

FINAL ROAD CONSTRUCTION PLAN MOUNT HEBRON OVERLOOK

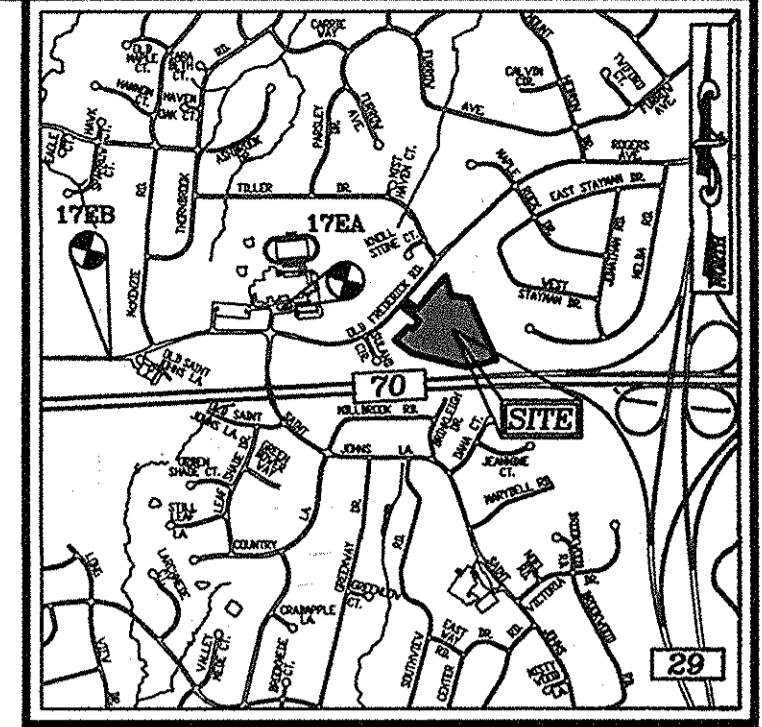
LOTS 1-25 AND OPEN SPACE LOT 26 A RE-SUBDIVISION OF THE "KEIM PROPERTY" LOT 2, AND A SUBDIVISION OF PARCELS 78 AND 416 HOWARD COUNTY, MARYLAND

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 NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- 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 R1-(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" (MUTCD).
 - 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 #5-6266.
- 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
- THE SUBJECT PROPERTY IS ZONED "R-20" IN ACCORDANCE WITH THE 2/2/04 COMPREHENSIVE ZONING PLAN AND THE 2010 LITE ZONING REGULATIONS EFFECTIVE ON 7/28/2010.
- 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 1.129 ACRES. FINANCIAL SURETY IN THE AMOUNT OF \$40,729 (81,457.20 x 0.50) WILL BE POSTED WITH THE FOREST CONSERVATION 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 MAINTAIN THE INLET STRUCTURE WITHIN THE MICRO-BIORETENTION FACILITIES ADJACENT TO THE RIGHT-OF-WAYS. ALL PERMANENT SIDEWALKS SHALL BE PRIVATELY OWNED AND MAINTAINED BY THE HOA 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 REZONING PARCEL SUBDIVISION IN ASSOCIATION WITH NEIGHBORHOOD PRESERVATION EXCHANGE OPTION SHALL BE DEVELOPED AS SINGLE FAMILY DWELLING UNITS THAT 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(d)(7) OF THE SUBDIVISION REGULATIONS FOR THE REMOVAL OF THE 39 SILVER MAPLE SPECIMEN TREE, APPROVED SEPTEMBER 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 7" 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-12-40, THE PLANNING BOARD APPROVED ON APRIL 22, 2010 A REQUEST TO WAIVE SECTION 16.110 (3)(10) REQUIRING A PERMANENT EASEMENT AT LEAST 20 FEET IN WIDTH FOR A PUBLIC STORM 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 17.5' WIDE EASEMENT AREA. THE PROPERTY OWNER MUST PROVIDE WRITTEN DOCUMENTATION TO ANY FUTURE PROPERTY OWNER OF THIS RESTRICTION.

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 STORMDRAIN
- PROPOSED STORMDRAIN INLET
- PROPOSED SIDEWALK
- PROPOSED TREENINE
- 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. PUBLIC DRAINAGE, SWIM & UTILITY EASEMENT
- PROP. PRIVATE DRAINAGE, SWIM & UTILITY EASEMENT
- PROP. PUBLIC SEWER & UTILITY EASEMENT
- PROP. PUBLIC DRAINAGE & UTILITY EASEMENT



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

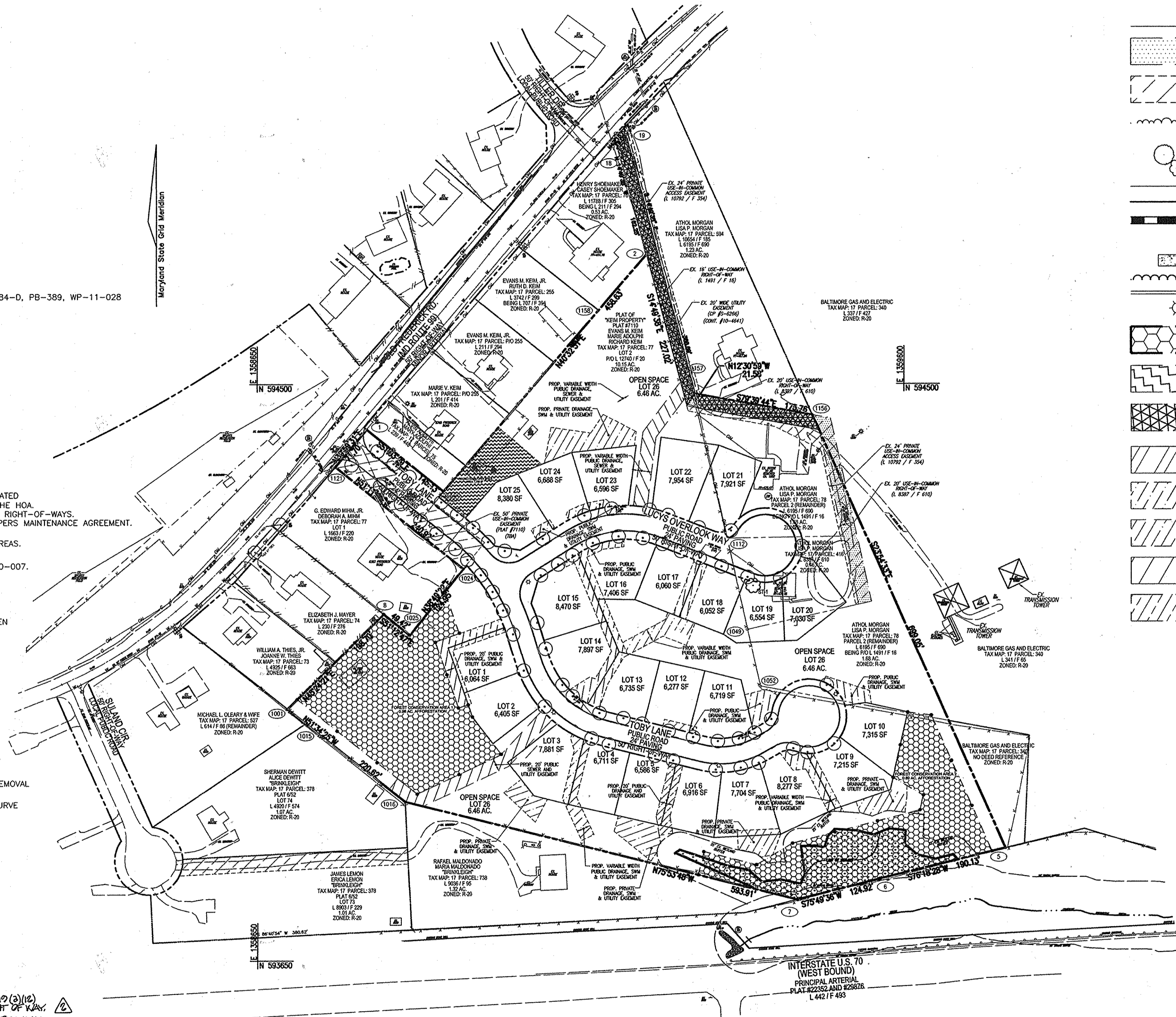
BENCHMARKS
HOWARD COUNTY BENCHMARK - 17EA (CONC. MONUMENT)
N 594357.62 E 1357519.37 ELEV. 478.77
LOCATION: FRONT OF MT. HEBRON H.S. (ROUTE 99 AND ST. JOHN'S LA.)
HOWARD COUNTY BENCHMARK - 17EB (CONC. MONUMENT)
N 593813.86 E 1355731.85 ELEV. 453.48

SITE ANALYSIS DATA SHEET
TAX MAP 17, GRID 16, PARCELS 77, 78, & 416
DEED REFERENCE: PARCEL 77: L 12740 / F 20
PARCEL 78: L 8195 / F 610
PARCEL 416: L 8387 / F 610
ELECTION DISTRICT: 2ND
LOCATION: EAST SIDE OF OLD FREDERICK ROAD (ROUTE 99), APPROX. 540' NORTH OF SULLAND 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 USING 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: 0.24 AC
TOTAL AREA OF CREDITED OPEN SPACE: 6.23 AC (50.0%)
REC OPEN SPACE: 300 SF/DWELLING UNIT x 25: 7,500 SF
REC OPEN SPACE PROVIDED: 7,750 SF
EXISTING USE OF SITE: RESIDENTIAL, SFD
PROPOSED USE OF SITE: SFD
PROPOSED WATER SYSTEM: PUBLIC
PROPOSED SEWER SYSTEM: PUBLIC
OPEN SPACE LOT 26 TO BE OWNED AND MAINTAINED BY THE HOME OWNERS ASSOCIATION
MINIMUM LOT AREA: 6,052 SF
DPZ REFS: F-87-100, ECP-10-013, CONT. #14-4684-D, PB-389, WP-11-028

OWNERS
PARCEL 77: EVANS M. KEIM, 3339 ROUTE 99, ELLICOTT CITY, MD 21042
PARCEL 78 & 416: ATHOL & LISA 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 21042-8119
ATTN: MR. DONALD R. REUWER
443-567-0422



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: _____
Date: 16/10/15

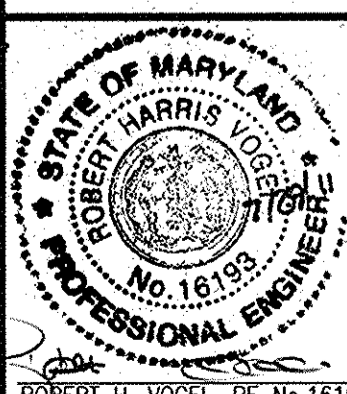
SHEET INDEX	
DESCRIPTION	SHEET NO.
COVER SHEET	1 OF 12
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SHA MARKING AND WIDENING PLAN	4 OF 12
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NO.	REVISION	DATE
4	DELETE 0.08AC PCE, ADD 20' PUBLIC SEWER & UTILITY EASEMENT	8/11/15
3	REVISE PUBLIC SEWER MAIN EASEMENT WIDTH ON LOT 4 FROM 10 TO 12', ADD ADDITIONAL NOTES #1	7/9/15
1	REVISE WATER FOR C-900 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
TAX MAP: 17 GRID: 16
DPZ REFS: 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 IN THE STATE OF MARYLAND.
EXPIRATION DATE: 09-27-2012

LOT TABULATION

TOTAL NO. OF PROPOSED LOTS:	25
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
3	593815.30	1359748.53	1057	594054.18	1359388.16
4	593770.30	1359563.83	1053	594174.61	1359532.48
5	593739.71	1359442.71	1054	594275.06	1359510.47
6	594161.06	1358835.36	1093	594342.17	1358923.45
7	594847.55	1359180.04	1117	594272.25	1359340.17
8	594861.65	1359192.86	1121	594378.46	1358764.50
9	594021.55	1358893.86	1152	594000.13	1359665.07
10	594800.14	1358721.06	1153	593758.36	1359773.79
11	593884.43	1358866.70	1156	594454.38	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
8-12-2011
DATE
CHIEF, BUREAU OF HIGHWAYS
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE

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 (O3-1) TOBY'S LANE
TOBY LANE	1+53.47	17' RT.	SPEED LIMIT SIGN (R2-1)
LUCYS OVERLOOK WAY	0+39.68	21' LT.	STOP SIGN (R1-1) STREET SIGN (O3-1) LUCYS OVERLOOK WAY
LUCYS OVERLOOK WAY	1+31.63	16' RT.	SPEED LIMIT SIGN (R2-1)

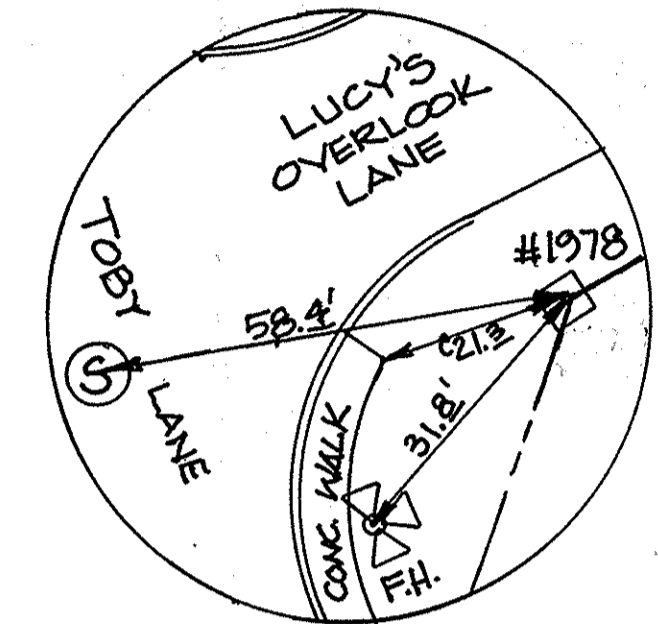
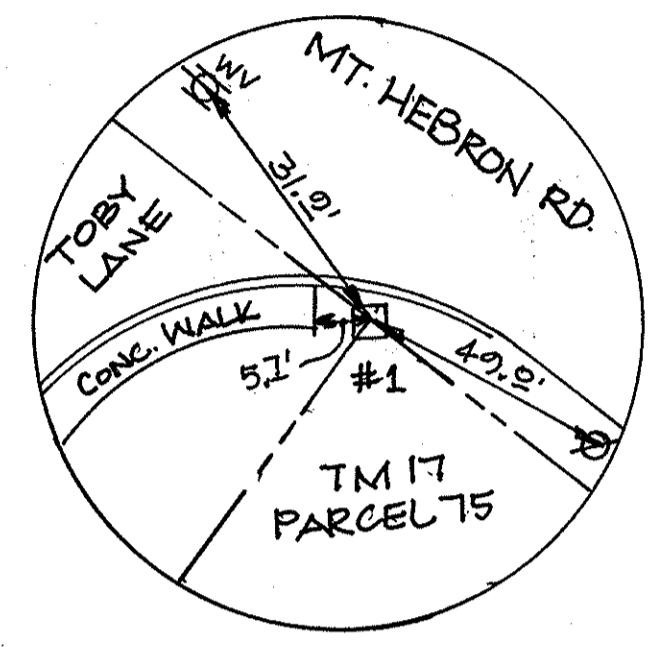
STREET LIGHT LOCATION CHART			
STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
TOBY LANE	0+40	31' RT.	150 WATT HPS VAPOR PREMIER POST-TOP FIXTURE MOUNTED ON A 14' BLACK FIBERGLASS POLE
LUCYS OVERLOOK WAY	0+33.93	21' RT.	100 WATT HPS VAPOR PREMIER POST-TOP FIXTURE MOUNTED ON A 14' BLACK FIBERGLASS POLE
LUCYS OVERLOOK WAY	2+33	20' LT.	
TOBY LANE	1+87	15' RT.	LP = LINEAR PROFILE
TOBY LANE	5+25	15' RT.	
TOBY LANE	7+72	15' RT.	
TOBY LANE	1+38.48 LP	6' LT.	
LUCYS 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	48.78	44°16'21"	N82°04'37"E
C4	140.78	150.00	76.05	53°46'22"	S84°35'19"W
C5	87.69	110.50	46.30	45°27'58"	N88°44'42"E

LEGEND:

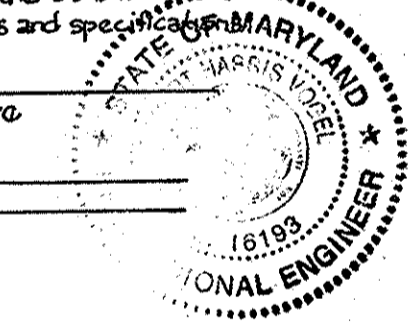
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- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EX. UTILITY TEST PIT LOCATION
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING 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
- CENTERLINE OF EXISTING STREAM
- PROPOSED STORMDRAIN
- PROPOSED STORMDRAIN INLET
- PROPOSED SIDEWALK
- PROPOSED TREELINE
- PROPOSED CURB
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- PROP. FOREST CONSERVATION (AFFORESTATION)
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- 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 facilities shown on this plan were constructed as shown on the "as-built" plans and meet the approved plans and specifications of MARYLAND.

Signature: _____
 FE No. 16193
 Date: 5/18/15



OWNERS		DEVELOPER	
PARCEL 77 EVANS M. KEIM 9339 ROUTE 99 ELLCOTT CITY, MD 21042	PARCEL 78 & 416 ATHOL & LISA MORGAN 9305 ROUTE 99 ELLCOTT CITY, MD 21042	DOUBLE R VENTURES, LLC C/O LAND DEVELOPMENT, INC. 5300 DORSEY HALL DR. STE 102 ELLCOTT CITY, MARYLAND 21042-7819 ATTN: MR. DONALD R. REWIER 443-387-0422	

NO.	REVISION	DATE
4	DELETE 0.08 AC FOREST CONSERVATION EASEMENT FROM LOT 4 FROM 10' TO 15' AND RELOCATE MONUMENT #1	8/14/15
3	ADD PERMANENT ENTRANCE MONUMENT, RELOCATE KEIM PROPERTY DRIVEWAY, RELOCATE STREET TREE, SPEED LIMIT SIGN	7/9/15
2	REVISE PUBLIC WATER TO C-900 PVC	9/19/12
1	REVISION	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
 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
 ELLCOTT 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. LICENSE NO. 16193 EXPIRATION DATE: 09-27-2012

2 SHEET OF 12

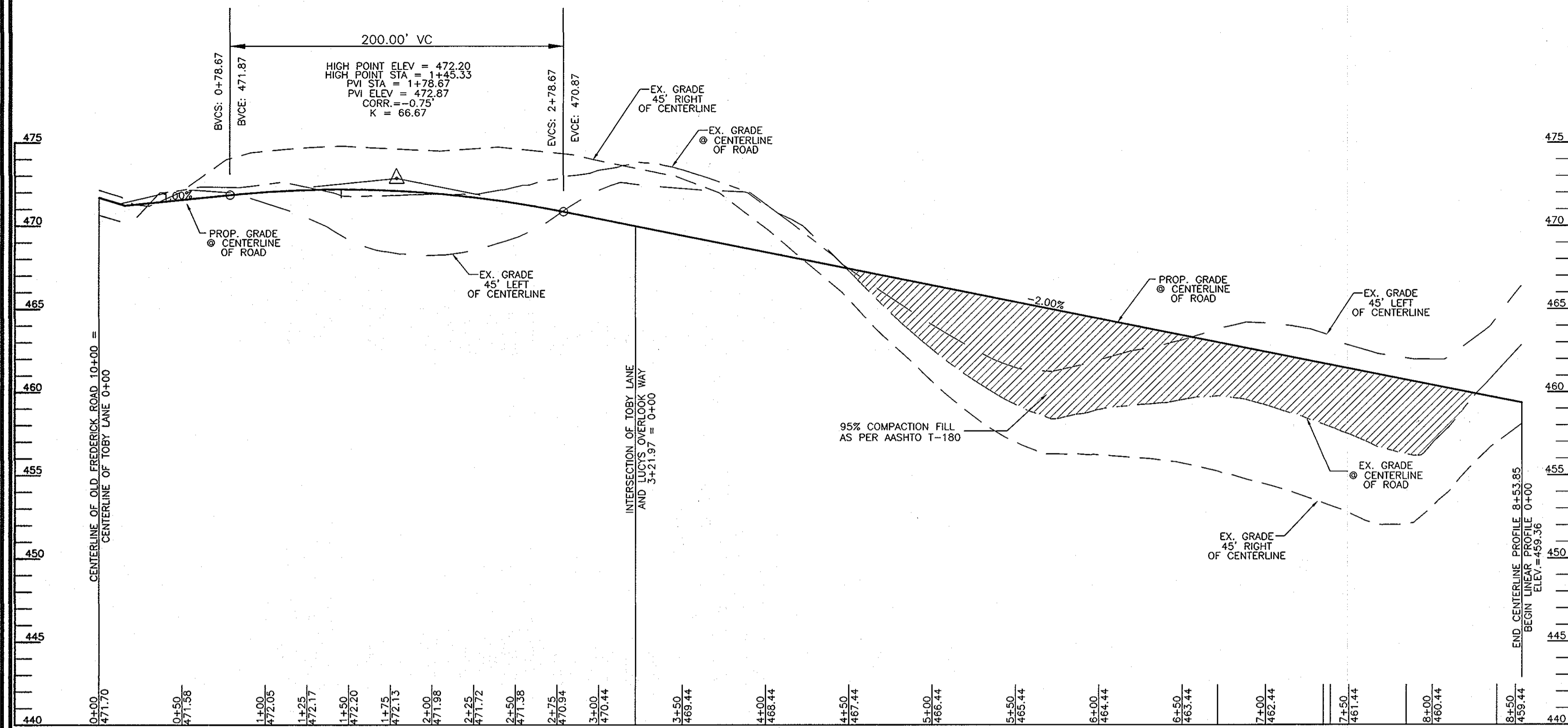
APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] 4-3-12
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 4/16/12
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

