

**GENERAL NOTES**

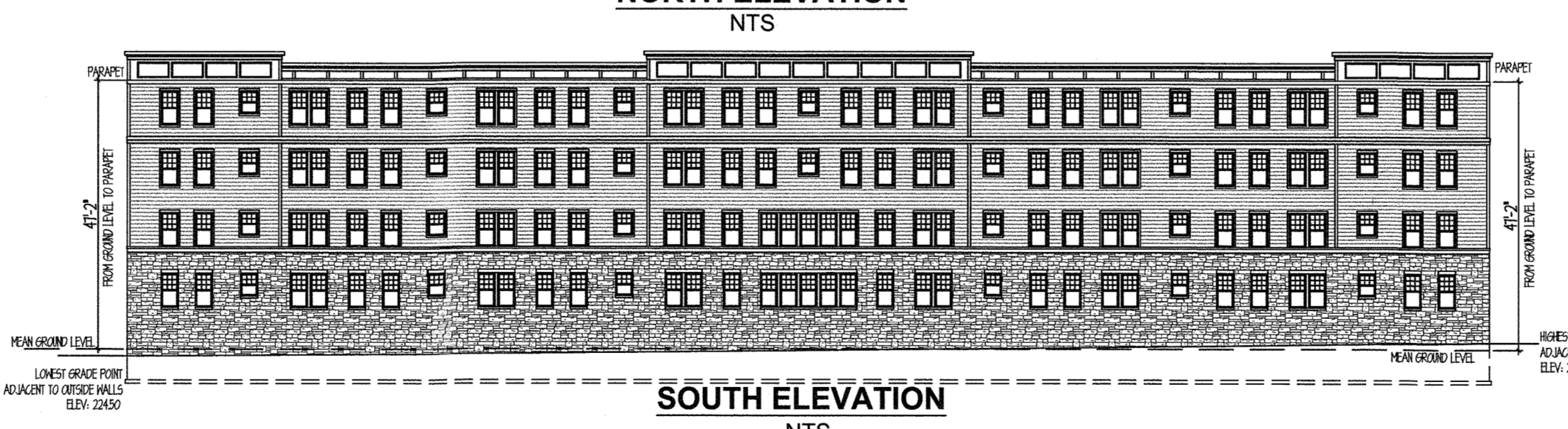
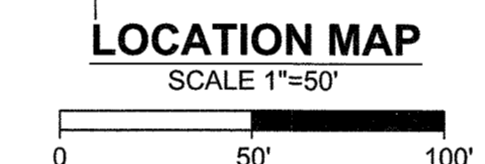
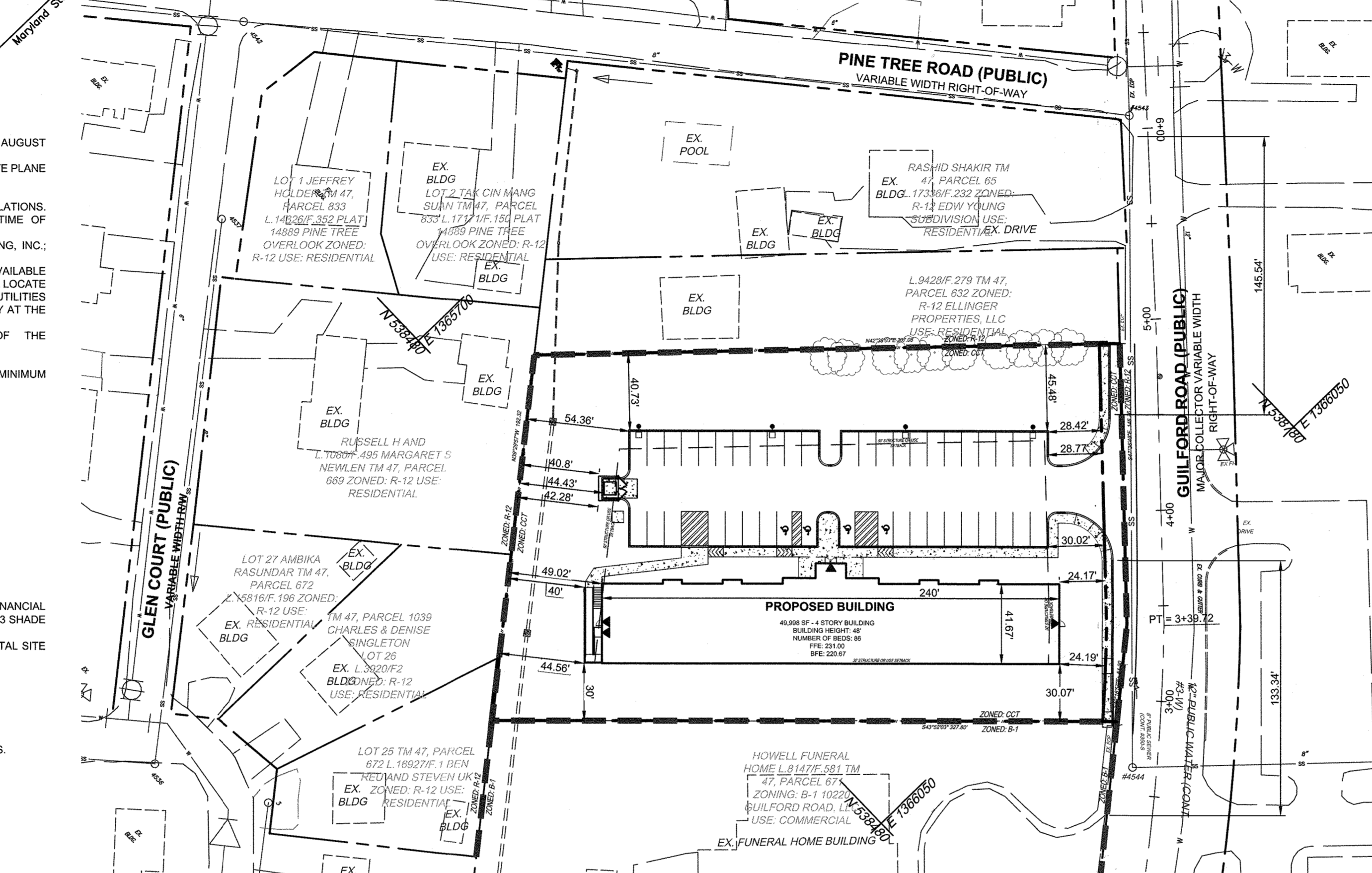
- ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE. UNLESS WAIVERS HAVE BEEN APPROVED.
- THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS:  
MISS UTILITY 1-800-257-7777  
VERIZON TELEPHONE COMPANY 1-410-654-6281  
HOWARD COUNTY BUREAU OF UTILITIES 410-313-2621  
AT&T CABLE LOCATION DIVISION 1-800-933-3553  
B.G.&E. CO. CONTRACTOR SERVICES 410-850-4620  
B.G.&E. CO. UNDERGROUND DAMAGE CONTROL 410-787-4620  
STATE HIGHWAY ADMINISTRATION 410-531-6533
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- 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.
- SITE ANALYSIS: SEE SITE ANALYSIS CHART.
- PROJECT BACKGROUND:  
LOCATION: TAX MAP 47, BLOCK 6, PARCEL 67  
ZONING - CCT  
SUBDIVISION - JESSUP  
SECTION/AREA - N/A  
DEED REFERENCE - L.17209 F.6  
DPZ REFERENCES - ECP-18-061  
EXISTING STRUCTURE: SINGLE HOUSE - RESIDENTIAL  
PRIMARY STRUCTURE YEAR BUILT: 1925  
STRUCTURE FOOTAGE: 2,076
- ANY DAMAGE TO PUBLIC RIGHT-OF-WAY, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- THE PROPERTY LINES SHOWN HEREON IS BASED ON A FIELD RUN BOUNDARY SURVEY PERFORMED BY ROBERT H. VOGEL ENGINEERING, INC. AUGUST 14, 2017.
- 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. 0016 AND 4264 ARE USED FOR THIS PROJECT.
- THE SUBJECT PROPERTY IS ZONED CCT (COMMUNITY CENTER TRANSITION) PER THE 1006/13 COMPREHENSIVE ZONING PLAN.
- 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, ALTERNATIVE COMPLIANCE APPLICATION OR BUILDING PERMIT APPLICATIONS.
- THE EXISTING TOPOGRAPHY SHOWN HEREON IS FROM A FIELD RUN TOPOGRAPHIC SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC. PERFORMED ON AUGUST, 2017. OFF-SITE TOPOGRAPHY FROM HOWARD COUNTY GIS DATA.
- EXISTING UTILITIES LOCATED FROM ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER 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.
- 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.
- A GEOTECHNICAL ENGINEER TO CONFIRM PAVING SECTION & PERMEABLE SURFACE THICKNESS PRIOR TO CONSTRUCTION. ALL PAVING TO BE MINIMUM P-2 PAVING, UNLESS OTHERWISE NOTED.
- THE GEOTECHNICAL REPORT WAS PREPARED BY KIM ENGINEERING, INC., DATED MAY 23, 2018.
- TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL GROUNDS OR CEMETERIES LOCATED ON THIS PROPERTY.
- NO STEEP SLOPES OVER 20,000 SF CONTIGUOUS ARE LOCATED ON-SITE.
- GUILFORD ROAD IS CLASSIFIED AS A MAJOR COLLECTOR. A 30 MPH SPEED LIMIT IS POSTED.
- A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
- THIS SITE IS CURRENTLY SERVED BY PUBLIC WATER VIA CONTRACT NO. 3-W.
- EXISTING WATER SERVICE SHALL REMAIN UNCHANGED. CONTRACTOR SHALL VERIFY SERVICE CONNECTION LOCATION.
- THIS SITE IS CURRENTLY SERVED BY PUBLIC SEWER VIA CONTRACT NO. 369.
- EXISTING SEWER SERVICE SHALL REMAIN UNCHANGED. CONTRACTOR SHALL VERIFY SERVICE CONNECTION LOCATION.
- THERE ARE NO FLOODPLAIN AND STEEP SLOPES WITHIN THE PROJECT.
- WETLANDS AND STREAMS SHOWN ON-SITE ARE BASED ON ECO-SCIENCE PROFESSIONALS, INC. C/O MR. JOHN CANOLES, DATED JUNE, 2018.
- FOREST STAND DELINEATION PLAN HAS BEEN PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. DATED JUNE, 2018.
- THERE ARE THREE SPECIMEN TREES DESIGNATED AS "TO BE REMOVED" WITHIN THE PROJECT LIMIT OF DISTURBANCE (LOD).
- THERE ARE NO CHAMPION TREES WITHIN THE LOD.
- 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 REQUIRED LANDSCAPING HAS BEEN POSED AS PART OF THE DEVELOPMENT'S AGREEMENT IN THE AMOUNT OF \$16,620 FOR 33 SHADE TREES @ \$500.00 EACH, 36 EVERGREEN TREES @ \$150.00 EACH AND 44 SHRUBS @ \$30.00 EACH.
- STORMWATER MANAGEMENT FOR THE PROJECT IS PROVIDED BY THE USE OF MICRO-SCALE PRACTICES IN ACCORDANCE WITH ENVIRONMENTAL SITE DESIGN CRITERIA. MICRO-SCALE PRACTICES INCLUDE MICRO-BIORETENTION. THESE FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED.
- EXISTING BUILDING ROOF LEADERS/DOWNSPOUTS SHALL REMAIN UNCHANGED.
- ALL REINFORCED CONCRETE FOR STORM DRAIN STRUCTURES SHALL HAVE A MINIMUM OF 28 DAYS STRENGTH OF 3500 P.S.I.
- ALL CURB AND GUTTER TO BE HOWARD COUNTY STANDARD DETAIL 3.01, UNLESS OTHERWISE NOTED.
- ALL ELEVATIONS ARE TO FLOWLINE/BOTTOM OF CURB UNLESS OTHERWISE NOTED.
- ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- CURRENT BUILDING PERMITS AND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- ALL EXTERIOR LIGHTING TO COMPLY WITH THE REQUIREMENTS FOUND IN ZONING SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS.
- TRAFFIC CONTROL DEVICES:  
A. THE R-11 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 TRAFFIC CONTROL DEVICES (MUTCD).  
D. ALL SIGN POST USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE CURB RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED QUICK PUNCH, SQUARE TUBE POST (1 1/2 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED QUICK PUNCH, SQUARE TUBE (1 1/2 GAUGE). A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON THE TOP OF EACH POST. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE GROUND LEVEL.
- TRASH AND RECYCLING SERVICES SHALL REMAIN PROVIDED FOR THIS SITE BY A PRIVATE SERVICE.
- BUILDING WATER METER SETTING SHALL REMAIN UNDISTURBED.
- 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
- HEALTH DEPARTMENT APPROVAL OF THIS SITE DEVELOPMENT PLAN (SDP) DOES NOT ENSURE APPROVAL OF BUILDING PERMIT APPLICATIONS ASSOCIATED WITH THIS PLAN. PERMIT PLANS FOR CERTAIN FACILITIES TO BE CONSTRUCTED WITHIN THE LIMITS DESCRIBED BY THIS SDP WILL REQUIRE REVIEW AND APPROVAL BY THE HEALTH DEPARTMENT. SUCH FACILITIES MAY INCLUDE, BUT ARE NOT LIMITED TO, THOSE WHICH HAVE SWIMMING POOLS, OR THAT SELL PREPARED OR PACKAGED FOODS, OR THAT MAY HAVE EQUIPMENT THAT EMITS RADIATION.
- KNOX BOXES SHALL BE LOCATED WITHIN 0' TO THE RIGHT OF THE MAIN ENTRANCE AT A RANGE OF 4'-5" IN HEIGHT. THE CONTRACTOR SHOULD CONTACT THE OFFICE OF THE FIRE MARSHAL PRIOR TO PURCHASING AND INSTALLING KNOX BOXES TO DETERMINE THE NUMBER AS WELL AS THE LOCATION(S) WHERE THEY ARE TO BE MOUNTED.
- ONE STAIRWELL WITH SPLT LANDINGS, STAIRPIPE CONNECTIONS ARE REQUIRED TO BE PLACED ON THE INTERMEDIARY LANDINGS.
- THIS PROJECT IS SUBJECT TO A-17-016 ON MARCH 6, 2016. THE PLANNING DIRECTOR APPROVED THE PETITION TO REDUCE THE 50 FOOT STRUCTURE OR USE SETBACK FROM AN R-12 DISTRICT TO 40.8 FEET FOR TRASH ENCLOSURE AND DUMPSTER, TO 40 FEET FOR A SIDEWALK AND SERVICE RAMP, TO 48.35 FEET FOR AN ASSISTED LIVING FACILITY BUILDING, AND TO 40.43 FEET FOR A PARKING LOT. ADDITIONALLY TO REDUCE THE 30 FOOT STRUCTURE OR USE SETBACK FROM A PUBLIC STREET RIGHT-OF-WAY REQUIRED BY SECTION 117.4.D.2.c TO 24 FEET FOR AN ASSISTED LIVING FACILITY BUILDING AND TO 28.42 FEET FOR A PARKING LOT. TO INCREASE THE MAXIMUM BUILDING HEIGHT IN SECTION 117.4.D.1.b FROM 40 FEET TO 48 FEET FOR AN ASSISTED LIVING FACILITY BUILDING.
- A TRAFFIC STUDY WAS PREPARED BY STREET TRAFFIC STUDIES, LTD. C/O MR. DAVID NELSON, P.E. DATED APRIL 17, 2018. TRAFFIC COUNTS WERE CONDUCTED APRIL 11 - 12, 2018.
- 0.20-ACRE OF FOREST CONSERVATION OBLIGATION FOR THIS PROJECT WILL BE SATISFIED BY OFF-SITE PLANTING RETENTION. FOREST BANK: CATTAIL CREEK SDP 14-031.
- PLANNING DIRECTOR AND CHIEF OF OF THE DIVISION OF PUBLIC SERVICE AND ZONING ADMINISTRATION DETERMINED THAT THE "GRASS PAVEMENT" TO SERVE AS THE ACCESS ROAD AT THE REAR OF THE BUILDING TO ALLOW FOR PLACEMENT OF A LADDER TRUCK MAY ENCROUGH INTO THE 30' STRUCTURE AND USE SETBACK.
- THIS PROJECT IS SUBJECT TO WP-19-114 ALTERNATIVE COMPLIANCE OF SECTION 16.1205(a) (7) AND (10), APPROVED ON JUNE 26, 2019. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:  
1. THE ALTERNATIVE COMPLIANCE PETITION NUMBER (WP-19-114) AND ITS CONDITIONS OF APPROVAL MUST BE ADDED TO ALL SUBDIVISIONS PLANS AND SITE DEVELOPMENT PLAN, SDP-19-040.  
2. THE DEVELOPER SHALL PLANT SIX (6) 3" MINIMUM CALIPER NATIVE SHADE TREES IN ADDITION TO THE REQUIRED PERIMETER LANDSCAPE TO MITIGATE THE REMOVAL OF SPECIMEN TREES. INCLUDE THE ADDITIONAL TREES ON THE SITE DEVELOPMENT PLAN. THESE TREES WILL BE BONDED WITH THE DEVELOPER'S AGREEMENT UNDER THE SITE DEVELOPMENT PLAN.  
3. THE ALTERNATIVE COMPLIANCE APPROVAL APPLIES ONLY TO THE 3 SPECIMEN TREES TO BE REMOVED AS SHOWN ON THE ALTERNATIVE COMPLIANCE EXHIBIT

# SITE DEVELOPMENT PLAN

## GUILFORD ASSISTED LIVING

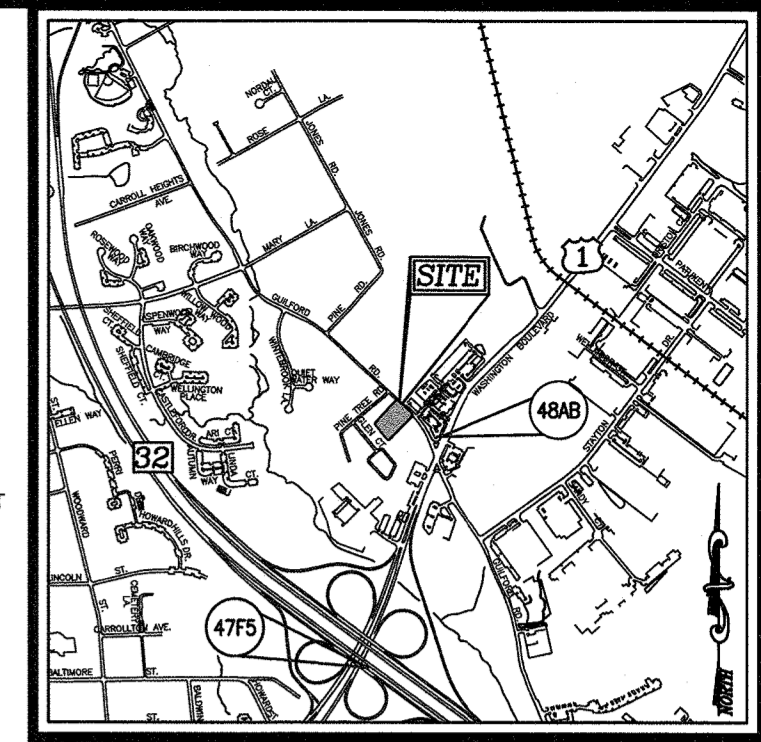
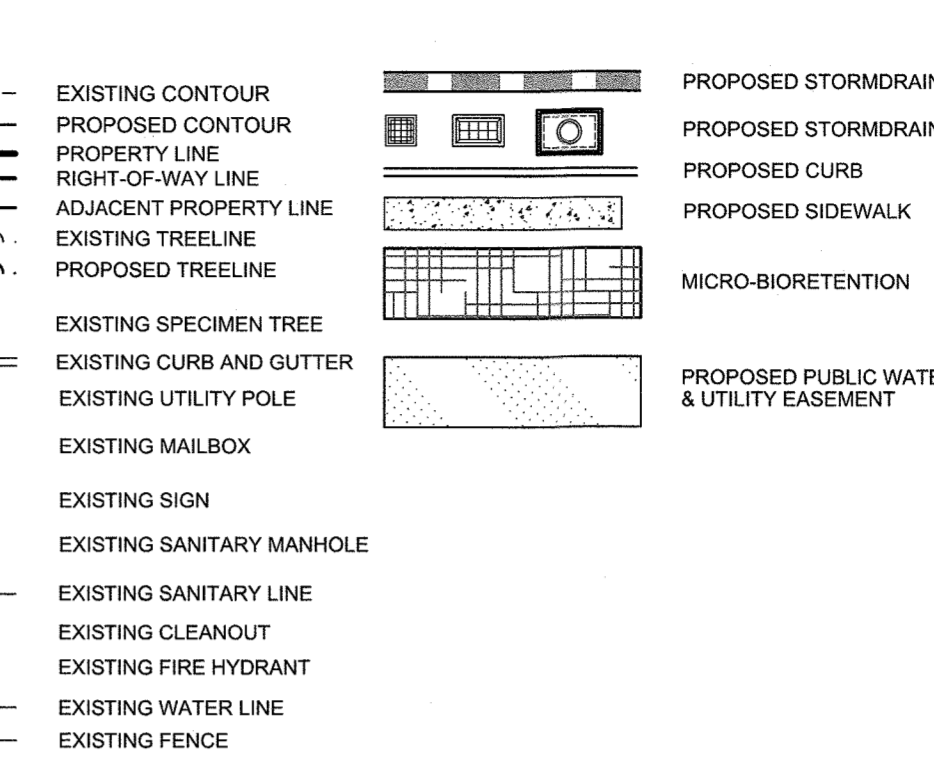
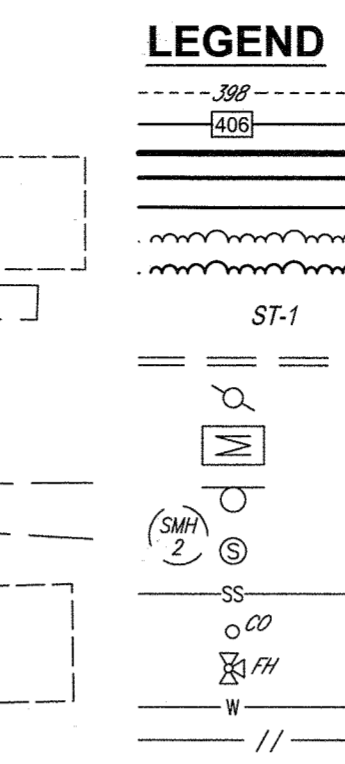
### 10210 GUILFORD ROAD

#### HOWARD COUNTY, MARYLAND



BASEMENT	9,154 SF
1ST FLOOR AREA	10,231 SF
2ND FLOOR AREA	10,231 SF
3RD FLOOR AREA	10,231 SF
4TH FLOOR AREA	10,151 SF
TOTAL	49,998 SF

ADDRESS	FACILITY NUMBER	PRACTICE TYPE	PUBLIC	PRIVATE	MAINTENANCE	MISC.
10210 GUILFORD ROAD	MBR #1	M-6 MICRO-BIORETENTION		X	PRIVATE	
	MBR #2	M-6 MICRO-BIORETENTION		X	PRIVATE	
	MBR #3	M-6 MICRO-BIORETENTION		X	PRIVATE	



LOCATION	JESSUP, MD, TAX MAP 47, BLOCK 6, PARCEL 67
ELECTION DISTRICT	6TH ELECTION DISTRICT
PRESENT ZONING	CCT (COMMUNITY CENTER TRANSITION)
PROPOSED USES FOR SITE AND STRUCTURES	ASSISTED LIVING
PROJECT AREA	1.426 ACRES
DPZ REFERENCES	L.17209 F.66, ECP-18-061, AA-17-016
USE OF STRUCTURE	ASSISTED LIVING
TOTAL BUILDING COVERAGE	10,231 SF (0.23 AC. OR 16.13% OF GROSS AREA)
OVERALL BUILDING AREA	49,998 SF (1.15 ACRES)
PAVED PARKING LOT AREA ON-SITE	13,157 SF (0.30 AC. OR 21.03% OF GROSS AREA)
AREA OF LANDSCAPE ISLAND	1,557 SF (0.036 AC OR 2.62% OF GROSS AREA)
LIMIT OF DISTURBANCE AREA	1.15 AC
WETLAND WITHIN LOD	0 AC
WETLAND BUFFERS WITHIN LOD	0 AC
STREAMS AND THEIR BUFFERS WITHIN LOD	0 AC
AREA OF ON-SITE 100-YEAR FLOODPLAIN WITHIN LOD	0 AC
AREA OF EXISTING FOREST WITHIN LOD	0 AC
AREA OF ON-SITE NRCS / MDE / HSDC STEEP SLOPES (20% OR GREATER)	0 AC
AREA OF ON-SITE STEEP SLOPES (25% OR GREATER)	0 AC
AREA OF ERODIBLE SOILS	0 AC
AREA MANAGED BY ESDv	1.00 AC
IMPERVIOUS AREA (MANAGED BY ESDv)	0.63 AC
GREEN AREA (MANAGED BY ESDv)	0.37 AC
OPEN SPACE REQUIRED	N/A

DESCRIPTION	SHEET NO.
COVER SHEET	1
EXISTING CONDITIONS & DEMOLITION PLAN	2
SITE PLAN	3
SITE PLAN DETAILS	4
STORMWATER MANAGEMENT NOTES & DETAILS	5
DRAINAGE AREA MAPS	6
UTILITY PLAN, SCHEDULES AND PROFILES	7
GRADING & EROSION AND SEDIMENT CONTROL PLAN	8
GRADING & EROSION AND SEDIMENT CONTROL NOTES & DETAILS	9
LANDSCAPE & FOREST CONSERVATION PLAN, NOTES AND DETAILS	10
PHOTOMETRIC PLAN	11

**OWNER / DEVELOPER**  
DAVID XU 163  
MOUNTAIN ROAD  
PASADENA, MD 21122  
C/O KEVIN XU (443)  
370-5402

**NOTE**  
HEALTH DEPARTMENT APPROVAL OF THIS SITE DEVELOPMENT PLAN (SDP) DOES NOT ENSURE APPROVAL OF BUILDING PERMIT APPLICATIONS ASSOCIATED WITH THIS PLAN. PERMIT PLANS FOR CERTAIN FACILITIES TO BE CONSTRUCTED WITHIN THE LIMITS DESCRIBED BY THIS SDP WILL REQUIRE REVIEW AND APPROVAL BY THE HEALTH DEPARTMENT. SUCH FACILITIES MAY INCLUDE, BUT ARE NOT LIMITED TO, THOSE WHICH HAVE SWIMMING POOLS, OR THAT SELL PREPARED OR PACKAGED FOODS, OR THAT MAY HAVE EQUIPMENT THAT EMITS RADIATION.

