

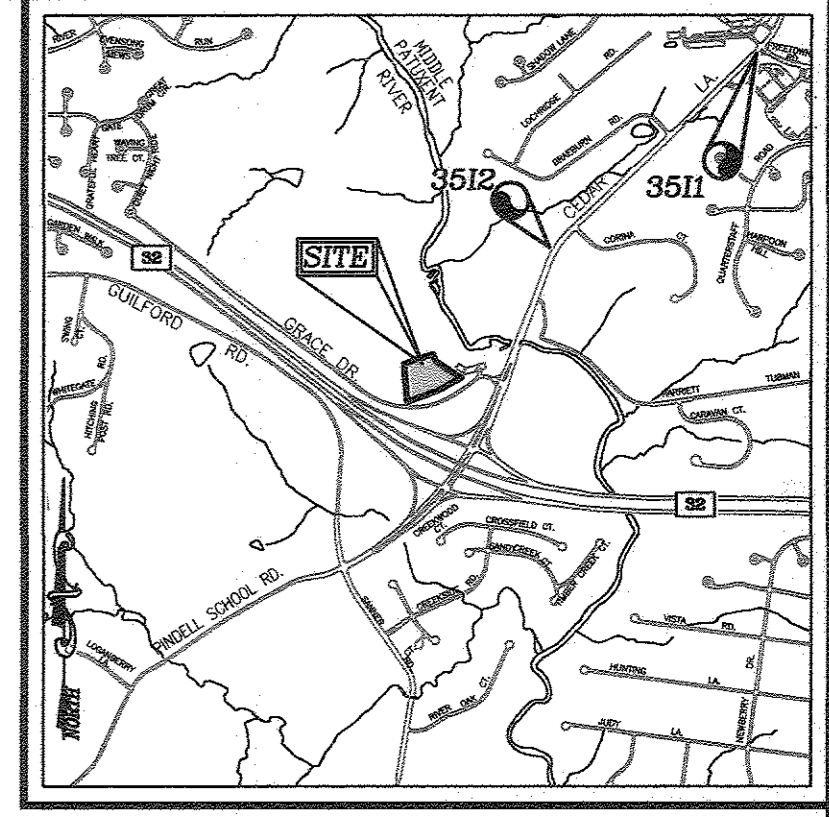
GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY STANDARDS AND SPECIFICATIONS. ALL WORK AND MATERIALS SHALL COMPLY WITH O.S.H.A. STANDARDS.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THIS DRAWING:
 - MISS UTILITY: 1-800-257-7777
 - VERIZON: 1-800-743-0033
 - BUREAU OF UTILITIES: 410-312-4900
 - A&E: 1-800-252-1133
 - B.G.A.E. (CONSTRUCTION SERVICES): 410-637-8713
 - B.G.A.E. (EMERGENCY): 410-885-0123
 - STATE HIGHWAY ADMINISTRATION: 410-531-5533
 - COLONIAL PIPELINE CO.: 410-795-1390
- SITE ANALYSIS:
 - AREA OF PARCEL: 3.84 AC.
 - PRESENT ZONING: R-1
 - USE OF STRUCTURE: OFFICE BUILDING AND RESTAURANT
 - BUILDING FLOOR AREA:
 - LOWER LEVEL (PARKING 11,875 SF + ACCESSORY 3,344 SF): 15,219 SF
 - 1ST FLOOR AREA: 15,178 SF (9,950 SF RESTAURANT + 5,228 SF OFFICE)
 - 2ND FLOOR AREA: 400 SF
 - 3RD FLOOR AREA: 15,400 SF
 - BUILDING WITH LOWER LEVEL: 61,603 SF
 - BUILDING WITHOUT LOWER LEVEL (PARKING AREA (11,875 SF)): 49,322 SF
 - TOTAL PARKING LOT AND BUILDING COVERAGE: 78,408 SF (1.80 AC. OR 46.99% OF GROSS AREA)
 - AREA OF LANDSCAPE ISLAND: 2,815.21/0.06 AC. OR 1.68% OF GROSS AREA
 - LIMIT OF DISTURBED AREA: 59,283.53 SF/1.36 AC
 - CUT: 1400 CY FILL: 1400 CY
- PROJECT BACKGROUND:
 - LOCATION: COLUMBIA, MD.; TAX MAP 35, BLOCK 22, PARCEL 86
 - ZONING: R-1
 - SUBDIVISION: N/A
 - SECTION/AREA: N/A
 - SITE AREA: 3.84 AC.
 - DPZ REFERENCES: BA-04-02706V, SDP-06-102 (VOIDED), PLAT 19441-19442, F-07-092, WP-16-040, WP-17-004, ECP-15-046, BA-14-016
- 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.
- ANY DAMAGE TO PUBLIC RIGHT-OF-WAY, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY, AND THE MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- EXISTING UTILITIES LOCATED FROM GRADE CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND AND SEWER EXTENSION PLANS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTOR'S 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.
- ALL REINFORCED CONCRETE FOR STORM DRAIN STRUCTURES SHALL HAVE A MINIMUM OF 28 DAYS STRENGTH OF 3,500 P.S.I.
- TRAFFIC CONTROL DEVICES:
 - A. THE R-1 SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
 - B. THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2400) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
 - C. ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD).
 - D. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT OF WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED SQUARE TUBE POST (14 GAUGE) INSERTED IN TO A 2-1/2" GALVANIZED STEEL, PERFORATED SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- ESTIMATES OF EARTHWORK QUANTITIES ARE PROVIDED SOLELY FOR THE PURPOSE OF CALCULATING FEES.
- 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.
- COORDINATES AND ELEVATIONS ARE BASED ON MARYLAND COORDINATE SYSTEM - NAD83(1991) AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 3511 AND 3512.
- THE PROPERTY LINES SHOWN HEREON IS BASED ON A BOUNDARY SURVEY PERFORMED BY ROBERT H. VOGEL ENGINEERING, INC., DATED MAY 2005.
- THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON A FIELD TOPOGRAPHICAL SURVEY WITH TWO FOOT CONTOUR INTERVALS PERFORMED BY ROBERT H. VOGEL ENGINEERING, INC., DATED MARCH 2015, JULY 2005, AND SITE DEVELOPMENT PLAN SDP-06-102.
- A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- ALL PAVING TO BE MINIMUM HOWARD COUNTY STANDARD DETAIL P-2 UNLESS OTHERWISE NOTED. (SEE DETAILS, SHEET 3). THE GEOTECHNICAL ENGINEER TO CONFIRM PAVING SECTION PRIOR TO CONSTRUCTION.
- ALL CURB AND GUTTER TO BE HOWARD COUNTY STANDARD DETAIL 3.01 UNLESS OTHERWISE NOTED (SEE DETAIL ON SHEET 3).
- CONTRACTOR RESPONSIBLE FOR CONSTRUCTING ALL HANDICAP RAMPS AND HANDICAP ACCESS IN ACCORDANCE WITH CURRENT ADA REQUIREMENTS.
- WHERE DRAINAGE FLOWS AWAY FROM CURB, CONTRACTOR TO REVERSE THE GUTTER PAN.
- ALL ELEVATIONS ARE TO FLOWLINE/BOTTOM OF CURB UNLESS OTHERWISE NOTED.
- ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- PUBLIC WATER AND SEWER AVAILABLE THROUGH CONTRACT 34-4410-D WHICH HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS. THIS PROPERTY IS LOCATED IN THE PIKEWOOD DRAINAGE AREA.
- STORMWATER MANAGEMENT IS PROVIDED BY AN EXISTING UNDERGROUND DETENTION FACILITY (SDP-06-102), BIORETENTION FACILITIES (M-6), PERVIOUS PAVING (A-2), AND A STORM FILTER (STRUCTURAL PRACTICE) DEVICE.
- ALL EXTERIOR LIGHTING TO CONFORM TO SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS. ALL LIGHTING SHALL BE DIRECTED DOWNWARD AND AWAY FROM THE NEIGHBORING PROPERTIES. (DETAIL ON SHEET 3)
- GEOTECHNICAL REPORT PREPARED BY HERBST BOSSON & ASSOCIATES, DATED DECEMBER 7, 2005. TEST PITS PERFORMED SEPTEMBER 1, 2015 AND EXAMINED BY ROBERT H. VOGEL ENGINEERING, INC.
- ANY EXISTING STREET TREES DAMAGED OR DESTROYED DURING CONSTRUCTION WILL BE REPLACED BY THE CONTRACTOR.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
- THERE ARE NO BURIED GROUNDS, CEMETERIES, OR HISTORIC STRUCTURES LOCATED ON THIS PROPERTY.
- TRAFFIC STUDY PREPARED BY THE TRAFFIC GROUP DATED APRIL 22, 2015 AND APPROVED 07/20/15.
- ALL STORMWATER PIPE BEDDING IS TO BE CLASS "C", AS REQUIRED BY AASHTO-180.
- BUILDING TO HAVE INSIDE WATER METER SETTINGS.
- THE FOREST CONSERVATION OBLIGATIONS WERE FERVOUSLY FULFILLED BY THE RETENTION OF 0.61 ACRES OF FOREST, BY THE REFORESTATION OF 0.39 ACRES OF FOREST, AND BY A FEE-IN-LIEU PAYMENT IN THE AMOUNT OF \$22,215.80 FOR THE REMAINING 0.68 ACRES OF FOREST REQUIRED (REFERENCE VOIDED SDP-06-102, BALTIMORE KOREAN SEVENTH DAY ADVENTIST CHURCH). FINANCIAL SURETY FOR THE REQUIRED REFORESTATION IN THE AMOUNT OF \$8,494.20 WILL BE POSTED AS PART OF THE DEVELOPERS AGREEMENT UNDER THIS SITE DEVELOPMENT PLAN. NO FURTHER OBLIGATIONS ARE REQUIRED WITH THIS PLAN.
- NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS AND FOREST CONSERVATION LASEMENT AREA.
- THERE ARE NO WETLAND OR FLOODPLAINS ON SITE. THERE IS 0.07 ACRES OF 15% STEEP SLOPES ON SITE.
- THE SUBJECT PROPERTY IS ZONED FOR PER USES OF THE COMPREHENSIVE ZONING PLAN.
- THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- REFERENCE BA-14-016V, APPROVED 07/24/14, FOR SIX VARIANCES FOR A RESTAURANT STRUCTURE, RETAINING WALL, AND PARKING IN A POR ZONING DISTRICT. THE VARIANCES FOR THIS PROJECT ARE AS FOLLOWS:
 - A REDUCTION IN THE 100-FOOT STRUCTURE AND USE SETBACK TO 52.67 FEET FOR THE PROPOSED BUILDING.
 - A REDUCTION IN THE 100-FOOT STRUCTURE AND USE SETBACK TO 51.17 FEET FOR PARKING AREA.
 - A REDUCTION IN THE 75-FOOT STRUCTURE AND USE SETBACK TO 42.90 FOR A PROPOSED RETAINING WALL, FROM THE WESTERN PROPERTY LINE (ADJACENT TO A RESIDENTIAL ZONING DISTRICT).
 - A REDUCTION IN THE 100-FOOT STRUCTURE AND USE SETBACK TO 78.67 FOR THE PROPOSED BUILDING.
 - A REDUCTION IN THE 100-FOOT STRUCTURE AND USE SETBACK TO 51.46 FOR A PARKING AREA, FROM THE SOUTHERN PROPERTY LINE (ADJACENT TO A PUBLIC STREET ROW).
 - A REDUCTION IN THE 30-FOOT STRUCTURE AND USE SETBACK TO 6.97 FOR A PARKING AREA.
- APPROVAL SUBJECT TO:
 - THE VARIANCES SHALL APPLY ONLY TO THE USES AND STRUCTURES AS DESCRIBED IN THE PETITION AS DEPICTED ON THE VARIANCE PLAN AND NOT TO ANY OTHER ACTIVITIES, USES, STRUCTURES, OR ADDITIONS ON THE PROPERTY.
- BUILDING HEIGHT COMPUTATION:
 - LOWEST GRADE ADJACENT TO BUILDING: 335.09
 - HIGHEST GRADE ADJACENT TO BUILDING: 346.26
 - ROOF ELEVATION: 390.25
 - MEAN ELEVATION ADJACENT TO BUILDING: 340.67
 - BUILDING HEIGHT: 49.58' IF MAXIMUM HEIGHT WITH MINIMUM SETBACK: 50.00'
- A KNOX BOX IS REQUIRED TO BE PLACED ON THE FRONT OF THE BUILDING. IT SHALL BE PLACED TO THE RIGHT OF THE MAIN ENTRANCE AT A RANGE OF 4'-5' IN HEIGHT AND NO MORE THAN 6' LATERSALLY FROM THE DOOR. ITS LOCATION IS SHOWN ON THESE PLANS. THE BOX SHALL BE ELECTRONICALLY SUPERVISED TO NOTIFY THE OWNER THAT IT IS BEING ACCESSED (INTEGRATED WITH THE FIRE ALARM SYSTEM).
- THE EXISTING 2 - 2.9 FT. HIGH TIERED RETAINING WALLS ARE NOT CONSIDERED STRUCTURES (SDP-06-102).
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006), SECTION 6.5.A. A MINIMUM OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- REFERENCE BA-04-02706V, A CONDITIONAL USE FOR A STRUCTURE USED PRIMARILY FOR RELIGIOUS ACTIVITIES, AND A VARIANCE TO REDUCE THE REQUIRED 75' USE SETBACK FROM AN EXTERNAL PUBLIC STREET RIGHT-OF-WAY TO ZERO FEET FOR A PROPOSED PARKING LOT IN AN R-1D (RESIDENTIAL, ENVIRONMENTAL DEVELOPMENT) ZONING DISTRICT, FILED PURSUANT TO SECTIONS 131.14.38 AND 130.0.5 OF THE HOWARD COUNTY ZONING REGULATIONS, APPROVED FEB 01, 2005. APPROVAL SUBJECT TO THE FOLLOWING CONDITIONS:
 - THE PETITIONER WILL INSTALL A DECELERATION LANE TO THE EAST OF THE PROPOSED DRIVEWAY. BUILDING PERMIT MUST BE OBTAINING WITHIN 2 YEARS (FEBRUARY 1, 2007) AND SUBSTANTIAL CONSTRUCTION COMPLETED WITHIN THREE YEARS (FEBRUARY 1, 2008) FROM THE DATE OF THE APPROVAL OF THE CONDITIONAL USE. ** ON JANUARY 17, 2007, THE TWO-YEAR TIME PERIOD FOR OBTAINING A BUILDING PERMIT WAS EXTENDED TO 2/1/2010 AND THE THREE-YEAR TIME PERIOD FOR COMPLETION OF SUBSTANTIAL CONSTRUCTION HAS BEEN EXTENDED TO FEBRUARY 1, 2011.
- THERE ARE NO SPECIMEN OR CHAMPION TREES WITHIN THE LOD.
- THE SUBJECT SITE WAS PARTIALLY CONSTRUCTED IN ACCORDANCE WITH THE APPROVED SITE DEVELOPMENT PLAN (REFERENCE VOIDED SDP-06-102, BALTIMORE KOREAN SEVENTH DAY ADVENTIST CHURCH). THE SIGHT DISTANCE FOR THIS PROJECT WAS PREVIOUSLY APPROVED WITH SDP-08-102, AT THE SAME LOCATION SHOWN ON THIS PLAN.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPERS AGREEMENT WITH THIS PLAN. IN THE AMOUNT OF \$12,720.00 FOR 24 SHADE TREES, 22 EVERGREEN TREES, AND 74 SHRUBS.
- FINANCIAL SURETY FOR THE REQUIRED STREET TREE PLANTING FOR THIS PROJECT HAS BEEN POSTED AS PART OF THE DEVELOPERS AGREEMENT WITH THIS PLAN. IN THE AMOUNT OF \$4,500.00 FOR THE REQUIRED 15 SHADE TREES.
- 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.
- SEPERATION, WP-16-040, APPROVED OCTOBER 15, 2015, WAIVE SECTION 18.116(b)(1)(i) WHICH PROHIBITING GRADING, REMOVAL OF VEGETATIVE COVER AND TREES, NEW STRUCTURES, AND PAVING ON LAND WITHIN STEEP SLOPES OF 25% OR GREATER. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
 - SUBJECT TO COMPLETION OF THE SPECIFIC COMMENTS FOR SDP-15-078.
 - PROVIDE A BRIEF DESCRIPTION OF THIS WAIVER PETITION, AS A GENERAL NOTE.

FINO VINO OFFICE BUILDING AND RESTAURANT SITE DEVELOPMENT PLAN

LEGEND

- Existing Contour
- Proposed Contour
- Existing Spot Elevation
- Proposed Spot Elevation
- Direction of Flow
- Existing Trees to Remain
- Light Poles
- Soil Type
- Concrete

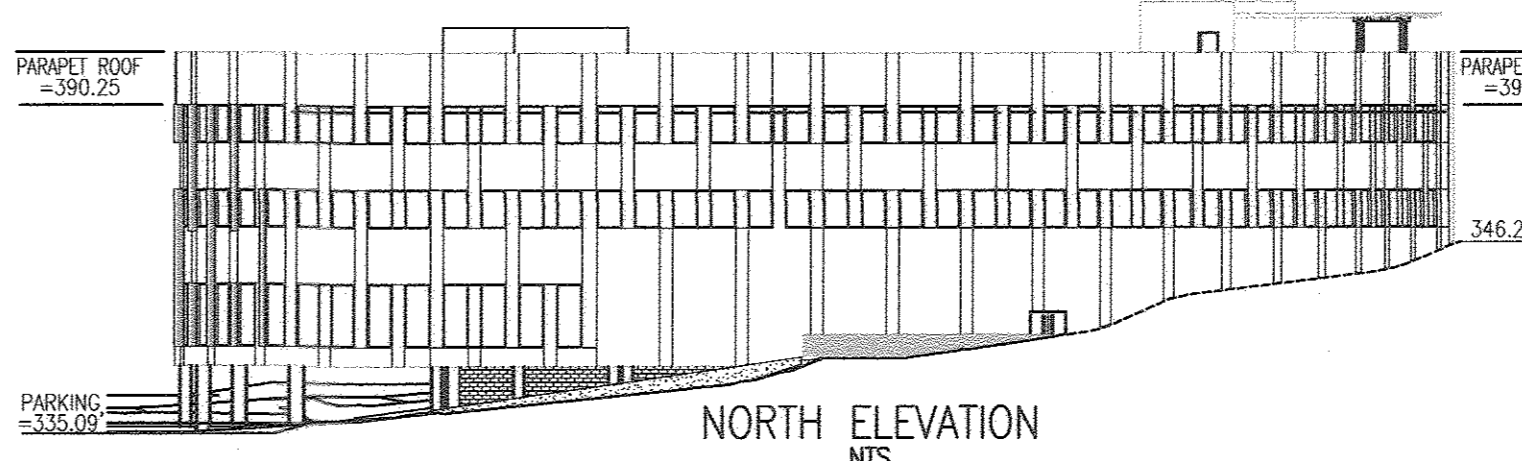
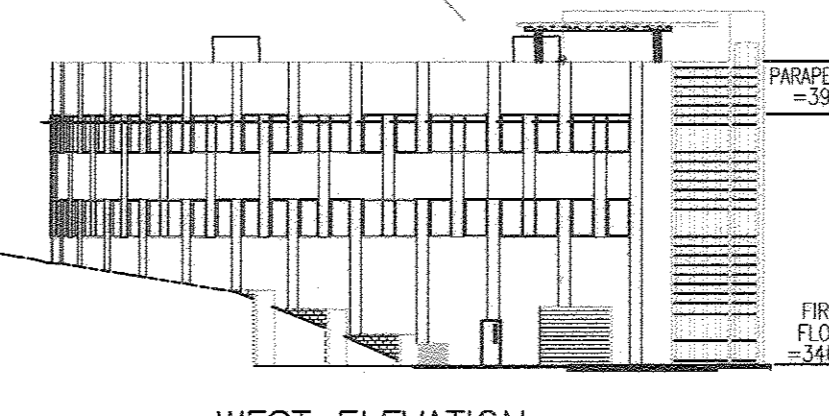
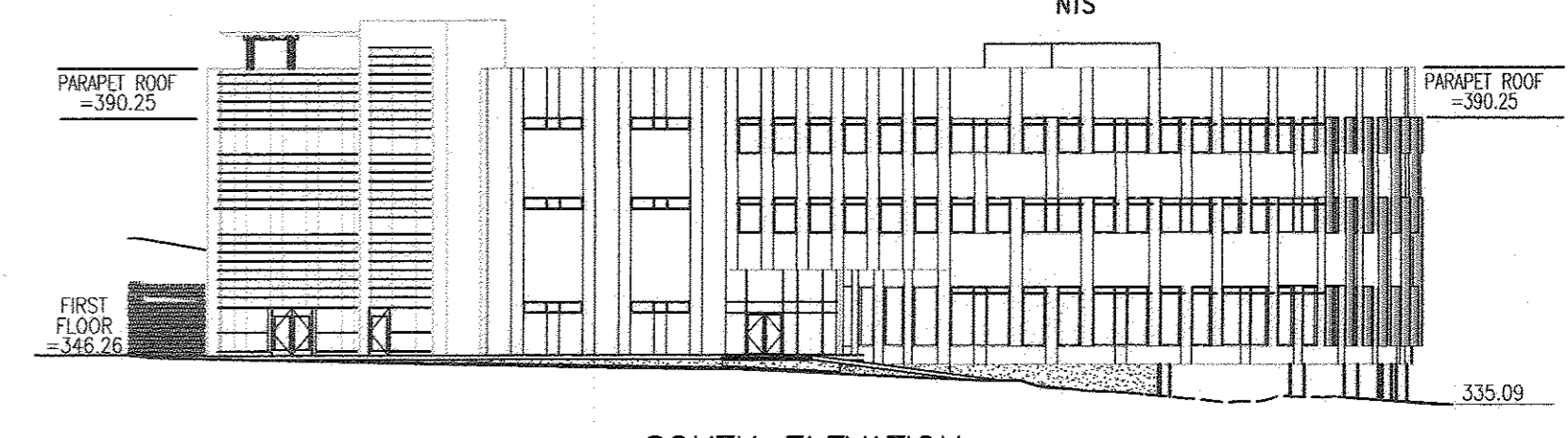
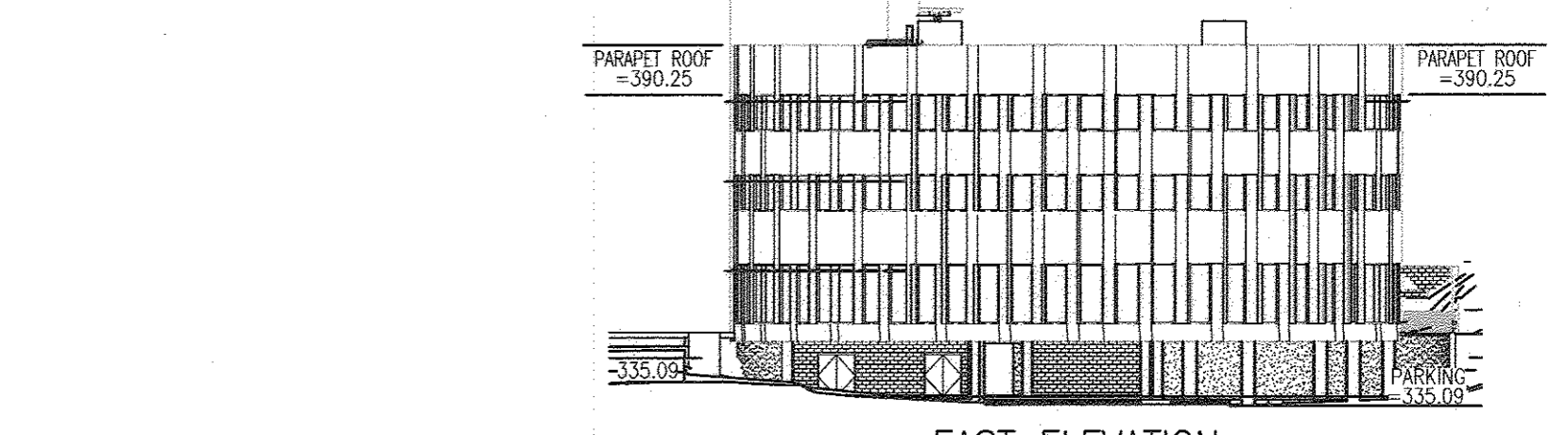
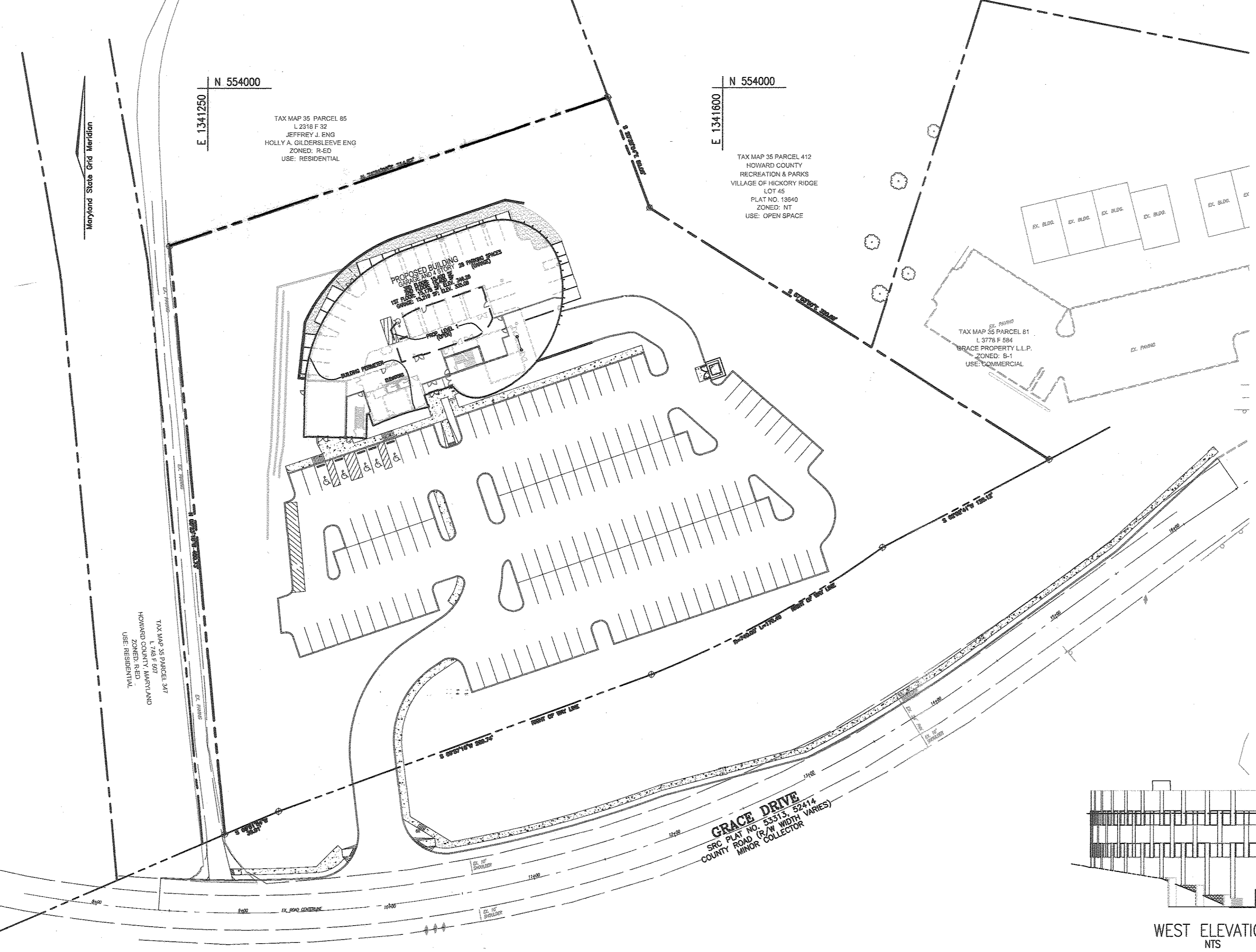


BENCHMARKS

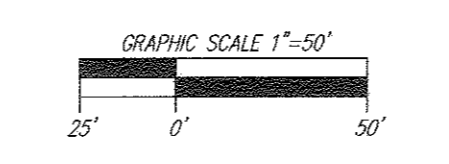
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N 557,110.367 E 1,344,893.647 ELEV. 400.068
- HOWARD COUNTY BENCHMARK 3512
N 555,100.814 E 1,342,733.092 ELEV. 329.743

SHEET INDEX

DESCRIPTION	SHEET NO.
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LOCATION MAP
SCALE: 1"=50'

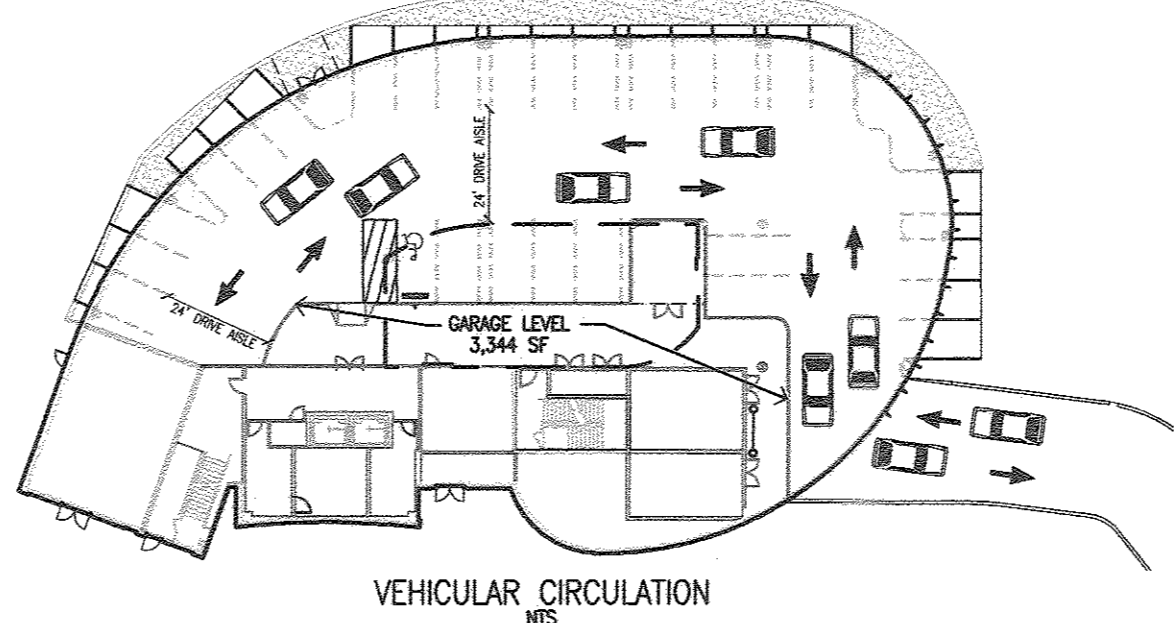


SHARED PARKING TABULATION ADJUSTMENT

USE	WEEKDAY				WEEKEND				NIGHTTIME					
	MORNING 6:00AM-8:00AM	MID-DAY 8:00AM-3:00PM	AFTERNOON 3:00PM-5:00PM	EVENING 5:00PM-12:00AM	DAY TIME 6:00AM-6:00PM	EVENING 6:00PM-12:00AM	12:00AM-6:00AM							
OFFICE	80%	96	100%	119	100%	119	10%	12	10%	12	5%	6	5%	6
RESTAURANT	0%	0	45%	63	25%	35	100%	140	100%	140	100%	140	5%	7
TOTAL SHARED	96	96	182	154	152	152	152	146	152	146	152	146	13	13
OTHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	96	96	182	154	152	152	152	146	152	146	152	146	13	13

PARKING TABULATION

REQUIREMENT DESCRIPTION	REQUIRED	PROVIDED
OFFICE - 36,028 SF @ 3.3 SPACES/1000:	119 SPACES	
RESTAURANT - 9,950 SF @ 14 SPACES/1000	140 SPACES	
TOTAL PARKING REQUIRED (WITHOUT SHARED PARKING REDUCTION):	259 SPACES	183 SPACES
*SEE SHARED PARKING TABULATION		



ADDRESS CHART

LOT/PARCEL#	STREET ADDRESS
86	7410 GRACE DRIVE

PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	PARCEL NUMBER
N/A	N/A	86

DEED REF.	GRID	ZONE	TAX/ZONE	ELECT. DIST.	CENSUS TR.
15412/00410 (PLAT 19441-2)	22	POR	35	5TH	6055.01

WATER CODE: E24 SEWER CODE: 6580000

OWNER/DEVELOPER
7410 GRACE DRIVE, LLC
7410 GRACE DRIVE
COLUMBIA, MD 21045
443-739-6077

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

FINO VINO
OFFICE BUILDING AND RESTAURANT
TAX MAP 35, GRID 22
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
ZONED: POR
PARCELS 86