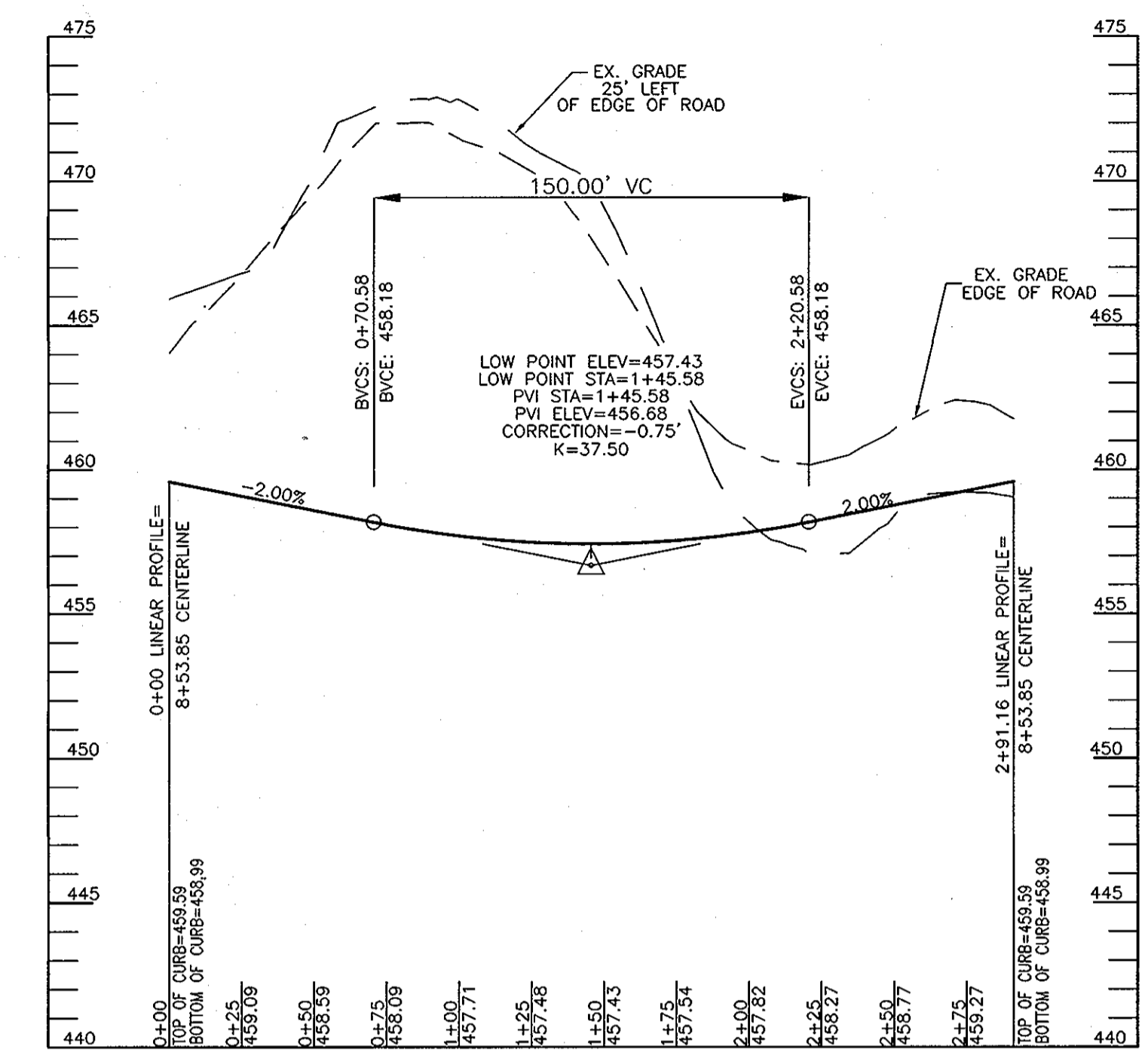
APPROVED: [Signature] 4/16/12
 CHIEF, DIVISION OF LAND DEVELOPMENT

LAYOUT PLAN OF UNMITIGATED 65 dBA LINE
 SCALE: 1"=50'

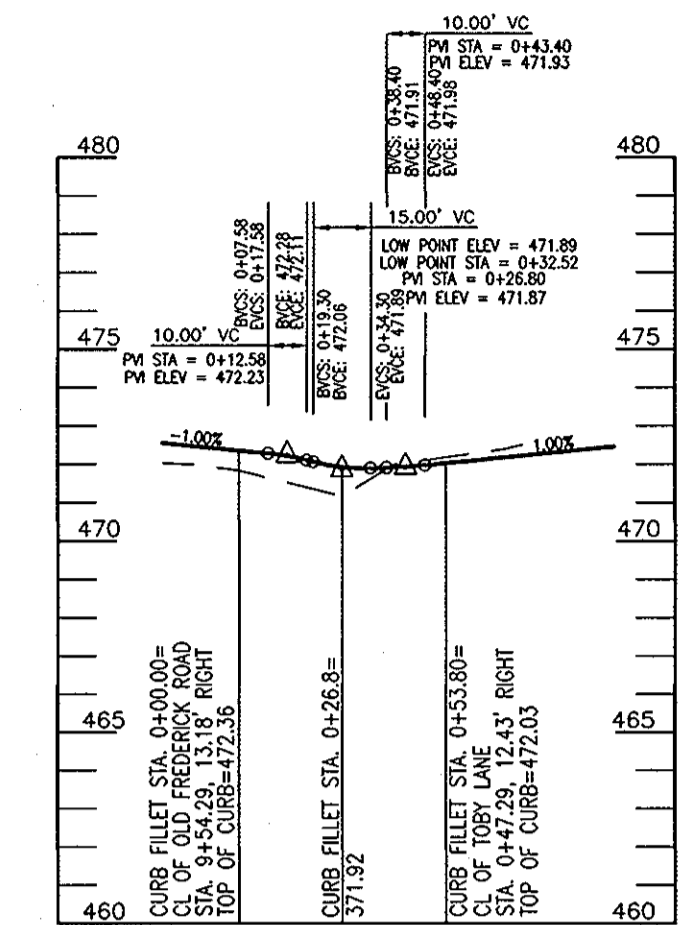
INTERSTATE U.S. 70
 (WEST BOUND)
 PRINCIPAL ARTERIAL
 PLAT #2250
 L 842 / F 488



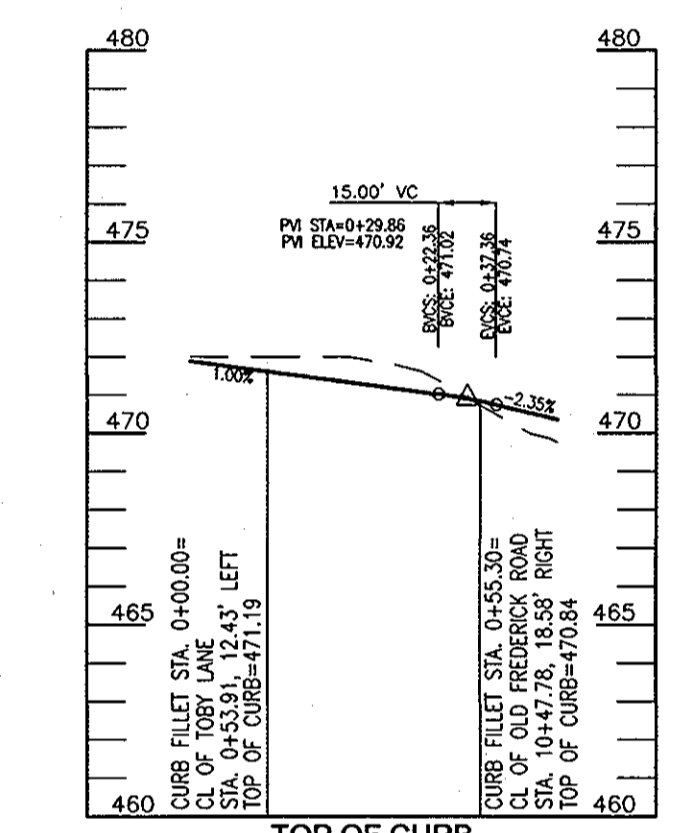
**ROAD PROFILE
TOBY LANE
PUBLIC ACCESS STREET**
DESIGN SPEED: 25 MPH
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



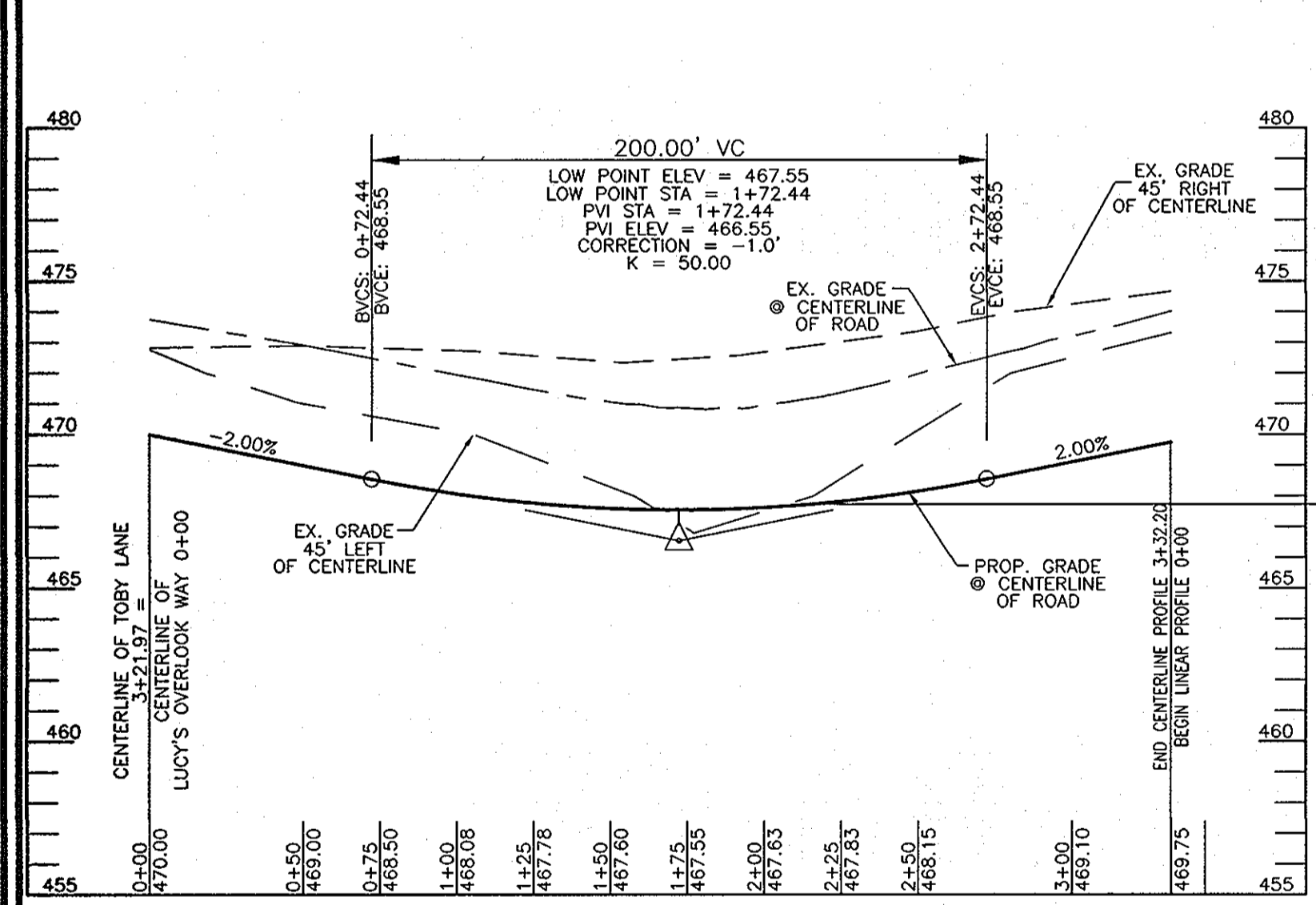
**LINEAR PROFILE
TOBY LANE
PUBLIC ACCESS STREET**
DESIGN SPEED: 25 MPH
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



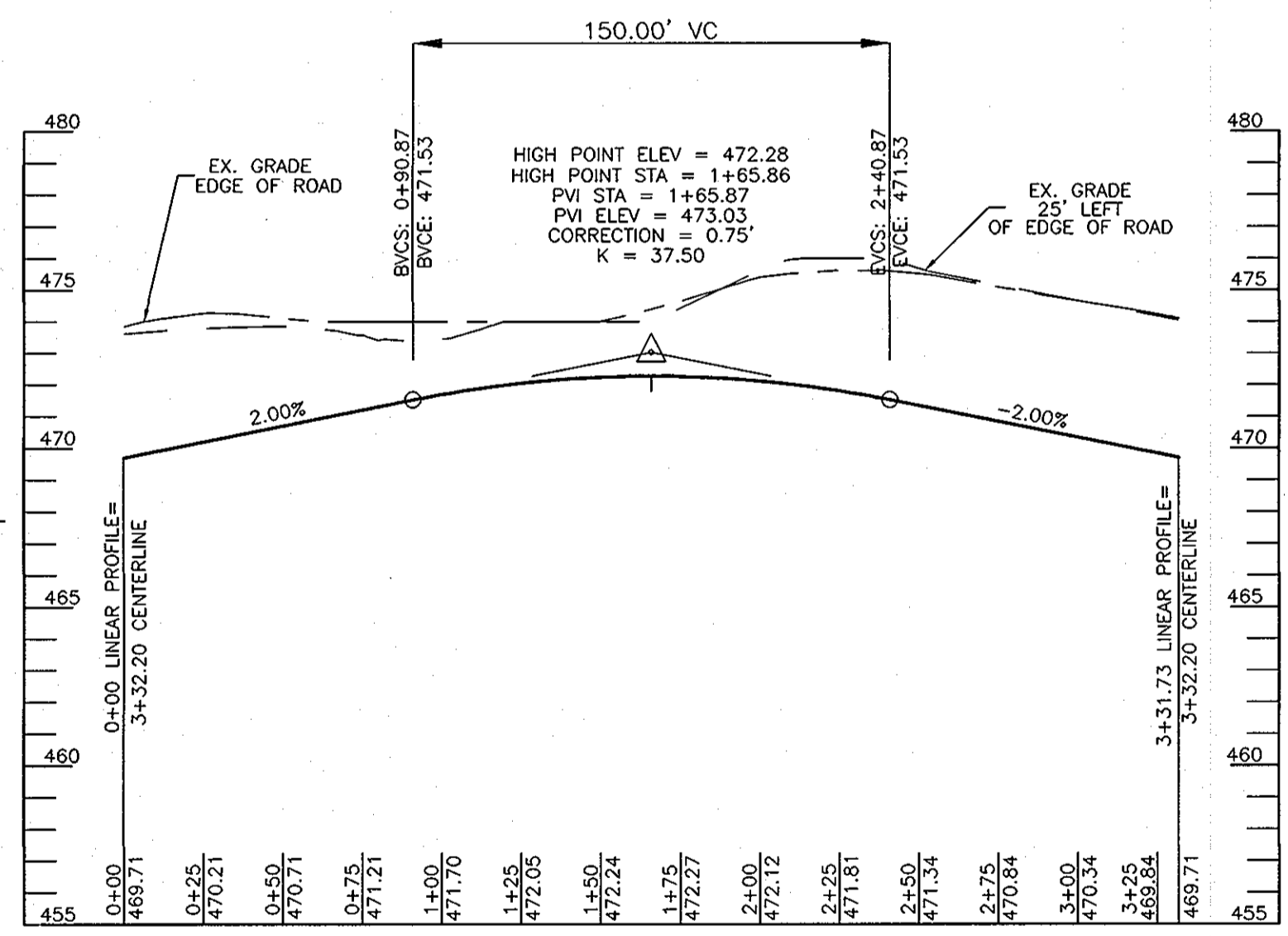
**TOP OF CURB
FILLET PROFILE (F-1)**
DESIGN SPEED: 25 MPH
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



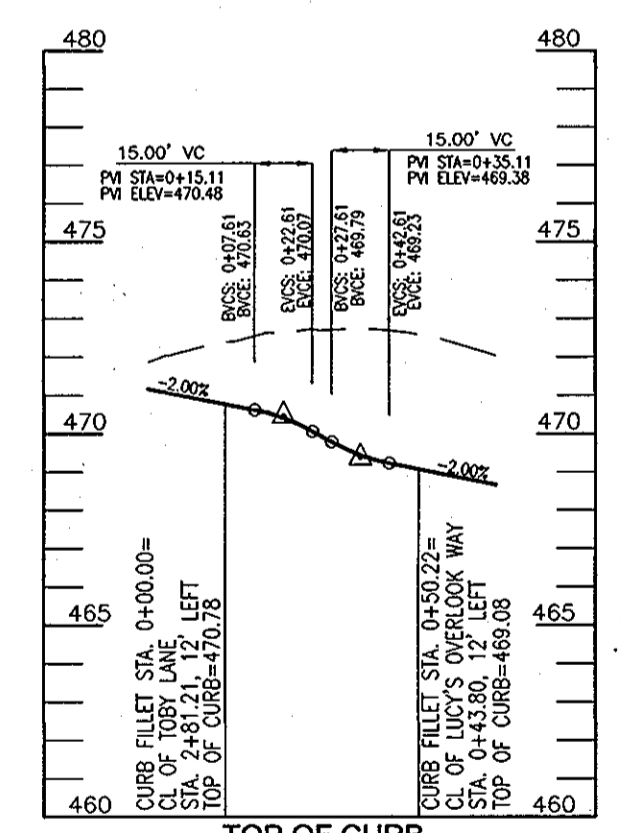
**TOP OF CURB
FILLET PROFILE (F-2)**
DESIGN SPEED: 25 MPH
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



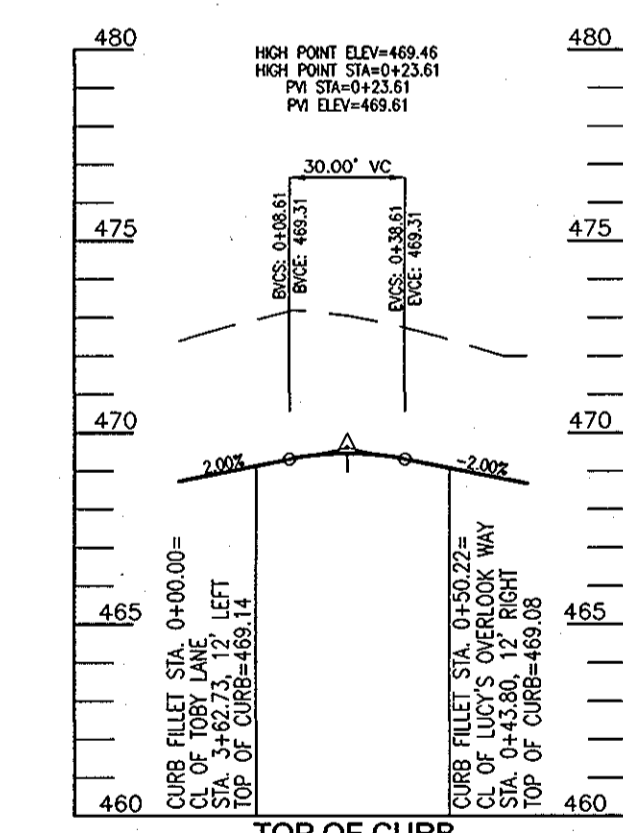
**ROAD PROFILE
LUCYS OVERLOOK WAY
PUBLIC ACCESS STREET**
DESIGN SPEED: 25 MPH
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



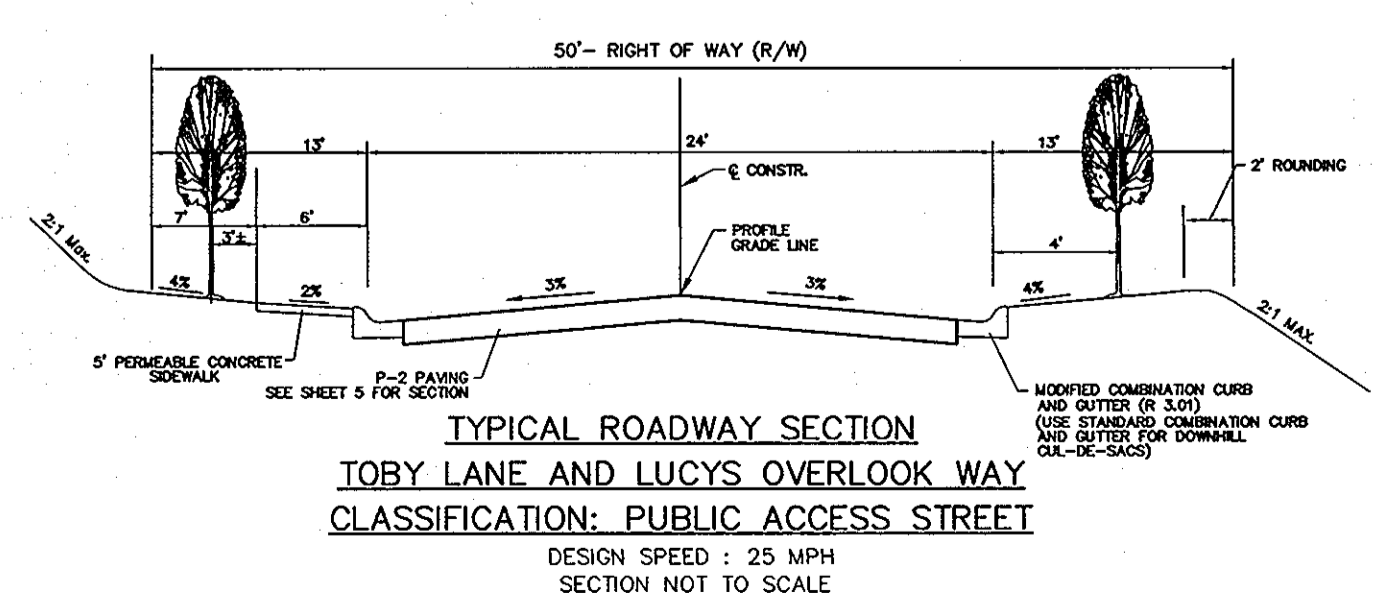
**LINEAR PROFILE
LUCYS OVERLOOK WAY
PUBLIC ACCESS STREET**
DESIGN SPEED: 25 MPH
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



**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'



OWNERS
PARCEL 77
EVANS, M. KEIM
3339 ROUTE 99
ELLICOTT CITY, MD 21042

DEVELOPER
PARCELS 78 & 416
ATHAL & LISA MORGAN
3305 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
ATTN: 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
HOWARD COUNTY, MARYLAND