	REQUIRED	PROVIDED
NUMBER OF PARKING SPACES REQUIRED - PROPOSED ASSISTED LIVING = 1 SPACE PER 2 BEDS. NUMBER OF BEDS: 86	43	43
ACCESSIBLE PARKING	4	4
ELECTRIC CHARGING STATIONS (1 SPACE PER 25 UNITS)	2	2

LOT/PARCEL#	STREET ADDRESS
67	10210 GUILFORD ROAD

SUBDIVISION NAME	SECTION/AREA	LOTS/PARCEL #
GUILFORD ASSISTED LIVING	N/A	67
PLAT # OR L/F	BLOCK NO	ZONE
L.17209/F.66	6	CCT
TAX MAP	ELECT. DIST.	CENSUS TR.
47	6TH	606901
WATER CODE: E01	SEWER CODE: 1403800	

**UNIVERSAL DESIGN REQUIREMENTS FOR AGE-RESTRICTED ADULT HOUSING IN HOWARD COUNTY**

- FOR MULTI-FAMILY APARTMENT OR CONDO DEVELOPMENTS, AN ACCESSIBLE PATH BETWEEN PARKING, DWELLING UNITS, AND COMMON AREAS THAT MEETS ADA STANDARDS.
- FOR SINGLE FAMILY DETACHED AND ATTACHED DEVELOPMENTS, A NO-STEP ACCESS TO THE FRONT ENTRANCE TO THE COMMUNITY BUILDING AND ALL DWELLINGS (A NO-STEP ENTRANCE IS DESIRABLE, BUT NOT REQUIRED TO OTHER ENTRANCES). THIS FRONT PROVIDES RESIDENTIAL UNITS WITH A NO-STEP ACCESS THROUGH THE GARAGE.
- 36" WIDE FRONT DOOR WITH EXTERIOR LIGHTING OF ENTRANCE (EXTERIOR DOORS SHALL BE PROVIDED WITH AN ARTIFICIAL LIGHT SOURCE LOCATED IN THE IMMEDIATE VICINITY OF THE EXTERIOR DOOR. THE ILLUMINATION OF THE EXTERIOR DOOR SHALL BE CONTROLLED FROM INSIDE THE DWELLING UNIT. EXCEPTION: LIGHTS THAT ARE CONTINUOUSLY ILLUMINATED OR AUTOMATICALLY CONTROLLED).
- ALL INTERIOR DOORWAYS AT LEAST 32" CLEAR WIDTH IN THE OPEN POSITION (2/10 DOORS ARE OR A 38" IS PREFERABLE).
- HALLWAYS AT LEAST 36" WIDE, (40-42" IS PREFERABLE), THE MAXIMUM VERTICAL FLOOR LEVEL CHANGE IS 1/4 INCH EXCEPT WHEN A TAPERED THRESHOLD IS USED. THE MAXIMUM HEIGHT IS 1/2 INCH.
- COMPLETE LIVING AREA INCLUDING MASTER BEDROOM AND BATH ON FIRST FLOOR (OR ELEVATOR ACCESS IF MULTI-STORY RENTAL/CONDO APARTMENTS)
- LEVER HANDLES ON INTERIOR AND EXTERIOR DOORS.
- REINFORCED WALLS TO ALLOW FOR THE LATER INSTALLATION OF GRAB BARS AROUND THE TOILET, TUB, AND SHOWER STALL.
- CLEAR FLOOR SPACE OF 30"x48" CENTERED ON THE APPLIANCE OR FIXTURE SHALL BE PROVIDED AT EACH FIXTURE IN THE KITCHEN. FLOOR SPACES CAN OVERLAP. (FAIR HOUSING ACT).
- MANEUVERING SPACE WITHIN THE BATHROOM TO PERMIT A PERSON USING A MOBILITY AID TO ENTER THE ROOM, CLOSE AND REOPEN THE DOOR, WITH A CLEAR FLOOR SPACE OF 30"x48" OUTSIDE OF THE ROOM. CLEAR SPACE OF 30"x48" SHOULD BE PROVIDED AT EACH FIXTURE IN THE BATHROOM. FLOOR SPACES CAN OVERLAP EACH OTHER. (NOTE: THIS IS A REQUIREMENT IN THE FAIR HOUSING ACT GUIDELINES).
- WALL MOUNTED LIGHT SWITCHES, ELECTRICAL OUTLETS, OR ENVIRONMENTAL CONTROLS SHALL BE MOUNTED FOR A REACHING RANGE OF MINIMUM 15" OFF THE FLOOR AND MAXIMUM 48" ABOVE THE FLOOR.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 8/29/19  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 [Signature] 9-26-19  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 [Signature] 9-26-19  
 DIRECTOR

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS  
 [Signature] 9/20/2019  
 COUNTY HEALTH OFFICER  
 HOWARD COUNTY HEALTH DEPARTMENT

**SITE DEVELOPMENT PLAN**  
**COVER SHEET**  
**GUILFORD ASSISTED LIVING**  
10210 GUILFORD ROAD  
HOWARD COUNTY, MARYLAND

TAX MAP 47, BLOCK 6  
6TH ELECTION DISTRICT  
ZONED: CCT  
PARCEL 67  
HOWARD COUNTY, MARYLAND

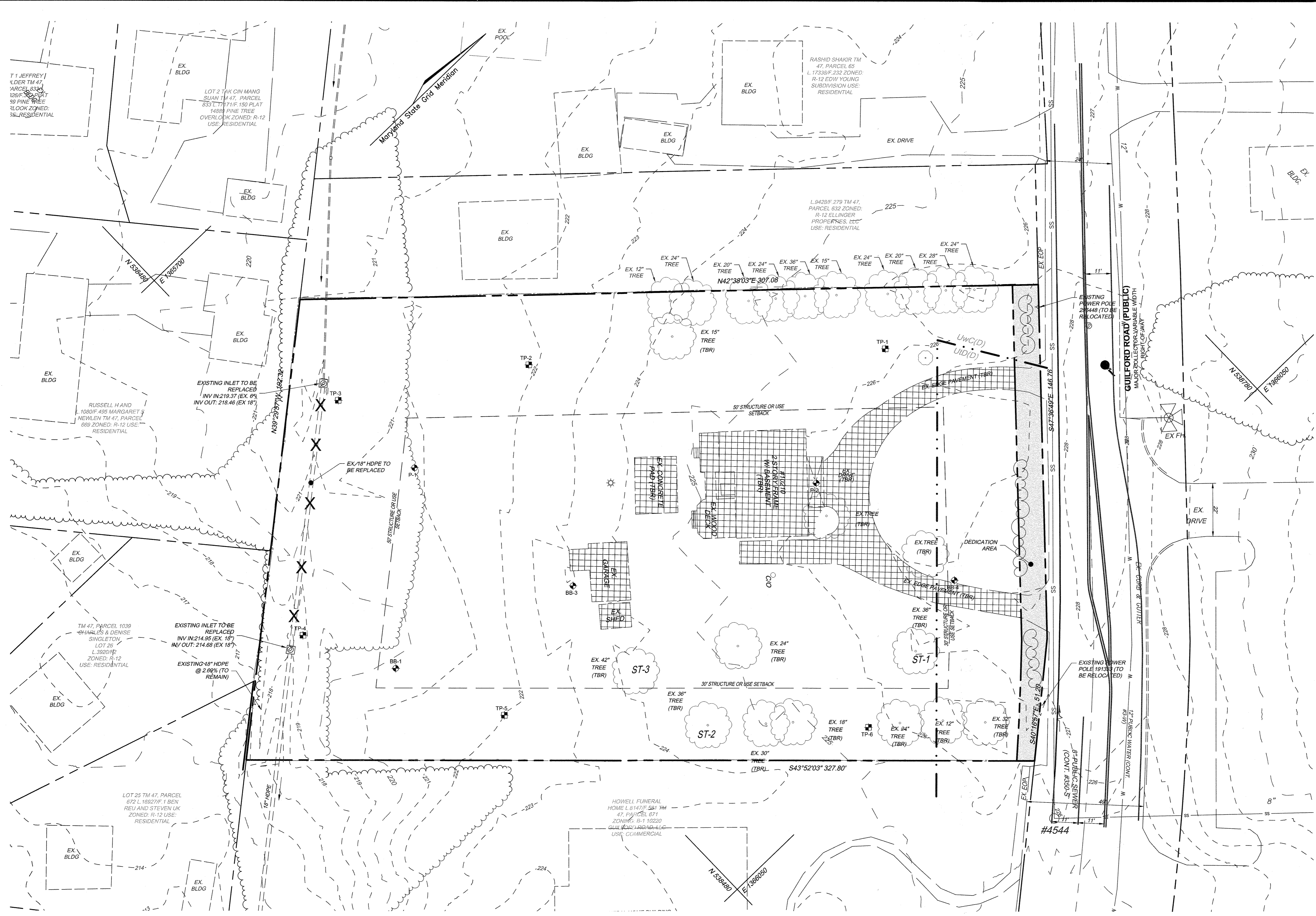
**ROBERT H. VOGEL ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
3300 NORTH RIDGE ROAD TEL: 410.461.7566  
SUITE 110 FAX: 410.461.8961  
ELLICOTT CITY, MD 21043

DESIGN BY: JPR  
DRAWN BY: JPR  
CHECKED BY: RHV  
DATE: DECEMBER 2018  
SCALE: AS SHOWN  
W.O. NO.: 16-23

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: 09-27-2027

1 SHEET OF 11

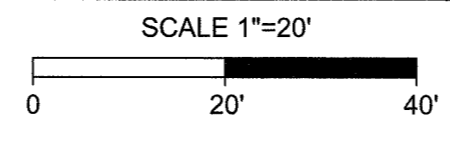




**LEGEND**

- EXISTING CONTOUR
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING TREELINE
- PROPOSED TREELINE
- SOIL LIMITS
- ST-1 EXISTING SPECIMEN TREE
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING FENCE
- DEMO AREA
- DEDICATION AREA (AREA: 2,011 SF +/-)

**EXISTING CONDITION PLAN**



**SOILS LEGEND**

SYMBOL	NAME / DESCRIPTION	GROUP	K FACTOR	ERODIBLE	ACREAGE
UID	URBAN LAND - UDRTHENTS COMPLEX, 0 TO 15 PERCENT SLOPES	D	0.28	NO	0.22
UwC	URBAN LAND - WOODTOWN-SASSAFRAS COMPLEX, 5 TO 10% SLOPES	D	0.17	NO	1.205

**SOILS 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]* 8-29-19  
CHIEF, DEVELOPMENT ENGINEERING DIVISION, DATE

*[Signature]* 9-26-19  
CHIEF, DIVISION OF LAND DEVELOPMENT, DATE

*[Signature]* 9-26-19  
DIRECTOR, DATE

NO.	REVISION	DATE

**SITE DEVELOPMENT PLAN**  
**EXISTING CONDITIONS & DEMOLITION PLAN**

**GUILFORD ASSISTED LIVING**  
10210 GUILFORD ROAD  
ZONED: CGT PARCEL 67  
HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
3300 NORTH RIDGE ROAD TEL: 410.461.7566  
SUITE 110 FAX: 410.461.8961  
ELlicott CITY, MD 21043

PROFESSIONAL CERTIFICATE

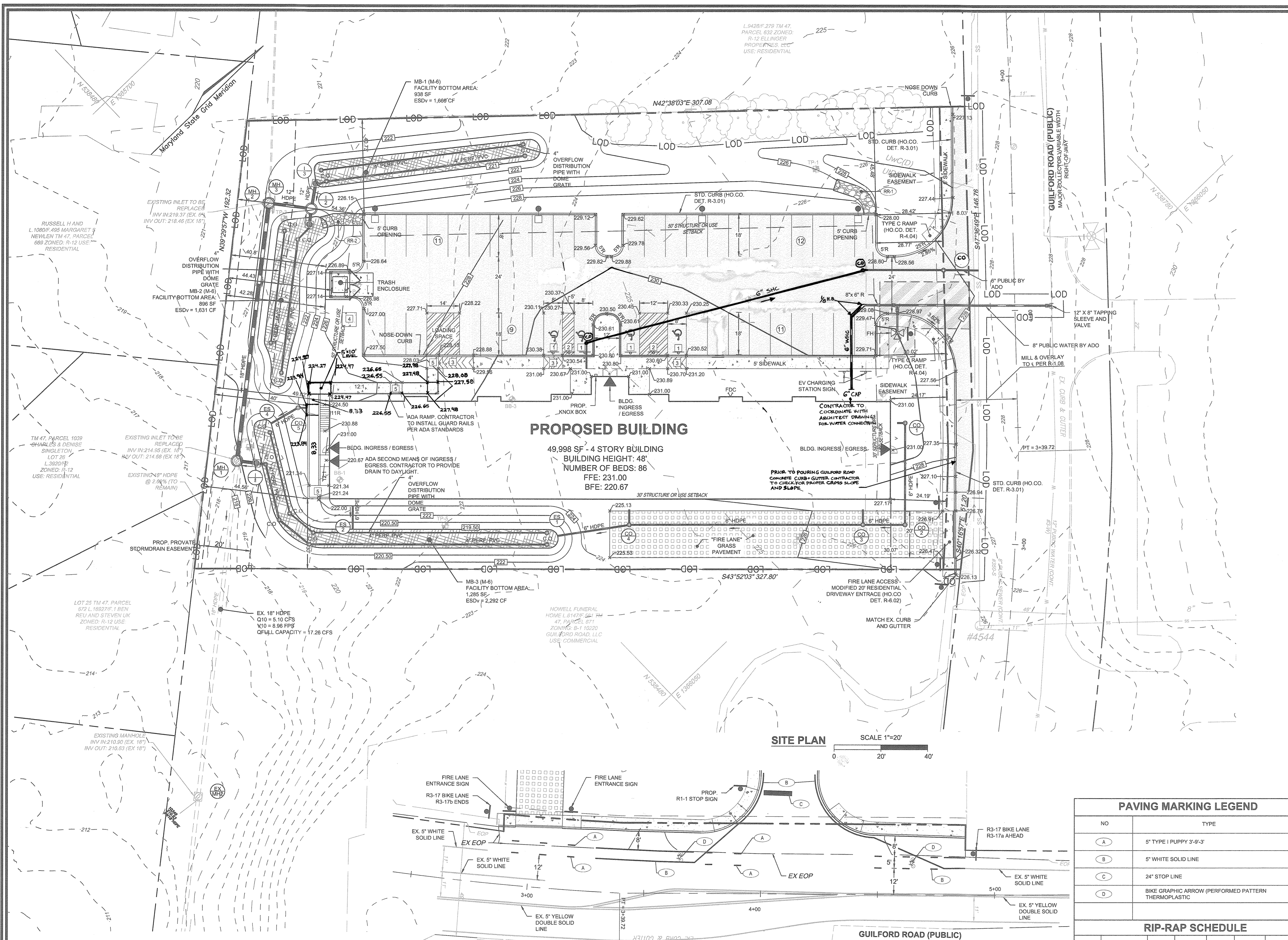
DESIGN BY: JPR  
DRAWN BY: JPR  
CHECKED BY: RHV  
DATE: DECEMBER 2018  
SCALE: AS SHOWN  
W.O. NO.: 16-23

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: 09-27-2020

**ROBERT H. VOGEL, PE No. 16193**

2 SHEET OF 11





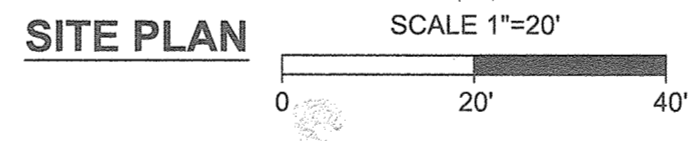
### LEGEND

	EXISTING CONTOUR
	PROPOSED CONTOUR
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	ADJACENT PROPERTY LINE
	LIMITS OF DISTURBANCE
	EXISTING TREELINE
	PROPOSED TREELINE
	EXISTING SPECIMEN TREE
	EXISTING CURB AND GUTTER
	EXISTING UTILITY POLE
	EXISTING MAILBOX
	EXISTING SIGN
	EXISTING SANITARY MANHOLE
	EXISTING CLEANOUT
	EXISTING FIRE HYDRANT
	EXISTING WATER LINE
	EXISTING FENCE
	PROPOSED STORMDRAIN
	PROPOSED STORMDRAIN INLET
	PROPOSED CURB
	FLUSH CURB
	PROPOSED SIDEWALK
	MICRO-BIORETENTION
	PROPOSED PUBLIC WATER & UTILITY EASEMENT
	GRASS PAVEMENT
	ASPHALT PAVEMENT

- ### KEYNOTES
- BOLLARD MOUNTED ADA SIGN
  - BOLLARD MOUNTED "NO PARKING IN ACCESS AISLE" SIGN
  - HO CO. SIDEWALK RAMP R-4.06
  - 6'x6' CONCRETE PAD
  - 5'x5' LANDING (ADA)

### SITE NOTES

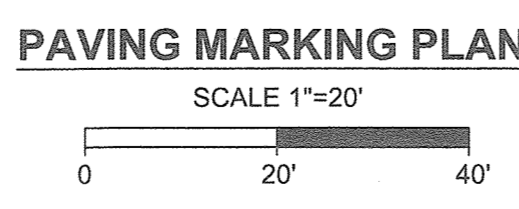
- THIS PROJECT IS SUBJECT TO AA-17-016 ON MARCH 6, 2018. THE PLANNING DIRECTOR APPROVED THE PETITION TO REDUCE THE 50 FOOT STRUCTURE OR USE SETBACK FROM AN R-12 DISTRICT TO 40.8 FEET FOR A TRASH ENCLOSURE AND DUMPSTER, TO 40 FEET FOR A SIDEWALK AND SERVICE RAMP, TO 48.35 FEET FOR AN ASSISTED LIVING FACILITY BUILDING, AND TO 40.43 FEET FOR A PARKING LOT. ADDITIONALLY TO REDUCE THE 30 FOOT STRUCTURE OR USE SETBACK FROM A PUBLIC STREET RIGHT-OF-WAY REQUIRED BY SECTION 1174.D.2.c TO 24 FEET FOR AN ASSISTED LIVING FACILITY BUILDING AND TO 28.40 FEET FOR A PARKING LOT TO INCREASE THE MAXIMUM BUILDING HEIGHT IN SECTION 1174.D.1.b FROM 40 FEET TO 48 FEET FOR AN ASSISTED LIVING FACILITY BUILDING.



### SIGNAGE LOCATION CHART

STATION	OFFSET	TYPE
3+92	45 LT	R1-1 STOP SIGN
4+90	17 LT	R3-17 BIKE LANE, R3-17a AHEAD
3+17	35 LT	FIRE LANE ENTRANCE SIGN
2+89	35 LT	FIRE LANE ENTRANCE SIGN
2+79	32 LT	R3-17 BIKE LANE, R3-17b ENDS

SEE SHEET 4 FOR SIGN DETAILS



### PAVING MARKING NOTE

CONTRACTOR TO CONTACT DPW TRAFFIC PRIOR TO INSTALLATION OF PAINT MARKINGS.

### PAVING MARKING LEGEND

NO	TYPE
A	5' TYPE I PUPPY 3'-9'-3'
B	5' WHITE SOLID LINE
C	24" STOP LINE
D	BIKE GRAPHIC ARROW (PERFORMED PATTERN THERMOPLASTIC)

### RIP-RAP SCHEDULE

ID	CLASS	L (FT)	W (FT)	T (IN)	D50 (IN)	DMAX (IN)
RR-1	CLASS 1	22'	5'	19"	9.5"	15"
RR-2	CLASS 1	18'	5'	19"	9.5"	15"

### STORMWATER MANAGEMENT INFORMATION CHART

ADDRESS	FACILITY NUMBER	PRACTICE TYPE	PUBLIC	PRIVATE	MAINTENANCE	MISC.
10210 GUILFORD ROAD	MBR #1	M-6 MICRO-BIORETENTION		X	PRIVATE	
	MBR #2	M-6 MICRO-BIORETENTION		X	PRIVATE	
	MBR #3	M-6 MICRO-BIORETENTION		X	PRIVATE	

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 9-20-19  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 9-26-19  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*[Signature]* 9-26-19  
DIRECTOR DATE

NO.	TO REVISE HOUSE WHIC AND SHC TO REFLECT FIELD RUN INFORMATION	11-19-19
REVISION		DATE

### SITE DEVELOPMENT PLAN

## SITE PLAN

GUILFORD ASSISTED LIVING  
10210 GUILFORD ROAD  
ZONED: CCT  
TAX MAP 47 BLOCK 6 PARCEL 67  
8TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

# ROBERT H. VOGEL ENGINEERING, INC.

ENGINEERS • SURVEYORS • PLANNERS  
3300 NORTH RIDGE ROAD TEL: 410.461.7666  
SUITE 110 FAX: 410.461.8961  
ELLCOTT CITY, MD 21043

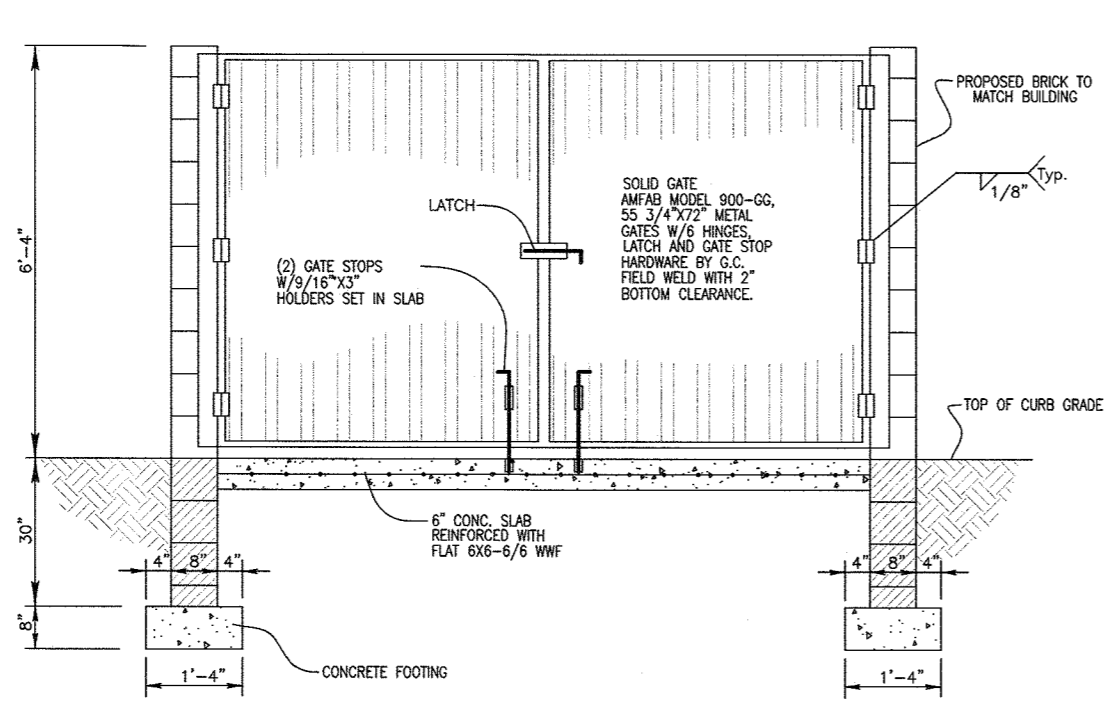
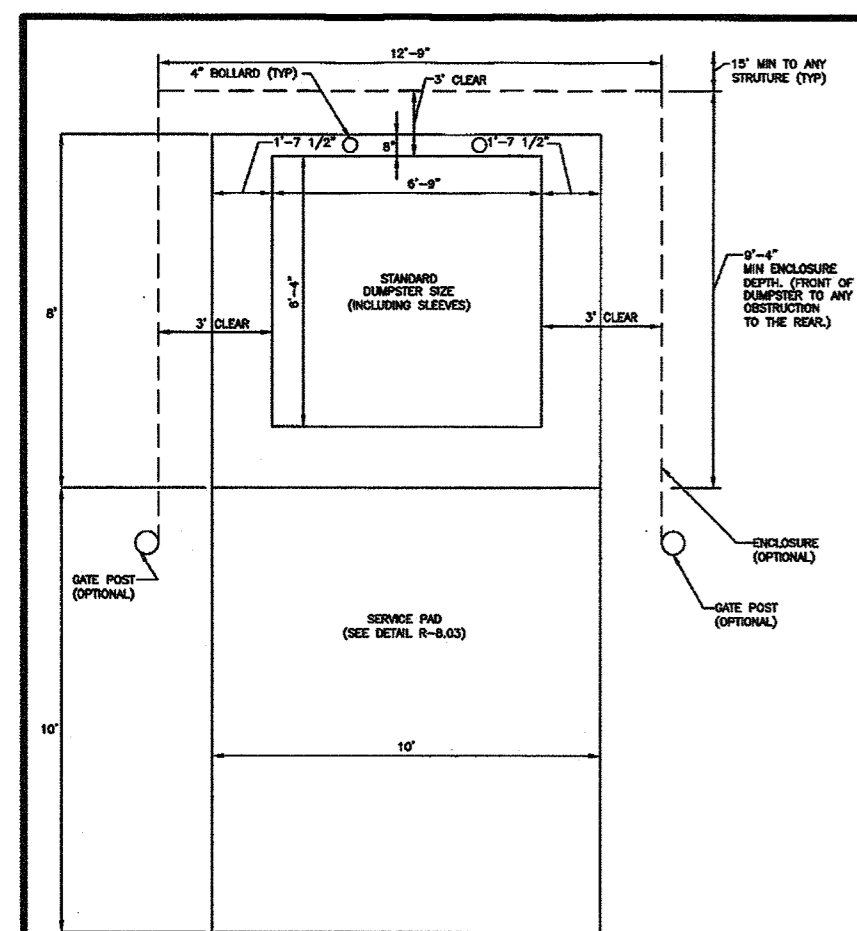
DESIGN BY: JPR  
DRAWN BY: JPR  
CHECKED BY: RHW  
DATE: DECEMBER 2018  
SCALE: AS SHOWN  
W.O. NO.: 16-23

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: 09-27-2020

3 SHEET OF 11

ROBERT H. VOGEL, PE No. 16193

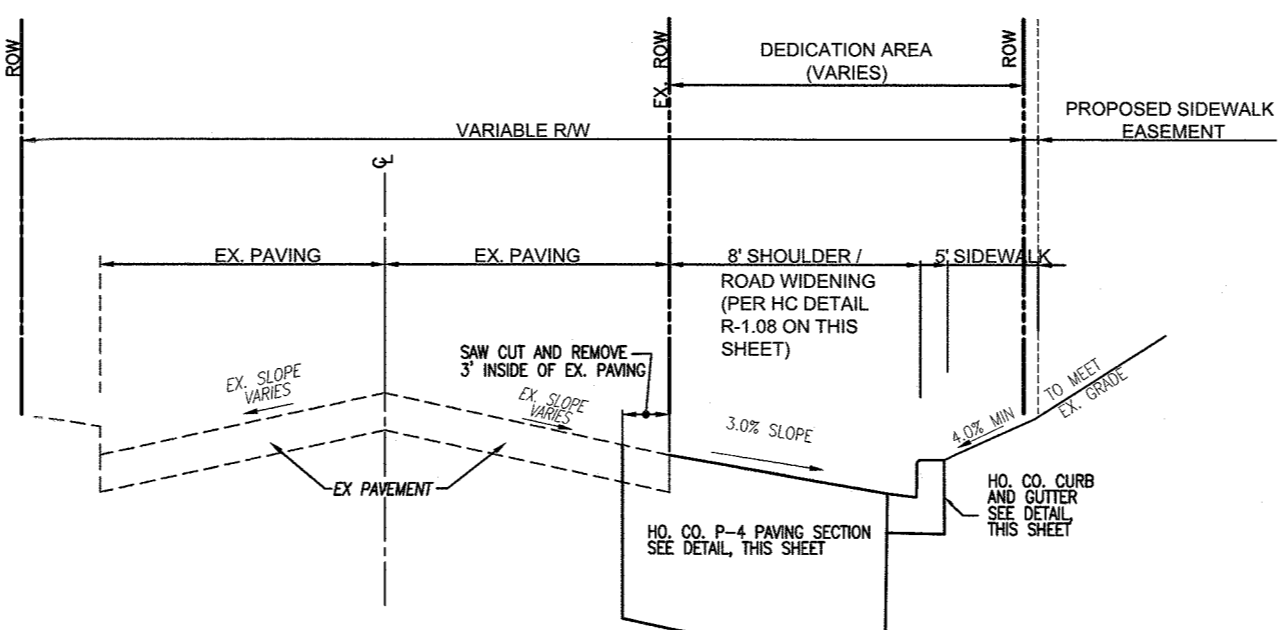




**TRASH ENCLOSURE**  
NTS

**NOTES:**  
1. ENCLOSURE GATES ARE NOT RECOMMENDED.  
2. IF ENCLOSURE GATES ARE REQUIRED, MINIMUM OPENING OF 12'-0" MUST BE MAINTAINED WITH THE CLOSED CURB.  
3. A MINIMUM OF 10' CLEAR SPACE SHALL BE PROVIDED FROM THE ENCLOSURE TO ANY STRUCTURE.

Howards County, Maryland Department of Public Works	SOLID WASTE Single Container Enclosure	Detail R-8.04
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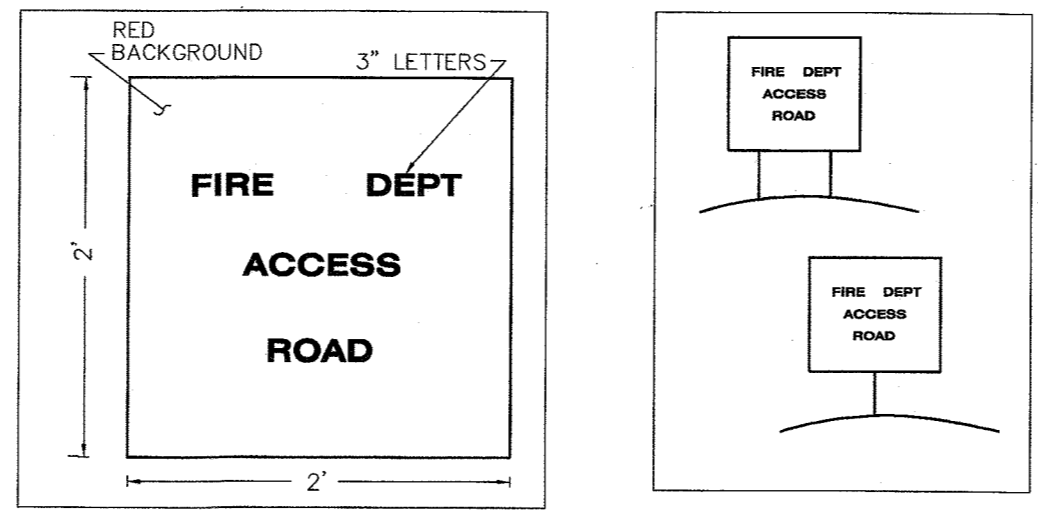
**GUILFORD ROAD TYPICAL SECTION (MAJOR COLLECTOR)**  
NTS

P-2	PARKING DRIVE ASIDES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY LOCAL ROADS ACCESS PLACE, ACCESS STREET CUL-DE-SACS RESIDENTIAL	SUPERPAVE ASPHALT MIX FINAL SURFACE 9.5 MM PG 64-22S, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
			1.5	1.5	1.5	1.5	1.5	1.5
P-3	PARKING DRIVE ASIDES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY LOCAL ROADS ACCESS PLACE, ACCESS STREET CUL-DE-SACS NON-RESIDENTIAL MINOR COLLECTORS	SUPERPAVE ASPHALT MIX FINAL SURFACE 9.5 MM PG 64-22S, LEVEL 1 (ESAL)	1.0	1.0	1.0	1.0	1.0	1.0
			1.0	1.0	1.0	1.0	1.0	1.0
P-4	MINOR COLLECTORS NON-RESIDENTIAL MAJOR COLLECTORS	SUPERPAVE ASPHALT MIX FINAL SURFACE 19.0 MM PG 64-22S, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
			2.0	2.0	2.0	2.0	2.0	2.0

**NOTES:**  
1. HEAVY TRUCKS ARE DEFINED AS THOSE WITH SIX (6) WHEELS OR MORE INCLUDING GARbage TRUCKS.  
2. SUPERPAVE ASPHALT MIX LAYERS SHALL BE PLACED IN PROPERLY COMPACTED LIFT THICKNESS.  
3. GRADED AGGREGATE BASE (GAB) TO BE PLACED AND COMPACTED IN 6" MAX. COMPACTED THICKNESS LAYERS.  
4. THE INTERMEDIATE SURFACE COURSE LAYER MUST BE PLACED WITHIN 3" TOLERANCE OF PLACEMENT OF BASE COURSE, AND IS REQUIRED PRIOR TO SUBSEQUENT COMPLETION INSPECTION AND ROAD REVISIONS.  
5. IN LIEU OF PLACING THE INTERMEDIATE SURFACE COURSE LAYER FOR COMMERCIAL/INDUSTRIAL ENTRANCE AREAS WITHIN THE CURB RIGHT-OF-WAY, THE INTERMEDIATE SURFACE COURSE LAYER THICKNESS OF THE INTERMEDIATE PAVEMENT LAYER CAN BE ADDED TO THE REQUIRED THICKNESS OF THE BASE ASPHALT MIX.  
6. THE CONSTRUCTION DETAILS SHALL SHOW THE PAVING SECTION, ROAD CLASSIFICATION AND CURB VALUE FOR EACH ROADWAY.

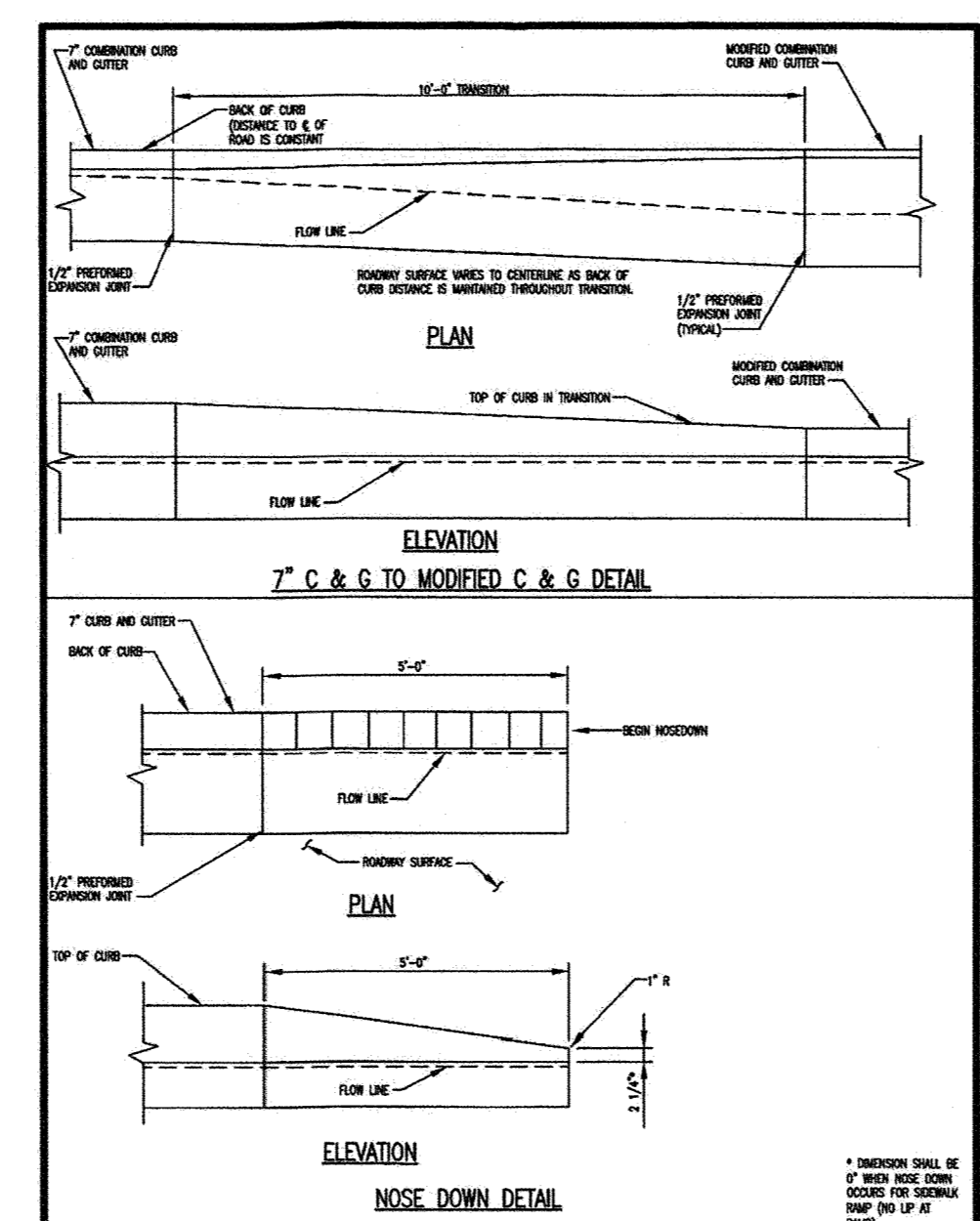
Howards County, Maryland Department of Public Works	PAVING SECTIONS P-1 to P-4	Detail R-2.01
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**NOTE:** PAVING SECTIONS ARE TO BE VERIFIED AND APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION.

