

SITE DATA
 LOCATION: TAX MAP 47, GRID 12, PARCEL 119
 DEED REFERENCE: L 9070 / F. 598
 6TH ELECTION DISTRICT
 PRESENT ZONING DESIGNATION: R-SC
 PER THE COMPREHENSIVE ZONING PLAN DATED 2/02/04.
 TOTAL PROJECT AREA: 0.64 AC. (27,663.21 SF)
 AREA OF RIGHT OF WAY: 0.00 AC. (0.00 SF)
 AREA OF FLOODPLAIN: 0.00 AC. (0.00 SF)
 AREA OF STEEP SLOPES: 0.00 AC. (0.00 SF)
 NET AREA OF PROJECT: 0.64 AC. (27,663.21 SF)
 LIMIT OF DISTURBED AREA: 0.59 AC. (25,828.64 SF)
 PROPOSED USES FOR SITE AND STRUCTURES: SFD RESIDENTIAL
 TOTAL NUMBER OF UNITS: 2 UNITS
 TOTAL NUMBER OF UNITS PROPOSED: 2 UNITS
 AREA OF SMALLEST BUILDABLE LOT PROPOSED: 0.26 AC. (11,294.41 SF)
 NUMBER OF PROPOSED OPEN SPACE LOTS: 0
 NUMBER OF NON-BUILDABLE BULK PARCELS: 0
 APPLICABLE DPZ FILE REFERENCES: ECP-11-049 AND ZB 1072m, F-11-086.
 CONT. 44-1004, AND CONT. 128-S

SITE DEVELOPMENT PLAN

TOTARO PROPERTY

LOTS 1 & 2

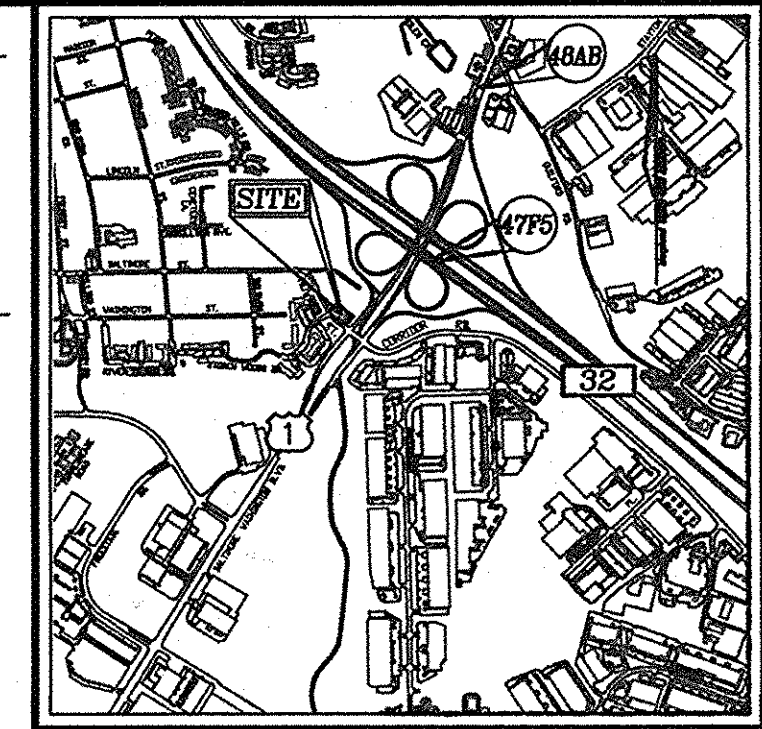
LIBER 9070, FOLIO 598

POINT	NORTHING	EASTING
913	535376.201	1364898.118
950	535308.036	1364841.958
951	535296.441	1364786.476
952	535390.735	1364676.298
954	535422.988	1364651.424
955	535432.134	1364646.996
956	535508.974	1364729.739

BENCHMARKS
 HOWARD COUNTY BENCHMARK - 47F5 (CONC. MONUMENT)
 N:535985.024 E:1365653.51 EL:235.045
 HOWARD COUNTY BENCHMARK - 484B (CONC. MONUMENT)
 N:536394.453 E:1366415.91 EL:225.70

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING PAVEMENT
- EXISTING FENCE
- EXISTING CURB

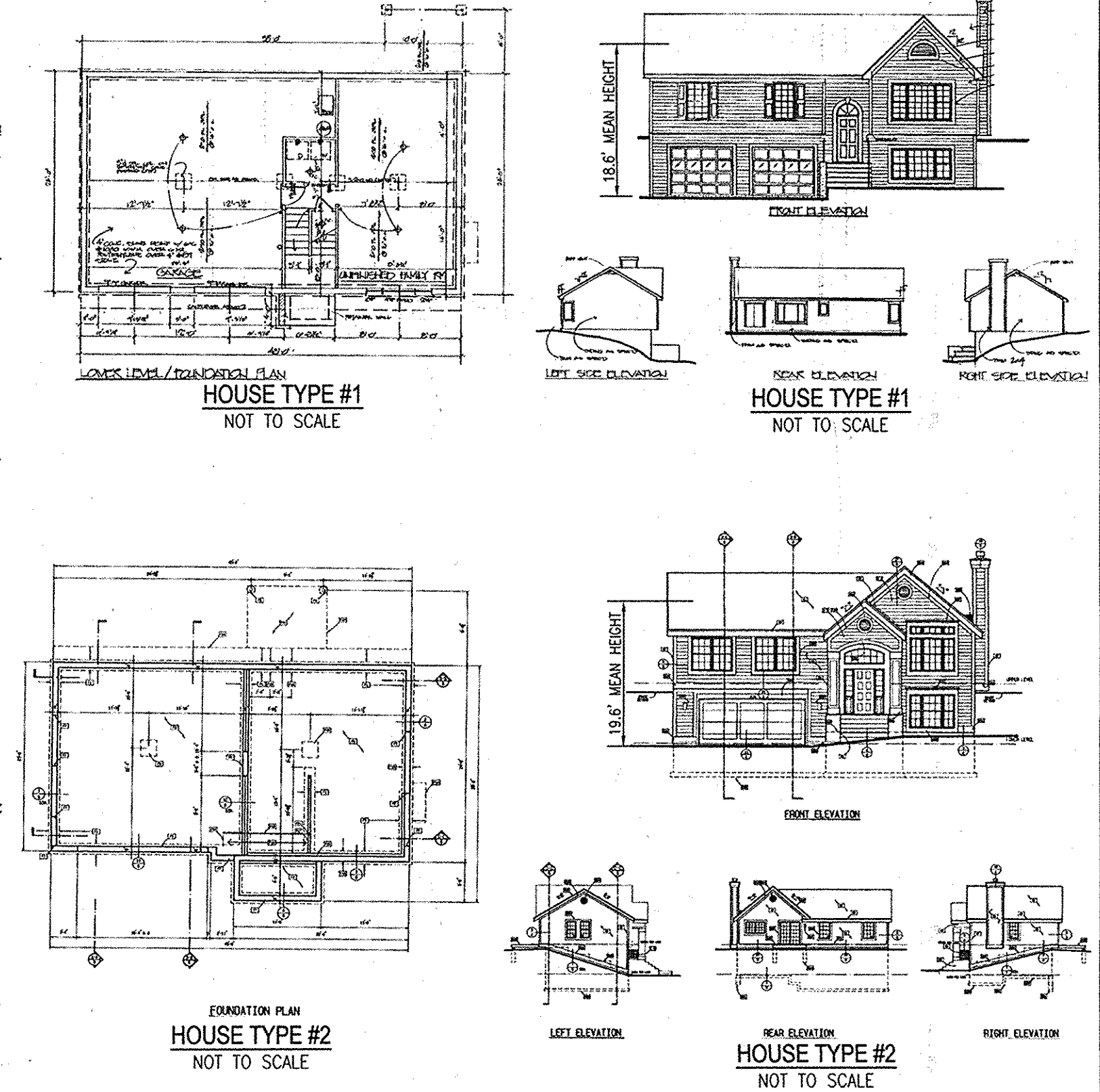
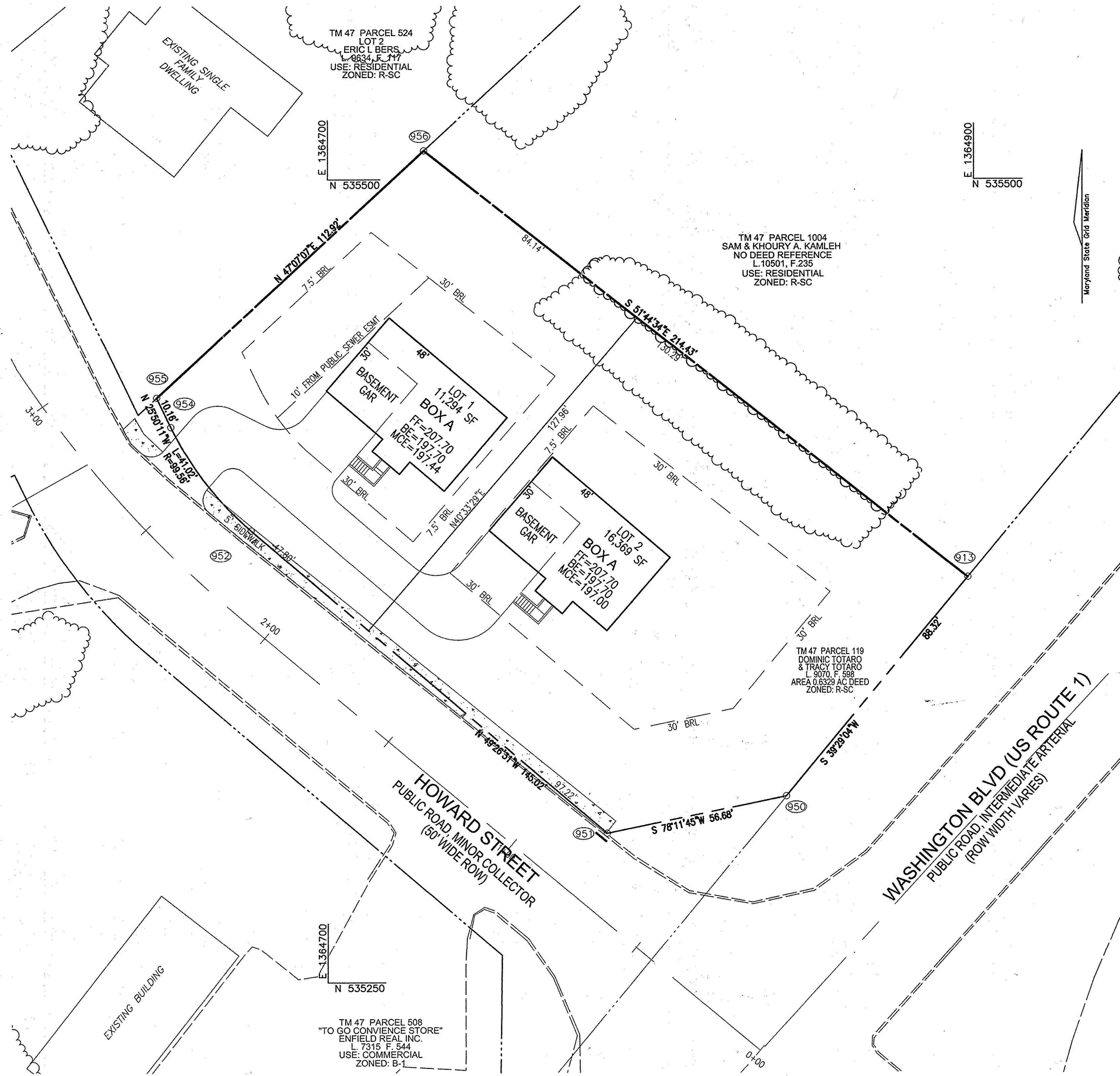


