SITE DEVELOPMENT PLAN
DEMIREL PLAZA
(L.11399/F.313)
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

GENERAL NOTES

1. ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE UNLESS WAIVERS HAVE BEEN APPROVED.
2. THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS:

MISS UTILITY	1-800-257-7777
VERIZON TELEPHONE COMPANY:	1-410-954-6281
HOWARD COUNTY BUREAU OF UTILITIES:	410-313-2366
AT&T CABLE LOCATION DIVISION:	1-800-393-3553
B.G.&E. CO. CONTRACTOR SERVICES:	410-850-4620
B.G.&E. CO. UNDERGROUND DAMAGE CONTROL:	410-787-4620
STATE HIGHWAY ADMINISTRATION:	410-531-5533

3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
4. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK. IN ADDITION, THE CONTRACTOR OR DEVELOPER SHALL CONTACT THE CONSTRUCTION INSPECTION DIVISION 24 HOUR IN ADVANCE OF COMMENCEMENT OF WORK AT (410) 313-1880
5. ANY DAMAGE TO PUBLIC RIGHT-OF-WAY, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
6. THE PROPERTY LINES SHOWN HEREON IS BASED ON A FIELD RUN BOUNDARY SURVEY PERFORMED BY ROBERT H. VOGEL ENGINEERING, INC. DATED SEPTEMBER, 2011. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT FROM A CERTIFIED TITLE ABSTRACTOR. A TITLE REPORT COULD REVEAL ADDITIONAL CONVEYANCES, EASEMENTS, OR RIGHT-OF-WAYS NOT SHOWN HEREON.
   DEED REFERENCE:
   DEMIREL PLAZA LLC
   LIBER 15837, FOLIO 345 DATED - OCTOBER 14, 2014
7. 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. 0066 AND 24B5 WERE USED FOR THIS PROJECT.
8. THE SUBJECT PROPERTY IS ZONED OT (OFFICE TRANSITION) PER THE 10/06/13 COMPREHENSIVE ZONING PLAN REFER TO ZB1098M
9. THIS PROJECT IS SUBJECT TO COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. DEVELOPMENT OR CONSTRUCTION ON THIS PROPERTY MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION OR BUILDING / GRADING PERMIT APPLICATIONS.
10. THE EXISTING TOPOGRAPHY SHOWN HEREON IS FROM A FIELD RUN TOPOGRAPHIC SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC.; PERFORMED ON SEPTEMBER, 2011. OFFSITE TOPOGRAPHY FROM HOWARD COUNTY GIS DATA.
11. EXISTING UTILITIES LOCATED FROM ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND AND SEWER EXTENSION PLANS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTORS INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
12. SOIL TYPES SHOWN HEREON ARE IN ACCORDANCE WITH THE WEB SOIL SURVEY, HOWARD COUNTY MARYLAND.
13. SOIL COMPACTION SPECIFICATIONS, REQUIREMENTS, METHODS AND MATERIALS ARE TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER. GEOTECHNICAL ENGINEER TO CONFIRM ACCEPTABILITY OF PROPOSED PAVING SECTION, BASED ON SOIL TEST PRIOR TO CONSTRUCTION.
14. A GEOTECHNICAL ENGINEER TO CONFIRM PAVING SECTION & PERMEABLE SURFACE THICKNESS PRIOR TO CONSTRUCTION. ALL PAVING EXCEPT, PERMEABLE SURFACES, TO BE MINIMUM P-2 PAVING, UNLESS OTHERWISE NOTED.
15. THERE ARE EXISTING STRUCTURES LOCATED ON SITE TO BE REMOVED.
16. TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL GROUNDS OR CEMETERIES LOCATED ON THIS PROPERTY.
   - THIS SITE IS NOT LOCATED IN A HISTORIC DISTRICT,
   - THE PROJECT HAS A HISTORIC STRUCTURE KNOWN AS #10111 FREDERICK ROAD (HO843)
   - THE PROJECT HAS GONE BEFORE THE HISTORIC DISTRICT COMMISSION ON 9-12-2013. THE HISTORIC DISTRICT COMMISSION HAD NO OBJECTION TO DEMOLITION OF THE STRUCTURE PER LETTER DATED 10-3-2013.
17. NO STEEP SLOPES OVER 20,000 SF CONTIGUOUS ARE LOCATED ONSITE.
18. AN APFO TRAFFIC STUDY HAS BEEN PREPARED BY MARS GROUP, JULY 2013.
19. THIS PORTION OF FREDERICK ROAD IS NOT A SCENIC ROAD.
20. FREDERICK ROAD IS CLASSIFIED AS A MINOR ARTERIAL ROAD. A 35MPH SPEED LIMIT IS POSTED.
21. A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
22. THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
23. THIS SITE IS CURRENTLY SERVED BY PUBLIC WATER VIA CONTRACT NO. 27-W. THIS SITE IS CURRENTLY SERVED BY PUBLIC SEWER VIA CONTRACT NO. 186-S.
24. WATER AND SEWER FOR THIS PROJECT WILL BE PROVIDED THROUGH A PUBLIC EXTENSION OF WATER CONTRACT 27-W AND PUBLIC / PRIVATE EXTENSION OF SEWER CONTRACT 186-S. PUBLIC WATER EXTENSION SHALL BE COMPLETED UNDER THE HOWARD COUNTY ADO PROCESS UNDER THE PROVISIONS OF SECTION 18.122.B OF THE HOWARD COUNTY CODE. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH ALL HOWARD COUNTY VOLUME II AND IV DETAILS.
25. THERE ARE NO FLOODPLAIN, WETLANDS, WETLAND BUFFERS, STREAMS, STREAM BUFFERS OR STEEP SLOPES WITHIN THE PROJECT.
   THERE ARE NO WETLANDS OR STREAMS ON THIS SITE AS DETERMINED BY ECO-SCIENCE PROFESSIONALS, INC; DATED FEBRUARY 2013.
26. FOREST STAND DELINEATION PLAN HAS BEEN PREPARED BY ECO-SCIENCE PROFESSIONALS, INC; DATED FEBRUARY 2013. THERE ARE SPECIMEN TREES ONSITE WITHIN THE LOD PROPOSED TO BE REMOVED.
27. THIS PROJECT IS SUBJECT TO WP-14-085. ON FEBRUARY 25, 2014; THE PLANNING DIRECTOR ISSUED NO ACTION TO THE THE REQUEST, TO WAIVE SECTION 16.1205(A)(7) WHICH REQUIRES THE RETENTION OF SPECIMEN TREES HAVING A DIAMETER OF 30" OR MORE. NO ACTION WAS TAKEN UNTIL COMMENTS WERE ADDRESSED.

   IN APRIL 2014, A REQUEST FOR RECONSIDERATION WAS SUBMITTED AND ON APRIL 16, 2014; THE PLANNING DIRECTOR APPROVED THE REQUEST TO WAIVE SECTION 16.1205(A)(7) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. APPROVAL ALLOWS FOR THE REMOVAL OF FOUR SPECIMEN TREES AS PROPOSED BY THE SITE DEVELOPMENT PLAN. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITION:

   1. THE PETITIONER SHALL PROVIDE A 1:1 REPLACEMENT PLANTING ONSITE TO MITIGATE REMOVAL OF THE FOUR SPECIMEN TREES. THE REPLACEMENT PLANTINGS SHALL BE MADE PART OF THE LANDSCAPE PLAN AND SHALL CONSIST OF SPECIES SIMILAR TO THE TREES REMOVED AND EQUAL TO OR GREATER THAN THE SIZES AND SPECIFICATIONS FOUND FOR SUCH PLANTINGS IN THE HOWARD COUNTY LANDSCAPE MANUAL. THE PETITIONER SHALL INDICATE AND IDENTIFY THE REPLACEMENT PLANTINGS ON THE LANDSCAPE PLAN

28. IN ACCORDANCE WITH SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION, THE TOTAL FOREST CONSERVATION OBLIGATION OF 0.30 ACRES (13,068 X 0.75 = $ 9,801.00) WILL BE FULFILLED BY PAYMENT OF A FEE-IN-LIEU.
29. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY FOR THE PERIMETER LANDSCAPING IN THE AMOUNT OF $ 20,490.00 FOR THE PROVIDED 16 SHADE TREES ($4,800), 56 EVERGREENS ($8,400), 26 SMALL TREES ($3,900), 4 SHADE TREES / SPECIMEN TREE REPLACEMENT ($1,200) AND 73 SHRUBS ($2,190) SHALL BE POSTED WITH THE DEVELOPERS AGREEMENT FOR THIS PLAN.
30. STORMWATER MANAGEMENT FOR THE PROJECT IS PROVIDED BY THE USE OF ALTERNATIVE SURFACES (POROUS CONCRETE / PERMEABLE SURFACE) AND MICRO-SCALE PRACTICES IN ACCORDANCE WITH ENVIRONMENTAL SITE DESIGN CRITERIA. MICRO-SCALE PRACTICES INCLUDE MICRO-BIORETENTION. THESE FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED.
31. ALL BUILDINGS TO HAVE ROOF LEADERS WHICH EMPTY AND FLOW AS DIRECTED HEREON.
32. TEST PITS WERE COMPLETED BY ROBERT H. VOGEL ENGINEERING, INC. DATED APRIL 2013.
33. THE PROPOSED BUILDINGS SHALL HAVE AN AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM INSTALLED.
34. ALL REINFORCED CONCRETE FOR STORM DRAIN STRUCTURES SHALL HAVE A MINIMUM OF 28 DAYS STRENGTH OF 3500 P.S.I.
35. ALL CURB AND GUTTER TO BE HOWARD COUNTY STANDARD DETAIL 3.01, UNLESS OTHERWISE NOTED.
36. ALL ELEVATIONS ARE TO FLOWLINE/BOTTOM OF CURB UNLESS OTHERWISE NOTED
37. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
38. CONTRACTOR RESPONSIBLE FOR CONSTRUCTING ALL HANDICAP RAMPS AND HANDICAP ACCESS IN ACCORDANCE WITH CURRENT ADA REQUIREMENTS.
39. ALL EXTERIOR LIGHTING TO COMPLY WITH THE REQUIREMENTS FOUND IN ZONING SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS.
40. SIGNAGE SHALL BE PROVIDED ON THE BUILDING IDENTIFYING THE BUILDING ADDRESS, AND EACH SUITE SEPARATED BY LETTER IF APPLICABLE.
41. TRAFFIC CONTROL DEVICES:
   A. THE R1-1(STOP) SIGN FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETE.
   B. 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.
   C. ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE 'MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES' (MDMUTCD).
   D. ALL SIGN POST USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED QUICK PUNCH, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED QUICK PUNCH, SQUARE TUBE SLEEVE (12 GAUGE - 3' LONG). A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON THE TOP OF EACH POST.
42. ALL SIGN POST USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL,
43. TRASH AND RECYCLING SERVICES SHALL BE BE PROVIDED FOR THIS SITE BY A PRIVATE SERVICE.
44. THE PROPOSED HOURS OF OPERATION FOR THIS SITE AS APPROVED IN ZB-1098M ARE:
   WEEKDAYS - MONDAY - FRIDAY 6:00 AM UNTIL 10:00 PM
   WEEKENDS - SATURDAY - SUNDAY 7:00 AM UNTIL 6:00 PM.
45. A KNOX BOX (FIRE DEPARTMENT ACCESS BOX) IS REQUIRED TO BE PLACED ON THE FRONT OF THE BUILDINGS. IT SHALL BE PLACED TO THE LEFT OF THE MAIN ENTRANCE AT A RANGE OF 4-5 FT IN HEIGHT AND NO MORE THAN 6 FT LATERALLY FROM THE DOOR. THE BOX SHALL BE ELECTRONICALLY SUPERVISED TO NOTIFY THE OWNER THAT IS BEING ACCESSED INTERGRATED WITH THE FIRE ALARM SYSTEM). NFPA-1 10.12.1
46. BUILDINGS TO HAVE INSIDE WATER METER SETTINGS.
47. LANDSCAPING NOT PERMITTED WITHIN 7-1/2' OF EACH SIDE OF THE FIRE DEPARTMENT CONNECTION. PROVIDE A CLEAR UNOBSTRUCTED ACCESS PATH TO THE FIRE DEPARTMENT CONNECTION. NFPA-1 13.1.4
48. IN ACCORDANCE WITH SECTION 128 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS, OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS. WINDOW WELLS MAY ALSO ENCROACH NOT MORE THAN 4 FEET INTO ANY SETBACK
   PORCHES OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK.
49. THIS PLAN PROPOSES SIDEWALK OVER THE EASTERN PORTION OF THE PUBLIC DRAINAGE AND UTILITY EASEMENT. THE DEPARTMENT OF PUBLIC WORKS HAS NO OBJECTION TO THE PROPOSAL OF SIDEWALK CONSTRUCTION WITHIN COUNTY MAINTAINED EASEMENT. THE DEVELOPER SHALL BE RESPONSIBLE FOR ANY DAMAGES WHICH OCCUR WITHIN THE REFERENCED EASEMENT DUE TO CONSTRUCTION OR MAINTENANCE. HOWARD COUNTY WILL NOT BE LIABLE FOR ANY DAMAGES WITHIN THE REFERENCED EASEMENT.
50. THE HOWARD COUNTY PLANNING BOARD, AT ITS MEETING HELD ON JULY 17, 2014, APPROVED THIS SITE DEVELOPMENT PLAN SDP-13-077, CONSISTING OF THE CONSTRUCTION OF FIVE TWO-STORY MIXED-USE BUILDINGS AND ASSOCIATED SITE IMPROVEMENTS ON 2.00 ACRES OF LAND LOCATED ON FREDERICK ROAD IN ELLICOTT CITY, MARYLAND.
51. THIS PROJECT IS SUBJECT TO WP-15-099. ON FEBRUARY 26, 2015; THE PLANNING DIRECTOR APPROVED THE THE REQUEST TO WAIVE SUBSECTIONS 16.156(K), 16.156(L) AND 16.156(M). APPROVAL OF THIS WAIVER ALLOWS FOR AN EXTENSION OF THE DEADLINES ESTABLISHED FOR EXECUTION OF DEVELOPER AGREEMENTS, PAYMENT OF FEES AND SUBMISSION OF PLAN ORIGINALS ASSOCIATED WITH SITE DEVELOPMENT PLAN SDP-13-077.
   APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
   A. DEVELOPER SHALL EXECUTE DEVELOPER AGREEMENTS, POST SURETIES AND PAY ALL REQUIRED FEES TO THE DEPARTMENT OF PUBLIC WORKS, REAL ESTATE SERVICES DIVISION ON OR BEFORE AUGUST 20, 2015.
   B. DEVELOPER SHALL SUBMITT THE SITE DEVELOPMENT PLAN ORIGINAL FOR SIGNATURE APPROVAL TO THE DEPARTMENT OF PLANNING AND ZONING, DIVISION OF LAND DEVELOPMENT AND SHALL SHALL ADDRESS OTHER ITEMS LISTED IN THE DPZ LETTER OF JULY 25, 2014 ON OR BEFORE AUGUST 20, 2015.

APPROVED JULY 17, 2014
PLANNING BOARD OF HOWARD COUNTY

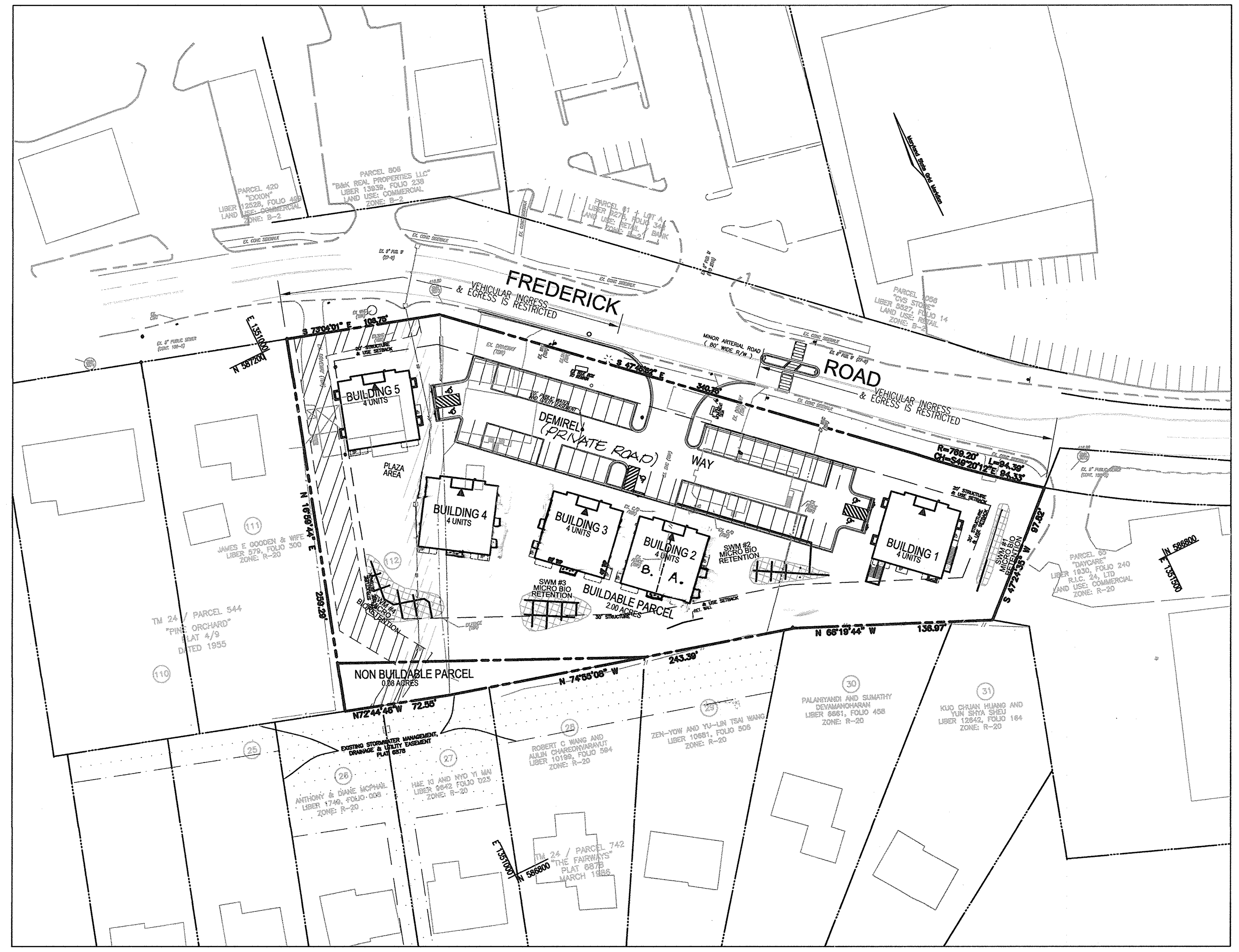
~~PLANNING DIRECTOR~~ ~~DATE~~

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6.8.15
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7-07-15
DIRECTOR — DATE 7-7-15

APPROVED : FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE 6/24/2015



LOCATION MAP
SCALE: 1" = 60'

PARKING TABULATION

1. NUMBER OF PARKING SPACES REQUIRED: 5 PROPOSED BUILDINGS @ 2,460 SF = 12,300 SF
   5 BUILDINGS X 2 APARTMENTS = 10 APARTMENTS
   1230 SF × 10 UNITS = 5 BUILDINGS @ 2,460 SF
   OFFICE 3.3 SPACES PER UNIT = 5 × 6150 20.30 SPACES REQUIRED 21 USE
   PERSONAL SERVICE 5 SPACES PER UNIT = 5 × 6150 / 12300 30.75 SPACES REQUIRED 31 USE
   APARTMENTS 2.3 SPACES PER UNIT = 10 UNITS 23 SPACES REQUIRED
   TOTAL 75 SPACES REQUIRED
   REFER TO SHARED ANALYSIS 57 SPACES MINIMUM

* USE OF SHARED PARKING ALLOWED PER SECTION 133.0.F.1.a OF HOWARD COUNTY ZONING REGULATIONS

2. NUMBER OF PARKING SPACES PROVIDED: 57 SPACES (MINIMUM 57)* SEE SHARED PARKING TABULATION

SHARED PARKING TABULATION*

USE SPACES	WEEKDAY MORNING 6AM-8AM	MID-DAY 8AM-3PM	AFTERNOON 3PM-5PM	EVENING 5PM-10PM	EVENING 10PM-6AM	WEEKEND DAYTIME 7AM-6PM	EVENING 6PM-7AM
OFFICE	80%	100%	100%	10%	0%	10%	0%
21	16.8	21.0	21.0	2.1	0.0	2.1	0.0
	17	21	21	3	0	3	0
PERSONAL SERVICE	20%	60%	60%	90%	0%	100%	0%
31	6.2	18.6	18.6	27.9	0.0	31.0	0.0
	7	19	19	28	0	31	0
RESIDENTIAL	80%	60%	60%	100%	100%	100%	100%
23	18.4	13.8	13.8	23.0	23.0	23.0	23.0
	19	14	14	23	23	23	23
TOTAL	43	54	54	54	23	57	23

*NOTE: SECTION 133.O.F.1.a TABULATION MODIFIED PER ALLOWED HOURS OF OPERATION. REFER TO GENERAL NOTE 44.

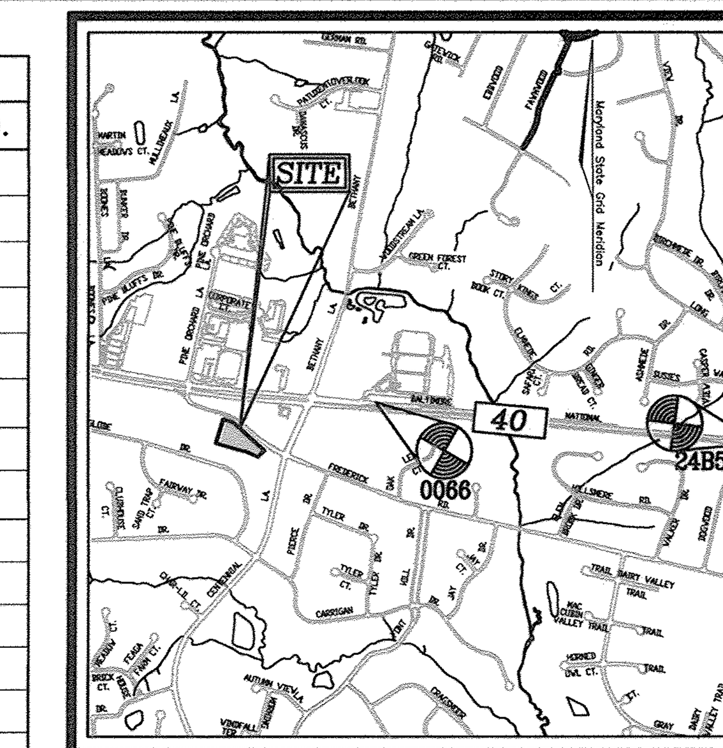
MAPPED SOILS TYPES

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	HYDRIC INCLUSIONS	K-FACTOR	PRIME FARMLAND	<15% SLOPE W/ EROSION POTENTIAL
GhB	GLENELG-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES	B/D	NO	NO	0.20	NO	NO

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

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

SHEET INDEX



VICINITY MAP
SCALE: 1"=2000'
ADC MAP COORDINATE: 11 G7

BENCHMARKS

HOWARD COUNTY BENCHMARK - 0066
N 587380.5040 E 1352603.4423 ELEV. 386.518
LOCATION: RT 40 BY ENCHANTED FOREST SHOPPING CENTER

HOWARD COUNTY BENCHMARK - 24B5
N 586956.2726 E 1356570.7844 ELEV. 390.170
LOCATION: ISLE AT CORNER RT.40 AND DOGWOOD DR.

SITE ANALYSIS DATA CHART

A. TOTAL PROJECT AREA: 2.08 AC.
B. AREA OF PLAN SUBMISSION: 2.00 AC.
C. LIMIT OF DISTURBED AREA: SEE SHEET 5
D. PRESENT ZONING DESIGNATION: OT
E. PROPOSED USES FOR SITE AND STRUCTURES: LOW IMPACT OFFICE AND RESIDENTIAL, AND PERSONAL SERVICES
F. FLOOR SPACE ON EACH LEVEL: 5,000 SF MAXIMUM GROSS FLOOR AREA
- EACH BUILDING CONTAINS A COMBINATION OF ONE OFFICE UNIT AND ONE PERSONAL SERVICES UNIT OR TWO OFFICE UNITS OR TWO RESIDENTIAL UNITS ON THE GROUND FLOOR (SEE NOTE 1) AND TWO RESIDENTIAL ON THE SECOND FLOOR
- GROSS FLOOR AREA PER BUILDING: 2,460± (1ST) +2,460± (2ND) = 4,920 SF±
- FLOOR AREA OF RESIDENTIAL UNITS PER BUILDING: 1,198 SF± X 2 UNITS = 2,396 SF±
- THE RESIDENTIAL UNITS OCCUPY 48.7 % OF THE BUILDING GROSS AREA (50% MAX. ALLOWED)

G. TOTAL NUMBER OF UNITS ALLOWED: 5 BUILDING
TOTAL OF 10 RESIDENTIAL UNITS
TOTAL OF 10 OFFICE AND/OR PERSONAL SERVICES UNIT
REFER TO ZB-1098-M

H. TOTAL NUMBER OF UNITS PROPOSED: 5 BUILDINGS
EACH BUILDING CONTAINS ANY COMBINATION OF: ONE OFFICE UNIT AND ONE PERSONAL SERVICES UNIT TWO OFFICE UNITS OR TWO RESIDENTIAL UNITS ON GROUND FLOOR (SEE NOTE 1), WITH TWO APARTMENTS ON THE SECOND FLOOR TOTAL OF 10 RESIDENTIAL UNITS, TOTAL OF 10 OFFICE AND/OR PERSONAL SERVICES UNIT

I. MAXIMUM # OF EMPLOYEES: N/A
J. NUMBER OF PARKING SPACES REQUIRED: REFER TO SHARED PARKING TABULATION, SHOWN HEREON
K. NUMBER OF PARKING SPACES PROVIDED: REFER TO SHARED PARKING TABULATION, SHOWN HEREON
L. OPEN SPACE ON-SITE: N/A
M. AREA OF RECREATION OPEN SPACE: N/A
N. BUILDING COVERAGE: 10% - 12,500 SF+/-
O. DPZ FILE REFERENCES: ECP 13-054, ZB 1098 M, WP 14-085, WP 15-099, F-14-084
P. ANY OTHER INFORMATION
- ERODIBLE SOILS (>0.35): N/A
- EXISTING IMPERVIOUS AREA: 0.22 AC.± (EXISTING HOMES & DRIVEWAYS)
- PROPOSED IMPERVIOUS AREA: 0.8 AC. (SEE PLAN)
- PROPOSED GREEN AREA: 1.3 AC
- AREA OF WETLANDS: 0 S.F. OR 0.00 AC.
- AREA OF FLOODPLAIN: 0 S.F. OR 0.00 AC.
- AREA OF FOREST: 0 S.F. OR 0.00 AC.
- AREA OF STEEP SLOPES: 0 S.F. OR 0.00 AC.

Q. FLOOR AREA RATIO (FAR) N/A

NOTE 1: THE ALLOW PERSONAL SERVICE USE FOR THIS PROJECT, PER PROVIDED PARKING, IS LIMITED TO FIVE (5) GROUND FLOOR UNIT SPACES.
NOTE 2: BUILDING 2 (#3303 B) TO BE DOG GROOMING (PERSONAL SERVICES) SECTION 117.3(c)(15)123.

PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/ AREA	LOT/ PARCEL			
DEMIREL PLAZA	-	BUILDINGS 1 - 5			
PLAT REF.	BLOCK NO	ZONE	TAX MAP	ELECT DIST.	CENSUS TR.
23380	1	OT	24	2ND	6023.03

ADDRESS CHART

BUILDING#	STREET ADDRESS
1	3301 A DEMIREL WAY
	3301 B DEMIREL WAY
	3301 C DEMIREL WAY
	3301 D DEMIREL WAY
2	3303 A DEMIREL WAY
	3303 B DEMIREL WAY
	3303 C DEMIREL WAY
	3303 D DEMIREL WAY
3	3305 A DEMIREL WAY
	3305 B DEMIREL WAY
	3305 C DEMIREL WAY
	3305 D DEMIREL WAY
4	3307 A DEMIREL WAY
	3307 B DEMIREL WAY
	3307 C DEMIREL WAY
	3307 D DEMIREL WAY
5	3309 A DEMIREL WAY
	3309 B DEMIREL WAY
	3309 C DEMIREL WAY
	3309 D DEMIREL WAY

NO.	REVISION	DATE
4	REVISE USE OF BUILDING 2	8/1/18
3	REVISE BUILDING 2,3 & 4 WINDOW WELL LOCATIONS, ADD CONC. PADS	6/15/17
2	REVISE PARKING TABULATION	6/27/16
1	REVISE ADDRESS CHART	2.3.15

ATTORNEY
SANG OH
TALKIN & OH, LLP
5100 DORSEY HALL DRIVE
ELLICOTT CITY, MD. 21042
PHONE: (410) 964-0300

OWNER/DEVELOPER
VELI DEMIREL
44087 HIGH POINT ROAD
ELLICOTT CITY, MD 21042
PHONE: (410) 440-1242

SITE DEVELOPMENT PLAN
COVER SHEET
DEMIREL PLAZA
L.15837 F.345

2ND ELECTION DISTRICT
TAX MAP: 24 GRID: 1

ZONED: OT
PARCELS 62, 63 AND P/O 544 (LOT 112)
HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND — ROBERT HARRIS VOGEL — NO. 16193 — REGISTERED PROFESSIONAL ENGINEER — 5.16.15
ROBERT H. VOGEL, PE No.16193

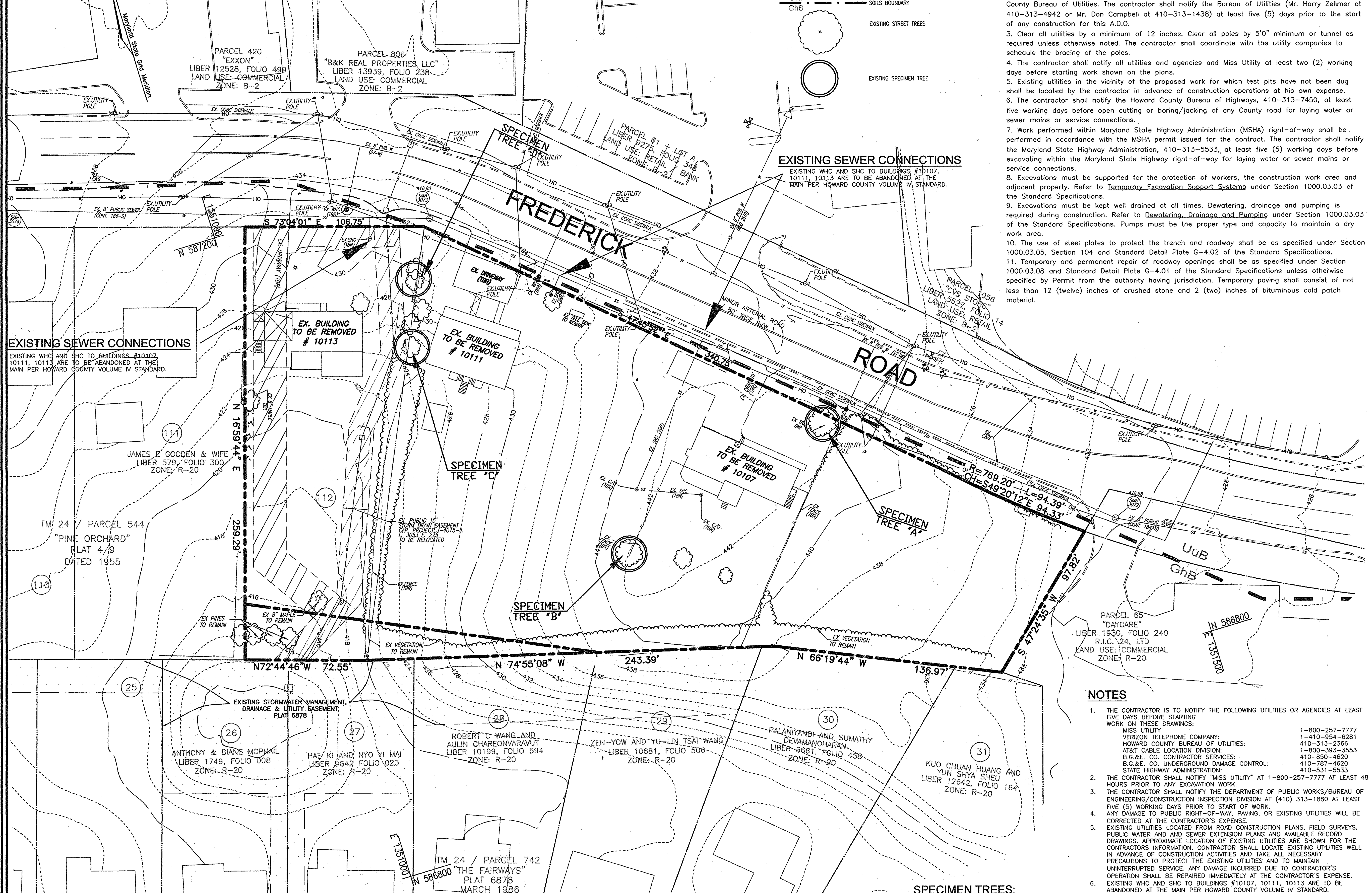
DESIGN BY: EDS
DRAWN BY: RVE
CHECKED BY: RHV
DATE: MAY 2015
SCALE: AS SHOWN
W.O. NO.: 11-01

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

SDP-13-077

LEGEND

	PROPERTY LINE		EXISTING MAILBOX
	RIGHT-OF-WAY LINE		EXISTING SIGN
	ADJACENT PROPERTY LINE		EXISTING SANITARY MANHOLE
398	EXISTING CONTOUR	S	EXISTING SANITARY LINE
	EXISTING CURB AND GUTTER	FH	EXISTING FIRE HYDRANT
	EXISTING UTILITY POLE	W	EXISTING WATER LINE
	EXISTING LIGHT POLE		EXISTING TREELINE
		UuB / GhB	SOILS BOUNDARY
			EXISTING STREET TREES
			EXISTING SPECIMEN TREE



CONSTRUCTION NOTES FOR ADVANCE DEPOSIT ORDER (A.D.O.)
WORK IN THE PUBLIC WATER & UTILITY EASEMENT

PART 1 GENERAL CONSTRUCTION NOTES

1. For details not shown on the drawing, and for materials and construction methods, use Howard County Design Manual, Volume IV, Standard Specifications and Details for Construction (Latest Edition). The contractor shall have a copy of Volume IV on the job.
2. The A.D.O. construction work must be performed under the continuous inspection of the Howard County Bureau of Utilities. The contractor shall notify the Bureau of Utilities (Mr. Harry Zellmer at 410-313-4942 or Mr. Don Campbell at 410-313-1438) at least five (5) days prior to the start of any construction for this A.D.O.
3. Clear all utilities by a minimum of 12 inches. Clear all poles by 5'0" minimum or tunnel as required unless otherwise noted. The contractor shall coordinate with the utility companies to schedule the bracing of the poles.
4. The contractor shall notify all utilities and agencies and Miss Utility at least two (2) working days before starting work shown on the plans.
5. Existing utilities in the vicinity of the proposed work for which test pits have not been dug shall be located by the contractor in advance of construction operations at his own expense.
6. The contractor shall notify the Howard County Bureau of Highways, 410-313-7450, at least five working days before open cutting or boring/jacking of any County road for laying water or sewer mains or service connections.
7. Work performed within Maryland State Highway Administration (MSHA) right-of-way shall be performed in accordance with the MSHA permit issued for the contract. The contractor shall notify the Maryland State Highway Administration, 410-313-5533, at least five (5) working days before excavating within the Maryland State Highway right-of-way for laying water or sewer mains or service connections.
8. Excavations must be supported for the protection of workers, the construction work area and adjacent property. Refer to Temporary Excavation Support Systems under Section 1000.03.03 of the Standard Specifications.
9. Excavations must be kept well drained at all times. Dewatering, drainage and pumping is required during construction. Refer to Dewatering, Drainage and Pumping under Section 1000.03.03 of the Standard Specifications. Pumps must be the proper type and capacity to maintain a dry work area.
10. The use of steel plates to protect the trench and roadway shall be as specified under Section 1000.03.05, Section 104 and Standard Detail Plate G-4.02 of the Standard Specifications.
11. Temporary and permanent repair of roadway openings shall be as specified under Section 1000.03.08 and Standard Detail Plate G-4.01 of the Standard Specifications unless otherwise specified by Permit from the authority having jurisdiction. Temporary paving shall consist of not less than 12 (twelve) inches of crushed stone and 2 (two) inches of bituminous cold patch material.

PART II WATER CONSTRUCTION NOTES

1. All water mains shall be D.I.P., Class 54 minimum, or AWWA C900/C905 P.V.C. pipe, Class DR18 minimum.
2. Tops of all water pipes shall have not less than 4'0" of cover unless otherwise noted.
3. Valves adjacent to tees shall be strapped to tees.
4. Fire hydrants shall be set to the bury line elevations shown on the Plans. All fire hydrants shall be installed in accordance with Standard Details. The soil around the fire hydrant shall be compacted in accordance with Sections 1000 and 1005 of the Standard Specifications.
5. All fittings shall be buttressed or anchored with concrete in accordance with Standard Details unless otherwise provided for on the drawings.
6. The contractor shall notify the Bureau of Utilities at least 48 hours in advance of scheduled shutdowns of the existing water main. Shutdowns of the existing water main for new connections and removal of existing service connections shall be as specified under Section 1002.06 – Connections of the Standard Specifications.
7. The contractor shall not operate any water main valves on the existing water system.
8. Water service connections shall be as specified under Section 1004–Water House Service and Appurtenances of the Standard Specifications and Standard Detail Plate . The minimum size of a single residential WHC for new residential construction is 1-1/2 inch diameter with 1-inch meter. Installation of the water meter is not part of the A.D.O. construction work. Water service connections include pressure and leak testing, disinfection and bacteriological testing.
9. [For commercial meters] The new water meter assembly shall be the (type) per Howard County Detail Plate W-3.24. Installation of the water meter is not part of the A.D.O. construction work.
10. If the existing water meter will be moved to the new meter connection inside the building, the contractor shall contact the Meter Division of the Bureau of Utilities at 410-313-4948 to schedule relocation of the meter setting.
11. The abandonment of existing water service connections shall be as specified under Section 1015.03 of the Standard Specifications. Removal of the existing corporation stop or tapping saddle requires a scheduled shutdown of the water main. The existing corporation stop shall be removed from the water main and the pipe repaired with a County approved stainless steel full circle repair clamp such as Ford Meter FS2, Mueller 550 or Romac SS2 series.
12. Tracer wire and continuity test stations shall be installed on all water mains in accordance with Detail Plate G-8.21 of the Standard Specifications.
13. Proper Assembly of Gasketed PVC Pipe Joints. The manufacturer's insertion line of gasketed PVC pipe joints indicates the maximum depth of insertion of the spigot into the bell. After assembly of the joint, the line shall remain visible. Dual insertion lines on gasketed PVC pipe indicate the maximum and minimum depth of insertion of the spigot into the bell.
14. Tees, crosses, bends greater than 5 degrees, and similar fittings for use with C-900 PVC water pipe shall be ductile iron conforming to AWWA C153.
15. All changes in horizontal or vertical direction of PVC water pipe shall be made with high-deflection couplings, 5 degree sweeps or standard bends. No bending of pipe or deflection of PVC pipe joints is permitted.
16. Seventeen (17) pound sacrificial anodes shall be installed on all valves and metallic fittings used with PVC water mains in accordance with the Standard Specifications and Details. Magnesium anodes shall be installed on all iron valves and ductile iron fittings including restraints and harnesses. Zinc anodes shall be installed on all stainless steel fittings and saddles used with PVC water mains.

PART III SEWER CONSTRUCTION NOTES

1. All sewer mains shall be D.I.P. or P.V.C. unless otherwise noted.
2. All manholes shall be 4'0" inside diameter unless otherwise noted.
3. Sewer force mains shall be D.I.P. unless otherwise noted.
4. Sewer house connections shall be as specified under Section 1009.03 of the Standard Specifications and the Standard Details.
5. House(s) with the symbol "C.N.S." indicates that the cellar cannot be served by a gravity sewer service connection.

NOTES

1. THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS:

MISS UTILITY	1-800-257-7777
VERIZON TELEPHONE COMPANY:	1-410-954-6281
HOWARD COUNTY BUREAU OF UTILITIES:	410-313-2366
AT&T CABLE LOCATION DIVISION:	1-800-393-3553
B.G.&E. CO. CONTRACTOR SERVICES:	410-850-4620
B.G.&E. CO. UNDERGROUND DAMAGE CONTROL:	410-787-4620
STATE HIGHWAY ADMINISTRATION:	410-531-5533

2. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
3. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK.
4. ANY DAMAGE TO PUBLIC RIGHT-OF-WAY, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
5. EXISTING UTILITIES LOCATED FROM ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND AND SEWER EXTENSION PLANS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTORS INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
6. EXISTING WHC AND SHC TO BUILDINGS #10107, 10111, 10113 ARE TO BE ABANDONED AT THE MAIN PER HOWARD COUNTY VOLUME IV STANDARD.

SPECIMEN TREES:

Key	Species, Size (dbh)	Condition	Critical Root Zone (radius)
A	Ginko, 42"	Good, non-native	63'
B	Silver maple, 38"	Good	57'
C	Black locust, 42"	Fair, poor shape, leaning over house	63'
D	Silver maple, 31"	Fair, some dieback notes, power lines run through canopy, leaning	46.5'

NOTES:

1. PER THE PLAN PROPOSAL SHOWN HEREON, ALL SPECIMEN TREES ARE TO BE REMOVED. REFER TO GENERAL NOTE 27, SHEET 1 REGARDING WP 14-085

EXISTING CONDITIONS / DEMO PLAN

SCALE: 1"=30'

30' 0 30' 60' 90'

MAPPED SOILS TYPES - ELLICOTT CITY SW MAP #13

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	HYDRIC INCLUSIONS	K-FACTOR	PRIME FARMLAND	<15% SLOPE W/ EROSION POTENTIAL
GhB	GLENELG-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES	B/D	NO	NO	0.20	NO	NO

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

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

Eco-Science Professionals, Inc.
Consulting Ecologists
P.O. Box 5406 Glen Arm, Maryland 21057 Telephone (410) 852-2400 Fax (410) 852-2435

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 6-8-15
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 7-07-15
DIRECTOR	DATE 7-7-15

APPROVED JULY 17, 2014
PLANNING BOARD OF HOWARD COUNTY

[redacted] ~~DATE~~

ATTORNEY
SANG OH
TALKIN & OH, LLP
5100 DORSEY HALL DRIVE
ELLICOTT CITY, MD. 21042
PHONE: (410) 964-0300

OWNER/DEVELOPER
VELI DEMIREL
44087 HIGH POINT ROAD
ELLICOTT CITY, MD 21042
PHONE: (410) 440-1242

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN

EXISTING CONDITIONS / DEMO PLAN

DEMIREL PLAZA

L.15837 F.345

2ND ELECTION DISTRICT
TAX MAP: 24 GRID: 1

ZONED: OT
PARCELS 62, 63 AND P/O 544 (LOT 112)
HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND ROBERT HARRIS VOGEL NO.16193 REGISTERED PROFESSIONAL ENGINEER 5/12/15

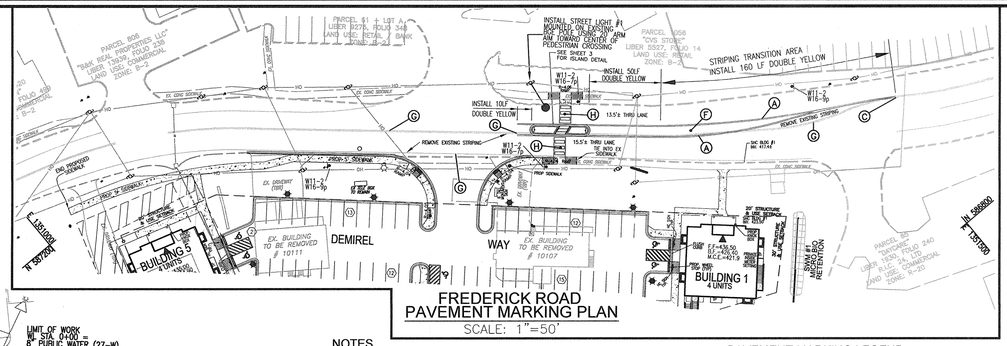
ROBERT H. VOGEL, PE No.16193

DESIGN BY:	EDS
DRAWN BY:	RVE
CHECKED BY:	RHV
DATE:	MAY 2015
SCALE:	AS SHOWN
W.O. NO.:	11-01

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

SDP-13-077

STREET LIGHT LOCATION CHART		
STREET NAME	LOCATION	FIXTURE/POLE TYPE
~~FREDERICK ROAD~~	~~N 587091 E 1351213~~	~~150 WATT HPS VAPOR PREMIER POST TOP FIXTURE MOUNTED ON A 14' BLACK FIBERGLASS POLE~~
FREDERICK ROAD	NORTHWEST OF PEDESTRIAN CROSSING	250 WATT HPS VAPOR FIXTURE MOUNTED ON EXISTING BGE POLE DETAILED HEREON



FREDERICK ROAD PAVEMENT MARKING PLAN

SCALE: 1"=50'

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLETS
- EXISTING TREELINE
- MICRO-BIORETENTION FACILITY
- PERMEABLE SURFACE PARKING PAD
- PROPOSED SIDEWALK
- TRASH PAD (4' X 8')
- PROPOSED STREET LIGHT

NOTES

1.) ALL SIGN LOCATIONS ARE APPROXIMATE. HOWARD COUNTY TRAFFIC SHALL FIELD APPROVE OR MARK ALL SIGN LOCATIONS PRIOR TO ANY SIGNS BEING INSTALLED. CALL (410) 313-5752

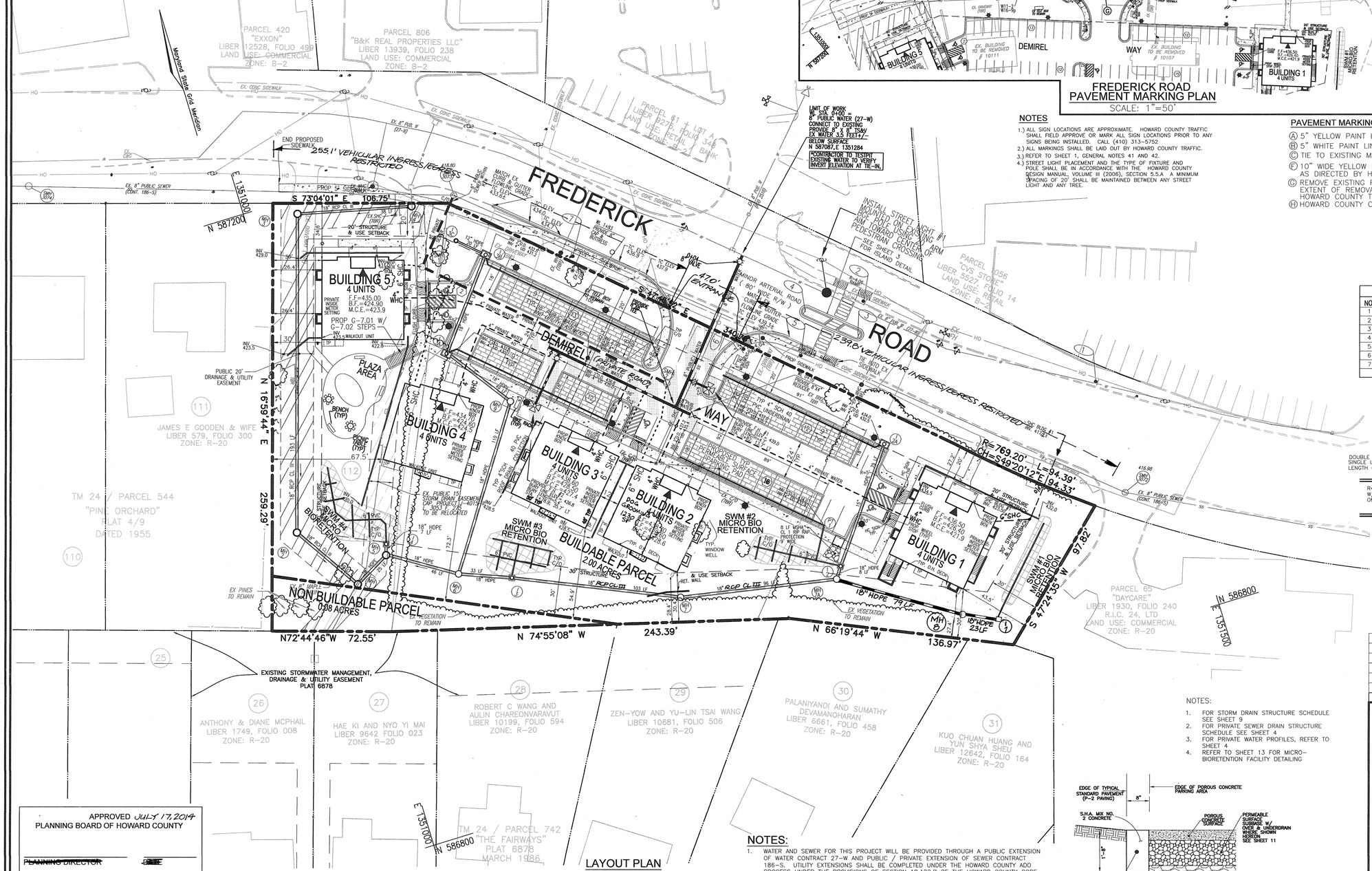
2.) ALL MARKINGS SHALL BE LAID OUT BY HOWARD COUNTY TRAFFIC.

3.) REFER TO SHEET 1, GENERAL NOTES 41 AND 42.

4.) STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006), SECTION 5.5.A. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.

PAVEMENT MARKING LEGEND

- (A) 5" YELLOW PAINT LINE
- (B) 5" WHITE PAINT LINE
- (C) TIE TO EXISTING MARKINGS.
- (F) 10" WIDE YELLOW HATCH MARKINGS – PAINT AS DIRECTED BY HOWARD COUNTY TRAFFIC
- (G) REMOVE EXISTING PAVEMENT MARKINGS BY GRINDING. EXTENT OF REMOVAL AS DIRECTED BY HOWARD COUNTY TRAFFIC
- (H) HOWARD COUNTY CROSSWALK



LAYOUT PLAN

SCALE: 1"=30'

30' 0 30' 60' 90'

NOTES:

1. WATER AND SEWER FOR THIS PROJECT WILL BE PROVIDED THROUGH A PUBLIC EXTENSION OF WATER CONTRACT 27-W AND PUBLIC / PRIVATE EXTENSION OF SEWER CONTRACT 186-S. UTILITY EXTENSIONS SHALL BE COMPLETED UNDER THE HOWARD COUNTY ADD PROCESS UNDER THE PROVISIONS OF SECTION 18.122.B OF THE HOWARD COUNTY CODE. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH ALL HOWARD COUNTY VOLUME II AND IV DETAILS.
   - REFER TO DETAILS HEREON.
2. A KNOX BOX (FIRE DEPARTMENT ACCESS BOX) IS REQUIRED TO BE PLACED ON THE FRONT OF THE BUILDINGS. IT SHALL BE PLACED TO THE LEFT OF THE MAIN ENTRANCE AT A RANGE OF 4-5 FT IN HEIGHT AND NO MORE THAN 6 FT LATERALLY FROM THE DOOR. THE BOX SHALL BE ELECTRONICALLY SUPERVISED TO NOTIFY THE OWNER THAT IS BEING ACCESSED(INTERGRATED WITH THE FIRE ALARM SYSTEM). NFPA-1 10.12.1
3. THE PROPOSED BUILDINGS WILL BE REQUIRED TO HAVE A SPRINKLER SYSTEM INSTALLED.
4. ALL WATER CONNECTIONS SHALL BE 4"; REFERENCE STANDARD DETAIL W-3.24
5. BUILDINGS SHALL UTILIZE INSIDE COMBINED FIRE / DOMESTIC (1-½") WATER METER SETTINGS. THERE ARE FOUR (4) UNITS PER BUILDING: TWO (2) RESIDENTIAL AND TWO (2) COMMERCIAL USES.
6. REFER TO "CONSTRUCTION NOTES FOR ADVANCE DEPOSIT ORDER (A.D.O.) WORK IN THE PUBLIC WATER & UTILITY EASEMENT

NOTES:

1. FOR STORM DRAIN STRUCTURE SCHEDULE SEE SHEET 9
2. FOR PRIVATE SEWER DRAIN STRUCTURE SCHEDULE SEE SHEET 4
3. FOR PRIVATE WATER PROFILES, REFER TO SHEET 4
4. REFER TO SHEET 13 FOR MICRO-BIORETENTION FACILITY DETAILING

CONCRETE BAND

(NOT TO SCALE)

LEGEND: NUMBER RELATES TO STREET SIGN LOCATION SCHEDULE

PROPOSED STREET SIGN

STREET SIGN LOCATION SCHEDULE				
NO.	STREET NAME	STATION / OFFSET	SIGN TYPE / DESCRIPTION	
1	FREDERICK ROAD	N 586951 E 1351467	PEDESTRIAN (W11-2) W/ "AHEAD PLAQUE (W16-9p)	
2	FREDERICK ROAD	N 587039 E 1351346	DBL SIDED FYG PEDESTRIAN (W11-2) W/ (W16-7p)	
3	FREDERICK ROAD	SEE MEDIAN ISLAND DETAIL	R4-7 W/ OM1-3	
4	FREDERICK ROAD	SEE MEDIAN ISLAND DETAIL	R4-7 W/ OM1-3	
5	FREDERICK ROAD	N 587018 E 1351300	DBL SIDED FYG PEDESTRIAN (W11-2) W/ (W16-7p)	
6	DEMIREL WAY	N 587033 E 1351288	R1-1 STOP SIGN	
7	FREDERICK ROAD	N 587117 E 1351185	PEDESTRIAN (W11-2) W/ "AHEAD PLAQUE (W16-9p)	

MEDIAN ISLAND DETAIL

ALONG FREDERICK ROAD

(NOT TO SCALE)

APPROVED JULY 17, 2014
PLANNING BOARD OF HOWARD COUNTY

~~PLANNING DIRECTOR~~ ~~DATE~~

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6-8-15

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7-07-15

DIRECTOR — DATE 7-7-15

NO.	REVISION	DATE
4	REVISE USE OF BUILDING 2	8/1/18
3	REVISE BUILDING 2, 3 & 4 WINDOW WELL LOCATIONS, ADD CONC. PADS	6/15/17
2	UPDATE SHARED PARKING	6/27/16
1	REVISE STORM DRAIN AND SHC TO BUILDING 1	12.9.15

SITE DEVELOPMENT PLAN

LAYOUT & PAVEMENT MARKING PLAN

DEMIREL PLAZA

L. 15837 F. 345

2ND ELECTION DISTRICT
TAX MAP: 24 GRID: 1

ZONED: OT
PARCELS 62, 63 AND P/O 544 (LOT 112)
HOWARD COUNTY, MARYLAND

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TEL: 410.461.7666 FAX: 410.461.8961

ATTORNEY
SANG OH
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PHONE: (410) 964-0300

OWNER/DEVELOPER
VELI DEMIREL
44087 HIGH POINT ROAD
ELLICOTT CITY, MD 21042
PHONE: (410) 440-1242

STATE OF MARYLAND — ROBERT HARRIS VOGEL — NO. 16193 — REGISTERED PROFESSIONAL ENGINEER — 7/12/16

ROBERT H. VOGEL, PE No.16193

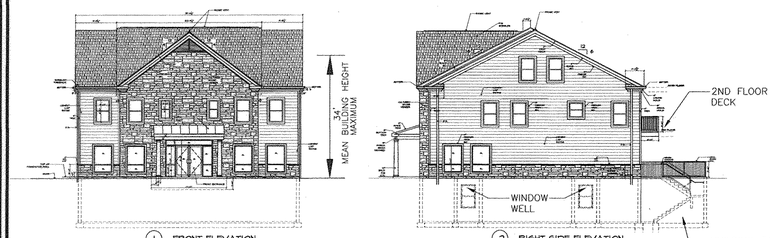
PROFESSIONAL CERTIFICATE

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

DESIGN BY:	EDS
DRAWN BY:	RVE
CHECKED BY:	RHV
DATE:	MAY 2015
SCALE:	AS SHOWN
W.O. NO.:	11-01

SHEET 3 OF 15

SDP-13-077



1 FRONT ELEVATION SCALE: 3/16" = 1'-0"

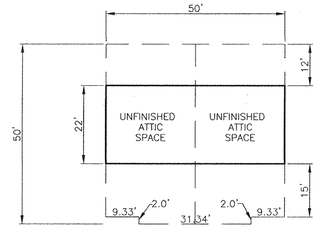
2 RIGHT SIDE ELEVATION SCALE: 3/16" = 1'-0"

3 LEFT SIDE ELEVATION SCALE: 3/16" = 1'-0"

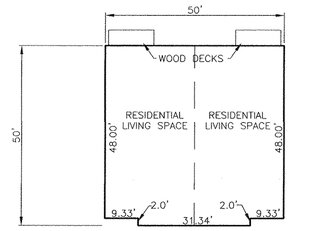
4 REAR ELEVATION SCALE: 3/16" = 1'-0"

ARCHITECTURAL ELEVATION VIEWS

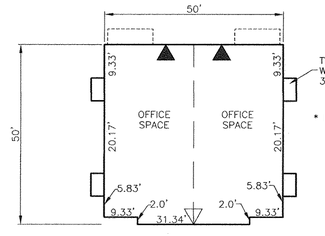
SCALE: N.T.S.



ATTIC PLAN



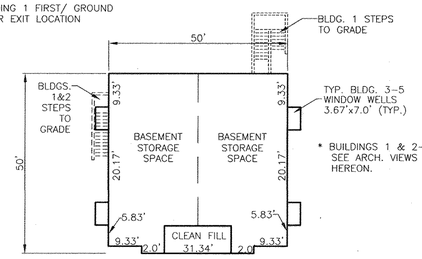
2ND FLOOR PLAN



▽ TYP. FRONT ENTRY/ EXIT LOCATION

▲ BUILDING 1 FIRST/ GROUND FLOOR EXIT LOCATION

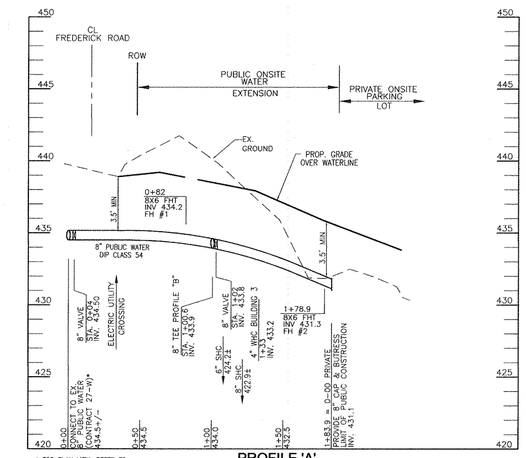
GROUND FLOOR PLAN



BASEMENT PLAN

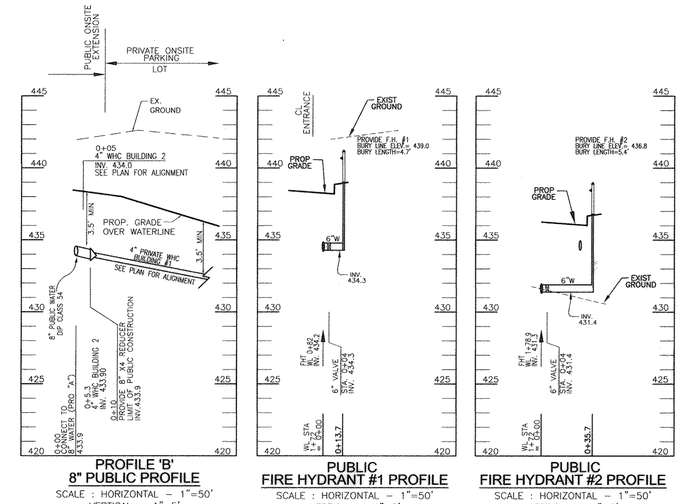
ARCHITECTURAL FLOOR PLANS

SCALE: 1"=20'



* FOR PLAN VIEW, REFER TO CONTRACT 27-W - SHEET 2
* FOR PROFILE, REFER TO CONTRACT 11-W - SHEET 29

PROFILE 'A'
8" PUBLIC PROFILE
SCALE : HORIZONTAL – 1"=50'
VERTICAL – 1"=5'



PROFILE 'B'
8" PUBLIC PROFILE
SCALE : HORIZONTAL – 1"=50'
VERTICAL – 1"=5'

PUBLIC
FIRE HYDRANT #1 PROFILE
SCALE : HORIZONTAL – 1"=50'
VERTICAL – 1"=5'

PUBLIC
FIRE HYDRANT #2 PROFILE
SCALE : HORIZONTAL – 1"=50'
VERTICAL – 1"=5'

NOTES:

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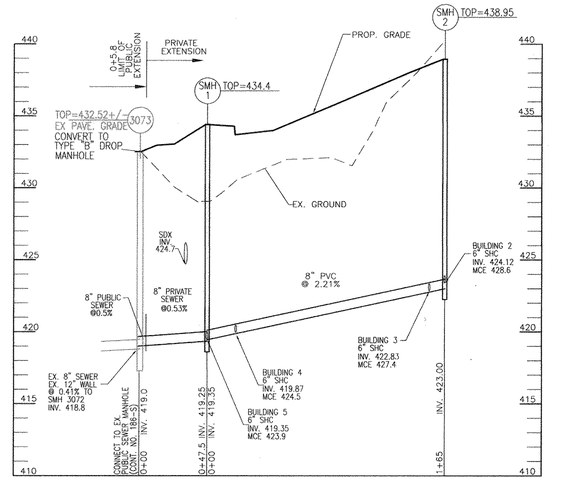
6. REFER TO "CONSTRUCTION NOTES FOR ADVANCE DEPOSIT ORDER (A.D.O.) WORK IN THE PUBLIC WATER & UTILITY EASEMENT

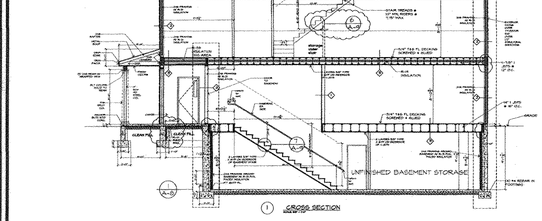
SEWER MANHOLE SCHEDULE

NO.	TYPE	LOCATION		TOP ELEV.	INV. IN	INV. OUT
		EASTING	NORTHING			
EX 3073	EXISTING MH			432.52±	419.0	418.8*
SMH 1	STD. PRECAST MH HO. CO. STD. DET. G5.12	E 1351095	N 587137	434.4	419.25	419.35
SMH 2	STD. PRECAST MH HO. CO. STD. DET. G5.12	E 1351217	N 587027	438.95	424.12	423.00

* CONTRACTOR SHALL VERIFY EXISTING INVERT



SEWER PROFILE
SCALE : HORIZONTAL – 1"=50'
VERTICAL – 1"=5'

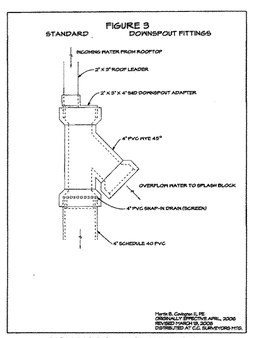


1 CROSS SECTION

ARCHITECTURAL CROSS SECTION VIEW

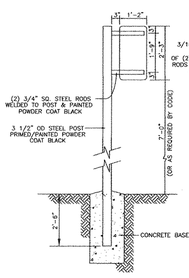
SCALE: N.T.S.

