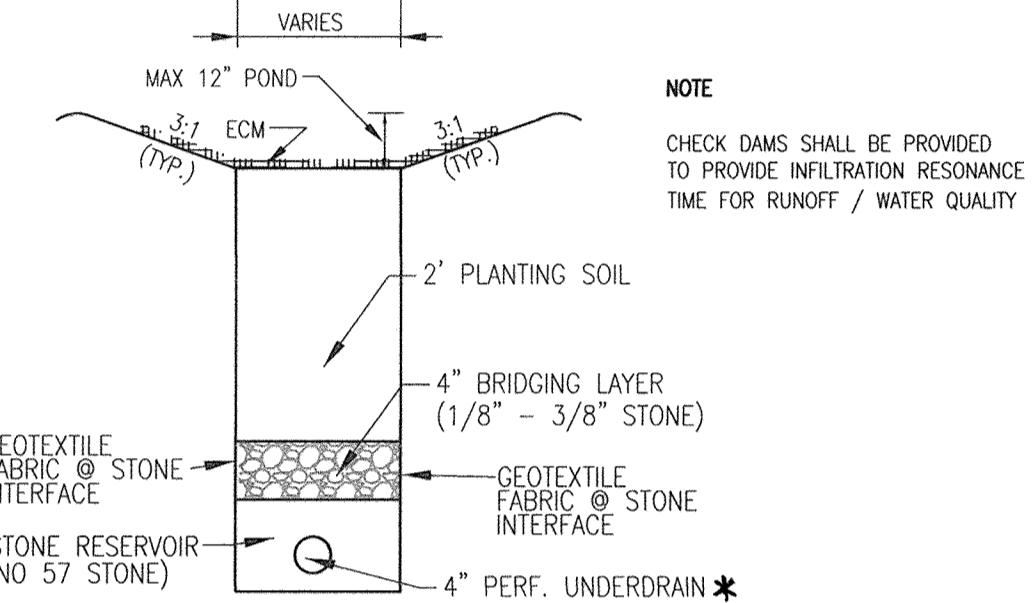
TYPICAL RAIN BARREL DESIGN

205 GAL	= 27.41 CUFT
7.48 GAL/CUFT	
500 SF X (1/12)	= 27.41 CUFT
12 (22.41 CUFT) / 500 SF	= 0.66"

THEFORE A 205 GALLON BARREL CAPTURES P_e OF 0.66" FROM A 500 SF SECTION OF PROPOSED ROOFTOP. THE REMAINING PORTION OF THE 500 SF SECTION OF ROOFTOP IS P_e = 0.34". THIS CAN BE ACHIEVED BY A 40' DISCONNECTION OF ROOFTOP RUNOFF LENGTH.

- [OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED Rainwater Harvesting (M-1)]**
- The Owner shall empty barrels on a monthly basis and clean barrel with a hose.
 - The Owner shall verify integrity of leaf screens, gutters, downspouts, spigots, and mosquito screens, and clean and remove any debris.
 - The Owner shall replace damaged components as needed.
 - The Owner shall disconnect the barrel prior to winter, or allow the barrel to drain by bottom spigot during the winter season.

BIO-SWALE - PLANTING
 PLANTINGS SHALL CONSIST OF A MIXTURE:
 REED CANNY GRASS - PHALARIS ARUNDINACEA
 SWITCHGRASS - PANICUM VIRGATUM
 MASTIC LILY TURF - LIRIOPE MISCARIN 'MASTIC'
 OR EQUAL COMBINATION OF GRASS / HARDY SEASON GRASSES TOLERANT OF FREQUENT INUNDATION.



BIO SWALE
 TYPICAL CROSS SECTION
 (NOT TO SCALE)

* 4" SLOTTED RIGID PVC OR HDPE OR PERFORATED SCH 40 PVC WRAPPED W/ 1/4" GALVANIZED HARDWARE CLOTH OR EQUAL MATERIAL. SEE APPENDIX B.4.C. DAYLIGHT OR TIE INTO STORM DRAIN STRUCTURE.

OPERATION AND MAINTENANCE SCHEDULE FOR M-6, M-7 AND M-8 AREAS

- ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DEFICIENT STEMMS AND BRANCHES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER EVERY 2 TO 3 YEARS.
- SOIL SOLUTION TO BE ADDRESSED ON AN AS NEEDED WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.
- FILTER MATERIAL MUST BE REPLACED WHEN WATER REMAINS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 24 HOURS FOLLOWING A 1- OR 2-YEAR STORM EVENT OR MORE THAN 48 HOURS FOLLOWING A 10-YEAR STORM EVENT.*

NOTE: UNDERDRAIN AND CHECK DAMS OF BIOSWALE WILL BE PUBLICALLY MAINTAINED.

N-1. DISCONNECTION OF ROOFTOP RUNOFF

CONSTRUCTION CRITERIA:

- THE FOLLOWING ITEMS SHOULD BE ADDRESSED DURING THE CONSTRUCTION OF PROJECTS WITH PLANNED ROOFTOP DISCONNECTIONS:
- EROSION AND SEDIMENT CONTROL: EROSION AND SEDIMENT CONTROL PRACTICES (E.G., SEDIMENT TRAPS) SHALL NOT BE LOCATED IN VEGETATED AREAS RECEIVING DISCONNECTED RUNOFF.
 - SITE DISTURBANCE: CONSTRUCTION VEHICLES AND EQUIPMENT SHOULD AVOID AREAS RECEIVING DISCONNECTED RUNOFF TO MINIMIZE DISTURBANCE AND COMPACTION. SHOULD AREAS RECEIVING DISCONNECTED RUNOFF BECOME COMPACTED, SCARIFYING THE SURFACE OR ROTOTILLING THE SOIL TO A DEPTH OF FOUR TO SIX INCHES SHALL BE PERFORMED TO ENSURE PERMEABILITY. ADDITIONAL AMENDMENTS MAY BE NEEDED FOR TIGHT, CLAYEY SOILS.

INSPECTION:

A FINAL INSPECTION SHALL BE CONDUCTED BEFORE USE AND OCCUPANCY APPROVAL TO ENSURE THAT SIZING FOR TREATMENT AREAS HAVE BEEN MET AND PERMANENT STABILIZATION HAS BEEN ESTABLISHED.

MAINTENANCE CRITERIA:

MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION (E.G., BY PLANTING TREES OR SHRUBS ALONG THE PERIMETER). IN COMMERCIAL AREAS, FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

A-2. PERMEABLE PAVEMENTS

CONSTRUCTION CRITERIA:

- THE FOLLOWING ITEMS SHOULD BE ADDRESSED DURING CONSTRUCTION OF PROJECTS WITH PERMEABLE PAVEMENT:
- EROSION AND SEDIMENT CONTROL: FINAL GRADING FOR INSTALLATION SHOULD NOT TAKE PLACE UNTIL THE SURROUNDING SITE IS STABILIZED. IF THIS CANNOT BE ACCOMPLISHED, RUNOFF FROM DISTURBED AREAS SHALL BE DIVERTED AROUND PROPOSED PAVEMENT LOCATIONS.
 - SOIL COMPACTION: SUB SOILS SHALL NOT BE COMPACTED. CONSTRUCTION SHOULD BE PERFORMED WITH LIGHTWEIGHT, WIDE TRACKED EQUIPMENT TO MINIMIZE COMPACTION. EXCAVATED MATERIALS SHOULD BE PLACED IN A CONTAINED AREA.
 - DISTRIBUTION SYSTEMS: OVERDRAIN, UNDERDRAIN, AND DISTRIBUTION PIPES SHALL BE CHECKED TO ENSURE THAT BOTH THE MATERIAL AND PERFORATIONS MEET SPECIFICATIONS (SEE APPENDIX B. 4). THE UPSTREAM ENDS OF PIPES SHOULD BE CAPPED PRIOR TO INSTALLATION. ALL UNDERDRAIN OR DISTRIBUTION PIPES USED SHOULD BE INSTALLED FLAT ALONG THE BED BOTTOM.
 - SUBBASE INSTALLATION: SUBBASE AGGREGATE SHALL BE CLEAN AND FREE OF FINES. THE SUBBASE SHALL BE PLACED IN LIFTS AND LIGHTLY ROLLED ACCORDING TO THE SPECIFICATIONS (SEE APPENDIX B.4).

INSPECTION:

REGULAR INSPECTIONS SHALL BE MADE DURING THE FOLLOWING STAGES OF CONSTRUCTION:

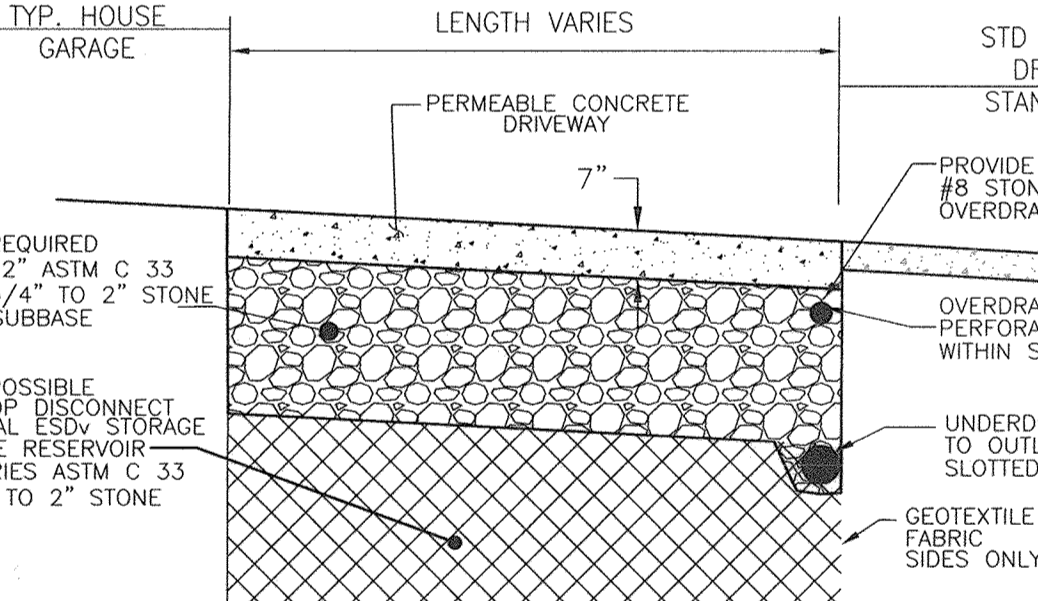
- DURING EXCAVATION TO SUB GRADE.
- DURING PLACEMENT AND BACKFILL OF ANY GRANULAR OR DISTRIBUTION SYSTEM(S).
- DURING PLACEMENT OF THE CRUSHED STONE SUBBASE MATERIAL.
- DURING PLACEMENT OF THE SURFACE MATERIAL.
- UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.

MAINTENANCE CRITERIA:

- THE FOLLOWING PROCEDURES SHOULD BE CONSIDERED ESSENTIAL FOR MAINTAINING PERMEABLE PAVEMENT SYSTEMS:
- PAVEMENTS SHOULD BE USED ONLY WHERE REGULAR MAINTENANCE CAN BE PERFORMED. MAINTENANCE AGREEMENTS SHOULD CLEARLY SPECIFY HOW TO CONDUCT ROUTINE TASKS TO ENSURE LONG-TERM PERFORMANCE.
 - PAVEMENT SURFACES SHOULD BE SWEEP AND VACUUMED TO REDUCE SEDIMENT ACCUMULATION AND ENSURE CONTINUED SURFACE POROSITY. SWEEPING SHOULD BE PERFORMED AT LEAST TWICE ANNUALLY WITH A COMMERCIAL CLEANING UNIT. WASHING SYSTEMS AND COMPRESSED AIR UNITS SHOULD NOT BE USED TO PERFORM SURFACE CLEANING.
 - DRAINAGE PIPES, INLETS, STONE EDGE DRAINS, AND OTHER STRUCTURES WITHIN OR DRAINING TO THE SUBBASE SHOULD BE CLEANED OUT AT REGULAR INTERVALS.
 - TRUCKS AND OTHER HEAVY VEHICLES CAN GRIND DIRT AND GRIT INTO THE POROUS SURFACES, LEADING TO CLOGGING AND PREMATURE FAILURE. THESE VEHICLES SHOULD BE PREVENTED FROM TRACKING AND SPILLING MATERIAL ONTO THE PAVEMENT.
 - DEICERS SHOULD BE USED IN MODERATION. WHEN USED, DEICERS SHOULD BE NON-TOXIC AND ORGANIC AND CAN BE APPLIED EITHER AS CALCIUM MAGNESIUM ACETATE OR AS PRETREATED SALT. SNOW PLOWING SHOULD BE DONE CAREFULLY WITH BLADES SET ONE-INCH HIGHER THAN NORMAL. PLOWED SNOW PILES AND SNOW MELT SHOULD NOT BE DIRECTED TO PERMEABLE PAVEMENT.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED PERMEABLE PAVEMENT (A-2)

- THE INDIVIDUAL LOT OWNER SHALL PERIODICALLY SWEEP (OR VACUUM POROUS CONCRETE PAVEMENT) THE PAVEMENT SURFACES TO REDUCE SEDIMENT ACCUMULATION AND ENSURE CONTINUED SURFACE POROSITY. SWEEPING SHOULD BE PERFORMED AT LEAST TWICE ANNUALLY WITH A COMMERCIAL CLEANING UNIT. WASHING OR COMPRESSED AIR UNITS SHOULD NOT BE USED TO PERFORM SURFACE CLEANING.
- THE INDIVIDUAL LOT OWNER SHALL PERIODICALLY CLEAN DRAINAGE PIPES, INLETS, STONE EDGE DRAINS AND OTHER STRUCTURES WITHIN OR DRAINING TO THE SUBBASE.
- THE INDIVIDUAL LOT OWNER SHALL USE DEICERS IN MODERATION. DEICERS SHOULD BE NON-TOXIC AND BE APPLIED EITHER AS CALCIUM MAGNESIUM ACETATE OR AS PRETREATED SALT.
- THE INDIVIDUAL LOT OWNER SHALL ENSURE SNOW PLOWING IS PERFORMED CAREFULLY WITH BLADES SET ONE-INCH ABOVE THE SURFACE. PLOWED SNOW PILES AND SNOW MELT SHOULD NOT BE DIRECTED TO PERMEABLE PAVEMENT.



TYP. HOUSE PERMEABLE SURFACE TYPICAL SECTION
 NOT TO SCALE

- NOTE:
- PAVEMENT CROSS SECTION TO BE CONFIRMED BY GEOTECHNICAL ENGINEER
 - UNDERDRAIN SHALL BE LOCATED SUCH THAT IT CAN DAYLIGHT TO THE CURB INTO A BIO-RETENTION FACILITY OR TO THE REAR OF THE LOT
 - OVERDRAIN SHALL COMBINE WITH UNDERDRAIN OR DAYLIGHT AS DETAILED FOR UNDERDRAIN. SEE NOTE 2.

DETAIL - PERMEABLE CONCRETE DRIVEWAY - 5% OR LESS
 NOT TO SCALE

ALL PERMEABLE CONCRETE THICKNESS, MIX AND SUB-BASE TO BE DETERMINED BY GEOTECHNICAL ENGINEER ONSITE.

B.4.B SPECIFICATIONS FOR PERMEABLE PAVEMENTS & REINFORCED TURF

THESE SPECIFICATIONS INCLUDE INFORMATION ON ACCEPTABLE MATERIALS FOR TYPICAL APPLICATIONS AND ARE NOT EXCLUSIVE OR LIMITING. THE DESIGNER IS RESPONSIBLE FOR DEVELOPING SPECIFICATIONS FOR INDIVIDUAL PROJECTS AND SPECIFIC CONDITIONS.

1. PERVIOUS CONCRETE SPECIFICATIONS

DESIGN THICKNESS - PERVIOUS CONCRETE APPLICATIONS SHALL BE DESIGNED SO THAT THE THICKNESS OF THE CONCRETE SLAB SHALL SUPPORT THE TRAFFIC AND VEHICLE TYPES THAT WILL BE CARRIED. APPLICATIONS MAY BE DESIGNED USING EITHER STANDARD PAVEMENT PROCEDURES (E.G., AASHTO, ACI 323.9R, ACI 309.0R) OR USING TRAFFIC AND WHEEL LOADS PERMIT DESIGN PROCEDURES.
 MIX & INSTALLATION - TRADITIONAL PORTLAND CEMENTS (ASTM C 150, C 1157) MAY BE USED IN PERVIOUS CONCRETE APPLICATIONS. PHOSPHORUS ADMIXTURES MAY ALSO BE USED. MATERIALS SHOULD BE TESTED (E.G., TONG BATHING) PRIOR TO CONSTRUCTION SO THAT CRITICAL PROPERTIES (E.G., SETTLING TIME, RATE OF STRENGTH DEVELOPMENT, PERVIOUSNESS) MEET DESIGN REQUIREMENTS.
 AGGREGATE - PERVIOUS CONCRETE CONTAINS A LIMITED FINE AGGREGATE CONTENT. COMMONLY USED GRADATIONS INCLUDE ASTM C 33 NO. 67 (3/4 IN. TO NO. 4), NO. 8 (3/8 IN. TO NO.16), AND NO. 89 (3/8 IN. TO NO.50) SIEVES. SINGLE-SIZED AGGREGATE (UP TO 1 INCH) MAY ALSO BE USED.
 WATER CONTENT - WATER-TO-CEMENT RATIOS BETWEEN 0.27 AND 0.30 ARE USED ROUTINELY WITH PROPER INCLUSION OF CHEMICAL ADMIXTURES. WATER QUALITY SHOULD MEET ACI 308.4S AS A GENERAL RULE. POTABLE WATER SHOULD BE USED ALTHOUGH RECYCLED CONCRETE PRODUCTION WATER MEETING ASTM C 94 OR AASHTO M 157 MAY ALSO BE USED.
 ADMIXTURES - CHEMICAL ADMIXTURES (E.G., RETARDERS OR HYDRATION-STABILIZERS) ARE USED TO OBTAIN SPECIAL PROPERTIES IN PERVIOUS CONCRETE. USE OF ADMIXTURES SHOULD MEET ASTM C 494 (CHEMICAL ADMIXTURES) AND ASTM C 260 (AIR ENTRAINING ADMIXTURES) AND CLOSELY FOLLOW MANUFACTURER'S RECOMMENDATIONS.
 BASE COURSE - THE BASE COURSE SHALL BE AASHTO NO. 3 OR 4 COURSE AGGREGATE WITH AN ASSUMED OPEN PORE SPACE OF 30% (n=0.30).

2. PERMEABLE INTERLOCKING CONCRETE PAVEMENTS (PICP)

PAVING BLOCKS - BLOCKS SHOULD BE EITHER 3\"/>

3. REINFORCED TURF

REINFORCED GRASS PAVEMENT (RGP) - WHETHER USED WITH GRASS OR GRAVEL, THE RGP THICKNESS SHALL BE AT LEAST 1-3/4" THICK WITH A LOAD CAPACITY CAPABLE OF SUPPORTING THE TRAFFIC AND VEHICLE TYPES THAT WILL BE CARRIED.