PROFESSIONAL CERTIFICATE

STATE OF MARYLAND
ROBERT H. VOGEL
REGISTERED PROFESSIONAL ENGINEER

DESIGN BY: RHV
DRAWN BY: KC
CHECKED BY: RHV
DATE: OCT. 2016
SCALE: AS SHOWN
W.O. NO.: 04-08

1 SHEET OF 12

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Paul Johnson 11-19-16
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Keith Schaefer 12-2-16
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Walter J. Fine 12-5-16
DIRECTOR DATE

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

William de Mussen Rosenman 11/30/2016
COUNTY HEALTH OFFICER DATE
HOWARD COUNTY HEALTH DEPARTMENT

TAX MAP 35 PARCEL 85
L 2318 F 32
JEFFREY J. ENG
HOLLY A. GILDERSLEEVE ENG
ZONED: R-ED
USE: RESIDENTIAL

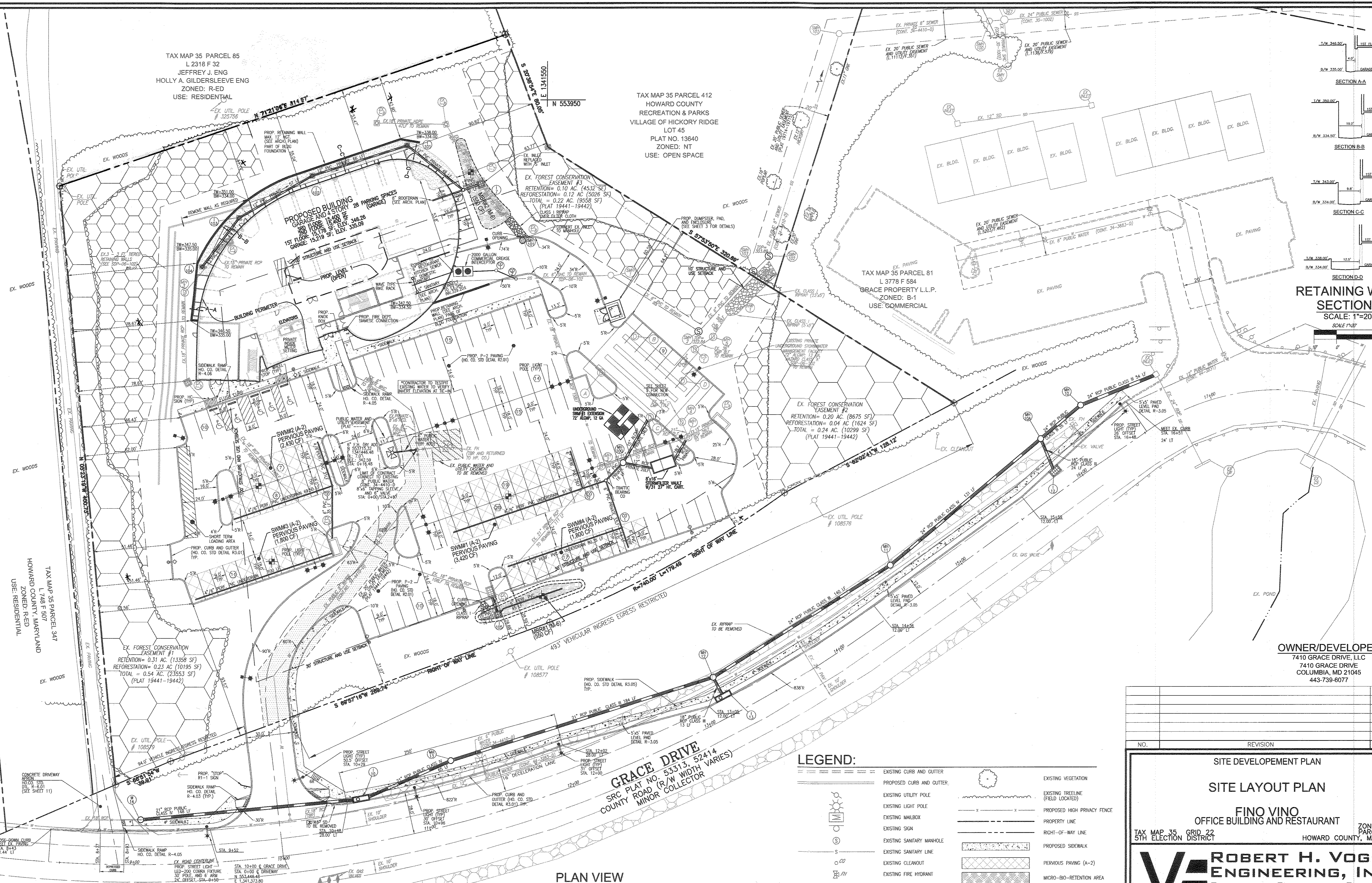
TAX MAP 35 PARCEL 412
HOWARD COUNTY
RECREATION & PARKS
VILLAGE OF HICKORY RIDGE
LOT 45
PLAT NO. 13640
ZONED: NT
USE: OPEN SPACE

TAX MAP 35 PARCEL 81
L 3778 F 584
GRACE PROPERTY L.L.P.
ZONED: B-1
USE: COMMERCIAL

RETAINING WALL
SECTIONS
SCALE: 1"=20'

OWNER/DEVELOPER
7410 GRACE DRIVE, LLC
7410 GRACE DRIVE
COLUMBIA, MD 21045
443-739-6077

* See General
Note 39 on sheet 1.



PLAN VIEW
SCALE: 1"=30'

STORMWATER MANAGEMENT
FACILITY PRIVATELY OWNED
AND MAINTAINED

LEGEND:

	EXISTING CURB AND GUTTER		EXISTING VEGETATION
	PROPOSED CURB AND GUTTER		EXISTING TREE LINE (FIELD LOCATED)
	EXISTING UTILITY POLE		PROPOSED HIGH PRIVACY FENCE
	EXISTING LIGHT POLE		PROPERTY LINE
	EXISTING MAILBOX		RIGHT-OF-WAY LINE
	EXISTING SIGN		PROPOSED SIDEWALK
	EXISTING SANITARY MANHOLE		PERVIOUS PAVING (A-2)
	EXISTING SANITARY LINE		MICRO-BIO-RETENTION AREA
	EXISTING CLEANOUT		PROPOSED STREET LIGHT
	EXISTING FIRE HYDRANT		EXISTING FOREST CONSERVATION EASEMENT "RETROFIT" (PLAT 19441-19442)
	EXISTING WATER LINE		EXISTING FOREST CONSERVATION EASEMENT "REFORESTATION" (PLAT 19441-19442)
	PROPOSED STORM DRAIN		PROPOSED RETAINING WALL
	PROPOSED STORM DRAIN INLET		
	EXISTING 20' PUBLIC WATER AND UTILITY EASEMENT (PLAT 19441-19442)		
	PROPOSED PUBLIC WATER AND UTILITY EASEMENT		
	EXISTING PUBLIC WATER AND UTILITY EASEMENT TO BE REMOVED		
	TEST PITS		

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

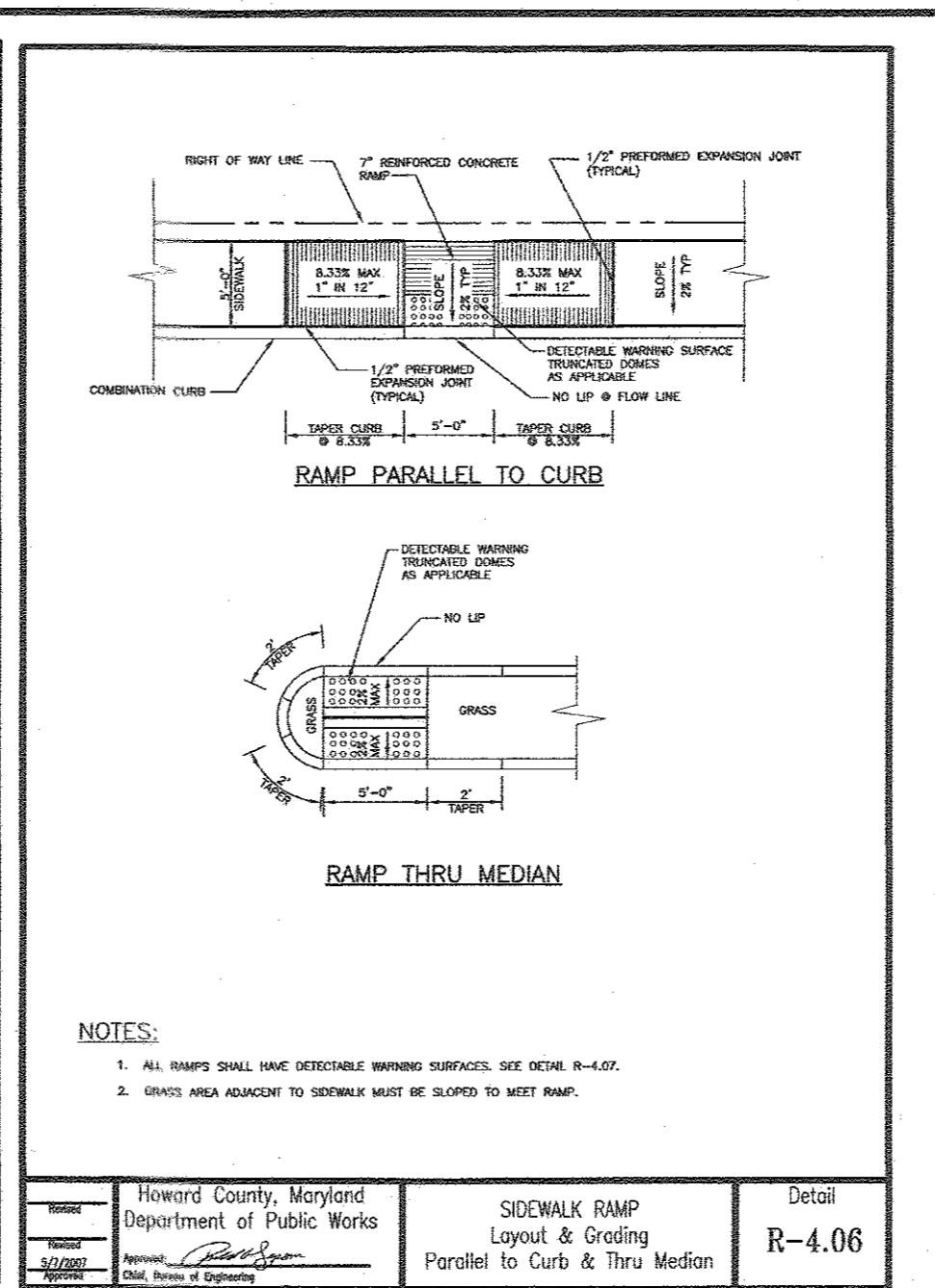
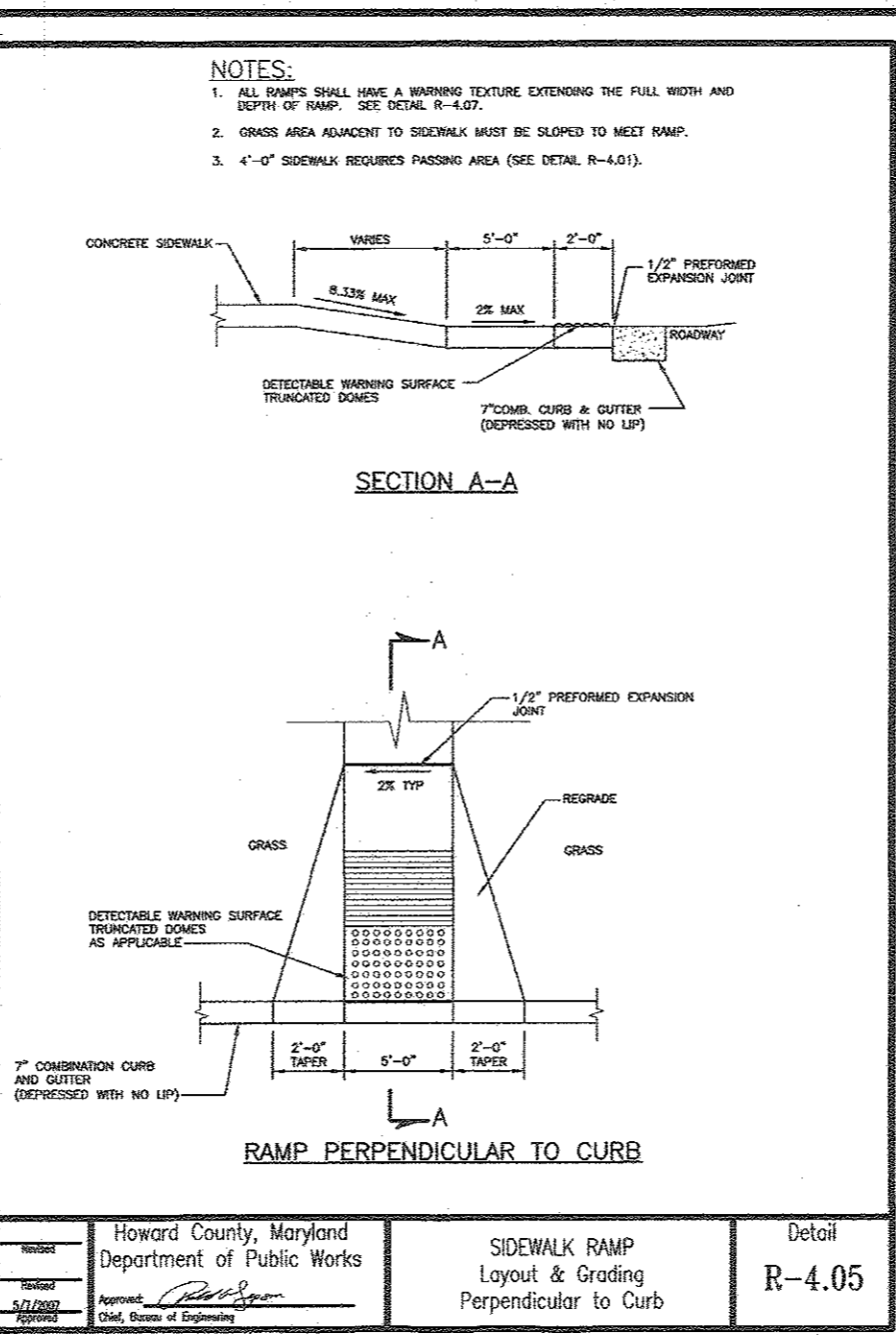
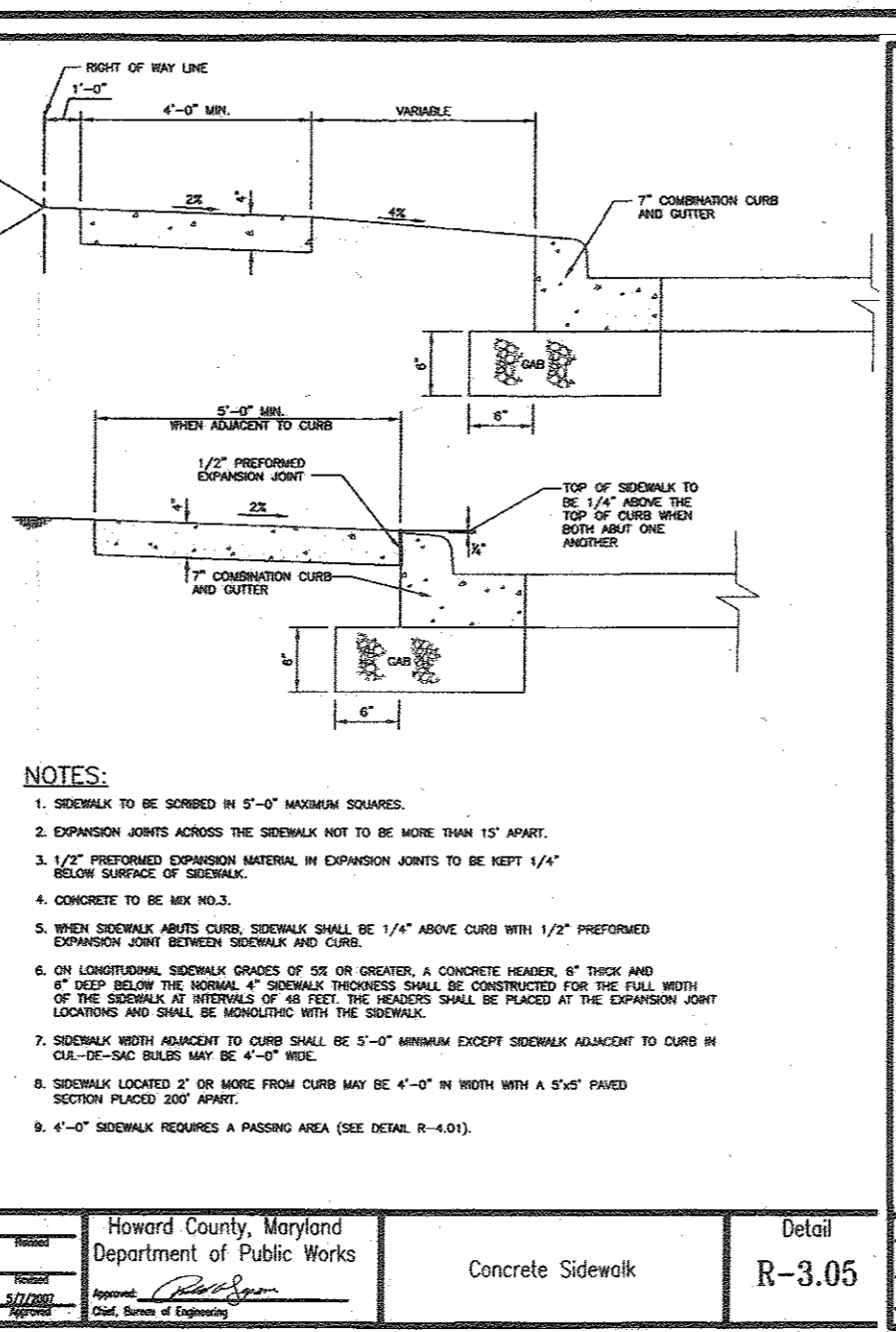
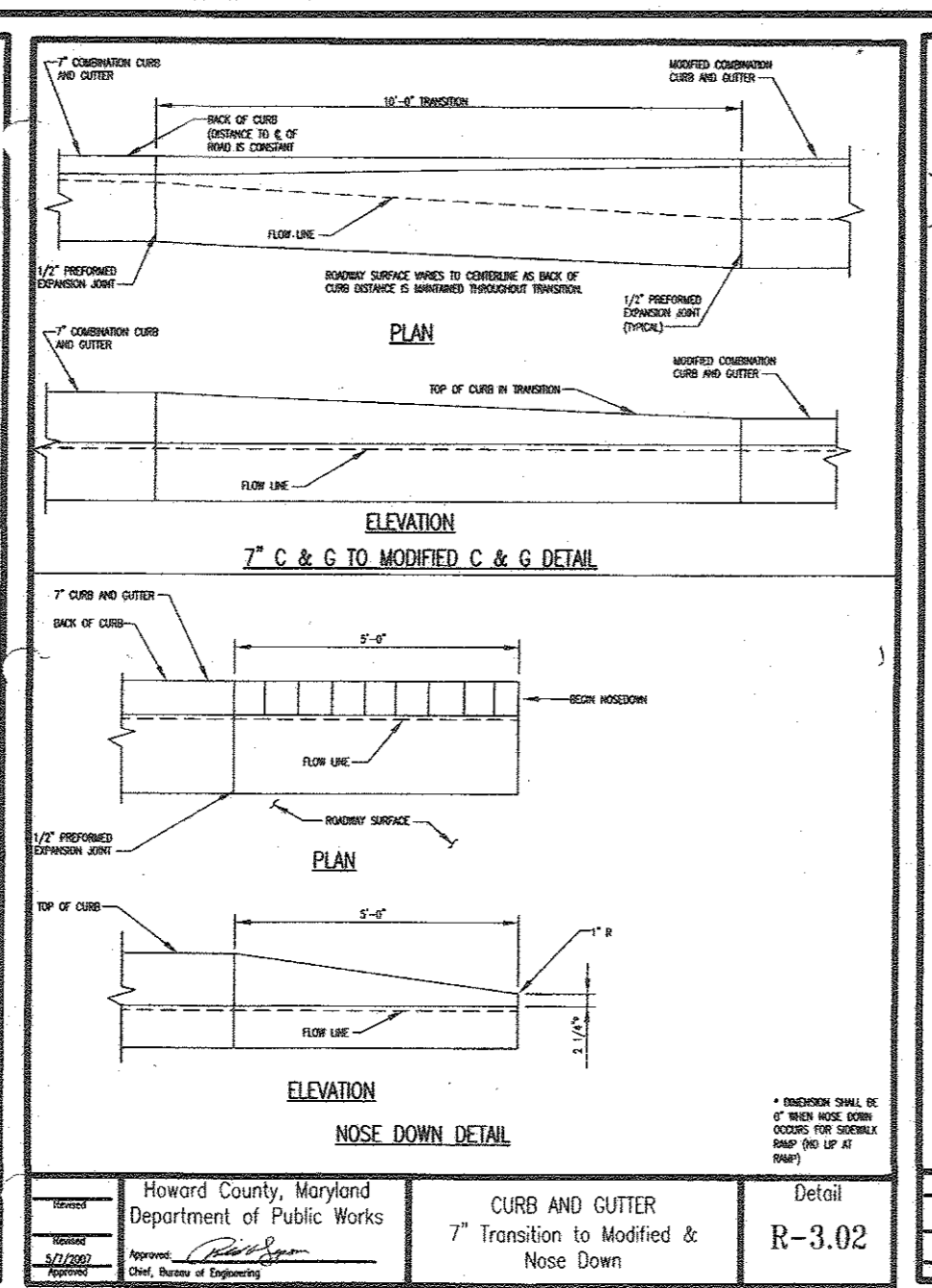
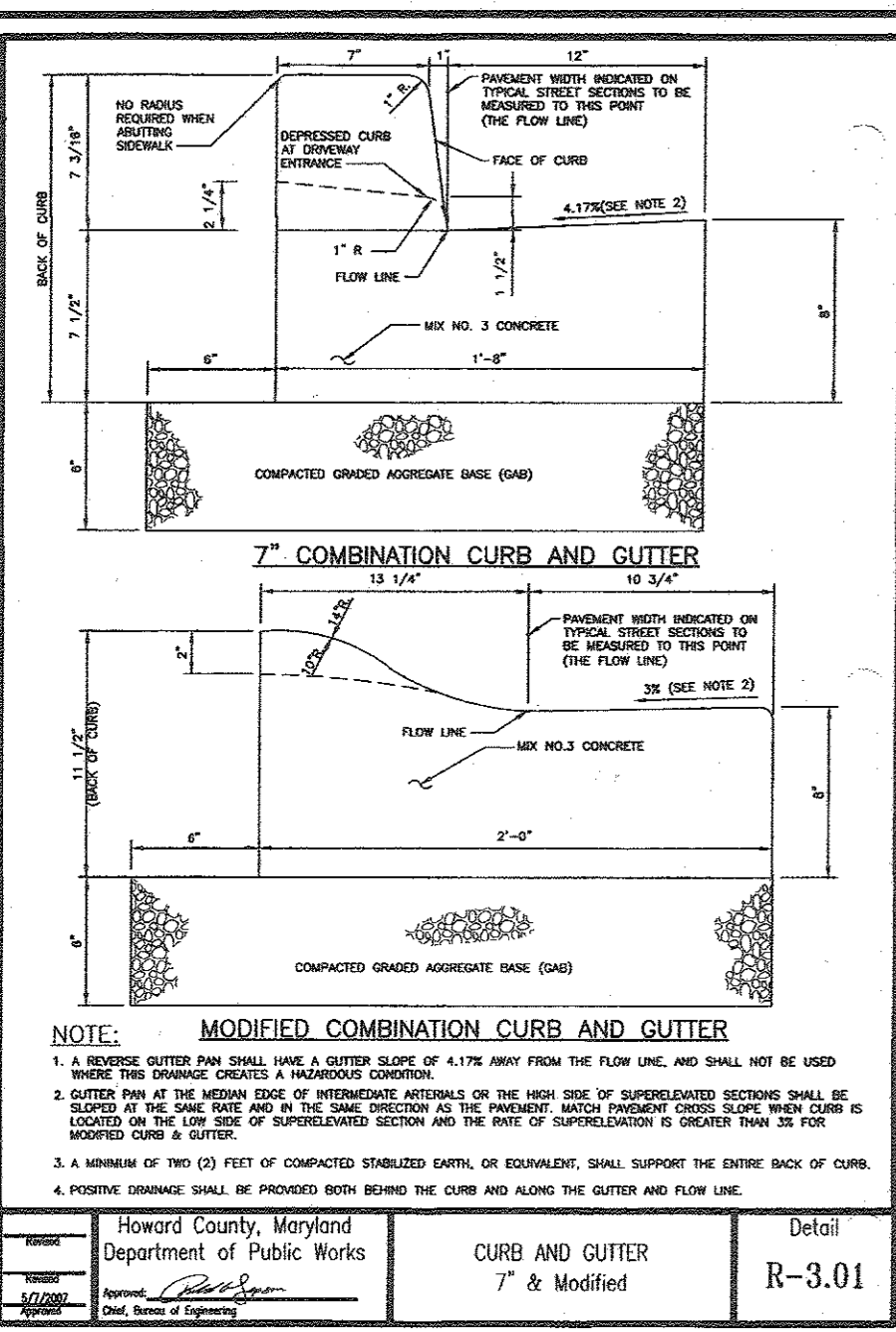
[Signature] 11/14/16
CHIEF, DEVELOPMENT ENGINEERING DIVISION & DATE

[Signature] 12-2-16
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

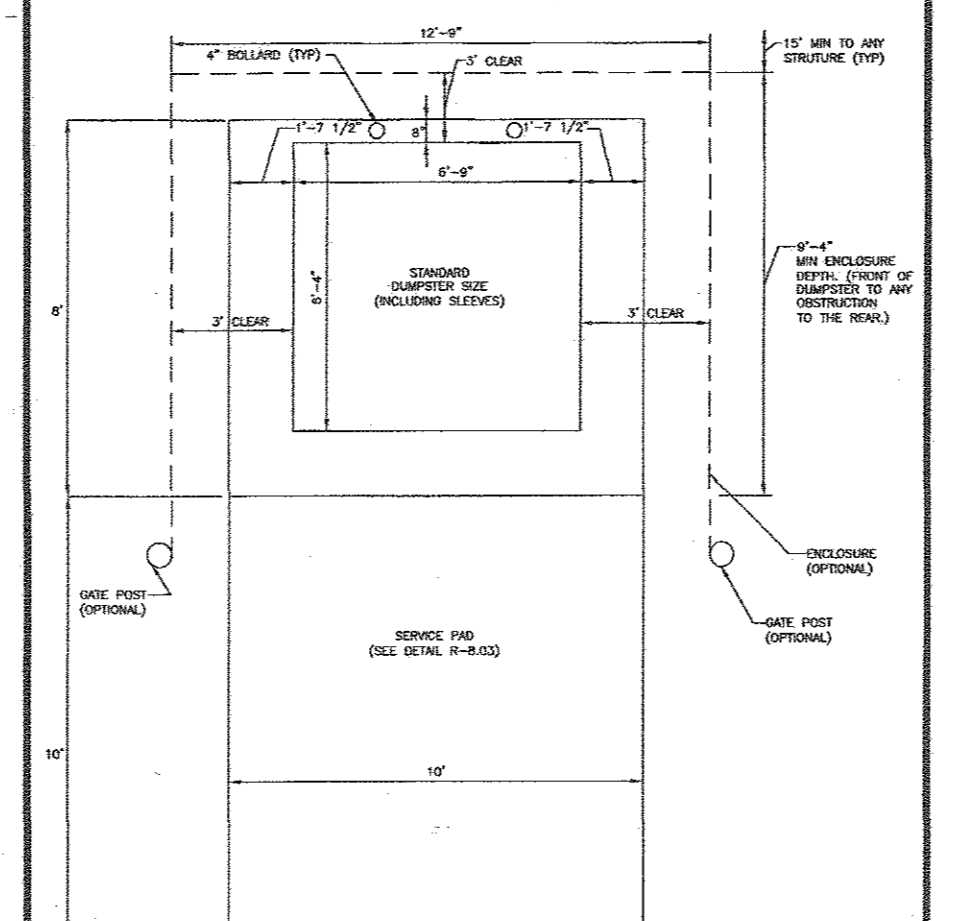
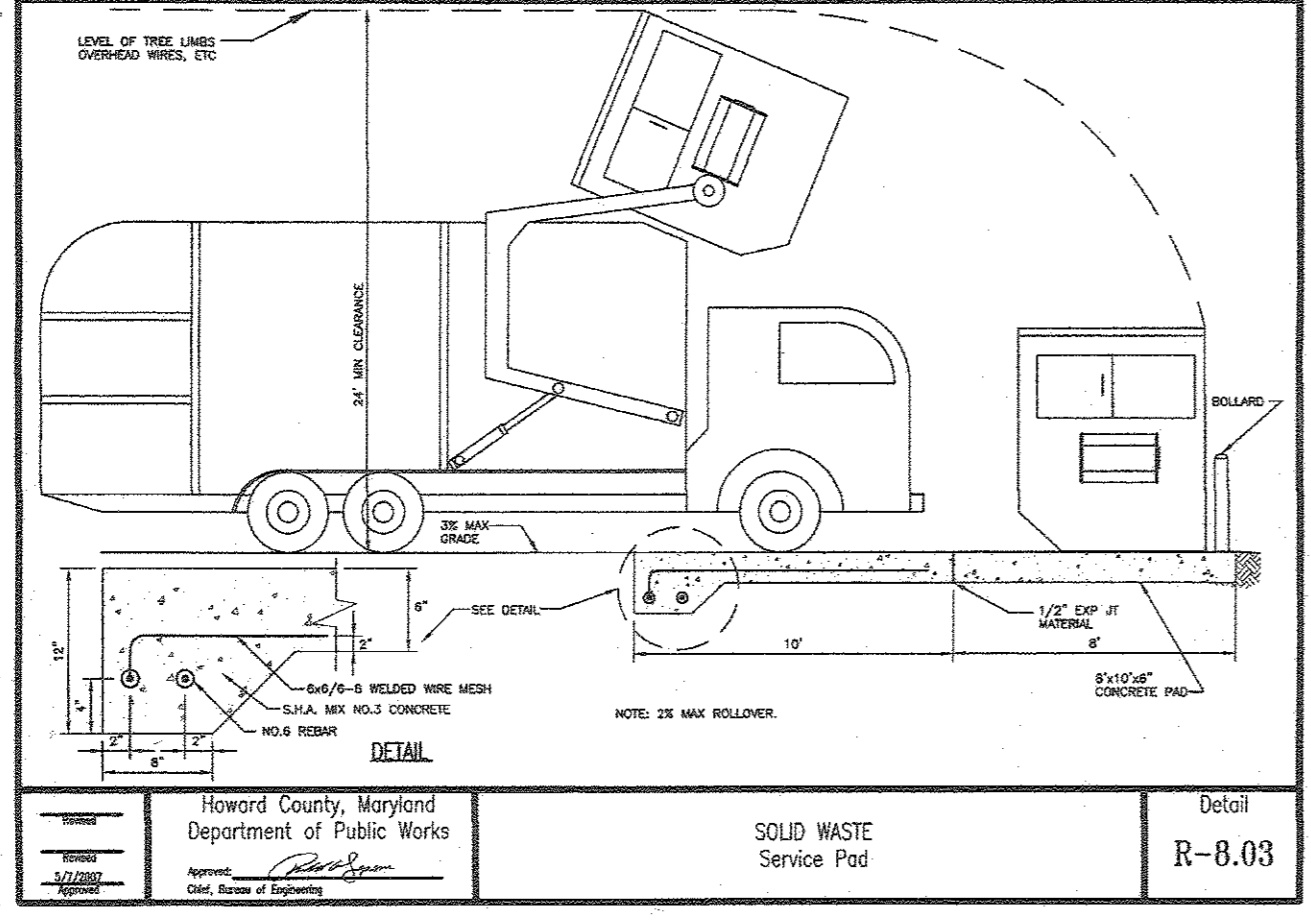
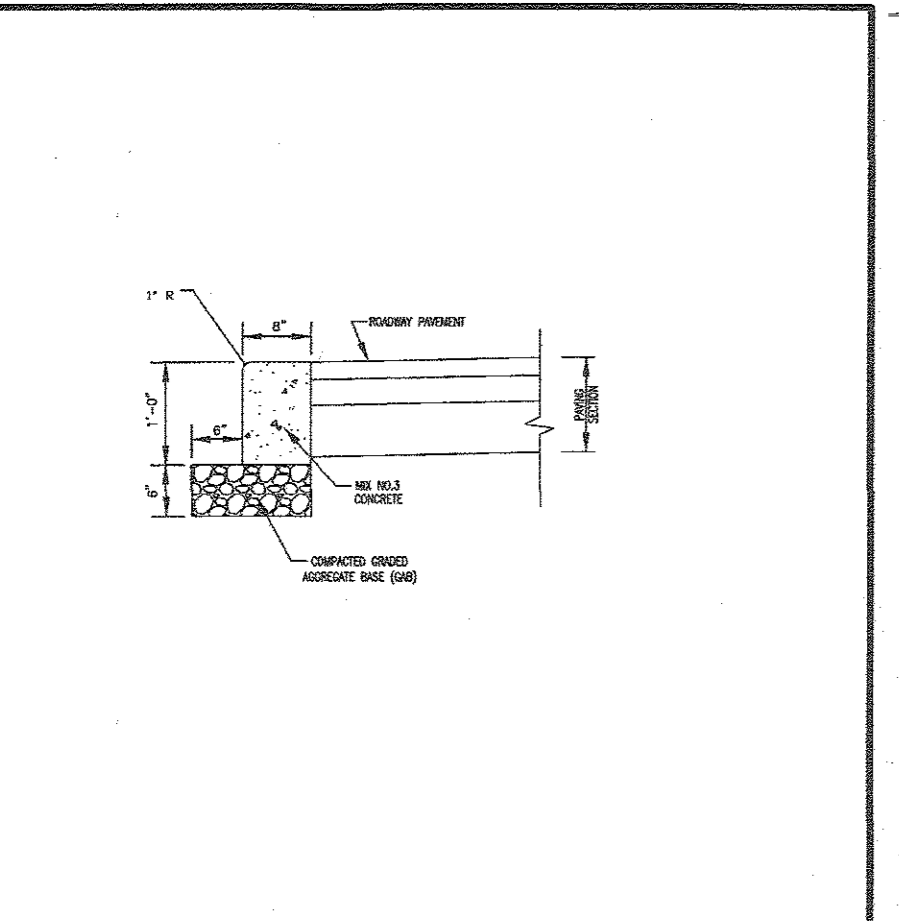
[Signature] 12-5-16
DIRECTOR DATE

NOTE:
1. ALL STREET LIGHTS WILL BE LED-200 COBRA FIXTURE MOUNTED AT 30' ON BRONZE FIBERGLASS POLE USING 6' ARM.
2. THE FRONTAGE IMPROVEMENTS ALONG GRACE DRIVE SHALL BE IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAIL R-1.08, SEE DETAIL SHEET 6.