SEE REDLINE SHEET 13 FOR ADDITIONAL BUILDING DETAILS

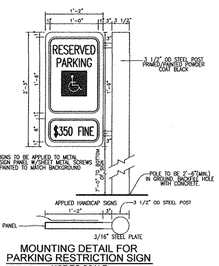


DOWNSPOUT OVERFLOW

1. PROVIDE ABOVE FITTING FOR ALL DOWNSPOUT FEEDING ROOFLEADER COLLECTION PIPE SYSTEMS



NOTE : FINE AMOUNT TO BE DETERMINED BY HOWARD COUNTY RESOLUTION. CONTACT HOWARD COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS.
* REDUCE SPACING SOR

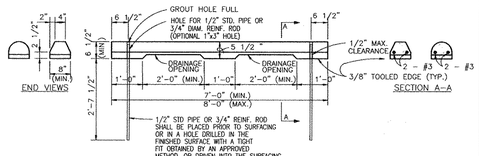


MOUNTING DETAIL FOR PARKING RESTRICTION SIGN

NOT TO SCALE

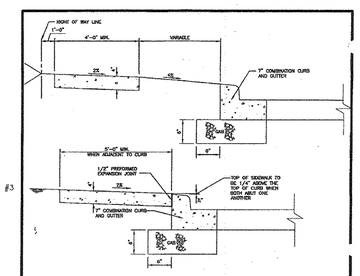
HANDICAP PARKING SIGNS

(NOT TO SCALE)



PRECAST CONCRETE WHEEL STOP DETAILS

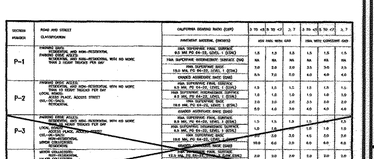
NOT TO SCALE



NOTES:

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" BELOW SURFACE OF SIDEWALK.
4. CONCRETE TO BE MIX NO.3.
5. WHEN SIDEWALK ABUTS CURB, SIDEWALK SHALL BE 1/4" ABOVE CURB WITH 1/2" PREFORMED EXPANSION JOINT BETWEEN SIDEWALK AND CURB.
6. ON LONGITUDINAL SIDEWALK GRADES OF 5% OR GREATER, A CONCRETE HEADER, 6" THICK AND 8" 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.
7. SIDEWALK WIDTH ADJACENT TO CURB SHALL BE 5'-0" MINIMUM EXCEPT SIDEWALK ADJACENT TO CURB IN CUL-DE-SAC BULBS MAY BE 4'-0" WIDE.
8. SIDEWALK LOCATED 2' OR MORE FROM CURB MAY BE 4'-0" IN WIDTH WITH A 5'x5' PAVED SECTION PLACED 200' APART.
9. 4'-0" SIDEWALK REQUIRES A PASSING AREA (SEE DETAIL R-4.01).

Howard County, Maryland Department of Public Works — Concrete Sidewalk — Detail R-3.05



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

Approved
Howard SCD

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6-8-15

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7-07-15

DIRECTOR — DATE 7-7-15

APPROVED JULY 17, 2014
PLANNING BOARD OF HOWARD COUNTY

PLANNING DIRECTOR — DATE

NO.	REVISION	DATE
3	REVISE BUILDING 2, 3 & 4 WINDOW WELL LOCATIONS, ADD CONC. PADS	6/15/17

SITE DEVELOPMENT PLAN

SITE DETAILS

DEMIREL PLAZA

L.15837 F.345

2ND ELECTION DISTRICT
TAX MAP: 24 GRID: 1

ZONED: OT
PARCELS 62, 63 AND P/O 544 (LOT 112)
HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND — ROBERT HARRIS HODGE — No. 16193 — REGISTERED PROFESSIONAL ENGINEER — 5/26/16

ROBERT H. VOGEL, PE No.16193

DESIGN BY:	EDS
DRAWN BY:	RVE
CHECKED BY:	RHV
DATE:	MAY 2015
SCALE:	AS SHOWN
W.O. NO.:	11-01

PROFESSIONAL CERTIFICATE

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

SHEET 4 OF 15

ATTORNEY
SANG OH
TALKIN & OH, LLP
5100 DORSEY HALL DRIVE
ELLICOTT CITY, MD. 21042
PHONE: (410) 964-0300

OWNER/DEVELOPER
VELI DEMIREL
4408? HIGH POINT ROAD
ELLICOTT CITY, MD 21042
PHONE: (410) 440-1242

SDP-13-077

GRADING PLAN

SCALE: 1"=30'

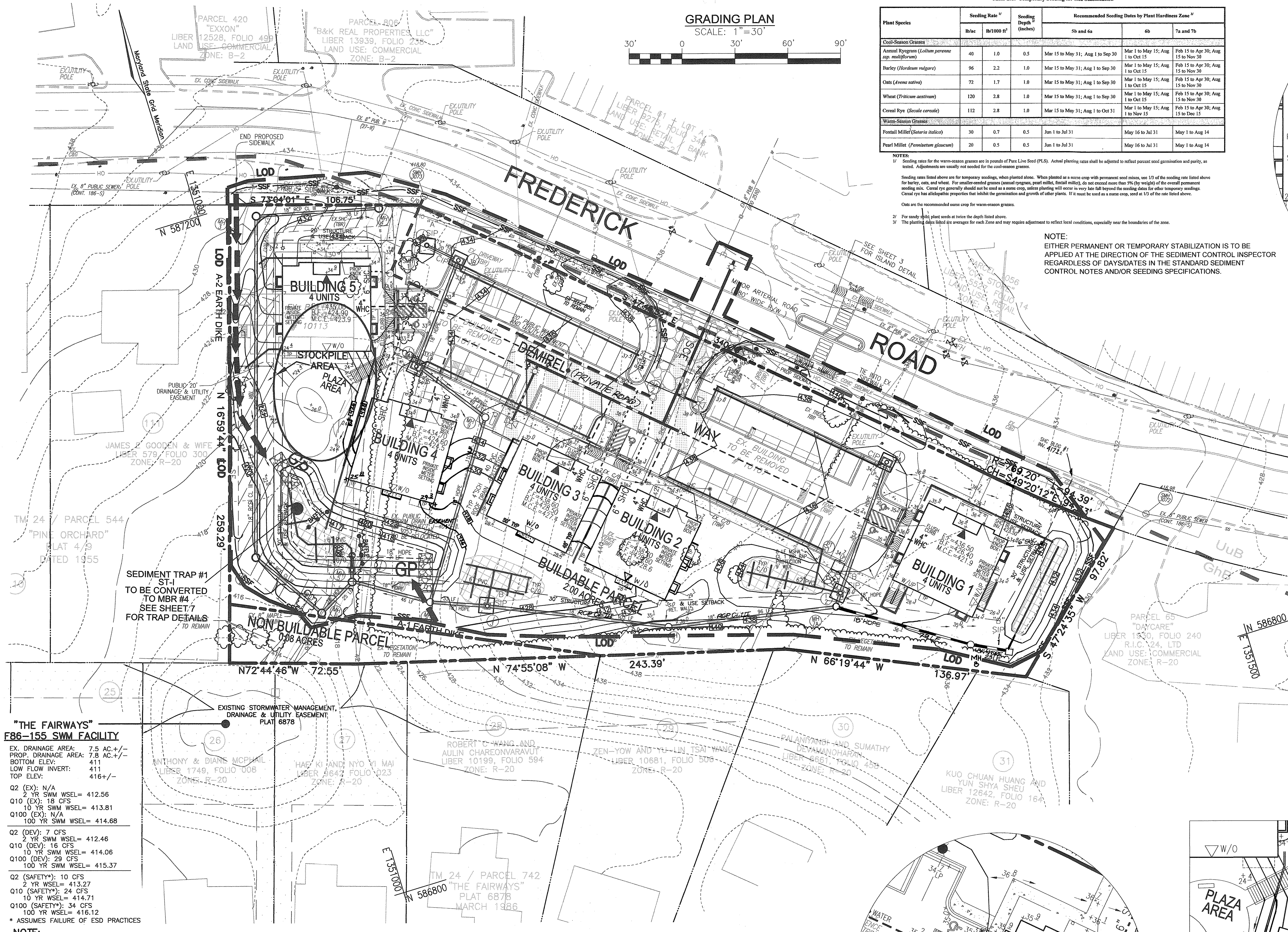


Table B.1: Temporary Seeding for Site Stabilization

Plant Species	Seeding Rate 1/ lb/ac	Seeding Rate 1/ lb/1000 ft²	Seeding Depth 2/ (inches)	Recommended Seeding Dates by Plant Hardiness Zone 3/ 5b and 6a	6b	7a and 7b
Cool-Season Grasses						
Annual Ryegrass (*Lolium perenne ssp. multiflorum*)	40	1.0	0.5	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Barley (*Hordeum vulgare*)	96	2.2	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Oats (*Avena sativa*)	72	1.7	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Wheat (*Triticum aestivum*)	120	2.8	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Cereal Rye (*Secale cereale*)	112	2.8	1.0	Mar 15 to May 31; Aug 1 to Oct 31	Mar 1 to May 15; Aug 1 to Nov 15	Feb 15 to Apr 30; Aug 15 to Dec 15
Warm-Season Grasses						
Foxtail Millet (*Setaria italica*)	30	0.7	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14
Pearl Millet (*Pennisetum glaucum*)	20	0.5	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14

NOTES:

1/ Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usually not needed for the cool-season grasses.

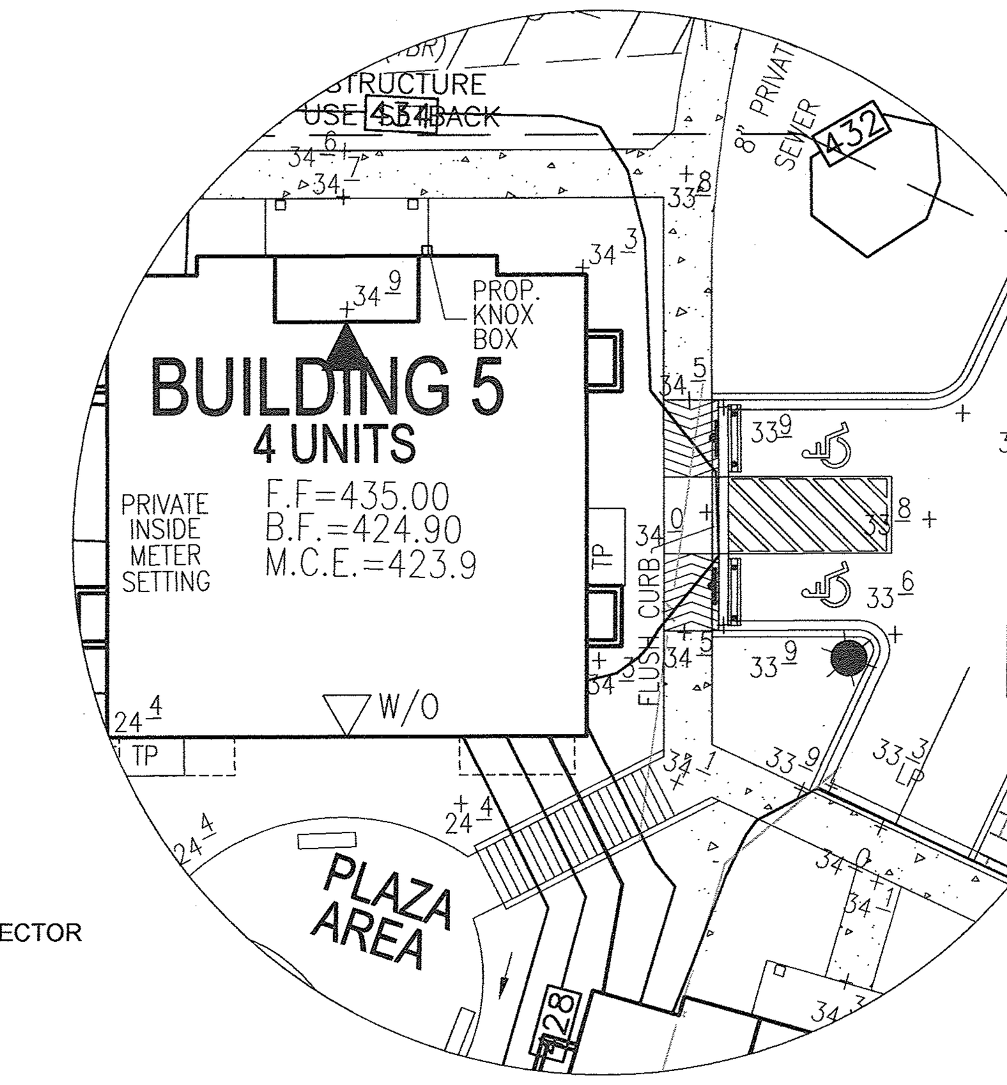
Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the overall permanent seeding mix. Cereal rye generally should not be used as a nurse crop, unless planting will occur in very late fall beyond the seeding dates for other temporary seedings. Cereal rye has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/3 of the rate listed above.

Oats are the recommended nurse crop for warm-season grasses.

2/ For sandy soils, plant seeds at twice the depth listed above.

3/ The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

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



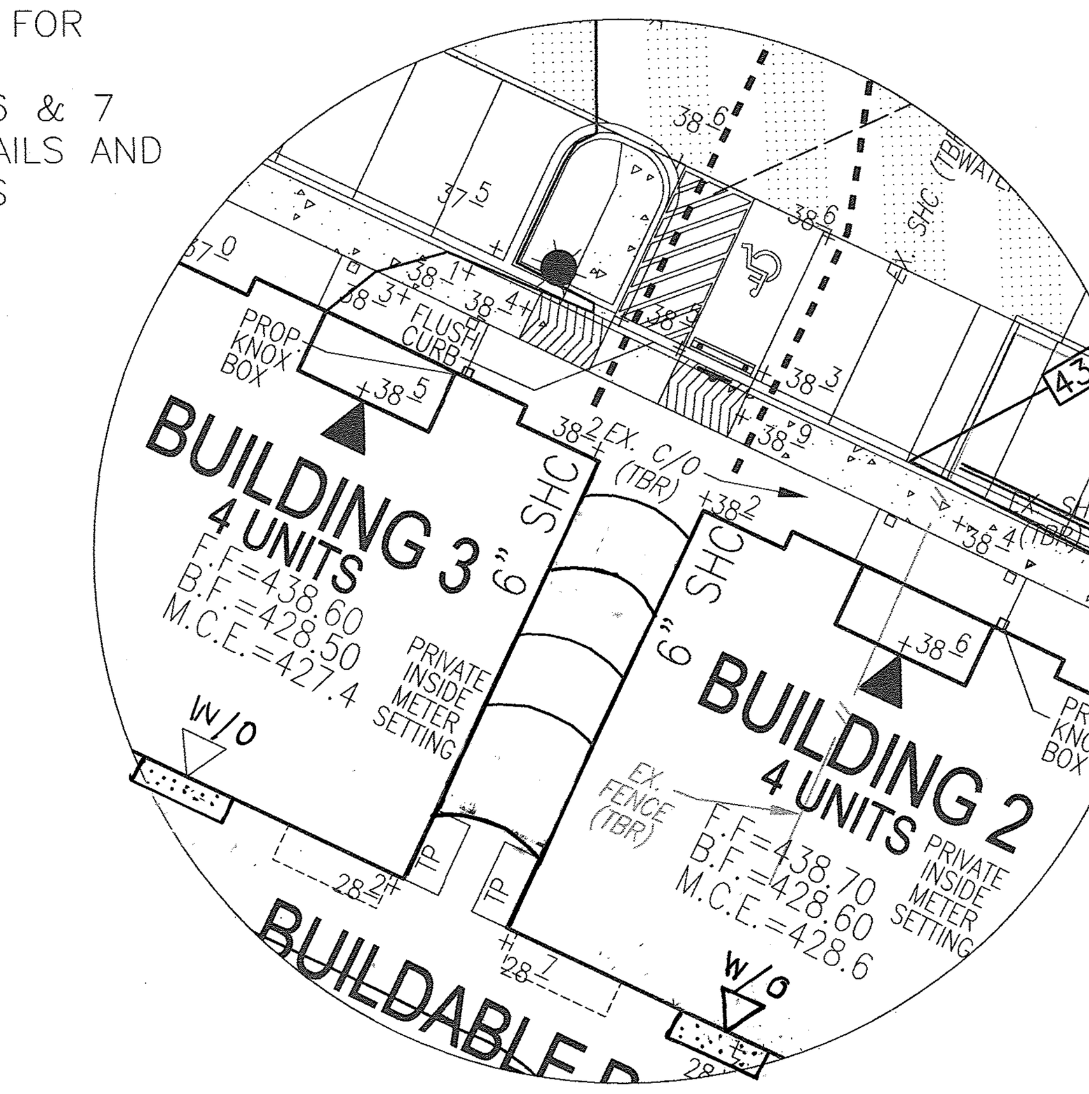
SIDEWALK INSET DETAIL
SCALE: 1"=20'

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLETS
- EXISTING TREELINE
- SOILS BOUNDARY
- SILT FENCE
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- CIP CURB INLET PROTECTION
- AGIP AT GRADE INLET PROTECTION
- STABILIZED CONSTRUCTION ENTRANCE

NOTES

1. REFER TO SHEET 7 FOR SEQUENCE OF CONSTRUCTION
2. REFER TO SHEET 7 FOR TRAP SCHEDULE
3. REFER TO SHEETS 6 & 7 FOR STANDARD DETAILS AND STABILIZATION NOTES



SIDEWALK INSET DETAIL
SCALE: 1"=20'

"THE FAIRWAYS" F86–155 SWM FACILITY

EX. DRAINAGE AREA: 7.5 AC.+/–
PROP. DRAINAGE AREA: 7.8 AC.+/–
BOTTOM ELEV: 411
LOW FLOW INVERT: 411
TOP ELEV: 416+/–

Q2 (EX): N/A
2 YR SWM WSEL= 412.56
Q10 (EX): 18 CFS
10 YR SWM WSEL= 413.81
Q100 (EX): N/A
100 YR SWM WSEL= 414.68

Q2 (DEV): 7 CFS
2 YR SWM WSEL= 412.46
Q10 (DEV): 16 CFS
10 YR SWM WSEL= 414.06
Q100 (DEV): 29 CFS
100 YR SWM WSEL= 415.37

Q2 (SAFETY*): 10 CFS
2 YR WSEL= 413.27
Q10 (SAFETY*): 24 CFS
10 YR WSEL= 414.71
Q100 (SAFETY*): 34 CFS
100 YR WSEL= 416.12
* ASSUMES FAILURE OF ESD PRACTICES

NOTE:
1. CONTRACTOR TO PROVIDE IMMEDIATE REPAIR OF ANY EARTH DIKES INTERRUPTED DURING CONSTRUCTION.
2. CONTRACTOR TO PROVIDE IMMEDIATE REPAIR OF ANY SEDIMENT CONTROLS INTERRUPTED OR DAMAGED BY THE INSTALLATION OF THE STORM DRAIN SYSTEMS.

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

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

APPROVED JULY 17, 2014
PLANNING BOARD OF HOWARD COUNTY

~~PLANNING DIRECTOR~~ ~~DATE~~

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6-8-15
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7-07-15
DIRECTOR — DATE 7-7-15

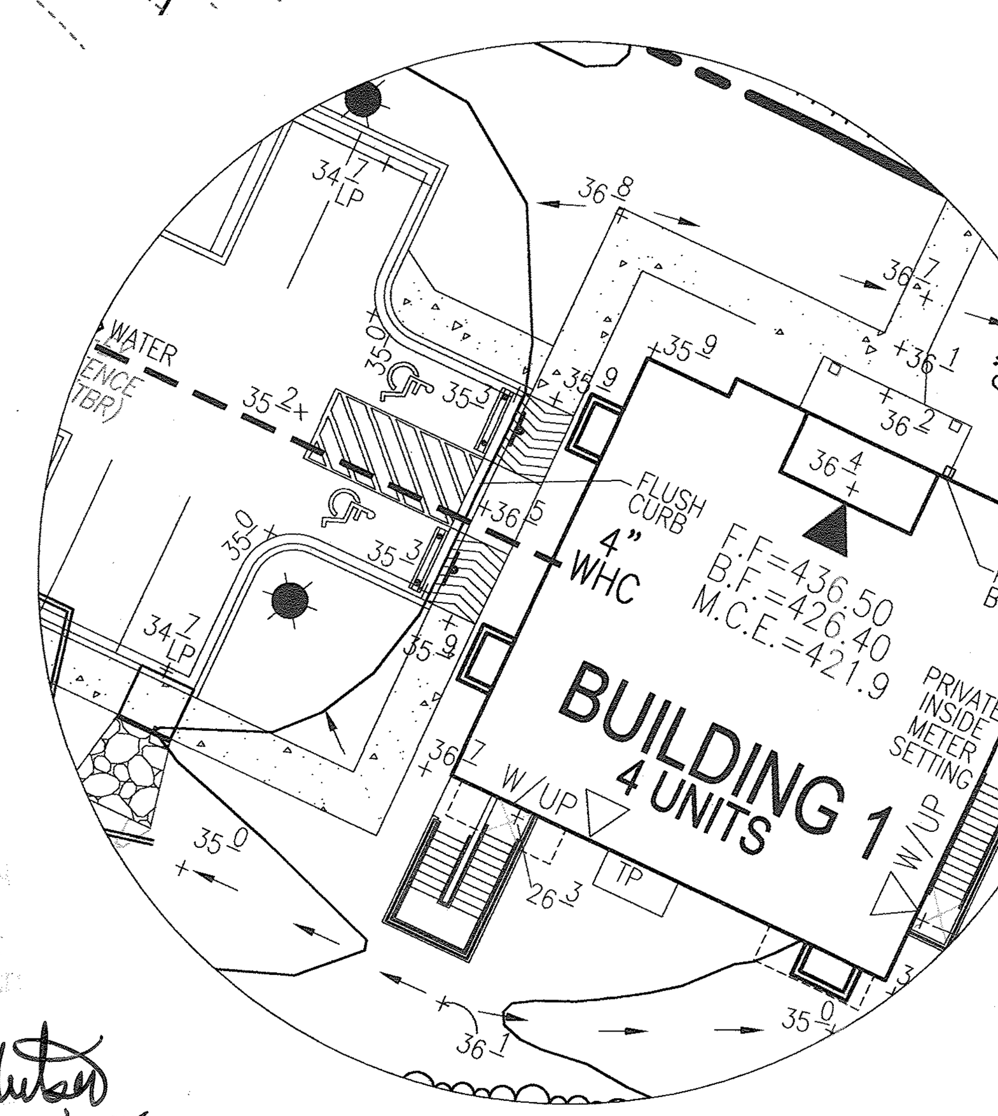
MAPPED SOILS TYPES - ELLICOTT CITY SW MAP #13

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	HYDRIC INCLUSIONS	K-FACTOR	PRIME FARMLAND	<15% SLOPE W/ EROSION POTENTIAL
GhB	GLENELG-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES	B/D	NO	NO	0.20	NO	NO

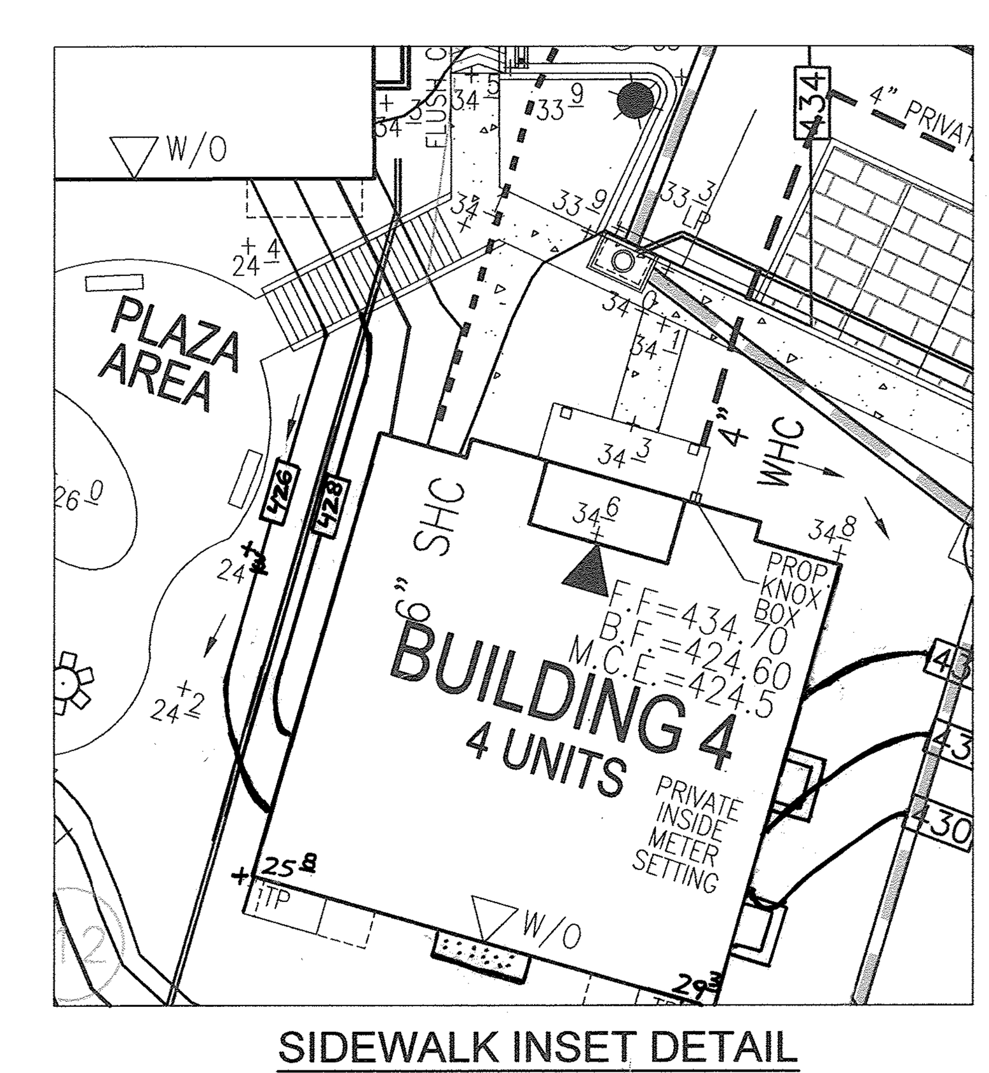
TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
K-FACTOR = Kw @ 0-4" DEPTH

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

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
Approved: Howard SCD 6/2/15



SIDEWALK INSET DETAIL
SCALE: 1"=20'



SIDEWALK INSET DETAIL
SCALE: 1"=20'

ATTORNEY
SANG OH
TALKIN & OH, LLP
5100 DORSEY HALL DRIVE
ELLICOTT CITY, MD. 21042
PHONE: (410) 964-0300

OWNER/DEVELOPER
VELI DEMIREL
44087 HIGH POINT ROAD
ELLICOTT CITY, MD 21042
PHONE: (410) 440-1242

NO.	REVISION	DATE
5	REVISE GRADES AROUND BUILDING 4	5-7-20
3	REVISE BUILDING 2, 3 & 4 WINDOW WELL LOCATIONS, ADD CONC. PADS	6/15/17
1	REVISE STORMDRAIN AND SHC TO BUILDING 1	12.9.15

SITE DEVELOPMENT PLAN

SOILS, GRADING AND SOIL EROSION AND SEDIMENT CONTROL PLAN

DEMIREL PLAZA

L.15837 F.345

2ND ELECTION DISTRICT
TAX MAP: 24 GRID: 1

ZONED: OT
PARCELS 62, 63 AND P/O 544 (LOT 112)
HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND — ROBERT HARRIS VOGEL — NO. 16193 REGISTERED PROFESSIONAL ENGINEER
ROBERT H. VOGEL, PE No.16193

DESIGN BY: EDS
DRAWN BY: RVE
CHECKED BY: RHV
DATE: MAY 2015
SCALE: AS SHOWN
W.O. NO.: 11-01

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

HOWARD SOIL CONSERVATION DISTRICT

STANDARD SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION, (313-1855).

2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", AND REVISIONS THERETO.

3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY 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 PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

7. SITE ANALYSIS:

TOTAL AREA OF SITE	2.08	ACRES
AREA DISTURBED	2.1	ACRES
AREA TO BE ROOFED OR PAVED	0.8	ACRES
AREA TO BE VEGETATIVELY STABILIZED	1.3	ACRES
TOTAL CUT	8,000	CU. YDS.*
TOTAL FILL	5,500	CU. YDS.*
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 CONTROL 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 CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

12. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 ACRES PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED ATA GIVEN TIME.

* ESTIMATE ONLY; CONTRACTOR SHALL VERIFY QUANTITIES TO HIS OWN SATISFACTION.
** TO BE DETERMINED BY CONTRACTOR, WITH PRE-APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, WITH AN APPROVED AND ACTIVE GRADING PERMIT

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

DEFINITION

TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.

PURPOSE

TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES

EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE 8.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE 8.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

HARDINESS ZONE (FROM FIGURE B.3): ZONE 6b
SEED MIXTURE (FROM TABLE B.1):

NO	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)	LIME RATE
1	COOL SEASON ANNUAL RYEGRASS OR EQUAL	40 LB / AC	MAR 1 TO MAY 15; AUG 1 TO OCT 15	1/2 IN.	436 LB/AC (10 LB PER 1000 SF)	2 TONS/AC (90 LB PER 1000 SF)
2	WARM SEASON FOXTAIL MILLET OR EQUAL	30 LB / AC	MAY 16 TO JUL 31	1/2 IN.		

