

FINAL ROAD CONSTRUCTION PLAN MOUNT HEBRON OVERLOOK

LOTS 1-25 AND OPEN SPACE LOT 26 A RE-SUBDIVISION OF THE "KEIM PROPERTY" LOT 2, AND A SUBDIVISION OF PARCELS 78 AND 416 HOWARD COUNTY, MARYLAND

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, UNLESS WAIVERS HAVE BEEN APPROVED.
- THE CONTRACTOR SHALL OBTAIN THE PERMITS OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION, WORK BEING DONE.
- TRAFFIC CONTROL DEVICES:
 - THE RT-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 (410-313-5752) 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" (MOMUTCD).
 - ALL SIGN POST USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE - 3' LONG). A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON 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 (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993). A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- THE EXISTING TOPOGRAPHY SHOWN HEREON IS TAKEN FROM AN AERIAL TOPOGRAPHIC SURVEY WITH 2 FOOT CONTOUR INTERVALS, PREPARED BY POTOMAC AERIAL SURVEYS, INC., DATED MARCH 6TH 2010.
- THE PROJECT BOUNDARY IS BASED ON A BOUNDARY SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED APRIL 6, 2010.
- 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. 17EA AND 17EB WERE USED FOR THIS PROJECT.
- WATER IS PUBLIC AND WILL BE PROVIDED THROUGH CONTRACT #71-W.
- SEWER IS PUBLIC AND WILL BE PROVIDED THROUGH CAPITAL PROJECT #S-6266.
- STORM WATER MANAGEMENT TO BE PROVIDED FOR THIS DEVELOPMENT BY ENVIRONMENTAL SITE DESIGN UTILIZING MICRO BIO-RETENTION, RAIN BARRELS, PERVIOUS DRIVEWAYS AND SIDEWALKS, AND ROOFTOP DISCONNECTS.
- EXISTING UTILITIES ARE BASED ON HOWARD COUNTY RECORDS AND FIELD SURVEY.
- THERE IS NO 100-YR FLOODPLAIN WITHIN THE LIMITS OF THIS PROJECT.
- WETLANDS SHOWN ON-SITE ARE BASED ON A FIELD INVESTIGATION PREPARED BY ECO-SCIENCE PROFESSIONALS, INC., DATED JUNE 02, 2010. THERE ARE NO PROPOSED DISTURBANCES TO THE WETLANDS OR ASSOCIATED BUFFERS.
- THIS PLAN IS SUBJECT TO PLANNING BOARD # PB 389 AND SP-10-007 APPROVED DECEMBER 2, 2010.
- FOREST STAND DELINEATION PLAN WAS PREPARED BY ROBERT H. VOGEL ENGINEERING INC., DATED MAY 2010, APPROVED UNDER SP-10-007.
- FOREST CONSERVATION PLAN PREPARED BY ROBERT H. VOGEL ENGINEERING, INC.
- TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO CEMETERIES OR GRAVE SITES LOCATED ON THE SUBJECT PROPERTY.
- 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 PETITION, OR BUILDING AND GRADING PERMITS.
- THE SUBDIVISION PLAN IS SUBJECT TO THE FOLLOWING DPZ FILES: F-87-100, ECP-10-013, SP-10-007, CONT. #14-4684-D, PB-389, WP-11-028 AND THE COMP. LITE ZONING REGULATIONS EFFECTIVE ON 7/28/06.
- A TRAFFIC STUDY WAS PREPARED BY THE TRAFFIC GROUP, INC., DATED JUNE 2010, APPROVED UNDER SP-10-007.
- A TOTAL OF 25 LOTS AND 1 OPEN SPACE LOT ARE PROPOSED UNDER THIS PLAN. THE LOTS HAVE BEEN CREATED BY A RE-SUBDIVISION OF THE "KEIM PROPERTY" LOT 2, AND A SUBDIVISION OF PARCELS 78 AND 416.
- OPEN SPACE LOT 26 TO BE OWNED AND MAINTAINED BY THE HOME OWNERS ASSOCIATION.
- ALL DRIVEWAY ENTRANCES SHALL UTILIZE HOWARD COUNTY STANDARD DETAIL NO. R-6.03 MODIFIED FOR SIDEWALK ADJACENT TO CURB.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$16,200.00 FOR THE REQUIRED 50 SHADE TREES AND 8 EVERGREEN TREES SHALL BE POSTED WITH THE DEVELOPERS AGREEMENT FOR THIS PLAN.
- PUBLIC STREET TREES ARE PROVIDED FOR THIS PROJECT IN ACCORDANCE WITH SECTION 16.124(e)(1) OF THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL. FINANCIAL SURETY IN THE AMOUNT OF \$25,125.00 SHALL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT FOR THE REQUIRED 67 STREET TREES.
- TOTAL FOREST CONSERVATION OBLIGATION OF THIS PROJECT TO BE FULFILLED BY ON-SITE AFFORESTATION OF 1.87 ACRE. FINANCIAL SURETY IN THE AMOUNT OF \$1,457,229 (81,457.20 x 0.50) WILL BE POSTED WITH THE FOREST CONSERVATION MAINTENANCE AGREEMENT.
- THE MICRO-BIORETENTION FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY THE HOA. THE STREET TREES, PERFORATED UNDER DRAINS, FEEDERS, PLANTINGS, SWALES AND DRIVEWAY CULVERTS WILL BE PRIVATELY OWNED AND MAINTAINED BY THE HOA. HOWARD COUNTY WILL ONLY MAINTAIN THE INLET STRUCTURE WITHIN THE MICRO-BIORETENTION FACILITIES ADJACENT TO THE RIGHT-OF-WAYS. ALL PERMEABLE SIDEWALKS SHALL BE PRIVATELY OWNED AND MAINTAINED BY THE HOA AND UNDER THE DEVELOPERS MAINTENANCE AGREEMENT.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAM(S), OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS.
- SEDIMENT AND EROSION CONTROL WILL BE PROVIDED FOR THIS SITE.
- A NOISE STUDY WAS PREPARED BY ROBERT H. VOGEL ENGINEERING, INC. FOR MD ROUTE 99 AND APPROVED UNDER SP-10-007. AN EXISTING NOISE BARRIER IS PROVIDED ALONG INTERSTATE 70.
- THERE ARE EXISTING STRUCTURES LOCATED ON PARCELS 77, 78, AND 416. ALL EXISTING STRUCTURES LOCATED ON-SITE SHALL BE REMOVED PRIOR TO THE RECONSTRUCTION OF THIS PLAN.
- USING THE NEIGHBORHOOD PRESERVATION EXCHANGE OPTION DESCRIBED IN SECTION 128.L OF THE ZONING REGULATIONS, THE RIGHTS FOR 1 OF THE RESIDENTIAL LOTS SHOWN ON THE SUBDIVISION PLAN FOR MOUNT HEBRON OVERLOOK HAS BEEN TRANSFERRED FROM PARCEL 594, TAX MAP 17, GRID 17, MORGAN PROPERTY.
- TEST PITS TO DETERMINE GROUND WATER AND ROCK ELEVATIONS WERE PERFORMED AT EACH FACILITY LOCATION. NO ROCK OR WATER ARE WITHIN 4' OF THE BOTTOM OF ANY FACILITY.
- ALL CURB AND GUTTER TO BE HOWARD COUNTY MODIFIED DETAIL R-3.01 UNLESS OTHERWISE NOTED.
- ALL STRUCTURES ARE REQUIRED TO BE SET BACK 75 FEET FROM PROJECT BOUNDARIES ADJOINING SINGLE-FAMILY DETACHED DEVELOPMENTS IN ACCORDANCE WITH SECTION 108.F.3.b OF THE ZONING REGULATIONS.
- ALL EXISTING FENCE WITHIN THE PROJECT BOUNDARY TO BE REMOVED.
- THIS R-20 ZONED SUBDIVISION IS BEING DEVELOPED PURSUANT TO SECTION 107.E OF THE R-ED ZONING DISTRICT INCLUDING THE PLANNING BOARD'S APPROVAL OF THE SUBDIVISION DESIGN. A 75' SETBACK FROM THE PROJECT ADJOINING SINGLE FAMILY DETACHED DEVELOPMENTS AND THE OTHER CRITERIA REQUIREMENTS IN ACCORDANCE WITH SECTION 108.F.3 OF THE ZONING REGULATIONS.
- IN ACCORDANCE WITH SECTION 108.F.2 OF THE ZONING REGULATIONS, THIS R-20 RECEIVING PARCEL SUBDIVISION IN ASSOCIATION WITH NEIGHBORHOOD PRESERVATION IS RECEIVING 1 BONUS DENSITY UNIT UP TO 10% MORE DWELLING UNITS THAN WOULD BE ACHIEVABLE BASED ON THE NET DENSITY IN THE R-ED ZONING DISTRICT IF DEVELOPED AS SINGLE FAMILY DWELLINGS USING THE R-ED REGULATIONS.
- THIS PLAN IS SUBJECT TO A WAIVER WP-11-28 TO SECTION 16.1205(a)(7) OF THE SUBDIVISION REGULATIONS FOR THE REMOVAL OF THE 30' x 14' 2010.
- THIS PLAN IS SUBJECT TO A DESIGN MANUAL WAIVER TO APPENDIX A, VOLUME III TO REDUCE THE MINIMUM HORIZONTAL CURVE RADIUS FOR A PUBLIC ROAD, APPROVED SEPTEMBER 7, 2010.
- WETLANDS AND THEIR BUFFERS WILL NOT BE IMPACTED BY THE CONSTRUCTION OF THE PUBLIC SWM, DRAINAGE AND UTILITY EASEMENT AND ASSOCIATED RIP RAP.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 - WIDTH - 12' (16' SERVING MORE THAN ONE RESIDENCE);
 - SURFACE - 12" ASTM C-33 3/4" TO 2" STONE WITH 2" PERMEABLE CONCRETE
 - GEOMETRY - MAX. 15% GRADE, MAX. 10% GRADE CHANGE AND MIN. 45' TURNING RADIUS;
 - STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING);
 - DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE.
 - MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
- THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- ALL SIDEWALKS NEAR MICRO BIO-RETENTION FACILITIES ARE TO BE TRAFFIC BEARING. SEE DETAIL SHEET 10.
- PLAN SUBJECT TO WP-10-109, THE PLANNING BOARD APPROVED ON APRIL 22, 2010 A REQUEST TO WAIVE SECTION 16.10(2)(1)(C) REQUIRING A PERFORATED EASEMENT AT LEAST 20 FEET IN WIDTH FOR A PUBLIC SIDEWALK DRAIN OUTSIDE THE ROAD RIGHT OF WAY. THE BUILDER MUST PROVIDE WRITTEN DOCUMENTATION TO THE LOT & PROPERTY OWNER EXPLAINING THAT NO STRUCTURES WILL BE PERMITTED WITHIN THE REDUCED 175' WIDE EASEMENT AREA. THE PROPERTY OWNER MUST PROVIDE WRITTEN DOCUMENTATION TO ANY FUTURE PROPERTY OWNER OF THIS RESTRICTION.

LOT TABULATION

TOTAL NO. OF PROPOSED LOTS:	26
TOTAL NO. OF DWELLING UNITS:	25
NO. OF SINGLE FAMILY DETACHED:	25
NO. OF OPEN SPACE LOTS:	1

COORDINATE TABLE

POINT	NORTHING	EASTING	POINT	NORTHING	EASTING
1	594433.39	1358810.57	1030	593754.47	1359383.97
2	594690.70	1359221.56	1049	594138.02	1359370.17
5	593815.30	1359748.55	1052	594054.18	1359388.16
6	593770.50	1359653.83	1053	594174.61	1359352.48
7	593739.71	1359442.71	1054	594275.06	1359510.47
8	594161.06	1358835.36	1093	594342.17	1358923.45
18	594847.55	1359180.04	1112	594275.26	1359340.17
19	594861.09	1359192.88	1121	594378.46	1359374.50
1001	594021.55	1358893.86	1152	594003.13	1359665.07
1015	594000.14	1358721.06	1153	593758.36	1359773.79
1016	593894.43	1358866.70	1156	594454.36	1359465.23
1024	594227.45	1358952.21	1157	594485.91	1359292.32
1025	594130.10	1358873.88	1158	594608.47	1359151.23

APPROVED: DEPARTMENT OF PUBLIC WORKS

[Signature] 8-12-2011
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 8/15/11
CHIEF, DEVELOPMENT ENGINEERING DIVISION

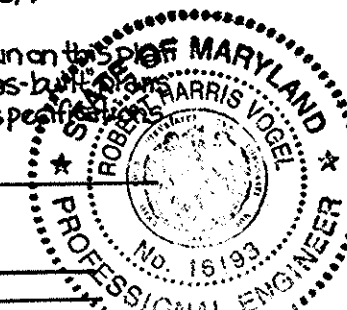
[Signature] 8/20/11
CHIEF, DIVISION OF LAND DEVELOPMENT

LOCATION MAP
SCALE: 1"=100'

AS-BUILT CERTIFICATION

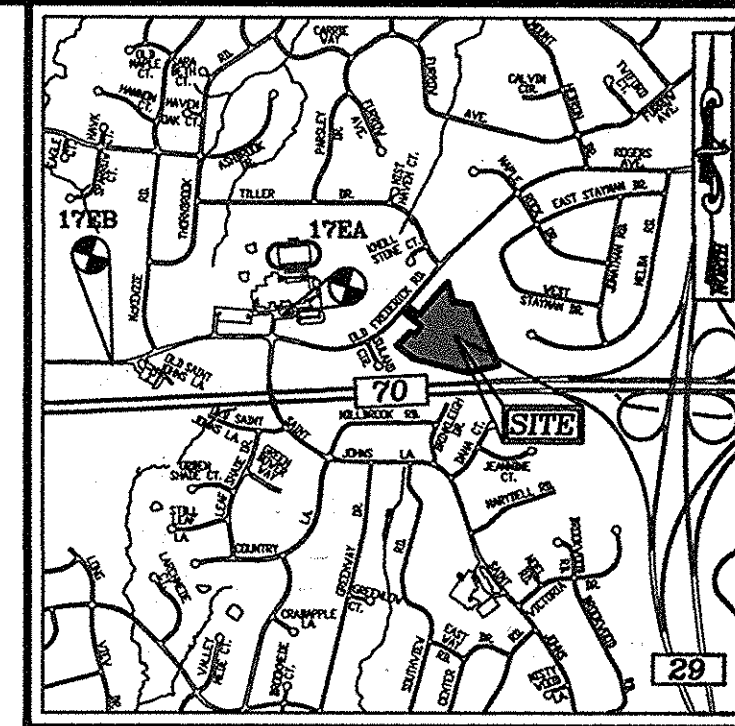
I hereby certify that the facility shown on this plan was constructed as shown on the "as-built" drawings and meets the approved plans and specifications.

[Signature]
Signature
PE No. 16193
Date: 5/15/15



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 USE-IN-COMMON ROW (L 1491 / F 16) (L 8387 / F 610)
- EXISTING USE-IN-COMMON ACCESS EASEMENT (L 10792 / F 354) (PLAT #7110)
- EXISTING TREE LINE (FIELD LOCATED)
- EXISTING TREES (FIELD LOCATED)
- EXISTING FENCE
- CENTERLINE OF EXISTING STREAM
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- PROPOSED SIDEWALK
- PROPOSED TREE LINE
- PROPOSED CURB
- PROPOSED STREET LIGHT
- PROP. FOREST CONSERVATION (AFFORESTATION)
- PROP. RECREATIONAL OPEN SPACE
- PROP. NON-CREDITED OPEN SPACE
- PROP. PUBLIC DRAINAGE, SEWER & UTILITY EASEMENT
- PROP. PRIVATE DRAINAGE, SEWER & UTILITY EASEMENT
- PROP. PUBLIC SEWER & UTILITY EASEMENT
- PROP. PUBLIC DRAINAGE & UTILITY EASEMENT



VICINITY MAP

SCALE: 1"=2000'
ADP MAP COORDINATE: PG. 4815 G3

BENCHMARKS

HOWARD COUNTY BENCHMARK - 17EA (CONC. MONUMENT)
N 594357.62 E 135719.37 ELEV. 478.77
LOCATION: FRONT OF MT. HEBRON H.S.
(ROUTE 99 AND ST. JOHN'S LA.)
HOWARD COUNTY BENCHMARK - 17EB (CONC. MONUMENT)
N 593813.86 E 1355731.85 ELEV. 453.48
LOCATION: ROUTE 99, 0.35 MILES WEST OF ST. JOHN'S LA.

SITE ANALYSIS DATA SHEET

TAX MAP 17, GRID 16, PARCELS 77, 78, & 416
DEED REFERENCE: PARCEL 77: L 12740 / F 20
PARCEL 78: L 0189 / F 60
PARCEL 416: L 8387 / F 610

ELECTION DISTRICT: 2ND
LOCATION: EAST SIDE OF OLD FREDERICK ROAD (ROUTE 99), APPROX. 540' NORTH OF SUNDLAND CIRCLE
EXISTING ZONING: R-20, UTILIZING R-ED OPTION; PER SECTION 108.F.3.

GROSS AREA: 12.44 AC.
AREA OF 100 YEAR FLOODPLAIN: N/A
AREA OF STEEP SLOPES: 6,186 SF (0.14 AC.)
NET AREA: 12.30 AC.
LIMIT OF DISTURBANCE: 8.74 AC.

BASE DENSITY: 2 LOTS PER NET ACRE (2X12.30): 24 LOTS
NUMBER OF UNITS SENT UNDER THE NEIGHBORHOOD PRESERVATION EXCHANGE OPTION PER SECTION 128.L OF THE ZONING REGULATIONS: 1 LOT

TOTAL LOTS ALLOWED: (24+1): 25 LOTS
NUMBER OF PROPOSED RESIDENTIAL LOTS (SFD): 25 LOTS
AREA OF PROPOSED RESIDENTIAL LOTS (SFD): 4.11 AC
TOTAL AREA OF ROAD RIGHT OF WAY: 1.91 AC
OPEN SPACE REQUIRED: 50% OF GROSS AREA: 6.22 AC
TOTAL AREA OF OPEN SPACE PROPOSED: 6.46 AC
TOTAL AREA OF NON-CREDITED OPEN SPACE: 0.23 AC
TOTAL AREA OF CREDITED OPEN SPACE: 6.23 AC (50.0%)
REC OPEN SPACE PROVIDED: 7,750 SF
EXISTING USE OF SITE: RESIDENTIAL SFD
PROPOSED USE OF SITE: SFD
PROPOSED SEWER SYSTEM: PUBLIC
PROPOSED SEWER SYSTEM: PUBLIC
MINIMUM LOT AREA: 6,052 SF
DPZ REF'S: F-87-100, ECP-10-013, CONT. #14-4684-D
SP-10-007, PB-389, WP-11-028

OWNERS

PARCEL 77: EVANS M. KEIM, 5339 ROUTE 99, ELLICOTT CITY, MD 21042
PARCEL 78 & 416: ATHOL USA R. MORGAN, 9305 ROUTE 99, ELLICOTT CITY, MD 21042

DEVELOPER

HOWARD LAND DEVELOPERS LLC
C/O LAND DESIGN & DEVELOPMENT, INC.
5300 DORSEY HALL DR., STE. 102
ELLICOTT CITY, MARYLAND 21042-7819
ATTN: MR. DONALD R. REWLER
443-367-0422

NO.	REVISION	DATE
1	REVISE PUBLIC STORM DRAIN BASEMENT WIDTH ON LOT 4 FROM 10' TO 15'; ADD AERIAL NOTES #1	7/9/12
2	REVISE WATER FOR 0-100 PVC	2/13/12

FINAL ROAD CONSTRUCTION PLAN MOUNT HEBRON OVERLOOK COVER SHEET

LOTS 1-25 AND OPEN SPACE LOT 26
A RE-SUBDIVISION OF THE "KEIM PROPERTY" LOT 2,
AND A SUBDIVISION OF PARCELS 78 AND 416
HOWARD COUNTY, MD
ZONING: R-20
2ND ELECTION DISTRICT: HOWARD COUNTY, MD
PARCELS: 77, 78, & 416
TAX MAP: 17 GRID: 16
HOWARD COUNTY, MARYLAND
DPZ REF'S: F-87-100, ECP-10-013, SP-10-007, CONT. #14-4684-D, PB-389, WP-11-028

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
DESIGN BY: RHV
DRAWN BY: JMR
CHECKED BY: RHV
DATE: JUNE 2011
SCALE: AS SHOWN
W.O. NO.: 10-06

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.
EXPIRATION DATE: 09-27-2015

1 SHEET OF 12

NOTE: ENTRANCE MONUMENT AND FENCING ALONG TOBY LANE TO BE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION (H.O.A.)

STREET SIGN LOCATION CHART			
STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
TOBY LANE	0+25	33' LT.	STOP SIGN (R1-1) STREET SIGN (D3-1) TOBY'S LANE
TOBY LANE	1+53.47	17' RT.	SPEED LIMIT SIGN (R2-1)
LUCY'S OVERLOOK WAY	0+39.68	21' LT.	STOP SIGN (R1-1) STREET SIGN (D3-1) LUCY'S OVERLOOK WAY
LUCY'S OVERLOOK WAY	1+31.63	16' RT.	SPEED LIMIT SIGN (R2-1)

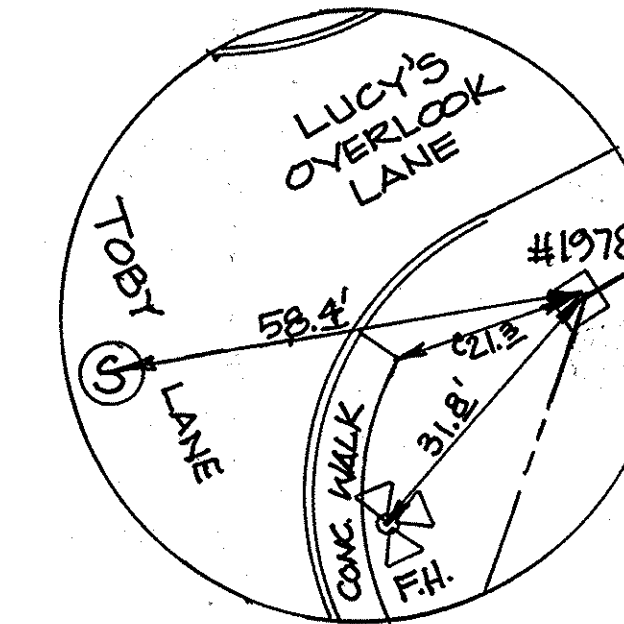
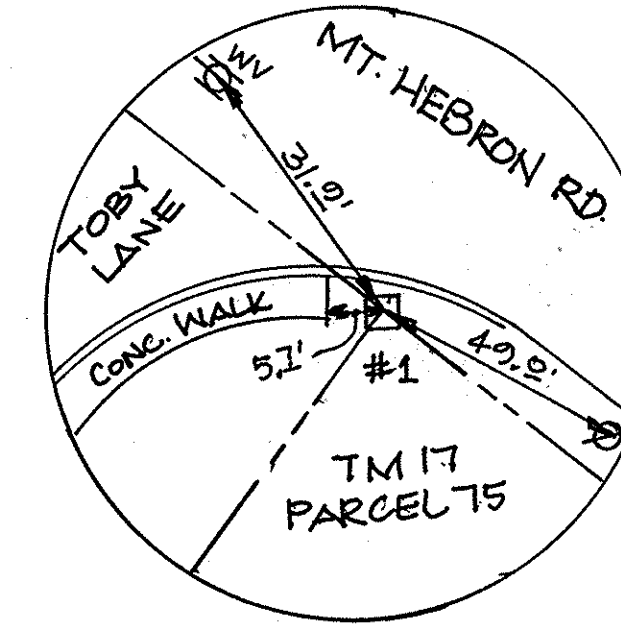
STREET LIGHT LOCATION CHART			
STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
TOBY LANE	0+40	31' RT.	150 WATT HPS VAPOR PREMIER POST-TOP FIXTURE MOUNTED ON A 14" BLACK FIBERGLASS POLE
LUCY'S OVERLOOK WAY	0+33.93	21' RT.	100 WATT HPS VAPOR PREMIER POST-TOP FIXTURE MOUNTED ON A 14" BLACK FIBERGLASS POLE
LUCY'S OVERLOOK WAY	2+33	20' LT.	
TOBY LANE	1+87	15' RT.	100 WATT HPS VAPOR PREMIER POST-TOP FIXTURE MOUNTED ON A 14" BLACK FIBERGLASS POLE
TOBY LANE	5+25	15' RT.	
TOBY LANE	7+72	15' RT.	100 WATT HPS VAPOR PREMIER POST-TOP FIXTURE MOUNTED ON A 14" BLACK FIBERGLASS POLE
TOBY LANE	1+38.48 LP	6' LT.	
LUCY'S OVERLOOK WAY	1+40.64 LP	6' LT.	