VICINITY MAP

SCALE: 1"=200'
 ADC MAP/GRID NUMBER: 20/ D-7

GENERAL NOTES

- THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS:
 - AT&T CABLE LOCATION DIVISION 1-800-393-3553
 - EG&E (CONTRACTOR SERVICES) 410-850-4620
 - EG&E (UNDERGROUND DAMAGE CONTROL) 410-787-4520
 - HOWARD COUNTY BUREAU OF UTILITIES 410-313-2366
 - COLONIAL PIPELINE CO. 410-795-1390
 - MISS UTILITY 1-800-257-7777
 - STATE HIGHWAY ADMINISTRATION 410-531-5533
 - VERIZON TELEPHONE CO. 1-410-954-6281
- 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.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- 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. 47F5 AND 484B WERE USED FOR THIS PROJECT.
- THE PROJECT BOUNDARY IS BASED ON A FIELD RUN BOUNDARY SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED 01/26/06.
- THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON FIELD RUN TOPOGRAPHIC SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED 03/26/06.
- EXISTING UTILITIES ARE BASED ON HOWARD COUNTY RECORDS, FIELD SURVEY, ROAD CONSTRUCTION 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 TO THE COUNTY'S RIGHTS-OF-WAY, PAVING, OR EXISTING UTILITIES SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- WATER AND SEWER SERVICE FOR THIS PROJECT WILL BE PUBLIC. WATER WILL BE PROVIDED THROUGH CONTRACT NO. 44-1004. SEWER WILL BE PROVIDED THROUGH CONTRACT NO. 128-S.
- PUBLIC WATER AND SEWER ALLOCATION WILL BE GRANTED AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
- ALL WATER HOUSE CONNECTIONS SHALL BE FOR OUTSIDE METER SETTING UNLESS OTHERWISE NOTED.
- THIS SUBDIVISION IS IN THE METROPOLITAN DISTRICT.
- THIS SITE IS NOT LOCATED IN A HISTORIC DISTRICT.
- NO STREAMS OR STREAM BUFFERS EXIST ON SITE.
- NO 100-YEAR FLOODPLAIN EXIST ON SITE.
- THERE ARE NO WETLANDS AND WETLAND BUFFERS ON THIS SITE.
- THE SUBJECT PROPERTY IS ZONED R-SC IN ACCORDANCE WITH THE 02/02/04 COMPREHENSIVE ZONING PLAN AND PER THE COMP. LITE ZONING REGULATION AMENDMENTS EFFECTIVE 07/28/06.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- FINANCIAL SURETY FOR THE REQUIRED 8 SHADE TREES, 4 EVERGREEN TREES IN THE AMOUNT OF \$3,000.00 IS PART OF THE BUILDERS GRADING PERMIT APPLICATION FOR LOTS 1 AND 2.
- THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. DEVELOPMENT OR CONSTRUCTION OF THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION, OR BUILDING AND GRADING PERMITS.
- DRIVEWAYS(S) SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 - a) WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE);
 - b) SURFACE - 8 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MIN.);
 - c) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM 45-FOOT TURNING RADIUS;
 - d) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING);
 - e) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE;
 - f) STRUCTURE CLEARANCES - MINIMUM 12 FEET;
 - g) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
- THE DRIVEWAY ENTRANCES SHALL UTILIZE HOWARD COUNTY STANDARD DETAIL NO. R-6.02.
- THERE IS NO EXISTING HOUSE, CONSTRUCTION, OR HISTORIC STRUCTURES LOCATED ON THIS PROPERTY.
- STORM WATER MANAGEMENT ADDRESSED FOR SITE USING THE 2007 MARYLAND STORMWATER DESIGN MANUAL (CHAPTER 5).
 - A. CHANNEL PROTECTION VOLUME (CPV) IS NOT REQUIRED (P₀ FOR ENTIRE SITE IS EQUAL TO OR UNDER 1.07)
 - B. WATER QUALITY VOLUME (WQV) AND RECHARGE VOLUME (REV) TO BE PROVIDED BY ROOFTOP DISCONNECT (N-1), MICRO-BIORETENTION FACILITIES (M-6), PERMEABLE CONCRETE (A-2), AND RAIN BARRELS (M-1)
- FOREST STAND DELINEATION PREPARED BY ROBERT H. VOGEL ENGINEERING, INC. DATED MARCH 2011.
- A NOISE STUDY WAS PREPARED BY ROBERT H. VOGEL ENGINEERING, INC. DATED FEBRUARY 2011.
- TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL/CEMETERY LOCATIONS ON SITE.
- THERE ARE NO STEEP SLOPES LOCATED ON SITE.
- THIS PROJECT IS EXEMPT FROM THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BECAUSE THE TOTAL AREA OF THE PROJECT IS LESS THAN 40,000 SQUARE FEET.
- THE 65dBA NOISE CONTOUR LINE DRAWN ON THIS DEVELOPMENT PLAN IS ADVISORY AS REQUIRED BY THE HOWARD COUNTY DESIGN MANUAL, CHAPTER 5, REVISED FEBRUARY, 1992 AND CANNOT BE CONSIDERED TO EXACTLY LOCATE THE 65dBA NOISE EXPOSURE. THE 65dBA NOISE LINE WAS ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS, BUILDERS, AND FUTURE RESIDENTS THAT AREAS BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVELS ESTABLISHED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT.
- 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. PORCHES OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK.
- THE NOISE WALL EASEMENT MAINTENANCE AGREEMENT IS RECORDED AT L.13671, F.006.
- LOTS 1 AND 2 WILL UTILIZE A USE-IN-COMMON DRIVEWAY. THE USE-IN-COMMON MAINTENANCE AGREEMENT IS RECORDED AT L.14779, F.451



NOTE:
 BOTH HOUSE TYPE 1 AND 2 WILL FIT INTO GENERIC BOX 'A' WITH ALL AVAILABLE OPTIONS

OWNER/DEVELOPER
 DOMINIC TOTARO
 TRACY TOTARO
 12309 CAROL DR
 FULTON, MD 20759
 PHONE: 301-674-6383

NO.	REVISION	DATE

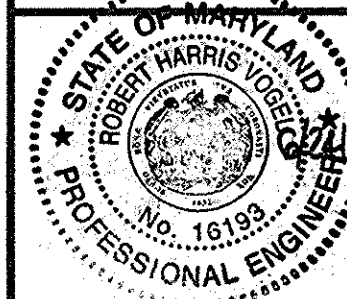
SITE DEVELOPMENT PLAN

COVER SHEET

TOTARO PROPERTY

LIBER 9070, FOLIO 598
 SFD UNITS
 6TH ELECTION DISTRICT
 MAP: 47 GRID: 12
 DPZ REF'S: ZB1072m, ECP-11-049, F-11-086, PARCEL: 119
 PLAT 22321, CONT. 128-S, CONT. 44-1004 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.2966 FAX: 410.461.2966



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

DESIGN BY: RHV
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: MARCH 2014
 SCALE: AS SHOWN
 W.O. NO.: 05-26