NO.	REVISION	DATE
SITE DEVELOPMENT PLAN		
SITE LAYOUT PLAN		
FINO VINO OFFICE BUILDING AND RESTAURANT		
TAX MAP 35 GRID 22 5TH ELECTION DISTRICT	ZONED: POR PARCELS 86	
ROBERT H. VOGEL ENGINEERS • SURVEYORS • PLANNERS		
8407 MAIN STREET ELICOTT CITY, MD 21043		TEL: 410.461.7666 FAX: 410.461.8961
PROFESSIONAL CERTIFICATE		
DESIGN BY: RHV	I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2018.	
CHECKED BY: RHV		
DATE: OCT. 2016		
SCALE: AS SHOWN		
W.O. NO.: 04-08		
2 SHEET OF 12		



SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)				
		3 TO <5	5 TO <7	≥ 7	3 TO <5	<7
P-1	RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY	PAVEMENT MATERIAL (INCHES)	MIN	HMA WITH GAB	HMA WITH CONSTANT GAB	
		HMA SUPERPAVE FINAL SURFACE 9.5 MM PG 64-22, LEVEL 1 (CSAL)	1.5	1.5	1.5	1.5
P-2	RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY	HMA SUPERPAVE FINAL SURFACE 9.5 MM PG 64-22, LEVEL 1 (CSAL)	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM PG 64-22, LEVEL 1 (CSAL)	2.0	2.0	2.0	2.0
P-3	RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY	HMA SUPERPAVE FINAL SURFACE 9.5 MM PG 64-22, LEVEL 1 (CSAL)	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM PG 64-22, LEVEL 1 (CSAL)	2.0	2.0	2.0	2.0
P-4	RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY	HMA SUPERPAVE FINAL SURFACE 9.5 MM PG 64-22, LEVEL 1 (CSAL)	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM PG 64-22, LEVEL 1 (CSAL)	2.0	2.0	2.0	2.0

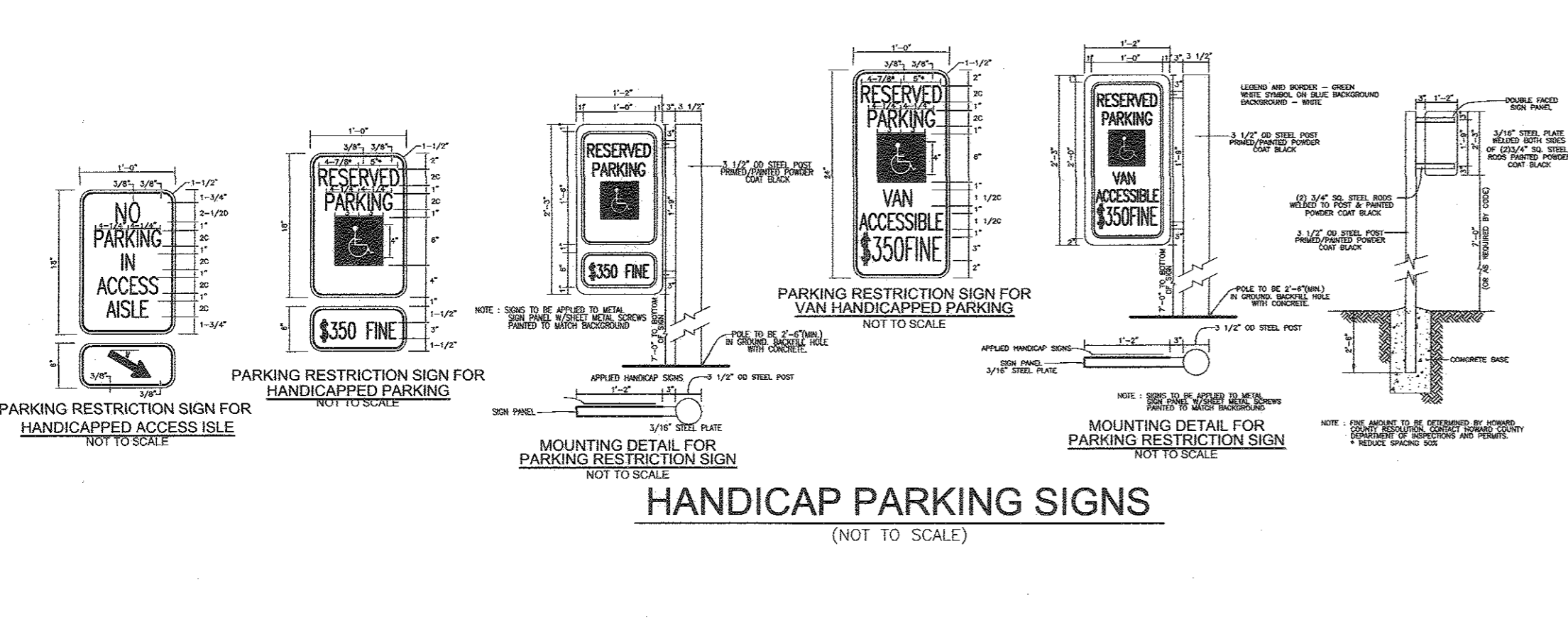
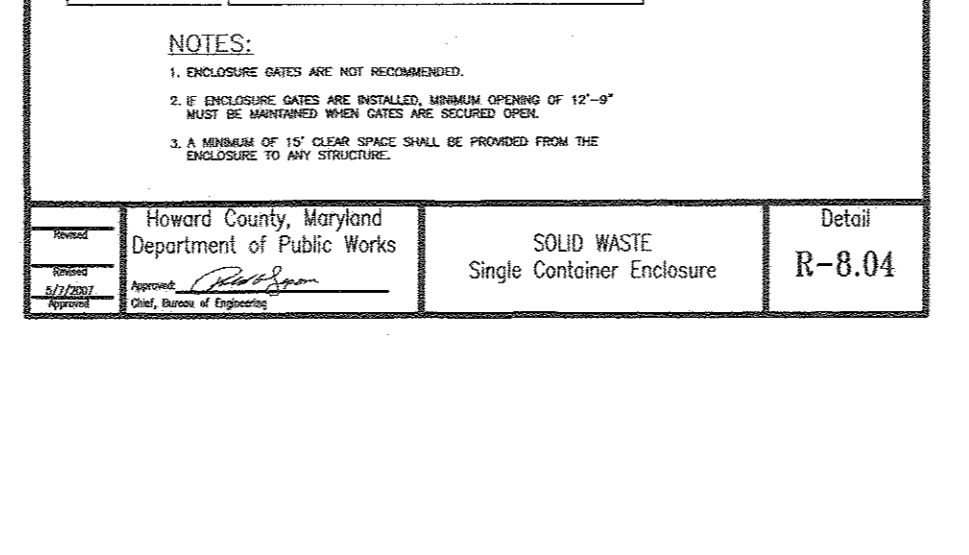
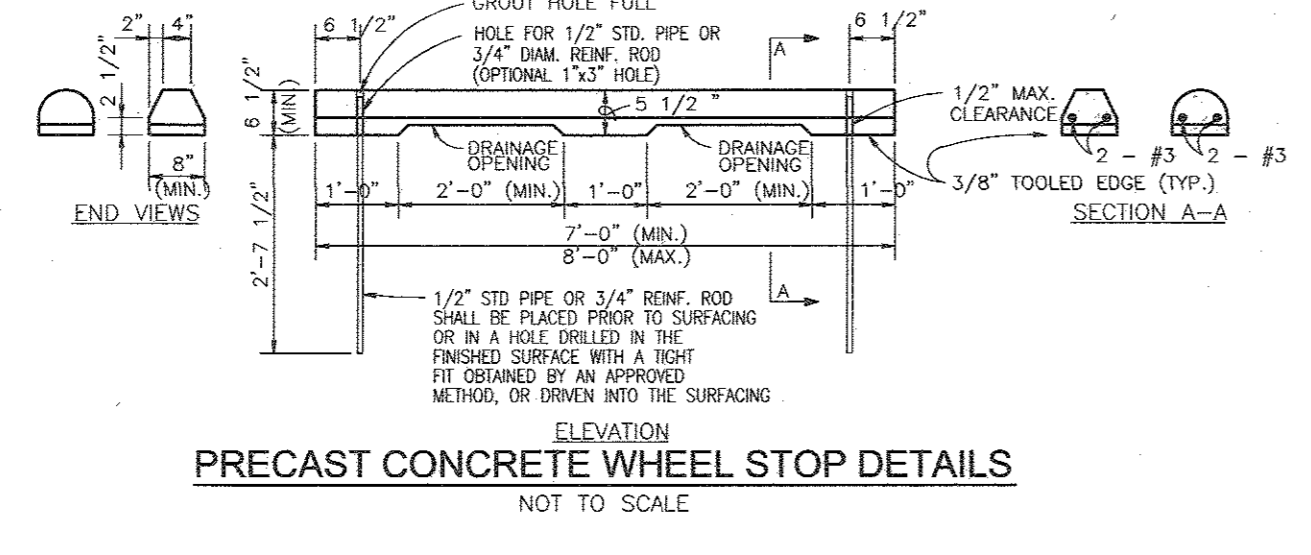


D-Series
Size 0
LED Area Luminaire

Specifications

- EPA: 0.8 ft (24 in)
- Length: 26" (660 mm)
- Width: 13" (330 mm)
- Height: 7" (178 mm)
- Weight: 16 lbs (7.3 kg)

Model	Material	Finish	Weight	Height	Length	Width
A	Aluminum	White	16 lbs	7"	26"	13"
B	Aluminum	Black	16 lbs	7"	26"	13"
C	Aluminum	Black	16 lbs	7"	26"	13"



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Phil Clark 11-14-16
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Kurt Schaefer 12-2-16
CHIEF, DIVISION OF LAND DEVELOPMENT

W. M. Taylor 12-5-16
DIRECTOR

OWNER/DEVELOPER
7410 GRACE DRIVE, LLC
7410 GRACE DRIVE
COLUMBIA, MD 21045
443-739-6077

SITE DEVELOPMENT PLAN
SITE DETAILS
FINO VINO
OFFICE BUILDING AND RESTAURANT

TAX MAP 35 GRID 22
5TH ELECTION DISTRICT

ZONED: POR
PARCELS 86
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL
ENGINEERS • SURVEYORS • PLANNERS

8407 MAIN STREET
ELICOTT CITY, MD 21043

TEL: 410.461.7666
FAX: 410.461.8961

NO.	REVISION	DATE

DESIGN BY: RHY

DRAWN BY: KG

CHECKED BY: RHY

DATE: OCT. 2016

SCALE: AS SHOWN

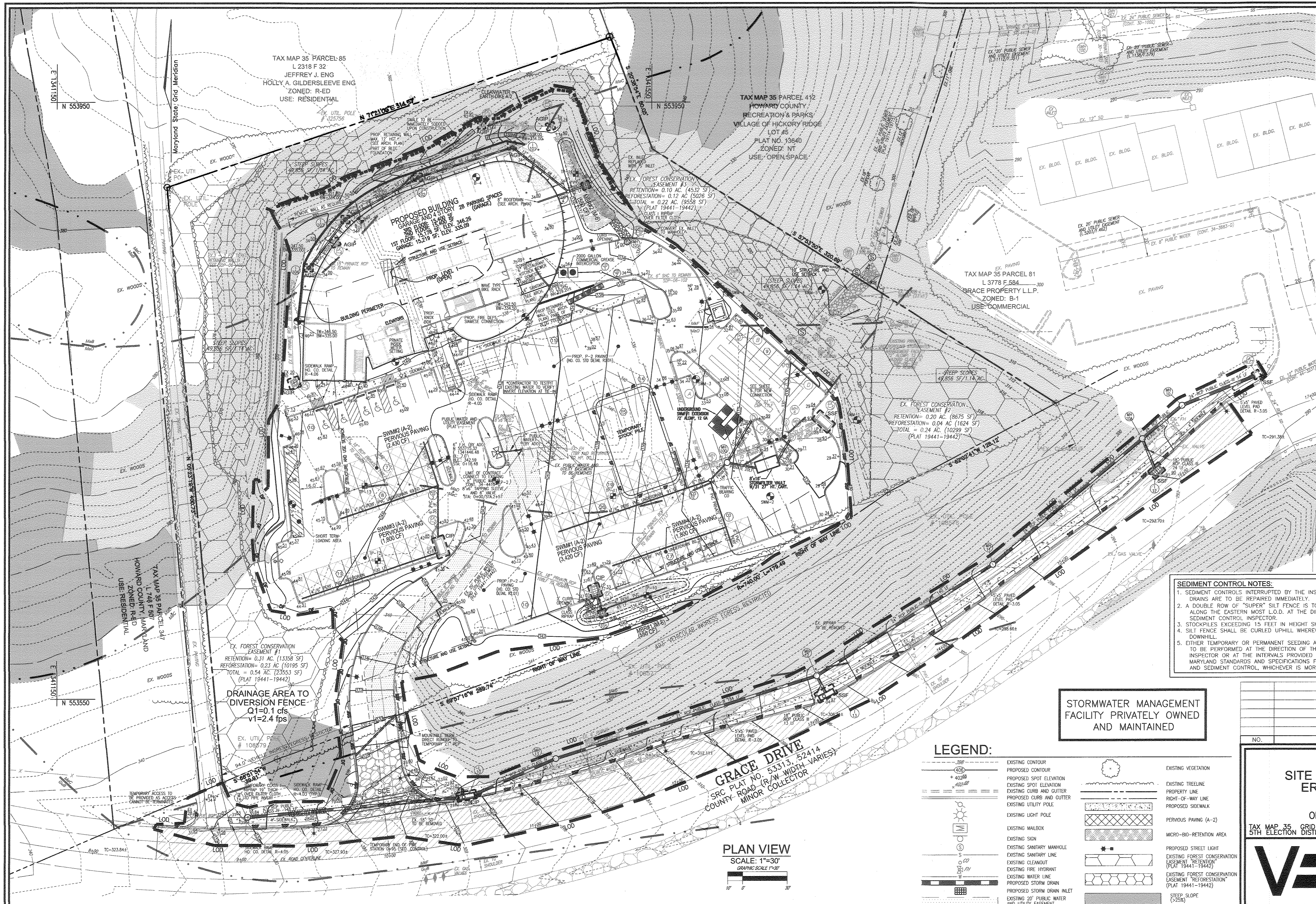
W.O. NO.: 04-06

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 (EXPIRATION DATE: 09-27-2018)

Robert H. Vogel
ROBERT H. VOGEL, PE No. 16193

3 SHEET OF 12



DETAIL B-4-B TEMPORARY SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL:
 TSSAC = # 0.51 lb/ft²
 # 8 INCH DEPTH KEY TRENCH END (TYP.)

CONSTRUCTION SPECIFICATIONS: ISOMETRIC VIEW

- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS SPECIFIED ON APPROVED PLANS.
- USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (WHILE ORGANIC), MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SHOCKER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND KEEP VEGETATION AND NON-HARMFUL TO THE SOIL. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 242 INCHES AND SUFFICIENTLY SPACED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
- INSTALL MATTING USING STEEL STAPLES, WOOD STAPLES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE 1/4" DIA. STAPLES MUST HAVE A MINIMUM GAGE OF NO. 12 WIRE AND 3/8" OF 6 INCHES LONG. T-SHAPED STAPLES MUST HAVE A MINIMUM 3 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAPLES MUST BE REGION-SAVIN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1/2 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDING PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING AND SEEDMENT CONTROL PLAN.
- UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL. CENTERING WORK FROM CENTER OF CHANNEL OUTWARD WITH ROLLERS. LAY MAT SMOOTHLY AND FIRMLY ON THE SEEDING SURFACE, AVOID STRETCHING THE MATTING.
- KEY-IN UPSTREAM END OF EACH MAT ROLL BY DIGGING A 6 INCH (MINIMUM) TRENCH AT THE UPSTREAM END OF THE MATTING, PLACING THE ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END.
- OVERLAP OR ABUT THE ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL EDGES BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
- STAPLE/MATE MAT IN A STAGGERED PATTERN ON A FOOT (MINIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG JOINTS, SEAMS, AND ROLL ENDS.
- ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4-B VEGETATIVE STABILIZATION.

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

SEDIMENT CONTROL NOTES:

- SEDIMENT CONTROLS INTERRUPTED BY THE INSTALLATION OF STORM DRAINS ARE TO BE REPAIRED IMMEDIATELY.
- A DOUBLE ROW OF "SUPER" SILT FENCE IS TO BE INSTALLED ALONG THE EASTERN MOST L.O.D. AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
- STOCKPILES EXCEEDING 15 FEET IN HEIGHT SHALL BE BENCHED. DOWNHILL.
- SILT FENCE SHALL BE CURLED UPHILL WHEREVER IT RUNS DOWNHILL.
- EITHER TEMPORARY OR PERMANENT SEEDING AND STABILIZATION IS TO BE PERFORMED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR OR AT THE INTERVALS PROVIDED IN THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, WHICHEVER IS MORE STRINGENT.

OWNER/DEVELOPER
 7410 GRACE DRIVE, LLC
 7410 GRACE DRIVE
 COLUMBIA, MD 21045
 443-739-6077

STORMWATER MANAGEMENT FACILITY PRIVATELY OWNED AND MAINTAINED

GRACE DRIVE
 SRC PLAT NO. 53513, 52414
 COUNTY ROAD (R/W, WIDTH VARIES)
 MINOR COLLECTOR

PLAN VIEW
 SCALE: 1"=30'
 GRAPHIC SCALE 1"=30'

LEGEND:

	EXISTING CONTOUR		EXISTING VEGETATION
	PROPOSED CONTOUR		EXISTING TREELINE
	PROPOSED SPOT ELEVATION		PROPERTY LINE
	EXISTING CURB AND GUTTER		RIGHT-OF-WAY LINE
	PROPOSED CURB AND GUTTER		PROPOSED SIDEWALK
	EXISTING UTILITY POLE		PERVIOUS PAVING (A-2)
	EXISTING LIGHT POLE		MICRO-BIO-RETENTION AREA
	EXISTING MAILBOX		PROPOSED STREET LIGHT
	EXISTING SIGN		EXISTING FOREST CONSERVATION EASEMENT
	EXISTING SANITARY MANHOLE		EXISTING FOREST CONSERVATION EASEMENT
	EXISTING CLEANOUT		STEP SLOPE
	EXISTING FIRE HYDRANT		SILT FENCE
	EXISTING WATER LINE		SUPER SILT FENCE
	PROPOSED STORM DRAIN		DIVERSION FENCE
	PROPOSED STORM DRAIN INLET		LIMIT OF DISTURBANCE
	EXISTING 20' PUBLIC WATER AND UTILITY EASEMENT		CURB INLET PROTECTION
	PROPOSED PUBLIC WATER AND UTILITY EASEMENT		AT GRADE INLET PROTECTION
	SOILS BOUNDARY		STABILIZED CONSTRUCTION ENTRANCE
	PROPOSED WIDENING AREA		
	PROPOSED RETAINING WALL		
	EXISTING PUBLIC WATER AND UTILITY EASEMENT TO BE REMOVED		

NOTE:
 1. THE FRONTAGE IMPROVEMENTS ALONG GRACE DRIVE SHALL BE IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAIL R-1.08, SEE DETAIL SHEET 6.

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

John L. Roberts 1/10/16
 HOWARD S.C.D. DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad E. ... 11-14-16
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kent ... 12-2-16
 CHIEF DIVISION OF LAND DEVELOPMENT DATE

Val ... 12-5-16
 DIRECTOR DATE

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 RESPECTING 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 (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

Rajesh Kathuria 10/31/16
 OWNER/DEVELOPER SIGNATURE DATE

Rajesh Kathuria
 PRINTED NAME & TITLE

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 IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Robert H. Vogel 10/21/16
 DESIGNER'S SIGNATURE DATE

ROBERT H. VOGEL MD REGISTRATION NO. 16193
 PRINTED NAME (E.S., R.L.S., OR R.L.A. (circle one))

NO. REVISION DATE

SITE DEVELOPMENT PLAN
SITE GRADING, SEDIMENT AND EROSION CONTROL PLAN
FINO VINO
 OFFICE BUILDING AND RESTAURANT
 TAX MAP 35, GRID 22, 5TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

ZONED: POR PARCELS 86

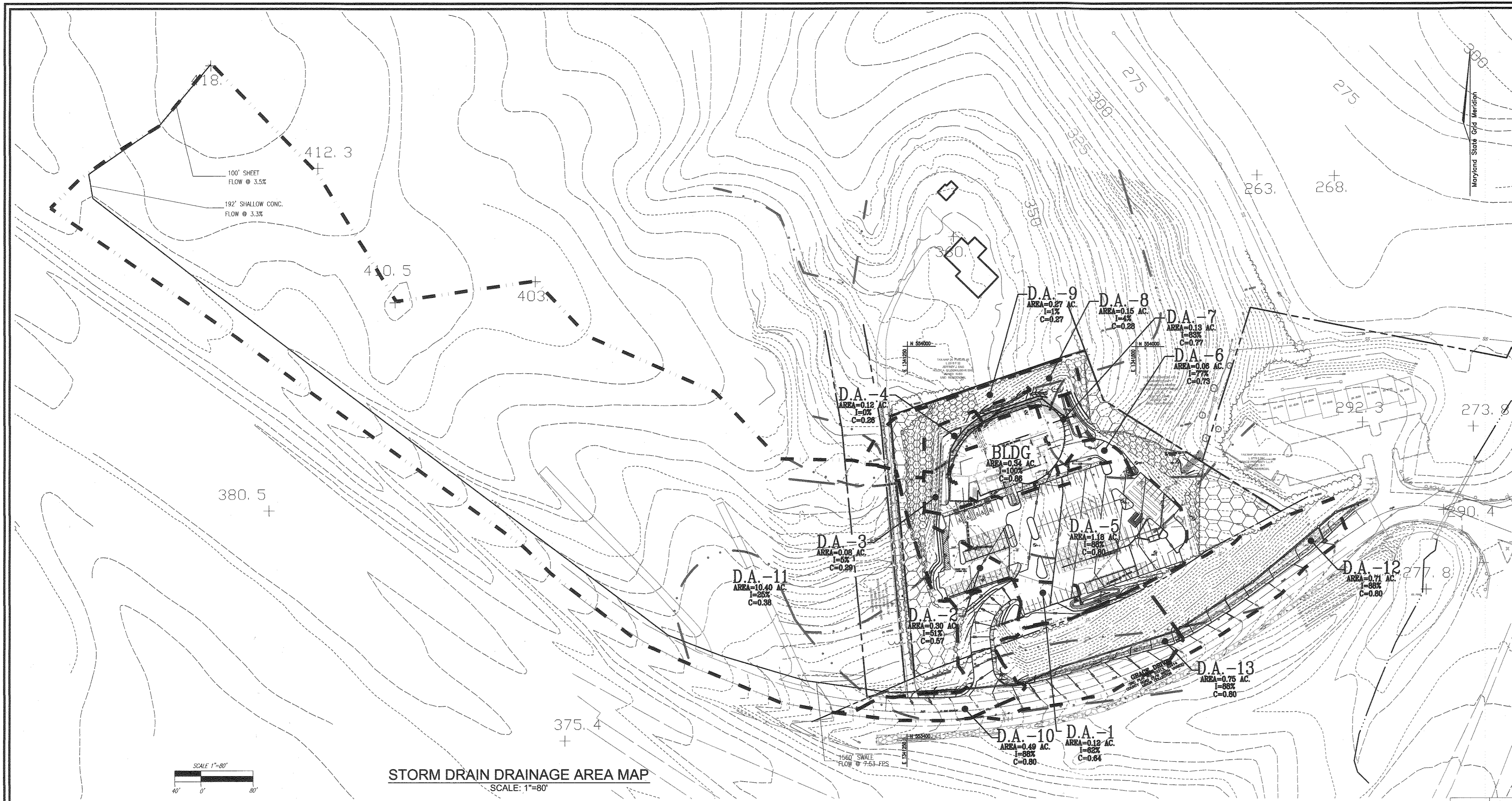
ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8991

DESIGN BY: RHV
 DRAWN BY: KG
 CHECKED BY: RHV
 DATE: OCT. 2016
 SCALE: AS SHOWN
 W.D. NO.: 04-06

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE 07-2018.

4 SHEET OF 12

SDP-15-078

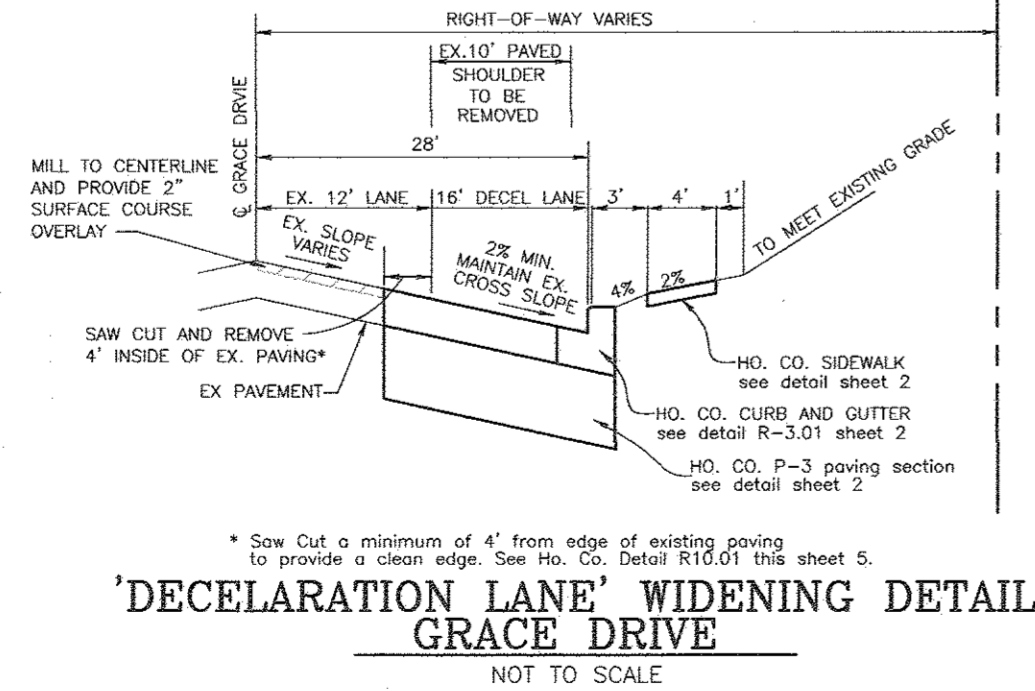
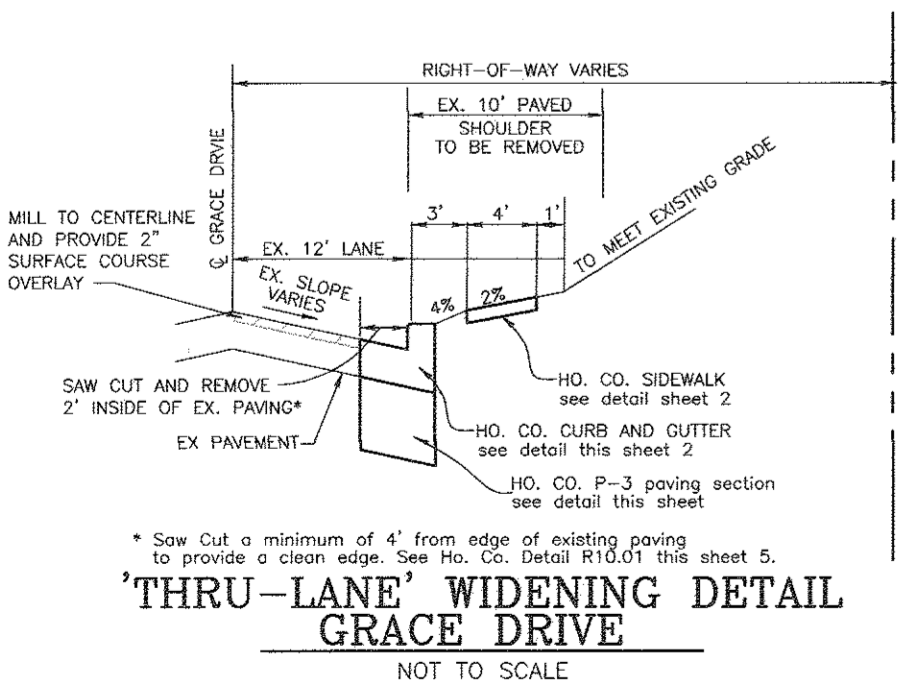


LEGEND:

	EXISTING CONTOUR
	PROPOSED CONTOUR
	PROPOSED SPOT ELEVATION
	EXISTING CURB AND GUTTER
	PROPOSED CURB AND GUTTER
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	EXISTING MAILBOX
	EXISTING SIGN
	EXISTING SANITARY MANHOLE
	EXISTING SANITARY LINE
	EXISTING FIRE HYDRANT
	EXISTING WATER LINE
	PROPOSED STORM DRAIN
	PROPOSED STORM DRAIN INLET
	SOILS BOUNDARY
	PROPOSED RETAINING WALL
	EXISTING VEGETATION
	EXISTING TREE LINE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	PROPOSED SIDEWALK
	PERVIOUS PAVING (A-2)
	PROPOSED STREET LIGHT
	EXISTING FOREST CONSERVATION EASEMENT (RETENTION) (PLAT 19441-19442)
	EXISTING FOREST CONSERVATION EASEMENT (REFORESTATION) (PLAT 19441-19442)
	TEST PITS

STORM DRAIN DRAINAGE AREA MAP
SCALE: 1"=80'