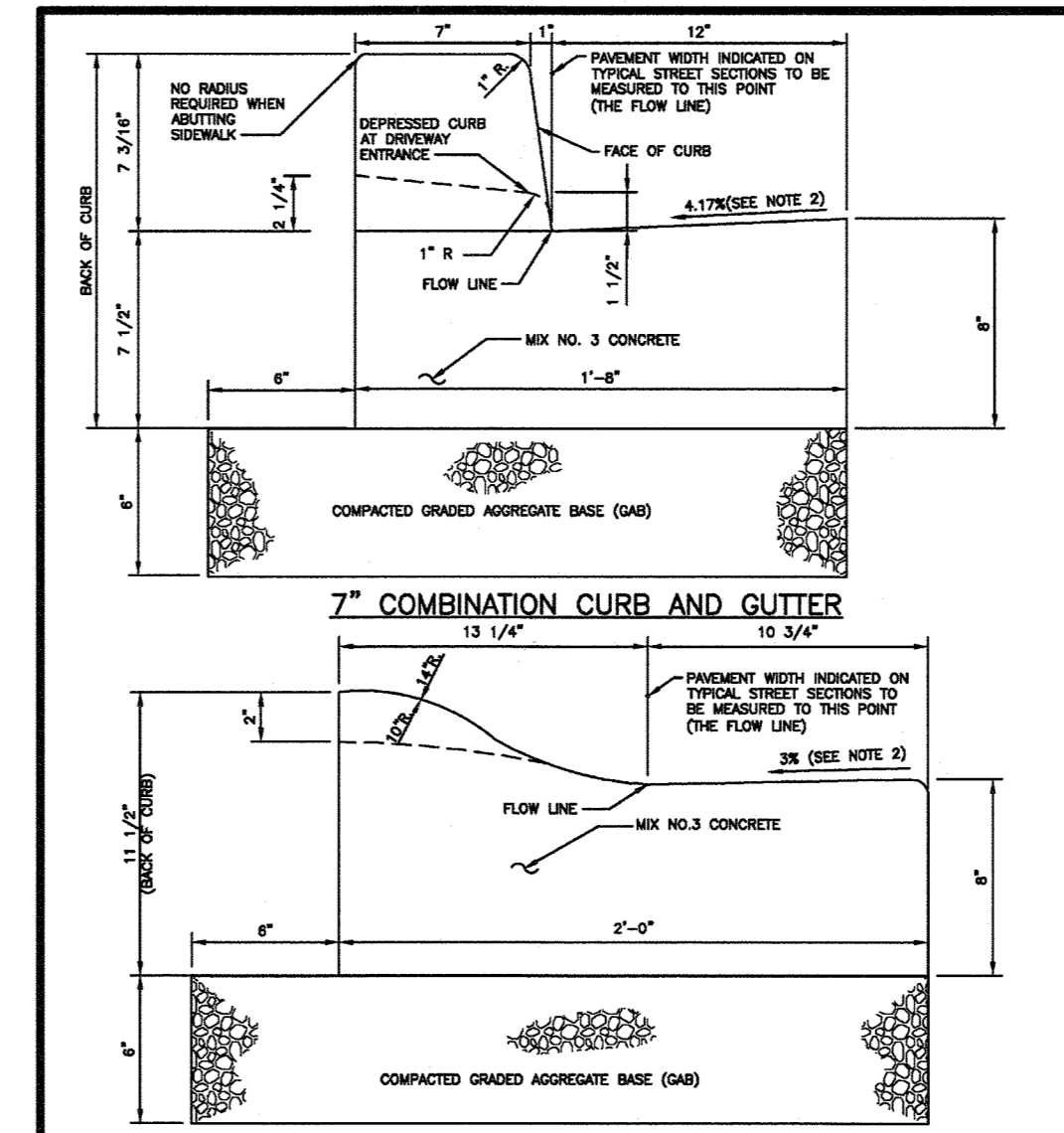


**NOTES:**  
1. ALL SIGNS SHALL BE RED IN COLOR WITH WHITE REFLECTIVE LETTERING.  
2. SIGNS SHALL BE POSTED AT ALL FIRE DEPT ACCESS POINTS TO THE SITE.  
3. SIGNS SHALL BE MADE OF DURABLE OR ALL WEATHER MATERIALS.  
4. SIGNS SHALL BE MOUNTED ON EITHER A SINGLE CENTER POST OR DOUBLE SIDE POST. POST MAY BE STEEL OR WOOD.  
5. TOP OF SIGN SHALL BE 6'-6" FEET FROM FINISH GRADE.  
6. SIGNS SHALL BE POSTED WHEN TEMPORARY FIRE DEPARTMENT ACCESS ROADS ARE INSTALLED.  
7. SIGNS SHALL BE REMOVED WHEN PERMANENT ROADS ARE COMPLETED.

**"FIRE LANE" - SIGN DETAIL**  
NTS

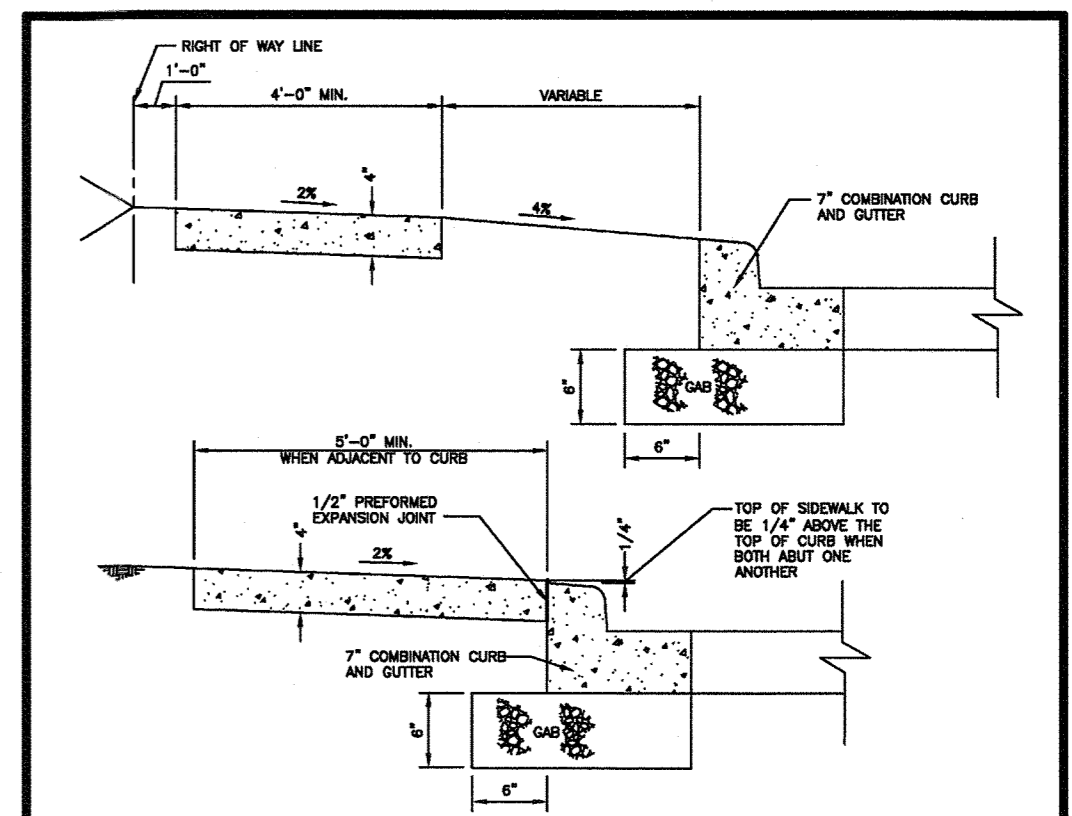


Howards County, Maryland Department of Public Works	CURB AND GUTTER 7" Transition to Modified & Nose Down	Detail R-3.02
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**7" COMBINATION CURB AND GUTTER**  
NTS

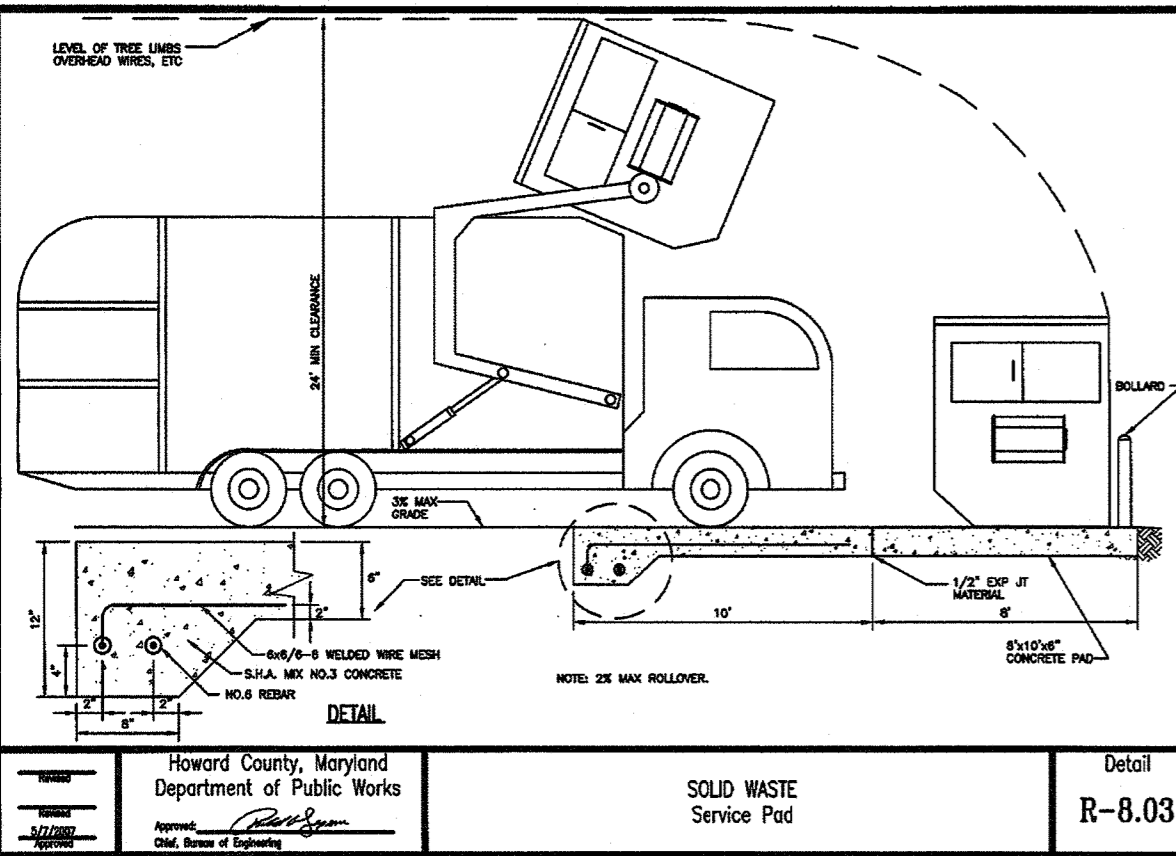
Howards County, Maryland Department of Public Works	CURB AND GUTTER 7" Modified	Detail R-3.01
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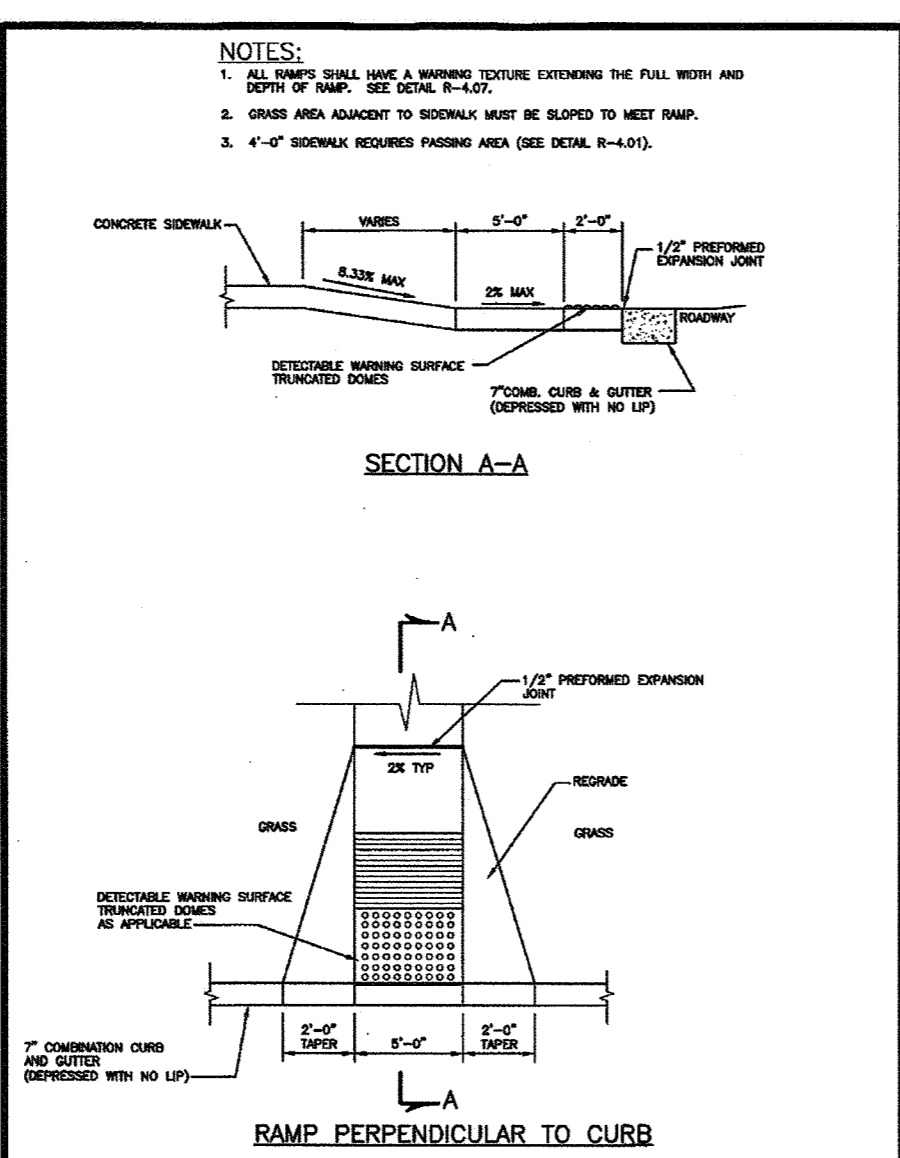
**MODIFIED COMBINATION CURB AND GUTTER**  
NTS

**NOTES:**  
1. A REVERSE GUTTER AND SHALL HAVE A GUTTER SLOPE OF 4:1 FROM THE FLOW LINE, AND SHALL NOT BE USED WHERE THIS DRAINAGE CREATES A HAZARDOUS CONDITION.  
2. GUTTER RUN OF THE MIDDLE EDGE OF INTERMEDIATE MATERIALS OR THE HIGH SIDE OF SUPERPAVED SECTIONS SHALL BE SLOPED AT THE SAME RATE AND IN THE SAME DIRECTION AS THE RATE OF SUPERPAVEMENT. MATCH PAVEMENT CROSS SLOPE WHEN CURB IS LOCATED ON THE LOW SIDE OF SUPERPAVED SECTION AND THE RATE OF SUPERPAVEMENT IS GREATER THAN 2% FOR MODIFIED CURB & GUTTER.  
3. A MINIMUM OF TWO (2) FEET OF COMPACTED STABILIZED SOIL, OR EQUIVALENT, SHALL SUPPORT THE ENTIRE BACK OF CURB.  
4. POSITIVE DRAINAGE SHALL BE PROVIDED BOTH BEHIND THE CURB AND ALONG THE GUTTER AND FLOW LINE.

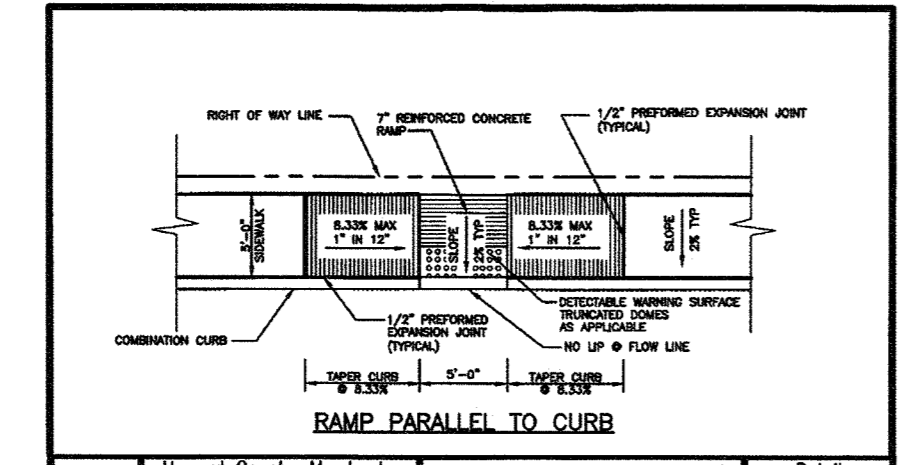
Howards County, Maryland Department of Public Works	CONCRETE SIDEWALK	Detail R-3.05
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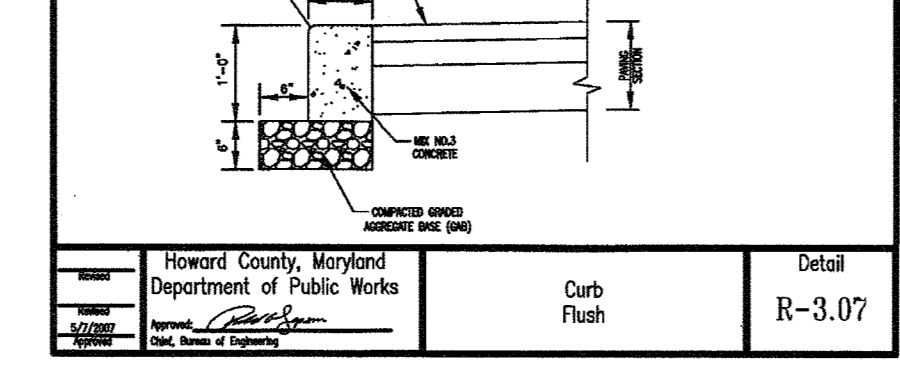
**SOLID WASTE Service Pad**  
Detail  
R-8.03



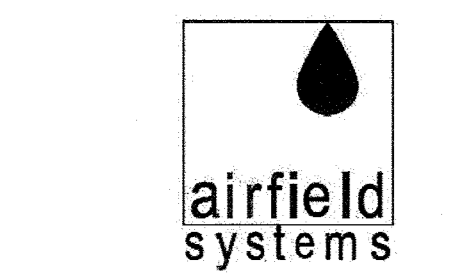
**SIDEWALK RAMP Layout & Grading Perpendicular to Curb**  
Detail  
R-4.05



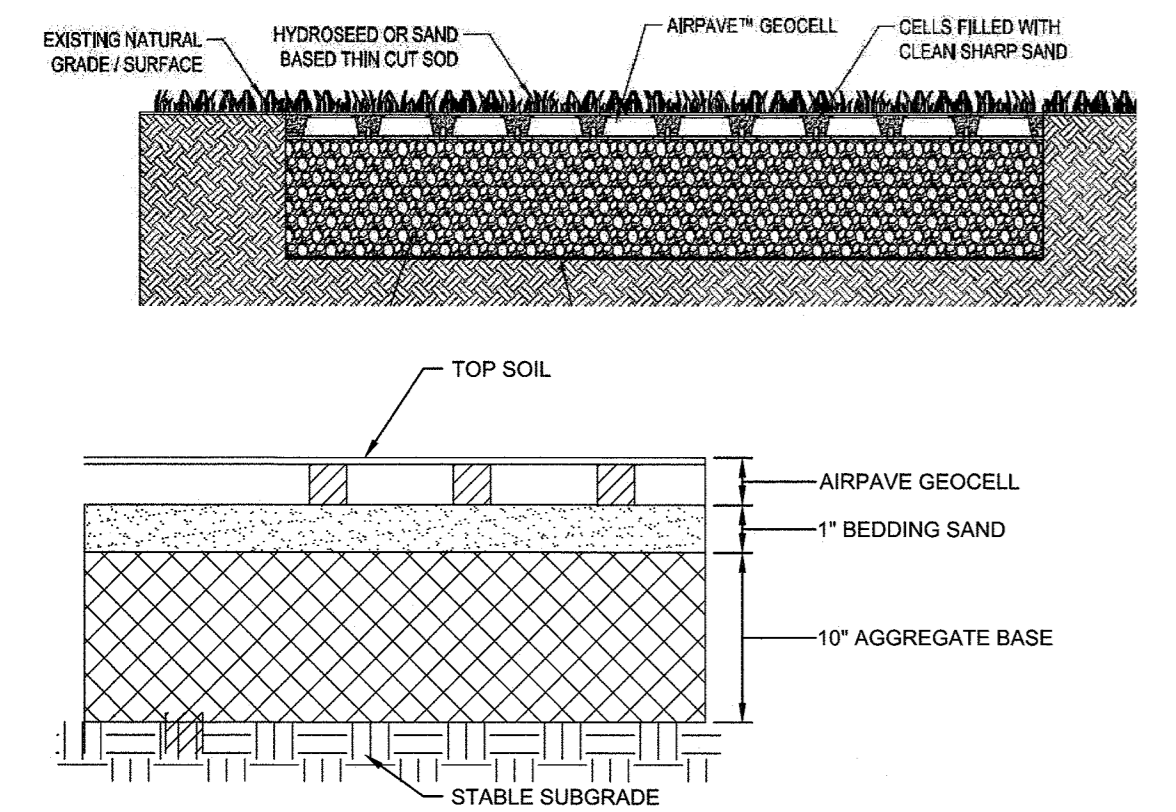
**SIDEWALK RAMP Layout & Grading Parallel to Curb & 3-Step Median**  
Detail  
R-4.06



**Curb Flush**  
Detail  
R-3.07

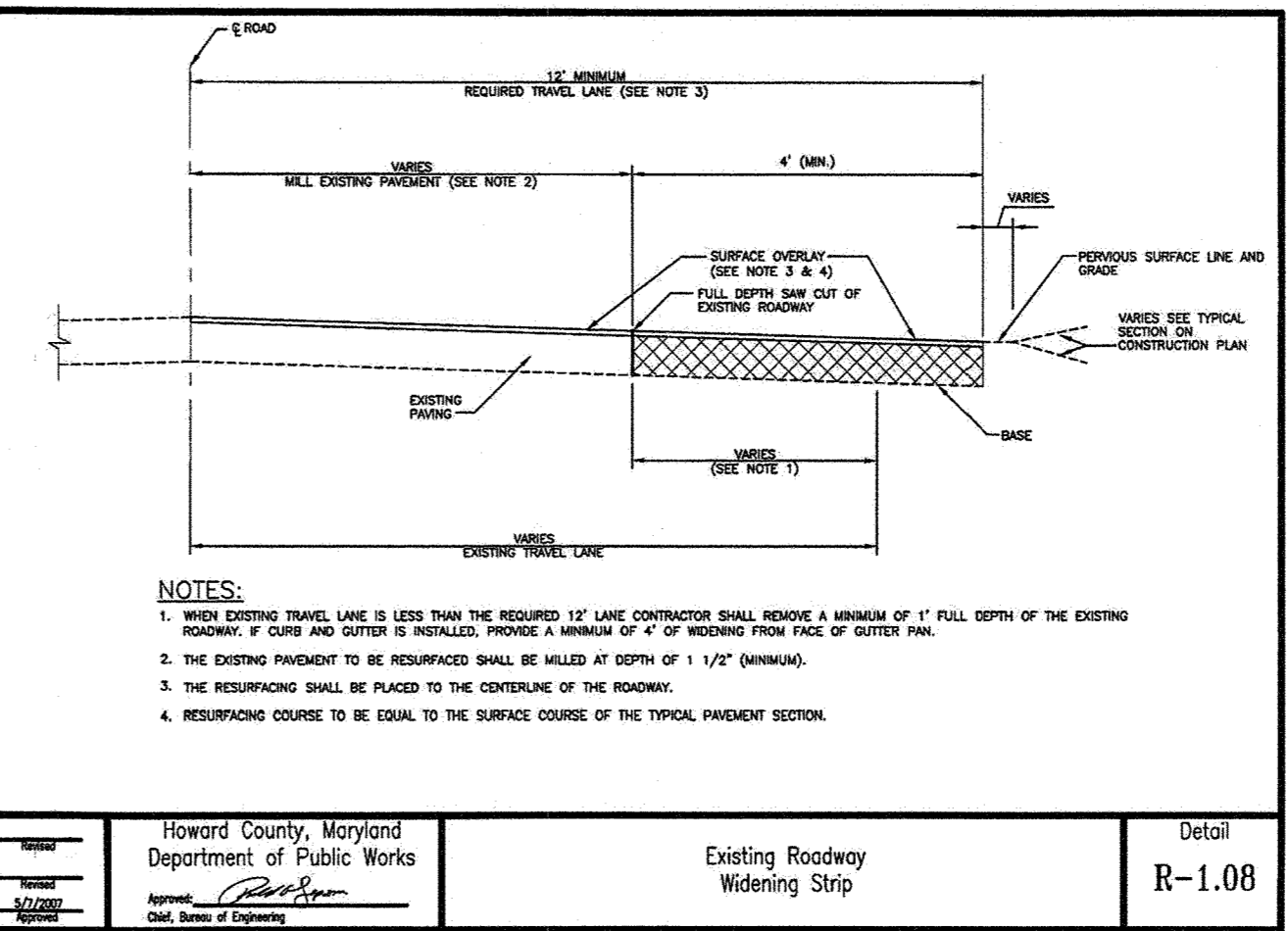


**AIRFIELD SYSTEMS, LLC**  
8028 N. MAY AVE, STE 201  
OKLAHOMA CITY, OK 73120  
PHONE: (405) 358-9375  
FAX: (405) 348-8945  
www.airfieldsystems.com

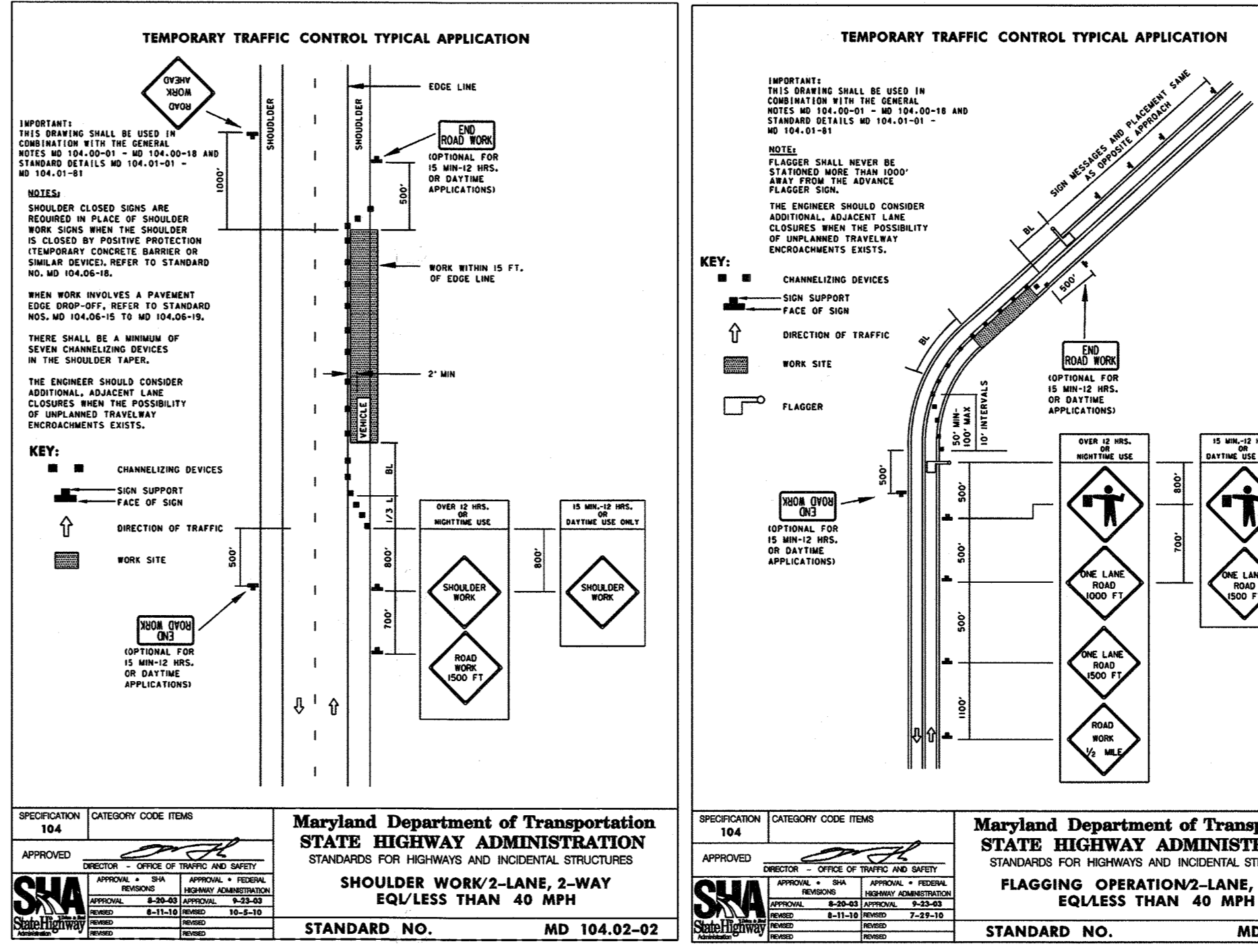


**"FIRE LANE" - GRASS PAVEMENT**  
NTS  
**NOTE:**  
1. LANE TO BE MAINTAINED DURING SNOW EVENTS.  
2. DEMARCATÉ FIRE LANE WITH SHRUBS AS SHOWN ON LANDSCAPE PLAN.