STORMWATER MANAGEMENT PRACTICES CHART

LOT	FEATURE	ESD PRACTICE
1	HOUSE	RAIN BARRELS (M-1) MICRO-BIORETENTION FACILITY (M-6) ROOF TOP DISCONNECTION (N-1)
	DRIVEWAY	PERVIOUS PAVEMENT (A-2)
	HOUSE	RAIN BARRELS (M-1) MICRO-BIORETENTION FACILITY (M-6) ROOF TOP DISCONNECTION (N-1)
2	HOUSE	RAIN BARRELS (M-1) MICRO-BIORETENTION FACILITY (M-6) ROOF TOP DISCONNECTION (N-1)
	DRIVEWAY	PERVIOUS PAVEMENT (A-2)

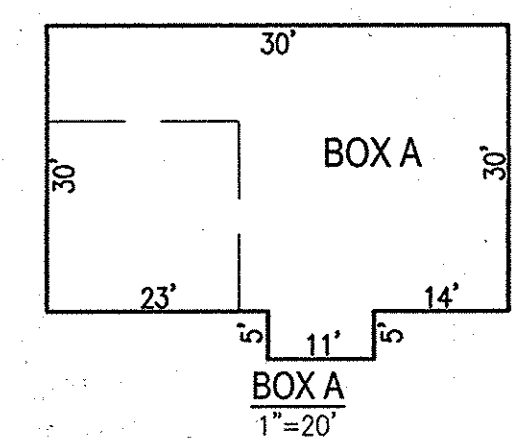
ADDRESS CHART

LOT/PARCEL#	STREET ADDRESS
TOTARO PROPERTY - LOT 1	8527 HOWARD STREET
TOTARO PROPERTY - LOT 2	8531 HOWARD STREET

PERMIT INFORMATION CHART

PLAT OR L/F	GRID NO.	ZONING	TAX MAP NO.	ELECT. DIST.	CENSUS TR.
PLAT 22321	12	R-SC	47	6TH	6069.02

LOCATION MAP
 SCALE: 1"=20'



SHEET INDEX

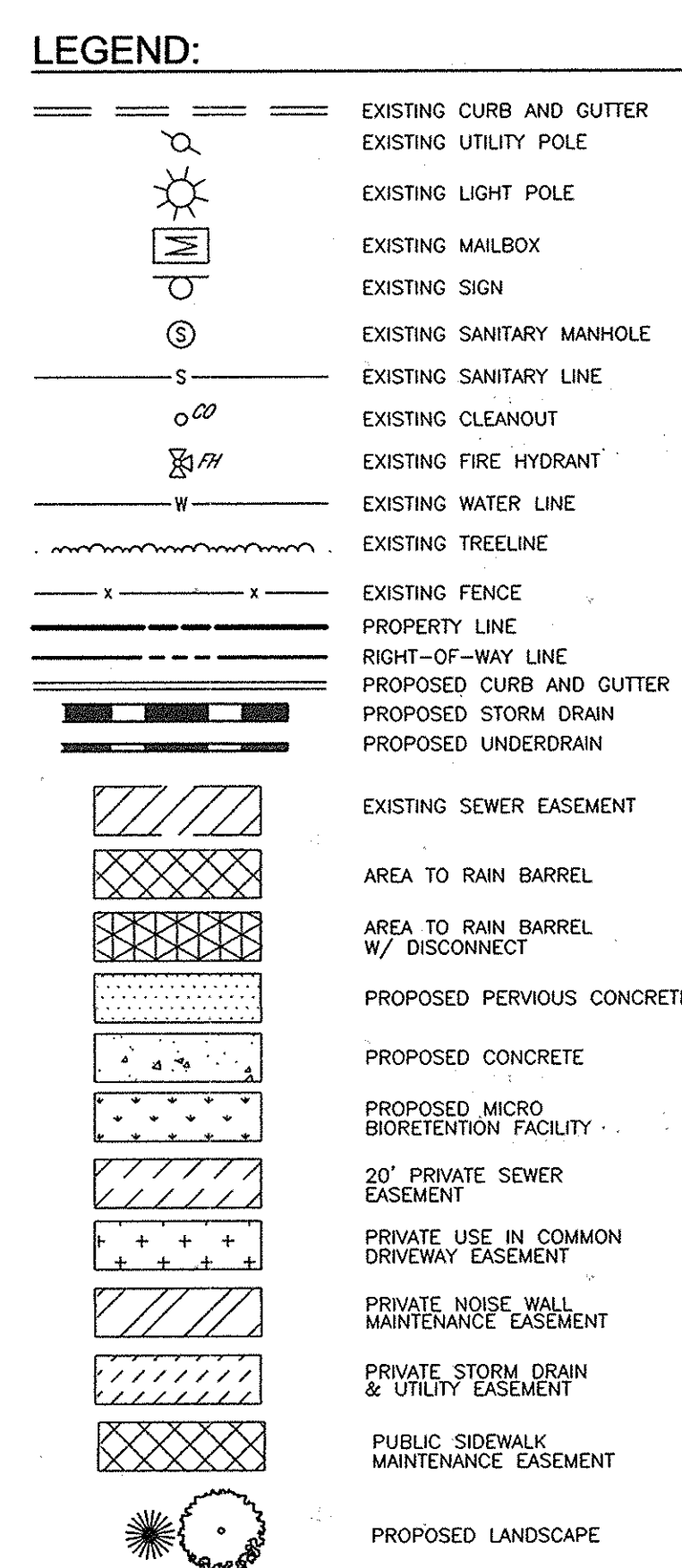
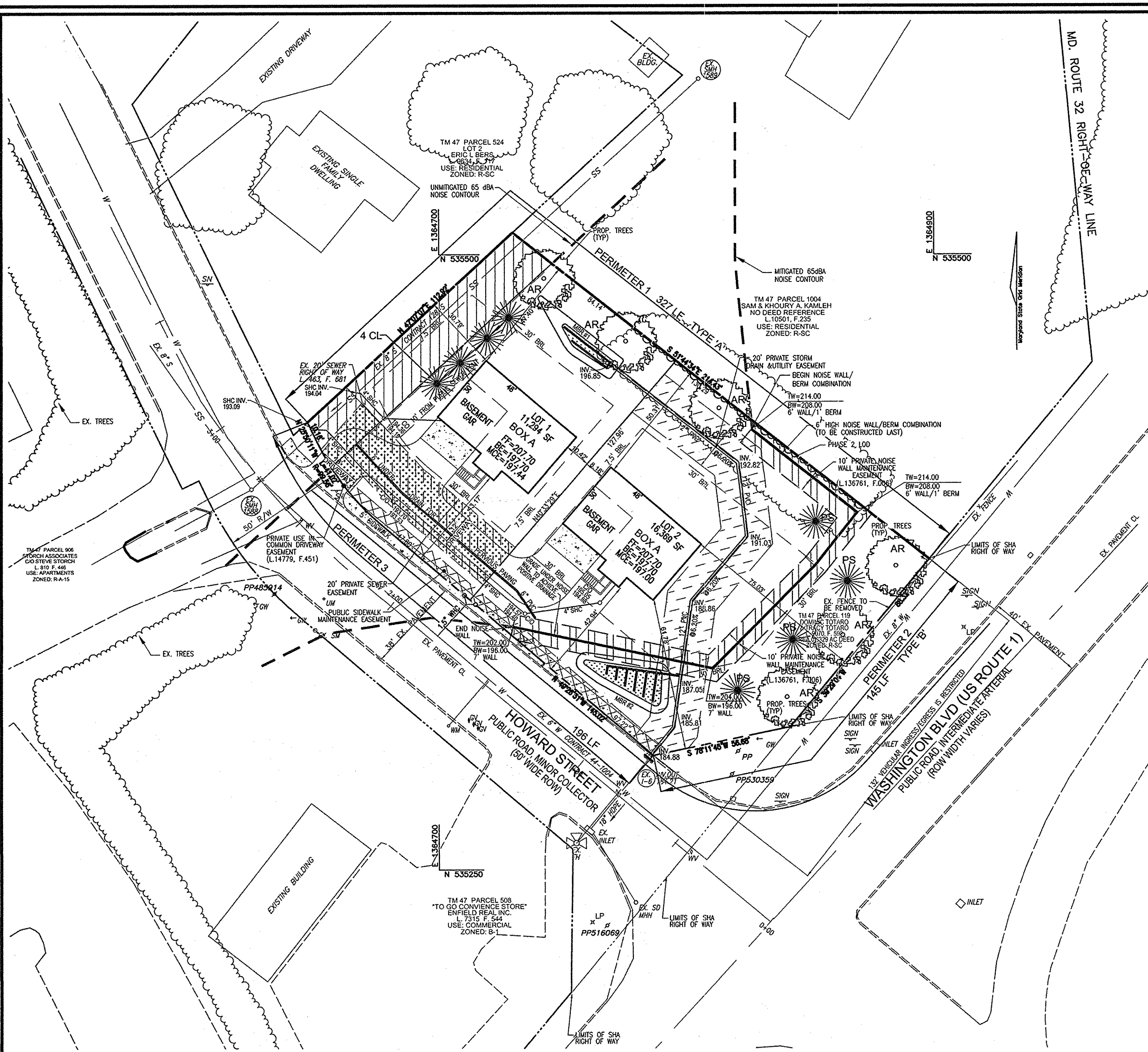
DESCRIPTION	SHEET NO.
COVER SHEET	1 OF 4
SITE LAYOUT AND LANDSCAPE PLAN	2 OF 4
SOILS MAP, GRADING, EROSION AND SEDIMENT CONTROL PLAN	3 OF 4
GRADING, EROSION AND SEDIMENT CONTROL NOTES AND DETAILS	4 OF 4

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Edwards 7-3-14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