REFER TO TABLE B-1, SHEET 5

Veli Demirel 5/18/16
SIGNATURE OF DEVELOPER DATE

BY THE DEVELOPER:

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

~~SIGNATURE OF DEVELOPER~~ ~~DATE~~

BY THE ENGINEER:

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

SIGNATURE OF ENGINEER 5/18/15
DATE

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

John R Robertson 6/2/15
HOWARD S.C.D. DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION 6-8-15 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 7-07-15 DATE

DIRECTOR 7-7-15 DATE

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

DEFINITION

TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

PURPOSE

TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES

EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA

A. SEED MIXTURES
I. GENERAL USE
A. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE 8.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE 8.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE 8.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
B. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
C. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3-1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.
2. TURFGRASS MIXTURES
A. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
B. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
I. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
II. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/ CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
III. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
IV. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1½ TO 3 POUNDS PER 1000 SQUARE FEET.

NOTES:
SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND" CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE

C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES

- WESTEM MD: MARCH 15 TO JUNE 1, AUGUST ITO OCTOBER 1 (HARDINESS ZONES: SB, 6A)
- CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)
- SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)

D. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1¼ INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.
E. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

1. GENERAL SPECIFICATIONS
A. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
B. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS ¼ INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TOM OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
C. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
D. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
E. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.
2. SOD INSTALLATION
A. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
B. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
C. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
D. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.
3. SOD MAINTENANCE
A. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
B. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
C. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

PERMANENT SEEDING SUMMARY

HARDINESS ZONE (FROM FIGURE B.3): ZONE 6b
SEED MIXTURE (FROM TABLE B.3): 9

NO	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20) N	P_2O_5	K_2O	LIME RATE
1	COOL SEASON TALL FESCUE & KENTUCKY BLUEGRASS OR EQUAL	T.F. 60 LB / AC; K.B. 40 LB / AC	MAR 1 TO MAY 15; AUG 15 TO OCT 15	1/4-1/2 IN.	45 LB/AC (1 LB PER 1000 SF)	90 LB/AC (2 LB PER 1000 SF)	90 LB/AC (2 LB PER 1000 SF)	2 TONS/AC (90 LB PER 1000 SF)

APPROVED JULY 17, 2014
PLANNING BOARD OF HOWARD COUNTY

~~PLANNING DIRECTOR~~ ~~DATE~~

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

DEFINITION

THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES

WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA

A. SOIL PREPARATION

1. TEMPORARY STABILIZATION
A. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
B. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
C. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
2. PERMANENT STABILIZATION
A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
I. SOIL PH BETWEEN 6.0 AND 7.0.
II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
B. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
C. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
D. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
E. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

I. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCEM HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FLIRNISH 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.
4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
A. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN DIAMETER.
B. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
C. 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.
6. TOPSOIL APPLICATION
A. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
B. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
C. TOPSOIL MUST NOT BE PLACED IF 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 SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
I. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

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

DEFINITION

THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

PURPOSE

TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES

TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

CRITERIA

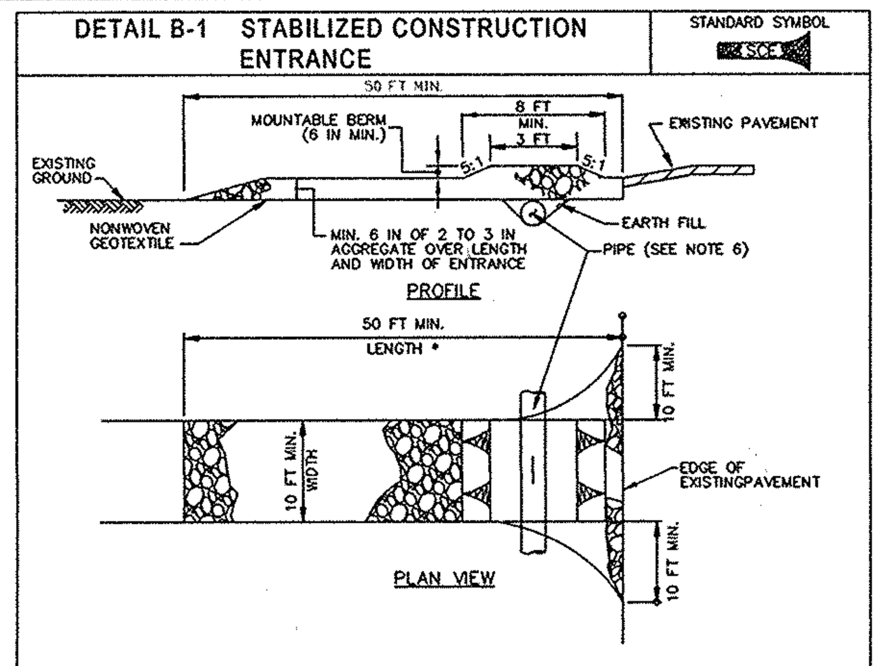
A. SEEDING
1.SPECIFICATIONS
A. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
B. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
C. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
D. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
2. APPLICATION
A. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
I. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE 8.1, PERMANENT SEEDING TABLE 8.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
B. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
I. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
C. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
I. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS), 200 POUNDS PER ACRE; K20 (POTASSIUM), 200 POUNDS PER ACRE.
II. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
III. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
IV. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

B. MULCHING
I. MULCH MATERIALS (IN ORDER OF PREFERENCE)
A. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, LYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
B. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
I. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
II. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
III. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
IV. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
V. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.

2. APPLICATION
A. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
B. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
C. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
3. ANCHORING
A. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
I. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
II. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
III. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
IV. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



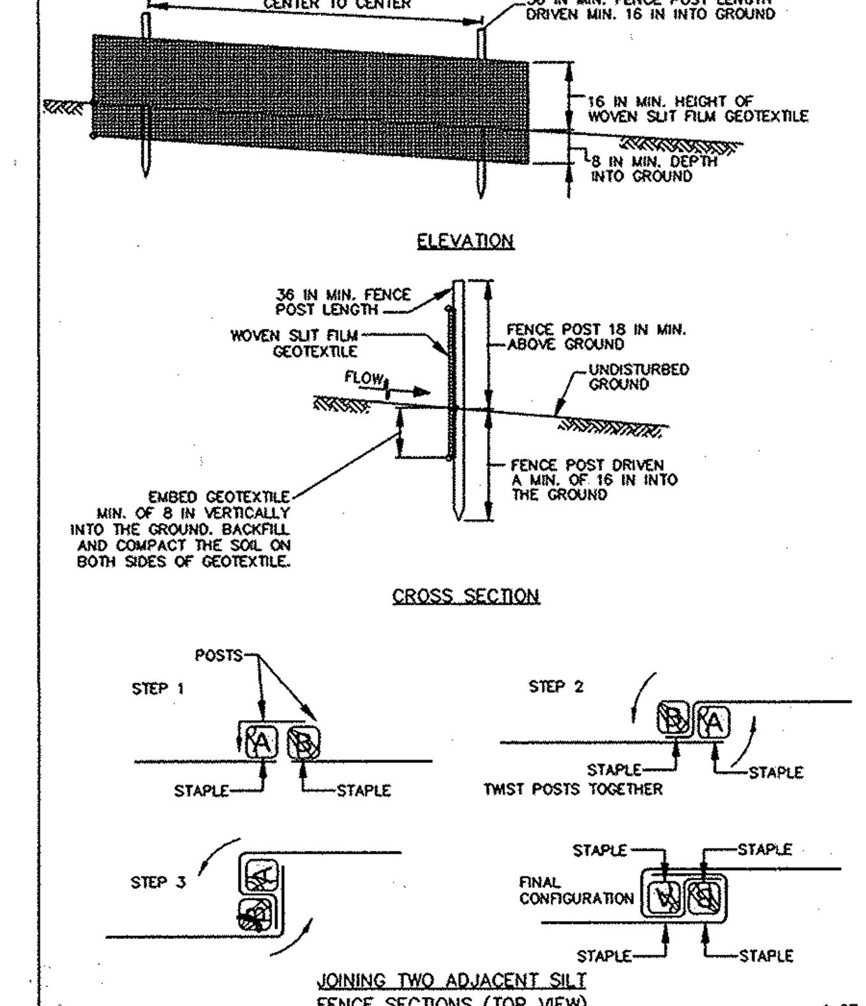
CONSTRUCTION SPECIFICATIONS

1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: ——SF——



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MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
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DETAIL E-1 SILT FENCE

STANDARD SYMBOL: ——SF——

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± ⅙ INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

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MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
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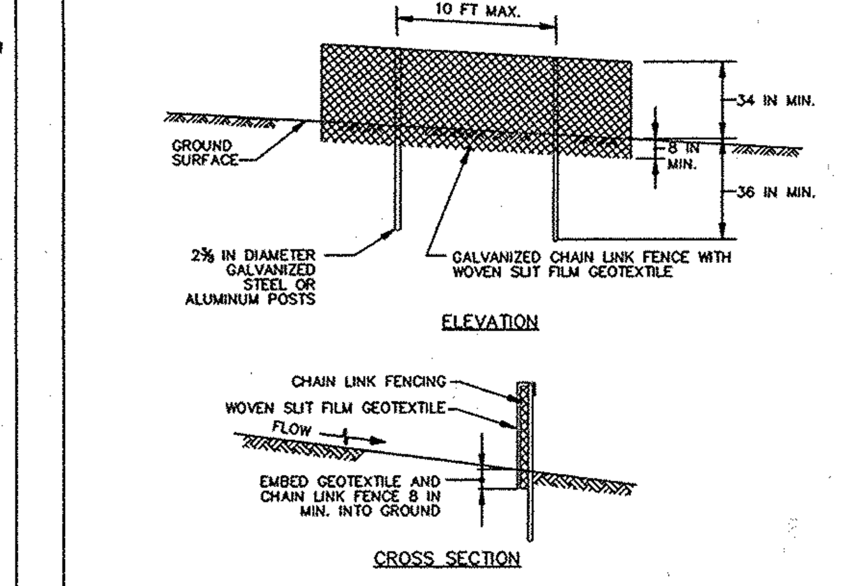
DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: ——SSF——



CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
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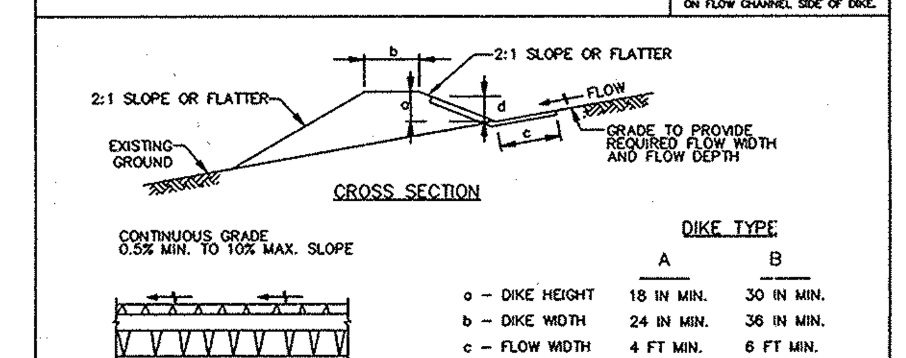
DETAIL C-1 EARTH DIKE

STANDARD SYMBOL: A-1 (PLACE DESIGNATION (e.g. A-1) ON FLOW CHANNEL SIDE OF DIKE.)



	DIKE TYPE A	B
a - DIKE HEIGHT	18 IN MIN.	30 IN MIN.
b - DIKE WIDTH	24 IN MIN.	36 IN MIN.
c - FLOW WIDTH	4 FT MIN.	6 FT MIN.
d - FLOW DEPTH	12 IN MIN.	24 IN MIN.

FLOW CHANNEL STABILIZATION

A-1	SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.)
A-2/B-2	SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.
A-3/B-3	4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

CONSTRUCTION SPECIFICATIONS

1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.
2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. COMPACT FILL.
4. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
5. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
6. STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
8. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
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B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

DEFINITION
A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.

PURPOSE

TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

CONDITIONS WHERE PRACTICE APPLIES

STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

CRITERIA

1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.
2. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.
3. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
4. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.
5. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
6. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
7. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.
8. IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING.

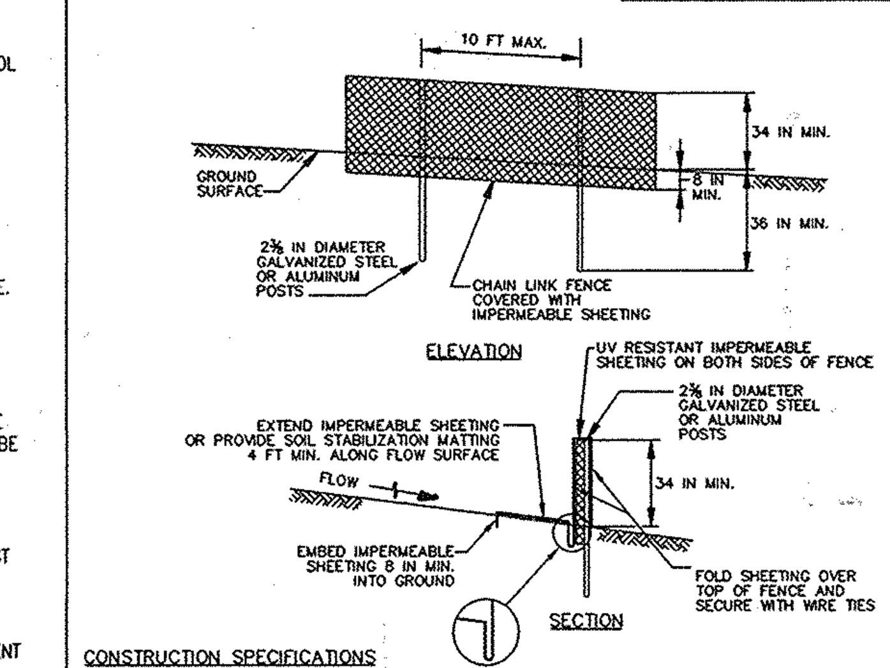
MAINTENANCE

THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

DETAIL C-9 DIVERSION FENCE

STANDARD SYMBOL: —— DF ——

MAXIMUM DRAINAGE AREA = 2 ACRES



CONSTRUCTION SPECIFICATIONS

1. USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2⅜ INCH MAXIMUM OPENING).
2. USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
3. FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
4. SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
5. EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
6. WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.
7. KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
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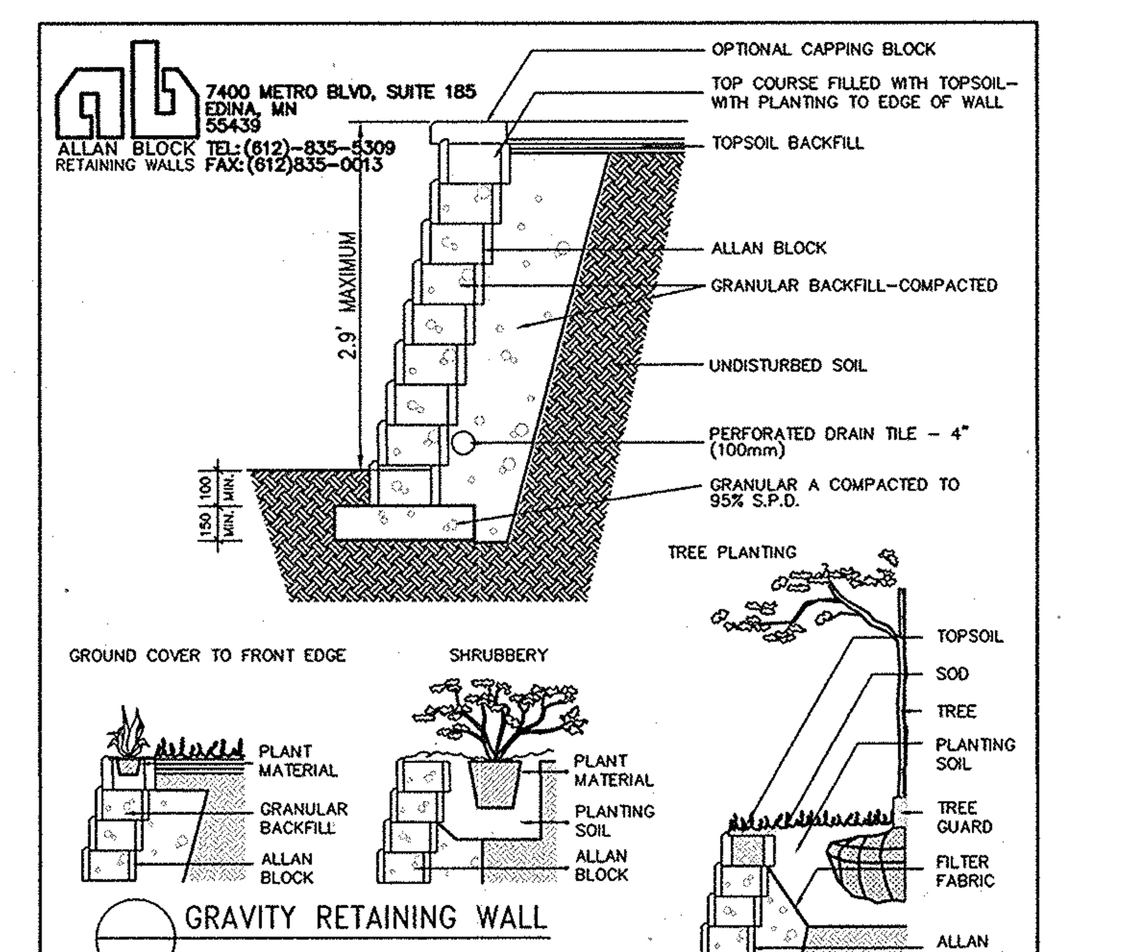


SPECIFICATIONS:

1. EXCAVATE AREA TO LINE AND GRADES AS SHOWN ON CONSTRUCTION DRAWINGS
2. SUBGRADE TO BE FIRM AND UNDISTURBED AND COMPACTED TO 95% S.P.D.
3. BASE MATERIAL SHALL BE GRANULAR A COMPACTED TO 95% S.P.D. AND GRADED TO PROVIDE LEVEL HARD SURFACE ON WHICH TO PLACE THE FIRST COURSE OF UNITS, MIN. THICKNESS - 6" (150mm)
4. PLACE FIRST COURSE A MINIMUM OF 4" (100mm) BELOW FINISHED GRADE, WITH THE RAISED LIP FACING OUT AND THE FRONT EDGES TIGHT TOGETHER. FILL CAVITYS WITH SAND OR CLEAR CRUSHED STONE AND COMPACT. SWEEP CLEAN AND CHECK THE UNITS FOR LEVEL AND ALIGNMENT. BACKFILL FRONT AND BACK OF ENTIRE BASE ROW TO FIRMLY LOCK IN PLACE.
5. INSTALL SUBSEQUENT COURSES IN SIMILAR FASHION PROVIDING A MIN. 3" (76mm) OVERLAP OF SEAMS AND A MIN. OF 12" (305mm) GRANULAR BACKFILL.
6. ALLAN BLOCKS COME IN 3 STYLES : STANDARD BLOCK, ANGLE BLOCK, AND CORNER BLOCK AS WELL AS A STANDARD CAPPING STONE. THE BLOCKS HAVE A COMPRESSIVE STRENGTH OF OVER 4000 psi (28MPa)
7. A WIDE VARIETY OF DESIGNS CAN BE ACHIEVED INCLUDING INSIDE AND OUTSIDE CORNERS, CURVES AND STEPS. BLOCKS COME IN 5 STANDARD COLORS :NATURAL, BUFF, BROWN, EARTH RANGE, SMOKE BLEND.
8. WALLS HIGHER THAN 6' REQUIRE GEOGRIDS OR REBAR AND MASONRY CONSTRUCTION-CONSULT MANUF.

TYP. GRAVITY WALL OR EQUAL

NO.	REVISION	DATE

ATTORNEY
SANG OH
TALKIN & OH, LLP
5100 DORSEY HALL DRIVE
ELLICOTT CITY, MD. 21042
PHONE: (410) 964-0300

OWNER/DEVELOPER
VELI DEMIREL
44087 HIGH POINT ROAD
ELLICOTT CITY, MD 21042
PHONE: (410) 440-1242

SITE DEVELOPMENT PLAN

GRADING AND SOIL EROSION, AND SEDIMENT CONTROL PLAN - DETAILS

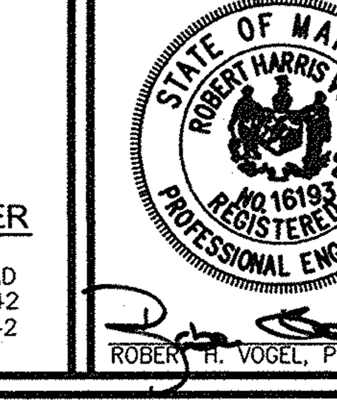
DEMIREL PLAZA

L.15837 F. 345

2ND ELECTION DISTRICT
TAX MAP: 24 GRID: 1

ZONED: OT
PARCELS 62, 63 AND P/O 544 (LOT 112)
HOWARD COUNTY, MARYLAND

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



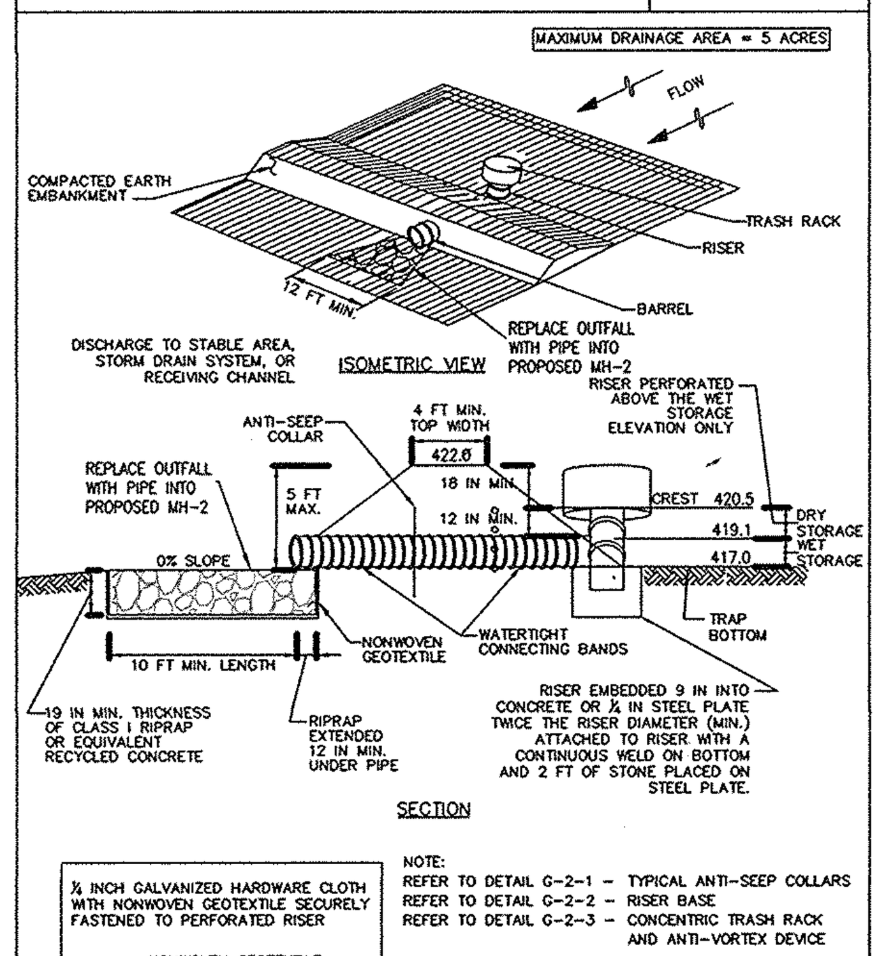
ROBERT H. VOGEL, PE No.16193

DESIGN BY: EDS
DRAWN BY: RVE
CHECKED BY: RHV
DATE: MAY 2015
SCALE: AS SHOWN
W.O. NO.: 11-01

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

DETAIL G-1-1 PIPE OUTLET SEDIMENT TRAP ST-I

STANDARD SYMBOL ST-I



NOTE:
REFER TO DETAIL G-2-1 – TYPICAL ANTI-SEEP COLLARS
REFER TO DETAIL G-2-2 – RISER BASE
REFER TO DETAIL G-2-3 – CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE

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MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL G-1-1 PIPE OUTLET SEDIMENT TRAP ST-I

STANDARD SYMBOL ST-I

PIPE OUTLET SEDIMENT TRAP ST-I, TRAP NO. 1		
DRAINAGE AREA – INTIAL	1.30	ACRES
DRAINAGE AREA – INTERIM	1.20	ACRES
DRAINAGE AREA – FINAL	1.80 *	ACRES
TOTAL STORAGE REQUIRED	7,200	CF
TOTAL STORAGE PROVIDED	7,218	CF
WET STORAGE REQUIRED	3,600	CF
WET STORAGE PROVIDED	3,617	CF
DRY STORAGE REQUIRED	3,600	CF
DRY STORAGE PROVIDED	3,601	CF
TRAP BOTTOM ELEVATION	417.00	FT
TRAP BOTTOM DIMENSIONS	10' X 90'+/–	SEE PLAN
RISER CREST (DRY STORAGE) ELEVATION	420.50	FT
OUTLET (WET STORAGE) ELEVATION	419.10	FT
CLEANOUT ELEVATION	418.20	FT
TOP OF EMBANKMENT ELEVATION	422.00	FT
SIDE SLOPE	2 : 1	H:V RATIO
EMBANKMENT TOP WIDTH	4'	FT
PRINCIPAL SPILLWAY MATERIAL (BARREL, RISER, ANTI-SEEP COLLAR)	PER STD. DETAIL	
RISER DIAMETER	27"	IN
BARREL DIAMETER	18"	IN
TRASH RACK DIAMETER	42"	IN
TRASH RACK HEIGHT	21"	IN
ANTI-SEEP COLLAR DIMENSIONS	5.5' X 5.5'	FT
OUTLET PROTECTION – LENGTH	INTO MH-5	FT
OUTLET PROTECTION – WIDTH	N/A	FT
OUTLET PROTECTION – DEPTH	N/A	IN

* WITH STORM DRAIN DIVERSION IN PLACE

BAFFLE DESIGN	SWALE/GM INFLOW	GM INFLOW
WIDTH = 25'+/–	L1= 24'	L1= 39'
MIN Le = 2xWIDTH = 50'	L2= 27'	L2= 11'
	PROVIDED Le = 51'	PROVIDED Le = 50'

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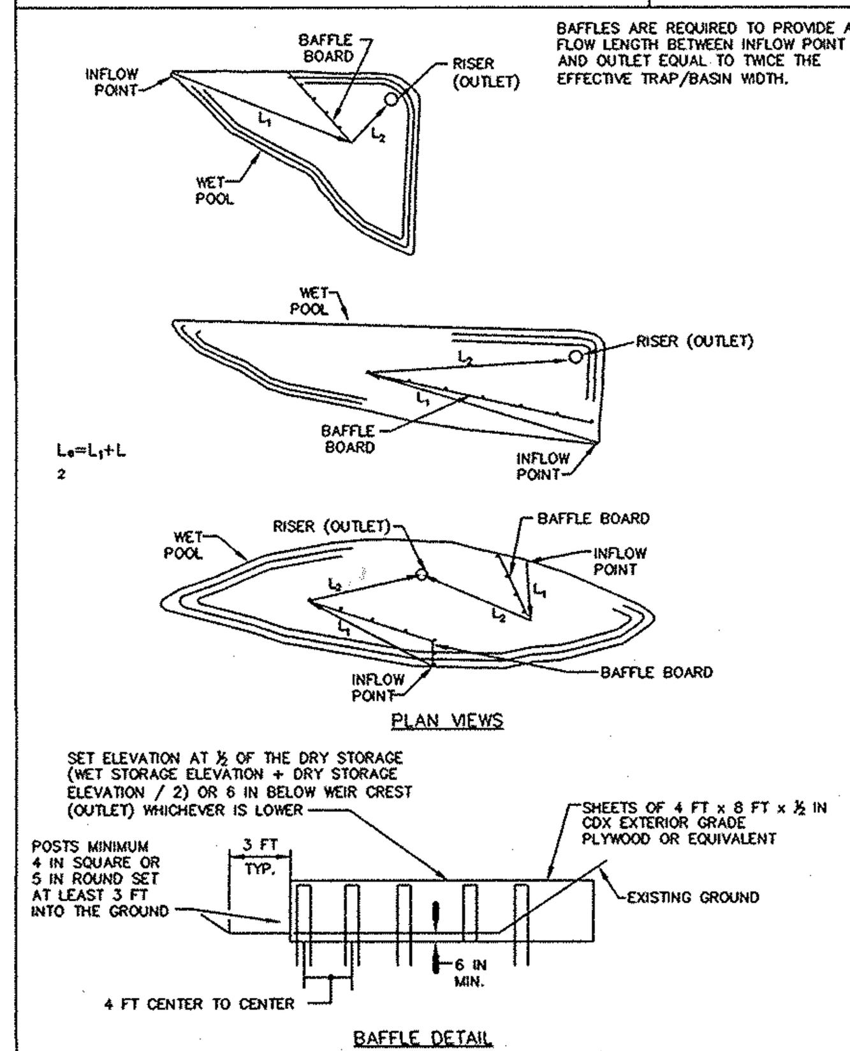
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL G-2-4 BAFFLE BOARDS

STANDARD SYMBOL BB

BAFFLES ARE REQUIRED TO PROVIDE A FLOW LENGTH BETWEEN INFLOW POINT AND OUTLET EQUAL TO TWICE THE EFFECTIVE TRAP/BASIN WIDTH.