LINE DATA TABLE		
LINE	BEARING	DISTANCE
L1	S51°07'19"E	223.40'
L2	S17°00'04"E	43.96'
L3	S75°47'12"E	146.13'
L4	N59°56'27"E	83.36'
L5	N57°42'08"E	121.64'
L6	S68°31'30"E	69.78'

CURVE DATA TABLE					
CURVE	LENGTH	RADIUS	TANGENT	DELTA	CHORD BEARING
C1	178.66	300.00	92.07	34°07'15"	N34°03'41"W
C2	153.90	150.00	84.50	58°47'08"	S46°23'38"E
C3	88.86	115.00	46.78	44°16'21"	N82°04'37"E
C4	140.78	150.00	76.05	53°48'22"	S84°35'19"W
C5	87.69	110.50	46.30	45°27'58"	N88°44'42"E

LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EX. UTILITY TEST PIT LOCATION
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING USE-IN-COMMON EASEMENT (L 1491 / F 16) (L 8387 / F 610)
- EXISTING USE-IN-COMMON ACCESS EASEMENT (L 10792 / F 354) (PLAT #7110)
- EXISTING TREELINE (FIELD LOCATED)
- EXISTING TREES (FIELD LOCATED)
- EXISTING FENCE
- CENTRELINE OF EXISTING STREAM
- PROPOSED STORMDRAIN
- PROPOSED STORMDRAIN INLET
- PROPOSED SIDEWALK
- PROPOSED TREELINE
- PROPOSED CURB
- PROPOSED STREET LIGHT
- PROP. FOREST CONSERVATION (AFFORESTATION)
- RECREATIONAL OPEN SPACE
- PROP. CREDITED OPEN SPACE
- PROP. PUBLIC DRAINAGE, SEWER & UTILITY EASEMENT
- PROP. PUBLIC DRAINAGE, SWM & UTILITY EASEMENT
- PROP. PRIVATE DRAINAGE, SWM & UTILITY EASEMENT
- PROP. PUBLIC SEWER & UTILITY EASEMENT
- PROP. PUBLIC DRAINAGE & UTILITY EASEMENT
- PROP. PERMEABLE CONCRETE
- PROP. 7" REINFORCED CONCRETE @ MRB'S



AS-BUILT CERTIFICATION

I hereby certify that the facility shown on this plan was constructed as shown on the "as-built" plans and meets the approved plans and specifications.

Signature: _____
 PE NO. 16103
 Date: 5/18/15

OWNERS
 PARCEL 77: EVANS M. KEIM, 9339 ROUTE 99, ELLICOTT CITY, MD 21042
 PARCEL 78 & 416: ATHOL MORGAN, 9305 ROUTE 99, ELLICOTT CITY, MD 21042

DEVELOPER
 DOUBLE R VENTURES, LLC, C/O LAND DESIGN & DEVELOPMENT, INC., 5300 DORSEY HALL DR. STE 102, ELLICOTT CITY, MARYLAND 21042-7819, ATTN: MRS. DONALD R. REUBER, 443-367-0422

NO.	REVISION	DATE
1	REVISE PUBLIC WATER TO C-800 PVC	03-21-12
2	REVISE PUBLIC WATER TO C-800 PVC	03-21-12

REVISED FINAL ROAD CONSTRUCTION PLAN
MOUNT HEBRON OVERLOOK
SITE LAYOUT
 LOTS 1-25 AND OPEN SPACE LOT 26
 A RE-SUBDIVISION OF THE "KEIM PROPERTY" LOT 2,
 AND A SUBDIVISION OF PARCELS 78 AND 416
 HOWARD COUNTY, MD
 PARCELS: 77, 78, & 416
 ZONING: R-20
 2ND ELECTION DISTRICT
 TAX MAP: 17 GRID: 16
 DP2 REF'S: F-87-100, ECP-10-013, SP-10-007, CONT. #14-4684-D, PB-359, WP-11-028

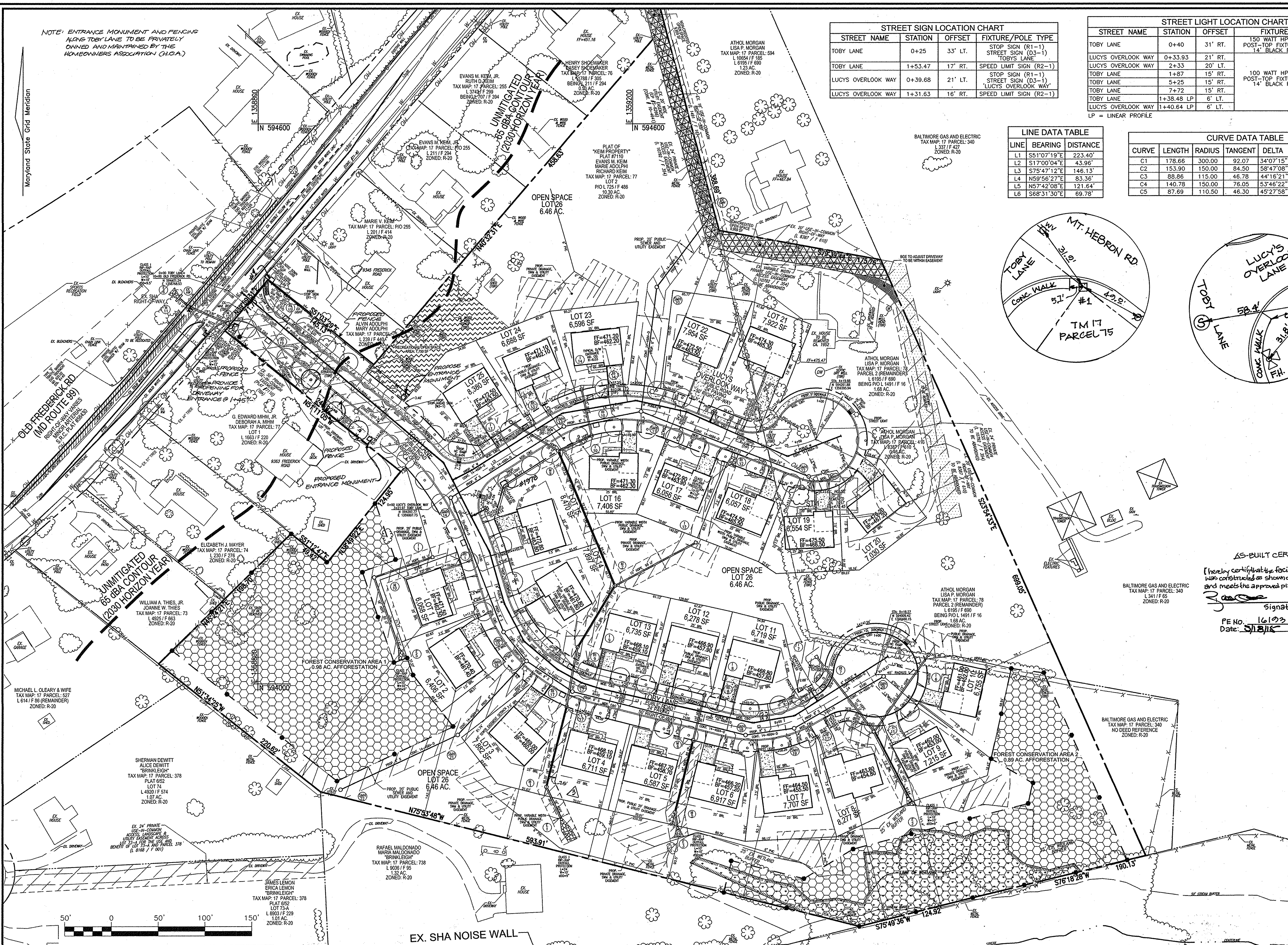
ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET, ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

DESIGN BY: RHV
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: JUNE 2011
 SCALE: AS SHOWN
 W.O. NO.: 10-06

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. EXPIRATION DATE: 09-27-2012

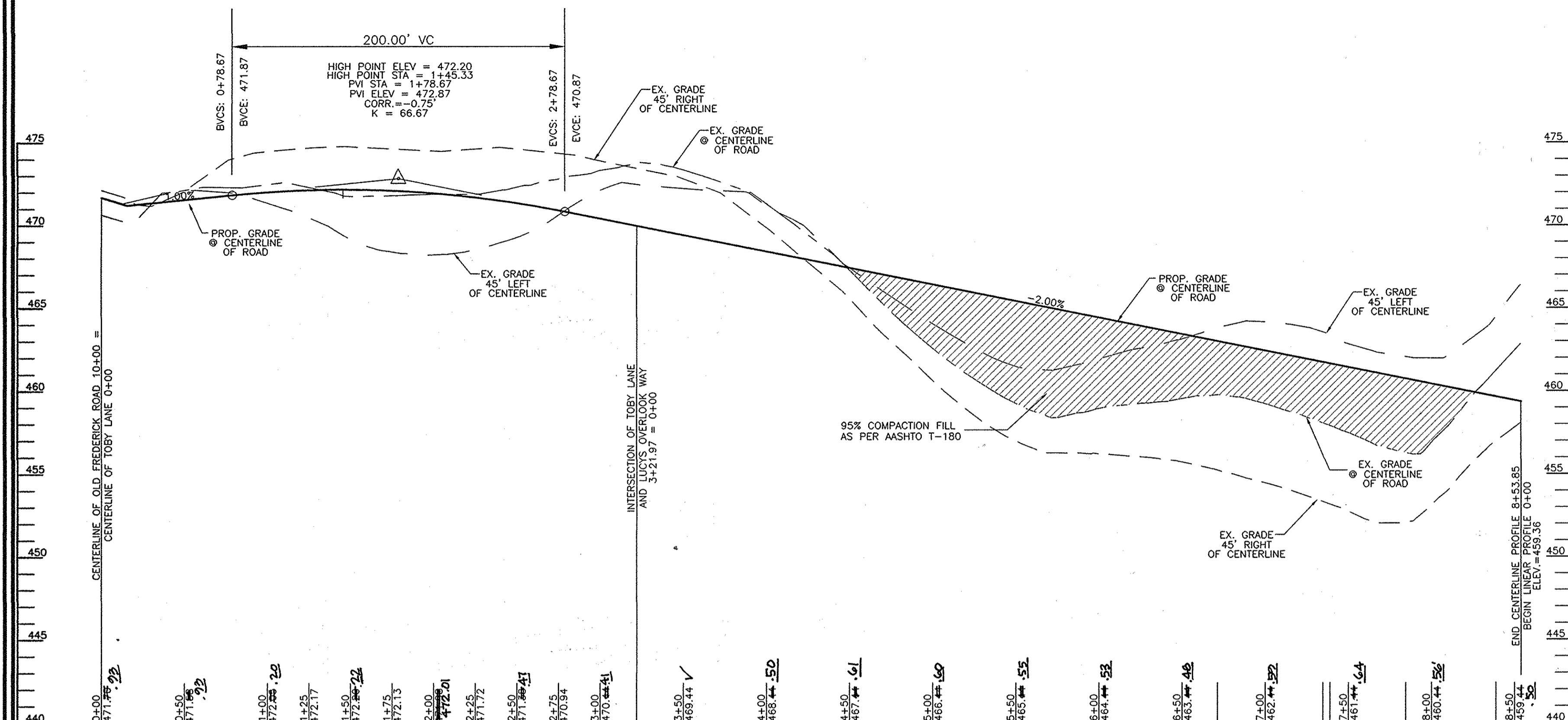
2 SHEET OF 12



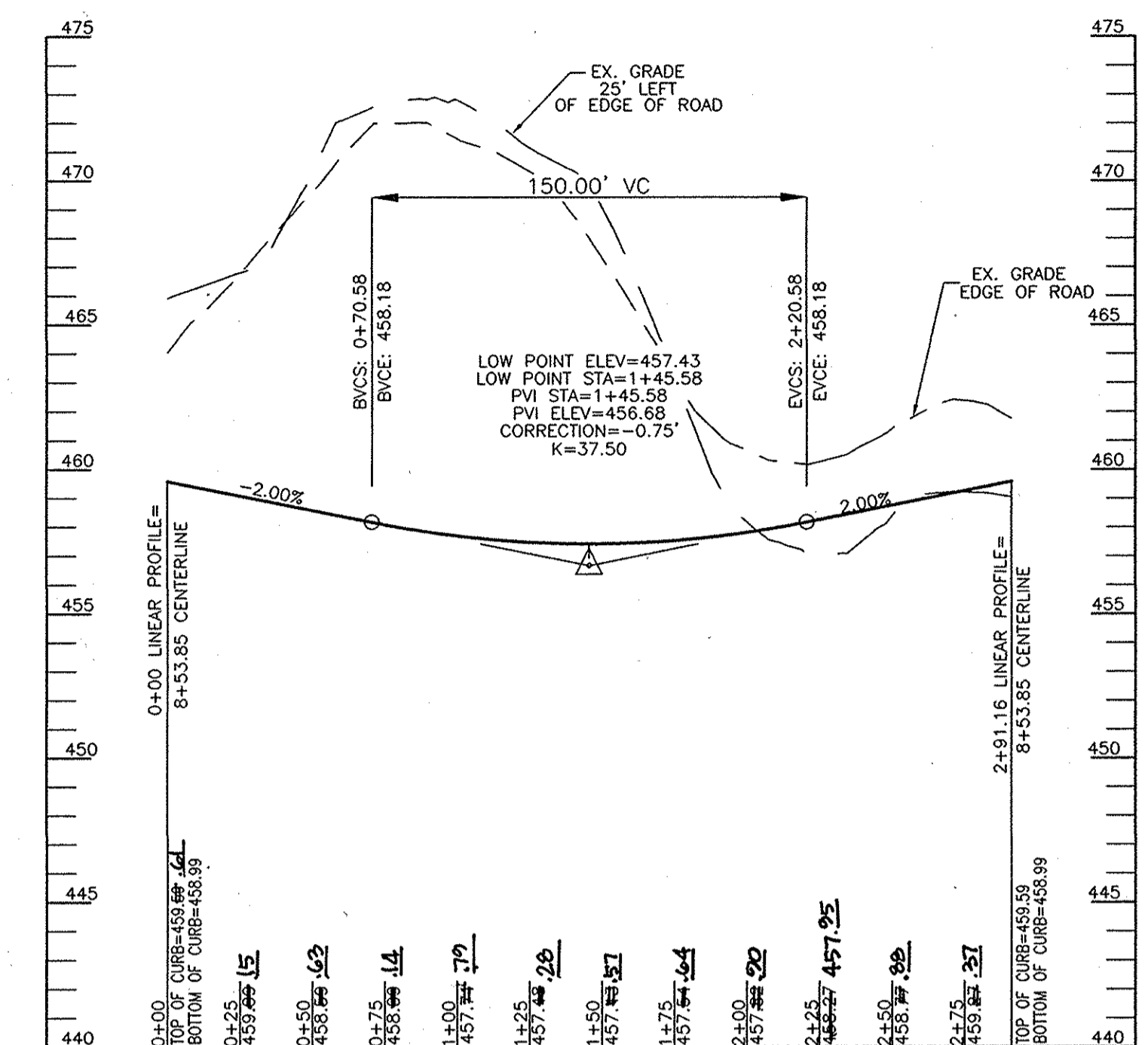
APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] 4-3-12
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 4/1/12
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 4/1/12
 CHIEF, DIVISION OF LAND DEVELOPMENT

LAYOUT PLAN
 SCALE: 1"=50'

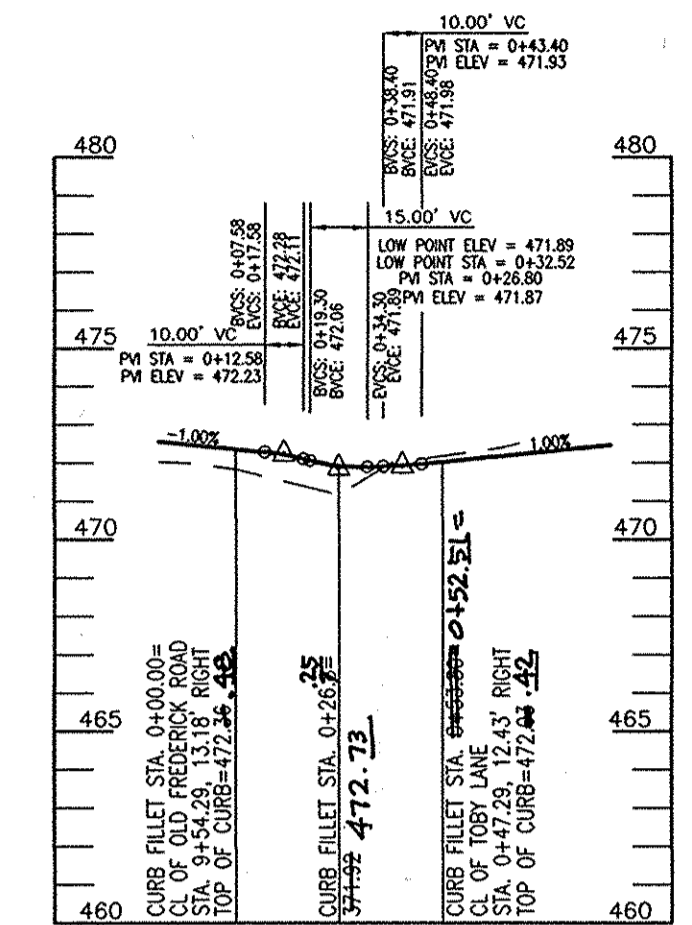
INTERSTATE U.S. 70
 (WEST BOUND)
 FEDERAL ARTERIAL
 PLAN #2250 AND 2250/6
 L 421 F 68



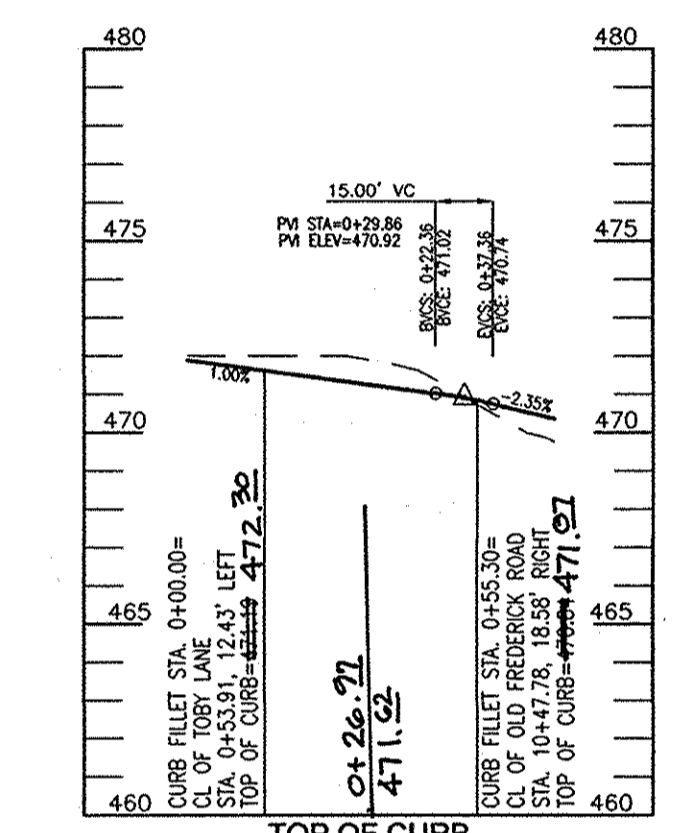
**ROAD PROFILE
TOBY LANE
PUBLIC ACCESS STREET**
DESIGN SPEED: 25 MPH
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



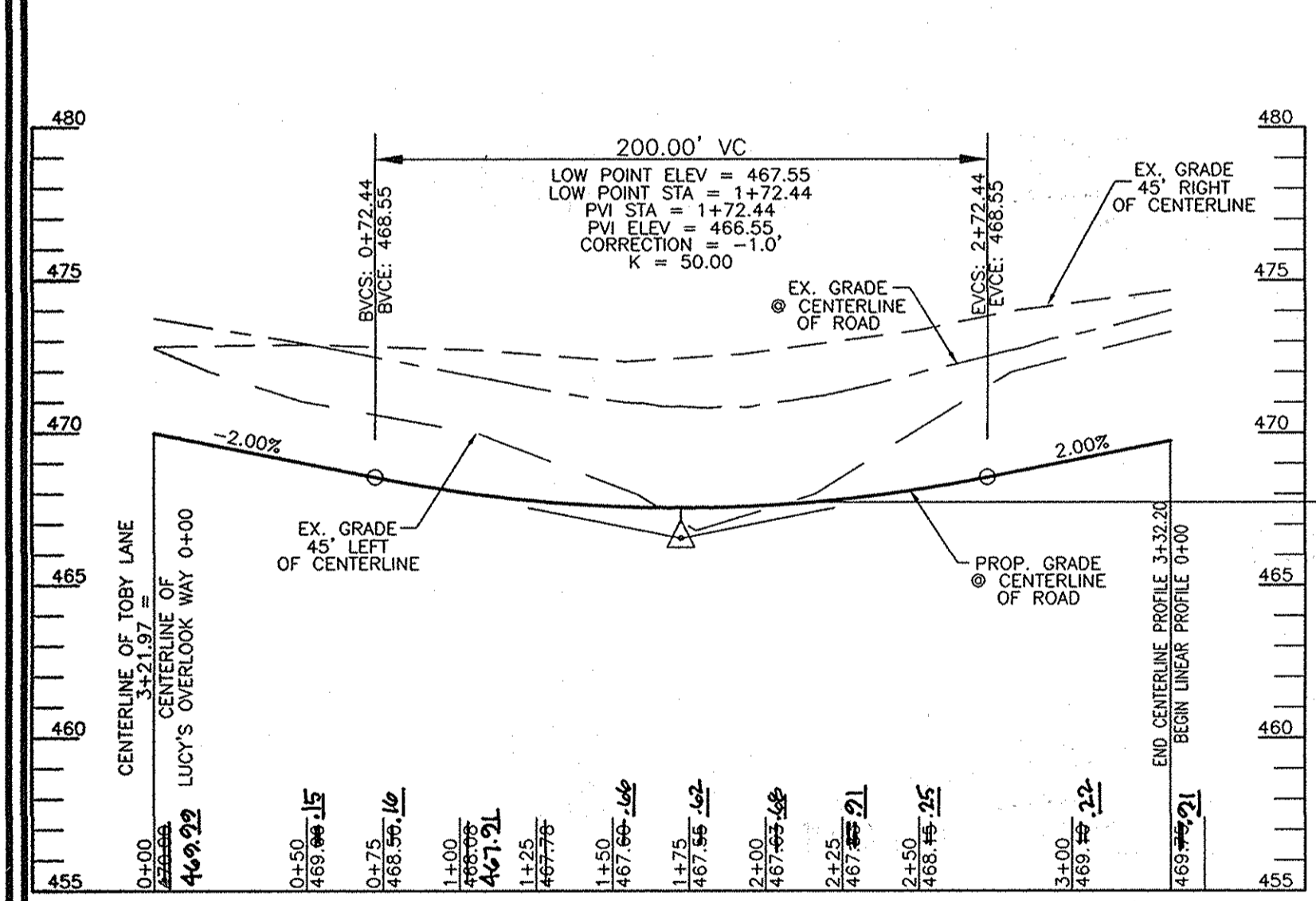
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TOBY LANE
PUBLIC ACCESS STREET**
DESIGN SPEED: 25 MPH
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