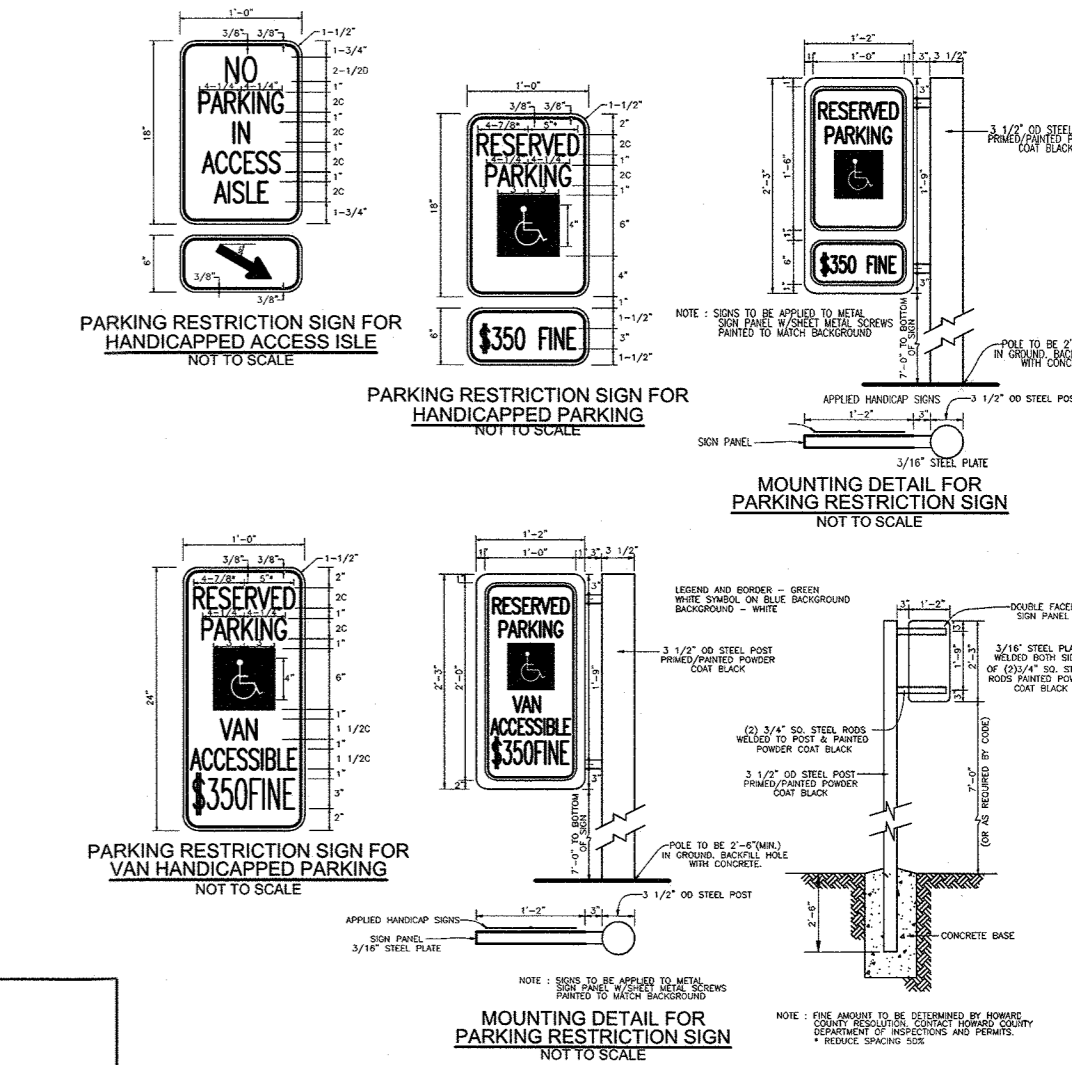
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 9-16-19  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
 [Signature] 9-26-19  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
 [Signature] 9-26-19  
 DIRECTOR DATE



**TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION**  
Detail  
R-1.08



**GUILFORD ROAD TRAFFIC CONTROL DETAILS**  
ALL WORK WITHIN THE GUILFORD ROAD PUBLIC RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE STANDARD MARYLAND STATE HIGHWAY ADMINISTRATION DETAILS: MD 104.02-02 & MD 104.02-10 OR AS DIRECTED BY THE HOWARD COUNTY - TRAFFIC ENGINEERING DIVISION.



**HANDICAP PARKING SIGNS**  
NTS

NO.	REVISION	DATE

**SITE DEVELOPMENT PLAN**  
**SITE PLAN DETAILS**  
GUILFORD ASSISTED LIVING  
10210 GUILFORD ROAD  
TAX MAP 47 BLOCK 6  
6TH ELECTION DISTRICT  
ZONED: CCT  
PARCEL 67  
HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
3300 NORTH RIDGE ROAD TEL: 410.461.7666  
SUITE 110 FAX: 410.461.8961  
ELLSWORTH CITY, MD 21043

DESIGN BY: JPR  
 DRAWN BY: JPR  
 CHECKED BY: RHW  
 DATE: DECEMBER 2018  
 SCALE: AS SHOWN  
 W.O. NO.: 16-23

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: 09-27-2020

4 OF 11

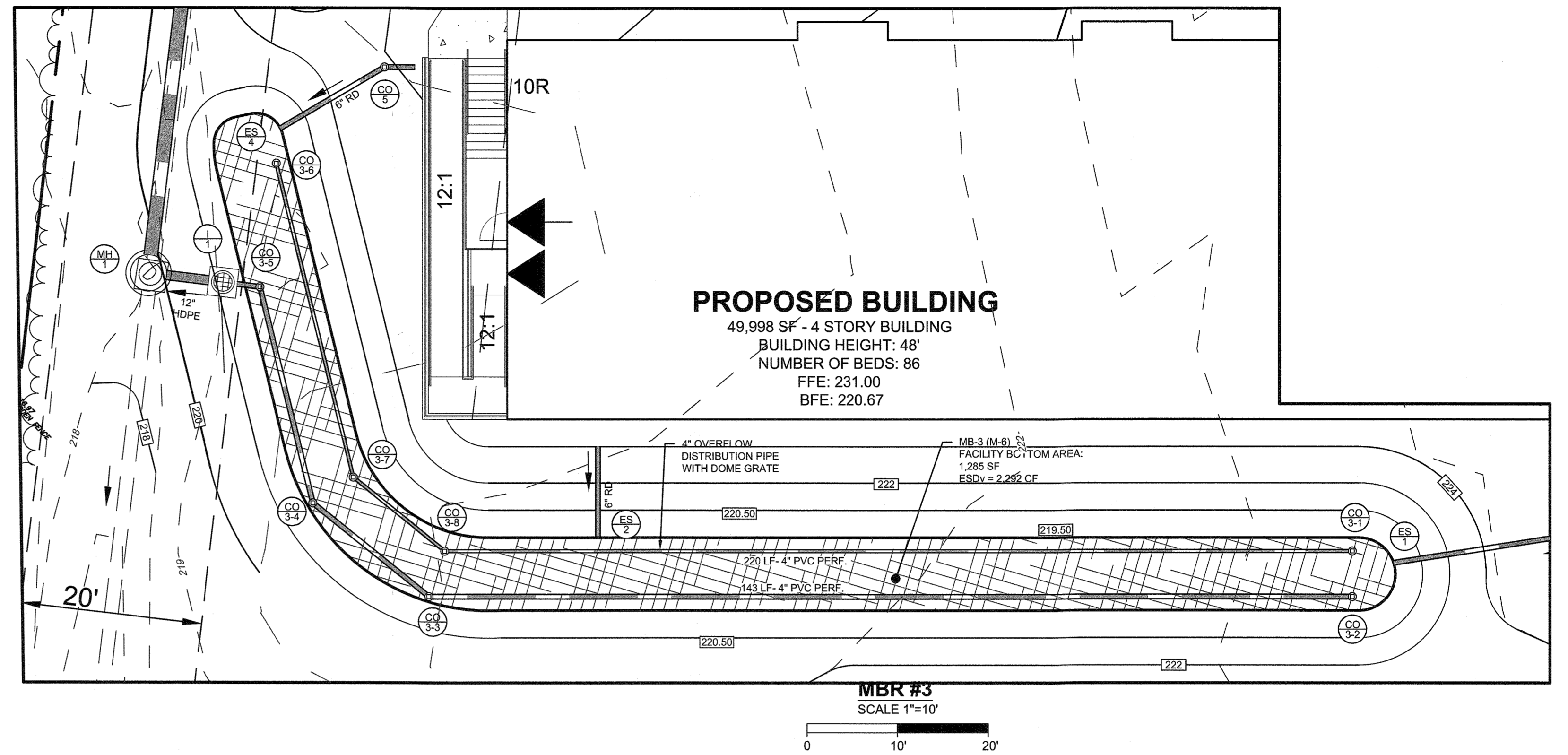
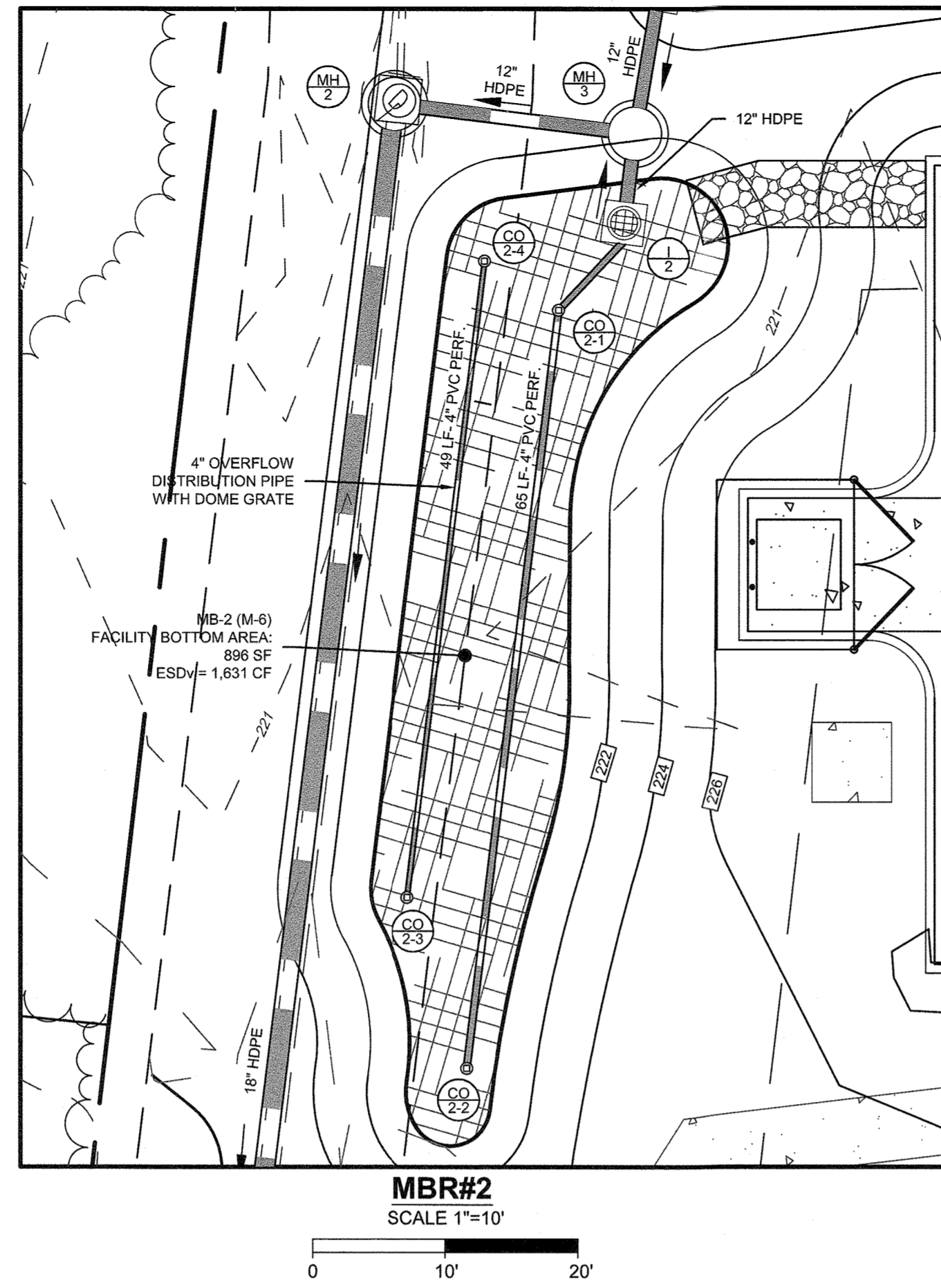


**OPERATION AND MAINTENANCE SCHEDULE FOR LANDSCAPE INFILTRATION (M-3), MICRO-BIORETENTION (M-6), RAIN GARDENS (M-7), BIORETENTION SWALE (M-8), AND ENHANCED FILTERS (M-9)**

- 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.

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

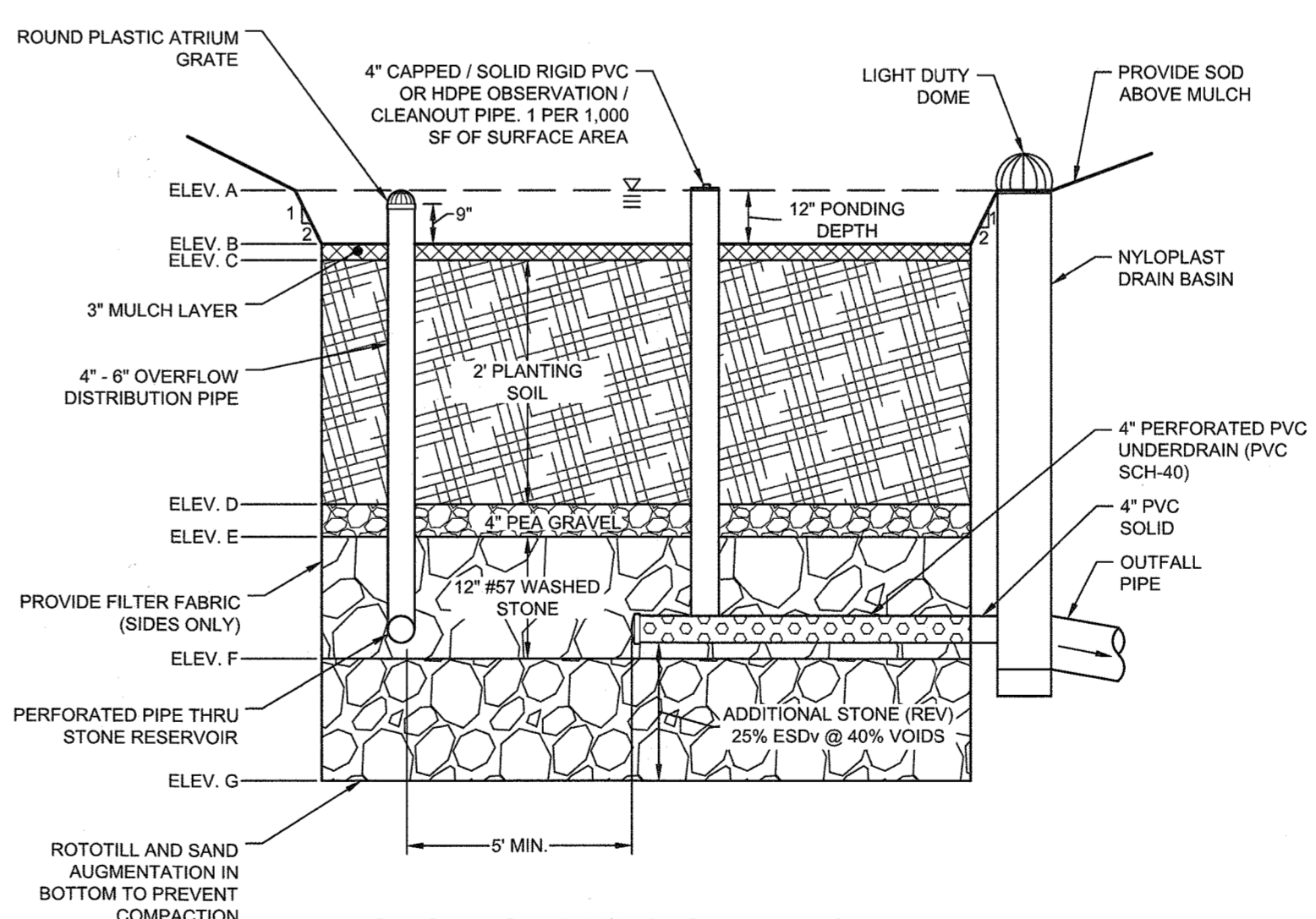
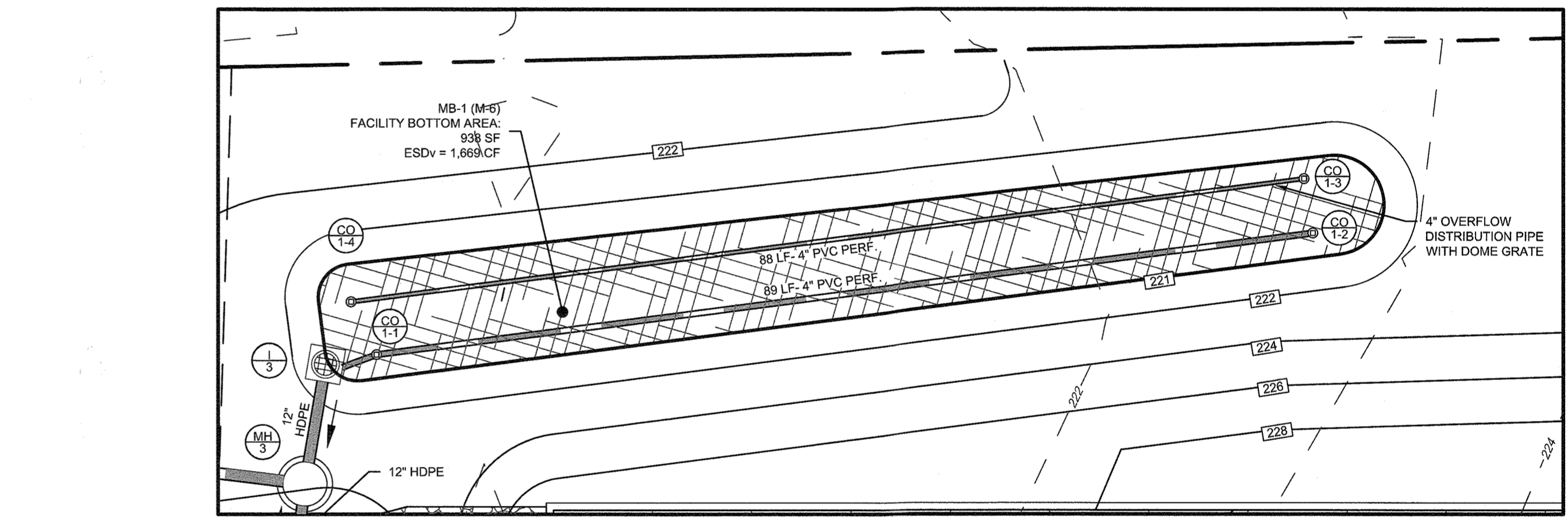
- MATERIAL SPECIFICATIONS**  
THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1.
- FILTERING MEDIA OR PLANTING SOIL**  
THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVIDE A 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 CONTENT - 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.
- 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 REFRACATURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.  
ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE. WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE. WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.
- PLANT MATERIAL**  
RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.
- 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, IMPEDS 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.
- UNDERDRAINS**  
UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:  
  - \* PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM 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 1,000 SQUARE FEET) TO PROVIDE A CLEAN-OUT POINT 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".
- MISCELLANEOUS**  
THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.



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

Table B.4.1 Materials Specifications for Micro-Bioretenion, 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 pipe; not necessary underneath pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; F <sub>c</sub> = 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.



MICRO-BIORETENTION TYPICAL DETAIL

**MICRO-BIORETENTION NOTES**

- ONLY THE SIDES OF MICROBIORETENTION ARE TO BE WRAPPED IN FILTER FABRIC. FILTER FABRIC BETWEEN LAYER OR AT THE BOTTOM OF THE MICROBIORETENTION WILL CAUSE THE MBR TO FAIL, AND THEREFORE SHALL NOT BE INSTALLED.
- WRAP THE PERFORATED MBR UNDERDRAIN PIPE WITH 1/4" MESH (4x4) OR SMALLER GALVANIZED HARDWARE CLOTH.
- PROVIDE 5" MINIMUM SPACING BETWEEN UNDER DRAIN AND PERFORATED PIPE THROUGH STONE RESERVOIR OR SPACE PIPE EQUALLY ACROSS BOTTOM FOR SMALL BIOS. (SEE PLANS)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 9-16-19  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
 [Signature] 9-26-19  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
 [Signature] 9-26-19  
 DIRECTOR DATE

MBR Facility	Ponding Depth (ft)	Ponding Elevation ELEV. A	Top of Mulch ELEV. B	Bottom of Mulch ELEV. C	Bottom of Planting Soil ELEV. D	Bottom of Pea Gravel ELEV. E	Depth of Stone (ft.)	Size of Underdrain (ft.)	Invert of Underdrain	Bottom of Stone ELEV. F	Depth of REV Stone (ft.)	Bottom of REV Stone ELEV. G
MB-1	1.0	222.00	221.00	220.75	218.75	218.42	1.00	0.33	217.84	217.42	0.66	217.18
MB-2	1.0	222.00	221.00	220.75	218.75	218.42	1.00	0.33	217.84	217.42	0.75	217.09
MB-3	1.0	220.50	219.50	219.25	217.25	216.92	1.00	0.33	216.34	215.92	0.66	215.68

NO. \_\_\_\_\_ REVISION \_\_\_\_\_ DATE \_\_\_\_\_

**SITE DEVELOPMENT PLAN**  
**STORMWATER MANAGEMENT NOTES & DETAILS**  
 GUILFORD ASSISTED LIVING  
 10210 GUILFORD ROAD  
 ZONED: CCT PARCEL 67  
 HOWARD COUNTY, MARYLAND

TAX MAP 47 BLOCK 6  
 6TH ELECTION DISTRICT

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 3300 NORTH RIDGE ROAD TEL: 410-461-7666  
 SUITE 110 FAX: 410-461-7661  
 ELLICOTT CITY, MD 21043

PROFESSIONAL CERTIFICATE  
 DESIGN BY: JPR  
 DRAWN BY: JPR  
 CHECKED BY: RHV  
 DATE: DECEMBER 2018  
 SCALE: AS SHOWN  
 W.O. NO.: 18-23

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: 06-27-2025

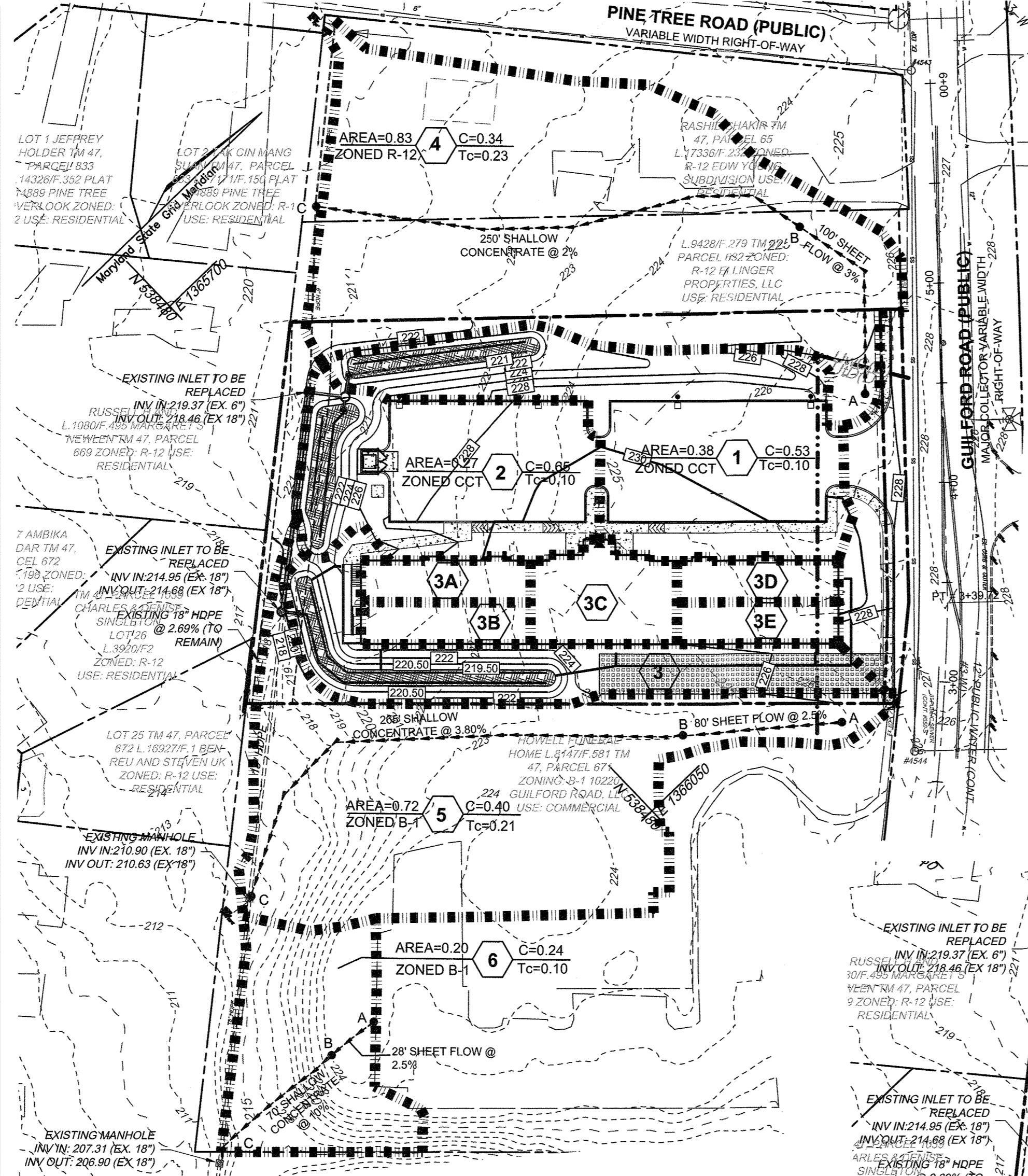
5 SHEET OF 11

ROBERT H. VOGEL, PE NO. 16183

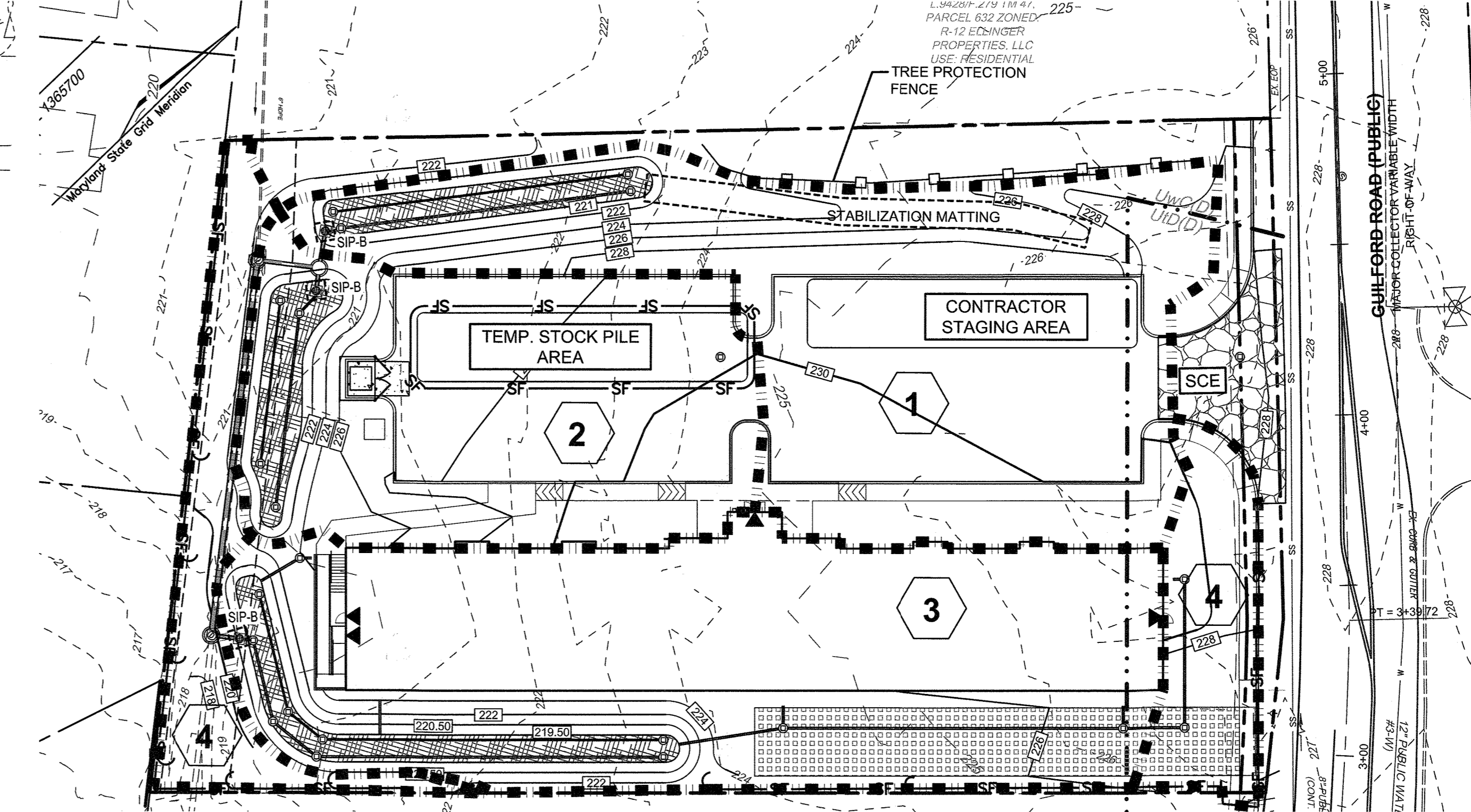


GUILFORD ASSISTED LIVING Runoff Coefficient Justification					
ID	SOIL	DESCRIPTION	Area acres	Table 3.01 "C"	CA
1	D	O.S. Grass	0.21	0.24	0.0504
	D	Impervious Area	0.18	0.86	0.1548
			0.39		0.2052
			C= 0.53		
			TR55 % Imp= 46.2%		
2	D	O.S. Grass	0.09	0.24	0.0216
	D	Impervious Area	0.18	0.86	0.1548
			0.27		0.1764
			C= 0.65		
			TR55 % Imp= 66.7%		
3A*	D	O.S. Grass	0.00	0.24	0.0000
	D	Impervious Area	0.04	0.86	0.0361
			0.04		0.0361
			C= 0.86		
			TR55 % Imp= 100.0%		
3B*	D	O.S. Grass	0.00	0.24	0.0000
	D	Impervious Area	0.04	0.86	0.0353
			0.04		0.0353
			C= 0.86		
			TR55 % Imp= 100.0%		
3C*	D	O.S. Grass	0.00	0.24	0.0000
	D	Impervious Area	0.08	0.86	0.0688
			0.08		0.0688
			C= 0.86		
			TR55 % Imp= 100.0%		
3D*	D	O.S. Grass	0.00	0.24	0.0000
	D	Impervious Area	0.04	0.86	0.0344
			0.04		0.0344
			C= 0.86		
			TR55 % Imp= 100.0%		
3E*	D	O.S. Grass	0.00	0.24	0.0000
	D	Impervious Area	0.04	0.86	0.0344
			0.04		0.0344
			C= 0.86		
			TR55 % Imp= 100.0%		
3*	D	O.S. Grass	0.21	0.24	0.0504
	D	Impervious Area	0.01	0.86	0.0120
			0.22		0.0624
			C= 0.28		
			TR55 % Imp= 6.3%		
4	D	O.S. Grass	0.62	0.24	0.1486
	D	Impervious Area	0.15	0.86	0.1281
	D	Wooded	0.06	0.15	0.0093
		0.83		0.2860	
			C= 0.34		
			TR55 % Imp= 17.9%		
5	D	O.S. Grass	0.53	0.24	0.1271
	D	Impervious Area	0.19	0.86	0.1634
			0.72		0.2905
			C= 0.40		
			TR55 % Imp= 26.4%		
6	D	O.S. Grass	0.20	0.24	0.0480
			0.20		0.0480
			0.20		0.0480
			C= 0.24		
			TR55 % Imp= 0.0%		