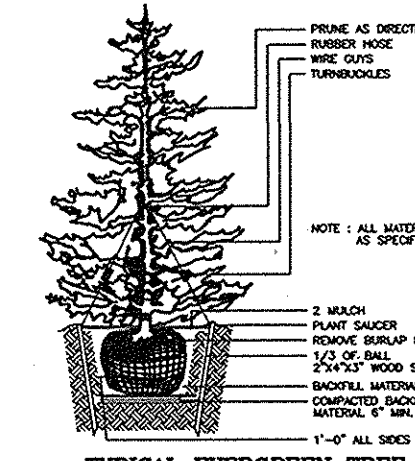
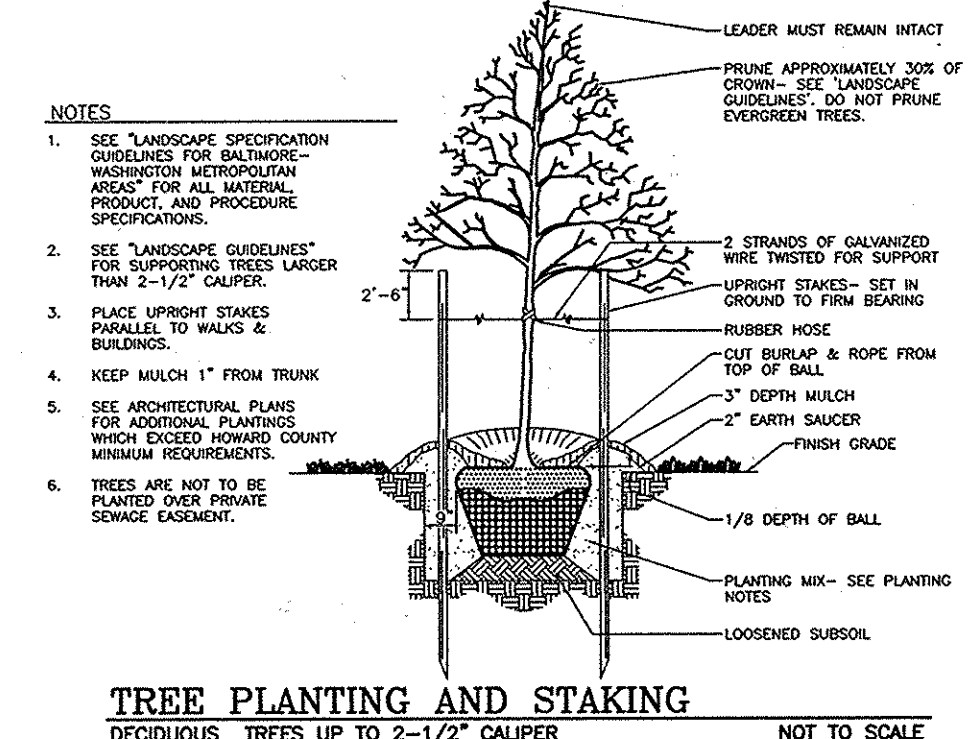
Robert H. Vogel 7-10-14
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

David A. Goych 7/10/14
 DIRECTOR DATE



LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	REMARKS
AR	6	ACER RUBRUM OCTOBER GLORY RED MAPLE	2 1/2"-3" CAL.	B & B
PS	4	PINUS STROBUS EASTERN WHITE PINE	6'-8' HT.	B & B
CL	4	CUPRESSUS X LEYLANDII LEYLAND CYPRESS	6'-8' HT.	B & B



SCHEDULE A PERIMETER LANDSCAPE EDGE

CATEGORY	1	2	3	TOTAL
PERIMETER/FRONTAGE DESIGNATION	A	B	C	
LANDSCAPE TYPE				
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	327'	145'	196'	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	NO	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	NO	
NUMBER OF PLANTS REQUIRED	327	145	196	
SHADE TREES	1:60	5	1:50	3
EVERGREEN TREES	1	1:40	2	3
SHRUBS	1	1	1	3
NUMBER OF PLANTS PROVIDED				
SHADE TREES	4	4	1	9
EVERGREEN TREES (2:1 SUB)	1	1	1	3
OTHER TREES (2:1 SUBSTITUTION)	1	1	1	3
SHRUBS (10:1 SUBSTITUTION)	1	1	1	3
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED				

SCALE: 1"=30'

LAYOUT PLAN SCALE: 1"=30'

DEVELOPER/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

SIGNATURE OF DEVELOPER: *DOMINIC TOTARO* DATE: 6-19-14

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: *Paul Edwards* DATE: 7-3-14

Chief, Division of Land Development: *Verle Jacobs* DATE: 7-10-14

Director: *David A. Gagliardi* DATE: 7/1/14

BIORETENTION PLANTING REQUIREMENTS

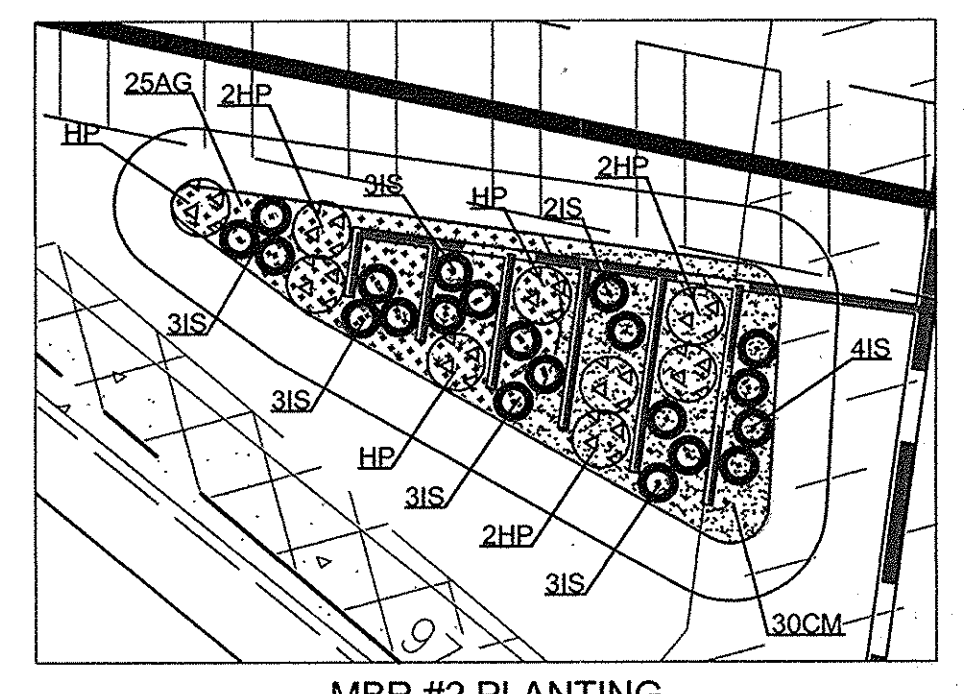
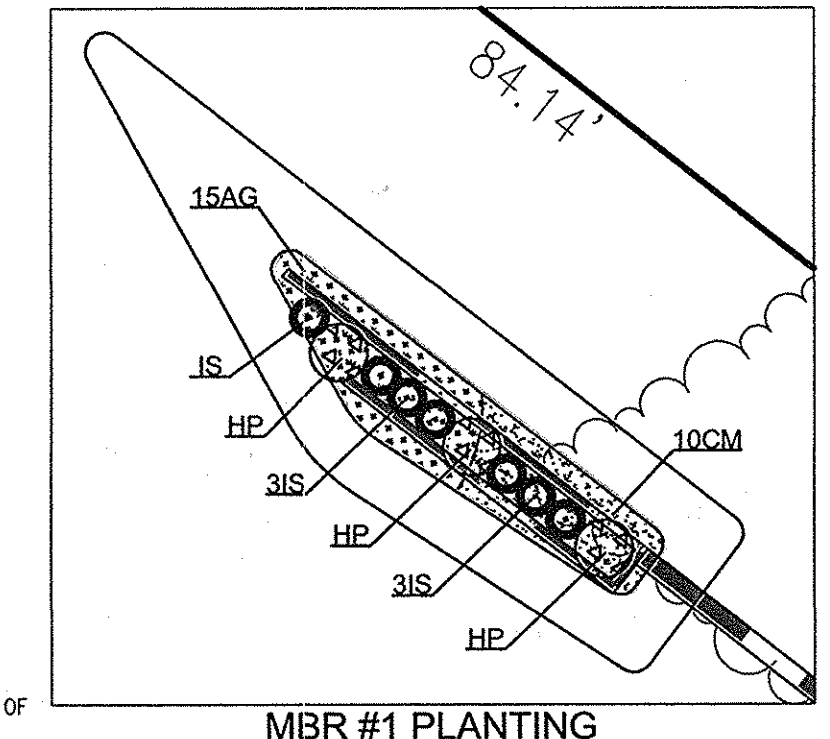
MBR	AREA	STEMS REQUIRED	STEMS PROVIDED
1	108 SF	3	10
2	288 SF	3	30

BIORETENTION PLANTING SCHEDULE MBR #1

KEY	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
7	1	BIS. SIBIRICA 'BENNETT'S BLUE' BENSBERG BLUE SIBERIAN	1 GALLON	18" O.C.
8	3	HEMEROCALLIS X 'PRAIRIE BLUE EYES'	1 GALLON	30" O.C.
9	1	PRONIA BLUE EYES DANIELA	1 QT.	12" O.C.
10	1	CONVALARIJA MARIALIS 'LEY-OF-THE-VALLEY'	1 QT.	12" O.C.
15	1	ACORUS GRAMINEUS 'COON GOLDEN VAREGATED SWEET FLAG'	1 QT.	12" O.C.