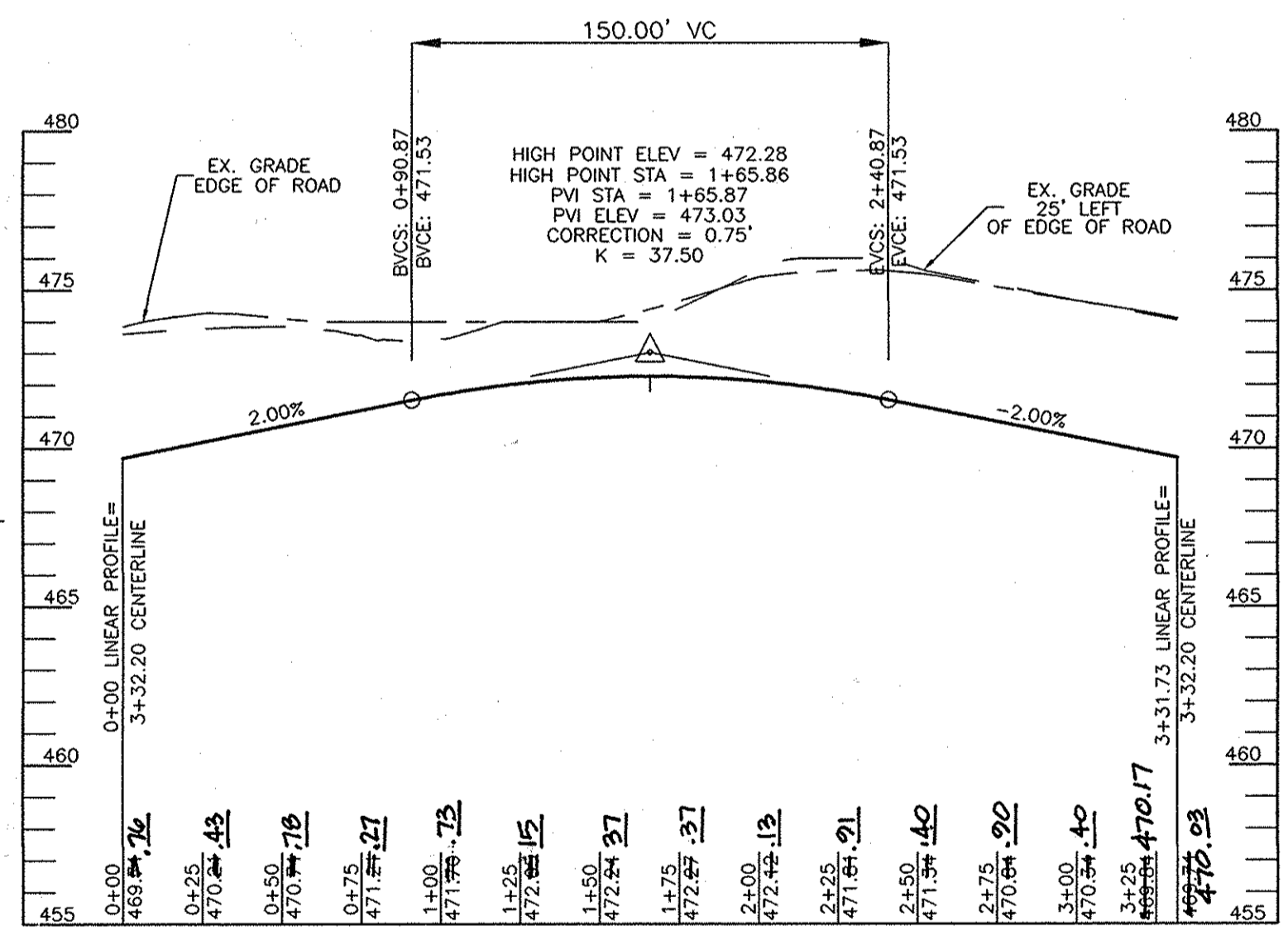
**TOP OF CURB
FILLET PROFILE (F-1)**
DESIGN SPEED: 25 MPH
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



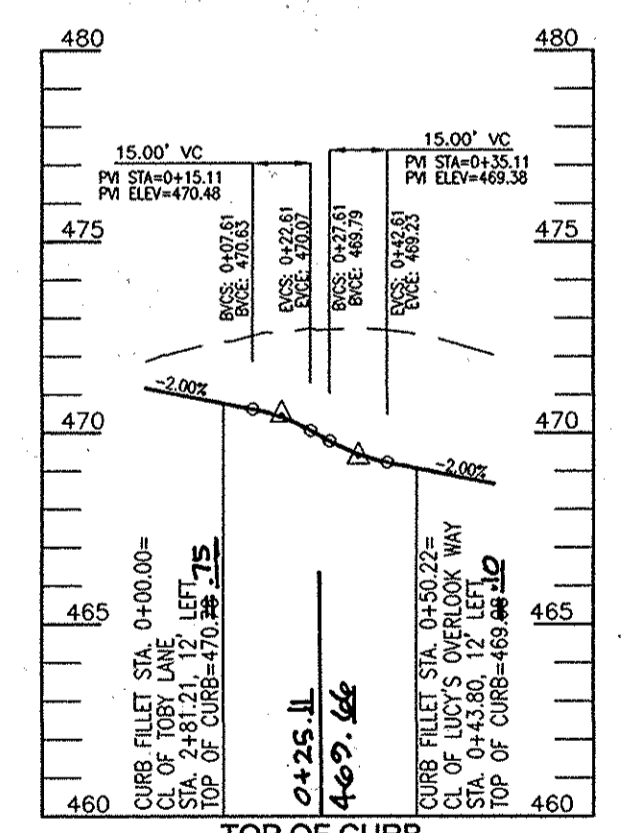
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FILLET PROFILE (F-2)**
DESIGN SPEED: 25 MPH
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



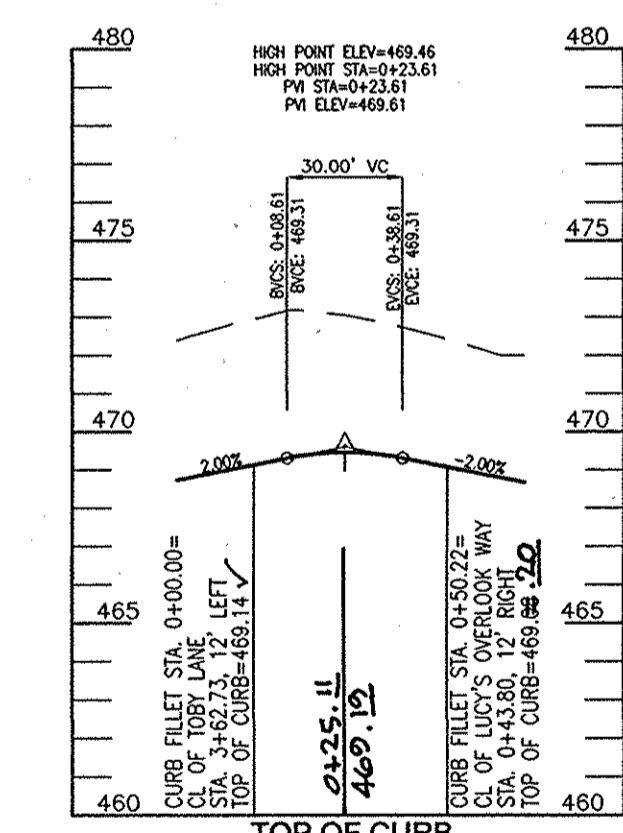
**ROAD PROFILE
LUCYS OVERLOOK WAY
PUBLIC ACCESS STREET**
DESIGN SPEED: 25 MPH
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



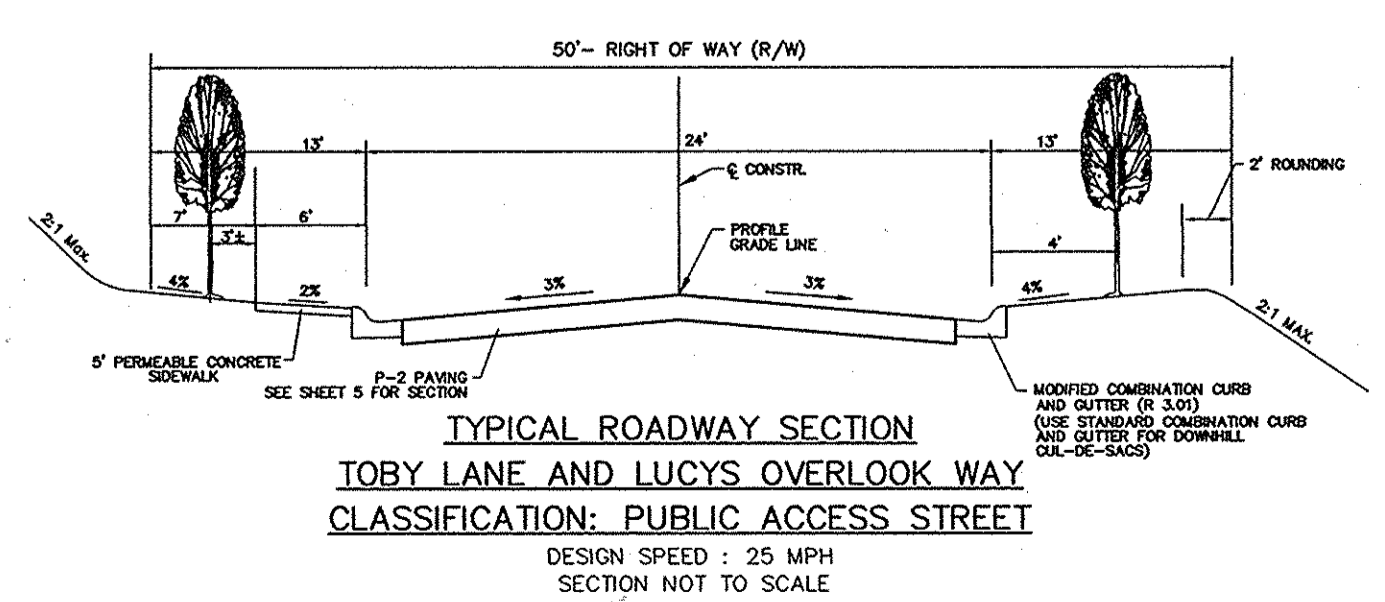
**LINEAR PROFILE
LUCYS OVERLOOK WAY
PUBLIC ACCESS STREET**
DESIGN SPEED: 25 MPH
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



**TOP OF CURB
FILLET PROFILE (F-3)**
DESIGN SPEED: 25 MPH
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



**TOP OF CURB
FILLET PROFILE (F-4)**
DESIGN SPEED: 25 MPH
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



**TYPICAL ROADWAY SECTION
TOBY LANE AND LUCYS OVERLOOK WAY
CLASSIFICATION: PUBLIC ACCESS STREET**
DESIGN SPEED: 25 MPH
SECTION NOT TO SCALE

APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] 8-12-2011
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 8/10/11
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 APPROVED: [Signature] 8/22/11
 CHIEF, DIVISION OF LAND DEVELOPMENT

A5-BUILT CERTIFICATION
 I hereby certify that the facility shown on this plan was constructed in accordance with the approved plans and specifications.
 [Signature]
 PE No. 5408 16193
 Date: 5/12/15
 PROFESSIONAL ENGINEER

OWNERS
 PARCEL 77
 EVANS M. KEIM
 9339 ROUTE 99
 ELLICOTT CITY, MD 21042

DEVELOPER
 PARCEL 78 & 416
 ATHOL & LISA MORGAN
 5305 ROUTE 99
 ELLICOTT CITY, MD 21042

HOWARD LAND DEVELOPERS, LLC
 C/O LAND DESIGN & DEVELOPMENT, INC.
 5300 DORSEY HALL DR. STE 102
 ELLICOTT CITY, MARYLAND 21042-7819
 ATR: MR. DONALD R. REUWER
 443-367-0422

NO.	REVISION	DATE

**FINAL ROAD CONSTRUCTION PLAN
MOUNT HEBRON OVERLOOK
ROAD PROFILES**

LOTS 1-25 AND OPEN SPACE LOT 26
 A RE-SUBDIVISION OF THE "KEIM PROPERTY" LOT 2,
 AND A SUBDIVISION OF PARCELS 78 AND 416
 HOWARD COUNTY, MD

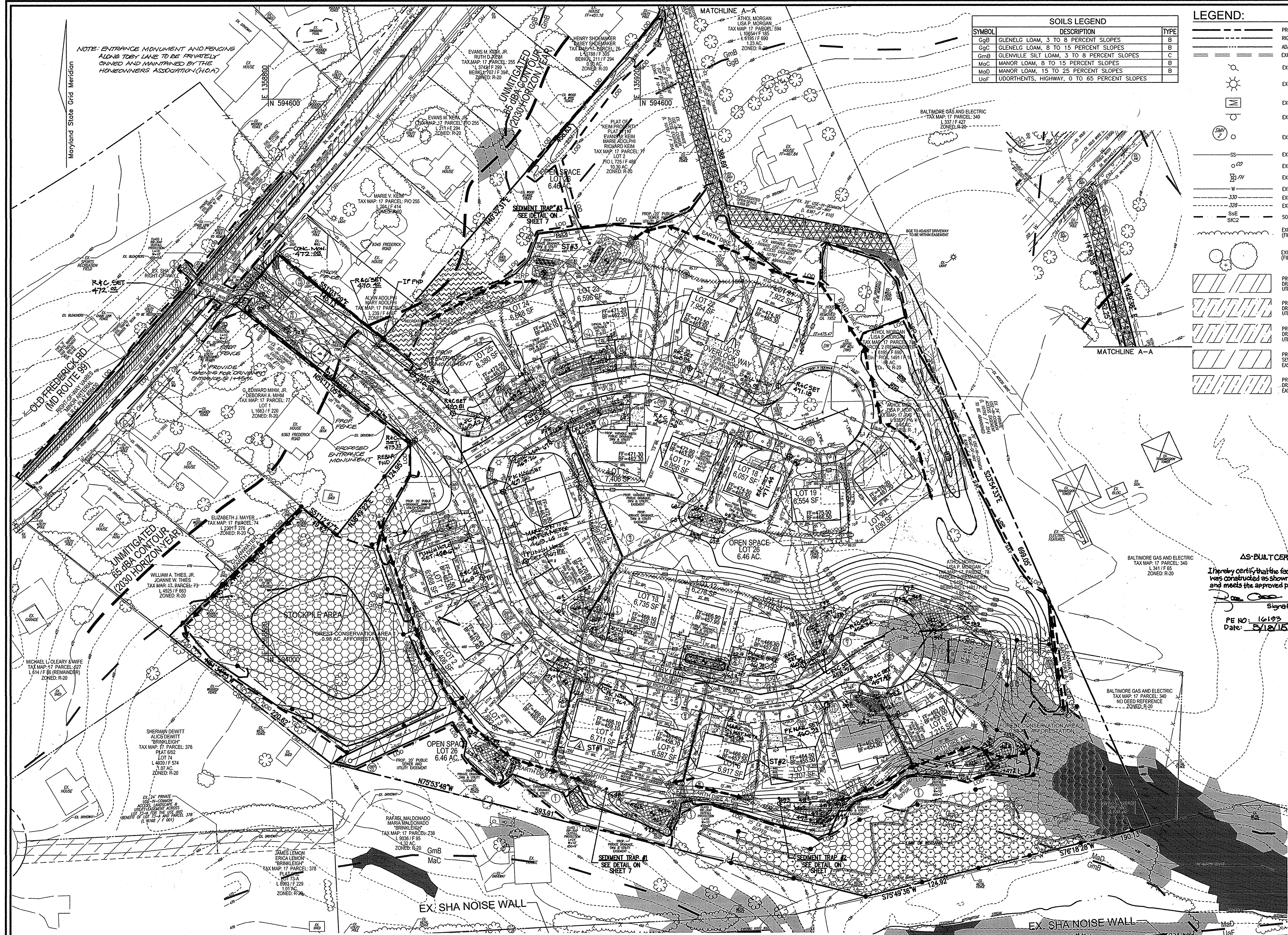
ZONING: R-20
 PARCELS: 77, 78, & 416
 TAX MAP: 17 GRID: 16
 DPZ REF'S: F-87-100, ECP-10-013, SP-10-007, CONT. #14-4684-D, PB-369, WP-11-028

**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: 09-27-2012.

DESIGN BY: RHY
 DRAWN BY: JMR
 CHECKED BY: RHY
 DATE: JUNE 2011
 SCALE: AS SHOWN
 W.O. NO.: 10-06

3 SHEET OF 12



SOILS LEGEND		
SYMBOL	DESCRIPTION	TYPE
GgB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B
GgC	GLENELG LOAM, 8 TO 15 PERCENT SLOPES	B
GmB	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C
MoC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B
MoD	MANOR LOAM, 15 TO 25 PERCENT SLOPES	B
UaF	UDORTHERTS, HIGHWAY, 0 TO 65 PERCENT SLOPES	B

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
- EXISTING TREELINE (FIELD LOCATED)
- EXISTING TREES (FIELD LOCATED)
- PROP. PUBLIC DRAINAGE, SEWER & UTILITY EASEMENT
- PROP. PUBLIC DRAINAGE, SWM & UTILITY EASEMENT
- PROP. PUBLIC SEWER & UTILITY EASEMENT
- PROP. PUBLIC DRAINAGE & UTILITY EASEMENT
- PROP. 7" REINFORCED CONCRETE @ 18" R/S
- PROP. PERMEABLE CONCRETE
- EXISTING FENCE
- CENTERLINE OF EXISTING STREAM
- PROPOSED STORMDRAIN
- PROPOSED STORMDRAIN INLET
- PROPOSED SIDEWALK
- PROPOSED TREELINE
- PROPOSED CURB
- PROPOSED STREET LIGHT
- PROP. FOREST CONSERVATION (AFFORESTATION)
- RECREATIONAL OPEN SPACE
- PROP. NON-CREDITED OPEN SPACE
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED SILT FENCE
- PROPOSED SUPER SILT FENCE
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED EROSION CONTROL MATING
- PROPOSED EARTH DIKE
- PROPOSED MODERATE SLOPES
- PROPOSED STEEP SLOPES

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

SEDIMENT TRAP #1 DATA		SEDIMENT TRAP #2 DATA	
TRAP TYPE:	TYPE II	TRAP TYPE:	TYPE II
PROP. DRAINAGE AREA:	2.2 AC.	PROP. DRAINAGE AREA:	2.0 AC.
WET STORAGE REQUIRED:	3960 CF	WET STORAGE REQUIRED:	3600 CF
DRY STORAGE REQUIRED:	4632 CF	DRY STORAGE REQUIRED:	3995 CF
TOTAL STORAGE REQUIRED:	8592 CF	TOTAL STORAGE REQUIRED:	7595 CF
TOTAL STORAGE PROVIDED:	9663 CF	TOTAL STORAGE PROVIDED:	7200 CF
BOTTOM ELEV.:	444.5	BOTTOM ELEV.:	442.5
TOP EMBANKMENT ELEV.:	448.0	TOP EMBANKMENT ELEV.:	448.0
WEIR ELEVATION:	447.0 @ 8'	WEIR ELEVATION:	445.0 @ 8'
WET STORAGE ELEVATION:	444.5-445.8	WET STORAGE ELEVATION:	442.5-443.9
DRY STORAGE ELEVATION:	445.8-447.0	DRY STORAGE ELEVATION:	443.9-445.0

SEDIMENT TRAP #3 DATA	
TRAP TYPE:	TYPE II
EX. DRAINAGE AREA:	1.6 AC.
PROP. DRAINAGE AREA:	2.9 AC.
WET STORAGE REQUIRED:	5250 CF
DRY STORAGE REQUIRED:	5336 CF
TOTAL STORAGE REQUIRED:	10586 CF
TOTAL STORAGE PROVIDED:	10872 CF
BOTTOM ELEV.:	456.0
TOP EMBANKMENT ELEV.:	460.0
WEIR ELEVATION:	458.0 @ 8'
WET STORAGE ELEVATION:	456.0-457.9
DRY STORAGE ELEVATION:	457.9-459.0
PROP. Q1 STORAGE REQUIRED:	2,925 CF
PROP. Q1 STORAGE PROVIDED:	7,427 CF @ 458.19

AS-BUILT CERTIFICATION
I hereby certify that the facility shown on this plan was constructed as shown on the "as-built" plans and meets the approved plans and specifications.

Signature: [Signature]
PE No: 16193
Date: 5/12/15

OWNERS	DEVELOPER
PARCEL 77 EVANS M. KEIM 5339 ROUTE 99 ELLICOTT CITY, MD 21042	PARCEL 78 & 416 ATHOL & LISA MORGAN 9102 DORSEY HALL DR, STE 102 ELLICOTT CITY, MARYLAND 21042-7819 ATTN: MR. DONALD R. REUWER 443-357-0222

NO.	REVISION	DATE
1	REVISE PUBLIC WATER TO C-900 PVC	03-21-12
2	REVISE GRADING ON OPEN SPACE LOT 18 REMOVE BROWNSHAW STRUCTURE FROM LOT 18	05/04/12
3	ADD FENCE AND ENTRANCE MONUMENT, RELOCATE KEM PROPERTY DRIVEWAY, RELOCATE SPEED LIMIT SIGN AND STREET TREE	9/19/12

REVISED FINAL ROAD CONSTRUCTION PLAN
MOUNT HEBRON OVERLOOK
SOILS MAP, GRADING, EROSION AND SEDIMENT CONTROL PLAN
LOTS 1-25 AND OPEN SPACE LOT 26
A RE-SUBDIVISION OF THE "KEM PROPERTY" LOT 2,
AND A SUBDIVISION OF PARCELS 78 AND 416
HOWARD COUNTY, MD
ZONING: R-20
PARCELS: 77, 78, & 416
2ND ELECTION DISTRICT
TAX MAP: 17 DIST: 16
DPZ REF'S: 87-100, ECP-10-013, SP-10-007, CONT. #14-4684-D, PB-389, WP-11-028

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

APPROVED: DEPARTMENT OF PUBLIC WORKS [Signature] CHIEF, BUREAU OF HIGHWAYS DATE: 4-3-12	APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING [Signature] CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 4/11/12	APPROVED: DIVISION OF LAND DEVELOPMENT [Signature] CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 4/11/12	BY THE DEVELOPER: [Signature] SIGNATURE OF DEVELOPER DATE: 3/26/12	BY THE ENGINEER: [Signature] SIGNATURE OF ENGINEER DATE: 3/21/12
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GRADING PLAN
SCALE: 1" = 50'

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

HOWARD S.C.D. DATE

INTERSTATE U.S. 70 (WEST BOUND)
PRINCIPAL ARTERIAL
PLAT # 122 AND 123
L 4321 P 493

EX. SHA NOISE WALL

MITIGATED 65 dBA LINE

PROFESSIONAL CERTIFICATE

DESIGN BY: RHV
DRAWN BY: JMR
CHECKED BY: RHV
DATE: JUNE 2011
SCALE: AS SHOWN
W.O. NO.: 10-06

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 16193 EXPIRATION DATE: 09-29-2012

6 SHEET OF 12

30.0 DUST CONTROL

DEFINITION

CONTROLLING DUST BLOWING AND MOVEMENT ON CONSTRUCTION SITES AND ROADS.

PURPOSE

TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES. REDUCE ON AND OFF-SITE DAMAGE HEALTH HAZARDS, AND IMPROVE TRAFFIC SAFETY.

CONDITIONS WHERE PRACTICE APPLIES

THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON AND OFF-SITE DAMAGE IS LIKELY WITHOUT TREATMENT.

SPECIFICATIONS

TEMPORARY METHODS

- 1. MULCHES - SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY. MULCH SHOULD BE CRIMPED OR TACKED TO PREVENT BLOWING.
2. VEGETATIVE COVER - SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER.
3. TILLAGE - TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12' APART, SPRING-TOOTHED HARROWS, AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.
4. IRRIGATION - THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS NEEDED. AT NO TIME SHOULD THE SITE BE IRRIGATED TO THE POINT THAT RUNOFF BEGINS TO FLOW.
5. BARRIERS - SOLID BOARD FENCES, SILT FENCES, SNOW FENCES, BURLAP FENCES, STRAW BALES, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 10 TIMES THEIR HEIGHT ARE EFFECTIVE IN CONTROLLING SOIL BLOWING.
6. CALCIUM CHLORIDE - APPLY AT RATES THAT WILL KEEP SURFACE MOIST. MAY NEED RETREATMENT.

PERMANENT METHODS

- 1. PERMANENT VEGETATION - SEE STANDARDS FOR PERMANENT VEGETATIVE COVER, AND PERMANENT STABILIZATION WITH SOIL. EXISTING TREES OR LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.
2. TOPSOILING - COVERING WITH LESS ERODIBLE SOIL MATERIALS. SEE STANDARDS FOR TOPSOILING.
3. STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

REFERENCES

- 1. AGRICULTURAL HANDBOOK 346. WIND EROSION FORCES IN THE UNITED STATES AND THEIR USE IN PREDICTING SOIL LOSS.
2. AGRICULTURAL INFORMATION BULLETIN 354. HOW TO CONTROL WIND EROSION, USDA-ARS.

SEDIMENT CONTROL NOTES

- 1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPT. OF INSPECTION, LICENSE AND PERMITS SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
2. ALL VEGETATION AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: (A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DICES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 2:1, (B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7, HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, FOR PERMANENT SEEDING, SOIL, TEMPORARY SEEDING, AND MULCHING (SEC. G). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:

Table with 2 columns: Description, Value. Includes TOTAL AREA (12.44 AC), AREA DISTURBED (3.74 AC), AREA TO BE ROOFED OR PAVED (1.72 AC), AREA TO BE VEGETATIVELY STABILIZED (7.02 AC), TOTAL CUT (24.572 CY), TOTAL FILL (18.276 CY), OFFSITE WASTE/BORROW AREA LOCATION.

- 8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR LOCATION OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE. HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER 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.
11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
* TO BE DETERMINED BY CONTRACTOR WITH PRE-APPROVAL OF THE SEDIMENT CONTROL INSPECTOR WITH AN APPROVED AND ACTIVE GRADING PERMIT.