Appendix B.4. Construction Specifications for Environmental Site Design Practices

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil	see DAM NOTE 5 (2' to 4' deep)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)	n/a	
Mulch	shredded hardwood	n/a	aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel, ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone, washed cobbles	stone: 2" to 5"	
Geotextile	n/a	n/a	PE Type 1 nonwovens
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")	
Underdrain piping	F-758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3' of gravel over pipes; not necessary underdrain pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth.
Poured in place concrete (if required)	MSHA Mix No. 3; F _c = 3500 psi @ 28 days, normal weight, air-entrained, reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required; 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350.8R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressure); and analysis of potential cracking.
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Substitutions such as Diabase and Graystone (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "track dust" can be used for sand.

APPROVED: DEPARTMENT OF PUBLIC WORKS

[Signature] 5-6-14
 CHIEF, BUREAU OF HIGHWAYS

[Signature] 5-9-14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 5-12-14
 CHIEF, DIVISION OF LAND DEVELOPMENT

FINAL ROAD CONSTRUCTION PLAN

STORMWATER MANAGEMENT NOTES AND DETAILS
HIGH RIDGE MEADOWS-SECTION I
 LOTS 1 - 54. OPEN SPACE LOTS 55 - 68 AND NON-BUILDABLE BULK PARCEL "B"
 A SUBDIVISION OF TAX MAP 50 - PARCEL 363 AND A RESUBDIVISION OF TAX MAP 50 - PARCEL 542
 KRAESKI PROPERTY NON-BUILDABLE BULK PARCEL "A" (PLAT 21191)
 6TH ELECTION DISTRICT - TAX MAP 50 GRID: 1
 DPZ REF: F-10-065, WP-10-067, ECP-12-047, WP-11-060, SP-13-007
 ZONED: R-SC
 PARCELS: 363 & 542
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.9561

DESIGN BY: EDS/RVS
 DRAWN BY: EDS/RVS
 CHECKED BY: RHV
 DATE: MARCH 2014
 SCALE: AS SHOWN
 W.O. NO.: 11-28W

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
 EXPIRATION DATE: 09-27-2014

24 SHEET OF 32

NO AS-BUILT INFORMATION ON THIS SHEET

AS-BUILT - DECEMBER 2018 F 14-022

"NORTH AREA 2" SUMMARY - SEE SHEET 23

DEER SPRINGS - ESDv COMPUTATIONS

DA #	% IMPERV	Rv	DA (SF)	DA (AC)	MINIMUM VOLUME	MAXIMUM VOLUME	1.6" VOLUME	VOLUME PROVIDED*	IMPERV (SF)	IMPERV (AC)	GREEN AREA	REMARKS
Site Computations: Rv = 0.2887 A = 36.94 Acres ESDv = 61940 cuft Pe = 1.6 inches Rv=0.05+0.009X V min=1.0" rainfall V max=1yr rainfall=2.6"												
(1.0x Rv x A)/12 (2.6x Rv x A)/12												
NORTH AREA # 2 - REQUIRED Pe = 1.6" Provided (Underdrains / Outfall Flows Freely) *Accounts for 75% Ponding Volume, See Computations												
A-1	24.65	0.2718	27100	0.62	614	1596	982	1064	6680	0.15	0.47	NON-STRUCTURAL, MICRO SCALE & MICRO BIO
A-2	53.62	0.5326	71325	1.64	3166	8231	5065	5075	38246	0.88	0.76	NON-STRUCTURAL, MICRO SCALE, ALT. SURFACE & MICRO BIO
B	21.76	0.2458	22131	0.51	453	1179	725	747	4815	0.11	0.40	NON-STRUCTURAL, MICRO SCALE
B-1	35.85	0.3726	21345	0.49	662	1723	1061	1070	6632	0.18	0.31	NON-STRUCTURAL, ALT. SURFACE & MICRO BIO
C	23.18	0.2386	44240	1.02	954	2479	1526	1532	10256	0.24	0.78	MICRO BIO
D-1	23.44	0.2610	33875	0.78	737	1915	1179	1187	7940	0.18	0.60	NON-STRUCTURAL, MICRO SCALE & MICRO BIO
D-2	14.65	0.1818	16250	0.37	246	640	394	463	2380	0.05	0.32	NON-STRUCTURAL, MICRO SCALE & MICRO BIO
E	66.18	0.6566	7900	0.18	425	1105	680	682	5238	0.12	0.06	NON-STRUCTURAL, ALT. SURFACE & MICRO BIO
F	24.55	0.2709	31000	0.71	700	1820	1120	1136	7610	0.17	0.54	ALT SURFACE, & MICRO-BIO RETENTION
G	63.08	0.6177	28200	0.64	1446	3760	2314	2340	17719	0.41	0.24	NON-STRUCTURAL, ALT. SURFACE & MICRO SCALE
G-1	15.42	0.1888	5090	0.12	80	208	128	154	785	0.02	0.10	NON-STRUCTURAL & MICRO SCALE
G-2	20.77	0.2369	3780	0.09	75	194	119	122	785	0.02	0.07	NON-STRUCTURAL & MICRO SCALE
G-3	24.62	0.2716	10418	0.24	236	613	377	381	2565	0.06	0.18	NON-STRUCTURAL & MICRO SCALE
NORTH TOTALS % IMPERV Rv DA (SF) DA (AC) MINIMUM VOLUME MAXIMUM VOLUME 1.6" VOLUME VOLUME PROVIDED* IMPERV (SF) IMPERV (AC) GREEN AREA 34.9 0.3644 322544 7.40 9794 25463 15670 15943 112661 2.59 4.82												

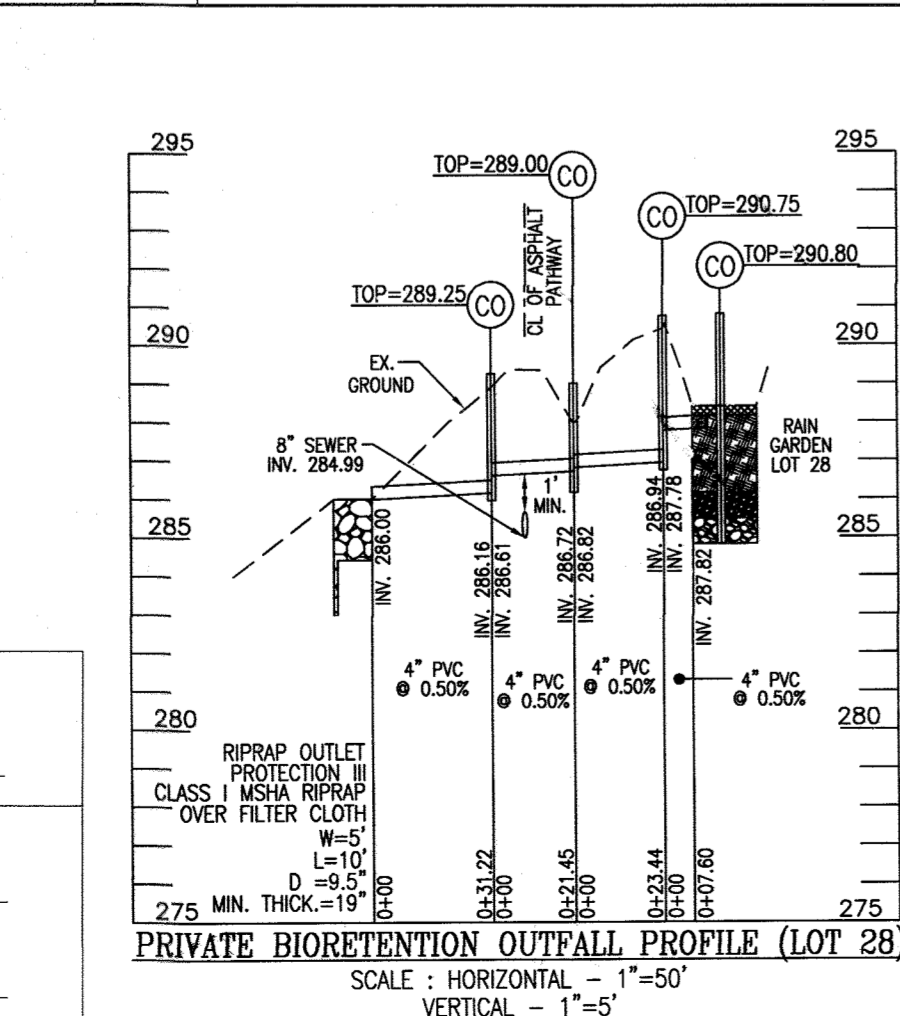
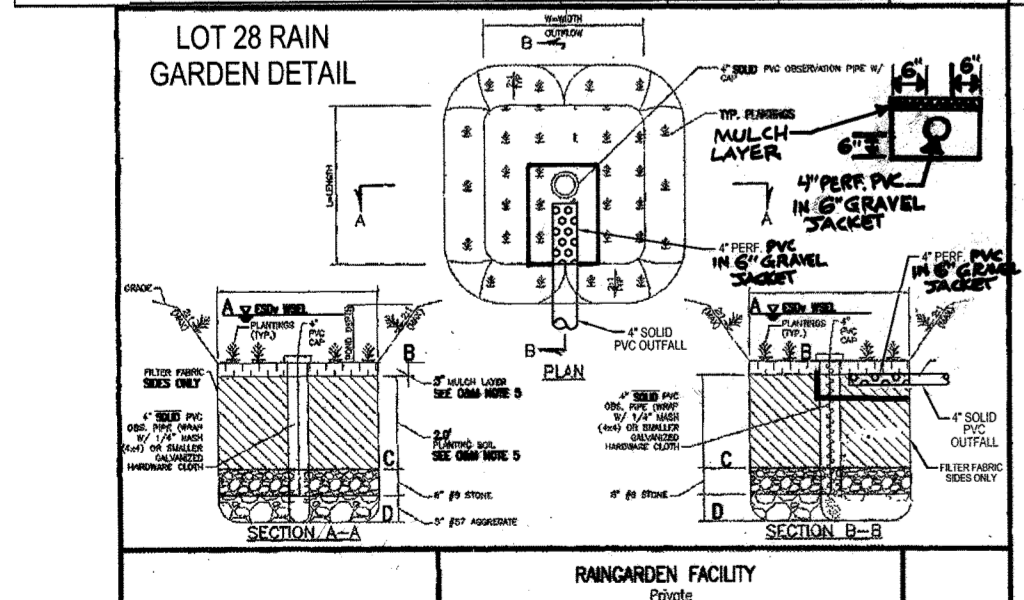
"SOUTH AREA" SUMMARY - SEE SHEET 22

DEER SPRINGS - ESDv COMPUTATIONS

DA #	% IMPERV	Rv	DA (SF)	DA (AC)	MINIMUM VOLUME	MAXIMUM VOLUME	1.6" VOLUME	VOLUME PROVIDED*	IMPERV (SF)	IMPERV (AC)	GREEN AREA	REMARKS
Rv=0.05+0.009X V min=1.0" rainfall V max=1yr rainfall=2.6"												
(1.0x Rv x A)/12 (2.6x Rv x A)/12												
SOUTH AREA - REQUIRED Pe = 1.6" Provided (Underdrains / Outfall Flows Freely) *Accounts for 75% Ponding Volume, See Computations												
S-1	31.66	0.3349	16000	0.37	447	1161	714	728	5065	0.12	0.25	MICRO BIORETENTION
S-2	15.11	0.1860	17665	0.41	274	712	438	439	2670	0.06	0.34	MICRO BIORETENTION
S-3A	69.40	0.6746	8365	0.19	470	1223	752	1276	5805	0.13	0.06	NON-STRUCTURAL, ALT. SURFACE & MICRO BIO
S-3B	63.40	0.6206	9156	0.21	474	1231	758	757	5805	0.13	0.08	NON-STRUCTURAL, ALT. SURFACE & MICRO BIO
S-3C	18.29	0.2146	14000	0.32	250	651	409	505	2560	0.06	0.26	NON-STR & MICROSCALE PRACTICES
S-4A	36.17	0.2855	3000	0.07	71	186	114	146	785	0.02	0.05	NON-STR & MICROSCALE PRACTICES
S-4B	18.34	0.2151	4280	0.10	77	199	123	149	785	0.02	0.08	NON-STR & MICROSCALE PRACTICES
S-4C	16.63	0.1997	4720	0.11	79	204	126	150	785	0.02	0.09	NON-STR & MICROSCALE PRACTICES
S-7	43.86	0.4447	24780	0.57	918	2388	1469	1472	10868	0.25	0.32	NON-STRUCTURAL, MICRO SCALE, ALT. SURFACE & MICRO BIO
S-8	47.79	0.4801	15772	0.36	631	1641	1010	1013	7537	0.17	0.19	NON-STRUCTURAL, ALT. SURFACE & MICRO BIORETENTION
S-9	47.69	0.4792	29660	0.68	1185	3080	1895	1928	14146	0.32	0.36	NON-STRUCTURAL, ALT. SURFACE & MICRO BIO
S-10	53.35	0.5301	12600	0.29	557	1447	891	932	6722	0.15	0.13	NON-STRUCTURAL, MICRO SCALE, ALT. SURFACE & MICRO BIO
S-11	14.54	0.1809	20422	0.47	308	800	493	503	2970	0.07	0.40	NON-STRUCTURAL, MICRO SCALE & MICRO BIO
S-12	64.06	0.6265	13200	0.30	689	1792	1103	1108	8456	0.19	0.11	NON-STRUCTURAL, ALT. SURFACE & MICRO BIORETENTION
S-13	26.75	0.2908	30520	0.70	740	1923	1183	1188	8165	0.19	0.51	NON-STRUCTURAL, MICRO SCALE & MICRO BIO
S-13A	38.89	0.4000	27540	0.63	918	2387	1469	1470	10710	0.25	0.39	NON-STRUCTURAL, MICRO SCALE & MICRO BIO
S-13B	6.55	0.1089	7563	0.17	69	178	110	116	495	0.01	0.16	NON-STR & MICROSCALE PRACTICES
S-13C	30.74	0.3267	27590	0.63	751	1953	1202	1211	8481	0.19	0.44	MICRO BIORETENTION
S-13D	52.36	0.5213	14800	0.34	643	1672	1029	1058	7750	0.18	0.16	MICRO BIORETENTION
S-14	56.32	0.5568	12650	0.29	587	1526	939	1042	7124	0.16	0.13	NON-STR, ALT SURFACES & MICRO BIO
S-14A	6.97	0.1127	6384	0.15	60	156	96	110	445	0.01	0.14	NON-STR & MICROSCALE PRACTICES
S-14B	4.46	0.0501	9985	0.23	75	195	120	120	445	0.01	0.22	NON-STR & MICROSCALE PRACTICES
S-14C	5.48	0.0594	617	0.19	67	175	108	112	445	0.01	0.18	NON-STR & MICROSCALE PRACTICES
S-14D	5.63	0.1006	7910	0.18	66	172	106	115	445	0.01	0.17	NON-STR & MICROSCALE PRACTICES
S-15	23.05	0.2574	13625	0.31	292	760	468	495	3140	0.07	0.24	NON-STR & MICROSCALE PRACTICES
S-16	31.19	0.3307	21800	0.50	601	1562	961	1100	6800	0.16	0.34	MICRO SCALE PRACTICE - BIOSWALE
S-17	57.07	0.5637	23960	0.55	1125	2926	1801	1815	13675	0.31	0.24	ALT SURFACES & MICRO BIORETENTION
S-17A	22.01	0.2481	7133	0.16	147	383	236	236	1570	0.04	0.13	NON-STR & MICROSCALE PRACTICES
S-17B	18.02	0.2122	4356	0.10	77	200	123	123	785	0.02	0.08	NON-STR & MICROSCALE PRACTICES
S-17C	15.15	0.1863	6535	0.15	101	261	162	179	980	0.02	0.13	NON-STR & MICROSCALE PRACTICES
S-18	36.52	0.3787	28850	0.64	886	2305	1418	1422	10258	0.24	0.11	NON-STRUCTURAL, MICRO SCALE, ALT. SURFACE & MICRO BIO
S-19	40.51	0.4146	15000	0.34	518	1347	829	830	6076	0.14	0.20	NON-STR, ALT SURFACES & MICRO BIORETENTION
SOUTH TOTALS % IMPERV Rv DA (SF) DA (AC) MINIMUM VOLUME MAXIMUM VOLUME 1.6" VOLUME VOLUME PROVIDED* IMPERV (SF) IMPERV (AC) GREEN AREA 34.9 0.3639 789715 18.13 22947 62262 38315 39791 275419 6.32 11.81												

SECTION ONE - PROJECT TOTALS

% IMPERV	Rv	DA (SF)	DA (AC)	MINIMUM VOLUME	MAXIMUM VOLUME	1.6" VOLUME	VOLUME PROVIDED*	IMPERV (SF)	IMPERV (AC)	GREEN AREA
34.9	0.3639	789715	18.13	22947	62262	38315	39791	275419	6.32	11.81