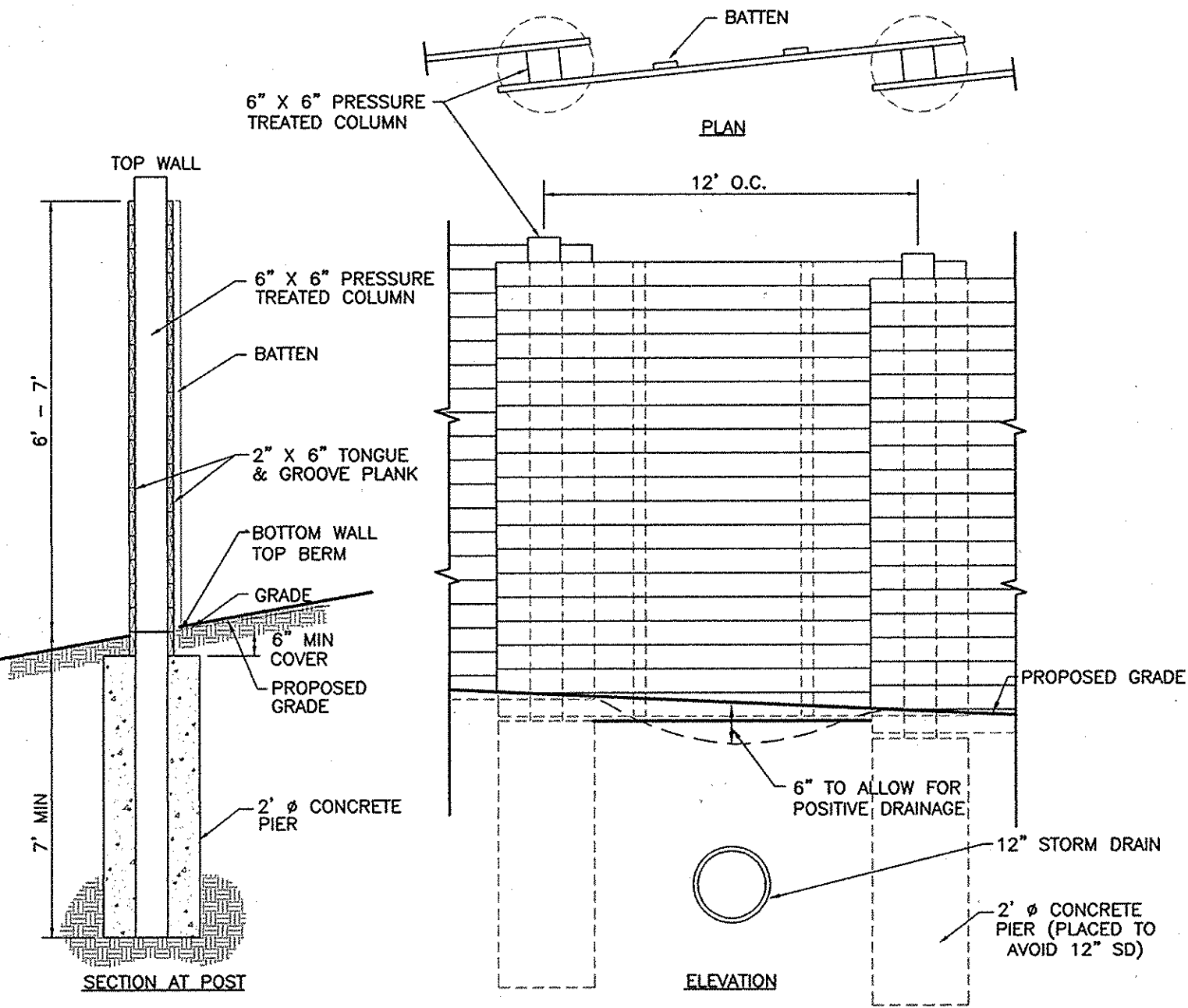
BIORETENTION PLANTING SCHEDULE MBR #2

KEY	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
21	1	BIS. SIBIRICA 'BENNETT'S BLUE' BENSBERG BLUE SIBERIAN	1 GALLON	18" O.C.
9	9	HEMEROCALLIS X 'PRAIRIE BLUE EYES'	1 GALLON	30" O.C.
30	1	CONVALARIJA MARIALIS 'LEY-OF-THE-VALLEY'	1 QT.	12" O.C.
25	1	ACORUS GRAMINEUS 'COON GOLDEN VAREGATED SWEET FLAG'	1 QT.	12" O.C.



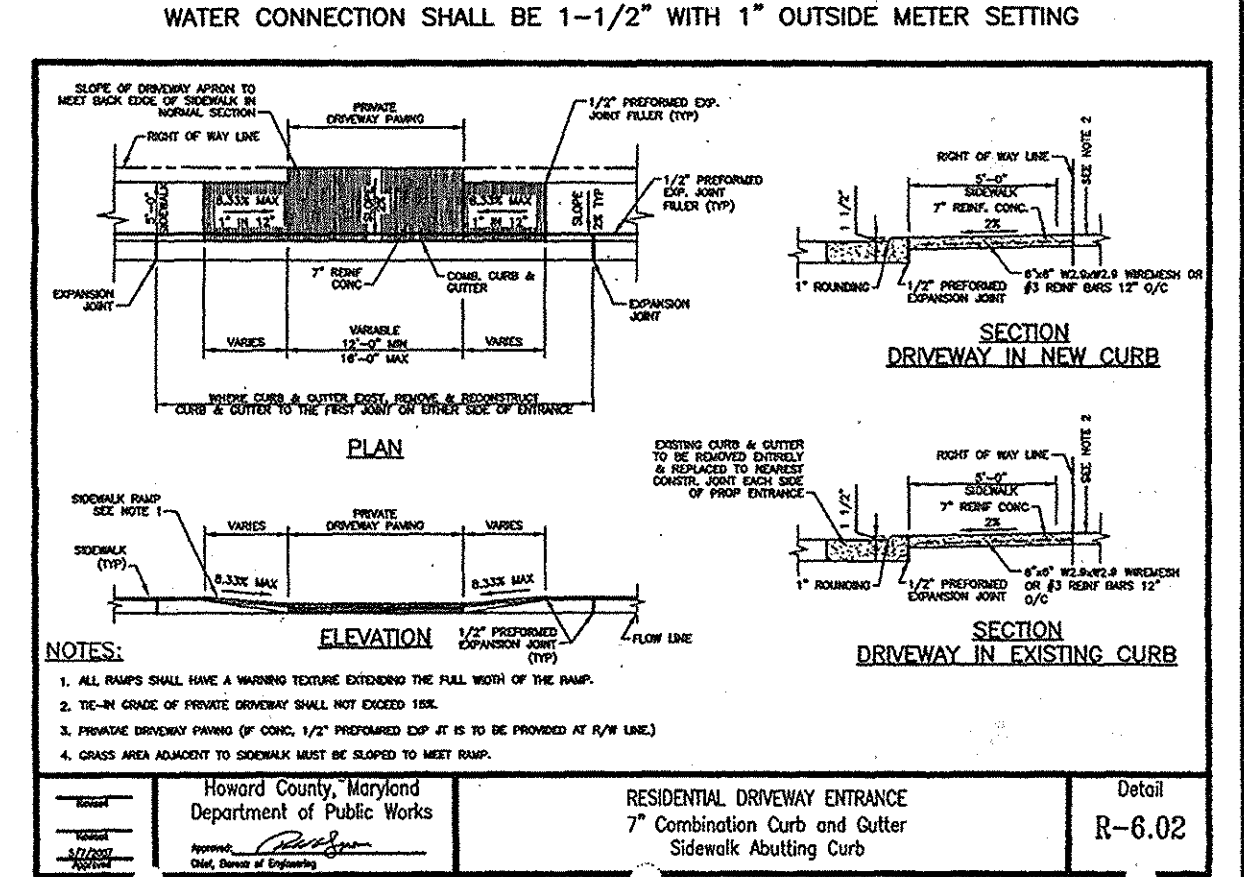
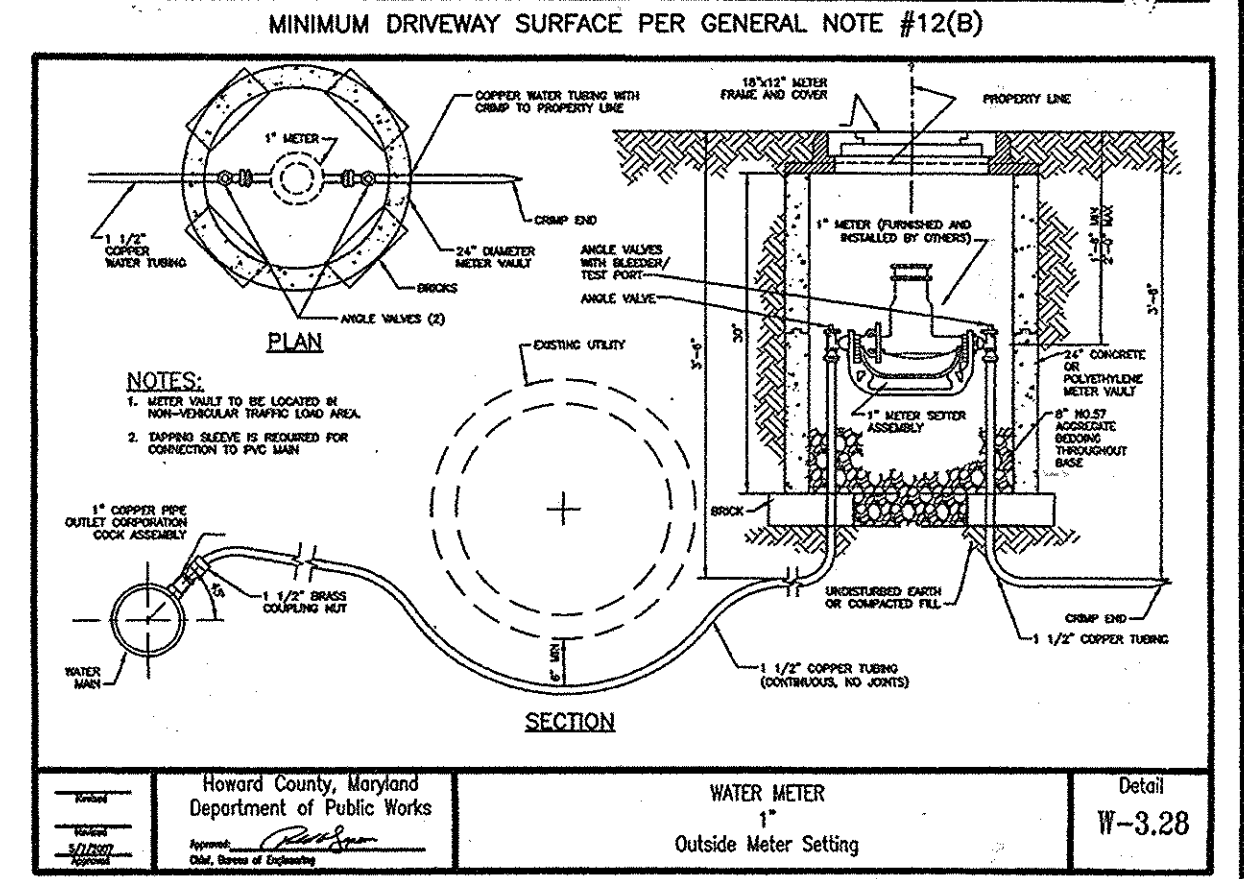
"MICRO-BIORETENTION" PLANTING SCHEDULE NOTES:

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. MICROBIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF 1000 STEMS PER PLANTED ACRE (0.229 STEMS PER SQUARE FOOT). ABOVE PLANTING RATIOS ARE TO BE APPLIED TO THE AREAS PROVIDED IN THE ES0V SUMMARY.



PAVING SECTIONS P-1 to P-4

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	PAVEMENT MATERIALS (GRADE)	1\"/>
P-1	PRIVATE DRIVE WITH SIDEWALK	1.5\"/>	
P-2	PRIVATE DRIVE WITH SIDEWALK	1.5\"/>	
P-3	PRIVATE DRIVE WITH SIDEWALK	1.5\"/>	
P-4	PRIVATE DRIVE WITH SIDEWALK	1.5\"/>	



OWNER/DEVELOPER

DOMINIC TOTARO
TRACY TOTARO
12309 CAROL DR
FULTON, MD 20759
PHONE: 301-674-6383

SITE DEVELOPMENT PLAN

SITE LAYOUT AND LANDSCAPE PLAN

TOTARO PROPERTY LOTS 1 & 2

6TH ELECTION DISTRICT TAX MAP: 47 GRID: 12 DPZ REF'S: ZB1072m, ECP-11-049, F-11-086, PLAT 22321, CONT. 128-S, CONT. 44-1004

LIBER 9070, FOLIO 598 SFD UNITS ZONING: R-3C PARCEL: 119 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERS • SURVEYORS • PLANNERS

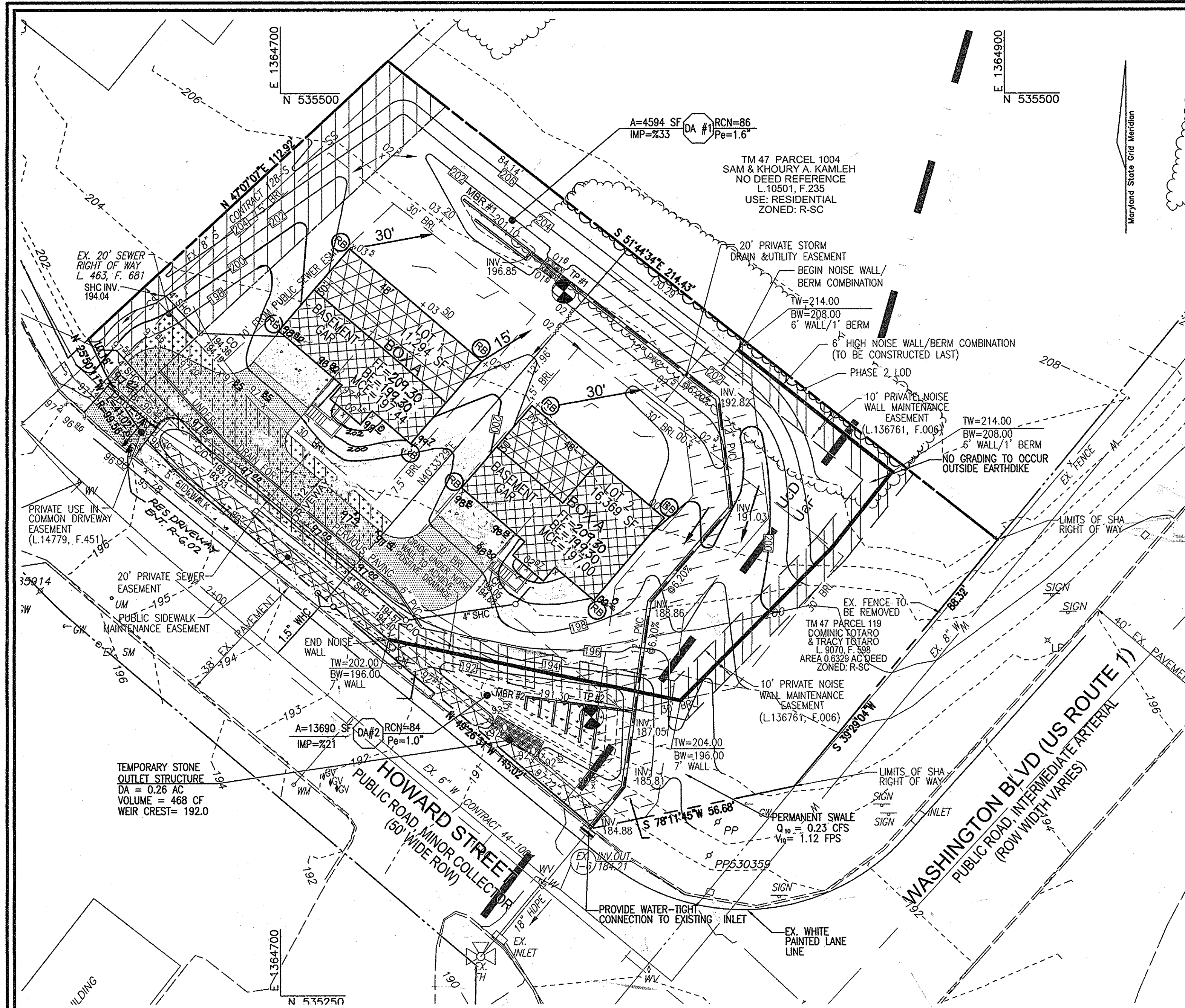
8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.9961

PROFESSIONAL CERTIFICATE

DESIGN BY: RHV
DRAWN BY: JMR
CHECKED BY: RHV
DATE: MARCH 2014
SCALE: AS SHOWN
W.O. NO.: 05-26

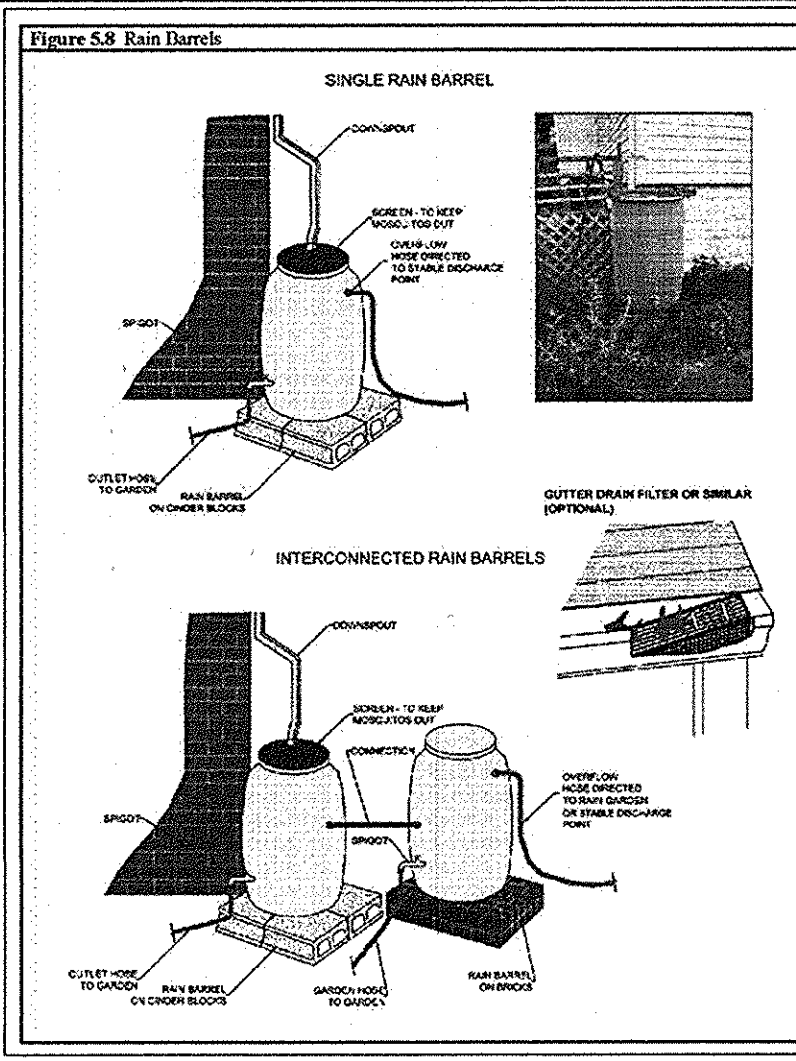
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NUMBER: 16193 EXPIRATION DATE: 09-27-2014