\* DENOTES AREA TO INLET I-1  
TOTAL AREA TO I-1 = 0.46 ACRES;  
TOTAL IMPERVIOUS = 10,849 SF (0.25 AC); PERVIOUS = 9,230 SF (0.21 AC)  
C = 0.58



STORMDRAIN DRAINAGE AREA MAP  
SCALE 1"=50'



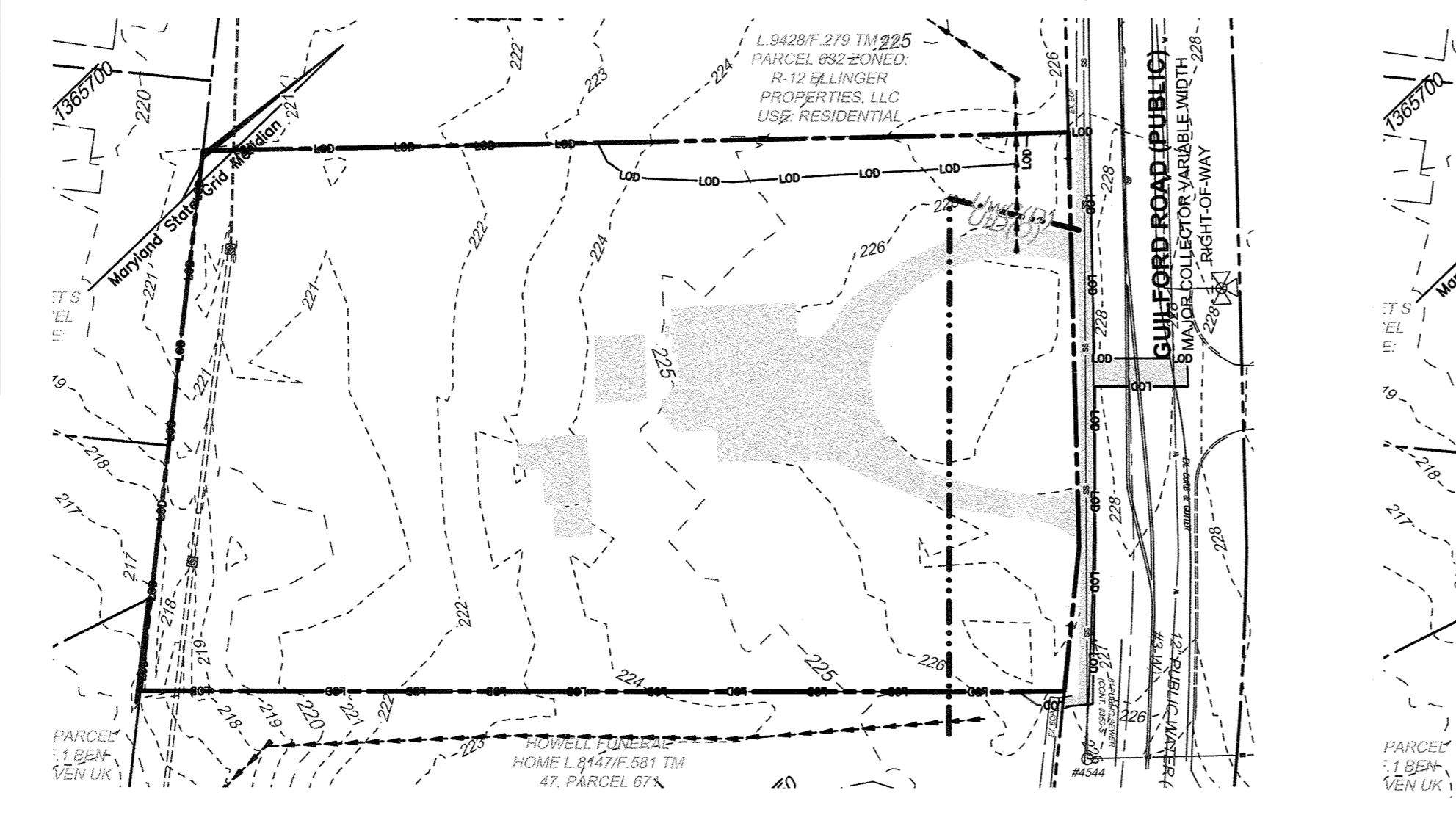
SEDIMENT CONTROL DRAINAGE AREA MAP  
SCALE 1"=30'

DA	Drainage Area Calculation						% Impv	Rv (a)
	Total (SF)	Pervious Area (SF)	Impervious Area (SF)	Total (AC)	Pervious Area (AC)	Impervious Area (AC)		
1	16,604	8,967	7,637	0.38	0.21	0.18	46	0.46
2	11,736	4,025	7,711	0.27	0.09	0.18	66	0.64
3	20,079	9,230	10,849	0.46	0.21	0.25	54	0.54

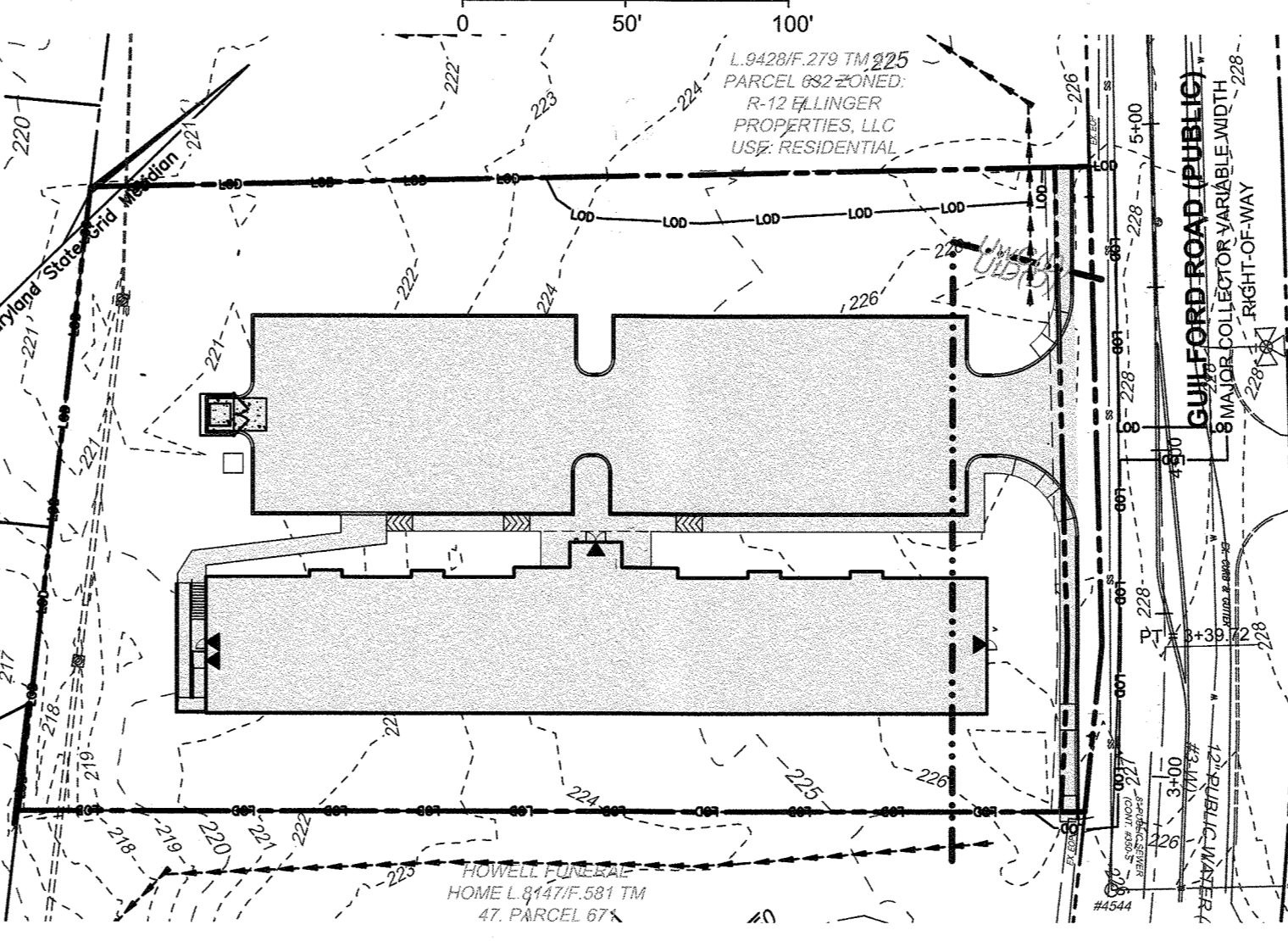
SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP	K FACTOR	ERODIBLE	ACREAGE
UD	URBAN LAND - UDOTMENTS COMPLEX, 0 TO 15 PERCENT SLOPES	D	0.38	NO	0.22
UwC	URBAN LAND - WOODTOWN-SASSAFRAS COMPLEX, 5 TO 10% SLOPES	D	0.17	NO	1.205

SOILS 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.



EXISTING COVERAGE MAP  
SCALE 1"=50'



PROPOSED COVERAGE MAP  
SCALE 1"=50'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Paul Plumb* 8-21-19  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*Kate DeDonno* 9-26-19  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*William J. Davis* 9-26-19  
DIRECTOR DATE

EXISTING IMPERVIOUS AREA: 7,841 SF (0.18 ACRES)  
LIMIT OF DISTURBANCE: 1.37 ACRES

PROPOSED IMPERVIOUS AREA: 27,879 SF (0.64 ACRES)  
LIMIT OF DISTURBANCE: 1.37 ACRES

SUMMARY

- 1 DA TO SIP-B: 0.38 AC
- 2 DA TO SIP-B: 0.27 AC
- 3 DA TO SIP-B: 0.39 AC
- 4 DA TO SILT FENCE: 0.22 AC

NO. \_\_\_\_\_ REVISION \_\_\_\_\_ DATE \_\_\_\_\_

SITE DEVELOPMENT PLAN  
**DRAINAGE AREA MAPS**  
GUILFORD ASSISTED LIVING  
10210 GUILFORD ROAD ZONED: CCT  
TAX MAP 47 BLOCK 6 PARCEL 67  
6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
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ELLCOTT CITY, MD 21043

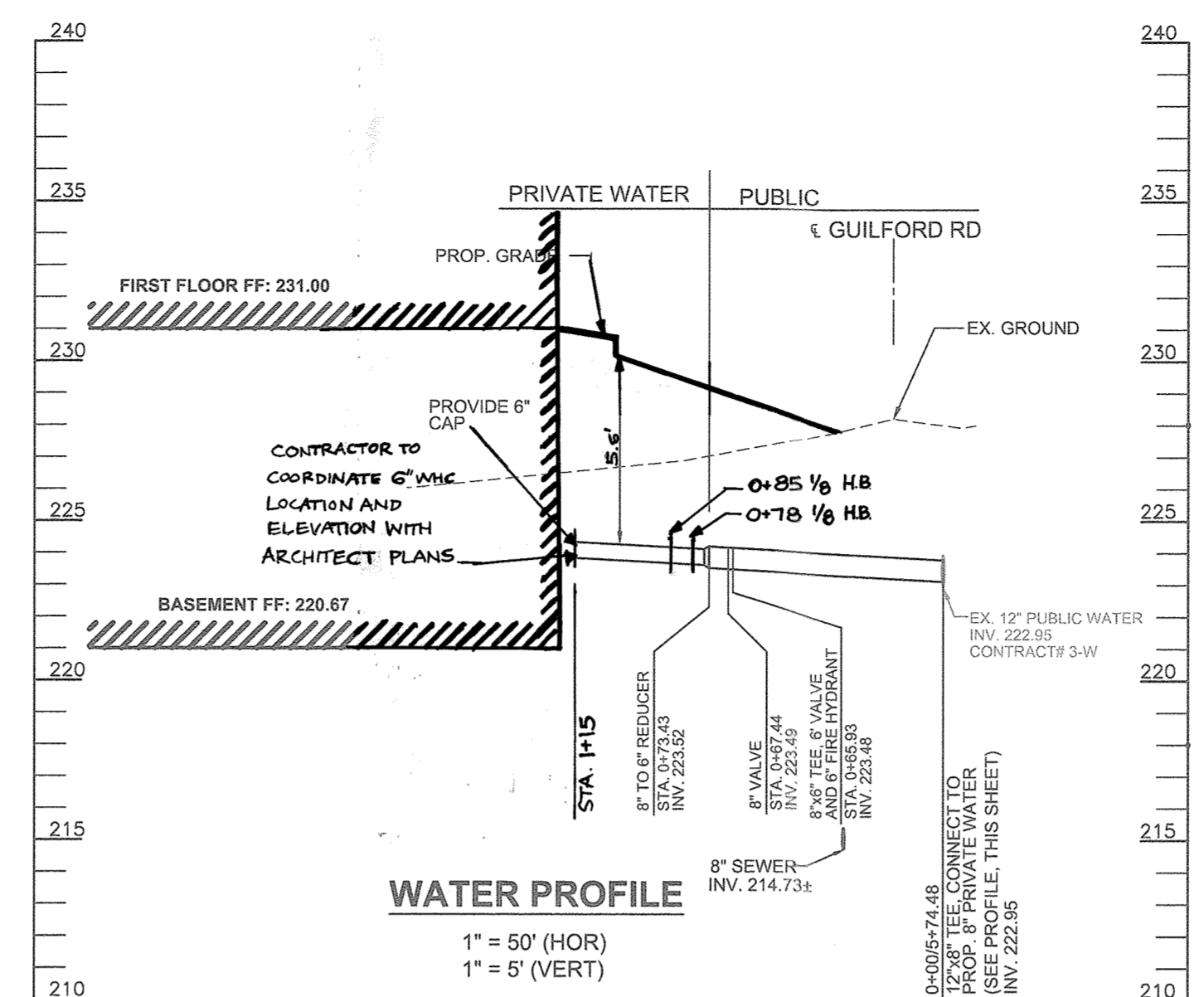
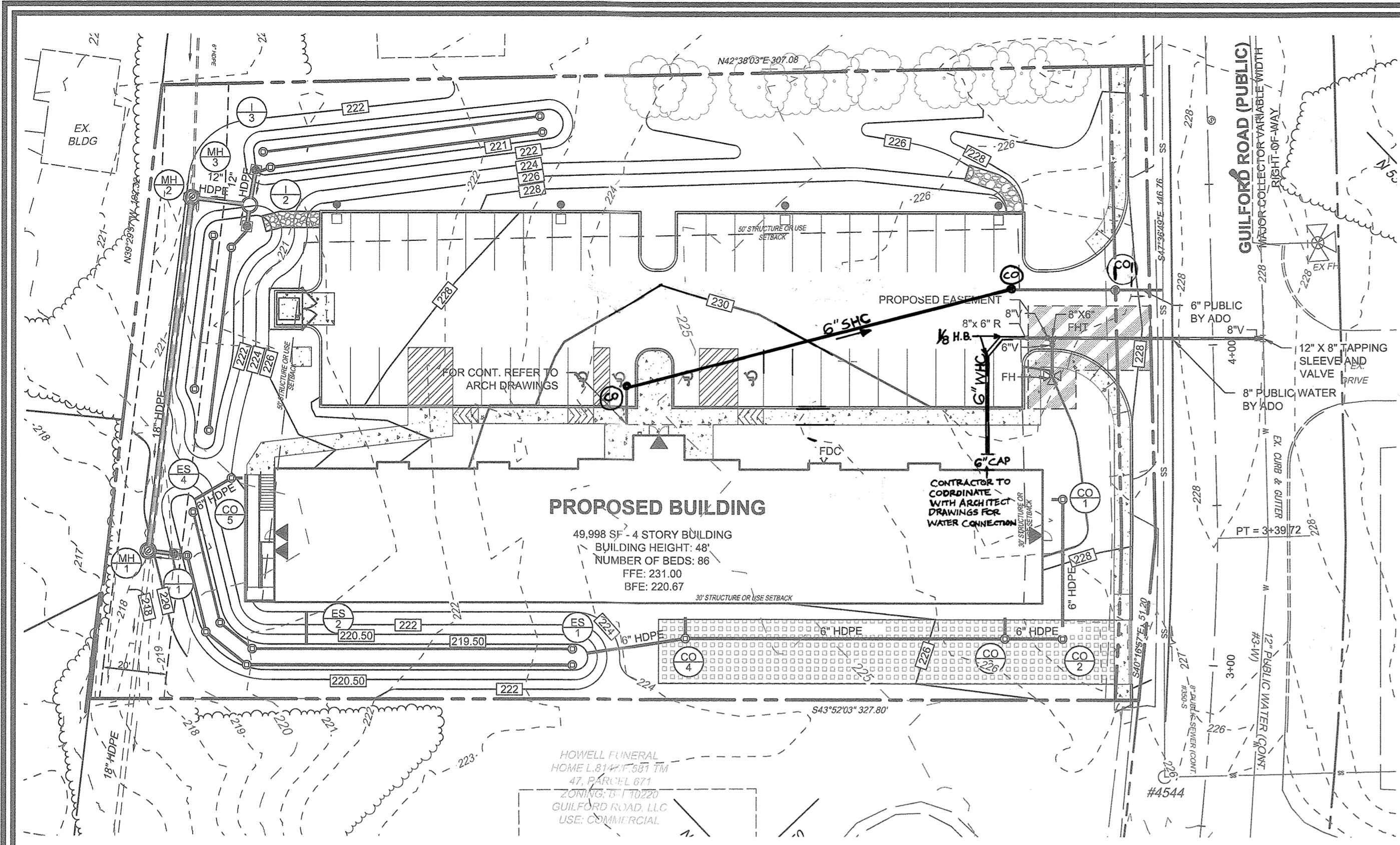
PROFESSIONAL CERTIFICATE  
DESIGN BY: JPR  
DRAWN BY: JPR  
CHECKED BY: RHV  
DATE: DECEMBER 2018  
SCALE: AS SHOWN  
W.O. NO.: 16-23

STATE OF MARYLAND  
ROBERT H. VOGEL  
PROFESSIONAL ENGINEER  
NO. 16193  
EXPIRATION DATE: 09-27-2020

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: 09-27-2020.