SEQUENCE OF CONSTRUCTION

- 1. OBTAIN GRADING PERMIT. NOTIFY HOWARD COUNTY BUREAU OF INSPECTIONS AND PERMITS (313-1880) AT LEAST 24 HOURS BEFORE STARTING ANY WORK. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.
2. INSTALL PERIMETER SEDIMENT SILT FENCE AND CLEANWATER DIKES AND INSTANT SUPER SILT TRAP 1-3.
3. WITH PERMISSION FROM SEDIMENT CONTROL INSPECTOR BEGIN MASS GRADING OF SITE AND INSTALL EARTH DIKES AND DIRECT TO TRAPS.
4. INSTALL WATER, SEWER AND STORM DRAIN.
5. WITH WATER, SEWER AND STORM DRAIN INSTALLED GRADE ROADS TO SUB-BASE AND APPLY DUST CONTROL SPECIFICATIONS.
6. WITH ROAD GRADED TO SUB-BASE BEGIN CURB AND GUTTER CONSTRUCTION AND ROAD PAVING. INSTALL SIDEWALKS.
7. WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL TRAPS AND CONSTRUCT MICRO-BIOTRENTION FACILITIES 3, 4, 15 AND 16 AND STABILIZE.
8. CONSTRUCT MICRO-BIOTRENTION FACILITIES AND STABILIZE IMMEDIATELY. DO NOT CONSTRUCT MICRO-BIOTRENTION FACILITIES 3, 4, 15 AND 16 UNTIL SEDIMENT TRAPS HAVE BEEN REMOVED.
9. WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL TRAPS AND CONSTRUCT MICRO-BIOTRENTION FACILITIES 3, 4, 15 AND 16 AND STABILIZE.
10. WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR AND WITH STABILIZED REMOVED REMAINING SEDIMENT CONTROL DEVICES.
11. REMOVE ALL NEW AND OLD JUNK, TRASH, DEBRIS AND OTHER MAN-MADE OBJECTS FROM THE ENTIRE FOREST CONSERVATION CASEMENT, FLOODPLAIN, WETLANDS, STREAMS AND THEIR BUFFERS.
12. INSTALL PERIMETER LANDSCAPING AS WELL AS STREET TREES.

NOTES

- DURING GRADING AND AFTER EACH RAINFALL, THE CONTRACTOR SHALL INSPECT AND PROVIDE THE NECESSARY MAINTENANCE ON THE SEDIMENT AND EROSION CONTROL MEASURES SHOWN HEREON.
FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
A. 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DICES, SWALES, DITCH PERIMETER SLOPES AND ALL SLOPES GREATER THAN 2:1.
B. 14 CALENDAR DAYS FOR ALL OTHER DISTURBED AREAS.

DEFINITION

PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETABLE GROWTH. SOILS OF CONCRETE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW pH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES

- I. THIS PRACTICE 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 CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
II. FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.
CONSTRUCTION AND MATERIAL SPECIFICATIONS

I. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS 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 SURVEY INFORMATION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.

II. TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:

- 1. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR A SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF SAND, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 AND 1/2" IN DIAMETER.
2. TOPSOIL SHALL BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
3. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF SOILS OF HIGH LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.
4. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
A. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL

PERMANENT SEEDING NOTES

- III. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:
I. ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:
A. PH FOR TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A PH OF LESS THAN 6.0 SURFICENT LIME SHALL BE PRESCRIBED TO RAISE THE PH TO 6.0 OR HIGHER.
B. ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT.
C. TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.
D. NO SOIL OR SEED SHALL 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.
NOTE: TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
II. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION-SECTION I-VEGETATIVE STABILIZATION METHODS AND MATERIALS.

IV. TOPSOIL APPLICATION

- 1. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
II. GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBERT 4" HIGHER IN ELEVATION.
III. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" - 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SOODING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
IV. TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDING PREPARATION.

V. TOPSOIL APPLICATION

- 1. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
II. GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBERT 4" HIGHER IN ELEVATION.
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IV. TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDING PREPARATION.

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.
SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, TROWEL OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

- 1) PREFERRED-APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./100 SO.FT.) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SO.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL AT THE TIME OF SEEDING. APPLY 400 LBS. PER ACRE 30-10-10 UREAFORM FERTILIZER (9 LBS./1000 SO.FT.)
2) ACCEPTABLE-APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SO.FT.) AND APPLY 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS./1000 SO.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 31, TOPSOIL SHALL BE SEED WITH 60 LBS. PER ACRE (1.4 LBS./1000 SO.FT.) OF KENTUCKY 31 TALL FESCUE FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS. PER ACRE (1.4 LBS./1000 SO.FT.) OF KENTUCKY 31 TALL FESCUE FOR THE PERIOD AUGUST 1 THRU OCTOBER 31. WEEDING LOVEGRASS DURING THE PERIOD OF OCTOBER 15 THRU FEBRUARY 28. PROTECT SITE BY OPTION (1) 2 TONS PER ACRE WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOIL. OPTION (3) SEED WITH 60 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

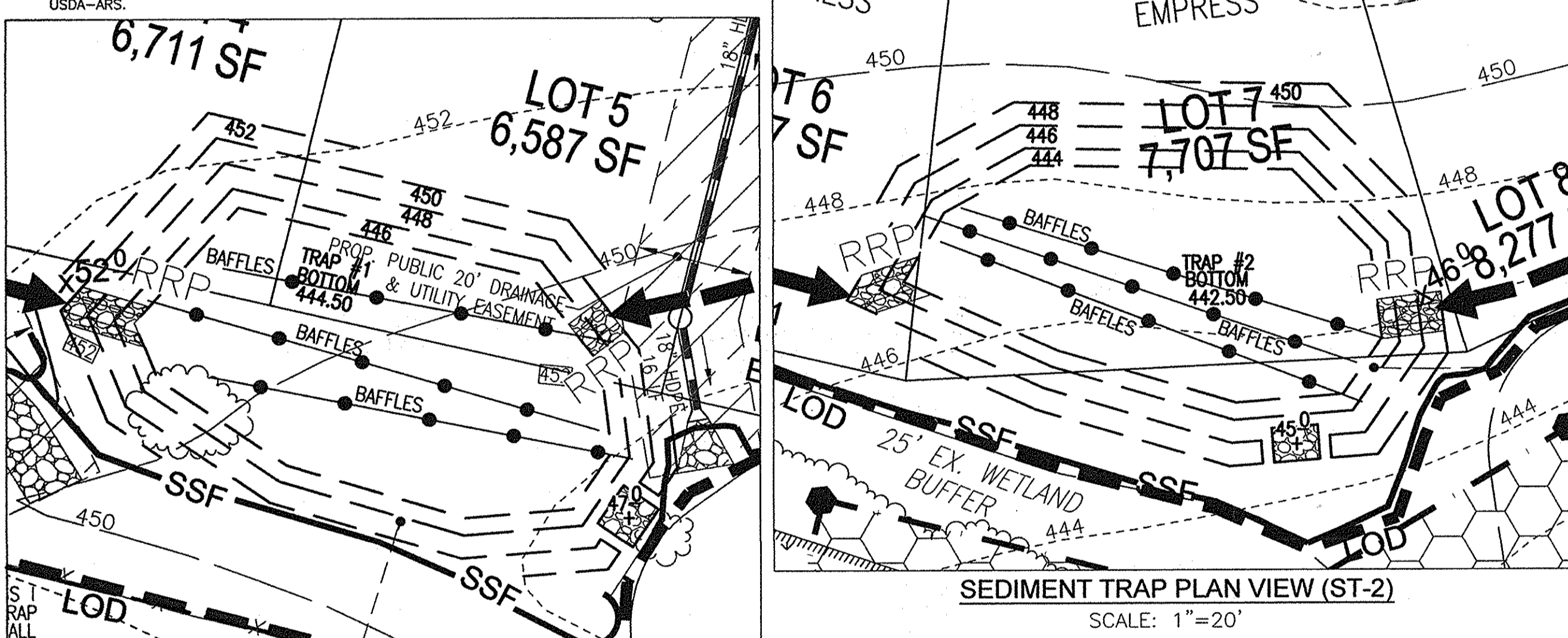
MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SO.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SO.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SO.FT.) FOR ANCHORING.
MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, AND RESEEDINGS.

TEMPORARY SEEDING NOTES

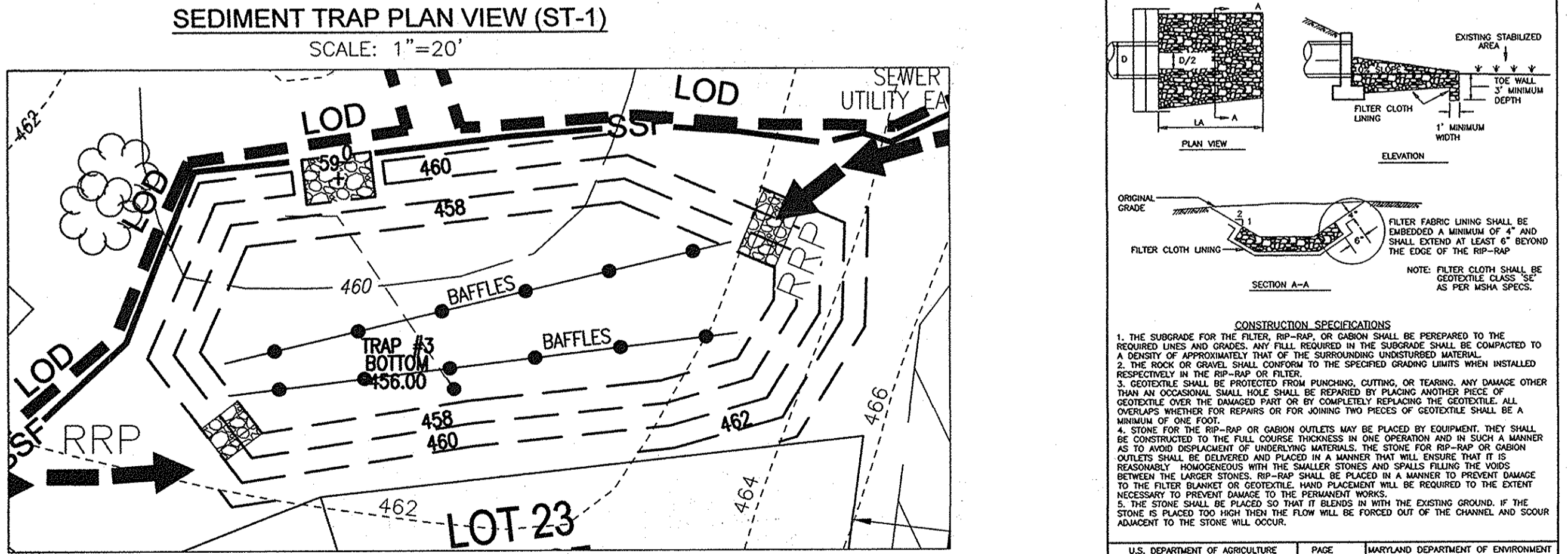
SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCHING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
SOIL AMENDMENTS: APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SO.FT.)

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2 1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS./1000 SO.FT.) FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (0.7 LBS./1000 SO.FT.). FOR THE PERIOD NOVEMBER 1 THRU FEBRUARY 28, SEED WITH 10 LBS. PER ACRE OF WEEPING LOVEGRASS (2.3 LBS./1000 SO.FT.) BY ANCHORING MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOIL.
MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SO.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SO.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SO.FT.) FOR ANCHORING.

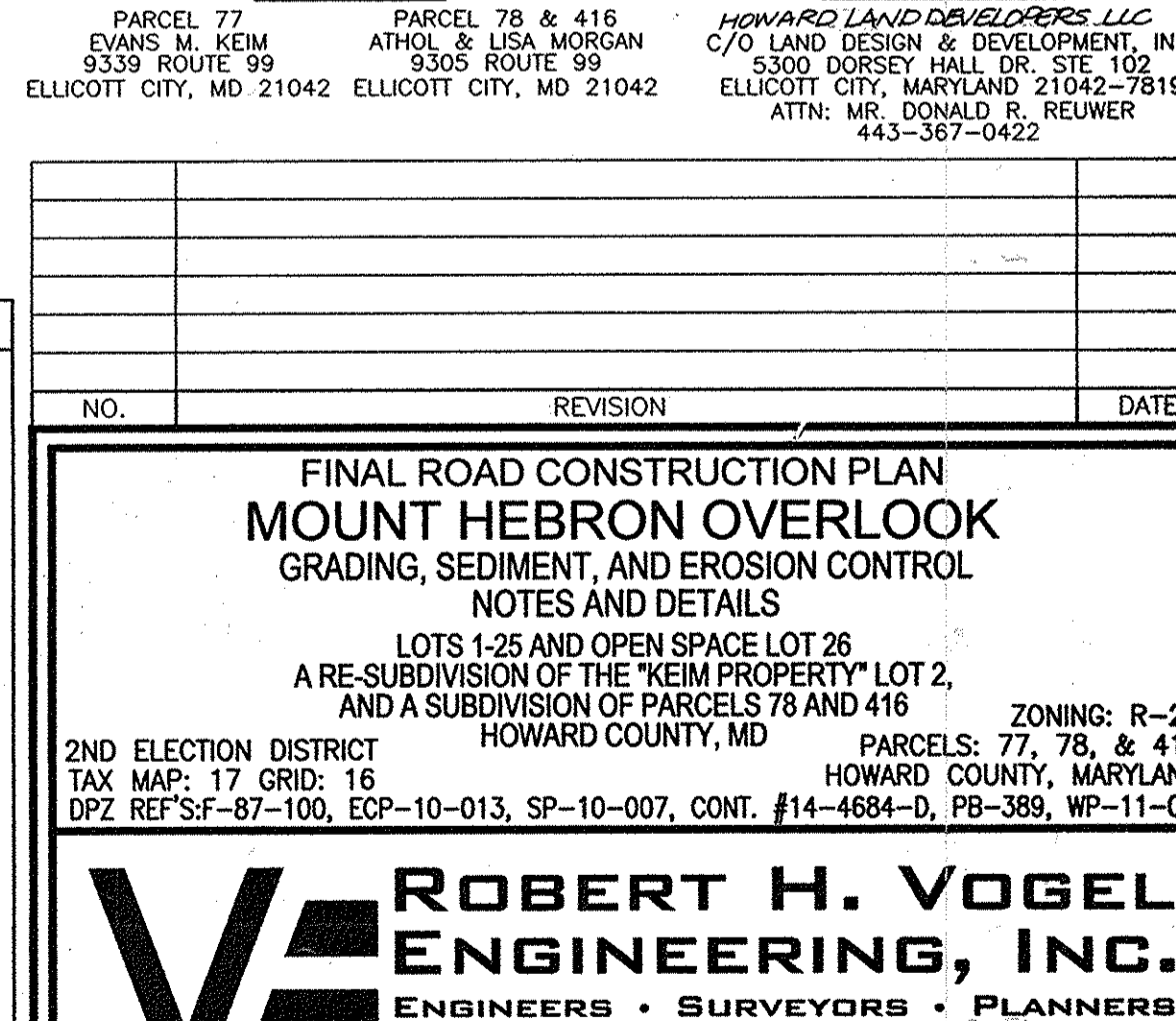
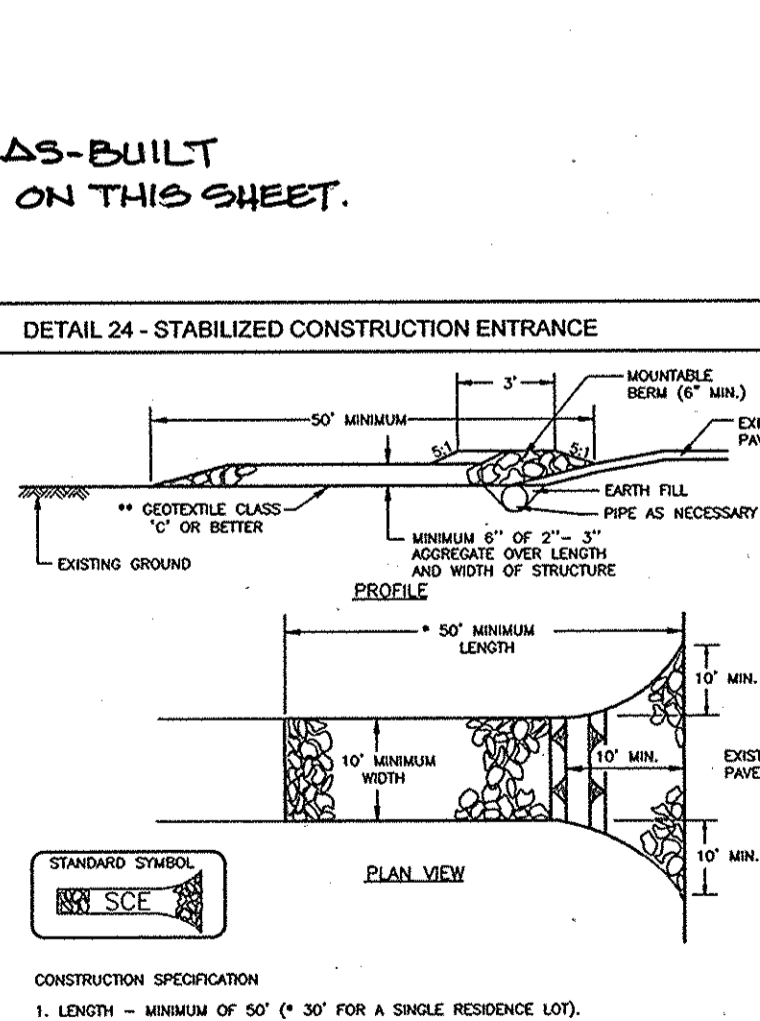
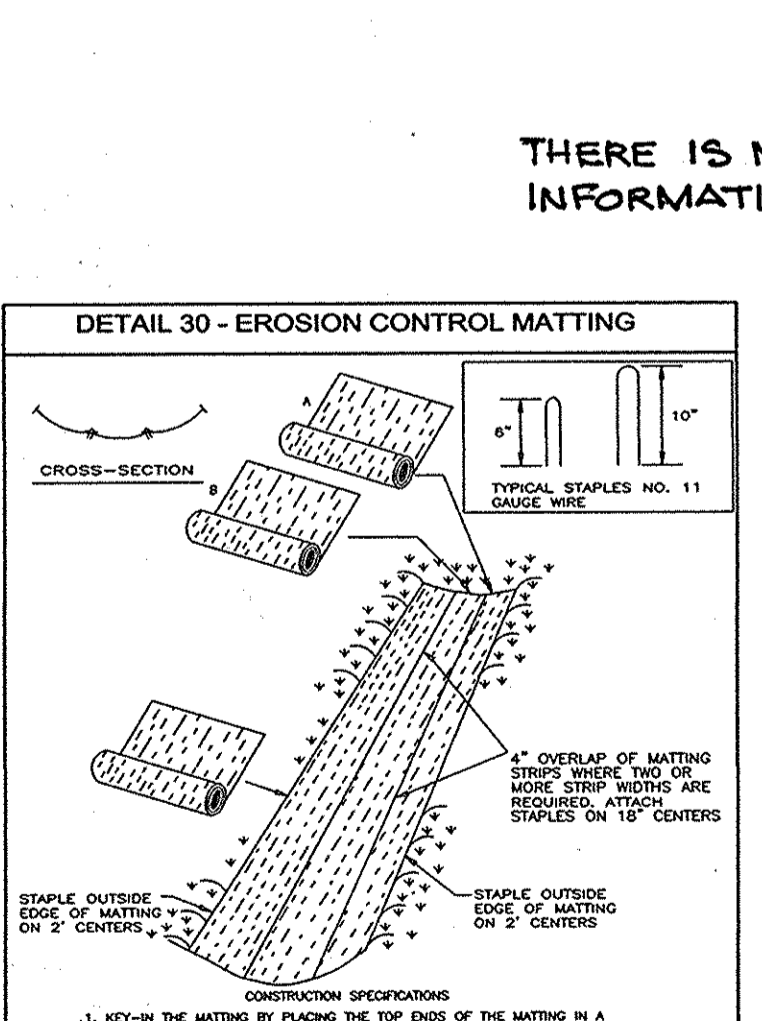
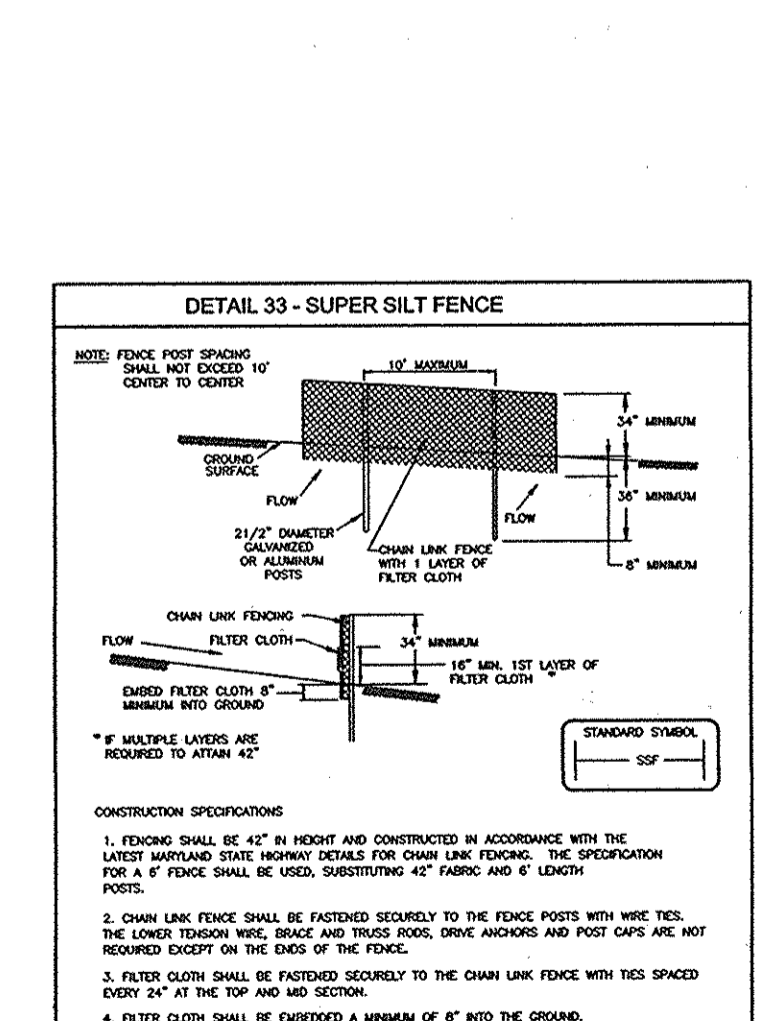
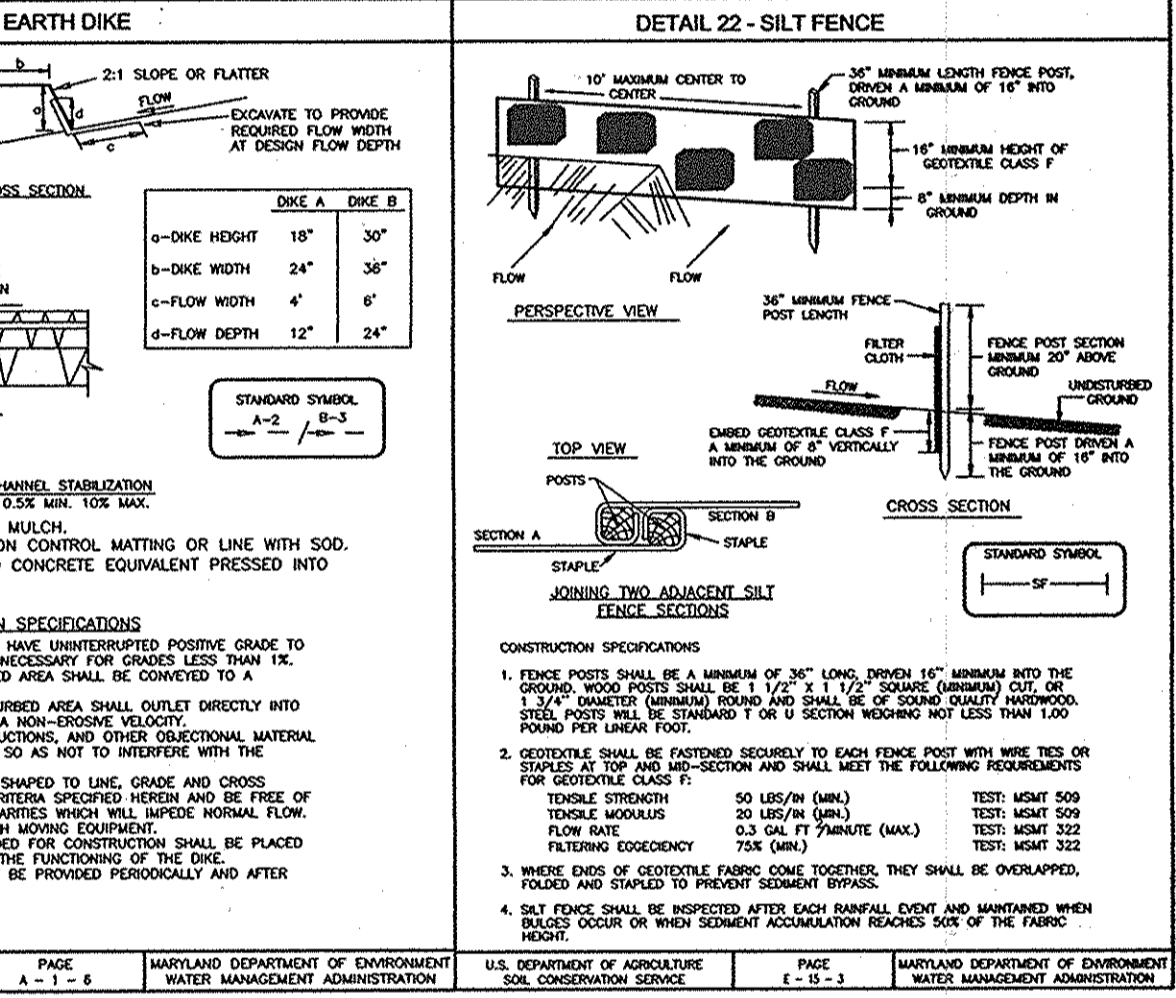
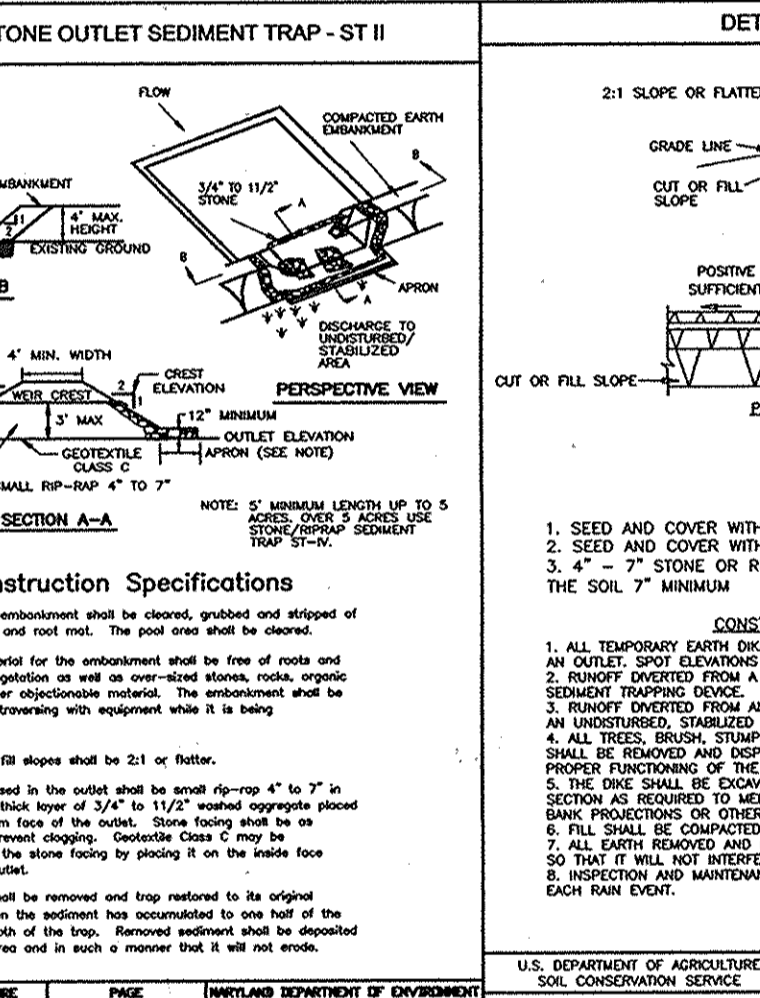
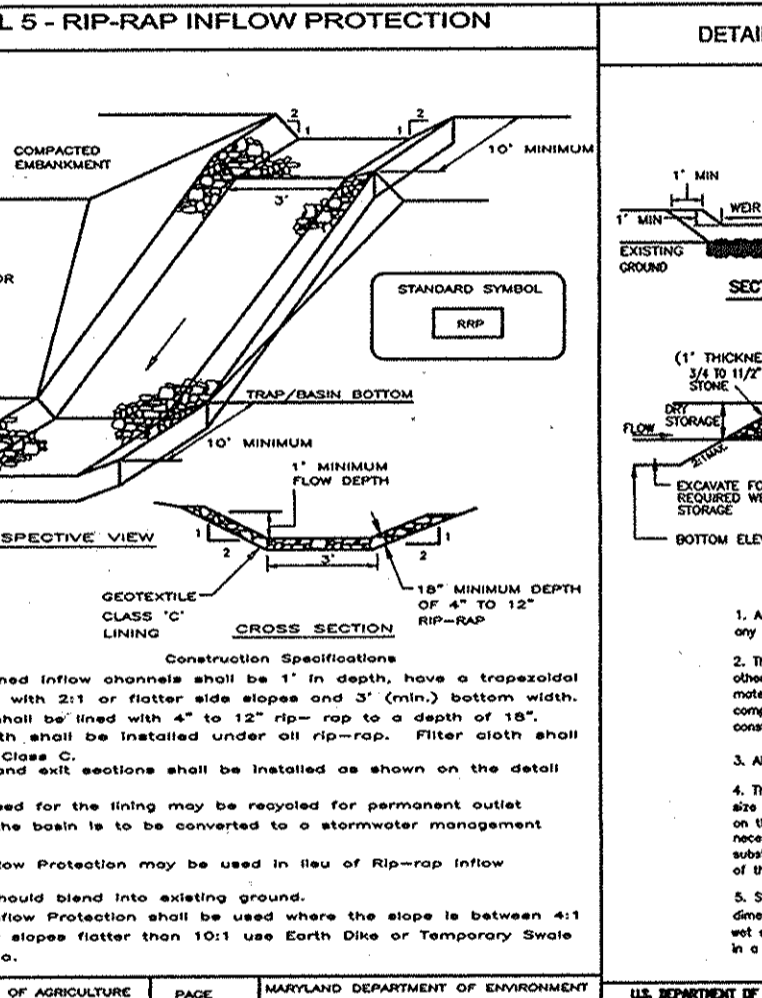
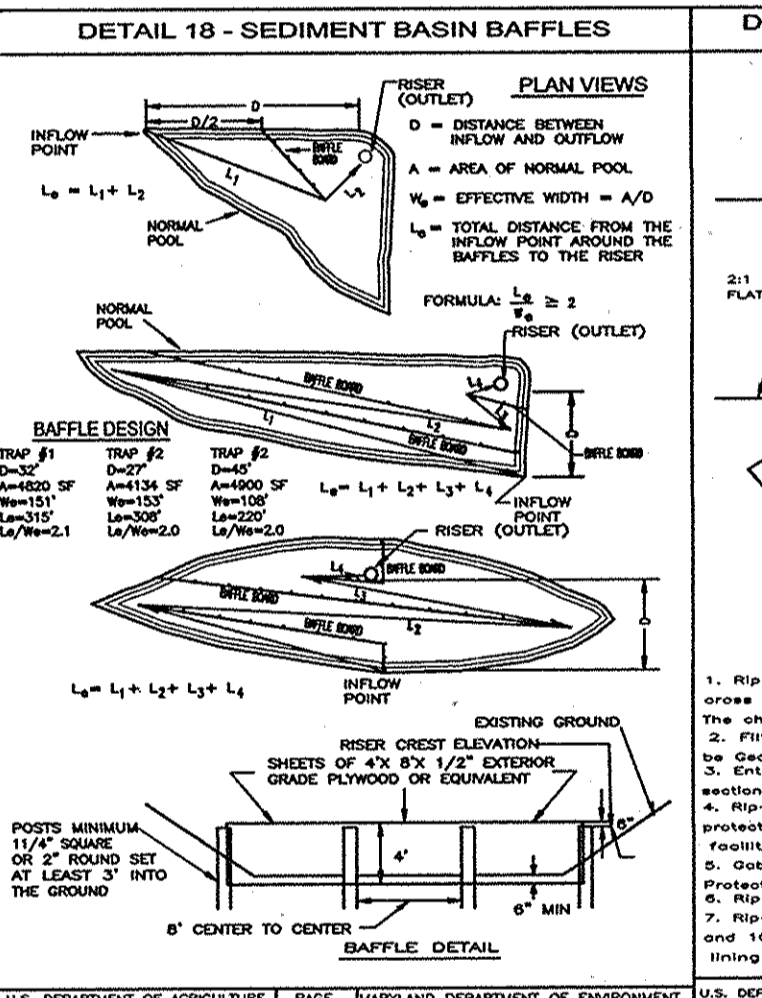
REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOTES.