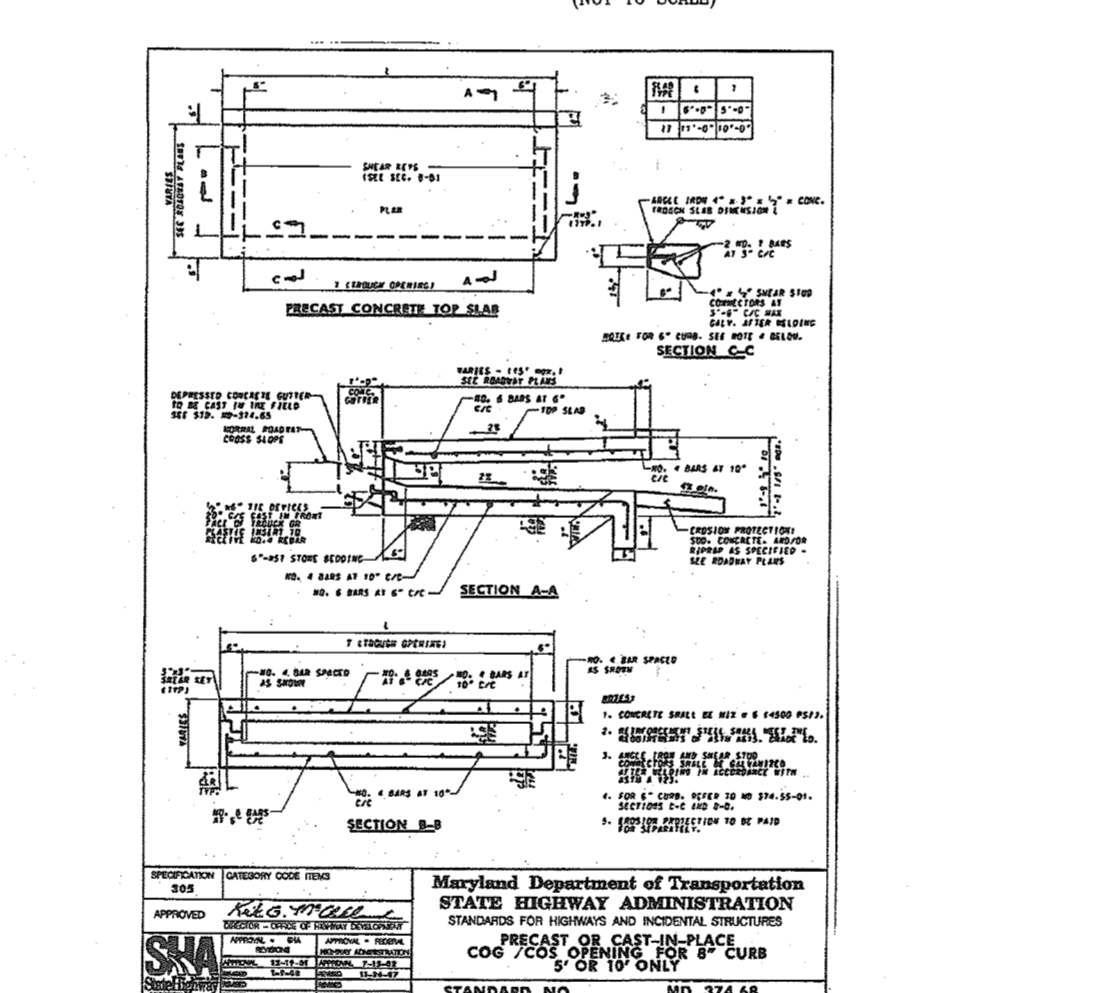
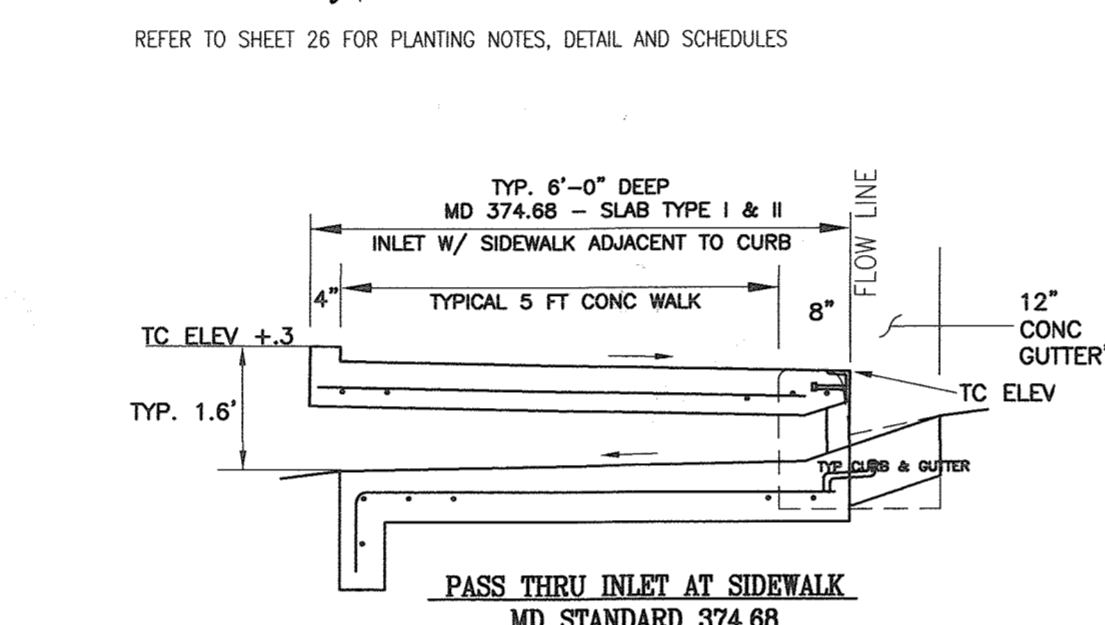
APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 5-6-14

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 5-9-14

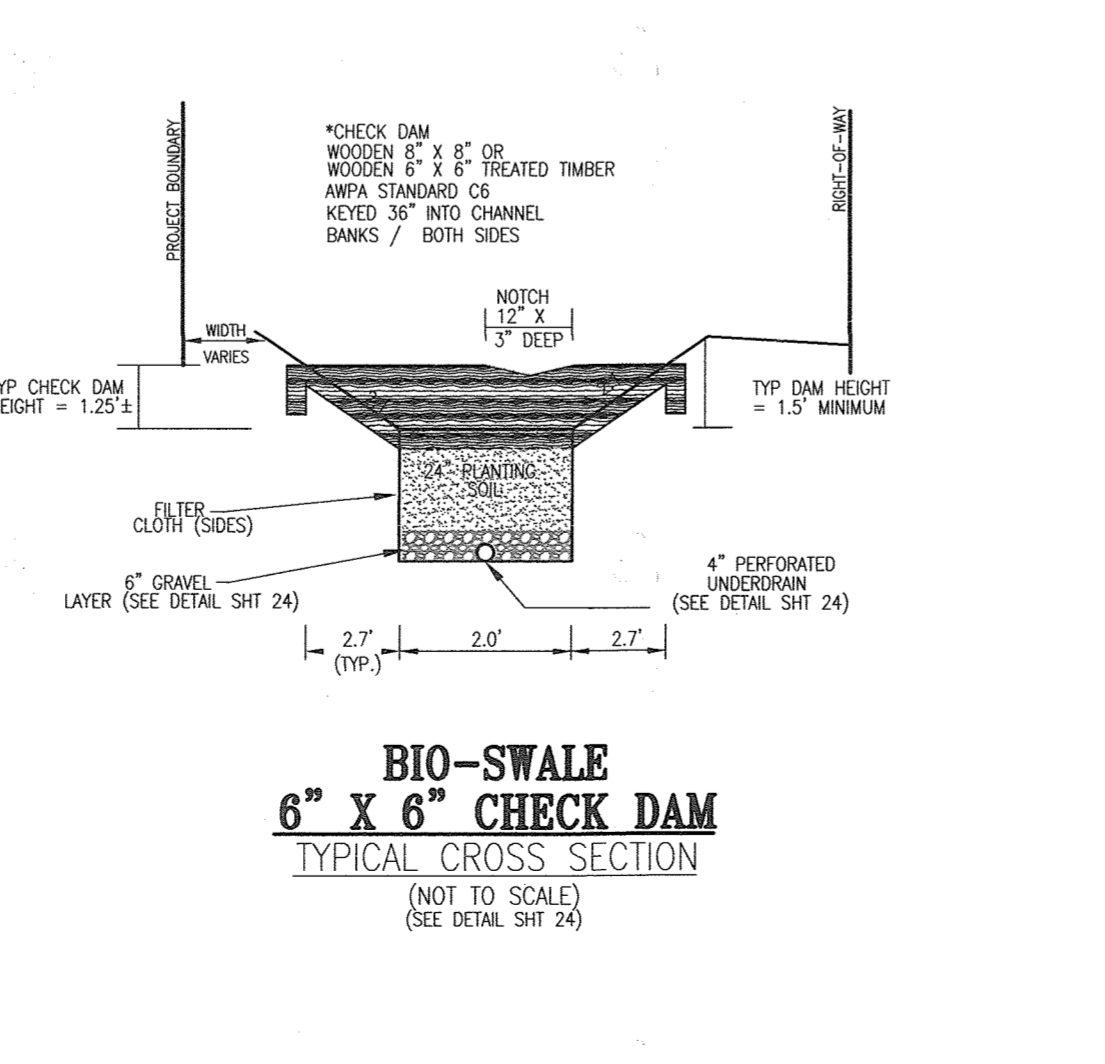
APPROVED: VETZEL ENGINEERING, INC.
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 5-12-14

MICRO-BIORETENTION FACILITY - DESIGN ELEVATION CHART

MBR FACILITY #	ESD WSEL A	TOP MULCH B	BOTTOM PLANT SOIL C	INV STONE D	SURFACE AREA SF	APPROX DIM	MBR TYPE Sht 23
SOUTH AREA							
1	288.00	287.00	284.75	283.42	700.00	SEE PLAN	2
2	272.71	274.71	272.46	271.13	930.00	SEE PLAN	1
3	292.46	291.40	289.15	287.82	910.00	SEE PLAN	1
7	296.60	295.60	293.35	292.02	760.75	SEE PLAN	1
8	296.60	295.60	293.35	292.02	585.00	SEE PLAN	1
9	298.00	297.00	294.75	293.42	1300.00	SEE PLAN	2
10	300.40	299.20	296.95	295.62	290.25	SEE PLAN	1
11	298.00	297.00	294.75	293.42	300.75	SEE PLAN	2
12	306.00	305.00	302.75	301.42	900.00	SEE PLAN	1
13	303.00	302.00	299.75	298.42	730.00	SEE PLAN	1
13A	307.00	306.00	303.75	302.42	1550.00	SEE PLAN	2
13D	309.65	308.65	306.40	305.07	1155.00	SEE PLAN	1
14	302.00	301.00	298.75	297.42	627.50	SEE PLAN	1
15	303.00	302.00	299.75	298.42	360.00	SEE PLAN	2
17	294.00	293.00	290.75	289.42	1610.00	SEE PLAN	2
18	296.75	295.75	293.50	292.17	885.75	SEE PLAN	2
19	302.80	301.80	299.55	298.22	500.75	SEE PLAN	3
NORTH AREA							
A1	315.00	314.00	311.75	310.42	470.00	SEE PLAN	2
A2	313.00	312.00	309.75	308.42	2160.00	SEE PLAN	2
B1	319.50	318.50	316.25	314.92	640.00	SEE PLAN	2
C	311.00	310.00	307.75	306.42	1150.00	SEE PLAN	1
D1	307.00	306.00	303.75	302.42	710.00	SEE PLAN	1
D2	306.00	305.00	302.75	301.42	300.00	SEE PLAN	1
E	317.00	316.00	313.75	312.42	400.00	SEE PLAN	1
F	297.00	296.00	293.75	292.42	750.00	SEE PLAN	2



TYPICAL CURB OPENING INLETS



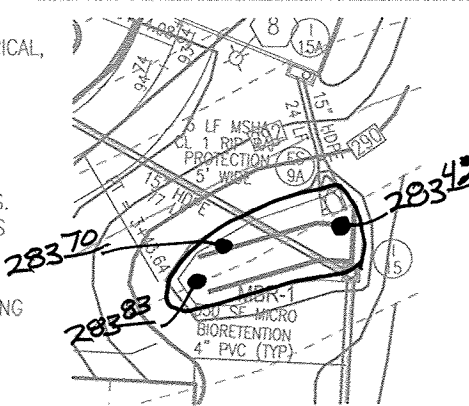
ONLOT STORMWATER MANAGEMENT PRACTICES

Lot	Rain Garden	M-7 Drywell	M-5 Rain Barrel	M-1 15' Disconnect	N-1 30' Disconnect	45' Disconnect	A-2 Perm. Surface Drive
Lot 1		1	1		1		1
Lot 2		1	1		1		1
Lot 3		1	1	1	1		1
Lot 4		1	1	1	1	2	1
Lot 5		1	1	1	1	2	1
Lot 6		1	1	1	1		1
Lot 7	1			2	1		1
Lot 8	1			1	2		1
Lot 9	1			1	1	1	1
Lot 10	1			2	1	1	1
Lot 11	1			1	1	2	1
Lot 12	1			2	1		1
Lot 13	1			1	2		1
Lot 14	1			1	1		1
Lot 15	1			1	1		1
Lot 16	1			1	1		1
Lot 17	1			1	3		1
Lot 18	1			1	3		1
Lot 19	1			1	3		1
Lot 20	1</						

"MICRO-BIORETENTION" PLANTING SCHEDULE NOTES:

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY. BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AND SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HOWARD COUNTY PLANTING SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLANT SWALES FROM LANDSCAPE SCHEDULE, THE PLAN SHALL COVER MICROBIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF 1000 STEMS PER PLANTED ACRE (0.229 STEMS PER SQUARE FOOT). ABOVE PLANTING RATIOS ARE TO BE APPLIED TO THE AREAS PROVIDED IN THE ESD SUMMARY.
- FILTER AREA SHALL BE 50% COVERED BY PLANTINGS AT FULL GROWTH

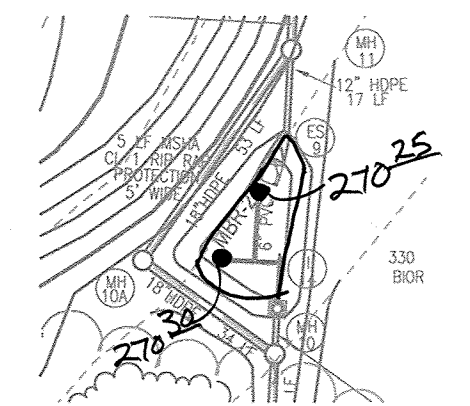
MBR #1 - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	6	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	4	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	4	SPICEBUSH LINDERA BENZON	3 GALLON	CONT
⊙	150	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.

550 SF X 75X X .0229 STEMS PER SQUARE FOOT = 10 PLANTS REQUIRED
10 PROVIDED

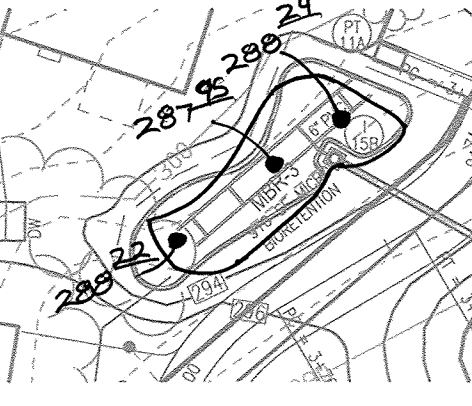
MBR #2 - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	6	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	150	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.

330 SF X 75X X .0229 STEMS PER SQUARE FOOT = 6 PLANTS REQUIRED
6 PROVIDED

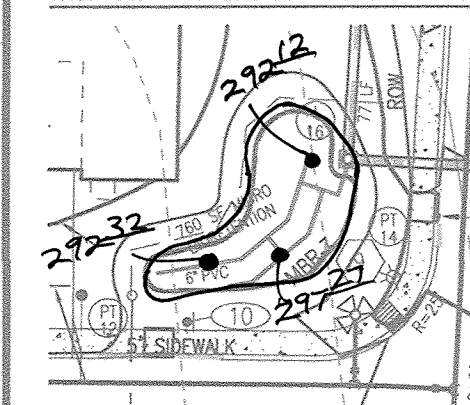
MBR #3 - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	8	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	6	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	6	SPICEBUSH LINDERA BENZON	3 GALLON	CONT
⊙	300	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.

910 SF X 75X X .0229 STEMS PER SQUARE FOOT = 16 PLANTS REQUIRED
16 PROVIDED

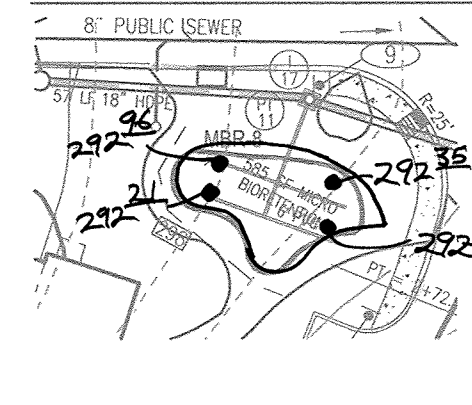
MBR #7 - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	10	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	10	SPICEBUSH LINDERA BENZON	3 GALLON	CONT
⊙	150	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.

760 SF X 75X X .0229 STEMS PER SQUARE FOOT = 13 PLANTS REQUIRED
13 PROVIDED

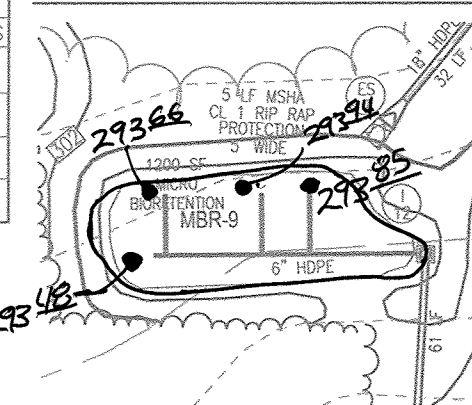
MBR #8 - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	8	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	4	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	8	SPICEBUSH LINDERA BENZON	3 GALLON	CONT

585 SF X 75X X .0229 STEMS PER SQUARE FOOT = 10 PLANTS REQUIRED
10 PROVIDED

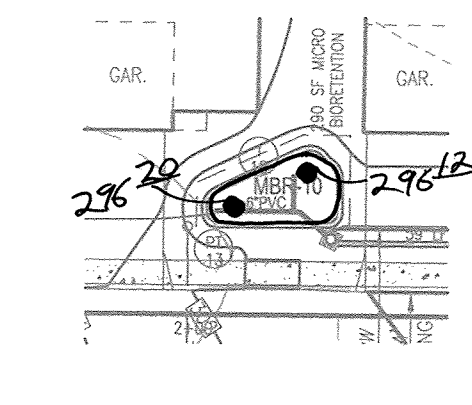
MBR #9 - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	10	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	10	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	4	SPICEBUSH LINDERA BENZON	3 GALLON	CONT
⊙	450	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.

1,200 SF X 75X X .0229 STEMS PER SQUARE FOOT = 21 PLANTS REQUIRED
21 PROVIDED

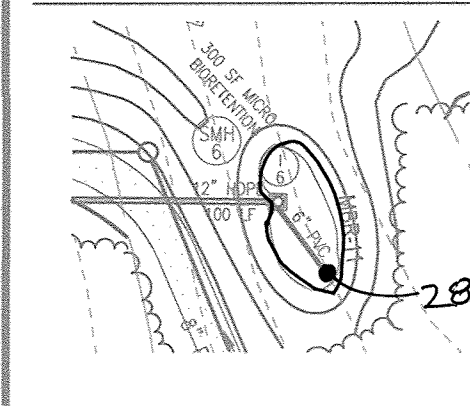
MBR #10 - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	4	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	2	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	4	SPICEBUSH LINDERA BENZON	3 GALLON	CONT

290 SF X 75X X .0229 STEMS PER SQUARE FOOT = 5 PLANTS REQUIRED
5 PROVIDED

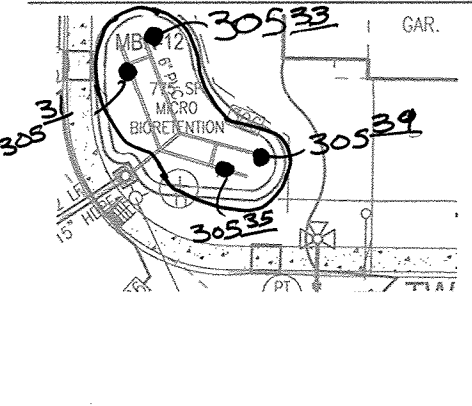
MBR #11 - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	4	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	4	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	4	SPICEBUSH LINDERA BENZON	3 GALLON	CONT

100 SF X 75X X .0229 STEMS PER SQUARE FOOT = 6 PLANTS REQUIRED
6 PROVIDED

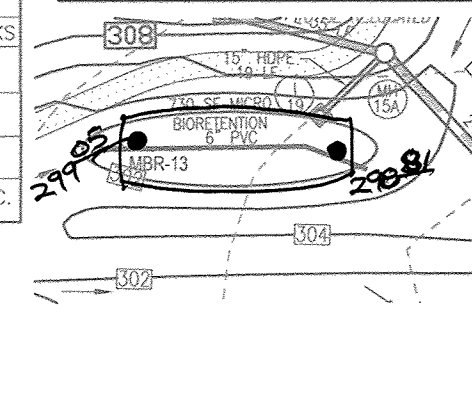
MBR #12 - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	10	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	6	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	10	SPICEBUSH LINDERA BENZON	3 GALLON	CONT
⊙	150	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.