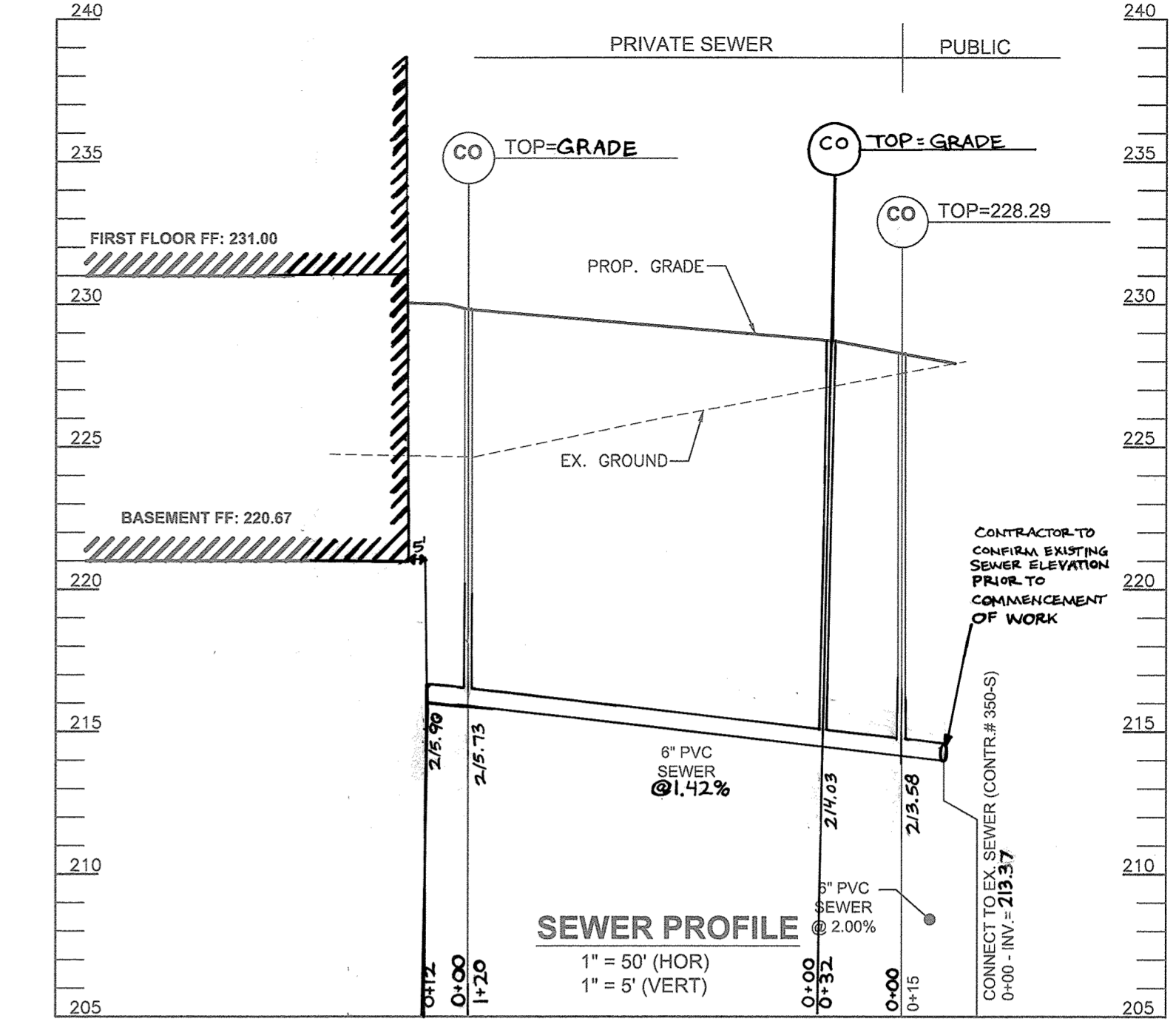
6 SHEET OF 11





**WATER MAIN LOCATION CHART**

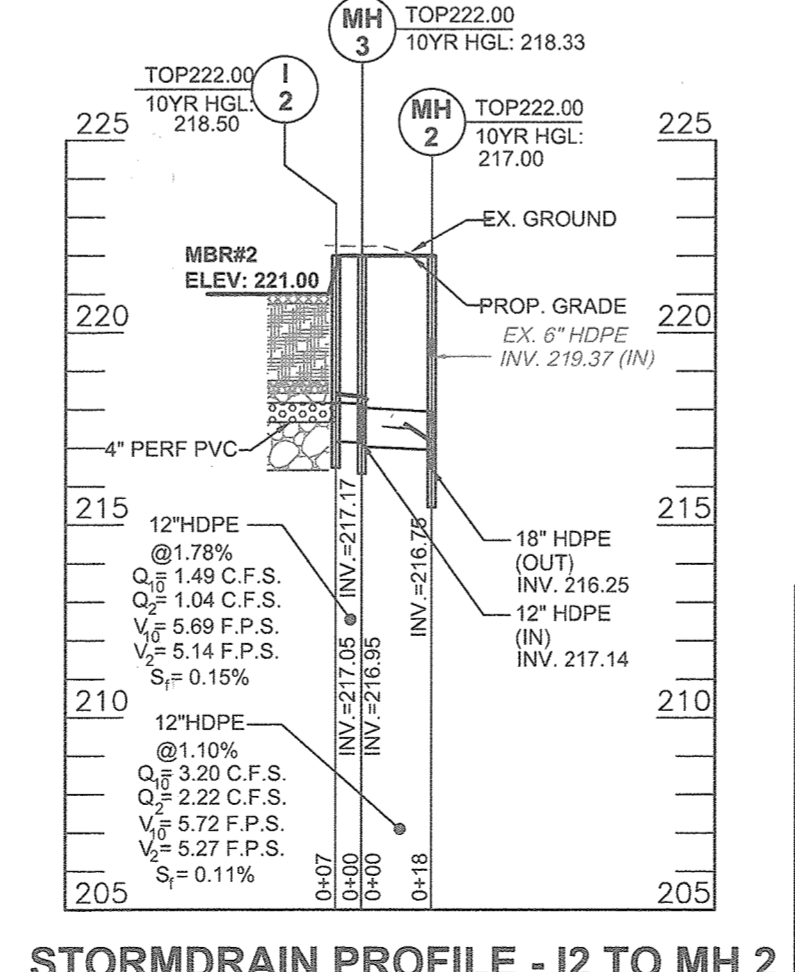
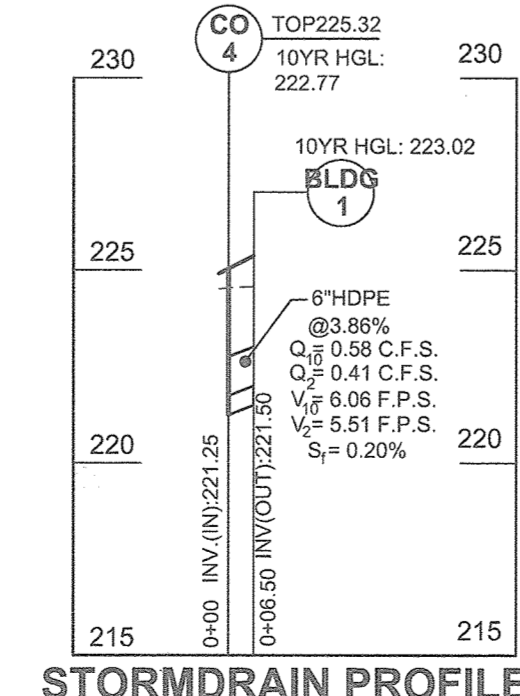
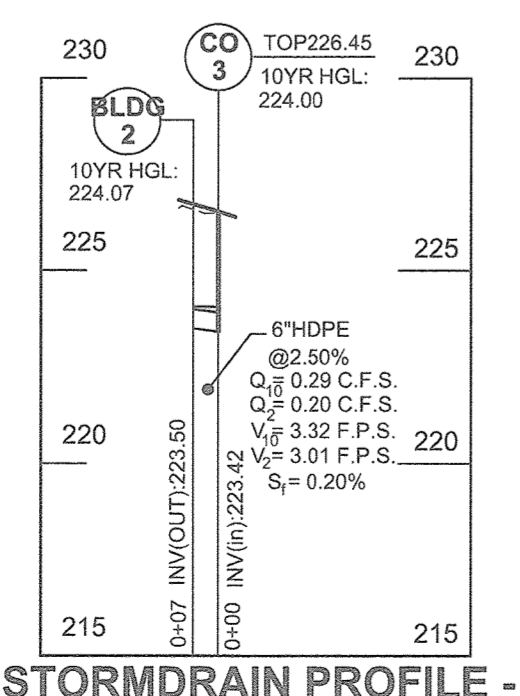
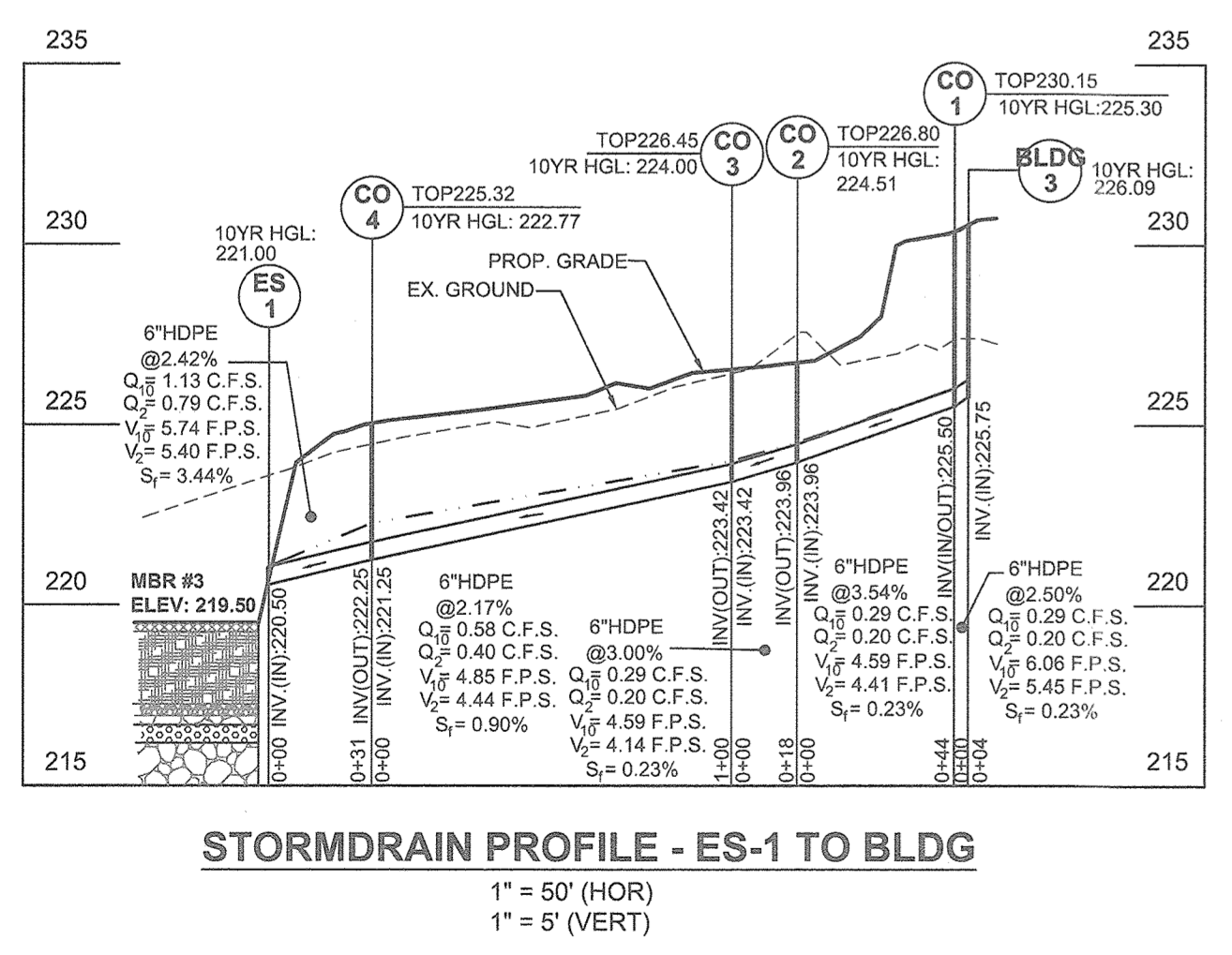
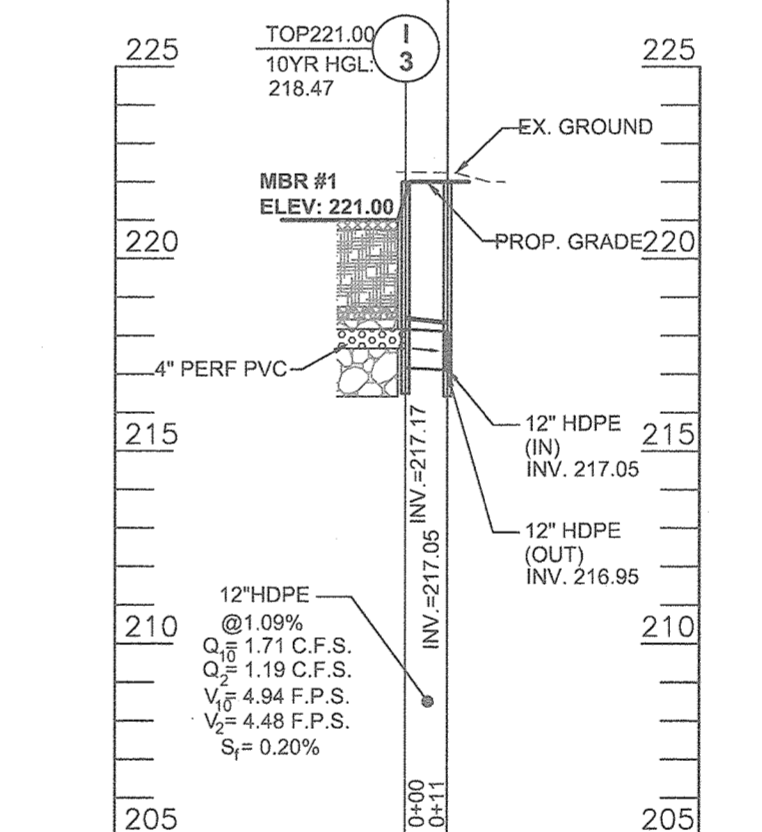
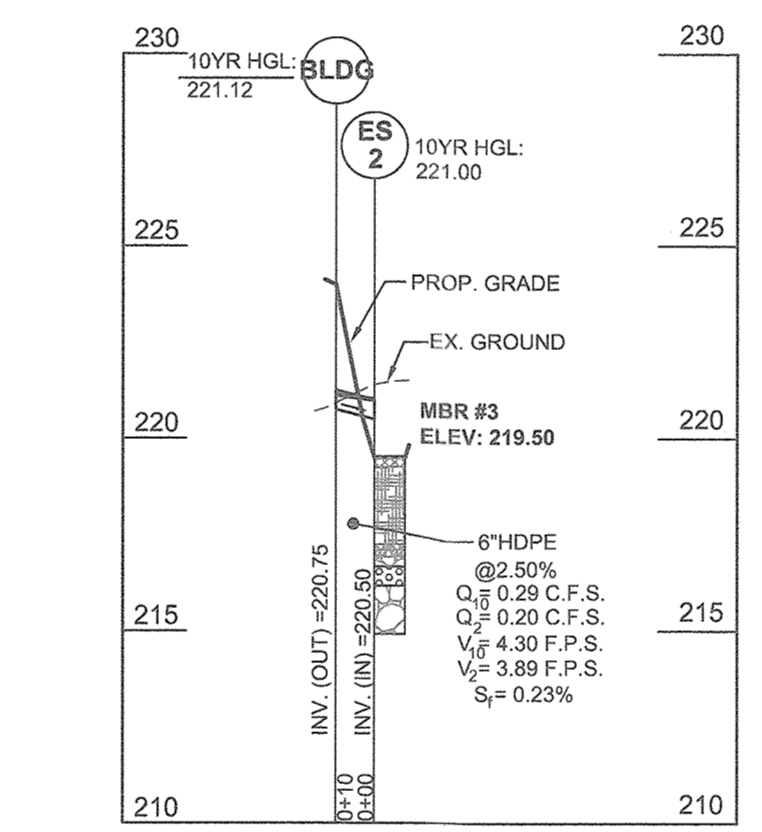
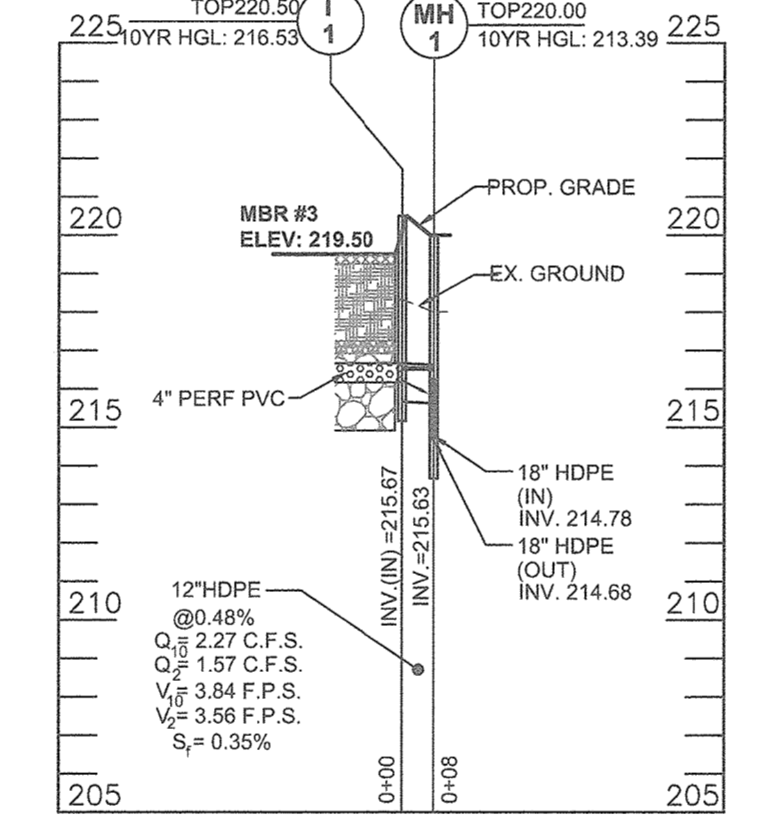
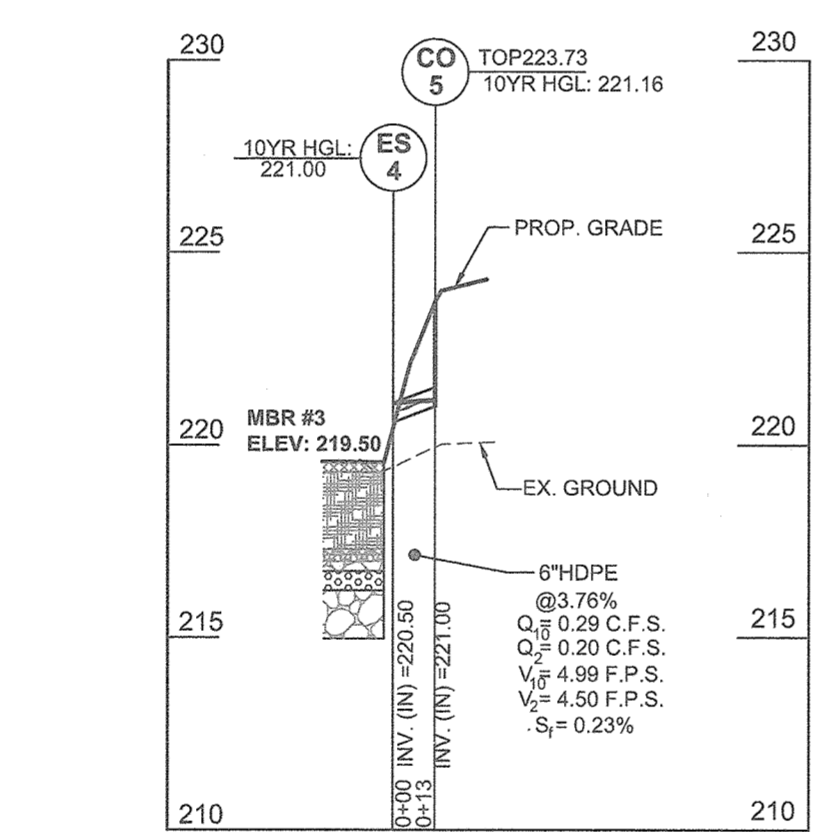
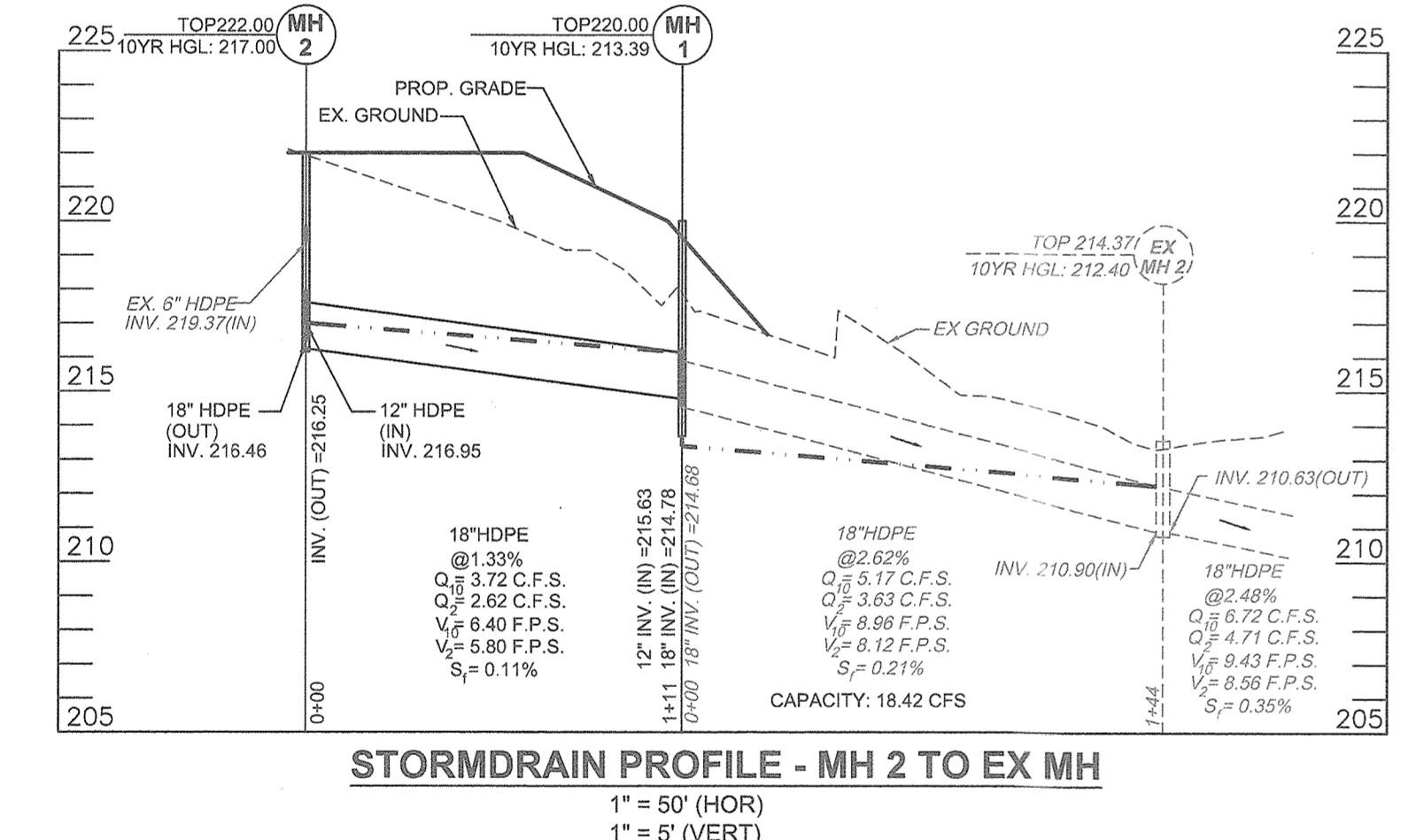
STATION	APPURTENANCE	NORTHING	EASTING
WATER MAIN			
WL0+00.00	CONNECT TO EX. 12" WATER LINE 12"x8" TAPPING SLEEVE	538712.29	1366042.72
WL0+02.00	8" VALVE	538710.77	1366041.25
WL0+65.93	8" x 6" FHT & 6" VALVE	538664.76	1365997.03
WL0+67.44	8" VALVE	538664.67	1365995.99
WL0+73.43	8" TO 6" REDUCER	538659.36	1365991.84



ALL CLEANOUTS TO BE TRAFFIC BEARING

**SEWER PIPE SCHEDULE**

SIZE	TYPE	LENGTH
6"	PVC (SEWER)	179 LF
8"	DIP (WHC)	74 LF
6"	DIP (WHC)	43 LF



**STORMDRAIN PIPE SCHEDULE**

SIZE	TYPE	LENGTH
6"	HDPE	233 LF
12"	HDPE (SD)	45 LF
18"	HDPE (SD)	111 LF
4"	HDPE PERFORATED	587 LF

**STORMDRAIN STRUCTURE SCHEDULE**

NO	TYPE	LOCATION	TOP ELEV	INV IN	INV OUT	COMMENTS
I-1	NYLOPLAST 12" W/ DOME	N 538420.10 E 1365855.83	220.50	216.17	215.67	DWG. NO 7001-110-397
I-2	NYLOPLAST 12" W/ DOME	N 538507.08 E 1365797.91	222.00	217.67	217.17	DWG. NO 7001-110-397
I-3	NYLOPLAST 12" W/ DOME	N 538521.14 E 1365787.14	221.00	217.67	217.17	DWG. NO 7001-110-397
MH - 1	STANDARD 4' PRECAST MANHOLE	N 538414.87 E 1365849.39	220.00	215.63 / 214.78	214.68	HO. CO. STD D-5-12
MH - 2	STANDARD 4' PRECAST MANHOLE	N 538500.79 E 1365779.49	222.00	219.37 / 216.75	216.25	HO. CO. STD D-5-12
MH - 3	STANDARD 4' PRECAST MANHOLE	N 538512.31 E 1365793.66	222.00	217.05 / 217.05	216.95	HO. CO. STD D-5-12
CO - 1	6" HDPE CLEAN OUT	N 538632.37 E 1368035.63	230.15	225.50	225.50	
CO - 2	6" HDPE CLEAN OUT	N 538602.25 E 1368066.96	226.80	223.96	223.96	
CO - 3	6" HDPE CLEAN OUT	N 538589.27 E 1366054.49	226.45	223.42 / 223.42	223.42	
CO - 4	6" HDPE CLEAN OUT	N 538517.18 E 1365985.19	225.32	221.25 / 221.25	221.25	
CO - 5	6" HDPE CLEAN OUT	N 538449.33 E 1365851.10	223.73	221.00	221.00	

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]*  
CHIEF DEVELOPMENT ENGINEERING DIVISION DATE 9-16-19

*[Signature]*  
CHIEF DIVISION OF LAND DEVELOPMENT DATE 9-26-19

*[Signature]*  
DIRECTOR DATE 9-26-19

**SITE DEVELOPMENT PLAN**  
**UTILITY PLAN, SCHEDULES AND PROFILES**  
GUILFORD ASSISTED LIVING  
10210 GUILFORD ROAD ZONED: OCT  
8TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND PARCEL 67

TAX MAP 47 BLOCK 6  
SUITE 110  
ELICOTT CITY, MD 21043

**ROBERT H. VOGEL ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
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SUITE 110 FAX: 410-461-8961

DESIGN BY: JPR  
DRAWN BY: JPR  
CHECKED BY: RHV  
DATE: DECEMBER 2018  
SCALE: AS SHOWN  
W.O. NO.: 16-23

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: 09-27-2020

7 SHEET OF 11



**GEOTECHNICAL EVALUATIONS AND RECOMMENDATIONS**  
 THE RECOMMENDATIONS AND RECOMMENDATIONS ARE BASED ON THE PROJECT INFORMATION PROVIDED TO US AND THE SUBSURFACE CONDITIONS ENCOUNTERED AT THE SITE. THE FOLLOWING SECTIONS PROVIDE RECOMMENDATIONS FOR PROPOSED CONSTRUCTION.

**GENERAL SITE PREPARATION**  
**VEGETATION AND STRIPPING**  
 VEGETATION, TOPSOIL AND ROOTS MUST BE REMOVED IN THE PROJECT AREA PRIOR TO CONSTRUCTION. CLEARING AND STRIPPING SHOULD EXTEND SEVERAL FEET BEYOND THE DEVELOPMENT AREA IF POSSIBLE AND SHOULD BE PERFORMED IN A MANNER AS TO MINIMIZE DISRUPTION OF THE SUBSURFACE SOILS. DEPRESSIONS MADE BY CLEARING OPERATIONS SHALL BE FILLED WITH SILENT MATERIAL AND COMPACTED TO CONFORM TO THE ADJACENT SURFACE. GRADES SHALL BE SLOPED AT NO STEEPER THAN 1 HORIZONTAL TO 1 VERTICAL (1:1). ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE PROJECT AREA.

**INSPECTION AND SUBGRADES**  
 WE RECOMMEND THAT ALL SUBGRADES BE INSPECTED BY A GEOTECHNICAL ENGINEER OR AN EXPERIENCED ENGINEERING TECHNICIAN. SUBGRADES SHOULD BE TESTED TO DETERMINE WHETHER ANY UNSTABLE ZONES THAT CANNOT BE RECONSTRUCTED SHOULD BE REMOVED AND REPLACED WITH COMPACTED FILL. THE RESULTS OF THE INSPECTION AND TESTING SHOULD BE REPORTED TO THE ENGINEER. THE RESULTS OF THE INSPECTION AND TESTING SHOULD BE REPORTED TO THE ENGINEER. THE RESULTS OF THE INSPECTION AND TESTING SHOULD BE REPORTED TO THE ENGINEER. THE RESULTS OF THE INSPECTION AND TESTING SHOULD BE REPORTED TO THE ENGINEER.

**FILL MATERIAL AND COMPACTION**  
 THE PROJECT NEAR SURFACE SOILS GENERALLY CONSISTED OF NATURALLY OCCURRING SOILS CONSISTING OF POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), SILTY SAND (SM), SANDY SILTY CLAY (CL-M), SANDY LEAN CLAY (CL) AND FAT CLAY (CH) BASED ON THE RESULTS OF OUR TEST BORINGS AND ON THE RESULTS OF OUR LABORATORY TESTS. ON-SITE COARSE-GRADED SOILS SUCH AS SILTY SAND (SM) AND GRADED SAND WITH SILT AND GRAVEL (SP-SM) THAT IS FREE OF ORGANICS AND DEBRIS IS CONSIDERED SUITABLE FOR REUSE AS COMPACTED ENGINEERED FILL BUT THE SOILS WITH HIGH PLASTIC CHARACTERISTICS ARE CONSIDERED UNSUITABLE FOR BACKFILL OR FOR REUSE AS COMPACTED ENGINEERED FILL FOR STRUCTURAL SUPPORT. IMPORTED FILL WILL BE REQUIRED FOR USE AS COMPACTED ENGINEERED FILL AT LOCATIONS WHERE THESE SOILS ARE ENCOUNTERED.

IF IMPORTED FILL IS REQUIRED AT THE SITE, WE RECOMMEND THAT THE MATERIAL HAVE LOW EXPANSIVE CHARACTERISTICS. THE MATERIAL SHOULD HAVE LESS THAN 20 PERCENT PASSING THE NO. 200 SIEVE, LIQUID LIMIT OF 40 OR LESS AND PLASTICITY INDEX LESS THAN 10.

WE RECOMMEND THAT THE FILL MATERIAL BE PLACED IN LIFTS HAVING A MAXIMUM LOOSE LIFT THICKNESS COMMENSURATE WITH THE EQUIPMENT BEING UTILIZED TO PERFORM THE COMPACTION. IN NO CASE SHOULD THOSE LIFTS EXCEED EIGHT (8) INCHES. EACH LIFT SHOULD BE UNIFORMLY COMPACTED TO AT LEAST 95% OF THE LABORATORY MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557 BASED ON HOWARD COUNTY REQUIREMENTS.

**FILL SELECTION, PLACEMENT AND COMPACTION**  
 THE PROJECT NEAR SURFACE SOILS GENERALLY CONSISTED OF NATURALLY OCCURRING SOILS CONSISTING OF POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), SILTY SAND (SM), SANDY SILTY CLAY (CL-M), SANDY LEAN CLAY (CL) AND FAT CLAY (CH) BASED ON THE RESULTS OF OUR TEST BORINGS AND ON THE RESULTS OF OUR LABORATORY TESTS. ON-SITE COARSE-GRADED SOILS SUCH AS SILTY SAND (SM) AND GRADED SAND WITH SILT AND GRAVEL (SP-SM) THAT IS FREE OF ORGANICS AND DEBRIS IS CONSIDERED SUITABLE FOR REUSE AS COMPACTED ENGINEERED FILL BUT THE SOILS WITH HIGH PLASTIC CHARACTERISTICS ARE CONSIDERED UNSUITABLE FOR BACKFILL OR FOR REUSE AS COMPACTED ENGINEERED FILL FOR STRUCTURAL SUPPORT. IMPORTED FILL WILL BE REQUIRED FOR USE AS COMPACTED ENGINEERED FILL AT LOCATIONS WHERE THESE SOILS ARE ENCOUNTERED.

IF IMPORTED FILL IS REQUIRED AT THE SITE, WE RECOMMEND THAT THE MATERIAL HAVE LOW EXPANSIVE CHARACTERISTICS. THE MATERIAL SHOULD HAVE LESS THAN 20 PERCENT PASSING THE NO. 200 SIEVE, LIQUID LIMIT OF 40 OR LESS AND PLASTICITY INDEX LESS THAN 10. WE RECOMMEND THAT THE FILL MATERIAL BE PLACED IN LIFTS HAVING A MAXIMUM LOOSE LIFT THICKNESS COMMENSURATE WITH THE EQUIPMENT BEING UTILIZED TO PERFORM THE COMPACTION. IN NO CASE SHOULD THOSE LIFTS EXCEED EIGHT (8) INCHES. EACH LIFT SHOULD BE UNIFORMLY COMPACTED TO AT LEAST 95% OF THE LABORATORY MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557 BASED ON HOWARD COUNTY REQUIREMENTS.

**FOUNDATIONS**  
 THE SOILS ARE GENERALLY UNDERLAIN BY WHAT APPEARS TO BE NATURALLY OCCURRING DEPOSITS OF POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), SILTY SAND (SM), SANDY SILTY CLAY (CL-M), SANDY LEAN CLAY (CL) AND FAT CLAY (CH). ALL OF WHICH, BASED UPON THE RESULTS OF OUR TEST BORINGS, ARE CURRENTLY JUDGED TO HAVE SUFFICIENT STRENGTH TO SUPPORT CONVENTIONAL FOUNDATIONS. FOUNDATIONS FOR PROPOSED STRUCTURES SHOULD BE DESIGNED TO SUPPORT CONVENTIONAL FOUNDATIONS. FOUNDATIONS FOR PROPOSED STRUCTURES SHOULD BE DESIGNED TO SUPPORT CONVENTIONAL FOUNDATIONS. FOUNDATIONS FOR PROPOSED STRUCTURES SHOULD BE DESIGNED TO SUPPORT CONVENTIONAL FOUNDATIONS.

**SPREAD FOOTINGS SUPPORTED BY APPROVED NATURALLY OCCURRING MATERIALS OF STRATUM A ARE CONSIDERED FEASIBLE FOR SUPPORT OF THE BUILDING. SOIL CHANGES SHOULD BE IDENTIFIED AND THE FOUNDATION DESIGN SHOULD BE ADJUSTED TO ACCOMMODATE ANY CHANGES. FOUNDATIONS FOR PROPOSED STRUCTURES SHOULD BE DESIGNED USING A MAXIMUM NET ALLOWABLE SOIL DESIGN BEARING PRESSURE NOT IN EXCESS OF 3,000 POUNDS PER SQUARE FOOT OR APPROVED NATURALLY OCCURRING MATERIALS OF STRATUM A OR OTHER MATERIALS.**

TO REDUCE THE POSSIBILITY OF LOCALIZED SHEAR FAILURES, STRIP FOOTINGS SHOULD BE A MINIMUM OF 18 INCHES WIDE. WHILE COLUMN FOOTINGS SHOULD BE A MINIMUM OF 30 INCHES SQUARE PERIMETER FOOTING SUBGRADE FOUNDATION SHOULD BE AT LEAST 30 INCHES BELOW THE FINAL EXTERIOR GRADE FOR PROTECTED BEARING CONDITIONS MAY OCCUR AT THE PROJECT SITE. THEREFORE, WE RECOMMEND THAT THE FOOTINGS BE PROPERLY REINFORCED TO PROVIDE THEM WITH GREATER BENDING CAPACITY.

**GROUND-SUPPORTED SLABS**  
 BASED ON THE SUBSURFACE CONDITIONS, FLOOR SLAB-ON-GRADE FOR THE BUILDING ADDITIONS CAN BE SUPPORTED BY APPROVED COMPACTED EXISTING SITE SOILS. WE RECOMMEND A MODULUS OF SUBGRADE REACTION (K) OF 100 POUNDS PER CUBIC INCH (PCI) FOR APPROVED SUBGRADES (K VALUE CONSIDERS A 1 FT BY 1 FT LAYER OF SUBGRADE WITH A MAXIMUM LAYER OF FREE DRAINING SUBGRADES (K VALUE CONSIDERS A 1 FT BY 1 FT LAYER OF SUBGRADE WITH A MAXIMUM LAYER OF FREE DRAINING SUBGRADES). A POLYETHYLENE MEMBRANE OR SIMILAR VAPOR BARRIER SHOULD BE PLACED BELOW THE FLOOR SLAB TO SERVE AS A CAPILLARY MOISTURE BARRIER. A POLYETHYLENE MEMBRANE OR SIMILAR VAPOR BARRIER SHOULD BE PLACED BELOW THE FLOOR SLAB TO SERVE AS A CAPILLARY MOISTURE BARRIER.

**GROUNDWATER AND DRAINAGE**  
 THE PROPOSED GRADE WALLS MAY BE SUBJECT TO GROUNDWATER THAT IS PERCHED/TRAPPED BEHIND THE WALL OVER THE DENSE SOIL LAYER. TO AVOID PRODUING HYDROSTATIC PRESSURES ON THE WALLS, IT IS RECOMMENDED THAT THE BELOW GRADE WALL SHOULD BE PERMANENTLY SEALED ALONG THE ENTIRE EXTERIOR OF THE WALLS. IN ADDITION, WE RECOMMEND THAT THE BELOW GRADE WALL SHOULD BE PERMANENTLY SEALED ALONG THE ENTIRE EXTERIOR OF THE WALLS. IN ADDITION, WE RECOMMEND THAT THE BELOW GRADE WALL SHOULD BE PERMANENTLY SEALED ALONG THE ENTIRE EXTERIOR OF THE WALLS.

**STORMWATER MANAGEMENT BY INFILTRATION**  
 ESTIMATED INFILTRATION RATES AND DEPTHS ARE PRESENTED IN TABLE 5 BELOW.  
 TABLE 5: ESTIMATED INFILTRATION RATE

Soil	Depth of Soil (ft)	Field Infiltration Rate (inches/hour)	USDA Textural Classification	USDA Infiltration Rate (inches/hour)
TP-1	0.0	0.0	LOAM	0.37
TP-2	0.0	0.0	SILT CLAY	0.27
TP-3	0.0	0.0	SILT CLAY LOAM	0.26
TP-4	0.0	1.2	LOAM SAND	2.41
TP-5	0.0	0.0	SILT CLAY	0.26
TP-6	0.0	0.0	SILT CLAY	0.24

BASED ON THE 2000 MARYLAND STORMWATER DESIGN MANUAL, APPENDIX D.1, A MINIMUM FIELD INFILTRATION RATE OF 0.52 INCHES PER HOUR IS REQUIRED FOR INFILTRATION PRACTICES. LOWER INFILTRATION RATES MAY BE ACCEPTABLE FOR INFILTRATION PRACTICES IF THE INFILTRATION PRACTICES ARE ALSO PRECLUDED IF GROUNDWATER OR BEDROCK ARE ENCOUNTERED WITHIN 4 FEET OF THE BOTTOM OF THE PROPOSED FACILITY.

FOR DESIGN PURPOSES, WE RECOMMEND USING THE LOWER VALUE OF THE AVERAGE FIELD INFILTRATION RATE AND MINIMUM USDA INFILTRATION RATE ASSOCIATED WITH THE TEXTURAL CLASSIFICATION. THE FIELD AND LABORATORY TEST RESULTS INDICATE THAT INFILTRATION PRACTICES MAY NOT BE FEASIBLE AT THE TEST DEPTH AND AT ALL TEST LOCATIONS EXCEPT FOR TP-4 BASED ON THE INFILTRATION RATES LESS THAN THE REQUIRED RATE OF 0.52 INCHES PER HOUR. INFILTRATION PRACTICES AT THESE LOCATIONS WILL REQUIRE PARTIAL INFILTRATION DESIGN AND/OR AN UNDERDRAIN SYSTEM. INFILTRATION MAY BE FEASIBLE AT THE TEST DEPTH AND AT THE LOCATION OF TP-4 BASED ON ACCEPTABLE FLOW RATE HIGHER THAN REQUIRED MINIMUM OF 0.52 INCH PER HOUR OBTAINED AND ALSO BASED ON GROUNDWATER OR WEATHERED ROCK NOT ENCOUNTERED.

**PAVEMENT AREAS**  
 THE FOLLOWING FINDINGS AND RECOMMENDATIONS ARE BASED ON OUR OBSERVATION AT THE SITE, AN INTERPRETATION OF THE FIELD DATA OBTAINED DURING THE SUBSURFACE EXPLORATION, AND OUR EXPERIENCE. SUBSURFACE CONDITIONS IN UNEXPOSED LOCATIONS MAY VARY FROM THOSE ENCOUNTERED.

THE TRAFFIC LOAD FOR PARKING LOTS WAS ASSUMED AS LIGHT-DUTY WITH OCCASIONAL DELIVERY OR TRASH TRUCK LOADS BASED ON OUR PREVIOUS EXPERIENCES WITH THE SIMILAR PROJECTS. IF THE TRAFFIC LOADING IS DIFFERENT FROM OUR ASSUMPTION, WE REQUEST THE CORRECT INFORMATION BE ADVISED TO US TO RE-EVALUATE OUR RECOMMENDATIONS.