SEMENT TRAP PLAN VIEW (ST-1) SCALE: 1"=20'



SEMENT TRAP PLAN VIEW (ST-3) SCALE: 1"=20'



APPROVED: DEPARTMENT OF PUBLIC WORKS
BY THE DEVELOPER: [Signature] DATE: 8/12/2011
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
BY THE ENGINEER: [Signature] DATE: 7/28/2011

APPROVED: DEPARTMENT OF PUBLIC WORKS
BY THE DEVELOPER: [Signature] DATE: 8/12/2011
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
BY THE ENGINEER: [Signature] DATE: 7/28/2011

APPROVED: DEPARTMENT OF PUBLIC WORKS
BY THE DEVELOPER: [Signature] DATE: 8/12/2011
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
BY THE ENGINEER: [Signature] DATE: 7/28/2011

FINAL ROAD CONSTRUCTION PLAN MOUNT HEBRON OVERLOOK GRADING, SEDIMENT, AND EROSION CONTROL NOTES AND DETAILS. LOTS 1-25 AND OPEN SPACE LOT 26. A RE-SUBDIVISION OF THE 'KEIM PROPERTY' LOT 2, AND A SUBDIVISION OF PARCELS 78 AND 416. ZONING: R-20. HOWARD COUNTY, MD. PARCELS: 77, 78, & 416. TAX MAP: 17 GRID: 16. DPZ REF: S-87-100, ECP-10-013, SP-10-007, CONT. #14-4684-D, PB-389, WP-11-028. ROBERT H. VOGEL ENGINEERS & SURVEYORS PLANNERS. 8407 MAIN STREET ELLICOTT CITY, MD 21043. TEL: 410.461.7666 FAX: 410.461.8961

NOTE: ENTRANCE MONUMENT AND FENCE ALONG TOBY LANE TO BE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION (H.O.A.)

DRAINAGE AREA TABULATIONS						
AREA	INLET	AREA	'C'	% IMP.	SOIL TYPE	ZONE
MBR-1	1-1	0.17 AC.	0.45	28%	B	R-20
MBR-6	1-6	0.56 AC.	0.56	48%	B	R-20
MBR-7	1-7	0.49 AC.	0.44	25%	B	R-20
MBR-8	1-8	0.36 AC.	0.48	34%	B	R-20
MBR-9	1-9	0.54 AC.	0.50	38%	B	R-20
MBR-10	1-10	0.56 AC.	0.51	40%	B	R-20
MBR-11	1-11	0.27 AC.	0.64	61%	B	R-20
MBR-12	1-12	0.85 AC.	0.46	28%	B	R-20
MBR-13	1-13	0.22 AC.	0.68	61%	B	R-20
MBR-14	1-14	0.50 AC.	0.59	54%	B	R-20
MBR-17	1-17	0.24 AC.	0.24	45%	B & C	R-20
MBR-19	1-19	0.63 AC.	0.63	6%	B	R-20

ESDv Summary							
LOCATION	DA	PE=1.52"		Practices			ESDv VOLUME
		Adjusted	PE	MBR	SFC	RB	
MBR-1	0.17	1.22	Y	N	N	N	210 CF
MBR-2	0.48	1.14	Y	N	N	Y	551 CF
MBR-3	0.49	1.15	Y	N	N	Y	475 CF
MBR-4	0.27	1.14	Y	N	N	Y	274 CF
MBR-5	0.45	1.15	Y	N	N	Y	226 CF
MBR-6	0.56	1.16	Y	N	N	Y	959 CF
MBR-7	0.49	1.18	Y	N	N	Y	390 CF
MBR-8	0.36	1.17	Y	N	N	Y	326 CF
MBR-9	0.54	1.17	Y	N	N	Y	584 CF
MBR-10	0.56	1.18	Y	N	N	Y	1061 CF
MBR-11	0.27	1.22	Y	N	N	N	449 CF
MBR-12	0.85	1.18	Y	N	N	N	659 CF
MBR-13	0.22	1.20	Y	N	N	Y	175 CF
MBR-14	0.50	1.20	Y	N	N	Y	675 CF
MBR-15	0.30	1.12	Y	N	N	Y	203 CF
MBR-16	0.42	1.15	Y	N	N	Y	260 CF
MBR-17	0.24	1.22	Y	N	N	N	335 CF
MBR-19	0.11	1.22	Y	N	N	N	360 CF
GS-1	0.10	1.22	N	N	N	Y	165 CF

* Subsequent to overall PE reduction due to alternative surfaces.
MBR- Micro-Bioretention
SFC- Sheetflow to Conservation Area
RB- Rain Barrel
RD- Rooftop Disconnect
GC- Grass Channel Swale

SOILS LEGEND		
SYMBOL	DESCRIPTION	TYPE
GgB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B
GgC	GLENELG LOAM, 8 TO 15 PERCENT SLOPES	B
GmB	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C
MdC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B
MdD	MANOR LOAM, 15 TO 25 PERCENT SLOPES	B
UoF	UDORTHERTS, HIGHWAY, 0 TO 65 PERCENT SLOPES	B

LEGEND:

PROPERTY LINE
 RIGHT-OF-WAY LINE
 ALIGNED PROPERTY LINE
 EXISTING CURB AND GUTTER
 EXISTING UTILITY POLE
 EXISTING LIGHT POLE
 EXISTING MANHOLE
 EXISTING SIGN
 EXISTING SANITARY MANHOLE
 EXISTING SANITARY LINE
 EXISTING CLEAVOUT
 EXISTING FIRE HYDRANT
 EXISTING WATER LINE
 EXISTING CONDUIT
 SOILS
 EXISTING USE-IN-COMMON EASEMENT (L 1491 / F 1492, 8307 / F 610)
 EXISTING USE-IN-COMMON ACCESS EASEMENT (L 1076 / F 304) (PLAT #7110)
 EXISTING TRESERVE (FIELD LOCATED)
 EXISTING TREES (FIELD LOCATED)
 ROOFTOP DISCONNECTS
 RAIN BARREL ONLY
 PERMEABLE CONCRETE
 RAINTOP UNCONNECTED & ROOFTOP DISCONNECTS (RAIN BARRELS)
 GRASS SWALE
 DRAINAGE AREA DIVIDE
 EXISTING FENCE
 CENTERLINE OF EXISTING STREET
 PROPOSED STORMWATER INLET
 PROPOSED TRESERVE
 PROPOSED CURB
 PROPOSED STREET LIGHT
 PROPOSED CONDUIT
 PROPOSED SPOT ELEVATION
 PROPOSED MODERATE SLOPES
 PROPOSED STEEP SLOPES
 FOREST CONSERVATION AREA (AFFORESTATION)
 RECREATIONAL OPEN SPACE
 PROP. NON-CREATED OPEN SPACE
 PROP. PUBLIC DRAINAGE, SEWER & UTILITY EASEMENT
 PROP. PUBLIC DRAINAGE, SSM & UTILITY EASEMENT
 PROP. PRIVATE DRAINAGE, SSM & UTILITY EASEMENT
 PROP. PUBLIC DRAINAGE & UTILITY EASEMENT
 RAIN BARREL
 ROOFTOP DISCONNECT

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET.

OWNERS		DEVELOPER	
PARCEL 77 EVANS M. KEIM 9339 ROUTE 99 ELLICOTT CITY, MD 21042	PARCEL 78 & 416 ATHOL & LISA MORGAN 9305 ROUTE 99 ELLICOTT CITY, MD 21042	HOWARD LANDDEVELOPERS, LLC C/O LAND DESIGN & DEVELOPMENT, INC. 5300 DORSEY HALL DR, STE 102 ELLICOTT CITY, MARYLAND 21042-7819 ATTN: MR. DONALD R. REUWER 443-567-0422	

NO.	REVISION	DATE
2	ADD FENCE AND ENTRANCE MONUMENT, RELOCATE KEIM PROPERTY DRIVEWAY, RELOCATE SPEED LIMIT SIGN AND STREET TREES	9/19/12

**FINAL ROAD CONSTRUCTION PLAN
 MOUNT HEBRON OVERLOOK
 STORM DRAIN DRAINAGE AREA MAP**
 LOTS 1-25 AND OPEN SPACE LOT 26
 A RE-SUBDIVISION OF THE "KEIM PROPERTY" LOT 2,
 AND A SUBDIVISION OF PARCELS 78 AND 416
 HOWARD COUNTY, MD
 ZONING: R-20
 2ND ELECTION DISTRICT
 TAX MAP: 17 GRID: 16
 DPZ REF'S: F-87-100, ECP-10-013, SP-10-007, CONT. #14-4684-D, PB-389, WP-11-028

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
 DESIGN BY: RHV
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: JUNE 2011
 SCALE: AS SHOWN
 W.O. NO.: 10-06