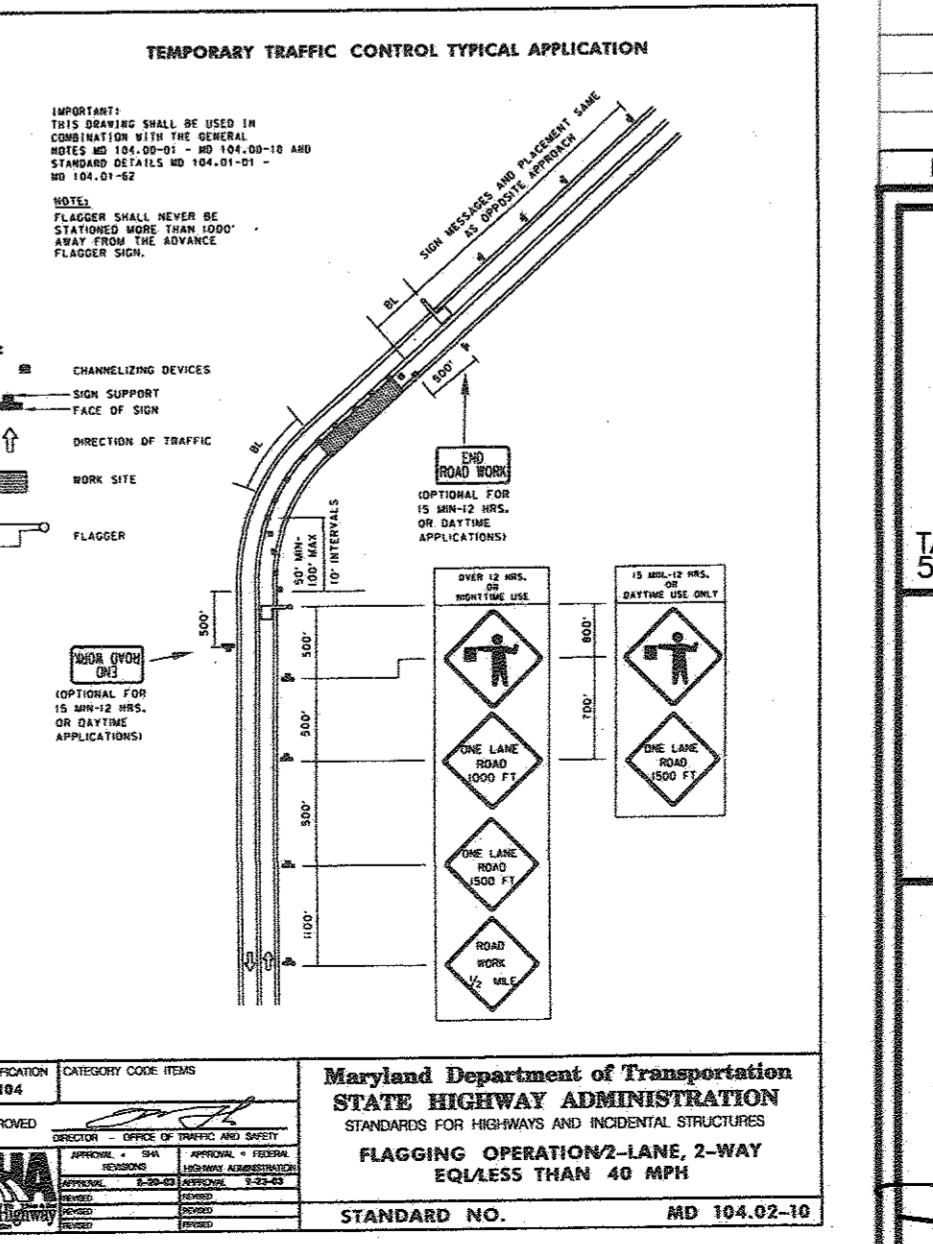
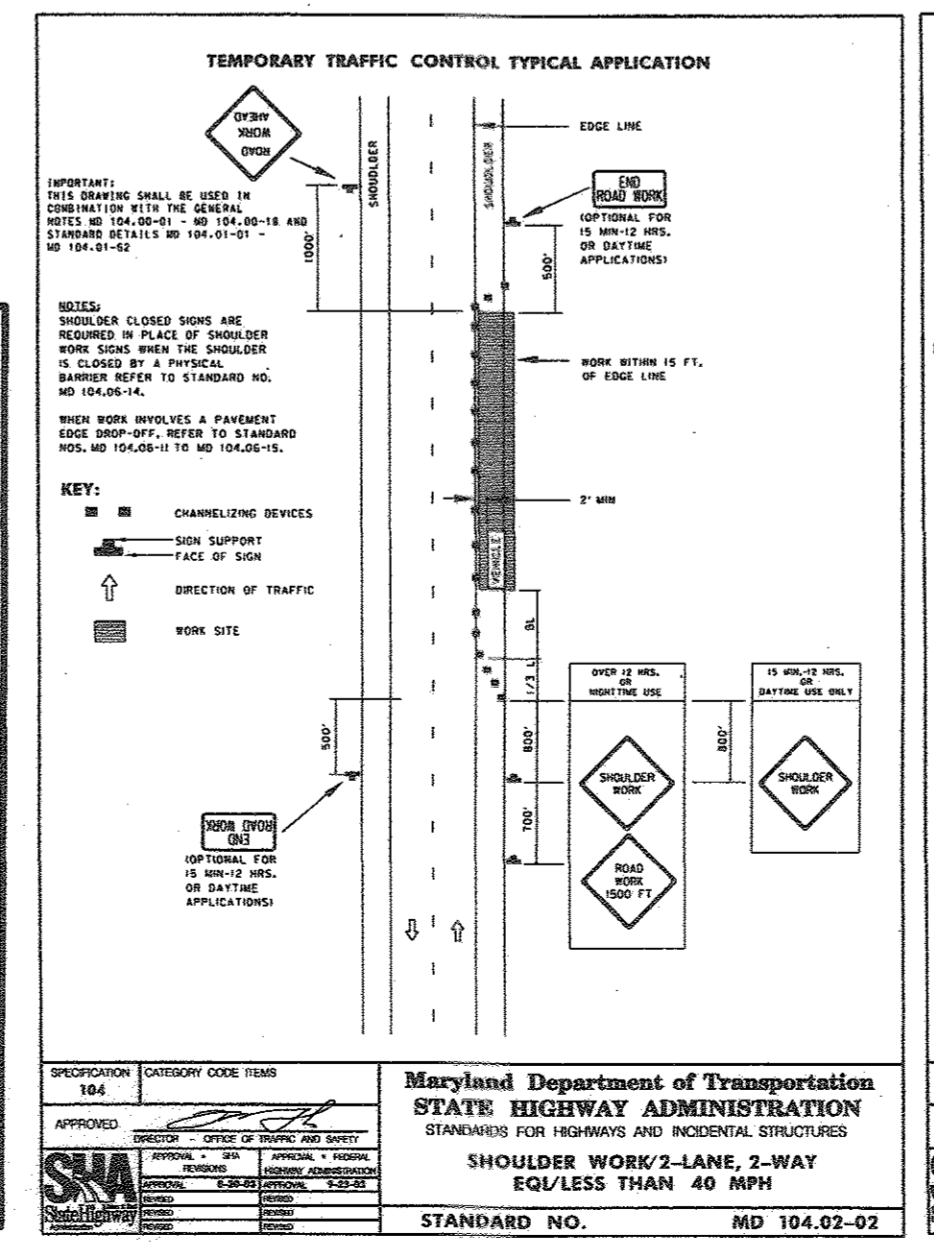
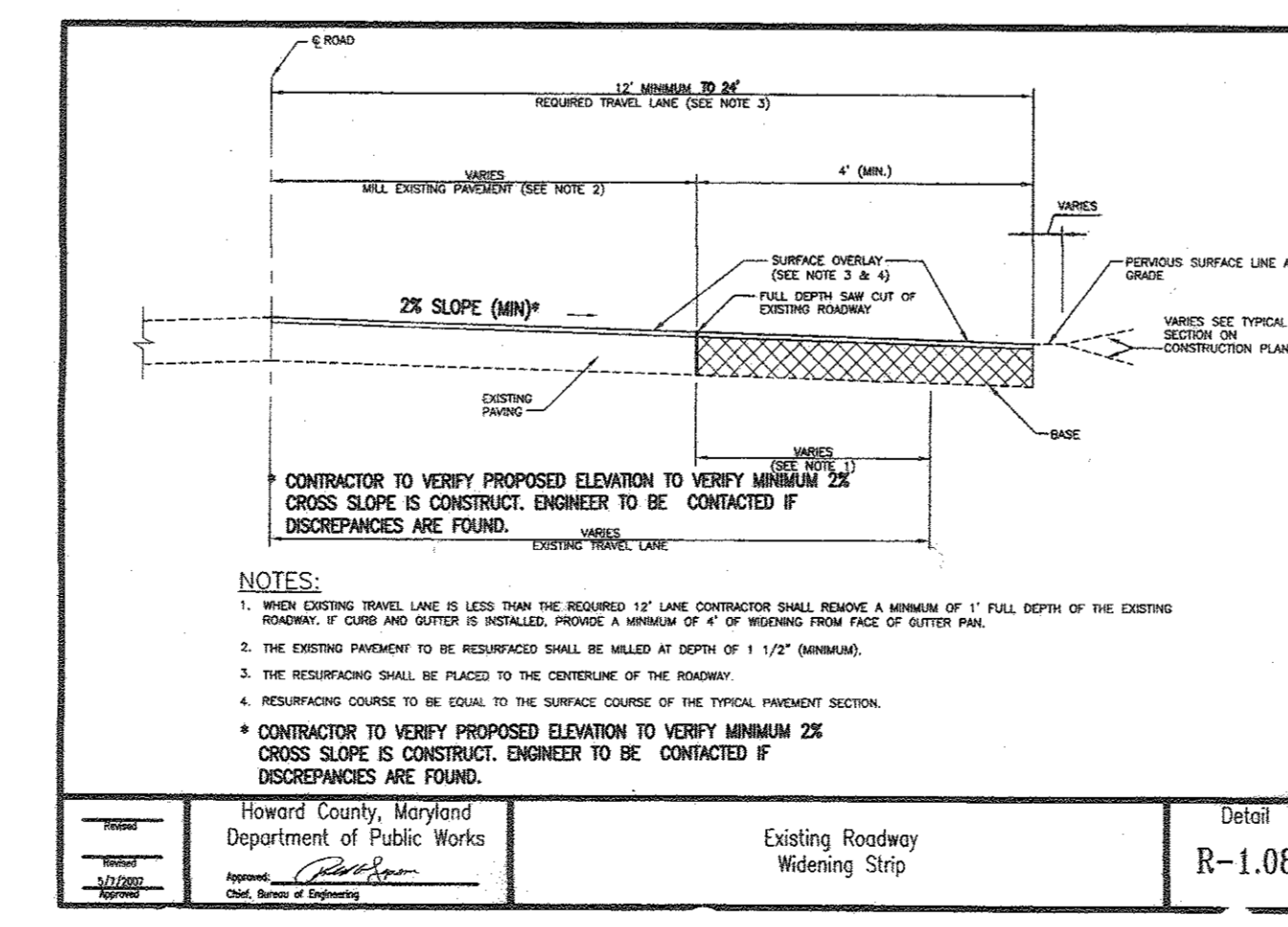
OWNER/DEVELOPER
7410 GRACE DRIVE, LLC
7410 GRACE DRIVE
COLUMBIA, MD 21045
443-739-6077



SOILS LEGEND
HOWARD COUNTY SOILS MAP #17

SYMBOL	NAME / DESCRIPTION	GROUP	K FACTOR	ERODIBLE	HYDRIC
MuC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	.28	NO	NO
MdD	MANOR LOAM, 15 TO 25 PERCENT SLOPES	B	.28	YES	NO
MkF	MANOR BRINKLOW COMPLEX, 25 TO 65 PERCENT SLOPES, VERY ROCKY	B	.32	YES	NO

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

Chad Edelman
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 11-14-16

Veronica Deane
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 12-2-16

Valerio Jofine
DIRECTOR
DATE: 12-5-16

NO. _____ REVISION _____ DATE _____

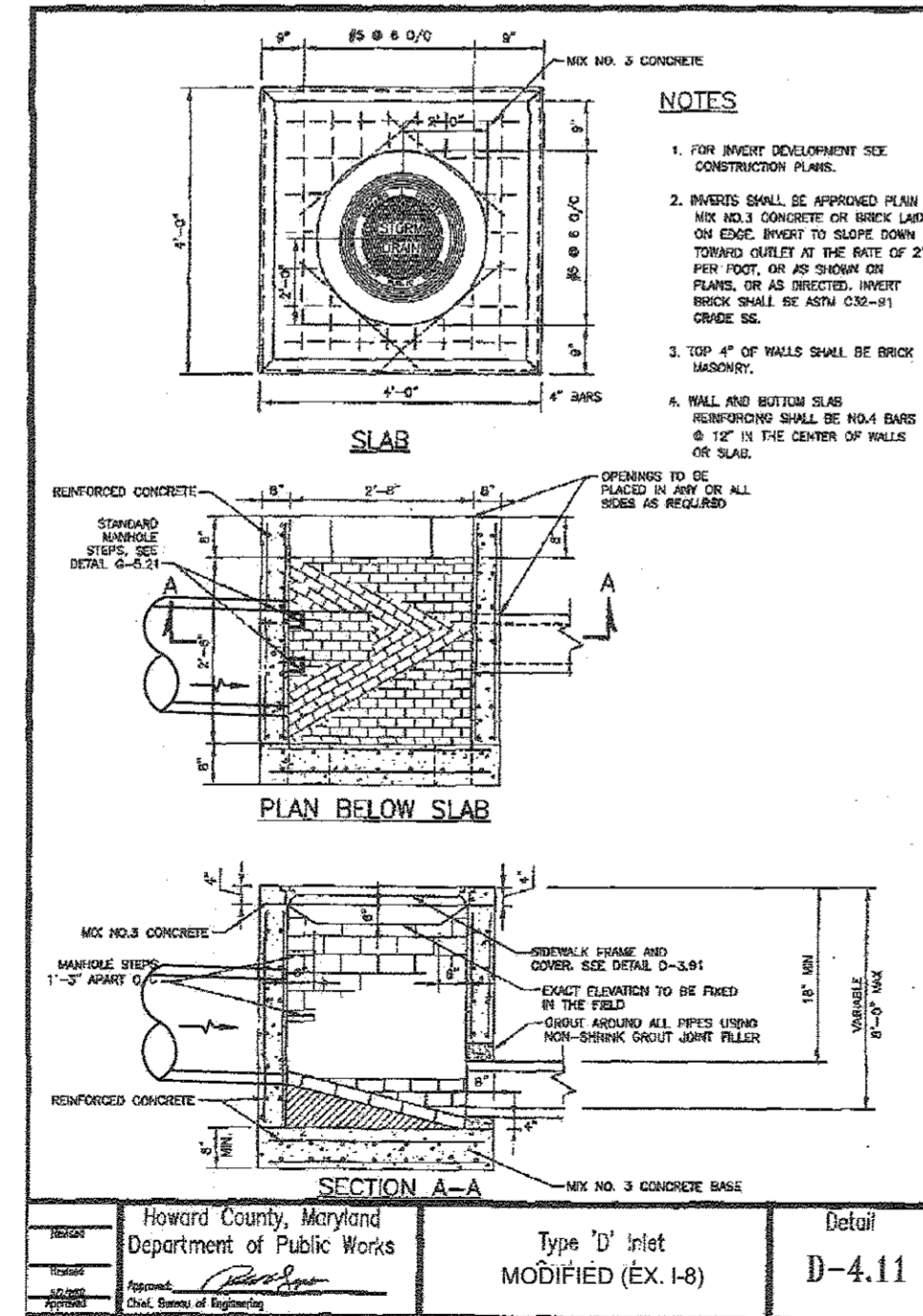
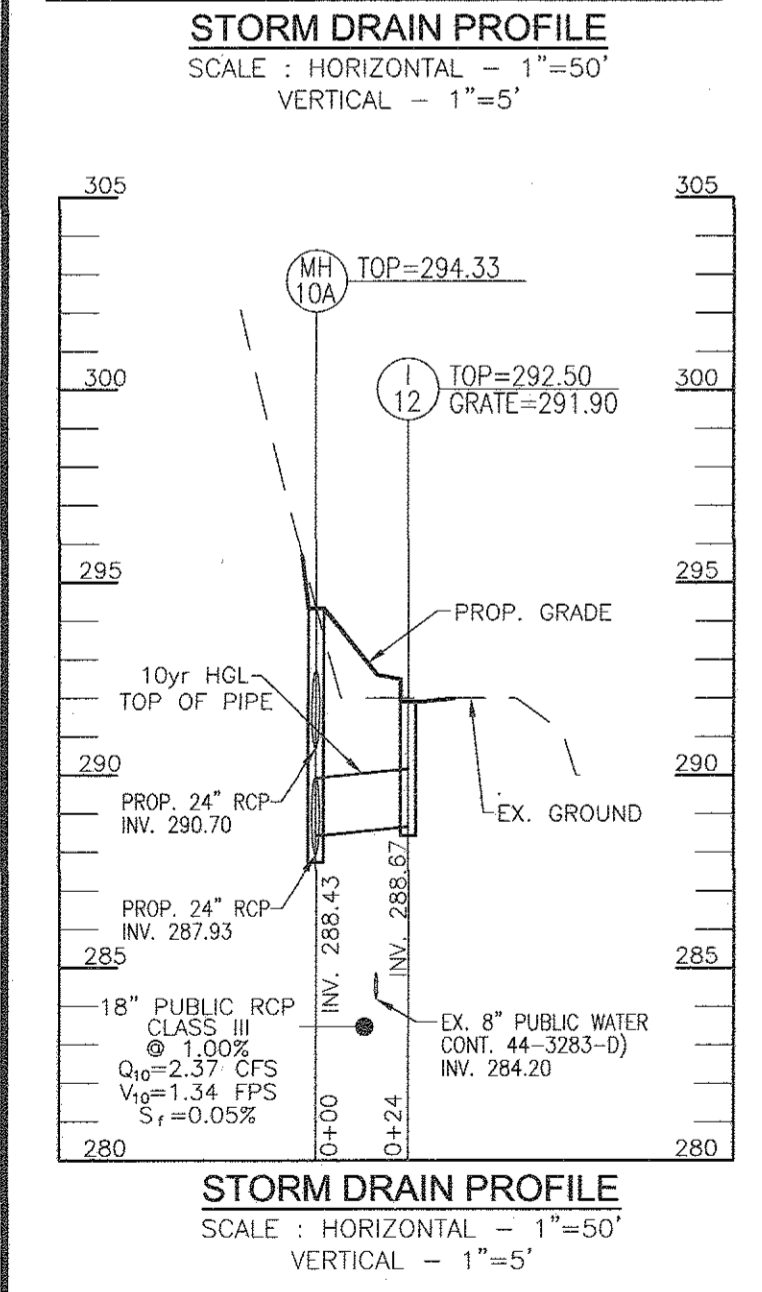
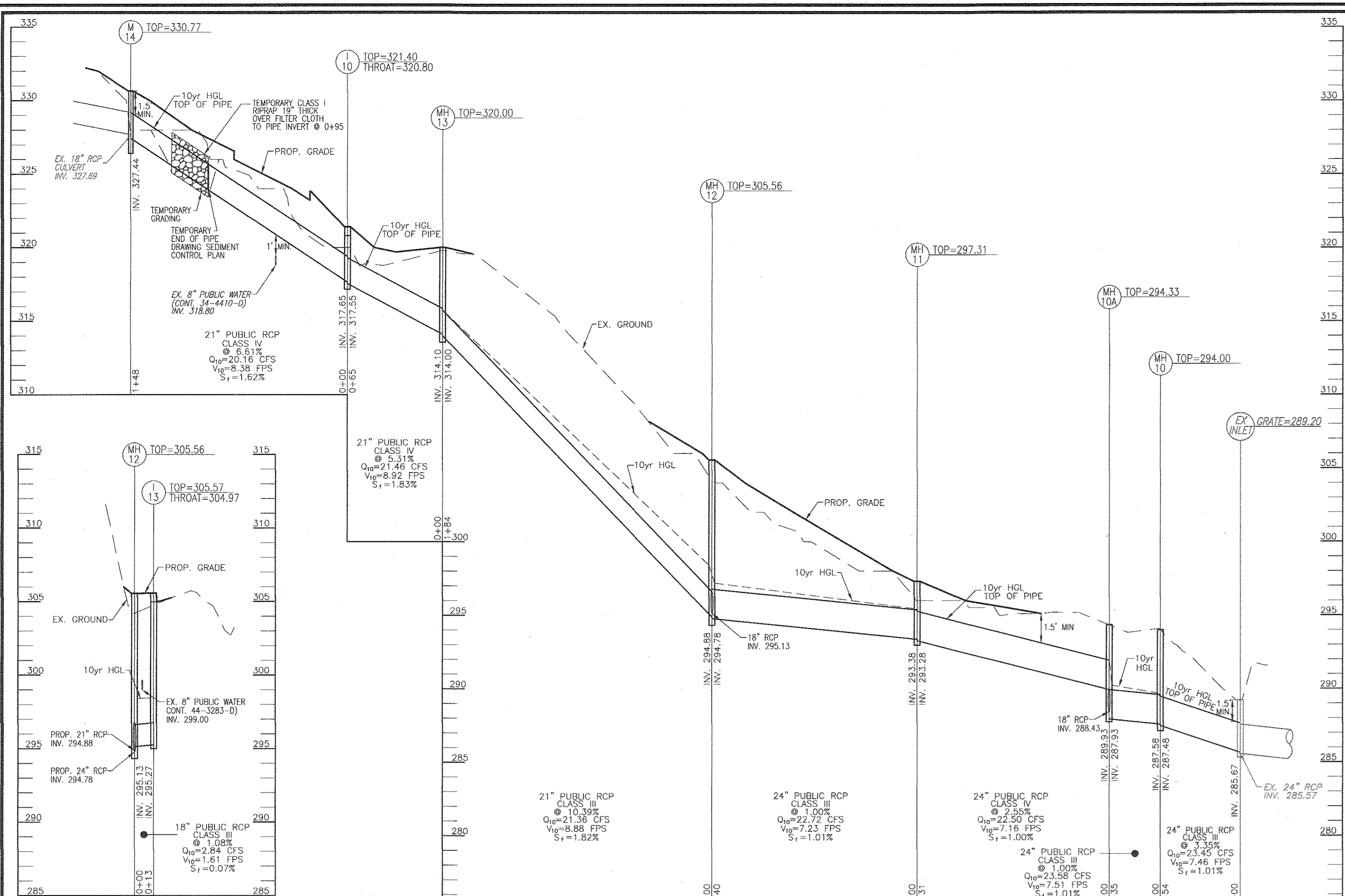
SITE DEVELOPMENT PLAN
STORM DRAIN DRAINAGE AREA MAP
FINO VINO
OFFICE BUILDING AND RESTAURANT
TAX MAP 35 5TH ELECTION DISTRICT
GRID 22 DISTRICT
HOWARD COUNTY, MARYLAND
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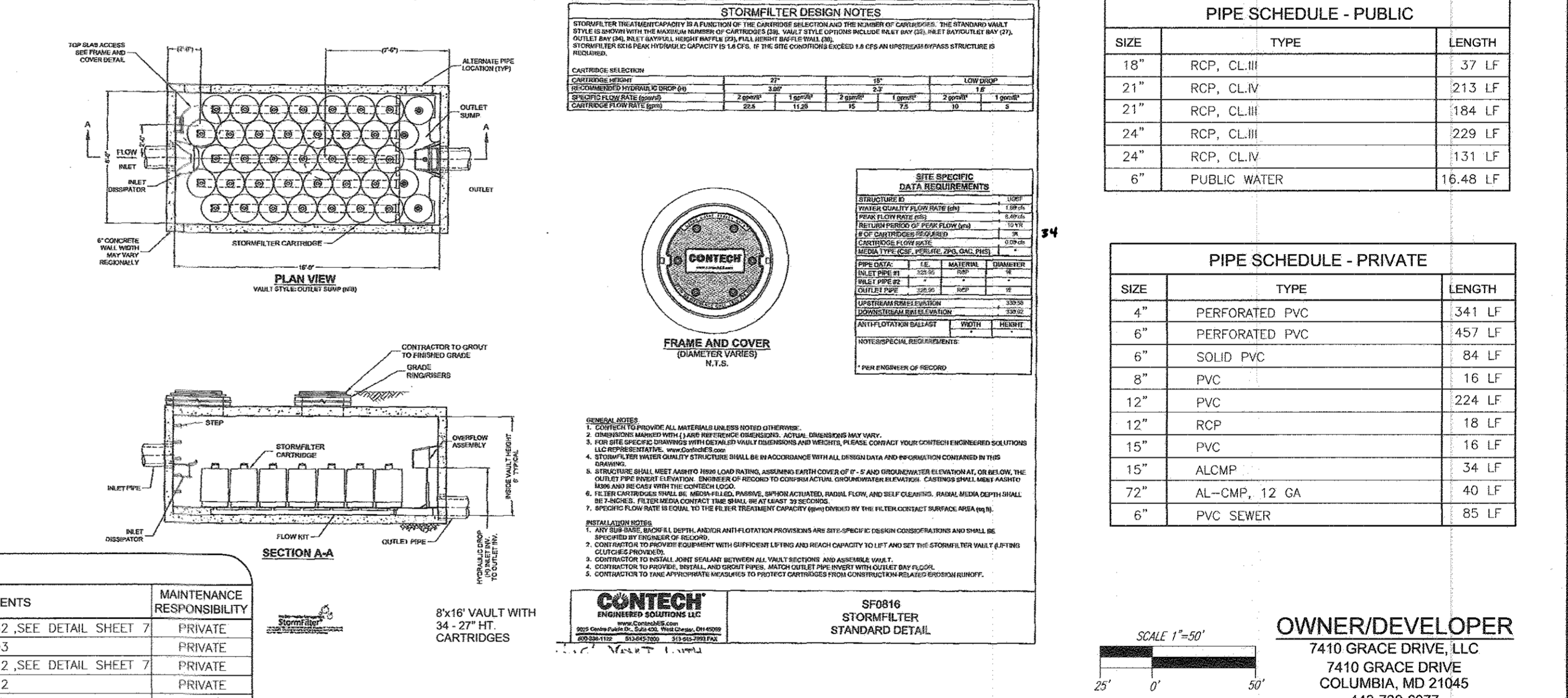
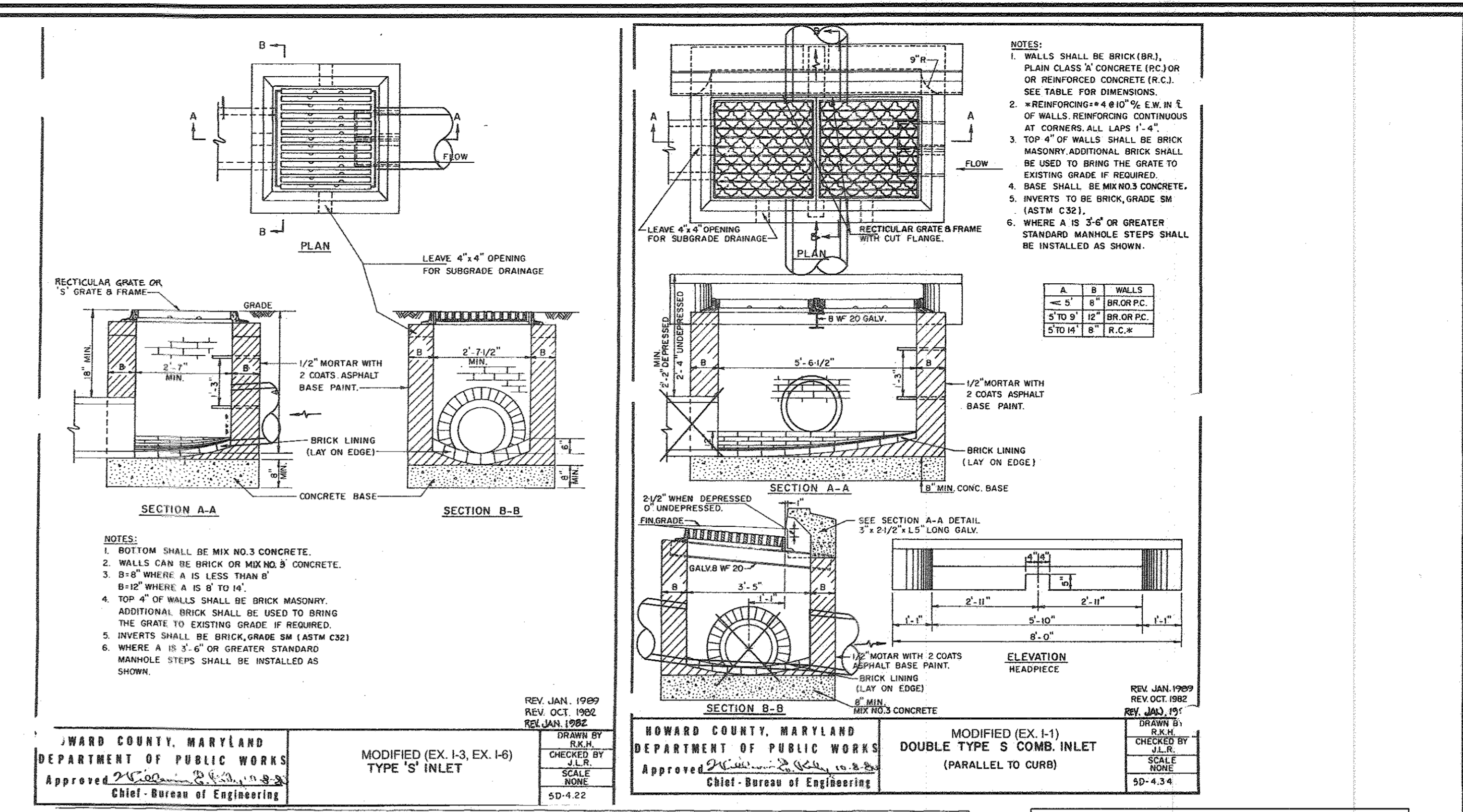
6 SHEET OF 12
SDP-15-078



STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	TOP ELEV.	INV. IN	INV. OUT	COMMENTS	MAINTENANCE RESPONSIBILITY
EXJ-1	DOUBLE TYPE 'S' COMB. INLET - PARALLEL (MODIF.)	N 553623 E 1341513	337.23	337.12	332.92	HO. CO. STD SD-4.32, SEE DETAIL SHEET 7	PRIVATE
EXJ-2	TYPE 'A'-10" INLET	N 553651 E 1341405	343.21	342.88	338.68	HO. CO. STD SD-4.03	PRIVATE
EXJ-3	TYPE 'S' INLET	N 553762 E 1341309	345.32	341.03	340.94	HO. CO. STD SD-4.22, SEE DETAIL SHEET 7	PRIVATE
EXJ-4	TYPE 'S' INLET	N 553856 E 1341336	344.84	---	342.08	HO. CO. STD SD-4.22	PRIVATE
EXJ-5	TYPE 'A'-10" INLET	N 553733 E 1341863	329.47	---	325.92	HO. CO. STD SD-4.03	PRIVATE
EXJ-6	TYPE 'S' INLET, CONVERT TO MANHOLE	N 553856 E 1341534	334.32	327.29	327.19	HO. CO. STD SD-4.22, SEE DETAIL SHEET 7	PRIVATE
EXJ-7	TYPE 'A'-5" INLET, CONVERT TO TYPE 'S' INLET	N 553893 E 1341503	333.97	327.72	327.69	HO. CO. STD SD-4.01	PRIVATE
EXJ-8	TYPE 'D' INLET - 4 OPENINGS (MODIF.)	N 553934 E 1341481	333.13	328.35	328.10	HO. CO. STD SD-4.11, SEE DETAIL SHEET 7	PRIVATE
EXJ-9	TYPE 'D' INLET - 4 OPENINGS (MODIF.)	N 553935 E 1341434	343.00	---	333.99	HO. CO. STD SD-4.11	PRIVATE
EX-MH-1	4'-0" STANDARD PRECAST MANHOLE	N 553725 E 1341642	329.81	---	324.13	HO. CO. STD. G-5-12	PRIVATE
EX-MH-2	4'-0" STANDARD PRECAST MANHOLE	N 553706 E 1341585	333.33	---	325.43	HO. CO. STD. G-5-12	PRIVATE
EX-MH-3	4'-0" STANDARD PRECAST MANHOLE	N 553822 E 1341306	345.76	341.73	341.49	HO. CO. STD. G-5-12	PRIVATE
EX-MH-4	4'-0" STANDARD PRECAST MANHOLE	N 553734 E 1341639	330.00	324.67	320.23	HO. CO. STD. G-5-12	PRIVATE
EX-MH-5	4'-0" STANDARD PRECAST MANHOLE	N 553781 E 1341658	321.00	315.70	307.20	HO. CO. STD. G-5-12	PRIVATE
I-10	TYPE 'A'-10" INLET, 3' INSIDE WIDTH	CL STA 104+58, 28.00' LT	321.40	317.65	317.55	HO. CO. STD D-4.03	PUBLIC
I-12	DOUBLE TYPE 'S' COMB. INLET - PARALLEL (MODIF.)	CL STA. 15+87, 15.16' LT	292.50	---	288.67	HO. CO. STD SD-4.32	PUBLIC
I-13	TYPE 'A'-10" INLET, 2'-6" INSIDE WIDTH (MODIF.)	CL STA. 13+16, 12.00' LT	305.57	---	295.27	HO. CO. STD D-4.03	PUBLIC
I-7	TYPE 'S' INLET	N 553894 E 1341505	333.80	327.75	327.69	HO. CO. STD. D-4.22	PRIVATE
I-101	TYPE 'YARD' INLET	N 553920 E 1341456	334.00	329.26	329.16	HO. CO. STD. D-4.14	PRIVATE
I-102	TYPE 'YARD' INLET	N 553899 E 1341393	334.00	330.02	329.92	HO. CO. STD. D-4.14	PRIVATE
I-103	TYPE 'YARD' INLET	N 553872 E 1341344	334.00	330.69	330.59	HO. CO. STD. D-4.14	PRIVATE
I-104	TYPE 'YARD' INLET	N 553839 E 1341319	334.00	---	331.10	HO. CO. STD. D-4.14	PRIVATE
I-105	TYPE 'S' INLET	N 553607 E 1341517	337.40	333.07	333.07	HO. CO. STD. D-4.22	PRIVATE
MH-10	4'-0" STANDARD PRECAST MANHOLE	CL STA. 16+25, 39.30' LT	294.00	287.58	287.48	HO. CO. STD. G-5-12	PUBLIC
MH-10A	4'-0" STANDARD PRECAST MANHOLE	CL STA. 15+92, 36.21' LT	294.33	288.13	287.93	HO. CO. STD. G-5-12	PUBLIC
MH-11	4'-0" STANDARD PRECAST MANHOLE	CL STA. 14+61, 27.29' LT	297.31	293.38	293.28	HO. CO. STD. G-5-12	PUBLIC
MH-12	4'-0" STANDARD PRECAST MANHOLE	CL STA. 13+16, 28.33' LT	305.56	301.63	294.78	HO. CO. STD. G-5-12	PUBLIC
MH-13	4'-0" STANDARD PRECAST MANHOLE	CL STA. 11+25, 41.43' LT	320.00	314.10	314.00	HO. CO. STD. G-5-12	PUBLIC
MH-14	4'-0" STANDARD PRECAST MANHOLE	CL STA. 9+05, 29.90' LT	330.77	327.69	327.44	HO. CO. STD. G-5-12	PUBLIC
MH-100	4'-0" STANDARD PRECAST MANHOLE	N 553708 E 1341601	332.33	328.19	320.13	HO. CO. STD. G-5-12	PRIVATE
MH-101	4'-0" STANDARD PRECAST MANHOLE	N 553856 E 1341533	334.00	327.29	327.19	HO. CO. STD. G-5-12	PRIVATE
CO-1	CLEAN OUT	N 553856 E 1341599	333.09	331.88	331.68	HO. CO. STD S-2.22	PRIVATE
CO-2	CLEAN OUT	N 553691 E 1341574	333.90	332.69	332.48	HO. CO. STD S-2.22	PRIVATE
CO-3	CLEAN OUT	N 553693 E 1341406	343.16	341.95	341.00	HO. CO. STD S-2.22	PRIVATE
CO-4	CLEAN OUT	N 553890 E 1341494	334.00	332.79	328.40	HO. CO. STD S-2.22	PRIVATE
CS-7	CONTROL STRUCTURE	N 553784 E 1341648	327.23	316.00	315.90	HO. CO. STD. D-5-11	PRIVATE
HW-1	TYPE 'A' HEADWALL (36" ALCMP)	N 553807 E 1341670	310.25	307.00	---	HO. CO. STD. D-5-11	PRIVATE
SMH-1	STD 4' PRECAST MANHOLE	N 553832 E 1341591	332.00	319.69	317.73	HO. CO. STD. S-2.22	PRIVATE
SMH-2	STD 4' PRECAST MANHOLE	N 553795 E 1341650	322.00	312.00	303.50	HO. CO. STD. S-2.22	PRIVATE
CO-1	SEWER CLEAN OUT	N 553836 E 1341515	---	---	---	HO. CO. STD S-2.22	PRIVATE
CO-2	SEWER CLEAN OUT	N 553831 E 1341530	---	---	325.03	HO. CO. STD S-2.22	PRIVATE

NOTES:
 1. Top elevations are at center top of headpiece for type 'A'-5", 'A'-10" and Double Type 'S' Comb. Inlets at center top of grate for type 'S', Double Type 'S', type 'K' inlet, and top of Manhole cover for Precast Manholes.
 2. For top slab slopes see grading plan.
 3. See Architectural plans for roof drain details.
 4. All custom and non-standard structures to be designed by a qualified structural engineer.