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

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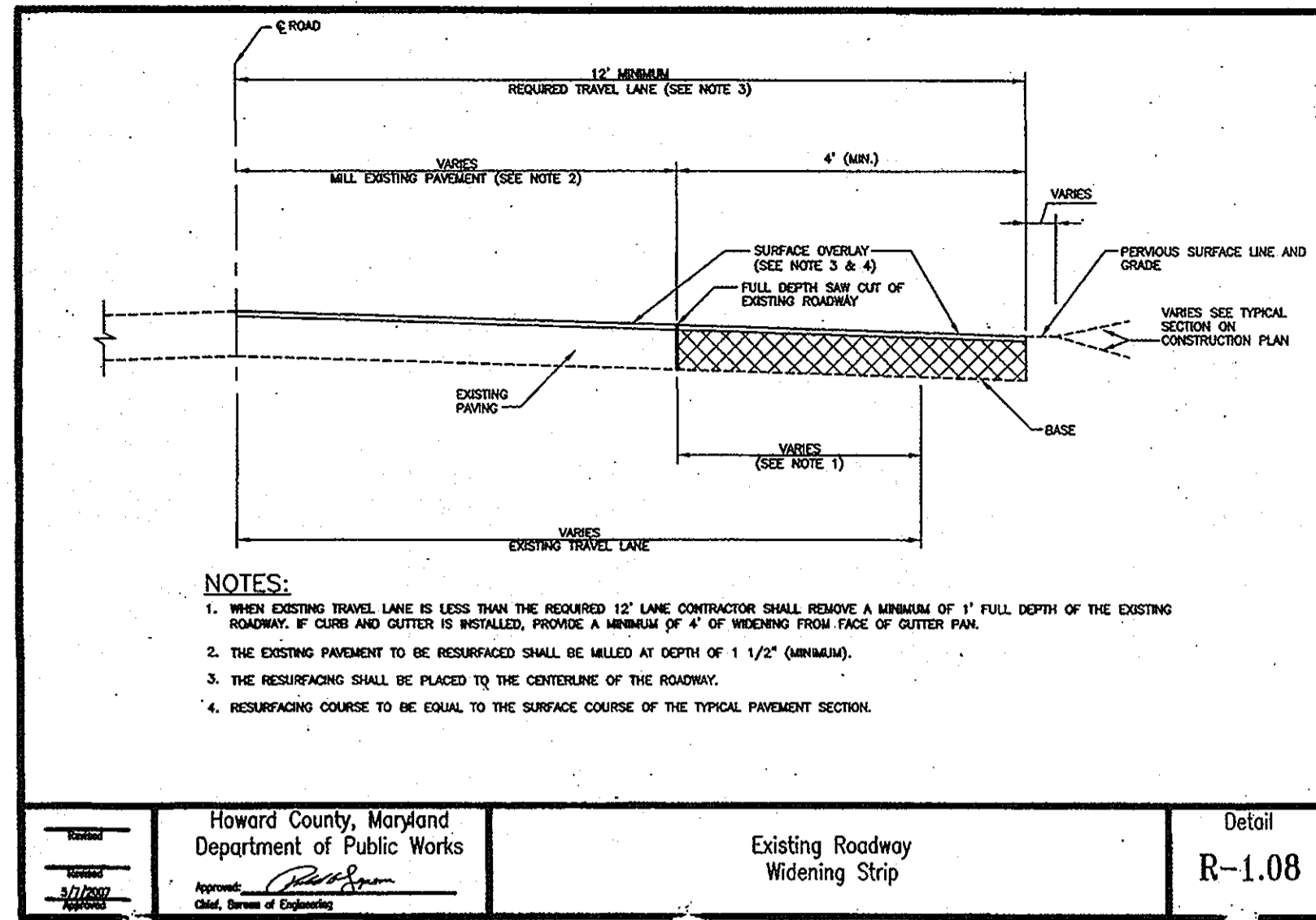
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EXPIRATION DATE: 09-27-2012

3 SHEET OF 12

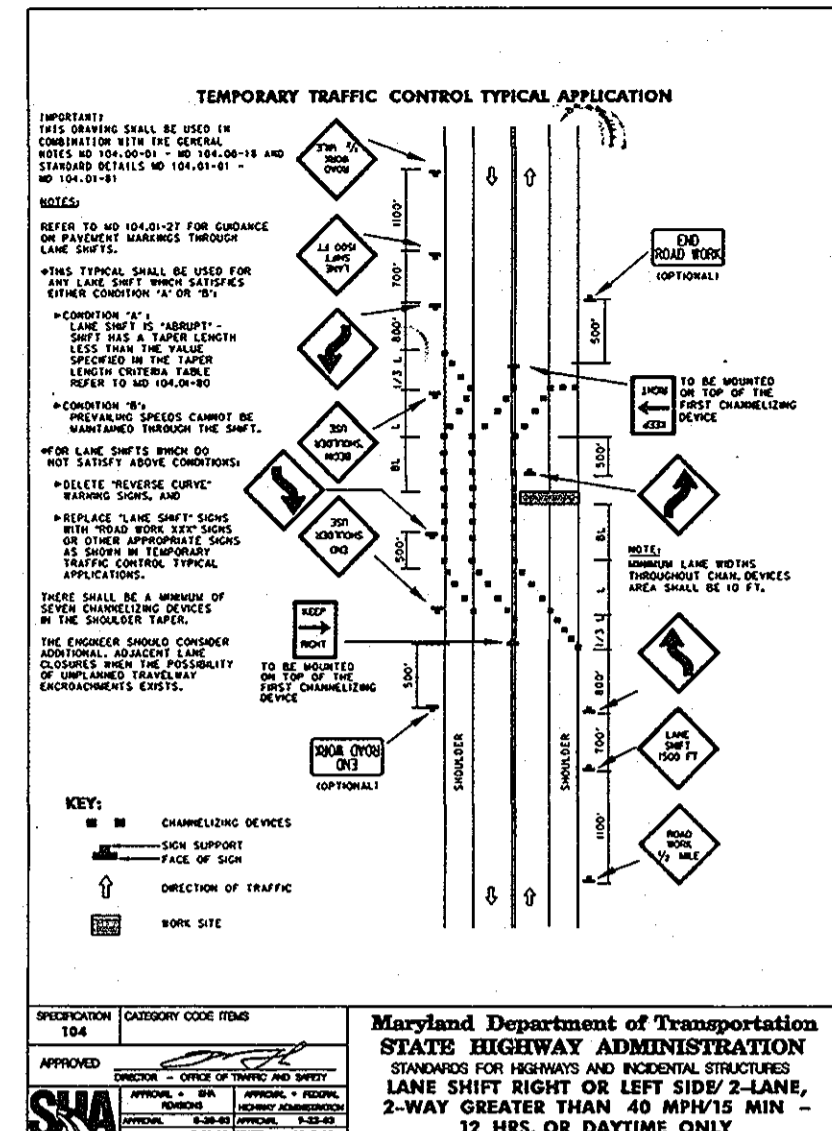
APPROVED: DEPARTMENT OF PUBLIC WORKS
8-12-2011
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
8/10/11
DATE

8/22/11
DATE

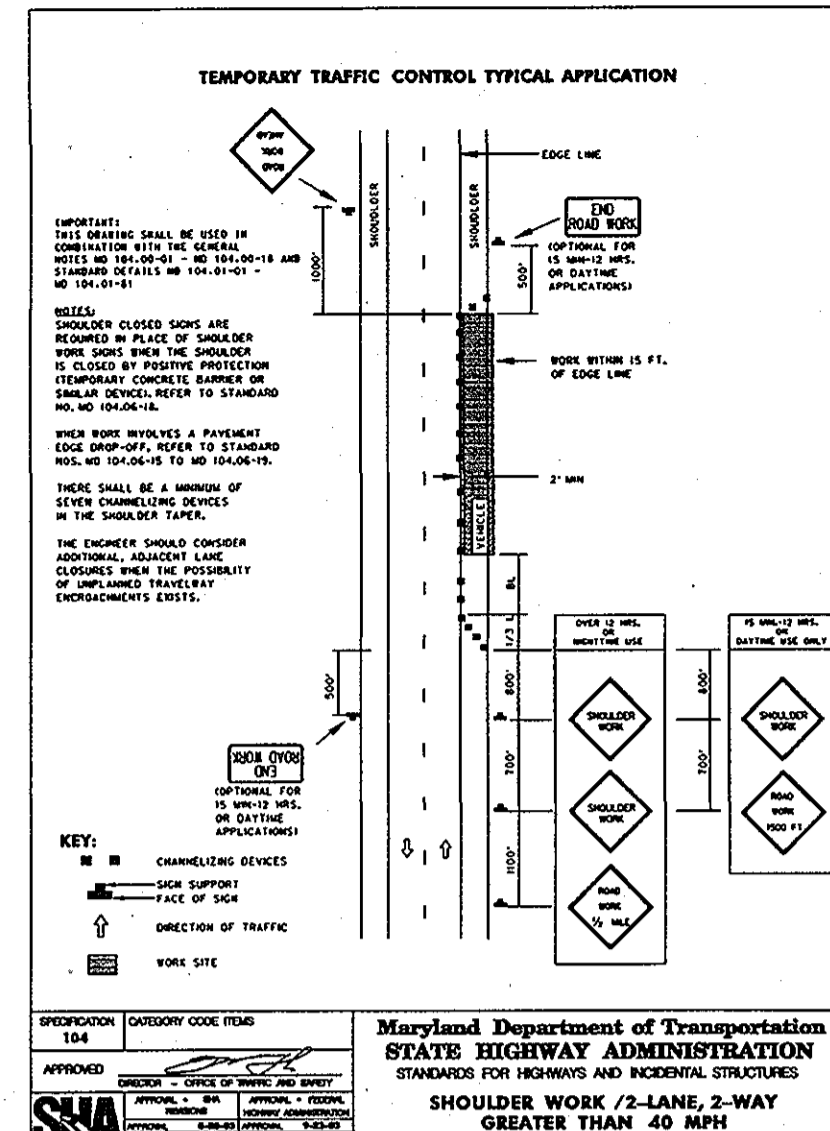


Howard County, Maryland
Department of Public Works
Existing Roadway
Widening Strip
Detail
R-1.08



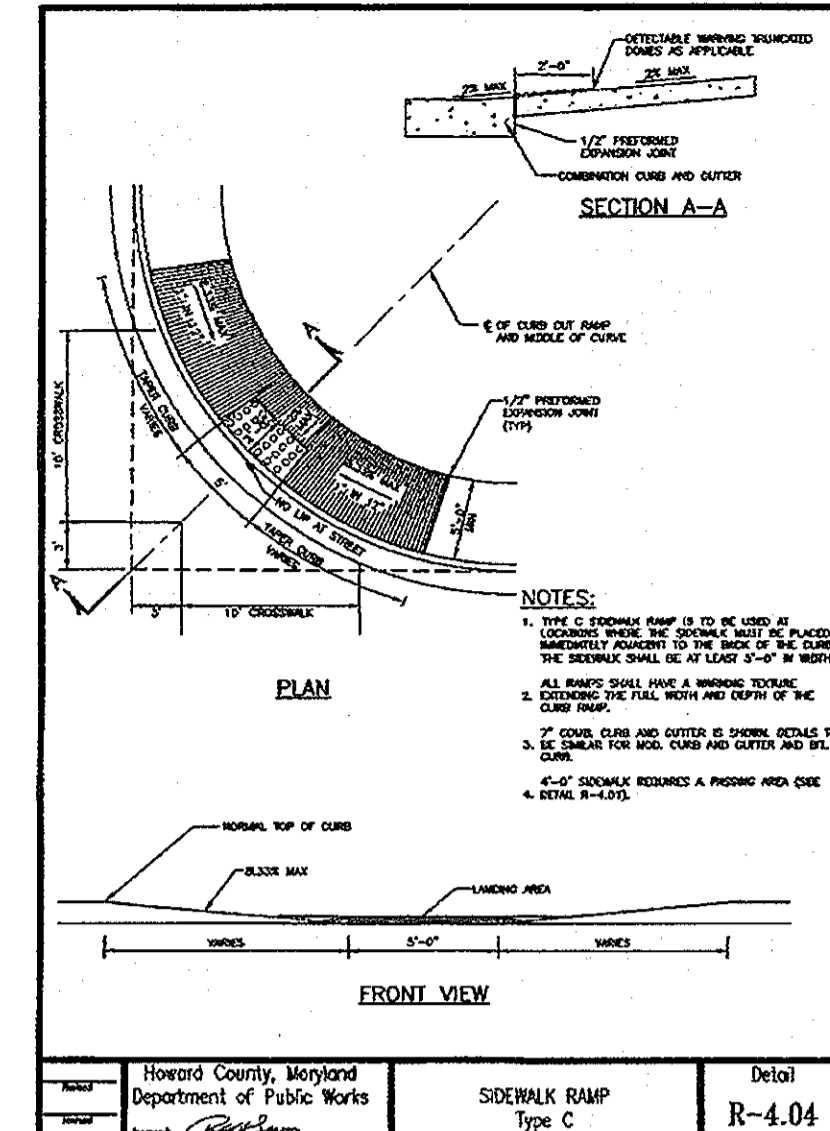
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND ROADWAY STRUCTURES
LANE SHIFT RIGHT OR LEFT SIDE 2-LANE,
2-WAY GREATER THAN 40 MPH/DAYTIME ONLY
STANDARD NO. MD 104.02-03

M.O.T. PLAN TO BE APPROVED BY MDSA

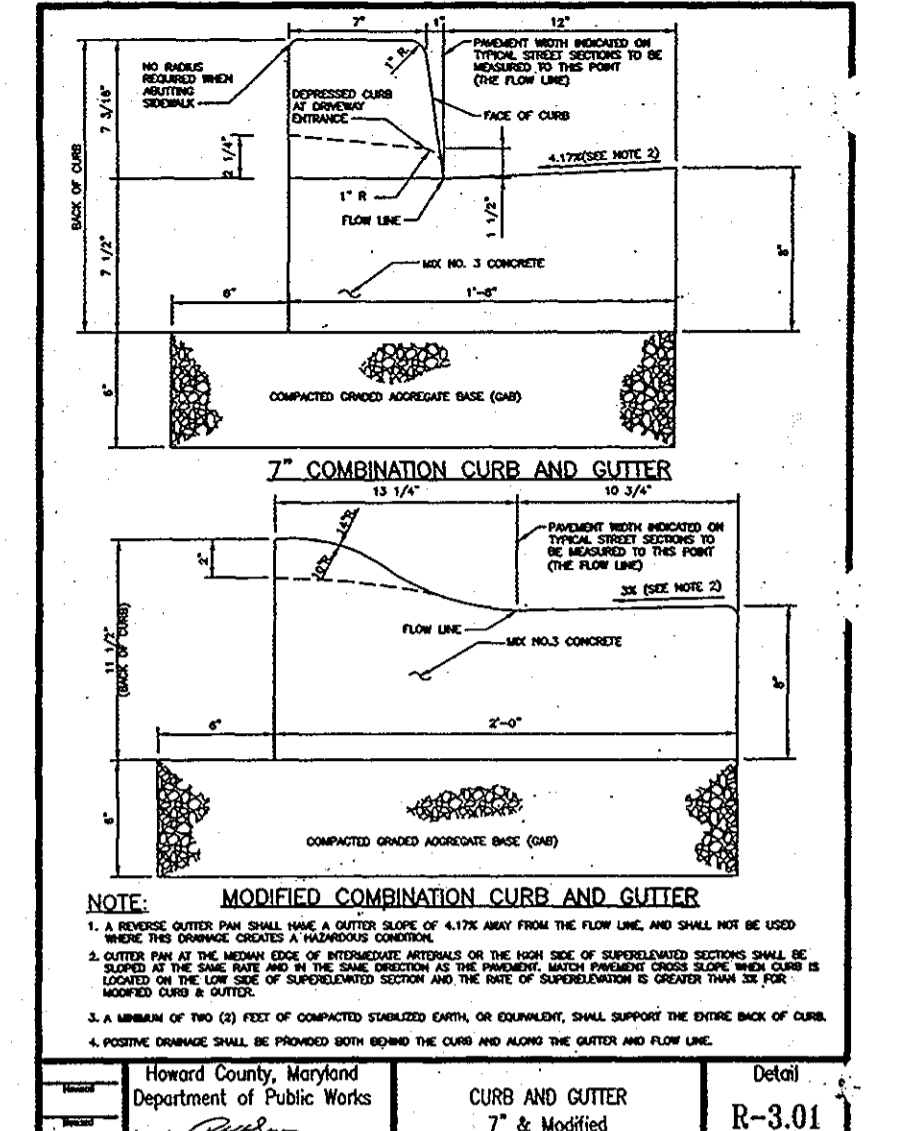


Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND ROADWAY STRUCTURES
SHOULDER WORK 2-LANE, 2-WAY
GREATER THAN 40 MPH
STANDARD NO. MD 104.02-01

M.O.T. PLAN TO BE APPROVED BY MDSA



Howard County, Maryland
Department of Public Works
SIDEWALK RAMP
Type C
Detail
R-4.04



Howard County, Maryland
Department of Public Works
CURB AND GUTTER
7" & Modified
Detail
R-3.01

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)	3 TO <5		5 TO <7		7 TO <10		10 TO <15		15 TO <20	
			MIN	MAX WITH GAB	MIN	MAX WITH GAB	MIN	MAX WITH GAB	MIN	MAX WITH GAB	MIN	MAX WITH GAB
P-1	PARKING DRIVE: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY	HMA SUPERFINE FINAL SURFACE 9.5 MM PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
			HMA SUPERFINE INTERMEDIATE SURFACE (HMA)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
			HMA SUPERFINE BASE	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
			GRADED AGGREGATE BASE (GAB)	8.0	7.0	6.0	4.0	4.0	4.0	4.0		
P-2	PARKING DRIVE: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY	HMA SUPERFINE FINAL SURFACE 9.5 MM PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
			HMA SUPERFINE INTERMEDIATE SURFACE (HMA)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
			HMA SUPERFINE BASE	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
			GRADED AGGREGATE BASE (GAB)	8.0	4.0	3.0	4.0	4.0	4.0			
P-3	LOCAL BOULEVARD: ACCESS STREET	HMA SUPERFINE FINAL SURFACE 9.5 MM PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
			HMA SUPERFINE INTERMEDIATE SURFACE (HMA)	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
			HMA SUPERFINE BASE	2.0	2.0	2.0	2.0	2.0	2.0	2.0		
			GRADED AGGREGATE BASE (GAB)	10.0	6.0	3.0	6.0	6.0	6.0			
P-4	MINOR COLLECTORS: NON-RESIDENTIAL	HMA SUPERFINE FINAL SURFACE 12.5 MM PG 64-22, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
			HMA SUPERFINE INTERMEDIATE SURFACE (HMA)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		
			HMA SUPERFINE BASE	4.0	4.0	3.0	6.0	6.0	6.0			
			GRADED AGGREGATE BASE (GAB)	13.0	7.0	4.0	6.0	6.0	6.0			

Notes:
1) HEAVY TRUCKS ARE DEFINED AS THOSE WITH SIX (6) WHEELS OR MORE INCLUDING GARAGE TRUCKS.
2) HMA SUPERFINE LAYERS SHALL BE PLACED IN APPROPRIATE COMPACTED LIFT THICKNESS: 19.0 MM BASE (30" MIN TO 4.0" MAX), 12.5 MM SURFACE (1.5" MIN TO 3.0" MAX), AND 9.5 MM SURFACE (1.0" MIN TO 2.0" MAX).
3) GRADED AGGREGATE BASE (GAB) TO BE PLACED AND COMPACTED IN 4" MAX COMPACTED THICKNESS LAYERS.
4) THE INTERMEDIATE SURFACE COURSE LAYER MUST BE PLACED WITHIN 2 WEEKS OF PLACEMENT OF BASE COURSE, AND IS REQUIRED PRIOR TO SUBSEQUENT COMPLETION RESPECTIVE AND BOND REQUIRED.
5) IN LIEU OF PLACING THE INTERMEDIATE SURFACE LAYER FOR COMMERCIAL/INDUSTRIAL ENTRANCE APPROX WITHIN THE COUNTY DEPT-40-100 THESE ALTERNATE LAYERS ARE NOT REQUIRED, THE THICKNESS OF THE INTERMEDIATE PAVEMENT LAYER CAN BE ADDED TO THE REQUIRED THICKNESS OF THE BASE ASPHALT LAYER.
6) THE CONSTRUCTION DRAWINGS SHALL SHOW THE FINISH SECTION, ROAD CLASSIFICATION AND CBR VALUE FOR EACH ROADWAY.