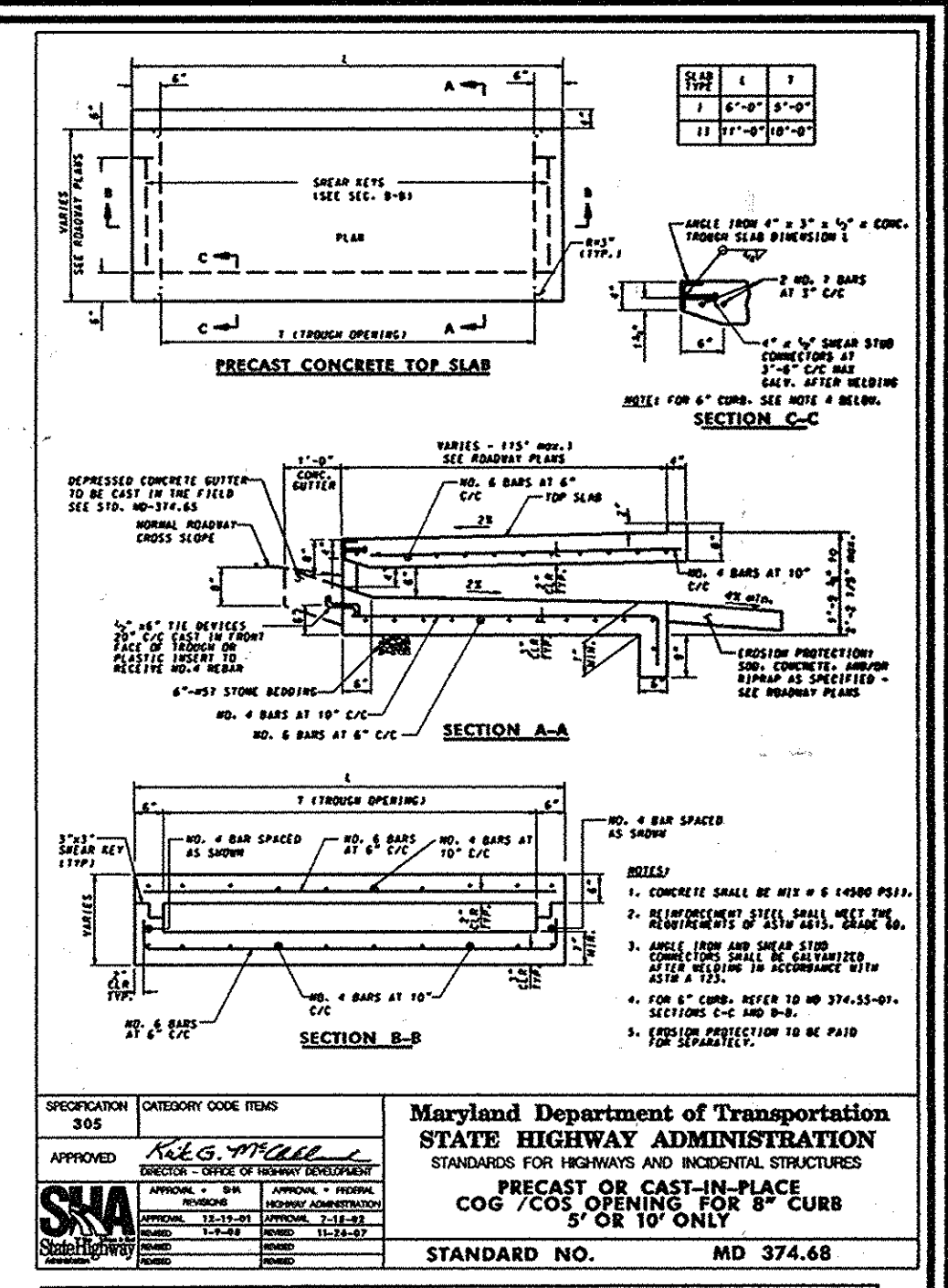
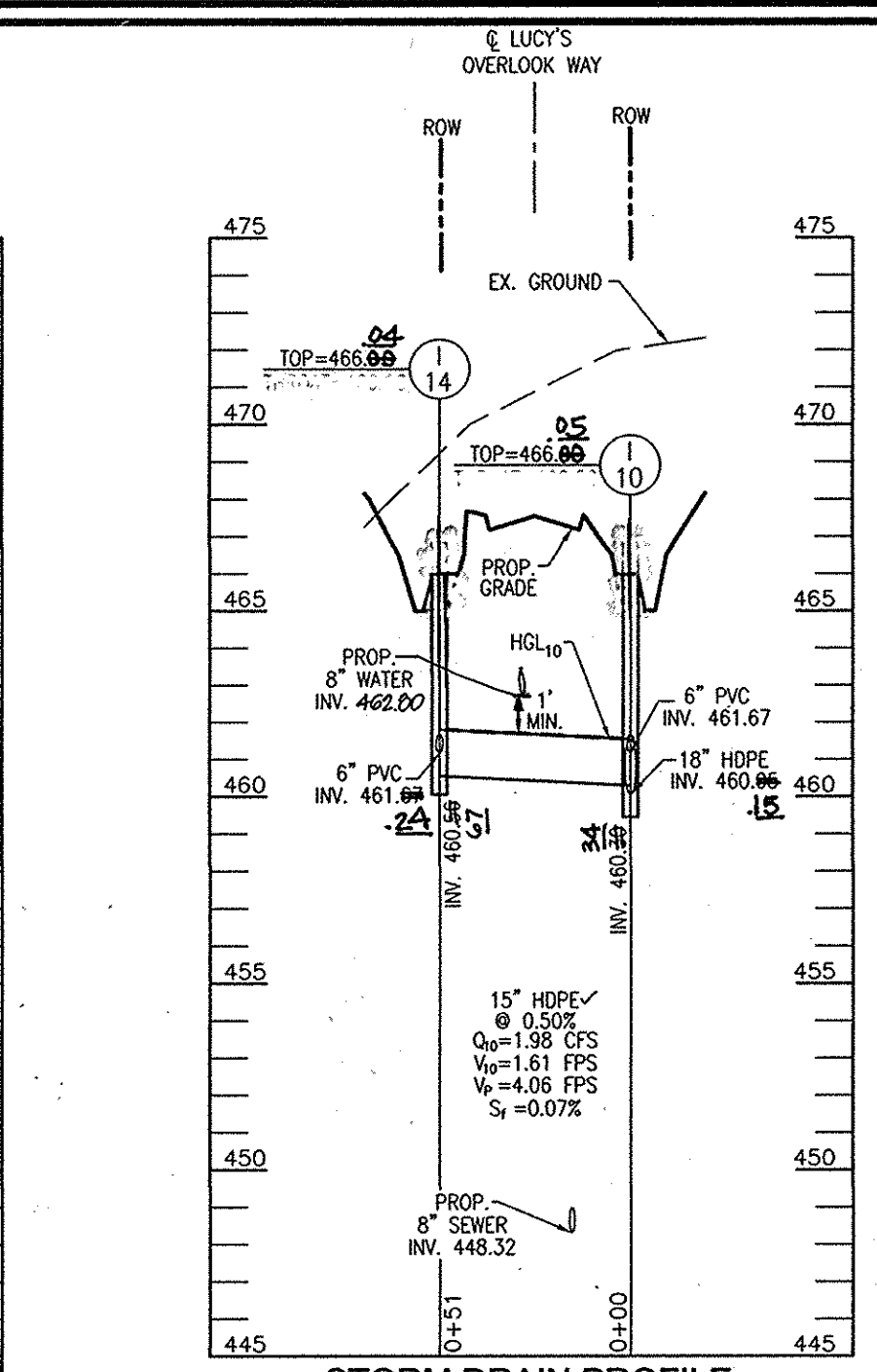
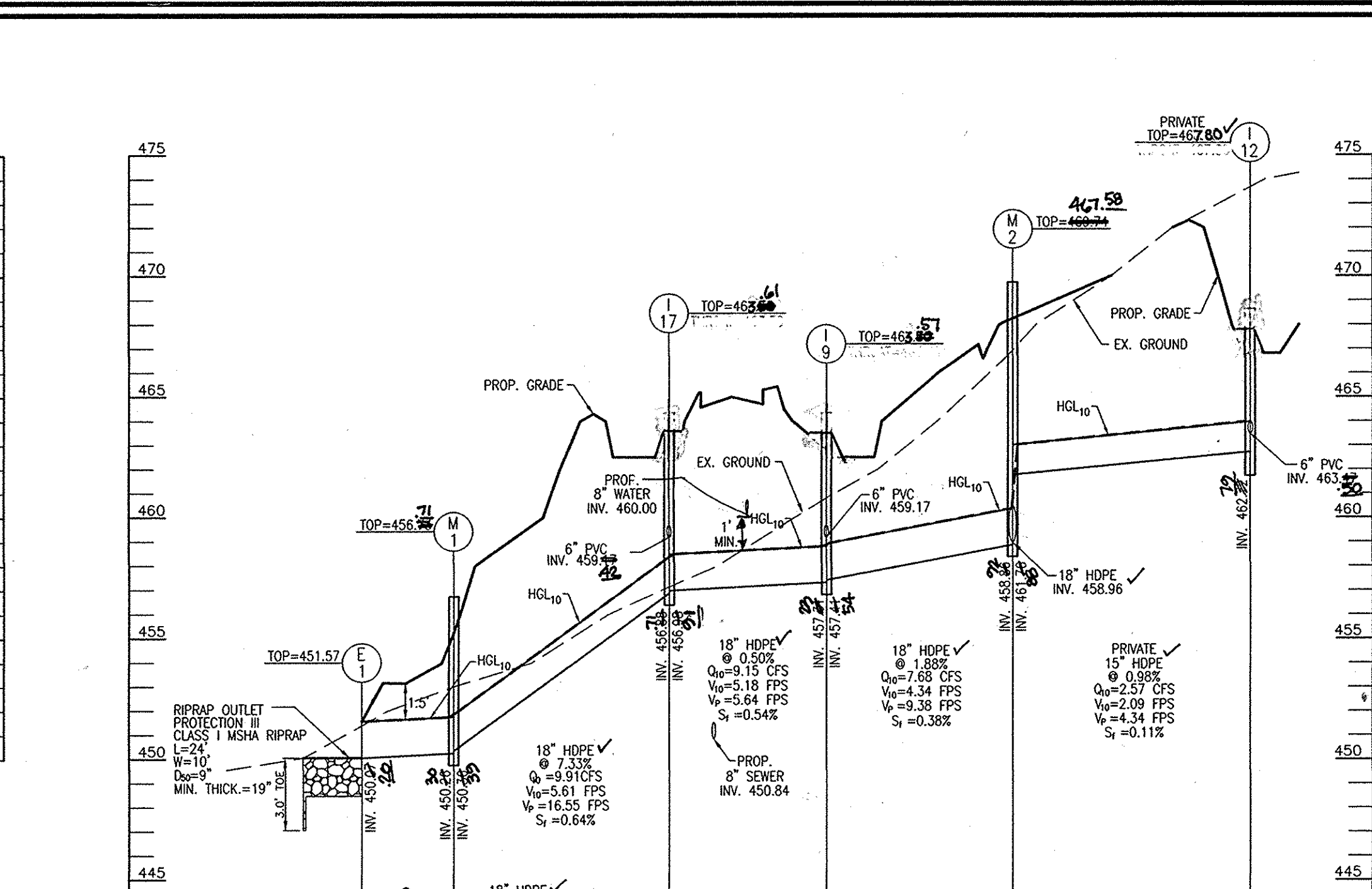
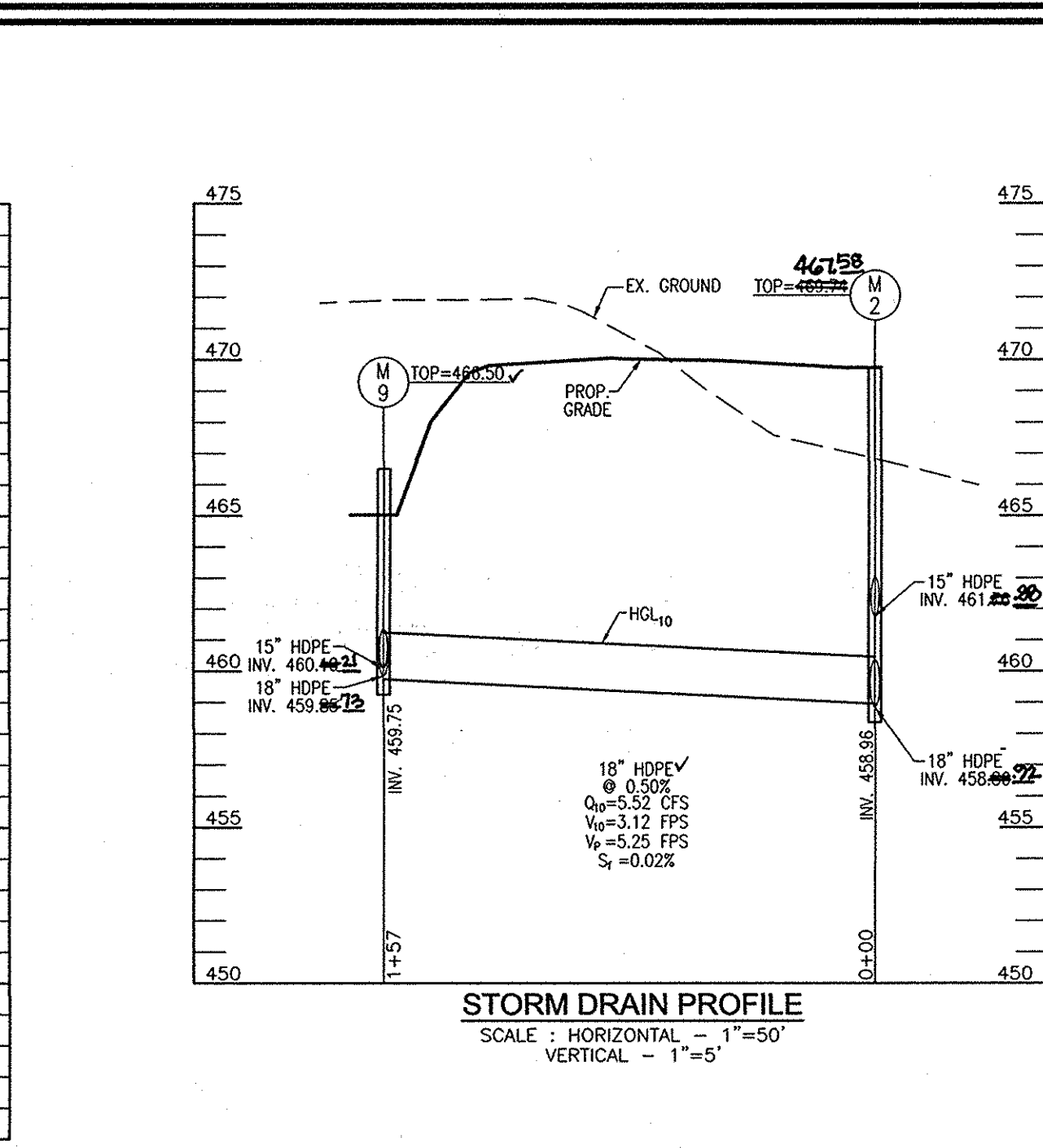
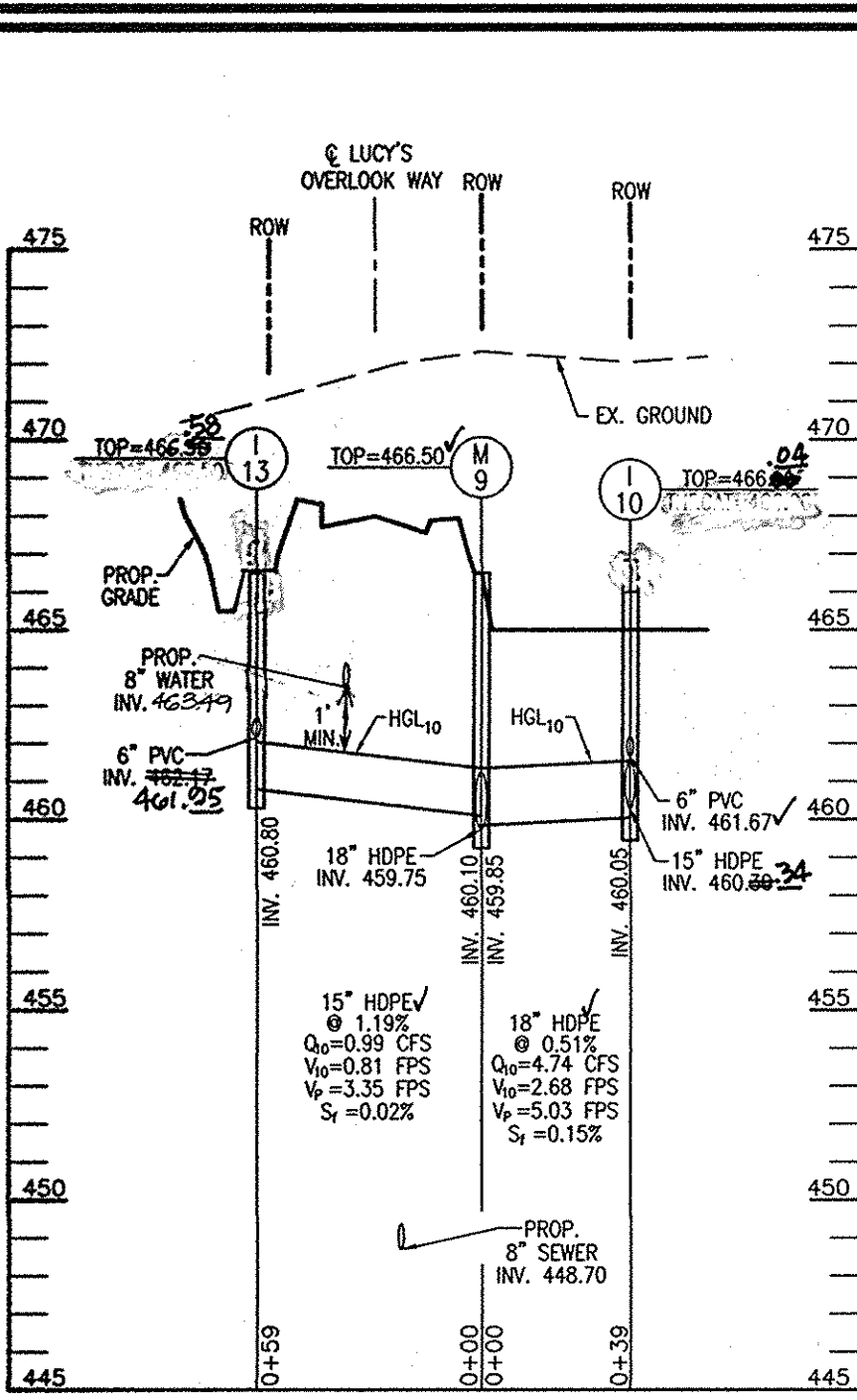
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE # 15193. EXPIRATION DATE 09-27-2012.

8 SHEET OF 12



APPROVED: DEPARTMENT OF PUBLIC WORKS
 DATE: 9-12-2011
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 DATE: 8/18/11
 DATE: 3/24/11





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

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

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

STORM DRAIN PROFILE
SCALE: HORIZONTAL - 1"=50'
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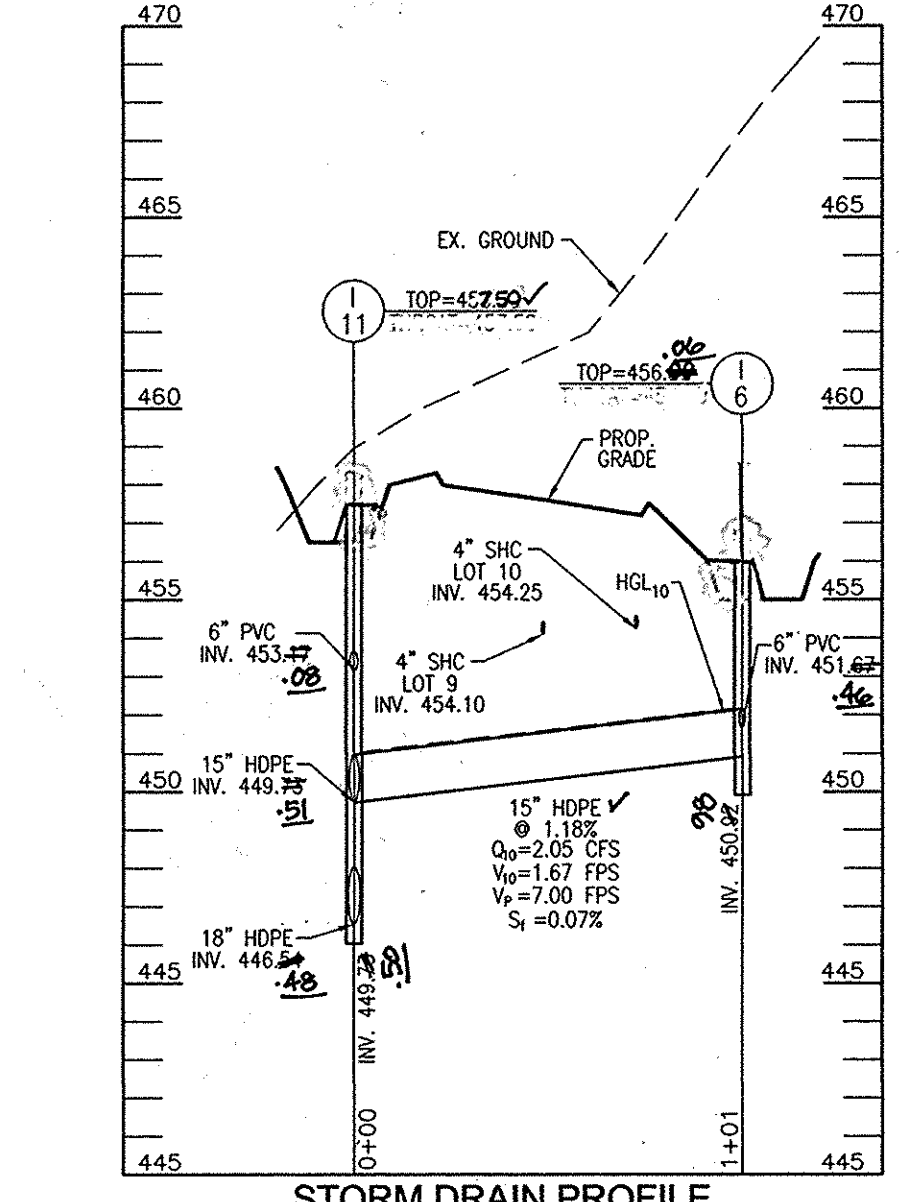
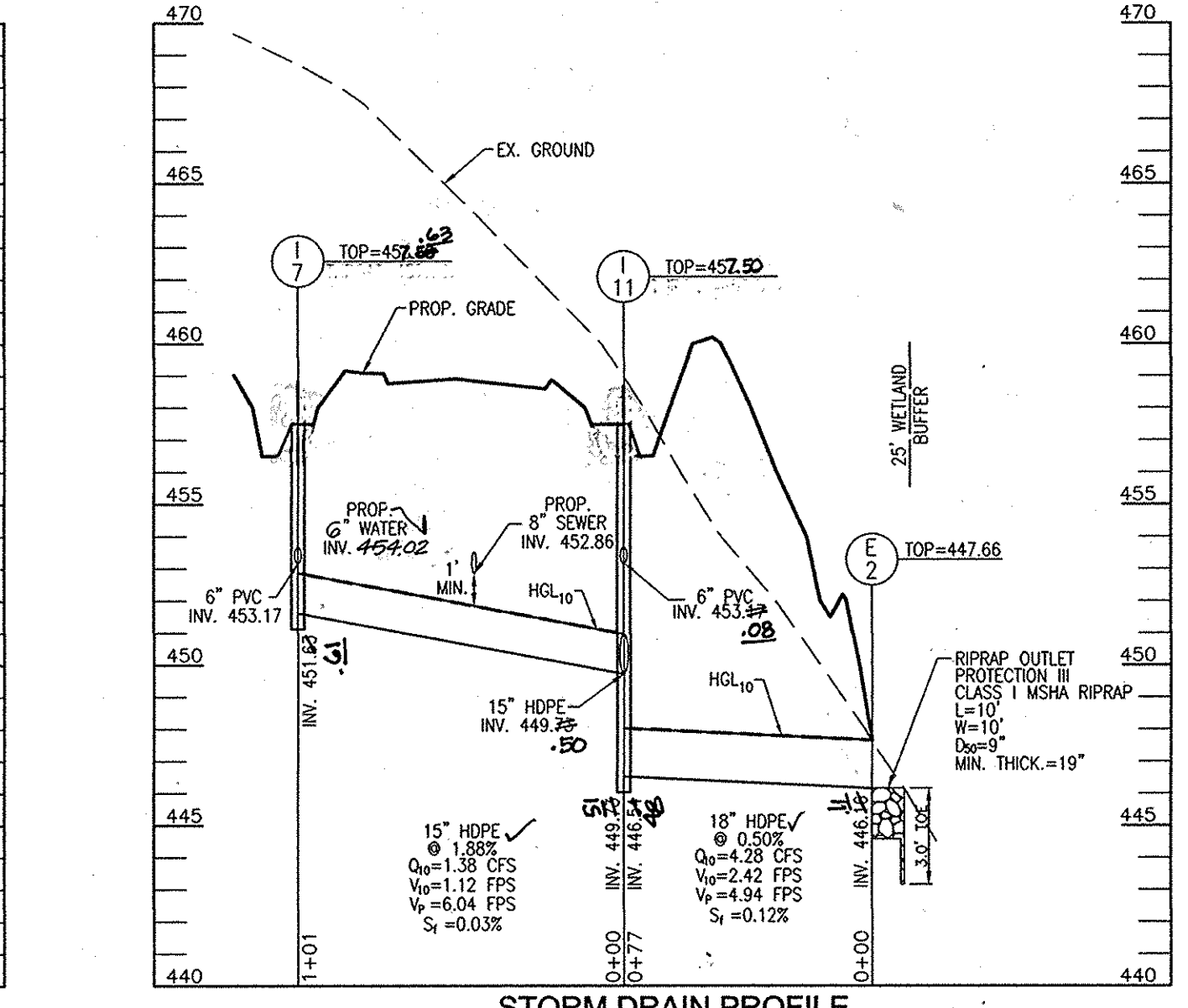
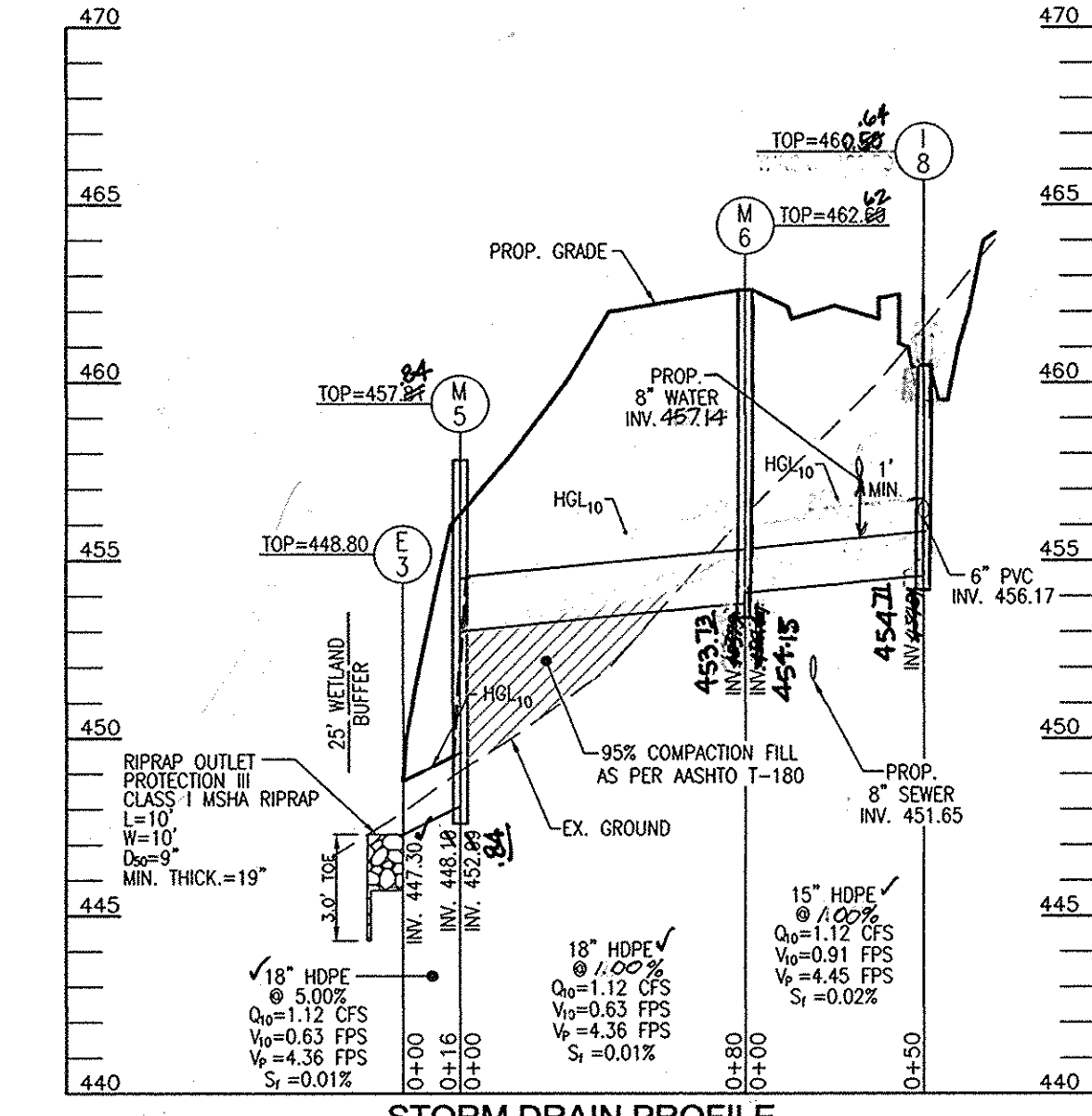
Quantities for estimating purposes only

ITEM	DESCRIPTION	QUANTITY	UNIT
1	18" HDPE	1.19	CS
2	18" HDPE	4.74	CS
3	18" HDPE	2.68	CS
4	18" HDPE	5.83	CS
5	18" HDPE	5.25	CS
6	18" HDPE	3.32	CS
7	18" HDPE	3.12	CS
8	18" HDPE	5.61	CS
9	18" HDPE	5.61	CS
10	18" HDPE	16.55	CS
11	18" HDPE	7.68	CS
12	18" HDPE	4.34	CS
13	18" HDPE	4.08	CS
14	18" HDPE	1.61	CS
15	18" HDPE	4.08	CS
16	18" HDPE	4.08	CS
17	18" HDPE	4.08	CS
18	18" HDPE	4.08	CS
19	18" HDPE	4.08	CS
20	18" HDPE	4.08	CS
21	18" HDPE	4.08	CS
22	18" HDPE	4.08	CS
23	18" HDPE	4.08	CS
24	18" HDPE	4.08	CS
25	18" HDPE	4.08	CS
26	18" HDPE	4.08	CS
27	18" HDPE	4.08	CS
28	18" HDPE	4.08	CS
29	18" HDPE	4.08	CS
30	18" HDPE	4.08	CS