900 SF X 75X X .0229 STEMS PER SQUARE FOOT = 16 PLANTS REQUIRED
16 PROVIDED

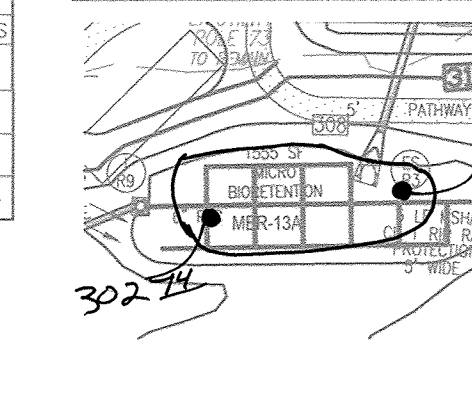
MBR #13 - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	4	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	10	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	6	SPICEBUSH LINDERA BENZON	3 GALLON	CONT
⊙	150	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.

730 SF X 75X X .0229 STEMS PER SQUARE FOOT = 13 PLANTS REQUIRED
13 PROVIDED

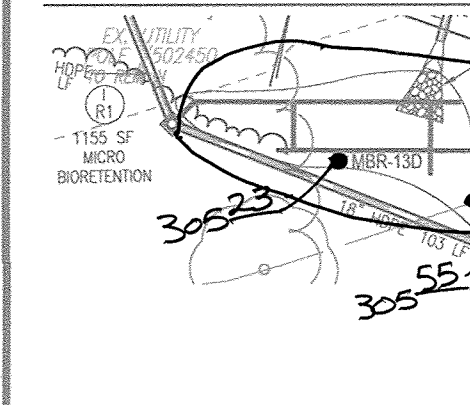
MBR #13A - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	10	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	8	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	10	SPICEBUSH LINDERA BENZON	3 GALLON	CONT
⊙	200	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.

1000 SF X 75X X .0229 STEMS PER SQUARE FOOT = 18 PLANTS REQUIRED
18 PROVIDED

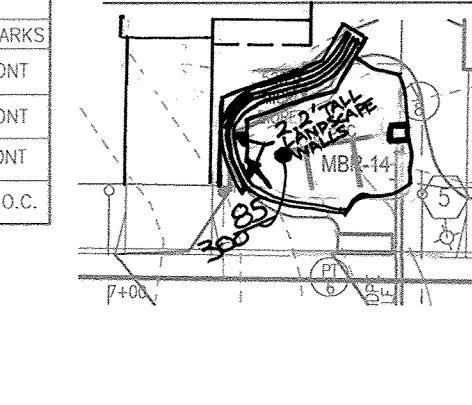
MBR #13D - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	6	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	4	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	10	SPICEBUSH LINDERA BENZON	3 GALLON	CONT
⊙	150	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.

115 SF X 75X X .0229 STEMS PER SQUARE FOOT = 14 PLANTS REQUIRED
14 PROVIDED

MBR #14 - PLANTING DETAIL:

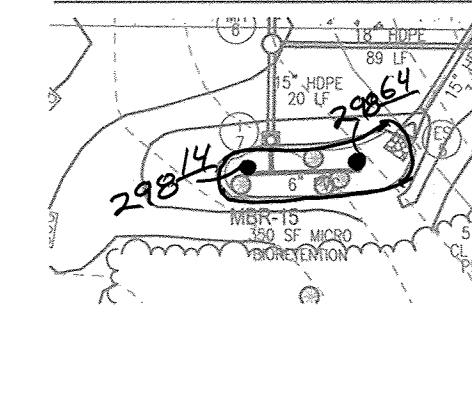


SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	8	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	8	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	4	SPICEBUSH LINDERA BENZON	3 GALLON	CONT
⊙	50	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.

627 SF X 75X X .0229 STEMS PER SQUARE FOOT = 11 PLANTS REQUIRED
11 PROVIDED

NOTE
THE MAINTENANCE OF THE TIERED WALL (MBR-14) LOCATED ON LOT 9 IS THE RESPONSIBILITY OF THE HOME OWNERS ASSOCIATION (H.O.A.)

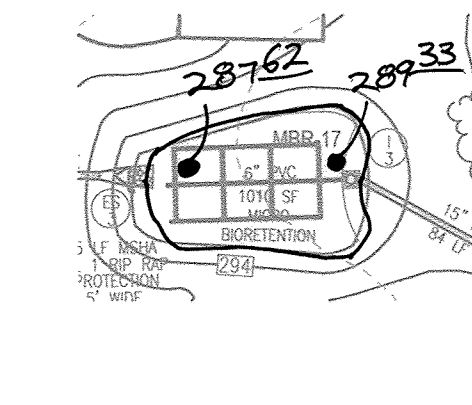
MBR #15 - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	4	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	4	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	4	SPICEBUSH LINDERA BENZON	3 GALLON	CONT

350 SF X 75X X .0229 STEMS PER SQUARE FOOT = 6 PLANTS REQUIRED
6 PROVIDED

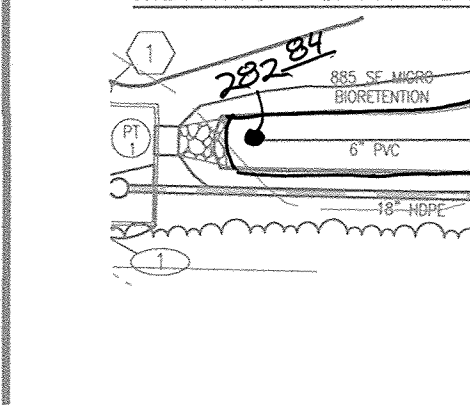
MBR #17 - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	10	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	10	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	10	SPICEBUSH LINDERA BENZON	3 GALLON	CONT
⊙	150	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.

1010 SF X 75X X .0229 STEMS PER SQUARE FOOT = 18 PLANTS REQUIRED
18 PROVIDED

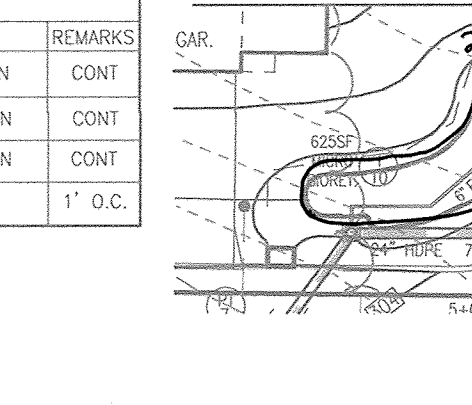
MBR #18 - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	10	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	10	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	10	SPICEBUSH LINDERA BENZON	3 GALLON	CONT
⊙	150	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.

885 SF X 75X X .0229 STEMS PER SQUARE FOOT = 16 PLANTS REQUIRED
16 PROVIDED

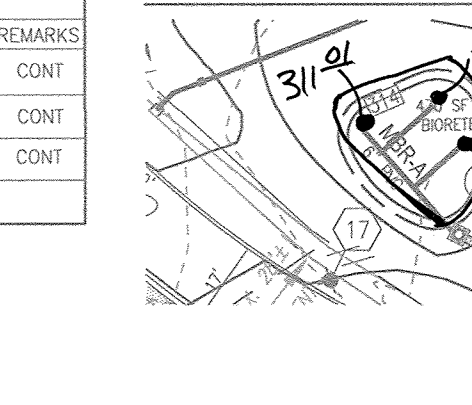
MBR #19 - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	6	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	6	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	6	SPICEBUSH LINDERA BENZON	3 GALLON	CONT

500 SF X 75X X .0229 STEMS PER SQUARE FOOT = 9 PLANTS REQUIRED
9 PROVIDED

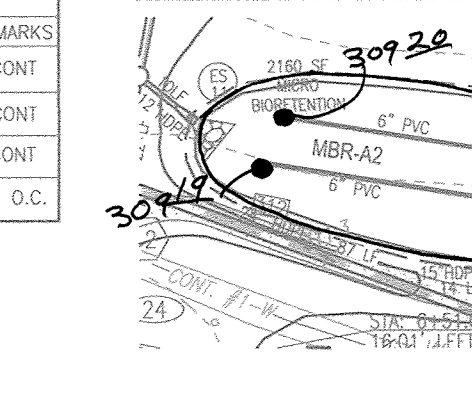
MBR # A1 - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	4	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	4	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	4	SPICEBUSH LINDERA BENZON	3 GALLON	CONT
⊙	100	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.

470 SF X 75X X .0229 STEMS PER SQUARE FOOT = 8 PLANTS REQUIRED
8 PROVIDED

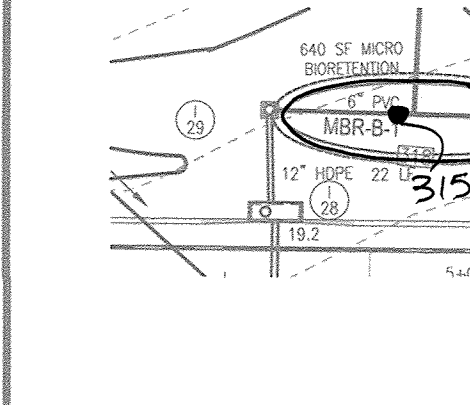
MBR # A2 - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	20	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	14	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	20	SPICEBUSH LINDERA BENZON	3 GALLON	CONT
⊙	500	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.

2160 SF X 75X X .0229 STEMS PER SQUARE FOOT = 37 PLANTS REQUIRED
37 PROVIDED

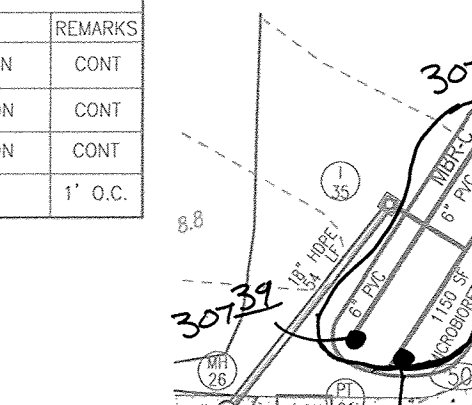
MBR # B1 - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	6	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	6	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	6	SPICEBUSH LINDERA BENZON	3 GALLON	CONT
⊙	100	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.

640 SF X 75X X .0229 STEMS PER SQUARE FOOT = 11 PLANTS REQUIRED
11 PROVIDED

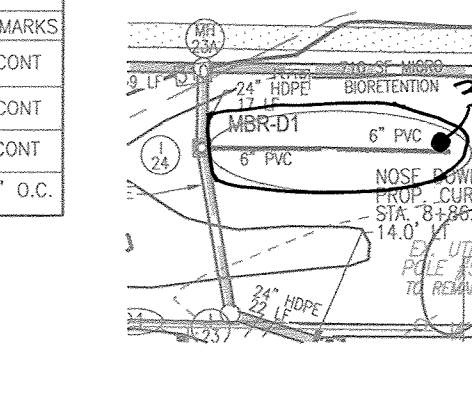
MBR # C - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	10	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	10	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	10	SPICEBUSH LINDERA BENZON	3 GALLON	CONT
⊙	250	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.

1150 SF X 75X X .0229 STEMS PER SQUARE FOOT = 20 PLANTS REQUIRED
20 PROVIDED

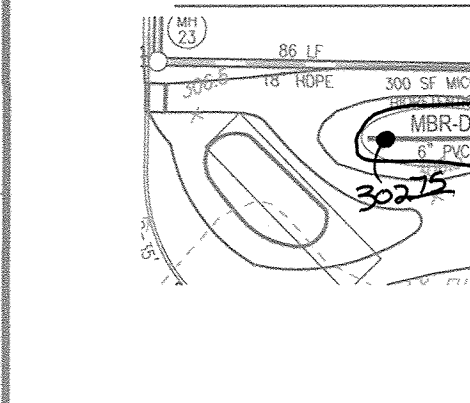
MBR # D1 - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	6	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	10	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	10	SPICEBUSH LINDERA BENZON	3 GALLON	CONT

710 SF X 75X X .0229 STEMS PER SQUARE FOOT = 13 PLANTS REQUIRED
13 PROVIDED

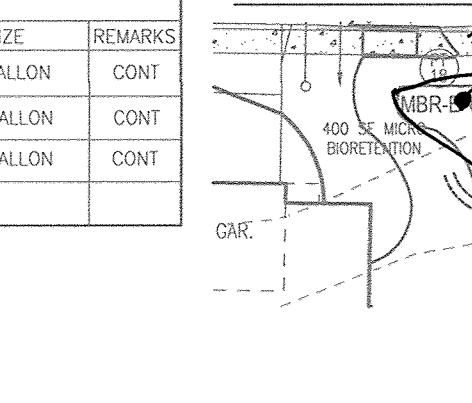
MBR # D2 - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	4	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	4	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	4	SPICEBUSH LINDERA BENZON	3 GALLON	CONT

300 SF X 75X X .0229 STEMS PER SQUARE FOOT = 6 PLANTS REQUIRED
6 PROVIDED

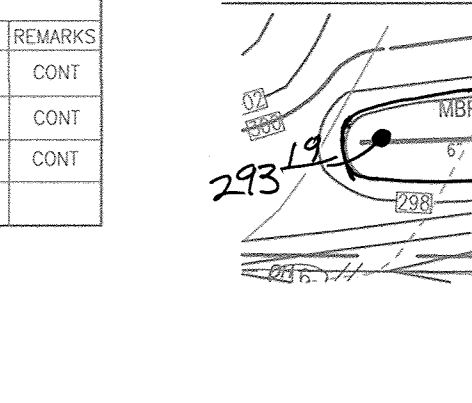
MBR # E - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	4	VIBURNUM TRILOBUM AMERICAN Highbush CRANBERRY	5 GALLON	CONT
⊙	4	ILEX GLABRA INKBERRY	3 GALLON	CONT
⊙	6	SPICEBUSH LINDERA BENZON	3 GALLON	CONT

400 SF X 75X X .0229 STEMS PER SQUARE FOOT = 7 PLANTS REQUIRED
7 PROVIDED

MBR # F - PLANTING DETAIL:



SYMBOL	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	6	VIBURNUM TRILOBUM AM		

TM 0047 P 0561
 THERESA & WILLIAM ATKINS
 L. 2979 F. 251
 USE: RESIDENTIAL

PLAT OF "WILLIAM SOUDER"
 PLAT 5460

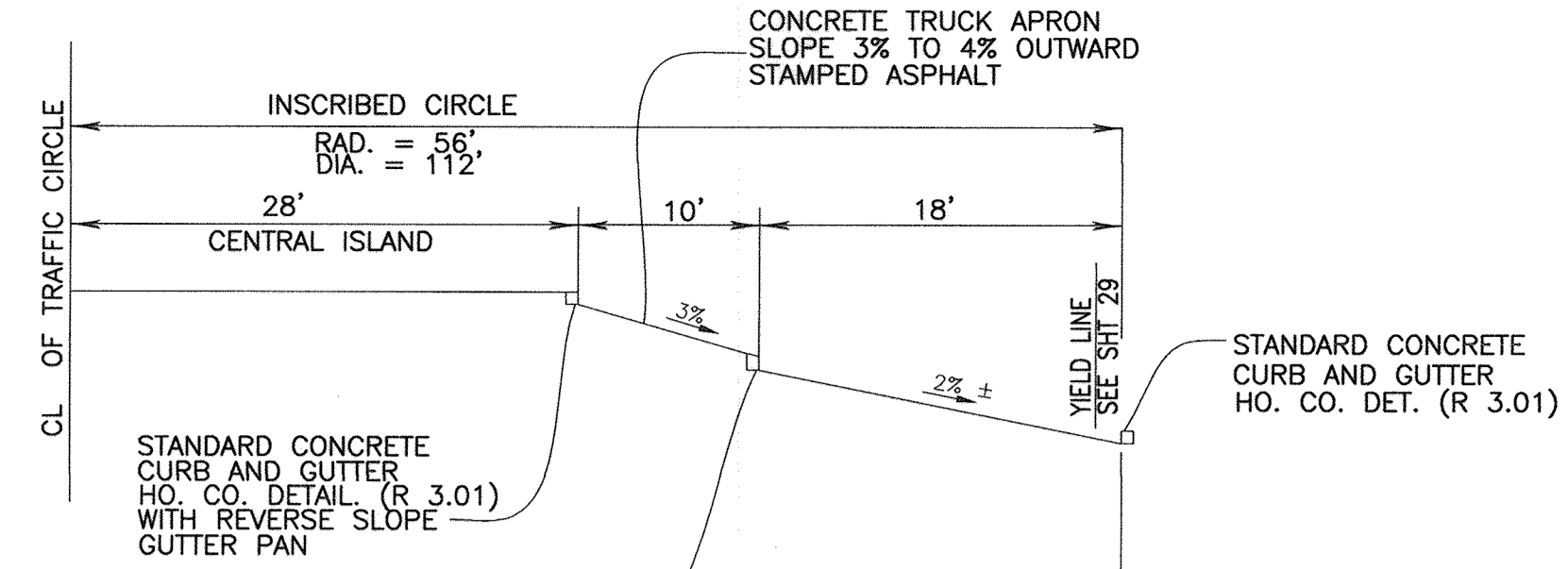
LOT 1 LOT 2 LOT 3

HIGH RIDGE ROAD

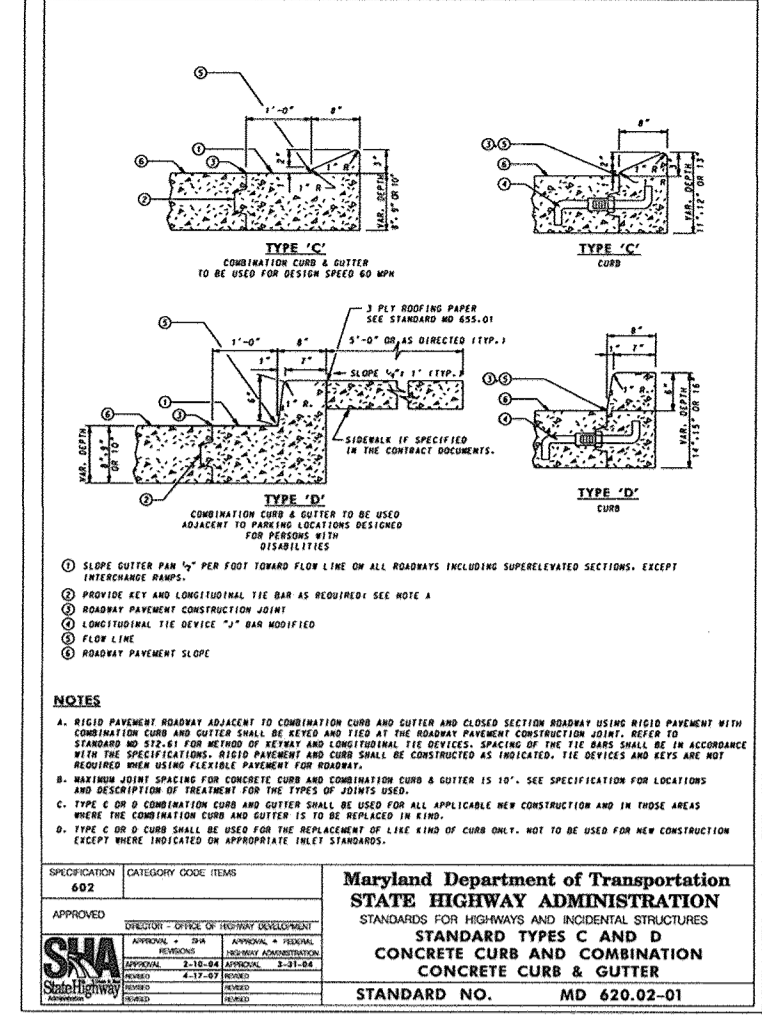
R-3.01
 STANDARD 7" COMB. CURB AND GUTTER
 NO TO SCALE

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways
 Approved: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 Chief, Division of Land Development