Howard County, Maryland
Department of Public Works
PAVING SECTIONS
P-1 to P-4
Detail
R-2.01

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

DEVELOPER
PARCEL 78 & 416
ATHOL & MORGAN
9305 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
ATTN: MR. DONALD S. REUWER
443-367-0422

NO.	REVISION	DATE

FINAL ROAD CONSTRUCTION PLAN
MOUNT HEBRON OVERLOOK
SITE 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

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

ZONING: R-20
PARCELS: 77, 78, & 416
HOWARD COUNTY, MARYLAND

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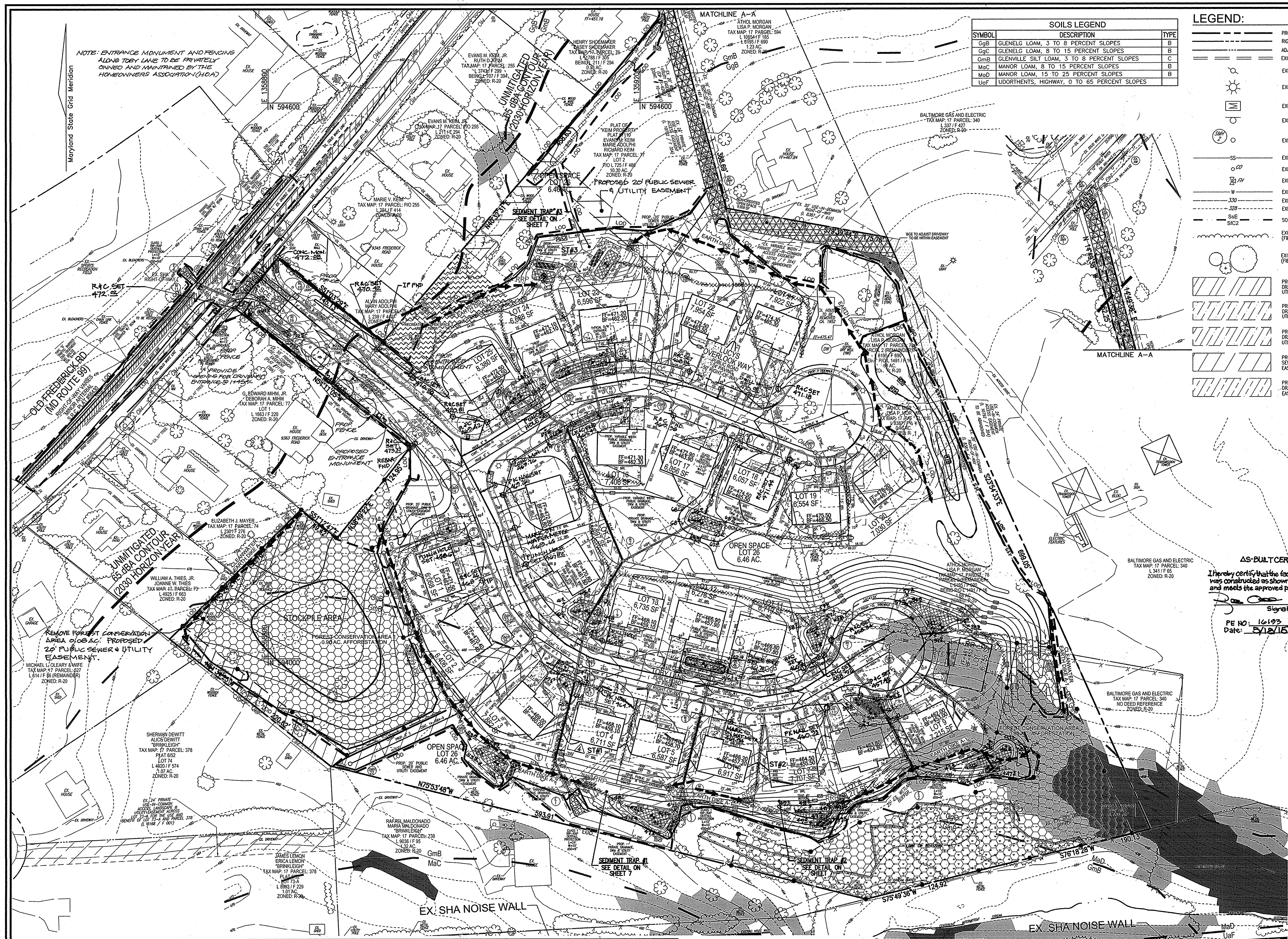
5 SHEET OF 12

APPROVED: DEPARTMENT OF PUBLIC WORKS

8-12-2011

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

8/22/11



SOILS LEGEND		
SYMBOL	DESCRIPTION	TYPE
GpB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B
GpC	GLENELG LOAM, 8 TO 15 PERCENT SLOPES	B
GmB	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C
MaC	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
- SOILS
- EXISTING TREE LINE (FIELD LOCATED)
- EXISTING TREES (FIELD LOCATED)
- 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

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
WET STORAGE PROVIDED:	4632 CF	WET STORAGE PROVIDED:	3956 CF
DRY STORAGE REQUIRED:	3960 CF	DRY STORAGE REQUIRED:	3900 CF
DRY STORAGE PROVIDED:	4632 CF	DRY STORAGE PROVIDED:	3694 CF
TOTAL STORAGE REQUIRED:	7920 CF	TOTAL STORAGE REQUIRED:	7200 CF
TOTAL STORAGE PROVIDED:	9264 CF	TOTAL STORAGE PROVIDED:	7658 CF
BOTTOM ELEV.:	444.5	BOTTOM ELEV.:	442.5
TOP EMBANKMENT ELEV.:	448.0	TOP EMBANKMENT ELEV.:	446.0
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
WET STORAGE PROVIDED:	5336 CF
DRY STORAGE REQUIRED:	5250 CF
DRY STORAGE PROVIDED:	5336 CF
TOTAL STORAGE REQUIRED:	10500 CF
TOTAL STORAGE PROVIDED:	10672 CF
BOTTOM ELEV.:	456.0
TOP EMBANKMENT ELEV.:	480.0
WEIR ELEVATION:	459.0 @ 8'
WET STORAGE ELEVATION:	456.0-457.9
DRY STORAGE ELEVATION:	457.9-459.0
PROP. Q1 STORAGE REQUIRED:	0.20CFS
PROP. Q1 STORAGE PROVIDED:	2.9CFS
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.

Robert H. Vogel
Signature
PE NO: 16193
Date: 5/12/15

OWNERS
PARCEL 77: EVANS M. KEIM, JR., 5339 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: MR. DONALD R. REUWER

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways
 DATE: 4-3-12

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 DATE: 4/11/12

APPROVED: DIVISION OF LAND DEVELOPMENT
 Chief, Division of Land Development
 DATE: 4/11/12

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.

Robert H. Vogel
Signature of Developer
DATE: 3/26/12

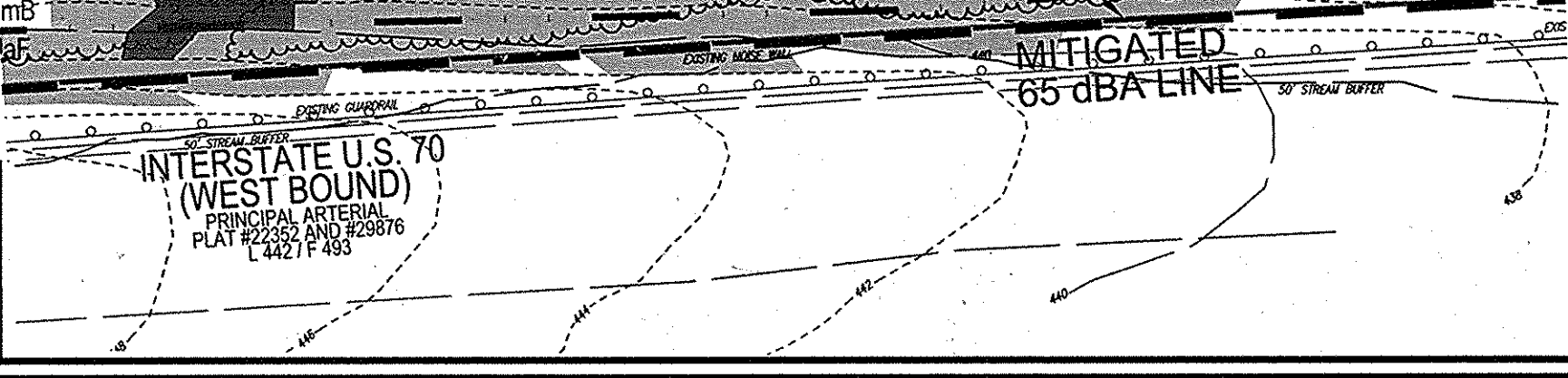
BY THE ENGINEER:
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Robert H. Vogel
Signature of Engineer
DATE: 3/22/12

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:



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 "KEIM PROPERTY" LOT 2, AND A SUBDIVISION OF PARCELS 78 AND 416
 HOWARD COUNTY, MD PARCELS: 77, 78, & 416
 TAX MAP: 17 GRID: 16 HOWARD COUNTY, MARYLAND
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 CHECKED BY: RHV
 DATE: JUNE 2011
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 W.O. NO.: 10-06

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 SOO, 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 (313-1885).
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, DIKES, PERMETER SLOPES, AND ALL SLOPES GREATER THAN 3:1; (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, 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.
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 and Area. Includes rows for TOTAL AREA (12.44 AC), AREA DISTURBED (2.72 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 (18.261 CY), and OFFSITE WASTE/BORROW AREA LOCATION.

- 8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
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 REQUIRED UPON COMPLETION OF INSTALLATION OF PERMETER 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 PERMETER SEWER SILT FENCE AND CLEANWATER DIKES AND INSTALL SUPER TRAPS 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, AND FINAL ROAD PAVING COMPLETE, STABILIZE ANY REMAINING DISTURBED AREAS, AND FLUSH STORM DRAIN SYSTEM.
8. CONSTRUCT MICRO-BIOTRENTATIONS FACILITIES AND STABILIZE IMMEDIATELY. DO NOT CONSTRUCT MICRO-BIOTRENTATIONS 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-BIOTRENTATION FACILITIES 3, 4, 15 AND 16 AND STABILIZE.
10. WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR AND WITH SITE STABILIZED REMOVE 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 PERMETER 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, DIKES, SWALES, DITCH PERMETER SLOPES AND ALL SLOPES GREATER THAN 3:1.
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 CONCERN HAVE 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 IN THE PLAN SURVEY.
CONSTRUCTION AND MATERIAL SPECIFICATIONS

- I. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT 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-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 APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 AND 1/2" IN DIAMETER.
2. TOPSOIL MUST 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 HEAVY CLAYS, GROUND 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 PROVISIONS:
I. 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

- 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 6.5 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 SOO OR SEED SHALL BE PLACED ON SOIL SOIL WHICH HAS BEEN TREATED WITH SOIL STABILIZANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL 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. PLACEMENT (IF REQUIRED) AND APPLY SOIL AMENDMENTS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION-SECTION I-VEGETATIVE STABILIZATION METHODS AND MATERIALS.

- V. TOPSOIL APPLICATION
I. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADES, 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, ALBEIT 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 SO MOIST THAT IT IS UNABLE TO BE PROPERLY STABILIZED OR BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

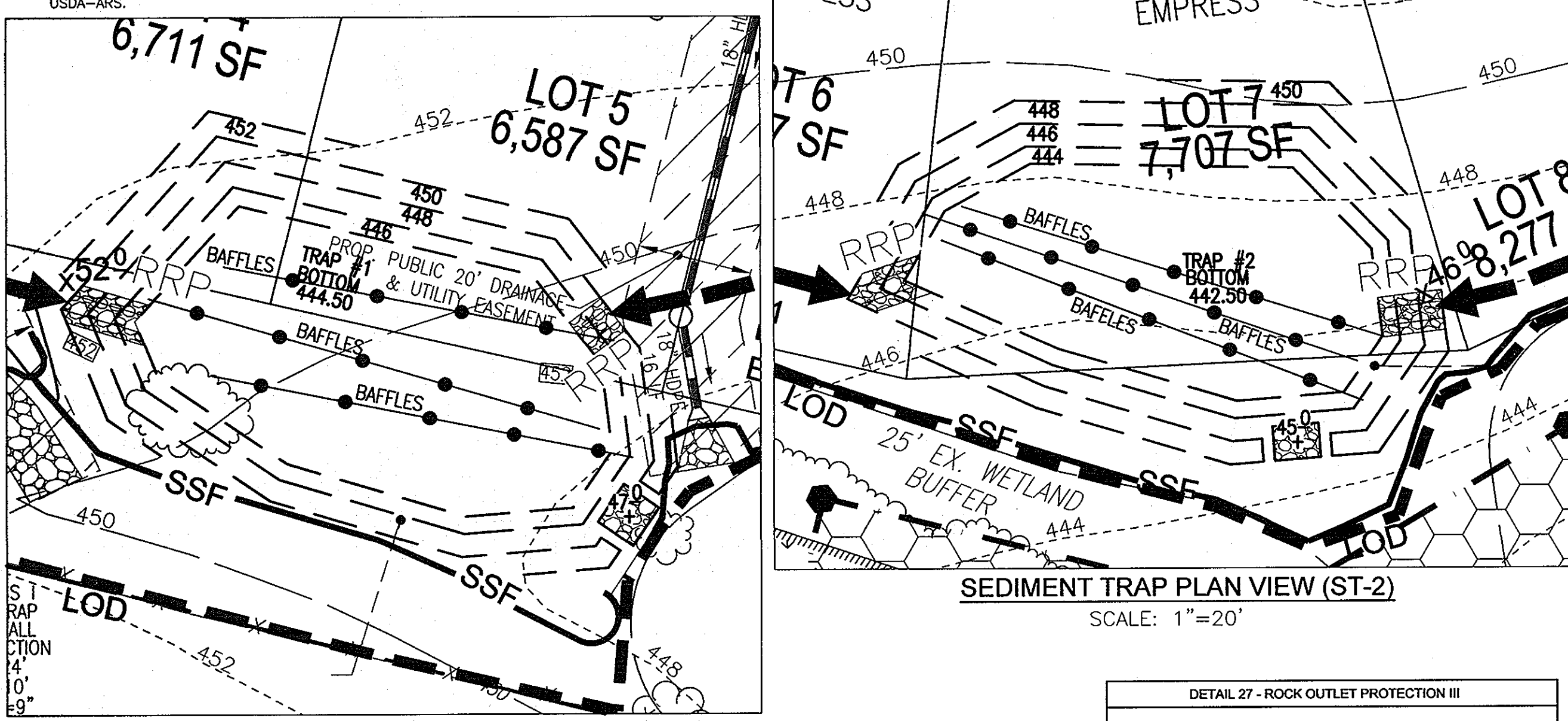
PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.
SEEDER PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCHING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

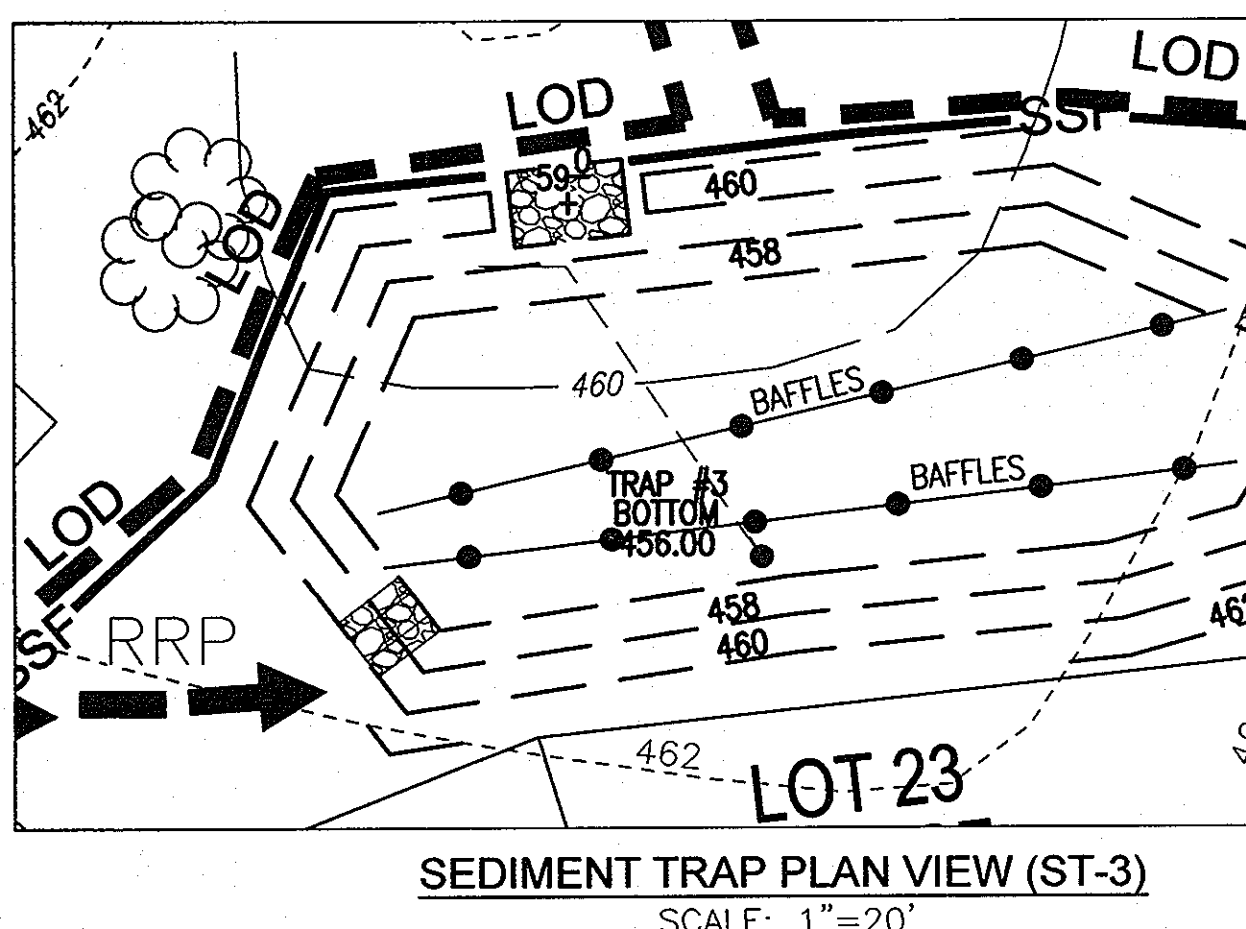
- SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:
1) PREFERRED-APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SO.FT.) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (4 LBS./1000 SO.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL AT THE TIME OF SEEDING. APPLY 400 LBS PER ACRE 30-0-0 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 15, 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 WEEPING 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 SOO, OPTION (3) USE 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 18 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, REPLACEMENTS AND RESEEDING.
TEMPORARY SEEDING NOTES
SEEDER PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCHING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