DETERMINATION OF AN APPROPRIATE PAVEMENT CROSS SECTION IS DEPENDENT ON THE PROPOSED TRAFFIC LOADS, TRAFFIC FREQUENCIES, SUBSURFACE CONDITIONS, AND CONSTRUCTION CONSTRAINTS. THE SUBSURFACE EXPLORATION DATA, THE GEOTECHNICAL ENGINEER'S DETERMINATION OF THE SOIL STRATUM APPROPRIATE FOR PAVEMENT SUPPORT, THE SUBSURFACE EXPLORATION DATA, THE GEOTECHNICAL ENGINEER'S DETERMINATION OF THE SOIL STRATUM APPROPRIATE FOR PAVEMENT SUPPORT, THE SUBSURFACE EXPLORATION DATA, THE GEOTECHNICAL ENGINEER'S DETERMINATION OF THE SOIL STRATUM APPROPRIATE FOR PAVEMENT SUPPORT.

**FLEXIBLE PAVEMENT SECTION RECOMMENDATION:**  
 LIGHTLY LOADED VEHICLES SUCH AS PASSENGER CARS AND LIGHT-DUTY TRUCKS ARE ANTICIPATED TO BE TRAVELING ALONG THE PROPOSED FACILITY. THE FOLLOWING PAVEMENT CROSS SECTION IS RECOMMENDED:  
 1.5 INCH HMA SUPERPAVE INTERMEDIATE SURFACE (9.5 MM PG 64-22)  
 2.5 INCH HMA SUPERPAVE BASE (9.5 MM PG 64-22)  
 8.0 INCH GRADED AGGREGATE BASE (GAB)

**RIGID PAVEMENT SECTION RECOMMENDATION:**  
 THE FLEXIBLE PAVEMENT SECTION MAY NOT BE SUITABLE FOR THE SUPPORT OF HEAVY STATIC LOADS NOR DOES THE DESIGN ACCOUNT FOR DYNAMIC LOADS SUCH AS THOSE PRODUCED IN AREAS WHERE STOPPING, STARTING, AND TURNING ARE PERFORMED BY RELATIVE HEAVY TRUCKS WHERE SUCH CONDITIONS ARE ANTICIPATED (E.G. TRUCKPARKS, LOADING AREAS, ETC). THE USE OF RIGID CONCRETE PAVEMENT OR PAD IS SUGGESTED. ALL CONSTRUCTION JOINTS WITHIN THE CONCRETE PAVEMENT/PAD AND BETWEEN THE ASPHALT AND CONCRETE PAVEMENT/PAD SHOULD BE TIGHTLY SEALED AND MAINTAINED AS SUCH TO AVOID WATER ACCESSING THE SUBGRADE. BASED UPON THE FIELD AND LABORATORY TESTS RESULTS, A MODULUS OF SUBGRADE REACTION (K) OF 100 PCI MAY BE USED TO DESIGN THE REQUIRED CONCRETE SLAB.

THE FOLLOWING HEAVY DUTY RIGID PAVEMENT CROSS SECTION IS RECOMMENDED:  
 7-INCH REINFORCED CONCRETE PAVEMENT  
 A BASE COURSE SHOULD BE PROVIDED UNDER THE RIGID PAVEMENT TO PROVIDE ADDITIONAL STRUCTURAL STRENGTH AND TO PROVIDE A MORE UNIFORM BEARING SURFACE FOR THE PAVEMENT. THE BASE COURSE SHALL ALSO BE USED TO REPLACE SOFT AND HIGHLY COMPRESSIBLE SOILS PRESENT AT THE SITE AND TO PROVIDE DRAINAGE FOR THE ROADBED AND TO PROVIDE A SUITABLE SURFACE FOR THE OPERATION OF CONSTRUCTION EQUIPMENT DURING ADVERSE WEATHER CONDITIONS. THE BASE COURSE SHALL HAVE A MINIMUM THICKNESS OF 4 INCHES OVER THE SUBGRADE. AS TESTS SHALL BE PERFORMED WITHIN THE PROPOSED PAVEMENT THROUGHOUT THE SITE.

DESIGN OF SOFT OR LOOSE SOILS ARE IDENTIFIED AT PROPOSED SUBGRADES AT THE TIME OF CONSTRUCTION IN ORDER TO PROPER PAVEMENT DESIGN. SOFT OR LOOSE SOILS ARE IDENTIFIED AT PROPOSED SUBGRADES AT THE TIME OF CONSTRUCTION IN ORDER TO PROPER PAVEMENT DESIGN. SOFT OR LOOSE SOILS ARE IDENTIFIED AT PROPOSED SUBGRADES AT THE TIME OF CONSTRUCTION IN ORDER TO PROPER PAVEMENT DESIGN.

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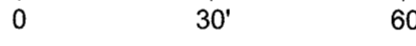
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**NOTES**

- SILT FENCE IS TO BE REPLACED WITH SUPER SILT FENCE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
- SILT FENCE SHALL BE CURLED UPHILL. NO MORE THAN 35 FEET APART
- DOUBLE ROWS OF SUPER SILT FENCE SHALL BE INSTALLED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
- LOCATE STOCKPILE AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR. STOCKPILES EXCEEDING 15 FEET IN HEIGHT SHALL BE BENCHED.
- CONTRACTOR TO PROVIDE IMMEDIATE REPAIR OF ANY EARTH DIKES INTERRUPTED DURING CONSTRUCTION.
- IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL SECTION A-3; FOR THE PURPOSES OF EROSION AND SEDIMENT CONTROL, STEEP SLOPES ARE DEFINED AS THOSE WITH GRADIENTS OF 20 PERCENT OR MORE (USDA NRCS SOIL SURVEY MANUAL, OCTOBER, 1993). 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. CERTAIN PROJECTS (E.G. THOSE LOCATED IN THE CHESAPEAKE AND ATLANTIC COASTAL BAYS CRITICAL AREA) MAY BE SUBJECT TO A MORE RESTRICTIVE DEFINITION FOR STEEP SLOPES OR HIGHLY ERODIBLE SOILS.
- 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.
- APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN (ECP) BY THE HOWARD SOIL CONSERVATION DISTRICT DOES NOT GRANT APPROVAL OF THE PROPOSED SEDIMENT CONTROL SCHEME. THE FINAL PLAN SHALL INCLUDE A SEQUENCE OF CONSTRUCTION WHICH SHALL DETAIL SEDIMENT & EROSION CONTROLS AND PHASING AND ADDRESS THE PROJECT TEMPORARY STORMWATER MANAGEMENT REQUIREMENTS.

**SEDIMENT CONTROL PLAN**

SCALE 1"=30'



**LEGEND**

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING SPECIMEN TREE
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING FENCE
- PROPOSED STORMDRAIN
- PROPOSED STORMDRAIN INLET
- PROPOSED CURB
- PROPOSED SIDEWALK
- MICRO-BIORETENTION
- PROPOSED PUBLIC WATER & UTILITY EASEMENT
- LIMIT OF DISTURBANCE
- SILT FENCE
- STANDARD INLET PROTECTION
- STABILIZED CONSTRUCTION ENTRANCE
- SAME DAY STABILIZATION AREAS

**SOILS LEGEND**

SYMBOL	NAME / DESCRIPTION	GROUP	K FACTOR	ERODIBILITY	ACREAGE
UD	URBAN LAND - ULDORTMENTS COMPLEX, 0 TO 15 PERCENT SLOPES	D	0.28	NO	0.22
UMC	URBAN LAND - WOODTOWN-SASSAFRAS COMPLEX, 5 TO 10% SLOPES	D	0.17	NO	1.205

**SOILS 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] DATE 8-29-19  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 [Signature] DATE 9-26-19  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 [Signature] DATE 9-26-19  
 DIRECTOR

**OWNER/DEVELOPER CERTIFICATION:**  
 I/WE CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY (OR, IF ENTRY FOR CONSTRUCTION IS DELAYED, I CERTIFY) THAT I AM THE OWNER/DEVELOPER OF THIS PROJECT.  
 [Signature] DATE 8-15-19  
**OWNER/DEVELOPER SIGNATURE**  
 [Signature] DATE 8-15-19  
 PRINTED NAME & TITLE  
 David Bunte, Jr.  
 NO. REGISTRATION NO. 16193  
 R.L.S. OR R.L.A. (circle one)

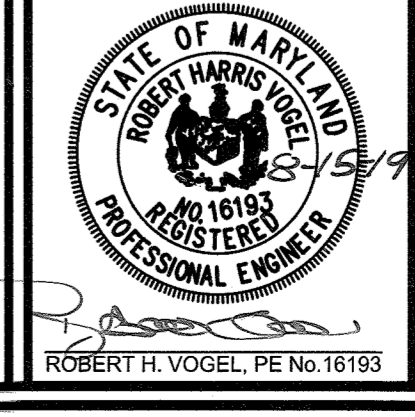
**DESIGN CERTIFICATION:**  
 I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT THIS PLAN INCLUDES INSPECTING AND MAINTAINING CONTROLS, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY (OR, IF ENTRY FOR CONSTRUCTION IS DELAYED, I CERTIFY) THAT I AM THE DESIGNER OF THIS PROJECT.  
 [Signature] DATE 8-27-19  
**DESIGNER'S SIGNATURE**  
 [Signature] DATE 8-27-19  
 PRINTED NAME  
 Robert H. Vogel  
 NO. REGISTRATION NO. 16193  
 R.L.S. OR R.L.A. (circle one)

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 [Signature] DATE 8-27-19  
 HOWARD S.C.D.

NO.	REVISION	DATE

**SITE DEVELOPMENT PLAN**  
**GRADING & EROSION AND**  
**SEDIMENT CONTROL PLAN**  
 GUILFORD ASSISTED LIVING  
 10210 GUILFORD ROAD  
 ZONED: CCT PARCEL 67  
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 3300 NORTH RIDGE ROAD TEL: 410.461.7666  
 SUITE 110 FAX: 410.461.8961  
 ELICOTT CITY, MD 21043



**PROFESSIONAL CERTIFICATE**  
 DESIGN BY: JPR  
 DRAWN BY: JPR  
 CHECKED BY: RHV  
 DATE: DECEMBER 18, 2019  
 SCALE: AS SHOWN  
 W.O. NO.: 16-23  
 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: 09-27-2020  
 8 SHEET OF 11



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

- A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE USE AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOURS NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:
  - PRIOR TO THE START OF EARTH DISTURBANCE.
  - PRIOR TO THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
  - PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT.
  - PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.

OTHER BUILDING OR GRADING APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL WITH THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.

- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THEREOF.
- ADDITIONAL PLANTING OPERATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND SHALL BE TO OCCUR ON DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.
- 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 TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-3), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-5). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES. PERMANENT SEEDING AND MULCHING ARE TO BE APPLIED TO ALL AREAS WHERE PERMANENT STABILIZATION IS REQUIRED. PERMANENT SEEDING SHALL BE ENFORCED IN AREAS WITH >15 OF CUT AND/OR FILL SLOPES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE TOE, SLOPE STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MIXTURE (SEC. B-4-6).
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAVE BEEN OBTAINED FROM THE CID.

6. SITE ANALYSIS:

TOTAL AREA OF SITE:	1.43 ACRES
AREA TO BE REEDED OR PAVED:	0.75 ACRES
AREA TO BE PERMANENTLY STABILIZED:	0.68 ACRES
TOTAL CUT:	1,317 CU. YDS. TOTAL*
TOTAL FILL:	3,575 CU. YDS. TOTAL*
OFFSITE WASTE/BORROW AREA LOCATION:	NA

(1) REFER TO FIG. 11 BELOW

- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY OR COLLAPSE OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID, THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY, AND THE NEXT DAY AFTER EACH RAIN EVENT A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE:
  - INSPECTION DATE (ROUTINE, PRE-STORE EVENT, DURING RAIN EVENT)
  - NAME AND TITLE OF INSPECTOR
  - WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)
  - BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PRESENT COMPLETE)
  - EVIDENCE OF SEDIMENT ACTIVITIES
  - IDENTIFICATION OF PLAN REFERENCES
  - IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
  - NOTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS
  - COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
  - PHOTOGRAPHS
  - MONITORING/SAMPLING
  - MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
  - OTHER INSPECTION DATA AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE).

- TRENCHES FOR THE CONSTRUCTION OF UTILITIES ARE LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKING WEEK/EVEN 5 SHIFTS.
- ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SCOPE OF CONSTRUCTION MUST BE APPROVED BY THE CID PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF HSD-APPROVED FIELD CHANGES.
- ALL DISTURBED AREAS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION BY THE END OF EACH WORKING DAY. THE DISTURBED AREA IN THE PRECEDING GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IS PROTECTED FROM EROSION AND SEDIMENTATION BY THE END OF EACH WORKING DAY. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CID, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
- WASH WATER FROM ANY EQUIPMENT, VEHICLES, WALKWAYS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED BY A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.
- SOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.
- ALL SILT FENCE AND SUPER SILT FENCE WITH LOWER END-IN-THE-COUNTER, AND BE INSTALLED AT 25' MINIMUM INTERVALS, WITH PLACED ENDS CURLED UPWARD BY 2' IN ELEVATION.
- STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUDES):
  - USE I AND II MARCH 1 - JUNE 15
  - USE III AND IV OCTOBER 1 - APRIL 30
  - USE V MARCH 1 - MAY 31
- IN V.4 OF THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

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

**DEFINITION**  
TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

**PURPOSE**  
TO USE LONG-LEAF 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. SOIL PREPARATION

- SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE (AS DESCRIBED IN SECTION B.2). EITHER SELECTED MIXTURES, APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY; THE SUMMARY IS TO BE PLACED ON THE PLAN.
- ADDITIONAL PLANTING OPERATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND SHALL BE TO OCCUR ON DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.
- 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 TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-3), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-5). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES. PERMANENT SEEDING AND MULCHING ARE TO BE APPLIED TO ALL AREAS WHERE PERMANENT STABILIZATION IS REQUIRED. PERMANENT SEEDING SHALL BE ENFORCED IN AREAS WITH >15 OF CUT AND/OR FILL SLOPES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE TOE, SLOPE STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MIXTURE (SEC. B-4-6).
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAVE BEEN OBTAINED FROM THE CID.

1. 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 NEW KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

2. TURFGRASS MIXTURES  
WHERE TURFGRASS MAY BE DESIRED INCLUDES LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES. MIXTURES 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. EITHER SELECTED MIXTURES, APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY; THE SUMMARY IS TO BE PLACED ON THE PLAN.

- 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 NEW KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
- TURFGRASS MIXTURES  
WHERE TURFGRASS MAY BE DESIRED INCLUDES LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES. MIXTURES 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. EITHER SELECTED MIXTURES, APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY; THE SUMMARY IS TO BE PLACED ON THE PLAN.

- GENERAL SPECIFICATIONS  
A. CLASSES OF TURFGRASS SOIL MUST BE MARYLAND STATE CERTIFIED. SOIL LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.  
B. SOIL MUST BE MOISTURE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH PLUS OR MINUS 1/8 INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN POTS AND TOW OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.  
C. STANDARD SIZE SECTIONS OF SOIL MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND NEARBY TREE AND SHADE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.  
D. SOIL MUST NOT BE HARVESTED OR TRANSPORTED WHEN MOISTURE CONTENT (EXCESSIVELY) EXCEEDS 10 PERCENT.  
E. SOIL MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOIL NOT TRANSPORTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.
200. SOIL INSTALLATION  
A. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOIL.  
B. LAY THE FIRST ROW OF SOIL IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROVIDE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOIL IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT ROOTS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.  
C. WHEREVER POSSIBLE, LAY SOIL WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERED JOINTS. ROLL AND TAMP PER OTHER METHODS TO SECURE THE SOIL TO PREVENT SURFACE SOIL SLOPPING. ENSURE SOIL CONTACT EXISTS BETWEEN SOIL ROOTS AND THE UNDERLYING SOIL SURFACE.  
D. WATER THE SOIL IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOIL PAD AND SOIL SURFACE BEHIND THE SOIL ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOIL WITHIN 48 HOURS.
300. MAINTENANCE  
A. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENT AS NECESSARY TO MAINTAIN MOST SOIL TO A DEPTH OF 4 INCHES. WATER SOIL DURING THE HEAT OF THE DAY TO PREVENT WILTING.  
B. AFTER THE FIRST WEEK, SOIL WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.  
C. DO NOT MOW UNTIL THE SOIL 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 COVER UNLESS OTHERWISE SPECIFIED.

PERMANENT SEEDING SUMMARY

NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)			LIME RATE
					N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	
0	COOL SEASON GRASS (PERMANENT)	T.F. 60 LB / AC	MAR 1 TO OCT 15	1/4-1/2 IN.	45 LB/AC (1000 SF)	90 LB/AC (1000 SF)	60 LB/AC (1000 SF)	2 TONS/AC (10 LB PER 1000 SF)
1	WARM SEASON GRASS (PERMANENT)	K.B. 40 LB / AC	AUG 15 TO OCT 15	1/4-1/2 IN.	15 LB PER 1000 SF	20 LB PER 1000 SF	15 LB PER 1000 SF	2 TONS/AC (10 LB PER 1000 SF)
2	PERMANENT SEEDING	P.R. 20 LB / AC	MAR 1 TO OCT 15	1/4-1/2 IN.	15 LB PER 1000 SF	20 LB PER 1000 SF	15 LB PER 1000 SF	2 TONS/AC (10 LB PER 1000 SF)
3	TEMPORARY SEEDING	DT 15 LB / AC	MAR 1 TO OCT 15	1/4-1/2 IN.	15 LB PER 1000 SF	20 LB PER 1000 SF	15 LB PER 1000 SF	2 TONS/AC (10 LB PER 1000 SF)
4	MULCHING	CRF 20 LB / AC	MAY 16 TO AUG 15	1/4-1/2 IN.	15 LB PER 1000 SF	20 LB PER 1000 SF	15 LB PER 1000 SF	2 TONS/AC (10 LB PER 1000 SF)
5	MULCHING	CHR 5 LB / AC	MAY 16 TO AUG 15	1/4-1/2 IN.	15 LB PER 1000 SF	20 LB PER 1000 SF	15 LB PER 1000 SF	2 TONS/AC (10 LB PER 1000 SF)

FOR ALTERNATES, REFER TO THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL - PAGES B.2-6 - B.3-2

**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

- TEMPORARY STABILIZATION  
A. SEEDING PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL TILERS, OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST BE RIPPED OR DRAGGED STRAIGHT 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.
- 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. SOILABLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).  
II. SOIL SOLIDS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRANULATED MATERIAL (GREATER THAN 30 PERCENT SIEVE #20 PLUS CLAY) TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOESS/CLAY WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SIEVE #20 PLUS CLAY) WOULD BE ACCEPTABLE.  
III. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.  
IV. 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. GRASS 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 4 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 AND MIX TO A DEPTH OF 3 TO 5 INCHES. REMOVE CHALK OR OTHER MATERIALS TO REVEAL THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDING 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 FRAGILE. SEEDING LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

- TOPSOILING 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 COARSE LOAM OR LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
- TOPSOIL, SAUNDED FILL OR OTHER MATERIALS MAY BE USED PROVIDED THEY MEET THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SAUNDED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIONS IN THE SOIL PROFILE SECTION OF THE PLAN, PUBLISHED BY USDA-NRCS.
- TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:  
I. THE EXISTING OR THE PROPOSED SUBSOIL MATERIAL IS NOT ADEQUATE TO SUPPORT PLANTS OR FURNISH CONTINUOUS SUPPLIES OF MOISTURE AND NUTRIENTS.  
II. THE SOIL IS TOO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OF FURNISH CONTINUOUS SUPPLIES OF MOISTURE TO PLANT NUTRIENTS.  
III. THE SOIL IS TOO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.  
IV. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND REVIEW.
- TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:  
A. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILTY LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED.  
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 ANOMALOUSLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.  
F. TOPSOIL MUST BE FREE OF NOxious PLANTS OR PLANT PARTS SUCH AS BERBERIS, BRASSICA, QUACK GRASS, JOHNSON GRASS, BUT SODS, POISON IVY, THISTLES OR OTHERS AS SPECIFIED.  
G. 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.

1. 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; P2O5 (PHOSPHORUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 1 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.

- APPLY 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 THAWES.
- 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 INOCULANTS AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.  
D. SOO SOO SEED MUST BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR OTHER SOILS USED FOR SUFFICIENT TIME TO HAVE ELAPSED (14 DAYS MIN.) TO PREVENT DISPERSION OF PHYTO-TOXIC MATERIALS.
- APPLICATION:  
A. DRY SEEDING: THIS INCLUDES THE USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.  
I. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARY.  
II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDING AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.  
B. DRILL OR OUTPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL. COLLECTING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDING MUST BE FINISHED PRIOR TO PLANTING.  
C. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MOIST CONDITION WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRASSING AND SEEDING PREPARATION.  
D. FERTILIZER: 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; P2O5 (PHOSPHORUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 1 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.  
II. FERTILIZER WITH FRESH 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 THE 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 OXIDE (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 88 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 HEAVILY ACIDIC OR COMPOSED OF HEAVY CLAYS, DISK 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.

- MULCHING  
A. MULCH MATERIALS (IN ORDER OF PREFERENCE)  
I. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, 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 MOIST, MOLDY, CAKED, OR EXCESSIVELY DUSTY. NOTE: TOTAL OXIDE (CALCIUM OXIDE PLUS MAGNESIUM OXIDE) MUST BE AT LEAST 50 PERCENT. B. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.  
I. WCFM IS TO BE DIED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORM SPREAD SURFACE.  
II. WCFM, INCLUDING DYE, MUST CONTAIN NO DETERMINATION 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 BUTTER-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 ELLEMENTS OR COMPOUNDS THAT CONCENTRATIONS 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 WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.  
C. ANCHORING  
I. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MUST BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED IN PREFERENCE), DEPENDING UPON THE AREA AND EROSION HAZARD.  
II. 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 FOLLOWING GUIDELINES:  
I. 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.  
II. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PRETSEPT, TERRA TACK, A TERRA TACK 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.  
III. 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.

- GENERAL SPECIFICATIONS  
A. CLASSES OF TURFGRASS SOIL MUST BE MARYLAND STATE CERTIFIED. SOIL LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.  
B. SOIL MUST BE MOISTURE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH PLUS OR MINUS 1/8 INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN POTS AND TOW OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.  
C. STANDARD SIZE SECTIONS OF SOIL MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND NEARBY TREE AND SHADE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.  
D. SOIL MUST NOT BE HARVESTED OR TRANSPORTED WHEN MOISTURE CONTENT (EXCESSIVELY) EXCEEDS 10 PERCENT.  
E. SOIL MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOIL NOT TRANSPORTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

200. SOIL INSTALLATION  
A. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOIL.  
B. LAY THE FIRST ROW OF SOIL IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROVIDE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOIL IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT ROOTS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.  
C. WHEREVER POSSIBLE, LAY SOIL WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERED JOINTS. ROLL AND TAMP PER OTHER METHODS TO SECURE THE SOIL TO PREVENT SURFACE SOIL SLOPPING. ENSURE SOIL CONTACT EXISTS BETWEEN SOIL ROOTS AND THE UNDERLYING SOIL SURFACE.  
D. WATER THE SOIL IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOIL PAD AND SOIL SURFACE BEHIND THE SOIL ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOIL WITHIN 48 HOURS.
300. MAINTENANCE  
A. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENT AS NECESSARY TO MAINTAIN MOST SOIL TO A DEPTH OF 4 INCHES. WATER SOIL DURING THE HEAT OF THE DAY TO PREVENT WILTING.  
B. AFTER THE FIRST WEEK, SOIL WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.  
C. DO NOT MOW UNTIL THE SOIL 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 COVER UNLESS OTHERWISE SPECIFIED.

PERMANENT SEEDING SUMMARY

NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)			LIME RATE
					N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	
0	COOL SEASON GRASS (PERMANENT)	T.F. 60 LB / AC	MAR 1 TO OCT 15	1/4-1/2 IN.	45 LB/AC (1000 SF)	90 LB/AC (1000 SF)	60 LB/AC (1000 SF)	2 TONS/AC (10 LB PER 1000 SF)
1	WARM SEASON GRASS (PERMANENT)	K.B. 40 LB / AC	AUG 15 TO OCT 15	1/4-1/2 IN.	15 LB PER 1000 SF	20 LB PER 1000 SF	15 LB PER 1000 SF	2 TONS/AC (10 LB PER 1000 SF)
2	PERMANENT SEEDING	P.R. 20 LB / AC	MAR 1 TO OCT 15	1/4-1/2 IN.	15 LB PER 1000 SF	20 LB PER 1000 SF	15 LB PER 1000 SF	2 TONS/AC (10 LB PER 1000 SF)
3	TEMPORARY SEEDING	DT 15 LB / AC	MAR 1 TO OCT 15	1/4-1/2 IN.	15 LB PER 1000 SF	20 LB PER 1000 SF	15 LB PER 1000 SF	2 TONS/AC (10 LB PER 1000 SF)
4	MULCHING	CRF 20 LB / AC	MAY 16 TO AUG 15	1/4-1/2 IN.	15 LB PER 1000 SF	20 LB PER 1000 SF	15 LB PER 1000 SF	2 TONS/AC (10 LB PER 1000 SF)
5	MULCHING	CHR 5 LB / AC	MAY 16 TO AUG 15	1/4-1/2 IN.	15 LB PER 1000 SF	20 LB PER 1000 SF	15 LB PER 1000 SF	2 TONS/AC (10 LB PER 1000 SF)

FOR ALTERNATES, REFER TO THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL - PAGES B.2-6 - B.3-2

**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.

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

**DEFINITION**  
THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

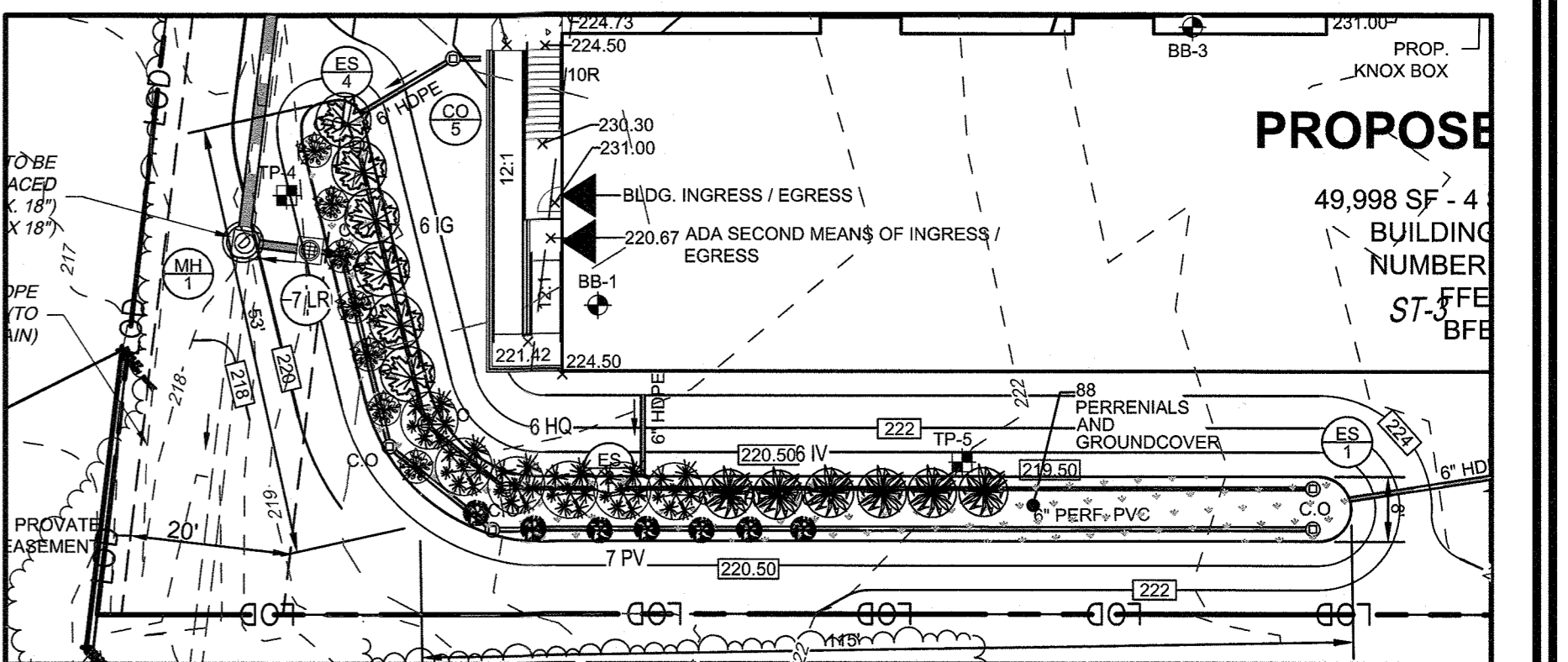
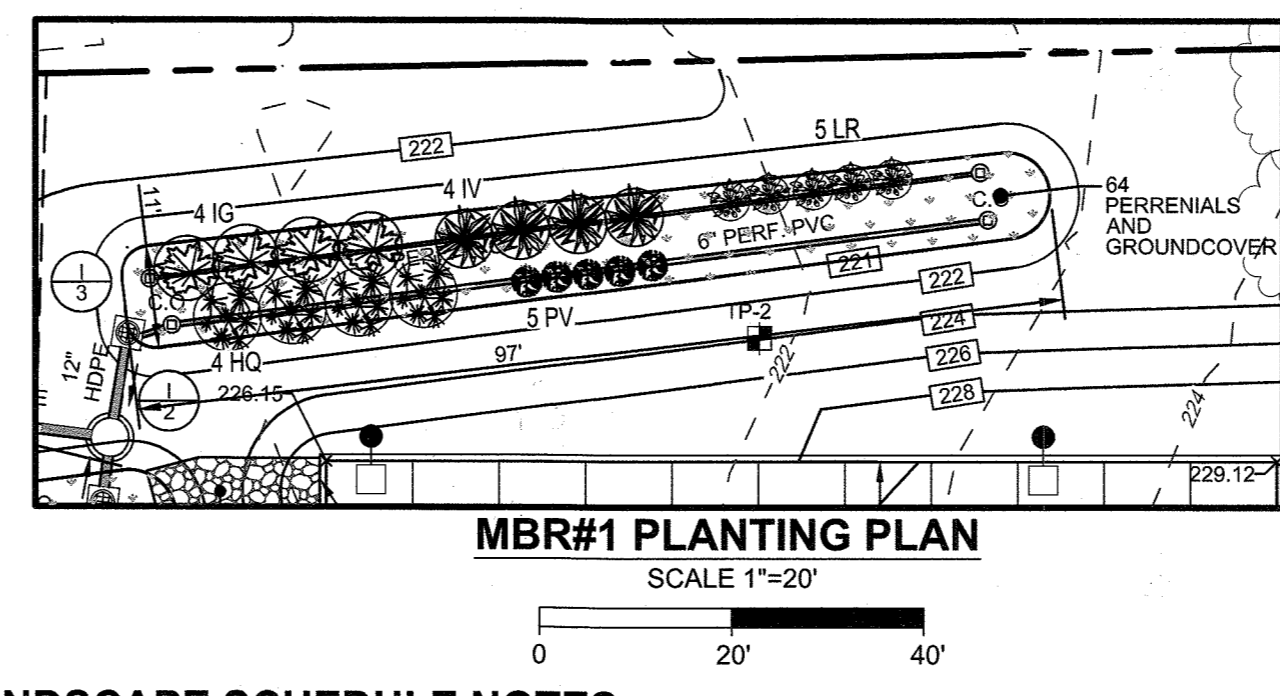
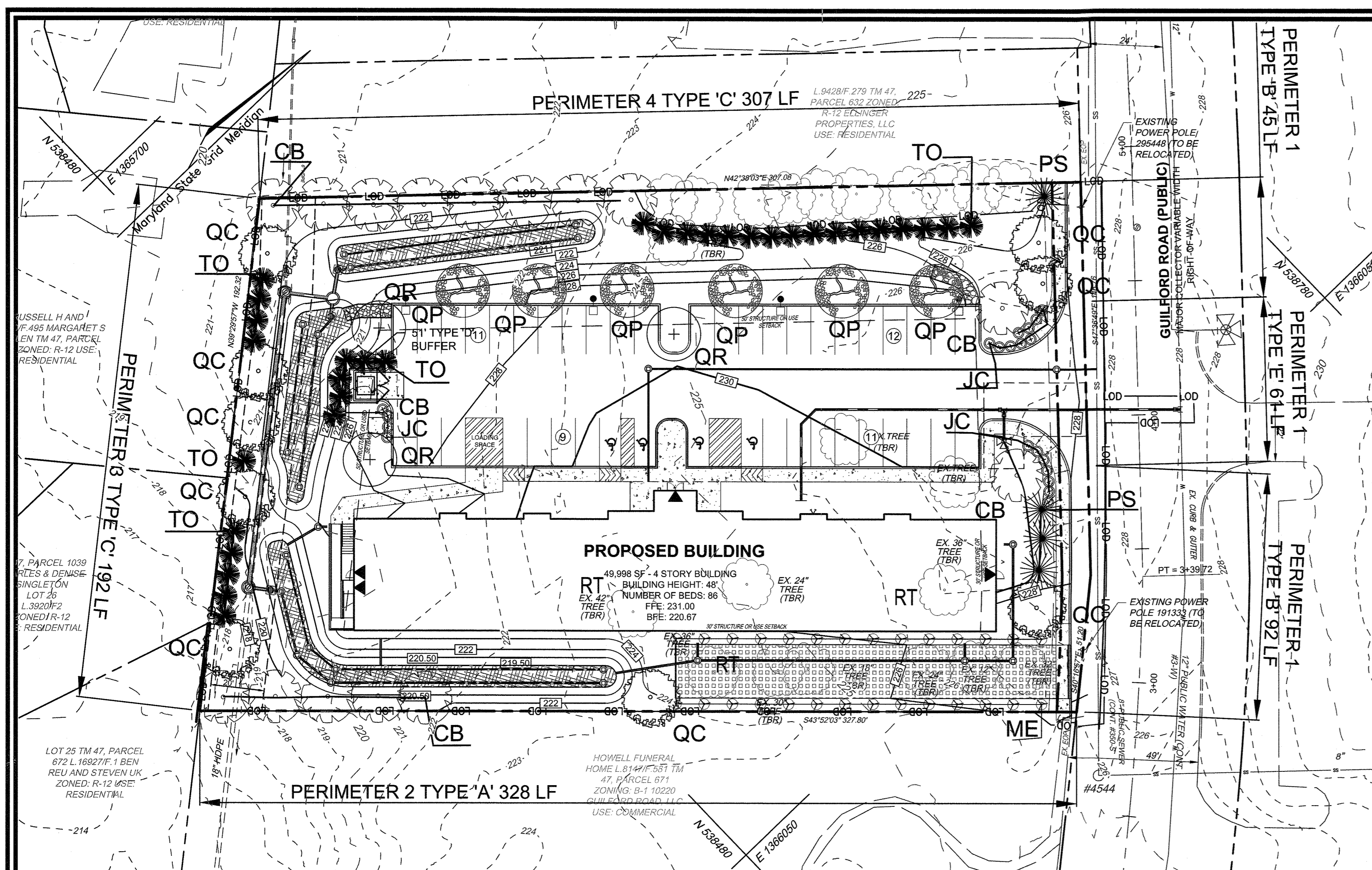
**PURPOSE**  
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

**CONDITIONS WHERE PRACTICE APPLIES**  
TO THE SURFACE OF ALL PERMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

**CRITERIA**  
A. SEEDING

- ORIGINAL SOIL 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 REGARD





**LANDSCAPE SCHEDULE NOTES:**

1. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAS 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.