INLET SCHEDULE

NO.	TYPE	LOCATION	TOP ELEV.	THROAT	INV. IN	INV. OUT	REMARKS
I-1	TYPE 'S' INLET	N 594135.81 E 1358986.31	467.00	462.67	461.27	462.67	D-4.22
I-2	TYPE 'S' INLET	N 594030.62 E 1359156.69	456.00	451.67	450.27	451.67	D-4.22
I-3	TYPE 'S' INLET	N 594028.44 E 1359396.78	457.00	453.17	451.67	453.17	D-4.22
I-4	TYPE 'S' INLET	N 593987.75 E 1359277.16	466.00	456.17	454.67	456.17	D-4.22
I-5	TYPE 'S' INLET	N 594039.22 E 1359141.54	463.00	457.17	455.67	457.17	D-4.22
I-6	TYPE 'S' INLET	N 594266.05 E 1359156.45	466.00	461.67	460.17	461.67	D-4.22
I-7	TYPE 'S' INLET	N 593948.37 E 1359457.91	457.50	452.17	450.67	452.17	D-4.22
I-8	TYPE 'S' INLET (PRIVATE)	N 594151.34 E 1359267.75	467.00	463.17	461.67	463.17	D-4.22
I-9	TYPE 'S' INLET	N 594280.58 E 1359070.17	466.00	461.67	460.17	461.67	D-4.22
I-10	TYPE 'S' INLET	N 594315.49 E 1359145.61	466.00	461.67	460.17	461.67	D-4.22
I-11	TYPE 'S' INLET	N 593975.69 E 1359129.63	463.00	458.17	456.67	458.17	D-4.22
I-12	TYPE 'S' INLET	N 594151.34 E 1359267.75	467.00	463.17	461.67	463.17	D-4.22
I-13	TYPE 'S' INLET	N 594280.58 E 1359070.17	466.00	461.67	460.17	461.67	D-4.22
I-14	TYPE 'S' INLET	N 594315.49 E 1359145.61	466.00	461.67	460.17	461.67	D-4.22
I-15	TYPE 'S' INLET	N 593975.69 E 1359129.63	463.00	458.17	456.67	458.17	D-4.22
R1-1	MD SHA 5' PRECAST COG INLET	TOBY LANE 3+79.20, 12.43' RT.	469.00	-	-	-	MD 374.68
R1-2	MD SHA 5' PRECAST COG INLET	TOBY LANE LRP 1+54.45, 0.00' LT.	457.00	-	-	-	MD 374.68
R1-3	MD SHA 5' PRECAST COG INLET	TOBY LANE LRP 0+09.80, 0.00' LT.	459.00	-	-	-	MD 374.68
R1-4	MD SHA 5' PRECAST COG INLET	TOBY LANE 7+14.69, 12.43' LT.	462.00	-	-	-	MD 374.68
R1-5	MD SHA 5' PRECAST COG INLET	TOBY LANE 5+63.72, 12.43' LT.	465.00	-	-	-	MD 374.68
R1-6	MD SHA 5' PRECAST COG INLET	LUCY'S OVERLOOK WAY 1+73.13, 12.43' RT.	467.00	-	-	-	MD 374.68
R1-7	MD SHA 5' PRECAST COG INLET	LUCY'S OVERLOOK WAY LRP 3+27.06, 0.00' LT.	469.00	-	-	-	MD 374.68
R1-8	MD SHA 5' PRECAST COG INLET	LUCY'S OVERLOOK WAY 1+02.17, 12.43' LT.	468.00	-	-	-	MD 374.68
R1-9	MD SHA 5' PRECAST COG INLET	LUCY'S OVERLOOK WAY 1+73.13, 12.43' LT.	467.00	-	-	-	MD 374.68
R1-10	MD SHA 5' PRECAST COG INLET	TOBY LANE 0+66.31, 12.43' RT.	471.00	-	-	-	MD 374.68
R1-11	MD SHA 5' PRECAST COG INLET	TOBY LANE 5+69.51, 12.43' LT.	465.00	-	-	-	MD 374.68
R1-12	MD SHA 5' PRECAST COG INLET	TOBY LANE 0+66.31, 12.43' RT.	471.00	-	-	-	MD 374.68
R1-13	MD SHA 5' PRECAST COG INLET	TOBY LANE 5+69.51, 12.43' LT.	465.00	-	-	-	MD 374.68
R1-14	MD SHA 5' PRECAST COG INLET	TOBY LANE 0+66.31, 12.43' RT.	471.00	-	-	-	MD 374.68
R1-15	MD SHA 5' PRECAST COG INLET	TOBY LANE 5+69.51, 12.43' LT.	465.00	-	-	-	MD 374.68
R1-16	MD SHA 5' PRECAST COG INLET	TOBY LANE 0+66.31, 12.43' RT.	471.00	-	-	-	MD 374.68
R1-17	MD SHA 5' PRECAST COG INLET	TOBY LANE 5+69.51, 12.43' LT.	465.00	-	-	-	MD 374.68
R1-18	MD SHA 5' PRECAST COG INLET	TOBY LANE 0+66.31, 12.43' RT.	471.00	-	-	-	MD 374.68

*TOP ELEV.=TOP OF THE CURB AT CENTER OF THE INLET FOR MD SHA 5' COG INLET.
*TOP ELEV.=TOP OF THE GRATE FOR TYPE 'S' INLET.



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

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

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

PIPE SCHEDULE

PIPE SIZE	TYPE	TOTAL LENGTH
15"	HDPE	526 LF
18"	HDPE	720 LF
24"	RCCP CLASS IV	6 LF
19"x30" ELLIP.	RCCP CLASS IV	59 LF

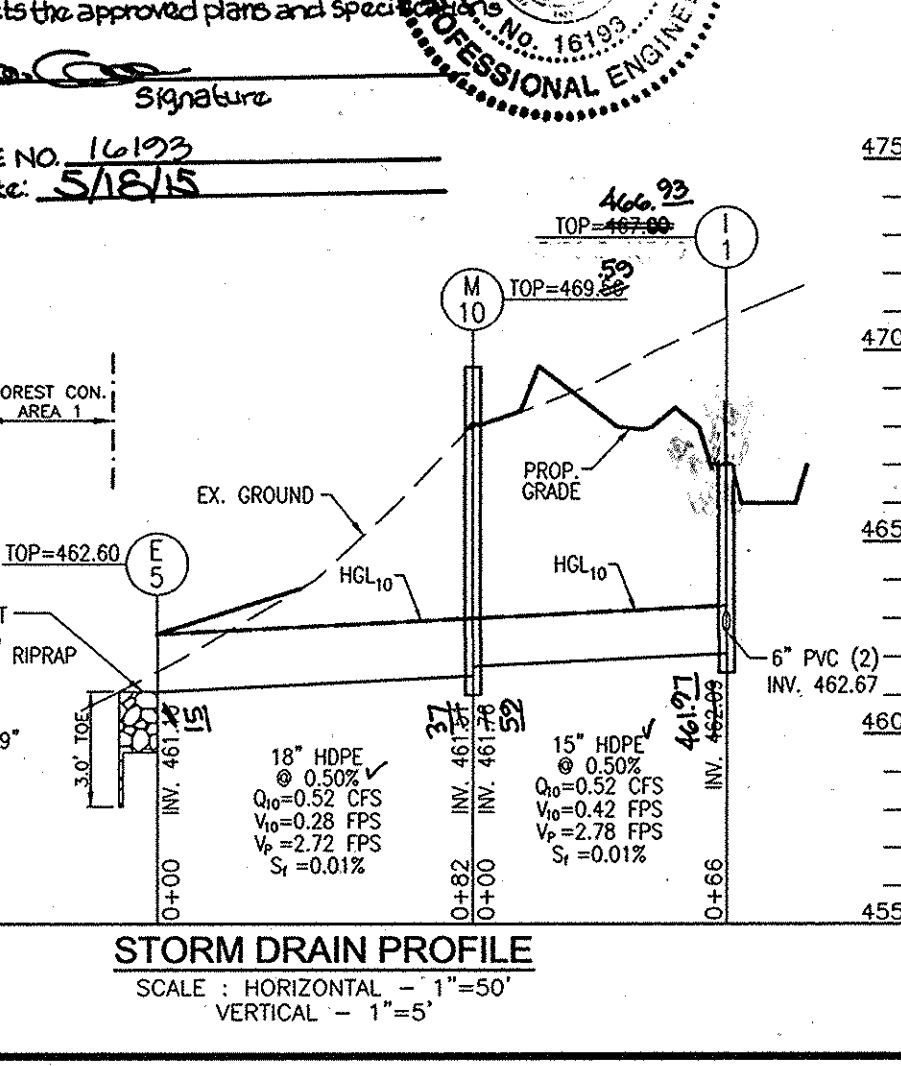
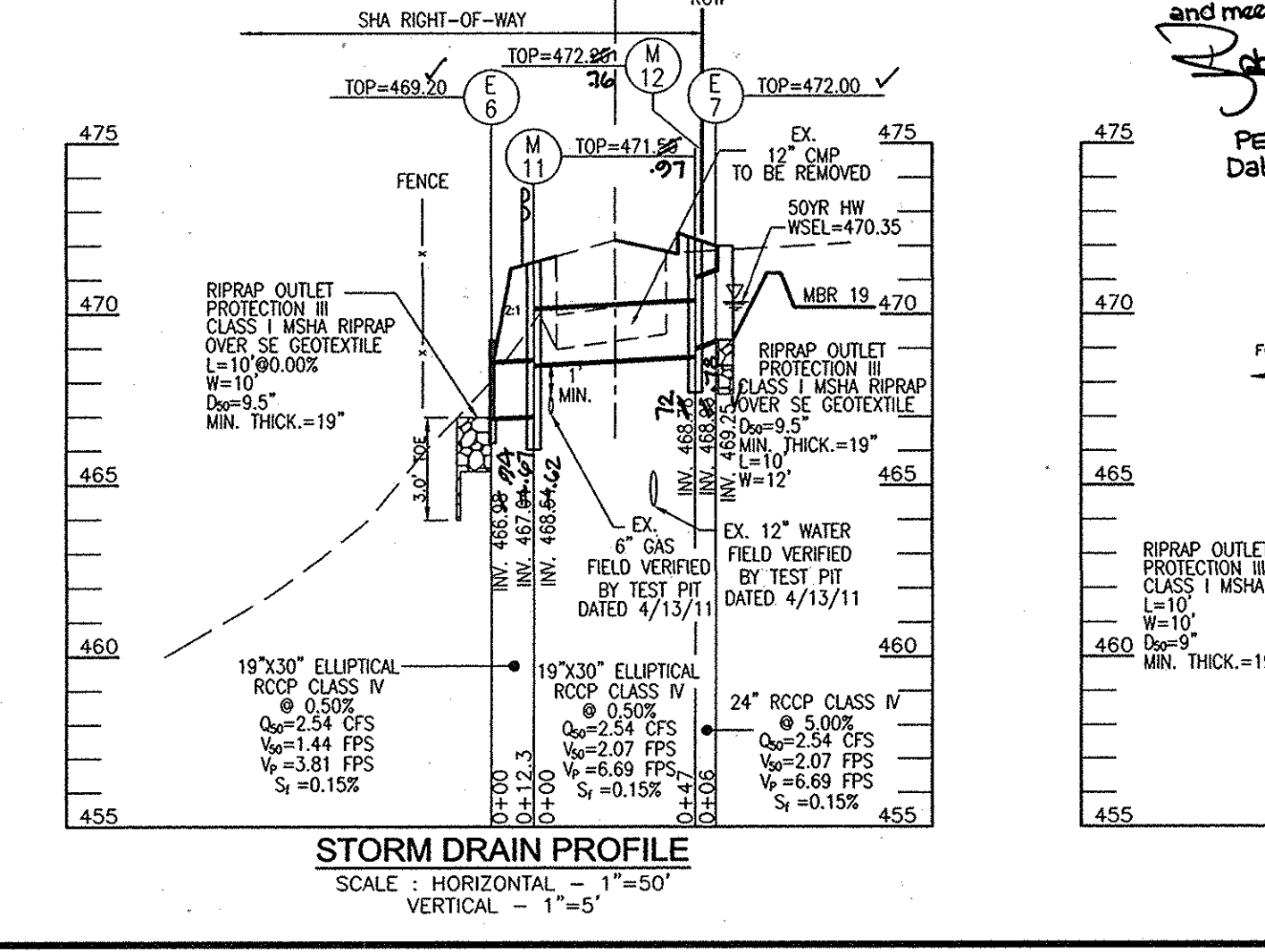
END TREATMENT SCHEDULE

NO.	TYPE	LOCATION	TOP ELEV.	INV. IN	INV. OUT
E-1	18" ADS HDPE END SECTION	N 593855.10 E 1359123.93	451.57	450.22	-
E-2	18" ADS HDPE END SECTION	N 593879.57 E 1359493.64	447.00	446.16	-
E-3	18" ADS HDPE END SECTION	N 593845.91 E 1359248.28	448.80	447.30	-
E-4	18" ADS HDPE END SECTION	N 594038.93 E 1358950.79	462.60	461.15	-
E-5	18" ADS HDPE END SECTION	N 594114.17 E 1358924.00	469.20	467.71	-
E-6	19"x30" TYPE 'C' CONCRETE ENDWALL (MSHA MD 354.01)	N 594413.54 E 1358715.41	469.20	466.66	-
E-7	19"x30" TYPE 'C' CONCRETE ENDWALL (MSHA MD 356.01)	N 594383.61 E 1358773.77	472.00	469.25	-

APPROVED: DEPARTMENT OF PUBLIC WORKS
 DATE: 8-12-2011
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 DATE: 8/24/11

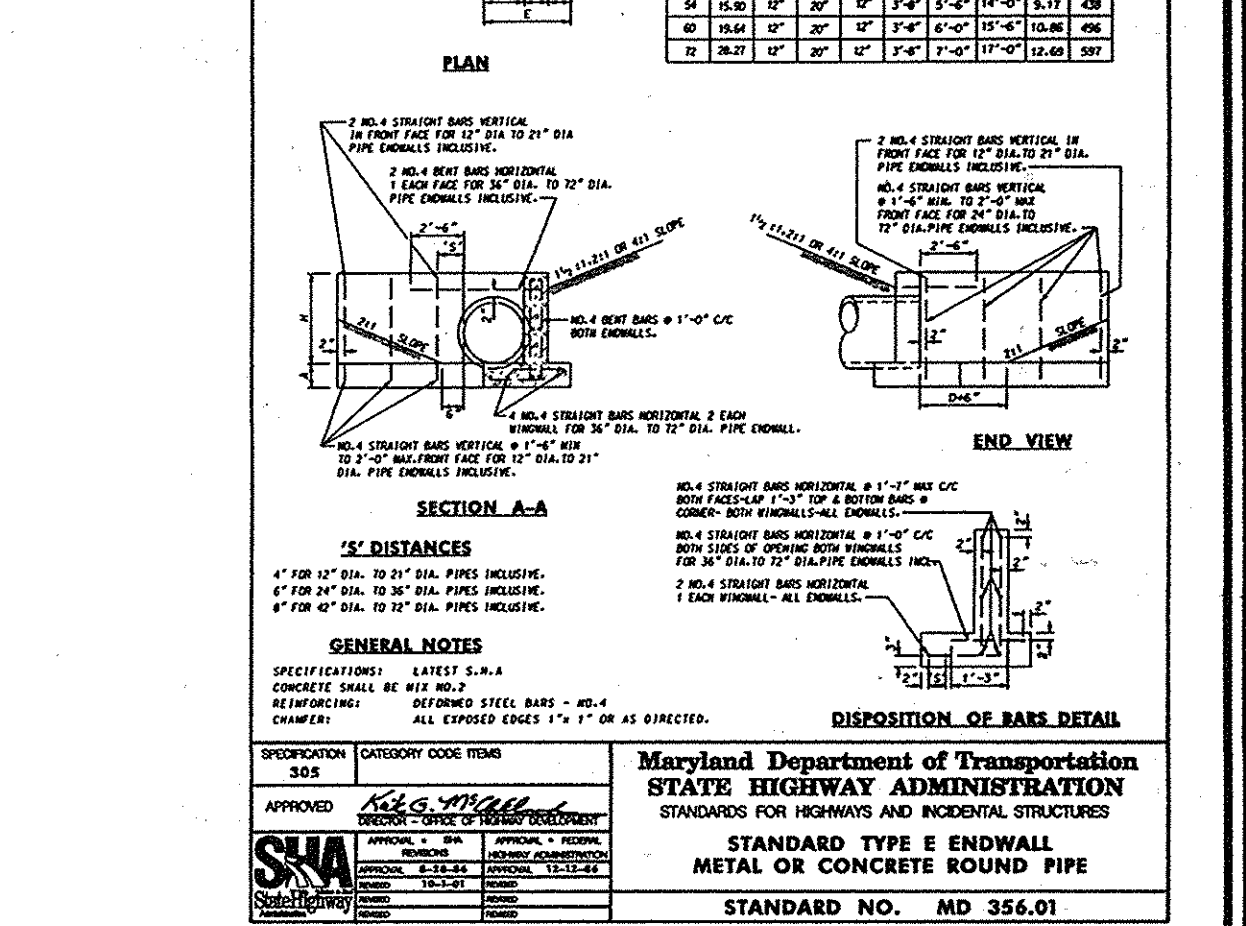
MANHOLE SCHEDULE

NO.	TYPE	LOCATION	TOP ELEV.	INV. IN	INV. OUT	REMARKS
M-1	STANDARD 4' PRECAST MANHOLE	N 593889.43 E 1359108.07	456.73	450.36	450.26	G-5.12
M-2	STANDARD 4' PRECAST MANHOLE	N 594105.12 E 1359181.35	469.74	461.76	458.86	G-5.12
M-3	STANDARD 4' PRECAST MANHOLE	N 593862.09 E 1359245.56	457.84	452.84	448.15	G-5.12
M-4	STANDARD 4' PRECAST MANHOLE	N 593939.36 E 1359264.97	462.60	457.60	453.77	G-5.12
M-5	STANDARD 4' PRECAST MANHOLE	N 594249.62 E 1359120.73	466.50	460.10	459.73	G-5.12
M-6	STANDARD 4' PRECAST MANHOLE	N 594114.17 E 1358924.00	469.20	463.20	461.31	G-5.12
M-7	SHA 4' PRECAST MANHOLE	N 594404.64 E 1358725.12	471.00	468.00	467.01	MD 383.01
M-8	SHA 4' PRECAST MANHOLE	N 594386.29 E 1358767.57	472.00	468.00	468.22	MD 383.01



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

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



STANDARD TYPE ENDWALL METAL OR CONCRETE ROUND PIPE

OWNERS: EVANS M. KEIM, 9339 ROUTE 99, ELLICOTT CITY, MD 21042
 DEVELOPER: HOWARD LAND DEVELOPERS LLC, C/O LAND DESIGN & DEVELOPMENT INC., 102 BERRY HALL DR., STE 102, ELLICOTT CITY, MARYLAND 21042-7819, ATTN: MR. DONALD R. REUWER, 443-367-0422

AS-BUILT CERTIFICATION

I hereby certify that the facility shown on this plan was constructed as shown on the as-built plans and meets the approved plans and specifications.

Signature: [Signature]
 PE NO. 16123
 Date: 5/26/15

FINAL ROAD CONSTRUCTION PLAN MOUNT HEBRON OVERLOOK STORM DRAIN PROFILES

LOTS 1-25 AND OPEN SPACE LOT 26
 A RE-SUBDIVISION OF THE 'KEIM PROPERTY' LOT 2
 AND A SUBDIVISION OF PARCELS 78 AND 416
 ZONING: R-20
 2ND ELECTION DISTRICT HOWARD COUNTY, MD PARCELS: 77, 78, & 416
 TAX MAP: 17 GRID: 16 HOWARD COUNTY, MARYLAND
 DPZ REF'S: F-87-100, ECP-10-013, SP-10-007, CONT. #14-4684-0, PB-389, WP-11-028

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

DESIGN BY: RHV
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: JUNE 2011
 SCALE: AS SHOWN
 W.O. NO.: 10-06

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. 16123, EXPIRATION DATE: 08-27-2012

9 SHEET OF 12

GENERAL NOTES:

- 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 \$16,200.00 FOR THE REQUIRED 50 SHADE TREES AND 8 EVERGREEN TREES SHALL BE POSTED WITH THE DEVELOPERS AGREEMENT TO THIS PLAN.
- PUBLIC STREET TREES ARE PROVIDED FOR THIS PROJECT IN ACCORDANCE WITH SECTION 16.124(c)(1) OF THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$25,125.00 SHALL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT FOR THE REQUIRED 67 STREET TREES.
- THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING. PLANT MATERIALS, FENCES AND WALLS, ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS LISTED HEREWITH AND APPROVED FOR THIS SITE SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY OF THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.
- THERE IS NO 100-YEAR FLOODPLAIN WITHIN THE LIMITS OF THIS PROJECT.
- WETLANDS SHOWN ON-SITE ARE BASED ON A FIELD INVESTIGATION PREPARED BY ECO-SCIENCE PROFESSIONALS INC., DATED JUNE 02, 2010. THERE ARE NO PROPOSED DISTURBANCES TO THE WETLANDS, WETLANDS BUFFER, STREAM BANK BUFFER OR FOREST CONSERVATION EASEMENTS.
- THE SUBJECT PROPERTY IS ZONED R-20 IN ACCORDANCE WITH THE 2/2/04 COMPREHENSIVE ZONING PLAN AND THE COMP. LITE ZONING REGULATIONS EFFECTIVE ON 7/28/06, AND IS SUBJECT TO THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS EFFECTIVE 10/2/03 PER COUNCIL BILL 75-2003.
- THE PROJECT BOUNDARY IS BASED ON A BOUNDARY SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC. DATED APRIL 6TH 2010.
- THE TOPOGRAPHY SHOWN HEREON IS BASED ON AN AERIAL TOPOGRAPHIC SURVEY PREPARED BY POTOMAC AERIAL SURVEY'S INC., DATED MARCH 6TH 2010.
- THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO GRAVE SITES, OR CEMETERIES LOCATED ON THE SUBJECT PROPERTY.
- THE REMOVAL OF TREES 30" OR GREAT DBH IS PROHIBITED WITH OUT COUNTY APPROVAL.
- THIS PLAN IS SUBJECT TO A WAIVER TO SECTION 16.1205(d)(7) OF THE SUBDIVISION REGULATIONS FOR THE REMOVAL OF 39" SILVER MAPLE SPECIMEN TREE, APPROVED SEPTEMBER 14, 2010.

LANDSCAPE NOTES

- THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WITHIN THE SAME HEIGHT, SPREAD, AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.
- PLANTINGS SHOWN HEREON ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL DURING THE CONSTRUCTION OF THE FINAL PLAN.

LANDSCAPE SCHEDULE NOTE:

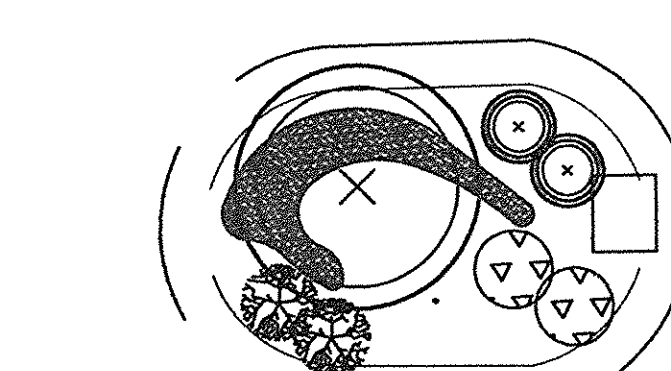
- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HRD PLANTING SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF PLANT MATERIAL 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.

B & E NOTES:

- THE LANDSCAPING ON WIREZONE (40' FROM BGE POLES) IS IN ACCORDANCE WITH BGE LIST OF TREES AND PLANTS.
- BGE RESERVES THE RIGHT TO TRIM, TOP OR CUT DOWN ANY TREE IN PROXIMITY TO THE LINE THAT IN THE OPINION OF BGE, SHALL BE DEEMED A HAZARD TO THE SAFE AND RELIABLE DELIVERY OF ELECTRICITY.
- THE DEPARTMENT OF PLANNING AND ZONING MAY AUTHORIZE THE TRIMMING OR REMOVAL OF TREES OR VEGETATION IMMEDIATELY ADJACENT TO THE BGE R/W OR EASEMENT, IF BGE DETERMINES THE TREES ARE COMPROMISING THE SAFETY OF A TRANSMISSION LINE LOCATED WITHIN THEIR UTILITY R/W OR EASEMENT. IF BGE INTENDS TO TRIM OR REMOVE TREES WITHIN A FOREST CONSERVATION EASEMENT, A LETTER SPECIFYING THE LOCATION AND SCOPE OF WORK NEEDS TO BE SENT TO DPZ AT LEAST 30 DAYS IN ADVANCE OF UNDERTAKING THE WORK. DPZ UNDERSTANDS CONSTRUCTION ENERGY'S NEED TO PROTECT ITS TRANSMISSION LINES AND WILL NOT UNREASONABLY WITHHOLD PERMISSION.

BIORETENTION PLANTING SCHEDULE NOTES:

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAN 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.
- SEE LANDSCAPE PLAN FOR TYPICAL PLANTING DETAILS.