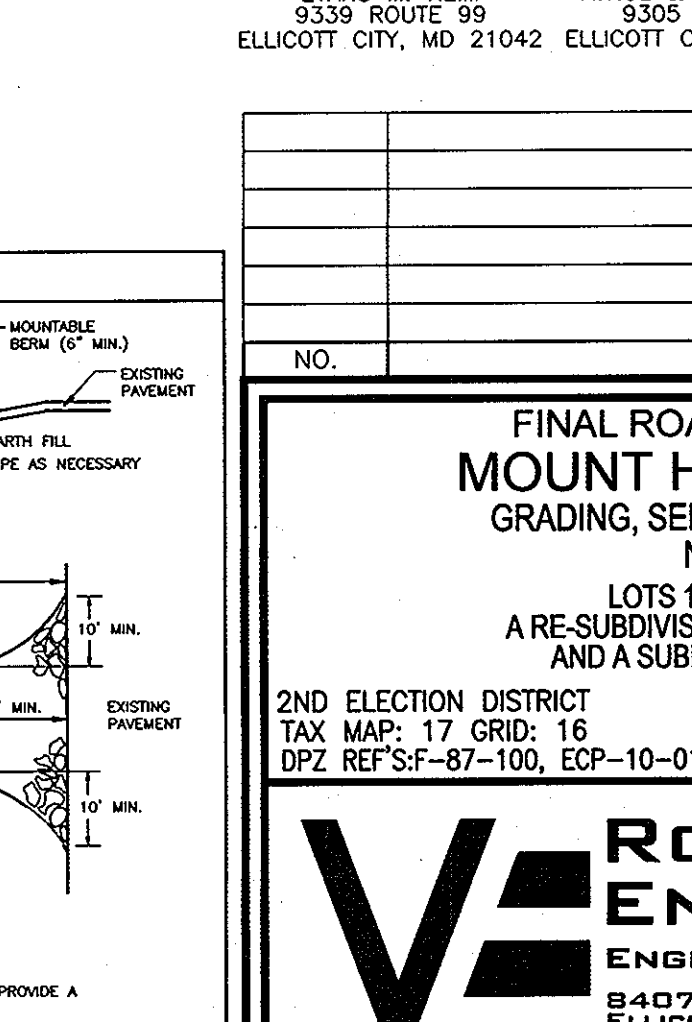
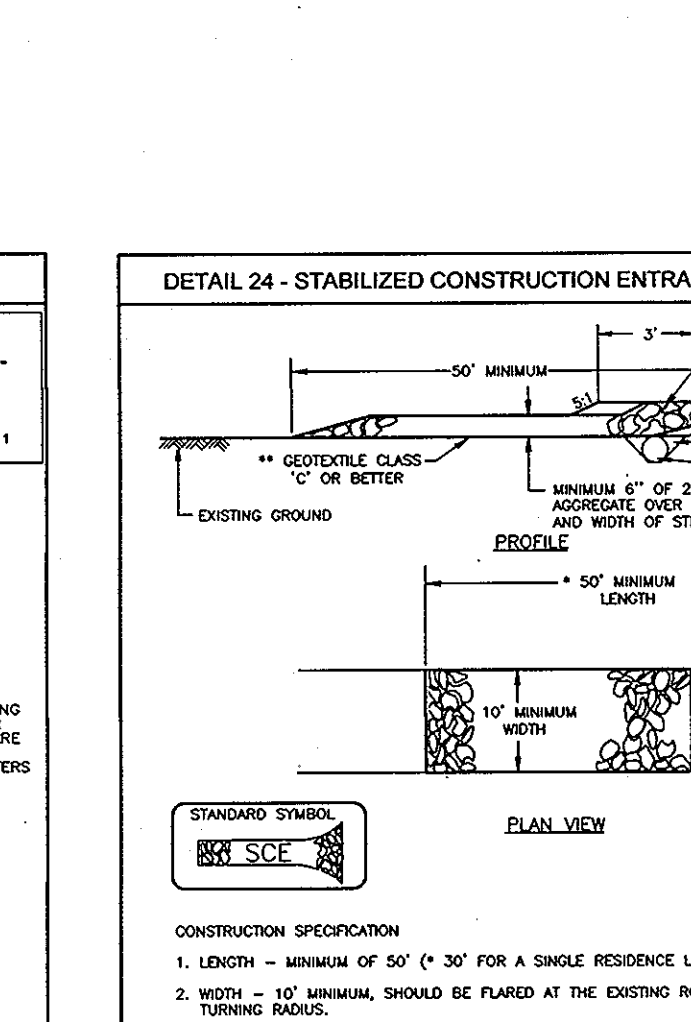
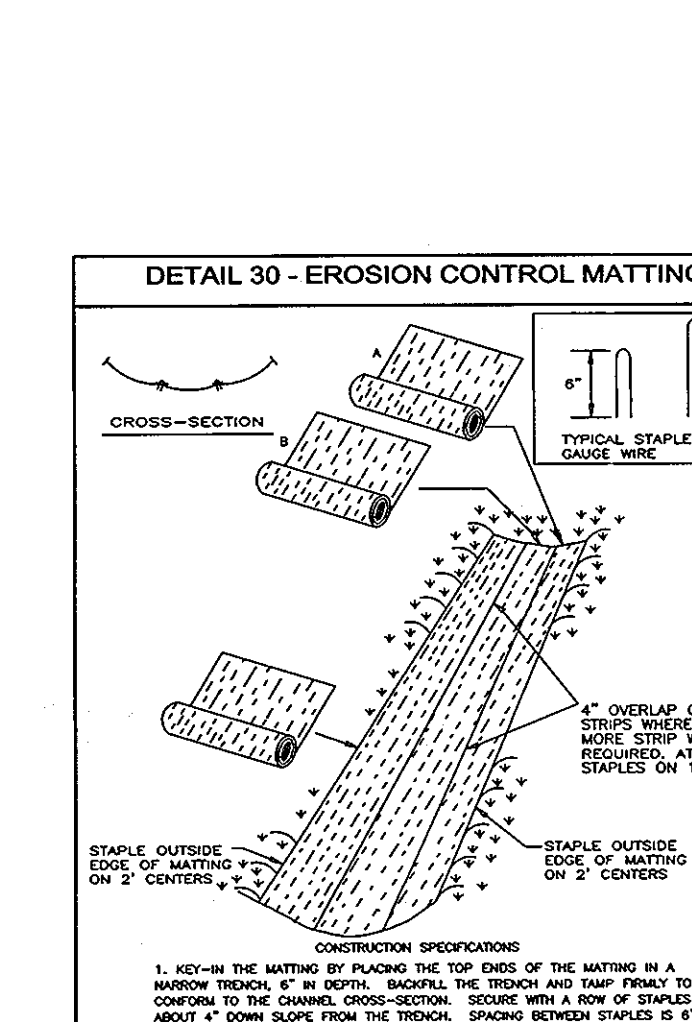
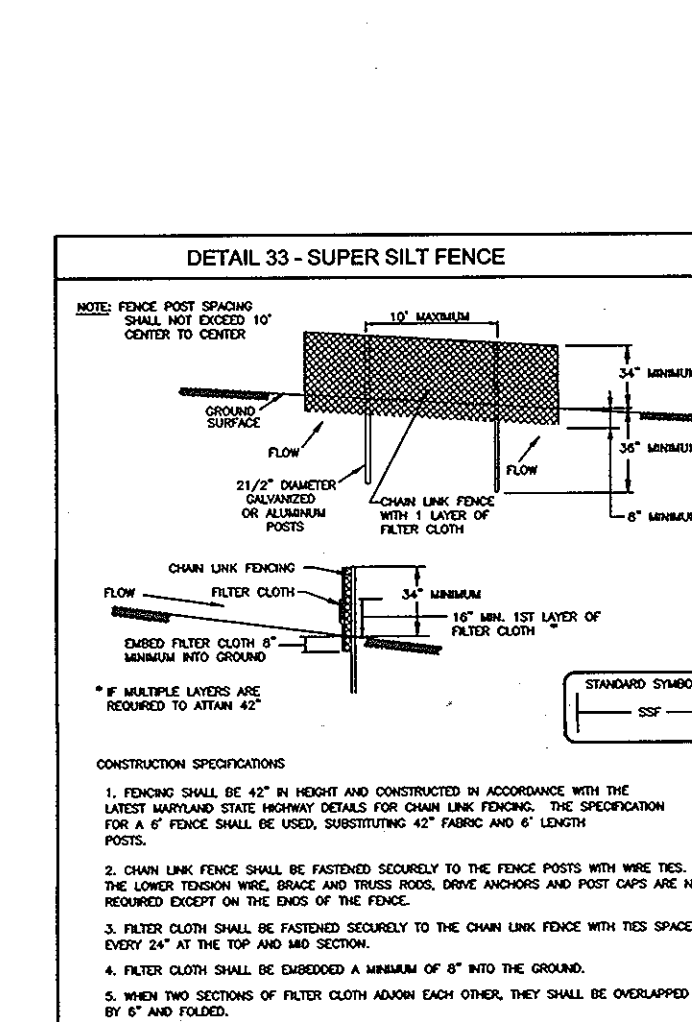
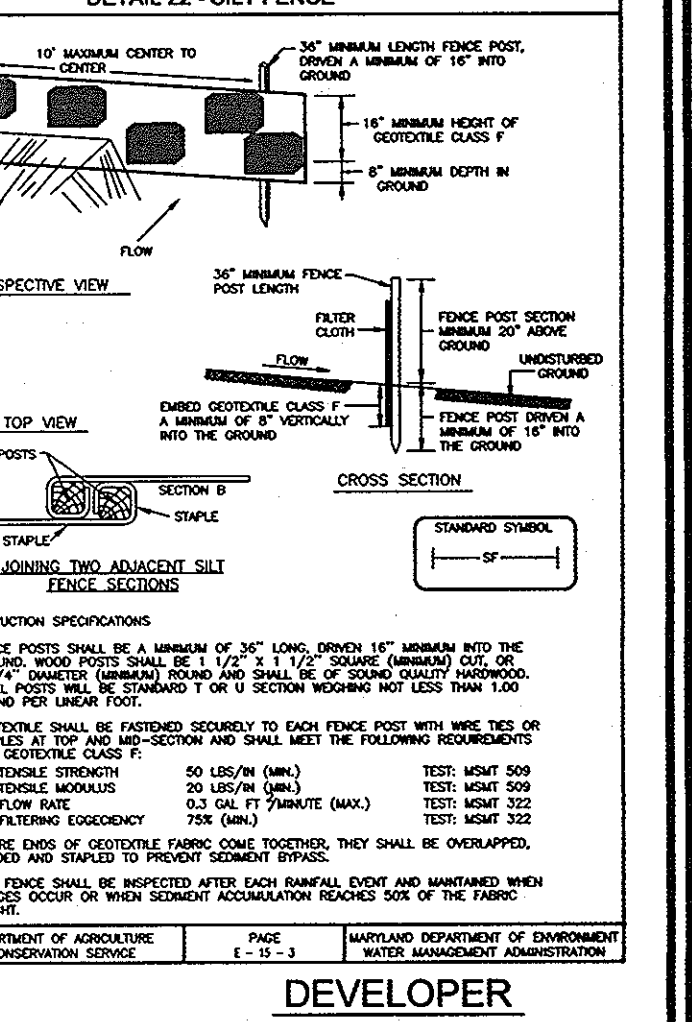
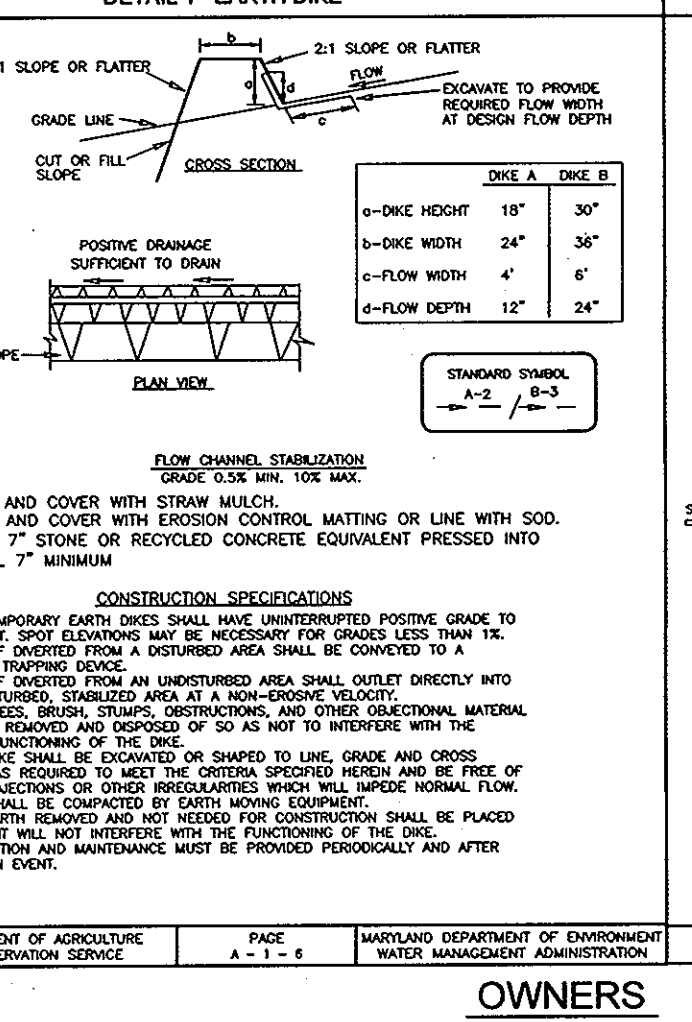
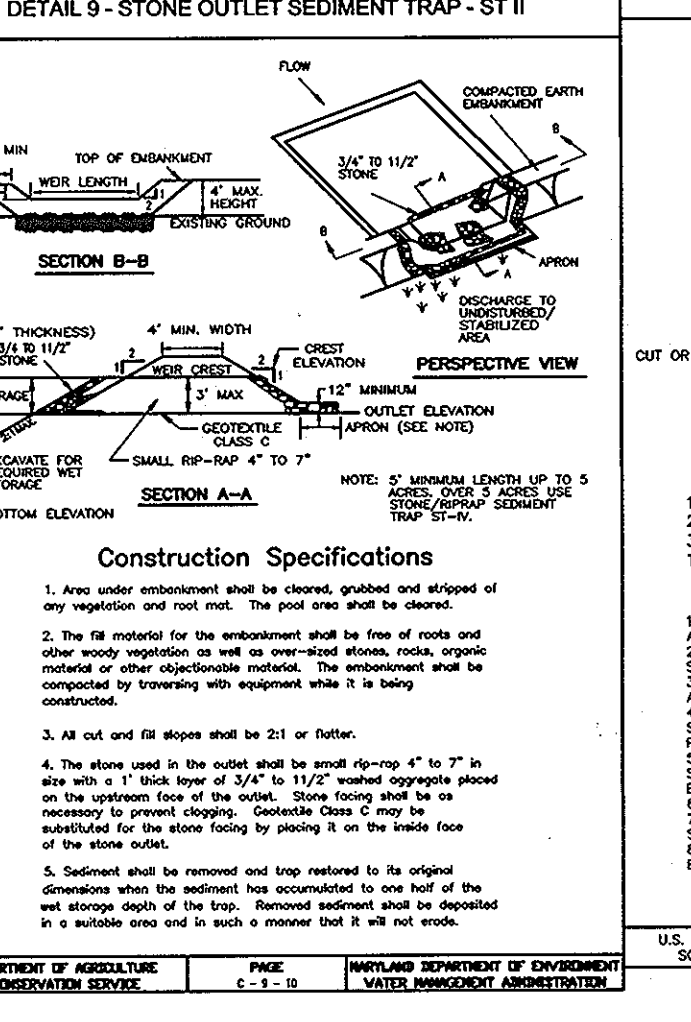
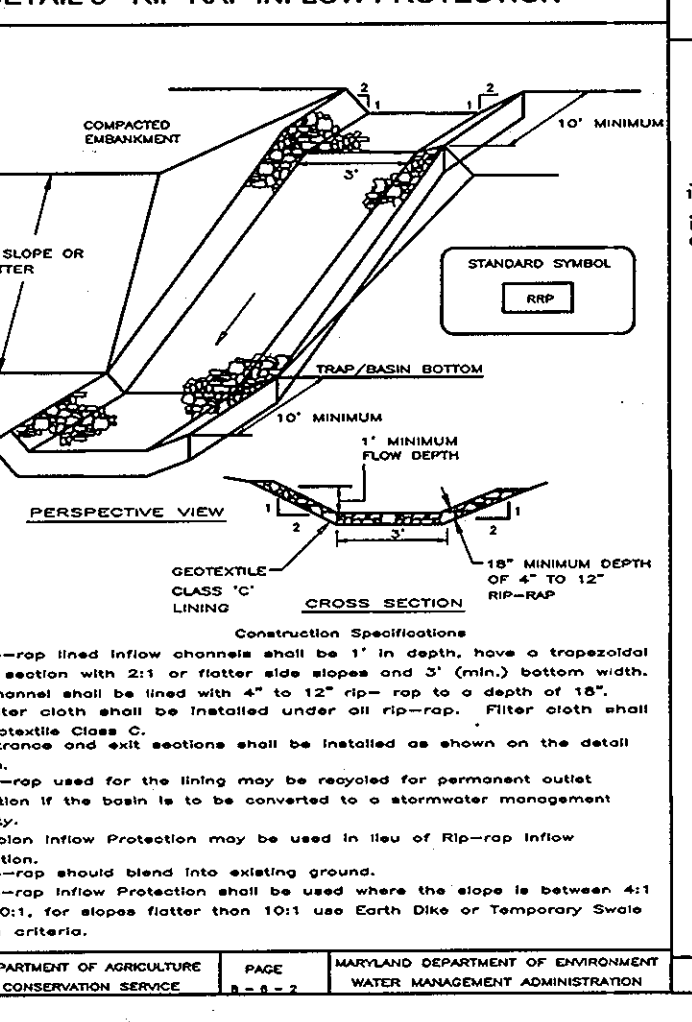
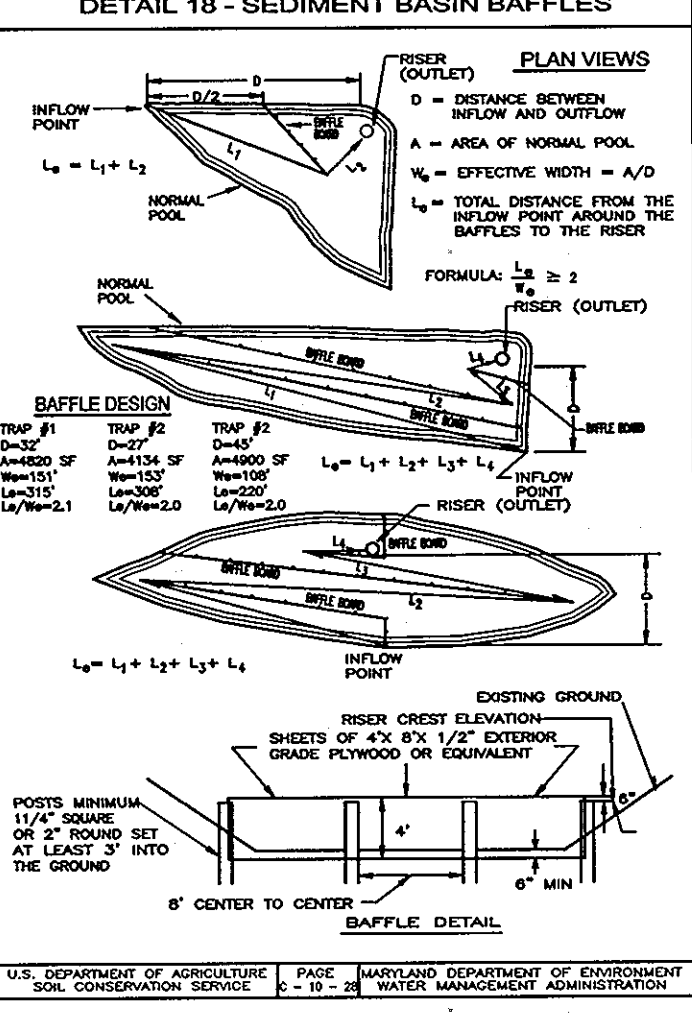
- SOIL AMENDMENTS: APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SO.FT.)
SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2 1/2 BUSHEL PER ACRE OF ANNUAL RYE (3 LBS. PER ACRE) FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (0.7 LBS./1000 SO.FT.) FOR THE PERIOD OF OCTOBER 15 THRU FEBRUARY 28, PROTECT SITE WITH 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOO.
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 18 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 NOT



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



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



APPROVED: DEPARTMENT OF PUBLIC WORKS
With 2. 11/11/11 8-12-2011
DATE
CHIEF, BUREAU OF HIGHWAYS
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
DATE
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.
DATE 7/28/2011

BY THE ENGINEER:
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A FEASIBLE 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.
DATE 7/28/11

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
DATE 7/28/11

CONSTRUCTION SPECIFICATIONS
1. LENGTH - MINIMUM OF 50' (30' FOR A SINGLE RESIDENCE LOT).
2. WIDTH - MINIMUM 10" SHOULD BE FLARED AT THE DISTINGUISH TO PROVIDE A 10" MINIMUM CLEARANCE.
3. GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE. THE PLAN APPROVAL AUTHORITY MAY NOT REQUIRE SINGLE FABRIC RESOURCES TO USE GEOTEXTILE.
4. STONE - CRUSHED AGGREGATE (2" TO 3") OR RECLAIMED OR RECYCLED CONCRETE.
5. SURFACE WATER - ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE KEPT THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A SUITABLE BARRIER FROM SILT, STONES AND A MINIMUM OF 10" MINIMUM COVER. THE PIPE HANG TO BE SET TO ACCORDING TO THE DRAINAGE, WHICH WILL USE A SUITABLE BARRIER FROM SILT, STONES AND A MINIMUM OF 10" MINIMUM COVER. THE PIPE SHALL BE REINFORCED WITH A MINIMUM OF 1" REINFORCEMENT.
6. LOCATION - A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC DIVERTS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE DRIVE DRAINAGE OF THE STABILIZED CONSTRUCTION ENTRANCE.

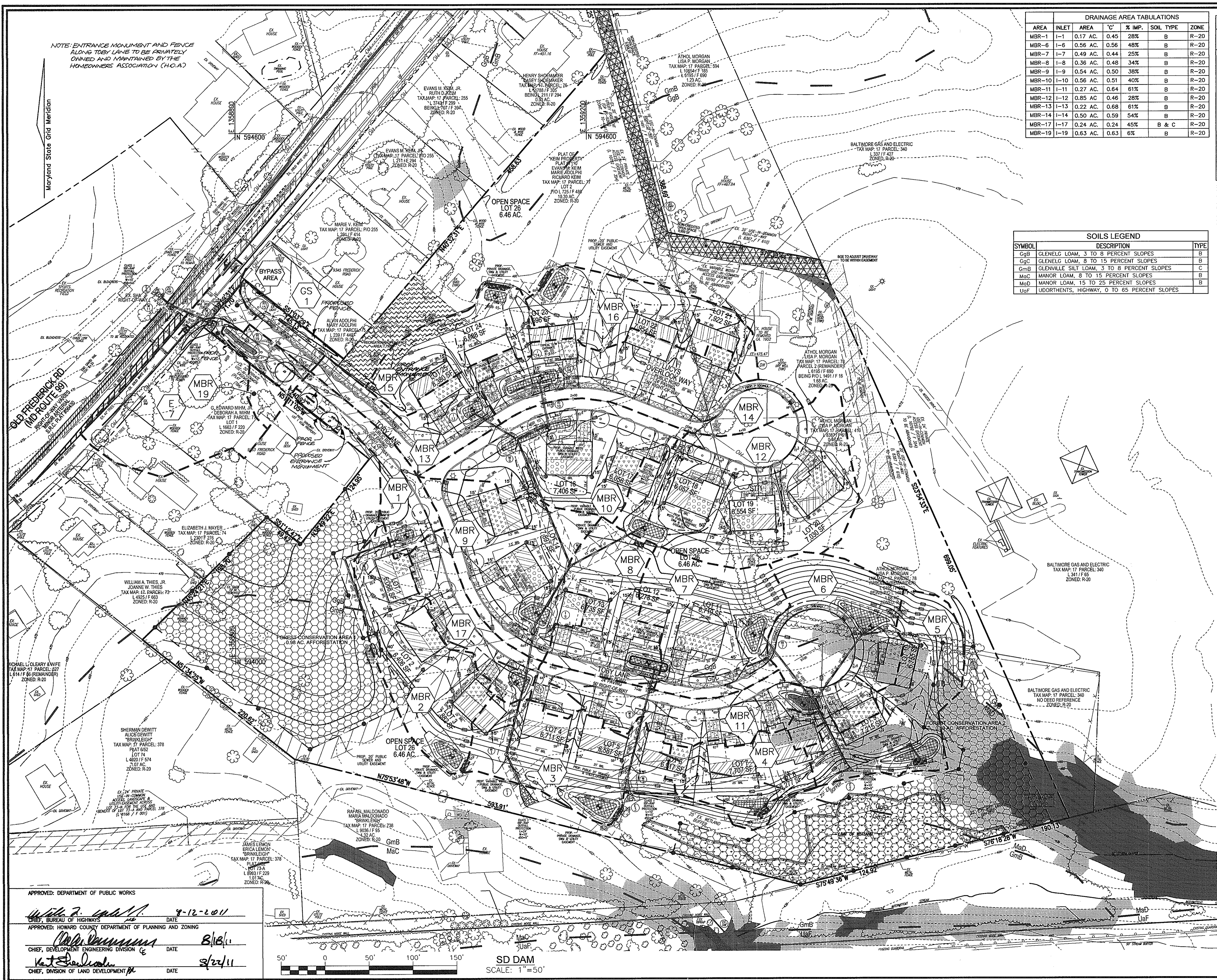
CONSTRUCTION SPECIFICATIONS
1. SEED AND COVER WITH STRAW MULCH.
2. SEED AND COVER WITH EROSION CONTROL MATTING OR LIME WITH SOO.
3. 4" - 7" STONE OR RECYCLED CONCRETE EQUIVALENT PRESSED INTO THE SOIL 7" MINIMUM.

OWNERS
PARCEL 77: EDWARD KEIM, 9339 ROUTE 99, ELLICOTT CITY, MD 21042
PARCEL 78 & 416: HOWARD LAND DEVELOPERS LLC, 9300 DORSEY HALL DR., STE. 102, ELLICOTT CITY, MARYLAND 21042-7819, ATTN: DONALD B. KEWLER, 443-367-0422
DEVELOPER
HOWARD LAND DEVELOPERS LLC, 9300 DORSEY HALL DR., STE. 102, ELLICOTT CITY, MARYLAND 21042-7819, ATTN: DONALD B. KEWLER, 443-367-0422

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. HOWARD COUNTY, MD. PARCELS: 77, 78, & 416. ZONING: R-20. 2ND ELECTION DISTRICT. TAX MAP: 17 GRID: 16. DPZ REF SF-87-100, ECP-10-013, SP-10-007, CONT. #14-4684-A, 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. PROFESSIONAL CERTIFICATE: DESIGN BY: RHV, DRAWN BY: JMR, CHECKED BY: RHV, DATE: JUNE 2011, SCALE: AS SHOWN, W.O. NO.: 10-06, 7 SHEET OF 12.