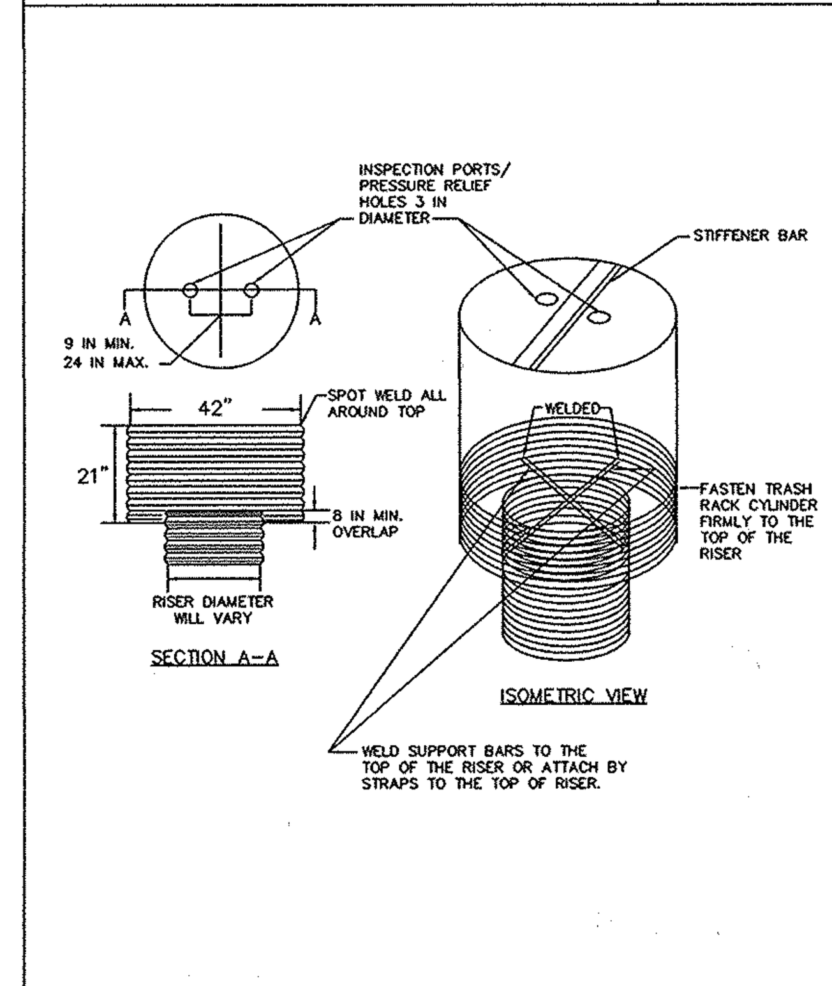


MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL G-2-3 CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE

STANDARD SYMBOL TR



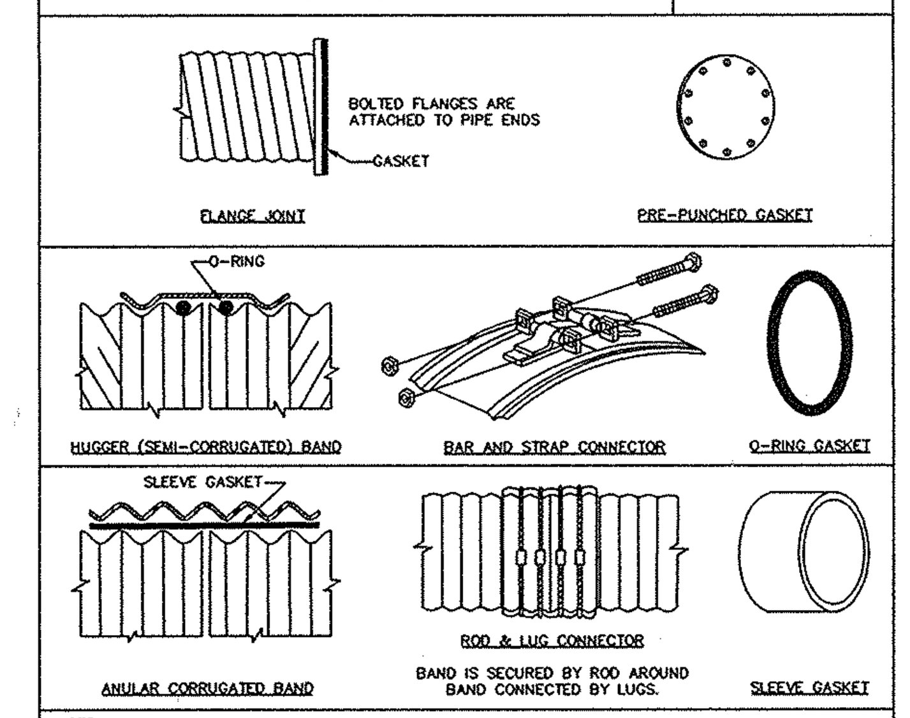
1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL G-2-5 TYPES OF COUPLERS FOR CORRUGATED STEEL PIPE

STANDARD SYMBOL



NOTE:
UNDER NO CIRCUMSTANCE IS A DIMPLE (UNIVERSAL) BAND ACCEPTABLE FOR USE IN A SEDIMENT CONTROL OR STORMWATER MANAGEMENT STRUCTURE.

CONSTRUCTION SPECIFICATIONS

1. USE A RUBBER OR NEOPRENE GASKET WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE RE-ROLLED WITH AN ADEQUATE NUMBER OF CORRUGATIONS TO ACCOMMODATE THE BAND WIDTH.
2. FOR PIPES LESS THAN 24 INCHES IN DIAMETER, PROVIDE ONE OF THE FOLLOWING TYPES OF CONNECTIONS:
   a. FLANGED JOINTS WITH ⅜ INCH CLOSED CELL GASKET THE FULL WIDTH OF THE FLANGE, PRE-PUNCHED TO THE FLANGE BOLT CIRCLES, SANDWICHED BETWEEN ADJACENT FLANGES, OR
   b. 12 INCH WIDE HUGGER TYPE BAND WITH O-RING GASKET HAVING A MINIMUM DIAMETER OF ½ INCH GREATER THAN THE CORRUGATION DEPTH.
3. FOR PIPES 24 INCHES IN DIAMETER AND LARGER, PROVIDE ONE OF THE FOLLOWING TYPES OF CONNECTIONS:
   a. 24 INCH WIDE ANNULAR CORRUGATED BAND WITH 24 INCH WIDE BY ⅜ INCH THICK CLOSED CELL CIRCULAR SLEEVE GASKET WITH 12 INCHES ON THE END OF EACH PIPE, CONNECTED WITH A MINIMUM OF 4 RODS AND LUGS, 2 ON EACH CONNECTING PIPE END, OR
   b. FLANGED JOINTS WITH ⅜ INCH CLOSED CELL GASKET THE FULL WIDTH OF THE FLANGE, PRE-PUNCHED TO THE FLANGE BOLT CIRCLES, AND SANDWICHED BETWEEN ADJACENT FLANGES.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL G-1-1 PIPE OUTLET SEDIMENT TRAP ST-I

STANDARD SYMBOL ST-I

CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT TRAP IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE AVOIDED.
2. CLEAR, GRUB, AND STRIP ANY VEGETATION AND ROOT MAT FROM THE AREA UNDER THE EMBANKMENT AND TRAP BOTTOM.
3. PERFORATE THE RISER WITH 1 INCH DIAMETER HOLES SPACED 6 INCHES ON CENTER WITH THE LOWEST PERFORATIONS AT THE WET STORAGE ELEVATION OR PROVIDE A HORIZONTAL OR VERTICAL DRAW-DOWN DEVICE PERFORATED ACCORDING TO APPROVED PLAN. DO NOT PERFORATE THE RISER WITHIN 6 INCHES OF THE TOP OF THE HORIZONTAL BARREL.
4. SET RISER/BARREL ASSEMBLY PRIOR TO EMBANKMENT CONSTRUCTION. MAKE ALL PIPE CONNECTIONS WATERTIGHT. OFFSET RISER FROM EMBANKEMENT TO ACCOMODATE PLACEMENT OF THE TRASH RACK. ANCHOR THE RISER WITH EITHER A REINFORCED CONCRETE BASE OR STEEL PLATE BASE TO PREVENT FLOTATION. MAKE CONCRETE BASES AT LEAST TWICE THE RISER DIAMETER AND 18 INCHES THICK WITH THE RISER EMBEDDED 9 INCHES.
5. USE FILL MATERIAL FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL FOR THE EMBANKMENT.
6. HAND COMPACT IN 4 INCH LAYERS FILL MATERIAL AROUND THE PIPE SPILLWAY. PLACE A MINIMUM OF 2 FEET OF HAND COMPACTED BACKFILL OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT.
7. CONSTRUCT TOP OF EMBANKMENT 1 FOOT MINIMUM ABOVE RISER CREST. COMPACT THE EMBANKMENT BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
8. MAKE ALL CUT AND FILL SLOPES 2:1 OR FLATTER.
9. WRAP THE RISER WITH ¼ INCH GALVANIZED HARDWARE CLOTH THEN WRAP WITH NONWOVEN GEOTEXTILE. DO NOT WRAP WITH MORE THAN ONE LAYER OF GEOTEXTILE. EXTEND HARDWARE CLOTH AND GEOTEXTILE AT LEAST 6 INCHES ABOVE THE HIGHEST PERFORATIONS AND AT LEAST 6 INCHES BELOW THE LOWEST PERFORATIONS. OVERLAP, FOLD AND FASTEN WHERE ENDS OF GEOTEXTILE COME TOGETHER TO PREVENT BYPASS. REPLACE GEOTEXTILE AS NECESSARY TO PREVENT CLOGGING.
10. USE STRAPS OR CONNECTING BANDS AT THE TOP AND BOTTOM OF THE GEOTEXTILE TO HOLD THE GEOTEXTILE AND HARDWARE CLOTH IN PLACE.
11. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
12. STABILIZE THE EMBANKMENT AND INTERIOR SLOPES WITH SEED AND MULCH. STABILIZE POINTS OF CONCENTRATED INFLOW AS SHOWN ON APPROVED PLAN.
13. CONSTRUCT AND MAINTAIN THE OUTLET ACCORDING TO THE APPROVED PLAN AND IN SUCH A MANNER THAT EROSION AT OR BELOW THE OUTLET DOES NOT OCCUR.
14. REMOVE SEDIMENT AND RESTORE TRAP TO ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO CLEANOUT ELEVATION (50% OF WET STORAGE DEPTH). DEPOSIT REMOVED SEDIMENT IN AN APPROVED AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. KEEP POINTS OF INFLOW AND OUTFLOW AS WELL AS INTERIOR OF THE TRAP FREE FROM EROSION, AND REMOVE ACCUMULATED DEBRIS. MAINTAIN EMBANKMENTS TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. REMOVE ANY TREES, BRUSH, OR OTHER WOODY VEGETATION GROWING ON EMBANKMENT OR NEAR PRINCIPAL SPILLWAY. MAINTAIN LINE, GRADE, AND CROSS SECTION. MAINTAIN WATER TIGHT CONNECTIONS. REPLACE GEOTEXTILE AROUND PERFORATED RISER IF DRY STORAGE VOLUME DOES NOT DRAW DOWN WITHIN 10 HOURS.
15. WHEN DEWATERING TRAP, PASS REMOVED WATER THROUGH AN APPROVED SEDIMENT CONTROL PRACTICE.
16. UPON REMOVAL, GRADE AND STABILIZE THE AREA OCCUPIED BY TRAP.

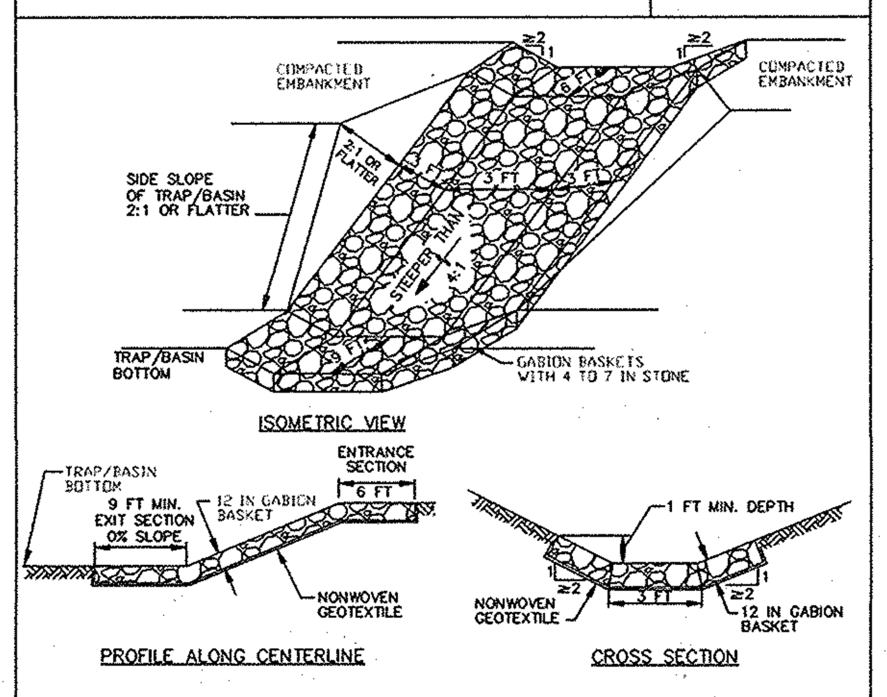
2 OF 3

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL D-3-2 GABION INFLOW PROTECTION

STANDARD SYMBOL GP



CONSTRUCTION SPECIFICATIONS

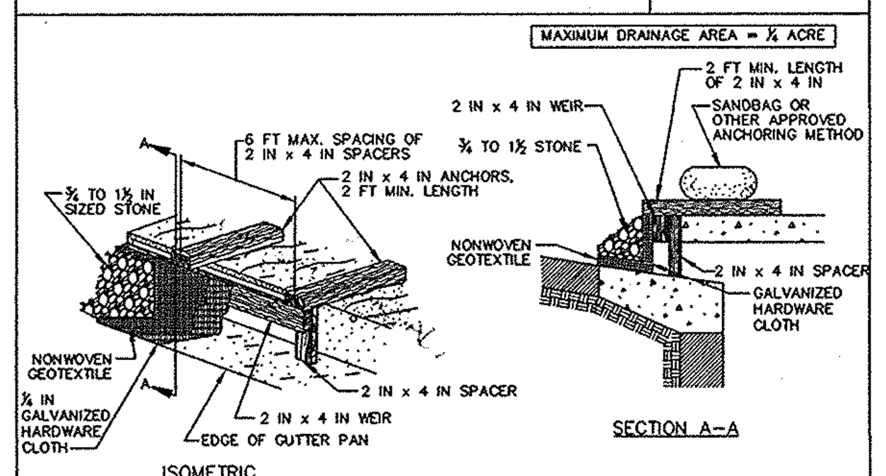
1. PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL GABION BASKETS.
2. USE BASKETS MADE OF MINIMUM 11 GAUGE WIRE.
3. CONSTRUCT GABION INFLOW PROTECTION BY ARRANGING 9 X 3 X 1 FOOT GABION BASKETS TO FORM A TRAPEZOIDAL SECTION WITH A 3 FOOT BOTTOM WIDTH, 1 FOOT MINIMUM DEPTH, 3 FOOT SIDE WALLS, AND 2:1 OR FLATTER SIDE SLOPES. FILL GABION BASKETS WITH 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE WITHOUT REBAR OR WEIR MESH.
4. INSTALL ENTRANCE AND EXIT SECTIONS AS SHOWN ON THE PROFILE.
5. INSTALL GABIONS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
6. BLEND GABIONS INTO EXISTING GROUND.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. KEEP POINTS OF INFLOW AND OUTFLOW FREE OF EROSION

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-9-3 CURB INLET PROTECTION

STANDARD SYMBOL CIP



CONSTRUCTION SPECIFICATIONS

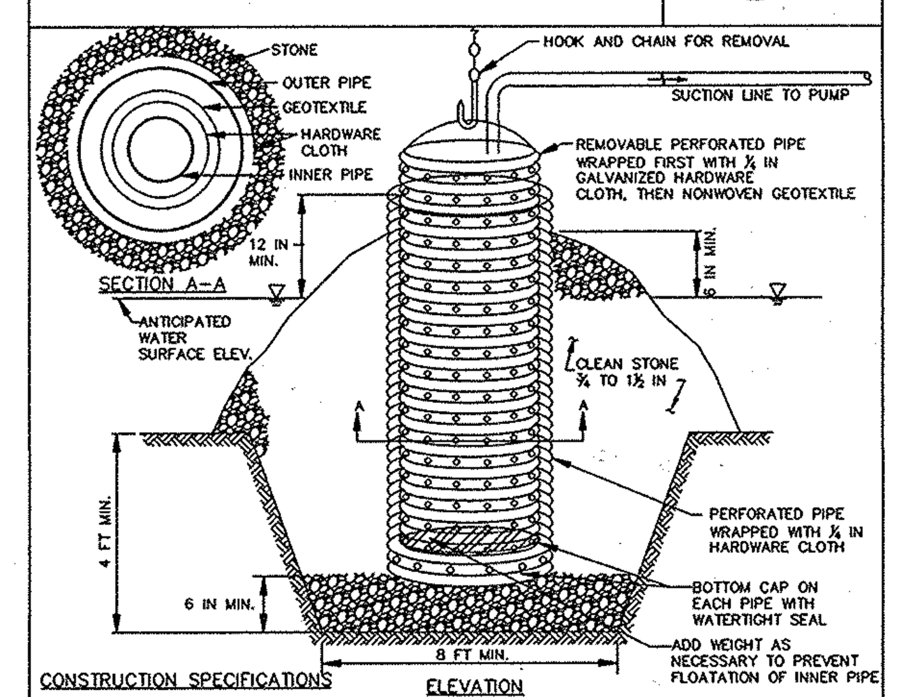
1. USE NOMINAL 2 INCH x 4 INCH LUMBER
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
3. NAIL THE 2x4 WEIR TO 9 INCH LONG VERTICAL SPACERS (MAXIMUM 6 FEET APART).
4. ATTACH A CONTINUOUS PIECE OF ¼ INCH GALVANIZED HARDWARE CLOTH, WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2x4 WEIR, EXTENDING IT 2 FEET BEYOND THROAT ON EACH SIDE.
5. PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE OF THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH TO THE 2x4 WEIR.
6. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2x4 ANCHORS (MINIMUM 2 FEET LENGTH). EXTEND THE ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD.
7. INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND THE ENDS OF THE THROAT OPENING.
8. FORM THE HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND FACE OF CURB TO SPAN THE INLET OPENING. COVER THE HARDWARE CLOTH AND GEOTEXTILE WITH CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE.
9. AT NON-SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS.
10. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL F-1 REMOVABLE PUMPING STATION

STANDARD SYMBOL RPS



CONSTRUCTION SPECIFICATIONS

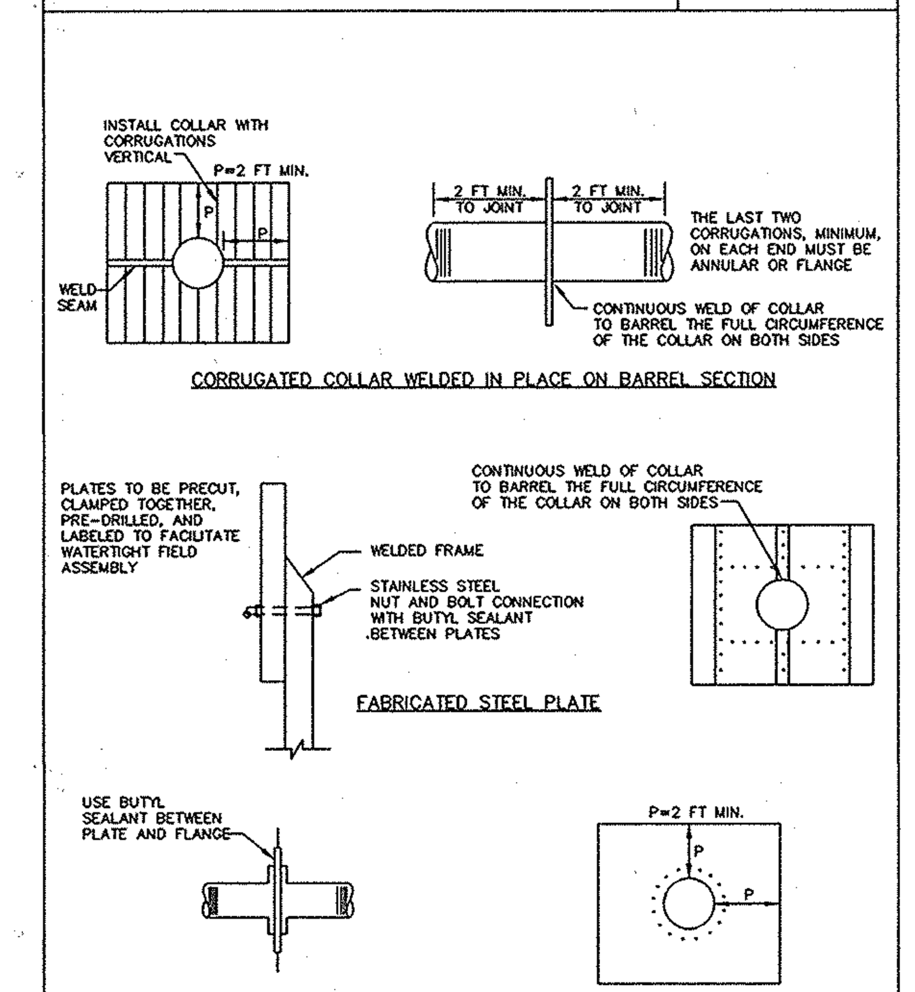
1. USE CORRUGATED METAL OR PLASTIC PIPE WITH 1 INCH DIAMETER PERFORATIONS 6 INCHES ON CENTER.
2. USE A MINIMUM 12 INCH DIAMETER INNER PIPE WITH AN OUTER PIPE A MINIMUM 6 INCHES LARGER IN DIAMETER. BOTTOM OF EACH PIPE MUST BE CAPPED WITH WATERTIGHT SEAL.
3. WRAP EACH PIPE WITH ¼ INCH GALVANIZED HARDWARE CLOTH. ON INNER PIPE WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE HARDWARE CLOTH.
4. EXCAVATE 8 FEET X 8 FEET X 4 FEET DEEP PIT FOR PIPE PLACEMENT. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
5. SET TOP OF INNER AND OUTER PIPES MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION (OR RISER CREST ELEVATION WHEN DEWATERING A BASIN).
6. BACKFILL PIT AROUND THE OUTER PIPE WITH ¾ TO 1½ INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
7. DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
8. A REMOVABLE PUMPING STATION REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, PULL OUT INNER PIPE AND REPLACE GEOTEXTILE. KEEP POINT OF DISCHARGE FREE OF EROSION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL G-2-1 TYPICAL ANTI-SEEP COLLARS

STANDARD SYMBOL

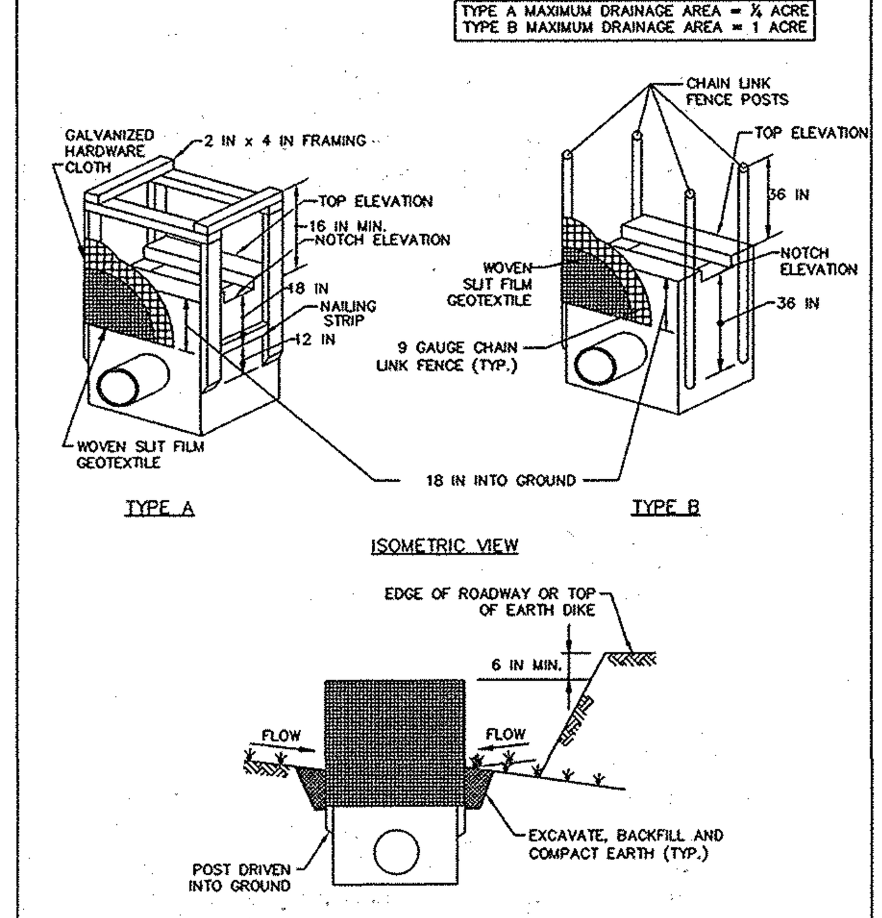


MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL SIP



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL SIP

CONSTRUCTION SPECIFICATIONS

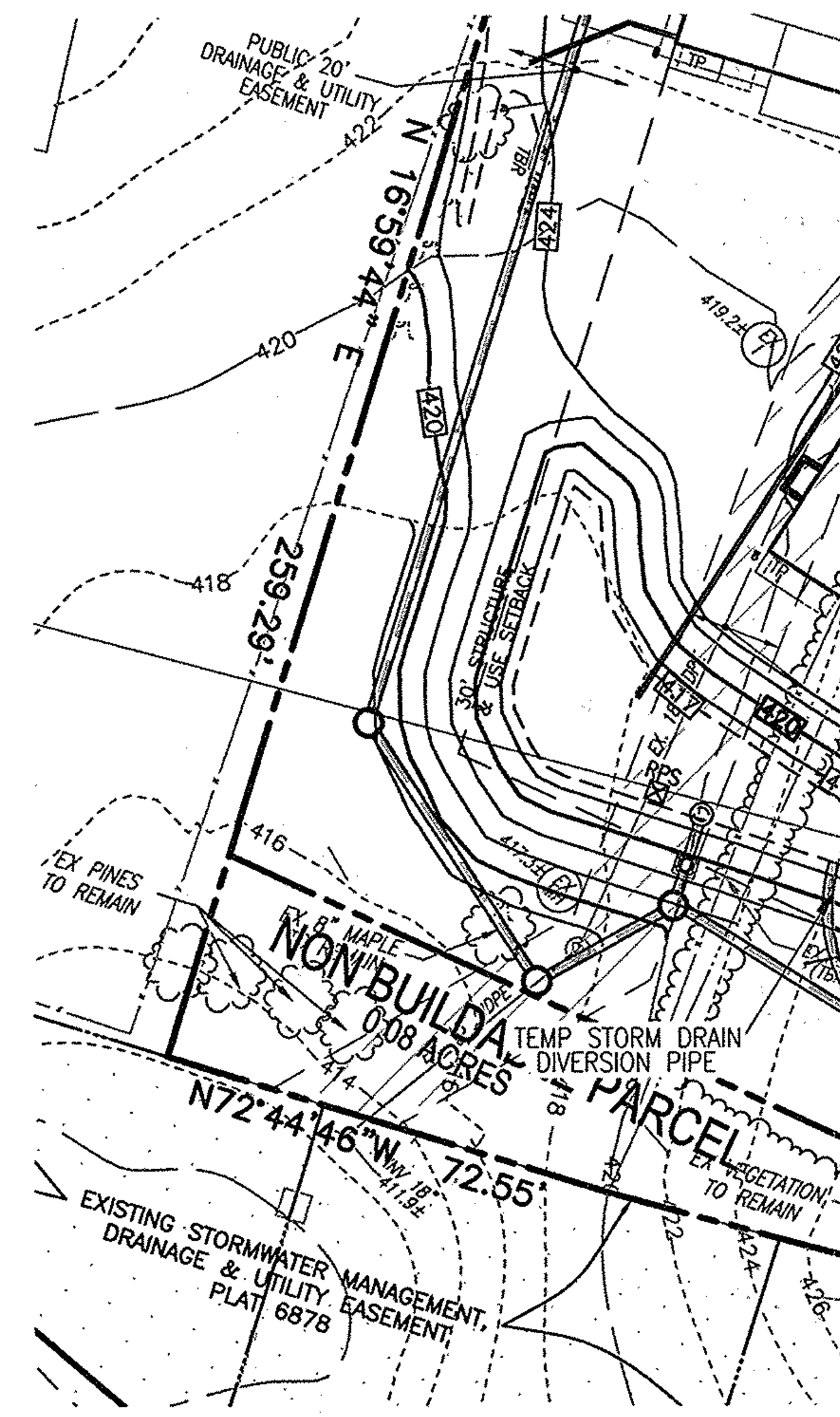
1. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18 INCHES BELOW THE NOTCH ELEVATION.
3. FOR TYPE A, USE NOMINAL 2 INCH X 4 INCH CONSTRUCTION GRADE LUMBER POSTS, DRIVEN 1 FOOT INTO THE GROUND AT EACH CORNER OF THE INLET. PLACE NAIL STRIPS BETWEEN THE POSTS ON THE ENDS OF THE INLET. ASSEMBLE THE TOP PORTION OF THE 2X4 FRAME AS SHOWN. STRETCH ¼ INCH GALVANIZED HARDWARE CLOTH TIGHTLY AROUND THE FRAME AND FASTEN SECURELY. FASTEN GEOTEXTILE SECURELY TO THE HARDWARE CLOTH WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND HARDWARE CLOTH A MINIMUM OF 18 INCHES BELOW THE WEIR CREST. THE ENDS OF THE GEOTEXTILE MUST MEET AT A POST, BE OVERLAPPED AND FOLDED, THEN FASTENED TO THE POST.

   FOR TYPE B, USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND 6 FOOT LENGTH, DRIVEN A MINIMUM OF 36 INCHES BELOW THE WEIR CREST AT EACH CORNER OF THE STRUCTURE. FASTEN 9 GAUGE OR HEAVIER CHAIN LINK FENCE, 42 INCHES IN HEIGHT, SECURELY TO THE FENCE POSTS WITH WIRE TIES. FASTEN GEOTEXTILE SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 18 INCHES BELOW THE WEIR CREST.
4. BACKFILL AROUND THE INLET IN LOOSE 4 INCH LIFTS AND COMPACT UNTIL SOIL IS LEVEL WITH THE NOTCH ELEVATION ON THE ENDS AND TOP ELEVATION ON THE SIDES.
5. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

2 OF 2

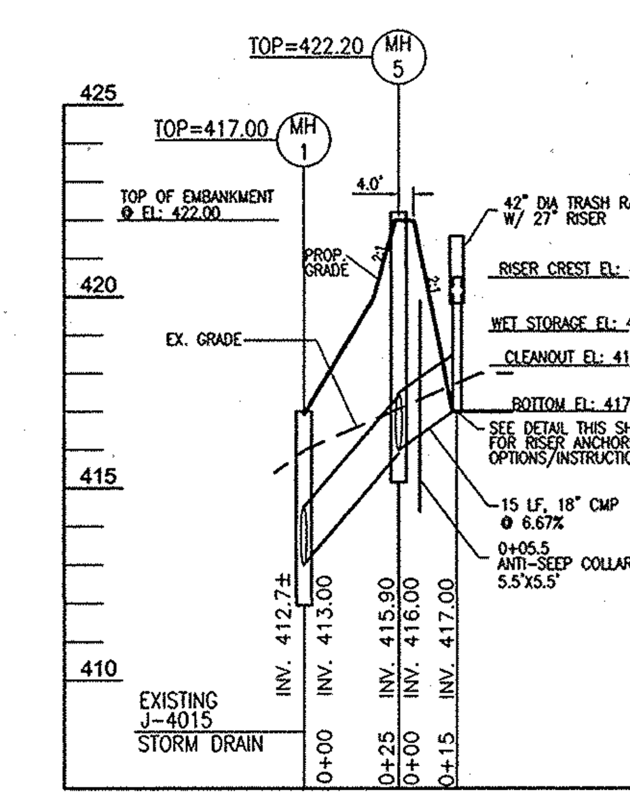
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



PIPE OUTLET SEDIMENT TRAP

SCALE: 1" = 30'



SECTION A–A
PIPE OUTLET SEDIMENT TRAP
SCALE : HORIZONTAL – 1"=50'
VERTICAL – 1"=5'

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT. (1 DAY)
2. DEVELOPER / CONTRACTOR SHALL REQUEST A PRE-CONSTRUCTION MEETING WITH THE APPROPRIATE ENFORCEMENT AUTHORITY PRIOR TO BEGINNING CONSTRUCTION. (1 DAY)
3. NOTIFY HOWARD COUNTY BUREAU OF INSPECTIONS AND PERMITS (410-313-1880) AT LEAST 24 HOURS BEFORE STARTING ANY WORK. (1 DAY)

PHASE 1

THE CONSTRUCTION IS LIMITED TO THE SOUTH WESTERN MOST PORTION OF THE SITE.