5-6-14
 5-9-14
 5-12-14



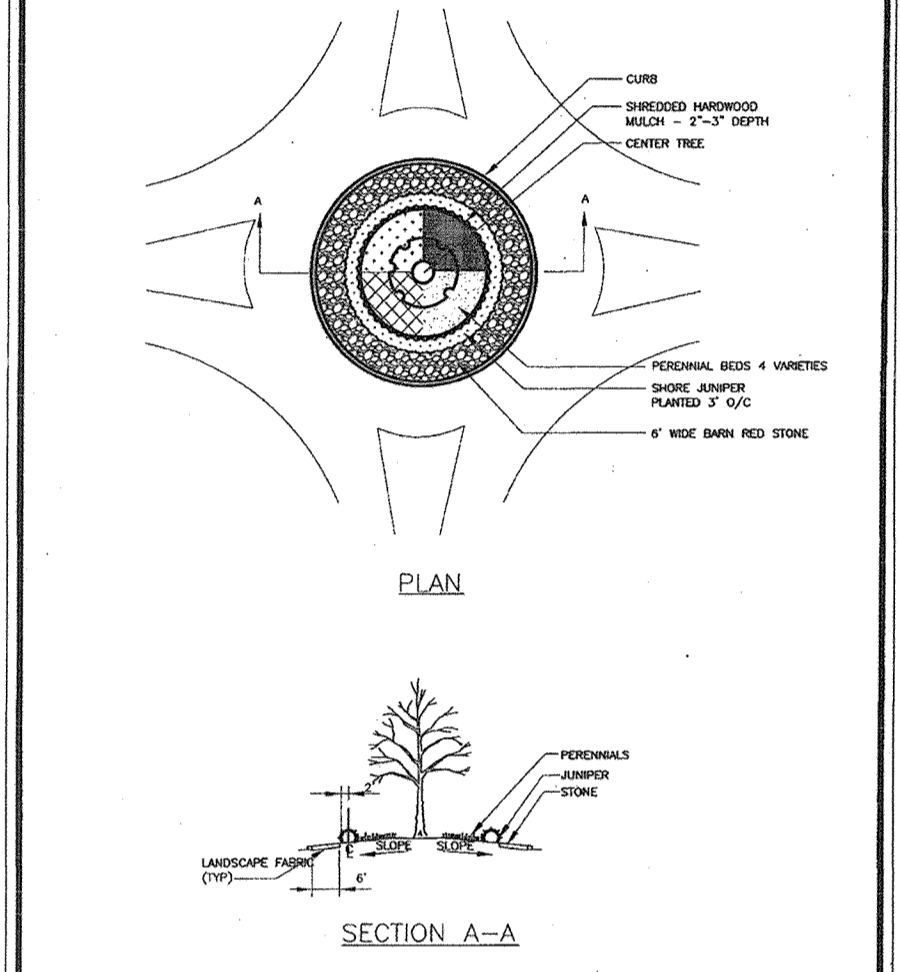
CROSS SECTION
 TRAFFIC CIRCLE AT
 INTERSECTION OF OLD SCAGGSVILLE ROAD,
 HIGH RIDGE AVENUE & RUNNING DEER DRIVE
 SECTION NOT TO SCALE



TYPICAL SPLITTER ISLAND
 NO TO SCALE

1. CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL, SIGNING AND STRIPING...
 2. WITH THE EXCEPT OF THE BEST PRACTICE FOR WORK IN TRAFFIC...
 3. EXISTING CURB AND GUTTER SHALL BE REPAIRED FROM SEAMS...
 4. ALL CURB AND GUTTER SHALL BE CONSTRUCTED TO THE CURB OR OUTSIDE EDGE...
 5. CURB AND GUTTER SHALL BE CONSTRUCTED TO THE CURB OR OUTSIDE EDGE...
 6. CURB AND GUTTER SHALL BE CONSTRUCTED TO THE CURB OR OUTSIDE EDGE...
 7. CURB AND GUTTER SHALL BE CONSTRUCTED TO THE CURB OR OUTSIDE EDGE...
 8. CURB AND GUTTER SHALL BE CONSTRUCTED TO THE CURB OR OUTSIDE EDGE...
 9. CURB AND GUTTER SHALL BE CONSTRUCTED TO THE CURB OR OUTSIDE EDGE...
 10. CURB AND GUTTER SHALL BE CONSTRUCTED TO THE CURB OR OUTSIDE EDGE...
 11. CURB AND GUTTER SHALL BE CONSTRUCTED TO THE CURB OR OUTSIDE EDGE...
 12. CURB AND GUTTER SHALL BE CONSTRUCTED TO THE CURB OR OUTSIDE EDGE...
 13. CURB AND GUTTER SHALL BE CONSTRUCTED TO THE CURB OR OUTSIDE EDGE...

Howard County, Maryland
 Department of Public Works
 Traffic Circle
 Generic Landscape Design
 Information
 L-1.02



Howard County, Maryland
 Department of Public Works
 Traffic Circle
 Generic Landscape Design
 Layout
 L-1.03

OWNER
 KATHY MIESSE, PERSONAL REPRESENTATIVE,
 ESTATE OF ARTHUR P. KRAESKI
 DEVELOPER
 LAND DESIGN & DEVELOPMENT, INC.
 5300 DORSEY HALL DRIVE, STE 109
 ELlicott CITY, MARYLAND 21042-7819

NO.	REVISION	DATE
3	REVISE STORM DRAIN ALIGNMENT TO AVOID CONFLICT WITH OTHER UTILITIES	3/12/15
2	REVISE SUBDIVISION NAME	7/18/14
1	REVISE OLD SCAGGSVILLE ROAD CENTERLINE RADIUS, AMEND UTILITY POLE DESIGNATION	7/18/14

FINAL ROAD CONSTRUCTION PLAN
 OLD SCAGGSVILLE ROAD
 TRAFFIC CIRCLE DETAILING
HIGH RIDGE MEADOWS - SECTION I
 LOTS 1 - 54, OPEN SPACE LOTS 55 - 68
 AND NON-BUILDABLE BULK PARCEL "B"
 A SUBDIVISION OF TAX MAP 50 - PARCEL 363
 AND A RESUBDIVISION OF TAX MAP 50 - PARCEL 542
 KRAESKI PROPERTY NON-BUILDABLE BULK PARCEL "A" (PLAT 21191)

6TH ELECTION DISTRICT - TAX MAP: 50 GRID: 1
 DPZ REF'S: F-10-065, WP-10-087, ECP-12-047,
 WP-13-080, SP 13-037

ZONED: R-3C
 PARCELS: 363 & 542
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELlicott CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8966

DESIGN BY: EDS
 DRAWN BY: EDS/RVE
 CHECKED BY: RHH
 DATE: MARCH 2014
 SCALE: AS SHOWN
 W.O. NO.: 11-28

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS
 WERE PREPARED OR APPROVED BY ME, AND
 THAT I AM A DULY LICENSED PROFESSIONAL
 ENGINEER UNDER THE LAWS OF THE STATE
 OF MARYLAND, LICENSE NO. 16193
 EXPIRATION DATE: 09-27-2014

27 SHEET OF 32

GENERAL NOTES
 1. CONTACT HOWARD COUNTY TRAFFIC DIVISION (410-313-5752) PRIOR TO INSTALLATION OF SIGNS AND STRIPING. HOWARD COUNTY TRAFFIC DIVISION WILL FIELD LOCATE ALL SIGNING AND MARKINGS FOR ROUNDABOUT.
 2. HOWARD COUNTY TRAFFIC DIVISION TO INSPECT AND APPROVE CURB FORMS PRIOR TO POURING CONCRETE.
 3. PEDESTRIAN CROSSING STRIPING WILL BE PROVIDED IN ACCORDANCE WITH SHEET 31 & 32
 4. SEE SHEET 31 FOR SIGNING AND MARKINGS FOR ROUNDABOUT.

STREET LIGHT LOCATION SCHEDULE

NO.	STREET NAME	STATION / OFFSET	TYPE / DESCRIPTION
13	TRAFFIC CIRCLE	STA: 2+70.02 - 21.62' R	150 WATT HPS VAPOR PREMIER POST TOP
14	TRAFFIC CIRCLE	STA: 2+03.68 - 23.81' R	150 WATT HPS VAPOR PREMIER POST TOP
15	TRAFFIC CIRCLE	STA: 1+44.65 - 15.17' R	150 WATT HPS VAPOR PREMIER POST TOP
16	TRAFFIC CIRCLE	STA: 0+37.33 - 12.67' R	150 WATT HPS VAPOR PREMIER POST TOP
17	TRAFFIC CIRCLE	STA: 0+89.28 - 22.38' R	150 WATT HPS VAPOR PREMIER POST TOP

ROUNDABOUT - PLAN VIEW
 SCALE: 1"=20'
 0 20' 40' 60'

AS-BUILT CERTIFICATION
 I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN AND COMPLY WITH THE APPROVED PLANS AND SPECIFICATIONS.
 P.E. # 16193
 DATE 7-18-14

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 NO. 16193

AS-BUILT-DECEMBER 2018

NOTE:

ALL TRAFFIC CONTROL SIGNAGE TO BE LOCATED IN FIELD AS DIRECTED BY HOWARD COUNTY TRAFFIC

NOTE:

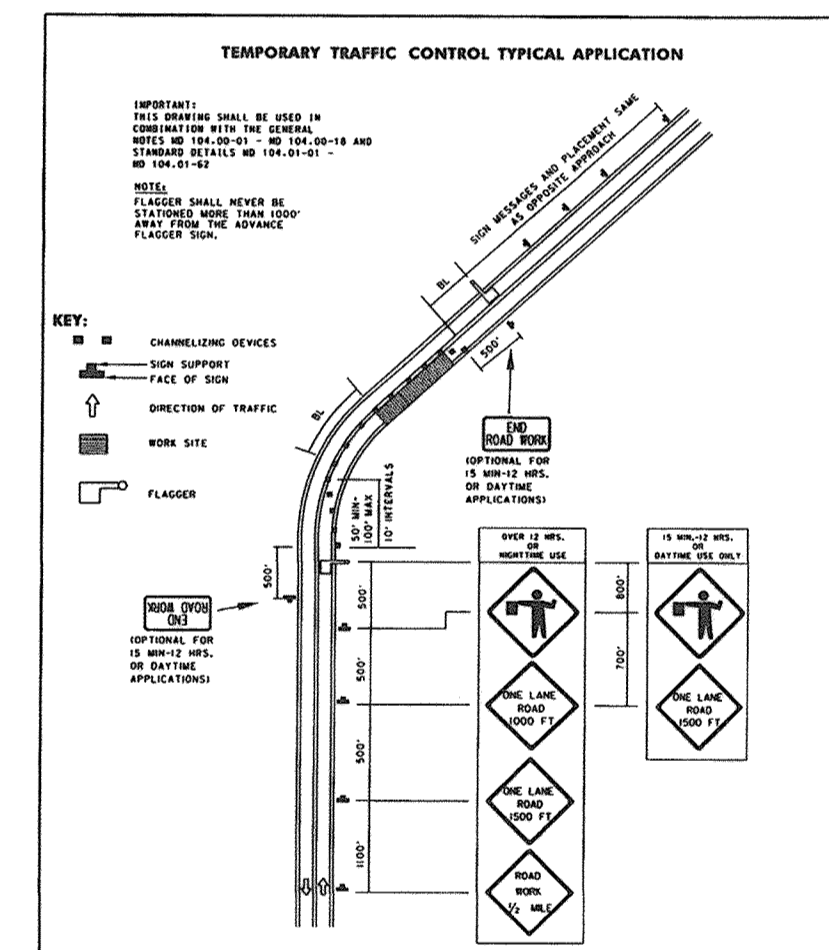
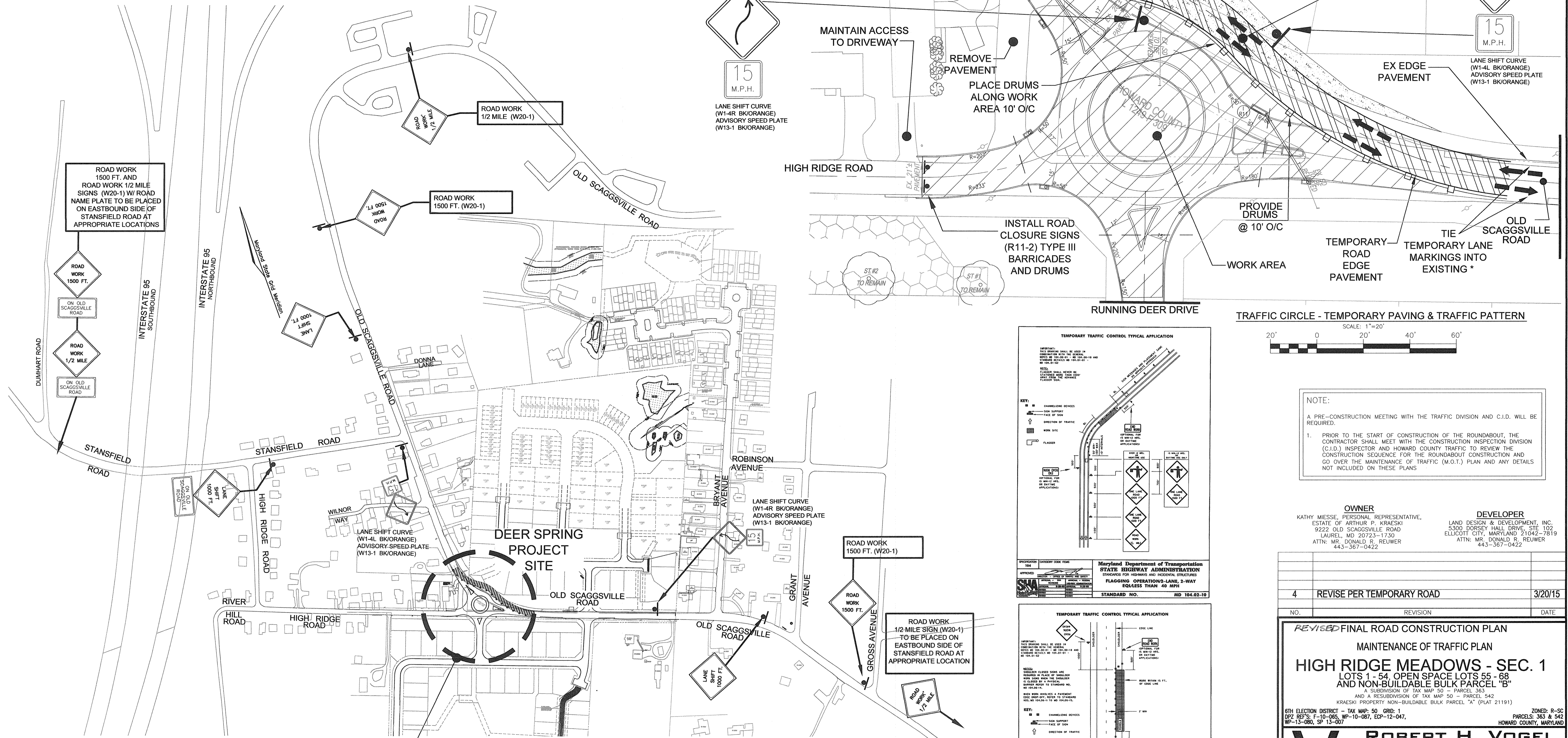
CONTACT THE HOWARD COUNTY TRAFFIC DIVISION TO FIELD LOCATE SIGNS FOR EACH REQUIRED CONSTRUCTION SEQUENCE

*** NOTE:**

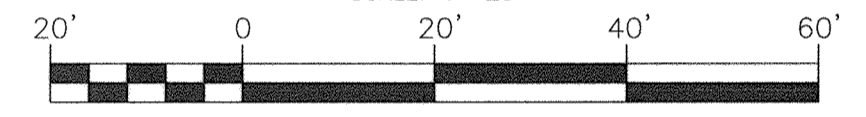
TEMPORARY LANE MARKINGS SHALL CONSIST OF
 - EDGE LANE LINES - 5" WHITE TEMPORARY TAPE
 - CENTER DOUBLE YELLOW - 5" YELLOW TEMPORARY TAPE
 TEMPORARY LANE MARKINGS SHALL BE MAINTAINED THROUGHOUT THE ENTIRE PHASE 1 M.O.T. OPERATIONS

LEGEND:

- PROPOSED WORK AREA
- TRAFFIC CONTROL DRUMS OR EQUAL CHANNEL DEVICE
- TEMPORARY ROAD REVERSIBLE GRADING EASEMENT



TRAFFIC CIRCLE - TEMPORARY PAVING & TRAFFIC PATTERN



NOTE:
 A PRE-CONSTRUCTION MEETING WITH THE TRAFFIC DIVISION AND C.I.D. WILL BE REQUIRED.
 1. PRIOR TO THE START OF CONSTRUCTION OF THE ROUNDABOUT, THE CONTRACTOR SHALL MEET WITH THE CONSTRUCTION INSPECTION DIVISION (C.I.D.) INSPECTOR AND HOWARD COUNTY TRAFFIC TO REVIEW THE CONSTRUCTION SEQUENCE FOR THE ROUNDABOUT CONSTRUCTION AND GO OVER THE MAINTENANCE OF TRAFFIC (M.O.T.) PLAN AND ANY DETAILS NOT INCLUDED ON THESE PLANS

OWNER
 KATHY MIESSE, PERSONAL REPRESENTATIVE,
 ESTATE OF ARTHUR P. KRAESKI
 9222 OLD SCAGGSVILLE ROAD
 LAUREL, MD 20723-1730
 ATTN: MR. DONALD R. REUWER
 443-367-0422

DEVELOPER
 LAND DESIGN & DEVELOPMENT, INC.
 5300 DORSEY HALL DRIVE, STE 102
 ELLICOTT CITY, MARYLAND 21042-7819
 ATTN: MR. DONALD R. REUWER
 443-367-0422

NO.	REVISION	DATE
4	REVISE PER TEMPORARY ROAD	3/20/15

REVISED FINAL ROAD CONSTRUCTION PLAN
MAINTENANCE OF TRAFFIC PLAN
HIGH RIDGE MEADOWS - SEC. 1
LOTS 1 - 54, OPEN SPACE LOTS 55 - 68
AND NON-BUILDABLE BULK PARCEL "B"
 A SUBDIVISION OF TAX MAP 50 - PARCELS 363
 AND A RESUBDIVISION OF TAX MAP 50 - PARCEL 542
 KRAESKI PROPERTY NON-BUILDABLE BULK PARCEL "A" (PLAT 21191)
 6TH ELECTION DISTRICT - TAX MAP 50 GRD: 1
 DPZ REF'S: F-10-085, W-10-087, EDP-12-047,
 W-13-080, SP 13-007