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	I-1	0.17 AC.	0.45	28%	B	R-20
MBR-6	I-6	0.56 AC.	0.56	48%	B	R-20
MBR-7	I-7	0.49 AC.	0.44	25%	B	R-20
MBR-8	I-8	0.36 AC.	0.48	34%	B	R-20
MBR-9	I-9	0.54 AC.	0.50	39%	B	R-20
MBR-10	I-10	0.56 AC.	0.51	40%	B	R-20
MBR-11	I-11	0.27 AC.	0.64	61%	B	R-20
MBR-12	I-12	0.85 AC.	0.46	28%	B	R-20
MBR-13	I-13	0.22 AC.	0.68	61%	B	R-20
MBR-14	I-14	0.50 AC.	0.59	54%	B	R-20
MBR-17	I-17	0.24 AC.	0.24	45%	B & C	R-20
MBR-19	I-19	0.63 AC.	0.63	6%	B	R-20

SOILS LEGEND		
SYMBOL	DESCRIPTION	TYPE
GcB	GLENELG LOAM, 3 TO 9 PERCENT SLOPES	B
GcC	GLENELG LOAM, 8 TO 15 PERCENT SLOPES	B
GmB	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C
MaC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B
MoD	MANOR LOAM, 15 TO 25 PERCENT SLOPES	B
UoF	UDORTMENTS, HIGHWAY, 0 TO 65 PERCENT SLOPES	B

ESDV Summary										
LOCATION	DA	Adjusted PE		*Practices				GC	ESDV VOLUME	
		MBR	SFC	RB	RD	RD	GC			
MBR-1	0.17	1.22	Y	N	N	N	N	N	210 CF	
MBR-2	0.48	1.14	Y	N	N	N	N	N	551 CF	
MBR-3	0.49	1.15	Y	N	N	N	N	N	475 CF	
MBR-4	0.27	1.14	Y	N	N	N	N	N	274 CF	
MBR-5	0.45	1.15	Y	N	N	N	N	N	226 CF	
MBR-6	0.56	1.16	Y	N	N	N	N	N	959 CF	
MBR-7	0.49	1.18	Y	N	N	N	N	N	390 CF	
MBR-8	0.36	1.17	Y	N	N	N	N	N	326 CF	
MBR-9	0.54	1.17	Y	N	N	N	N	N	584 CF	
MBR-10	0.56	1.19	Y	N	N	N	N	N	1061 CF	
MBR-11	0.27	1.22	Y	N	N	N	N	N	449 CF	
MBR-12	0.85	1.18	Y	N	N	N	N	N	639 CF	
MBR-13	0.22	1.20	Y	N	N	N	N	N	175 CF	
MBR-14	0.50	1.20	Y	N	N	N	N	N	675 CF	
MBR-15	0.30	1.12	Y	N	N	N	N	N	203 CF	
MBR-16	0.42	1.15	Y	N	N	N	N	N	260 CF	
MBR-17	0.24	1.22	Y	N	N	N	N	N	335 CF	
MBR-19	0.11	1.22	Y	N	N	N	N	N	360 CF	
GS-1	0.10	1.22	N	N	N	N	N	Y	165 CF	

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

LEGEND:

---	PROPERTY LINE	---	EXISTING FENCE
---	RIGHT-OF-WAY LINE	---	CENTLINE OF EXISTING STREAM
---	ADJACENT PROPERTY LINE	---	PROPOSED STORMDRAIN
---	EXISTING CURB AND GUTTER	---	PROPOSED STORMDRAIN INLET
---	EXISTING UTILITY POLE	---	PROPOSED CURB
---	EXISTING LIGHT POLE	---	PROPOSED STREET LIGHT
---	EXISTING MAILBOX	---	PROPOSED CONTOUR
---	EXISTING SIGN	---	PROPOSED SPOT ELEVATION
---	EXISTING SANITARY MANHOLE	---	PROPOSED MODERATE SLOPES
---	EXISTING SANITARY LINE	---	PROPOSED STEEP SLOPES
---	EXISTING CLEARHOOT	---	FOREST CONSERVATION AREA (AFFORESTATION)
---	EXISTING FIRE HYDRANT	---	RECREATIONAL OPEN SPACE
---	EXISTING WATER LINE	---	PROF. PUBLIC DRAINAGE, SHER & UTILITY EASEMENT
---	EXISTING CONTOUR	---	PROF. PUBLIC DRAINAGE, SMC & UTILITY EASEMENT
---	SOILS	---	PROF. PRIVATE DRAINAGE, SMC & UTILITY EASEMENT
---	EXISTING USE-IN-COMMON EASEMENT (L 1491 / F 160, 8307 / F 610)	---	PROF. PUBLIC DRAINAGE & UTILITY EASEMENT
---	EXISTING USE-IN-COMMON ACCESS EASEMENT (L 10792 / F 354) (PLAT #7110)	---	PROF. PUBLIC DRAINAGE & UTILITY EASEMENT
---	EXISTING TREELINE (FIELD LOCATED)	---	PERFORABLE CONCRETE
---	EXISTING TREES (FIELD LOCATED)	---	RANWATER HARVESTING & ROOFTOP DISCONNECTS (RAIN BARRELS)
---	ROOFTOP DISCONNECTS	---	GRASS SWALE
---	RAIN BARREL ONLY	---	DRAINAGE AREA DIVIDE
---	PERFORABLE CONCRETE	---	
---	RANWATER HARVESTING & ROOFTOP DISCONNECTS (RAIN BARRELS)	---	
---	GRASS SWALE	---	
---	DRAINAGE AREA DIVIDE	---	

OWNERS
 PARCEL 77: EVANS M. KEIM, 9339 ROUTE 99, ELICOTT CITY, MD 21042
 PARCEL 78 & 416: ATHOL MORGAN, 5305 DORSEY HALL DR, STE 102, ELICOTT CITY, MARYLAND 21042-7819, ATTN: MR. DONALD R. REILWER, 443-367-0422

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

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 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, ELICOTT 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. MY LICENSE NO. IS 16153. EXPIRATION DATE: 09-27-2012.

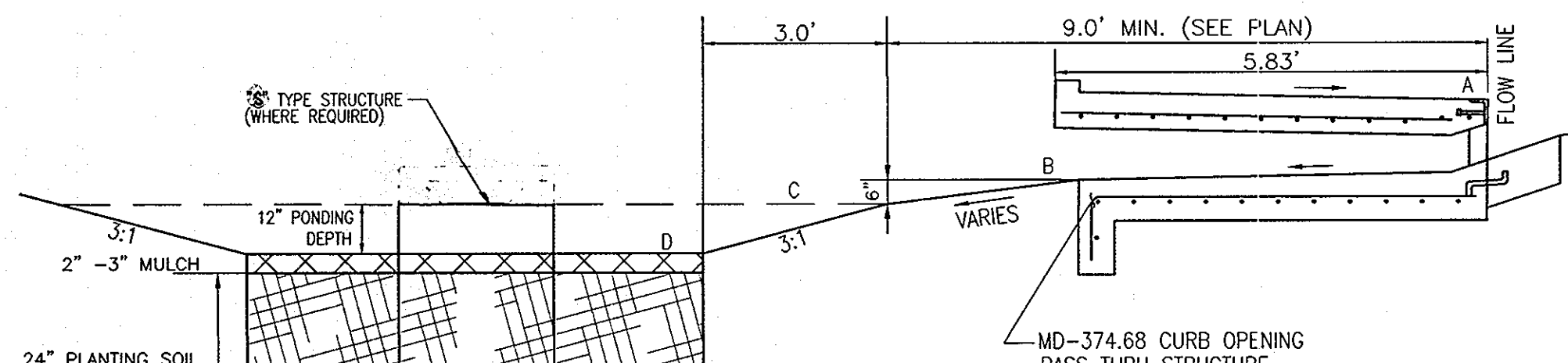
8 SHEET OF 12

APPROVED: DEPARTMENT OF PUBLIC WORKS
 DATE: 9-12-2011

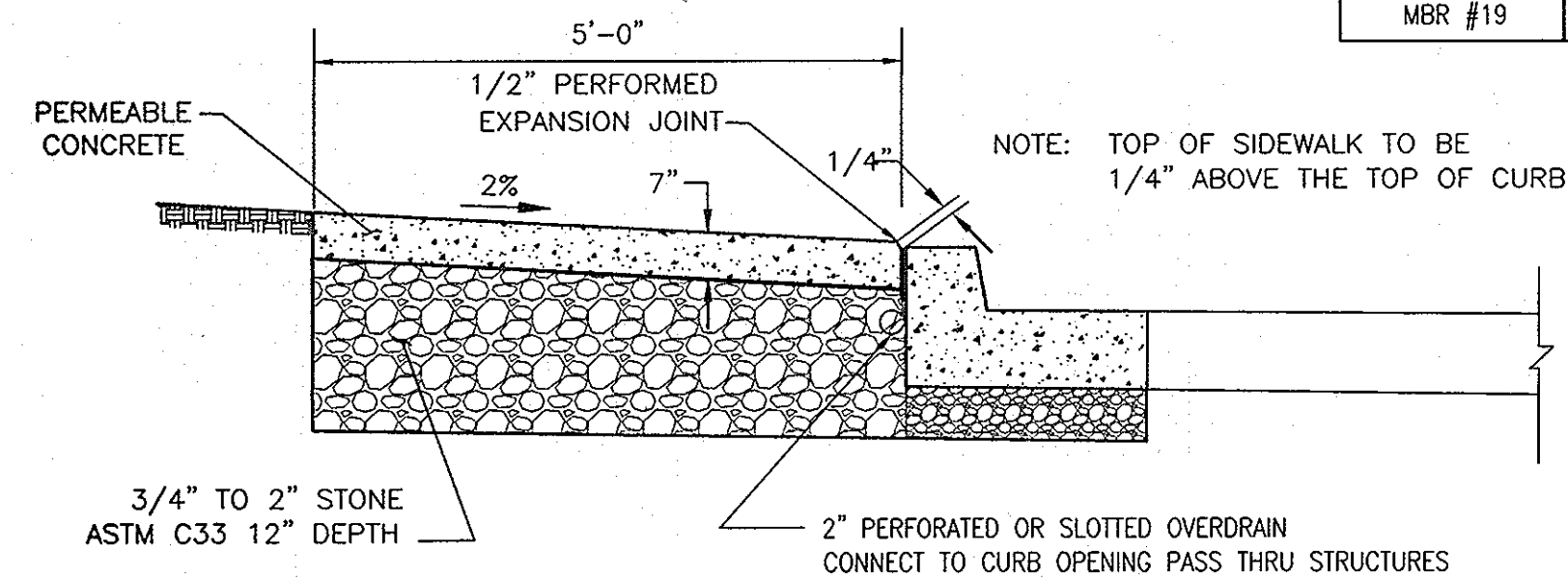
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 DATE: 8/18/11

APPROVED: DATE: 8/24/11





MBR FACILITY	A	B	C	D	SURFACE AREA	APPROX. DIMENSIONS
MBR #1	469.09	467.9	467.0	466.0	152 SF	19' x 8'
MBR #6	457.80	456.4	456.0	455.0	728 SF	49' x 20'
MBR #7	459.60	458.2	457.5	456.5	464 SF	37' x 18'
MBR #8	462.38	461.1	460.5	459.5	332 SF	42' x 8'
MBR #9	465.40	464.1	463.5	462.5	483 SF	28' x 18'
MBR #10	467.78	466.5	466.0	465.0	673 SF	83' x 8'
MBR #11	459.60	458.2	457.5	456.5	376 SF	35' x 13'
MBR #13	468.27	467.0	466.5	465.5	239 SF	23' x 11'
MBR #14	467.78	466.5	466.0	465.0	473 SF	56' x 9'
MBR #17	465.28	463.9	463.5	462.5	308 SF	22' x 15'
MBR #19	471.80	470.6	471.2	470.2	206 SF	44' x 5'



- DETAIL - PERMEABLE CONCRETE WALK**
NOT TO SCALE
1. SIDEWALK TO BE SCRIBED IN 5'-0" MAXIMUM SQUARES.
 2. EXPANSION JOINTS ACROSS THE SIDEWALK NOT TO BE MORE THAN 15' APART.
 3. 1/2" PREFORMED EXPANSION MATERIAL IN EXPANSION JOINTS TO BE KEPT 1/4" ABOVE SURFACE OF SIDEWALK.
 4. WHEN SIDEWALK ABUTS CURB, SIDEWALK SHALL BE 1/4" ABOVE CURB WITH 1/2" PREFORMED EXPANSION JOINT BETWEEN SIDEWALK AND CURB.
 5. ON LONGITUDINAL SIDEWALK GRADES OF 5% OR GREATER, A CONCRETE HEADER, 6" THICK AND 6" DEEP BELOW THE NORMAL 4" SIDEWALK THICKNESS SHALL BE CONSTRUCTED FOR THE FULL WIDTH OF THE SIDEWALK AT INTERVALS OF 40 FEET. THE HEADERS SHALL BE PLACED AT THE EXPANSION JOINT LOCATIONS AND SHALL BE MONOLITHIC WITH THE SIDEWALK.
 6. SIDEWALK WIDTH ADJACENT TO CURB SHALL BE 5" MINIMUM EXCEPT SIDEWALK ADJACENT TO CURB IN CUL-DE-SAC BUILDS MAY BE 4'-0" WIDE.

Cement shall be per AASHTO M85 Air Entraining - Type II Portland type, gray color. Mix and Deliver concrete in accordance with ASTM C94/CSM, Option C with the following criteria: Tensile Strength: 500 psi at 28 days, Compressive Strength: 3000 psi at 28 days, Unit Weight: 130 pounds/cf. Stoen shall be No. 8 coarse aggregate per ASTM C33

8. CONCRETE MIX SHALL BE DESIGNED BY GEO TECHNICAL CONSULTANT.
9. BASE BELOW THE CURB SHALL CONSIST OF GRADED AGGREGATE BASE(GAB).

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

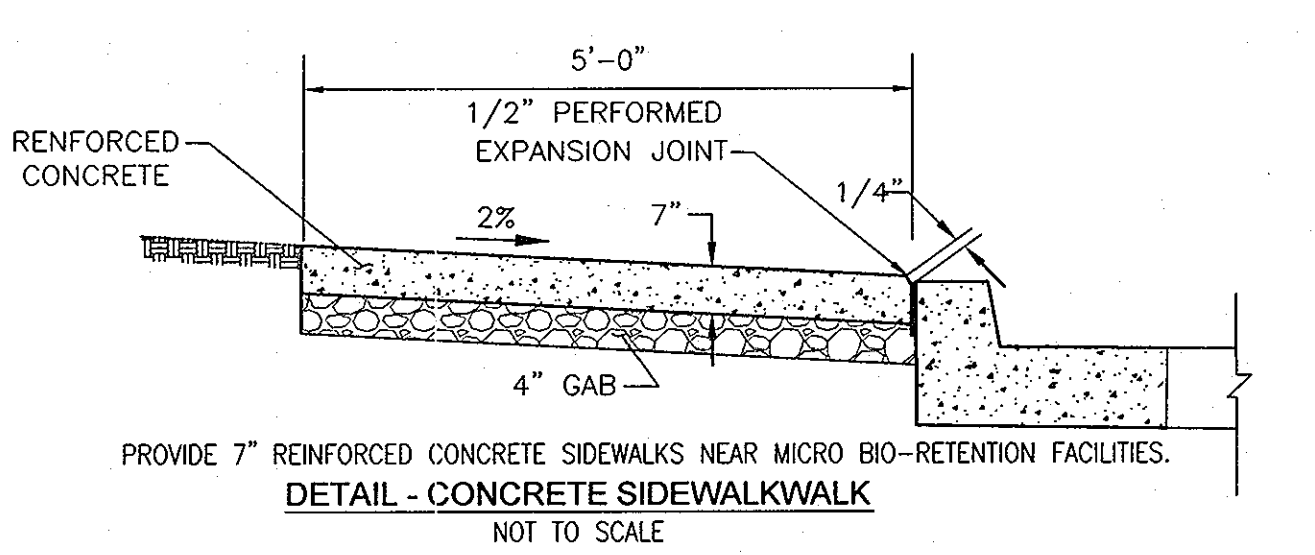
- The Owner shall periodically sweep (or vacuum porous concrete pavement) the pavement surfaces to reduce sediment accumulation and ensure continued surface porosity. Sweeping should be performed at least twice annually with a commercial cleaning unit. Washing or compressed air units should not be used to perform surface cleaning.
- The Owner shall periodically clean drainage pipes, inlets, stone edge drains and other structures within or draining to the subbase.
- The Owner shall use deicers in moderation. Deicers should be non-toxic and be applied either as calcium magnesium acetate or as pre-treated salt.
- The Owner shall ensure snow plowing is performed carefully with blades set one-inch above the surface. Plowed snow piles and snowmelt should not be directed to permeable pavement.

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 lead 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.

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

- Maintenance of areas receiving disconnected runoff is generally no different than that required for other lawn or landscaped areas. The Owner shall ensure the areas receiving runoff are protected from future compaction or development of impervious areas. In commercial areas, foot traffic should be discouraged as well.



PROVIDE 7" REINFORCED CONCRETE SIDEWALKS NEAR MICRO BIO-RETENTION FACILITIES.
DETAIL - CONCRETE SIDEWALK WALK
NOT TO SCALE

APPROVED: DEPARTMENT OF PUBLIC WORKS
BY THE DEVELOPER: [Signature] DATE: 8/22/11
BY THE ENGINEER: [Signature] DATE: 7/29/11

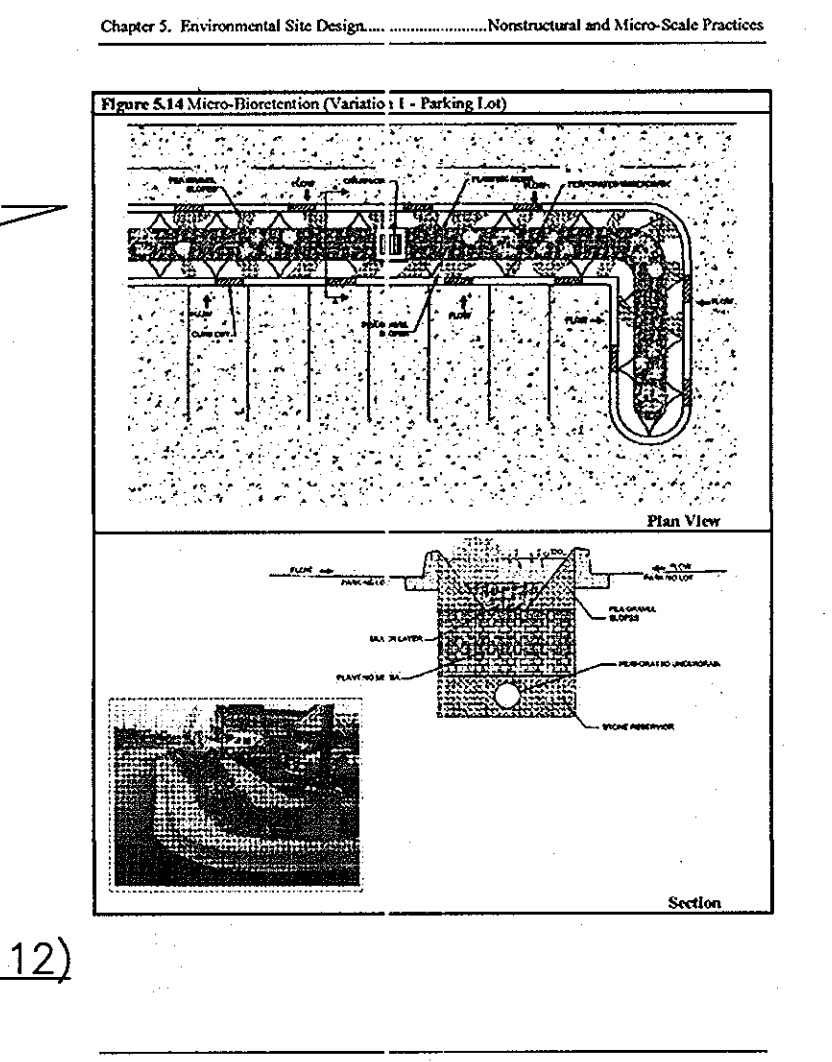
BUSHMAN BRIT205 Round Tank

For use with BRIT205 round tank from BUSHMAN designed for above ground installation in a well-ventilated area. The tank has a 205 US Gallon (775 Liter) capacity and is available in several popular colors with UV stabilizers to resist fading. The BRIT205 can be ordered as a basic tank with additional tank accessories.

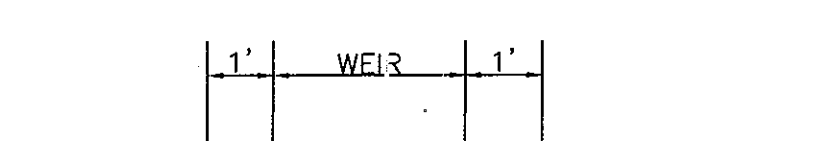
Features & Benefits

- Water capacity of over 20 gallons rain barrels
- High quality resin coated polypropylene construction assures maximum strength
- One-piece construction and horizontal ribs around the tank provide added wall strength
- Light weight with integrated screen and cover
- Overflow assembly provided with mosquito screen and 90 degree elbow
- Tank openings are pre-drilled for easy installation
- BUSHMAN'S "V" Varnish

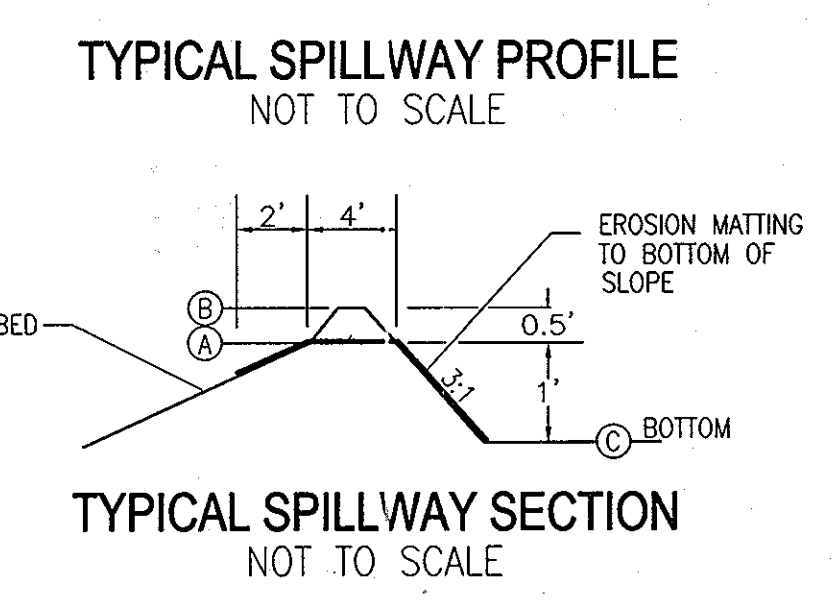
BUSHMAN BRIT205 (205 GALLON) RAIN HARVESTING SYSTEM OR EQUIVALENT RAIN BARREL DETAIL
NOT TO SCALE



MDE DETAIL M-6
NOT TO SCALE



TYPICAL SPILLWAY PROFILE
NOT TO SCALE



TYPICAL SPILLWAY SECTION
NOT TO SCALE

MBR FACILITY	A	B	C	SURFACE AREA	WEIR LENGTH	APPROX. DIMENSIONS
MBR #2	453.00	453.50	452.00	446 SF	15 LF	37' x 14'
MBR #3	447.70	448.20	446.70	537 SF	15 LF	42' x 16'
MBR #4	450.80	451.30	449.80	310 SF	15 LF	38' x 10'
MBR #5	447.80	448.00	446.80	566 SF	15 LF	52' x 13'
MBR #15	463.33	463.83	462.33	267 SF	20 LF	24' x 12'
MBR #16	460.50	461.00	459.50	383 SF	20 LF	32' x 12'

WATER WAS ENCOUNTERED FOR MBR#14 AT ELEV. 442.5. BOTTOM OF FACILITY IS 446.5. WATER WAS ENCOUNTERED FOR MBR#15 AT ELEV. 455.0. BOTTOM OF FACILITY IS 459.0.