4. CLEAR AND GRUB FOR THE INSTALLATION OF PERIMETER CONTROLS (1 DAY)
5. INSTALL STABILIZED CONSTRUCTION ENTRANCE AND PERIMETER CONTROLS AS SHOWN HEREON AND STABILIZE DISTURBANCES. (2 DAYS)
6. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, PROCEED WITH THE INSTALLATION OF OFFSITE DIVERSION STORM DRAIN SYSTEM MH-1 TOWARD MH-3 AND MH-3 TOWARD MH-4. EXISTING STORM DRAIN SYSTEM SHALL REMAIN IN SERVICE UNTIL THE OFFSITE DIVERSION STORM DRAIN SYSTEM INSTALLATION IS COMPLETE – (5 DAYS)
7. TEMPORARILY INSTALL SILT FENCE AROUND THE EXISTING HOME # 10113. THIS STRUCTURE SHALL BE RAZED AT THIS TIME. WITH THIS STRUCTURE (#10113) REMOVED, THE REMAINDER OF THE OFFSITE DIVERSION STORM DRAIN SYSTEM CAN BE COMPLETED; MH-2 THROUGH MH-4 JUST SOUTH OF FREDERICK ROAD. – (5 DAYS)

NOTE: EXISTING STORM DRAIN SYSTEM SHALL REMAIN IN SERVICE UNTIL THE OFFSITE DIVERSION STORM DRAIN SYSTEM INSTALLATION IS COMPLETE TO MH-1 TO MH-4. THIS REALIGNMENT SHALL BE COMPLETED FROM ITS EXISTING LOCATION TO THE PROPOSED LOCATION PRIOR TO MOVING ON TO THE PHASE 2 WORK. AFTER OBTAINING PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR TO PROCEED TO PHASE 2

PHASE 2

8. WITH FREDERICK ROAD STORM DRAIN DIVERSION IN PLACE AND FUNCTIONING, CLEAR & GRUB AREA COMMON TO THE SEDIMENT TRAP. – (5 DAYS)
9. REMOVE EXISTING MANHOLE NEAR MH-1 AND INSTALL STORM DRAIN SYSTEMS MH-1 TO MH-5 AND MH-5 TO MH-6. WITH TRAP COMPLETE, INSTALL TEMPORARY DIVERSION PIPE INTO SEDIMENT TRAP FROM MH-6. – (5 DAYS)
10. COMPLETE CONSTRUCTION OF SEDIMENT TRAP PER THE DETAILS AND SPECFICATIONS SHOWN HEREON AND EARTH DIKES CONVEYING RUNOFF TO THE TRAP. EXCAVATED MATERIAL SHALL BE STOCKPILED OR USED AS FILL MATERIAL PER THE OVERALL SITE GRADING PROPOSAL. TRAP PIPE OUTLET SHALL BE CONNECTED AND OUTFALL INTO BYPASS STORM DRAIN VIA MH-5 – (5 DAYS)

NOTE: WITH THE OFFSITE DIVERSION STORM DRAIN SYSTEM IN PLACE THE REMAINNG PORTIONS OF THE EXISTING STORM DRAIN, WHICH GOES THROUGH THE TRAP LOCATION, CAN BE REMOVED.

11. STABILIZE ~~STABILIZE~~ THE DISTURBED AREAS FROM THE AFOREMENTIONED DISTURBANCES WITH TEMPORARY SEEDING MIXTURE AND STRAW MULCH – (1 DAY)
12. THE SEDIMENT SHALL BE REMOVED FROM THE SEDIMENT TRAP WHEN THE CLEANOUT ELEVATION HAS BEEN REACHED. – (2 DAYS)
13. THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON THE SEDIMENT AND EROSION CONTROLS SHOWN HEREON AFTER EACH RAINFALL AND ON A DAILY BASIS – (1 DAY)
14. THE SEDIMENT TRAP SHALL BE DEWATERED BY PUMPING. THE ACCUMULATED SEDIMENT FROM THE TRAPS SHALL BE PLACED UP GRADE FROM THE STRUCTURE IN SUCH A MANNER AS NOT TO INTERFERE WITH CONSTRUCTION OPERATIONS OR CAUSE EROSION DOWN GRADE FROM THE STRUCTURE. – (2 DAYS)
15. AFTER OBTAINING PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR TO PROCEED WITH THE REMOVAL OF THE REMAINING EXISTING HOMES AND GRADE THE SITE WITHIN THE INSTALLED PERIMETER CONTROLS, BRINGING SITE TO SUBGRADE ELEVATIONS AND COMPACTED FILLS FOR PROPOSED BUILDING CONSTRUCTION. – (2 WEEKS)
16. STABILIZE AREAS PLACED TO FINAL GRADE WITH PERMANENT SEEDING MIXTURE AND STRAW MULCH OR AS DIRECTED BY THE SEDIMENT CONTRIOL INSPECTOR. – (2 DAYS)
17. COMPLETE INSTALLATION OF STROM DRAIN SYSTEM & WATER AND SEWER UTILITY EXTENSIONS. (2 WEEKS)
18. INSTALL INLET PROTECTION AS SHOWN HEREON OR AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR. – (1 DAY)
19. OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR TO PROCEED. – (1 DAY)
20. INSTALL PERMEABLE SURFACE PARKING AREA "CURBING", STONE RESERVOIR, STONE SUBBASE AND ASSOCIATED UNNDER&OVER DRAIN – (5 DAYS)
21. INSTALL REMAINING PARKING LOT CURB AND GUTTER AND GRADE FOR PAVED AREAS – (5 DAYS)
22. INSTALL BASE COURSE PAVEMENT – (1 DAY)
23A. *CONTACT HOWARD COUNTY TRAFFIC ENGINEERING, 410-313-5752. PLACEMENT OF SHEET 15'S MAINTENANCE OF TRAFFIC SIGNAGE SHALL BE AT THE DIRECTION OF HOWARD COUNTY TRAFFIC ENGINEERING. COMPLETE INSTALLATION OF PEDESTRIAN REFUGE ISLAND, ASSOCIATED SIGNAGE; MARKINGS AND FREDERICK ROAD IMPROVEMENTS.*
23B. INSTALL SIDEWALK. – (5 DAYS)
24. INSTALL LANDSCAPING – (5 DAYS)
25. WITH BUILDING CONSTRUCTION COMPLETE, INSTALL SURFACE COURSE PAVEMENT – (1 DAY)
26. WITH CONTRIBUTING AREA STABILIZED WITH A 2" STAND OF GRASS, CONSTRUCT MICRO-BIOS TO RECIEVE RUNOFF PER SHEET DRAINAGE AREAS – (5 DAYS)
27. UPON COMPLETION OF MICROBIORETENTION FACILITIES, IMMEDIATELY STABILIZE PERMANENT SEEDING MIXTURE AND STRAW MULCH AND INSTALL REQUIRED LANDSCAPING – (1 DAY)
28. COMPLETE ANY REMAINING FINE GRADING WITHIN THE INSTALLED PERIMETER CONTROLS AND STABILIZE WITH PERMANENT SEEDING MIXTURE AND STRAW MULCH (5 DAYS)
29. UPON STABILIZATION OF ALL DISTURBED AREAS AND WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL DEVICES AND STABILIZE DISTURBANCES WITH PERMANENT SEEDING MIXTURE AND STRAW MULCH.

NOTE: ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.

BY THE DEVELOPER:

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

[signature] 5/18/15
SIGNATURE OF DEVELOPER

BY THE ENGINEER:

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

[signature] 5/18/15
SIGNATURE OF ENGINEER

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

[signature] 6/2/15
HOWARD S.C.D. DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[signature] 6.8.15
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[signature] 7-07-15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[signature] 7-7-15
DIRECTOR DATE

APPROVED JULY 17, 2014
PLANNING BOARD OF HOWARD COUNTY

~~PLANNING DIRECTOR~~ ~~DATE~~

ATTORNEY
SANG OH
TALKIN & OH, LLP
5100 DORSEY HALL DRIVE
ELLICOTT CITY, MD. 21042
PHONE: (410) 964-0300

OWNER/DEVELOPER
VELI DEMIREL
44087 HIGH POINT ROAD
ELLICOTT CITY, MD 21042
PHONE: (410) 440-1242

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN

GRADING AND SOIL EROSION, AND SEDIMENT CONTROL PLAN - DETAILS

DEMIREL PLAZA

L.15837 F.345

2ND ELECTION DISTRICT
TAX MAP: 24 GRID: 1

ZONED: OT
PARCELS 62, 63 AND P/O 544 (LOT 112)
HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND – ROBERT HARRIS VOGEL – NO. 16193 – REGISTERED PROFESSIONAL ENGINEER

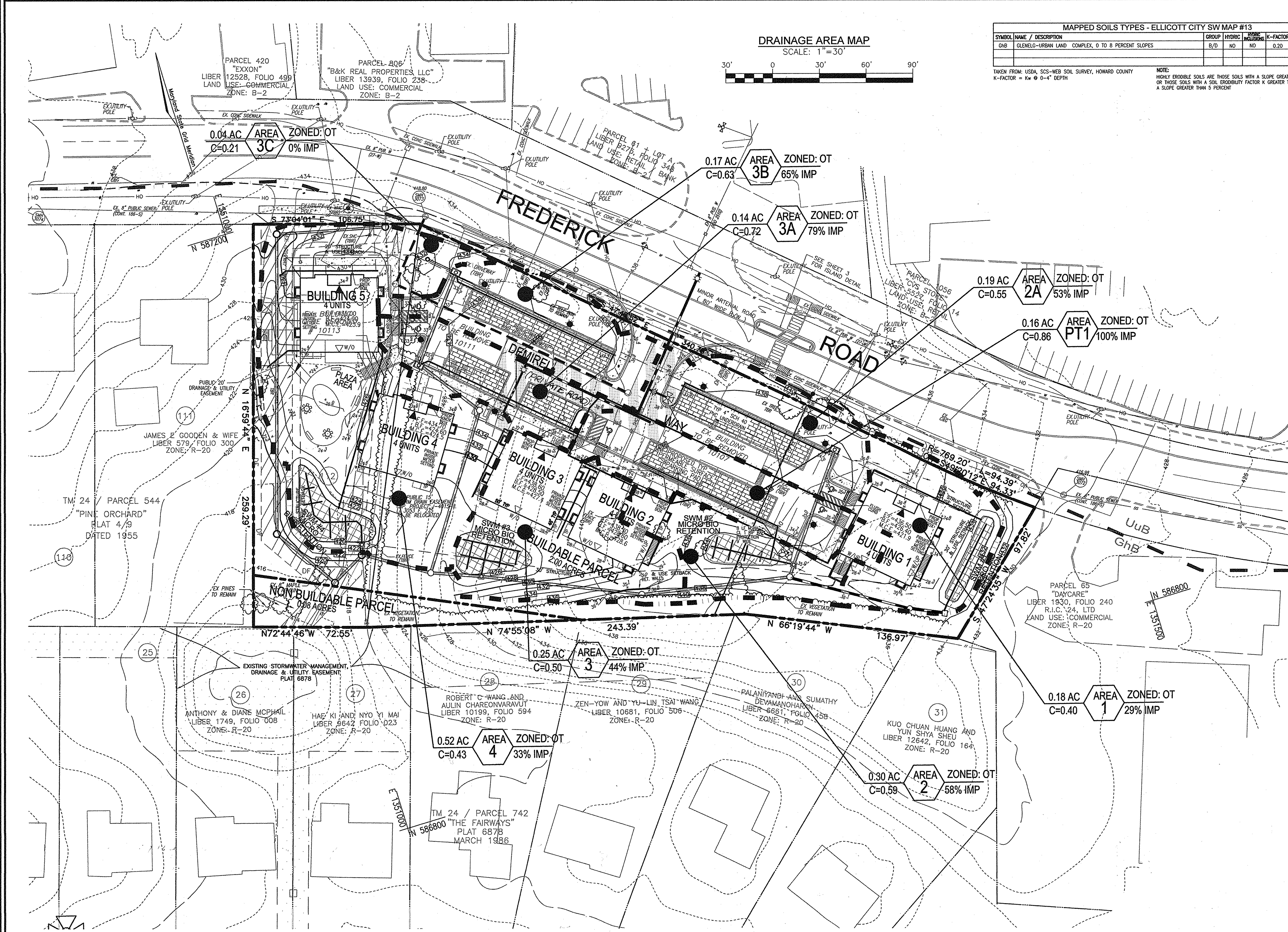
ROBERT H. VOGEL, PE No.16193

DESIGN BY:	EDS
DRAWN BY:	RVE
CHECKED BY:	RHV
DATE:	MAY 2015
SCALE:	AS SHOWN
W.O. NO.:	11-01

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

DRAINAGE AREA MAP

SCALE: 1"=30'



MAPPED SOILS TYPES - ELLICOTT CITY SW MAP #13							
SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	HYDRIC INCLUSIONS	K-FACTOR	PRIME FARMLAND	<15% SLOPE W/ EROSION POTENTIAL
GhB	GLENELG-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES	B/D	NO	NO	0.20	NO	NO

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

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

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CONTOUR (398)
- PROPOSED CONTOUR (406)
- PROPOSED SPOT ELEVATION (+02 68)
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING FIRE HYDRANT (FH)
- EXISTING WATER LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLETS
- EXISTING TREELINE
- SOILS BOUNDARY (Fa / RuB)
- DRAINAGE DIVIDE

DRAINAGE AREA / 'C' FACTOR — AREA — ZONING / % IMPERVIOUS

NOTES:
1. WORST CASE 5 MIN. TC ASSUMED THROUGHOUT DESIGN.

NO.	REVISION	DATE
1	REVISE STORM DRAIN AND SHC TO BUILDING 1	12.9.15

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION HBP — DATE 6.8.15

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7-07-15

DIRECTOR — DATE 7-7-15

APPROVED JULY 17, 2014
PLANNING BOARD OF HOWARD COUNTY

[redacted]DIRECTOR — [redacted]

ATTORNEY
SANG OH
TALKIN & OH, LLP
5100 DORSEY HALL DRIVE
ELLICOTT CITY, MD. 21042
PHONE: (410) 964-0300

OWNER/DEVELOPER
VELI DEMIREL
44087 HIGH POINT ROAD
ELLICOTT CITY, MD 21042
PHONE: (410) 440-1242

SITE DEVELOPMENT PLAN

STORM DRAIN
DRAINAGE AREA MAP

DEMIREL PLAZA

L.15837 F.345

2ND ELECTION DISTRICT
TAX MAP: 24 GRID: 1

ZONED: OT
PARCELS 62, 63 AND P/O 544 (LOT 112)
HOWARD COUNTY, MARYLAND

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

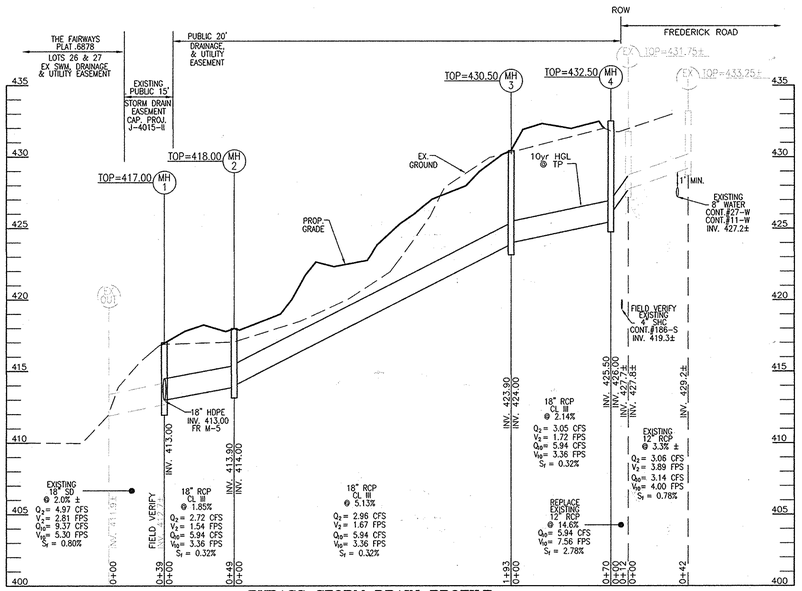
STATE OF MARYLAND — ROBERT HARRIS VOGEL — NO. 16193 REGISTERED PROFESSIONAL ENGINEER

ROBERT H. VOGEL, PE No.16193

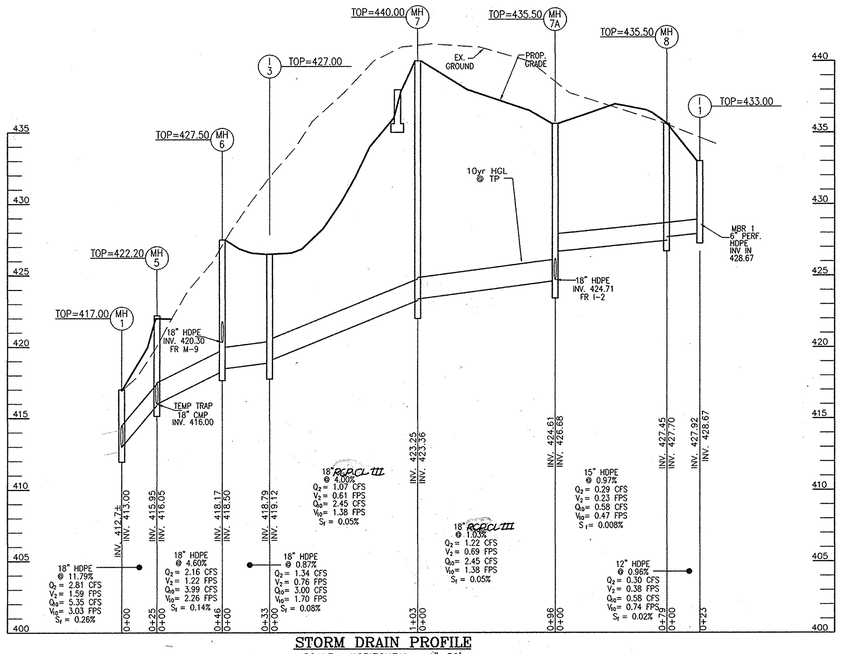
DESIGN BY:	EDS
DRAWN BY:	RVE
CHECKED BY:	RHV
DATE:	MAY 2015
SCALE:	AS SHOWN
W.O. NO.:	11-01

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

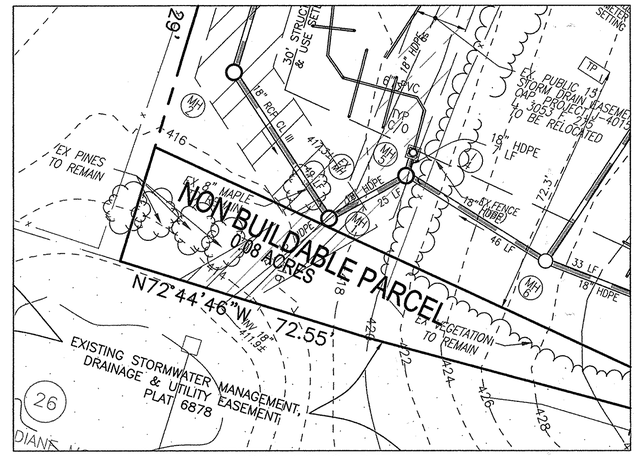
SDP-13-077



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



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

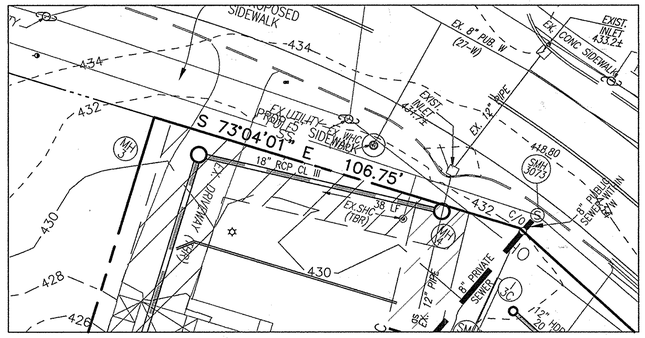


CONNECTION DETAIL
M-1 TO EX STORM DRAIN
SCALE: 1"=20'

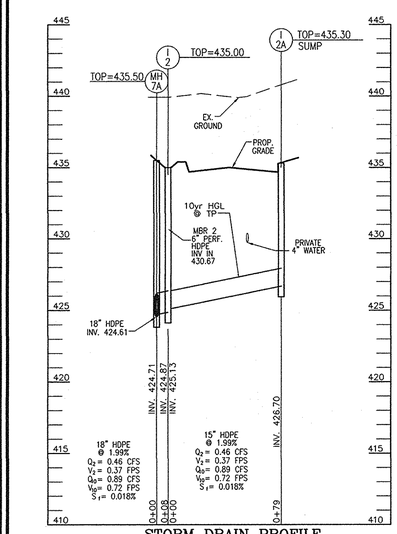
NOTES

1. INSTALL OFFSITE DIVERSION STORM DRAIN SYSTEM MH–1 TOWARD MH–3 AND MH–3 TOWARD MH–4. EXISTING STORM DRAIN SYSTEM SHALL REMAIN IN SERVICE UNTIL THE OFFSITE DIVERSION STORM DRAIN SYSTEM INSTALLATION IS COMPLETE

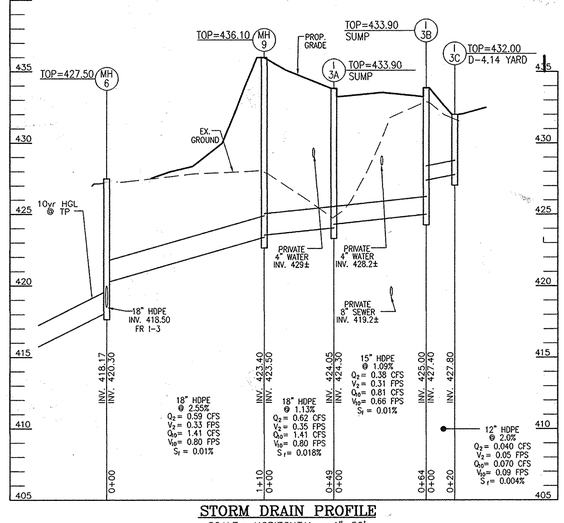
2. INSTALL SILT FENCE AROUND THE EXISTING HOME # 10113. THIS STRUCTURE SHALL BE RAZED AT THIS TIME. WITH THIS STRUCTURE (#10113) REMOVED, THE REMAINDER OF THE OFFSITE DIVERSION STORM DRAIN SYSTEM CAN BE COMPLETED; MH–2 THROUGH MH–4 JUST SOUTH OF FREDERICK ROAD.



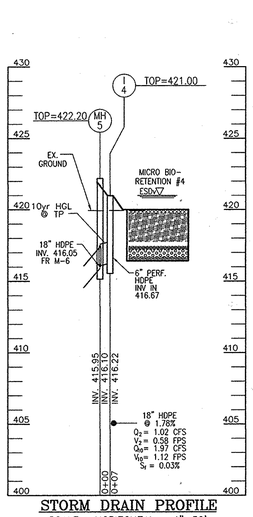
CONNECTION DETAIL
M-4 TO EX STORM DRAIN
SCALE: 1"=20'



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'

APPROVED JULY 17 2015
PLANNING BOARD OF HOWARD COUNTY

~~PLANNING DIRECTOR~~ ~~DATE~~

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6-8-15

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7-07-15

DIRECTOR — DATE 7-7-15

PIPE SCHEDULE

Size	Class	Total Length *
12"	RCP CL III	12
18"	RCP CL III	523
12"	HDPE	43
15"	HDPE	222
18"	HDPE	278

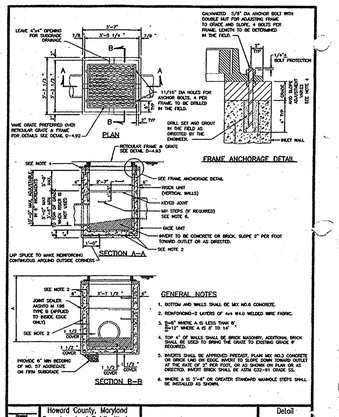
* The total length of pipe is linear feet only.

HDPE is to be smooth interior. Contractor shall install pipe in accordance with manufacturer's specifications

STRUCTURE SCHEDULE

STR #	TYPE	INV. IN	INV. OUT	TOP ELEV	THROAT ELEV	DETAIL	LOCATION	REMARKS
I-1	S	428.67	427.92	433.00	-	D-4.22	N 586834.4 E 1351370.9	
I-2	S	425.13	424.87	435.00	-	D-4.22	N 586889.5 E 1351286.4	
I-2A	A-5	-	426.70	435.30	-	D-4.01	N 586950.9 E 1351331.7	(1) SUMP INLET
I-3	S	419.12	418.79	427.00	-	D-4.22	N 586941.2 E 1351092.7	
I-3A	A-5	424.30	424.05	433.90	-	D-4.01	N 587084.4 E 1351095.4	(1) SUMP INLET
I-3B	A-5	427.40	425.00	433.90	-	D-4.01	N 587131.5 E 1351132.8	(1) SUMP INLET
I-3C	YARD	-	427.80	432.00	-	D-4.14	N 587146.6 E 1351119.4	(1) SUMP INLET
I-4	S	416.67	416.22	421.00	-	D-4.22	N 586983.2 E 1351025.3	
P-T-1	FLOW THRU	-	-	435.30	-	MD 374.68	N 586906.4 E 1351291.5	(1) Top L=6' Depth=6'
M-1	48" MH	413.00	412.7*	417.00	-	G-5.12	N 586964.9 E 1351001.7	(1)
M-2	48" MH	414.00	413.90	418.00	-	G-5.12	N 587005.7 E 1350975.2	(1)
M-3	48" MH	424.00	423.90	430.50	-	G-5.12	N 587160.5 E 1351031.7	(1)
M-4	48" MH	426.00	425.50	432.50	-	G-5.12	N 587174.6 E 1351099.5	(1)
M-5	48" MH	416.05/416.10	415.95	422.20	-	G-5.12	N 586976.8 E 1351023.3	(1)
M-6	48" MH	418.50/420.30	418.17	427.50	-	G-5.12	N 586952.9 E 1351062.3	(1)
M-7	48" MH	423.36	423.25	440.00	-	G-5.12	N 586899.9 E 1351187.6	(1)
M-7A	48" MH	424.71/426.68	424.61	435.50	-	G-5.12	N 586882.7 E 1351281.7	(1)
M-8	48" MH	427.70	427.45	435.50	-	G-5.12	N 586844.4 E 1351350.6	(1)
M-9	48" MH	424.50	423.40	436.10	-	G-5.12	N 587043.8 E 1351122.9	(1)

(1) Coordinate for Proposed Structure = Centerline of Structure — * FIELD VERIFY



0 50' 100' 150'

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN

STORM DRAIN PROFILES

DEMIREL PLAZA

L. 15837 F. 345

2ND ELECTION DISTRICT
TAX MAP: 24 GRID: 1

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EXPIRATION DATE: 09–27–2016

SHEET 9 OF 15

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SDP-13-077

STORMWATER MANAGEMENT - DRAINAGE AREA MAP

SCALE: 1"=30'

30' 0 30' 60' 90'

MAPPED SOILS TYPES - ELLICOTT CITY SW MAP #13								
SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	HYDRIC INCLUSIONS	K-FACTOR	PRIME FARMLAND	CLOSE SLOPE W/ ERODIBLE POTENTIAL
GhB	GLENELG-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES	B/D	NO	NO	0.20	NO	NO

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

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

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CONTOUR
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLETS
- EXISTING TREELINE
- SOILS BOUNDARY (UuB / GhB)
- MICRO-BIORETENTION FACILITY
- PERMEABLE SURFACE PARKING PAD
- DRAINAGE DIVIDE
- AREA 4 / 0.56 AC. — DRAINAGE AREA DESRIPTION

PARCEL 420 "EXXON" LIBER 12528, FOLIO 499 LAND USE: COMMERCIAL ZONE: B-2

PARCEL 806 "B&K REAL PROPERTIES, LLC" LIBER 13939, FOLIO 238 LAND USE: COMMERCIAL ZONE: B-2

PARCEL 61 + LOT A LIBER 9278, FOLIO 348 LAND USE: RETAIL / BANK ZONE: B-2

PARCEL 1056 "CVS STORE" LIBER 5592, FOLIO 14 LAND USE: RETAIL ZONE: B-2

PARCEL 65 "DAYCARE" LIBER 1930, FOLIO 240 R.I.C. 24, LTD LAND USE: COMMERCIAL ZONE: R-20

JAMES E GOODEN & WIFE LIBER 579, FOLIO 300 ZONE: R-20

TM 24 / PARCEL 544 "PINE ORCHARD" PLAT 4/9 DATED 1955

ANTHONY & DIANE MCPHAIL LIBER 1749, FOLIO 008 ZONE: R-20

HAE KI AND NYO YI MAI LIBER 5642 FOLIO 023 ZONE: R-20

ROBERT C WANG AND AULIN CHAREONVARAVUT LIBER 10199, FOLIO 594 ZONE: R-20

ZEN-YOW AND YU-LIN TSAI WANG LIBER 10681, FOLIO 506 ZONE: R-20

PALANIYANDI AND SUMATHY DEVAMANOHARAN LIBER 6661, FOLIO 458 ZONE: R-20

KUO CHUAN HUANG AND YUN SHYA SHEU LIBER 12642, FOLIO 164 ZONE: R-20

TM 24 / PARCEL 742 "THE FAIRWAYS" PLAT 6878 MARCH 1986

EXISTING STORMWATER MANAGEMENT, DRAINAGE & UTILITY EASEMENT PLAT 6878

FREDERICK ROAD (MD 144) — MINOR ARTERIAL ROAD (80' WIDE ROW)

BUILDING 5 4 UNITS — BUILDING 4 4 UNITS — BUILDING 3 4 UNITS — BUILDING 2 4 UNITS — BUILDING 1 4 UNITS

BUILDABLE PARCEL 2.00 ACRES

NON-BUILDABLE PARCEL 0.08 ACRES

SWM #3 MICRO BIO RETENTION — SWM #2 MICRO BIO RETENTION

AREA 1 0.17 AC. — AREA 2 0.15 AC. — AREA 3 0.25 AC. — AREA 4 0.56 AC. — AREA 5 0.15 AC. — AREA 6 0.16 AC.

PUBLIC 20' DRAINAGE & UTILITY EASEMENT

PUBLIC STORM DRAIN EASEMENT (EXISTING 30') TO BE RELOCATED

DEMIREL DRIVE (PRIVATE ROAD)

PLAZA AREA

TIE INTO EX SIDEWALK

SEE SHEET 3 FOR ISLAND DETAIL

EX. BUILDING TO BE REMOVED

EX. VEGETATION TO REMAIN

EX PINES TO REMAIN

N 72°44'46" W 72.55'

N 74°55'08" W 243.39'

N 66°19'44" W 136.97'

S 47°24'45" W 97.82'

S 34°01'E 106.75'

N 16°59'44" E 259.29'

R=769.20' L=94.39' S 49°20'12" E 94.33'

N 581200 E 1351080

N 586800 E 1351000

N 586800 E 1351500

NO.	REVISION	DATE
1	REVISE STORM DRAIN AND SHC TO BUILDING 1	12.9.15

SITE DEVELOPMENT PLAN
STORMWATER MANAGEMENT
ESDv DRAINAGE AREA MAP

DEMIREL PLAZA

L.15837 F.345

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APPROVED JULY 17, 2014
PLANNING BOARD OF HOWARD COUNTY

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SHEET 10 OF 15

SDP-13-077

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

1. MATERIAL SPECIFICATIONS

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

2. FILTERING MEDIA OR PLANTING SOIL

THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.

THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:

* SOIL COMPONENT – LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION).
* ORGANIC CONTEN – MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (35% TO 40%) OR SANDY LOAM (30%), 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 IN TO THE SOIL TO INCREASE OR DECREASE PH.

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

3. COMPACTION

IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.

COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACTURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE.

WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE.

WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.

4. PLANT MATERIAL

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

5. PLANT INSTALLATION

COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.

ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION. TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.

GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.

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

6. UNDERDRAINS

UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:

* PIPE – SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTMF 758, TYPE PS 28, OR AASHTO-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OF HDPE).
* PERFORATIONS – IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4x4) GALVANIZED HARDWARE CLOTH.
* GRAVEL – THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.
* THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.
* A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,0000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.
* A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES IN TO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".

THIS MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

7. MISCELLANEOUS

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

OPERATION AND MAINTENANCE SCHEDULE FOR (M-6) MICROBIORETENTION AREAS

1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.
2. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
3. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
4. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

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

Table B.4.1 Materials Specifications for Micro-Bioretention, Rain Gardens & Landscape Infiltration-

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil [2' to 4' deep]	loamy sand (60 - 65%) & compost (35 – 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with ¼-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f'_c = 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) *not using previously approved State or local standards* requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350.R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (**AASHTO**) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

MAPPED SOILS TYPES - ELLICOTT CITY SW MAP #13

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	HYDRIC INCLUSIONS	K-FACTOR	PRIME FARMLAND	<15% SLOPE W/ EROSION POTENTIAL
GhB	GLENELG-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES	B/D	NO	NO	0.20	NO	NO

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

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

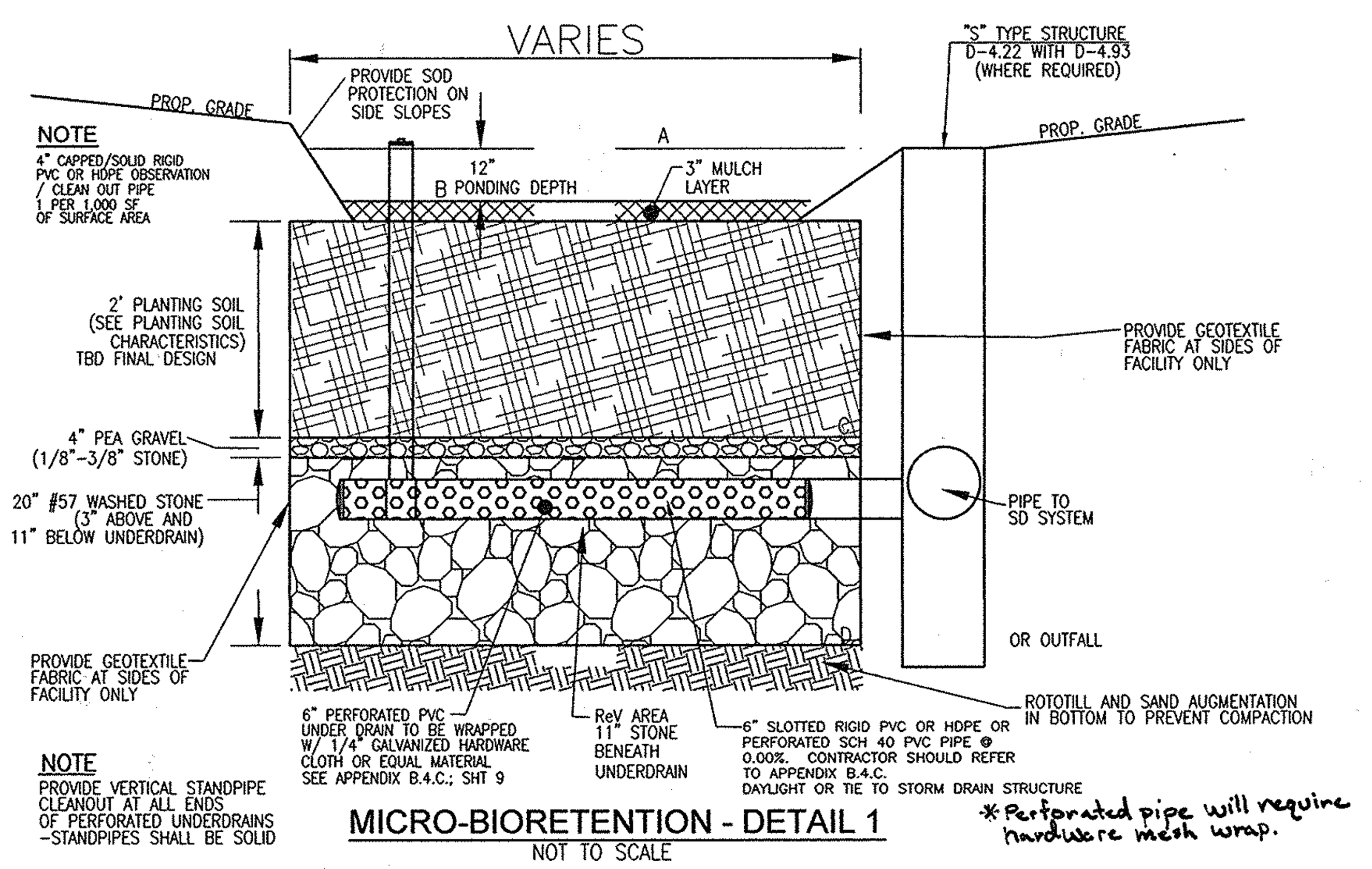
[signature] 6-8-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[signature] 7-07-15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[signature] 7-7-15
DIRECTOR DATE

APPROVED JULY 17, 2014
PLANNING BOARD OF HOWARD COUNTY

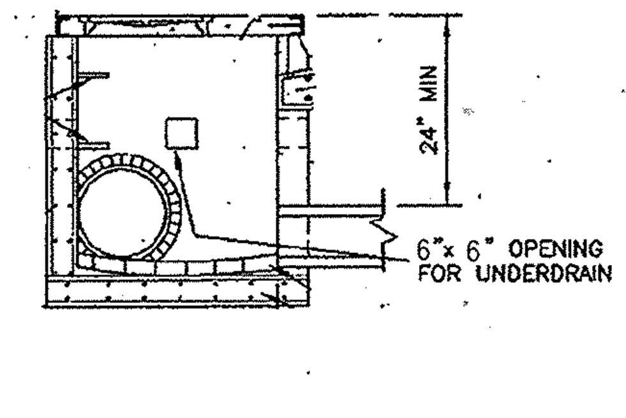
~~PLANNING DIRECTOR~~ ~~DATE~~



MICRO-BIORETENTION - DETAIL 1
NOT TO SCALE

*Perforated pipe will require hardware mesh wrap.

MBR FACILITY	A	B	C	D	SURFACE AREA	APPROX. DIMENSIONS
MBR #1	433.00	432.00	429.75	427.75	432 SF	SEE PLAN
MBR #2	435.00	434.00	431.75	429.75	625 SF	SEE PLAN
MBR #3	427.00	426.00	423.75	421.75	800 SF	SEE PLAN
MBR #4	421.00	420.00	417.75	415.75	940 SF	SEE PLAN



PERVIOUS PAVEMENT UNDER DRAIN CONNECTION DETAIL
NOT TO SCALE

DEMIREL PROPERTY - FINAL PLAN ESDv COMPUTATIONS

SITE AREA: 2.00 AC 87120
TARGET Pe: 1.80 IN
SITE IMPERVIOUS: 44.44 PERCENT
SITE Rv: 0.4500
SITE ESDv: 5880 CF +/-

Rev Req. 849 cuft
Rev Prov. 862.5 cuft

Rv=0.05+0.009XI
V min=1.0" rainfall (1.0x0.95xA)/12
Vmax= 1yr rainfall=2.6" (2.6x0.95xA)/12

DA #	% IMPERV	Rv	ReV (CF)	DA (SF)	DA (AC)	MINIMUM VOLUME	MAXIMUM VOLUME	1.8" VOLUME	VOLUME PROVIDED*	IMPERV (SF)	IMPERV (AC)	GREEN AREA	REMARKS
1 BUILDING #1	32.27	0.3404	127	7344	0.17	208	542	375	475	2370	0.05	0.11	MICROSCALE MICRO-BIO RETENTION #1 475 432 SF MICRO BIO Recharge Volume 350 sf 0.92 ft 96.6 cuft
2 BUILDING #1	10.75	0.1467	167	6514	0.15	80	207	143	625	700	0.02	0.13	MICROSCALE MICRO-BIO RETENTION #2 625 625 SF MICRO BIO Recharge Volume 625 sf 0.92 ft 172.5 cuft
3 BUILDING #2 BUILDING #3	42.02	0.4282	273	11030	0.25	394	1023	708	1020	4635	0.11	0.15	MICROSCALE MICRO-BIO RETENTION #3 1020 1020 SF MICRO BIO Recharge Volume 1020 sf 0.92 ft 281.52 cuft
4 BUILDING #4 BUILDING #5	32.51	0.3426	332	24516	0.56	700	1820	1260	1240	7970	0.18	0.38	MICROSCALE MICRO-BIO RETENTION #4 1240 1130 SF MICRO BIO Recharge Volume 1130 sf 0.92 ft 311.88 cuft
5 PARKING LOT	81.81	0.7863		5916	0.14	388	1008	698	679	4840	0.11	0.02	ALT SURFACE PARKING AREA (BUILDING 3 & 4) 268 PERM SURFACE PARKING PAD @ .196 410 STONE UNDER PERM SURFACE PARKING @ 1.0'
6 PARKING LOT	84.35	0.8091		6971	0.16	470	1222	846	791	5880	0.13	0.03	ALT SURFACE PARKING AREA (BUILDING 1 & 2) 313 PERM SURFACE PARKING PAD @ .196 479 STONE UNDER PERM SURFACE PARKING @ 1.0'
7	54.67	0.5421		8322	0.19	376	977	677	571	4550	0.10	0.09	ALT SURFACE - FREDERICK ROAD EAST PARKING BAY 323 PERM SURFACE PARKING PAD @ .196 248 STONE UNDER PERM SURFACE PARKING @ 0.5'
8	65.78	0.6420		7411	0.17	397	1031	714	617	4875	0.11	0.06	ALT SURFACE - FREDERICK ROAD WEST PARKING BAY 349 PERM SURFACE PARKING PAD @ .196 267 STONE UNDER PERM SURFACE PARKING @ 0.5'
PROJECT TOTALS	45.9	0.4632	899	78024	1.79	3012	7830	5421	6017	35820	0.82	0.97	

A-2. PERMEABLE PAVEMENTS

CONSTRUCTION CRITERIA:

THE FOLLOWING ITEMS SHOULD BE ADDRESSED DURING CONSTRUCTION OF PROJECTS WITH PERMEABLE PAVEMENT:

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

INSPECTION:

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

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

MAINTENANCE CRITERIA:

THE FOLLOWING PROCEDURES SHOULD BE CONSIDERED ESSENTIAL FOR MAINTAINING PERMEABLE PAVEMENT SYSTEMS:

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

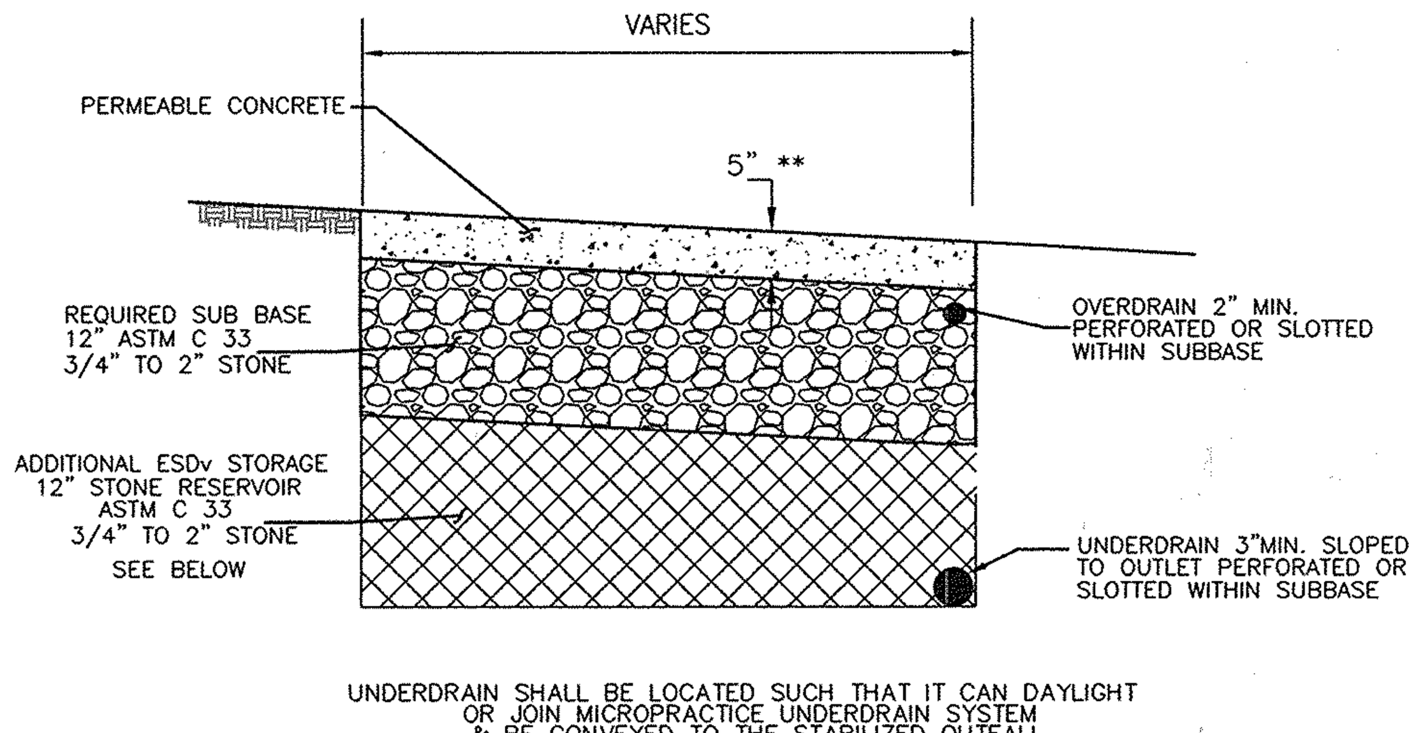
HOWARD COUNTY – OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED PERMEABLE PAVEMENT (A-2)

A. 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.

B. THE OWNER SHALL PERIODICALLY CLEAN DRAINAGE PIPES, INLETS, STONE EDGE DRAINS AND OTHER STRUCTURES WITHIN OR DRAINING TO THE SUBBASE

C. THE OWNER SHALL USE DEICERS IN MODERATION. DEICERS SHOULD BE NON-TOXIC AND BE APPLIED EITHER AS CALCIUM MAGNESIUM ACETATE OR AS PRETREATED SALT.

D. THE OWNER SHALL ENSURE SNOW PLOWING IS PERFORMED CAREFULLY WITH BLADES SET ONE-INCH ABOVE THE SURFACE. PLOWED SNOW PILES AND SNOW MELT SHOULD NOT BE DIRECTED TO PERMEABLE PAVEMENT.



UNDERDRAIN SHALL BE LOCATED SUCH THAT IT CAN DAYLIGHT OR JOIN MICROPRACTICE UNDERDRAIN SYSTEM & BE CONVEYED TO THE STABILIZED OUTFALL.

DETAIL - PERMEABLE CONCRETE PARKING
NOT TO SCALE

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

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

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

1. PERVIOUS CONCRETE SPECIFICATIONS

DESIGN THICKNESS – PERVIOUS CONCRETE APPLICATIONS SHALL BE DESIGNED SO THAT THE THICKNESS OF THE CONCRETE SLAB SHALL SUPPORT THE TRAFFIC AND VEHICLE TYPES THAT WILL BE CARRIED. APPLICATIONS MAY BE DESIGNED USING EITHER STANDARD PAVEMENT PROCEDURES (E.G., AASHTO, ACI 325.9R, ACI 330R) OR USING STRUCTURAL VALUES DERIVED FROM FLEXIBLE PAVEMENT DESIGN PROCEDURES.

MIX & INSTALLATION – TRADITIONAL PORTLAND CEMENTS (ASTM C 150, C 1157) MAY BE USED IN PERVIOUS CONCRETE APPLICATIONS. PHOSPHORUS ADMIXTURES MAY ALSO BE USED. MATERIALS SHOULD BE TESTED (E.G., TRIAL BATCHING) PRIOR TO CONSTRUCTION SO THAT CRITICAL PROPERTIES (E.G., SETTLING TIME, RATE OF STRENGTH DEVELOPMENT, POROSITY, PERMEABILITY) CAN BE DETERMINED.

AGGREGATE – PERVIOUS CONCRETE CONTAINS A LIMITED FINE AGGREGATE CONTENT. COMMONLY USED GRADATIONS INCLUDE ASTM C 33 NO. 67 (3/4 IN. TO NO. 4), NO. 8 (3/8 IN. TO NO.16) AND NO. 89 (3/8 IN. TO NO.50) SIEVES. SINGLE-SIZED AGGREGATE (UP TO 1 INCH) MAY ALSO BE USED.

WATER CONTENT – WATER-TO-CEMENT RATIOS BETWEEN 0.27 AND 0.30 ARE USED ROUTINELY WITH PROPER INCLUSION OF CHEMICAL ADMIXTURES. WATER QUALITY SHOULD MEET ACI 30A. AS A GENERAL RULE, POTABLE WATER SHOULD BE USED ALTHOUGH RECYCLED CONCRETE PRODUCTION WATER MEETING ASTM C 94 OR AASHTO M 157 MAY ALSO BE USED.

ADMIXTURES – CHEMICAL ADMIXTURES (E.G., RETARDERS OR HYDRATION-STABILIZERS) ARE USED TO OBTAIN SPECIAL PROPERTIES IN PERVIOUS CONCRETE. USE OF ADMIXTURES SHOULD MEET ASTM C 494 (CHEMICAL ADMIXTURES) AND ASTM C 260 (AIR ENTRAINING ADMIXTURES) AND CLOSELY FOLLOW MANUFACTURER'S RECOMMENDATIONS.

BASE COURSE – THE BASE COURSE SHALL BE AASHTO NO. 3 OR 4 COURSE AGGREGATE WITH AN ASSUMED OPEN PORE SPACE OF 30% (n=0.30).

2. PERMEABLE INTERLOCKING CONCRETE PAVEMENTS (PICP)

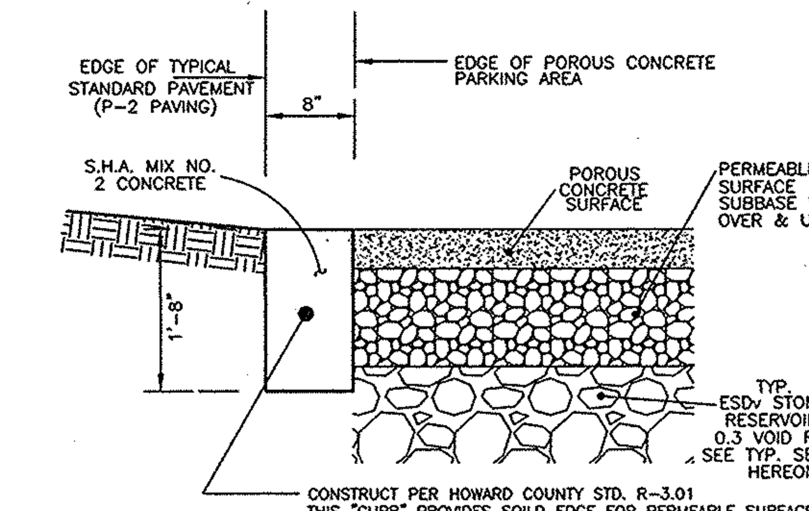
PAVER BLOCKS – BLOCKS SHOULD BE EITHER 3? IN. OR 4 IN. THICK, AND MEET ASTM C 936 OR CSA A231.2 REQUIREMENTS. APPLICATIONS SHOULD HAVE 20% OR MORE (40% PREFERRED) OF THE SURFACE AREA OPEN. INSTALLATION SHOULD FOLLOW MANUFACTURER'S INSTRUCTIONS, EXCEPT THAT INFILL AND BASE COURSE MATERIALS AND DIMENSIONS SPECIFIED IN THIS APPENDIX SHALL BE FOLLOWED.

INFILL MATERIALS AND LEVELING COURSE – OPENINGS 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 SAND.

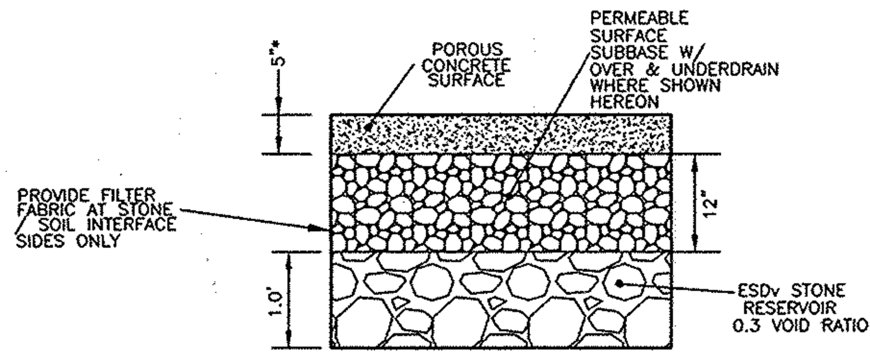
BASE COURSE – THE BASE COURSE SHALL BE AASHTO NO. 3 OR 4 COURSE AGGREGATE WITH AN ASSUMED OPEN PORE SPACE OF 30% (n=0.30).

3. REINFORCED TURF

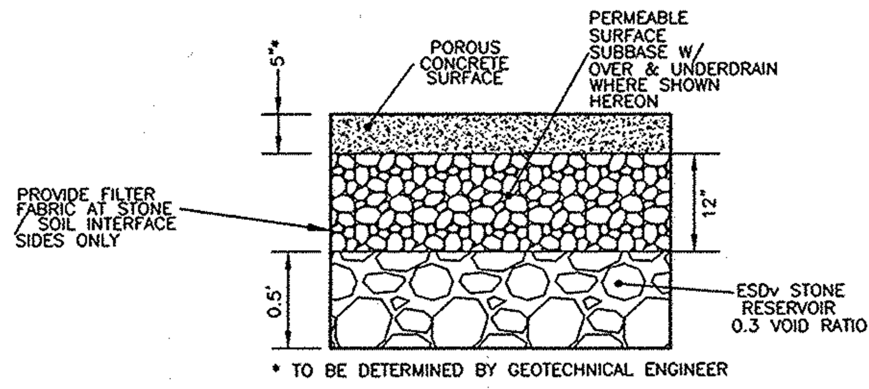
REINFORCED GRASS PAVEMENT (RGP) – WHETHER USED WITH GRASS OR GRAVEL, THE RGP THICKNESS SHALL BE AT LEAST 1-3/4" THICK WITH A LOAD CAPACITY CAPABLE OF SUPPORTING THE TRAFFIC AND VEHICLE TYPES THAT WILL BE CARRIED.



CONCRETE BAND
(NOT TO SCALE)



DA # 5 & # 6



DA # 7 & # 8

PERMEABLE SURFACE TYPICAL SECTIONS
(NOT TO SCALE)

NO.	REVISION	DATE

ATTORNEY
SANG OH
TALKIN & OH, LLP
5100 DORSEY HALL DRIVE
ELLICOTT CITY, MD. 21042
PHONE: (410) 964-0300

OWNER/DEVELOPER
VELI DEMIREL
44087 HIGH POINT ROAD
ELLICOTT CITY, MD 21042
PHONE: (410) 440-1242

SITE DEVELOPMENT PLAN

STORMWATER MANAGEMENT - NOTES & DETAILS

DEMIREL PLAZA

L.15837 F.345

2ND ELECTION DISTRICT
TAX MAP: 24 GRID: 1

ZONED: OT
PARCELS 62, 63 AND P/O 544 (LOT 112)
HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND ROBERT HARRIS VOGEL NO. 16193 REGISTERED PROFESSIONAL ENGINEER
ROBERT H. VOGEL, PE No.16193

DESIGN BY: EDS
DRAWN BY: RVE
CHECKED BY: RHV
DATE: MAY 2015
SCALE: AS SHOWN
W.O. NO.: 11-01

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

SDP-13-077

B G & E NOTES:

1. THE LANDSCAPING ON WIREZONE (40' FROM BGE POLES) IS IN ACCORDANCE WITH BGE LIST OF TREES AND PLANTS.
2. 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.
3. 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 CONSTELLATION ENERGY'S NEED TO PROTECT ITS TRANSMISSION LINES AND WILL NOT UNREASONABLY WITHHOLD PERMISSION.

DPZ'S POLICIES GOVERNING THE PLACEMENT OF LANDSCAPING AND STREET TREES IN PROXIMITY TO BGE'S POWER LINES OR TRANSMISSION RIGHT-OF-WAY ARE BASED ON BGE'S PUBLISHED "PLANTING ZONE CONCEPT" WHICH STIPULATES THE MAXIMUM ALLOWABLE SIZE OF PLANT MATERIALS FOR THREE DEFINED ZONES. AS THE DISTANCE FROM BGE EQUIPMENT INCREASES, SO DOES THE SIZE OF THE ALLOWABLE PLANT MATERIALS. THESE THREE ZONES AREA DEFINED AS FOLLOWS:

ZONE	DISTANCE FROM THE BGE POWER LINE OR TRANSMISSION RIGHT-OF-WAY	MAXIMUM HEIGHT OF VEGETATION
GREEN	UP TO 20 FEET	25 FEET
YELLOW	BETWEEN 20 FEET AND 45 FEET	40 FEET
RED	BEYOND 45 FEET	ABOVE 40 FEET

NOTES

1. THIS SHEET SHALL NOT BE USED FOR GRADING PURPOSES SEE GRADING PLAN

Eco-Science Professionals, Inc.
Consulting Ecologists
P.O. Box 5006 Glen Arm, Maryland 21057 Telephone (410) 832-2450 Fax (410) 832-2485

SPECIMEN TREES:

Key	Species, Size (dbh)	Condition	Critical Root Zone (radius)
A	Ginko, 42"	Good, non-native	63'
B	Silver maple, 38"	Good	57'
C	Black locust, 42"	Fair, poor shape, leaning over house	63'
D	Silver maple, 31"	Fair, some dieback notes, power lines run through canopy, leaning	46.5'

NOTES:

1. PER THE PLAN PROPOSAL SHOWN HEREON, ALL SPECIMEN TREES ARE TO BE REMOVED. REFER TO GENERAL NOTE 27, SHEET 1 REGARDING WP 14-085. REFER TO SHEET 2 FOR LOCATION. "X" MARKS LOCATION HEREON "TO BE REMOVED"

SPECIMEN TREE REPLACEMENT - PLANTING SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	REM.
AG	4	GINKGO BILOBA 'AUTUMN GOLD' AUTUMN GOLD GINKGO (MALE ONLY)	2 1/2"-3" CAL.	B & B
BR	3	ACER RUBRUM "BOWHALL' BOWHALL RED MAPLE	2 1/2"-3" CAL.	B & B

NOTE:
- REPLACEMENT TREES PER THE REMOVAL OF SPECIMEN TREE A, B, C AND D. PLANTED AS PART OF THIS SDP13-077 PLAN

LANDSCAPE PLAN
SCALE: 1"=30'

30' 0 30' 60' 90'

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CONTOUR
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLETS
- EXISTING TREELINE
- SOILS BOUNDARY (UuB, GhB)
- MICRO-BIORETENTION FACILITY
- PERMEABLE SURFACE PARKING PAD
- PROPOSED SHADE TREES
- PROPOSED EVERGREEN TREES
- PROPOSED LANDSCAPE BUFFER (TYPE 'B' BUFFER)
- EX. SPECIMEN TREE (ST16)
- EX. SPECIMEN TREE TO BE REMOVED (ST16)
- BG & E GREEN ZONE
- BG & E YELLOW ZONE

LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	CAT
AR	4	ACER 'RUBRUM OCTOBER GLORY' RED MAPLE	2 1/2"-3" CAL.	B & B
QR	5	QUERCUS RUBRA NORTHER RED OAK	2 1/2"-3" CAL.	B & B
ZS	3	ZELCOVA SERRATA 'VILLAGE GREEN' VILLAGE GREEN JAPANESE ZELCOVA	2 1/2"-3" CAL.	B & B
AB	7	ACER PALMATUM 'BLOODGOOD' BLOODGOOD JAPANESE RED MAPLE	4'-6" HT. (MAX. HEIGHT=25')	B & B
CM	26	LAGERSTROEMIA TUSCARORA TUSCARORA CRAPE MYRTLE	4'-6" HT. (MAX. HEIGHT=25')	B & B
PS	19	PINUS STROBUS EASTERN WHITE PINE	6'-8' HT.	B & B
TN	23	THUJA PLICATA / 'GREEN GIANT' GIANT ARBORVITAE	5'-6' HT.	B & B
TD	73	TAXUS MEDIA 'DENSIFORMIS' DENSIFORMIS YEW	2 1/2" -3" HT.	B & B
PT	8	PINUS THUNBERGIANA JAPANESE BLACK PINE	6'-8' HT.	B & B
NS	6	ILEX 'NELLIE R. STEVENS' NELLIE R. STEVENS HOLLY	5'-6' HT.	B & B

LANDSCAPE SCHEDULE NOTE:

1. 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.
2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
3. 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.
4. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

NO.	REVISION	DATE
1	REVISE STORM DRAIN AND SHC TO BUILDING 1	12.9.15

MICRO-BIORETENTION PLANTING NOTE:

REFER TO SHEET 13 FOR DETAILING OF THE PROPOSED MICRO-BIORETENTION FACILITY PLANTING REQUIREMENTS

SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING

NUMBER OF PARKING SPACES	57
NUMBER OF ISLANDS AND TREES REQUIRED	3
NUMBER OF ISLANDS AND TREES PROVIDED	
ISLANDS AND SHADE TREES	3
OTHER TREES (2:1 SUBSTITUTION)	–

ATTORNEY
SANG OH
TALKIN & OH, LLP
5100 DORSEY HALL DRIVE
ELLICOTT CITY, MD. 21042
PHONE: (410) 964-0300

OWNER/DEVELOPER
VELI DEMIREL
44087 HIGH POINT ROAD
ELLICOTT CITY, MD 21042
PHONE: (410) 440-1242

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6.8.15

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7-7-15

DIRECTOR — DATE 7-7-15

APPROVED JULY 17, 2014
PLANNING BOARD OF HOWARD COUNTY
PLANNING DIRECTOR — DATE

DEVELOPER'S/OWNER'S LANDSCAPE CERTIFICATE

I/WE CERTIFY THAT LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION OF THE PROJECT, A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

DEVELOPER'S/OWNER'S NAME:

MAPPED SOILS TYPES - ELLICOTT CITY SW MAP #13

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	HYDRIC INCLUSIONS	K-FACTOR	FARM (TIMBLAND)	CLYH SLOPE W/ BROWN EXTENSION
GnB	GLENELG-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES	B/D	NO	NO	0.20	NO	NO

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

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

SITE DEVELOPMENT PLAN

LANDSCAPE PLAN

DEMIREL PLAZA
L.15837 F.345

2ND ELECTION DISTRICT
TAX MAP: 24 GRID: 1

ZONED: OT
PARCELS 62, 63 AND P/O 544 (LOT 112)
HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — REGISTERED PROFESSIONAL ENGINEER — 5/12/15

ROBERT H. VOGEL, PE No.16193

PROFESSIONAL CERTIFICATE

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

DESIGN BY:	EDS
DRAWN BY:	RVE
CHECKED BY:	RHV
DATE:	MAY 2015
SCALE:	AS SHOWN
W.O. NO.:	11-01

SHEET 12 OF 15

SDP-13-077

HOWARD COUNTY
FOREST CONSERVATION WORKSHEET

ZONED OT

NET TRACT AREA:

A. TOTAL TRACT AREA	2.00 AC.
B. AREA WITHIN 100 YEAR FLOODPLAIN	0.00 AC
C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION	0.00 AC
D. NET TRACT AREA	2.00 AC

LAND USE CATEGORY

INPUT THE NUMBER "1" UNDER THE APPROPIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY. BASED UPON ZONED R20

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

E. AFFOREST THRESHOLD	15%	X 2.00 = 0.30 AC
F. CONSERVATION THRESHOLD	15%	X 2.00 = 0.30 AC

EXISTING FOREST COVER:

G. EXISTING FOREST COVER	= 0.00 AC
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD	= 0.00 AC
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD	= 0.00 AC

BREAK EVEN POINT:

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

J. FOREST RETENTION WITH NO MITIGATION	= 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. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD (L X.25)	= 0.00 AC
P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD	= 0.00 AC
Q. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD (M-F)	= 0.00 AC
R. TOTAL REFORESTATION REQUIRED (N+P-Q)	= 0.00 AC
S. TOTAL AFFORESTATION REQUIRED	= 0.30 AC
T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED	= 0.30 AC

FOREST CONSERVATION EASEMENT HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY FOREST CONSERVATION MANUAL.