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2016

DESIGN BY: EDS.
 DRAWN BY: EDS/RVE.
 CHECKED BY: RHV.
 DATE: MARCH 2015
 SCALE: AS SHOWN
 W.O. NO.: 11-28

28 SHEET OF 32

APPROVED: DEPARTMENT OF PUBLIC WORKS

 CHIEF, BUREAU OF HIGHWAYS
 DATE: 7/14/2015

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 7/17/15

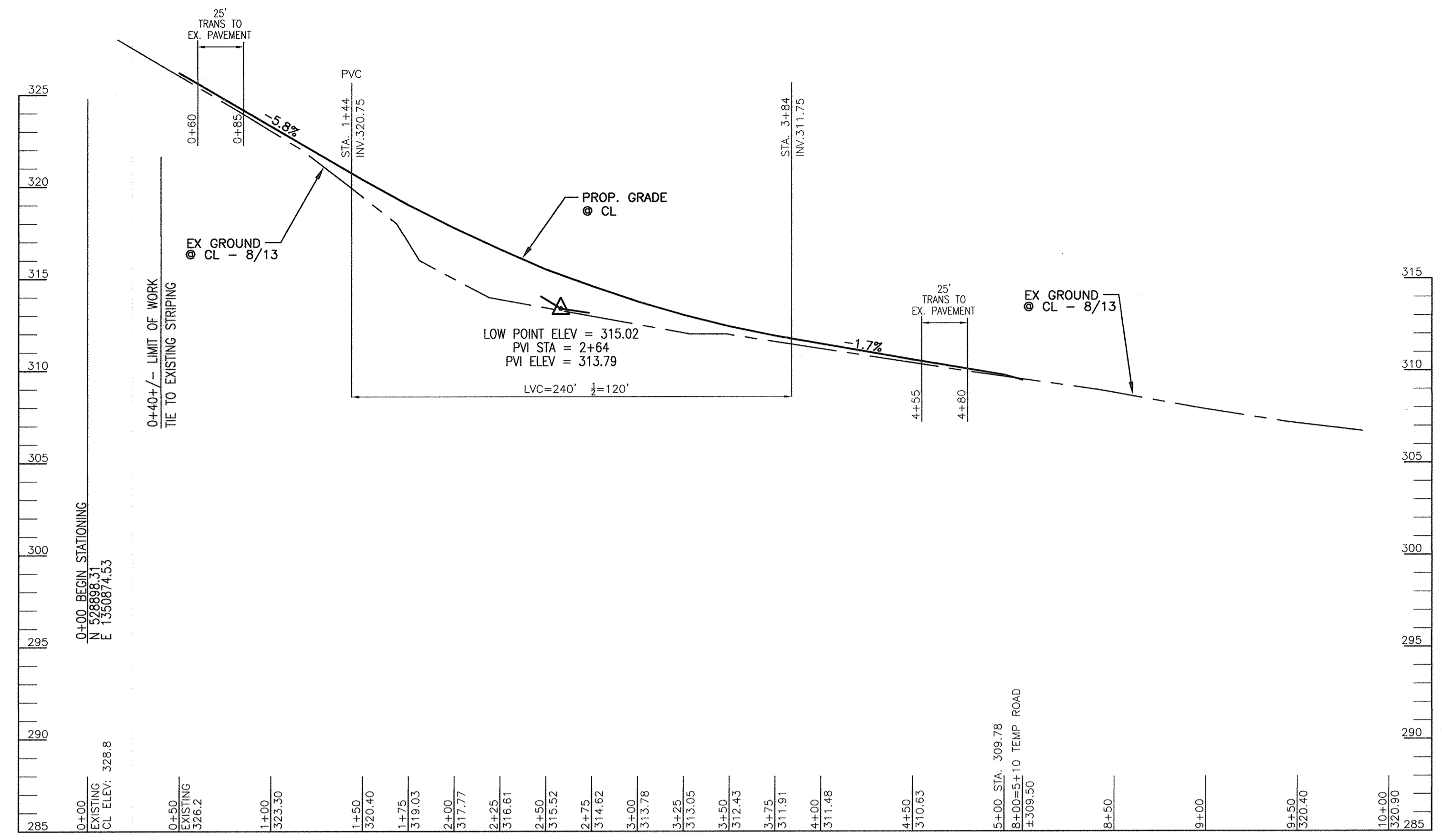
CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 7.20.15

NOTE:
 1. TRAFFIC SHALL BE DIVERTED ONTO HIGH RIDGE ROAD TOWARD STANSFIELD ROAD DURING THE CONSTRUCTION OF THE TRAFFIC CIRCLE.
 REFER TO "DETOUR PLAN", SHEET 30



AS-BUILT CERTIFICATION
 I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS.
 P.E. NAME: 16193 P.E.#: 7-18-19 DATE: 7-18-19

NO AS-BUILT INFORMATION ON THIS SHEET



**OLD SCAGGSVILLE ROAD
TEMPORARY ROAD**
SCALE: HORIZONTAL = 1"=50'
VERTICAL = 1"=5'

NOTE:
A PRE-CONSTRUCTION MEETING WITH THE TRAFFIC DIVISION AND C.I.D. WILL BE REQUIRED.
1. PRIOR TO THE START OF CONSTRUCTION OF THE ROUNDABOUT, THE CONTRACTOR SHALL MEET WITH THE CONSTRUCTION INSPECTION DIVISION (C.I.D.) INSPECTOR AND HOWARD COUNTY TRAFFIC TO REVIEW THE CONSTRUCTION SEQUENCE FOR THE ROUNDABOUT CONSTRUCTION AND GO OVER THE MAINTENANCE OF TRAFFIC (M.O.T.) PLAN AND ANY DETAILS NOT INCLUDED ON THESE PLANS

OWNER
KATHY MIESSE, PERSONAL REPRESENTATIVE,
ESTATE OF ARTHUR P. KRAESKI
9222 OLD SCAGGSVILLE ROAD
LAUREL, MD 20723-1730
ATTN: MR. DONALD R. REUWER
443-367-0422

DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
5300 DORSEY HALL DRIVE, STE 102
ELLICOTT CITY, MARYLAND 21042-7819
ATTN: MR. DONALD R. REUWER
443-367-0422

NO.	REVISION	DATE
10	REVISE PLANS TO SHOW AS-BUILT CONDITION FOR MBR-14	12/5/18
4	REVISE PER TEMPORARY ROAD	3/20/15
2	REVISE SUBDIVISION NAME	7/18/14

**REVISED FINAL ROAD CONSTRUCTION PLAN
TEMPORARY ROAD PROFILE**
HIGH RIDGE MEADOWS - SEC. 1
LOTS 1 - 54, OPEN SPACE LOTS 55 - 68
AND NON-BUILDABLE BULK PARCEL "B"
A SUBDIVISION OF TAX MAP 50 - PARCEL 363
AND A RESUBDIVISION OF TAX MAP 50 - PARCEL 542
KRAESKI PROPERTY NON-BUILDABLE BULK PARCEL "A" (PLAT 21191)
6TH ELECTION DISTRICT - TAX MAP 50 GRID: 1
DPT ZETS: F-10-066, WP-10-087, ECP-12-047, PARCELS: 363 & 542
WP-13-080, SP 13-007 HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL
ENGINEERING, INC.**
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET TEL: 410.461.7666
ELLICOTT CITY, MD 21043 FAX: 410.461.8961

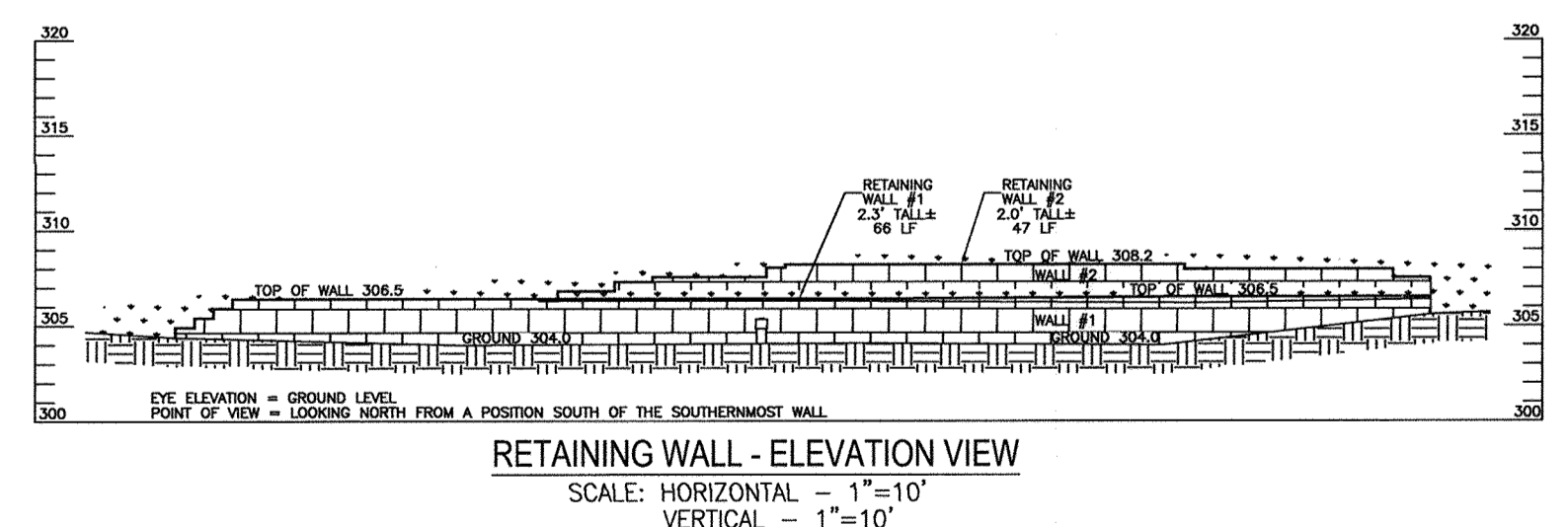
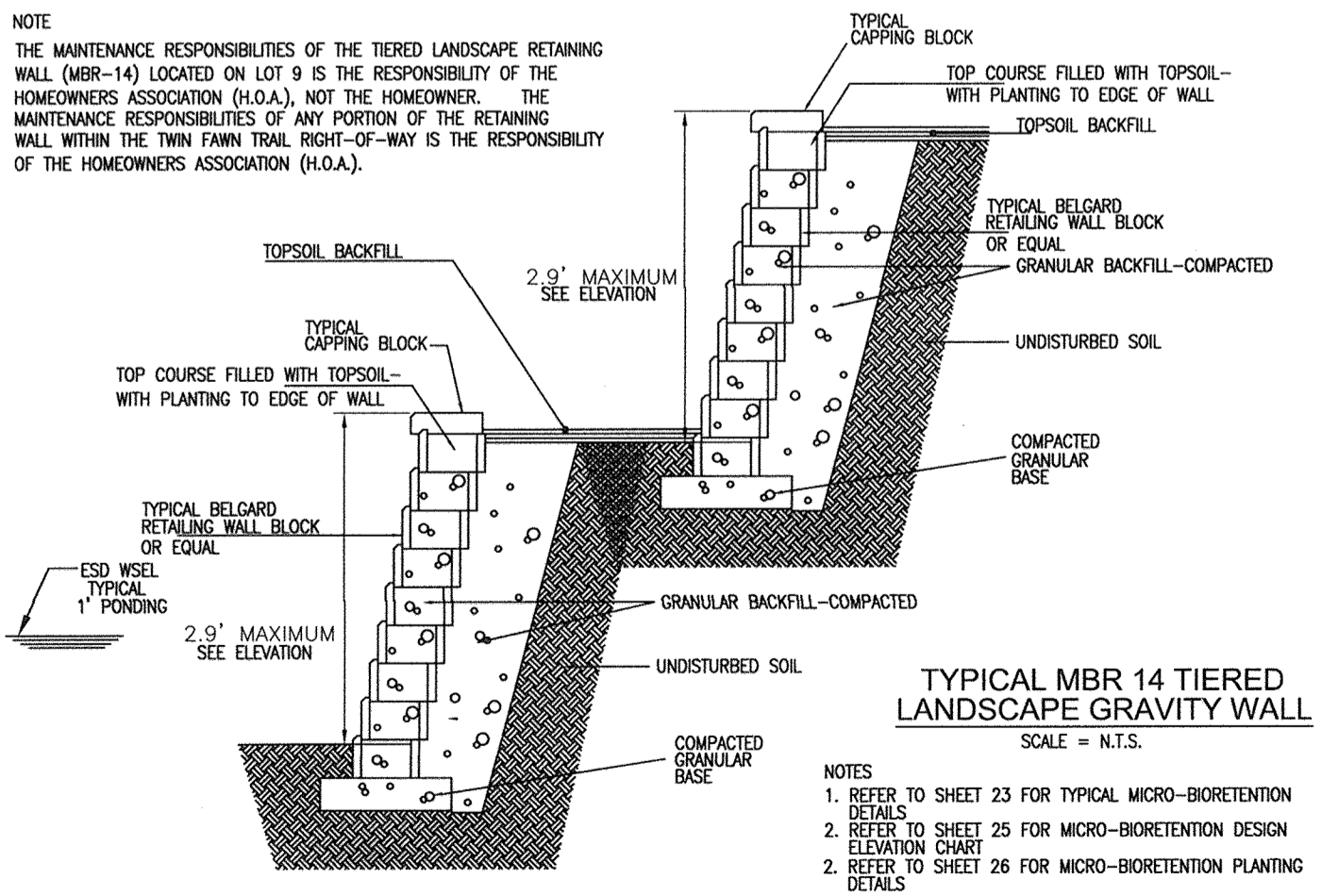
PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2016

DESIGN BY: EDS
CHECKED BY: RHV
DATE: MARCH 2015
SCALE: AS SHOWN
W.O. NO.: 11-28

29 SHEET OF 32



AS-BUILT CERTIFICATION
I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THESE PLANS WERE CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLY WITH THE APPROVED PLANS AND SPECIFICATIONS.
DATE: 16/193 7-18-19
NAME: [Signature] P.E.# DATE

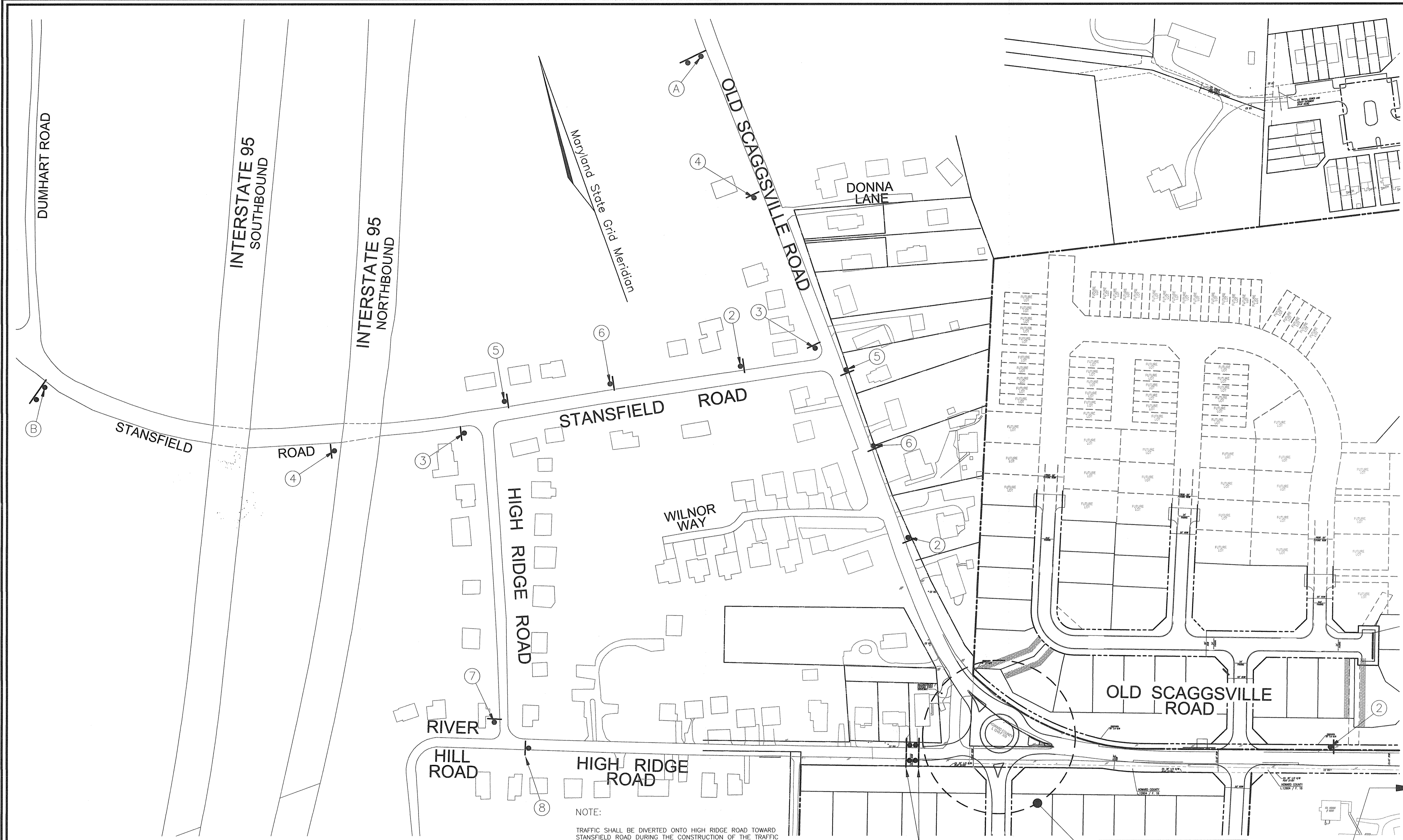


APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 7/14/2015
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] 7/17/15
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 7-20-15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

NO AS-BUILT INFORMATION ON THIS SHEET



TEMPORARY TRAFFIC CONTROL SIGN TABLE						
SYMBOL	M.U.T.C.D. DESIGNATION	MESSAGE	SIZE	QUANTITY	COLOR	
					BACKGROUND	CHARACTERS
①*	R11-2	ROAD CLOSED	48"x30"	2	ORANGE	BLACK
	ROAD NAME PANEL (MOUNT ON TOP OF ALL M4-9SIGNS)	"HIGH RIDGE RD" (5" LETTERS)	30"x12"	11	WHITE	BLACK
②	M4-9 W/ ROAD NAME PANEL	↑	5" LETTERS 30"x12" 30"x24"	3	WHITE	BLACK
③	M4-9R W/ ROAD NAME PANEL	→	5" LETTERS 30"x12" 30"x24"	2	WHITE	BLACK
④	M4-9R (MODIFIED ARROW) W/ ROAD NAME PANEL	↻	5" LETTERS 30"x12" 30"x30"	2	WHITE	BLACK
⑤	M4-9L W/ ROAD NAME PANEL	←	5" LETTERS 30"x12" 30"x24"	2	WHITE	BLACK
⑥	M4-9L (MODIFIED ARROW) W/ ROAD NAME PANEL	↻	5" LETTERS 30"x12" 30"x30"	2	WHITE	BLACK
⑦	M4-8A	END DETOUR	30"x24"	1	ORANGE	BLACK
⑧*	M4-10L W/R11-3a	ROAD CLOSED 800 FT. AHEAD LOCAL TRAFFIC ONLY	48"x18" 60"x30"	1	WHITE	BLACK

* MOUNT ON TYPE III BARRICADE
 ** CONTACT TRAFFIC ENGINEER FOR FIELD PLACEMENT

NOTE:
 SEE SHEETS 27, 28 & 29 OF 32 FOR
 FOR TRAFFIC CIRCLE CONSTRUCTION
 AND MAINTENANCE OF TRAFFIC PLANS



AS-BUILT CERTIFICATION
 I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLY WITH THE APPROVED PLANS AND SPECIFICATIONS.
 R.H.V. 16193 7-18-19
 P.E. # DATE

OWNER
 KATHY MIESSE, PERSONAL REPRESENTATIVE,
 ESTATE OF ARTHUR P. KRAESKI
 9222 OLD SCAGGSVILLE ROAD
 LAUREL, MD 20723-1730
 ATTN: MR. DONALD R. REUWER
 443-367-0422

DEVELOPER
 LAND DESIGN & DEVELOPMENT, INC.
 5300 DORSEY HALL DRIVE, STE 102
 ELLICOTT CITY, MARYLAND 21042-7819
 ATTN: MR. DONALD R. REUWER
 443-367-0422

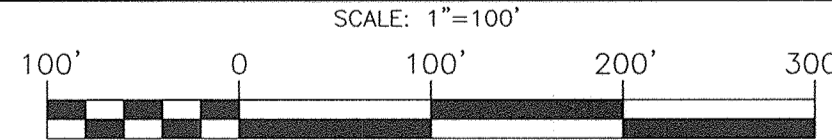
NOTE:
 TRAFFIC SHALL BE DIVERTED ONTO HIGH RIDGE ROAD TOWARD STANSFIELD ROAD DURING THE CONSTRUCTION OF THE TRAFFIC CIRCLE.