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

HOWARD S.C.D.

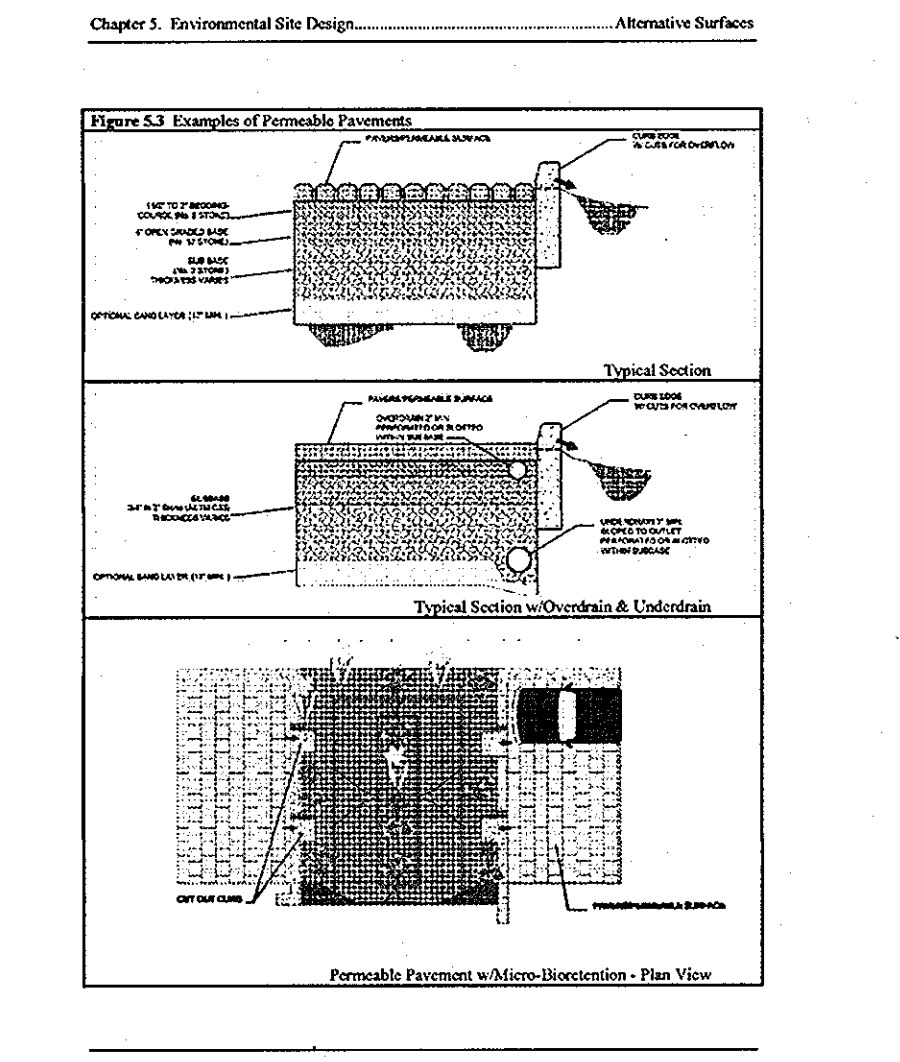
BUSHMAN BRIT205 Rain Harvesting System

For use with BRIT205 round tank from BUSHMAN designed for above ground installation in a well-ventilated area. The tank has a 205 US Gallon (775 Liter) capacity and is available in several popular colors with UV stabilizers to resist fading. The BRIT205 can be ordered as a basic tank with additional tank accessories.

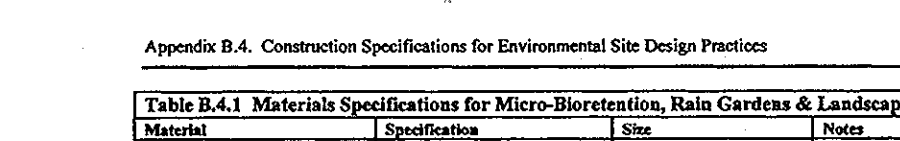
Features & Benefits

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- Light weight with integrated screen and cover
- Overflow assembly provided with mosquito screen and 90 degree elbow
- Tank openings are pre-drilled for easy installation
- BUSHMAN'S "V" Varnish

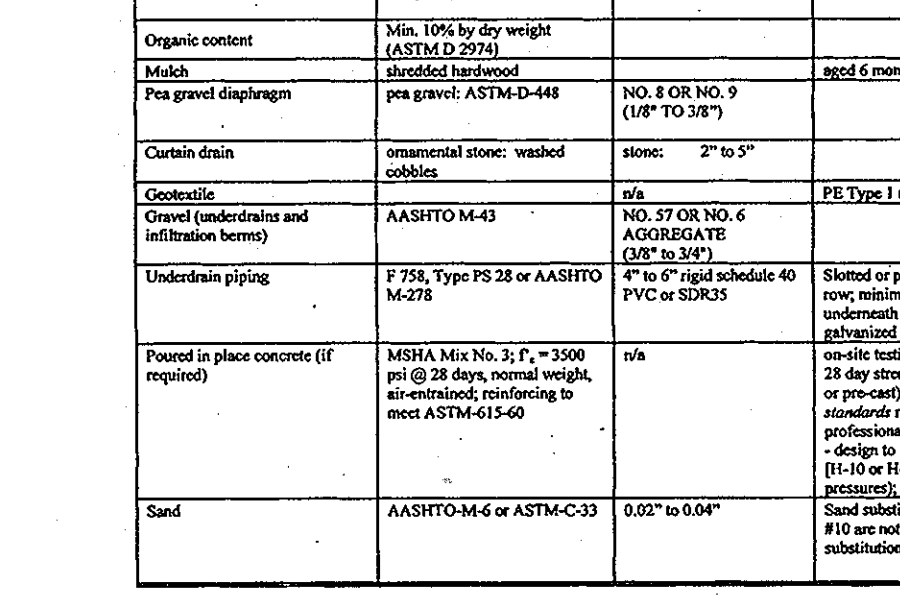
BUSHMAN BRIT205 (205 GALLON) RAIN HARVESTING SYSTEM OR EQUIVALENT RAIN BARREL DETAIL
NOT TO SCALE



MDE DETAIL A-2
NOT TO SCALE



TYPICAL SPILLWAY PROFILE
NOT TO SCALE



TYPICAL SPILLWAY SECTION
NOT TO SCALE

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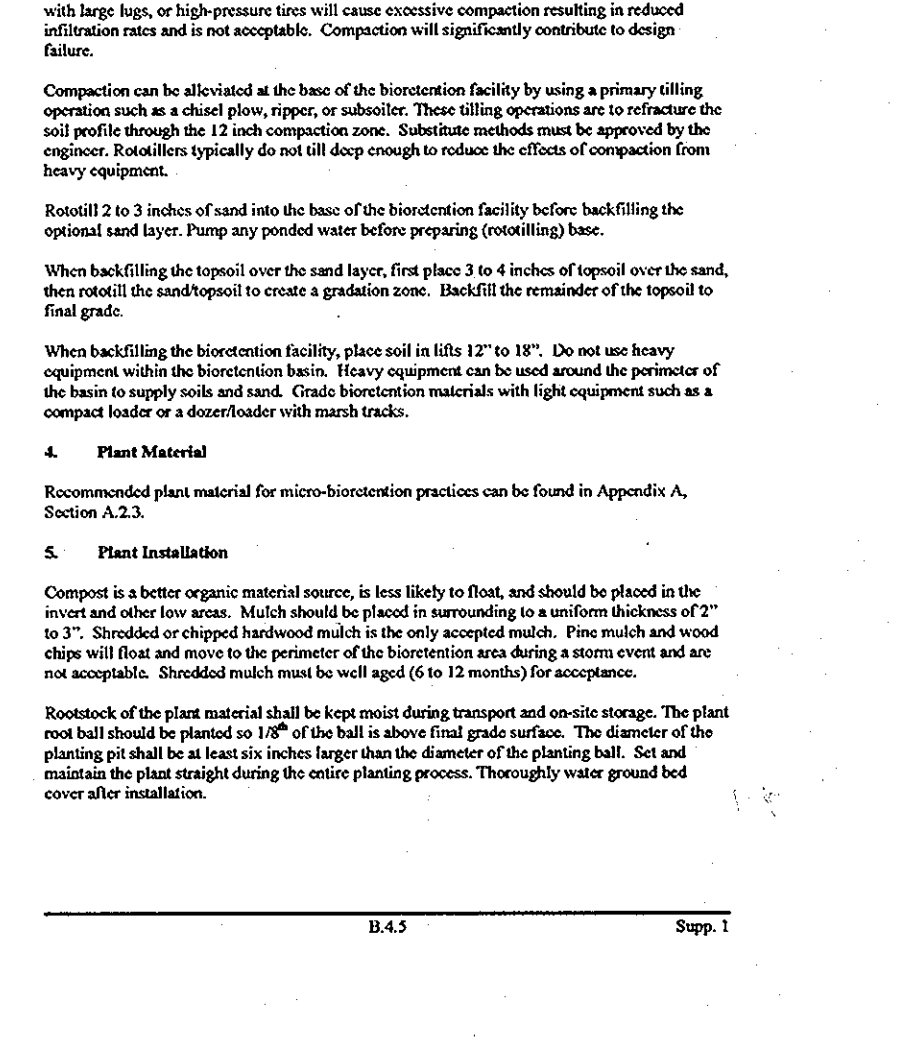
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Features & Benefits

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- High quality resin coated polypropylene construction assures maximum strength
- One-piece construction and horizontal ribs around the tank provide added wall strength
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- Overflow assembly provided with mosquito screen and 90 degree elbow
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- BUSHMAN'S "V" Varnish

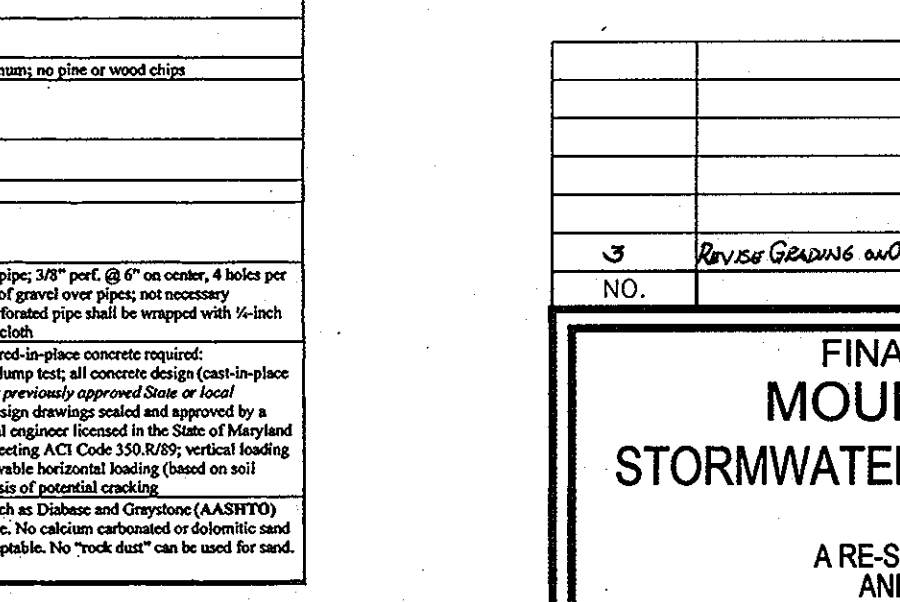
BUSHMAN BRIT205 (205 GALLON) RAIN HARVESTING SYSTEM OR EQUIVALENT RAIN BARREL DETAIL
NOT TO SCALE



MDE DETAIL A-2
NOT TO SCALE



TYPICAL SPILLWAY PROFILE
NOT TO SCALE



TYPICAL SPILLWAY SECTION
NOT TO SCALE

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HOWARD S.C.D.

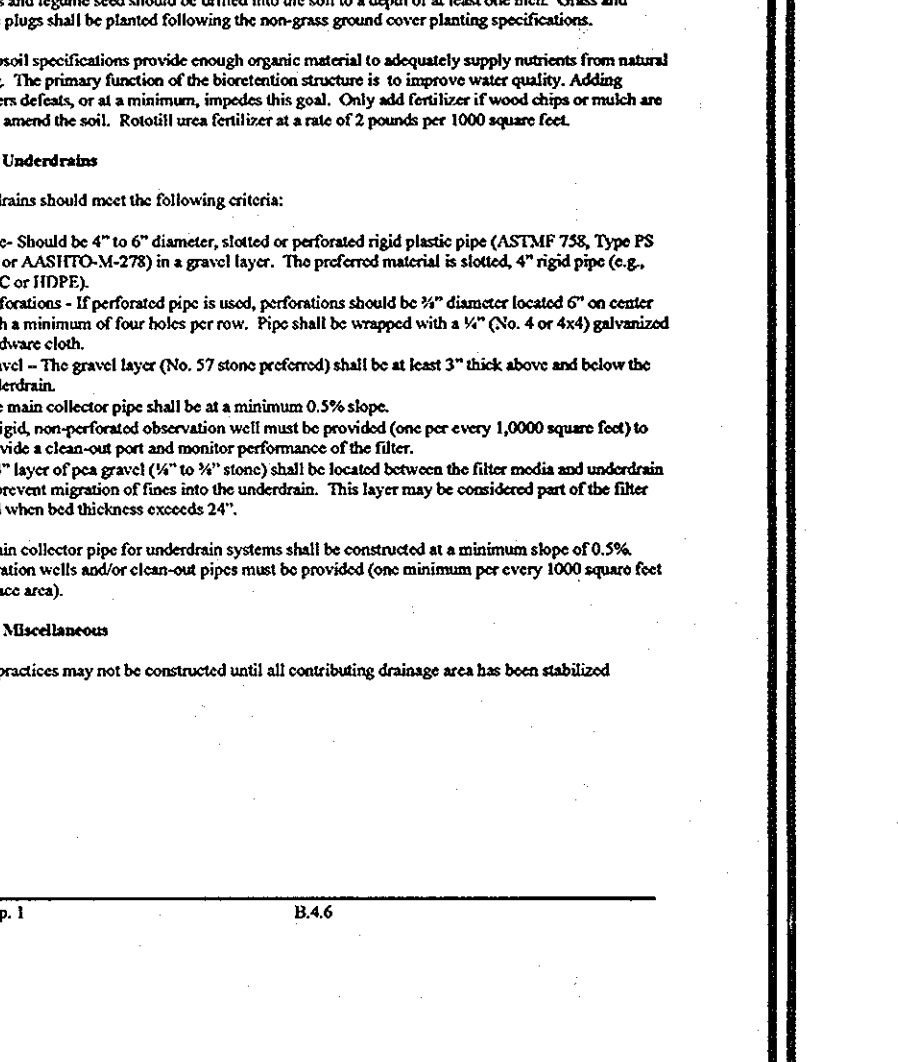
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Features & Benefits

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- High quality resin coated polypropylene construction assures maximum strength
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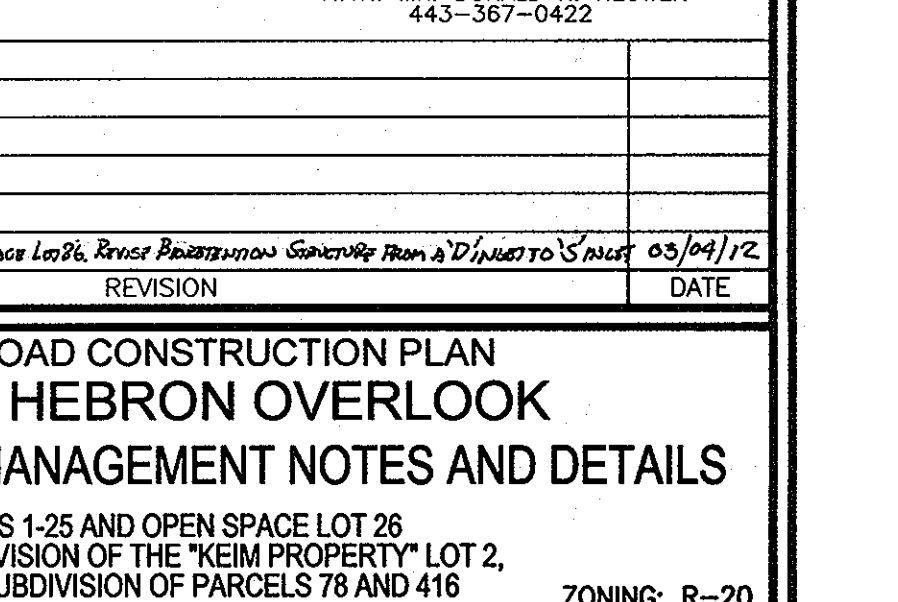
BUSHMAN BRIT205 (205 GALLON) RAIN HARVESTING SYSTEM OR EQUIVALENT RAIN BARREL DETAIL
NOT TO SCALE



MDE DETAIL A-2
NOT TO SCALE



TYPICAL SPILLWAY PROFILE
NOT TO SCALE



TYPICAL SPILLWAY SECTION
NOT TO SCALE

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

HOWARD S.C.D.

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

B.4.3. Specifications for Permeable Pavements & Reinforced Turf

This specification includes information on acceptable materials for typical applications and are not exclusive or limiting. The designer is responsible for developing detailed specifications for individual projects and specific conditions.

1. Previous Concrete Specifications

Design Thickness - Previous 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, AASHTO, AASHTO, AASHTO) or using structural values derived from flexible pavement design procedures.

Mix & Installation - Traditional Portland concrete (ASTM C 150, C 1157) may be used in previous concrete application. Phosphorus admixture may also be used. Materials should be tested (e.g., trial batches) prior to construction so that critical properties (e.g., setting time, rate of strength development, porosity, permeability) can be determined.

Aggregate - Previous concrete contains a limited fine aggregate content. Commonly used gradations include ASTM C 33 No. 67 (4 in. to No. 4), No. 5 (1/2 in. to No. 16) and No. 89 (1/4 in. to No. 70) sieves. Single-sized aggregate (top 1 inch) may also be used.

Water Content - Water content must be between 17 and 23% and used readily with proper inclusion of chemical admixture. Water quality should meet ACI 308. As a general rule, potable water should be used although recycled concrete production water meeting ASTM C 94 or AASHTO M 197 may also be used.

The planting soil shall be tested and shall meet the following criteria:

- Soil Component - Loamy Sand or Sandy Loam (Soil Textural Classification)
- Organic Content - Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of heavy sand (50%-60%) and compost (50% to 40%) or sandy loam (30%), coarse 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. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

Base Course - The base course shall be AASHTO No. 3 or 4 coarse aggregate with an assumed open pore space of 30% (or = 0.30).

2. Permeable Interlocking Concrete Pavements (PICP)

Paver Blocks - Blocks shall be either 3/4 in. or 4 in. thick, and meet ASTM C 936 or CSA 2231.2 requirements. Applications should have 20% coarse (40% perforated) interlocking surface area. Installation should follow manufacturer's instructions, except that lift and base course materials and dimensions specified in this Appendix shall be followed.

Grill Materials and Leveling Course - Opening shall be filled with ASTM C-33 graded sand or sandy loam. PICP blocks shall be placed on a one-inch thick leveling course of ASTM C-33

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

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1. Previous Concrete Specifications

Design Thickness - Previous 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, AASHTO, AASHTO, AASHTO) or using structural values derived from flexible pavement design procedures.

Mix & Installation - Traditional Portland concrete (ASTM C 150, C 1157) may be used in previous concrete application. Phosphorus admixture may also be used. Materials should be tested (e.g., trial batches) prior to construction so that critical properties (e.g., setting time, rate of strength development, porosity, permeability) can be determined.

Aggregate - Previous concrete contains a limited fine aggregate content. Commonly used gradations include ASTM C 33 No. 67 (4 in. to No. 4), No. 5 (1/2 in. to No. 16) and No. 89 (1/4 in. to No. 70) sieves. Single-sized aggregate (top 1 inch) may also be used.

Water Content - Water content must be between 17 and 23% and used readily with proper inclusion of chemical admixture. Water quality should meet ACI 308. As a general rule, potable water should be used although recycled concrete production water meeting ASTM C 94 or AASHTO M 197 may also be used.

The planting soil shall be tested and shall meet the following criteria:

- Soil Component - Loamy Sand or Sandy Loam (Soil Textural Classification)
- Organic Content - Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of heavy sand (50%-60%) and compost (50% to 40%) or sandy loam (30%), coarse 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. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

Base Course - The base course shall be AASHTO No. 3 or 4 coarse aggregate with an assumed open pore space of 30% (or = 0.30).

2. Permeable Interlocking Concrete Pavements (PICP)

Paver Blocks - Blocks shall be either 3/4 in. or 4 in. thick, and meet ASTM C 936 or CSA 2231.2 requirements. Applications should have 20% coarse (40% perforated) interlocking surface area. Installation should follow manufacturer's instructions, except that lift and base course materials and dimensions specified in this Appendix shall be followed.

Grill Materials and Leveling Course - Opening shall be filled with ASTM C-33 graded sand or sandy loam. PICP blocks shall be placed on a one-inch thick leveling course of ASTM C-33

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

B.4.3. Specifications for Permeable Pavements & Reinforced Turf

This specification includes information on acceptable materials for typical applications and are not exclusive or limiting. The designer is responsible for developing detailed specifications for individual projects and specific conditions.

1. Previous Concrete Specifications

Design Thickness - Previous 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, AASHTO, AASHTO, AASHTO) or using structural values derived from flexible pavement design procedures.