TOTAL FOREST CONSERVATION OBLIGATION; 0.30 ACRES (13,068 x 0.75 = $ 9,801.00) FOR THIS PROJECT TO BE FULFILLED BY PAYMENT OF A FEE-IN-LIEU.

NOTES:

1. THE FOREST STAND & WETLAND ANALYSIS WAS COMPLETED BY ECO-SCIENCE PROFESSIONALS, INC. C/O MR. JOHN CANOLES, FEBRUARY 2013
2. THERE ARE NO WETLANDS, STREAMS OR BUFFERS ONSITE.
3. THE PROJECT SITE IS WITHIN THE LITTLE PATUXENT RIVER (UPPER) AREA # 2131105A

FOREST CONSERVATION / FSD NOTES:

1. SURROUNDING LAND USE IS RESIDENTIAL.
2. NO FOREST RESOURCES ARE PRESENT ON THE SITE.
3. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE.

Eco-Science Professionals, Inc.
Consulting Ecologists
P.O. Box 5006 Glen Arm, Maryland 21057 Telephone (410) 832-2480 Fax (410) 832-2488

SPECIMEN TREES:

Key	Species, Size (dbh)	Condition	Critical Root Zone (radius)
A	Ginko, 42"	Good, non-native	63'
B	Silver maple, 38"	Good	57'
C	Black locust, 42"	Fair, poor shape, leaning over house	63'
D	Silver maple, 31"	Fair, some dieback notes, power lines run through canopy, leaning	46.5'

NOTES:

1. PER THE PLAN PROPOSAL SHOWN HEREON, ALL SPECIMEN TREES ARE TO BE REMOVED. REFER TO GENERAL NOTE 27, SHEET 1 REGARDING WP 14-085

APPROVED JULY 17, 2014
PLANNING BOARD OF HOWARD COUNTY

PLANNING DIRECTOR DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6-8-15

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7-07-15

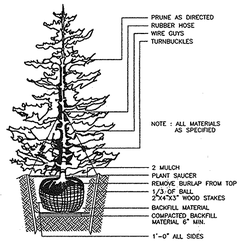
DIRECTOR — DATE 7-7-15

GENERAL NOTES:

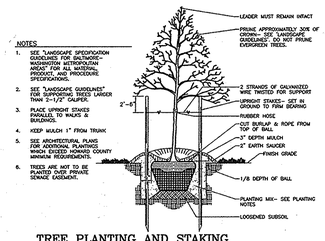
1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY FOR THE PERIMETER LANDSCAPING IN THE AMOUNT OF $ 20,490.00 FOR THE PROVIDED 16 SHADE TREES ($4,800), 56 EVERGREENS ($8,400), 26 SMALL TREES ($3,900), 4 SHADE TREES / SPECIMEN TREE REPLACEMENT ($1,200) AND 73 SHRUBS ($2,190) SHALL BE POSTED WITH THE DEVELOPERS AGREEMENT FOR THIS PLAN.
2. THE REMOVAL OF TREES 30" OR GREAT DHB IS PROHIBITED WITHOUT COUNTY WAIVER APPROVAL. REFER TO WP 14-085, SHEET 1, GENERAL NOTE 27.

LANDSCAPE NOTES

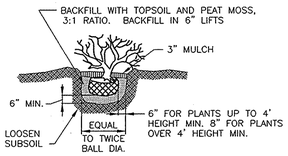
1. AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.
2. 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.
3. SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD, AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.
4. PLANTINGS SHOWN HEREON ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL DURING THE CONSTRUCITON OF THE FINAL PLAN.



TYPICAL EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE



TREE PLANTING AND STAKING
DECIDUOUS TREES UP TO 2-1/2" CALIPER — NOT TO SCALE



SHRUB PLANTING DETAIL
NOT TO SCALE

DEVELOPER'S/OWNER'S LANDSCAPE CERTIFICATE

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DEVELOPER'S/OWNER'S NAME:

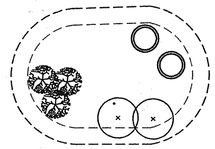
SCHEDULE 'A' PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO PERIMETER PROPERTIES					
PERIMETER/FRONTAGE DESIGNATION	1		2	3	4	TOTAL
LANDSCAPE TYPE	E	B	C	C	C	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	290'	225'	98'	455'	226'	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO*	NO	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO –	NO –	NO –	NO –	NO –	
NUMBER OF PLANTS REQUIRED	290'	225'	98'	455'	226'	
SHADE TREES	1:40 8	1:50 5	1:40 3	1:40 12	1:40 6	34
EVERGREEN TREES	–	1:40 6	1:20 5	1:20 23	1:20 12	46
SHRUBS	1:4 73	–				73
NUMBER OF PLANTS PROVIDED						
SHADE TREES			3	9	4	16
EVERGREEN TREES	–	6	5	29	16	56
OTHER TREES (2:1 SUBSTITUTION)	16	10	–	–	–	26
SHRUBS (10:1 SUBSTITUTION)	73	–	–	–	–	73
(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	–	–	–	–	–	–

* FULL PERIMETER BUFFER PROVIDED IN ADDITION TO EXISITING EVERGREEN SCREEN TO REMAIN

MICRO-BIORETENTION PLANTING SCHEDULE				
	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
	16	LINDERA BENZOIN SPICEBUSH	5 GALLON	CONT
	70	ILEX GLABRA INKBERRY	3 GALLON	CONT
	58	VIBURNUM TRILOBUM AMERICAN HIGHBUSH CRANBERRY	3 GALLON	CONT

SF X 75% X .0229 STEMS PER SQUARE FOOT = PLANTS REQUIRED



TYPICAL PLANTING DETAIL FOR MICRO BIO-RETENTION
NTS

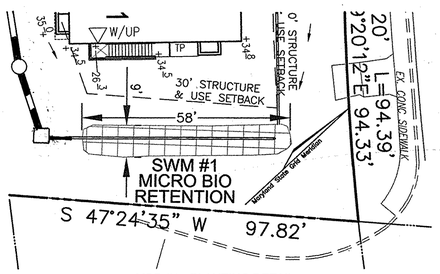
50% COVERAGE AT FULL GROWTH REQUIRED

"MICRO-BIORETENTION" PLANTING SCHEDULE NOTES:

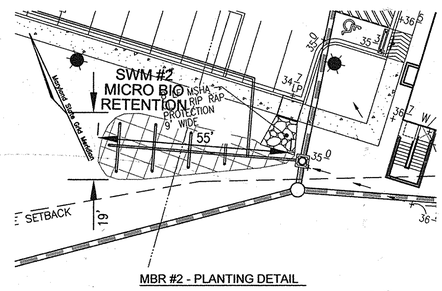
1. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HOWARD COUNTY PLANTING SPECIFICATIONS.
2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
3. FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
4. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.
5. SEE SHEET 10 FOR TYPICAL PLANTING SPECIFICATIONS AND DETAILS.
6. MICROBIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF 1000 STEMS PER PLANTED ACRE (.0229 STEMS PER SQUARE FOOT). ABOVE PLANTING RATIOS ARE TO BE APPLIED TO THE AREAS PROVIDED IN THE ESDv SUMMARY.

MBR FACILITY	SURFACE AREA	REQUIRED PLANTINGS	PLANTINGS
MBR #1	450 SF	8	2 SPICEBUSH 8 INKBERRY 6 AMERICAN HIGHBUSH CRANBERRY
MBR #2	550 SF	10	2 SPICEBUSH 10 INKBERRY 8 AMERICAN HIGHBUSH CRANBERRY
MBR #3	450 SF	8	2 SPICEBUSH 8 INKBERRY 6 AMERICAN HIGHBUSH CRANBERRY
MBR #4	450 SF	8	2 SPICEBUSH 8 INKBERRY 6 AMERICAN HIGHBUSH CRANBERRY
MBR #5	550 SF	10	2 SPICEBUSH 10 INKBERRY 8 AMERICAN HIGHBUSH CRANBERRY
MBR #6	600 SF	11	2 SPICEBUSH 10 INKBERRY 10 AMERICAN HIGHBUSH CRANBERRY
MBR #7	500 SF	9	2 SPICEBUSH 8 INKBERRY 8 AMERICAN HIGHBUSH CRANBERRY
MBR #8	450 SF	8	2 SPICEBUSH 8 INKBERRY 6 AMERICAN HIGHBUSH CRANBERRY

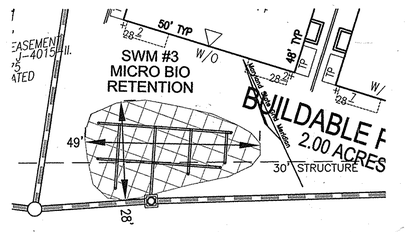
50% COVERAGE AT FULL GROWTH REQUIRED



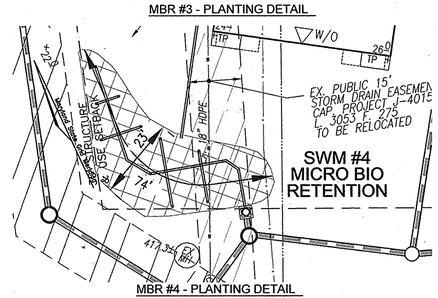
MBR #1 - PLANTING DETAIL



MBR #2 - PLANTING DETAIL



MBR #3 - PLANTING DETAIL



MBR #4 - PLANTING DETAIL

ATTORNEY
SANG OH
TALKIN & OH, LLP
5100 DORSEY HALL DRIVE
ELLICOTT CITY, MD. 21042
PHONE: (410) 964-0300

OWNER/DEVELOPER
VELI DEMIREL
4408? HIGH POINT ROAD
ELLICOTT CITY, MD 21042
PHONE: (410) 440-1242

NO.	REVISION	DATE
1	REVISE STORM DRAIN AND SHC TO BUILDING I	12-9-15

SITE DEVELOPMENT PLAN
LANDSCAPE AND FOREST CONSERVATION PLAN - NOTES AND DETAILS

DEMIREL PLAZA
L.15837 F.345

2ND ELECTION DISTRICT
TAX MAP: 24 GRID: 1

ZONED: 01
PARCELS 62, 63 AND P/O 544 (LOT 112)
HOWARD COUNTY, MARYLAND

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8407 MAIN STREET ELLICOTT CITY, MD 21043
TEL: 410.461.7666 FAX: 410.461.6961

STATE OF MARYLAND — ROBERT HARRIS VOGEL — NO. 16193 — REGISTERED PROFESSIONAL ENGINEER — 5/14/15

ROBERT H. VOGEL, PE No.16193

DESIGN BY:	EDS
DRAWN BY:	RVE
CHECKED BY:	RHV
DATE:	MAY 2015
SCALE:	AS SHOWN
W.O. NO.:	11-01

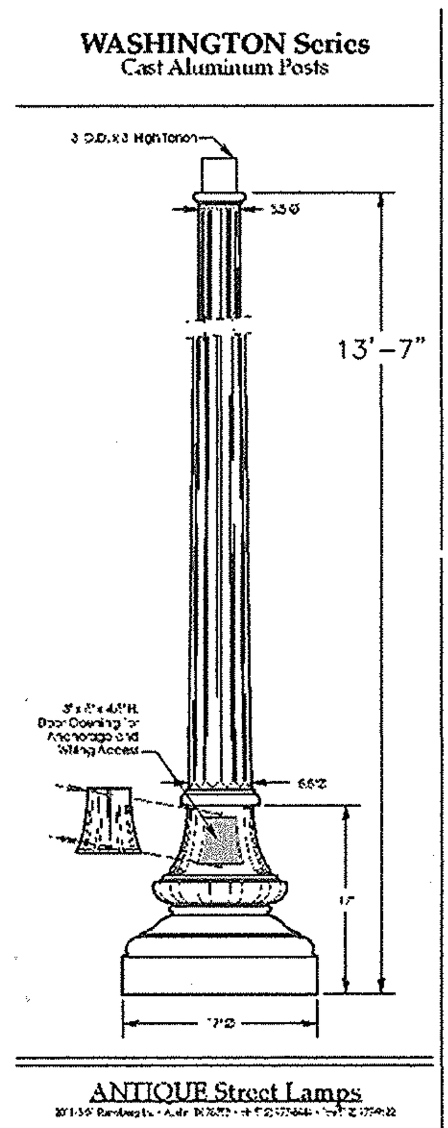
PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2016

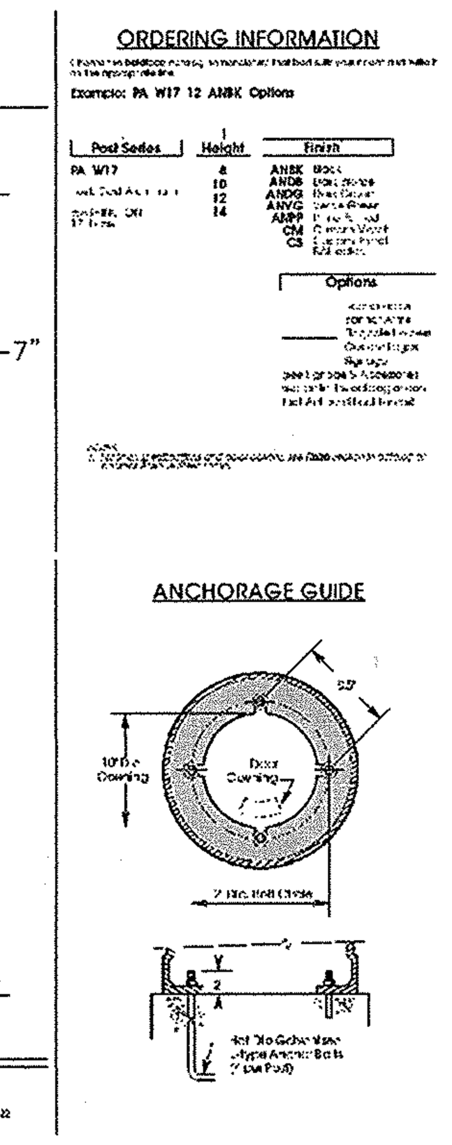
SHEET 13 OF 15

SDP-13-077

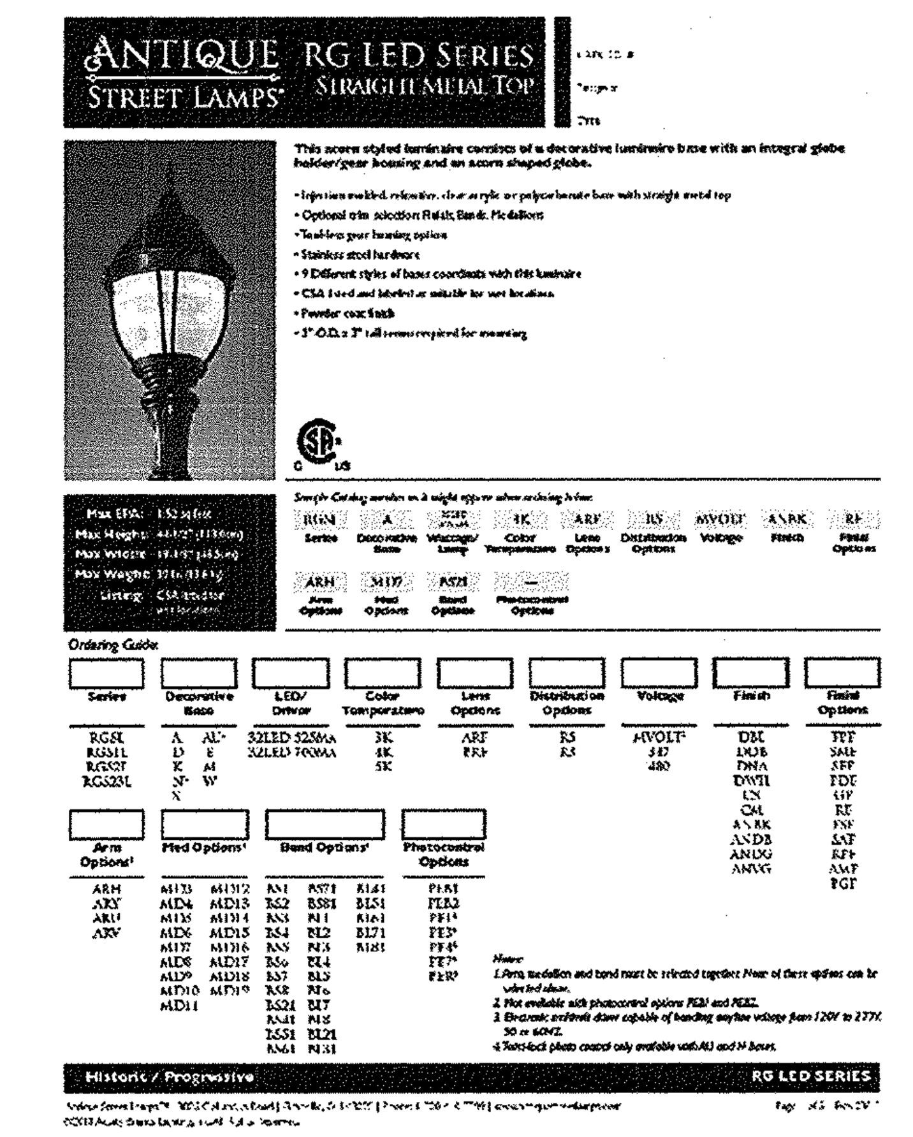
LIGHTING PLAN

SCALE: 1"=30'





* OR EQUAL



* OR EQUAL

LEGEND

	PROPERTY LINE
	RIGHT-OF-WAY LINE
	ADJACENT PROPERTY LINE
398	EXISTING CONTOUR
	EXISTING CURB AND GUTTER
	PROPOSED CURB AND GUTTER
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	EXISTING MAILBOX
	EXISTING SIGN
	EXISTING SANITARY MANHOLE
S	EXISTING SANITARY LINE
FH	EXISTING FIRE HYDRANT
W	EXISTING WATER LINE
	EXISTING TREELINE

LUMINAIRE SCHEDULE

Symbol	Label	Qty	Catalog Number	Description	Lamp	File	Lumens	LLF	Watts
■	AD	9	RGXL X 32LED 700MA 3K ARF R3 MVOLT FPF DBL / PA W17 14 ANBK	RG LED ACORN POST TOP WITH ALUMINUM TOP. Includes RGS/ 14FT POLE	32 LED ARRAY	RGXL_X_32LED_700MA_3K_ARF_R3.ies	Absolute	0.85	78.5

NOTE

1. ANY LIGHTING TO ILLUMINATE OFF-STREET PARKING AREAS SHALL BE SO ARRANGED AS TO DIRECT THE LIGHT DOWN, TOWARDS THE PARKING AREA, AND AWAY FROM THE ADJOINING LOT IN RESIDENTIAL DISTRICTS AND ANY PUBLIC STREET RIGHT-OF-WAY. IN ACCORDANCE WITH SECTION 134.D. OF THE ZONING REGULATIONS, LIGHT TRESPASS ONTO ANY OTHER PROPERTY ZONED OR USED FOR RESIDENTIAL PURPOSES SHALL BE LIMITED TO 0.1 FOOT CANDLES.

LIGHTING STUDY (6/18/2013) SHOWN ABOVE COMPLETED BY:

FEDERATED LIGHTING

SITE LIGHTING:

1. PROPOSED LIGHTING SHALL BE LIMITED TO BOLLARD OR OVERHEAD FIXTURES NOT TO EXCEED 14FT. IN HEIGHT AND SHALL MEET ALL COUNTY REQUIREMENTS. ALL LIGHTING SHALL BE DIRECTED DOWN AND AWAY FROM ADJOINING PROPERTIES VIA CUTOFF SHIELDS AND SHALL BE INSTALLED SUCH THAT THE SURROUNDING RESIDENTIAL AREAS AND ROADWAYS WILL NOT BE IMPACTED.

ALL LIGHTING SHALL COMPLY WITH SECTION 134 OF THE ZONING REGULATIONS.

2. LOCATE LIGHTING POLES A MINIMUM OF 3'-0" BEHIND FACE OF CURB TO CENTER, OR 1'-0" OFF EDGE OF SIDEWALK.

3. POLE LOCATIONS SHALL BE COORDINATED WITH LANDSCAPING.

NOTES

Disclaimer:

Calculations are based on procedures established by the IESNA or standard industry practice. Output performance is based on input data as provided to Federated Lighting by others and believed to be accurate.

This study is intended to assist with lighting design and is not a substitute for an independent lighting analysis and testing for lighting safety and suitability. Federated Lighting cannot be held responsible for variations in actual situations which can effect calculated output.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 6.8.15
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 7-7-15
DIRECTOR	DATE 7-7-15

APPROVED JULY 17, 2014
PLANNING BOARD OF HOWARD COUNTY

~~PLANNING DIRECTOR~~ ~~DATE~~

ATTORNEY
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NO.	REVISION	DATE

SITE DEVELOPMENT PLAN

LIGHTING PLAN

DEMIREL PLAZA

L.15837 F.345

2ND ELECTION DISTRICT
TAX MAP: 24 GRID: 1

ZONED: OT
PARCELS 62, 63 AND P/O 544 (LOT 112)
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STATE OF MARYLAND
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5/15/15

ROBERT H. VOGEL, PE No.16193

DESIGN BY: EDS
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14 SHEET OF 15

SDP-13-077

NOTE:

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

NOTE:

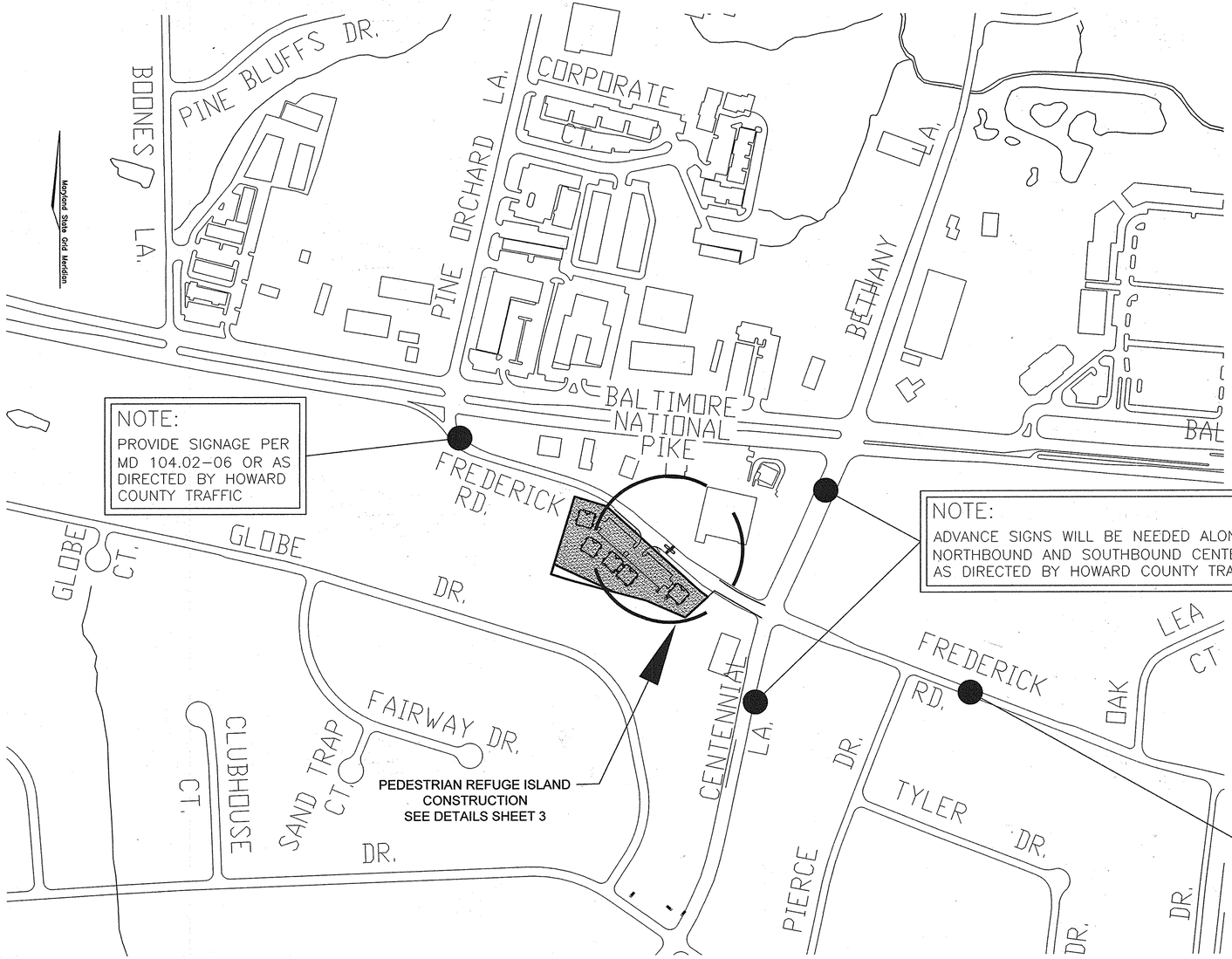
REFER TO SEQUENCE OF CONSTRUCTION – SHEET 7

PEDESTRIAN REFUGE ISLAND CONSTRUCTION SHALL OCCUR UPON THE COMPLETION OF ONSITE WORK SIMULTANEOUSLY WITH FREDERICK ROAD IMPROVEMENTS AND SITE ENTRANCE WORK.

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

GENERAL NOTES

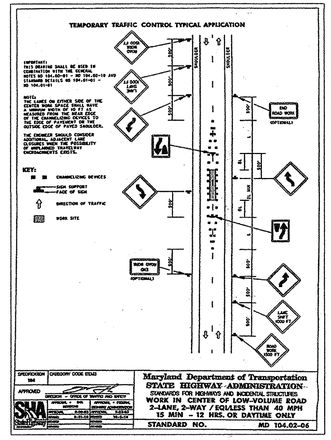
1. CONTACT HOWARD COUNTY TRAFFIC DIVISION (410-313-5752) PRIOR TO INSTALLATION OF SIGNS AND STRIPING.
2. SIGNAGE / MAINTENANCE OF TRAFFIC SHALL BE AS DIRECTED BY THE MARYLAND STANDARD MD-104.02-06 (SHOWN HEREON). ANY REVISIONS TO THIS STANDARD SHALL BE AS DIRECTED BY THE HOWARD COUNTY TRAFFIC DIVISION (410) 313-5752
3. HOWARD COUNTY TRAFFIC DIVISION TO INSPECT AND APPROVE CURB FORMS PRIOR TO POURING CONCRETE.
4. PEDESTRIAN CROSSING STRIPING WILL BE PROVIDED IN ACCORDANCE WITH SHEET 3.
5. SEE SHEET 3 FOR SIGNING AND MARKINGS.

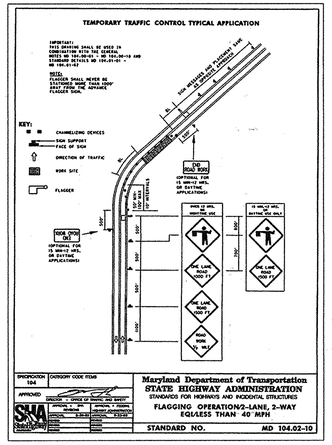


MAINTENANCE OF TRAFFIC PLAN
SCALE: 1"=200'

NOTE:

REFER TO SHEET 3 FOR:
1. FREDERICK ROAD PAVEMENT MARKING DETAILS
2. PEDESTRIAN REFUGE ISLAND / ROAD SIGNAGE LOCATIONS
3. PEDESTRIAN REFUGE ISLAND DETAIL





NOTE:

A PRE-CONSTRUCTION MEETING WITH THE TRAFFIC DIVISION AND C.I.D. WILL BE REQUIRED.

PRIOR TO THE START OF CONSTRUCTION OF THE PEDESTRIAN REFUGE ISLAND, THE CONTRACTOR SHALL MEET WITH THE CONSTRUCTION INSPECTION DIVISION (C.I.D.) INSPECTOR AND HOWARD COUNTY TRAFFIC TO REVIEW THE CONSTRUCTION SEQUENCE AND GO OVER THE MAINTENANCE OF TRAFFIC (M.O.T.) PLAN AND ANY DETAILS NOT INCLUDED ON THESE PLANS

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN

MAINTENANCE OF TRAFFIC PLAN

DEMIREL PLAZA

L.15837 F.345

2ND ELECTION DISTRICT
TAX MAP: 24 GRID: 1

ZONED: OT
PARCELS 62, 63 AND P/O 544 (LOT 112)
HOWARD COUNTY, MARYLAND

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 6.16.15
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 7-7-15
DIRECTOR	DATE 7-7-15

ATTORNEY
SANG OH
TALKIN & OH, LLP
5100 DORSEY HALL DRIVE
ELLICOTT CITY, MD. 21042
PHONE: (410) 964-0300

OWNER/DEVELOPER
VELI DEMIREL
44087 HIGH POINT ROAD
ELLICOTT CITY, MD 21042
PHONE: (410) 440-1242

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

STATE OF MARYLAND — ROBERT HARRIS VOGEL — NO. 16193 — REGISTERED PROFESSIONAL ENGINEER

ROBERT H. VOGEL, PE No.16193

DESIGN BY:	EDS
DRAWN BY:	RVE
CHECKED BY:	RHV
DATE:	MAY 2015
SCALE:	AS SHOWN
W.O. NO.:	11-01

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

SHEET 15 OF 15

SDP-13-077

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