① **ADD DRUMS AS NEEDED

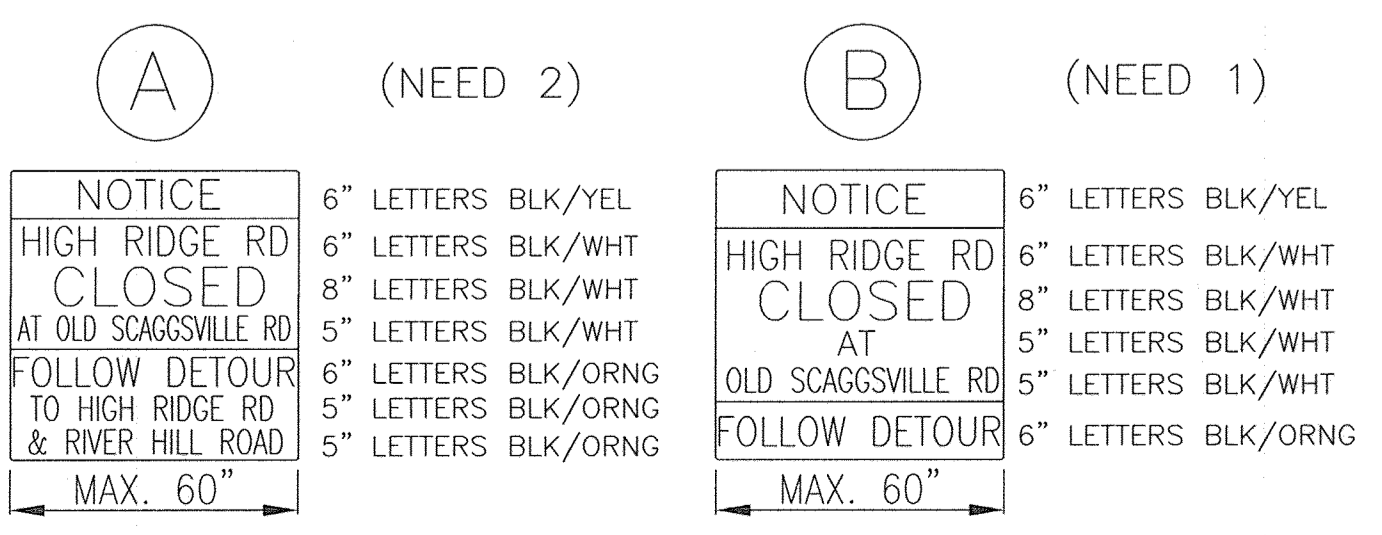
ROUNDABOUT CONSTRUCTION AREA, SEE SHEET 27

LOCATION OF NOTICE SIGN (A) TO BE FIELD LOCATED

HIGH RIDGE ROAD CLOSURE AND HIGH RIDGE ROAD & RIVER HILL ROAD DETOUR - PLAN VIEW



NOTICE SIGNS



NOTE:
 A PRE-CONSTRUCTION MEETING WITH THE TRAFFIC DIVISION AND C.I.D. WILL BE REQUIRED.
 1. PRIOR TO THE START OF CONSTRUCTION OF THE ROUNDABOUT, THE CONTRACTOR SHALL MEET WITH THE CONSTRUCTION INSPECTION DIVISION (C.I.D.) INSPECTOR AND HOWARD COUNTY TRAFFIC TO REVIEW THE CONSTRUCTION SEQUENCE FOR THE ROUNDABOUT CONSTRUCTION AND GO OVER THE MAINTENANCE OF TRAFFIC (M.O.T.) PLAN AND ANY DETAILS NOT INCLUDED ON THESE PLANS

NOTE:
 FULL DETOUR SHALL BE IN PLACE PRIOR TO BEGINNING WORK ON PHASE 1 TRAFFIC CIRCLE WORK (SHEET 28)
 UPON COMPLETION OF TRAFFIC CIRCLE CONSTRUCTION AND PERMISSION FROM CONSTRUCTION INSPECTION DIVISION (C.I.D.) INSPECTOR AND HOWARD COUNTY TRAFFIC, REMOVE DETOUR AND OPEN TRAFFIC CIRCLE FOR PUBLIC USE

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Bureau of Highways
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 Chief, Division of Land Development

DATE: 5-6-14
 DATE: 5-9-14
 DATE: 5-12-14

- NOTES:
- ALL SIGN LOCATIONS ON PLAN ARE APPROXIMATE. FIELD LOCATIONS TO BE MARKED BY HOWARD COUNTY TRAFFIC PRIOR TO ANY SIGN INSTALLATIONS AND MAY REQUIRE ADJUSTMENT BASED UPON CONSTRUCTION SEQUENCING.
 - SIGNS SHOULD BE MOUNTED ON 4"x4" WOOD POSTS.
 - DETOUR PLAN SHALL STAY IN PLACE DURING BOTH PHASES OF CONSTRUCTION OF THE ROUNDABOUT
 - ALL DETOUR AND ROAD WORK SIGNAGE SHALL BE INSTALLED & COVERED WITH OPAQUE MATERIAL PRIOR TO ROUNDABOUT PHASE 1 CONSTRUCTION STARTING.
 - TWO VARIABLE MESSAGE BOARDS (VMS) SHALL BE INSTALLED 14 DAYS PRIOR TO THE START OF THE ROUNDABOUT DETOUR PLAN IMPLEMENTATION. CONTACT HOWARD COUNTY TRAFFIC FOR LOCATION AND MESSAGE. DEVELOPER WILL BE RESPONSIBLE FOR VMS RENTAL.

NO AS-BUILT INFORMATION ON THIS SHEET

2	REVISE SUBDIVISION NAME	7/18/14
NO.	REVISION	DATE

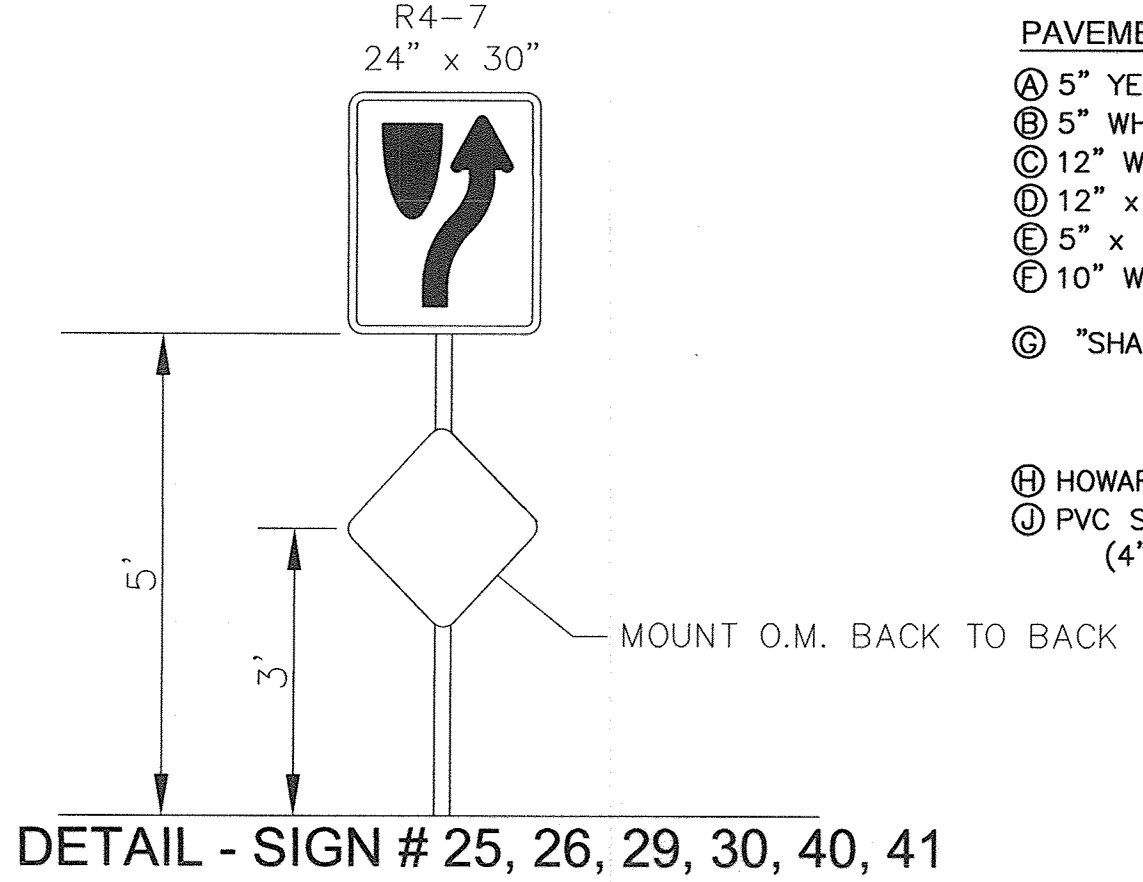
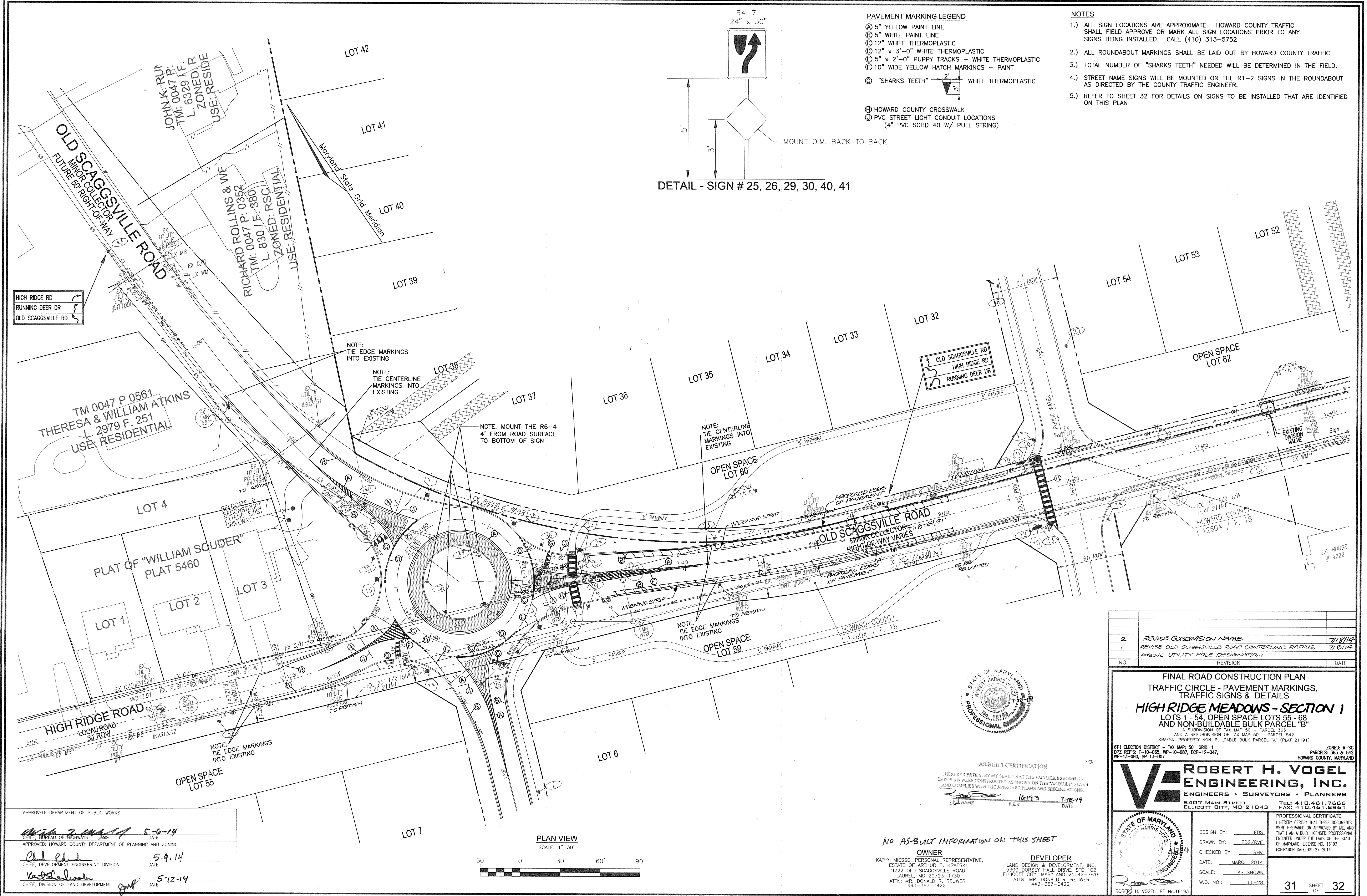
FINAL ROAD CONSTRUCTION PLAN
DETOUR PLAN FOR TRAFFIC CIRCLE CONSTRUCTION
HIGH RIDGE MEADOWS- SECTION 1
 LOTS 1 - 54, OPEN SPACE LOTS 55 - 68
 AND NON-BUILDABLE BULK PARCEL "B"
 AND A RESUBDIVISION OF TAX MAP 50 - PARCEL 542
 KRAESKI PROPERTY NON-BUILDABLE BULK PARCEL "A" (PLAT 21191)
 6TH ELECTION DISTRICT - TAX MAP: 50 GRID: 1
 022 REFS: F-10-065, WP-10-087, ECP-12-047, PARCELS: 383 & 542
 WP-13-080, SP 13-007 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET TEL: 410.461.7666
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2014

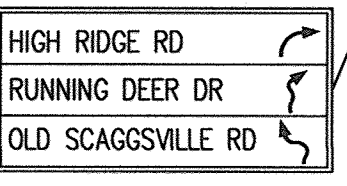
DESIGN BY: EDS.
 DRAWN BY: EDS/RVS.
 CHECKED BY: RHV.
 DATE: MARCH 2014.
 SCALE: AS SHOWN
 W.O. NO.: 11-28

30 SHEET OF 32



- PAVEMENT MARKING LEGEND**
- Ⓐ 5" YELLOW PAINT LINE
 - Ⓑ 5" WHITE PAINT LINE
 - Ⓒ 12" WHITE THERMOPLASTIC
 - Ⓓ 12" x 3'-0" WHITE THERMOPLASTIC
 - Ⓔ 5" x 2'-0" PUPPY TRACKS - WHITE THERMOPLASTIC
 - Ⓕ 10" WIDE YELLOW HATCH MARKINGS - PAINT
 - Ⓖ "SHARKS TEETH" WHITE THERMOPLASTIC
 - Ⓗ HOWARD COUNTY CROSSWALK
 - Ⓘ PVC STREET LIGHT CONDUIT LOCATIONS (4" PVC SCHD 40 W/ PULL STRING)

- NOTES**
- 1.) ALL SIGN LOCATIONS ARE APPROXIMATE. HOWARD COUNTY TRAFFIC SHALL FIELD APPROVE OR MARK ALL SIGN LOCATIONS PRIOR TO ANY SIGNS BEING INSTALLED. CALL (410) 313-5752
 - 2.) ALL ROUNDABOUT MARKINGS SHALL BE LAID OUT BY HOWARD COUNTY TRAFFIC.
 - 3.) TOTAL NUMBER OF "SHARKS TEETH" NEEDED WILL BE DETERMINED IN THE FIELD.
 - 4.) STREET NAME SIGNS WILL BE MOUNTED ON THE R1-2 SIGNS IN THE ROUNDABOUT AS DIRECTED BY THE COUNTY TRAFFIC ENGINEER.
 - 5.) REFER TO SHEET 32 FOR DETAILS ON SIGNS TO BE INSTALLED THAT ARE IDENTIFIED ON THIS PLAN



NO.	REVISION	DATE
2	REVISE SUBDIVISION NAME	7/18/14
1	REVISE OLD SCAGGSVILLE ROAD CENTERLINE RADIUS, AMEND UTILITY POLE DESIGNATION	7/6/14



AS-BUILT CERTIFICATION
 I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLY WITH THE APPROVED PLANS AND SPECIFICATIONS.
 NAME: [Signature] P.E.# 16193 DATE: 7-18-19

NO AS-BUILT INFORMATION ON THIS SHEET

OWNER
 KATHY MIESSE, PERSONAL REPRESENTATIVE,
 ESTATE OF ARTHUR P. KRAESKI
 9222 OLD SCAGGSVILLE ROAD
 LAUREL, MD 20723-1730
 ATTN: MR. DONALD R. REUWER
 443-367-0422

DEVELOPER
 LAND DESIGN & DEVELOPMENT, INC.
 5300 DORSEY HALL DRIVE, STE 102
 ELLICOTT CITY, MARYLAND 21042-7819
 ATTN: MR. DONALD R. REUWER
 443-367-0422

FINAL ROAD CONSTRUCTION PLAN
TRAFFIC CIRCLE - PAVEMENT MARKINGS,
TRAFFIC SIGNS & DETAILS
HIGH RIDGE MEADOWS - SECTION 1
 LOTS 1 - 54, OPEN SPACE LOTS 55 - 68
 AND NON-BUILDABLE BULK PARCEL "B"
A SUBDIVISION OF TAX MAP 50 - PARCEL 363
 AND A RESUBDIVISION OF TAX MAP 50 - PARCEL 542
 KRAESKI PROPERTY NON-BUILDABLE BULK PARCEL "A" (PLAT 21191)

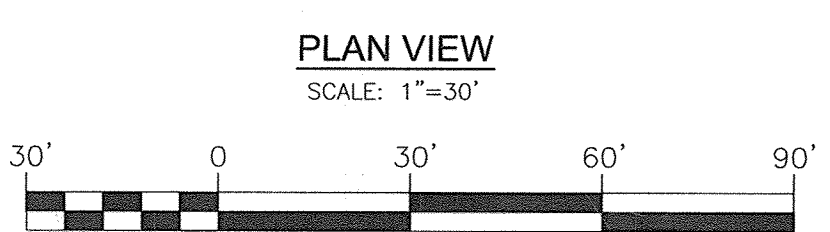
ROBERT H. VOGEL
ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET TEL: 410.461.7666
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