2 SHEET OF 4



LEGEND:

	EXISTING CONTOUR		EXISTING SEWER EASEMENT
	PROPOSED CONTOUR		AREA TO RAIN BARREL
	EXISTING SPOT ELEVATION		AREA TO RAIN BARREL W/ DISCONNECT
	PROPOSED SPOT ELEVATION		PROPOSED PERVIOUS CONCRETE
	EXISTING CURB AND GUTTER		PROPOSED CONCRETE
	PROPOSED CURB AND GUTTER		PROPOSED MICRO BIORETENTION FACILITY
	EXISTING UTILITY POLE		20' PRIVATE SEWER EASEMENT
	EXISTING LIGHT POLE		PRIVATE USE IN COMMON DRIVEWAY EASEMENT
	EXISTING MAILBOX		PRIVATE NOISE WALL MAINTENANCE EASEMENT
	EXISTING SANITARY MANHOLE		PUBLIC SIDEWALK MAINTENANCE EASEMENT
	EXISTING SANITARY LINE		PRIVATE STORM DRAIN & UTILITY EASEMENT
	EXISTING CLEANOUT		LIMIT OF DISTURBANCE
	EXISTING FIRE HYDRANT		PROPOSED NOISE WALL
	EXISTING WATER LINE		STABILIZED CONSTRUCTION ENTRANCE
	EXISTING TREE LINE		SUPER SILT FENCE
	EXISTING FENCE		ECM
	PROPERTY LINE		
	RIGHT-OF-WAY LINE		
	EXISTING SOIL		
	PROPOSED STORM DRAIN		
	PROPOSED UNDERDRAIN		
	PROPOSED CLEAN WATER DIKE (MOUNTABLE)		
	PROPOSED RAIN BARREL		

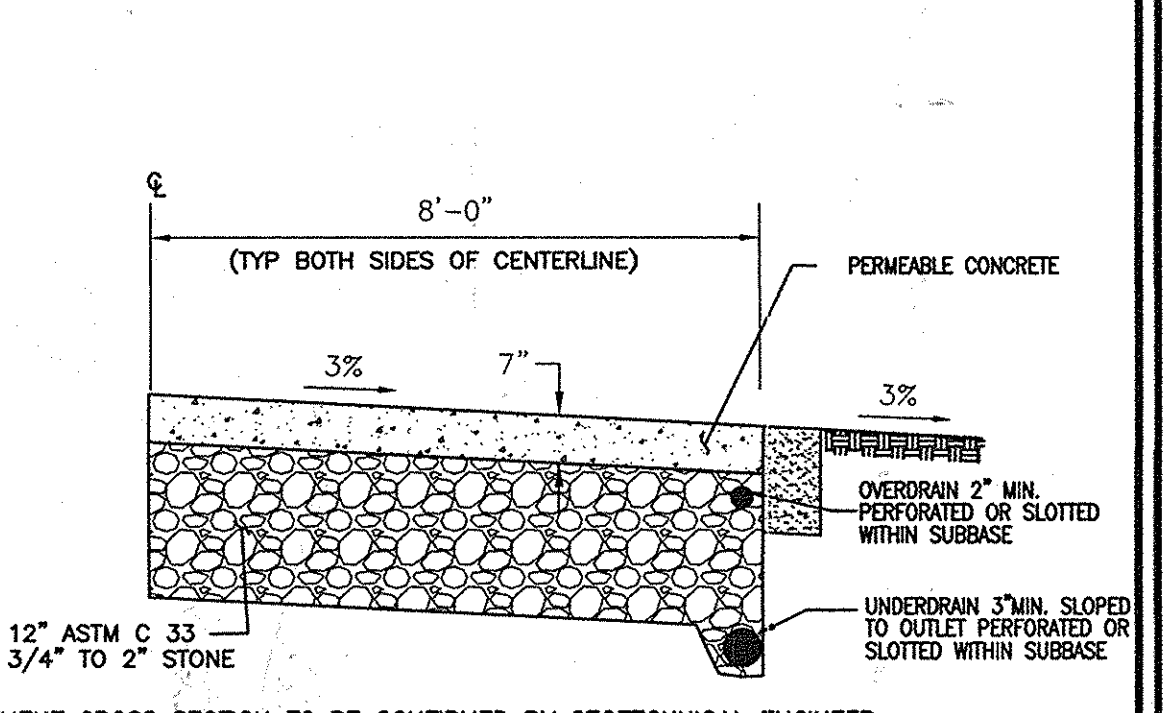


- OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED RAINDRAIN HARVESTING (M-1)**
- THE OWNER SHALL EMPTY BARRELS ON A MONTHLY BASIS AND CLEAN BARREL WITH A HOSE.
 - THE OWNER SHALL VERIFY INTEGRITY OF LEAF SCREENS, GUTTERS, DOWNSPOUTS, SPIGOTS, AND MOSQUITO SCREENS, AND CLEAN AND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

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

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

Material	Specification	Notes
Planting soil	See Appendix A, Table A.4	Planting soil shall be site-specific.
Filtering soil	USDA soil (60-70% coarse compost (15-40%) and 30-40% fine compost (40-60%))	USDA soil types heavy sand or sandy loam, clay content < 2%
Organic content	Min. 10% by dry weight (ASTM D 2974)	
Mulch	Shredded hardwood	Need 6 months, minimum, no pine or wood chips
Permeable geotextile	per gravel: ASTM D-444	NO. 1 OR NO. 9 (SEE TABLE 2)
Catchment basin	enamel-lined: washed cobble	size: 2" to 5"
Geotextile	NO. 57 OR NO. 4	PER TYPE 1 MEMBRANE
Gravel (underdrains and infiltration basins)	per gravel: ASTM D-444	NO. 57 OR NO. 4 (SEE TABLE 2)
Underdrain piping	7.75" Type PS 28 or AASHTO M-27E	Slotted or perforated pipe: 3/8" perf. @ 8" on center, 4 holes per foot; minimum 1/2" of gravel over pipe; no necessary underdrain pipes. Perforated pipe shall be wrapped with 1/2-inch absorbent geotextile fabric.
Placed in place concrete (if required)	MSHA Min No. 3, F _c = 3000 psi (28 day normal weight, air-entrained, reinforcing to meet ASTM-415-04)	
Sand	AASHTO M-44 or ASTM C-33	0.075 to 0.04"



DETAIL - PERMEABLE CONCRETE (A-2)

NOT TO SCALE

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

- OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED PERMEABLE PAVEMENT (A-2)**
- THE OWNER SHALL PERIODICALLY SWEEP (OR VACUUM POROUS CONCRETE PAVEMENT) THE PAVEMENT SURFACES TO REDUCE SEDIMENT ACCUMULATION AND ENSURE CONTINUED SURFACE POROSITY. SWEEPING SHOULD BE PERFORMED AT LEAST TWICE ANNUALLY WITH A COMMERCIAL CLEANING UNIT. WASHING OR COMPRESSED AIR SHOULD NOT BE USED TO PERFORM SURFACE CLEANING.
 - THE OWNER SHALL PERIODICALLY CLEAN DRAINAGE PIPES, INLETS, STONE DRAINAGE GRASSES AND OTHER STRUCTURES WITHIN OR DRAINING TO THE SUBBASE.
 - THE OWNER SHALL USE DECIDERS IN MODERATION. DECIDERS SHOULD BE NON-TOXIC AND BE APPLIED AS CALCIUM MAGNESIUM ACETATE OR AS PRETREATED SALT.
 - THE OWNER SHALL ENSURE SNOW PLOWING IS PERFORMED CAREFULLY WITH BLADES SET ONE INCH ABOVE THE SURFACE. PLOWED SNOW PILES AND SNOWMELT SHOULD NOT BE DIRECTED TO PERMEABLE PAVEMENT.