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

1. MATERIAL SPECIFICATIONS

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

2. FILLING MEDIA OR PLANTING SOIL

THE FILLING MEDIA OR PLANTING SOIL SHALL BE A UNIFORM MIX OF SAND, SILTS, CLAYS, AND OTHER MATERIALS OR SUBSTITUTES SHALL BE MADE OR DAWED WITH THE MICRO-BIOTRETION PRACTICE THAT WILL BE SUITABLE TO PLANT GROWTH OR PROVIDE A HABITAT TO THE PLANTING MEDIA MAINTENANCE OPERATIONS. THE PLANTING MEDIA SHALL BE FREE OF BROMIUM GRASS, QUACKERS, JOHNSON GRASS, OR OTHER NOxious WEEDS AS SPECIFIED UNDER COMAR 15.06.01.05.

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

- SOIL COMPOSITION - LOAMY SAND OR SANDY LOAM (SOILS TO BE CLASSIFIED AS SUCH)
- ORGANIC CONTENT - MINIMUM LOY BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (35%-40%) TO MEET THE ORGANIC CONTENT REQUIREMENT.
- CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 1%.
- PHOSPHORUS - SHOULD BE BETWEEN 3.5 TO 100 PPM (PPM) (SEE THE SOIL SUELATE PLUS SUELATE) MAY BE MIXED IN TO THE SOIL TO INCREASE OR DECREASE PH.

THESE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIDER BOTH THE STANDARD SOIL TEST FOR PH AND NUTRIENTS. THESE ORGANIC MATTER AND SOLUBLE SALTS. A FEDERAL ANALYSIS IS REQUIRED FROM THE SITE SUELOFIED TOPSOIL IF TOPSOIL IS APPLIED. THEN A FEDERAL ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.

3. CONSTRUCTION

IF IT IS VERY IMPORTANT TO MAINTAIN COMPARISON OF BOTH THE TYPE OF BIOTRETION PRACTICES AND THE REQUIRED BACKFILL WHEN POSSIBLE, USE EXCAVATION HOLES TO REMOVE ORIGINAL SOIL. PRACTICES ARE EXCAVATED USING LAZERS, THE CONTROLLER SHOULD USE WIRE TRACER OR WIRE TRACER EQUIPMENT OR LIGHT EQUIPMENT WITH THE USE OF EQUIPMENT WITH WIRE TRACER OR WIRE TRACER. USE OF EQUIPMENT WITH WIRE TRACER OR WIRE TRACER, OR HIGH-PRESSURE JETS WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. EQUIPMENT WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.

CONSTRUCTION CAN BE ALTERNATE AT THE BASE OF THE BIOTRETION FACILITY BY USING A LIGHTLY TAMPING OPERATION SUCH AS GUSSET FLOOR, ROLLER, OR SUBROLLER. THESE TAMPING OPERATIONS ARE TO RESTRUCTURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROLLERS TYPICALLY DO NOT KEEP DOWN TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT. ROLLERS 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIOTRETION FACILITY BEFORE BACKFILLING THE GROUND SAND LAYER. PUMP ANY PONDING TO BE BEFORE PREPARING (ROTOTILL) THE BASE.

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

WHEN INSTALLING THE BIOTRETION FACILITY, PLACE SOIL IN LIFTS 12 TO 16 IN. DO NOT USE HEAVY EQUIPMENT WITH THE BIOTRETION BOWL. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BOWL TO SUPPLY SOILS AND SAND. EQUIPMENT WITH LIGHT WEIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH WARE TRUCKS.

4. PLANT MATERIAL

RECOMMENDED PLANT MATERIAL FOR MICRO-BIOTRETION FACILITIES CAN BE FOUND IN APPENDIX A SECTION A.2.3.

5. PLANT INSTALLATION

COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SUBSEQUENCING TO A UNIFORM THICKNESS OF 2 TO 3 INCHES. SPREADDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. FINE MULCH AND WOOD CHIPS WILL FLIGHT AND MOVE TO THE PERIMETER OF THE BIOTRETION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SPREADDED MULCH SHALL BE AT LEAST 3 INCHES ABOVE AND BELOW THE UNDERDRAIN.

BIOTRETION OF THE PLANT MATERIAL SHALL BE KEPT HIGH DURING TROPICAL AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO THAT THE PLANT MATERIAL IS AT LEAST 2 INCHES ABOVE THE UNDERDRAIN. THE PLANT MATERIAL SHALL BE PLANTED AT LEAST 2 INCHES ABOVE THE UNDERDRAIN. THE PLANT MATERIAL SHALL BE PLANTED AT LEAST 2 INCHES ABOVE THE UNDERDRAIN. THE PLANT MATERIAL SHALL BE PLANTED AT LEAST 2 INCHES ABOVE THE UNDERDRAIN. THE PLANT MATERIAL SHALL BE PLANTED AT LEAST 2 INCHES ABOVE THE UNDERDRAIN.

THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM LANDSCAPE CYCLING. THE PRIMARY FUNCTION OF THE BIOTRETION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS, OUTLETS, OR AT A MINIMUM, IMPROVES THE GOAL. USE OF FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AVOID THE SOIL. FERTILIZER AT A RATE OF 1/2 POUNDS PER 1000 SQUARE FEET.

6. UNDERDRAINS

UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:

- A. PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F2919, TYPE 2S, OR ASHTO M-278) IN A GRAVEL LAYER. THE PERFORATED HOLES SHOULD BE SPACED AT A UNIFORM THICKNESS OF 2 TO 3 INCHES. SPREADDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. FINE MULCH AND WOOD CHIPS WILL FLIGHT AND MOVE TO THE PERIMETER OF THE BIOTRETION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SPREADDED MULCH SHALL BE AT LEAST 3 INCHES ABOVE AND BELOW THE UNDERDRAIN.
- B. THE MAIN COLLECTOR PIPE SHALL BE 4" TO 6" DIAMETER RIGID PLASTIC PIPE (ASTM F2919, TYPE 2S, OR ASHTO M-278) IN A GRAVEL LAYER. THE PERFORATED HOLES SHOULD BE SPACED AT A UNIFORM THICKNESS OF 2 TO 3 INCHES. SPREADDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. FINE MULCH AND WOOD CHIPS WILL FLIGHT AND MOVE TO THE PERIMETER OF THE BIOTRETION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SPREADDED MULCH SHALL BE AT LEAST 3 INCHES ABOVE AND BELOW THE UNDERDRAIN.
- C. WHEN SEDIMENT ACCUMULATION OF MORE THAN 2" IS OBSERVED OR ANY OTHER FACTORS THAT MIGHT AFFECT THE OUTFLOW IS OBSERVED, THE FACILITY SHALL BE CLEANED IMMEDIATELY AFTER PETROLEUM SPILLS. THE OWNER SHALL CONTACT THE APPROPRIATE REGULATORY AGENCIES AND NOTIFY THEM OF THE SPILL AND CLEANUP OPERATION.
- D. THE FACILITY SHALL BE CLEANED IMMEDIATELY AFTER PETROLEUM SPILLS. THE OWNER SHALL CONTACT THE APPROPRIATE REGULATORY AGENCIES AND NOTIFY THEM OF THE SPILL AND CLEANUP OPERATION.
- E. THE SEDIMENT AND DEBRIS SHALL BE REMOVED FROM THE UNDERGROUND STORMWATER MANAGEMENT FACILITY BY VACUUM TRUCK, OR OTHER MANUAL MEANS. THE OWNER SHALL FOLLOW PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIAL AND LIQUID.
- F. THE INLET AND OUTLET PIPES SHALL BE CHECKED FOR ANY OBSTRUCTIONS AT LEAST EVERY SIX (6) MONTHS. IF OBSTRUCTIONS ARE FOUND, THE OWNER SHALL HAVE THEM REMOVED AND PROPERLY DISPOSED OF.

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

THESE SPECIFICATIONS INCLUDE INFORMATION ON ACCEPTABLE MATERIALS FOR TYPICAL APPLICATIONS AND ARE NOT INTENDED TO BE USED AS A DESIGN SPECIFICATION FOR DEVELOPING SPECIFICATIONS FOR INDIVIDUAL PROJECTS AND SPECIFIC CONDITIONS.

1. PERVIOUS CONCRETE SPECIFICATIONS

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

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

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

WATER CONTENT - WATER-TO-CEMENT RATIOS BETWEEN 0.27 AND 0.30 ARE USED ROUTINELY WITH PROPER INCLUSION OF CHEMICAL ADMIXTURES. WATER QUALITY SHOULD MEET ACI 304. AS A GENERAL RULE, POTABLE WATER SHOULD BE USED ALTHOUGH RECYCLED CONCRETE PRODUCTION WATER MEETING ASTM C 94 OR ASHTO M 157 MAY ALSO BE USED.

ADMIXTURES - CHEMICAL ADMIXTURES (E.G., RETARDERS OR HYDRATION-STABILIZERS) ARE USED TO OBTAIN SPECIAL PROPERTIES IN PERVIOUS CONCRETE. USE OF ADMIXTURES SHOULD MEET ASTM C 494 (CHEMICAL ADMIXTURES) AND ASTM C 260 (AIR ENTRAINING ADMIXTURES) AND CLOSELY FOLLOW MANUFACTURER'S RECOMMENDATIONS. BASE COURSE - THE BASE COURSE SHALL BE ASHTO NO. 3 OR 4 COURSE AGGREGATE WITH AN ASSUMED OPEN PORE SPACE OF 30% (n=0.30).

2. PERMEABLE INTERLOCKING CONCRETE PAVEMENTS (PICP)

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

INFILL MATERIALS AND LEVELING COURSE - OPENINGS SHALL BE FILLED WITH ASTM C-33 GRADED SAND OR SANDY LOAM. PICP BLOCKS SHALL BE PLACED ON A ONE-INCH THICK LEVELING COURSE OF ASTM C-33 SAND.

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

3. REINFORCED TURF

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

SUMMARY TABLE

SP#1 3.08AC.	REQUIREMENT	VOLUME REQUIREMENT W/O CREDITS	CREDITS	VOLUME REQUIREMENT AFTER CREDITS	NOTES
1	WATER QUALITY VOLUME WOV	0.20 AC.FT.	N/A	0.20 AC.FT.	
2	RECHARGE VOLUME REV	0.05 AC.FT. OR 0.30 AC.	N/A	0.05 AC.FT. OR 0.30 AC.	PROVIDED IN REV TRENCH UNDER ALL SANDFILTERS 0.06 AC.FT. PROVIDED
3	CHANNEL PROTECTION VOLUME CPV	0.20	N/A	0.19 AC.FT. OR 8105 CV.FT.	CPV PROVIDED IN 372 LF OR UNDERGROUND STORAGE
4	OVERHEAD FLOOD PROTECTION, G10P	N/A	N/A	N/A	NOT REQUIRED
5	EXTREME FLOOD VOLUME, G100P	N/A	N/A	N/A	NOT REQUIRED

SWM PROVIDED BY: WOV PROVIDED IN 3 UNDERGROUND SANDFILTERS
REV PROVIDED IN GRASS TRENCH UNDER/AT SANDFILTERS
CPV PROVIDED IN 72" AL-CLMP UNDERGROUND STORAGE FACILITY.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DATE: 11-14-16

DATE: 12-2-16

DATE: 12-5-16

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

1. THE OWNER SHALL PERIODICALLY SWEEP OR VACUUM POROUS CONCRETE PAVEMENT SURFACES TO REMOVE SEDIMENT ACCUMULATION AND ENSURE CONTINUED SURFACE POROSITY. SWEEPING SHOULD BE PERFORMED AT LEAST TWICE ANNUALLY WITH A COMMERCIAL CLEANING UNIT. WASHING OR COMPACTION AIR UNITS SHOULD NOT BE USED TO PERFORM SURFACE CLEANING.

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

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

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

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

1. 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 SHALL BE DISEASED, TRESS AND SHRUBS, AND REPLACE ALL DEFICIENT STEMS AND BRANCHES.

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 BEYOND TREATMENT. REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL. DISINFESTATED TRESS AND SHRUBS, AND REPLACE ALL DEFICIENT STEMS AND BRANCHES.

3. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REACHED BEFORE THE NEW LAYER IS APPLIED.

4. THE OWNER SHALL CHECK FOR SOIL EROSION ON AN AS NEEDED BASIS WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

5. SHOULD SYSTEM FAIL, AND UPON DETERMINING FAILURE OF SYSTEM IS DUE TO PLANTING MEDIA, ALL PLANT MATERIAL WITHIN THE UNIT, INCLUDING TRESS, SHALL BE REMOVED AND REPLACED.

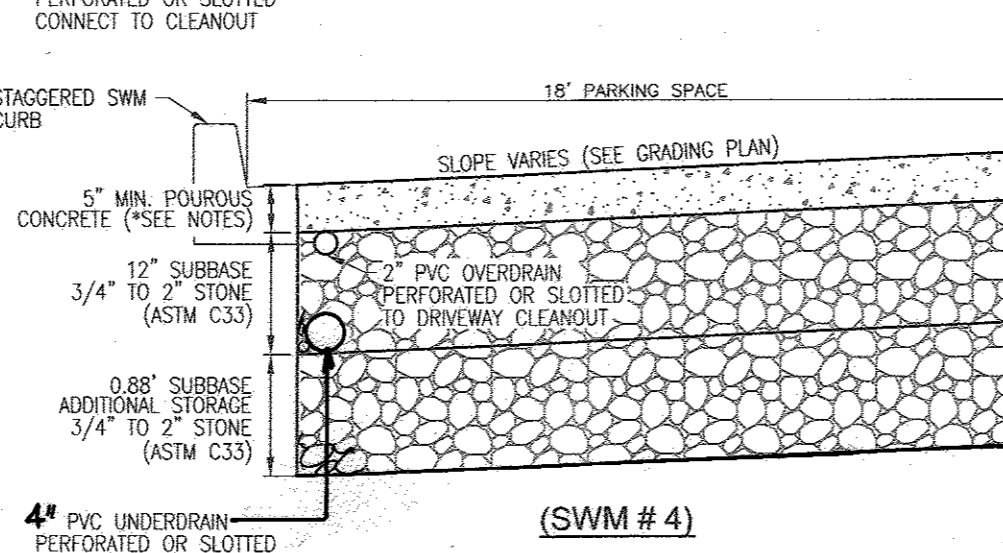
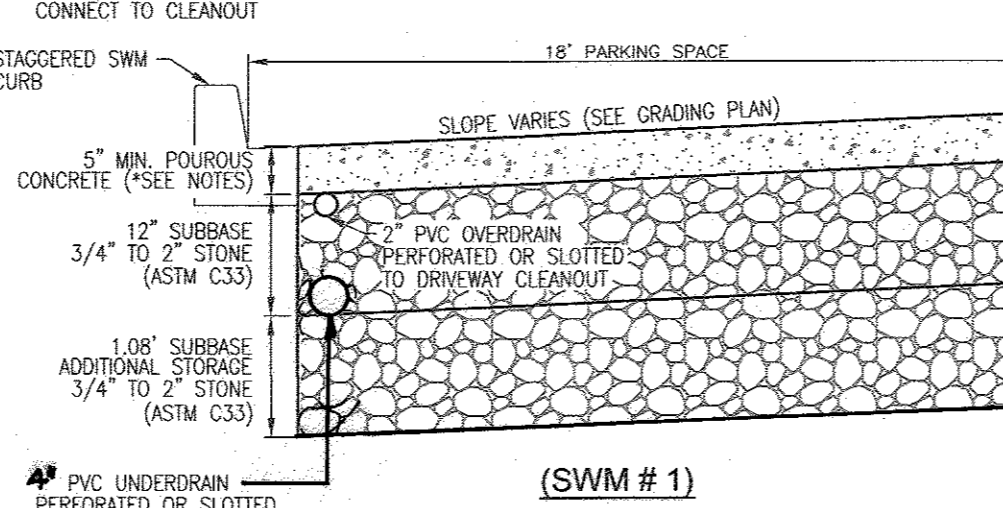
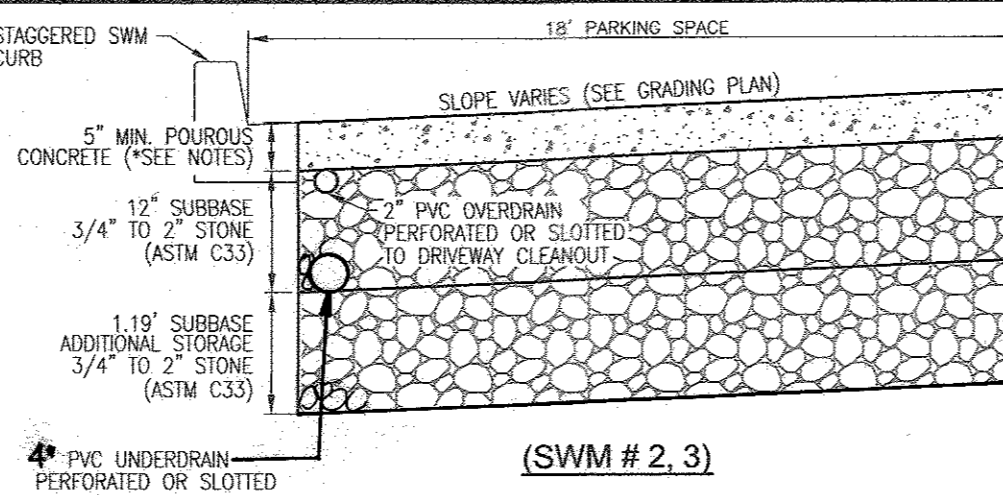
OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED UNDERGROUND FACILITIES

1. THE UNDERGROUND STORMWATER MANAGEMENT FACILITY IS PRIMARILY OWNED AND IT SHALL BE THE RESPONSIBILITY OF THE OWNER TO PERIODICALLY INSPECT AND CLEAN THE FACILITY TO MAINTAIN ITS OPERATION AND FUNCTIONING. THE UNDERGROUND STORMWATER MANAGEMENT FACILITY SHALL BE INSPECTED YEARLY AT A MINIMUM AND AFTER ESPECIALLY SEVERE STORM EVENTS.

2. WHEN SEDIMENT ACCUMULATION OF MORE THAN 2" IS OBSERVED OR ANY OTHER FACTORS THAT MIGHT AFFECT THE OUTFLOW IS OBSERVED, THE FACILITY SHALL BE CLEANED IMMEDIATELY AFTER PETROLEUM SPILLS. THE OWNER SHALL CONTACT THE APPROPRIATE REGULATORY AGENCIES AND NOTIFY THEM OF THE SPILL AND CLEANUP OPERATION.

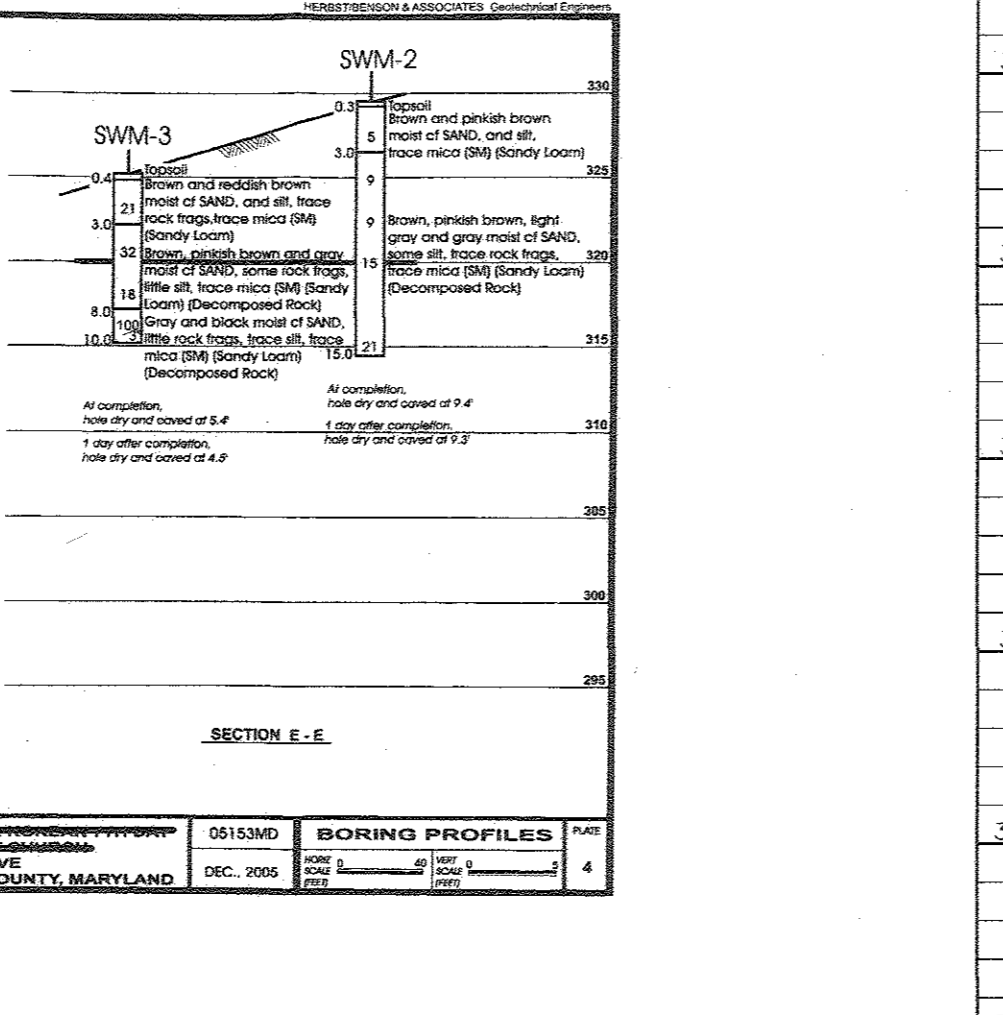
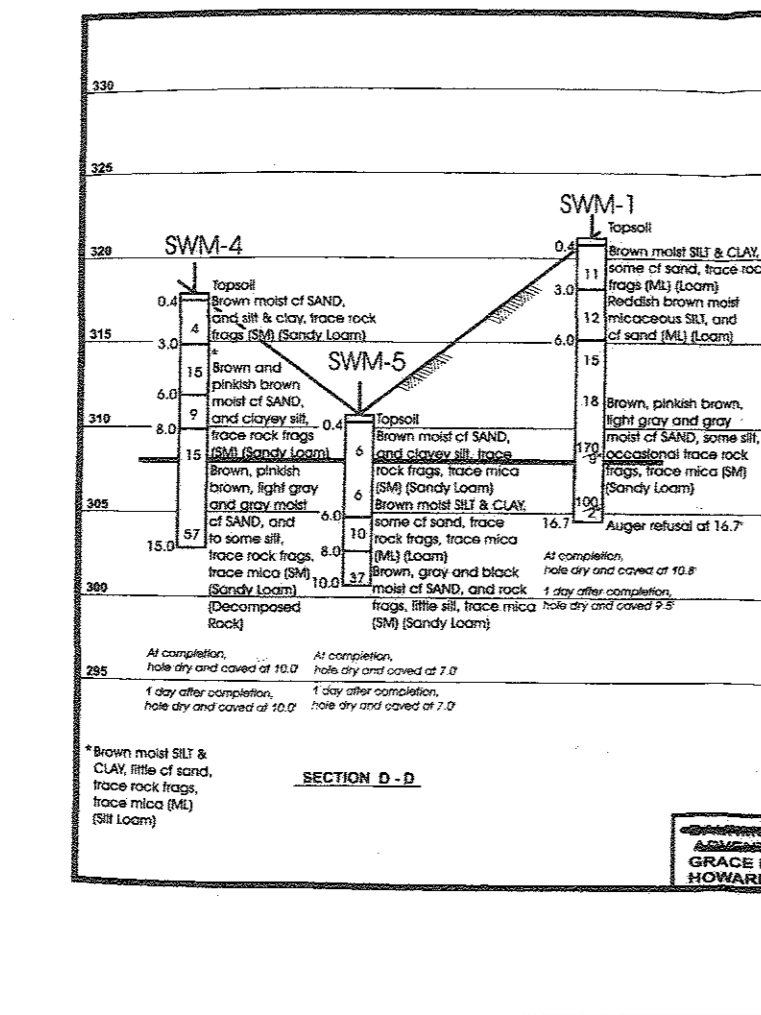
3. THE SEDIMENT AND DEBRIS SHALL BE REMOVED FROM THE UNDERGROUND STORMWATER MANAGEMENT FACILITY BY VACUUM TRUCK, OR OTHER MANUAL MEANS. THE OWNER SHALL FOLLOW PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIAL AND LIQUID.

4. THE INLET AND OUTLET PIPES SHALL BE CHECKED FOR ANY OBSTRUCTIONS AT LEAST EVERY SIX (6) MONTHS. IF OBSTRUCTIONS ARE FOUND, THE OWNER SHALL HAVE THEM REMOVED AND PROPERLY DISPOSED OF.



PERMEABLE CONCRETE PARKING SPACES
(FOR ELEVATIONS AND INVERTS, SEE PROFILES)
NOT TO SCALE

- NOTE:**
- PAVEMENT CROSS SECTION TO BE CONFIRMED BY GEOTECHNICAL ENGINEER
 - PERVIOUS CONCRETE SECTION TO CONFORM TO APPENDIX B.4.B SPECIFICATIONS (FOR PERMEABLE PAVEMENTS) AND DESIGNED BY THE GEOTECHNICAL ENGINEER
 - UNDERDRAINS/OVERDRAINS SHALL CONNECT INTO A TRAFFIC BEARING CLEANOUT AS SHOWN ON THE PLANS.



BORING PROFILES

NO.	DATE	DEPTH (FEET)	SOIL TYPE	REMARKS
1	08/15/20	10.0	CLAY	...
2	08/15/20	10.0	CLAY	...
3	08/15/20	10.0	CLAY	...
4	08/15/20	10.0	CLAY	...

StormFilter Maintenance Guidelines

Maintenance operations and frequency are dependent on the pollution load characteristics of the site and may be adjusted in the event of a chemical spill or due to excessive sediment loading.

Maintenance Procedures

Although there are other effective maintenance systems, CORTICEH recommends the following two step procedure:

1. Inspect: Determine the need for maintenance.
2. Maintenance: Cartridge replacement and sediment removal.

Inspection and Maintenance Activity Timing

At least one scheduled inspection activity should take place per year with maintenance following as necessary.

First inspection should be done before the winter season. During warm months, the need for maintenance should be determined and if disposal during maintenance will be required, samples of the accumulated sediment and media should be obtained.

Second, if warranted, maintenance should be performed during periods of potential discharge.

In addition, you should check the condition of the StormFilter and other main stormwater potential damage caused by high flow and for high sediment accumulation. It may be necessary to adjust the inspection/maintenance activity schedule depending on the actual operating conditions encountered by the system.

Generally, inspection activities can be conducted at any time, and maintenance should occur when flow into the system are relatively low.