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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 CLEANOUP
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- SOILS
- 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
- CENTERLINE OF EXISTING STREAM
- PROPOSED STORMDRAIN
- PROPOSED STORMDRAIN INLET
- BC&E 40' GREEN ZONE
- BC&E 25' YELLOW ZONE
- PROP. PERMEABLE CONCRETE
- PROPOSED TREELINE
- PROPOSED CURB
- PROPOSED STREET LIGHT
- PROP. FOREST CONSERVATION (AFFORESTATION)
- RECREATIONAL OPEN SPACE
- PROP. NON-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
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED SHRUBS
- PROPOSED SHADE TREES
- PROPOSED EVERGREEN TREES
- PROPOSED LANDSCAPE BUFFER
- FOREST CONSERVATION SIGNS

SPECIMEN TREE CHART

NO.	SIZE	SPECIES NAME	COMMON NAME	CONDITION	COMMENTS
ST-1	39" DBH	Acer saccharinum	SILVER MAPLE	GOOD	TO BE REMOVED

J. Ogle
CHRIS OGLE
 BAK QUALIFIED PROFESSIONAL

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET.

OWNERS
 PARCEL 77
 EVANS M. KEIM
 2339 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 21042-7319
 ATTN: MR. DONALD R. REUWER
 443-367-0422

NO.	REVISION	DATE
2	ADD FENCE AND ENTRANCE MONUMENT, RELOCATE KEIM PROPERTY DRIVEWAY, RELOCATE STREET TREES AND SPEED LIMIT SIGN.	9/19/12
4	REMOVE FOREST CONSERVATION & ADD PUBLIC SEWER EASEMENT	8/11/15

FINAL ROAD CONSTRUCTION PLAN
MOUNT HEBRON OVERLOOK
LANDSCAPE AND FOREST CONSERVATION PLAN

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
 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

DESIGN BY: RHV
DRAWN BY: JMR
CHECKED BY: RHV
DATE: JUNE 2011
SCALE: AS SHOWN
W.O. NO.: 10-08

PROFESSIONAL CERTIFICATE
 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 09-27-2012

11 SHEET OF 12

APPROVED: DEPARTMENT OF PUBLIC WORKS
 8-12-2011
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 8/18/11
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED:
 8/23/11
 CHIEF, DIVISION OF LAND DEVELOPMENT

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.

D.M.M.
 SIGNATURE OF DEVELOPER
 7/29/2011
 DATE

LANDSCAPE PLAN
 SCALE: 1"=50'

INTERSTATE U.S. 70 (WEST BOUND)
 PRINCIPAL ARTERIAL
 PLAT #2282 AND #2287
 L 4217 F 406

GENERAL NOTES:

- 1. 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 DEVELOPER'S AGREEMENT FOR THIS PLAN.

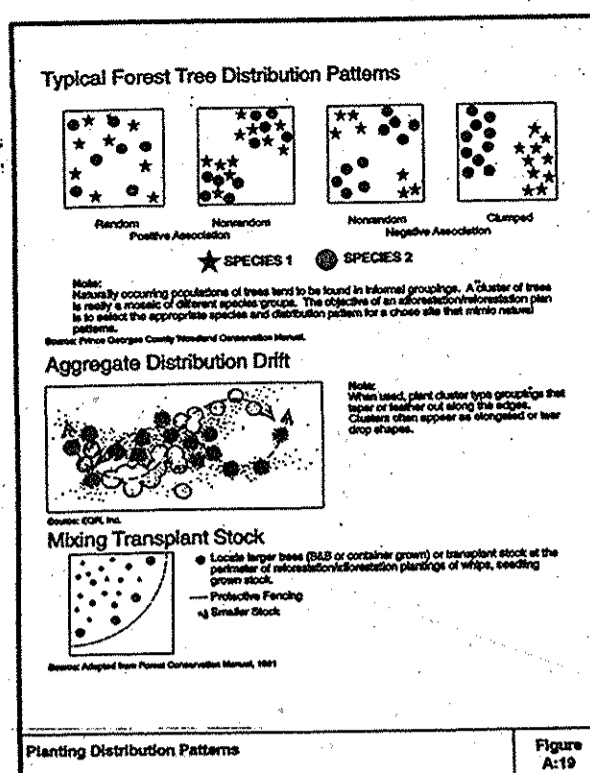
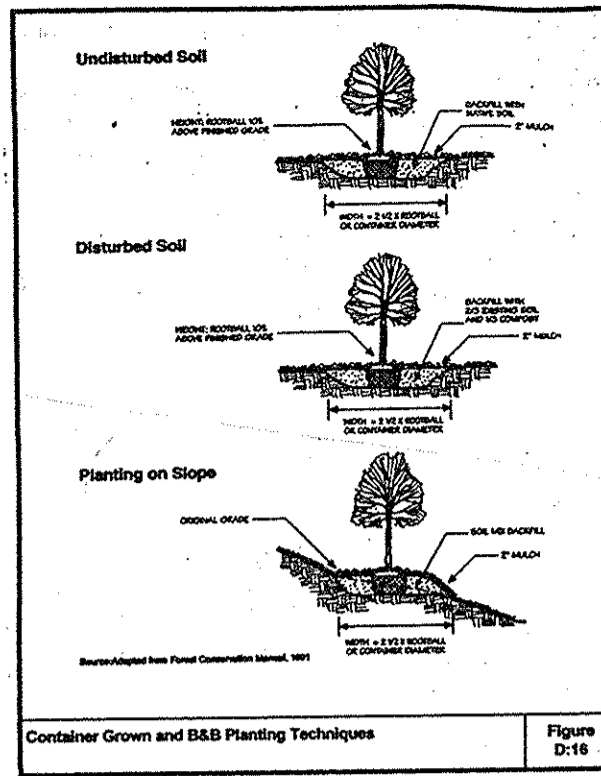


Table with 4 columns: Size, Number Planted per Area, Approximate Spacing, and Survivability. Includes rows for Site Stocking and various tree types.

HOWARD COUNTY FOREST CONSERVATION WORKSHEET

Table with 2 columns: ZONED R-20 NET TRACT AREA (A, B, C) and LAND USE CATEGORY (E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T).

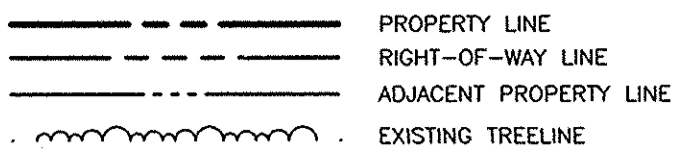
FOREST CONSERVATION EASEMENT HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.120 OF THE HOWARD COUNTY FOREST CONSERVATION MANUAL...

FINANCIAL SURETY IN THE AMOUNT OF \$40,729.00 (81,457 x 0.50) WILL BE POSTED WITH THE FOREST CONSERVATION MAINTENANCE AGREEMENT.

PLANT SCHEDULE table with columns: BOTANICAL NAME, AREA 1, AREA 2, SIZE, SPACING (FT). Lists various tree species like Acer rubrum, Liquidambar, etc.

*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.

LEGEND



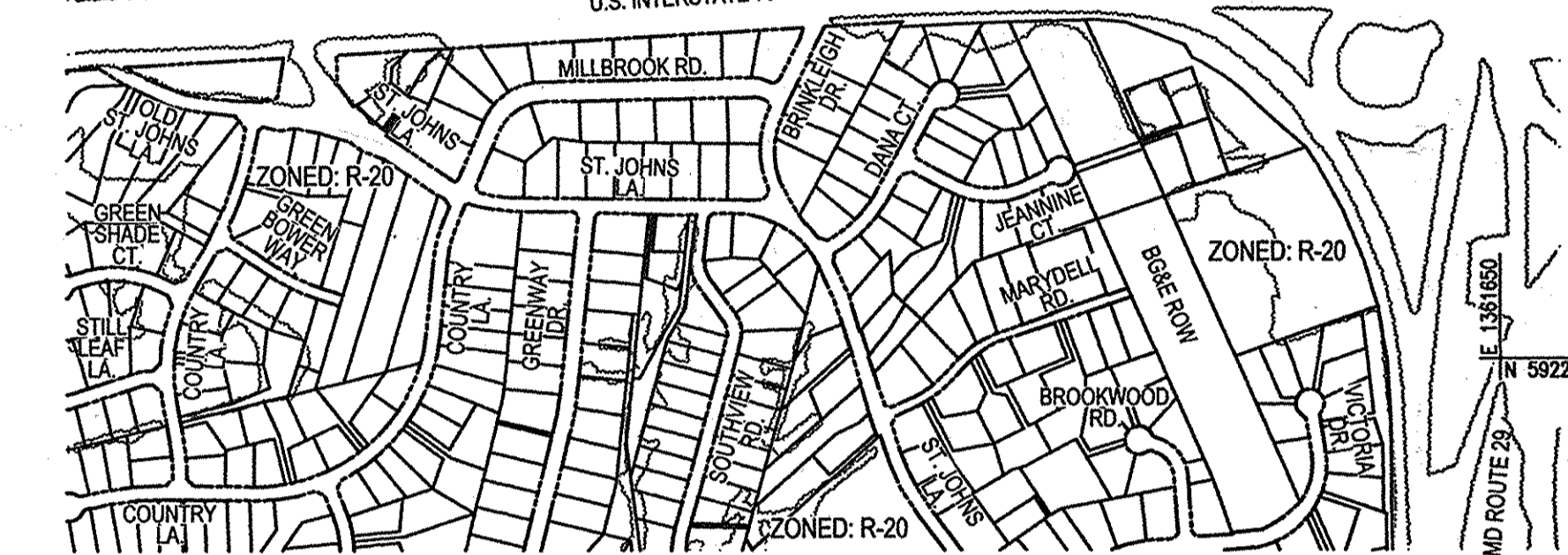
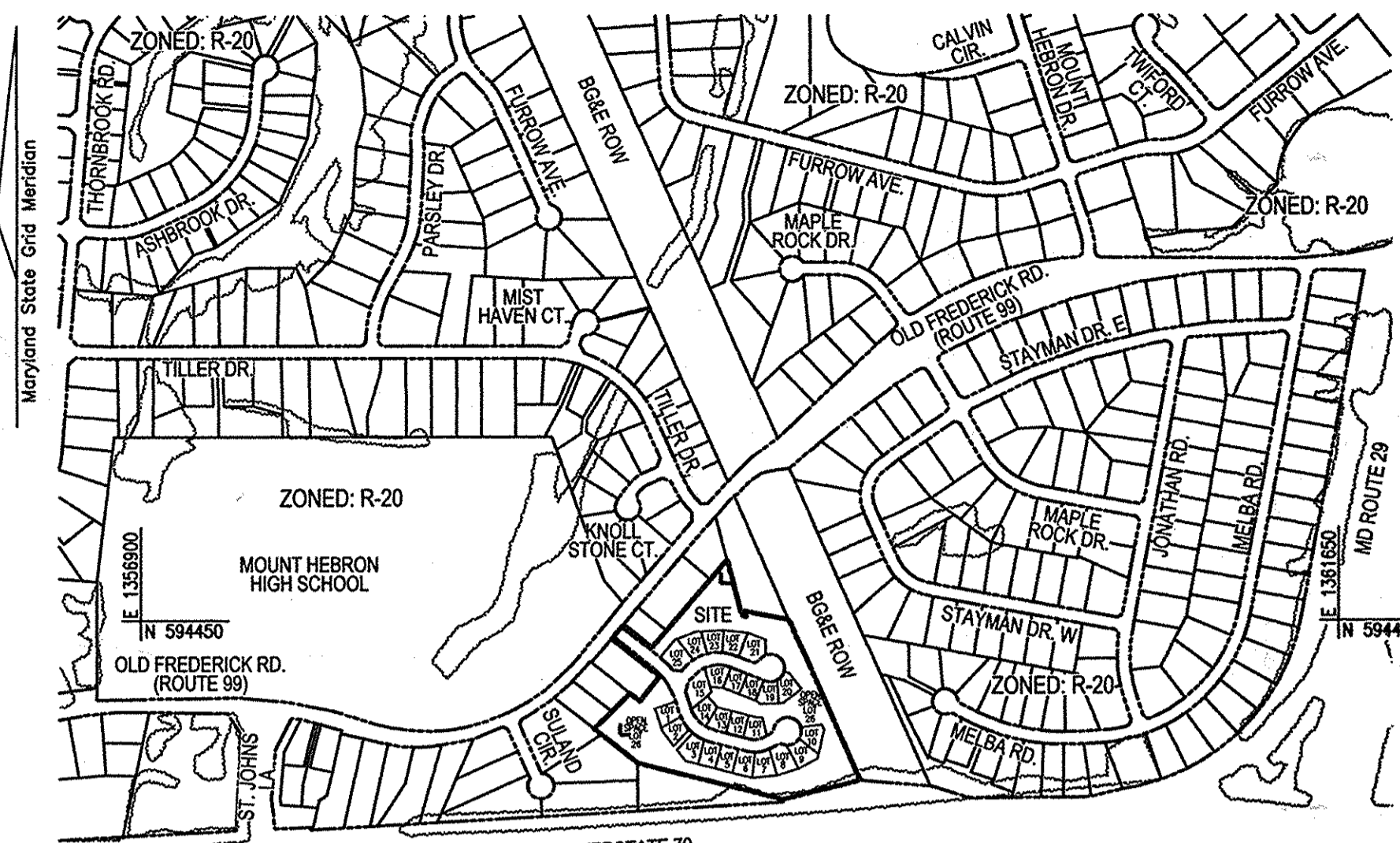
AFFORESTATION PROVIDED - AREA-1

0.90 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

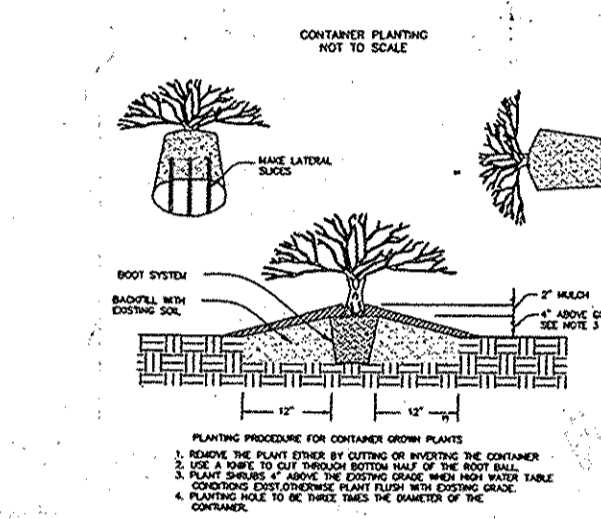
NOTE: ALL TREE SUBSTITUTIONS MUST BE APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING



VICINITY MAP SCALE: 1"=600'

LANDSCAPE NOTES

- 1. 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 CONDITION...



LANDSCAPE SCHEDULE NOTE

- 1. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT ANS SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HRD PLANTING SPECIFICATIONS.

B & E NOTES:

- 1. THE LANDSCAPING ON WIREZONE (40' FROM BGE POLES) IS IN ACCORDANCE WITH BGE LIST OF TREES AND PLANTS.

BIORETENTION PLANTING SCHEDULE NOTES:

- 1. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT ANS SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HRD PLANTING SPECIFICATIONS.

AFFORESTATION PLANTING NOTES

- 1. AFFORESTATION AREAS MAY BE PLANTED AS SOON AS REASONABLE TO DO SO. LATE WINTER-EARLY SPRING PLANTINGS ARE PREFERRED.

AFFORESTATION AREA MONITORING NOTES

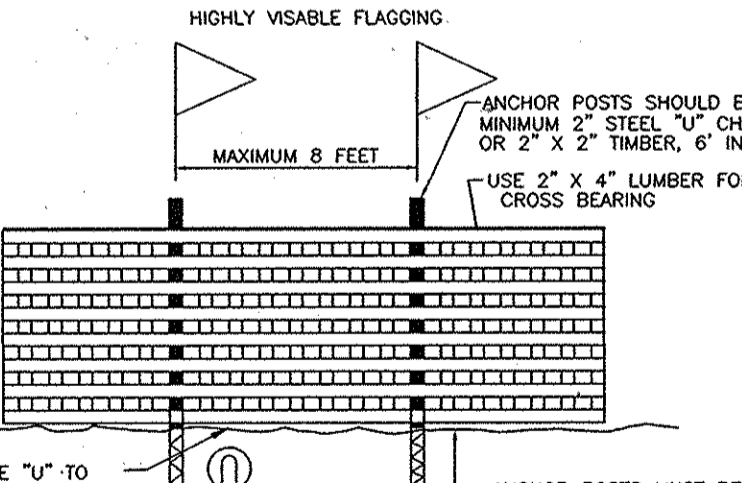
- 1. MONTHLY VISITS DURING THE FIRST GROWING SEASON ARE TO ASSESS THE SUCCESS OF THE PLANTINGS AND TO DETERMINE IF SUPPLEMENTAL WATERING, PEST CONTROL OR OTHER ACTIONS ARE NECESSARY.

FOREST PROTECTION NOTES

- 1. FOR RETENTION AREAS, INSTALL BLAZE ORANGE FENCE AND RETENTION SIGNS BEFORE CONSTRUCTION BEGINS.

SEQUENCE OF CONSTRUCTION-FOREST CONSERVATION

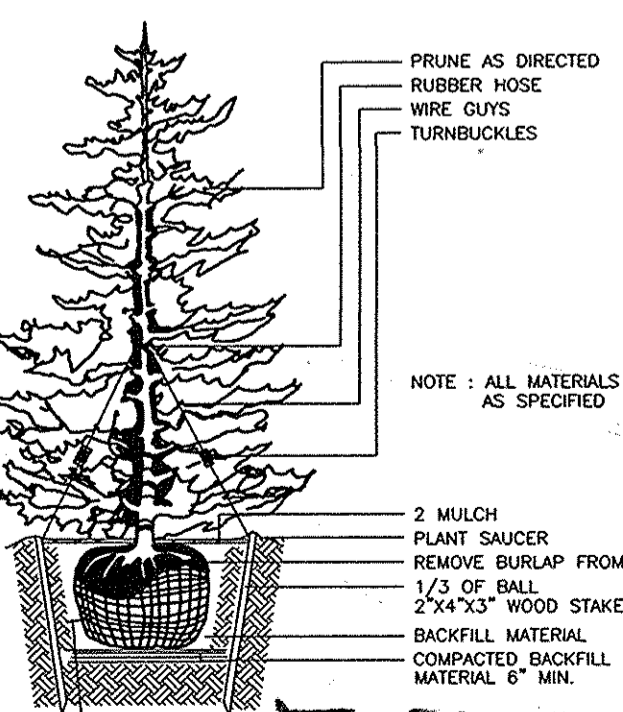
- 1. PRECONSTRUCTION MEETING /SITE WALK WITH CONTRACTORS AND OTHER RESPONSIBLE PARTIES TO DEFINE PROTECTION MEASURES TO BE UTILIZED AND TO POINT OUT PARTICULAR TREES TO BE SAVED.



TYPICAL TREE PROTECTION FENCE DETAIL

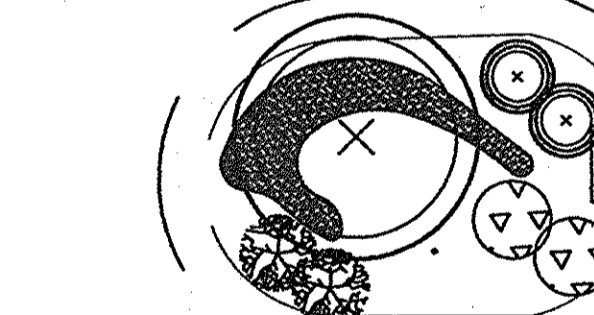
SUPPLEMENTAL INFORMATION

Table with 2 columns: Category (GROSS SITE AREA, AREA OF SLOPE, etc.) and Value (12.44 ACRES, 0.14 ACRES, etc.).



TYPICAL EVERGREEN TREE PLANTING DETAIL NOT TO SCALE

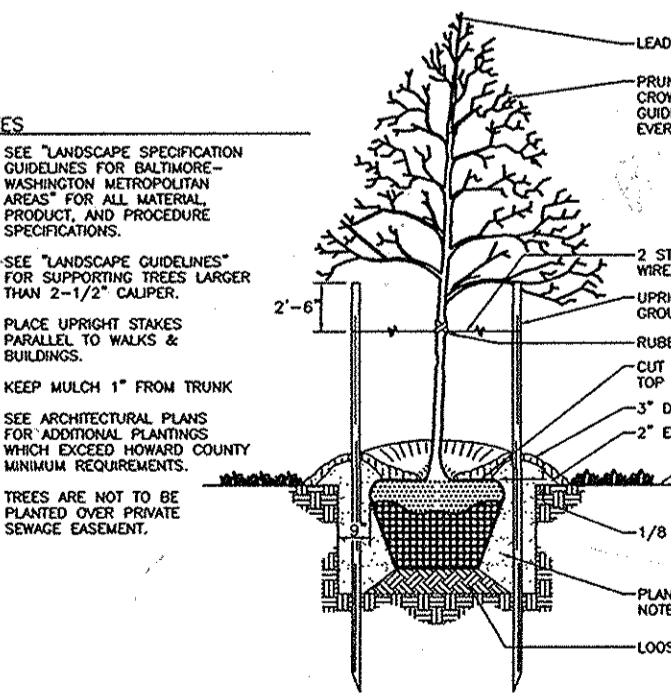
THERE IS NO AS-BUILT INFORMATION ON THIS SHEET.



TYPICAL PLANTING DETAIL FOR MICRO BIO-RETENTION

TYPICAL MICRO-BIORETENTION PLANTING SCHEDULE PER 250 SF AREA

Table with 5 columns: KEY, QTY, BOTANICAL NAME/PLANTING NAME, SIZE, REMARKS. Lists plants like Cladostis lutea, Ilex glabra, etc.



TREE PLANTING AND STAKING 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...

SIGNATURE OF DEVELOPER DATE

SIGNATURE OF PROFESSIONAL DATE

SCHEDULE A: PERIMETER LANDSCAPE EDGE

Table with columns: CATEGORY, ADJACENT TO PERIMETER PROPERTIES/ROADWAYS (1-6), and TOTAL. Lists landscape types like PERIMETER FRONTAGE, LINEAR FEET OF ROADWAY, etc.

OWNERS

PARCEL 77 EDWIN M. KEM 9339 ROUTE 99 ELLICOTT CITY, MD 21042

DEVELOPER

HOWARD LAND DEVELOPMENT, INC. 5300 DORSEY HALL DR, STE 102 ELLICOTT CITY, MARYLAND 21042-7819

Table with 4 columns: NO., DELETE, ADD, PUBLIC WORKER & UTILITY EASEMENT & 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

Logo and contact information for ROBERT H. VOGEL ENGINEERING, INC. ENGINEERS • SURVEYORS • PLANNERS

Professional Certificate seal for Robert H. Vogel, PE No. 16193, State of Maryland.

Table with 2 columns: DESIGN BY, DRAWN BY, CHECKED BY, DATE, SCALE, W.O. NO., SHEET OF.