SWM DRAINAGE AREA INFO

FACILITY	AREA	% IMP	ESDV	REQ	ESDV PROV	FACILITY TYPE
MBR #1	4594 SF	33%	72 CF	78 CF		MICRO BIORETENTION
MBR #2	13690 SF	21%	175 CF	250 CF		MICRO BIORETENTION

OWNER/DEVELOPER

DOMINIC TOTARO
TRACY TOTARO
12309 CAROL DR
FULTON, MD 20759
PHONE: 301-674-6383

SOILS MAP, GRADING, & SEDIMENT CONTROL PLAN

SCALE: 1" = 20'

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

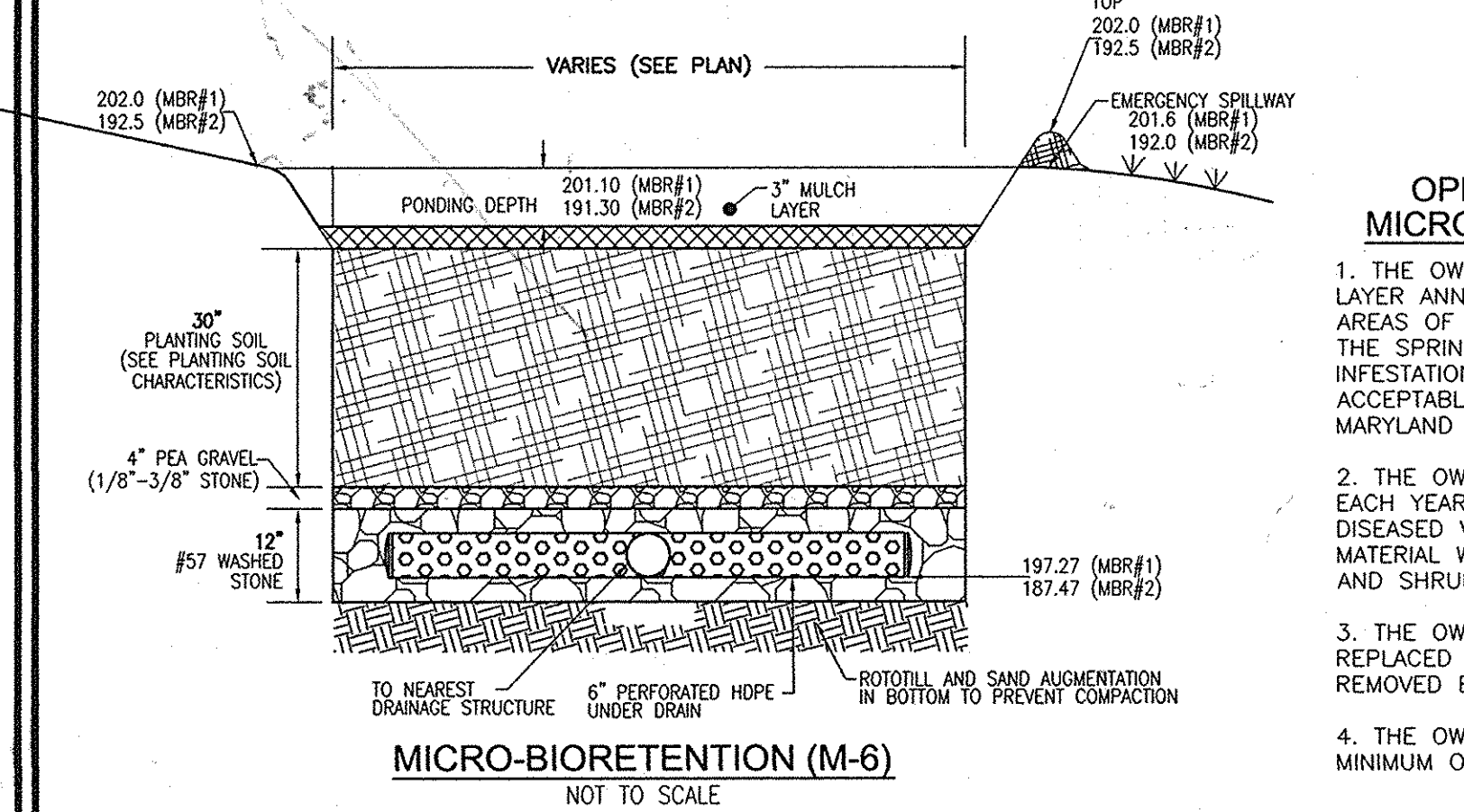
- MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREAS, FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

SWALE COMPUTATION

$Q = c10 = 0.33$
 $c = 0.23, S = 6.60$
 $Q = 0.22 AC$

SOILS LEGEND

SYMBOL	NAME/DESCRIPTION	TYPE
UoF	UDORNTENTS HIGHWAY, 0 TO 65 PERCENT SLOPES	D
UoD	URBAN LAND-CHILLUM-BELTSVILLE COMPLEX, 5 TO 15 PERCENT SLOPES	D



OPERATION AND MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6) AND RAIN GARDENS (M-7)

- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. 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 PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME II, TABLE A.4.1 AND 2.
- THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT. REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL. TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
- THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

SWM NARRATIVE

THE STORMWATER MANAGEMENT PROVIDED ON THIS SITE WAS DESIGN TO PRESERVE THE NATURAL RESOURCES OF THE SITE TO THE MAXIMUM EXTENT POSSIBLE. STRUCTURAL PRACTICES HAVE BEEN MINIMIZED WHILE RAIN BARRELS, ROOFTOP DISCONNECTS, PERVIOUS PAVEMENT AND MICROBIO RETENTION HAS BEEN UTILIZED THROUGHOUT THE SITE. THE ADDITION OF IMPERVIOUS AREAS WAS MINIMIZED BY USING PERVIOUS PAVEMENT IN RELATIVELY FLAT AREAS. SEDIMENT CONTROL FOR THESE LOTS WILL BE ACHIEVED BY USING SUPER SILT FENCE WHICH WILL MINIMIZE DISTURBANCE AND PRESERVE NATURAL SHELFLOW. THERE WERE NO ENVIRONMENTAL FEATURES (SUCH AS STREAMS OR WETLANDS) FOUND ON THIS SITE.

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 PRODUCTS AND SPECIFIC CONDITIONS.

- 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 TIRES THAT WILL BE CARRIED. APPLICATIONS MAY BE DESIGNED USING EITHER STANDARD PAVEMENT PROCEDURES (E.G., AASHTO, ACI 325R, ACI 330R) OR USING DESIGN PROCEDURES. MIX & INSTALLATION - TRADITIONAL PORTLAND CEMENTS (ASTM C 150, C 1157) MAY BE USED IN PERVIOUS CONCRETE APPLICATIONS. PHOSPHORUS ADDITIVES MAY ALSO BE USED. MATERIALS SHOULD BE TESTED (E.G., TYPICAL BATCHING) PRIOR TO CONSTRUCTION SO THAT CRITICAL PROPERTIES (E.G., SETTING TIME, RATE OF STRENGTH DEVELOPMENT, PERVIOUSITY) 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-SIZE AGGREGATE (UP TO 1 INCH) MAY ALSO BE USED. WATER CONTENT - WATER-TO-CEMENT RATIOS BETWEEN 0.40 AND 0.45 ARE USED ROUTINELY WITH PROPER INCLUSION OF CHEMICAL ADJUVANTS. WATER QUALITY SHALL MEET ACI 308. AS A GENERAL RULE, PORTABLE WATER SHOULD BE USED THROUGHOUT CONCRETE PRODUCTION WATER MEETING ASTM C 94 OR ASTM M 157 MAY ALSO BE USED. ADJUVANTS - CHEMICAL ADJUVANTS (E.G., RETARDERS OR HYDRATION-STABILIZERS) ARE USED TO OBTAIN SPECIAL PROPERTIES IN PERVIOUS CONCRETE. USE OF ADJUVANTS SHOULD MEET ASTM C 494 (CHEMICAL ADJUVANTS) AND ASTM C 260 (FOR ENTRAINING ADJUVANTS) AND CLOSELY FOLLOW MANUFACTURER'S RECOMMENDATIONS. BASE COURSE - THE BASE COURSE SHALL BE ASHTO NO. 3 OR 4 COURSE AGGREGATE WITH AN ASSUMED OPEN PORE SPACE OF 30% (n=0.30).
- PERVIOUS INTERLOCKING CONCRETE PAVEMENTS (PICP):** PAVEMENT BLOCKS - BLOCKS SHOULD BE EITHER 12 IN. OR 14 IN. AND MEET ASTM C 936 OR CSA A231.2 REQUIREMENTS. APPLICATIONS SHOULD HAVE 20% OR MORE (40% DEPENDENT) OF THE SURFACE AREA OPEN. INSTALLATION SHOULD FOLLOW MANUFACTURER'S INSTRUCTIONS, EXCEPT THAT HILL AND BASE COURSE MATERIALS AND DIMENSIONS SPECIFIED IN THIS APPENDIX SHALL BE FOLLOWED. INSTALLATION AND LAYING COURSE - OPENINGS SHALL BE FILLED WITH ASTM C-33 GRAD SAND OR SANDY LOAM. PICP BLOCKS SHALL BE PLACED ON A MINIMUM 1/2 INCH THICK LAYER OF ASTM C-33 SAND. BASE COURSE - THE BASE COURSE SHALL BE ASHTO NO. 3 OR 4 COURSE AGGREGATE WITH AN ASSUMED OPEN PORE SPACE OF 30% (n=0.30).
- 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 TIRES THAT WILL BE CARRIED.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division
7-3-14
DATE

Chief, Division of Land Development
7-10-14
DATE

Director
7-10-14
DATE

BY THE DEVELOPER:

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

Signature of Developer
19-14
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 I WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Signature of Engineer
7/1/14
DATE

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

Signature of District Official
7/1/14
DATE

1. To revise hse floor elev. & grading. lot 2. final apr. 1/16/16

NO. REVISION DATE

SITE DEVELOPMENT PLAN

SOILS MAP, GRADING, EROSION, AND SEDIMENT CONTROL PLAN

TOTARO PROPERTY
LOTS 1 & 2
LIBER 9078 FOLIO 598
SFD UNITS

6TH ELECTION DISTRICT
TAX MAP: 47 GRID: 12
DPZ REF'S: ZB1072m, ECP-11-049, F-11-086,
PLAT 22321, CONT. 128-S, CONT. 44-1004

ZONING: R-SC
PARCEL: 119
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.

ENGINEERS • SURVEYORS • PLANNERS

8407 MAIN STREET
ELICOTT CITY, MD 21043
TEL: 410-461-7666
FAX: 410-611-8961

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 16183 EXPIRATION DATE: 09-27-2014

DESIGN BY: RHV
DRAWN BY: JMR
CHECKED BY: RHV
DATE: MARCH 2014
SCALE: AS SHOWN
W.O. NO.: 05-26

3 SHEET OF 4