Maintenance Activity Frequency

Maintenance is performed on a regular basis, based on inspection. Average maintenance frequency is 1 year. The primary factor controlling timing of maintenance of the StormFilter is sediment loading. Sediment loading is determined, using the following:

Inspection: One time per year

Major Inspections: As needed

Regular Inspections: As needed

Inspection: One time per year

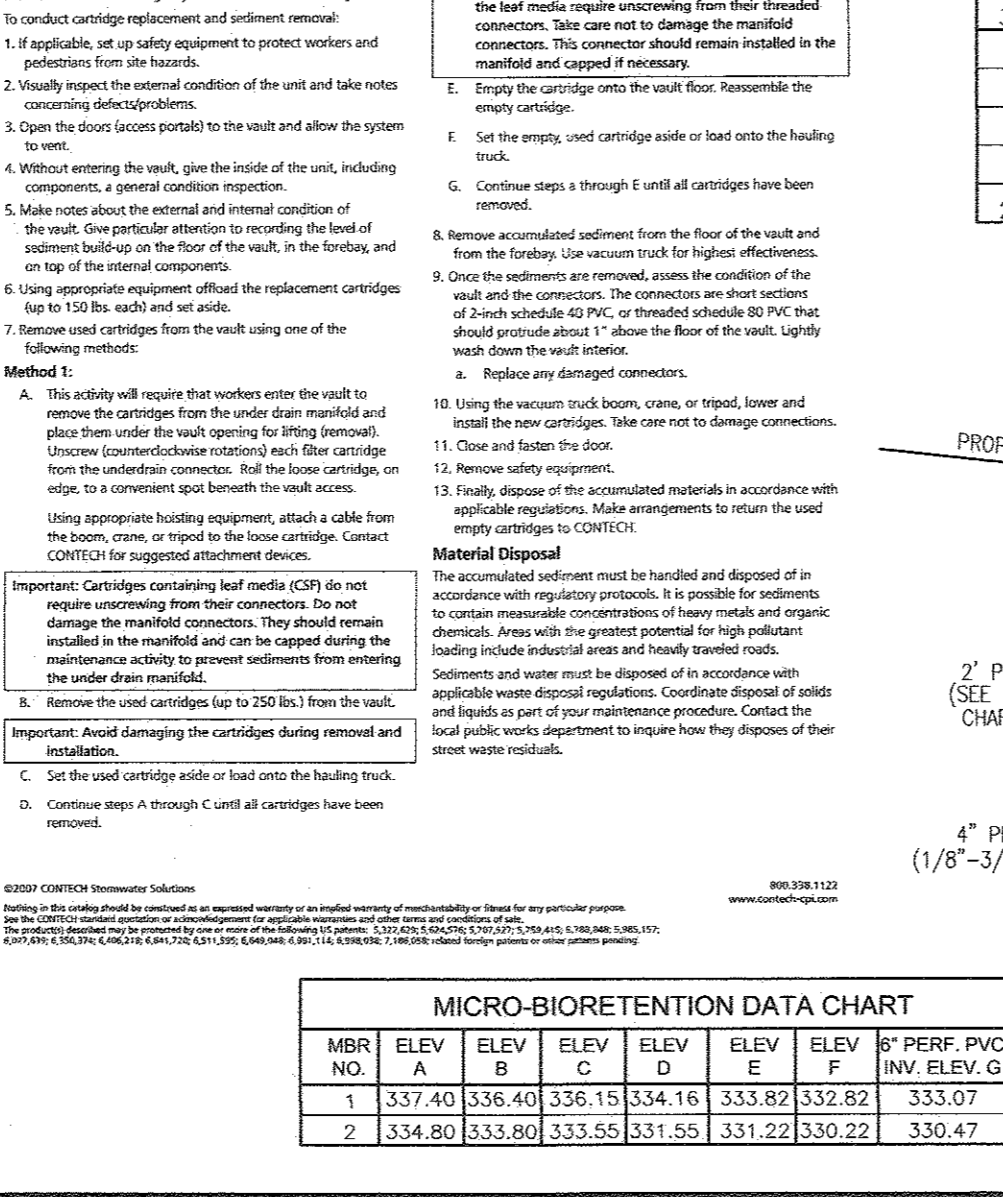
Major Inspections: As needed

Regular Inspections: As needed

Inspection: One time per year

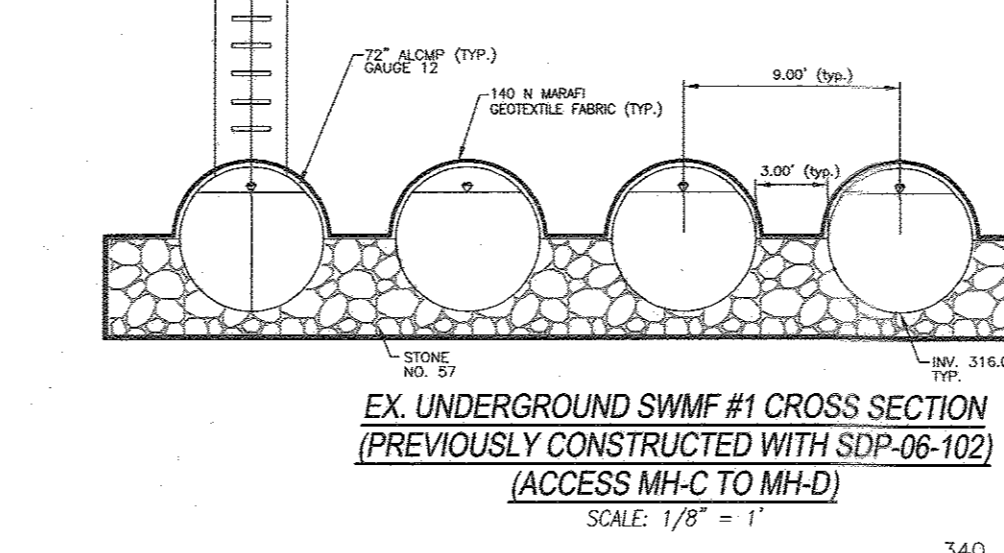
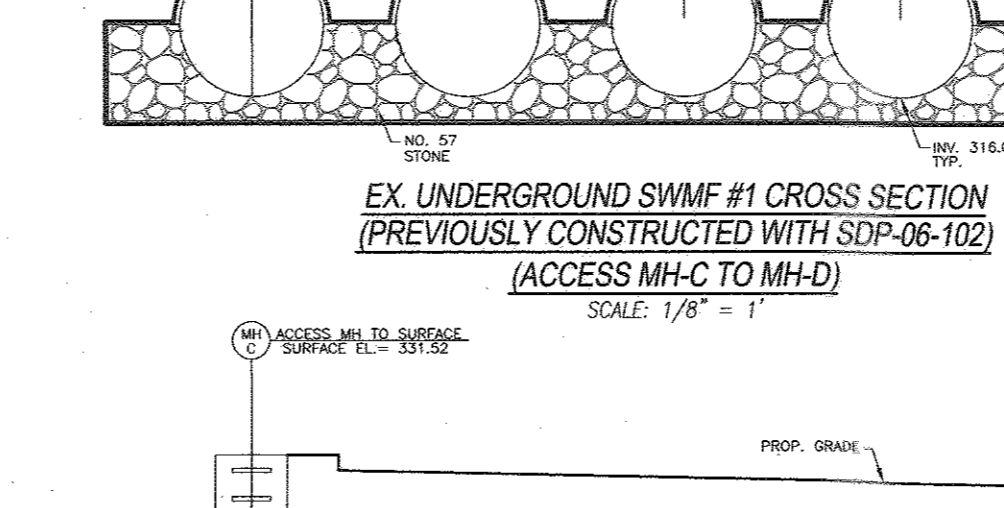
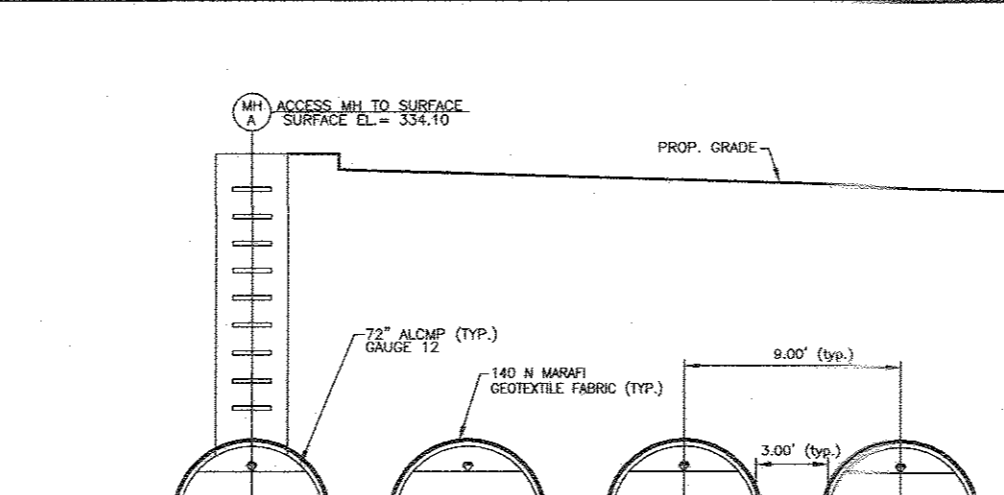
Major Inspections: As needed

Regular Inspections: As needed

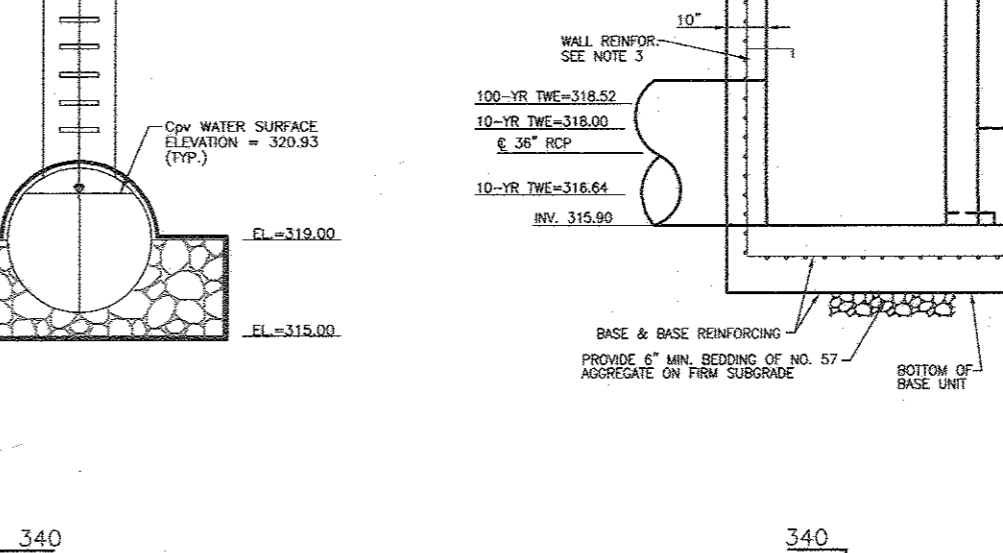
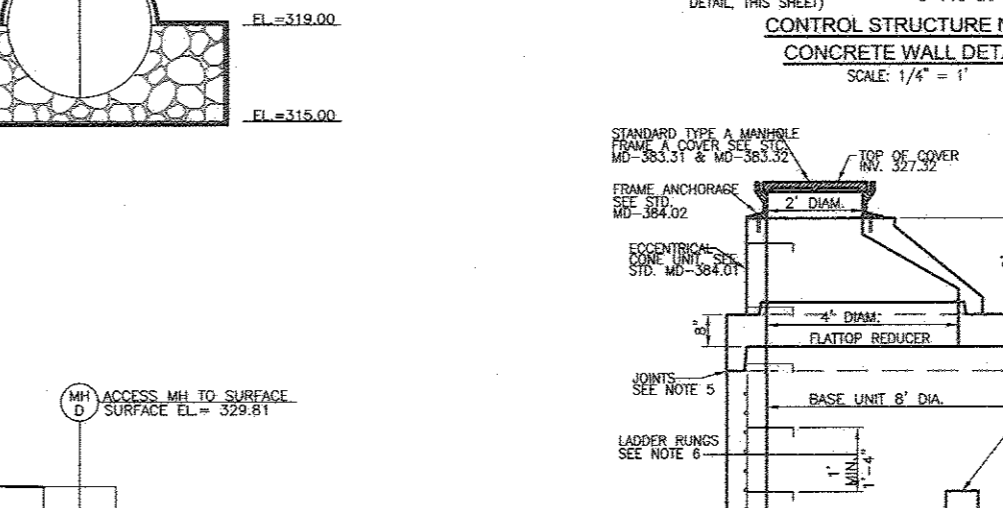
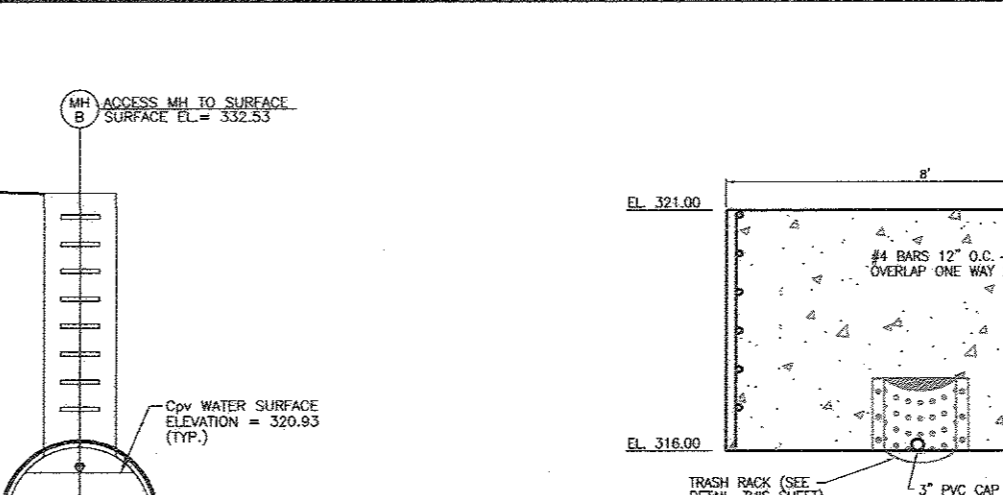
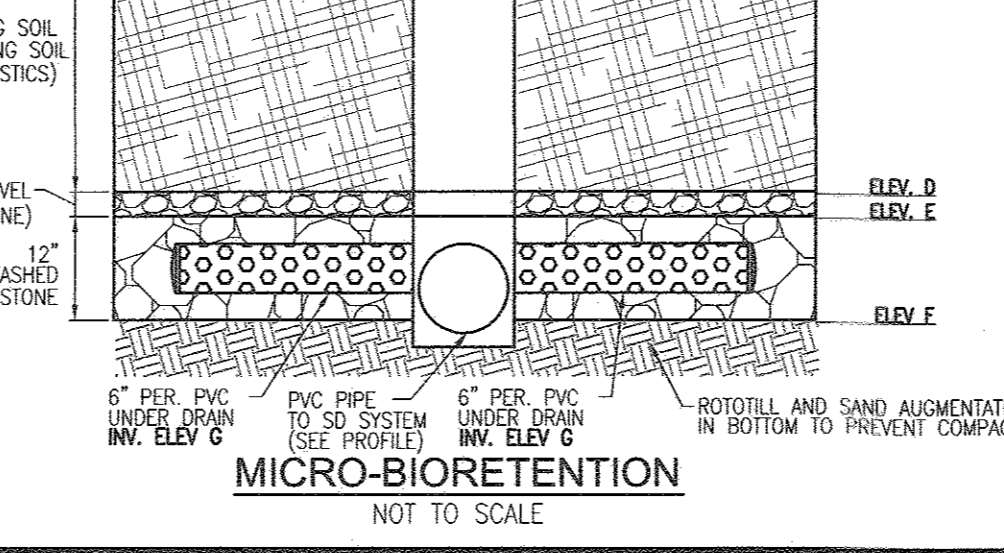
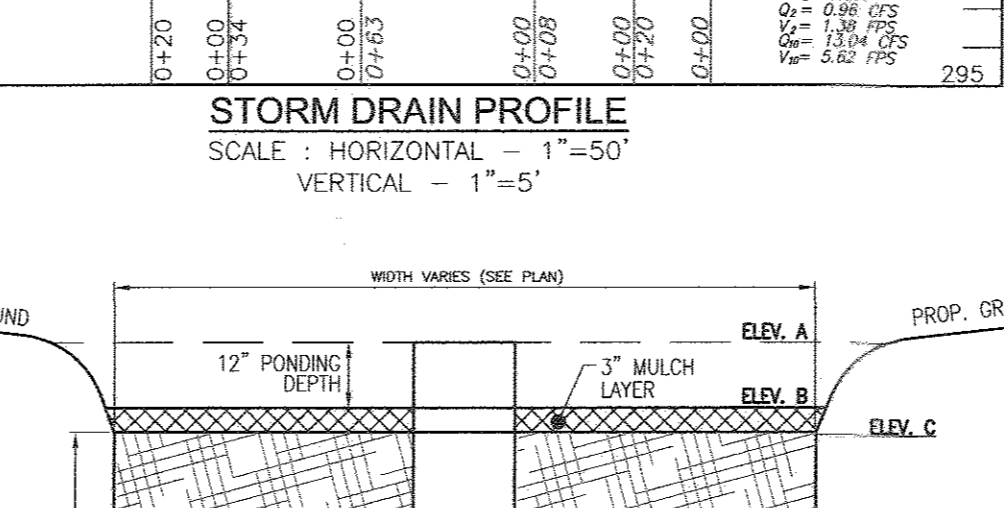
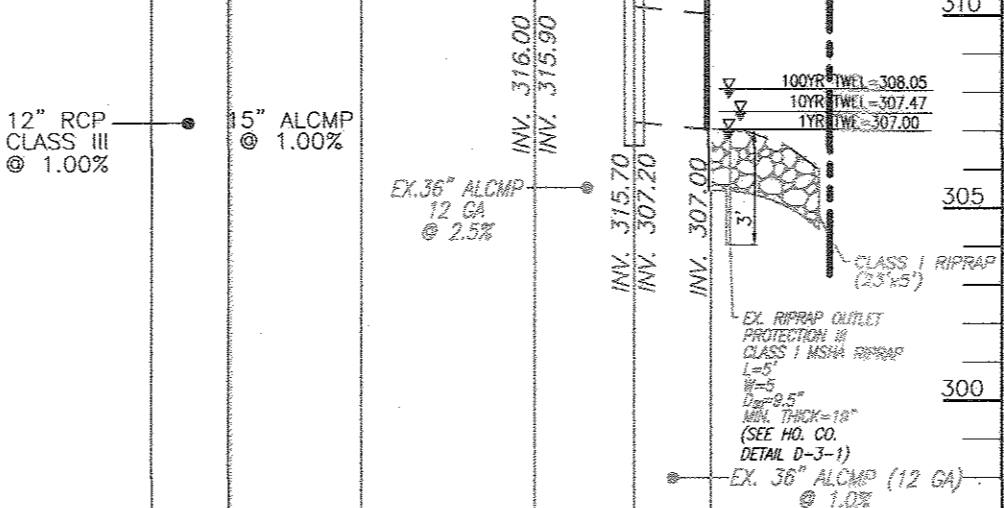
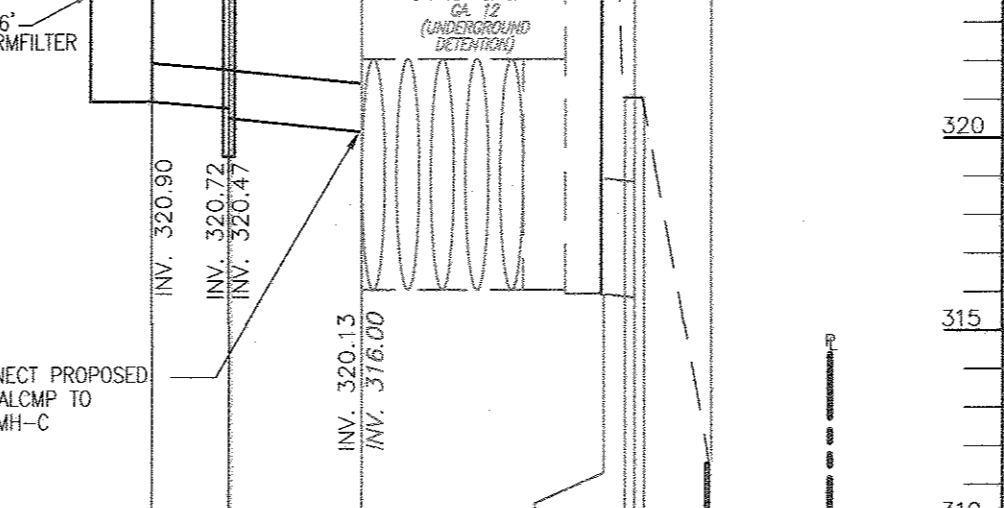
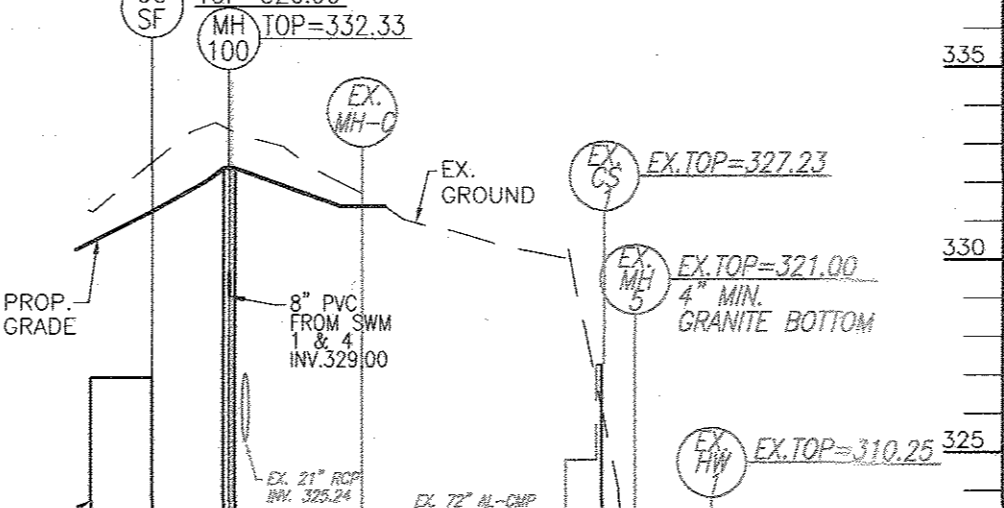


MICRO-BIOTRETION DATA CHART

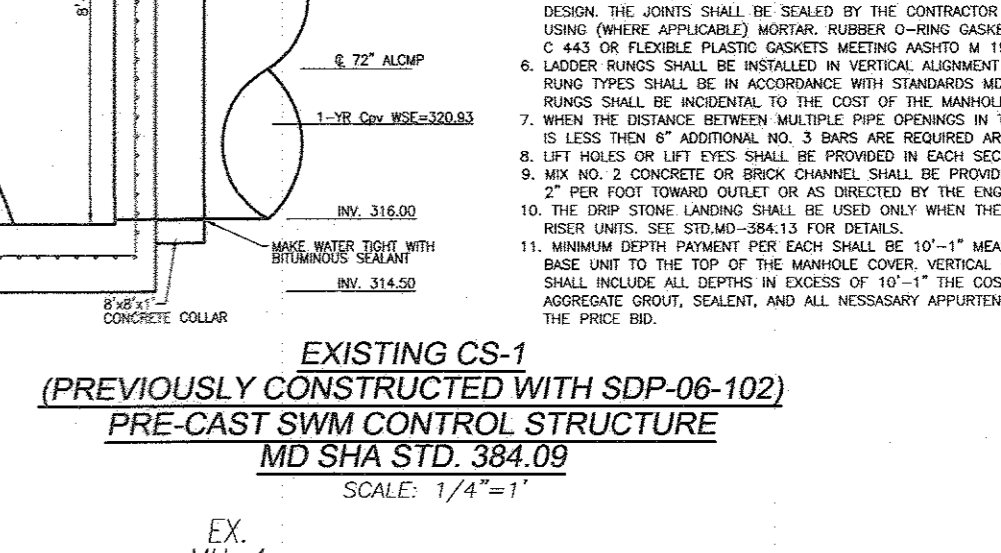
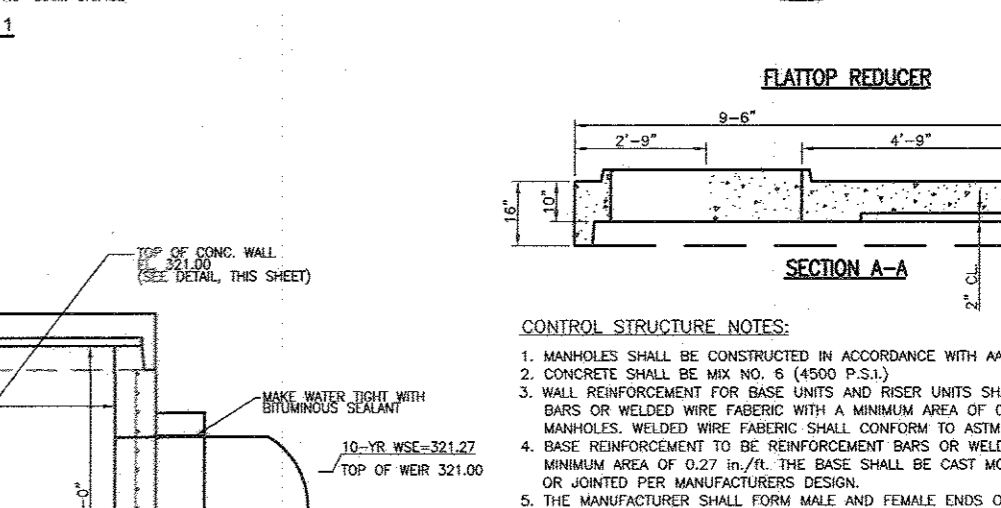
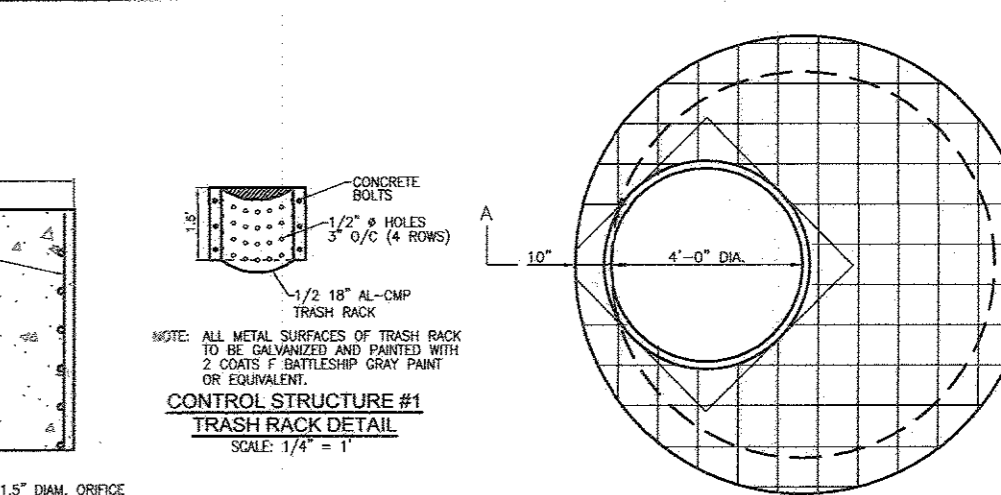
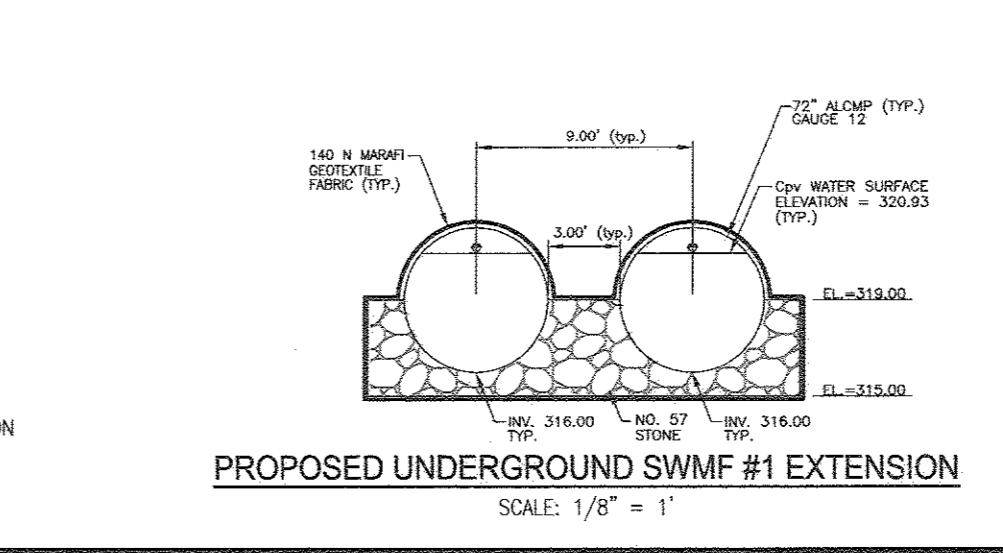
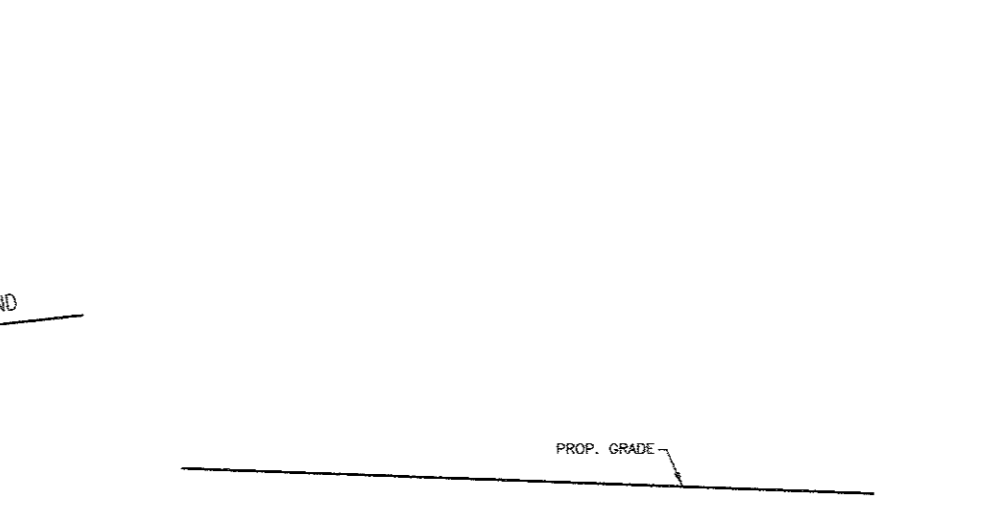
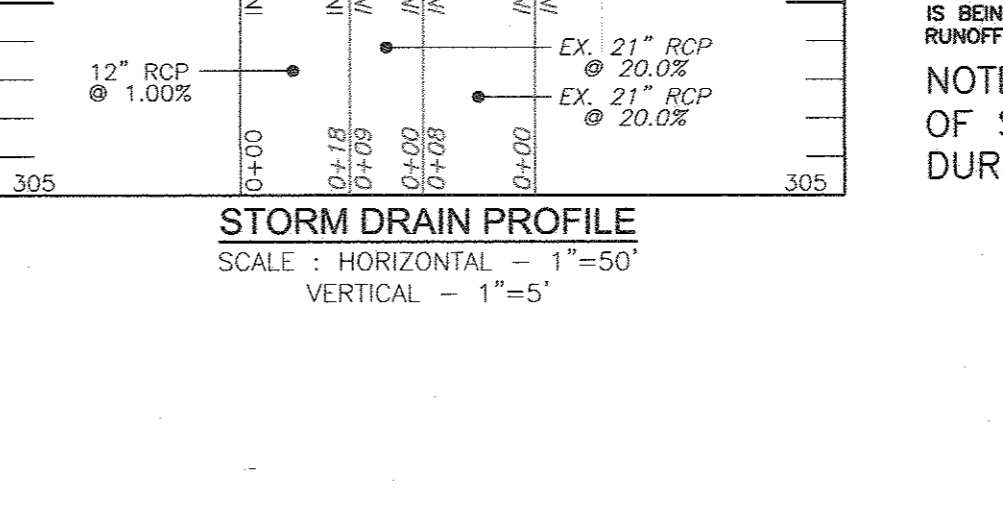
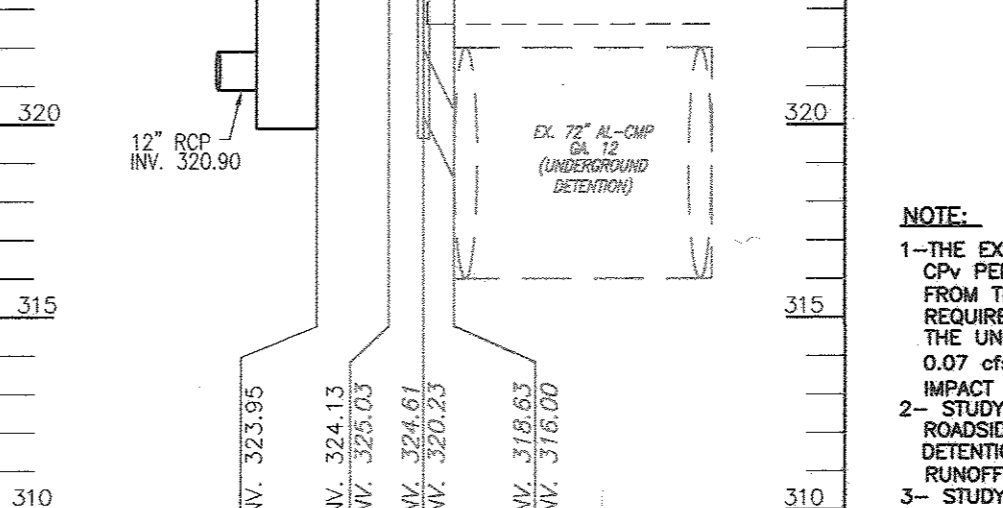
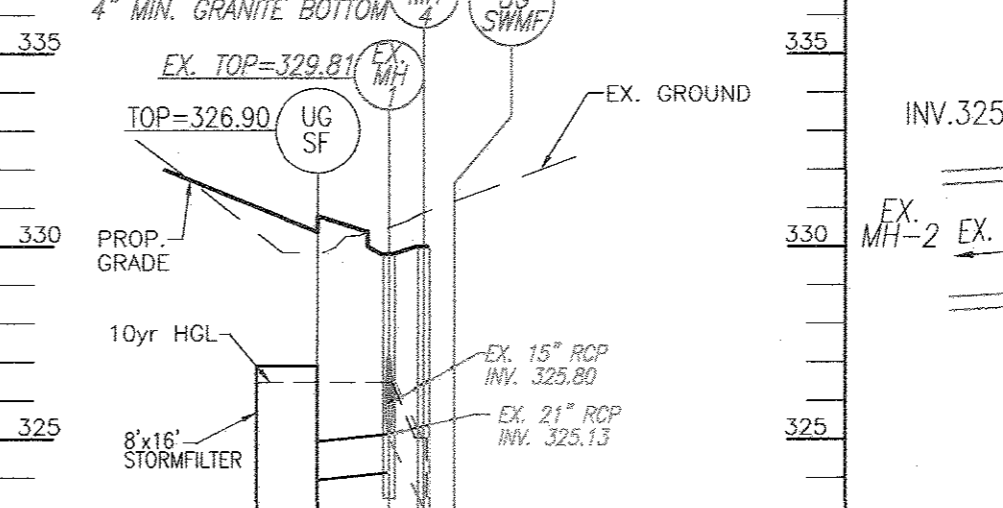
M/R	ELEV. A	ELEV. B	ELEV. C	ELEV. D	ELEV. E	ELEV. F	PERF. PVC INVERT
1	337.40	336.40	336.15	334.16	333.82	332.82	333.07
2	334.80	333.80	333.55	331.55	331.22	330.22	330.47