**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 BERRIS, 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, 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. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
5. 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.
6. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

**GENERAL NOTES:**

1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
2. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$16,620 FOR 33 SHADE TREES @ \$300.00 EACH, 36 EVERGREEN TREES @ \$150.00 EACH AND 44 SHRUBS @ \$30.00 EACH. 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.
3. THERE ARE NO BURIAL GROUNDS, CEMETERIES, OR HISTORIC STRUCTURES LOCATED ON THIS PROPERTY.
4. NO LANDSCAPING TO BE INSTALLED WITHIN ANY PUBLIC EASEMENT FOR WATER, SEWER, OR STORMWATER.
5. ANY EXISTING STREET TREES DAMAGED OR DESTROYED DURING CONSTRUCTION WILL BE REPLACED BY THE CONTRACTOR.
6. 0.20-ACRE OF FOREST CONSERVATION OBLIGATION FOR THIS PROJECT WILL BE SATISFIED BY OFF-SITE PLANTING RETENTION, FOREST BANK, CANTAL CREEK SDP 14-031.
7. THIS PROJECT IS SUBJECT TO WP-19-114 ALTERNATIVE COMPLIANCE OF SECTION 16.1205(g)(7) AND (10), APPROVED ON JUNE 26, 2019 FOR THE REMOVAL OF THREE (3) SPECIMEN TREES.

**"MICRO-BIORETENTION/RAINGARDEN" PLANTING SCHEDULE NOTES:**

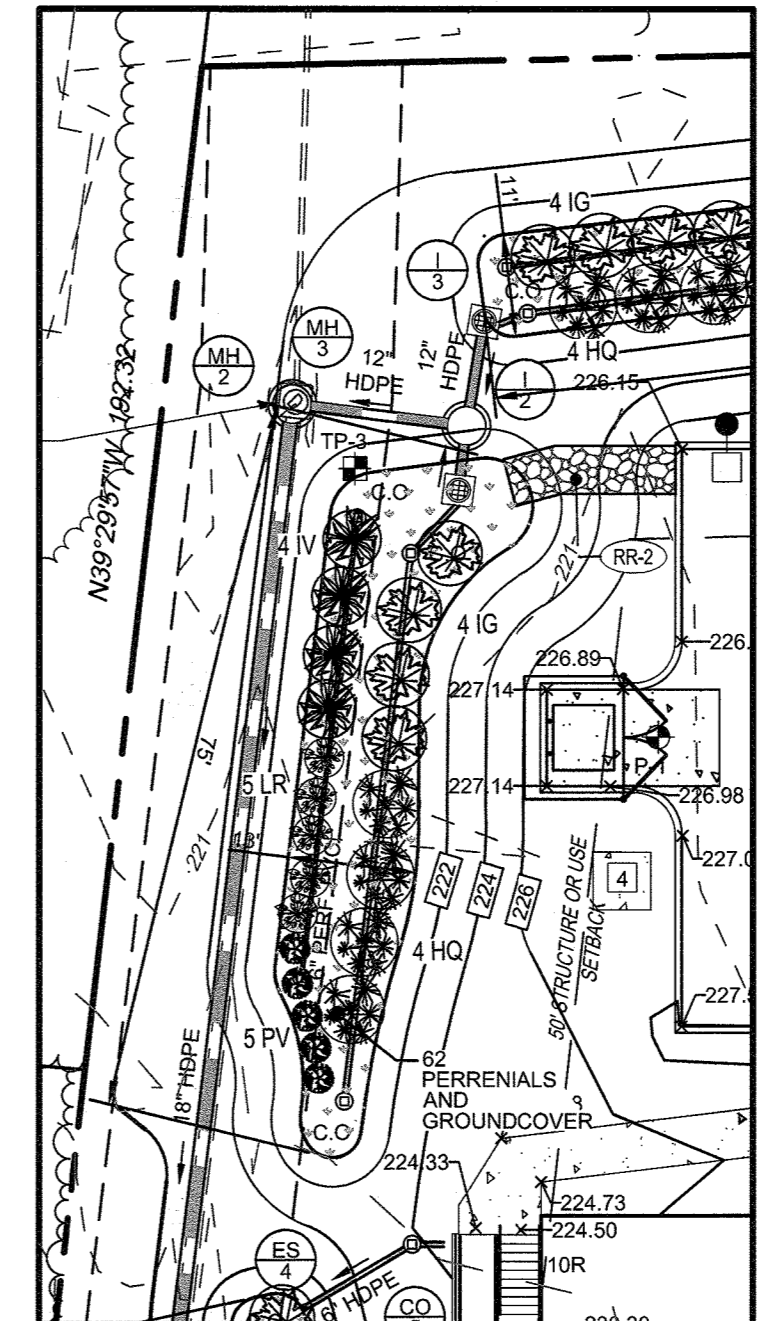
1. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAS SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HOWARD COUNTY PLANTING SPECIFICATIONS.
2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
3. FINAL LOCATION 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 ESDV SUMMARY.
6. FILTER AREA SHALL BE SOAK COVERED BY PLANTING AT FULL GROWTH.

**BIORETENTION PLANTING SCHEDULE (SHRUB/ORNAMENTAL GRASSES)**

LEGEND KEY	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
IG	14	ILEX GLABRA 'SHAMROCK' INKBERRY HOLLEY	1 GALLON	-
IV	14	ITEA VIRGINICA 'HENRY'S GARNETT' VIRGINIA SWEETSPIRE	1 GALLON	-
HQ	14	HYDRANGEA QUERCIFOLIA OAKLEAF HYDRANGEA	1 GALLON	-
LR	17	LEUCOTHEA RACEMOSA FETTERBUSH	1 GAL.	-
PV	17	PANICUM VIRGATUM SWITCHGRASS	1 GAL.	-

**BIORETENTION PERENNIALS/GROUNDCOVER PLANTING SCHEDULE**

LEGEND	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
107		BAPTISIA AUSTRALIS FALSE INDIGO	4" POT	12"-15" O.C. FOR SIDES AND BOTTOM OF MBR. MIX ALL VARIETIES IN A NATURALIZED RANDOM PATTERN THROUGHOUT. PLANT IN GROUPS OF NO LESS THAN 9 PLANTS PER CLUMP.
107		ACORUS GRAMINEUS 'OGON' GOLDEN VARIEGATED SWEET FLAG	1 QT.	



**FOREST CONSERVATION WORKSHEET**  
Version 1.0

Project: 10210 Guilford Road  
Date: June 7, 2018

**NET TRACT AREA**

Area	Acres
A. Total tract area	1.4
B. Area within 100 Year Floodplain	0
C. Area of existing impervious surface/unchanged use	0
D. Net Tract Area	1.4

**LAND USE CATEGORY:**

Category	Percentage
E. Afforestation Threshold	15
F. Conservation Threshold	20

**EXISTING FOREST COVER:**

Category	Percentage
G. Existing forest cover (excluding floodplain)	0
H. Area of forest above afforestation threshold	0
I. Area of forest above conservation threshold	0

**BREAK-EVEN POINT:**

Category	Value
J. Forest retention above threshold with no mitigation	NA
K. Clearing permitted without mitigation	Break-Even Point

**PROPOSED FOREST CLEARING**

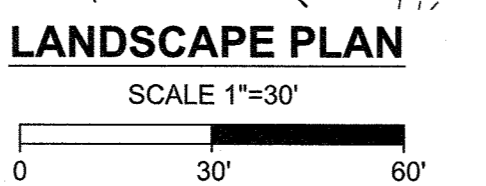
Category	Value
L. Total area of forest to be Cleared or Retained Outside FCE	0
M. Total area of forest to be Retained in FCE	0

**PLANTING REQUIREMENTS**

Category	Value
N. Reforestation for clearing above Conservation Threshold	0
P. Reforestation for clearing below Conservation Threshold	0
Q. Credit for retention above conservation threshold	0
R. Total reforestation required	0
S. Total afforestation required	0.2
T. Total reforestation and afforestation required	0.2

**Specimen Tree Chart**

Key (#)	Species	Size (in. dbh)	CRZ (feet radius)	Comments
1	Willow oak	36	54	Good condition, to be removed
2	Loblolly pine	34	51	Good condition, to be removed
3	Willow oak	46.5	69.75	Good condition, to be removed



**DUMPSTER AREA LANDSCAPING**

Category	Quantity
LINEAR FEET OF LOADING AREA	51'
NUMBER OF TREES REQUIRED TYPE D BUFFER	1
EVERGREEN TREES 1:10	6
NUMBER OF TREES PROVIDED	6
SHADE TREES (2:1 SUBSTITUTION)	6
SHRUBS (10:1 SUBSTITUTION)	6

**SCHEDULE B PARKING LOT INTERNAL LANDSCAPING**

Category	Quantity
NUMBER OF PROPOSED PARKING SPACES	43
NUMBER OF TREES REQUIRED (1/20 SPACES)	2
NUMBER OF TREES PROVIDED	2
SHADE TREES	2
EVERGREEN TREES (2:1 SUBSTITUTION)	2
SHRUBS (10:1 SUBSTITUTION)	2

**SPECIMEN TREE MITIGATION**

Category	Quantity
NUMBER OF SPECIMEN TREES TO BE REMOVED	3
NUMBER OF TREES REQUIRED (2 x SPECIMEN TREES TBR)	6
NUMBER OF TREES PROVIDED	6
SHADE TREES (3" CAL MIN.)	6
EVERGREEN TREES (2:1 SUBSTITUTION)	6

**"FIRE LANE" ACCESS SCREENING TABLE**

Category	Quantity
NUMBER OF TREES PROVIDED	28
SHADE TREES	28
EVERGREEN TREES (2:1 SUBSTITUTION)	28
SHRUBS (10:1 SUBSTITUTION)	28

DPW'S POLICIES COVERING 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 ARE DEFINED AS FOLLOWS:

Zone	Distance from 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

**SCHEDULE 'A' PERIMETER LANDSCAPE EDGE**

Category	Adjacent to Roadways	Adjacent to Perimeter Properties	Total
PERIMETER/FRONTAGE DESIGNATION	B	E	2
LANDSCAPE TYPE	A	C	4
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	137'	61'	328'
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	1:50	3	1:40
SHADE TREES	3	2	6
EVERGREEN TREES	1:40	4	1:4
NUMBER OF PLANTS PROVIDED	3	2	6
SHADE TREES	3	2	6
EVERGREEN TREES	1:40	4	1:4
OTHER TREES (2:1 SUBSTITUTION)	-	-	-
SHRUBS (10:1 SUBSTITUTION)	-	-	-
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED	-	-	-

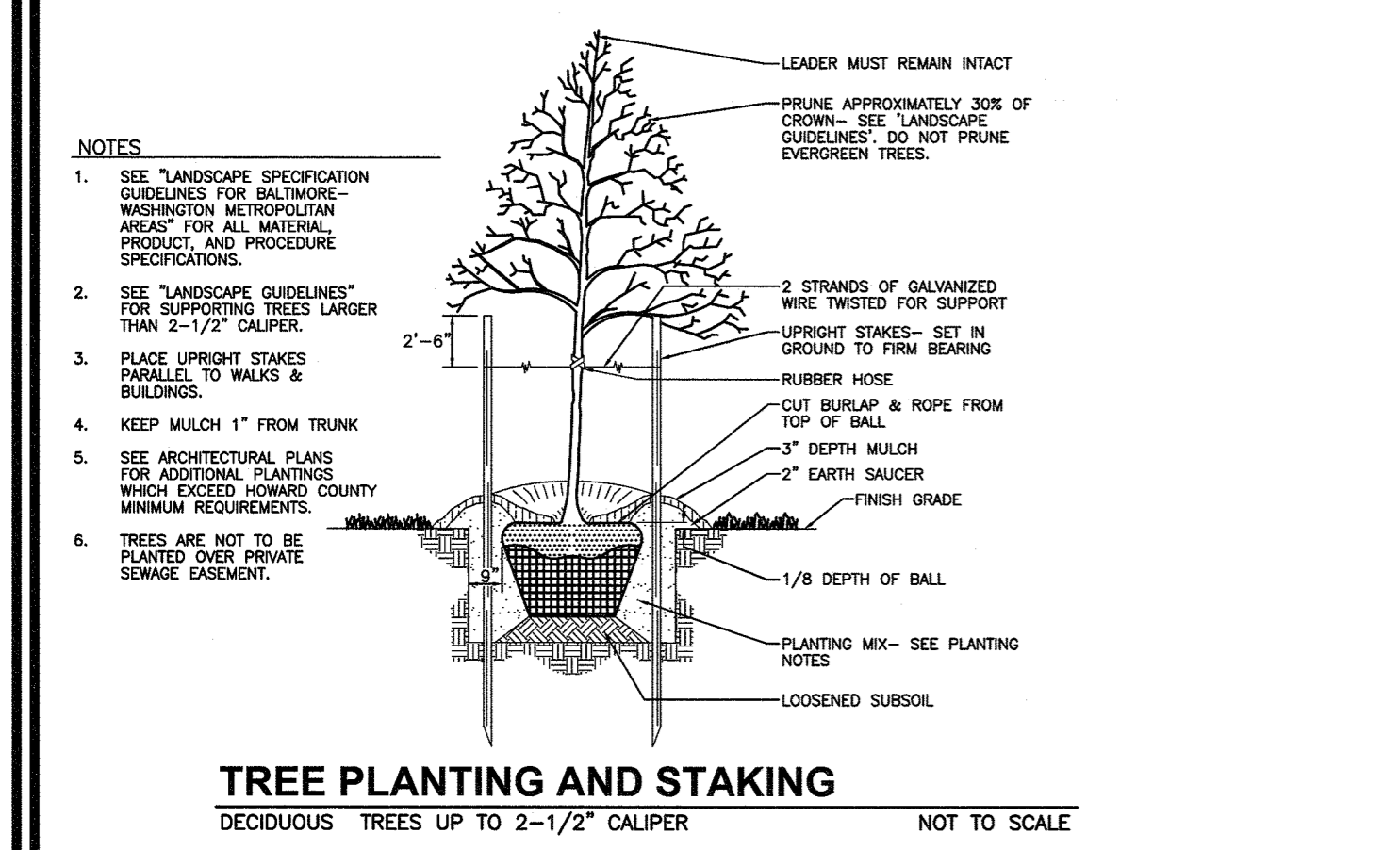
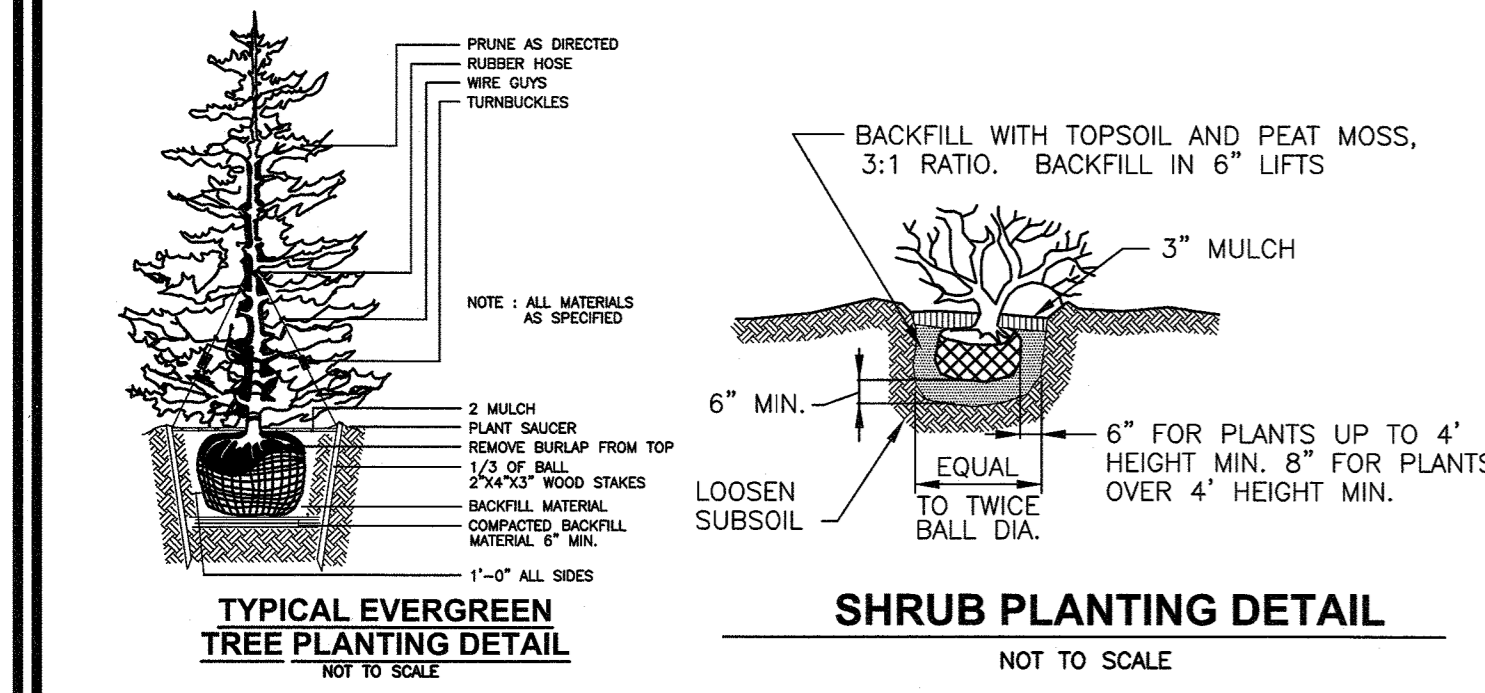
**LANDSCAPE SCHEDULE - REQUIRED PLANTING**

SYMB	KEY	QUAN	BOTANICAL NAME	SIZE	CAT
QC	9	9	QUERCUS OCCIDENSA SCARLET OAK	2.5"-3" CAL	B & B
PS	4	4	PINUS STROBUS EASTERN WHITE PINE	6-8" HGT	B & B
TO	32	32	THUJA OCCIDENTALS 'GREEN EMERALD' WHITE CEDAR	6-8" HGT	B & B
QR	2	2	QUERCUS RUBRA NORTHERN RED OAK	2.5"-3" CAL	B & B
CB	16	16	CARPINUS BETULUS 'FASTIGIATA'	2.5"-3" CAL	B & B
JC	16	16	JUNIPERUS CHINENSIS COMPACT PRITZER JUNIPER	2'-2-1/2' HGT	B & B
ME	28	28	ELIOMYRUS HAITSIANUS MANHATTAN EUCONYMIUS	1 GAL.	B & B
QP	6	6	QUERCUS PALUSTRIS PIN OAK	3" CAL	B & B
TOTAL		113			

**SPECIMEN TREE - REPLACEMENT CALCULATIONS**

NO. TO BE REMOVED	NO. REPLACEMENT REQUIRED	NO. PROVIDED
2	8	8

REFER TO WP 19-064 - 3" CALIPER NATIVE SHADE TREES REQUIRED

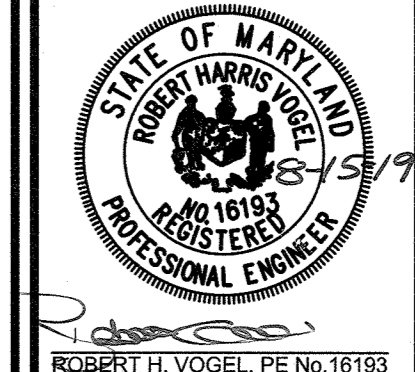


APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 9-26-19

DEVELOPER'S/BUILDER'S CERTIFICATE  
 I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.  
 SIGNATURE OF DEVELOPER: [Signature] DATE: 8-15-19

**SITE DEVELOPMENT PLAN**  
**LANDSCAPE & FOREST CONSERVATION PLAN, NOTES AND DETAILS**  
 GUILFORD ASSISTED LIVING  
 10210 GUILFORD ROAD  
 HOWARD COUNTY, MARYLAND  
 ZONED: CCT PARCEL 67  
 TAX MAP 47 BLOCK 6  
 6TH ELECTION DISTRICT

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 3300 NORTH RIDGE ROAD TEL: 410.461.7666  
 SUITE 110 FAX: 410.461.8961  
 ELLICOTT CITY, MD 21043



DESIGN BY: JPR  
 DRAWN BY: JPR  
 CHECKED BY: RHV  
 DATE: DECEMBER 2018  
 SCALE: AS SHOWN  
 W.O. NO.: 18-23

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: 09-27-2020



L 9428/F 279 TM 47,  
PARCEL 632 ZONED:  
R-12 ELLINGER  
PROPERTIES, LLC  
USE: RESIDENTIAL

RUSSELL H AND  
L 1080/F 455 MARGARET S  
NEWLEN TM 47, PARCEL  
666 ZONED: R-12 USE:  
RESIDENTIAL

TM 47, PARCEL 1038  
CHARLES & DENISE  
SINGLETON  
LOT 28  
L 300/F 2  
ZONED: R-12  
USE: RESIDENTIAL

LOT 25 TM 47, PARCEL  
672 L 1692/F 1 BEN  
REU AND STEVEN LUK  
ZONED: R-12 USE:  
RESIDENTIAL

**PROPOSED BUILDING**

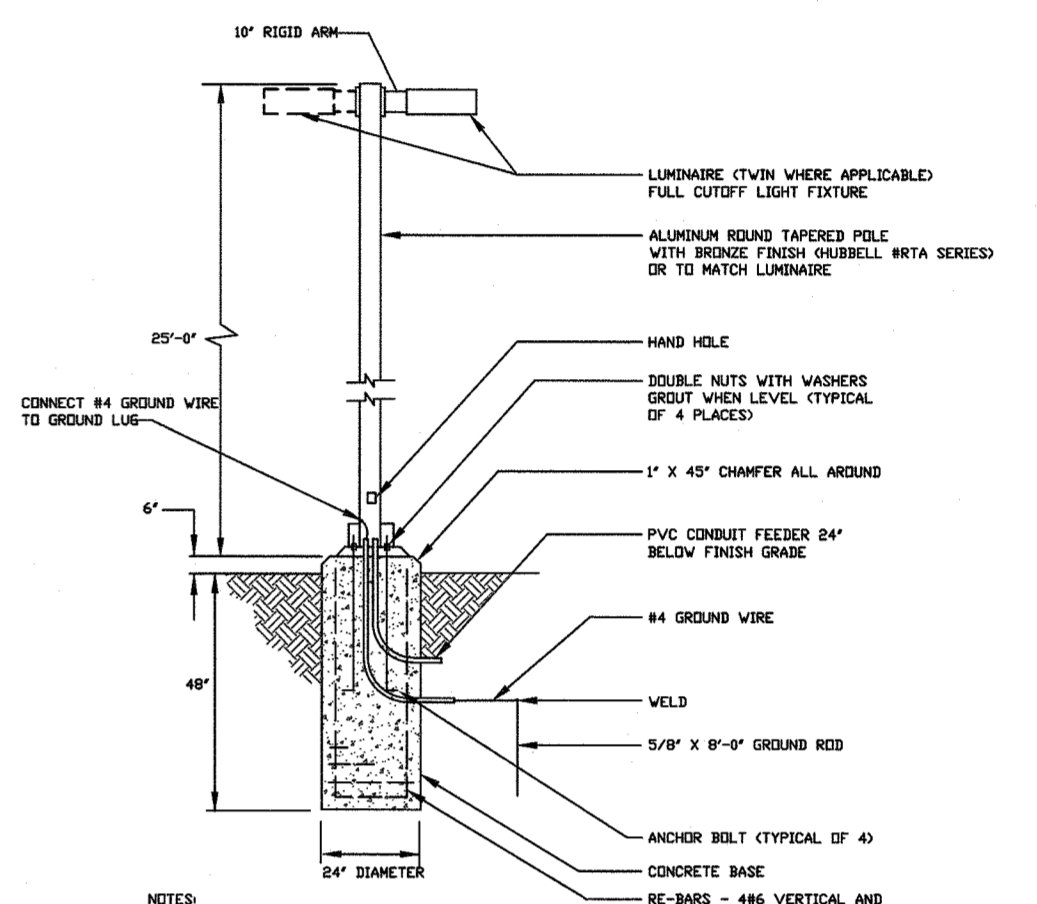
49,998 SF - 4 STORY BUILDING  
BUILDING HEIGHT: 48'  
NUMBER OF BEDS: 86  
FFE: 231.00  
BFE: 220.67

**PHOTOMETRIC PLAN**

SCALE 1"=20'  
0 20' 40'

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
□	A	2	Lithonia Lighting	DSX0 LED P3 40K T4M MVOLT HS	One DSX0 LED P3 40K T4M MVOLT with houseshield on pole and base for 25 ft. mounting height	LED	1	DSX0_LED_P3_40K_T4 M_MVOLT_HS.ies	6417	0.9	71
□	B	1	Lithonia Lighting	DSX0 LED P3 40K RCCO MVOLT	One DSX0 LED P3 40K RCCO MVOLT with pole and base for 25 ft. mounting height	LED	1	DSX0_LED_P3_40K_RC CO_MVOLT.ies	5153	0.9	71
□	C	1	Lithonia Lighting	DSX0 LED P3 40K LCCO MVOLT	One DSX0 LED P3 40K LCCO MVOLT with pole and base for 25 ft. mounting height	LED	1	DSX0_LED_P3_40K_LC CO_MVOLT.ies	5153	0.9	71

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
1. On Property Line	+	0.0 fc	0.0 fc	0.0 fc	N/A	N/A
2. Parking Lot	X	1.2 fc	3.1 fc	0.2 fc	15.5:1	6.0:1
Calc. Zone #2	+	0.3 fc	3.1 fc	0.0 fc	N/A	N/A



NOTES:  
1. LIGHT TO BE 4IN ENTABLATURE RECTILINEAR WITH 800 WATT FIXTURE.  
2. LIGHTING DETAIL FOR INFORMATIONAL PURPOSES ONLY. SEE ELECTRICAL AND ARCHITECTURAL PLANS FOR ACTUAL LIGHTING DETAILS AND SPECIFICATIONS.

**POLE BASE DETAIL**  
(NOT TO SCALE)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*[Signature]*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 8-29-19

**DEVELOPER'S/BUILDER'S CERTIFICATE**  
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DATE: 9-26-19  
DATE: 8-15-19

NO. \_\_\_\_\_ REVISION \_\_\_\_\_ DATE \_\_\_\_\_

**SITE DEVELOPMENT PLAN**  
**PHOTOMETRIC PLAN**

GUILFORD ASSISTED LIVING  
10210 GUILFORD ROAD  
TAX MAP 47 BLOCK 6  
6TH ELECTION DISTRICT

ZONED: CCT  
PARCEL 67  
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DESIGN BY: JPR  
DRAWN BY: JPR  
CHECKED BY: RHV  
DATE: DECEMBER 2018  
SCALE: AS SHOWN  
W.O. NO.: 16-23

11 SHEET OF 11

ROBERT H. VOGEL, PE No. 16193