TYPICAL PLANTING DETAIL FOR MICRO BIO-RETENTION

KEY	GTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
X	1	CLADRASTIS LUTEA 'SWEETSHADE' SWEETSHADE YELLOWWOOD	1 1/2"-2" CAL	B & B
	1	ILEX GLABRA COMPACTA DWARF HOLLY	3 GALLON	CONT
	2	VIBURNUM TRELORUM AMERICAN HIGBUSH CRANBERRY	5 GALLON	CONT
	2	KALMA LATIFOLIA MOUNTAIN LAUREL	5 GALLON	CONT
	2	RHODOCYDENDRON HY 'GLACIER' OR 'WHITE ROSEBUD' GLACIER OR WHITE ROSEBUD HYBRID AZALEA	3 GALLON	CONT
	50	LIRODIUM MUSCARI 'MAJESTIC' MAJESTIC LILY TURK	2" POT	1" O.C.

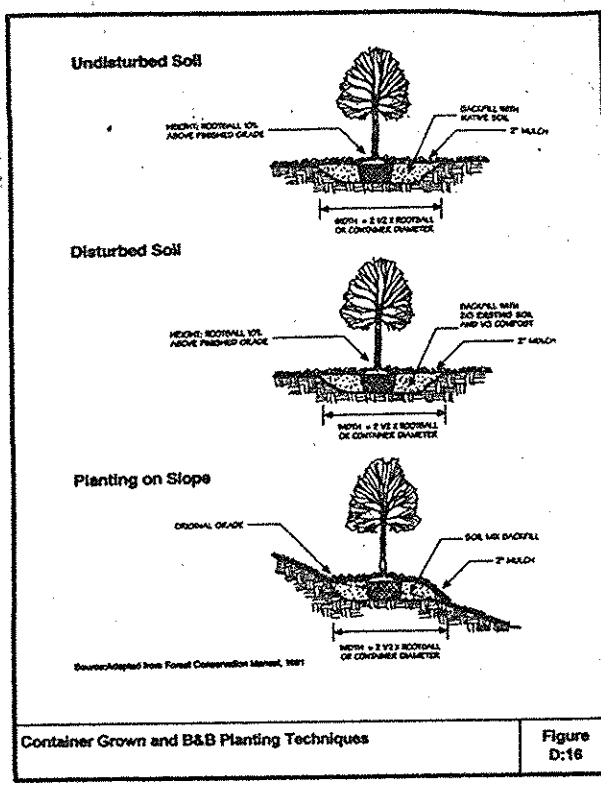
BIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF 1000 STEMS PER PLANTED ACRE (0.2229 STEMS PER SQUARE FOOT). ABOVE PLANTING RATIOS ARE TO BE APPLIED TO THE AREAS PROVIDED IN THE ESDY SUMMARY. ROUND UP TO QUANTITY.

APPROVED: DEPARTMENT OF PUBLIC WORKS

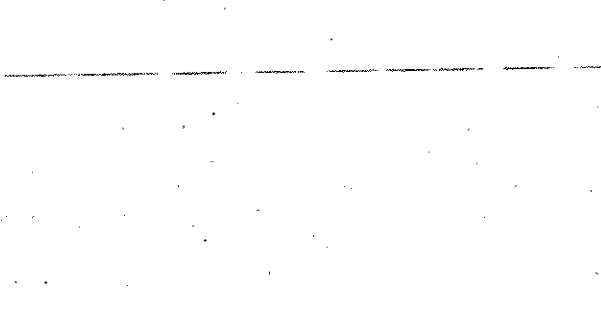
DATE: 8-12-2011

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DATE: 8/22/11



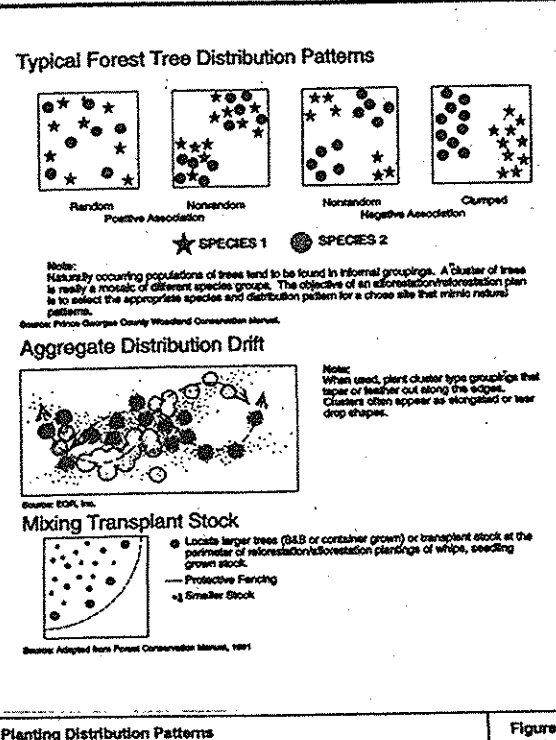
Undisturbed Soil



Planting on Slope

Container Grown and B&B Planting Techniques

Figure 016



Typical Forest Tree Distribution Patterns

Aggregate Distribution Drift

Mixing Transplant Stock

Planting Distribution Patterns

Figure 019

Size	Number Required per Acre	Approximate Spacing	Survivability (at 100% survival)
1.0" Caliper	700	8 x 8	75%
1.5" Caliper	450	10 x 10	75%
2.0" Caliper	300	12 x 12	75%
2.5" Caliper	200	15 x 15	75%
3.0" Caliper	150	20 x 20	75%

Site Stocking

Figure 018

HOWARD COUNTY FOREST CONSERVATION WORKSHEET

ZONED R-20
NET TRACT AREA: 12.44 AC
A. TOTAL TRACT AREA: 12.44 AC
B. AREA WITHIN 100 YEAR FLOODPLAIN: 0.00 AC
C. NET TRACT AREA: 12.44 AC

LAND USE CATEGORY
INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING AND LIMIT TO ONLY ONE ENTRY. ZONED R-20.
ARA MDR IDA HDR MPD CIA
0 0 0 0 1 0 0

E. AFFORESTATION THRESHOLD: 15% X D = 1.87 AC
F. CONSERVATION THRESHOLD: 20% X D = 2.49 AC

EXISTING FOREST COVER:
G. EXISTING FOREST COVER: 0.00 AC
H. AREA OF FOREST ABOVE REFORESTATION THRESHOLD: 0.00 AC
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD: 0.00 AC

BREAK EVEN POINT:
J. BREAK EVEN POINT: 0.00 AC
K. CLEARING PERMITTED WITHOUT MITIGATION: 0.00 AC

PROPOSED FOREST CLEARING:
L. TOTAL AREA OF FOREST TO BE CLEARED: 0.00 AC
M. TOTAL AREA OF FOREST TO BE RETAINED: 0.00 AC

PLANTING REQUIREMENTS:
N. AFFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD: 0.00 AC
O. AFFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD: 0.00 AC
P. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD: 0.00 AC
Q. TOTAL REFORESTATION REQUIRED (N+M-P): 0.00 AC
R. TOTAL AFFORESTATION REQUIRED: 1.87 AC
T. TOTAL AFFORESTATION AND REFORESTATION REQUIRED: 1.87 AC

FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL 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.

TOTAL FOREST CONSERVATION OBLIGATION OF THIS PROJECT TO BE FULFILLED BY ONSITE AFFORESTATION OF 1.87 AC.

FINANCIAL SURETY IN THE AMOUNT OF \$40,729.00 (\$1,457 x 0.50) WILL BE POSTED WITH THE FOREST CONSERVATION MAINTENANCE AGREEMENT.

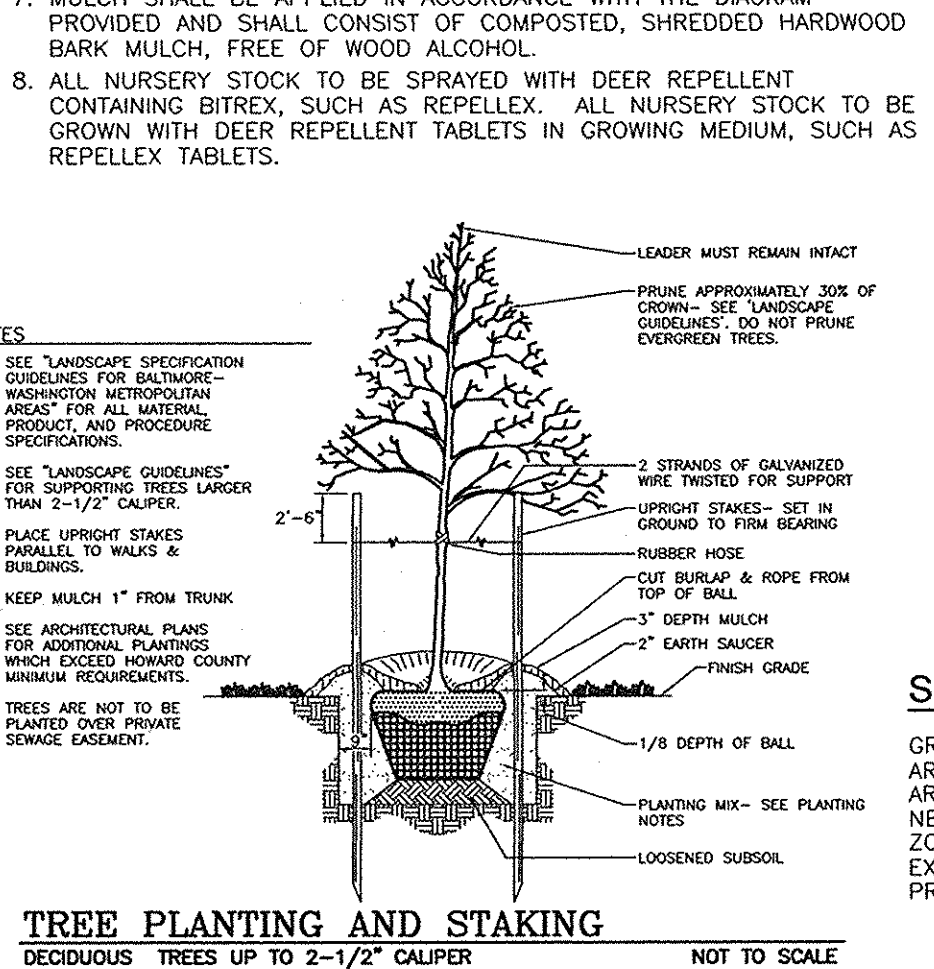
PLANT SCHEDULE

BOTANICAL NAME	AREA 1	AREA 2	SIZE	SPACING (FT)
Acer rubrum 'October Glory' Red Maple (Seedless)	37	35	1" Cal.	15 X 15
Liquidambar styraciflua American Sweetgum	37	35	1" Cal.	15 X 15
*Amelanchier canadensis Serviceberry	48	42	1" Cal.	15 X 15
Prunus spp. Flowering Cherry	37	33	1" Cal.	15 X 15
*Cercis canadensis Eastern Redbud	37	33	1" Cal.	15 X 15

*PLANT WITHIN 45' FROM BG&E RIGHT-OF-WAY FOR AFFORESTATION AREA 2 NO SUBSTITUTIONS PERMITTED UNLESS APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING.

AFFORESTATION 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.
- 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 DESIGNED 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 SHADED AREAS UNTIL READY FOR PLANTING.
- 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, SHREDED 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.



TREE PLANTING AND STAKING

DEERODIOUS TREES UP TO 2-1/2" CALIPER

NOT TO SCALE

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: [Signature] DATE: 7/28/2011

AFFORESTATION AREA MONITORING NOTES

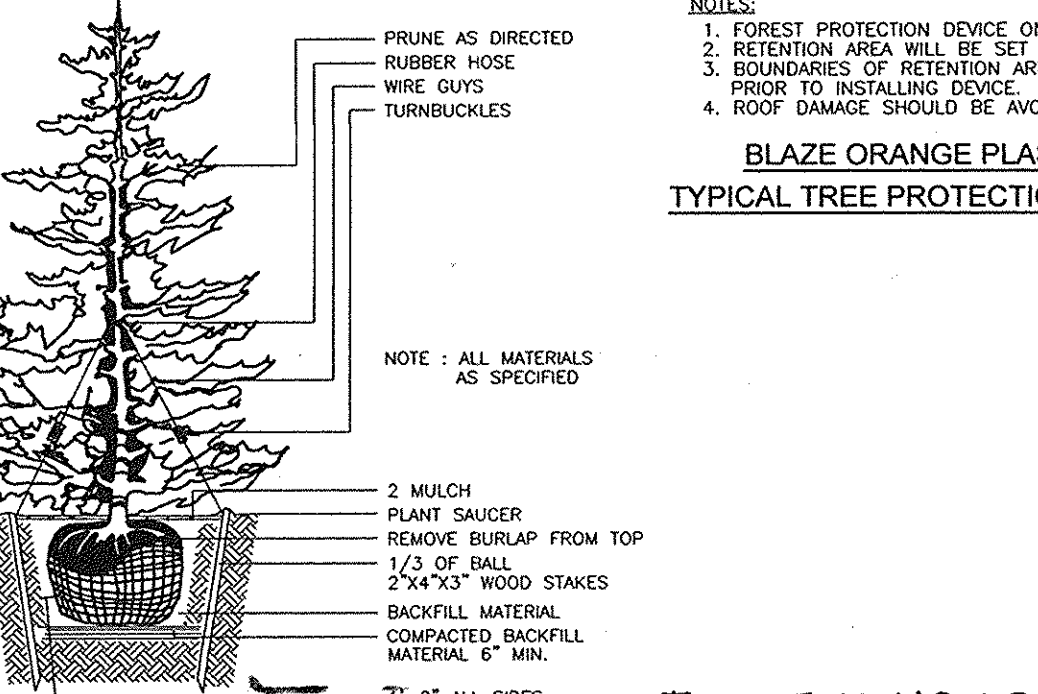
- MONTHLY VISITS DURING THE FIRST GROWING SEASON ARE TO ASSESS THE SUCCESS OF THE PLANTINGS AND TO DETERMINE IF SUPPLEMENTAL WATERING, PEST CONTROL OR OTHER ACTIONS ARE NECESSARY. EARLY SPRING VISITS WILL DOCUMENT WINTER KILL AND AUTUMN VISITS WILL DOCUMENT WINTER KILL.
- THE MINIMUM SURVIVAL RATE SHALL 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 NATURAL 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.

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.

SUPPLEMENTAL INFORMATION

GROSS SITE AREA	12.44 ACRES
AREA OF STEEP SLOPES	0.14 ACRES
AREA OF FLOODPLAIN	0.00 ACRES
NET AREA OF SITE	12.30 ACRES
ZONED	R-20
EXISTING USE	RESIDENTIAL
PROPOSED USE	RESIDENTIAL

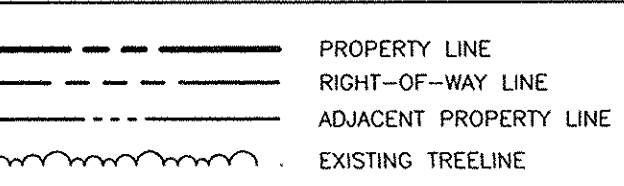


TYPICAL EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET.

LEGEND



AFFORESTATION PROVIDED - AREA-1

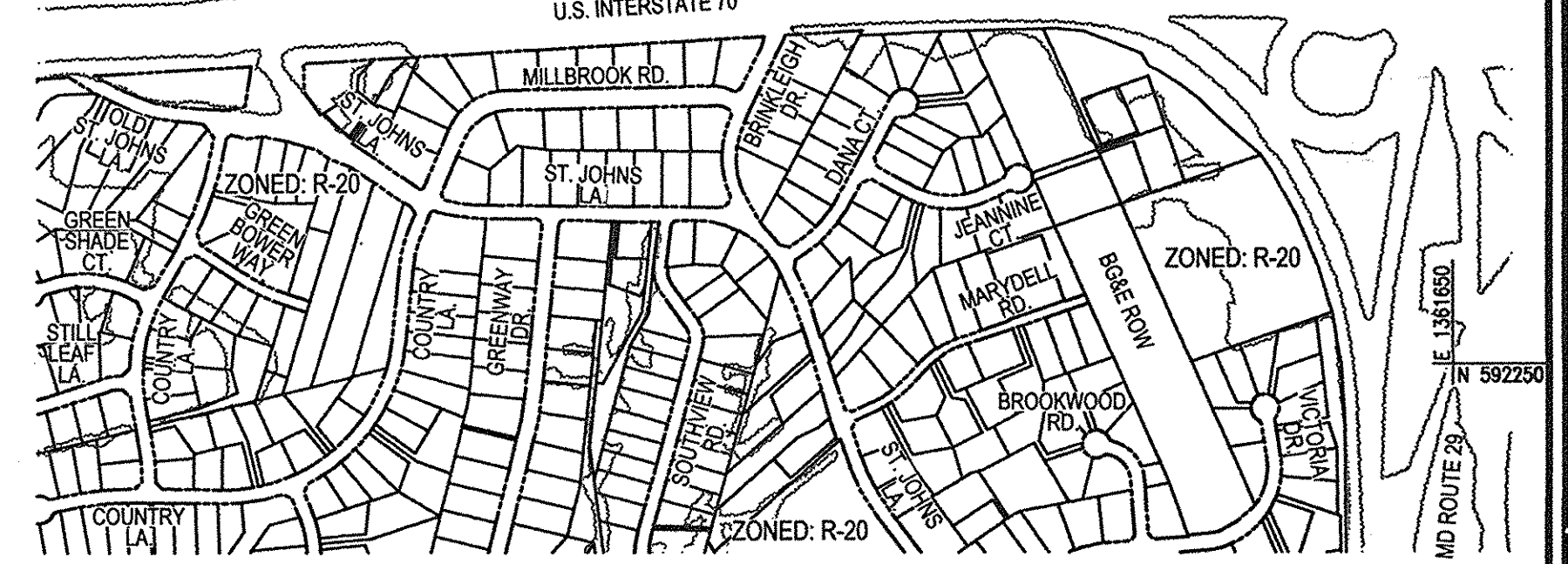
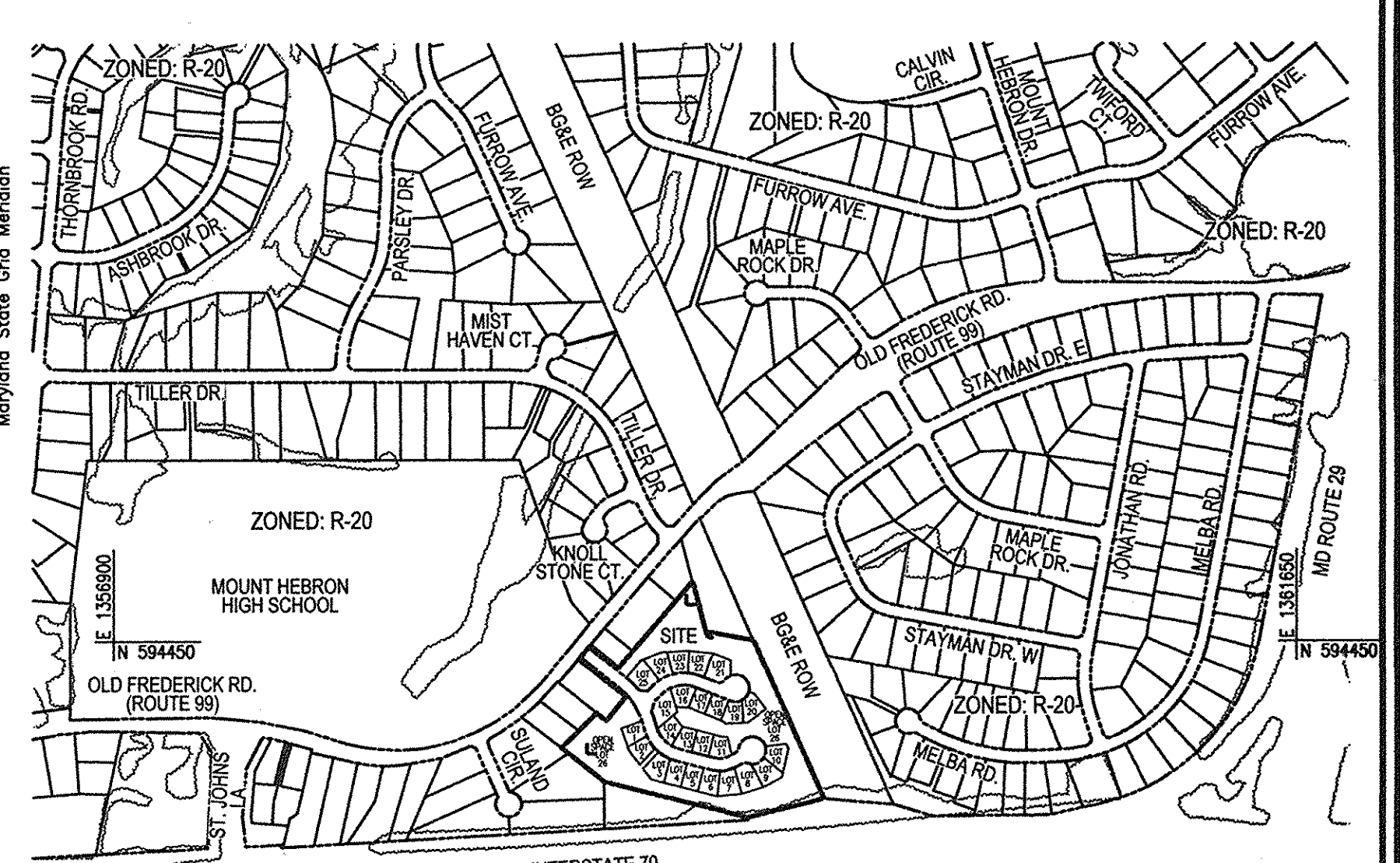
0.98 ACRES
1" CALIPER TREES
196 TREES @ 200 TREES PER ACRE

AFFORESTATION PROVIDED - AREA-2

0.89 ACRES
1" CALIPER TREES
178 TREES @ 200 TREES PER ACRE

NOTE:

ALL TREE SUBSTITUTIONS MUST BE APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING



VICINITY MAP

SCALE: 1"=600'

SCHEDULE A: PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO PERIMETER PROPERTIES/ROADWAYS						TOTAL
	1	2	3	4	5	6	
PERIMETER/FRONTAGE DESIGNATION	1	2	3	4	5	6	
LANDSCAPE TYPE	604'	443'	699'	315'	815'	614'	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER							
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	YES 191'	YES 330'	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	NO	
NUMBER OF PLANTS REQUIRED (IF REMAINING)	604'	443'	699'	315'	624'	284'	50
SHADE TREES	1:60 10	1:60 7	1:60 12	1:50 6	1:60 10	1:60 5	5
EVERGREEN TREES	-	-	-	1:40 8	-	-	8
NUMBER OF PLANTS PROVIDED	10	7	12	8*	10	5	50
SHADE TREES	-	-	-	-	-	-	8
EVERGREEN TREES	-	-	-	-	-	-	5
OTHER TREES (2:1 SUBSTITUTION)	-	-	-	-	-	-	8
SHRUBS (10:1 SUBSTITUTION)	-	-	-	-	-	-	5
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED							

* THE PLANTING REQUIREMENTS FOR PERIMETER 4 WERE MOVED TO WITHIN PERIMETER 5 DUE TO THE LOCATION OF FOREST CONSERVATION AREA 2.

OWNERS

PARCEL 77: EVANS, M. KEIM 9339 ROUTE 99 ELLICOTT CITY, MD 21042
PARCEL 78 & 416: ATRIO & USA MORAN 9305 ROUTE 99 ELLICOTT CITY, MD 21042

DEVELOPER

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

NO.	REVISION	DATE

FINAL ROAD CONSTRUCTION PLAN

MOUNT HEBRON OVERLOOK

LANDSCAPE AND FOREST CONSERVATION NOTES

LOTS 1-25 AND OPEN SPACE LOT 26
A RE-SUBDIVISION OF THE 'KEIM PROPERTY' LOT 2
AND A SUBDIVISION OF PARCELS 78 AND 416

ZONING: R-20
2ND ELECTION DISTRICT
TAX MAP: 17 GRID: 16
DPZ REF: S-87-100, ECP-10-013, SP-10-007, CONT. #14-4684-D, PB-389, WP-11-028

HOWARD COUNTY, MD
PARCELS: 77, 78, & 416
HOWARD COUNTY, MARYLAND
ATTN: MR. DONALD R. REUWER

ROBERT H. VOGEL ENGINEERING, INC.

ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET ELLICOTT CITY, MD 21043
TEL: 410.461.7966
FAX: 410.461.8661

PROFESSIONAL CERTIFICATE

DESIGN BY: RHV
DRAWN BY: JMR
CHECKED BY: RHV
DATE: JUNE 2011
SCALE: AS SHOWN
W.O. NO.: 10-06

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: 09-27-2012

12 SHEET OF 12

AS-BUILT 04/14/15 F-11-064