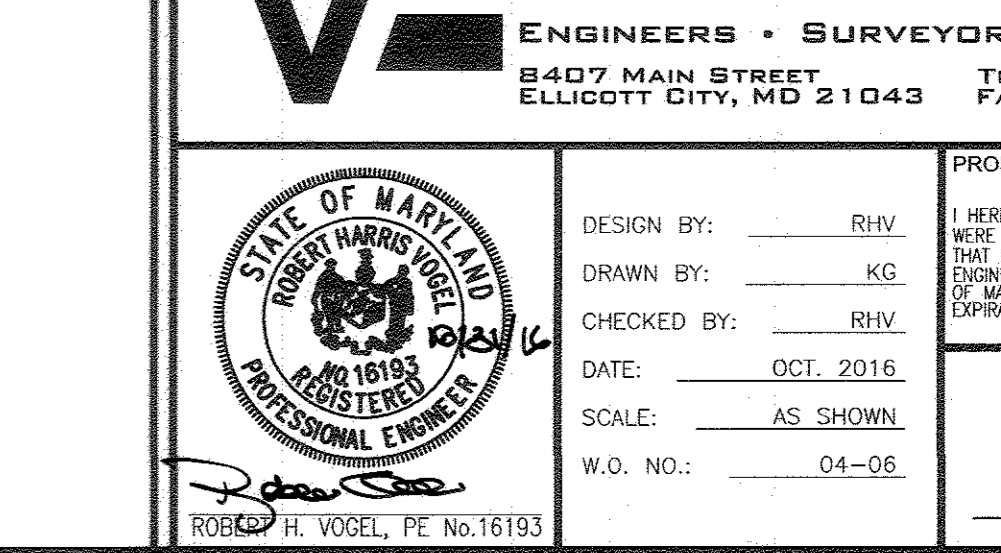
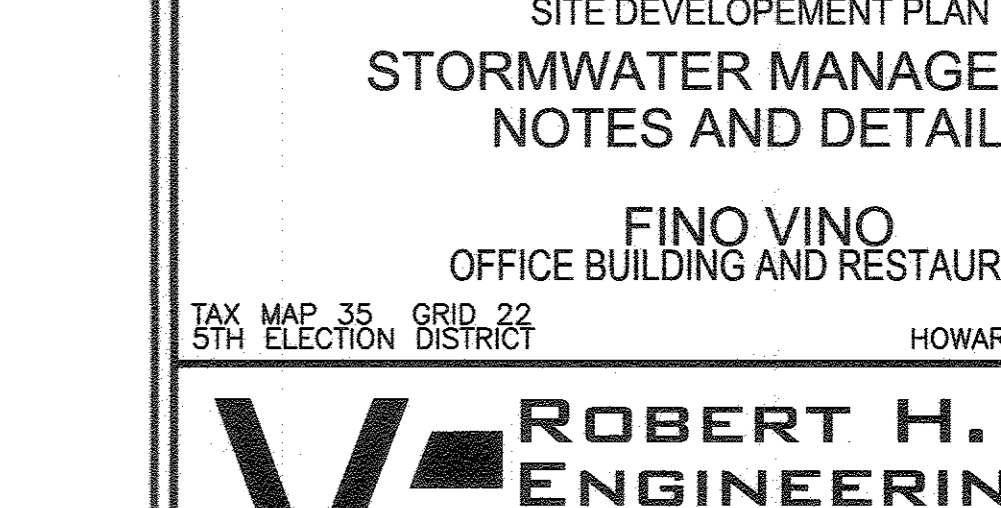
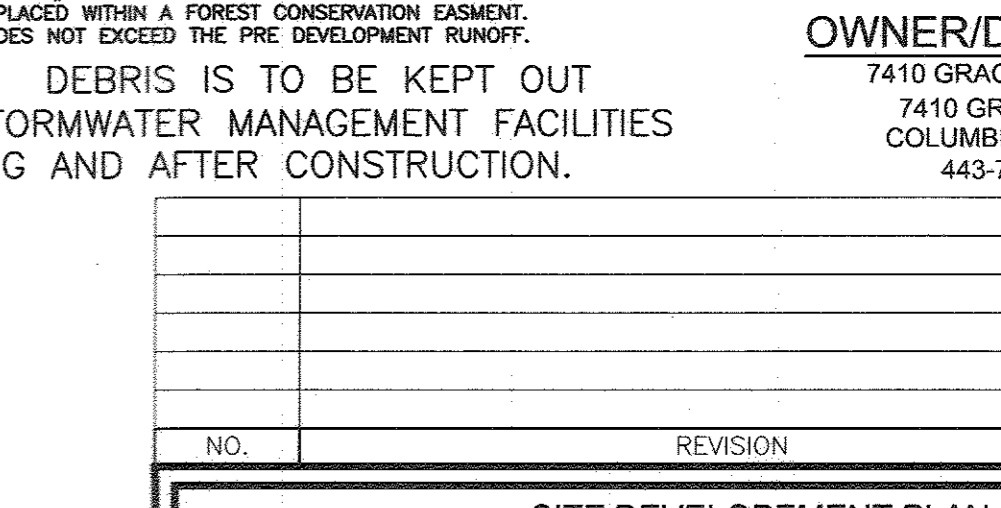
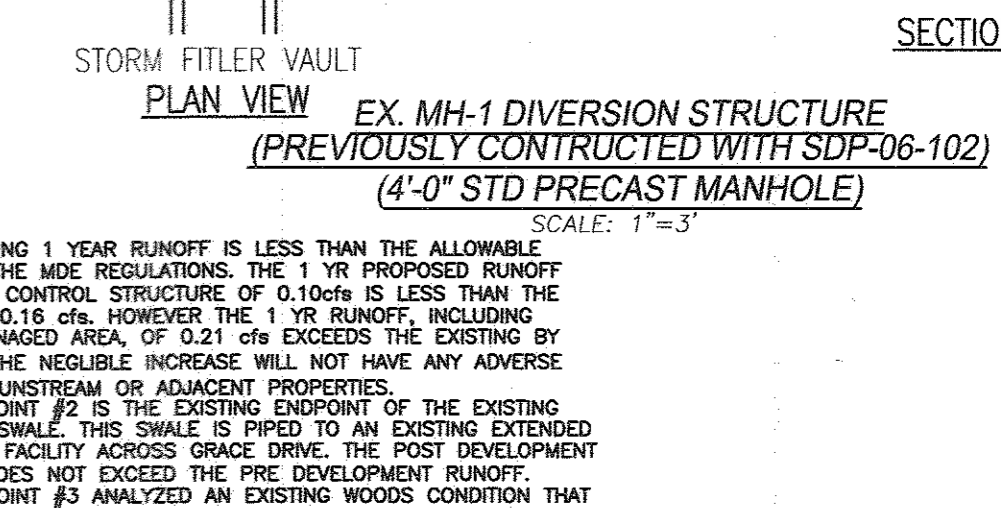
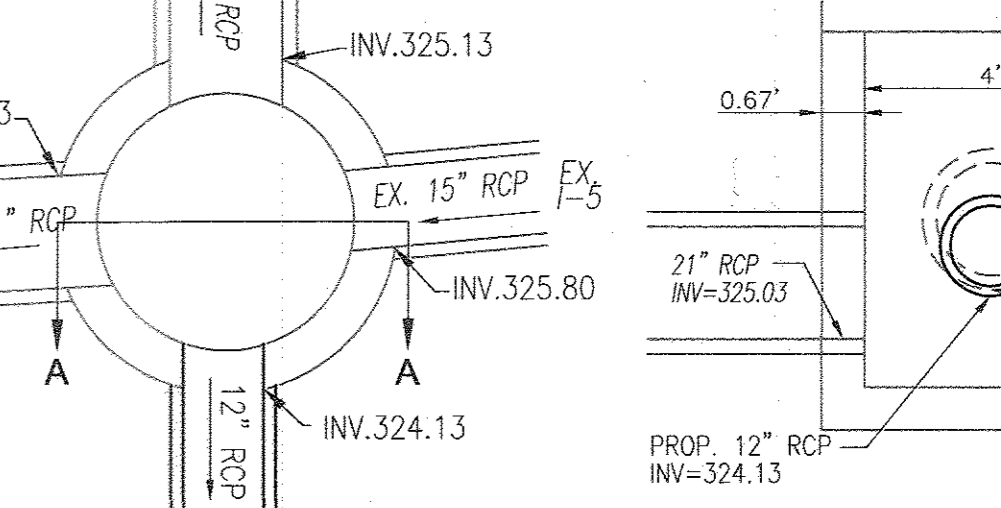
STORM DRAIN PROFILE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



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



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



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

SITE DEVELOPMENT PLAN
STORMWATER MANAGEMENT
NOTES AND DETAILS

FINO VINO
OFFICE BUILDING AND RESTAURANT
ZONED: POR PARCELS 96

5TH MAP 35 GRID 22
TAX MAP SECTION DISTRICT
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELICOTT CITY, MD 21043
TEL: 410-461-7666
FAX: 410-461-8961

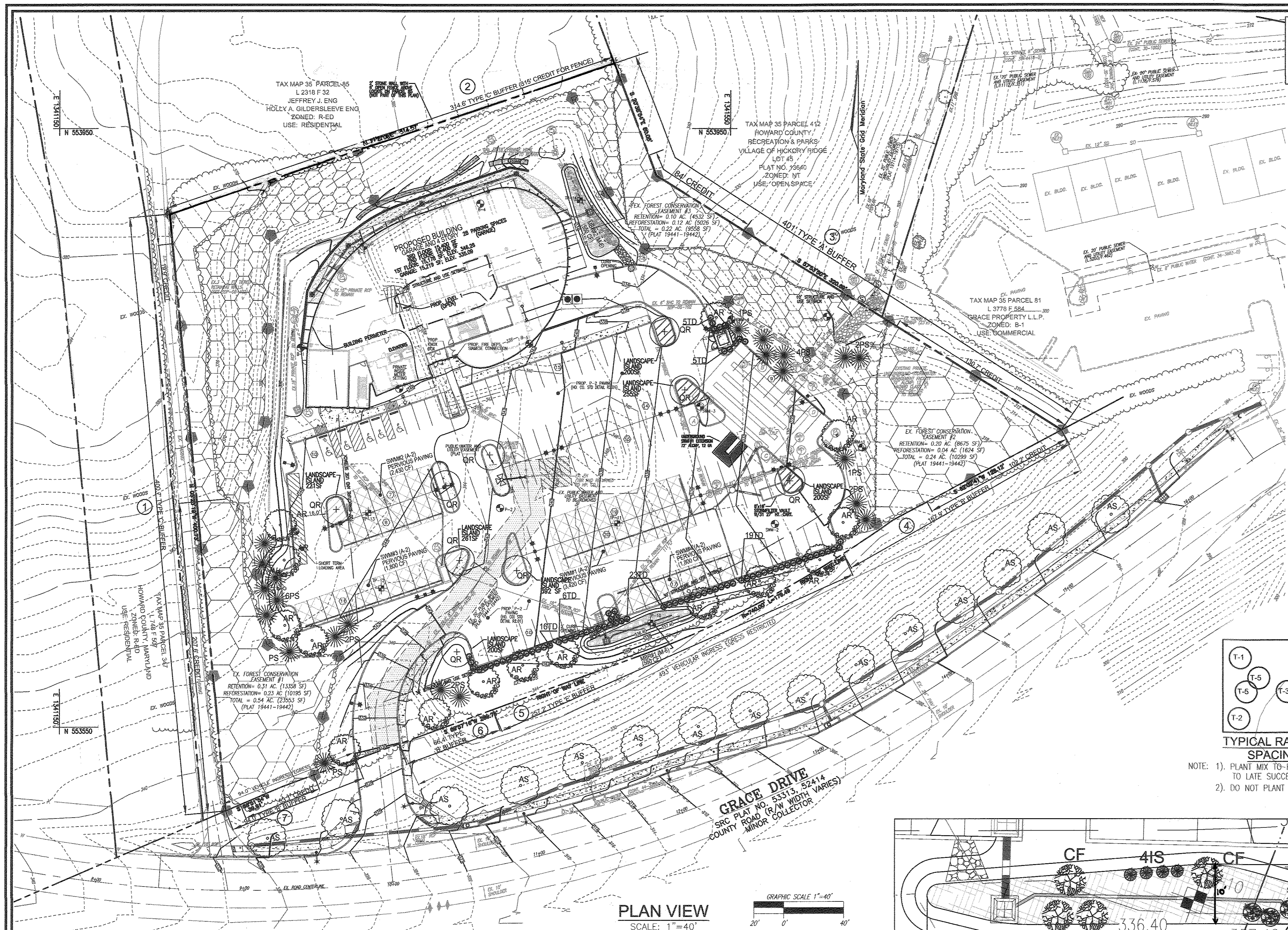
PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2018.

DESIGN BY: RHV
DRAWN BY: KG
CHECKED BY: RHV
DATE: OCT. 16, 2016
SCALE: AS SHOWN
W.O. NO.: 04-06
9 SHEET OF 12

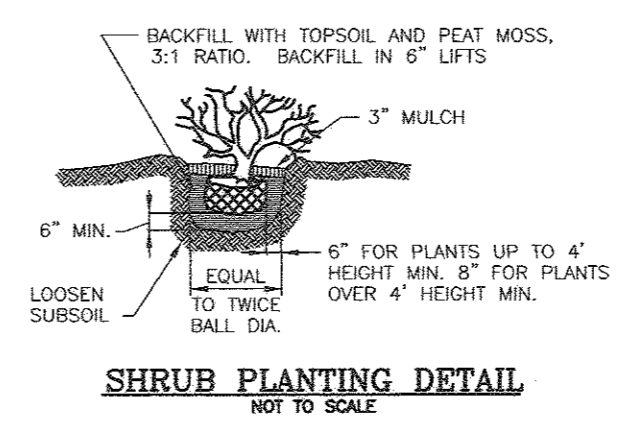
OWNER/DEVELOPER
7410 GRACE DRIVE, LLC
7410 GRACE DRIVE
COLUMBIA, MD 21045
443-739-6077

NO. REVISION DATE

SDP-15-078



STORMWATER MANAGEMENT FACILITY PRIVATELY OWNED AND MAINTAINED



**SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING**

Number of parking spaces	183
Number of trees required	9
Number of trees provided	9
Shade Trees	9
Other Trees (2:1 Substitution)	0

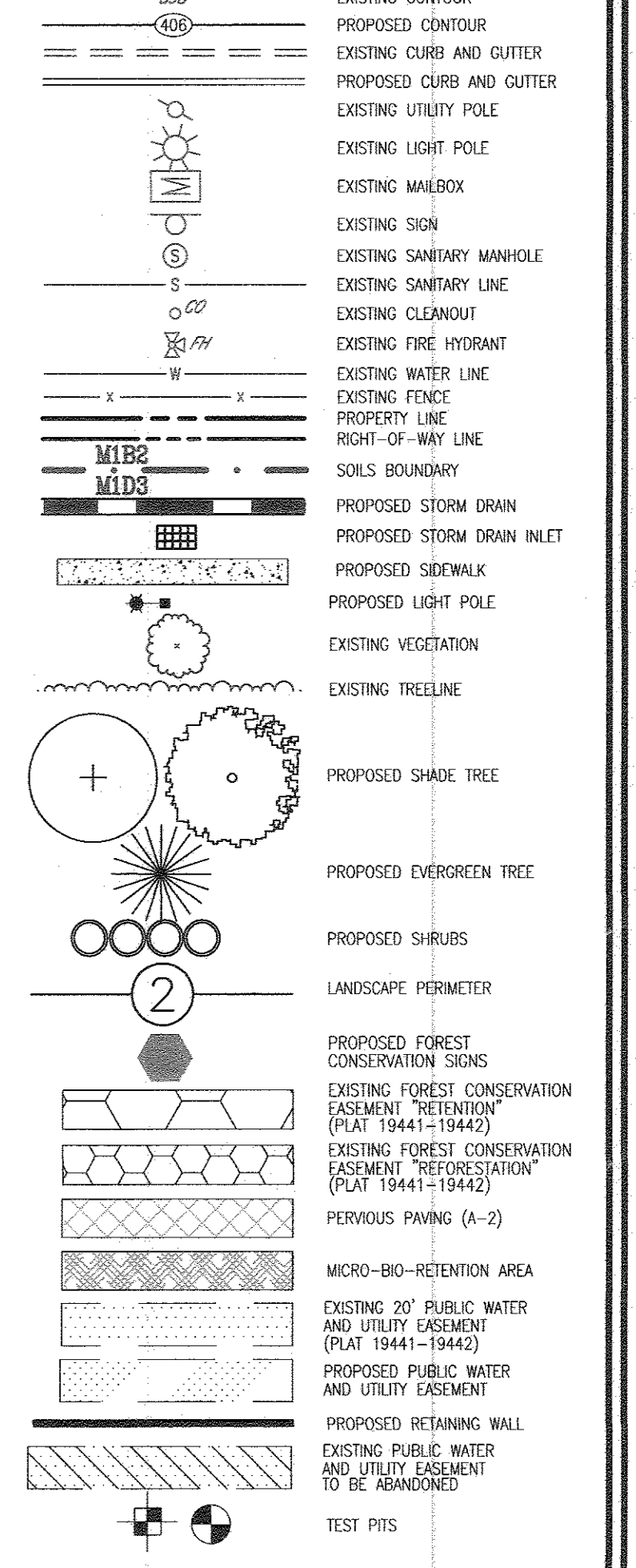
LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	CAT
AR	15	ACER RUBRUM	2 1/2"-3" CAL.	B & F
OR	9	QUERCUS PHellos	2 1/2"-3" CAL.	B & F
AS	15	ACER SACCHARUM "LEGACY"	2 1/2"-3" CAL.	B & F
PS	22	PINUS STROBUS	6"-8" HT.	B & F
TD	74	TAXUS MEDIA "WENSFORMS"	2 1/2"-3" HT.	B & F

STREET TREE CALCULATIONS

STREET NAME	LINEAR FEET	REQUIRED	PROVIDED
GRACE DRIVE (MINOR COLLECTOR)	610	15	15

LEGEND:



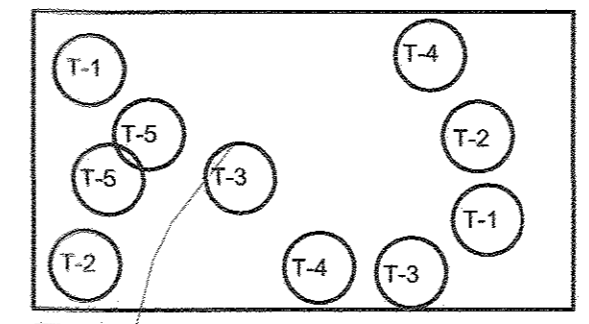
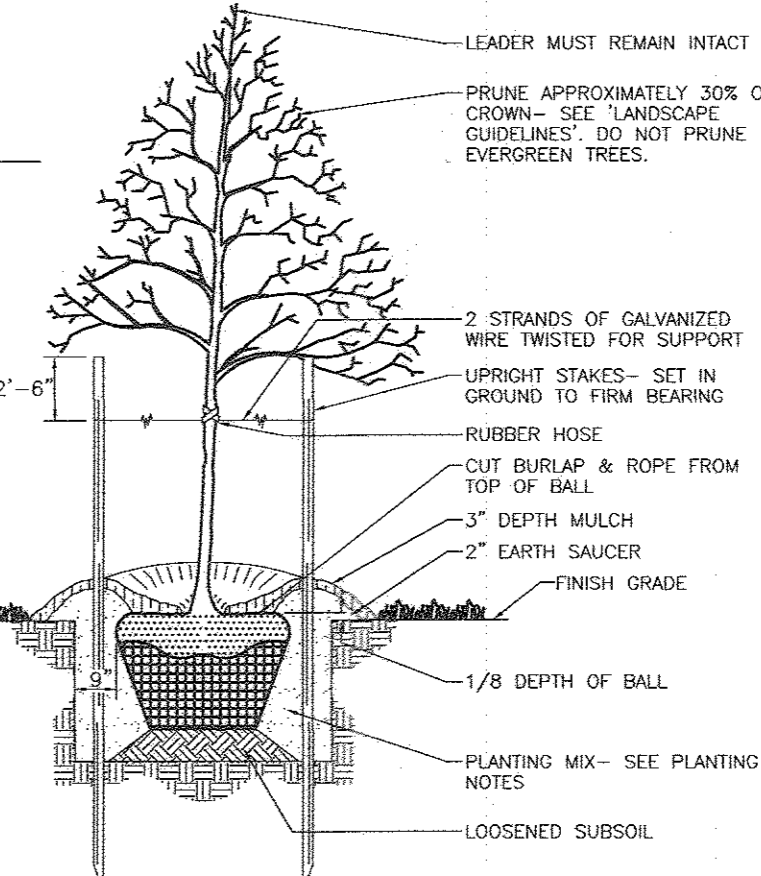
**SCHEDULE A
PERIMETER LANDSCAPE EDGE**

CATEGORY	ADJACENT TO ROADWAYS AND PERIMETER PROPERTIES								ADJACENT TO DUMPSTER	TOTAL			
	1	2	3	4	5	6	7	8					
PERIMETER/FRONTAGE DESIGNATION	C	A	B	B	B	B	B	C					
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	401	315	401	210	257	66	94	34					
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	YES 228	NO	YES 215	YES 102	NO	NO	YES 53	NO					
CREDIT FOR WALL FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	YES 315	NO	NO	NO	NO	NO	NO					
NUMBER OF PLANTS REQUIRED													
SHADE TREES	1:40	4	1:40	3	1:50	2	1:40	6	1:50	1	1:40	1	18
EVERGREEN TREES	1:20	9	1:20	9	1:40	3	1:40	2	1:40	1	1:20	2	17
SHRUBS	-	-	-	-	-	-	-	-	-	-	-	-	64
NUMBER OF PLANTS PROVIDED													
SHADE TREES	4	-	-	2	6	1	1	1	1	1	1	1	15
EVERGREEN TREES	9	-	-	6	3	-	2	1	1	1	1	1	22
SHRUBS (10:1 SUBSTITUTION)	-	-	-	-	-	-	-	-	-	-	-	-	64
OTHER TREES (2:1 SUBSTITUTION)	-	-	-	-	-	-	-	-	-	-	-	-	10
TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	74

* SUBSTITUTE 1 SHRUBS FOR 1 EVERGREEN AT DUMPSTER AREA.
** LANDSCAPING REQUIREMENT ALONG THIS PERIMETER IS BEING PROVIDED BY A FENCE.
*** SUBSTITUTE 2 EVERGREEN TREES FOR EACH SHADE TREE.

NOTES

- SEE "LANDSCAPE SPECIFICATION GUIDELINES" FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS FOR ALL MATERIAL, PRODUCT, AND PROCEDURE SPECIFICATIONS.
- SEE "LANDSCAPE GUIDELINES" FOR ADDITIONAL PLANTINGS WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.
- PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
- KEEP MULCH 1" FROM TRUNK.
- SEE ARCHITECTURAL PLANS FOR ADDITIONAL PLANTINGS WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.
- TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWAGE EASEMENT.



BIORETENTION PLANTING REQUIREMENTS

MFR	AREA	STEMS REQUIRED	STEMS PROVIDED
1	551 SF	13	16
2	787 SF	19	20

BIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF 1000 STEMS PER PLANTED ACRE (0.0229 STEMS PER SQUARE FOOT).

BIORETENTION PLANTING SCHEDULE

KEY	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
1	9	PIRUS AMERICANA 'PIONEER BLUE'	1 GALLON	18" O.C.
2	9	FRAXINUS 'FRAXINUS BLUE EYES'	1 GALLON	30" O.C.
3	9	LOQUET 'MUSCARI' 'BIG BLUE'	4" HT	SPECIMAN QUALITY STRAIGHT LEADER
4	9	CORNUS SERICEA 'FLAVIRAMA'	4" HT	SPECIMAN QUALITY STRAIGHT LEADER

OWNER/DEVELOPER
7410 GRACE DRIVE, LLC
7410 GRACE DRIVE
COLUMBIA, MD 21045
443-739-6077

THE DEPARTMENT OF RECREATION AND PARKS TO GRANT A 20' PUBLIC SEWER AND UTILITY EASEMENT AND A 10' CONSTRUCTION STRIPE ON BOTH SIDES TO CONSTRUCT A SEWER MAIN SUBJECT TO THE FOLLOWING: TOTAL TREE LOSS IS 71 D.B.H. INCHES (DIAMETER AT BREAST HEIGHT). A FEE-IN-LIEU FOR MITIGATION OF 50% OF THE D.B.H. INCHES LOST, WHICH IS 35.5 D.B.H. INCHES. THE CALCULATION FOR THE FEE-IN-LIEU IS AS FOLLOWS: 35.5 D.B.H. INCHES X \$ 63.85 = \$2,266.68 TO BE PAID UPON APPROVAL OF THIS PLAN.

SIZE (IN. DIA. DBH)	SPECIES
20"	RED OAK
18"	TULIP POPLAR
10"	MAPLE
12"	HICKORY
11"	OAK
71"	TOTAL

50% OF 71"=35.5" X \$63.85=\$2,266.68

LANDSCAPE SCHEDULE NOTE:

- 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.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
- CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

GENERAL NOTES:

- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. THE REQUIRED PARKING AND PERIMETER LANDSCAPING WILL BE BONDED PER THIS SUBMISSION.
- PER SDP-06-102 THE FOREST RESTORATION OBLIGATIONS WERE FULFILLED BY THE RETENTION OF 0.61 ACRES OF FOREST, BY THE REFORESTATION OF 0.39 ACRES OF FOREST, AND BY A FEE-IN-LIEU PAYMENT IN THE AMOUNT OF \$22,215.60 FOR THE REMAINING 0.58 ACRES OF FOREST REQUIRED. FINANCIAL SURETY FOR THE REQUIRED REFORESTATION IN THE AMOUNT OF \$8,494.20 HAS BEEN POSTED AS PART OF THE DEVELOPERS AGREEMENT UNDER THIS SITE DEVELOPMENT PLAN. NO FURTHER OBLIGATIONS REQUIRED WITH THIS PLAN.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPERS AGREEMENT WITH THIS PLAN. IN THE AMOUNT OF \$12,700.00 FOR 24 SHADE TREES, 14 EVERGREEN TREES, AND 74 SHRUBS. FINANCIAL SURETY FOR THE REQUIRED STREET TREE PLANTING HAS BEEN POSTED AS PART OF THE DEVELOPERS AGREEMENT WITH THIS PLAN. IN THE AMOUNT OF \$4,500.00 FOR THE REQUIRED 15 SHADE TREES.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

John E. ...
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 11-11-16

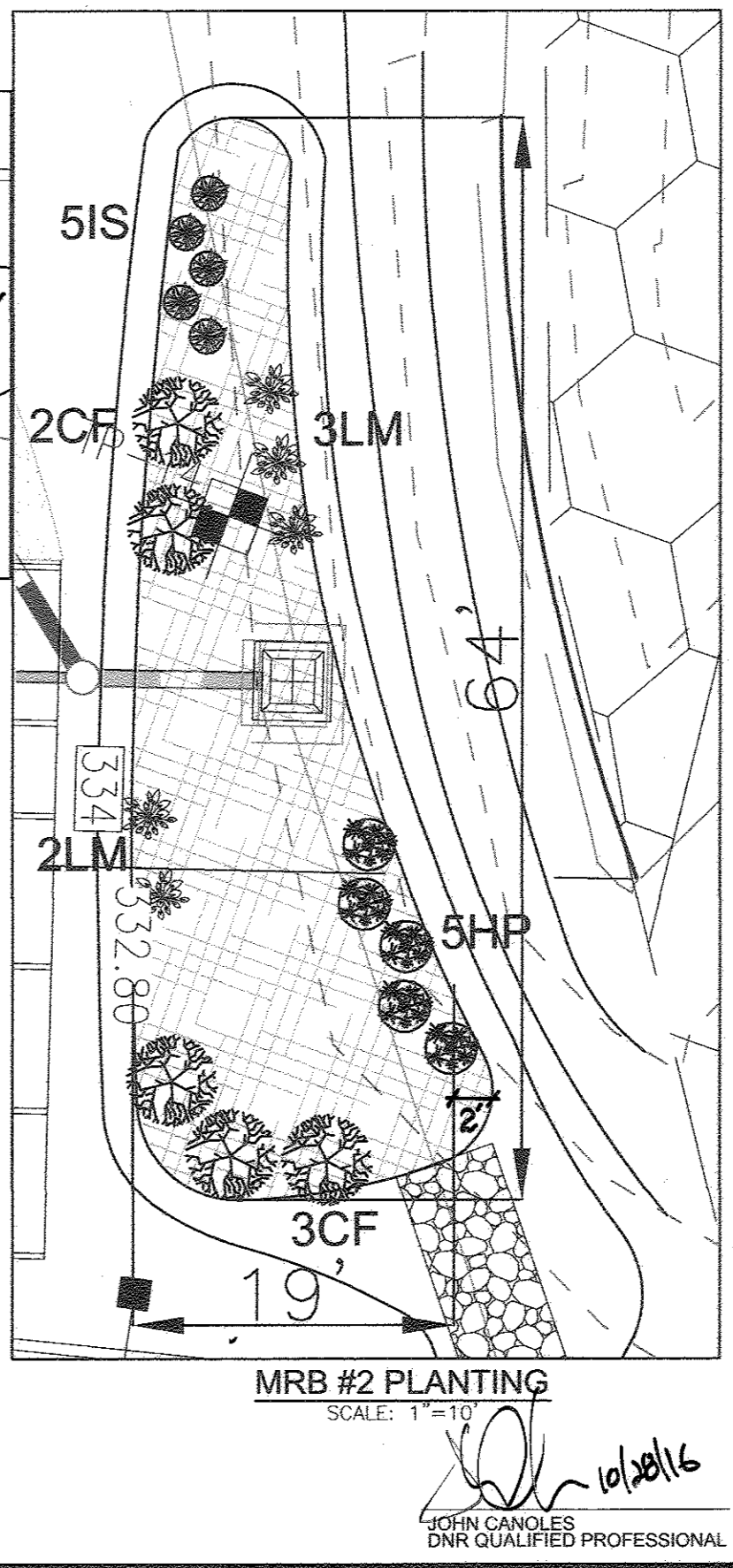
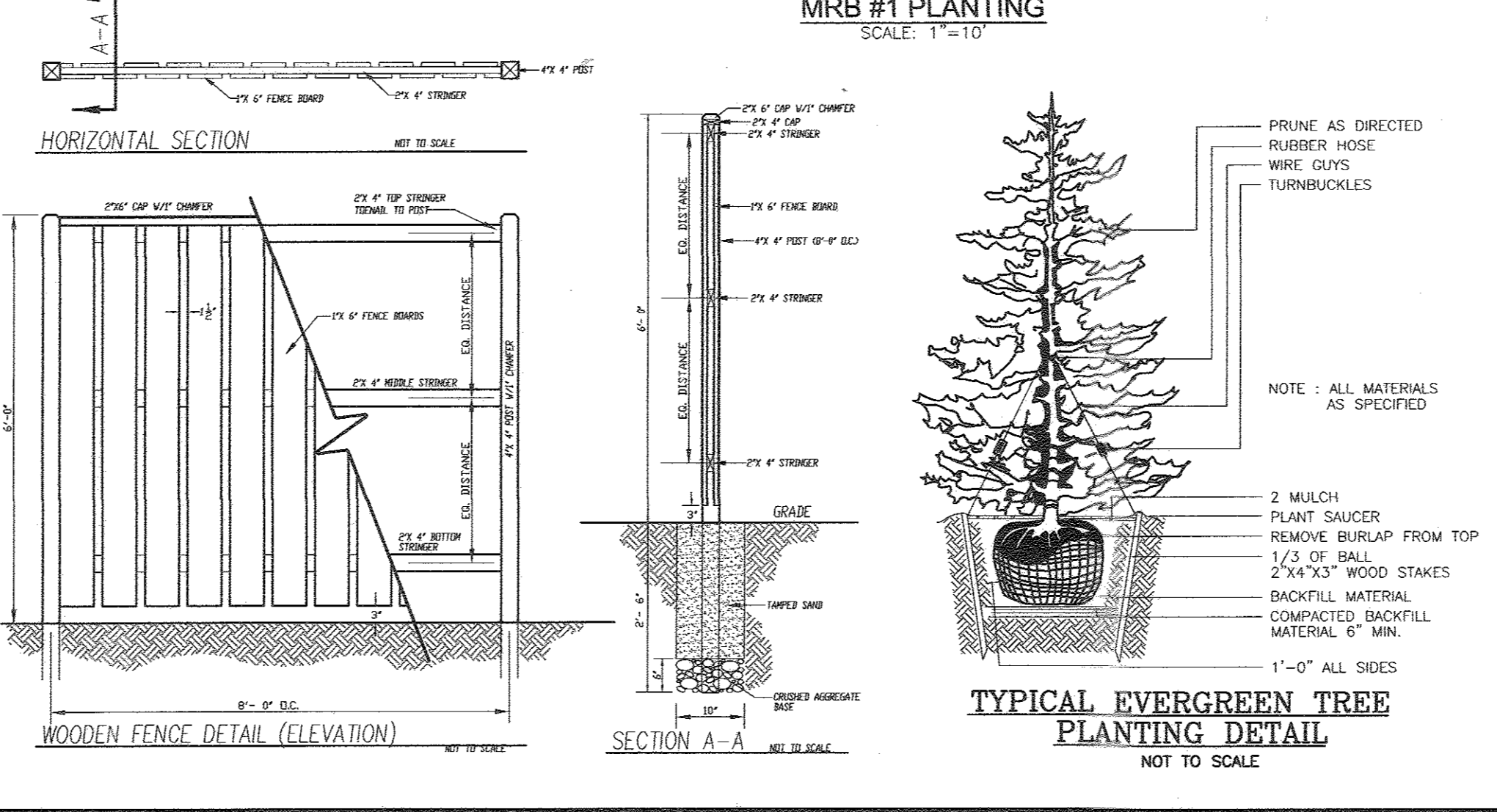
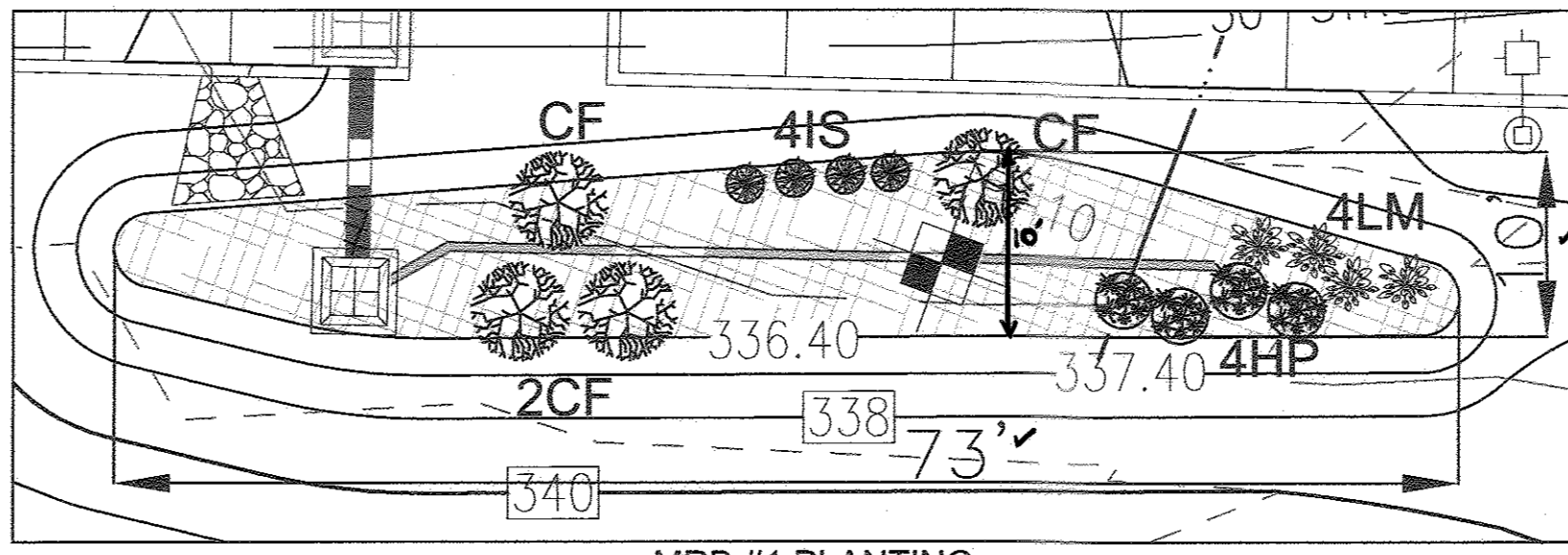
Val ...
CHIEF DIVISION OF LAND DEVELOPMENT
DATE: 12-2-16