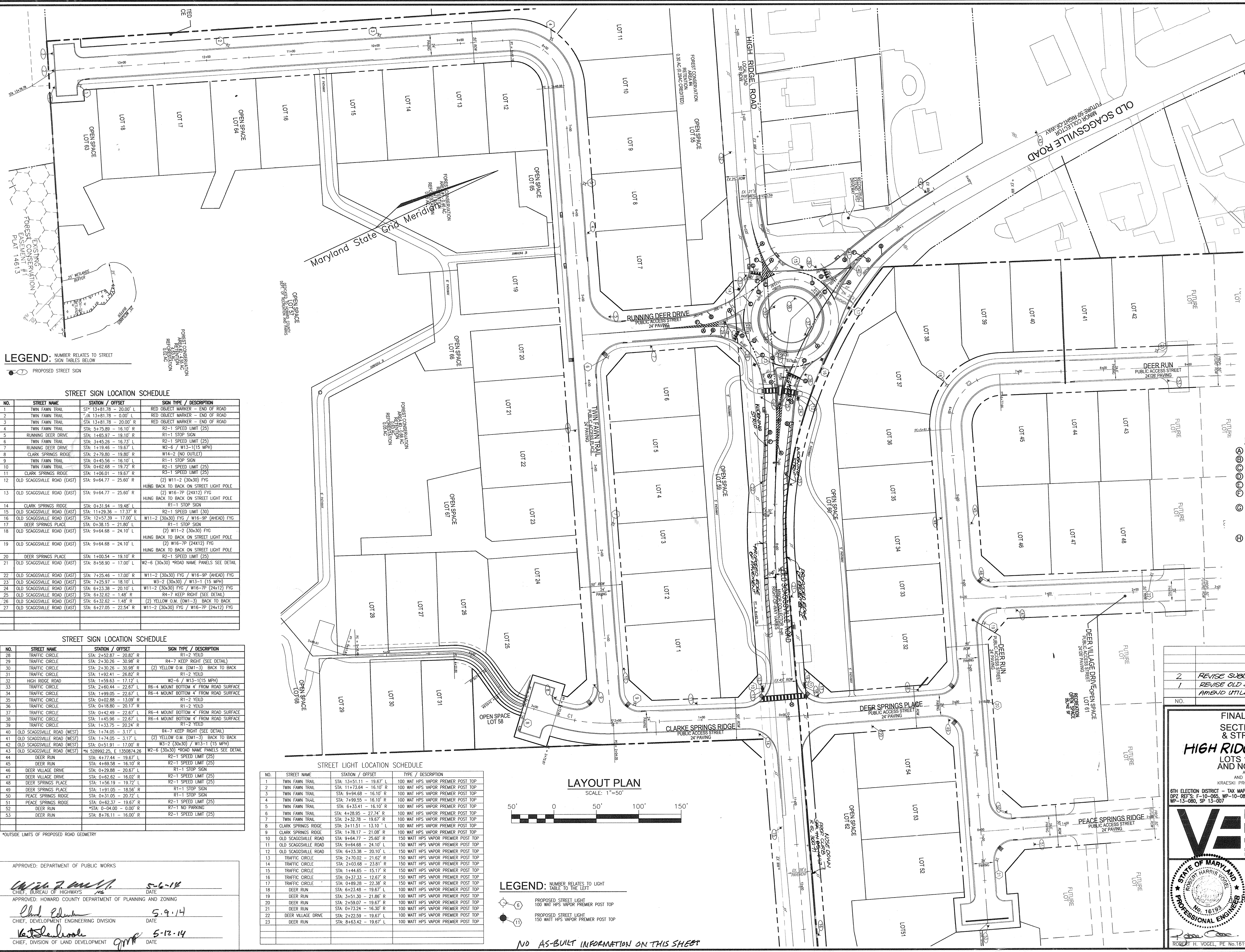
PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2014

DESIGN BY: EDS
 DRAWN BY: EDS/RVE
 CHECKED BY: RHY
 DATE: MARCH 2014
 SCALE: AS SHOWN
 W.O. NO.: 11-28

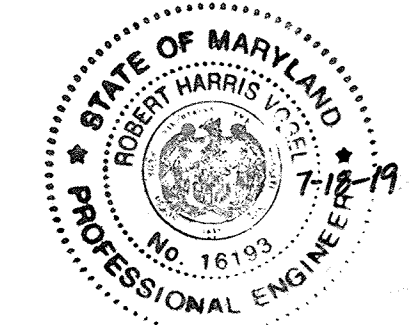
31 SHEET OF 32

APPROVED: DEPARTMENT OF PUBLIC WORKS
Chris Z. Hall 5-6-14
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Chad Edwards 5-9-14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
Kurt Schaefer 5-12-14
 CHIEF, DIVISION OF LAND DEVELOPMENT





- NOTES:
- TRAFFIC CONTROL DEVICES:
 - THE R1-1(STOP) SIGNS AND STREET NAME SIGN (SNS) ASSEMBLIES FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETE.
 - 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.
 - ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUMUCD).
 - ALL SIGN POST USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, ("BUCK PUNCH") SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE - 3" LONG). THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "BUCK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON THE TOP OF EACH POST.
 - STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME III (2005), SECTION 5.5.4. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.



AS-BUILT CERTIFICATION
 I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLY WITH THE APPROVED PLANS AND SPECIFICATIONS.
 P.E. NAME: 16193 P.E. # 7-18-19 DATE

- PAVEMENT MARKING LEGEND - SEE SHT 29
- ⊙ 5" YELLOW PAINT LINE
 - ⊙ 5" WHITE PAINT LINE
 - ⊙ 12" WHITE THERMOPLASTIC
 - ⊙ 12" x 3'-0" WHITE THERMOPLASTIC
 - ⊙ 5" x 2'-0" PUPPY TRACKS - WHITE THERMOPLASTIC
 - ⊙ 10" WIDE YELLOW HATCH MARKINGS - PAINT
 - ⊙ "SHARKS TEETH" - WHITE THERMOPLASTIC
 - ⊙ HOWARD COUNTY CROSSWALK

OWNER
 KATHY MIESSE, PERSONAL REPRESENTATIVE,
 ESTATE OF ARTHUR P. KRASINSKI
 9222 OLD SCAGGSVILLE ROAD
 LAUREL, MD 20723-1730
 ATTN: MR. DONALD R. REUWER 443-367-0422

DEVELOPER
 LAND DESIGN & DEVELOPMENT, INC.
 5300 DORSEY HALL DRIVE, STE 102
 ELLICOTT CITY, MARYLAND 21042-7819
 ATTN: MR. DONALD R. REUWER 443-367-0422

LEGEND: NUMBER RELATES TO STREET SIGN TABLES BELOW

STREET SIGN LOCATION SCHEDULE

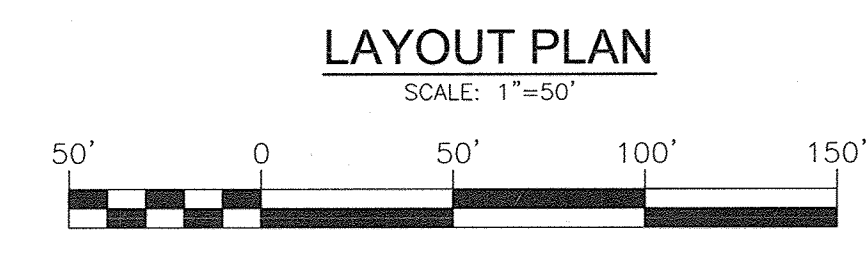
NO.	STREET NAME	STATION / OFFSET	SIGN TYPE / DESCRIPTION
1	TWIN FAWN TRAIL	STA 13481.78 - 20.00' L	RED OBJECT MARKER - END OF ROAD
2	TWIN FAWN TRAIL	STA 13481.78 - 0.00' R	RED OBJECT MARKER - END OF ROAD
3	TWIN FAWN TRAIL	STA 13481.78 - 20.00' R	RED OBJECT MARKER - END OF ROAD
4	TWIN FAWN TRAIL	STA 5475.89 - 16.10' R	R2-1 SPEED LIMIT (25)
5	RUNNING DEER DRIVE	STA 1465.97 - 19.10' R	R1-1 STOP SIGN
6	TWIN FAWN TRAIL	STA 3445.26 - 16.73' L	R2-1 SPEED LIMIT (25)
7	RUNNING DEER DRIVE	STA 1418.46 - 19.67' L	W2-6 / W13-1(15 MPH)
8	CLARK SPRINGS RIDGE	STA 2479.80 - 19.80' R	W14-2 (NO OUTLET)
9	TWIN FAWN TRAIL	STA 0445.59 - 16.10' L	R1-1 STOP SIGN
10	TWIN FAWN TRAIL	STA 0462.68 - 19.72' R	R2-1 SPEED LIMIT (25)
11	CLARK SPRINGS RIDGE	STA 1406.01 - 19.67' R	R3-1 SPEED LIMIT (25)
12	OLD SCAGGSVILLE ROAD (EAST)	STA: 9464.77 - 25.60' R	(2) W11-2 (30x30) FYG
13	OLD SCAGGSVILLE ROAD (EAST)	STA: 9464.77 - 25.60' R	HUNG BACK TO BACK ON STREET LIGHT POLE
14	CLARK SPRINGS RIDGE	STA: 0431.94 - 19.48' L	R1-1 STOP SIGN
15	OLD SCAGGSVILLE ROAD (EAST)	STA: 11429.39 - 17.37' R	R2-1 SPEED LIMIT (30)
16	OLD SCAGGSVILLE ROAD (EAST)	STA: 12457.39 - 17.00' L	W11-2 (30x30) FYG / W16-9P (AHEAD) FYG
17	DEER SPRINGS PLACE	STA: 0438.15 - 21.80' R	R1-1 STOP SIGN
18	OLD SCAGGSVILLE ROAD (EAST)	STA: 9464.68 - 24.10' L	(2) W11-2 (30x30) FYG
19	OLD SCAGGSVILLE ROAD (EAST)	STA: 9464.68 - 24.10' L	HUNG BACK TO BACK ON STREET LIGHT POLE
20	OLD SCAGGSVILLE ROAD (EAST)	STA: 9464.68 - 24.10' L	(2) W16-7P (24x12) FYG
21	DEER SPRINGS PLACE	STA: 1400.54 - 19.10' L	R2-1 SPEED LIMIT (25)
22	OLD SCAGGSVILLE ROAD (EAST)	STA: 8458.90 - 17.00' L	W2-6 (30x30) *ROAD NAME PANELS SEE DETAIL
23	OLD SCAGGSVILLE ROAD (EAST)	STA: 7425.46 - 17.00' R	W11-2 (30x30) FYG / W16-9P (AHEAD) FYG
24	OLD SCAGGSVILLE ROAD (EAST)	STA: 7425.97 - 18.10' L	W3-2 (30x30) / W13-1 (15 MPH)
25	OLD SCAGGSVILLE ROAD (EAST)	STA: 6423.39 - 20.10' L	W11-2 (30x30) FYG / W16-7P (24x12) FYG
26	OLD SCAGGSVILLE ROAD (EAST)	STA: 6432.62 - 1.48' R	R4-7 KEEP RIGHT (SEE DETAIL)
27	OLD SCAGGSVILLE ROAD (EAST)	STA: 6432.62 - 1.48' R	(2) YELLOW O.M. (OM1-3) BACK TO BACK
28	OLD SCAGGSVILLE ROAD (EAST)	STA: 6427.05 - 22.54' R	W11-2 (30x30) FYG / W16-7P (24x12) FYG

STREET SIGN LOCATION SCHEDULE

NO.	STREET NAME	STATION / OFFSET	SIGN TYPE / DESCRIPTION
28	TRAFFIC CIRCLE	STA: 2452.87 - 20.87' R	R1-2 YIELD
29	TRAFFIC CIRCLE	STA: 2430.26 - 30.98' R	R4-7 KEEP RIGHT (SEE DETAIL)
30	TRAFFIC CIRCLE	STA: 2430.26 - 30.98' R	(2) YELLOW O.M. (OM1-3) BACK TO BACK
31	TRAFFIC CIRCLE	STA: 1492.41 - 26.82' R	R1-2 YIELD
32	HIGH RIDGE ROAD	STA: 1459.63 - 17.12' L	W2-6 / W13-1(15 MPH)
33	TRAFFIC CIRCLE	STA: 2460.44 - 22.67' L	R6-4 MOUNT BOTTOM 4' FROM ROAD SURFACE
34	TRAFFIC CIRCLE	STA: 1499.05 - 22.67' L	R6-4 MOUNT BOTTOM 4' FROM ROAD SURFACE
35	TRAFFIC CIRCLE	STA: 0452.88 - 13.09' R	R1-2 YIELD
36	TRAFFIC CIRCLE	STA: 0418.80 - 20.17' R	R1-2 YIELD
37	TRAFFIC CIRCLE	STA: 0442.49 - 22.67' L	R6-4 MOUNT BOTTOM 4' FROM ROAD SURFACE
38	TRAFFIC CIRCLE	STA: 1445.96 - 22.67' L	R6-4 MOUNT BOTTOM 4' FROM ROAD SURFACE
39	TRAFFIC CIRCLE	STA: 1433.75 - 20.24' R	R1-2 YIELD
40	OLD SCAGGSVILLE ROAD (WEST)	STA: 1474.05 - 3.17' L	R4-7 KEEP RIGHT (SEE DETAIL)
41	OLD SCAGGSVILLE ROAD (WEST)	STA: 1474.05 - 3.17' L	(2) YELLOW O.M. (OM1-3) BACK TO BACK
42	OLD SCAGGSVILLE ROAD (WEST)	STA: 0451.91 - 17.00' R	W3-2 (30x30) / W13-1 (15 MPH)
43	OLD SCAGGSVILLE ROAD (WEST)	STA: 528992.25, 1350874.26	W2-6 (30x30) *ROAD NAME PANELS SEE DETAIL
44	DEER RUN	STA: 4477.44 - 19.67' L	R2-1 SPEED LIMIT (25)
45	DEER RUN	STA: 4459.58 - 18.10' R	R2-1 SPEED LIMIT (25)
46	DEER VILLAGE DRIVE	STA: 0429.88 - 20.87' L	R1-1 STOP SIGN
47	DEER VILLAGE DRIVE	STA: 0462.62 - 16.02' R	R2-1 SPEED LIMIT (25)
48	DEER SPRINGS PLACE	STA: 1456.19 - 19.72' L	R2-1 SPEED LIMIT (25)
49	DEER SPRINGS PLACE	STA: 1491.05 - 18.26' R	R1-1 STOP SIGN
50	PEACE SPRINGS RIDGE	STA: 0431.05 - 20.77' R	R1-1 STOP SIGN
51	PEACE SPRINGS RIDGE	STA: 0462.37 - 19.67' R	R2-1 SPEED LIMIT (25)
52	DEER RUN	STA: 0404.00 - 0.00' R	R1-1 STOP SIGN
53	DEER RUN	STA: 8476.11 - 16.00' R	R2-1 SPEED LIMIT (25)

STREET LIGHT LOCATION SCHEDULE

NO.	STREET NAME	STATION / OFFSET	TYPE / DESCRIPTION
1	TWIN FAWN TRAIL	STA: 13451.11 - 19.67' L	100 WATT HPS VAPOR PREMIER POST TOP
2	TWIN FAWN TRAIL	STA: 11473.64 - 16.10' R	100 WATT HPS VAPOR PREMIER POST TOP
3	TWIN FAWN TRAIL	STA: 9494.68 - 16.10' R	100 WATT HPS VAPOR PREMIER POST TOP
4	TWIN FAWN TRAIL	STA: 7499.55 - 16.10' R	100 WATT HPS VAPOR PREMIER POST TOP
5	TWIN FAWN TRAIL	STA: 6433.41 - 16.10' R	100 WATT HPS VAPOR PREMIER POST TOP
6	TWIN FAWN TRAIL	STA: 4426.95 - 27.74' R	100 WATT HPS VAPOR PREMIER POST TOP
7	TWIN FAWN TRAIL	STA: 2432.78 - 19.67' R	100 WATT HPS VAPOR PREMIER POST TOP
8	CLARK SPRINGS RIDGE	STA: 3411.51 - 13.10' L	100 WATT HPS VAPOR PREMIER POST TOP
9	CLARK SPRINGS RIDGE	STA: 1478.17 - 21.08' R	100 WATT HPS VAPOR PREMIER POST TOP
10	OLD SCAGGSVILLE ROAD	STA: 9464.77 - 25.60' R	150 WATT HPS VAPOR PREMIER POST TOP
11	OLD SCAGGSVILLE ROAD	STA: 9464.68 - 24.10' L	150 WATT HPS VAPOR PREMIER POST TOP
12	OLD SCAGGSVILLE ROAD	STA: 6423.39 - 20.10' L	150 WATT HPS VAPOR PREMIER POST TOP
13	TRAFFIC CIRCLE	STA: 2470.02 - 21.62' R	150 WATT HPS VAPOR PREMIER POST TOP
14	TRAFFIC CIRCLE	STA: 2403.68 - 23.81' R	150 WATT HPS VAPOR PREMIER POST TOP
15	TRAFFIC CIRCLE	STA: 1444.65 - 15.17' R	150 WATT HPS VAPOR PREMIER POST TOP
16	TRAFFIC CIRCLE	STA: 0437.33 - 12.67' R	150 WATT HPS VAPOR PREMIER POST TOP
17	TRAFFIC CIRCLE	STA: 0489.28 - 22.38' R	150 WATT HPS VAPOR PREMIER POST TOP
18	DEER RUN	STA: 6423.48 - 19.67' L	100 WATT HPS VAPOR PREMIER POST TOP
19	DEER RUN	STA: 3451.30 - 21.86' R	100 WATT HPS VAPOR PREMIER POST TOP
20	DEER RUN	STA: 2459.07 - 19.67' R	100 WATT HPS VAPOR PREMIER POST TOP
21	DEER RUN	STA: 0473.24 - 16.30' R	100 WATT HPS VAPOR PREMIER POST TOP
22	DEER VILLAGE DRIVE	STA: 2422.59 - 19.67' L	100 WATT HPS VAPOR PREMIER POST TOP
23	DEER RUN	STA: 8463.42 - 19.67' L	100 WATT HPS VAPOR PREMIER POST TOP



LEGEND: NUMBER RELATES TO LIGHT TABLE TO THE LEFT

- ⊙ PROPOSED STREET LIGHT 100 WATT HPS VAPOR PREMIER POST TOP
- ⊙ PROPOSED STREET LIGHT 150 WATT HPS VAPOR PREMIER POST TOP

NO AS-BUILT INFORMATION ON THIS SHEET

APPROVED: DEPARTMENT OF PUBLIC WORKS
 DATE: 5-6-18

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 DATE: 5-9-14

DATE: 5-12-14

NO.	REVISION	DATE
2	REVISE SUBDIVISION NAME	7/18/14
1	REVISE OLD SCAGGSVILLE ROAD CENTERLINE RADIUS	7/18/14
	AMEND UTILITY POLE DESIGNATION	

FINAL ROAD CONSTRUCTION PLAN
 SECTION ONE - TRAFFIC SIGNAGE & STREET LIGHT LOCATION PLAN
HIGH RIDGE MEADOWS-SECTION I
 LOTS 1 - 54, OPEN SPACE LOTS 55 - 68
 AND NON-BUILDABLE BULK PARCEL "B"

6TH ELECTION DISTRICT - TAX MAP: 50 GRID: 1
 DEPT. REC'S: F-10-066, WP-10-087, EOP-12-047, PARCELS: 383 & 342
 WP-13-080, SP-13-007, HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2014

DESIGN BY: _____ EDS.
 DRAWN BY: _____ EDS/RVE.
 CHECKED BY: _____ RHV.
 DATE: _____ MARCH 2014.
 SCALE: _____ AS SHOWN.
 W.O. NO.: _____ 11-28.

32 SHEET OF 32