Val ...
DIRECTOR
DATE: 12-5-16

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 INSTALLED, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Val ...
SIGNATURE OF DEVELOPER
DATE: 12/11/16



**SITE DEVELOPMENT PLAN
LANDSCAPE AND FOREST
CONSERVATION PLAN AND DETAILS**

FINO VINO
OFFICE BUILDING AND RESTAURANT

TAX MAP 35 GRID 22
5TH ELECTION DISTRICT

ZONED: POR
PARCELS 86

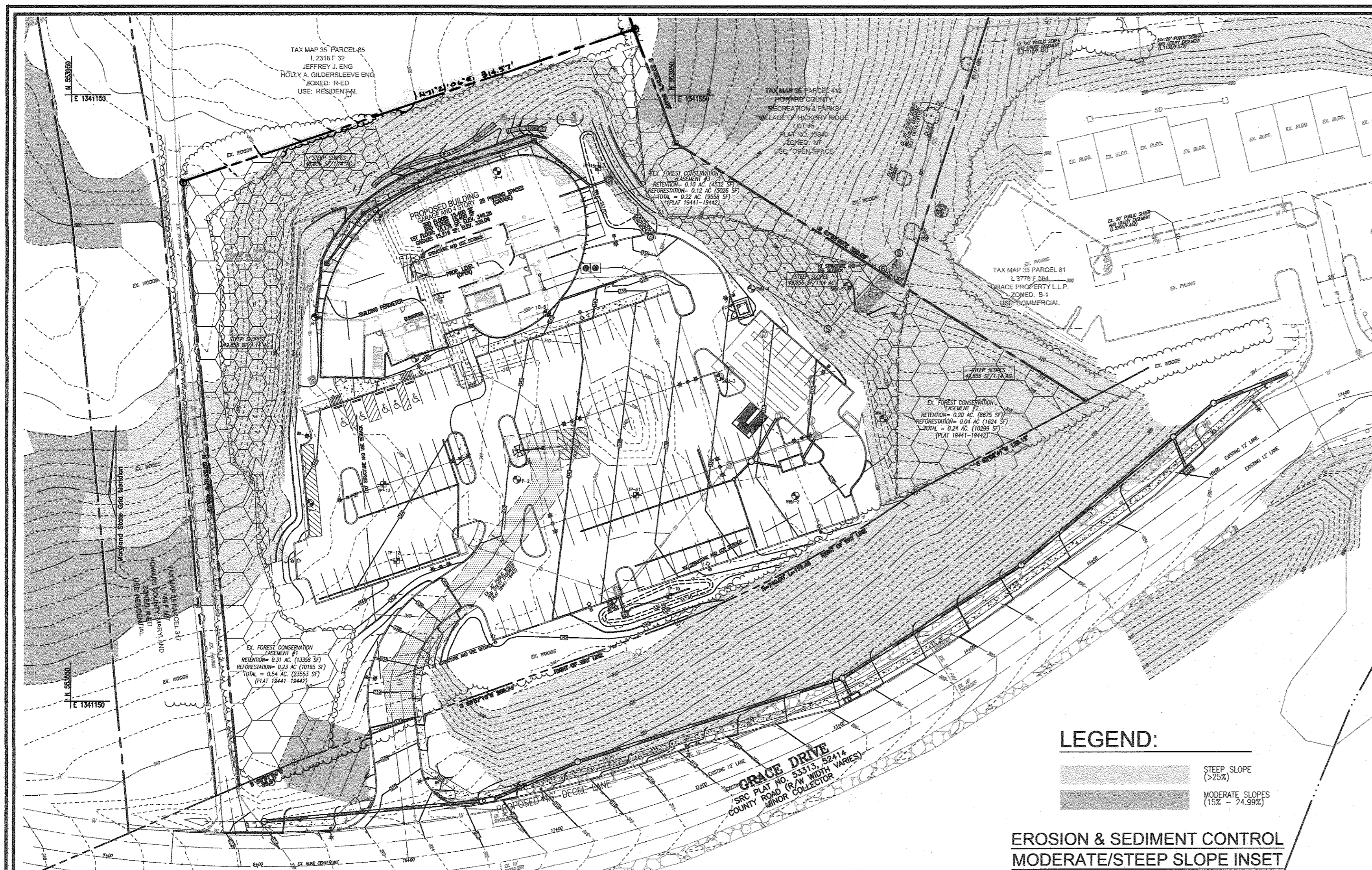
**ROBERT H. VOGEL
ENGINEERING, INC.**
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

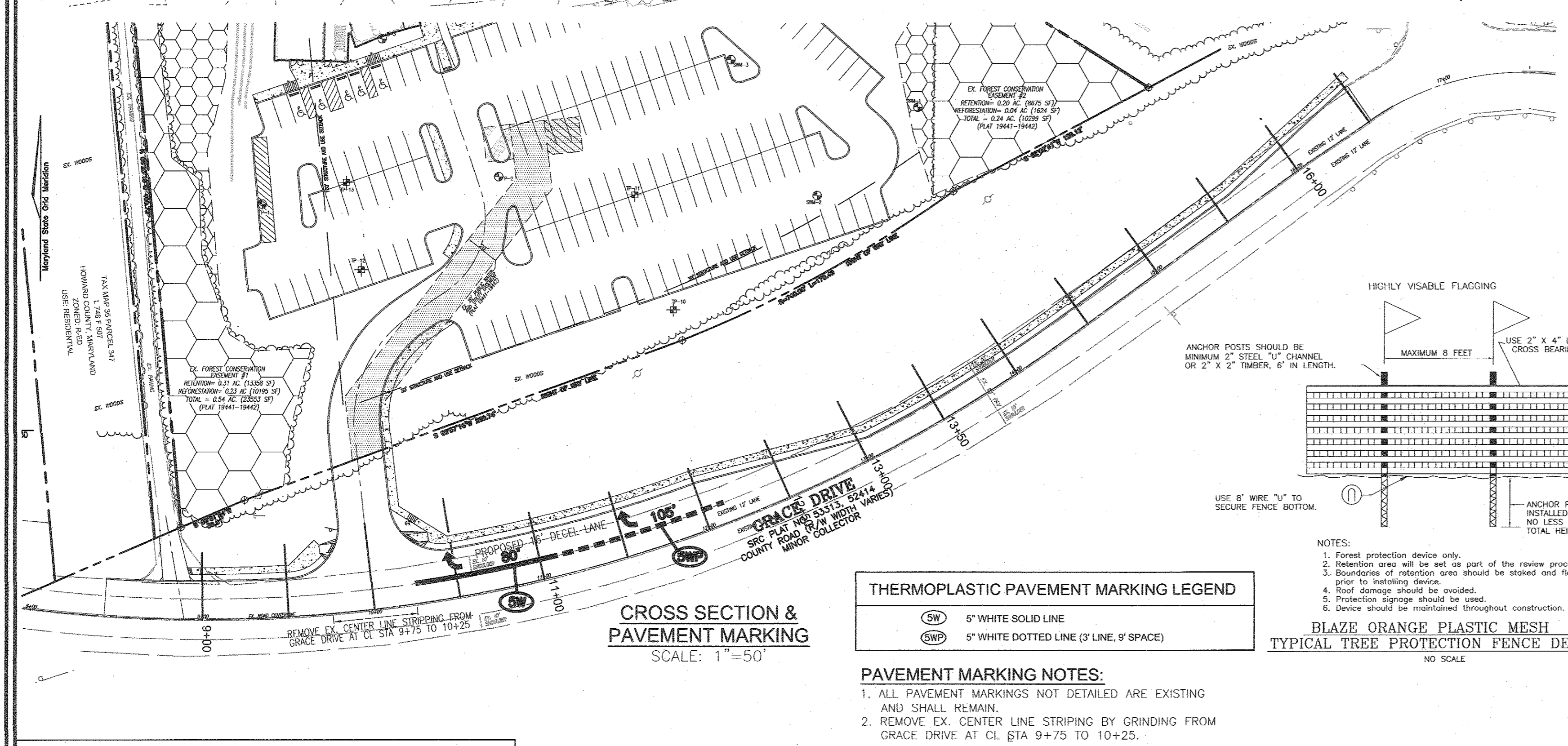
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE 09-27-2018.

DESIGN BY: RHW
DRAWN BY: KG
CHECKED BY: RHW
DATE: OCT. 2016
SCALE: AS SHOWN
W.O. NO.: 04-08

10 SHEET OF 12



**EROSION & SEDIMENT CONTROL
MODERATE/STEEP SLOPE INSET**
SCALE: 1"=50'



**CROSS SECTION &
PAVEMENT MARKING**
SCALE: 1"=50'

THERMOPLASTIC PAVEMENT MARKING LEGEND

- (SW) 5" WHITE SOLID LINE
- (SD) 5" WHITE DOTTED LINE (3" LINE, 9" SPACE)

- PAVEMENT MARKING NOTES:**
- ALL PAVEMENT MARKINGS NOT DETAILED ARE EXISTING AND SHALL REMAIN.
 - REMOVE EX. CENTER LINE STRIPING BY GRINDING FROM GRACE DRIVE AT CL STA 9+75 TO 10+25.

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/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: 10/31/16

TYPICAL ROAD SECTION, STA. 9+00 GRACE DRIVE
SCALE: HORIZONTAL - 1"=8'
SEE DTLS ON SHEET 5 FOR ADDITIONAL INFORMATION

TYPICAL ROAD SECTION, STA. 9+50 GRACE DRIVE
SCALE: HORIZONTAL - 1"=8'
SEE DTLS ON SHEET 5 FOR ADDITIONAL INFORMATION

TYPICAL ROAD SECTION, STA. 10+00 GRACE DRIVE
SCALE: HORIZONTAL - 1"=8'
SEE DTLS ON SHEET 5 FOR ADDITIONAL INFORMATION

TYPICAL ROAD SECTION, STA. 10+50 GRACE DRIVE
SCALE: HORIZONTAL - 1"=8'
SEE DTLS ON SHEET 5 FOR ADDITIONAL INFORMATION

TYPICAL ROAD SECTION, STA. 11+00 GRACE DRIVE
SCALE: HORIZONTAL - 1"=8'
SEE DTLS ON SHEET 5 FOR ADDITIONAL INFORMATION

TYPICAL ROAD SECTION, STA. 11+50 GRACE DRIVE
SCALE: HORIZONTAL - 1"=8'
SEE DTLS ON SHEET 5 FOR ADDITIONAL INFORMATION

TYPICAL ROAD SECTION, STA. 12+00 GRACE DRIVE
SCALE: HORIZONTAL - 1"=8'
SEE DTLS ON SHEET 5 FOR ADDITIONAL INFORMATION

TYPICAL ROAD SECTION, STA. 12+50 GRACE DRIVE
SCALE: HORIZONTAL - 1"=8'
SEE DTLS ON SHEET 5 FOR ADDITIONAL INFORMATION

TYPICAL ROAD SECTION, STA. 13+00 GRACE DRIVE
SCALE: HORIZONTAL - 1"=8'
SEE DTLS ON SHEET 5 FOR ADDITIONAL INFORMATION

TYPICAL ROAD SECTION, STA. 13+50 GRACE DRIVE
SCALE: HORIZONTAL - 1"=8'
SEE DTLS ON SHEET 5 FOR ADDITIONAL INFORMATION

TYPICAL ROAD SECTION, STA. 14+00 GRACE DRIVE
SCALE: HORIZONTAL - 1"=8'
SEE DTLS ON SHEET 5 FOR ADDITIONAL INFORMATION

TYPICAL ROAD SECTION, STA. 14+50 GRACE DRIVE
SCALE: HORIZONTAL - 1"=8'
SEE DTLS ON SHEET 5 FOR ADDITIONAL INFORMATION

TYPICAL ROAD SECTION, STA. 15+00 GRACE DRIVE
SCALE: HORIZONTAL - 1"=8'
SEE DTLS ON SHEET 5 FOR ADDITIONAL INFORMATION

TYPICAL ROAD SECTION, STA. 15+50 GRACE DRIVE
SCALE: HORIZONTAL - 1"=8'
SEE DTLS ON SHEET 5 FOR ADDITIONAL INFORMATION

TYPICAL ROAD SECTION, STA. 16+00 GRACE DRIVE
SCALE: HORIZONTAL - 1"=8'
SEE DTLS ON SHEET 5 FOR ADDITIONAL INFORMATION

TYPICAL ROAD SECTION, STA. 16+50 GRACE DRIVE
SCALE: HORIZONTAL - 1"=8'
SEE DTLS ON SHEET 5 FOR ADDITIONAL INFORMATION

REFORESTATION EASEMENT AREA 1: 0.23 AC ± 46 TREES					200 TPA
QUAN	BOTANICAL NAME	COMMON NAME	MIN. SIZE	SPACING	NOTES
10	Acer Rubrum	Red Maple	1" CAL	15' X 15'	B & B
9	Quercus rubra	Northern Red Oak	1" CAL	15' X 15'	B & B
9	Platanus occidentalis	Sycamore	1" CAL	15' X 15'	B & B
9	Cornus florida	Flowering Dogwood	1" CAL	15' X 15'	B & B
9	Liquidambar styraciflua	Sweet Gum	1" CAL	15' X 15'	B & B

REFORESTATION EASEMENT AREA 2: 0.04 AC ± 8 TREES					200 TPA
QUAN	BOTANICAL NAME	COMMON NAME	MIN. SIZE	SPACING	NOTES
1	Acer Rubrum	Red Maple	1" CAL	15' X 15'	B & B
1	Quercus rubra	Northern Red Oak	1" CAL	15' X 15'	B & B
2	Platanus occidentalis	Sycamore	1" CAL	15' X 15'	B & B
2	Cornus florida	Flowering Dogwood	1" CAL	15' X 15'	B & B
2	Liquidambar styraciflua	Sweet Gum	1" CAL	15' X 15'	B & B

REFORESTATION EASEMENT AREA 3: 0.12 AC ± 24 TREES					200 TPA
QUAN	BOTANICAL NAME	COMMON NAME	MIN. SIZE	SPACING	NOTES
4	Acer Rubrum	Red Maple	1" CAL	15' X 15'	B & B
4	Quercus rubra	Northern Red Oak	1" CAL	15' X 15'	B & B
5	Platanus occidentalis	Sycamore	1" CAL	15' X 15'	B & B
5	Cornus florida	Flowering Dogwood	1" CAL	15' X 15'	B & B
5	Liquidambar styraciflua	Sweet Gum	1" CAL	15' X 15'	B & B

FOREST CONSERVATION WORKSHEET

NET TRACT AREA:
 A. TOTAL TRACT AREA = 3.84 AC
 B. DEDUCTIONS = 0.00 AC
 C. NET TRACT AREA = 3.84 AC

LAND USE CATEGORY (FROM TABLE 3.2.1, PAGE 40, MANUAL)
 INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY.

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

D. AFFOREST THRESHOLD = 15% X D = 0.58 AC
 E. CONSERVATION THRESHOLD = 15% X D = 0.77 AC

EXISTING FOREST COVER:
 F. EXISTING FOREST COVER (EXCLUDING FLOODPLAIN) = 3.77 AC
 G. AREA OF FOREST ABOVE CONSERVATION THRESHOLD = 3.00 AC

BREAK EVEN POINT:
 H. BREAK EVEN POINT = 1.37 AC
 I. CLEARING PERMITTED WITHOUT MITIGATION = 2.40 AC

PROPOSED FOREST CLEARING:
 J. TOTAL AREA OF FOREST TO BE CLEARED = 3.16 AC
 K. TOTAL AREA OF FOREST TO BE RETAINED = 0.61 AC

PLANTING REQUIREMENTS:
 L. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD = 0.75 AC
 M. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD = 0.32 AC
 N. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD = 0.00 AC
 O. TOTAL REFORESTATION REQUIRED = 1.07 AC
 P. TOTAL AFFORESTATION REQUIRED = 0.00 AC
 R. TOTAL REFORESTATION AND AFFORESTATION REQUIRED = 1.07 AC

THE FOREST CONSERVATION OBLIGATIONS WILL BE FULFILLED BY THE RETENTION OF 0.61 ACRES OF FOREST, BY THE REFORESTATION OF 0.39 ACRES OF FOREST, AND BY A FEE-IN-LIEU IN THE AMOUNT OF \$22,215.60 FOR THE REMAINING 0.68 ACRES OF FOREST REQUIRED. FINANCIAL SURETY FOR THE REQUIRED FOREST CONSERVATION IN THE AMOUNT OF \$6,494.20 WILL BE PAID AS PART OF THE DEVELOPERS AGREEMENT.
 REFORESTATION (16988.40 SF OR 0.39 AC x 0.50 = \$6,494.20)

[Signature]
 JOHN CANOLES
 DNR QUALIFIED PROFESSIONAL

FOREST PROTECTION NOTES

PRE-CONSTRUCTION ACTIVITIES
 PRIOR TO THE START OF ANY CONSTRUCTION, THE APPLICANT SHALL ARRANGE A PRE-CONSTRUCTION MEETING WITH THE HOWARD COUNTY DPZ ENVIRONMENTAL PLANNER TO ADDRESS IMPLEMENTATION OF THE FOREST CONSERVATION PLAN, THE INSTALLATION OF SIGNAGE, AND ANY REQUIRED FENCING WILL BE INSPECTED AT THAT MEETING.

- INSTALL BLAZE ORANGE FENCE AND FOREST CONSERVATION SIGNS BEFORE CONSTRUCTION BEGINS.
- FENCING SHALL BE MAINTAINED IN GOOD CONDITION AND PROMPTLY REPAIRED OR RESTORED AS THE SITUATION WARRANTS.

CONSTRUCTION PHASE
 NO DISTURBANCE OR DUMPING IS ALLOWED INSIDE THE AFFORESTATION AREA.
 NO EQUIPMENT SHALL BE OPERATED INSIDE THE AFFORESTATION AREA, INCLUDING TREE CANOPIES.

- IN THE EVENT OF DROUGHT, THE PROTECTED TREES SHALL BE MONITORED FOR SIGNS OF STRESS AND WATERED AS NEEDED.

POST-CONSTRUCTION ACTIVITIES
 AT THE DIRECTION OF A QUALIFIED TREE CARE EXPERT, DAMAGES TO RETAINED TREES SHALL BE REPAIRED BY THE CONTRACTOR.

- FENCE REMOVAL AND STABILIZATION SHALL BE AS PER THE SEDIMENT AND EROSION CONTROL PLAN.
- FOLLOWING CONSTRUCTION, THE APPLICANT SHALL ARRANGE A POST-CONSTRUCTION MEETING WITH THE HOWARD COUNTY DPZ ENVIRONMENTAL PLANNER TO ADDRESS COMPLIANCE WITH THE FOREST CONSERVATION PLAN. DO NOT REMOVE SIGNS.

OWNER/DEVELOPER
 7410 GRACE DRIVE, LLC
 7410 GRACE DRIVE
 COLUMBIA, MD 21045
 443-739-6077

FOREST CONSERVATION AREA SIGNS
 NOT TO SCALE

FOREST CONSERVATION AREA

REFORESTATION PROJECT

TREES FOR YOUR FUTURE

FOREST CONSERVATION AREA

REFORESTATION PROJECT

DIRECT SEEDING

TREES FOR YOUR FUTURE

FOREST CONSERVATION AREA

DO NOT DISTURB

MACHINERY, DUMPING OR STORAGE OF ANY MATERIALS IS PROHIBITED

VIOLATORS ARE SUBJECT TO FINES AS IMPOSED BY THE MARYLAND FOREST CONSERVATION ACT OF 1991

SPECIMEN TREE

DO NOT REMOVE

MACHINERY, DUMPING OR STORAGE OF ANY MATERIALS IS PROHIBITED

VIOLATORS ARE SUBJECT TO FINES AS IMPOSED BY THE MARYLAND FOREST CONSERVATION ACT OF 1991

NOTE:

- THE SIGNS NOTIFY CONSTRUCTION WORKERS AND FUTURE RESIDENTS OF THE NEWLY PLANTED MATERIAL, IMPROVING THE TREES' SURVIVAL RATES.
- SIGNS MAY BE ADAPTED BY RESIDENTS FOR IDENTIFICATION OF FOREST RETENTION AREAS IN LONG TERM.
- BOTTOM OF SIGNS TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE.
- SIGNS TO BE PLACED APPROXIMATELY 50'-100' FEET APART, CONDITIONS ON SITE AFFECTING VISIBILITY MY WARRANT PLACING SIGNS CLOSER OR FARTHER APART.
- ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 11/4/16
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 12-2-16
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 12-5-16
 DIRECTOR DATE

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/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: 10/31/16

SITE DEVELOPMENT PLAN
SLOPE INSETS, PAVEMENT MARKINGS, ROAD SECTIONS, AND FOREST CONSERVATION NOTES AND DETAILS

FINO VINO
 OFFICE BUILDING AND RESTAURANT

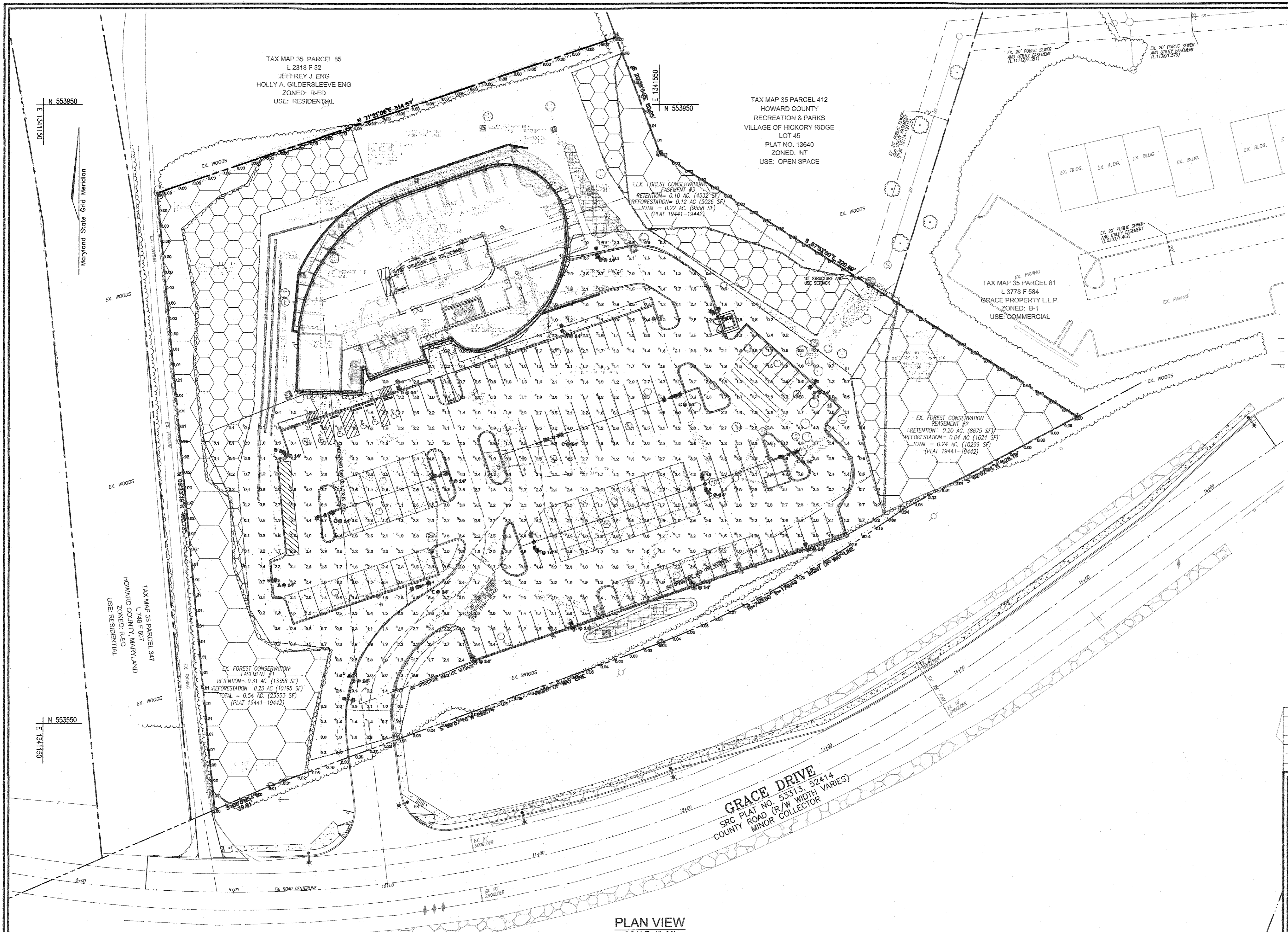
TAX MAP 35 GRID 22 ZONED: POP PARCELS 86
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410-461-7666 FAX: 410-461-8961

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: 09-27-2018

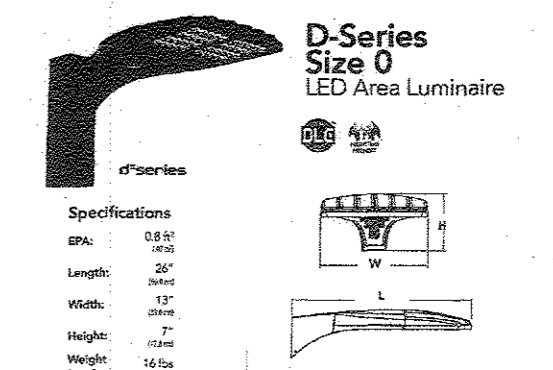
DESIGN BY: RHV
 DRAWN BY: RHV
 CHECKED BY: RHV
 DATE: OCT. 2016
 SCALE: AS SHOWN
 W.O. NO.: 04-06

11 SHEET OF 12



LEGEND:

	EXISTING CURB AND GUTTER
	PROPOSED CURB AND GUTTER
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	EXISTING MAILBOX
	EXISTING SIGN
	EXISTING SANITARY MANHOLE
	EXISTING SANITARY LINE
	EXISTING CLEANOUT
	EXISTING FIRE HYDRANT
	EXISTING WATER LINE
	PROPOSED STORM DRAIN
	PROPOSED STORM DRAIN INLET
	EXISTING VEGETATION
	EXISTING TREE LINE (FIELD LOCATED)
	PROPOSED HIGH PRIVACY FENCE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	PROPOSED SIDEWALK
	PROPOSED STREET LIGHT
	EXISTING FOREST CONSERVATION EASEMENT "RETENTION" (PLAT 19441-19442)
	EXISTING FOREST CONSERVATION EASEMENT "REFORESTATION" (PLAT 19441-19442)
	PROPOSED RETAINING WALL



Specifications

Model	A	1 Luminaire	100 WATT LED AREA LUMINAIRE WITH 10' X 10' FOOT CANOPY AND 10' X 10' FOOT FOOT CANDLE	100	1	10000	10000	10000	10000	10000	10000
Model	B	1 Luminaire	100 WATT LED AREA LUMINAIRE WITH 10' X 10' FOOT CANOPY AND 10' X 10' FOOT FOOT CANDLE	100	1	10000	10000	10000	10000	10000	10000
Model	C	1 Luminaire	100 WATT LED AREA LUMINAIRE WITH 10' X 10' FOOT CANOPY AND 10' X 10' FOOT FOOT CANDLE	100	1	10000	10000	10000	10000	10000	10000
Model	D	1 Luminaire	100 WATT LED AREA LUMINAIRE WITH 10' X 10' FOOT CANOPY AND 10' X 10' FOOT FOOT CANDLE	100	1	10000	10000	10000	10000	10000	10000

OWNER/DEVELOPER
 7410 GRACE DRIVE, LLC
 7410 GRACE DRIVE
 COLUMBIA, MD 21045
 443-739-6077

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Schmitt
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 11-14-16

Valerie J. Zappia
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 12-2-16

Valerie J. Zappia
 DIRECTOR
 DATE: 12-5-16

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

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

PLAN VIEW
 SCALE: 1"=30'

GRAPHIC SCALE 1"=30'

Note:
 This is an Initial Light Level Study for light trespass purposes. No Light Loss Factor has been applied.

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
On Property Line	+	0.03 fc	0.41 fc	0.00 fc	N/A	N/A
Parking Lot and Drive	X	2.3 fc	6.7 fc	0.4 fc	16.8:1	5.8:1

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN
PHOTOMETRIC PLAN EXHIBIT

FINO VINO
 OFFICE BUILDING AND RESTAURANT
 TAX MAP 35 GRID 22 ZONED: POR
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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DESIGN BY: RHV
 DRAWN BY: KG
 CHECKED BY: RHV
 DATE: OCT. 2016
 SCALE: AS SHOWN
 W.O. NO.: 04-06

12 SHEET OF 12